

CHESHUNT AND WALTHAM CROSS URBAN TRANSPORT PLAN Public Consultation Document

October 2010



Appendices A-C

Appendix A – Scheme Pro-forma's

Walking and Cycling Scheme Pro-forma's

Short Term Schemes

- WC10 Signing of cycle route Winston Churchill Way to Eleanor Cross Road
- WC11a Signing improvements between Waltham Cross bus station and rail station
- WC11b Provision of toucan crossing across Abbey Road
- WC12a Theobalds Lane/High Street toucan crossing
- WC12b Signing of Cycle Route – Theobalds Grove to Lee Valley Park
- WC13 Signing of Cycle Route – Waltham Cross to Lee Valley Park
- WC14 Cycle Route – Theobalds Grove to Cheshunt Station
- WC22 Signing of cycleway Waltham Cross Town Centre to Abbey Road Roundabout
- WC24 Enhancements to Monarchs Way subway – landscaping/lighting & walkways
- WC26 Publish a walking and cycling leaflet and information on HCC and BBC websites

Medium Term Schemes

- WC15 Signing of cycle route Park Lane to Waltham Cross Town Centre
- WC17a New River Cycle/ Footway Phase 1 – Theobalds Lane to College Road
- WC17b New River Cycle / Footway Phase 2 – College Road to Church Lane
- WC20 Cycle enhancements in B176 corridor
- WC21 Signing of link to Enfield from Waltham Cross Town Centre via Enfield Greenways
- WC30 Provision of cycle and pedestrian facilities Brookfield Lane West.

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Scheme Name	Signing of Cycle Route Winston Churchill Way to Eleanor Cross Road
Scheme Reference:	WC10
Problem References:	WCP5: Routes are lacking, in poor condition or at an inadequate standard to key destinations (discontinuous, narrow, dangerous and poorly signed)
Contributions to Targets / Objectives	Journey Time per Mile Change in Area Wide Traffic Mileage Mode Share of Journeys to School Cycle Usage Access to Employment Air Quality Environmental Improvements, particularly for vulnerable road users Encourage use of sustainable modes through improved information

Description of Proposals

This scheme will provide cycle route signing to improve the connectivity of the route towards Lee Valley Park. A shared use footway/cycleway is currently being progressed by Broxbourne Borough Council along the south side of Winston Churchill Way. From the eastern end of this proposed shared use path, cyclists will be able to take advantage of the existing crossing facilities at High Street and follow the newly signed route to join up with the Waltham Cross to Lee Valley Park cycle route along Eleanor Cross Road proposed as part of this UTP.

The route will take cyclists through the residential streets of Swanfield Road and York Road. Both these roads are traffic calmed, creating an environment where cyclists are less likely to be intimidated by fast moving traffic. This route is preferred for signing over the busier Monarch's Way, although some (more experienced) cyclists may choose the route along Monarch's Way.

Location Plan



Supporting Photograph(s)



Traffic calming on York Road

Outline Scheme Plan



Sign No 1: Printworks/A10
Sign No 2: Lee Valley Park/Waltham Cross
Sign No 3: Printworks/A10
Sign No 4: Lee Valley Park/Waltham Cross
Sign No 5: Printworks/A10
Sign No 6: Lee Valley Park/Waltham Cross

Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Suitability of cycling on proposed road	Utilise existing quiet residential roads where vehicle speeds are low. Carriageway widths are appropriate for the implementation of cycle routes.	Y
Location of underground services in relation to proposed sign locations	Adjust sign locations around existing underground service locations	Y

Links to other UTP schemes:	WC02: Footway/cycleway on south side of Winston Churchill Way WC13: Signing of Cycle Route – Theobald's Grove to Lee Valley Park
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Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Outline Cost Analysis		
Works Element	Est. Cost	Notes
6 no traffic signs, with posts	£1,000	
Design fees	£200	
Supervision	£200	
Miscellaneous costs	£600	Including allowances for contingencies, preliminaries and inflation
TOTAL COST FOR DELIVERY	£2,000	

Advantages	Disadvantages
Creates a link to other destinations following on from the proposed footway/cycleway on the south side of Winston Churchill Way	Regular maintenance of vegetation required to ensure signs are not obscured
Works require minimal engineering and design input and are therefore easy to undertake	Signs may be subject to vandalism
Quick win solution to improve way finding	
Will contribute to an increased sense of integration and continuity of rail-bus journeys	

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk:		
N/A		

Other Information/Additional Notes:

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Scheme Name	Signing improvements between Waltham Cross bus station and rail station
Scheme Reference:	WC11a
Problem References:	<p>WCP1: Underpasses (particularly the Monarch's Way underpass) create movement barriers for pedestrians and cyclists and are unpleasant and unsafe</p> <p>WCP5: Routes are lacking, in poor condition or at an inadequate standard to key destinations (discontinuous, narrow, dangerous and poorly signed)</p> <p>WCP12: Accessibility to rail stations is poor due to lack of crossing points</p>
Contribution to Targets / Objectives	<p>Public Transport Patronage</p> <p>Bus Service User Satisfaction</p> <p>Cycle Usage</p> <p>Access to Employment</p> <p>Access to Public Transport</p> <p>Access to Town / Local Centres</p> <p>Air Quality</p> <p>Rail Related Improvements</p> <p>Encourage use of sustainable modes through improved information</p>

Description of Proposals

Install a number of blue flag type pedestrian/cyclist directional signs to clearly mark the route between the bus station and the rail station at Waltham Cross (and to the town centre and Waltham Abbey/Lea Valley Park where appropriate). A number of existing signs on the route are to be replaced with larger signs to improve visibility and legibility. New signs are to be height staggered to improve legibility. New signs are to be mounted on rectangular tubular posts to minimise rotation. There is no requirement to light the signs.

Vegetation along the route, in particular on the approaches to the Monarch's Way underpass are to be maintained in order to ensure that new signs are not obscured.

A possible Olympic theme may be considered through the duration of the Games to guide visitors to the venue.

Location Plan



Supporting Photograph(s)



Towards underpass from bus station (maintain vegetation)



Central area of underpass (stagger height of signs to improve legibility)



From underpass towards bus station (replace sign to indicate both town centre and bus station)



From underpass towards rail station (install signs to improve way finding to rail station)

Outline Scheme Plan



- Location 1: 2no signs ('Bus Station/Town Centre' and 'Rail Station')
- Location 2: 2no signs ('Bus Station/Town Centre' and 'Rail Station')
- Location 3: 3no signs ('Bus Station/Town Centre', 'Rail Station' and 'Waltham Abbey/Lea Valley Park')
- Location 4: 2no signs ('Bus Station/Town Centre' and 'Rail Station')
- Location 5: 2no signs ('Bus Station/Town Centre' and 'Waltham Abbey/Lea Valley Park')

Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Location of underground services in relation to proposed sign locations	Adjust sign locations around existing underground service locations	Y

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Links to other UTP schemes:	WC11b: Provision of toucan crossing across Monarch's Way
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Manufacture and installation of 11no signs and required posts	£2,000	Use rectangular tubular posts to minimise sign rotation
Design fees	£400	
Supervision	£200	
Miscellaneous costs	£1,400	Including allowances for contingencies, preliminaries and inflation
TOTAL COST FOR DELIVERY	£4,000	

Advantages	Disadvantages
Works require minimal engineering and design input and are therefore easy to undertake	Regular maintenance of vegetation required to ensure signs are not obscured
Quick win solution to improve way finding	Signs may be subject to vandalism
Will contribute to an increased sense of integration and continuity of rail-bus journeys	

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other proposals?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk:		
n/a		

Other Information/Additional Notes:
This scheme may be enhanced following installation of toucan crossing across Monarch's Way with supplementary pedestrian/cyclist direction signs to indicate routes via underpass and via the toucan crossing.

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Scheme Name	Provision of toucan crossing at Monarch's Way Roundabout (Abbey Road toucan crossing)
Scheme Reference:	WC11b
Problem References:	<p>WCP1: Underpasses (particularly the Monarch's Way underpass) create movement barriers for pedestrians and cyclists and are unpleasant and unsafe</p> <p>WCP3: Insufficient provision for pedestrians and cyclists to safely negotiate busy junctions and to cross busy roads</p> <p>WCP12: Accessibility to rail crossings is poor due to lack of crossing provisions</p> <p>BUP8/RAP4: Poor integration of bus and rail services</p>
Contributions to Targets / Objectives	<p>Cycle Usage</p> <p>Access to Employment</p> <p>Access to Public Transport</p> <p>Access to Town/local Centres</p> <p>Personal Security</p> <p>Town Centre enhancements/streetscape improvements</p>

Description of Proposals

The proposal is for a staggered toucan crossing across the southern arm of Monarch's Way Roundabout which will complement the existing subway system at the roundabout. Site observations show that there is a clear demand for a surface crossing on this arm to facilitate movements between Waltham Cross bus and rail stations.

Preliminary modelling was undertaken using the junction capacity modelling software LINSIG to assess the likely impact of the proposed crossing on traffic at Monarch's Way Roundabout. In the traffic junction model, the maximum length pedestrian phase was called on during every cycle, whereas in reality it is unlikely that demand will reach the level. The results of the modelling are therefore assumed to be conservative in terms of assessing impact on traffic.

The results showed that whilst queues would form on the approaches to the proposed crossing, they would be minimal. Furthermore, due to the flow profile of traffic and the length of the pedestrian phase (even when tested at maximum length), any vehicles joining the queue on the southbound exit were shown to do so at the end of the red vehicular traffic signal period, hence were being cleared through the junction without tailing back onto the circulatory carriageway.

Location Plan



Supporting Photograph(s)



Existing pedestrian desire despite deterrents of high traffic speeds and guardrailing



Restricted visibility to the left from Eleanor Cross Road (west) due to overgrown vegetation

Outline Scheme Plan



Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Traffic queuing – Pedestrian/cycle phase may cause traffic queues to build up	Toucan crossing will be 'on demand' rather than programmed into the phasing to be green every cycle. LINSIG modelling has been undertaken using worst case scenarios and have shown limited impact on queuing traffic.	Y
Visibility from eastern arm – Visibility is currently restricted due to overgrown vegetation	Existing overgrown vegetation to be removed As part of the environmental improvements to the underpass system, all large vegetation will be replaced with slow, low growing varieties of plants	Y
Connectivity of footways – There are no footways at present along this route	Provision of new footways	Y

Links to other UTP schemes:	WC11a: Signing improvements between Waltham Cross bus station and rail station
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Toucan crossing (two-stage)	£200,000	Including ancillary facilities
Design fees	£40,000	
Supervision fees	£20,000	

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Miscellaneous costs	£140,000	Including allowances for contingencies, preliminaries and inflation
TOTAL COST FOR DELIVERY	£400,000	

Advantages	Disadvantages
Scheme will respond to an existing demand	May have slight adverse impact on traffic

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk: <p>The proposed footway requires land from the playing field. It appears to be an area of the field that is not extensively used and possible agreement could be reached for its use as a permissive path.</p>		

Other Information/Additional Notes:

Additional confirmation required:

Agreement with National Playing Fields Association
Detailed design (including traffic modelling)

As part of option development, complete signalisation of the roundabout was also tested. Whilst this was shown to marginally improve overall congestion around the junction, vehicles joining the roundabout from Eleanor Cross Road (west) experienced significant delay in comparison to the scenario without full signalisation. Consultation has highlighted the delay experienced by buses leaving the Waltham Cross bus station; hence the option of full signalisation of Monarch's Way Roundabout was not pursued.

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Scheme Name	Theobald's Lane/High Street Toucan Crossing Signing of cycle route – Theobald's Grove to Lee Valley Park
Scheme Reference:	WC12a/WC12b
Problem References:	WCP3: Insufficient provisions for pedestrians and cyclists to safely negotiate busy junctions and to cross busy roads WCP5: Routes are lacking, in poor condition or at an inadequate standard to key destinations (discontinuous, narrow, dangerous and poorly signed)
Contributions to Targets / Objectives	Casualty Reduction Mode Share of Journeys to School Cycle Usage Access to Employment Access to Town / Local Centres Personal Security

Description of Proposals

This cycle route will primarily be on-road with associated signing to facilitate access between Theobald's Grove rail station and the Lee Valley Country Park. The route utilises Trinity Lane which is a quiet residential road and will therefore be unmarked.

A toucan crossing is proposed to facilitate pedestrian and cyclist movements across High Street near Theobald's Grove rail station. The main purpose of the toucan crossing will be to remove the need for cyclists to negotiate the mini-roundabouts outside Theobald's Grove station and nearby side roads and will primarily serve east-west cyclist movements.

It is proposed to upgrade the existing pedestrian crossing with a toucan crossing. Eastbound cyclists coming from Theobald's Lane will have the opportunity to cross Theobald's Lane near High Street to join the footway then rejoin the carriageway at Trinity Lane. Westbound cyclists will have the opportunity to cross Trinity Lane near High Street to join the footway then rejoin the carriageway at Theobald's Lane.

An optional raised table platform may be installed at the Trinity Lane/Central Avenue junction to reduce vehicle speeds on the approach to the junction where the approach roads are straight and speed could be a problem.

Location Plan



Supporting Photograph(s)



Cyclists using the existing pedestrian crossing although not permitted



Carriageway at Theobald's Grove is busy and constrained



Cyclist under the railway bridge at Theobald's Grove – carriageway is sufficiently wide



Cyclists both on the carriageway and on the footway at Theobald's Grove

Outline Scheme Plan



- Cross-over details to enable cyclists to join the footway and utilise the proposed toucan crossing
- On-road unmarked cycle route along Trinity Lane to be appropriately signed
- Optional raised platform treatment to control vehicle approach speeds at Trinity Lane / Central Avenue junction

Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Conflict with pedestrians	Likely to be minimal given foot-way width and evidence that cycling already takes place on the carriageway.	Y

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Disruption to vehicular traffic flow on High Street	Existing signal controlled pedestrian crossing to be replaced by a toucan crossing, therefore impact on vehicular traffic should not change.	Y
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Links to other UTP schemes:	WC13: Waltham Cross to Lee Valley Park Cycle Route
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Toucan crossing (one-stage)	£51,000	Including for related ancillaries and cross-over details
Signed cycle route	£2,000	
Raised table at Trinity Lane/ Central Avenue	£16,000	
Design fees	£14,000	
Supervision	£7,000	
Miscellaneous costs	£48,000	Including allowances for contingencies, preliminaries and inflation
TOTAL COST FOR DELIVERY	£138,000	

Advantages	Disadvantages
Will improve safety of routes to several schools in the vicinity	Requires crossing of side roads by westbound cyclists due to constrained footway on High Street

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk:		
n/a		

Other Information/Additional Notes:
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Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Scheme Name	Waltham Cross to Lee Valley Park Cycle Route
Scheme Reference:	WC13
Problem References:	WCP4: Poor access to Lee Valley WCP5: Routes are lacking, in poor condition or at an inadequate standard to key destinations (discontinuous, narrow, dangerous and poorly signed)
Contributions to Targets / Objectives	Casualty Reduction Change in Area Wide Traffic Mileage Mode Share of Journeys to School Cycle Usage Access to Public Transport Access to Town/Local Centres Air Quality Environmental improvement schemes, particularly for vulnerable road users Encourage use of sustainable modes through improved information

Description of Proposals

This route is intended to create a link between the Lee Valley Country Park and Waltham Cross rail station, with access to Waltham Cross town centre via the underpass system at Monarch's Way.

The route will be delivered through on-road cycle facilities which will be unmarked along Central Avenue. York Road is a one-way street northbound and the cycle route will be delivered as a marked contra-flow lane southbound (northbound cyclists to travel with traffic on unmarked route).

Location Plan



Supporting Photograph(s)



Existing on street parking and one-way system on York Road – running lane carriageway is relatively wide



York Road is a traffic calmed area suitable for cyclists

Outline Scheme Plan



- Provision of unmarked on-road cycleway on Central Avenue (leading to Trinity Lane and Lee Valley Country Park)
- Cut-through for cyclists to provide access at the existing dead end between Central Avenue and York Road
- Contra-flow cycle lane on York Road to allow southbound cyclist movements

Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Suitability of cycling on proposed road	Utilise existing quiet residential roads where vehicle speeds are low. Carriageway widths are appropriate for the implementation of cycle routes.	Y
Alternative route	An alternative route which directs southbound cyclists via Queen's Road may need to be investigated should York Road not be suitable for contraflow cycling	Y

Links to other UTP schemes:	WC12b: Theobald's Grove to Lee Valley Park WC24: Enhancements to Monarch's Way Subway – Landscaping/Lighting & Walkways
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Outline Cost Analysis

Works Element	Est. Cost	Notes
Unmarked on-road cycleway	£1,000	Central Avenue
Marked on-road cycleway	£14,000	Contra-flow along York Road
Design fees	£3,000	
Supervision	£1,500	
Miscellaneous costs	£10,500	Including allowances for contingencies, preliminaries and inflation

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

TOTAL COST FOR DELIVERY	£30,000	

Advantages	Disadvantages
Provides a direct route for cyclists travel in both directions between Waltham Cross and Lee Valley Country Park	Potential hazard of opening car doors as a result of on street parking on both sides of the carriageway on York Road
Cyclists have advantage over vehicular traffic via the contra-flow system	
Route is already a quiet route used for residential access – dead end at Central Avenue restricts the level of through traffic	
Provides access to schools in the vicinity	
Direct link to Monarch's Way underpass providing links to Waltham Cross rail station and town centre	

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk:		
n/a		

Other Information/Additional Notes:

Short Term UTP Schemes

Scheme Feasibility Assessment



Scheme Name	Cycle Route – Theobald's Grove to Cheshunt Rail Station
Scheme Reference:	WC14
Problem References:	WCP5: Routes are lacking, in poor condition or at an inadequate standard to key destinations (discontinuous, narrow, dangerous and poorly signed)
Contributions to Targets / Objectives	<ul style="list-style-type: none"> Journey Time per Mile Change in Area Wide Traffic Mileage Mode Share of Journeys to School Cycle Usage Access to Employment Access to Public Transport Access to Town/Local Centres Air Quality Rail related improvements Environmental improvements, particularly for vulnerable road users Encourage use of sustainable modes through improved information

Description of Proposals

The proposals are for a cycle route to be designated between Theobald's Grove rail station and Cheshunt rail station. The route will run along Albury Walk, Albury Ride, Russell's Ride, Downfield Road and Windmill Lane, passing a number of schools on route.

The route along Albury Walk will be off-road and will be upgraded to ensure an all weather riding surface. The remainder of the route will be along quiet residential roads and will be unmarked on-road cycle facilities with appropriate signing.

The existing pedestrian crossing at Crossbrook Street could be replaced by a toucan crossing to facilitate cyclist movements between the Albury Ride/Crossbrook Street/Russell's Ride staggered junction. However, this requires a detour on the part of cyclists and confident cyclists may choose to negotiate the staggered junction on road with traffic.

Location Plan



Supporting Photograph(s)



Russells Ride, near Windmill Lane



Quiet residential roads with on-street parking and school.



Existing pedestrian crossing at Crossbrook Street



Shops on Crossbrook Street



Windmill Lane, on approach to Cheshunt Rail Station.



On-street parking on Albury Ride but no through traffic due to dead end.



Crossing point to Albury Walk



Street lighting and footway on Albury Walk – improvements required for shared use

Outline Scheme Plan



- Albury Walk – upgrade path to shared use (non-trafficked) suitable for all weather riding (this path will require widening to accommodate shared use; land owned by Broxbourne Borough Council)
- Eastbound cyclists to join footway at eastern end of Albury Ride, then use the proposed shared use path along Crossbrook Street before rejoining the carriageway at the western end of Russell's Ride
- Westbound cyclist to cross Russell's Ride at the western end to join the footway and use the proposed shared use path along Crossbrook Street before crossing Albury Ride to rejoin the carriageway
- Unmarked on-road cycle route along Albury Ride, Russell's Drive, Downfield Road and Windmill Lane to be appropriately signed

Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Personal security along Albury Walk where path is secluded	Provision of street lighting; consider CCTV	Y
Collision between cyclists and vehicular traffic	Route uses quiet residential roads, some of which are traffic calmed.	Y

Links to other UTP schemes: WC18: Cycle route: Goff's Oak to Cheshunt rail station east-west

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

	route WC05: Theobald's Lane (east) Cycleway and traffic calming
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Track upgrade	£68,000	Albury Walk
Toucan crossing (one-stage)	£51,000	Including ancillary facilities and cross-over details
Unmarked cycleway	£4,500	
Design fees	£25,000	
Supervision	£12,500	
Miscellaneous costs	£85,000	Including allowances for contingencies, preliminaries and inflation
TOTAL COST FOR DELIVERY	£246,000	

Advantages	Disadvantages
Provides access to schools	Promoting Albury Walk may disturb the quiet nature of the route
Provides access to main rail station	
Opportunities for links to wider network via High Street Cheshunt	

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk: Albury Walk requires widening to accommodate shared use by pedestrians and cyclists. This requires work outside the highway boundary in land owned by Broxbourne Borough Council.		

Other Information/Additional Notes:
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Short Term UTP Schemes

Scheme Feasibility Assessment



Scheme Name	Waltham Cross Town Centre to Abbey Road Roundabout
Scheme Reference:	WC22
Problem References:	WCP5: Routes are lacking, in poor condition or at an inadequate standard to key destinations (discontinuous, narrow, dangerous and poorly signed) WCP8: Cycle ban in Waltham Cross town centre
Contributions to Targets / Objectives	Journey Time per Mile Change in Area Wide Traffic Mileage Cycle Usage Access to Employment Access to Town/Local Centres

Description of Proposals

At present, the pedestrianised zone within Waltham Cross town centre imposes a ban on cyclists. This ban is imposed along the northern and eastern routes of the town centre. The southern approach to the town centre (at The Roundel) is not pedestrianised and there are cycle parking hoops at the roundabout/ turning facility at The Roundel which prevents vehicular traffic entry to the town centre.

