

# Option identification and evaluation

This chapter develops a series of potential improvements for West Thurrock Way and appraises these in line with key evaluation criteria

# 4

# Option identification and evaluation

## Introduction

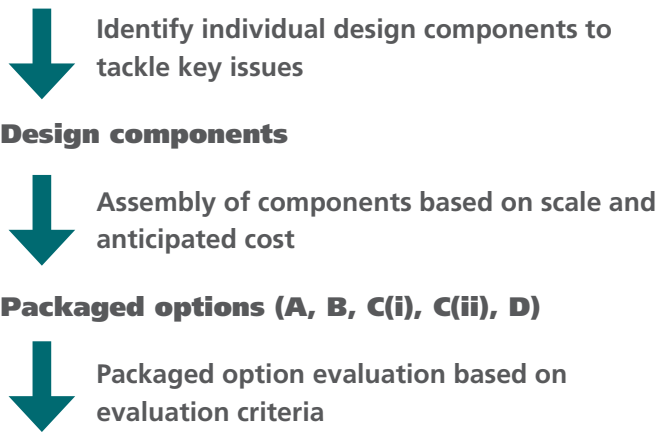
In this section, we present and then appraise the advantages and disadvantages of a number of potential improvements for West Thurrock Way. The objectives of the study have been set out earlier in this report but essentially the improvement options that we have suggested respond to the issues identified in chapter 2. We propose schemes that enhance connectivity at the key locations identified in the analysis and ultimately underpin the Masterplan and support the development of a new Regional town centre.

A combination of the emerging Lakeside Masterplan work and the baseline information gathering and issues appreciation work, forming part of the West Thurrock Way Integration Feasibility Study, has provided a basis for identifying access and public realm improvement schemes along West Thurrock Way. Chapter 2 highlights some of the key issues currently experienced by users of West Thurrock Way including the overriding issue of poor pedestrian accessibility on a localised level between different land uses on each side of the road and on a more strategic level across the wider Lakeside Basin area.

The desire to achieve a significant enhancement to the public realm as part of ‘civilising the streets’ and addressing the negative aspects of a heavily trafficked road such as West Thurrock Way, has been a particularly important objective given the wider regeneration objectives for Lakeside, which are based on high quality redevelopment incorporating retail residential and leisure land uses.

## Approach

### West Thurrock Way baseline analysis



### Identification of key options to bring forward

Our approach started by considering how a large suite of potential interventions varying in scale, scope and impact could be rationalised for the length of West Thurrock Way. By subdividing the road into 4 key links from Lancaster Roundabout in the east, through to the A1306 in the north, a selection of interventions was compiled focusing on the particular requirements of each distinct stretch of road. This helped to best fulfil the intrinsic functional requirements for the different parts of West Thurrock Way, while acknowledging the role of the road as a whole.

A suite of components was developed for each link and packaged into a series of options, based on the scale of change and anticipated cost:

- A. Small scale or light touch approach with no significant highway configuration changes**
- B. Medium scale approach with prioritised traffic management changes**
- C.(i) Significant road civilising measures**
- C.(ii) Significant junction remodelling measures**
- D. Large scale transformational connectivity projects**

## Evaluation criteria

The packaged options for each of the links have been appraised based on a set of criteria that reflect the brief for this work and the overall vision for Lakeside, namely:

- Traffic capacity/safety**  
Although estimation of the trip generation of the proposed development schedule for the Masterplan (not known at this point but being modelled by SKM in the near future) and traffic modelling of key junctions were beyond the scope of this study, we have reviewed the existing and potential future traffic flows in the area in order to take a view on the adequacy of capacity of the highway network with our proposals in place. This is largely based on an estimated appreciation of the capacity of links and junctions and an understanding of the likely level of total vehicle / PCUs per hour that could be accommodated through our proposed changes.
- Vehicular accessibility / route choice**  
An assessment of any changes in vehicular accessibility to land uses along the length of West Thurrock Way plus changes to vehicular route choice resulting from the measures.
- Pedestrian environment (including localised accessibility and connectivity)**  
It is accepted that civilising streets through a combination of measures which may add, subtract or adapt functions result in improved environment for pedestrians by reducing the dominance of vehicles. Where appropriate the options that we have developed include improvements for pedestrians such as formal and informal pedestrian crossings and kerb build-outs. A stated objective of the study is to enhance localised accessibility between land uses, both existing and future, that straddle West Thurrock Way within the study area. We will assess the extent to which options meet this objective.
- Cyclist environment**  
Again it is generally accepted that civilising streets represents an improved environment for cyclists and reduces the dominance and speed of vehicles. Where appropriate the options that we have developed include improvements for

cyclists such as off-highway cycle lanes, advance stop lines and public cycle parking in appropriate locations.

- Public transport**  
A general improvement in the environment for pedestrians through the improvement of crossing facilities and footways will enhance permeability and accessibility to public transport available at Chafford Hundred rail station and Lakeside shopping centre bus stations.
- Quality of the public realm**  
Redesigning the streets in and around the gyratory will provide the opportunity to improve the quality of the public realm through ‘civilising the streets’, such as providing consistent quality and width of footways and providing opportunities for gateway treatments.

- Extent of land take**  
A number of the options we have developed incorporate land take in order to remove road capacity at roundabouts and on links.

- Cost / deliverability**  
We have made an assessment of the cost and deliverability associated with the options we have developed. The implementation costs have been estimated based on calculations of areas and materials allied to a standard set of rates which are in turn based on our experience of designing and implementing similar schemes in South East England. Where appropriate this also assumes that existing infrastructure can be re-used and added to and there is not a need for completely new construction.

Where possible, quantitative assessments of the performance of the various options against these criteria have been undertaken. This has been possible to varying degrees for the traffic capacity, extent of land take and cost / degree of change criteria. Assessments against the other criteria have been entirely qualitative in nature. Each of the options have been compared to the existing situation across all criteria and scored on a scale of minus three to plus three to reflect varying degrees of positive or negative impacts with a zero equating to no discernible effect.

## Options appraisal locations within study area

1. Lancaster Roundabout to TGI Friday roundabout
2. TGI Friday roundabout to Lakeside Leisure Park roundabout
3. Lakeside Leisure Park to Lakeside Retail Park roundabout
4. Lakeside Retail Park roundabout to junction with A1306 (Arterial Road)



Fig. 25 - Link location map



# 1. West Thurrock Way - Lancaster roundabout to TGI Friday roundabout

The following options have been considered for this section:

**A. Pedestrian / cycle access enhancement package**

- (i) Existing footway re-surfacing
- (ii) Introduce shared use footway / enhanced cycle way on north side of West Thurrock Way
- (iii) Enhanced public cycle parking facilities
- (iv) Enhanced cycle and pedestrian wayfinding

**B. Incremental road civilisation / traffic management package**

All or elements of the above plus:

- (i) Re-location and upgrade of current formal pedestrian crossing (from puffin to Toucan) to the west of the Lancaster roundabout slightly further west to address pedestrian desire lines.
- (ii) Addition of new formal pedestrian crossing on desire line at West Thurrock Way near junction with Lancaster roundabout.
- (iii) Removal of west-bound slip lane from Heron Way directly onto West Thurrock Way
- (iv) Addition of signalised crossing on West Thurrock Way at junction of TGI roundabout and signalised crossing on Costco access road. Supports strategic link from

Hammersons site through to Lakeside shopping centre identified in the Masterplan work.

- (v) Introduce new off road footpath link from roundabout along western edge of South Lake (rear of Lakeside Retail Park) to the landing point of proposed new pedestrian bridge across South Lake.
- (vi) Narrow width of westbound carriageway from 10.25m to approximately 8m. Maintain width of eastbound carriageway at 7.5m. Maintain two lanes in each direction. Utilise space for increased width of central median.
- (vii) Tree planting in central median
- (viii) New road surfacing to encourage lower speeds



Fig. 26 - Link 1 Option A

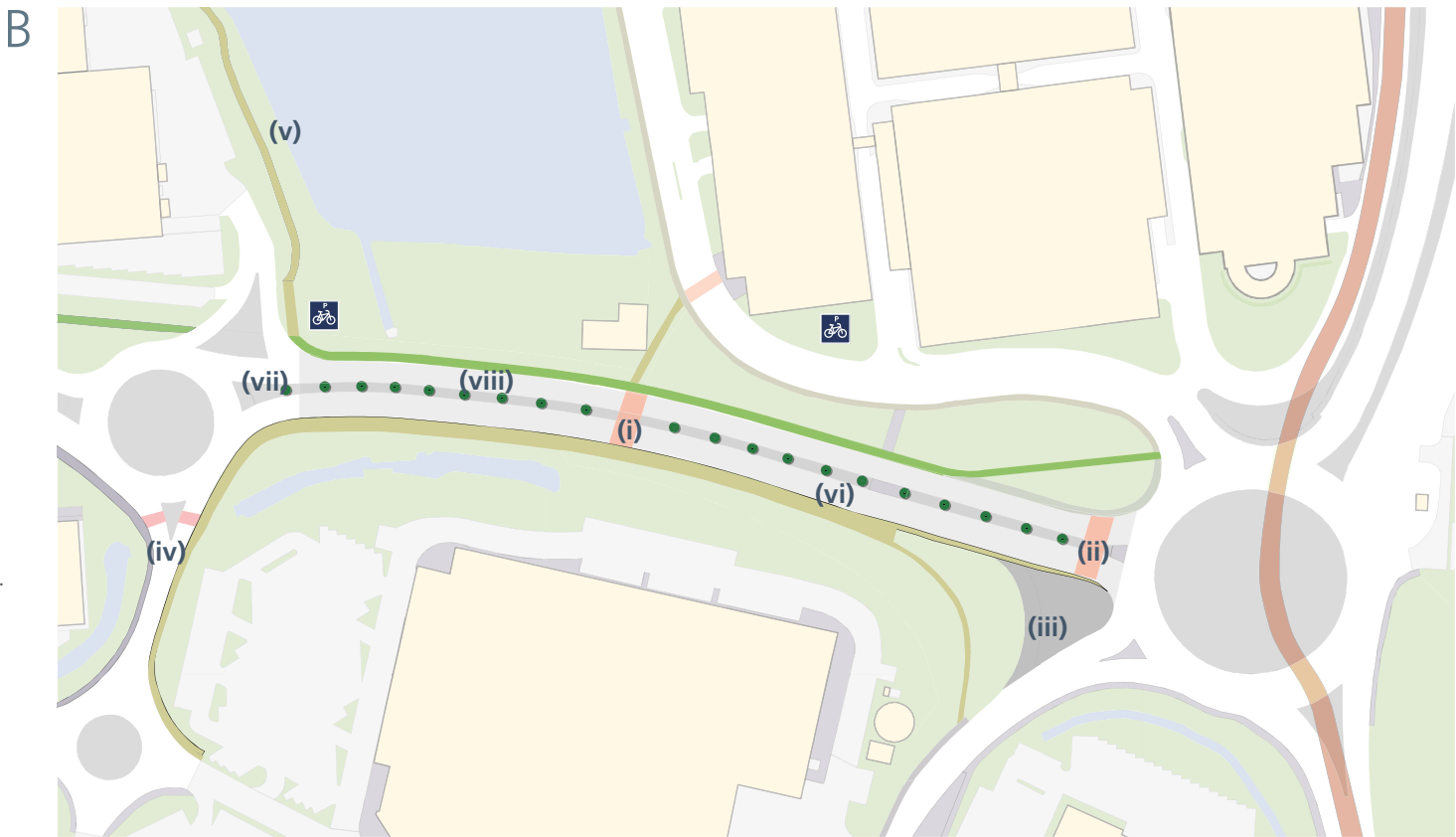


Fig. 27 - Link 1 Option B



**C(i) Roundabout signalisation and road civilisation package**

- All or elements of the above plus:
  - (i) Full signalisation of three arms of TGI Friday roundabout (both West Thurrock Way arms and Costco access road arm) to include formal crossing facilities for pedestrians



Fig. 28 - Link 1 Option C(i)

**C(ii) Junction and crossing re-modelling package**

- All or elements of A and B plus:
  - (i) Removal of roundabout and replacement with signalised road junction on all 4 arms
  - (ii) Widened toucan crossing arrangement on east arm to facilitate greater crossing capacity and cycle permeability north-south

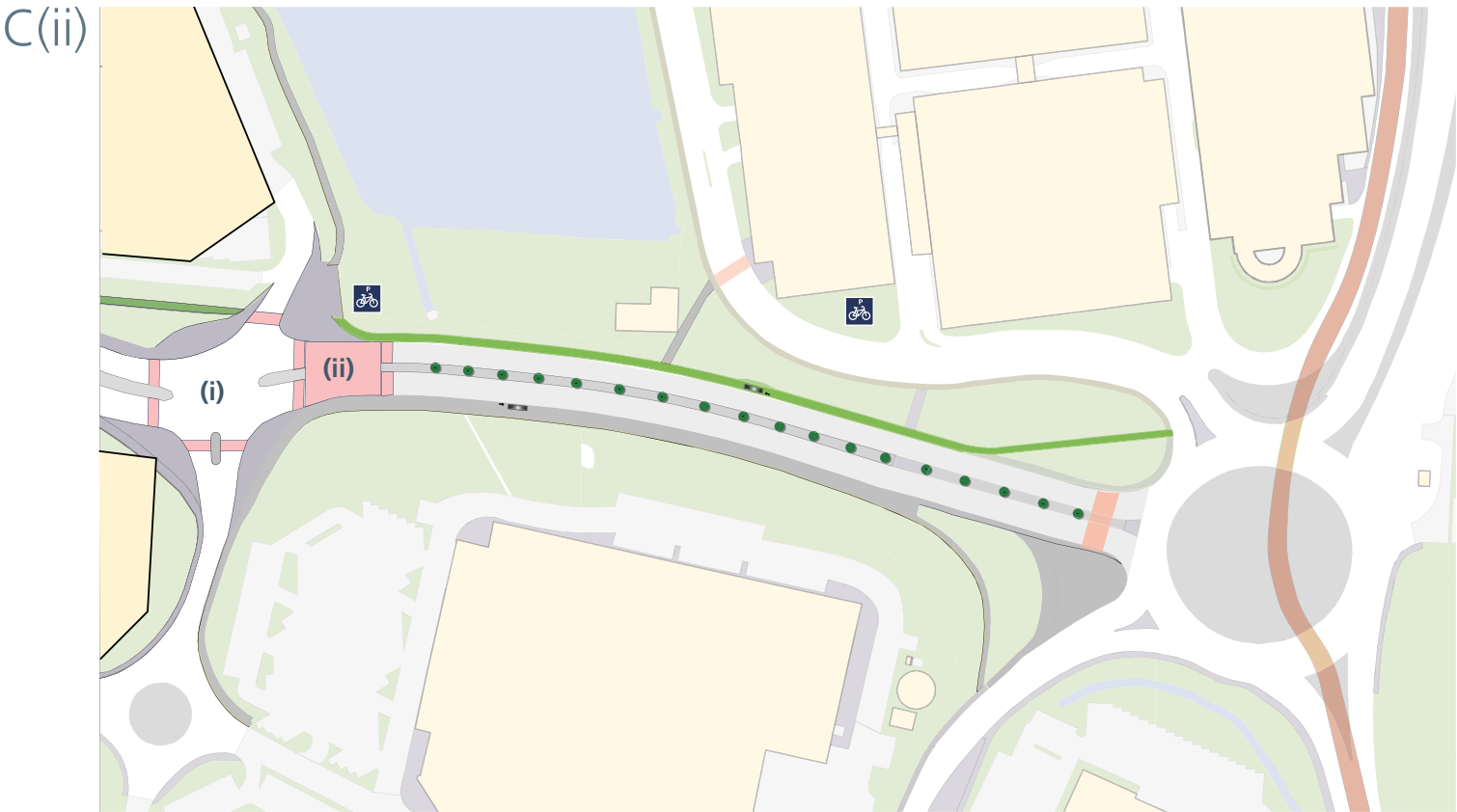


Fig. 29 - Link 1 Option C(ii)

**D(i) New Green bridge to link Lakeside shopping centre to Hammersons site**

(i) New green bridge on SW to NE alignment connecting to the south-west corner of South Lake.

