



Basildon Local Plan Pound Lane, Bowers Gifford Technical Note May 2021



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1 Background

The Basildon Local Plan has determined that land to the east of Basildon, and land between A127 and Burnt Mill Road will be acceptable for development (both residential and commercial / employment area).

To support the development of these sites, a new road is proposed from Pound Lane to Courtauld Road, facilitating the employment area, which shall also require improvements to the Highway Network, particularly along the northern length of Pound Lane.

This report is concerned with cataloguing potential improvements required along Pound Lane to support the proposed development sites. These include alterations to the main junctions to facilitate the expected additional traffic flows and improvements along the southern section of pound lane to enhance the current facilities to bring them up to an acceptable standard to support the additional housing and community services (school, doctor's surgery etc.) proposed.



2 Site Description

Pound Lane predates A127, which was originally constructed in the 1920s and dualled in the 1930s.

At the time of writing the A127 at the junction of Pound Lane is subject to the National Speed Limit (70MPH for dual carriageways), and is street lit, with shared, unsegregated cycleway/footways on each side.

Crashmaps.co.uk indicates that there has been one recorded injury collision in the last five years.

In terms of characteristics the following are of note:

- -The A127 is a PR1 route within the Essex hierarchy With Pound Lane itself PR2
- -Pound Lane is predominantly rural in nature at the north, with little, inconsistent street lighting and a 40MPH speed restriction.
- -The rural section, being from the A127 junction, south to the start of the 30MPH restriction near the junction with Grange Road, has little in the way of positive drainage, relying on storm water draining to ditches by the side of the road, and is often subject to flooding, being in Flood Risk Zone 3 at the Northern end in particular
- -To the south, there is limited residential development, mostly to the west side of the carriageway, and then on both sides of the carriageway towards the junction with B1464 London Road.
- -The more developed length of the road features street lighting and by virtue of this is a restricted road (30MPH), from a point approximately 150m north of the junction with Grange Road.

The more developed section has positive drainage by way of channel gullies. The condition of the drainage has not been reviewed but is believed to be sufficient for the present situation.

- -Within the more developed length of Pound Lane there are several residential streets on both sides of Pound Lane of which some are private roads, and some adopted into the Highway.
- -As well as residences there are a small number of businesses, and local amenities.
- -The south end of Pound Lane features a signalised junction with B1464 London Road.
- -A watercourse starts as a ditch on the east side of Pound Lane opposite the junction with Osborne Road (and is presumably piped upstream of this point where there is a culvert), and falls north to *Redvers*, a property northeast of the junction with Burnt Mills Road. From here, the watercourse passes beneath Pound Lane via a culvert, and then falls north towards *Hamilton House*, where it again crosses Pound Lane via a culvert, and then A127 via a culvert. It ultimately joins a tributary of the River Crouch.
- -B1464 was formerly the main east/west route between London and south Essex and has been subsequently bypassed by the current A13.
- -B1464 London Road is a PR2 route within the Essex hierarchy.
- -This route has been highlighted as a priority in the draft Local Cycling and Walking Infrastructure Plan (LCWIP) for Basildon, which has recently been published for consultation. A means of crossing the A127 will need to be provided to facilitate this route. This has not been considered in this report and is likely to require additional land.



3 Recommendations

Assumptions

At the time of writing works are in progress to implement a 50mph restriction along A127 linked to the local Air Quality Management Plan (AQMP). Once complete there shall be a 50mph restriction on both the eastbound and westbound lanes of the A127. This scheme includes the implementation of average speed cameras for enforcement, and therefore it may be expected that compliance with the speed restriction is high. If this is the case, the Highway Authority will be satisfied with reduced design speeds for the proposed revised arrangement at A127 junction with Pound Lane.

The design speed for a dual carriageway is determined by the physical alignment of the carriageway and physical constraints on site, rather than the actual speed limit of the road. So in the case of the A127, which was originally designed as a High Speed Road and still retains that alignment, a higher design speed should still be used for the junction design. However due to the expected speed reduction associated with the new speed limit it is reasonable to assume that a relaxation to a lower Design Speed would be acceptable and as such, in the absence of any agreement from the Highway Authority at this stage a design Speed of 70kph has been selected and all references to Standards in the sections below relate to this.