This proposal sees the implementation of an unmarked (signed) cycleway between The Roundel and the Abbey Road roundabout, which links to the wider highway network. This will enable cyclists, especially from the south, to cycle directly to the parking facilities at the town centre before entering the town centre.

Location Plan



Supporting Photograph(s)



Existing cycle parking facilities at The Roundel are not fully utilised.

Outline Scheme Plan



The scheme will run along approx 150m of highway between Waltham Cross town centre and Abbey Road. It will mainly provide signage for the cycle parking facilities available at the town centre by The Roundel.

Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Safety of cycling routes to negotiate Abbey Road roundabout	There are existing facilities at Abbey Road roundabout	Y
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Links to other UTP schemes:	WC11a: Signing improvements between Waltham Cross bus station and rail station WC11b: Provision of toucan crossing across Abbey Road WC25: Monarch's Way/ Abbey Road footway
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Unmarked cycleway	£400	
Design fees	£100	
Supervision	£100	
Miscellaneous costs	£400	Including allowances for contingencies, preliminaries and inflation
TOTAL COST FOR DELIVERY	£1,000	

Advantages	Disadvantages
Low cost	Does not address a large catchment area
Highlights existing parking facilities available in the town centre which are underutilised	

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk:		
n/a		

Other Information/Additional Notes:

Short Term UTP Schemes

Scheme Feasibility Assessment



Scheme Name	Enhancements to Monarch's Way Subway – Landscaping/Lighting & Walkways
Scheme Reference:	WC24
Problem References:	WCP1: Underpasses (particularly the Monarch's Way underpass) create movement barriers for pedestrians and cyclists and are unpleasant and unsafe
Contributions to Targets / Objectives	Casualty Reduction Cycle Usage Access to Employment Access to Public Transport Access to Town/Local Centres Personal Security Town centre improvements/streetscape improvements Environmental improvements, particularly for vulnerable road users

Description of Proposals

Public consultation feedback has indicated that the Monarch's Way underpass system is perceived to be unpleasant and unsafe. A number of environmental improvements are therefore proposed to improve the underpass environment.

Location Plan



Supporting Photograph(s)



Overgrown vegetation on approach to underpass at Eleanor Cross Road (east)



Underpass is secluded from streetscape, raising personal security concerns



Overgrown vegetation on approach to underpass from Waltham Cross town centre/bus station



Dark walkways on the underpass system, under carriageways



Colour scheme and seating are dull and uninviting



Underpass entrance is hidden from street view, raising personal security concerns

Outline Scheme Plan



- Maintain vegetation to improve sense of personal security; alternatively replace with low, slow growing planting or tiling scheme
- Improve lighting at underpasses to improve sense of personal security
- Complement with pedestrian/cyclist signs and CCTV
- Possible Olympics theme

Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Potential for improvements to be vandalised	Treat all new surfaces with anti-graffiti treatment	Y
Growth of vegetation over time to current state	Implement a regular maintenance programme	Y

Links to other UTP schemes:	WC11a: Signing improvements between Waltham Cross bus station and rail station WC23: Provision of CCTV at Monarch's Way subway
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Outline Cost Analysis

Works Element	Est. Cost	Notes
Lighting improvements	£10,000	
Maintaining vegetation	£1,500	Regular maintenance required in addition to this initial cost

Short Term UTP Schemes Scheme Feasibility Assessment



Supervision costs	£500	
Miscellaneous costs	£13,000	Including allowances for contingencies, inflation and preliminaries
TOTAL COST FOR DELIVERY	£25,000	

Advantages	Disadvantages
Possibility to mix-and-match different elements of the proposal to suit programming and budget	Requires regular maintenance

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk:		
n/a		

Other Information/Additional Notes:

Scheme Feasibility Assessment

AECOM

Scheme Name	Publish a walking/cycling leaflet and information on HCC and BBC websites
Scheme Reference:	WC26
Problem References:	WCP10: Few people in the area walk or cycle either for regular journeys or for recreation BUP10/SCP3: Lack of awareness of bus routes and timetables WCP14/SCP1: Lack of promotion/publicity to encourage cycling SCP2: Insufficient focus on reducing the need to travel and encouraging greater use of sustainable modes of transport
Contributions to Targets / Objectives	Journey Time per Mile Change in Area Wide Traffic Mileage Mode Share of Journeys to School Right of Way Cycle Usage Access to Employment Access to Public Transport Access to Town/Local Centres Air Quality Personal Security Encourage use of sustainable modes through improved information

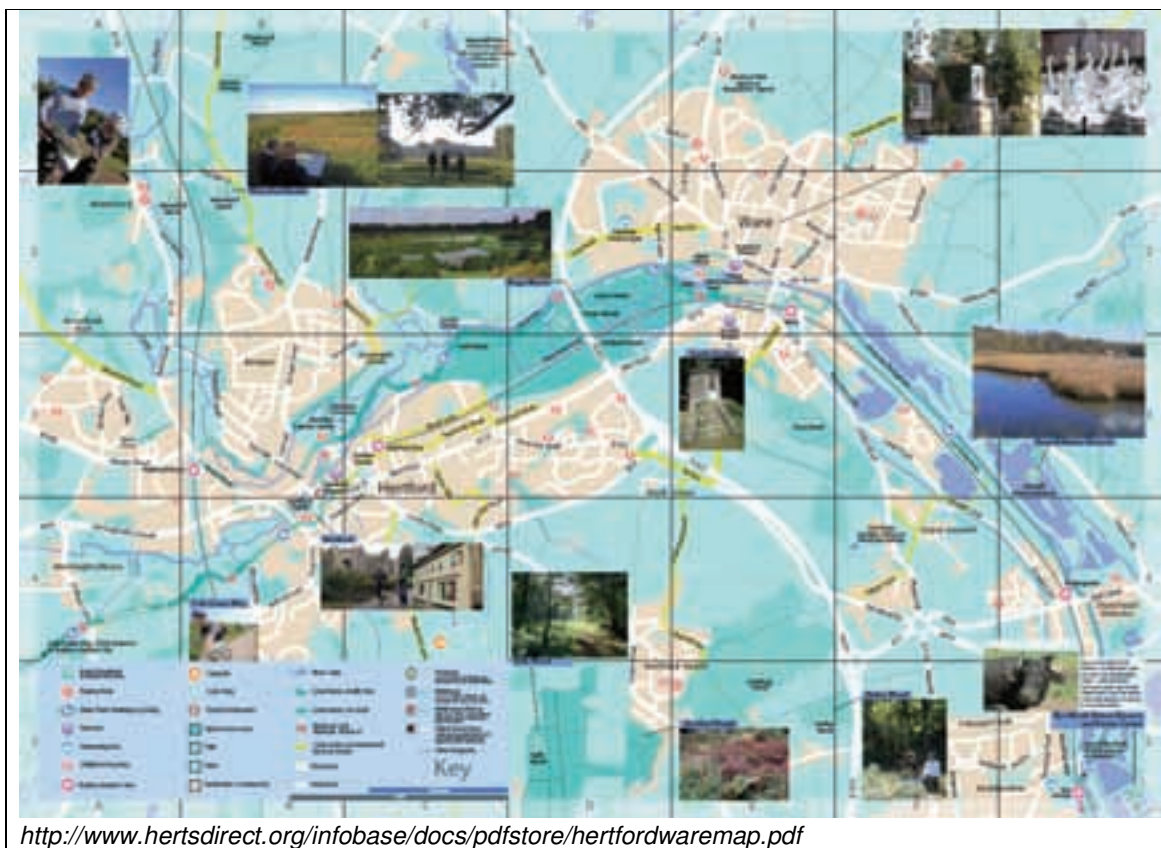
Description of Proposals

The proposal is for information on all walking and cycling routes to be collated on to one walking and cycling map for Cheshunt and Waltham Cross. This map will include existing routes and those programmed, and can also refer to future aspirations once they are relatively certain for delivery.

In order to reach a wider audience, it will be necessary to make the map available in print form (i.e. not just on the internet) and to circulate it to the community, possibly through the TravelSmart scheme.

Outline Scheme Plan

The Cheshunt and Waltham Cross Walking and Cycling map will follow the format of other walking and cycling maps already available for various areas in Hertfordshire. The Hertford and Ware map has been attached below for guidance.



Links to other UTP schemes:

SC01: Develop TravelSmart – rolling out the scheme across the area by wards
 SC03: Ensure residents in the area receive information on smarter choices and sustainable modes on an annual basis

Outline Cost Analysis

Works Element	Est. Cost	Notes
Design and publication	£20,000	on-going costs may be required for additional publications
TOTAL COST FOR DELIVERY	£20,000	

Advantages

Cost effective way of disseminating information to a wide audience

A large scale version of the plan can be displayed at prominent locations (public transport stations, community/sports centres, etc)

Disadvantages

Requires ensuring that information is up to date and that updates are distributed regularly

Deliverability Assessment

Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N

Scheme Feasibility Assessment

AECOM

Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk:		
N/A		

Other Information/Additional Notes:

Scheme:

Signing of cycle route Park Lane to Waltham Cross Town Centre

Scheme Reference:

WC15

Scheme Status:

Medium term proposal in UTP.

Purpose:

The purpose of the scheme is to provide a coherent signed route from Park Lane to Waltham Cross Town Centre to link the existing facilities in the town centre with the employment opportunities at the Park Plaza and print works sites off the A10. The scheme will complement the enhanced Park Lane cycleway/footway rail crossing and will improve access to the area for non-motorised trips.

Details:

The scheme will primarily be a signing scheme. Roads on this route are residential in nature with low traffic flows and speeds, which do not necessitate the implementation of segregated cycle facilities. To achieve maximum effect, the scheme will need to be promoted through travel planning activities associated with local employers in the area and wider promotion and marketing of sustainable mode.

Outline Cost:

Low (<£250,000), comprising

Unmarked Cycleway	£1,000
Design fees	£200
Supervision fees	£100
Miscellaneous costs	£700

Advantages:

- Low cost;
- Minimal engineering risks;
- Potential for fast delivery.

Disadvantages

- Timing dependent on developers.

Scheme:

New River Cycle/Footway Phase 1 – Theobalds Lane to College Road

Scheme Reference:

WC17a

Scheme Status:

Medium term proposal in the UTP.

Purpose:

The proposal is for a traffic-free waterside walking/cycling route along the New River. Phase 1 will run from Theobalds Lane to College Road and will be the first of three phases for this route. When complete, the route will run from Theobalds Lane to Brookfield, providing a more pleasant alternative to the A10 for pedestrians and cyclists.

Although the New River and the existing adjacent path are Thames Water assets with permissive use only, there is still potential for this route to bring benefits in a wider context.

Details:

The route will require the construction of a shared path use along existing permissive path, which is to be upgraded to be suitable for all weather riding. A toucan crossing will be provided at College Road to enable links to the wider network (accessed via ramp). The existing footbridge over the New River (currently step access only) to be upgraded to enable cycle usage and provide a more suitable link between the new A10 footbridge and the upgraded New River path.

Additionally, lighting will be provided for safety in hours of darkness, supplemented by CCTV where appropriate. Litter bins will be provided to minimise risk of water contamination.

Outline Cost:

High (>500,000), comprising:

Cycleway construction	£179,000
Lighting	£52,500
Footbridge works	£69,000
Toucan crossing	£50,000
Design fees	£70,000
Supervision fees	£35,000
Miscellaneous costs	£245,000

Advantages:

- Provides safer cycling and walking routes to schools and to the Waltham Cross via the A10 footbridge;
- Potential to form an important link in a wider cycling and walking network for the area;
- Provides a quiet and pleasant environment for pedestrians and cyclists, in particular less confident cyclists which could encourage the uptake of cycling;
- Potential to expand the scheme and create links beyond the study Cheshunt area, including access to the country side.

Disadvantages:

- High cost;
- Risks surrounding permissions - requires consultation with Thames Water.

Scheme:

New River Cycle/Footway Phase 2 – College Road to Church Lane

Scheme Reference:

WC17b

Scheme Status:

Medium term proposal in the UTP.

Purpose:

The purpose of this scheme is to deliver the second phase of the New River Cycle/Footway scheme. The route will be delivered in three phases with the first phase being delivered in the short term between Theobalds Lane and College Road. Following the delivery of the second phase, the route will be extended in Phase 3 to the Brookfield Centre to form a strategic north-south cycling and walking route linking residential areas to schools, employment opportunities and retail facilities, providing an attractive alternative to car use.

Details:

The route will require construction/upgrading of an all-weather suitable track alongside the New River. Access to the highway network will be provided at College Road where a toucan crossing will have been delivered as part of Phase 1. At the northern end of Phase 2 the route joins Church Lane, where a toucan crossing will be provided to provide safe access to the route. Opportunities will be taken along the route to provide links to local residential streets in order to maximise accessibility of the route to the local area.

Outline Cost:

High (>£500,000), comprising

Cycleway construction	£136,000
Lighting	£40,500
Footbridge works	£25,000
Toucan crossing	£50,000
Design fees	£50,000
Supervision fees	£25,000
Miscellaneous costs	£176,500

Advantages:

- Provides safer cycling and walking routes to schools and to the borough council offices;
- Potential to form an important link in a wider cycling and walking network for the area;
- Provides a quiet and pleasant environment for pedestrians and cyclists, in particular less confident cyclists which could encourage the uptake of cycling;
- Potential to expand the scheme and create links beyond the study Cheshunt area, including access to the country side.

Disadvantages:

- High cost;
- Risks surrounding permissions - requires consultation with Thames Water.

Scheme:

Cycle enhancements in B176 corridor

Scheme Reference:

WC20

Scheme Status:

Medium term proposal in the UTP.

Purpose:

The purpose of the scheme is to improve the quality of the environment for cyclists along the B176 which links Waltham Cross and Cheshunt to Turnford.

Details:

The B176 is an important local north-south route through Cheshunt and provides access to a number of residential, commercial and community facilities. It is heavily trafficked and road widths are constrained, which can be a deterrent to cyclists.

There are limited opportunities to improve north-south cycling facilities in this part of Cheshunt other than through the use of the B176. In order to improve conditions for cyclists in the area, it is therefore important that facilities for cyclists are enhanced along this route. However, it is unlikely that a fully segregated cycle facility can be provided along the entire length of the B176 whether on-road or off-road. Cycle enhancements will therefore be dependent on design considerations and consultation with cyclists and local residents/businesses.

Towards the northern end of the B176 near Turnford, carriageway and footway widths are wider and it may be possible to provide an on-road segregated cycle lane. This would need to be investigated further.

Outline Cost:

Medium (£250,000 – £500,000)

Advantages:

- Provides cycle access to residential, commercial and community uses;
- Provides an important component of a wider cycle network for the area.

Disadvantages:

- Road space and highway boundary constraints
- Potential conflict for space with pedestrians, especially closer to the town centres

Scheme:

Signing of link to Enfield from Waltham Cross town centre via Enfield Greenways

Scheme Reference:

WC21

Scheme Status:

Medium term proposal in the UTP.

Purpose:

The purpose of this scheme is to improve the links between Enfield and Waltham Cross. This route makes use of the recent Enfield Greenways proposals which are lightly trafficked scenic routes.

Details:

The route will be primarily signed to guide cyclists between Enfield and Waltham Cross. The use of quiet residential roads and the Enfield Greenways means that provision of segregated facilities should not be required.

Outline Cost

Low (<250,000)

Advantages:

- Low cost scheme;
- Promotes scenic routes and recreational cycling;
- Improves connectivity between Waltham Cross and Greater London via Enfield.

Disadvantages:

- Dependent on successful delivery of Enfield Greenways scheme to achieve full benefits

UTP Medium Term Scheme Study Outline

AECOM

Scheme Name	Provision of cycle and pedestrian facilities Brookfield Lane West.
Scheme Reference:	WC30
Problem References:	WCP3: Insufficient provision for pedestrians and cyclists to safely negotiate busy junctions and to cross busy roads
Contributions to Targets / Objectives	Mode Share of Journeys to School Right of Way Cycle Usage Access to Employment Access to Town/Local Centres Personal Security Environmental Improvements, particularly for vulnerable road users Encourage use of sustainable modes through improved information

Location Plan



Supporting Photograph(s)



Photograph 1: Brookfield Lane West at bridge over the New River.



Photograph 2: Brookfield Lane West at bridge over New River.



Photograph 3: New River footpath approach to Brookfield Lane West



Photograph 4: Halfhide Lane approach to Brookfield Centre access

Existing Issues

Brookfield Lane West is the main route to the A10 for residential areas to the southwest of Brookfield. It is a single carriageway road with a footway along the southern side only. The route is constrained by frontage development, the Cheshunt Reservoir to the north and the bridge over the New River all of which limit the potential to increase vehicular and pedestrian capacity through localised widening. Traffic congestion occurs along Brookfield Lane West, particularly on approach to junctions towards the Brookfield Centre. During both AM and PM peak periods, traffic speeds on approaches to the Halfhide Lane / Mylne Close roundabout fall to between 20mph and 25mph.

Constraints and Considerations

Planning permission was granted in 2009 for a residential development on the Cheshunt Reservoir site to the south of Brookfield Lane West. The site will have a single vehicular access directly onto Brookfield Lane West. Development on this site will increase traffic pressures on this route and which need to be addressed. In particular, the site will need to be well served by sustainable modes of travel, namely, bus, cycle and walking.

Description of Proposals

It has been agreed that the residential development on the Reservoir site will provide funding for the provision of sustainable transport measures, pedestrian/traffic calming measures, bus services and improved bus stops through a S106 agreement. Part of the sustainable transport contribution could be used for a toucan crossing which would have the potential to provide a linkage to the proposed UTP New River pedestrian / cycle route to the Brookfield Centre (WC17c) and to cycling measures that may be provided in conjunction with the proposed development of Brookfield Riverside.

The toucan crossing facility should be delivered in accordance with LTN2/95. It should be located a 'safe' distance from neighbouring junctions (a minimum of 20 metres is recommended) but should follow desire lines to ensure it is used by pedestrian / cyclists.

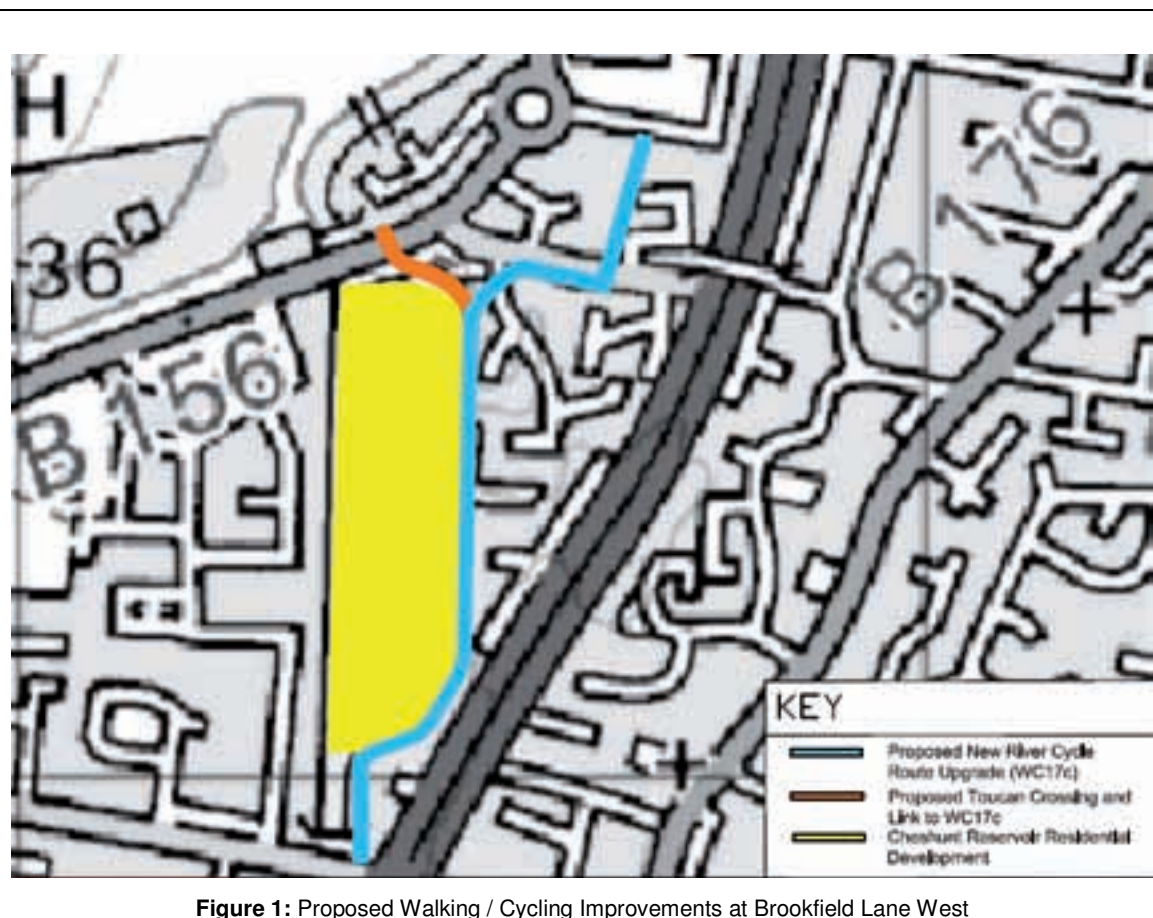


Figure 1: Proposed Walking / Cycling Improvements at Brookfield Lane West

Links to other UTP schemes:	WC 17c: New River Cycle/Footway Phase 3 - Church Lane to Brookfields Centre
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Funded through Planning Obligation Agreement		
TOTAL COST FOR DELIVERY		

Other Information/Additional Notes:
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Rail Scheme Pro-forma's

Short Term Schemes

RA16 Environmental Improvements to Theobalds Grove rail station

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Scheme Name	Environmental improvements to Theobald's Grove rail station
Scheme Reference:	RA16
Problem References:	RAP5: Train services and facilities at Theobald's Grove rail station are substandard
Contributions to Targets / Objectives	Public Transport Patronage Access to Public Transport Access to Town/Local Centres Personal Security Rail related improvements

Location Plan



Supporting Photograph(s)



Station building is uninviting – lack of secure cycle parking.