**D(ii) Subway to facilitate strategic connection to Lakeside Shopping Centre**

(i) New 3m wide quality subway facility to facilitate enhanced crossing to Lakeside Shopping Centre. Alignment to connect north-west corner of Costco site to the south-west corner of South Lake.

**D(iii) Public Square to facilitate strategic connection to Lakeside Shopping Centre**

(i) New public square similar to facilitate enhanced at grade crossing to Lakeside Shopping Centre

It should also be noted that Thurrock Council has plans to introduce a bus priority scheme at Lancaster roundabout, part of a longer corridor scheme, originally part of SERT. This scheme has been included on the locations plans but has not been included in the subsequent evaluation process.

D(i)

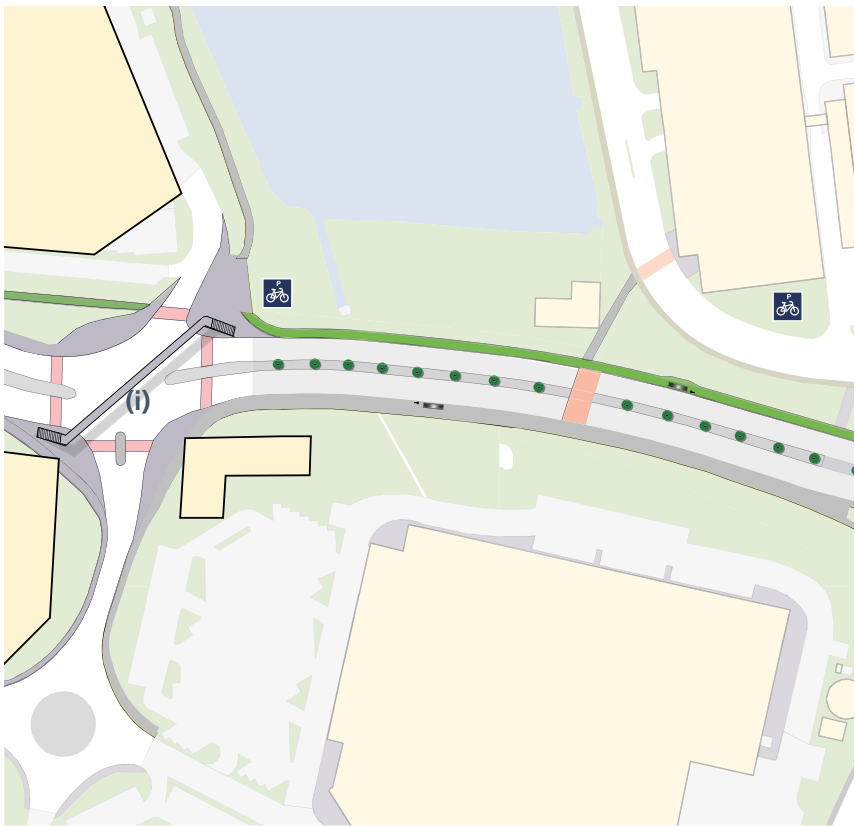


Fig. 30 - Link 1 Option D(i)

D(ii)

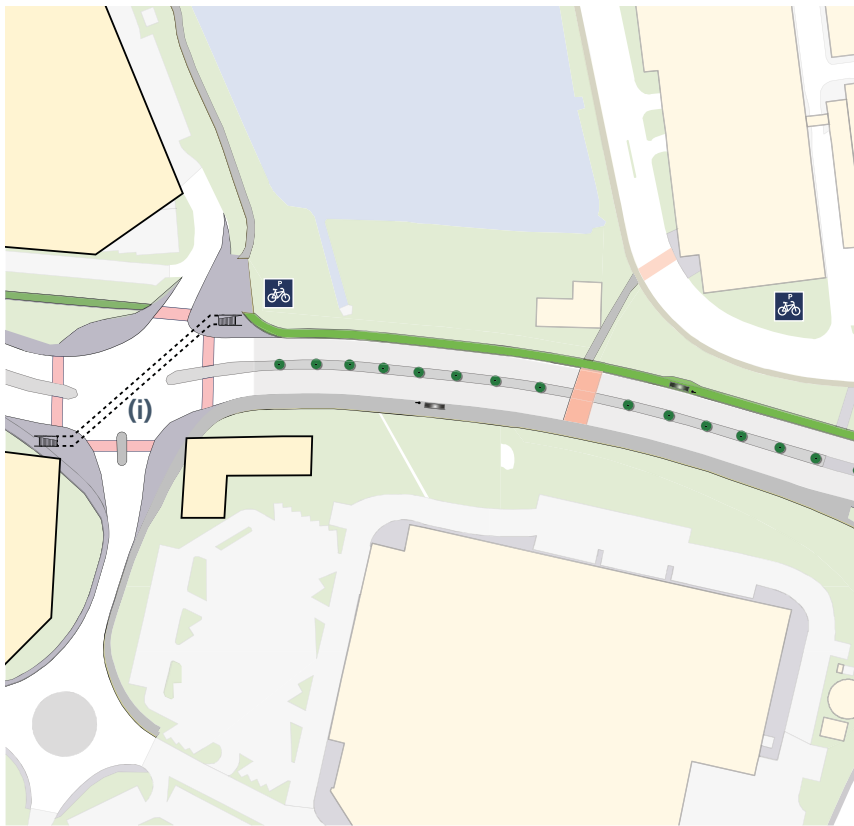


Fig. 31 - Link 1 Option D(ii)

D(iii)



Fig. 32 - Link 1 Option D(iii)

West Thurrock Way - Lancaster roundabout to TGI Friday roundabout scheme evaluation

Criteria	Option A Pedestrian and cycle package	Option B Incremental road civilisation	Option C (i) Roundabout signalisation package	Option C (ii) Junction re- modelling package	Option D (i) New Green bridge	Option D (ii) Subway	Option D (iii) Public Square
Traffic capacity	0	-1	-1	-1	0	0	-1
Vehicular accessibility and route choice	0	0	-1	-1	0	0	0
Pedestrian environment	1	1	2	2	2	1	3
Cyclist environment	2	2	2	2	1	1	2
Public Transport	0	1	2	2	1	1	1
Quality of the public realm	0	1	1	2	2	1	3
Extent of land take	0	0	0	0	-2	-2	-2
Cost / deliverability	-1	-1	-2	-2	-3	-3	-2
Total	+2	+3	+3	+4	+1	-1	+4

Fig. 33 - Link 1 Evaluation Matrix

The performance of the options against the eight criteria is compared and contrasted below:

Traffic capacity / safety

Four of the proposed schemes have some negative impact on traffic capacity. The public square option D (iii) does not have a considerable impact on traffic capacity in its own right as dual carriageway is maintained in each direction, but when packaged with elements of A and B it scores a -1. The bridge and subway options being grade separated have no impact on traffic capacity which is also true of option A.

Vehicular accessibility and route choice

There is no overall impact of package A on route choice and vehicular accessibility and access to current land use activities along West Thurrock Way is maintained as at present. With package B there is a negligible impact on vehicle access to land uses along West Thurrock Way through the loss of the Heron Way slip, although this has

been scored a 0 as overall vehicle accessibility is not seriously affected. Options C(i) and (ii) result in a marginal reduction in vehicular accessibility through the measures mentioned above plus signalisation / remodelling of the TGI Friday roundabout. It should be highlighted the C and D options are only likely to be considered as viable if land use changes as set out in the Masterplan are realised with potential reduction in car-borne trips, and greater reliance made on public transport and walking / cycling for trips into and within the area. Options D (i) and (ii) are considered traffic neutral.

Pedestrian environment

Option A measures are relatively short term that could deliver quick but relatively small improvements in the pedestrian environment and critically to the objectives of this study, improve local visibility and network accessibility across West Thurrock Way. Fundamentally traffic flows along

West Thurrock Way are likely to remain the same within the timescales that these measures are relevant.

Option B will result in quite significant improvements in this location through the introduction of both at grade crossing facilities at TGI Friday roundabout and a new footpath running at the back of the Lakeside Retail Park service area, adjacent to South Lake which would connect to the new pedestrian bridge across South Lake. This facilitates a key pedestrian link between Lakeside shopping centre and the south side of West Thurrock Way. The C options when added to the elements of the B package also result in significant improvements to the pedestrian environment and pedestrian connectivity through the major reduction in traffic volume, speeds, severance and potentially increased informal crossing opportunities using the central median. This is in addition to the formal opportunities created through the relocated and new pedestrian crossings. The D options and D(i) and (iii) particularly also provide a significant enhancement in connectivity and strategic access.

Cyclist environment

Option A creates an enhanced cycle facility and new surface on the north side of West Thurrock Way with supporting signage and new cycle parking facilities and is accordingly scored with +2. Option B offers an enhanced experience for cyclists with the same elements of A but including scope for an enhanced cycle track on the south side of West Thurrock Way and improved crossing facilities through the Toucan crossings introduced. The C options when combined with elements of A and B offer a further improvement in the cycling environment through reduction in traffic speeds and potentially traffic volumes and informal crossing points. Options D (i) and (ii) improve strategic cycling connectivity across the wider Lakeside Basin through the provision of good quality grade separated links over and under West Thurrock Way.

Public Transport

Option A has a neutral impact on public transport, with option B enabling public transport enhancements through

the provision of east and west bound bus stops. The C options also include the bus stop element but taken in their own right may have a small impact on bus service operations. The D options are anticipated to have a neutral impact on public transport operations and an overall positive impact in terms of improved accessibility to Chafford Hundred Station and Lakeside bus station.

Quality of the public realm

Option A offers small improvements to the public realm of West Thurrock Way but it is options B, C (i) and (ii) and the D options that contribute most significantly towards improving the public realm. This is through the development of an incrementally higher quality environment with better spaces and links, enhanced materials and a reduction in traffic dominance and speeds.

Extent of land take

The land take required for Option A is effectively neutral as it does not require any road capacity or space from adjacent land parcels. Option B requires some land from the South Lake bank to the rear of the Lakeside Retail Park service area to enable the footpath to the South Lake Bridge to be constructed. The C options are relatively neutral in the sense that some small amounts of land might be needed to facilitate reconfiguration of roundabouts, but carriageway space is also handed back for other uses. In the case of the D options the green bridge, new public square and subway are likely to require land for abutments beyond the extent of the public highway which may be costly and challenging to secure.

Cost / degree of change

The C and particularly the D major crossing infrastructure options are the costliest. A green bridge in this location is estimated to cost in the order of £2.5 to 3 million with a subway estimated at c£3 million. Relatively speaking the C Options are less expensive but still are estimated to cost c£2 million. Options A and B are significantly less expensive at £275,000 and £650,000 respectively.



## 2. TGI Friday roundabout to Lakeside Leisure Park roundabout

The following options have been considered for this section:

**A. Pedestrian / cycle access enhancement package**

- (i) Upgrade of existing formal pedestrian crossing located to the west of the TGI Friday roundabout from Puffin to Toucan.
- (ii) Footway widening on the north side (part) and footway re-surfacing
- (iii) Introduce shared use footway / enhanced cycle way on north side of West Thurrock Way
- (iv) Enhanced public cycle parking facilities
- (v) Enhanced cycle and pedestrian wayfinding

**B. Incremental road civilisation / traffic management package**

- All or elements of A and B plus:
  - (i) Narrow width of westbound carriageway from 10.00m to approximately 8m. Maintain width of eastbound carriageway at 7.5m. Maintain two lanes in each direction. Utilise space for increased width of central median with tree planting.
  - (ii) Introduction of pedestrian crossings on two arms of Lakeside Leisure Park roundabout (one to the immediate west of Lakeside Leisure Park roundabout) and one across access road to Leisure Park to facilitate connection from Hammersons site to Lakeside Retail Park site.
  - (iii) Removal of guardrail from Lakeside Leisure park roundabout.
  - (iv) Tree planting in central median
  - (v) New road surface to encourage lower speeds