The locations of Statutory Undertakers' apparatus has not been investigated, but as a relatively old Highway corridor it is assumed that there shall be a number of services within the existing Highway, any of which may have an effect on the design of any proposals described herein.

It is also clear from our inspection the existing carriageway and footway is in poor repair within sections A-D and is likely of a limited Construction 'structurally'.

It should be noted that since this report was originally commissioned and issued, new guidance (Local Transport Note 1/20) has been issued by the Department for Transport in July 2020 this relates to the design of cycling infrastructure and outlines recommended requirements for segregated cycling infrastructure. As this was not available at the time of writing the original version of this report the designs and recommendations highlighted in the Summary do not take these additional requirements into account. Generally, it is likely that the footway / cycleway provisions including crossing points would need to be wider resulting in additional land requirements outside of the existing Highway Boundary. Local Transport note (LTN) 1/20 requirements will need to be considered fully before any further design works are carried out and any infrastructure implemented.

A127 Junction With Pound Lane

(See drawing no's B3553R8A-02-002, 003 & 004)

The most direct access to the employment area between Burnt Mills Lane and A127 shall be from the A127 westbound track via its junction with Pound Lane.

The existing junction features subsidiary lanes for exiting and entering the A127 westbound track, however the subsidiary lane to exit the A127 (which is approximately 80m in length with an additional 40m taper) is not in accordance with Standard, and therefore should be extended to meet the Standard. This shall allow vehicles sufficient length of carriageway off line of the main A127 carriageway to safely decelerate in order to negotiate the junction.

Currently the entrance and exit for the car park of *Alton Garden Centre* is located prior to the start of the subsidiary lane, increasing the length of the subsidiary lane shall have an effect on the exit from the car park, as this would now be located within the lane. The entrance, to the east of the subsidiary lane would also now be significantly closer to the start of the lane. It is likely that both



entrance and exit arrangements to the property would require alteration / improvements, which in turn, due to the layout of the site is likely to require additional changes to the way the property is currently internally laid out and operates. These mitigating measures have not been explored here, but should be considered. Potentially access could be redirected from Harrow Road, however this would require substantial work by the garden centre, and the narrowness of Harrow Road would likely preclude this.

The entry radius to the junction (approximately 13.5m) is too small to meet current Standards, and would require enlarging to do so. This would require land acquisition on the southeast side of the junction, in order that the additional land may be incorporated into the Highway.

As well as land requirements for construction, the requirements for forward visibility for vehicles using the junction should also be accounted for. A Design Speed of 70kph has been applied to the junction, being from the end of the subsidiary lane entry taper, through the entry radius of the junction, to the Pound Lane link. For this Design Speed a Stopping Sight Distance (SSD) of 120 metres is the Desirable Minimum, with 90 metres being One Step below the Desirable Minimum, with the latter being applied only with the agreement of the Highway Authority.

For an SSD of 120m as (shown in drawing 002), it would be necessary for a large area of land to be incorporated into the Highway, including the entirety of the private car park on the east side of the carriageway and the entire sewage pumping station compound, with any features obscuring the envelope of visibility to be demolished or removed. This includes trees, vegetation, planting and the sewage pumping station.

The "one step below minimum" SSD of 90m (as shown in drawing 003) has a lesser requirement for additional land to be incorporated into the Highway, however the sewage pumping station would still be adversely affected.

As well as the pumping station and car park, it would be necessary to accommodate the water course which runs to the east of those features, and falls north, below the A127. Within this area earthworks shall be required to support the widened construction, which is not shown in the drawing, as the extent would not be known without topographical information. It should be noted that no improvement to the existing entry radius is possible within the existing highway boundary as this follows closely the back of the narrow footway.

The existing exit radius is also insufficient in accordance with current Standards, which would require this to be larger. Again, land acquisition would be required to achieve the Standard radii, which would likely blight the existing plot which is currently used for car sales.