Parking on access road; cycle stands outside station building not prominent (concerns over security due to minimal monitoring)

Outline Scheme Plan



Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Description of Proposals

Consultation with stakeholders through the development of the UTP has indicated that the general environment and facilities at Theobald's Grove rail station are poor and there is an urgent need to address this. In response to this situation, Broxbourne Borough Council has identified funding to enable commencement of an intended programme of enhancement works to improve Theobald's Grove rail station and its immediate surroundings. Proposed improvements include painting the railway bridge over High Street, installation of secure covered cycle racks (existing 6no Sheffield stands are not covered and are situated in a location offering minimal security monitoring), footway improvements along the secondary access road which is on Network Rail land and provision of raised bus boarding points.

More extensive improvements to the facilities at the station are desirable, however, where these rely on funding from Network Rail or National Express east Anglia, they are not anticipated to be delivered until the longer term as Theobald's Grove station is considered a lower priority than other stations such as Waltham Cross. Short term measures therefore focus on low cost measures.

Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Interaction between pedestrians, cyclists, industrial traffic and general traffic at station forecourt	Consideration of main desire lines	Y

Links to other UTP schemes:	RA13: Improve station buildings and passenger waiting areas RA14: TEO – Provide CCTV coverage of the station and cycle storage
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Footway improvements	£4,000	
Cycle parking facilities	£900	6 no Sheffield stands
Railway bridge repainting	£3,000	
Raised kerbing at bus stop	£6,500	
Design fees	£7,000	
Supervision	£3,000	
Miscellaneous costs	£4,600	Including allowances for contingencies, preliminaries and inflation
TOTAL COST FOR DELIVERY	£29,000	

Advantages	Disadvantages
Environmental improvements can make Theobald's Grove rail station look more attractive	Lack of funding mean only limited enhancements possible in the short term.
Improves pedestrian safety	
Improves personal security	
Improves the space efficiency of the area	

Short Term UTP Schemes Scheme Feasibility Assessment



Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk:		

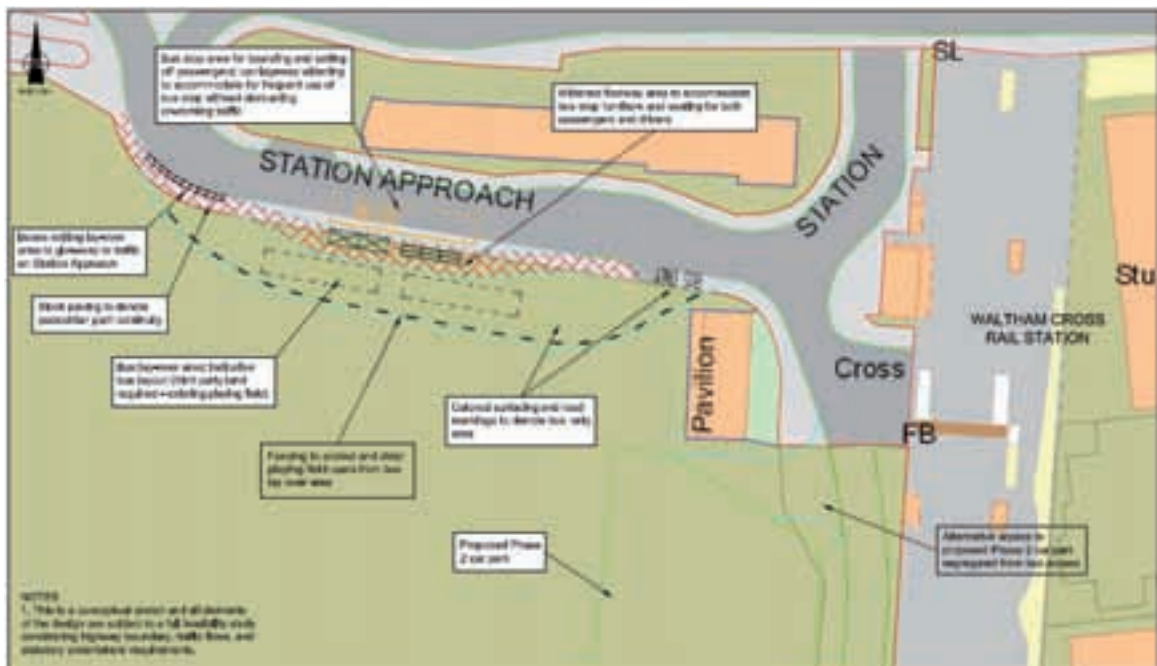
Other Information/Additional Notes:

Pressure should continue to be exerted by HCC and BBC on Network Rail and National Express East Anglia (and successor rail operator) to bring Theobald's station up to a much better standard to cater for existing and new rail users.

Bus Scheme Pro-forma's

Medium Term Schemes

- BU04 Provide additional bus stop facility at Waltham Cross Railway Station
- BU14 Study: Work with BBC, TfL and other bus operators to investigate capacity and layover issues at Waltham Cross Bus Station



Footway works will be required to provide a safe pedestrian links between the station building and the proposed bus stops. In order to minimise pedestrian/vehicle conflict, it would be beneficial if access to the adjacent Broxbourne Borough Council car park could be integrated with access to the Network Rail car park to minimise the number of vehicular accesses to Station Approach. Consideration will need to be given to co-ordination of design and implementation with the proposed improvements to Waltham Cross rail station.

Outline Cost:

Low (<£250,000)

Advantages:

- Improved bus-rail interchange at Waltham Cross, potentially leading to increased bus and rail patronage, and less commuter car parking demand in adjacent;
- Minimise risks and inconvenience associated with current separation of the bus and rail station.

Disadvantages:

- Dependent on bus operators agreeing to bus re-routeing;
- Permissions associated with third part land;
- Potential high costs.

Scheme:

Study: Work with BBC, TfL and other bus operators to investigate capacity and layover issues at Waltham Cross Bus Station.

Scheme Reference:

BU14

Scheme Status:

Medium term proposal in the UTP.

Purpose:

Consultation with bus operators and members of the public indicate that there are capacity constraints due to limited space at the Waltham Cross Bus Station. This will be further exacerbated when the layover spaces are enlarged to comply with more recent health and safety requirements. By investigating capacity and layover issues in detail, with respect to routeing and timetabling, options can be developed to alleviate the existing pressures at the Waltham Cross Bus Station.

Details:

The scheme will involve detailed consultation with bus operators regarding existing capacity and layover issues, and existing and future routeing and timetabling requirements.

Outline Cost:

Low cost (<£250,000)

Advantages:

- Maximise efficiency of services with regards to layover issues
- Minimise delays to bus services arising from capacity constraints
- Create more partnership working opportunities between bus operators

Disadvantages:

- It is unlikely that reorganisation at the existing Waltham Cross Bus Station will fully address all issues and that expansion may be necessary

Highways & Parking Scheme Pro-forma's

Short Term Schemes

- HP01 Improved lining at Monarchs Way roundabout
- HP06 Eleanor Cross taxi parking provision
- HP14 Study – Investigation of A121 route strategy including revise junction at Monarchs Way / A121 roundabout
- HP16 Study – Investigation of traffic management strategies for the A10, including signalisation of the A121 junction.
 - HP16a: M25 J25
 - HP16b: A10/A121
 - HP16c: A10/College Road
 - HP16d: A10/Church Lane
- HP18 Study – Investigate transport measures to support the proposed Brookfield Riverside development

Medium Term Schemes

- HP09 Goffs Lane Speed Reduction Scheme
- HP11 Traffic calming along Brookfield Lane West
- HP12 Church Lane Shops Access Improvements
- HP15 Study – Investigate masterplan for Cheshunt Town Centre to include a revised junction at the Pond to enable more spaces to be given over to pedestrians and additional short stay parking for the centre.

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Scheme Name	Improved lining at Monarch's Way roundabout
Scheme Reference:	HP01
Problem References:	HPP4: Localised congestion at key junctions
Contributions to Targets / Objectives	Journey Time per Mile Bus Punctuality Access to Employment

Description of Proposals

At present there are no road markings on the northern portion of the circulatory carriageway at Monarch's Way roundabout. As a result, when vehicles queue onto the roundabout from the Eleanor Cross (east) exit, they effectively straddle the two available lane widths, blocking the road for right turning traffic. Application of lining on the northern portion of the circulatory carriageway will encourage better discipline and minimise the impact of queuing traffic on the roundabout. New traffic signs will be implemented to correspond to lane designations.

Location Plan



Supporting Photograph(s)



Poor lane discipline of vehicles negotiating the northern portion of the circulatory carriageway resulting in poor utilisation of available carriageway width

Outline Scheme Plan



- Installation of road markings on the northern portion of the circulatory carriageway
- Additional road markings around the roundabout to suit

Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Vehicles may not be able to negotiate paths indicated by new lining.	Swept path analysis under-taken using AutoTrack. Hatched area provided adjacent to inner circulatory carriageway to facilitate turning movements of large vehicles.	Y

Links to other UTP schemes:	WC11b: Provision of toucan crossing across Monarch's Way BU02: Provide bus priority facilities and signalisation at Monarch's Way roundabout.
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
White lining/lettering	£850	
Night time working	£1,000	
New traffic signs	£4,000	Large directional
Design fees	£1,200	
Supervision	£600	
Miscellaneous costs	£4,350	Including allowances for contingencies, preliminaries and inflation
TOTAL COST FOR DELIVERY	£12,000	

Advantages	Disadvantages
Low cost	Likely to require closure of roundabout to facilitate works (night time working)
Possibility for fast delivery and implementation	Unlikely to bring significant capacity improvements
	Regular maintenance of signs and reapplication of lining required

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk:		
n/a		

Other Information/Additional Notes:

Short Term UTP Schemes Scheme Feasibility Assessment

AECOM



Short Term UTP Schemes

Scheme Feasibility Assessment

AECOM

Scheme Name	Eleanor Cross taxi parking provision
Scheme Reference:	HP06
Problem References:	BUP14: Positioning of taxi rank at Waltham Cross causes congestion for buses at the bus station
Contributions to Targets / Objectives	Journey Time per Mile Personal Security

Description of Proposals

The proposal is for a new taxi rank to be provided utilising the space under the ramp to the Palisades multi-storey car park opposite the Waltham Cross bus station on Eleanor Cross Road. It is understood that the land will be leased to the taxi company by the Palisades shopping centre and that a planning application has now been submitted for this proposal.

Location Plan



Supporting Photograph(s)



Taxis parked opposite the bus station partially obstructing the carriageway.



Extended queue of waiting taxis opposite the bus station

Outline Scheme Plan



- Taxis to queue along western side of ramp to Palisades multi-storey car park to remove interaction with buses
- Taxis to exit via eastern side of ramp to Palisade multi-storey car park and left turn out to Monarch's Way

Short Term UTP Schemes

Scheme Feasibility Assessment



Design Considerations	Proposed Solutions	Are solutions sufficient to overcome issues? (Y/N)
Potential of taxi queue extending past allocated length, affecting buses	Install a 'KEEP CLEAR' area – work with taxi operating company and drivers	Y

Links to other UTP schemes:	BU14: Study – work with BCC, TfL and other bus operators to investigate capacity and layover issues at Waltham Cross bus station
------------------------------------	--

Outline Cost Analysis		
Works Element	Est. Cost	Notes
Yellow lining	£500	
Yellow lettering	£350	
Design fees	£200	
Supervision	£100	
Miscellaneous costs	£850	Including allowances for contingencies, preliminaries and inflation
TOTAL COST FOR DELIVERY	£2,000	

Advantages	Disadvantages
Utilisation of existing under-used land	Possible interaction with bus operation and adjacent car parks
In a location easily accessible from both the bus station and town centre	

Deliverability Assessment		
Can the scheme be delivered within the highway boundary?	Y	N
Can the scheme be delivered without third party involvement?	Y	N
Do all elements of the scheme involve standard work processes?	Y	N
Can the scheme be delivered independently to other schemes?	Y	N
Can the scheme be delivered in the short term?	Y	N
Where 'N' details for overcoming deliverability risk: The scheme is not within highway boundary; however the land owner/current occupier has clearly expressed an interest for a taxi rank to be provided in this location. This is evident through their submission of a planning application.		

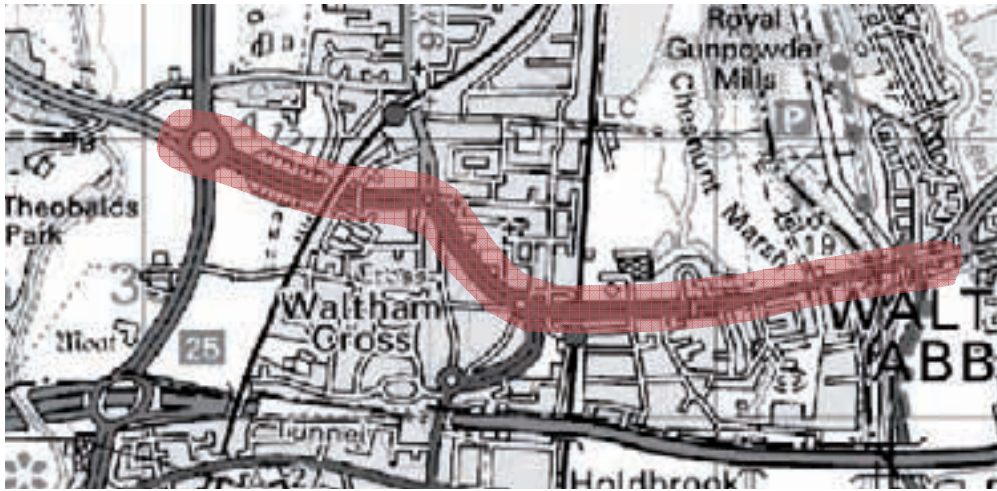
Other Information/Additional Notes:
Broxbourne Borough Council have previously used this land as a site compound; land is in good condition and easily accessible from all areas within the district via A121 and Monarchs Way roundabout.

Short Term UTP Schemes

Study Outline

Scheme Name	Study – investigation of junction improvement strategy for A121 corridor between junctions with B176 and B194 Highbridge Street
Scheme Reference:	HP14
Problem References:	HPP2: Congestion along main traffic corridors HPP4: Localised congestion at key junctions
Contributions to Targets / Objectives	Journey Time/Journey reliability Access to Employment Access to Town/Local Centres

Location Plan: A121 Corridor



Supporting Photograph(s)



Photograph 1: Eleanor Cross Road westbound towards Hertfordshire County border



Photograph 2: Eleanor Cross Road near Waltham Cross Rail Station

Short Term UTP Schemes

Study Outline



Photograph 3: Queuing on Winston Churchill Way eastbound towards Fishpools Roundabout



Photograph 4: Monarch's Way roundabout



Photograph 5: A121 eastbound merges from dual to single carriageway at the junction with Queen's Drive



Photograph 6: Insufficient room at A121 / Lea Road junction for HGV traffic arriving / departing the industrial estate

Existing Issues

The A121 between Waltham Cross and Waltham Abbey provides the only east-west route in the local area and carries high volumes of traffic. The section through Waltham Cross is heavily constrained due to the route's urban nature and the narrowing of the route from dual to single carriageway to the east of Queen's Drive until the junction with the B194 Abbeyview on the outskirts of Waltham Cross. Peak period congestion along the route currently occurs at Fishpools Roundabout, Monarch's Way Roundabout and Eleanor Cross Road where the road narrows to a single carriageway.

Peak hour speeds regularly reduce to less than 10mph along the route, as shown in the following plans. Particular problems occur on the A121 approaches to the B176 and A1010 junctions, along Eleanor Cross Road and in the vicinity of the County border

Junctions along Eleanor Cross Road interrupt the smooth operation of the road. Towards the County border there are also two signalised junctions, A121 / B194 Highbridge Street and A121 / Lea Road (industrial estate access), which appear to operate independently resulting in stop-start movements along the corridor. The lack of signal coordination potentially means that throughput along the corridor is not being maximised. Furthermore, it can result in traffic backing, even during the inter-peak period, thereby restricting right turning movements from the eastbound approach and left turning movements from the A121.

Short Term UTP Schemes
Study Outline

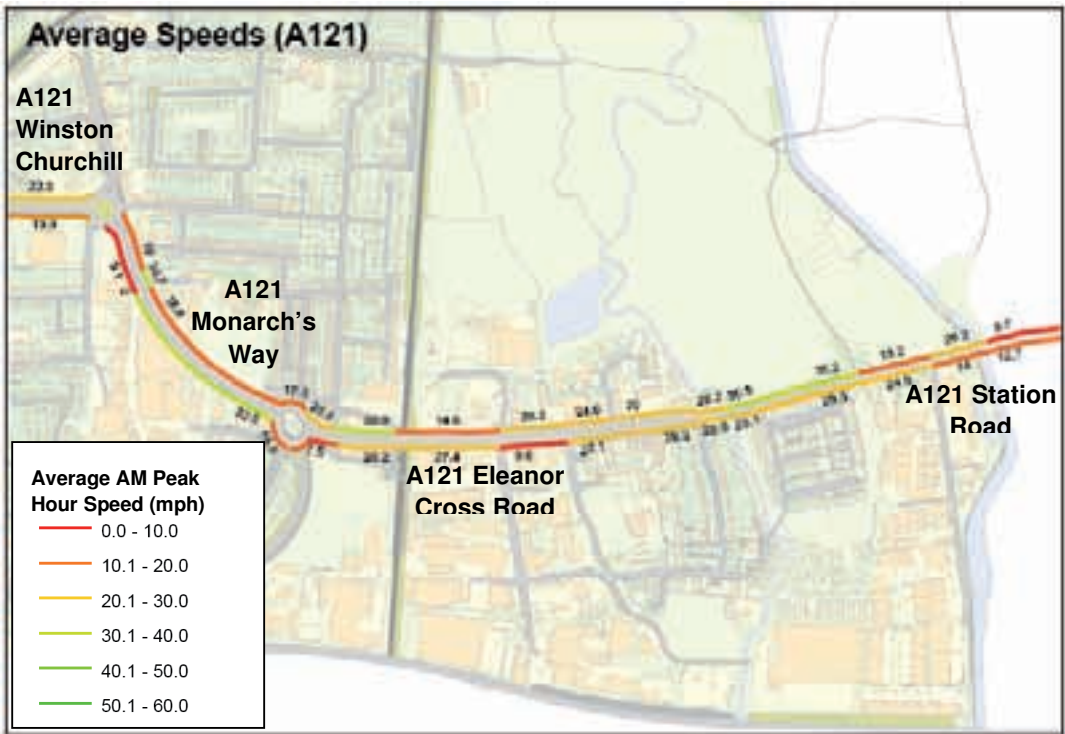


Figure 1: AM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

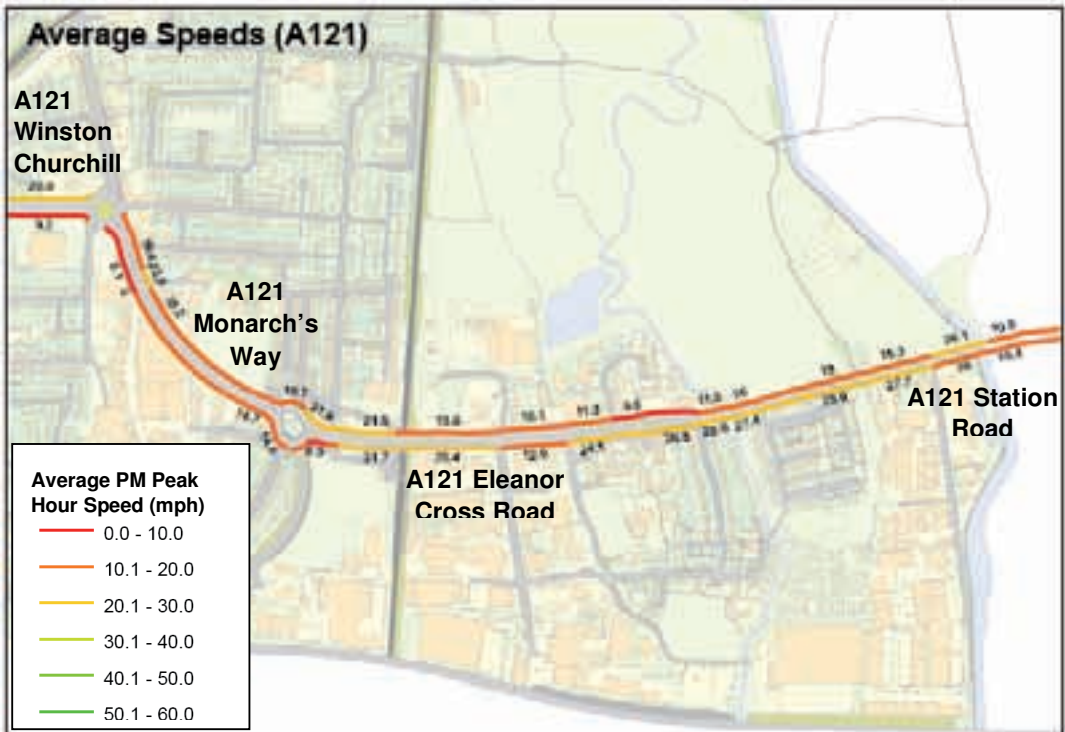


Figure 2: PM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

Short Term UTP Schemes

Study Outline

Pedestrian accessibility is also poor along some sections of the A121, particularly at Monarch's Way where the roundabout subway system is perceived by some people to acts as a barrier to pedestrian movement between the town centre, bus station and rail station.