A

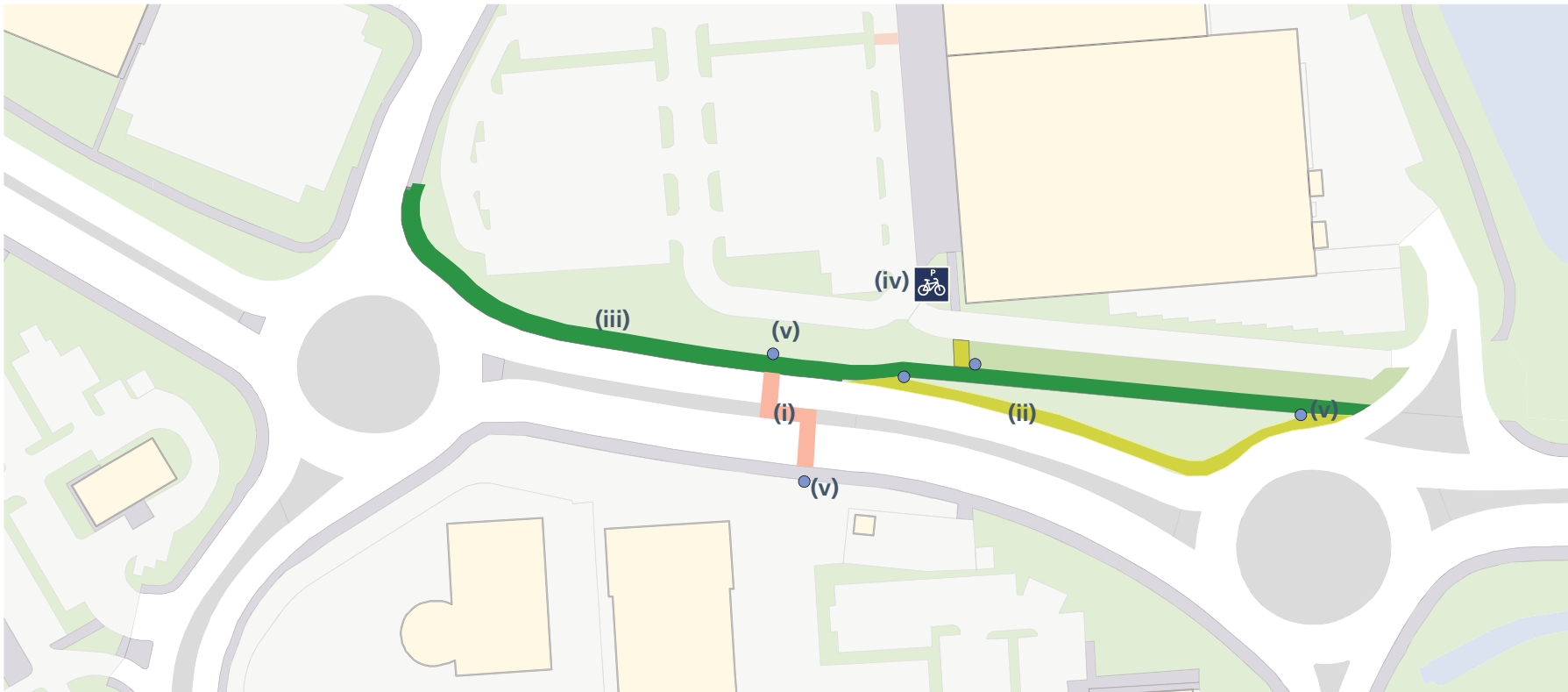


Fig. 34 - Link 2 Option A

B

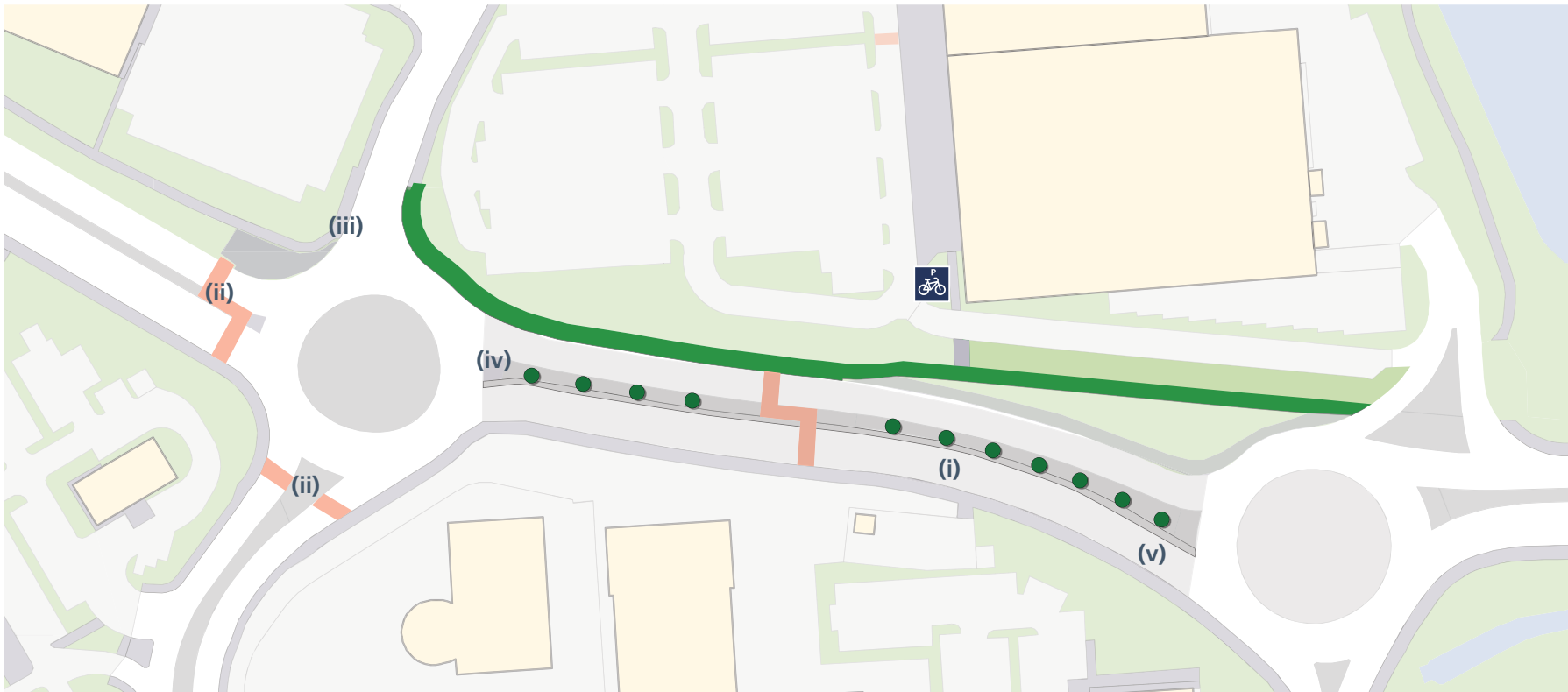


Fig. 35 - Link 2 Option B

2. TGI Friday roundabout to Lakeside Leisure Park roundabout

C(i) Significant road civilisation / roundabout signalisation package

- (i) Major civilisation of West Thurrock Way to narrow carriageways in both directions to approximately 6.4m but maintain two lanes in each direction.
- (ii) Full signalisation of all 4 arms of Lakeside Leisure park roundabout to include formal crossings for pedestrians.

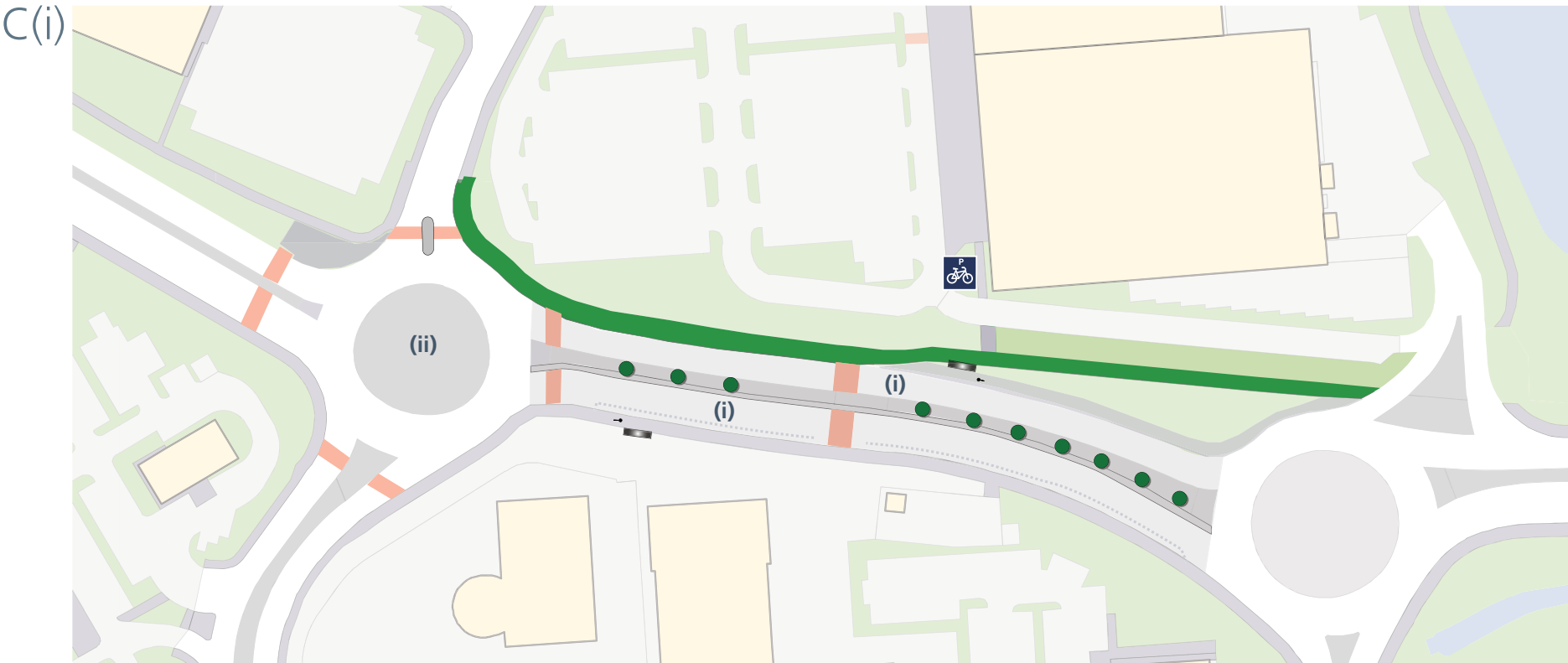


Fig. 36 - Link 2 Option C(i)

C(ii) Significant road civilisation and junction re-modelling package

- (i) Major civilisation of West Thurrock Way to narrow carriageways in both directions to approximately 6.4m but maintain two lanes in each direction.
- (ii) Removal of Lakeside Leisure Park roundabout and replacement with signalised road junction on all 4 arms.
- (iii) Re-alignment of West Thurrock Way west of TGI Friday roundabout
- (iv) Addition of servicing facilities / parking and manouvering lane on nearside of westbound carriageway.



Fig. 37 - Link 2 Option C(ii)

## TGI Friday roundabout to Lakeside Leisure Park roundabout scheme evaluation

Criteria	Option A Pedestrian and cycle package	Option B Incremental road civilisation	Option C (i) Significant road civilisation / roundabout signalisation package	Option C (ii) Significant road civilisation, junction re- modelling and servicing facilities on westbound carriageway package
Traffic capacity	0	-1	-1	-1
Vehicular accessibility and route choice	0	0	-1	-1
Pedestrian environment	1	1	2	2
Cyclist environment	1	1	2	2
Public Transport	0	1	1	1
Quality of the public realm	0	1	1	2
Extent of land take	0	0	0	0
Cost / degree of change	-1	-1	-2	-2
Total	+1	+2	+2	+3

Fig. 38 - Link 2 Evaluation Matrix

The performance of the options against the eight criteria is compared and contrasted below:

### Traffic capacity / safety

Three of the proposed schemes have some impact on traffic capacity: options B, C(i) and C(ii). Option A is regarded as being traffic neutral with option B having a relatively small impact on highway capacity through relatively minor carriageway narrowing and additional crossings on the roundabout. Option C(i) also has an impact on highway capacity through a reduction in carriageway widths (although two lanes in each direction are maintained) and signalisation of the roundabout.

### Vehicular accessibility and route choice

Option A has no impact on the ability of vehicles to access the activities at either Lakeside Leisure Park to the south of the roundabout or to Lakeside Retail Park to the north of the roundabout. Option B has a very small impact through the creation of new pedestrian crossings on two arms of the Lakeside Leisure Park roundabout and through some limited carriageway narrowing west of the TFI Friday roundabout. The C options have some impact on vehicle accessibility through a more significant reduction in road capacity along this section of road and a potential re-configuration of the Lakeside Leisure Centre roundabout, although it should be stressed that it is still possible to access uses along West Thurrock Way. In keeping with the analysis of the previous section of West Thurrock Way it should be pointed out that the C options are only likely to be viable if the land uses in the area change in line with the Masterplan aspirations to become less dependent on car-borne access.

### Pedestrian environment

Option A creates some short term improvements to the pedestrian environment through improved crossing facilities and new footway surfaces. These benefits are fairly limited though and it is only the elements included in Options B and C that generate the step change in pedestrian environment and connectivity that underpin the objectives of this study. Option B will enable an improvement in local accessibility between Lakeside Retail Park and Lakeside Leisure Park through the new crossings at the Lakeside Leisure Park roundabout. Option C however will enable more informal pedestrian crossing movements along the whole length of this section of road through carriageway narrowing and reduction in road speeds and traffic volumes.

### Cyclist environment

Options B and C provide the greatest benefit to cyclists through civilising this section of West Thurrock Way and making both journeys along the road and across the road safer and more pleasant through a reduction in traffic speeds and volumes. Option C in particular is likely to result in more confident cyclists sharing the carriageway with other vehicles. This is less likely to be the case with Option B, but the narrowing of the carriageway does provide the opportunity for cycle facilities off-carriageway on both sides of the road along this section. Option A will also serve to increase the attractiveness of West Thurrock Way as a cycle route through the creation of an improved shared use footway / cycle way on the northern side of the road.

### Public Transport

Option A makes a very small contribution to improving access to public transport through the provision of enhanced signage but relative to other options this is considered to be too minor to warrant a score. Option B makes a greater contribution through enhanced signage, improved, widened footways and enhanced pedestrian crossing facilities at Lakeside Leisure Park roundabout, plus importantly a bus stop in each direction to serve this link. The C options offer the same facility but also the greater potential and case for

bus routes to operate on West Thurrock Way to support new land uses and building frontages that address the road.

### Quality of the public realm

Option A offers relatively minor improvements to the public realm on this section of West Thurrock Way. Options B and C offer a much greater opportunity for improving the public realm along this section of West Thurrock Way, with the C options in particular resulting in a significant uplift through a potential reduction of road speeds and traffic volume, and better quality spaces and use of new materials.

### Extent of land take

Options A and B are both neutral options as there is no requirement for land take outside the boundary of the public highway. The C options may require a very small element of land take to facilitate roundabout reconfiguration and signalisation, but in all likelihood can be delivered within the highway boundary. With both options B and C the carriageway narrowing actually adds space back for enabling public realm improvements.

### Cost / degree of change

Options B and C are, relatively speaking, the most expensive options to deliver for this link, with option C(ii) likely to cost in the order of £3.8million. Option A is a relatively low cost option at £300,000.



### 3. Lakeside Leisure Park roundabout to Lakeside Retail Park roundabout

The following options have been considered for this section:

**A. Pedestrian / cycle access enhancement package**

- (i) Upgrade of existing formal pedestrian crossing at Lakeside Retail park roundabout from puffin to toucan, and removal of guardrail.
- (ii) Footway widening on the north side (part) and footway re-surfacing
- (iii) Introduction of shared use footway / cycle way on north side of West Thurrock Way
- (iv) Enhanced public cycle parking facilities
- (v) Enhanced cycle and pedestrian wayfinding (indicative placement shown)

**B. Incremental road civilisation / traffic management package**

- All of the above plus:
  - (i) Narrow width of westbound carriageway from 10m to approximately 8m. Maintain width of eastbound carriageway at 7.3m. Maintain two lanes in each direction. Introduction of toucan crossing on Weston Avenue arm of Lakeside Retail Park roundabout. Utilise space for increased width of central median.
  - (ii) Introduction of toucan crossing on access road into Lakeside Retail Park
  - (iii) Introduction of staggered crossing across West Thurrock Way linking movements to the access ramp to the south.
  - (iv) Removal of guardrail from Lakeside Retail Park roundabout
  - (v) Tree planting in central median
  - (vi) New road surface to encourage lower speeds

A

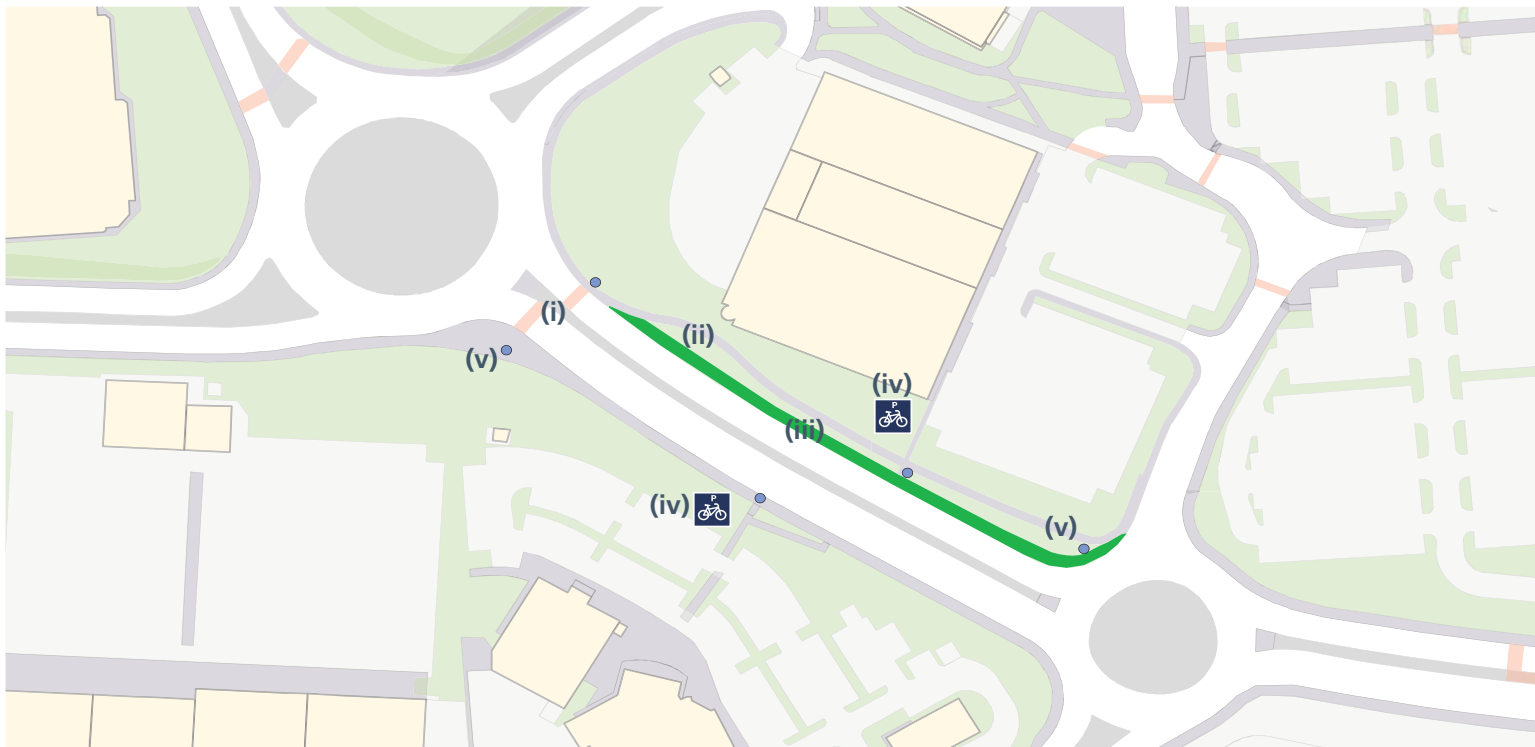


Fig. 39 - Link 3 Option A

B



Fig. 40 - Link 3 Option B

### 3. Lakeside Leisure Park roundabout to Lakeside Retail Park roundabout

**C(i) Significant road civilisation / roundabout signalisation package**

- (i) Major civilisation of West Thurrock Way to narrow carriageways in both directions to approximately 6.4m but maintain two lanes in each direction.
- (ii) Full signalisation of all 4 arms of Lakeside Retail Park roundabout to include formal crossings for pedestrians.