As well as the entry radius, the forward visibility for the exit radius has been considered. For an SSD of 120m, it would be necessary to acquire the *Hamilton House* plot, as well as the garage workshop and car showroom plot so that the house, garage workshop and showroom may be demolished to allow the envelope of forward visibility to be unobstructed. The 90m SSD would allow the house and garage workshop to be left, although it would be necessary for the showroom to be demolished. A small area of the *Hamilton House* plot would need to be acquired, and perhaps half of the area to the front of the garage workshop.

To achieve Standard lane widths, it would be necessary to increase the size of the existing traffic island, which could incorporate uncontrolled crossing points for the existing cycleway, rather than diverting Non-Motorised Users (NMUs) to a crossing point off line, away from the junction. Currently NMUs cross to the south of the existing splitter island on the narrow and poorly maintained sections of footway. This is a poor layout due to the speed of vehicles existing the A127, interaction with vehicles preparing to enter join the A127 and the movements of the car dealership traffic.

The subsidiary lane entering the A127 is close to Standard, and to be improved to Standard may be done so wholly within the Highway.



The user of a lower design speed would reduce the requirements for the subsidiary lanes, however to achieve radii and visibility within the Standard would still require land acquisition similar to that described herein.

A127 Junction to Harrow Road Junction (Section A)

(See drawing no. B3553R8A-02-001, 002 and 005)

In order to support sustainable transport links to and from developments, a 4m shared, unsegregated cycleway is proposed along the eastern side of the link, connecting with the existing shared cycleway/footway facility on A127.

Combined with a standard cross-section width for the carriageway of 7.3m (2 x 3.65m wide lanes), and a 2m wide verge where there is no cycleway, an overall width for the corridor of 13.3m is required. It is not possible for this to be accommodated within the width of the existing Highway corridor (which varies between approximately 7.8m and 9.8m in width along this section), and therefore land acquisition shall be required. Due to the narrowness of the corridor it is only recommended to provide the cycleway/footway on the one side of the carriageway with the eastern side deemed to create less disruption to *Hamilton House* and the existing ditch line to the east including the culvert headwall on that side of the carriageway.

Pound Lane Junction with Harrow Road

(See drawing no. B3553R8A-02-001)

The existing junction is a major/minor priority junction with a traffic island and is used as a turning point for buses.

Horse Shoe Cottage on the northeast side of the junction is Grade II listed, and it is therefore recommended that the least disruption is caused to the property as possible, including the grounds, as well as the building. It is therefore recommended that in the vicinity of the junction, the cycleway discussed previously crosses to the west side of the carriageway.

It is recommended that the junction is changed to a compact roundabout junction, which will allow the construction of the road to join Courtauld Road through what is currently arable land, rather than constructing a major/minor priority junction further south, which would bring the new road closer to residences and increase the likelihood of Part 1 claims under the Land Compensation Act. This shall also allow an easier manoeuvre for buses.

In order for the roundabout to be constructed it would be necessary to relocate the existing bus stop layby away from the junction, where there appears to be sufficient space within the Highway (notwithstanding any earthworks), as long as the cycleway/footway remains on the west side of the carriageway.

Within the drawing the cycleway/footway is shown to follow the new road to a crossing just beyond the entry/exit taper for the roundabout. The cycleway on either or both sides should be continued along the new road to join the development; the crossing point is shown here as it is outside of the entry/exit taper, offering the shortest crossing possible.

It may be preferable to provide a crossing point through the traffic island on the west side of the roundabout, however the island would need to be increased in width, with the follow on effect that the Inscribed Circle Diameter of the roundabout would also need to be increased, leading to an increased requirement for land acquisition.

To the south of the existing bus stop layby is a traffic calming feature in the form of a priority system with build out, including a cycle bypass. It is recommended that this is removed as it may have a



negative impact on the operation of the bus stop, as queuing traffic may block traffic wishing to exit the priority working system. The provision of the roundabout shall provide a form of traffic calming which may be sufficient mitigation for the removal of the priority working system.

The watercourse would require culverting and/or diverting, and additional flood mitigating measures are likely to be required as the location is within flood zones.

