

HCC Highways Works Contract
Gaunts Way
Letchworth Garden City
Feasibility Report
Project Number: 1041442
IWP Number: N/A

Project Manager
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Hertfordshire Highways



1) Existing Site Conditions

Any measurements are approximate unless stated otherwise.

General Site observations

The site was visited on 9th November 2011 and consists of Eastern Way, Gaunts Way and Western Way.

These form part of a residential area in the north of Letchworth Garden City, are subject to 30mph speed limits, with street lights and telegraph poles along their length.

Gaunts Way is largely straight road, 650m in length and joins the northern ends of Eastern Way and Western Way with 90° bends. Eastern Way and Western Way are both 350m long and have junctions with Northfields, which runs parallel to Gaunts Way, at priority junctions with Northfields having the right of way.

In general all roads are 5m wide with 1.8m footways separated from the carriageway by 3.2m verges. The verge widths can vary dependent on the road layout and are sometimes non-existent. There are regular vehicle crossovers and connecting footways along the lengths of the roads.

Along each road there is roadside planting in the form of trees.

Dealing with each road separately:

Eastern Way

At the priority junction with Northfields, Eastern Way continues to the north east until it becomes Gaunts Way. There are two minor side junction spurs on the south east side serving other residential properties but are still part of Eastern Way. There are regular vehicle crossovers and connecting footways with dropped kerbs on both sides of the road.

At the southern end, both sides of the junction are protected by timber bollards (one missing) to prevent parking on the verge. On the day of the site visit, two cars were parked fully on the road directly at the junction entrance, therefore forcing vehicles to enter the road on the wrong side.

Parking was present only on the north western side of the road (except for one vehicle which was parked fully on the eastern verge), leaving sufficient room for a vehicle to use the remaining carriageway. At the time of the visit, a hopper type bus was observed to do so unhindered with no problems. Whilst the width of the road means that vehicles can pass parked vehicles, there is evidence of vehicle overrun on the eastern verge, which may be caused by larger vehicles or parked vehicles at busier times. The road is wide and straight enough for large vehicles to pass parked cars without overrunning the verge, but the damage is constant along the verge, which implies that vehicles are mounting it more than just occasionally when they meet oncoming traffic.

At the north end the loop spur road has evidence of overrunning at the junctions. On the northern junction concrete bollards appear to have been recently added so further
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regularly overrun, likely by large vehicles through necessity. However, the worn surface appears compacted and durable rather than rutted verge as so many of the other locations are.

Gaunts Way

There are four side road junctions on the south west side of the road (Maycroft, Whitehicks, Sparhawke and Burley) which all connect to Northfields. On the north east side of the road, half way along, there is an access to playing fields which may be heavily used at the weekends for various fixtures.

There are a number of accesses serving garage blocks along the length on the south west side.

Vehicles were parked on both sides of the road, though not opposite each other as this would block the road. As with Eastern Way as there was sufficient free space and the road does not appear to have access or safety issues. There is evidence of vehicle overrun on junction corners and on straight sections of verge especially in front of the playing fields junction. The overrun on junction corners is likely to be due to large vehicles turning and having their movements restricted by vehicles parking opposite or near the junction. At the playing fields it is more likely to be due to vehicles parking on the verge when the playing fields are busy.

On the bend in to Western Way, the inside radius has been overrun up to 0.5m. This corner is already being widened as a separate issue and will be completed by the time any works proposed in this report will go ahead.

Western Way

There are two side road junctions on the south east side of the road (Kimberley and Stoneley) which both connect through to Northfields. At these junctions there is evidence of overrunning on the junction corners likely caused by large vehicles turning when vehicles are parked opposite the junction.

At the junction with Northfields there is overrunning up to 0.5m wide, probably by large vehicles, especially on the eastern side. There is also evidence of parking at this junction, which may be due to the flats on the north west side. These flats have a parking area but it may be insufficient for the number of vehicles. A number of the properties in the immediate area do not appear to have off road parking facilities, so these may also add to the on street parking.

2) Scope of Requirements

Eastern Way

The main objective is to stop vehicles parking at the junction with Northfields and to ease access along the road to avoid the overrun. Also to investigate whether anything needs to be done to protect the overrun areas at spur loop at the north end of the road.

Gaunts Way

Investigate ways of preventing vehicles from overrunning the corners of the side road junctions, and the verge.

Western Way

Investigate ways of preventing vehicles from overrunning the corners of the side road junctions, and the junction with Northfields. May include preventing parking at the junction.

3) Design Solution Options

A number of ideas were considered rather than specific options as different combinations of various elements could be chosen depending on cost.

Swept path analysis has been undertaken at various road junctions to determine if larger vehicles would be able to use the junctions if no vehicles were parked there. If this is the case then waiting restrictions could be proposed as installing bollards where they would continually be damaged just causes a maintenance liability. To widen the junctions whilst leaving vehicles parked would be expensive as considerable widening would be required.