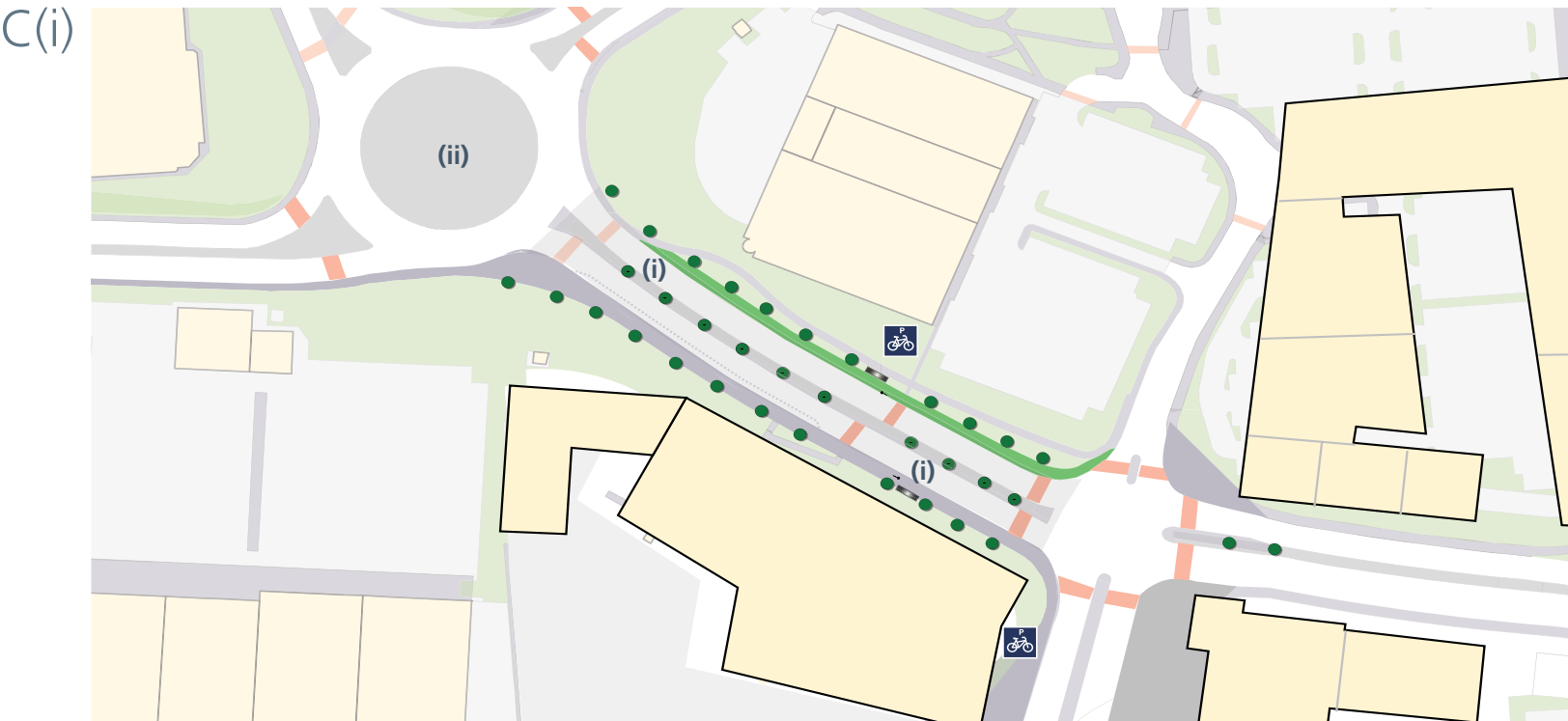


Fig. 41 - Link 3 Option C(i)

**C(ii) Significant road civilisation, junction re-modelling and servicing facilities on westbound carriageway package**

- (i) Major civilisation of West Thurrock Way to narrow carriageways in both directions to approximately 6.4m but maintain two lanes in each direction.
- (ii) Removal of Lakeside Retail Park roundabout and replacement with signalised road junction on all 4 arms.
- (iii) Re-alignment of West Thurrock Way west of Lakeside Leisure Park roundabout
- (iv) Addition of servicing facilities / parking and manouvering lane on nearside of westbound carriageway.

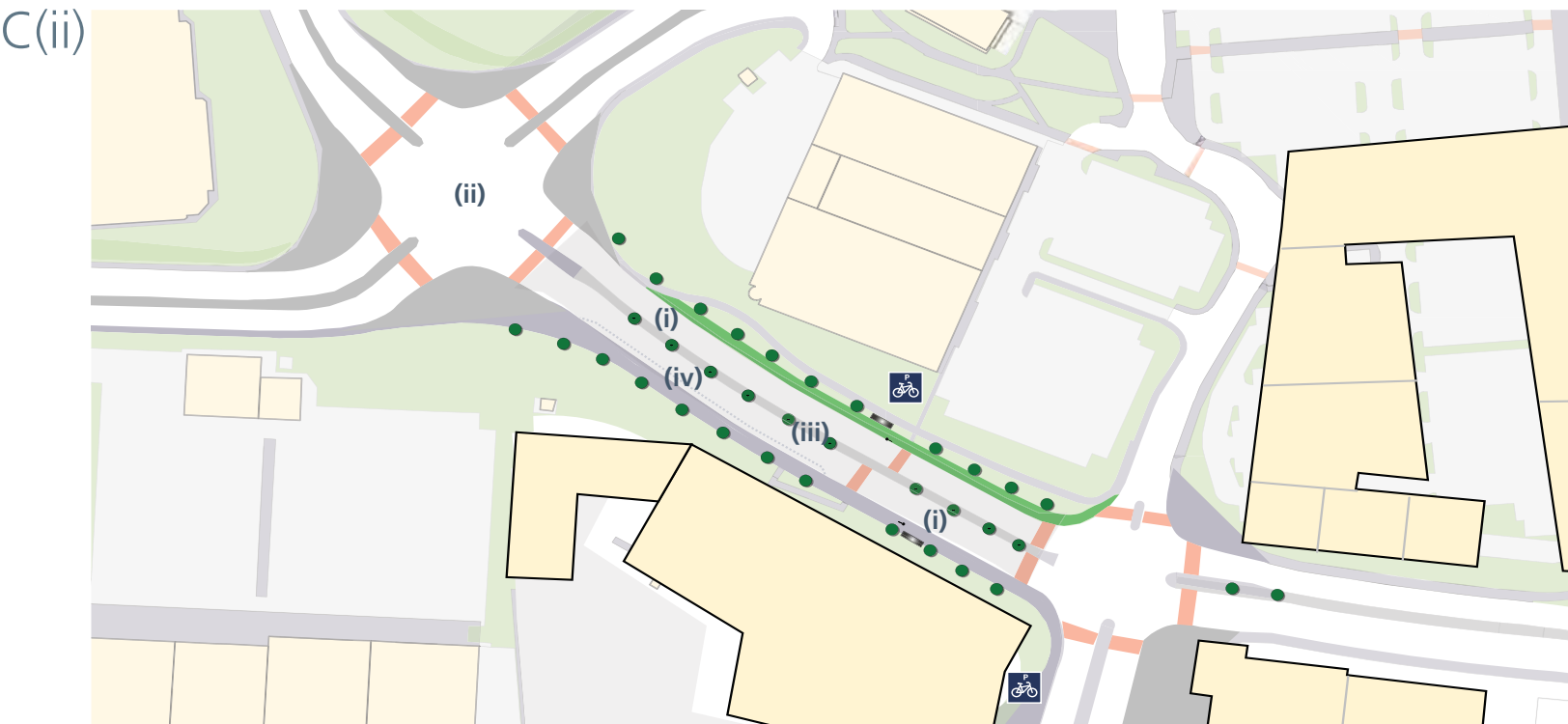


Fig. 42 - Link 3 Option C(ii)

Lakeside Leisure Park roundabout to Lakeside Retail Park roundabout scheme evaluation

Criteria	Option A Pedestrian and cycle package	Option B Incremental road civilisation	Option C (i) Significant road civilisation / roundabout signalisation package	Option C (ii) Significant road civilisation, junction re- modelling and servicing facilities on westbound carriageway package
Traffic capacity / safety	0	-1	-1	-1
Vehicular accessibility and route choice	0	0	-1	-1
Pedestrian environment	1	1	2	2
Cyclist environment	1	1	2	2
Public Transport	0	1	1	1
Quality of the public realm	0	1	1	2
Extent of land take	0	0	0	0
Cost / degree of change	-1	-1	-2	-2
Total	+1	+2	+2	+3

Fig. 43 - Link 3 Evaluation Matrix

The performance of the options against the eight criteria is compared and contrasted below:

Traffic capacity / safety

As with link 2, three of the proposed schemes are anticipated to have some impact on traffic capacity with potential option C (ii), junction remodelling at Lakeside Retail Park roundabout, having the most significant impact. Option A is regarded as being traffic neutral with option B having a relatively small impact on highway capacity through relatively minor carriageway narrowing and additional crossings on the roundabout. Option C(i) also has an impact on highway capacity through a reduction in carriageway widths (although two lanes in each direction are maintained) and signalisation of the roundabout. Highway modelling

work is required to better understand the impact on traffic movement from the C options.

Vehicular accessibility and route choice

Option A has no impact on the ability of vehicles to access the retail and leisure uses at either Lakeside Retail Park to the north / east, Lakeside Leisure Park to the south and the Weston Avenue / Tunnel Estate / The Junction Retail Parks to the west of the roundabout. Option B has a negligible impact through the creation of new toucan crossings on two arms of the Lakeside Retail Park roundabout and through some limited narrowing of the westbound carriageway west of the Lakeside Leisure Park roundabout. The C options have a greater potential impact on vehicle accessibility through a reduction in road capacity along this section of

road and a potential re-configuration of the Lakeside Retail Park roundabout including signalisation of all four arms of the roundabout.

Pedestrian environment

In keeping with other sections of West Thurrock Way further to the east, Option A creates some short term improvements to the pedestrian environment through fairly limited footway resurfacing treatment, some enhanced signage and an upgrade to the existing pedestrian crossing; from a puffin to a toucan. Options B, and the C options in particular, provide the conditions for a greatly enhanced pedestrian environment. Options B and C will support enhanced connectivity and greater pedestrian accessibility between the more isolated retail estates at the western end of West Thurrock Way and the Lakeside Retail Park, and on to the Lakeside Shopping Centre. Both C options and particularly C (ii) create the conditions to significantly improve the pedestrian environment along this section of road through reduced traffic speeds and volumes.

Cyclist environment

Option A will serve to increase the attractiveness of West Thurrock Way as a cycle route through the creation of an improved shared use footway / cycle way on the northern side of the road. Options C(i) and (ii) provide the greatest benefit to cyclists through civilising this section of West Thurrock Way, making journeys along and across the road safer and more pleasant through a reduction in traffic speeds and volumes. The C options are likely to result in more cyclists sharing the carriageway with other vehicles. This is less likely to be the case with Option B, but the narrowing of the carriageway does provide the opportunity for off-carriageway cycle facilities on both sides of the road along this section.

Public Transport

Option A makes a small contribution to improving access to public transport in the vicinity through the provision of enhanced signage. Option B makes a greater contribution

through enhanced signage, improved, widened footways and enhanced pedestrian crossing facilities at Lakeside Retail Park roundabout. This will result in improved access for pedestrians on the south and western sides of West Thurrock Way, enabling walking to Lakeside Shopping Centre bus station and Chafford Hundred rail station. Option C offers the same facility but also the potential for bus routes to operate on West Thurrock Way, to support new land use activities that front onto and address the road.

Quality of the public realm

Option A offers minor improvements to the public realm on this section of West Thurrock Way, largely through footway re-surfacing. Option B offers the opportunity for a further step up in the quality of the public realm through limited carriageway narrowing and use of the released highway land for alternative uses. Option C provides the chance for a major uplift in the public realm of West Thurrock Way through a reduction in traffic volumes, speeds and the use of high quality materials including new street furniture.

Extent of land take

Option A is a neutral option as there is no requirement for land take. Option B requires little or no land take whilst option C is likely to require a very small element of land take to facilitate Lakeside Retail Park roundabout reconfigurations and signalisation. With both options B and C, the carriageway narrowing actually adds land back for alternative uses, hence creating a neutralising effect which accounts for this element scoring a '0'.

Cost / degree of change

In keeping with other sections of West Thurrock Way, Options C(i) and particularly Option C(ii) are the most costly, at £1.75million and £3.3million respectively. Option A is relatively inexpensive at £350,000.



# Example cross section of West Thurrock Way at link 3, showing Option C(ii)

The cross section opposite is an indicative representation of Option C(ii) in link 3. Under this option, servicing and parking facilities have been shown on both the north and south sides of the road to service frontages, although servicing on one side only may be deemed as more appropriate. The widths used on this cross section fit within the highway boundary and do not require any additional land take.



Fig. 44 - Indicative cross section of West Thurrock Way based on future option C(ii) on link 3

# 4. Lakeside Retail Park roundabout to junction with A1306 (Arterial Road)

The following options have been considered for this section:

**A. Enhanced pedestrian and cycle accessibility package**

- (i) Footway re-surfacing and provision of shared use cycle / footway on western side of road
- (ii) Improved signage
- (iii) Enhanced access steps from eastern footway down to Tescos access road

**B. Incremental road civilisation / traffic management / pedestrian accessibility package**

- (i) Signalisation of West Thurrock Way at junction with A1306 (Arterial Road)
- (ii) Reconfiguration of roundabout at this location to facilitate pedestrian crossing. (It should be noted that there is some debate about whether elements 1. and 2. of option B are desirable given current and likely future scale of pedestrian movement in this area. On reflection we have decided to included these elements)
- (iii) Removal of crash barrier in central median
- (iv) Tree planting in central median
- (v) Replacement of Lakeside Retail Park roundabout with signalised junction

A



Fig. 45 - Link 4 Option A

B



Fig. 46 - Link 4 Option B

## Lakeside Retail Park roundabout to junction with A1306 (Arterial Road) scheme evaluation

Criteria	Option A Enhanced pedestrian and cycling accessibility	Option B Incremental road civilisation
Traffic capacity / safety	0	1
Vehicular accessibility and route choice	0	0
Pedestrian environment	1	2
Cyclist environment	1	1
Public Transport	0	0
Quality of the public realm	0	1
Extent of land take	-1	-1
Cost / degree of change	0	-1
Total	+2	+3

Fig. 47 - Link 4 Evaluation Matrix

The section of West Thurrock Way between the A1306 and the Lakeside Retail Park roundabout is different in character and function when compared to other links on West Thurrock Way. The road slopes dramatically down from the A1306 towards the Lakeside Retail Park and it is largely due to this significant change in topography that there is little scope for development that addresses the road on the eastern side of this section.

Observations suggest that average road speeds are faster on this section when compared to other links. The link may also be used by a greater proportion of private vehicles accessing the industrial uses in the Weston Avenue area.

The Masterplan suggests that some new development on the west side of the road may occur within the plan period. However it seems likely that for the reasons listed above, this section of West Thurrock Way is not as critical as the other three in terms of requirements for short to medium term improvements in pedestrian connectivity. This is reflected in the two option packages suggested as appropriate for this section of road, outlined in the previous concept sketches.

The performance of the options against the eight criteria is compared and contrasted below:

### Traffic capacity / safety

There is no impact on traffic capacity for option A. Option B is likely to have a small impact on capacity at the roundabout with the A1306, but with the potential introduction of a pedestrian crossing and signalisation at the West Thurrock Way junction, safety for pedestrians and vehicles will be significantly improved. For this reason it has been scored positively.