With the construction of the roundabout it will be necessary to implement additional and improved street lighting at the junction.

Harrow Road Junction to Burnt Mills Road Junction (Section B)

(See drawing no. B3553R8A-02-001)

There may be sufficient space to provide a cycleway/footway in the verge on the east side of the carriageway just to the north of Burnt Mills Road junction where there is currently a wide grass verge and a larger amount of Highway land available for use. If the footway were to remain on the western side, it would come into conflict with the private residential property of *Lavender Cottage* on the Corner of Burnt Mill Road. It also provides improved connectivity to the proposals to the south of the Burnt Mills Road junction.

As, in the vicinity of the junction with Harrow Road, the cycleway is proposed on the west side of the carriageway, it would be necessary to provide a crossing point, preferably near to *Redvers*. This may require an extension to the existing culvert outside of this property, although as a very short narrowing, it may be satisfactory for such a pinch point to remain, as the visibility at this location is good.

Pound Lane Junction with Burnt Mills Road

(See drawing no. B3553R8A-02-001)

There may be some benefit to straightening the alignment of the bend at the junction with Burnt Mills Road, as this would allow a footway to be constructed outside *Lavender Cottage* to provide a route for pedestrians to the bus stop, and if required, provide an additional bus stop on the northbound side of the carriageway. Whilst the current timetable and routes may not require this, the development of the employment area may warrant improvements to the existing bus stops, or the construction of new bus stops.

Additionally realigning the junction would provide better visibility between Burnt Mills Road and the south arm of Pound Lane. The existing bus stop facilities on the east side of the carriageway are satisfactory in that a hard standing area has been provided for passengers and there exists a bus stop kerb to allow passengers to board and alight from buses, however these would need to be replaced if the junction geometry was amended.

Burnt Mills Road to North Benfleet Hall Road (Section C)

(See drawing no. B3553R8A-02-001)

There may be sufficient width within the verge on the east side of the carriageway to provide a continuation of the recommended cycleway/footway south to North Benfleet Hall Road, should the vegetation along the Highway boundary be cut back and where necessary the crowns of trees raised.

There is a ditch to the back of the verge which may therefore require some form of protection to prevent cyclist entering the ditch.



Pound Lane Junction with North Benfleet Hall Road

(See drawing no. B3553R8A-02-001)

At the junction of North Benfleet Hall Road is a triangular island which could be removed to allow the junction bell mouth to be narrowed. This would provide the benefits of improving visibility between the arms of the junctions and provide areas for cyclists to wait to cross North Benfleet Hall Road.

On the northeast side of the junction, there is a culvert which would require extending or reconstruction to allow the cycleway to reach North Benfleet Hall Road.

North Benfleet Hall Road to Grange Road (Section D)

(See drawing no. B3553R8A-02-001)

South of North Benfleet Hall Road is very similar to the arrangement north of that junction, in that there may be sufficient space within the Highway to provide a cycleway/footway on the east side of the carriageway following landscaping works.

Grange Road to Junction with Clarence Road (Section E)

(See drawing no. B3553R8A-02-001)

Approximately 175 metres north of the junction with Grange Road is a gateway feature where the 40MPH restriction changes to 30MPH, and very slightly south of this there are footways on both sides of the carriageway.

It is recommended that the suggested cycleway/footway on the east side of the carriageway continues to Osborne Road, although this shall require the relocation of street lighting columns and telegraph posts.

South of this point the Highway corridor reduces in width, and there is development on both sides of the carriageway, so, dependent on traffic speeds and volume, it would be preferable for the cycle route to continue on road, rather than increasing the width for either or both footways to be converted to a shared unsegregated cycleway/footway.

At this distance from the change in speed limits, traffic speeds may be low enough for cyclists to feel comfortable cycling on the carriageway. If vehicle speeds are recorded, it may be possible to make a decision as to whether cyclist friendly traffic calming is required.

