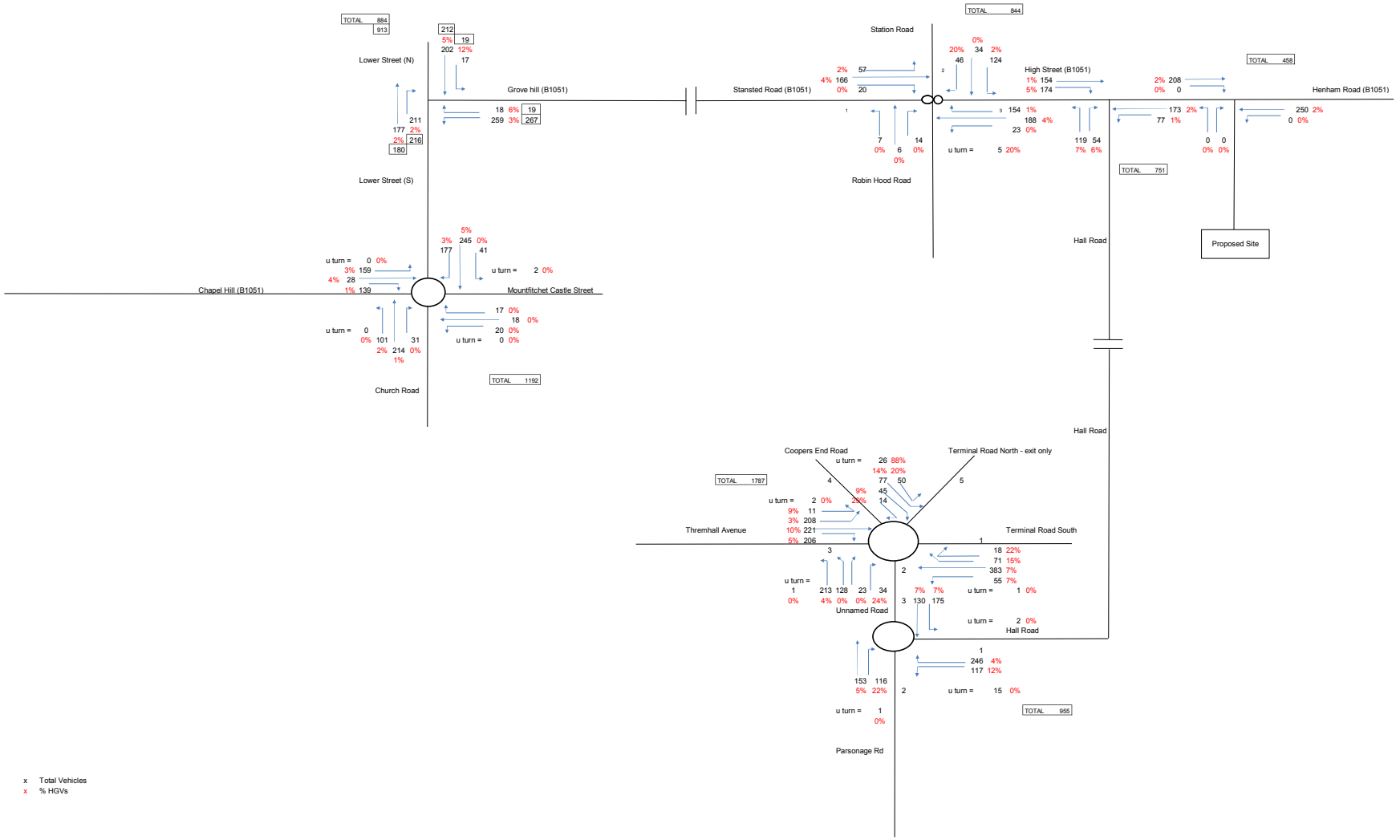
**Appendix H**

**Main Scenario**

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|---|---|---|---|
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