Constraints and Considerations

The A121 along this section is heavily constrained due to its urban nature and capacity limitations including the narrowing of the route from dual to single carriageway. The potential to increase capacity through localised widening is also limited by the river crossing, frontage development, the Lee Valley Regional Park and the width of two bridges which cross over Cobbins Brook. Widening works could be prohibitively costly and environmentally intrusive; consequently any improvements will need to focus on making the most efficient use of existing infrastructure, managing traffic flow and access to the route and encouraging greater use of sustainable modes.

As well as accommodating existing demand, consideration is being given to managing traffic associated with the Broxbourne White Water Canoe Centre which is due to host the Canoe Slalom during the London 2012 Olympics. It is proposed that the site will be accessed from the northern side of the site with visitors encouraged to use Cheshunt Rail Station and walk to the site via Lee Valley Park.

It has been recognised that improvements to enhance pedestrian permeability at key junctions along the route are also required. It has been identified through the UTP process that the introduction of a toucan crossing on the A1010 Abbey Road arm and relining on the junction to maximise capacity through improved lane use would provide benefits to pedestrians and vehicular traffic at the junction.

The UTP has also identified a cycle / footway improvement scheme along the northern side of the A121 to extend the existing shared route which currently terminates opposite Queensway. The route will provide access to Lee Valley Park and Waltham Cross from the existing network which extends to the A10.



Figure 3: Proposed Improvements along the A121 Corridor

Short Term UTP Schemes

Study Outline

Study Proposals

To improve existing operation of the route as a whole it is recommended that a study is undertaken using VISSIM micro-simulation software which will offer the opportunity to assess a range of different junction layouts and traffic control along the A121 and their interrelated operation. Specifically, it is suggested that the following are investigated:

- Partial signalisation of Fishpools Roundabout
- Partial signalisation of Monarch's Way Roundabout
- Full signalisation of the A121 / Britannia Road junction
- Potential coordination of signal timings at the A121 signalised junctions with the B194 Highbridge Street and Lea Road (industrial estate access).

In addition to these key junctions, there are a number of priority junctions and pedestrian crossings which can be modelled in VISSIM. VISSIM offers the opportunities to introduce and test various scenarios, including:

- The re-allocation of road-space for buses and improved bus priority, particularly at the Monarch's Way junction;
- Increased lane widths and improved junction geometry to facilitate HGV movements along the corridor, particularly at the Lea Road industrial estate entrance.
- Alternative junction layouts;
- Development proposals in the area;
- Improved pedestrian access, including the introduction of a toucan crossing at A1010 Abbey Road.

VISSIM modelling will need to be supported by data collection for validation purposes. Traffic surveys required include journey time surveys, turning count surveys and queue surveys.

Links to other UTP schemes:	
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Outline Cost Analysis

Works Element	Est. Cost	Notes
Traffic surveys	£11,000	Includes AECOM site visit
Build base model	£16,000	
Option testing	£13,000	
Prepare <i>Findings and Recommendations</i> Report	£5,000	
TOTAL COST FOR DELIVERY	£45,000	

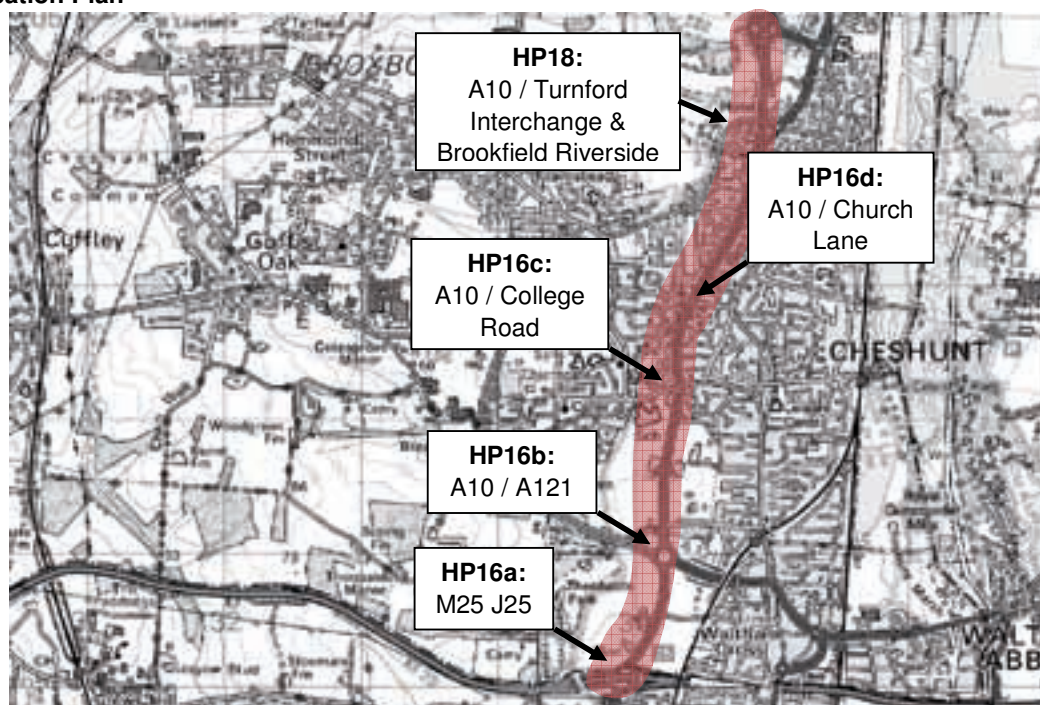
Other Information/Additional Notes:
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Short Term UTP Schemes Study Outline

AECOM

Scheme Name	Study – investigation of traffic management strategies for the A10, including signalisation of A121 junction
Potential Study Outcomes:	<ul style="list-style-type: none"> A10 junction with M25 J25 – Additional exit lane from M25 anti-clockwise onto the A10 northbound. A121/A10 Roundabout – Localised widening and full signalisation. A10/College Road junction – Revised signal operation and phasing. A10/Church Lane junction – Revised signal operation and localised widening to provide a dedicated left turn / ahead lane from Church Lane east. A10 / Turnford Interchange & Brookfield Riverside – High quality access, frequent attractive bus provision, improved pedestrian / cycle routes, car park management and VMS.
Scheme Reference:	HP16
Problem References:	HPP2: Congestion along main traffic corridors HPP4: Localised congestion at key junctions
Contributions to Targets / Objectives	Congestion Journey Time/journey time reliability Access to Employment Access to Town/Local Centres

Location Plan



Supporting Photograph(s)



Photograph 1: Queuing traffic southbound on approach to Church Lane junction



Photograph 2: A10 / M25 junction



Photograph 3: The A10 is used by a wide variety of traffic



Photograph 4: New signalised junction for Printworks site



Photograph 5: A10 / College Road junction

Study Proposals

A route study is proposed to investigate the A10 between the Turnford junction and the M25. At present the route suffers from congestion during the peak periods, typically in the southbound direction in the AM peak and in the northbound direction during the PM peak. This reflects commuter patterns in and out of the London area. In addition, there is significant congestion on routes crossing the A10 comprising local traffic, including school trips in the morning peak period and traffic joining the A10 to make longer trips.

Specific problem sites and opportunities for investigation are set out in supplementary pro-forma's as follows:

HP16a	M25 J25
HP16b	A121/A10 Roundabout
HP16c	A10/College Road junction
HP16d	A10/Church Lane junction
HP18	A10 / Turnford Interchange & Brookfield Riverside

Rather than looking to investigate and develop separate solutions for each problem site, it is proposed to investigate and develop a route management strategy for the A10 through Cheshunt and Waltham Cross. This study will need to consider potential impacts of future growth that may occur in the corridor and which is being considered as part of the Broxbourne Core Strategy process. This includes potential employment land at Maxwell farm and Theobald's Farm in the southern A10 corridor.

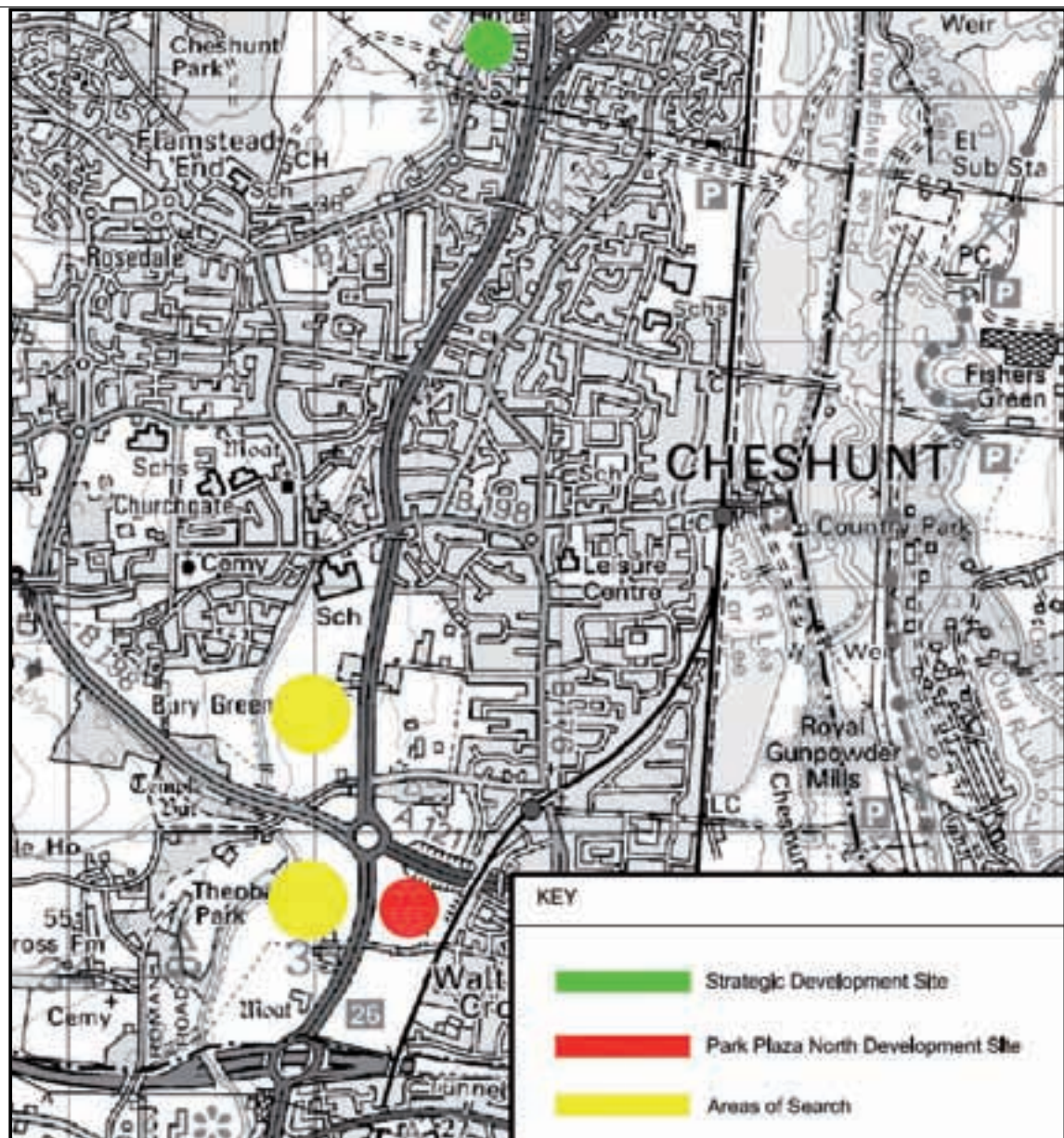


Figure 1: Proposed Development Sites along the A10 Corridor

Broxbourne Borough Council have commissioned consultant MVA to carry out high level traffic modelling to assist in developing their LDF which is due to be adopted in March 2011. The purpose of this exercise is to model likely transport flows on the A10, M25 and other key roads in the Borough considering a number of future development scenarios.

This UTP study is proposed to investigate in more detail the operation of the junctions along the A10 through Cheshunt which are the principal cause on congestion on the route. The study could be undertaken by either a VISSIM model or a TRANSYT/LINSIG network model as there are only a limited number of major junctions along this section of the A10 and both model formats would enable linked junction performance to be investigated. The resource requirements for building a VISSIM model or a TRANSYT/LINSIG model would also be similar. VISSIM however offers greater flexibility to

Short Term UTP Schemes Study Outline



test scenarios, particularly in terms of illustrating outcomes, and it is therefore recommended that the route study is undertaken using a VISSIM model.

The study approach will be to build a base VISSIM model and to use this to test a range of scenarios for current and future years that could include:

- Provision of traffic signal junction at A121 junction;
- Changing signal phasing, particularly for right turning and side road traffic;
- Banning of right turns at College Road/Church Lane junction (test a range of combinations)
- Impact of new developments/potential alternative access arrangements
- Potential impact of modal shift changes to sustainable modes, including consideration of the impacts of proposed UTP schemes in the corridor.

The base VISSIM modelling will need to be supported by data collection for calibration and validation purposes. Traffic surveys required include journey time surveys, turning count surveys and queue surveys.

Links to other UTP schemes:	HP14: Investigation of A121 route strategy including revised junction at Monarch's Way roundabout
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Traffic surveys	£18,000	Includes AECOM site visit
Build base model	£22,000	
Option testing	£15,000	
Prepare <i>Findings and Recommendations</i> Report	£5,000	
TOTAL COST FOR DELIVERY	£60,000	

Other Information/Additional Notes:

To include M25 J25 and the A1055 junction would cost an additional £8,000 for traffic surveys, £15,000 for building a base model, £12,000 for option testing and £5,000 for preparing *Findings and Recommendations* Report. The total cost for delivery would therefore be an additional £40,000.

Costs may be reduced if there are existing traffic surveys and models which are relevant and appropriate.

Short Term UTP Schemes Study Outline

AECOM

Scheme Name	Study – investigation of junction improvement strategy for A10 / M25 J25
Scheme Reference:	HP16a
Problem References:	HPP2: Congestion along main traffic corridors HPP4: Localised congestion at key junctions
Contributions to Targets / Objectives	Congestion Journey Time/journey time reliability Access to Employment Access to Town/Local Centres

Location Plan



Supporting Photograph(s)



Photograph 1: Approach to M25 J25 from A10



Photograph 2: M25 mainline from J25 circulatory

Existing Issues

M25 J25 is a Highways Agency (HA) controlled signalised gyratory which is managed by their Area 5 Team. The junction was installed in 1995 on a fixed cycle with vehicle activated (VA) stages controlled by the Hertfordshire Urban Traffic Control (UTC). In 2004, control was transferred to the HA's Area 5 UTC but the junction continues to operate fixed cycle with VA influences. The junction serves the A10 which is an important radial route serving the north London area to the south of the M25 and Hertfordshire/Cambridgeshire to the north. Within Enfield, the junction of the A10 and A1055 lies around 300 metres to the south of M25 J25.

M25 J25 experiences congestion during peak hours with queues extending along both M25 slip roads. The main demand from the M25 appears to be towards London on the A10 south. In particular, high traffic volumes routing from the M25 to A1055 Bullsmoor Lane via the A10 southbound appears to cause delays due to a lack of storage capacity on the A10 right turn filter at the A1055. Queuing also occurs on the M25 J25 circulatory as a result of limited storage capacity in advance of the A10 arms joining.

The figures below show average peak hour traffic speeds on the A10 in Hertfordshire to the north of M25 J25. During the AM peak hour, traffic speeds on the southbound approach reduce to between 10mph and 13mph whilst traffic departing the junction on the northbound approach travels up to 40mph. In the PM peak hour both the northbound and southbound sections of the A10 are congested. Southbound speeds average 8mph to 12mph whilst northbound slightly higher speeds are achieved (15-17mph).

Safety at the junction is also an issue, with 105 injury accidents occurring at the junction over a 36 month period between 2002 and 2005. The majority of these accidents were shunts but 11 serious accidents and one fatality were also recorded.

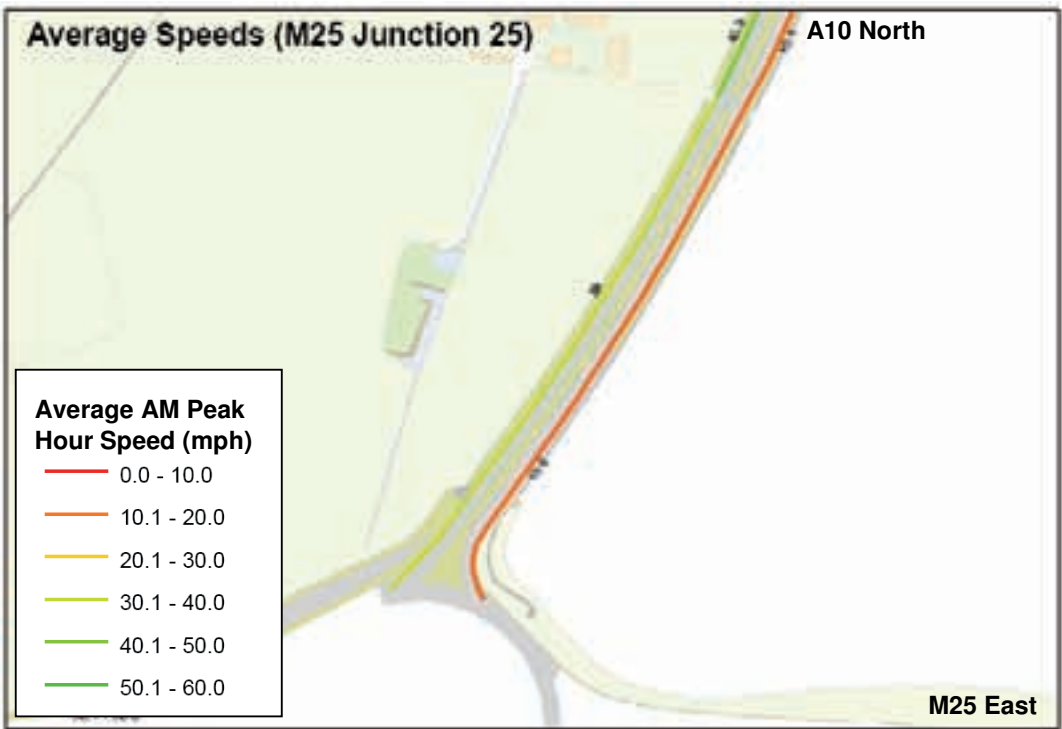


Figure 1: AM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

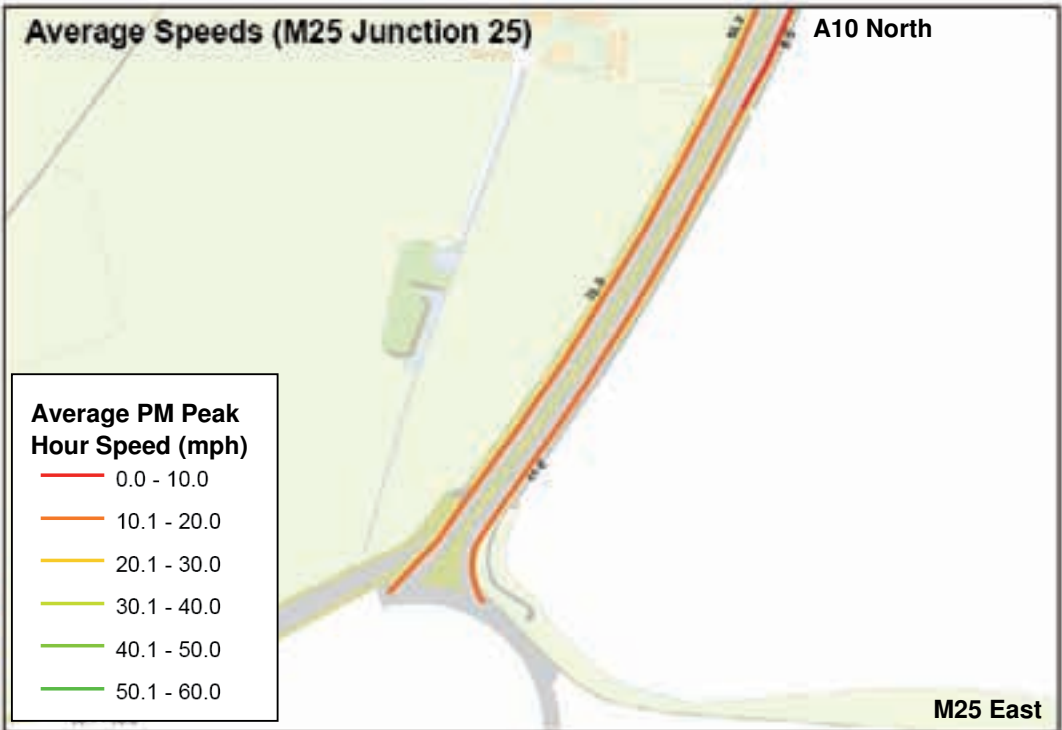


Figure 2: PM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

Constraints and Considerations

M25 J25 falls outside of HCC's responsibilities and therefore any changes to the junction layout or signal operation will be subject to Highways Agency approval. The Agency is not proposing any immediate changes to the junction and it is likely that any proposals to increase the capacity of access to the M25 will be resisted owing to existing and forecasted pressures along the route. However, the junction is identified in the East TechMAC asset management system for renewal / upgrade in the near future.

Study Proposals

Mitigation measures for the M25 J25 have been identified in conjunction with Park Plaza development which lies to the northeast of M25 J25 and east of the A10. Planning permission was granted in October 2005. It was agreed that road infrastructure improvements to be delivered in association with the Park Plaza development would be phased. A new signalised junction has been provided on the A10 in conjunction with the Phase 1 (print-works and hotel development) to allow access to the site. Phase 2, which has yet to be implemented and involves modification of the M25 eastbound off-slip and gyratory to provide a dedicated filter lane to the A10.

The proposed improvement works at M25 J25 have been designed by Burksgreen and are shown in Figure 1 below. The proposals comprise realignment of the M25 eastbound off slip and realignment of the circulatory to increase stacking space behind existing signals on the circulatory in advance of the M25 eastbound off slip. Widening on the A10 has already taken place in conjunction with the Phase 1 works and will provide sufficient capacity to accommodate traffic existing M25 J25.