Where the cycle route transitions from cycle track to carriageway, sufficient facilities should be provided to ensure cyclists are able to move from one type of facility to the other safely. For northbound cyclists in the carriageway to access a shared cycleway/footway on the east side of the carriageway, this may be accessed by providing a cycle scoop and vestigial cycleway/footway on the west side of the carriageway with an uncontrolled or parallel crossing to link the cycle tracks on each side of the carriageway. Traffic speeds and volumes shall need to be reviewed to determine if an uncontrolled crossing is sufficient, and if a parallel crossing may be implemented at this location. Alternatively a toucan crossing may be considered if cycle numbers and motorised traffic numbers are high.

If expected, or existing cycle numbers are sufficiently high, advisory cycle lanes may be provided on the carriageway, from Grange Road, south to the junction of Bowers Court Drive.



Where footways cross Grange Road, Windsor Road, Osborne Road, Clifton Road, Cornwall Road, Katherine Road and Clarence Road, it is recommended that uncontrolled pedestrian crossings are improved by ensuring they are sufficiently wide, providing tactile paving, and in many cases resurfacing the carriageway in the bell mouths of junctions to provide a trip free surface.

In providing improved crossing facilities, there is an opportunity to amend the geometry of junction bell mouths subject to further review to reduce the likelihood of footways being overrun, therefore improving safety for pedestrians and reducing future maintenance requirements.

A small number of bus stops exist along this length of Pound Lane with varying levels of provision. Consideration should be given to providing as a minimum, bus stop kerbs, however this may not be possible in all locations as the footway cross fall may be adversely affected where the footway is narrow and there is insufficient space within the Highway corridor for the footway to be widened, or for the levels of the footway to be raised without affecting the adjacent ground levels.

Clarence Road Junction to Junction with Bowers Court Drive (Section F)

(See drawing no. B3553R8A-02-001)

A chicane type priority system exists between the junction of Clarence Road and the junction with Homestead Road and Page Road. It is recommended that the system is amended to increase the width of the cycle bypasses, and bollards are relocated to make the cycle bypasses more accommodating for cyclists.

Just south of the junction with William Road and Canvey Road, there is a layby on each side of the carriageway. These were possibly installed to accommodate the bus stops at these locations, however they are often used for parking for the adjacent shops, despite the existence of waiting restrictions on the east side of the carriageway.

With the parking, zebra crossing, crossroad junction and bus stops concentrated in a relatively small area, it may be possible to improve the situation. This could include relocating or amending the zebra crossing; providing positive parking places and judicious use of waiting restrictions (amending existing waiting restrictions); relocating and/or improving the bus stops, including providing bus stop cage markings and no stopping signs. It may be practical to reconfigure the geometry of the laybys; promoting them for parking and for the bus stops instead to be in the carriageway with bus stop kerbs to assist those wishing to board and alight as well as reduce the likelihood of motorists parking on the footway at these locations.

In providing improved crossing facilities, there is an opportunity to amend the geometry of junction bell mouths subject to further review to reduce the likelihood of footways being overrun, therefore improving safety for pedestrians and reducing future maintenance requirements.

North of Bowers Court Road there is sufficient space on the east side of the carriageway to provide a short length of cycleway so that a cycle crossing may be installed to allow cyclists to cross to a new cycleway on the west side of the carriageway (see following section).

Where footways cross Homestead Road, Page Road, William Road, Canvey Road, Kelly Road, Alpha Road, and Bowers Court Road, it is recommended that uncontrolled pedestrian crossings are improved by ensuring they are sufficiently wide, providing tactile paving, and in many cases resurfacing the carriageway in the bell mouths of junctions to provide a trip free surface.

B1464 London Road Junction with Pound Lane

(See drawing no. B3553R8A-02-006)



It is recommended that the existing right turn lane (from Pound Lane to B1464 London Road) is increased in length to improve capacity at the junction. This is based on a number of anecdotal onsite observations of traffic regularly driving along the eastern footway of Pound Lane to access the left turn lane onto the B1464 when the queueing traffic waiting to turn right is queued back. The timings of the two movements are currently staggered and due to the short stacking capacity for the separate movements it is a regular occurrence to see vehicles carrying out unacceptable manoeuvres in order to not be delayed. This has been looked at a number of times in the past with the pedestrian refuge in Pound Lane being removed to provide additional space and the signal timings optimised however the problem remains and it is possible that it would increase with the proposed developments.