### Vehicular accessibility and route choice

Neither of these options impact on vehicular accessibility or route choice and for that reason both have been scored as neutral in the evaluation matrix.

### Pedestrian environment

In keeping with the other sections of West Thurrock Way further to the east, Option A provides some small scale improvements to the pedestrian environment including a limited footway resurfacing treatment on the western footway, additional pedestrian signage and potential improvements to the stepped pedestrian route through to the Tesco access road. Option B includes all the elements of option A plus the opportunity for a pedestrian crossing at the roundabout junction with the A1306.

### Cyclist environment

There will be some measureable benefits for cyclists emerging from both of the link 4 options, with the provision of an off-carriageway shared-use footway/cycleway facility on the western side of West Thurrock Way under both options providing improved segregated conditions.

### Public Transport

It is anticipated that for both of these options, there will not be an adverse impact on public transport performance, in operational and accessibility terms. For this reason both options have been scored '0'.

### Quality of the public realm

Option A has no significant impact on the quality of the public realm along this section of West Thurrock Way and for this reason has been scored with a '0'. Option B has a positive impact on the quality of the public realm and has been scored accordingly.

### Extent of land take

There is likely to be some land-take requirements to enable the construction of improvements in stepped pedestrian access from West Thurrock Way down to Tesco from link 4. The bank in this location is believed to be within the ownership of Thurrock Council and obtaining the permissions to enable these improvements is likely to be relatively straightforward.

### Cost / degree of change

The cost of option A at ~£350,000 is considered to be relatively low when compared to other potential options listed in this analysis. The cost of option B, with signalisation and additional tree planting, will be greater at £580,000.



# Evaluation Summary

Summary of Preferred Option Packages	Total Evaluation Score from Chapter 4	Sketch Design provided in Chapter 5	Included in Phasing Strategy in Chapter 6
1. Lancaster roundabout to TGI Friday roundabout			
- Option C(i) - Significant road civilisation / roundabout signalisation package	+3	✓	✗
- Option C(ii) - Junction and crossing re-modelling package	+4	✓	✓
- Option D(iii) - Public Square	+4	✗	✓
2. TGI Friday roundabout to Lakeside Leisure Park roundabout			
- Option C(i) - Significant road civilisation / roundabout signalisation package	+2	✓	✗
- Option C(ii) - Significant road civilisation and junction re-modelling package	+3	✓	✓
3. Lakeside Leisure Park roundabout to Lakeside Retail Park roundabout			
- Option C(i) - Significant road civilisation / roundabout signalisation package	+2	✓	✓
- Option C(ii) - Significant road civilisation and junction re-modelling package	+3	✓	✓
4. Lakeside Retail Park roundabout to junction with A1306 (Arterial Road)			
- Option A - Enhanced pedestrian and cycle accessibility package	+2	✗	✓
- Option B - Incremental road civilisation / traffic management package	+3	✓	✓

Fig. 48 - Summary of option packages offering the greatest overall net benefit, and their inclusion in subsequent chapters

We have considered the potential options for each of the 4 links of West Thurrock Way and then appraised their advantages and disadvantages in terms of the overall objectives for development and regeneration in the Lakeside Masterplan area.

Taking the results of the evaluation framework assessment those options considered as offering the greatest net benefits are shown in figure 48 and are:

- Link 1 - Option C(i), Option C(ii), Option D(iii)
- Link 2 - Option C(i), Option C(ii)
- Link 3 - Option C(i), Option C(ii)
- Link 4 - Option A, Option B

Key issues considered in developing the option packages set out in chapter 4 were:

- Land take – The land take requirements and cost generally increase from short through medium to long term, corresponding to anticipated development of the Masterplan and taking into account land already owned by the Council. The medium term strategy also incorporates junction arrangements that aim to strike a balance between creating a good quality public realm and offering the capacity to accommodate car borne trips in the Masterplan area. A detailed estimate of land take costs have not been provided as part of this study.
- Maintaining traffic flow / capacity – West Thurrock Way is likely to maintain its role as a significant local trip distributor for the foreseeable future. For this reason we have sought to maintain two traffic lanes in each direction under all the options put forward. We also recognise the importance of maintaining highway capacity to support the development of bus routes along West Thurrock Way in the future.



# Design Development

This chapter sets out initial sketch designs for the West Thurrock Way option packages which score highly in the option evaluation

5

# Design Development

## Overview

This chapter focuses on a number of the key preferred option packages from chapter 4 and develops the concept packages into sketch highways designs to support the overarching connectivity objectives. This section includes:-

- Sketch designs at 1:1000 scale of the 7 key options for the 4 links
- A more detailed explanation on the rationale for these options and commentary on the deliverability of each of the options



Fig. 49 - Link 1: Lancaster Roundabout to TGI Friday Roundabout

## Link 1 - Lancaster roundabout to TGI Friday roundabout

Refer to drawings numbered 5120007/TP/FD/001 & 002 on pages 59 and 60.

This link is comprised of a 2-way dual carriageway - westbound 10.25m wide and eastbound 7.25m wide, separated by a central reservation approximately 2.5m wide. The carriageway is bounded on both sides by footways approximately 2.0m wide. There is an existing signalised (Puffin) crossing approximately 75m west of the Lancaster Roundabout. There is a slip road from Heron Way on to West Thurrock Way.

The options for this link include measures to improve facilities for pedestrians and cyclists by resurfacing the existing footway south western footway to remove areas of ponding and un-evenness and the introduction of an un-segregated shared surface pedestrian/cycle path on the north-west side of West Thurrock Way. This facility will be a minimum of 3.0m in width and will be supported by the introduction of enhanced cycle and pedestrian way-finding measures and the inclusion of strategic cycle parking facilities near key destination points.

A reduction in the width of the westbound carriageway to 8.0m will assist speed reduction whilst not affecting overall capacity on the link; this will be reinforced with the introduction of a new road surface conducive to lower traffic speeds.

There is evidence on the ground of pedestrian desire lines that are currently not served by the formal crossing facility, giving rise to a situation whereby pedestrians are crossing the carriageway at inappropriate locations. The relocation of the existing pedestrian crossing to a location adjacent to these desire lines will encourage the use of the crossing with consequent road safety improvements. Similarly the introduction of new Toucan crossings at TGI roundabout will assist pedestrian movements. The sketch design on page 60 shows the proposal for a widened pedestrian crossing on the eastern arm of the junction. This represents part of the incremental enhancement of connectivity at this key location to facilitate access through to Lakeside Shopping Centre, in advance of the public square D option.

The removal of the existing slip road from Heron Way on to West Thurrock Way will provide the opportunity to introduce improved pedestrian links and to assist traffic circulation on the Lancaster Roundabout:

Development proposals include the introduction of a new footpath link from the south (TGI Roundabout) along the western edge of South Lake to the landing point of the proposed bridge

Improvements to general amenity of the area will be provided by tree planting and other areas of landscape planting.

As far as can be ascertained, with the exception of the new footpath link to the proposed pedestrian bridge (on land owned by a combination of Intu and Land Securities) the proposals are all contained within land that is under the ownership of Thurrock Council and thus minimal land acquisition will be required.

There are currently no waiting or loading restrictions in operation on this section of West Thurrock Way, it is not proposed to introduce any alterations that would require the advertisement of a traffic order. The relocation and introduction of the pedestrian crossings will involve the issue of a public notice in accordance with the Road Traffic Regulation Act 1984.

Statutory Undertakers search enquiries are in progress and information will be reported as it becomes available. However given the nature of the works it is estimated that there will be some requirement to relocate underground services, mainly associated with the removal of the slip road and the introduction of the new pedestrian crossings. The total cost of stats relocation at this site can be expected to be below £50,000.

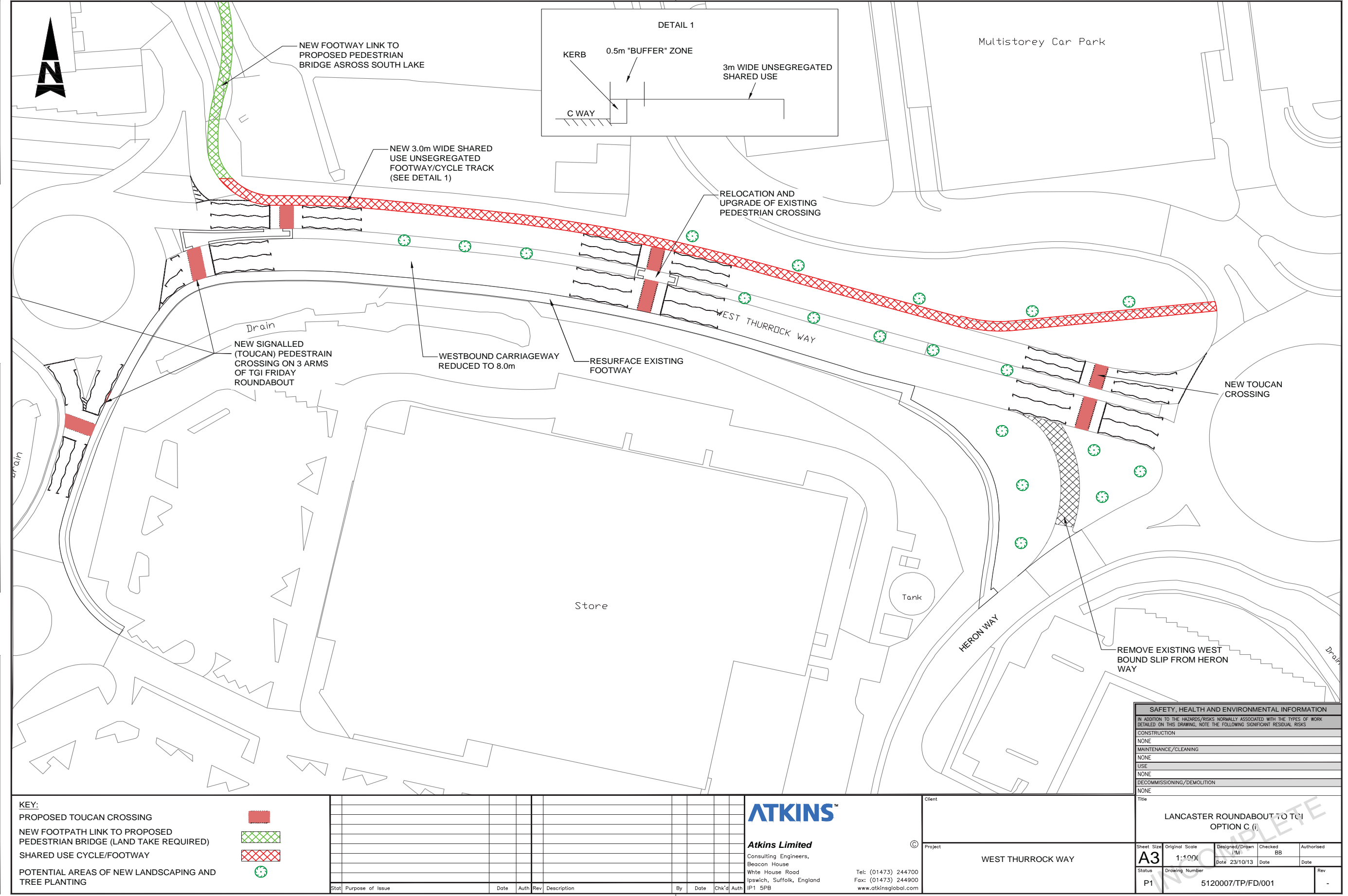


Status	Drawing Number	Rev
P1	-	-

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A3

File: H:\My Documents\New folder\Lancaster Roundabout to TG11.dwg  
Date: Nov 04, 2013 - 5:06pm Plotted by: horn2943



Link 1 Option C(ii) - Lancaster roundabout to TGI Friday roundabout

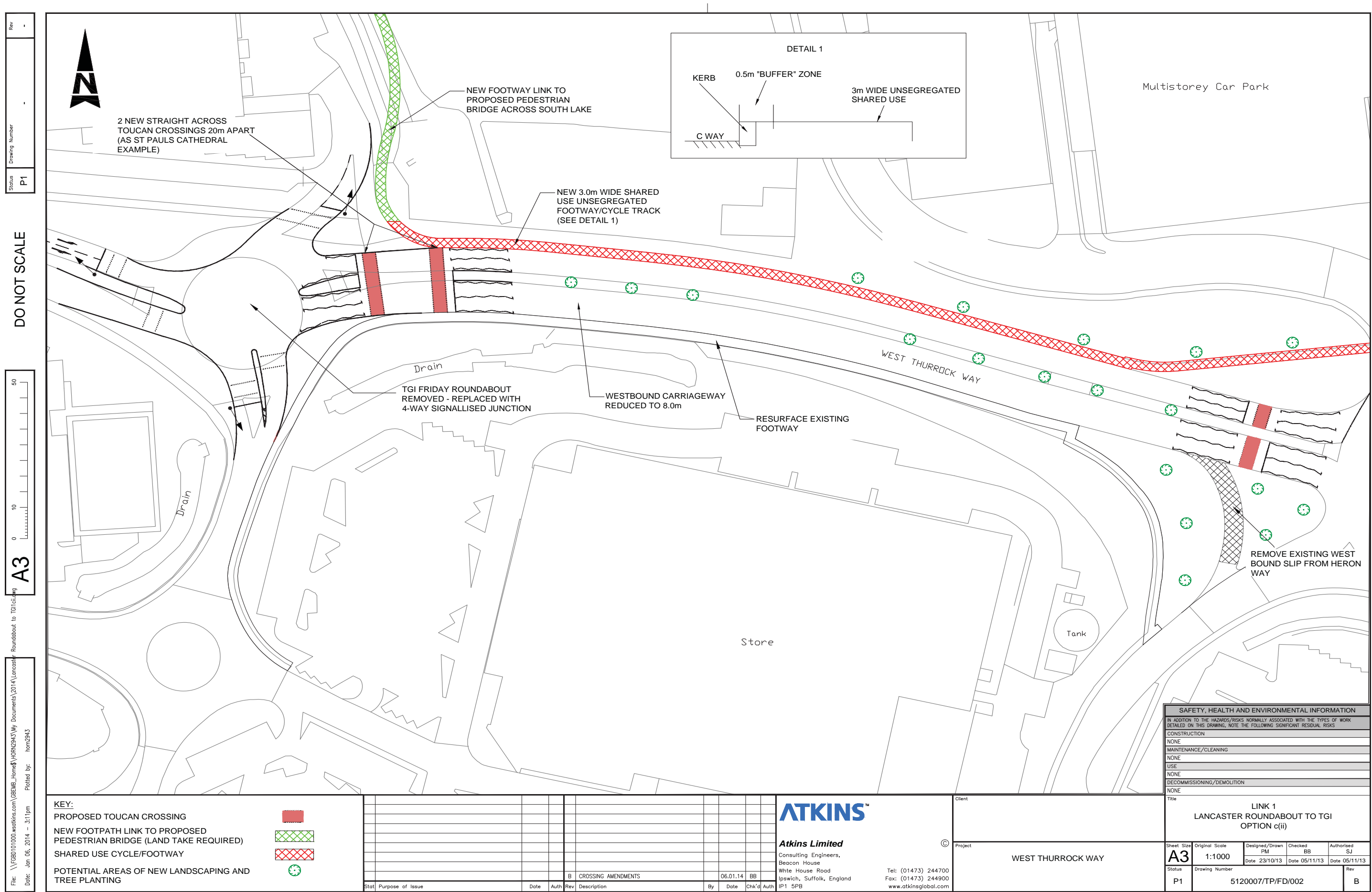






Fig. 52 - Link 2: TGI Friday Roundabout to Lakeside Leisure Park roundabout

## Link 2 - TGI Friday roundabout to Lakeside Leisure Park r/a

Refer to drawings numbered 5120007/TP/FD/003 and 004 on pages 62 and 63.