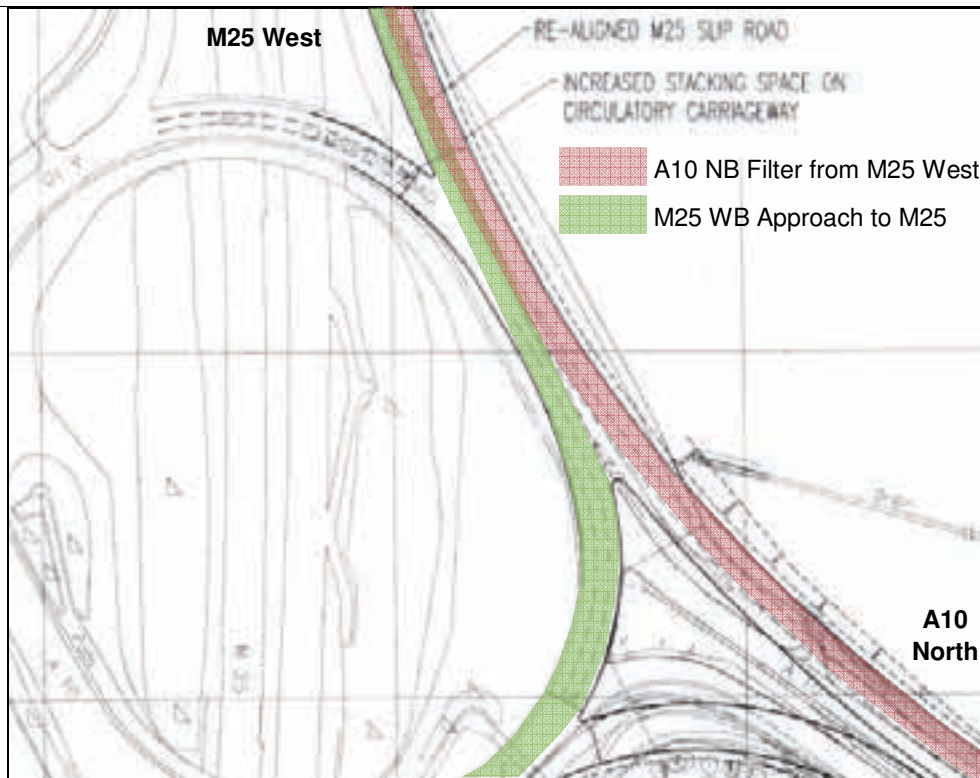


Figure 3: Proposed Realignment of M25 West / A10 North Slip Road

Short Term UTP Schemes Study Outline



It is also intended to improve sustainable transport provision around the site. A shared footway / cycleway, provided in conjunction with the Phase 1 print works, runs alongside the A10 and connects to two subways which run under the M25 J25 circulatory and connect to the existing walking network to the south of the junction in the London Borough of Enfield. This route is currently unattractive and would benefit from lighting and security improvements to increase its attractiveness for commuter journeys. The applicant has agreed in-principle to consider a financial contribution towards the costs of upgrading the walk / cycle route underneath the M25 / A10 interchange but these improvements have not as yet been identified.

Links to other UTP schemes:	HP16: Investigation of A10 route strategy
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Outline Cost Analysis

Works Element	Est. Cost	Notes
Traffic surveys		
Build base model		
Option testing		
Prepare <i>Findings and Recommendations</i> Report		
TOTAL COST FOR DELIVERY		Costs for delivery of this proposal are included in the overarching scheme pro-forma HP16.

Other Information/Additional Notes:

Delivery of the proposed improvement works at M25 J25 is dependent on Phase 2 of the Park Plaza proposals coming forward.

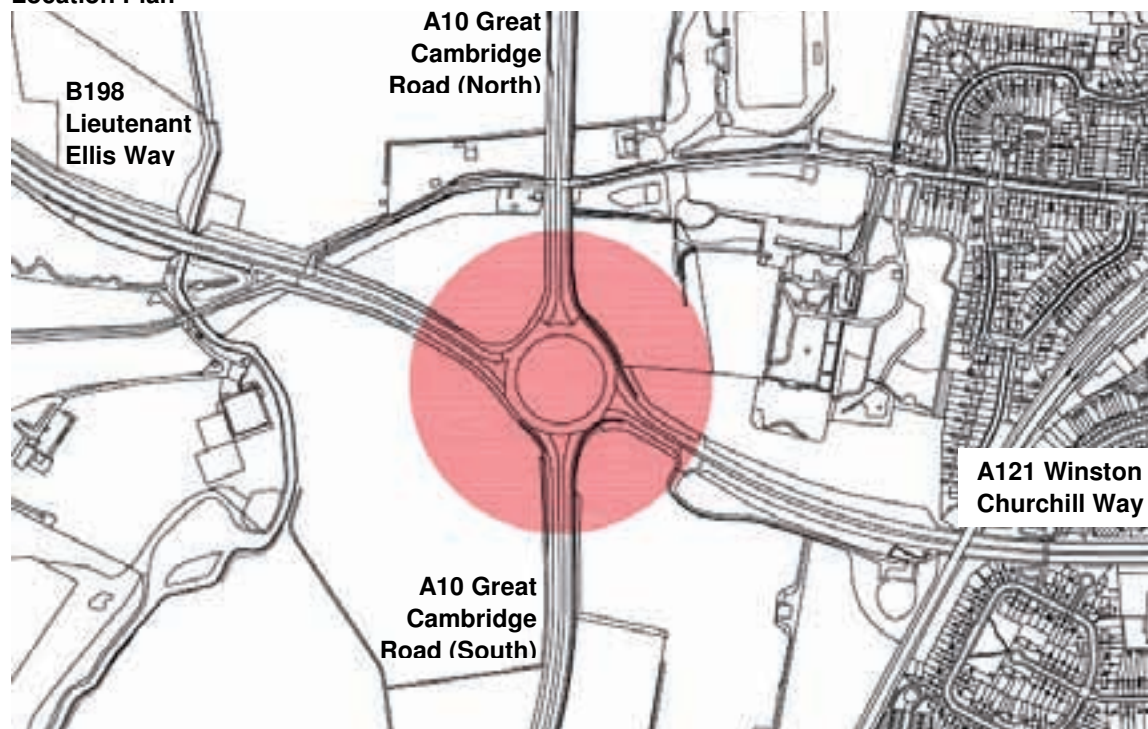
Short Term UTP Schemes

Study Outline

AECOM

Scheme Name	Study – investigation of junction improvement strategy for A10 / A121 Junction
Scheme Reference:	HP16b
Problem References:	HPP2: Congestion along main traffic corridors HPP4: Localised congestion at key junctions
Contributions to Targets / Objectives	Congestion Journey Time/journey time reliability Access to Employment Access to Town/Local Centres

Location Plan



Supporting Photograph(s)



Photograph 1: B198 approach to junction



Photograph 1: Staggered stop lines on A10 (North) approach to junction

Existing Issues

The A10 / A121 Roundabout is heavily congested at peak times and has a poor safety record. Between 2002 and 2005, 58 injury accidents occurred at the junction including two serious accidents. The junction is listed on the authority's accident site list as requiring action, though recent improvements to the junction layout have helped reduce accident risk in this location.

High vehicle speeds along the A10 through the junction make it difficult for traffic accessing the junction from the A121 and B198 to join the circulatory; consequently lengthy queues form along these routes, particularly along Lieutenant Ellis Way in the morning peak period. The figures below show average peak hour traffic speeds along the A10, A121 and B198 on approach to A10 / A121 Roundabout. During the AM peak hour, traffic speeds on the B198 Lieutenant Ellis Way approach average only 5mph whilst traffic approaching from the A10 south maintains average speeds of 27mph. Traffic approaching from the A10 north also slows to just 10mph despite average circulatory speeds of approximately 24mph being maintained. In the PM peak, all approaches suffer from congestion with average approach speeds of 9mph-17mph although circulatory traffic on the roundabout itself continue to be relatively high (23mph).

Previous studies have shown that during a typical working week, queues in excess of 65 vehicles per lane build up on the B198 Lieutenant Ellis Way approach which results in delays of approximately 4-5 minutes per vehicle. Minor improvements have been carried out to the A10 / A121 Roundabout in conjunction with the Park Plaza development which widened the A10 south of the junction to three lanes. However, further capacity improvements may be required to deliver the authorities growth aspirations on land adjacent to the junction.

The junction is a major bottleneck in the area as well as being an accident problem site. The future operation and scope for improving this junction will have a key bearing on the potential for future development in the A10 corridor, Options for improving this junction need to be considered in relation to potential development coming forward in the corridor and as part of an overall route strategy for the A10 in the district.

A new Toucan crossing is to be provided on the Winston Churchill Way approach in conjunction with new pedestrian and cycling routes along Winston Churchill Way and the A10 linking to a new pedestrian overbridge near Theobald's Lane. However, no highway schemes are currently proposed at this junction.

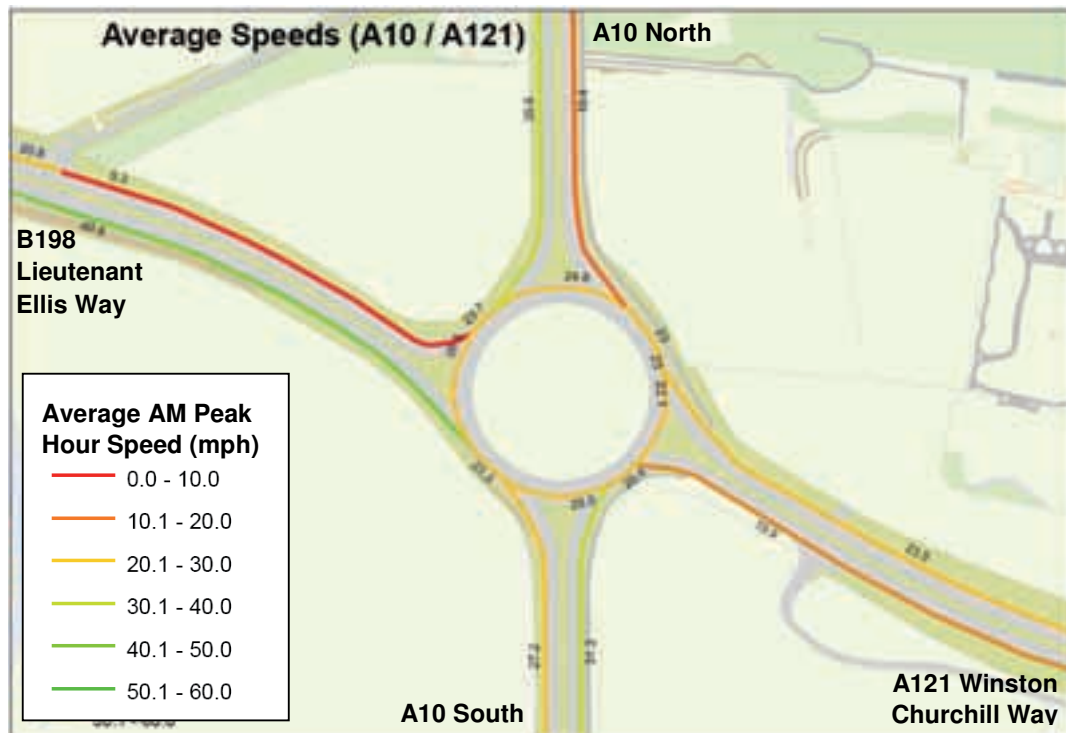


Figure 1: AM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

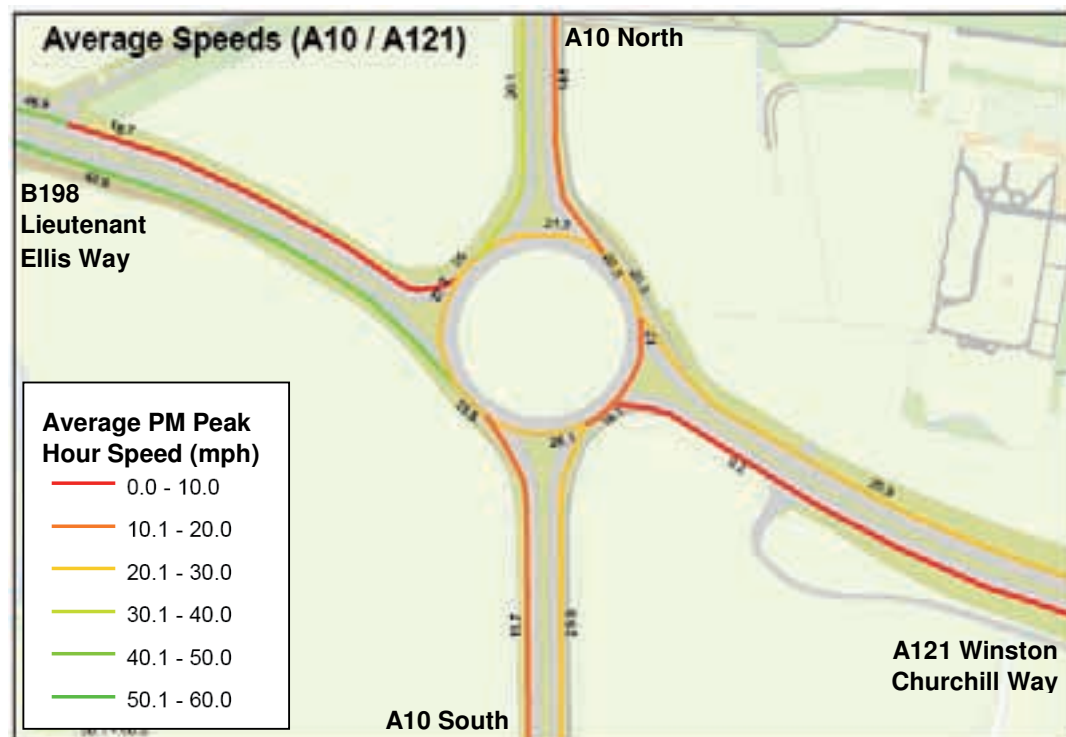


Figure 2: PM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)


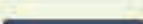
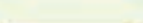
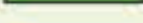


Constraints and Considerations

The A10 junction with the A121 is situated in open land and lies between traffic signal controlled junctions on the A10 at Park Plaza and College Road.

The relocated St Mary's School development will introduce a 40mph speed limit along the A10 Great Cambridge Road and improve pedestrian accessibility in the vicinity of the site. The school will also benefit from the proposed footbridge over the A10 which will connect an existing public footpath / private access to the west of the A10 with a new footway to the east which will continue along the southern edge of Theobalds Lane. Broxbourne Council will be seeking S106 contributions from the Park Plaza North applicant to deliver further sustainable transport improvements including well designed, useable and attractive links to the A10, Winston Churchill Way, Park Lane bridleway and the railway crossing point. Additionally, contributions will be sought to secure the future of the site's shuttle bus which is currently funded by the Park Plaza South as part of a 7 year obligation. These measures are shown on the plan below.



Figure 3: Indicative Improvement Scheme for A10 / A121 Junction

KEY	
	HCC Proposed New cycle route
	Proposed upgrade to footway along Theobalds Lane
	Existing footway/cycle way provided with Park Plaza South Development
	Proposed Toucan Crossing
	Proposed Pedestrian/Cycle Route
	Proposed A10 Footbridge

The Broxbourne Core Strategy has identified potential growth areas in the A10 corridor and adjacent to the junction, as follows:

- Land east of the A10 south of Cheshunt School which could provide residential development.
- Land west of the A10 south of Albury Farm which could provide employment floorspace.
- Land south of A121 Lieutenant Ellis Way, west of the A10 and north of the M25 which could provide a strategic employment site. This site may not be needed until post-2021 but is intended to be safeguarded for strategic employment use of national importance.

To deliver these development aspirations, a mix of measures are likely to be required, including measures to reduce traffic demand in the wider area and measures to improve the operation of A10 / A121 Roundabout in order to safeguard the operation of the A10 and minimise additional pressures on the M25 and J25.

Study Proposals

In the last eight years two major development sites have been proposed in the vicinity of the junction both of which proposed to signalise the A10 / A121 junction. These include:

- Park Plaza site.
- St Mary's High School relocation to Bury Green Farm site.

It was originally envisaged that the Park Plaza development would come forward first and a signalisation scheme would be delivered ahead of the new school opening. However, this development was delayed and an alternative signalised layout was prepared in conjunction with the St Mary's High School application. This is illustrated in the plan below. However, this scheme was not progressed as it was subsequently concluded that the school would have a relatively minor impact on the junction.

Traffic signalisation of the A10 / A121 roundabout or the provision of an alternative form of traffic signal junction continue to be potential options for the site. It is suggested that these options be investigated so that a scheme may be identified which provides for medium and longer term needs rather than specifically for the needs of any individual development, which could be prejudicial to longer term requirements.

The preferred scheme could potentially involve localised widening and the introduction of signal control on all arms and the circulatory. This would need to be investigated in the context of potential land use options and modelled using ARCADY, LINSIG or TRANSYT. Layouts proposed by past developments were deemed to deliver reserve capacity in the order of 11% thus reducing queuing and delays on junction and these layouts should be investigated initially.

In particular, any signalisation scheme will need to take account of the Park Plaza North site which will require appropriate access provision. The development brief prepared by Broxbourne Council in respect of this site outlines three potential access options to be investigated.

- Entrance 1 proposes access via the Park Plaza signalised junction with the A10 which was implemented as part of the Printworks proposals.
- Entrance 2 proposes direct access onto the A10 / A121 roundabout via an additional arm between A10 Great Cambridge Road (south) and A121 Winston Churchill Way (east).
- Entrance 3 proposes an entrance from Winston Churchill Way, to the east of the A10 / A121 junction.

Any scheme to be delivered at the junction will need to consider these access options and take into

Short Term UTP Schemes Study Outline



consideration the following:

- Entrance 1 would avoid the extra complexity of a fifth arm on the A10 / A121 roundabout which could significantly constrain longer term options for the junction. However, modelling conducted as part of the Phase 1 works indicates that the new signalised junction at Park Plaza would be expected to operate at or around capacity by 2023 if it provided access to both the northern and southern parts of the site. Dependent upon the end user and their likely trip generation, further modelling will be required to determine the spare capacity of the junction and its ability to accommodate increased traffic.
- Entrance 2 appears to have significant risks as the junction has historically been identified as a problem site and remedial works have only recently been carried out to help address safety concerns. There is limited space to accommodate an additional arm so any new access road would be in very close proximity to the existing approaches which could have an adverse impact on traffic safety. Consequently, significant junction remodelling and / or the introduction of signal control may be required to deliver this option, limiting scope for further improvement in the future.
- Entrance 3 also has disadvantages in that Winston Churchill Way is a main distributor road and LTP policy states that new accesses will not normally be permitted onto these routes. Furthermore, the planned pedestrian and cycling route on the south side of Winston Churchill Way would be adversely affected by any new access leading to safety concerns.

The preferred junction layout will therefore need to be consistent with the sustainable transport improvements proposed in the area as well as longer term aspirations for development in the corridor. In addition it will be necessary to consider how changes at this junction may affect the operation of adjacent traffic signal controlled junctions on the A10 and the potential role of route management measures to better manage traffic signals along this section of the A10, including the potential benefits of improved driver information through Variable message Signs (VMS).

Links to other UTP schemes:	HP16: Investigation of A10 route strategy
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Outline Cost Analysis

Works Element	Est. Cost	Notes
Traffic surveys		
Build base model		
Option testing		
Prepare <i>Findings and Recommendations</i> Report		
TOTAL COST FOR DELIVERY		Costs for delivery of this proposal are included in the overarching scheme pro-forma HP16.

Other Information/Additional Notes:

Short Term UTP Schemes Study Outline

AECOM

Scheme Name	Study – investigation of junction improvement strategy for A10 / College Road Junction
Scheme Reference:	HP16c
Problem References:	HPP2: Congestion along main traffic corridors HPP4: Localised congestion at key junctions
Contributions to Targets / Objectives	Congestion Journey Time/journey time reliability Access to Employment Access to Town/Local Centres

Location Plan



Supporting Photograph(s)



Photograph 1: Birds eye view of junction from pedestrian overbridge



Photograph 2: A10 (South) and College Road (West) approaches to the junction

Existing Problems

The A10 / College Road signalised junction is heavily constrained, due to its urban nature, and currently operates at capacity. College Road is a relatively narrow urban single carriageway but generates significant volumes of traffic including large numbers of right turning vehicles onto the A10. There are several schools in the vicinity of the junction and therefore demand peaks occur at school start and finish times as well as during traditional AM and PM peak periods. The figures below show average peak hour traffic speeds on approach to the A10 / Church Road junction. During both the AM and PM peak hours, average traffic speeds on all approaches reduce to less than 5mph at the junction.