All these proposals are summarised on drawing M/1041442/100/003.

Eastern Way Widening

Widening of Eastern Way more or less from the junction with Northfields to Gaunts Way by 0.5m could ease access for larger vehicles. However, this would be expensive as drainage and street lighting would require relocation as part of the work. Widening by more than 0.5m is not possible due to the locations of mature trees which line the road and the need to leave sufficient clearance to these.

Post and Rail Fence

The use of a low post and rail fence approximately knee height, especially along Eastern Way (instead of road widening) would prevent any parking on the verges and deter any overrun by vehicles. Again, this is an expensive option and may be a maintenance liability if it is continually struck by vehicles which do overrun the verge. Aside from leaving gaps at any vehicle crossovers and connecting footways, it would restrict pedestrian access across the verges.

Timber Bollards

The use of timber bollards would prevent any parking and deter vehicle overrun of the verges in Eastern Way, Gaunts Way and at various junctions. Bollards would be as effective as a post and rail fence and easier to add/remove as necessary. If placed outside the playing fields in Gaunts Way the small area of existing slabs could be removed and returned to verge. The number of proposed bollards could vary and has been divided into specific areas to choose from. The number required will ultimately depend on tracking analysis of large vehicles, as bollards should not be placed where vehicles will continue to overrun.

Waiting Restrictions

These would take the form of double yellow line, 'no waiting at anytime' restrictions at the junctions of Northfields with Eastern Way and Western Way and all the side roads on Gaunts Way and Western Way. These would be used to remove vehicles parking at the junctions therefore allowing larger vehicles to manoeuvre without overrunning the footways. The extent of the restrictions would depend on other works listed above/below taking place, though minimum lengths to resolve issues would be applied at all junctions.

New Parking Spaces

Additional parking spaces on the north west verge at the junction of Eastern Way and Northfields could be provided to make up for some spaces lost from Eastern Way due to the waiting restrictions. Approximately six spaces could be provided and should be sufficient. It is recommended that any parking area is accessed to and from Eastern and the restrictions in Eastern Way will cover this access to protect users. This option would require the removal of some mature trees (3no), though others could be planted in their place.

Western Way/Northfields Junction Widening

This junction could be widened on the south east side to enable easier access for large vehicles. It is recommended that this should also be undertaken with the implementation of waiting restrictions to prevent vehicles parking at the junction, reducing visibility. To further protect the verges, timber bollards could be installed. It is likely that a short length of widening should also be undertaken on the north west side.

Works Costs

The table below indicates the approximate works costs only for various elements of the above proposals. There will be extra costs for design, traffic management, permanent traffic regulation orders (PTROs) and possible consultations with residents.

Timber bollards and waiting restrictions have many options which are shown with cost breakdowns depending on the numbers required.

Other items are shown with maximum costs.

Item	Quantity	Cost (£)
Eastern Way widening	250m	35,000
Post and rail fence	250m	5,000
Timber bollards:	111no.	16,095
<i>Replace existing at Eastern Way junction with Northfields</i>	1no.	145
<i>Eastern Way</i>	62no.	8,990
<i>Northfields / Western Way junction</i>	12no.	1,740
<i>Inside radius of side road junctions</i>	10no.	1,450
<i>Gaunts Way verge outside playing fields</i>	3no.	435
<i>Additional Gaunts Way verge</i>	23no.	3,335

Item	Quantity	Cost (£)
Waiting Restrictions		
<i>Minimum on Eastern Way junction</i>	67m	23.45
<i>Minimum on Western Way junction</i>	107m	37.45
<i>Additional on Eastern Way junction</i>	160m	56.00
<i>Additional on Western Way junction</i>	176m	61.60
<i>At side road junctions</i>	525m	183.75
<i>Due to the above quantities it is likely a minimum charge for markings would apply</i>		660
Repairing verge at playing fields	20m ²	360
Additional car parking spaces	200m ²	15,000
Widening at Northfields / Western Way junction	50m	6,000

4) Swept Path Analysis

Swept path analysis (SPA) of larger vehicles has been carried out at the following junctions:

- Eastern Way / Northfields
- Western Way / Northfields
- Gaunts Way / Burley
- Gaunts Way / Maycroft
- Western Way / Kimberley
- Western Way / Stoneley

These are the junctions where over running or parking was most evident where the parking restricts the movement of large vehicles, causing damage to verges. SPA enables a designer to 'drive' a vehicle on a plan to see what issues there may be and the choice of vehicles is from a standard list. The SPA will track a vehicle route and will show the lines taken by the wheels and any body overhang. As a larger vehicle with a rigid wheelbase can find more issues at a junction compared to an articulated vehicle an 11m pantechnicon (removal lorry) has been used here. This is larger than a Freight Transport Association (FTA) 10m HG Rigid vehicle and is less manoeuvrable than the FTA 16.5m Articulated vehicle, so provides a worst case. The movements assessed are for turning left in and left out of each junction.