Similar to link 1 this link is comprised of a 2-way dual carriageway – westbound 10.0m wide and eastbound 7.5m wide, separated by a grassed central reservation approximately 2.0m wide. There is a footway approximately 2.0m bordering the westbound carriageway. The footway bounding the eastbound carriageway is approximately 1.5m wide and for approximately 20m is at the foot of an embankment approximately 1.5m deep. There is an existing signalised (Puffin) crossing approximately mid-way between the two roundabouts. The existing road configuration provides for high traffic speeds that are not suitable for the proposed new use of the link as a “town centre”.

The options for this link incorporate measures to improve facilities for pedestrians and cyclists by introducing a shared use footway/cycle way on the northern side of West Thurrock Way; this will be reinforced by converting the existing Puffin crossing to a Toucan.

In order to reduce traffic speeds through the link, both carriageways are to remain as two lanes but will be narrowed to 6.4m. On the eastbound carriageway this narrowing will be taken up in the central reservation. On the westbound carriageway the carriageway will be narrowed from the southern footway, the resulting area will be utilised as a car parking / loading bay.

A further means of reducing traffic speeds, and to provide additional pedestrian crossing facilities will be the introduction of traffic signals on all four arms of the Lakeside Leisure Roundabout. A further option is to replace the TGI roundabout with a four arm signalised junction with associated pedestrian crossing facilities.

Improvements to general amenity of the area will be provided by tree planting and other areas of landscape planting.

As far as can be ascertained, the proposals are all contained

within land that is under the ownership of Thurrock Council and thus minimal land acquisition will be required.

There are currently no waiting or loading restrictions in operation on this section of West Thurrock Way. It is proposed to introduce time limited waiting restrictions within the new lay-by; this will require the advertisement of a traffic order. The relocation and introduction of the pedestrian crossings will involve the issue of a public notice in accordance with the Road Traffic Regulation Act 1984.

Statutory Undertakers search enquiries are in progress and information will be reported as it becomes available. However given the nature of the works it is estimated that there will be some requirement to relocate underground services, mainly associated with the removal of the TGI roundabout, the construction of the cycle track and the introduction of the new pedestrian crossings. Total costs associated with stats relocation is likely to be in the region of £200,000.



Fig. 53 - Link 2 - Design Development



07 January 2014

### Link 3 - Lakeside Leisure Park roundabout to Lakeside Retail Park r/a

Refer to drawings numbered 5120007/TP/FD/005 & 006 on pages 65 and 66.

Similar to links 1 and 2, this link is comprised of a 2-way dual carriageway – westbound 10m wide and eastbound 7.3m wide, separated by a grassed central reservation approximately 1.5m wide. There are footways on either side of the link; the westbound is approximately 2.0m wide and the eastbound one is approximately 1.5m wide, located at the foot of an embankment approximately 1.5m high and 2.5m wide.

The options for this link incorporate measures to improve facilities for pedestrians and cyclists and to reduce traffic speeds to accommodate the proposed change of function of the highway environment more akin to a “town centre”.

As with link2 (above), to reduce traffic speeds through the link, both carriageways are to remain as two lanes but will be narrowed to 6.4m. On the eastbound carriageway this narrowing will be taken up in the central reservation. On the westbound carriageway, the carriageway will be narrowed from the southern footway; the resulting area will be utilised as a car parking / loading bay.

A further means of reducing traffic speeds, and to provide additional pedestrian crossing facilities will be the introduction of traffic signals on all four arms of the Lakeside Retail Park Roundabout. A further option is to replace the roundabouts with four arm signalised junctions, with associated pedestrian crossing facilities.

Improvements to general amenity of the area will be provided by tree and other areas of landscape planting.

As far as can be ascertained, the proposals are all contained within land that is under the ownership of Thurrock Council and thus minimal land acquisition will be required.

There are currently no waiting or loading restrictions in operation on this section of West Thurrock Way. It is proposed to introduce time limited waiting restrictions

within the new lay-by; this will require the advertisement of a traffic order. The relocation and introduction of the pedestrian crossings will involve the issue of a public notice in accordance with the Road Traffic Regulation Act 1984.

Statutory Undertakers search enquiries are in progress and information will be reported as it becomes available. However given the nature of the works it is estimated that there will be some requirement to relocate underground services, mainly associated with the removal of the Lakeside Leisure Park and Lakeside Retail Park roundabouts, the construction of the cycle track and the introduction of the new pedestrian crossings, total costs could well be in the region of £200,000.

### Link 4 - Lakeside Retail Park roundabout to junction with A1306

Refer to drawing numbered 5120007/TP/FD/007 on pages 67 and 68.

This link is comprised of a 2-way dual carriageway – westbound 10m wide and eastbound 7.3m wide, separated by a grassed central reservation approximately 2.0m wide with “W” section crash barriers along its length. The link has footways approximately 2.0m wide on both the eastbound and westbound sides. There is an existing zebra crossing on the northwest arm of the Retail Park roundabout.

The proposals on this link are aimed at improving pedestrian crossing facilities at the junction with A1306, where there is currently an uncontrolled informal crossing point, and introducing improvements to the access steps to TESCO from the eastern footway.

Improvements to general amenity of the area will be provided by tree and other areas of landscape planting, and the removal of the central reservation crash barriers.

As far as can be ascertained, the proposals are all contained within land that is under the ownership of the local highway authority and thus minimal land acquisition will be required.

There are currently no waiting or loading restrictions in operation on this section of West Thurrock Way. The relocation and introduction of the pedestrian crossings will involve the issue of a public notice in accordance with the Road Traffic Regulation Act 1984.

Statutory Undertakers search enquiries are in progress and information will be reported as it becomes available. However given the nature of the works it is estimated that there will be some requirement to relocate underground services, mainly associated with the introduction of the new pedestrian crossings, total costs could be in the region of £20,000.

**DO NOT SCALE**

**A3**

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Rev  
Drawing Number  
Status  
**P1**

**KEY:**  
PROPOSED TOUCAN CROSSING  
POTENTIAL AREAS FOR NEW LANDSCAPING/TREE PLANTING

**ATKINS**  
Atkins Limited  
Consulting Engineers,  
Beacon House  
White House Road  
Ipswich, Suffolk, England  
IP1 5PB  
Tel: (01473) 244700  
Fax: (01473) 244900  
www.atkinsglobal.com

**Safety, Health and Environmental Information**  
IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS:  
CONSTRUCTION  
NONE  
MAINTENANCE/CLEANING  
NONE  
USE  
NONE  
DECOMMISSIONING/DEMOLITION  
NONE

**LAKESIDE LEISURE TO LAKESIDE RETAIL OPTION C(i)**  
Sheet Size Original Scale  
**A3** 1:1000  
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Date 23/10/13 Date Date  
Status Drawing Number  
**P1** 5120007/TP/FD/005

**West Thurrock Way**

**El Sub Sta**

**Gas Governor**

**Restaurant**

**Lakeside Retail Park**

**INTRODUCE NEW SIGNALLED (TOUCAN) CROSSINGS ON ALL 4 ARMS OF LAKESIDE RETAIL ROUNDABOUT**

**EASTBOUND AND WESTBOUND REDUCED TO 6.4m BY WIDENING CENTRAL RESERVE**

**WIDEN EXISTING FOOTWAY TO INTRODUCE NEW SHARED USE (SEGREGATED) FOOTWAY CYCLE TRACK**

**RESURFACE EXISTING FOOTWAY**

**NEW TOUCAN CROSSING LINKING PEDESTRIAN ACCESS ROUTES**

**WEST THURROCK WAY**

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Plotted by: hrm2943

5







Rev

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P1

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P1

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A3

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Date: Nov 06, 2013 - 12:37pm  
Plotted by: horn2943

ETL

ARTERIAL ROAD (WEST THURRECK)

14.0m

Tanks

Tunnel Estate

B 186

FOR CONTINUATION SEE DRG NO. 5120007/TP/FD/008

INTRODUCE NEW TRAFFIC SIGNALS  
INCORPORATING PEDESTRIAN CROSSING

REMOVE EXISTING CENTRAL VEHICLE  
RESTRAINT SYSTEM INTRODUCE AREA OF  
LANDSCAPING AND TREE PLANTING

ENHANCED ACCESS FROM  
EASTERN FOOTWAY TO  
TESCO ACCESS ROAD

FOOTWAY RESURFACED AND  
WIDENED TO 3.0m TO  
ACCOMMODATE UNSEGREGATED  
SHARED CYCLE/PEDESTRIAN USE

Posts

Posts

Posts

Filling  
Station

KEY:

PROPOSED TOUCAN CROSSING

NEW AREA OF LANDSCAPING/TREE  
PLANTING

ATKINS

Atkins Limited

Consulting Engineers,  
Beacon House  
White House Road  
Ipswich, Suffolk, England  
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Tel: (01473) 244700  
Fax: (01473) 244900  
www.atkinsglobal.com

Client

Project

WEST THURROCK WAY

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK  
DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS

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MAINTENANCE/CLEANING  
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USE  
NONE  
DECOMMISSIONING/DEMOLITION  
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Designed/Drawn  
PM

Checked  
BB

Authorised  
SJ

Status  
P1

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5120007/TP/FD/007

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68

# Deliverability Review

This chapter provides details of costings, option priority and a phasing strategy for implementation

6

# Costing Assessment and Delivery Recommendations

## Costing Overview

Estimated costs for the options broken down into the small, medium and large scale packages are set out in figure 60. We include this table of option costs as a summary of all the costed options, before making recommendations as to which combination of measures can be regarded as the optimum. These costs have been developed using the following criteria:

- No allowance has been made for renewal/maintenance of infrastructure or carriageway/ footway. Any costs associated with remedial work to rectify issues or increase the life of the asset is assumed to come from a maintenance budget. Where existing surfaces abut to new, an allowance has been made to cater for regarding of carriageway/footway to meet new levels.
- For costing purposes, high specification materials have been used.
- The provision of cycle lanes includes for 1.5m wide green anti-skid surfacing along their length.
- An allowance has been made on an option by option basis for utilities costs.
- Estimates do not include an Optimism bias - (Optimism Bias relates to the demonstrated and systematic tendency for project appraisers to be overly optimistic when considering future project benefits and costs. The Treasury “Green Book” recommends that Optimism bias a value of 44% should be added to the estimates for road projects.)
- Lighting assessments will be required to ensure that potential signal locations meet current standards for lighting pedestrian crossings. Additional lighting works may increase costs by 10%.

## Delivery Strategy and Option Priority

The delivery strategy is closely aligned to the option evaluation process in chapter 4 which identified the benefits of each option in order to establish preferred options for the links on West Thurrock Way. Chapter 5 considered in more detail the design and deliverability of each of the preferred options and their net benefit.

It is proposed that the east end of West Thurrock Way, linking the Retail Centre to the Leisure Park, is to be prioritised in the short term. C(ii) options for both links 1 and 2 will provide a strong step change towards civilising the street.

‘Quick win’ projects involving relatively minor footway, public realm, cycle-way, signage, tree planting, pedestrian crossing relocation projects and some elements of carriageway narrowing to support the above can be delivered on links 3 and 4 in the short term.

Our recommendation is that the most appropriate option for transformational connectivity infrastructure on the key movement corridor to Lakeside Shopping Centre, is a new square / public realm area, deliverable within the medium term timescale from 2019 to 2025. The cost for delivering a public square will depend largely on the extent of altering the lakeside edge and the extent of works proposed for a specific design. Post 2019 and with the realisation of new development opportunities which address West Thurrock Way and generate more local sustainable trips, this major piece of infrastructure is likely to become more realistic and justifiable in business case terms.

## Best Value Delivery

Analysis of the costs in relation to the net benefit of each link as detailed in chapter 4, produced a list of the most viable options which could be considered as part of the delivery process. These are detailed in the Phasing Costs tables (right) and have been included as part of a phased strategy of delivery for the period 2014-2019 (see figure 62), and 2019-2025 (see figure 63).

It is vital that the delivery strategy is delivered in conjunction with the incremental realisation of the masterplan vision, in terms of changes in development along West Thurrock Way. Only with the commitment from all stakeholders to new developments, which will generate and support greater pedestrian movement across and along the West Thurrock Way corridor, can the most transformative options (C and D packages) become viable.

The cost breakdown chart (figure 60) highlights the economic challenge of delivering the most transformational projects early in the masterplan process. The phased strategy looks to provide a manageable programme of works which is ambitious enough to provide a step change in public realm quality that will catalyse future development.

The evaluation process has highlighted the most cost effective interventions which should be considered in the short term; namely, the enhancement of links 1 and 2, from Lancaster Roundabout to Lakeside Leisure Roundabout. These C(ii) options include significant junction re-modelling to remove the two smaller roundabouts on West Thurrock Way and offer the most significant change in the character of the street, and in turn the best contribution towards fulfilling the improved connectivity aspirations of the masterplan.

Those options which are considered to be less of a priority in the short term, such as on links 3 and 4, furthest west, have been packaged in to the medium term delivery period (2019-2025). It is important to note that streetscape uplift for these links in the long term will be key for delivering a coherent route and consistent street profile along the length of West Thurrock Way.

## Phasing Costs

Phase 1 (2014-2019)	Cost
1. Lancaster roundabout to TGI Friday roundabout	
- Option C(ii) - Junction and crossing re-modelling package	£1,600,000
2. TGI Friday roundabout to Lakeside Leisure Park roundabout	
- Option C(ii) - Significant road civilisation and junction re-modelling package	£3,800,000
3. Lakeside Leisure Park roundabout to Lakeside Retail Park roundabout	
- Option C(i) - Significant road civilisation / roundabout signalisation package	£1,750,000
4. Lakeside Retail Park roundabout to junction with A1306 (Arterial Road)	
- Option A - Enhanced pedestrian and cycle accessibility package	£375,000
Total for Phase 1	£7,525,000

Phase 2 (2019-2025)	Cost
1. Lancaster roundabout to TGI Friday roundabout	
- Option D(iii) - Public Square	£2,500,000
2. TGI Friday roundabout to Lakeside Leisure Park roundabout	
- Maintain Option C(ii)	-
3. Lakeside Leisure Park roundabout to Lakeside Retail Park roundabout	
- Option C(ii) - Significant road civilisation and junction re-modelling package	£3,300,000
4. Lakeside Retail Park roundabout to junction with A1306 (Arterial Road)	
- Option B - Incremental road civilisation / traffic management package	£580,000
Total for Phase 2	£6,380,000