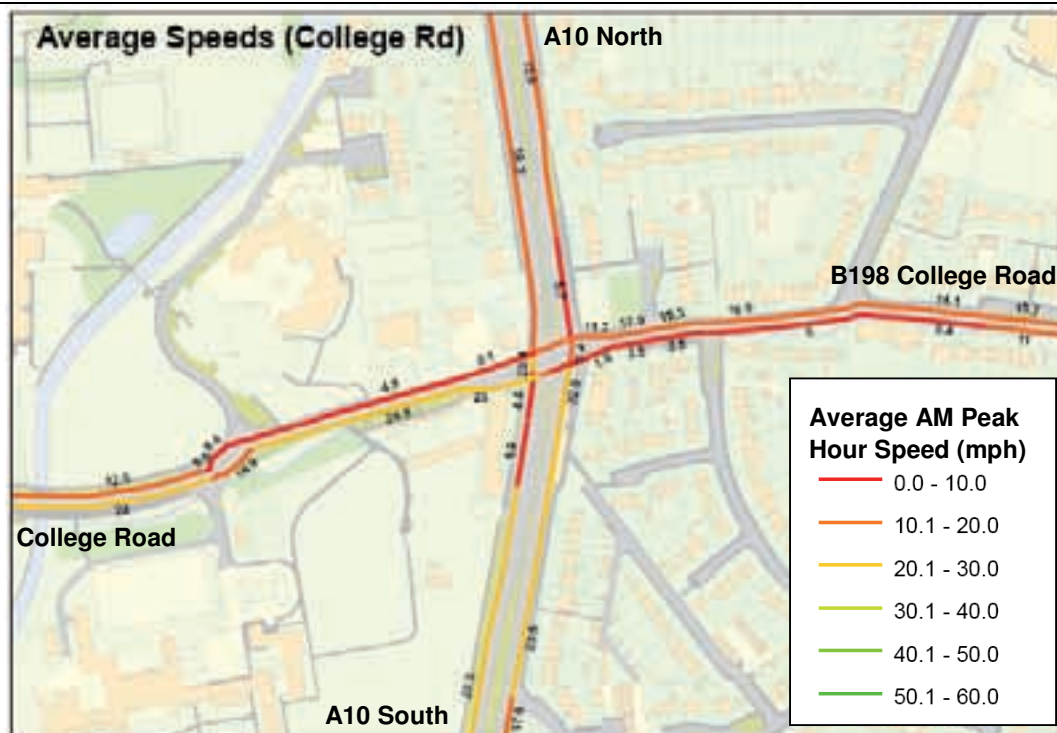


Figure 1: AM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

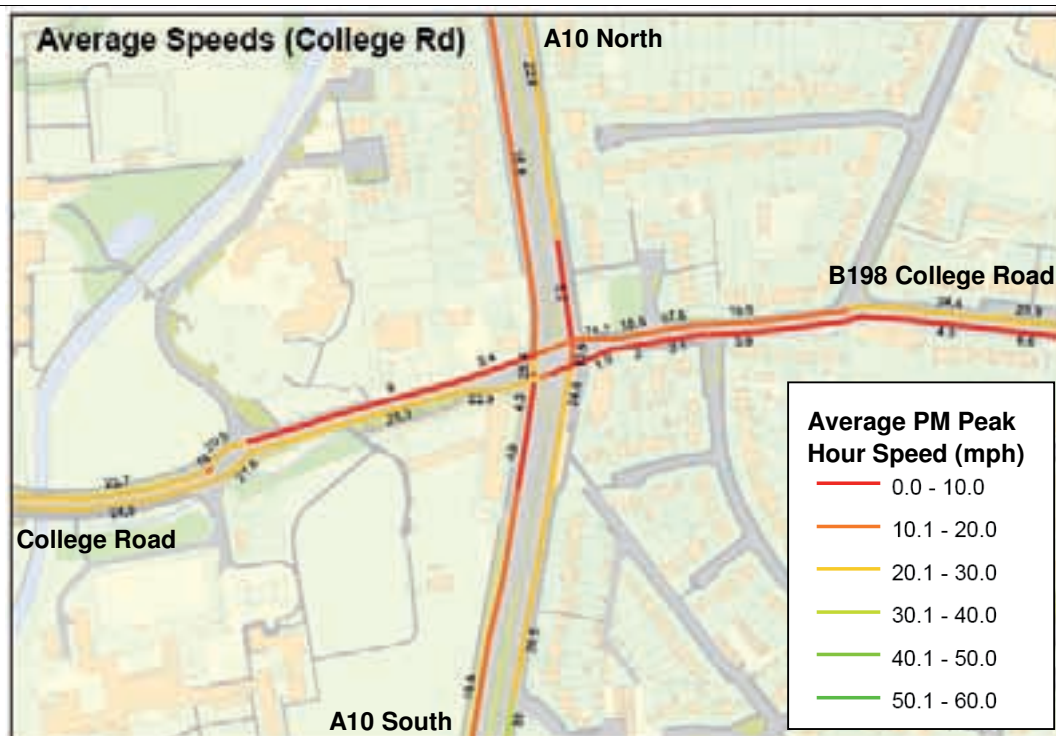


Figure 2: PM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

On site observations suggest that the junction operates as fixed cycle and includes dedicated right turn filter lanes with extended green time on the A10 northbound and southbound approaches. Currently all movements from Church Road (east and west) are permitted in one cycle which results in right turning traffic queuing back while waiting for gaps in ahead traffic.

Between 2002 and 2005, 23 injury accidents occurred at this junction, including one serious accident.

Constraints and Considerations

Existing land constraints at this junction mean that localised widening is likely to be unfeasible or unacceptable on cost and environmental impact grounds. The junction is entirely land locked and any expansion at this junction would require compulsory land purchase. Consequently improvement options will need to focus on making best use of existing infrastructure including enhanced signal phasing and better management of traffic movements.

Study Proposals

There are currently no proposals to improve this junction but to accommodate future growth along the corridor. Options need to be considered that will manage traffic demand as well as measures to enhance capacity. The St Mary's School relocation proposals involve the demolition of existing school buildings and replacement with 100 residential dwellings. This is forecast to reduce total traffic by 2.5% in the morning peak hour although high levels of demand will continue to impact on junction operation. Reducing car trips to other schools in the local area could also reduce traffic demand on College Road.

As a short term measure, options for revised signal operation and phasing should be reviewed to determine whether this could improve traffic throughput. In particular, it may be beneficial to revise signal timings on the Church Road approaches to run separate stages for right turn and ahead movements or allow the east and west approaches to operate independently.

Short Term UTP Schemes Study Outline



Links to other UTP schemes:	HP16: Investigation of A10 route strategy
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Traffic surveys		
Build base model		
Option testing		
Prepare <i>Findings and Recommendations</i> Report		
TOTAL COST FOR DELIVERY		Costs for delivery of this proposal are included in the overarching scheme pro-forma HP16.

Other Information/Additional Notes:
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Short Term UTP Schemes Study Outline

AECOM

Scheme Name	Study – investigation of junction improvement strategy for A10 / Church Lane Junction
Scheme Reference:	HP16d
Problem References:	HPP2: Congestion along main traffic corridors HPP4: Localised congestion at key junctions
Contributions to Targets / Objectives	Congestion Journey Time/journey time reliability Access to Employment Access to Town/Local Centres

Location Plan



Supporting Photograph(s)



Photograph 1: View of junction from Church Lane (E)



Photograph 2: A10 (North) approach to junction

Existing Issues

The A10 / Church Lane junction is currently signal controlled and includes pedestrian crossing stages which run concurrently with non-conflicting vehicle phases to minimise delay. The A10 southbound approach includes a dedicated right turn filter lane with extended green time but right turning movements from the A10 northbound are not permitted.

Movements from Church Lane east are heavily constrained by right turning traffic onto the A10. When approaching the junction along Church Lane east, limited storage capacity for right turners means that any more than two vehicles waiting to turn can cause queues which restrict ahead and left-turn movements from this arm of the junction.

Signal timings at the junction also cause significant pedestrian delay. The crossing over the A10 north is staggered so pedestrians have to cross in two stages. The crossing on the A10 south has been closed, with safety barriers blocking the route thereby forcing pedestrians to cross three arms of the junction to get from the southern side of Church Lane east to Church Lane west. In the past consideration has been given to provision of a pedestrian footbridge but this has not been pursued.

Cycle lanes run along Church Lane and advanced stop lines are provided on the westbound approach.

The figures below show average peak hour traffic speeds on sections of each approach to the A10 / Church Lane junction. During the AM peak hour, traffic speeds on Church Lane (east and west) reduce to 2mph while A10 traffic speeds average 19mph. In the PM peak hour, a similar situation occurs, though the A10 southbound has less congestion and higher speeds.

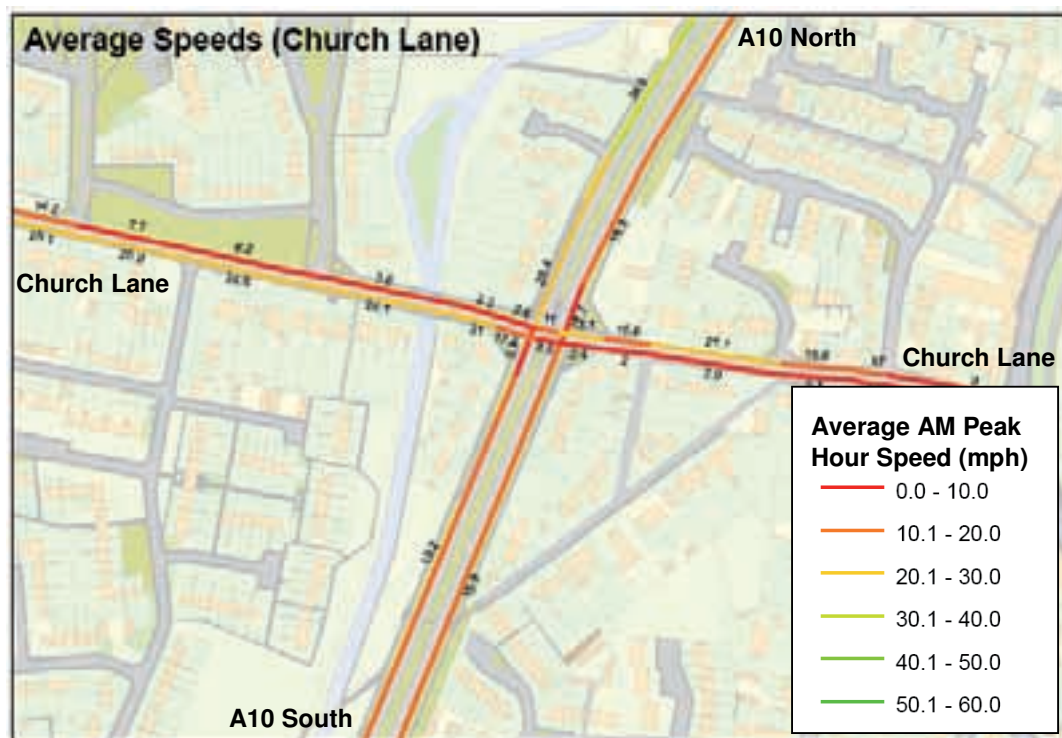


Figure 1: AM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

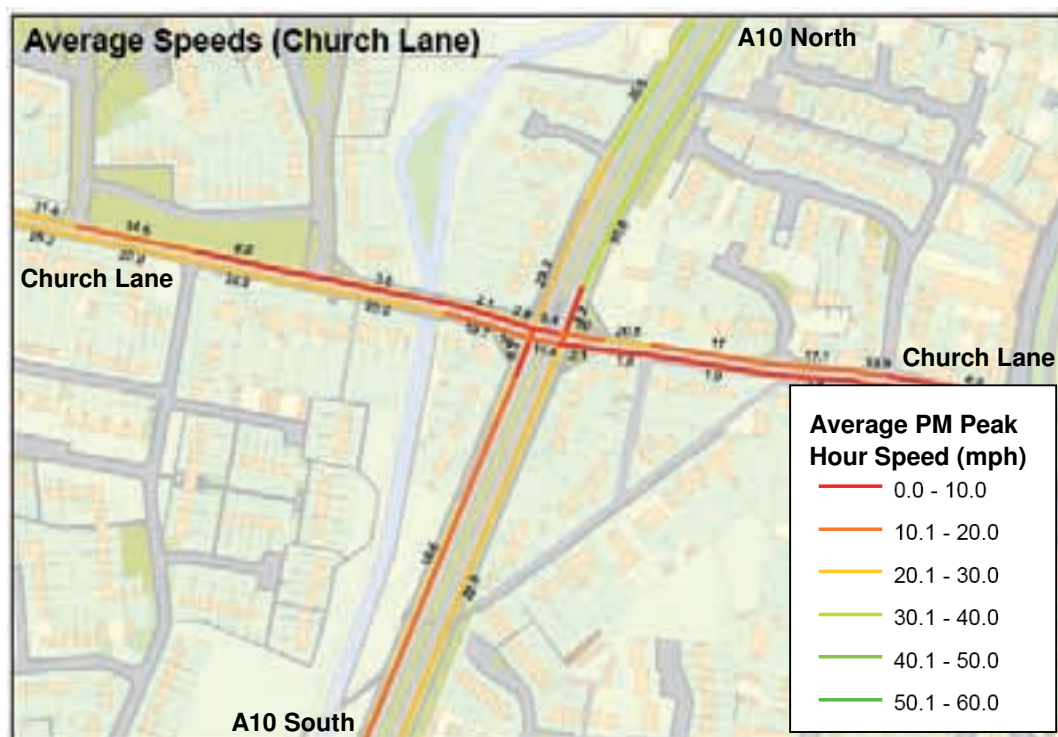


Figure 2: PM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

Constraints and Considerations

There are land constraints at this junction. It may be possible to widen certain approaches but this could involve high cost, compulsory land acquisition and have significant impacts on surrounding properties. Less disruptive local widening at stop lines on Church Lane may not be appropriate as queuing on single lane sections would limit effectiveness.

As part of the UTP, cycling measures are proposed at this junction including implementation of a signed cycle route along Church Lane and across the A10 junction to link residential areas in the west of Cheshunt to the rail station to the east.

Study Proposals

It is proposed that the operation of this junction should be investigated in conjunction with the development of a route strategy for the A10 in the UTP area. As part of this study further consideration will be given to junction widening and signal timings. Specifically, the potential to provide a dedicated left turn / ahead lane from Church Lane east will be considered. This will involve land take from the existing grassed area to the southeast of the junction. The cost of this option will have to be carefully weighed against potential benefits which may be diluted as right turning traffic will still have the potential to queue back affecting other movements. UTC operation of the traffic signals will also be reviewed to assess scope to maximise traffic throughput and minimise delay for all users.

Links to other UTP schemes:

Outline Cost Analysis

Works Element	Est. Cost	Notes
Traffic surveys		

Short Term UTP Schemes Study Outline



Build base model		
Option testing		
Prepare <i>Findings and Recommendations</i> Report		
TOTAL COST FOR DELIVERY		Costs for delivery of this proposal are included in the overarching scheme pro-forma HP16.

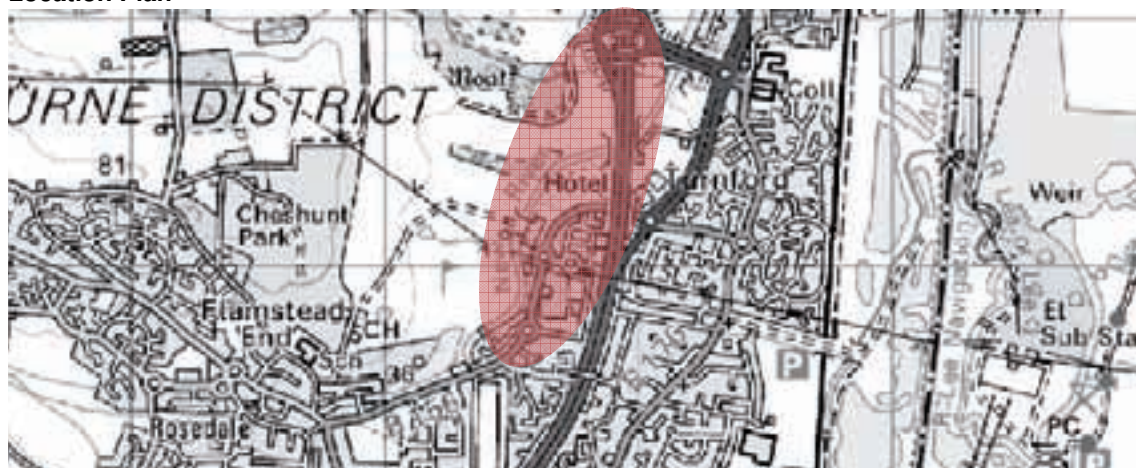
Other Information/Additional Notes:

Short Term UTP Schemes

Study Outline

Scheme Name	A10 / Turnford Interchange and Brookfield Riverside transport assessment – identifying transport measures to support the development.
Scheme Reference:	HP18
Problem References:	WCP6: Conflict between pedestrians and cyclists, particularly in/around town centres HPP3: Congestion at town centres and at Brookfield Centre HPP13: Insufficient car parking facilities at town centres
Contributions to Targets / Objectives	Public Transport Patronage Mode Share of Journeys to School Cycle Usage Access to Employment Access to Public Transport Access to Town/Local Centres Town Centre enhancements/streetscape improvements Environmental improvements, particularly for vulnerable road users

Location Plan



Supporting Photograph(s)



Photograph 1: Brookfield Retail Park access with B156 Halfhide Lane



Photograph 2: Brookfield Centre access opposite Mylne Close

Short Term UTP Schemes

Study Outline



Photograph 3: Halfhide Lane outside Brookfield Retail Park



Photograph 4: Halfhide Lane approach to Brookfield Centre access

Existing Issues

The B156 Halfhide Lane is the main route to the A10 for residential areas to the south of Brookfield and provides two accesses to the Brookfield Centre and Brookfield Retail Park via a signalised junction and a roundabout. The existing Brookfield Centre has limited bus connectivity and is not well served by cycle and pedestrian links to the surrounding area; consequently, there is high demand for vehicular access.

Halfhide Lane is 40mph single carriageway with short flares in advance of the retail park access junctions to accommodate demand. The route is constrained by retail development to the north and residential areas to the south which limits the potential to increase capacity through localised widening.

Significant traffic congestion occurs in the area at peak times, particularly along Halfhide Lane and Brookfield West. Figures 1 and 2 show average peak period speeds on these links for the morning peak period and the evening peak period between 01/09/2008 and 31/08/2009. During both AM and PM peak periods, traffic speeds on approaches to the Halfhide Lane / The Links junction and Halfhide Lane / Great Cambridge Road roundabout fall to between 10mph and 20mph.

Short Term UTP Schemes
Study Outline

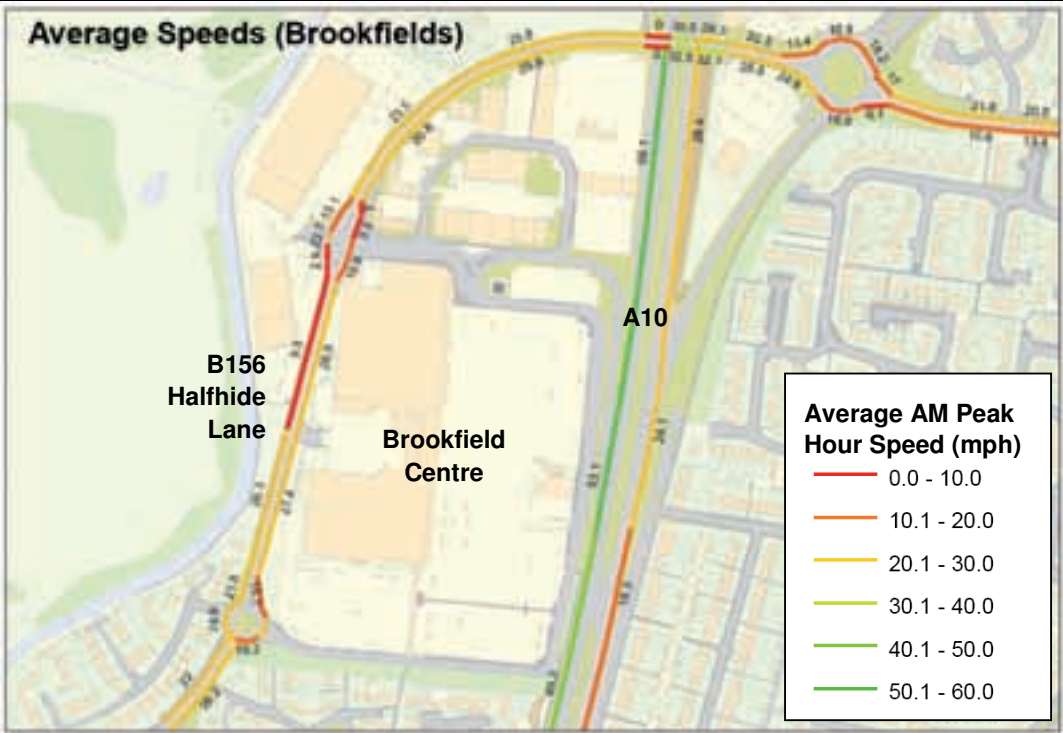


Figure 1: AM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

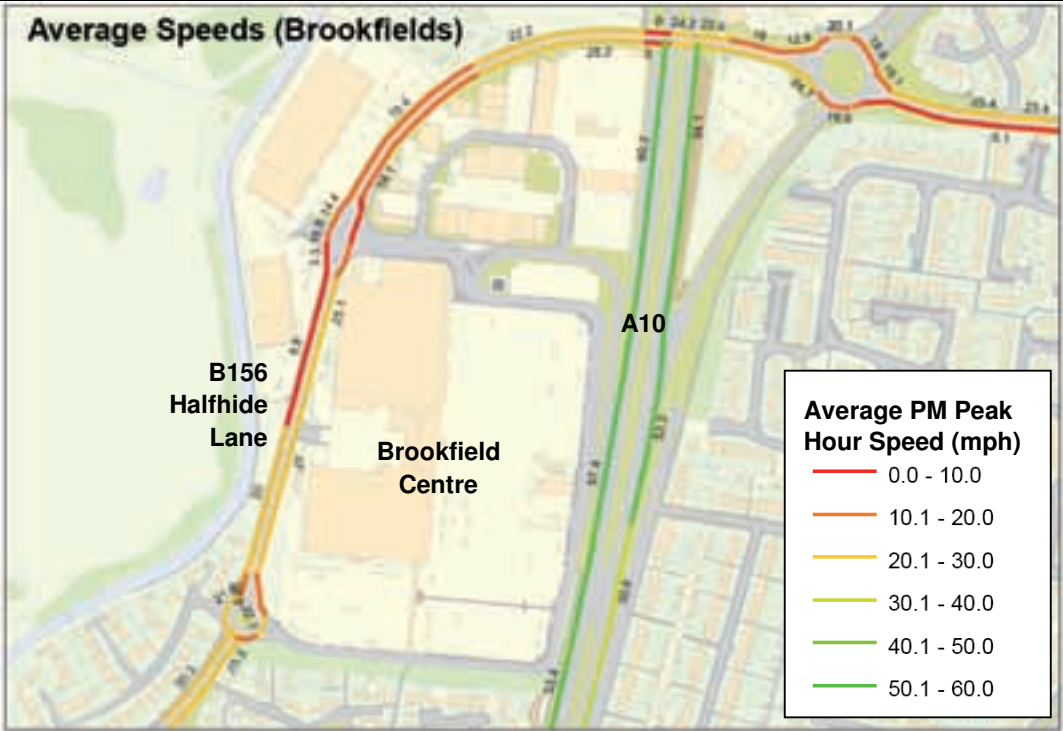


Figure 2: PM Peak Hour Average Speeds
Source: HCC (based on TRAFFICMASTER data)

Short Term UTP Schemes

Study Outline

In the wider area, the A10 junctions with Church Lane, College Road and the A121 are also heavily congested at peak times and the A10 southbound also suffers congestion, with mainline speeds reducing to 18mph.