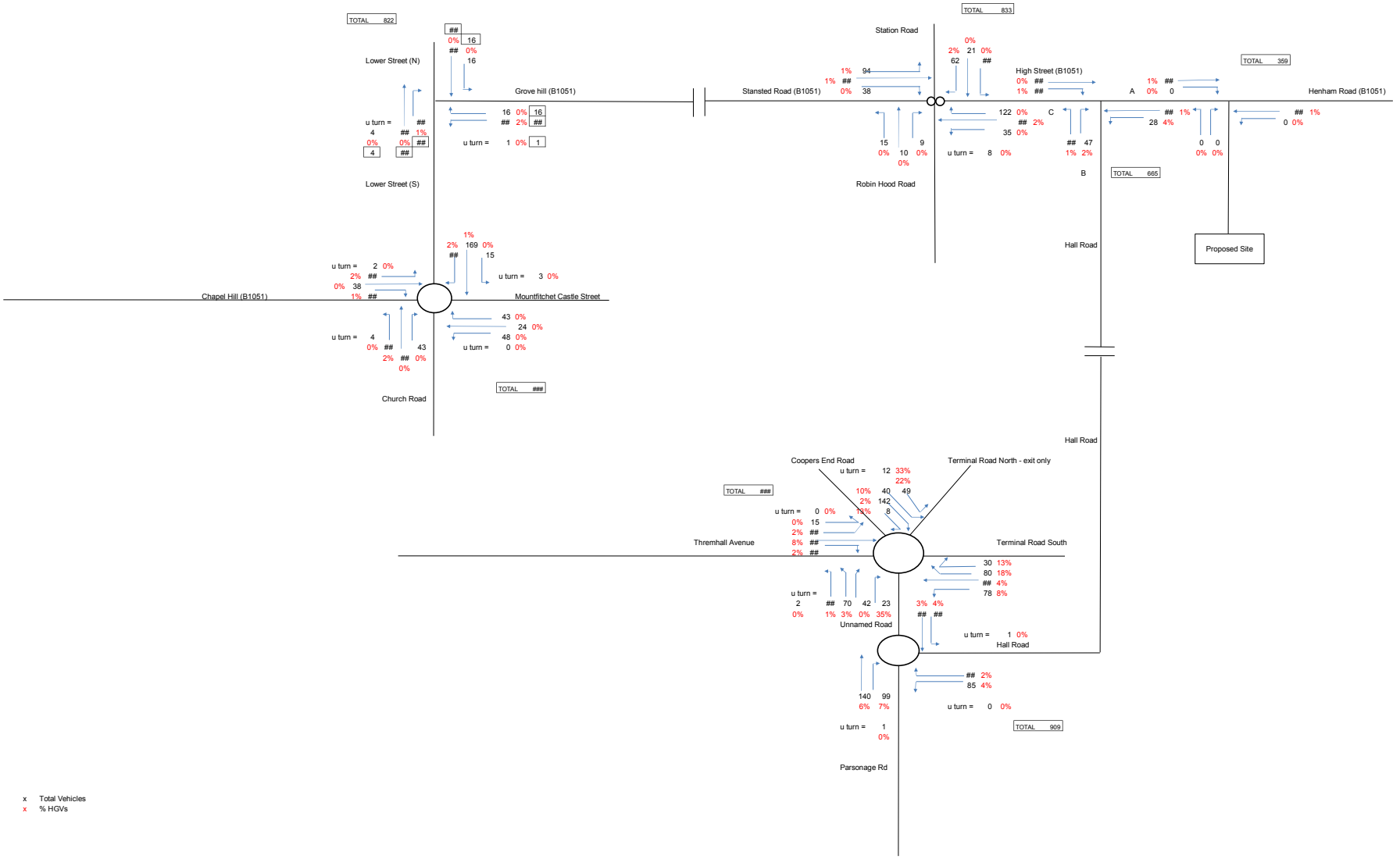
| | Date<br>**July 2022** | Job No<br>**2008170** | Drawing No |
| | **2018 Surveyed Flows - AM Peak** | | |