Fig. 59 - Phased costs based on proposed phasing strategy in figure 61



Options package costs

Link	Small Scale Interventions	Cost	Medium Scale Interventions	Cost	Large Scale Interventions	Cost
Link 1: Lancaster Roundabout to TGI Roundabout	<b>Option A. Pedestrian / cycle access enhancement package</b> (i) Existing footway re-surfacing (ii) Introduce shared use footway / enhanced cycle way (iii) Enhanced cycle parking facilities (iv) Enhanced cycle and ped wayfinding	£275,000	<b>B. Incremental road civilisation / traffic management package</b> (i) Re-location and upgrade of pedestrian crossing (ii) Addition of new formal pedestrian crossing (iii) Removal of west-bound slip lane from Heron Way (iv) Addition of signalised crossing on West Thurrock Way (v) Introduce new off road footpath link (vi) Narrow width of westbound carriageway (vii) Tree planting in central median (viii) New road surfacing to encourage lower speeds <b>C(i) Roundabout signalisation and road civilisation package</b> • All or elements of the above plus: (i) Full signalisation of three arms of TGI Friday roundabout	£1,200,000	<b>C(ii) Junction remodelling package</b> • All or elements of A and B plus: (i) Removal of roundabout and replacement with signalised road junction on all 4 arms  D (iii) Public Square	£1,600,000   £2,500,000
Link 2: TGI Roundabout to Lakeside Leisure Roundabout	<b>Option A. Pedestrian / cycle access enhancement package</b> (i) Upgrade of existing formal pedestrian crossing (ii) Footway widening on the north side (part) and footway re-surfacing (iii) Introduce shared use footway / enhanced cycle way (iv) Enhanced cycle parking facilities (v) Enhanced cycle and ped wayfinding	£305,000	<b>B. Incremental road civilisation / traffic management package</b> (i) Narrow width of westbound carriageway (ii) Introduction of pedestrian crossings on two arms of Lakeside Leisure Park roundabout (iii) Removal of guardrail from Lakeside Leisure park roundabout. (iv) Tree planting in central median (v) New road surface to encourage lower speeds <b>C(i) Significant road civilisation / roundabout signalisation package</b> (i) Major civilisation of West Thurrock Way to narrow carriageways (ii) Full signalisation of all 4 arms of Lakeside Leisure park roundabout	£1,600,000	<b>C(ii) Significant road civilisation and junction re-modelling package</b> (i) Major civilisation of West Thurrock Way to narrow carriageways (ii) Removal of Lakeside Leisure Park roundabout and replacement with signalised road junction (iii) Re-alignment of West Thurrock Way (iv) Addition of servicing facilities / parking	£3,800,000
Link 3: Lakeside Leisure Roundabout to Lakeside Retail Roundabout	<b>Option A. Pedestrian / cycle access enhancement package</b> (i) Upgrade of existing formal pedestrian crossing (ii) Footway widening on the north side (part) and footway re-surfacing (iii) Introduction of shared use footway / cycle (iv) Enhanced cycle parking facilities (v) Enhanced cycle and ped wayfinding	£350,000	<b>B. Incremental road civilisation / traffic management package</b> (i) Narrow width of westbound carriageway (ii) Introduction of toucan crossing on access road into Lakeside Retail Park (iii) Introduction of staggered crossing across West Thurrock Way linking movements to the access ramp to the south. (iv) Removal of guardrail from Lakeside Retail Park roundabout (v) Tree planting in central median (vi) New road surface to encourage lower speeds <b>C(i) Significant road civilisation / roundabout signalisation package</b> (i) Major civilisation of West Thurrock Way to narrow carriageways (ii) Full signalisation of all 4 arms of Lakeside Retail Park roundabout	£1,750,000	<b>C(ii) Significant road civilisation, junction re-modelling and servicing facilities on westbound carriageway package</b> (i) Major civilisation of West Thurrock Way to narrow carriageways (ii) Removal of Lakeside Retail Park roundabout and replacement with signalised road junction (iii) Re-alignment of West Thurrock Way (iv) Addition of servicing facilities / parking	£3,300,000
Link 4: Lakeside Retail Park roundabout to Junction with A1306 (Arterial Road)	<b>Option A. Enhanced pedestrian and cycle accessibility package</b> (i) Footway re-surfacing and provision of shared use cycle / footway (ii) Improved signage (iii) Enhanced access steps	£375,000	<b>B. Incremental road civilisation / traffic management / pedestrian accessibility package</b> (i) Signalisation of West Thurrock Way at junction with A1306 (ii) Reconfiguration of roundabout at this location to facilitate pedestrian crossing. (iii) Removal of crash barrier in central median (iv) Tree planting in central median	£580,000		

Fig. 60 - Costs associated with the small, medium and large scale interventions as outlined in chapter 4. Full costs for all project elements are included in the appendix.

# Phasing Strategy

## Incremental Delivery

For those options that require proven changes in the use of the street to justify delivery (such as in the case of the public square), an incremental delivery process has been proposed. This will help to tackle severance and enhance connectivity on West Thurrock Way at the most effective time in the masterplanning process and at an appropriate scale. The process will also assist in providing phased implementation costs, which can be aligned with funding opportunities.

It is likely that the individual elements of the options for both the short and medium term 5-6 year planning periods will be implemented in multiple delivery phases, tied in with the overall Lakeside Masterplan and the incremental development across the Lakeside Basin area.

This may hinge on specific sites coming forward for development and how the funding opportunities through CiL and/or s106 present themselves. Equally public funding opportunities, such as that afforded by the Strategic Economic Plan (SEP), are likely to present opportunities for delivery of the short term components and elements of the medium term. Furthermore it is recommended that a more detailed construction phasing programme is developed for each link to ensure sustained network efficiency during construction periods.

The phasing diagram (figure 61) outlines the key development periods within the scope of the masterplan. It highlights how interventions could be phased to prioritise public realm uplift at the east end of West Thurrock Way initially, with the removal of the two smallest roundabouts and the civilising of the street, through reduced widths and improved crossings.

The medium term delivery package should not be precluded by the implementation of earlier works. For example trees may be planted in anticipation of where the square will be located so they have matured and will not be disturbed at the time of implementing phase 2. Another example is in the trialling of the wider crossing proposed as part of the first phase, to see how the public square can be designed and delivered in the later phase.

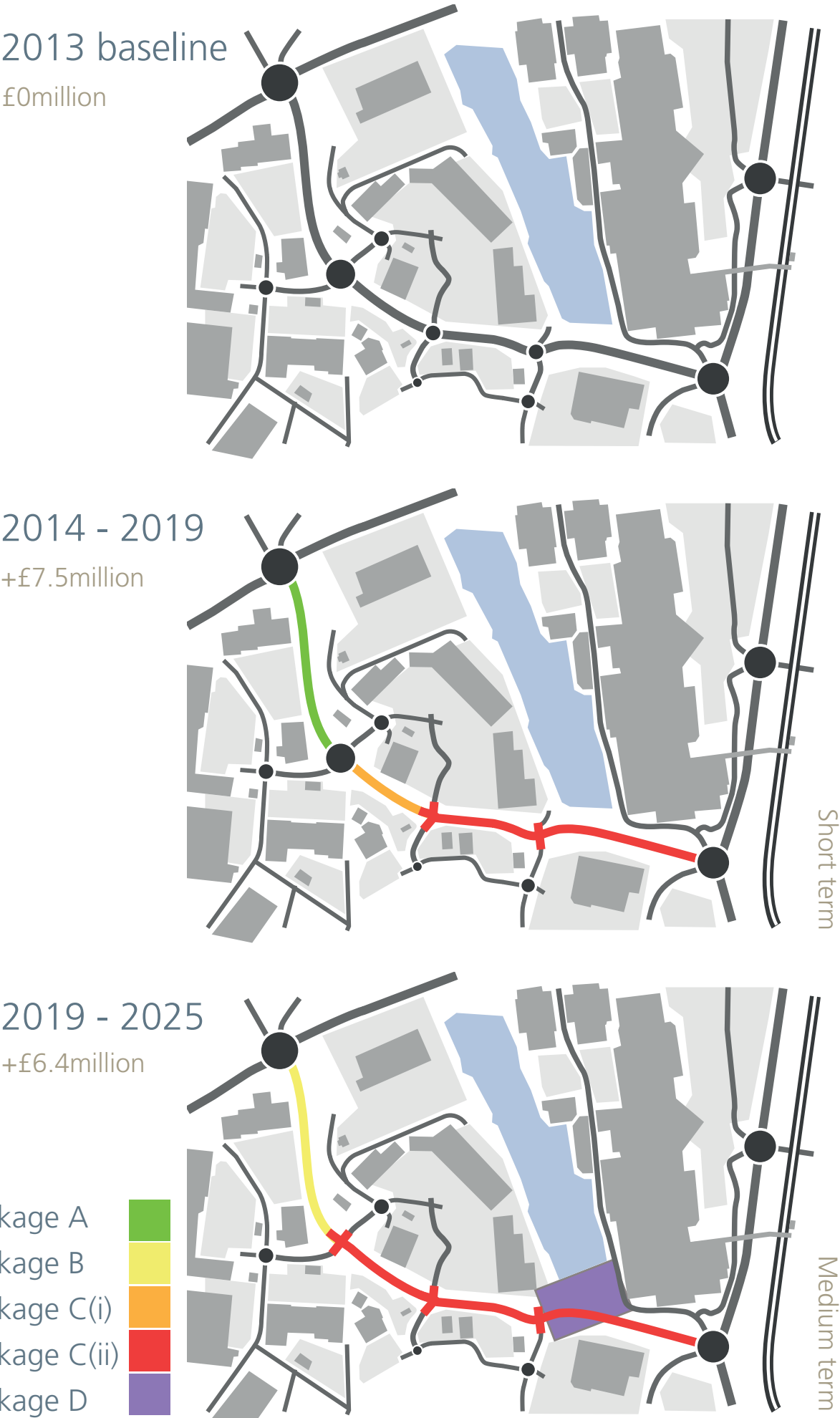


Fig. 61 - Phasing strategy



Fig. 62 - Recommended configuration of links for 2019

Note: Incremental development of building plots are shown for illustrative purposes only



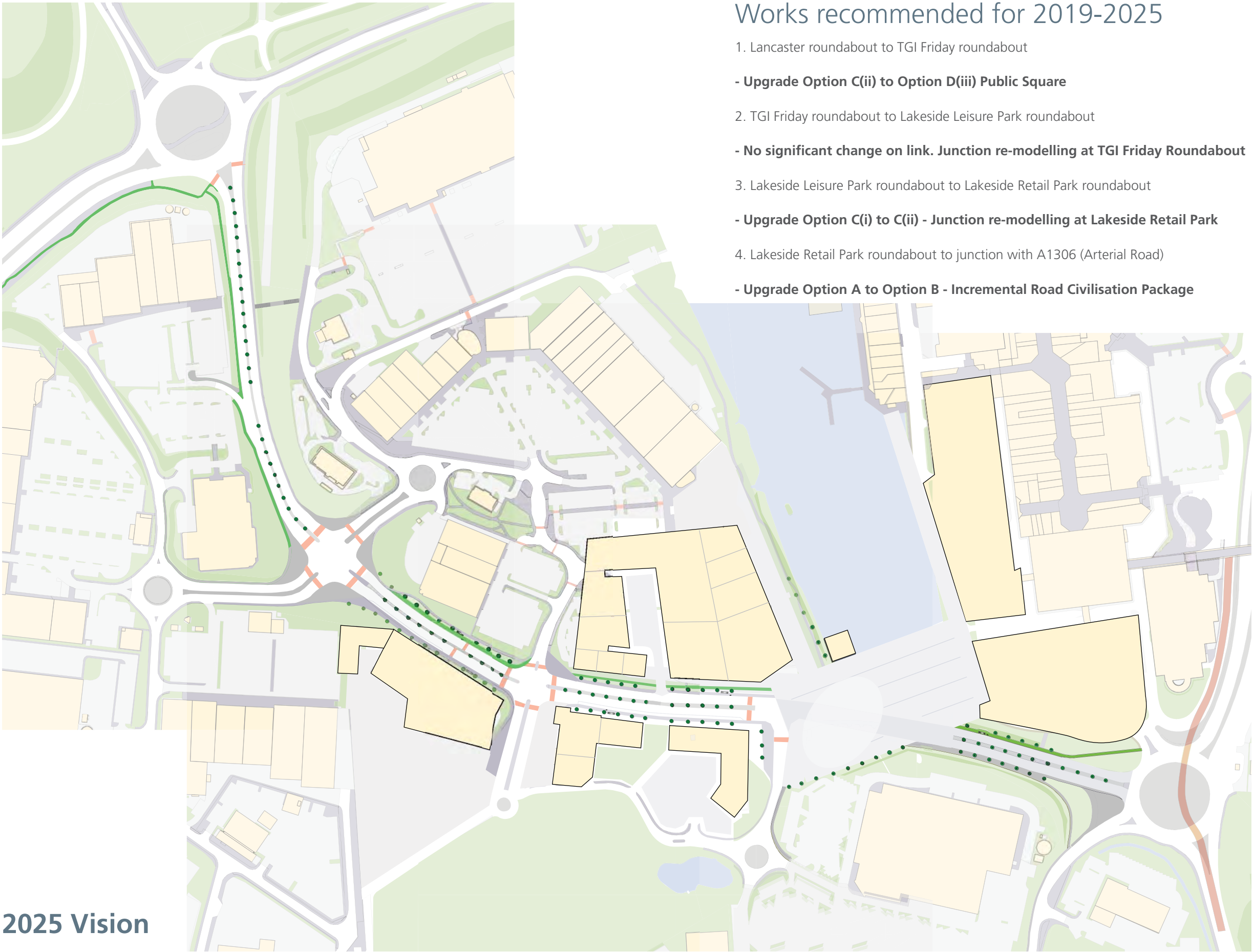


Fig. 63 - Recommended configuration of links for 2025

Note: Incremental development of building plots are shown for illustrative purposes only



# Summary and Conclusions



## Summary and Conclusions

Atkins were commissioned by Thurrock Borough Council to carry out a study into options to tackle severance and improve connectivity along the length of the B186 West Thurrock Way.

The study has focused on analysis for identifying the extent of severance issues and recommendations for tackling these issues. Whilst particularly focusing on West Thurrock Way the study has also considered connectivity and accessibility issues in the wider Lakeside study area.

The study purpose has been to identify and consider a range of options for overcoming or reducing significantly the severance impacts caused by the West Thurrock Way. The study has reviewed the feasibility of a series of initial options for improving pedestrian accessibility and permeability, developing the credible and deliverable into costed options.

### Analysis of baseline issues

Chapter 2 provided an overview of key issues based on analysis of various data sources, site visits and through desk top spatial analysis. Pedestrian movement within the study area is relatively limited with considerable activity within car parks between vehicles and retail units but not a significant number of walking trips along West Thurrock Way or between the various retail and leisure sites in the area. Most trips into the area are made by car. Our observations on site visits indicated that trips within the area between retail and leisure uses involve people getting back into their car and travelling short distances to another car park. The key drivers for movement in the study area are the various retail units within the several retail parks, leisure uses and the car parks. The location of public transport also plays a role as a driver for movement although relatively few trips are made into the area using bus or rail services via Chafford Hundred station.

The land uses straddling West Thurrock Way are linked through four formal crossing points on West Thurrock Way, Other pedestrian movements within these areas are generally on the carriageway or on grass verges. The current extent, location and quality of connectivity infrastructure serving West Thurrock Way is just one contributory factor in the present relative low levels of walking and cycling activity in the study area. Measures of the extent of pedestrian accessibility and ease of connectivity within the study area have been made using Atkins Fathom tool. Analysis shows that there is marked variation in visibility as one moves west from the A126. The footways have relatively poor visibility until they open out onto the central retail space. Where trunk roads intersect the West Thurrock Way there is a temporary increase in visibility, which improves navigational capacity for pedestrians.

Accessibility analysis indicates that the south side of West Thurrock Way is shown to be less accessible than the north. The stretch of West Thurrock Way on the approach to Lancaster roundabout is shown to exhibit particularly poor levels of pedestrian accessibility and visibility. Reviewing the

pedestrian desire lines worn into grassed areas suggests that a number of pedestrian desire lines are unsupported by crossing infrastructure across West Thurrock Way. Pedestrian crossings are fairly spread out along the length of West Thurrock Way and are not always located in the optimum location to encourage safe pedestrian movement and crossing of West Thurrock Way.

Cycle activity within the study area is generally low. Some limited cycle parking has been provided at a number of retail units throughout the area and to serve the Shopping Centre.

In summary West Thurrock Way exhibits the following characteristics;

- It severs pedestrian flows and reduces pedestrian friendliness
- In its role as a strategic distributor it feeds strategic through traffic through the area.
- It limits public transport accessibility
- It increases hazards for cyclists
- Creates safety problems for vulnerable road users (although may be more of a perception issue)

### Integration with the emerging Lakeside Masterplan and use of case studies to assist in forming recommendations

Atkins has worked closely with David Lock Associates, the consultants leading on the Lakeside Masterplan in preparing this report. We have been particularly keen to understand the scale and nature of future development proposals and the likely locations of key movement corridors in preparing our recommendations for enhanced crossings of West Thurrock Way. The scale of proposed future development and key new road and pedestrian connections has been outlined in chapter 3. This highlights the significance of a number of likely key future links within the study area, particularly the link between the Hammersons owned site and Lakeside Shopping Centre across the TGI Friday

roundabout. We have undertaken a second round of accessibility analysis based on the proposed movement networks planned under the Lakeside Masterplan. It shows a clear indication of how much easier it will become to navigate and walk within the Masterplan area based on the recalibrated spatial configuration of the new layout. Finally in section 3 we have provided some examples of case studies of similar roads and environments to West Thurrock Way that have offered inspiration in terms of the recommendations.

### Option identification and evaluation

We have identified a number of project options for addressing the objectives of this study in tackling the severance issues along West Thurrock Way and supporting the Lakeside Masterplan. We have paid particular attention to identifying projects which support the key masterplan issues of facilitating sustainable movement on key corridors and also support development which better addresses the frontage of West Thurrock Way.