Constraints and Considerations

The most significant development proposal for the area is for a major new centre adjacent to the existing Brookfield Centre which is proposed to include an extensive retail development together with office, leisure, residential, health and hotel facilities. It is proposed that the commercial developments will be served by a further 3000 parking bays thus providing a total provision of more than 5000 spaces. These developments, known collectively as Brookfield Riverside, are proposed within a 200 metre corridor to the north of the current Brookfield Centre and the Turnford interchange on the A10.

As part of preliminary discussions with promoters of the Brookfield Riverside development, a number of transport measures are being considered. These will need to be the subject of further consideration through an agreed Transport Assessment and Travel Plan. However, it is important that key transport objectives are defined for the site to ensure that the development is consistent with sustainable transport principles.

Study Proposals

To ensure that delivery of the proposed Brookfield Riverside development is not detrimental to the operation of the local and strategic highway network, the proposed Brookfield Riverside development will be the subject of a transport assessment and travel plan. These documents will identify the measures to be taken forward to address the potential transport impacts of development and improve accessibility and safety for all modes of travel, particularly alternatives to the car such as public transport, walking and cycling. Effective management and control of parking will also need to be considered and appropriately managed to reduce car commuting and congestion and deliver wider environmental objectives.

The study should consider/ investigate the following measures for delivery in conjunction with the proposed Brookfield Riverside development:

- High quality, frequent and attractive bus services.
- High quality access to the A10 via the Turnford interchange with associated closure of the Halfhide Lane route through the development.
- New southbound on-slip to the A10 in conjunction with the closure of the existing southbound slip.
- Route improvements along Halfhide Lane and Brookfield Lane West.
- Variable message signs.
- New bus access via The Links.
- New bus hub within the new development with connections to the existing Brookfield Centre and Retail Park.
- Attractive internal pedestrian routes with external links to Brookfield Centre and Brookfield Retail Park.
- High quality cycle and pedestrian routes linking to wider cycle networks serving the district.
- Car park management including an appropriate charging regime.

Figure 3: Brookfield Riverside – Indicative Master Plan



Short Term UTP Schemes

Study Outline

Links to other UTP schemes:	WC17c WC30 BU12
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Transport measures to serve the proposed Brookfield Riverside development to be funded by the developer through a planning obligation agreement.		
TOTAL COST FOR DELIVERY		

Other Information/Additional Notes:
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Scheme:

Goff's Lane Speed Reduction Scheme

Scheme Reference:

HP09

Scheme Status:

Medium term proposal in the UTP.

Purpose:

The purpose of this scheme is to manage vehicle speeds along Goff's Lane.

Details:

The scheme will introduce speed management measures along Goff's Lane. Goff's Lane is a largely residential road subject to a speed limit of 30mph. Observations indicate that vehicle speeds along Goff's Lane could be better managed to create a better environment for pedestrians and cyclists, particularly in a residential area. Traffic speed and volume data will be used to verify the extent of measures required. Options can vary from, but are not restricted to, installation of speed cameras, or road narrowing (by reallocation of road space to pedestrians/cyclists).

Outline Cost:

Low (<£250,000)

Advantages:

- Creates a better residential environment, supporting pedestrian and cyclist movements.

Disadvantages:

- Potential disruption to flow of traffic and capacity

Medium Term UTP Schemes Study Outline

AECOM

Scheme Name	Traffic calming along Brookfield Lane West
Scheme Reference:	HP11
Problem References:	HPP8 – Road accidents and speeding along main roads in residential areas
Contributions to Targets / Objectives	Speed limit compliance Mode share of journeys to school Cycle usage Access to employment Access to town/local centres Environmental improvements, particularly for vulnerable road users

Location Plan



Supporting Photograph(s)



Photograph 1: Brookfield Lane West on approach to Brookfield Centre access.



Photograph 2: Brookfield Lane West beyond New River bridge.

Existing Issues

Brookfield Lane West is the main route to the A10 for residential areas to the southwest of Brookfield. It is a single carriageway road with a 30mph speed limit. The road is constrained by frontage development, the Cheshunt Reservoir to the north and the bridge over the New River all of which limit the potential to increase vehicular capacity through localised widening.

Localised traffic congestion occurs along Brookfield Lane West, particularly on approaches to the Halfhide Lane / Mylne Close roundabout where peak period traffic speeds fall to between 20mph and 25mph. Outside of peak hours, speeding is a problem along the corridor. A 24 hour Automatic Traffic Count conducted on Brookfield Lane West over seven days in May 2008 recorded mean traffic speeds of 34mph with 85th percentile speeds approaching 40mph.

Accident data along Brookfield Lane West indicates that between 2003 and 2008 13 personal injury accidents occurred along the corridor, including 3 serious accidents. Seven of the accidents occurred at night, five occurred in wet conditions and seven occurred at one of the four existing T-junctions with Brookfield Lane West. None of these accidents appeared to be directly attributable to speeding.

Constraints and Considerations

Planning permission was granted in 2009 for a residential development on the Cheshunt Reservoir site to the south of Brookfield Lane West. The site will have a single vehicular access directly onto Brookfield Lane West. Speeding traffic has the potential to conflict with vehicles accessing / egressing the site, thereby increasing accidents. Therefore the implementation of traffic calming measures is vital to ensuring the safe operation of the corridor.

Description of Proposals

It has been agreed that the residential development on the Reservoir site will fund traffic calming measures along the corridor through S106 monies. Specifically the proposals include:

- 50m of high friction surfacing on the approaches to the junction;
- Red coloured high friction surfacing across the mouth the development access junction; and
- Two artificial non-physical narrowings with 'slow' markings, 'side road ahead' and 'reduce speed now' warning signs and bollards in the verges on the approaches approximately 50m from the proposed site access.

These improvements are shown in Figure 1 below.

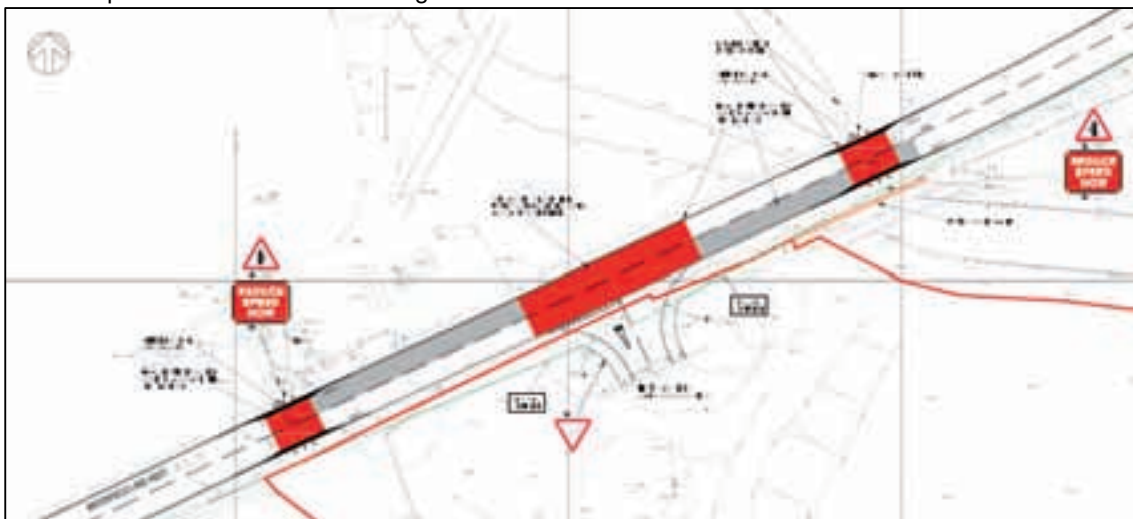


Figure 1: Traffic Calming Measures

(Source: WSP drawing in Crest Nicholson Supplementary Transport Report for the Cheshunt South Reservoir development)

Medium Term UTP Schemes Study Outline



To support these measures, a more comprehensive regime of traffic calming could be implemented along Brookfield Lane West. Physical calming mechanisms such as road humps, speed cushions and raised tables at junctions may not be appropriate as speed does not appear to have been a factor in any of the accidents that have occurred since 2003 and the route's importance as a connection between residential areas and the strategic road network. However, subject to detailed investigation into accident causation and appropriateness, measures could include the following:

- Improved lighting and vegetation cut back to make street lighting more prominent and remind drivers of the speed limit.
- Reactive road signs to assist enforcement of the 30mph speed limit.
- High friction surfacing or rumble strips to encourage slower speeds and increase awareness of speed limits.
- Additional artificial narrowings such as chicanes, build outs and ghost traffic islands.
- Gateway features to reduce vehicle speeds.

Links to other UTP schemes:	WC30: Provision of cycle and pedestrian facilities Brookfield Lane West.
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Outline Cost Analysis		
Works Element	Est. Cost	Notes
Funded through Planning Obligation Agreement		
TOTAL COST FOR DELIVERY		

Other Information/Additional Notes:
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Scheme:

Church Lane Shops Access Improvements

Scheme Reference:

HP12

Scheme Status:

Medium term proposal in the UTP.

Purpose:**Details:**

The shops at Church Lane currently suffer from poor access. Parking provision is minimal/substandard resulting in shoppers parking on the footway. This in turn causes obstructions for pedestrians.

The proposal to improve access to the shops will see the rationalisation of car parking provisions which will contribute to reducing parking on the footway.

The scheme is likely to require works on land outside the highway boundary within shop fronts. However, it is envisaged that there will be a high level of support and co-operation from shop owners.

Outline Cost:

Low (<£250,000)

Advantages:

- Supports local shops and encourages accessibility by sustainable means

Disadvantages:

- Space is constrained and options may be limited.

Scheme:

Study – Investigate masterplan for Cheshunt Town Centre to include a revised junction at the Pond to enable more spaces to be given over to pedestrians and additional short stay parking for the centre

Scheme Reference:

HP15

Scheme Status:

Medium term proposal in the UTP.

Purpose:

The purpose of the scheme is to maximise the attractiveness of Cheshunt Town Centre in its community and commercial function. At present, the high street is also used as a through route and the aim will be to reduce the impact and dominance of traffic. The area around The Pond has been highlighted due to its central location and the existing fountain feature which already provides a focal point for the centre.

Details:

The masterplan would look at options in facilitate pedestrian and cyclist movements in a busy town centre setting. Consultation has highlighted a desire for additional short stay parking and it is envisaged that this will also be investigated, in line with servicing and disabled access facilities.

Outline Cost:

Low cost (<£250,000), comprising:

Traffic surveys	£6,000
Stakeholder Engagement and Consultation	£6,000
Build base VISSIM model	£15,000
Options testing	£7,000
Prepare <i>Findings and Options</i> Report	£5,000

Advantages:

- Maximise commercial and community value of Cheshunt Town Centre
- Reduce impact of congestion through the town centre setting
- Promote sustainable travel to/from and around Cheshunt Town Centre

Disadvantages:

- High cost
- Space constraints
- Minimal opportunities for re-routeing through traffic

Appendix B – UTP Programme of Measures

Chapters 7 and 8 of this document discussed and presented the proposed programme of measures, organised by priority (assessment score) and by delivery timescale. Packages of schemes have been formulated in order to provide an organised delivery solution of all schemes listed in Chapters 7 and 8 which have been proposed for delivery in the first five years (i.e. short term and medium term schemes). The packaged schemes are presented in Tables B.1 to B.9 below.

Table B.1: UTP Schemes for implementation in the First Five Years: Waltham Cross Town Centre Area

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC07a	Park Lane Cycle/Footway rail crossing	0-2 years	£1,000,000	S106 (developer)	
WC07b	Park Lane Bridleway crossing	0-2 years	£1,000,000	S106 (developer)	
WC08	Hurst Drive Primary School Initiative	0-2 years	Scheme programmed	HCC Children Schools & Families	
WC10	Signing of cycle Route Winston Churchill Way to Eleanor Cross Road	0-2 years	£2,000	HCC LTP Cycling	✓ (See appendix A)
WC11a	Signing improvements between Waltham Cross bus station and rail station	0-2 years	£4,000	HCC LTP Accessibility	✓ (See appendix A)
WC11b	Provision of toucan crossing across Abbey Road	0-2 years	£210,000	HCC LTP Accessibility	✓ (See appendix A)
WC22	Signing of cycleway Waltham Cross Town Centre to Abbey Road Roundabout	0-2 years	£1,000	HCC LTP Accessibility	✓ (See appendix A)

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC23	Provision of additional CCTV at Monarchs Way Subway	0-2 years	Scheme programmed	BBC	
WC24	Enhancements to Monarchs Way Subway - Landscaping/ Lighting & Walkways	0-2 years	£47,500	BBC, HCC LTP Accessibility S106 (developer)	✓ (See appendix A)
WC25	Monarchs Way (Abbey Road) footway	0-2 years	£42,000 (In BBC's Capital Programme)	BBC	
BU01	Provide more information on county services at Waltham Cross bus station through provision of journey planning maps and more accessible electronic passenger information points	0-2 years	[TBC]	HCC PTU	
HP01	Improved lining at Monarchs way roundabout	0-2 years	£12,000	HIIS	✓ (See appendix A)
HP06	Eleanor Cross taxi parking provision	0-2 years	£2,000	BBC	✓
HP07	Roundel High Street Improvements	0-2 years	£110,000	BBC	
HP14	Study - Investigation of A121 route strategy including revised junction at Monarchs Way roundabout	0-2 years	£45,000	HIIS S106 (developer)	✓ (See appendix A)

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC15	Signing of Park Lane to Waltham Cross Town Centre	3-5 years	£1,000	HCC LTP Accessibility	✓ (See appendix A)
WC21	Signing of Cycleway Link to Enfield from Waltham Cross via Enfield Greenways	3-5 years	£2,000	HCC LTP Accessibility	✓ (See appendix A)
BU03	Modify existing bus services to directly serve Waltham Cross rail station (working with bus operators)	3-5 years	[TBC]	n/a	
BU04	Provide an additional bus stop facility at Waltham Cross rail station to allow additional bus services to call there	3-5 years	£20,000	S106 (developer) HCC LTP Bus Patronage HCC LTP Accessibility	✓ (See appendix A)
BU14	Study - Work with BBC, TfL and other bus operators to investigate capacity and layover issues at Waltham Cross bus station	3-5 years	£100,000	TBC	✓ (See appendix A)

Table B.2: UTP Schemes for Implementation in the First Five Years: St Mary's School Relocation

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC02	Footway/Cycleway on south side of Winston Churchill Way	0-2 years	Scheme programmed	BBC	

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC03	A10 Theobalds Lane Cycle/Footbridge	0-2 years	Scheme programmed	BBC Sustrans S106 (developer)	
WC04	A10 Cycle/Footbridge Link to St Mary's School	0-2 years	Scheme programmed	S106 (developer)	
WC05	Theobalds Lane (east) improvements - cycleway	0-2 years	Scheme programmed	S106 (developer)	
WC06a	Toucan Crossing of Winston Churchill Way at A10 roundabout	0-2 years	Scheme programmed	S106 (developer)	
WC06b	Winston Churchill Way to A10 Footbridge and Theobalds Lane	0-2 years	Scheme programmed	S106 (developer)	
WC09	Cycle Route – St Mary's School to Bury Green	0-2 years	Scheme programmed	S106 (developer)	
WC12a	Theobalds Lane/High Street Toucan Crossing	0-2 years	£102,000 (Scheme in development)	Sustrans	✓ (See appendix A)
WC12b	Signing of Cycle Route - Theobalds Grove to Lee Valley Park	0-2 years	£36,000 (Scheme in development)	Sustrans	✓ (See appendix A)
WC13	Signing of Cycle Route - Waltham Cross to Lee Valley Park	0-2 years	£30,000 (Scheme in development)	Sustrans	✓ (See appendix A)
WC14	Cycle Route - Theobalds Grove to Cheshunt Station	0-2 years	£246,000 (Scheme in development)	Sustrans	✓ (See appendix A)

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC17a	New River Cycle/Footway Phase 1 - Theobalds Lane to College Road	3-5 years	£701,000	HCC LTP RoW or Cycling S106 (developer)	✓ (See appendix A)
WC17b	New River Cycle/Footway Phase 2 - College Road to Church Lane	3-5 years	£503,000	HCC LTP RoW or Cycling S106 (developer)	✓ (See appendix A)

Table B.3: UTP Schemes for Implementation in the First Five Years: Wider Cheshunt Area

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC28	Hammondstreet pedestrian crossing	0-2 years	Scheme programmed	BBC	
HP10	College Road / Cromwell Road Roundabout Improvements	0-2 years	[TBC]	[TBC]	
HP13	Rosedale Way/Fairfield Primary Safe Routes to School scheme	0-2 years	Scheme programmed	HCC LTP Mode Share to School	
HP16	Study - Investigation of traffic management strategies for the A10, including signalisation of A121 junction.	0-2 years	£60,000	HCC HIIS S106	✓
WC20	Cycle enhancements in B176 corridor	3-5 years	£300,000	HCC LTP Cycling	✓ (See appendix A)

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
BU06	Provide real time bus information and electronic passenger information points at bus stops starting with those most heavily used. (Stops at The Pond, Theobalds Grove rail station, Waltham Cross bus station and Brookfield Centre)	3-5 years	[TBC]	HCC PTU	
BU13	Support and promote the hospital hopper	3-5 years	£10,000	HCC PTU	
HP09	Goffs Lane speed reduction scheme	3-5 years	[TBC]	HCC LTP Speed Compliance	✓ (See appendix A)
HP12	Church Lane Shops Access Improvements	3-5 years	[TBC]	HCC LTP Accessibility	✓ (See appendix A)
HP15	Study - Investigate masterplan for Cheshunt town centre to include a revised junction arrangement at the Pond to enable more space to be given over to pedestrians and additional short stay parking for the centre	3-5 years	£39,000	HIIS S106 (developer)	✓

Table B.4: UTP Schemes for Implementation in the First Five Years: Access to Lee Valley / Olympics

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC01a	A121 Eleanor Cross Road Cycleway Final Phase (Linked to Olympic Site)	0-2 years	Scheme programmed	HCC LTP Cycling Olympic Delivery Authority British Waterways S106 (developer)	
WC01b	A121 Eleanor Cross Road - Link to Cheshunt Station via Towpath (Linked to Olympic Site)	0-2 years	Scheme programmed	HCC LTP Cycling Olympic Delivery Authority British Waterways S106 (developer)	

Table B.5: UTP Schemes for Implementation in the First Five Years: Greater Brookfield

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC29	Milne Close Roundabout pedestrian improvements	0-2 years	Scheme in development	S106 (developer)	
HP18	Study – Investigate transport measures to support Brookfield Riverside development	0-2 years	To be funded through developer contributions	S106 (developer)	✓ (See appendix A)
WC30	Brookfield Lane West toucan crossing	3-5 years	[TBC]	S106 (developer)	✓ (See appendix A)

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
HP11	Traffic calming along Brookfield Lane West	3-5 years	[TBC]	S106 (developer)	✓ (See appendix A)

Table B.6: UTP Schemes for Implementation in the First Five Years: Cheshunt Rail Station

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
BU16	Provision of bus shelter at Cheshunt rail station	0-2 years	Scheme programmed	HCC PTU	
RA10	Cheshunt Rail Station - Provision of longer platforms to accommodate longer trains	3-5 years	[TBC]	Network Rail	
BU05	Increase frequency and range of bus service stopping at Cheshunt Station (working with bus operators)	3-5 years	[TBC]	TBC	

Table B.7: UTP Schemes for Implementation in the First Five Years: Waltham Cross Rail Station

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
RA01	Waltham Cross Rail Station - Implement Phase 2 of BBC Car Park Expansion scheme	0-2 years	£120,000	BBC	

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
RA03	Waltham Cross Rail Station - Provide lifts for access to southbound platform	3-5 years	[TBC]	DfT HCC BBC S106 (developer) See note 1	
RA04	Waltham Cross Rail Station - Provide new station building with level access	3-5 years	[TBC]	DfT HCC BBC S106 (developer) See note 1	
RA05	Waltham Cross Rail Station - Remodel station frontage and provide drop off facility	3-5 years	[TBC]	DfT HCC BBC S106 (developer) See note 1	
RA06	Waltham Cross Rail Station - Provide upgraded passenger waiting areas with improved seating	3-5 years	[TBC]	DfT HCC BBC S106 (developer) See note 1	
RA07	Waltham Cross Rail Station - Improve CCTV coverage within station, to include monitoring of cycle parking facilities.	3-5 years	[TBC]	DfT HCC BBC S106 (developer) See note 1	

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
RA08	Waltham Cross Rail Station - Improve customer real time information	3-5 years	[TBC]	DfT HCC BBC S106 (developer) See note 1	
RA09	Waltham Cross Rail Station - Provide improved cycle storage facilities	3-5 years	£2,000	DfT HCC BBC S106 (developer) See note 1	
Note 1: subject to costings priorities and funding					

Table B.8: UTP Schemes to be Implemented in the First Five Years: Theobalds Grove Rail Station

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
RA16	Theobalds Grove Rail Station - Environmental improvements to Theobalds Grove rail station	0-2 years	£29,000 Scheme programmed	BBC	✓
RA14	Theobalds Grove Rail Station- Provide CCTV coverage of the station and cycle storage	3-5 years	[TBC]	TBC	
RA15	Theobalds Grove Rail Station- Improve customer real time information	3-5 years	[TBC]	TBC	

Table B.9: UTP Schemes for Implementation in the First Five Years: Sustainable Travel, Information and Wide Area Measures

Scheme Ref	Measure	Year	Estimated Cost	Potential Funding Source	Scheme Proforma
WC26	Publish a walking/cycling leaflet and information on HCC and BBC web sites	0-2 years	£20,000	BBC	✓
SC01	Develop Travel Smart – Rolling out the scheme across the area by wards	0-2 years	£400,000 Scheme programmed	Sustrans HIIS BBC	
SC03	Ensure residents in the area receive information on smarter choices and sustainable modes on an annual basis	0-2 years	Scheme programmed as part of SC01	Sustrans HIIS BBC	
BU07	Provide bus real time information on the HCC web site	3-5 years	[TBC]	HCC PTU	

As can be seen from Tables B.1 to B.9 above, there are a number of opportunities for funding the measures proposed for short and medium term delivery. **Tables B.10 to B.27** below arrange these measures by potential funding source. Where a scheme is proposed to be funded by more than one source, it appears on all appropriate tables. The estimated cost in all cases refers to the total cost of the measure, not the cost to be provided by each potential funding source.