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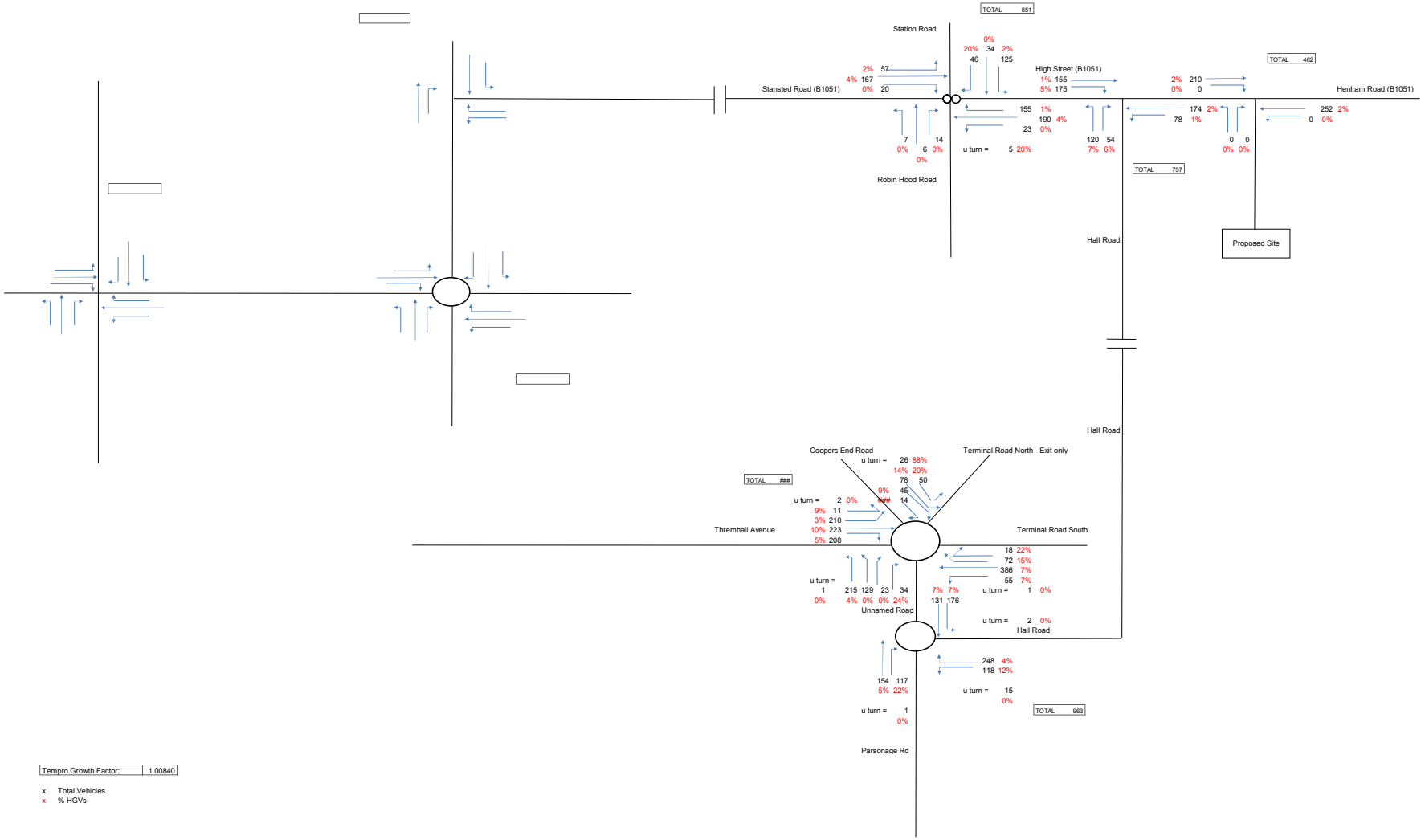
| | Date<br>**July 2022** | Job No<br>**2008170** | Drawing No |
| | **2018 Surveyed Flows - PM Peak** | | |