This would require widening out of the Highway boundary on the west side of the carriageway. As land acquisition is required, anyway, it may be possible to further increase the width of the Highway corridor, which shall allow for a minimum 4m wide refuge to be installed to accommodate the cycleway/footway crossing Pound Lane, radii and tapers in accordance with Standard, and widening of the footway to support the implementation of a shared cycleway/footway on the west side of the carriageway, from north of Bowers Court Road, south to the junction where it may connect with the existing facilities on the north and south side of B1464 London Road.

If these recommendations were implemented, it would also be necessary to remove the existing refuge island on the west arm of the junction, and install a new island further west, away from the radii on the northwest side of the junction.



4 Summary

The following are recommended (in geographical order from north to south):

- Consider construction of a new junction to the west of Pound Lane, and close the existing
 junction. This would allow easier access to the proposed employment area or amend the
 geometry of A127 junction with Pound Lane in accordance with standard (requires land
 acquisition and demolition of business premises and residences).
- Provide shared unsegregated cycleway/footway on east side of carriageway, from the
 existing facility on the south side of A127, south to junction with Grange Road (requires land
 acquisition in certain locations). It may be necessary for the cycle track to be constructed on
 the west side of the carriageway through the proposed roundabout junction.
- Construct roundabout at the junction of Pound Lane and Harrow Road and new road between Pound Lane and Courtauld Road (requires land acquisition), relocate bus stop layby and improve bus stop facilities and remove priority working system on east side of carriageway, south of Harrow Road.
- Amend geometry of Burnt Mills Road junction to improve visibility, and allow provision of bus stop/bus stop improvements and cycleway/footway to be installed on east side of carriageway.
- Amend geometry of North Benfleet Hall Road junction to improve visibility and allow cycleway/footway to be installed on east side of carriageway.
- Provide advisory cycle lanes within length of existing 30mph restriction (Lawrence Road, south to Bowers Court Drive).
- Provide cycle crossing facilities at each end of on carriageway cycle lanes.
- Improve existing cycle facilities within chicane type traffic calming measure.
- Formalise parking, review parking restrictions and zebra crossing arrangement, and improve bus stops south of junction with William Road and Canvey Road.
- Review existing bus stop arrangements throughout the length of Pound Lane, and as a minimum provide bus stop kerbs (where practical).
- Provide new kerbs and tactile pacing at uncontrolled crossings of side roads throughout the length of Pound Lane, and where necessary resurface carriageway in junction bell mouths.
- Amend geometry of B1464 London Road to allow increase in length of right turn lane, install refuge island for crossing, and construct cycleway/footway on west side of carriageway.

In all these we need to consider the ability of the existing Highway structure to take the amount of improvement without major structural upgrade. Add to this the known issues with Drainage and flooding as well as Lighting mean this is, as an overall scheme could yield 'an order of magnitude cost' reach around £4M (excluding land costs).

This would warrant further investigation and also to consider if the improvements could be constructed in viable sections or phases and the current use of Pound Lane will add further constraints with a Traffic Management or Diversion route strategy

Utility records for potential diversions also would need thorough investigation.



An early appraisal of ground conditions, Flood Risk character and Environmental constraints is also recommended.

5 Drawings

See Appendix A

Drawing no. B3553R8A-02-001 Location Plan

Drawing no. B3553R8A-02-002

Proposed Arrangement A127 J/W Pound Lane

Drawing no. B3553R8A-02-003

A127 J/W Pound Lane Forward Visibility Desirable Minimum (120m)

Drawing no. B3553R8A-02-004

A127 J/W Pound Lane Forward Visibility One Step Below Desirable Minimum (90m)

Drawing no. B3553R8A-02-005

Proposed Arrangement Pound Lane J/W Harrow Road

Drawing no. B3553R8A-02-006

Proposed Arrangement B1464 London Road J/W Pound Lane