Table B.10: UTP Schemes for implementation in the First Five Years: Funding Source – HCC LTP Accessibility

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC11a	Signing improvements between Waltham Cross bus station and rail station	0-2 years	£4,000	-	✓ See Appendix A

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC11b	Provision of toucan crossing across Abbey Road	0-2 years	£210,000	-	✓ See Appendix A
WC22	Signing of cycleway Waltham Cross Town Centre to Abbey Road Roundabout	0-2 years	£1,000	-	✓ See Appendix A
WC24	Enhancements to Monarchs Way Subway - Landscaping/ Lighting & Walkways	0-2 years	£47,500	BBC S106 (developer)	✓ See Appendix A
WC15	Signing of Park Lane to Waltham Cross Town Centre	3-5 years	£1,000	-	✓ See Appendix A
WC21	Signing of Cycleway Link to Enfield from Waltham Cross via Enfield Greenways	3-5 years	£2,000	-	✓ See Appendix A
BU04	Provide an additional bus stop facility at Waltham Cross rail station to allow additional bus services to call there	3-5 years	£20,000	S106 (developer) HCC LTP Bus Patronage	✓ See Appendix A
HP12	Church Lane Shops Access Improvements	3-5 years	[TBC]	-	✓ See Appendix A

**Table B.11: UTP Schemes for implementation in the First Five Years:
Funding Source – HCC LTP Cycling**

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC01a	A121 Eleanor Cross Road Cycleway Final Phase (Linked to Olympic Site)	0-2 years	Scheme programmed	Olympic Delivery Authority British Waterways S106 (developer)	
WC01b	A121 Eleanor Cross Road - Link to Cheshunt Station via Towpath (Linked to Olympic Site)	0-2 years	Scheme programmed	Olympic Delivery Authority British Waterways S106 (developer)	
WC10	Signing of cycle Route Winston Churchill Way to Eleanor Cross Road	0-2 years	£2,000	-	✓ See Appendix A
WC17a	New River Cycle/Footway Phase 1 - Theobalds Lane to College Road	3-5 years	£701,000	HCC LTP RoW S106 (developer)	✓ See Appendix A
WC17b	New River Cycle/Footway Phase 2 - College Road to Church Lane	3-5 years	£503,000	HCC LTP RoW S106 (developer)	✓ See Appendix A
WC20	Cycle enhancements in B176 corridor	3-5 years	£300,000	-	

**Table B.12: UTP Schemes for implementation in the First Five Years:
Funding Source – HCC LTP Bus Patronage**

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
BU04	Provide an additional bus stop facility at Waltham Cross rail station to allow additional bus services to call there	3-5 years	£20,000	S106 (developer) HCC LTP Accessibility	✓ See Appendix A

**Table B.13: UTP Schemes for implementation in the First Five Years:
Funding Source – HCC LTP Right of Way**

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC17a	New River Cycle/Footway Phase 1 - Theobalds Lane to College Road	3-5 years	£701,000	HCC LTP Cycling S106 (developer)	✓ See Appendix A
WC17b	New River Cycle/Footway Phase 2 - College Road to Church Lane	3-5 years	£503,000	HCC LTP Cycling S106 (developer)	✓ See Appendix A

**Table B.14: UTP Schemes for implementation in the First Five Years:
Funding Source – HCC LTP Mode Share to School**

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
HP13	Rosedale Way/Fairfield Primary Safe Routes to School scheme	0-2 years	[TBC]	-	

**Table B.15: UTP Schemes for implementation in the First Five Years:
Funding Source – HCC LTP Speed Compliance**

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
HP09	Goffs Lane speed reduction scheme	3-5 years	[TBC]	-	✓ See Appendix A

**Table B.16: UTP Schemes for implementation in the First Five Years:
Funding Source – HHS (in place of HCC LTP Congestion Funding)**

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
SC01	Develop Travel Smart – Rolling out the scheme across the area by wards	0-2 years	£400,000	Sustrans BBC	
SC03	Ensure residents in the area receive information on smarter choices and sustainable modes on an annual basis	0-2 years	Delivered as part of SC01	Sustrans BBC	
HP01	Improved lining at Monarchs way roundabout	0-2 years	£12,000	-	
HP14	Study - Investigation of A121 route strategy including revised junction at Monarchs Way roundabout	0-2 years	£45,000	S106 (developer)	✓ See Appendix A

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
HP16	Study - Investigation of traffic management strategies for the A10, including signalisation of A121 junction.	0-2 years	£60,000	S106 (developer)	✓ See Appendix A
HP15	Study - Investigate masterplan for Cheshunt town centre to include a revised junction arrangement at the Pond to enable more space to be given over to pedestrians and additional short stay parking for the centre	3-5 years	£39,000	S106 (developer)	

**Table B.17: UTP Schemes for implementation in the First Five Years:
Funding Source – HCC PTU**

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
BU01	Provide more information on county services at Waltham Cross bus station through provision of journey planning maps and more accessible electronic passenger information points	0-2 years	[TBC]	-	
BU16	Provision of bus shelter at Cheshunt rail station	0-2 years	Scheme programmed	-	
BU06	Provide real time bus information and electronic passenger information points at bus stops starting with those most heavily used. (Stops at The Pond, Theobalds Grove rail station, Waltham Cross bus station and Brookfield Centre)	3-5 years	[TBC]	-	
BU07	Provide bus real time information on the HCC web site	3-5 years	[TBC]	-	

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
BU13	Support and promote the hospital hopper	3-5 years	£10,000	-	

Table B.18: UTP Schemes for implementation in the First Five Years: Funding Source – HCC Children Schools & Families

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC08	Hurst Drive Primary School Initiative	0-2 years	Scheme programmed	-	

Table B.19: UTP Schemes for implementation in the First Five Years: Funding Source – HCC (not identified at present)

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
RA03	Waltham Cross Rail Station - Provide lifts for access to southbound platform	3-5 years	[TBC]	DfT BBC S106 (developer) See note 1	
RA04	Waltham Cross Rail Station - Provide new station building with level access	3-5 years	[TBC]	DfT BBC S106 (developer) See note 1	
RA05	Waltham Cross Rail Station - Remodel station frontage and provide drop off facility	3-5 years	[TBC]	DfT BBC S106 (developer) See note 1	

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
RA06	Waltham Cross Rail Station - Provide upgraded passenger waiting areas with improved seating	3-5 years	[TBC]	DfT BBC S106 (developer) See note 1	
RA07	Waltham Cross Rail Station - Improve CCTV coverage within station, to include monitoring of cycle parking facilities.	3-5 years	[TBC]	DfT BBC S106 (developer) See note 1	
RA08	Waltham Cross Rail Station - Improve customer real time information	3-5 years	[TBC]	DfT BBC S106 (developer) See note 1	
RA09	Waltham Cross Rail Station - Provide improved cycle storage facilities	3-5 years	£2,000	DfT BBC S106 (developer) See note 1	
Note 1: subject to costings priorities and funding					

Table B.20: UTP Schemes for implementation in the First Five Years: Funding Source – BBC

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC02	Footway/Cycle way on south side of Winston Churchill Way	0-2 years	Scheme programmed	-	
WC03	A10 Theobalds Lane Cycle/Footbridge	0-2 years	Scheme programmed	Sustrans S106 (developer)	

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC23	Provision of additional CCTV at Monarchs Way Subway	0-2 years	£96,000	-	
WC24	Enhancements to Monarchs Way Subway - Landscaping/ Lighting & Walkways	0-2 years	£47,500	HCC LTP Accessibility S106 (developer)	✓ See Appendix A
WC25	Monarchs Way (Abbey Road) footway	0-2 years	£42,000	-	
WC26	Publish a walking/cycling leaflet and information on HCC and BBC web sites	0-2 years	£20,000	-	✓ See Appendix A
WC28	Hammondstreet pedestrian crossing	0-2 years	[TBC]	-	
RA01	Waltham Cross Rail Station - Implement Phase 2 of BBC Car Park Expansion scheme	0-2 years	£120,000	-	
RA16	Theobalds Grove Rail Station - Environmental improvements to Theobalds Grove rail station	0-2 years	£29,000	-	
SC01	Develop Travel Smart – Rolling out the scheme across the area by wards	0-2 years	£400,000	Sustrans HIIS	

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
SC03	Ensure residents in the area receive information on smarter choices and sustainable modes on an annual basis	0-2 years	Delivered as part of SC01	Sustrans HIIS	
HP06	Eleanor Cross taxi parking provision	0-2 years	£2,000	-	✓ See Appendix A
HP07	Roundel High Street Improvements	0-2 years	£110,000	-	
RA03	Waltham Cross Rail Station - Provide lifts for access to southbound platform	3-5 years	[TBC]	DfT HCC S106 (developer) See note 1	
RA04	Waltham Cross Rail Station - Provide new station building with level access	3-5 years	[TBC]	DfT HCC S106 (developer) See note 1	
RA05	Waltham Cross Rail Station - Remodel station frontage and provide drop off facility	3-5 years	[TBC]	DfT HCC S106 (developer) See note 1	
RA06	Waltham Cross Rail Station - Provide upgraded passenger waiting areas with improved seating	3-5 years	[TBC]	DfT HCC S106 (developer) See note 1	

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
RA07	Waltham Cross Rail Station - Improve CCTV coverage within station, to include monitoring of cycle parking facilities.	3-5 years	[TBC]	DfT HCC S106 (developer) See note 1	
RA08	Waltham Cross Rail Station - Improve customer real time information	3-5 years	[TBC]	DfT HCC S106 (developer) See note 1	
RA09	Waltham Cross Rail Station - Provide improved cycle storage facilities	3-5 years	£2,000	DfT HCC S106 (developer) See note 1	
Note 1: subject to costings priorities and funding					

Table B.21: UTP Schemes for implementation in the First Five Years: Funding Source – Sustrans

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC03	A10 Theobalds Lane Cycle/Footbridge	0-2 years	Scheme programmed	BBC S106 (developer)	
WC12a	Theobalds Lane/High Street Toucan Crossing	0-2 years	£102,000 Scheme in development	-	✓ See Appendix A
WC12b	Signing of Cycle Route - Theobalds Grove to Lee Valley Park	0-2 years	£36,000 Scheme in development	-	✓ See Appendix A

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC13	Signing of Cycle Route - Waltham Cross to Lee Valley Park	0-2 years	£30,000 Scheme in development	-	✓ See Appendix A
WC14	Cycle Route - Theobalds Grove to Cheshunt Station	0-2 years	£246,000 Scheme in development	-	✓ See Appendix A
SC01	Develop Travel Smart – Rolling out the scheme across the area by wards	0-2 years	£400,000 Scheme programmed	HIIS BBC	
SC03	Ensure residents in the area receive information on smarter choices and sustainable modes on an annual basis	0-2 years	Delivered as part of SC01	HIIS BBC	

Table B.22: UTP Schemes for implementation in the First Five Years: Funding Source – S106 Developer Contributions

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC01a	A121 Eleanor Cross Road Cycleway Final Phase (Linked to Olympic Site)	0-2 years	Scheme programmed	HCC LTP Cycling Olympic Delivery Authority British Waterways	
WC01b	A121 Eleanor Cross Road – Link to Cheshunt Station via Towpath (Linked to Olympic Site)	0-2 years	Scheme programmed	HCC LTP Cycling Olympic Delivery Authority British Waterways	

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC03	A10 Theobalds Lane Cycle/Footbridge	0-2 years	Scheme programmed	BBC Sustrans	
WC04	A10 Cycle/Footbridge Link to St Mary's School	0-2 years	Scheme programmed	-	
WC05	Theobalds Lane (east) improvements - cycleway and traffic calming measures - A10 to High Street	0-2 years	Scheme programmed	-	
WC06a	Toucan Crossing of Winston Churchill Way at A10 roundabout	0-2 years	Scheme programmed	-	
WC06b	Winston Churchill Way to A10 Footbridge and Theobalds Lane	0-2 years	Scheme programmed	-	
WC07a	Park Lane Cycle/Footway rail crossing	0-2 years	£1,000,000	-	
WC07b	Park Lane Bridleway crossing	0-2 years	£1,000,000	-	
WC09	Cycle Route – St Mary's School to Bury Green	0-2 years	Scheme programmed	-	
WC24	Enhancements to Monarchs Way Subway - Landscaping/ Lighting & Walkways	0-2 years	£47,500	BBC HCC LTP Accessibility	✓ See Appendix A

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC29	Milne Close Roundabout pedestrian improvements	0-2 years	[TBC]	-	
HP14	Study - Investigation of A121 route strategy including revised junction at Monarchs Way roundabout	0-2 years	£45,000	HIIS	✓ See Appendix A
HP16	Study - Investigation of traffic management strategies for the A10, including signalisation of A121 junction.	0-2 years	£60,000	HIIS	✓ See Appendix A
HP18	Study – Investigate transport measures to support Brookfield Riverside development	0-2 years	To be funded through developer contributions	-	✓ (See appendix A)
BU04	Provide an additional bus stop facility at Waltham Cross rail station to allow additional bus services to call there	3-5 years	£20,000	HCC LTP Bus Patronage HCC LTP Accessibility	✓ See Appendix A
WC17a	New River Cycle/Footway Phase 1 - Theobalds Lane to College Road	3-5 years	£701,000	HCC LTP RoW or Cycling	✓ See Appendix A

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC17b	New River Cycle/Footway Phase 2 - College Road to Church Lane	3-5 years	£503,000	HCC LTP RoW or Cycling	✓ See Appendix A
WC30	Brookfield Lane West toucan crossing	3-5 years	Scheme in development	-	✓ (See appendix A)
HP11	Traffic calming along Brookfield Lane West	3-5 years	[TBC]	-	✓ (See appendix A)
HP15	Study - Investigate masterplan for Cheshunt town centre to include a revised junction arrangement at the Pond to enable more space to be given over to pedestrians and additional short stay parking for the centre	3-5 years	£39,000	HIIS	✓ See Appendix A
RA03	Waltham Cross Rail Station - Provide lifts for access to southbound platform	3-5 years	[TBC]	DfT HCC BBC See note 1	
RA04	Waltham Cross Rail Station - Provide new station building with level access	3-5 years	[TBC]	DfT HCC BBC See note 1	

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
RA05	Waltham Cross Rail Station - Remodel station frontage and provide drop off facility	3-5 years	[TBC]	DfT HCC BBC See note 1	
RA06	Waltham Cross Rail Station - Provide upgraded passenger waiting areas with improved seating	3-5 years	[TBC]	DfT HCC BBC See note 1	
RA07	Waltham Cross Rail Station - Improve CCTV coverage within station, to include monitoring of cycle parking facilities.	3-5 years	[TBC]	DfT HCC BBC See note 1	
RA08	Waltham Cross Rail Station - Improve customer real time information	3-5 years	[TBC]	DfT HCC BBC See note 1	
RA09	Waltham Cross Rail Station - Provide improved cycle storage facilities	3-5 years	£2,000	DfT HCC BBC See note 1	
Note 1: subject to costings priorities and funding					

**Table B.23: UTP Schemes for implementation in the First Five Years:
Funding Source – DfT/Rail Authorities**

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
RA03	Waltham Cross Rail Station - Provide lifts for access to southbound platform	3-5 years	[TBC]	HCC BBC S106 (developer) See note 1	
RA04	Waltham Cross Rail Station - Provide new station building with level access	3-5 years	[TBC]	HCC BBC S106 (developer) See note 1	
RA05	Waltham Cross Rail Station - Remodel station frontage and provide drop off facility	3-5 years	[TBC]	HCC BBC S106 (developer) See note 1	
RA06	Waltham Cross Rail Station - Provide upgraded passenger waiting areas with improved seating	3-5 years	[TBC]	HCC BBC S106 (developer) See note 1	
RA07	Waltham Cross Rail Station - Improve CCTV coverage within station, to include monitoring of cycle parking facilities.	3-5 years	[TBC]	HCC BBC S106 (developer) See note 1	
RA08	Waltham Cross Rail Station - Improve customer real time information	3-5 years	[TBC]	HCC BBC S106 (developer) See note 1	

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
RA09	Waltham Cross Rail Station - Provide improved cycle storage facilities	3-5 years	£2,000	HCC BBC S106 (developer) See note 1	
RA10	Cheshunt Rail Station - Provision of longer platforms to accommodate longer trains	3-5 years	[TBC]	-	
Note 1: subject to costings priorities and funding					

Table B.24: UTP Schemes for implementation in the First Five Years: Funding Source – Olympic Delivery Authority

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC01a	A121 Eleanor Cross Road Cycleway Final Phase (Linked to Olympic Site)	0-2 years	Scheme programmed	HCC LTP Cycling British Waterways S106 (developer)	
WC01b	A121 Eleanor Cross Road – Link to Cheshunt Station via Towpath (Linked to Olympics Site)	0-2 years	Scheme programmed	HCC LTP Cycling British Waterways S106 (developer)	

Table B.25: UTP Schemes for implementation in the First Five Years: Funding Source – British Waterways

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
WC01a	A121 Eleanor Cross Road Cycleway Final Phase (Linked to Olympic Site)	0-2 years	Scheme programmed	HCC LTP Cycling Olympic Delivery Authority S106 (developer)	
WC01b	A1221 Eleanor Cross Road – Link to Cheshunt Station via Towpath (Linked to Olympic Site)	0-2 years	Scheme programmed	HCC LTP Cycling Olympic Delivery Authority S106 (developer)	

Table B.26: UTP Schemes for implementation in the First Five Years: Funding Source – To be Confirmed

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
HP10	College Road / Cromwell Road Roundabout Improvements	0-2 years	[TBC]	-	
BU03	Modify existing bus services to directly serve Waltham Cross rail station (working with bus operators)	3-5 years	[TBC]	-	
BU05	Increase frequency and range of bus service stopping at Cheshunt Station (working with bus operators)	3-5 years	[TBC]	-	

Scheme Ref	Measure	Year	Estimated Cost	Other Potential Funding Source	Scheme Pro-forma
BU14	Study - Work with BBC, TfL and other bus operators to investigate capacity and layover issues at Waltham Cross bus station	3-5 years	£100,000	-	✓ See Appendix A
RA14	Theobalds Grove Rail Station - Provide CCTV coverage of the station and cycle storage	3-5 years	[TBC]	-	
RA15	Theobalds Grove Rail Station - Improve customer real time information	3-5 years	[TBC]	-	

Table B.27 below lists schemes which have been identified for delivery after the initial five year period.

Table B.27: UTP Schemes for implementation after the First Five Years

Scheme Ref	Measure	Outline Cost	Potential Funding Source
WC16	Completion of Winston Churchill Way to M25	Low	S106 (developer)
WC17c	New River Cycle/Footway Phase 3 – Church Lane to Brookfield Centre	High	HCC LTP – RoW or Cycling
WC18	Signing of Cycle Route – Goff's Oak to Cheshunt Station east-west route	High	HCC LTP – Cycling S106 (developer)

WC19	Signing of Cycle Route – Hammondstreet to Rosedale linking with Goff's Oak to Cheshunt rail station route	High	HCC LTP – Cycling
BU02	Study – Provide bus priority facilities and signalisation at Monarchs Way roundabout	Low	HCC LTP- Bus punctuality HCC LTP – Accessibility HCC LTP – User Satisfaction HCC LTP – Patronage
BU11	Provide improved east-west bus services in the Cheshunt area (working with bus operators)	TBC	HCC LTP – PTU
BU12	Provide minimum half hourly bus services from all parts of the area to Brookfield Centre (working with bus operators)	TBC	S106 (developer) Others to be confirmed
BU17	Implementation of public transport facilities in line with Brookfield Masterplan	High	S106
RA02	Waltham Cross Rail Station – Improve internal pedestrian link between Network Rail car park and station building	TBC	DfT HCC BBC S106 (developer) subject to costings, priorities and funding)
RA12	Theobalds Grove Rail Station – Provide lifts to platforms	TBC	TBC

RA13	Theobalds Grove Rail Station – Improve station building and passenger waiting areas	TBC	TBC
SC02	Develop a car sharing scheme covering the Cheshunt and Waltham Cross area	Low	TBC
HP02	Provide CCTV and VMS signing A10 (M25 – Church Road, on approaches to Cheshunt and M25) providing information on congestion	Low	HIIS



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