| Tempro Growth Factor: | 1.00840 |
|---|---|

x Total Vehicles
x % HGVs

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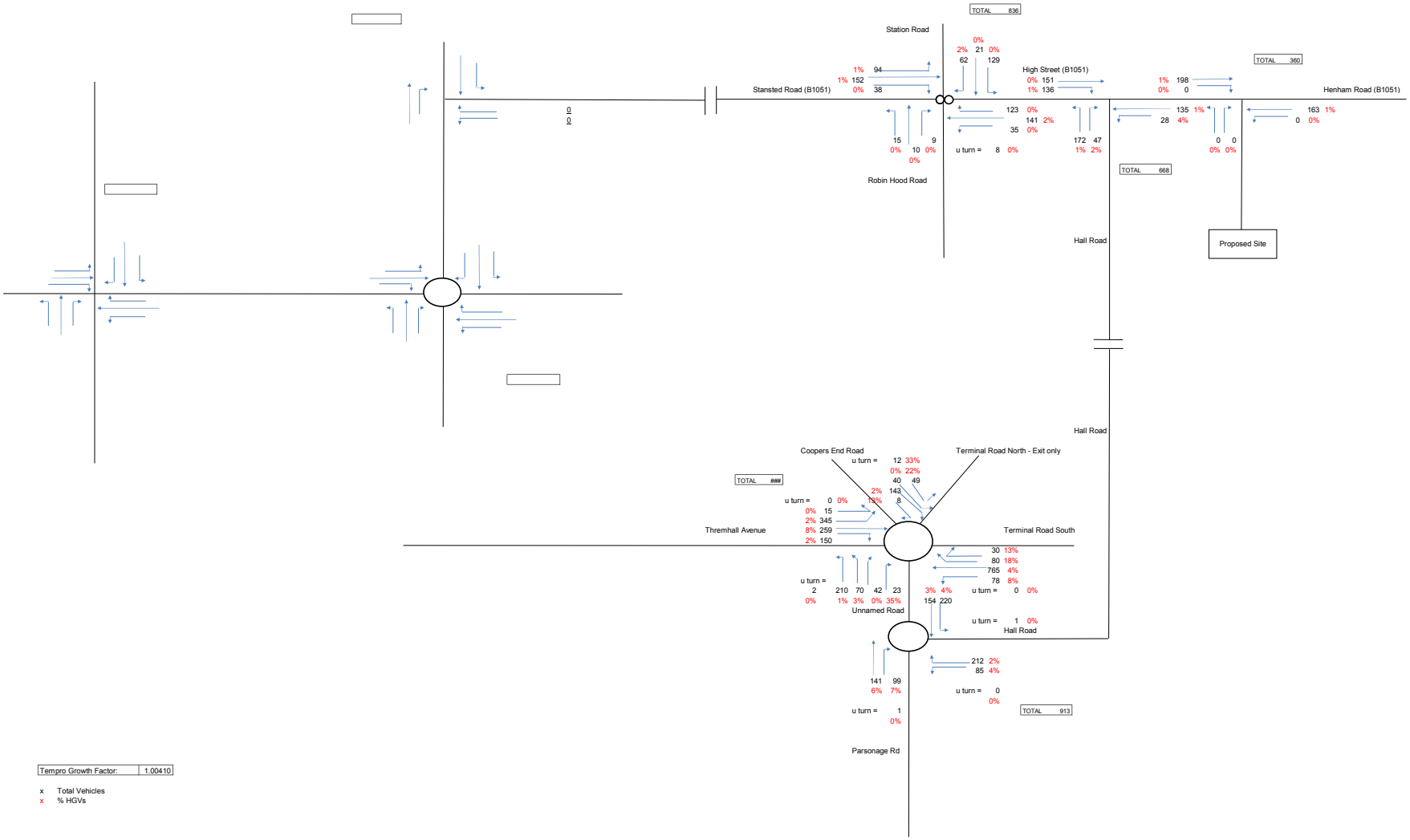
| Date: **July 2022** | Job No: **2008170** |
| Drawing No | |