Chapter 4 sets out these options which have been developed based on the 4 links along West Thurrock Way namely

1. Lancaster Roundabout to TGI Friday roundabout
2. TGI Friday roundabout to Lakeside Leisure Park roundabout
3. Lakeside Leisure Park roundabout to Lakeside Retail Park roundabout
4. Lakeside Retail Park rounabout to the A1306.

Schemes have been grouped into option packages for each link. **Option A** schemes for all links include relatively small scale improvements to the pedestrian and cycling environment both along and across West Thurrock Way, with minimum impact on road capacity. **Option B** schemes introduce more substantial traffic management, public realm and connectivity improvement schemes on an incremental basis. Option B also introduces a new footpath connection from the TGI Friday roundabout along the West side of

Alexandra Lake connecting into the proposed bridge across the Lake.

**Option C** schemes offer the opportunity for a step change in the enhancement of accessibility and connectivity across West Thurrock Way. This introduces some changes to pedestrian crossing locations, new pedestrian crossings, carriageway narrowing to provide enhanced space for pedestrians, kerbside servicing in key locations, major public realm improvements and tree planting. The C options in links 2 and 3 in particular are critical in supporting the creation of a new centre with active frontages and a high street feel along West Thurrock Way.

The **D options** are relevant to link 1 only but introduce major crossing infrastructure in the form of a major new public square straddling the current location of the TGI Friday roundabout and the south side of Alexandra Lake.

A key conclusion of this chapter is that the more ambitious and potentially contentious and challenging schemes in terms of delivery (as outlined in options C and D) can only realistically be delivered as part of a phased delivery of major elements of new development set out in the Masterplan.

These options have all been evaluated against a set of criteria outlined in chapter 4 to determine which ones might be most appropriate to address study objectives and in what timescales. The main findings from this evaluation are summarised at the end of chapter 4.

Chapter 5 develops these packages by showing sketch designs for preferred options which fulfil the aspirations of the brief to improve connectivity across West Thurrock Way.

Costings and Delivery

Our principal conclusion is that an incremental approach to the delivery of the various scheme package is the most realistic and beneficial strategy.

• The **‘quick win’ option A** projects involving relatively minor footway, public realm, cycle-way, signage, tree planting and pedestrian crossing relocation projects are all relatively easily deliverable and relatively low cost. They deliver short term improvements but not the step change in connectivity enhancements that are regarded as key in realising the LRTCP vision.

• All or elements of the **medium scale, option B and C(ii)** projects, involving the creation of new pedestrian crossings, narrowing of carriageways (whilst maintaining 2 lanes in each direction), tree planting and re-modelling of roundabouts, are considered as desirable and realistic in helping to meet the study objectives. These are deliverable within the short term timescale of 2014 - 2019 but need to be justified through the realisation of new development that better addresses the West Thurrock Way frontage and generates more sustainable trips within the study area.

• All of the **major C (ii) option** projects involve significant junction changes including signalisation, road narrowing, road re-alignment, creation of servicing facilities to support the concept of a new active frontage on the two middle links. These longer term options can only be developed in tandem with the major elements of the masterplan related to development and new movement network aspirations. It is recommended to prioritise the east end of West Thurrock Way with C(ii) interventions in the short term period, and work towards providing C (ii) options through a phased process in link 3.

• The **D options** are generally not considered deliverable or justifiable in cost-benefit terms, except for the public realm option. This could be feasible in the 2019-2025 period if major progress has been made elsewhere towards realising the Masterplan vision.

A set of initial 1:1000 scale engineering drawings have been produced to highlight the key options for each of the links (see figures 50-58). An initial assessment of deliverability has been made for each of these options. The majority of the schemes outlined in this report can be delivered within the curtilage of the public highway. The notable exceptions

to this are part of option B on link 1 which introduces the footpath link on land owned by a combination of Land Securities and Intu holdings and the D options. Option D (iii), the public square, can only be delivered with an extensive land take requirement from both sides of Thurrock Way adjacent to the current TGI Friday roundabout.

Summary of Preferred Option Packages	Cost
1. Lancaster roundabout to TGI Friday roundabout	
- Option C(i) - Significant road civilisation / roundabout signalisation package	£1,200,000
- Option C(ii) - Junction and crossing re-modelling package	£1,600,000
- Option D(iii) - Public Square	£2,500,000
2. TGI Friday roundabout to Lakeside Leisure Park roundabout	
- Option C(i) - Significant road civilisation / roundabout signalisation package	£1,600,000
- Option C(ii) - Significant road civilisation and junction re-modelling package	£3,800,000
3. Lakeside Leisure Park roundabout to Lakeside Retail Park roundabout	
- Option C(i) - Significant road civilisation / roundabout signalisation package	£1,750,000
- Option C(ii) - Significant road civilisation and junction re-modelling package	£3,300,000
4. Lakeside Retail Park roundabout to junction with A1306 (Arterial Road)	
- Option A - Enhanced pedestrian and cycle accessibility package	£375,000
- Option B - Incremental road civilisation / traffic management package	£580,000

Fig. 64 - Summary and costs of preferred option packages





# Appendix A - Cost Schedule

Appendix A provides more detail on estimated scheme costs broken down by package and by section of West Thurrock Way

a

# 1. Lancaster Motors roundabout to TGI Friday roundabout

A. Pedestrian / cycle access enhancement package		B. Incremental road civilisation / traffic management package		C. Significant re-alignment of roundabout and road civilisation package		D. Public Square, bridge and subway crossing options	
	000' est.		000' est.		000' est.		000' est.
Footway widening on the north side (part) and footway re-surfacing. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	20-25 2 5	Re-location and upgrade of current formal pedestrian crossing (from puffin to Toucan) to the west of the Lancaster roundabout slightly further west to address pedestrian desire lines. <ul style="list-style-type: none"><li>Remove existing crossing</li><li>Introduce new Toucan crossing</li><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	15-20 110-130 12-15 5-10	C(i) Full signalisation of all arms of roundabout at the TGI Friday roundabout. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul> <b>Total (including A and B elements)</b>	200-250 16-20 10-15 <b>£1,200,000</b>	Construction of a new public square across West Thurrock Way adjacent to roundabout (excluding structure over lake) <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	1500 – 2000 125-150 75-100
Introduce shared use footway / enhanced cycle way on north side of West Thurrock Way. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	130-150 15-20 25-30	Addition of new formal pedestrian crossing on desire line at West Thurrock Way near junction with Lancaster roundabout. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	10-130 12-15 5-10	C(ii) Removal of TGI roundabout and replacement with 4 arm signalised junction (widened toucan on eastern arm). <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul> <b>Total (including A and B elements)</b>	1000 – 1250 80-100 100-125 <b>£1,600,000</b>	Construction of new green bridge across TGI Friday roundabout <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	2500 – 3000 150-250 100-120
Enhanced public cycle parking facilities. Covered shelter and “Sheffield” stands. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	15-20 1-2 1	Removal of west-bound slip lane from Heron Way directly onto West Thurrock Way <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	20-25 3-5 5-7			Construction of new high quality subway beneath TGI Friday roundabout <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	2500 – 3000 150-250 100-120
Enhanced cycle and pedestrian wayfinding. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	10-15 5-7 2-3	Footway widening to narrow width of westbound carriageway from 10.00m to approximately 8m. Maintain width of eastbound carriageway at 7.5m. Maintain two lanes in each direction.	100 - 125				
		Addition of signalised crossing on West Thurrock Way at junction of TGI roundabout and signalised crossing on Costco access road. Supports strategic link from Hammersons site through to Lakeside shopping centre identified in the Masterplan work. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	120-130 10-12 10-15				
		Introduce new off road footpath link from roundabout along western edge of South Lake (rear of Lakeside Retail Park) to the landing point of proposed new pedestrian bridge across South Lake. Approximately 300m and including access ramp and parapets. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	150 – 175 12-15 15-20				
		Footway widening to narrow width of westbound carriageway from 10.25m to approximately 8m. Maintain width of eastbound carriageway at 7.5m. Maintain two lanes in each direction. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	150-175 12-15 15-20				
		Tree planting in central median <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	40-50 2-3 4-5				
		New road surfacing to encourage lower speeds	£300/m²				
TOTAL ESTIMATED COST			£565,000				

2. TGI Friday roundabout to Lakeside Leisure Park roundabout

A. Pedestrian / cycle access enhancement package		B. Incremental road civilisation / traffic management package		C. Significant re-alignment of roundabout and road civilisation package	
	000' est.		000' est.		000' est.
Upgrade of existing formal pedestrian crossing at Lakeside Leisure park roundabout from Puffin to Toucan (equipment only) <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	40-50  3-5 5	Footway widening to narrow width of westbound carriageway from 10.00m to approximately 8m. Maintain width of eastbound carriageway at 7.3m. Maintain two lanes in each direction. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	100 -125  10-12 10-15	<b>C(i)</b> Major civilisation of West Thurrock Way to reduce existing dual carriageway to a single 4m carriageway in each direction with space being utilised for enhanced footway and cycleway on each side and widened central median. <ul style="list-style-type: none"><li>Design Fees</li><li>Statutory Undertaker costs</li></ul> Full signalisation of all 4 arms of Lakeside Leisure park roundabout. <ul style="list-style-type: none"><li>Signal equipment</li><li>Civil Engineering works</li><li>Design Fees</li><li>Statutory Undertaker costs</li></ul> <b>Total estimated cost</b>	550 – 600  45-50 50-60  200-220 100-125 8-10 5-10  <b>£1,600,000</b>
Footway widening on the north side (part) and footway re-surfacing <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	30-40  3-5 3-5	Introduction of pedestrian crossings on two arms of Lakeside Leisure park roundabout (one to the immediate west of Lakeside Leisure Park roundabout) and one across access road to Leisure Park to facilitate strategic connection from Hammersons site to Lakeside Retail Park site. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	130 – 150  10-15 10-15	<b>C(ii)</b> Major civilisation of West Thurrock Way to reduce existing dual carriageway to a 2lane 6.4m carriageway in each direction with space being utilised for enhanced footway and cycleway on each side, widened central median and the introduction of a lay-by for waiting and loading activities. <ul style="list-style-type: none"><li>Design Fees</li><li>Statutory Undertaker costs</li></ul> Removal of Lakeside Leisure Park roundabout and replacement with 4 arm signalised junction. <ul style="list-style-type: none"><li>Design Fees</li><li>Statutory Undertaker costs</li></ul> Re-alignment of West Thurrock Way west of TGI Friday roundabout <ul style="list-style-type: none"><li>Design Fees</li><li>Statutory Undertaker costs</li></ul> <b>Total estimated cost</b>	600-700  50-55 60-70  1000 – 1250  80-100 100-125  1000  80-100 150-200  <b>£3,800,00</b>
Introduction of shared use footway / cycle way on north side of West Thurrock Way <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	100 – 125  10-15 10-15	Removal of guardrail from Lakeside Retail Park roundabout <ul style="list-style-type: none"><li>Estimated Design Fees</li></ul>	2-3  1		
Enhanced public cycle parking facilities. Covered shelter and “Sheffield” stands. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	15 – 20 1-2 0	Tree planting in central median <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	40-50 2-3 4-5		
Enhanced cycle and pedestrian wayfinding <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	10 – 15  5-7 2-3	New road surfacing to encourage lower speeds	£300/m <sup>2</sup>		
<b>TOTAL ESTIMATED COST</b>	<b>£305,000</b>		<b>£385,000</b>		

### 3. Lakeside Leisure Park roundabout to Lakeside Retail Park roundabout

A. Pedestrian / cycle access enhancement package		B. Incremental road civilisation / traffic management package		C. Significant re-alignment of roundabout and road civilisation package	
	000' est.		000' est.		000' est.
Upgrade of existing formal pedestrian crossing at Lakeside Retail Park roundabout from Puffin to Toucan (equipment only) <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	50-60  3-5 5	Narrow width of westbound carriageway from 10.00m to approximately 8m. Maintain width of eastbound carriageway at 7.5m. Maintain two lanes in each direction. Utilise space for increased width of central median with tree planting. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	100-125  10-12 10-12	<b>C(i)</b> Major civilisation of West Thurrock Way to reduce existing dual carriageway to a single 4m carriageway in each direction with space being utilised for enhanced footway and cycleway on each side and widened central median. <ul style="list-style-type: none"><li>Design Fees</li><li>Statutory Undertaker costs</li></ul> Full signalisation of all 4 arms of Lakeside Leisure park roundabout. <ul style="list-style-type: none"><li>Signal equipment</li><li>Civil Engineering works</li><li>Design Fees</li><li>Statutory Undertaker costs</li></ul> <b>Total estimated cost</b>	500 – 550  40-45 45-55  200-210 100-115 8-10 5-10 <b>£1,750,000</b>
Footway widening on the north side (part) and footway re-surfacing <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	40-50  3-5 3-5	Introduction of toucan crossing on Weston Avenue arm of Lakeside Retail Park roundabout <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	75-100  6-8 5-7	<b>C(ii)</b> Major civilisation of West Thurrock Way to reduce existing dual carriageway to a 2lane 6.4m carriageway in each direction with space being utilised for enhanced footway and cycleway on each side, widened central median and the introduction of a lay-by for waiting and loading activities. <ul style="list-style-type: none"><li>Design Fees</li><li>Statutory Undertaker costs</li></ul> Removal of Lakeside Leisure Park roundabout and replacement with 4 arm signalised junction. <ul style="list-style-type: none"><li>Design Fees</li><li>Statutory Undertaker costs</li></ul> Re-alignment of West Thurrock Way west of TGI Friday roundabout <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Statutory Undertaker costs</li></ul> <b>Total estimated cost</b>	550-650  50-55 60-70  1000 – 1250 80-100 100-125  600 60-70 70-100 <b>£3,300,000</b>
Introduction of shared use footway / cycle way on north side of West Thurrock Way <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	100 – 125  10-12 10-15	Introduction of toucan crossing on access road into Lakeside Retail Park <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	75-100  6-8 5-7		
Enhanced public cycle parking facilities. Covered shelter and “Sheffield” stands. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	15 – 20  1-2 0	Removal of guardrail from Lakeside Retail Park roundabout <ul style="list-style-type: none"><li>Estimated Design Fees</li></ul>	2-3  1		
Enhanced cycle and pedestrian wayfinding <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	10 – 15  5-7 2-3	Tree planting in central median <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	40-50  2-3 4-5		
		New road surfacing to encourage lower speeds	£300/m²		
<b>TOTAL ESTIMATED COST</b>	<b>£350,000</b>		<b>£440,000</b>		



4. Lakeside Retail Park roundabout to junction with A1306 (Arterial Road)

A. Pedestrian / cycle access enhancement package		B. Incremental road civilisation / traffic management package	
	000' est.		000' est.
Footway re-surfacing and provision of shared use cycle / footway on western side of road <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	200-250  15-20 22-25	Signalisation of West Thurrock Way at junction with A1306 (Arterial Road) <ul style="list-style-type: none"><li>Signal equipment</li><li>Civil Engineering works</li><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	  200-250 100-150 10-20 8-10
Enhanced cycle and pedestrian wayfinding <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	10 – 15  5-7 2-3	Reconfiguration of roundabout at this location to facilitate pedestrian crossing. <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	40-60 5-7 5-7
Enhanced access steps from eastern footway down to Tesco access road <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	120-140  10-15 <5	Removal of crash barrier in central median <ul style="list-style-type: none"><li>Estimated Design Fees</li><li>Estimated Statutory Undertaker costs</li></ul>	40-50  2-3 0
TOTAL ESTIMATED COST	£375,000		£580,000

**Notes**  
Estimates do not include an Optimism bias - (Optimism Bias relates to the demonstrated and systematic tendency for project appraisers to be overly optimistic when considering future project benefits and costs. The Treasury "Green Book" recommends that Optimism bias a value of 44% should be added to the estimates for road projects.)  
Estimates do not include for any design, tendering or supervision fees.  
Estimates do not include for any statutory undertakers (or other) diversion costs. These can vary significantly.  
\* Lighting assessments will be required to ensure that potential signal locations meet current standards for lighting pedestrian crossings. Additional lighting works may increase costs by 10%