It should be pointed out that these SPA would usually be carried out on a properly surveyed plan as Ordnance Survey plans are not 100% accurate. However, as the programme used will err on the side of caution (undertaking the movements in a real vehicle will be much easier), it will be satisfactory to highlight issues here.

At all of the side road junctions it can be seen that although the vehicle can make the movements without the wheels over running the kerbs, the vehicle does require the full road width and the body requires space to swing over the footway and verges in places.

In order to ensure vehicles can manoeuvre unhindered, it is recommended that all these junctions have waiting restrictions implemented to prevent obstructions by parked vehicles. If vehicles are left to park where they do, installing bollards will not solve overrunning and they will likely become a continuous maintenance problem due to being struck by turning vehicles. However, even without parked vehicles, it is not recommended to use bollards on the verges to prevent overrun because of the path required by vehicle bodywork.

Exiting the junctions of Eastern Way and Western Way with Northfields, vehicle bodywork does not swing out over the verge opposite, although a turning vehicle will partially encroach on to the opposite side of the road. Whilst this is not unusual for large vehicles manoeuvring in residential estates, waiting restrictions are recommended to ensure that enough space is available and that they do not overrun the verge.

The Western Way / Northfield junction shows significantly more overrun than the Eastern Way / Northfields junction and turning vehicles encroach more on to the opposite side of the road. Therefore, this junction would benefit from some widening as well as waiting restrictions to ease movements through the junction.

5) Recommendation

It is recommended that the following options are carried out:

- Replace existing timber bollard, plus provide new timber bollards along Eastern Way, outside the playing fields and along Gaunts Way.
- DYL's at both Northfields junctions and six side road junctions.
- Repair verge outside playing fields.
- Additional 6 car parking spaces at the junction of Eastern Way and Northfields.
- Widening of the Western Way / Northfields junction.

For Eastern Way, timber bollards have been recommended rather than widening or a post and rail fence. Whilst bollards and a fence will prevent verge parking, bollards are more expensive than a fence to install. However, bollards are easier to install, can easily accommodate any layout alterations and do not restrict pedestrian movements as much as a fence. Widening could be the ideal solution but is much more expensive due to alterations to lighting and drainage this would require.

Timber bollards are also proposed on the verge outside the playing fields and some of the worst overrun areas along Gaunts Way. The verge outside the playing fields will also be repaired and re-grassed.

Double yellow line waiting restrictions are proposed at a number of junctions as described in section 4) following SPA. Only four of the six junctions were assessed with SPA as they were the ones which show current overrun. However, it is recommended that restrictions are placed on all six junctions as there are similarities between many of them. This will require officer time to undertake the required design, consultations and adverts required for the whole traffic regulation order (TRO) process.

Parking spaces are proposed on the grassed area at the south end of Eastern Way to offset some of the parking which will be lost if bollards are implemented. Along with design time the parking spaces will require consultation with councillors and residents as required. If considering this option, it is likely that it will require the removal of three mature trees, though replacements could be planted as part of the work.

The widening of the Western Way junction with Northfields of up to 1m, in addition to the waiting restrictions, will aid the movement of large vehicles as assessed in section 4).

The total works costs for the above items would be in the order of **£35,000.**

The other costs associated with the above would be as follows:

- Design Team (design and possible consultations) **£12,000**
- TROs (TRO Team and adverts) **£2,000**
- Traffic Management (signing) **£1,500**

The total cost for the recommended works will be approximately **£50,500**

6) Attachments

Layout Drawings:	M/1041442/100/003 (Sheets 1-3)
Swept Path Drawings:	M/1041442/100/005 (Sheets 1-2)
Bill of Quantities.	