**2027 Alternative Background Flows (using 2018 survey flows + Tempro Growth) - AM Peak**




| Tempro Growth Factor: | 1.00410 |
|---|---|

x Total Vehicles
x % HGVs

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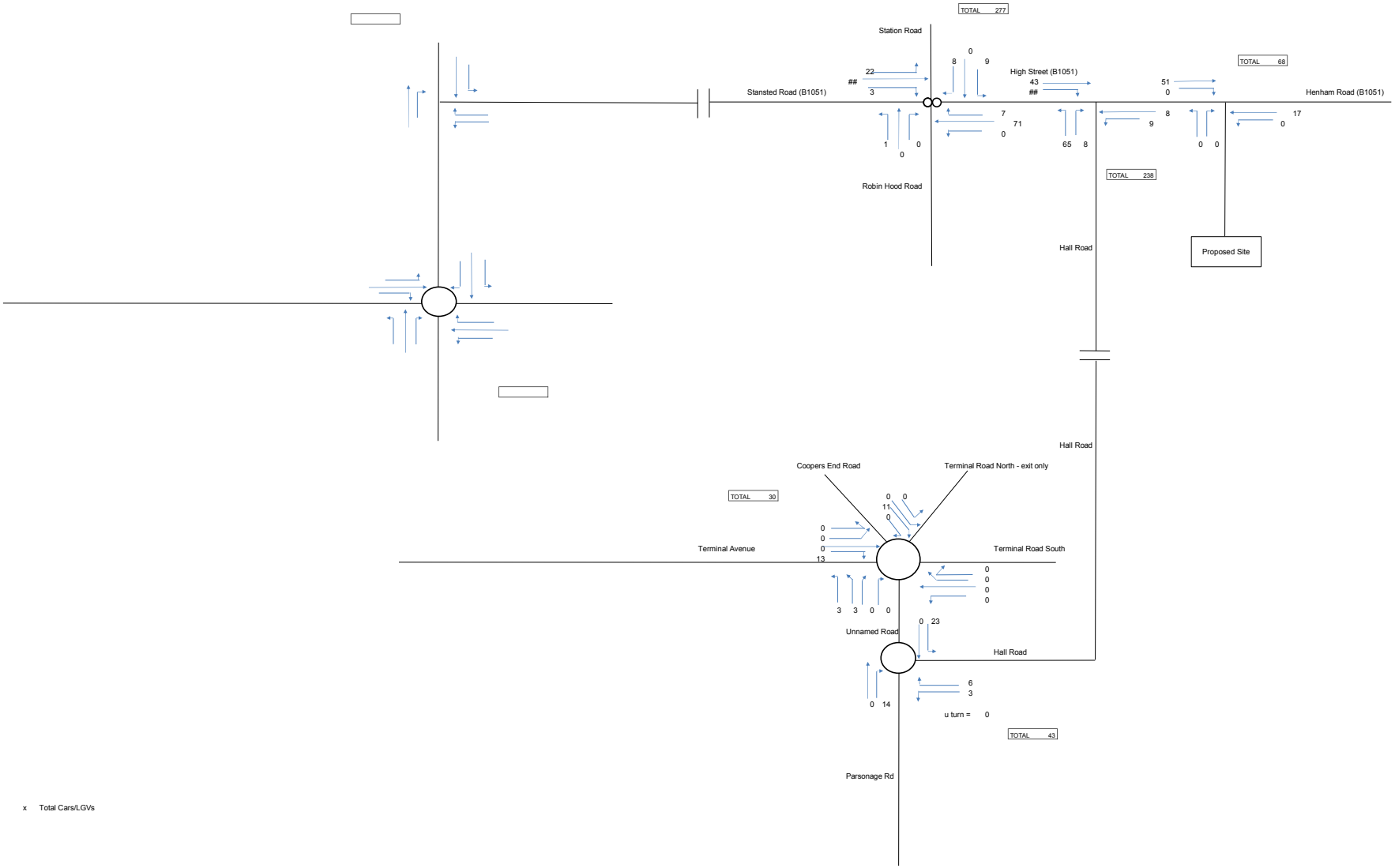
| Drawing No | |