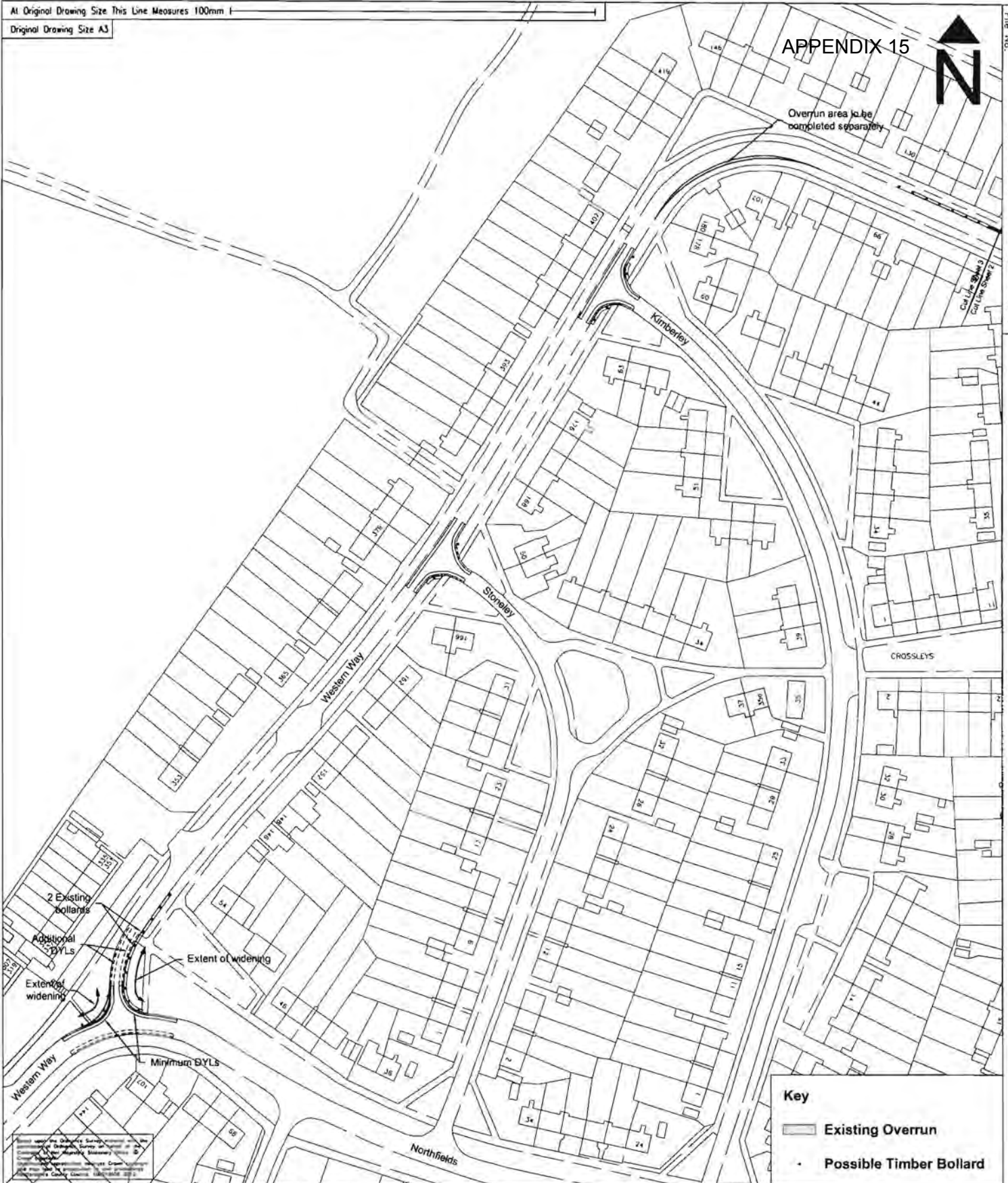
7) References

Manual for Streets

APPENDIX 15



Overrun area to be completed separately



Key

- Existing Overrun
- Possible Timber Bollard

It is the responsibility of the client to ensure that the information provided is accurate and complete. Hertfordshire Highways is not responsible for any errors or omissions in this drawing.

Project No. 1041442		Drg. No. M/1041442/100/003		Rev.
Revisions with Dates		Project Title Gaunts Way, Letchworth		
		Drawing Title Proposed Works (All Possible Options Shown Together)		
CAD	Drawn	Checked	Approved	Sheet No. 3 of 3
Initials	RN	RN	RN	Scales
Date	Mar 12	Mar 12	Mar 12	LETCHWORTH (12.03.14)

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At Original Drawing Size This Line Measures 100mm

Original Drawing Size A3

APPENDIX 15



Computer: S:\STEWART\CD\1\ENV\ALL\Design Team 2011\12\Gaunts Way.Dwg
File No.:



Based on the Ordnance Survey National Grid with the assumption of a datum fixed as stated in the Computer or her Majesty's Stationery Office's Copyright material. The Crown's Copyright and any right in any map or plan deposited in Her Majesty's Stationery Office, 1988 and 2011.

Notes

LETCHWORTH (12.03.14)

Revision with Dates

No.	Description	Date

Project No. 1041442

Drawn	Checked	Approved
RH	RH	RH
12/03/14	12/03/14	12/03/14

Sheet No. 1 of 2

Scale 1:500

Org. No. M/1041442/100/005

Project Title Gaunts Way, Letchworth

Drawing Title Swept Path Analysis - Pantechnicon Left In / Left Out at Side Road Junctions

Hertfordshire Highways

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