**2027 Alternative Background Flows (using 2018 survey flows + Tempro Growth) - PM Peak**




x Total Cars/LGVs

| | | | |
|---|---|---|---|
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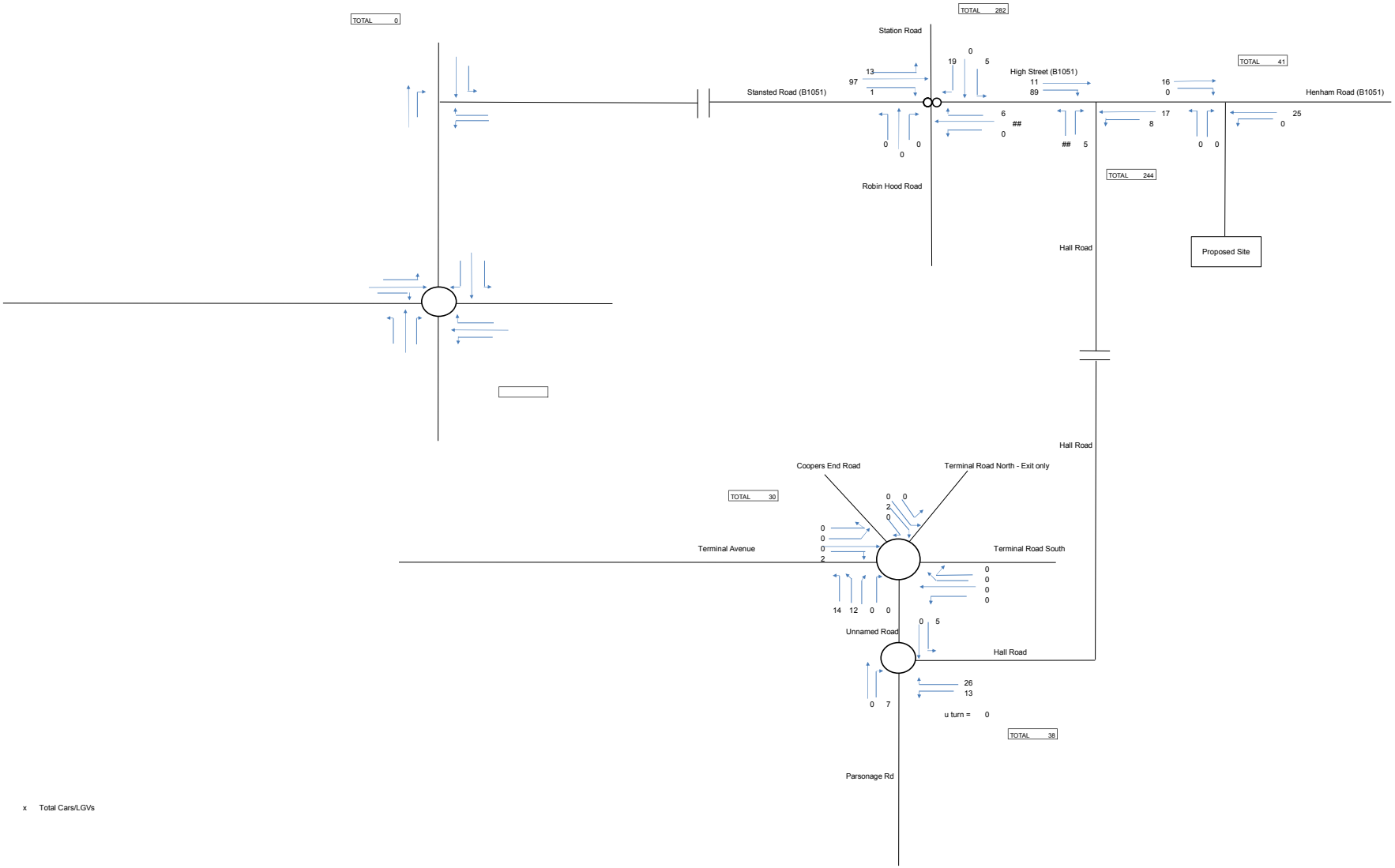
| | Date<br>**July 2022** | Job No<br>**2008170** | Drawing No |
| | **Committed Development Flows (as used in E Elsenham) - AM Peak** | | |




x Total Cars/LGVs

| | | | |
|---|---|---|---|
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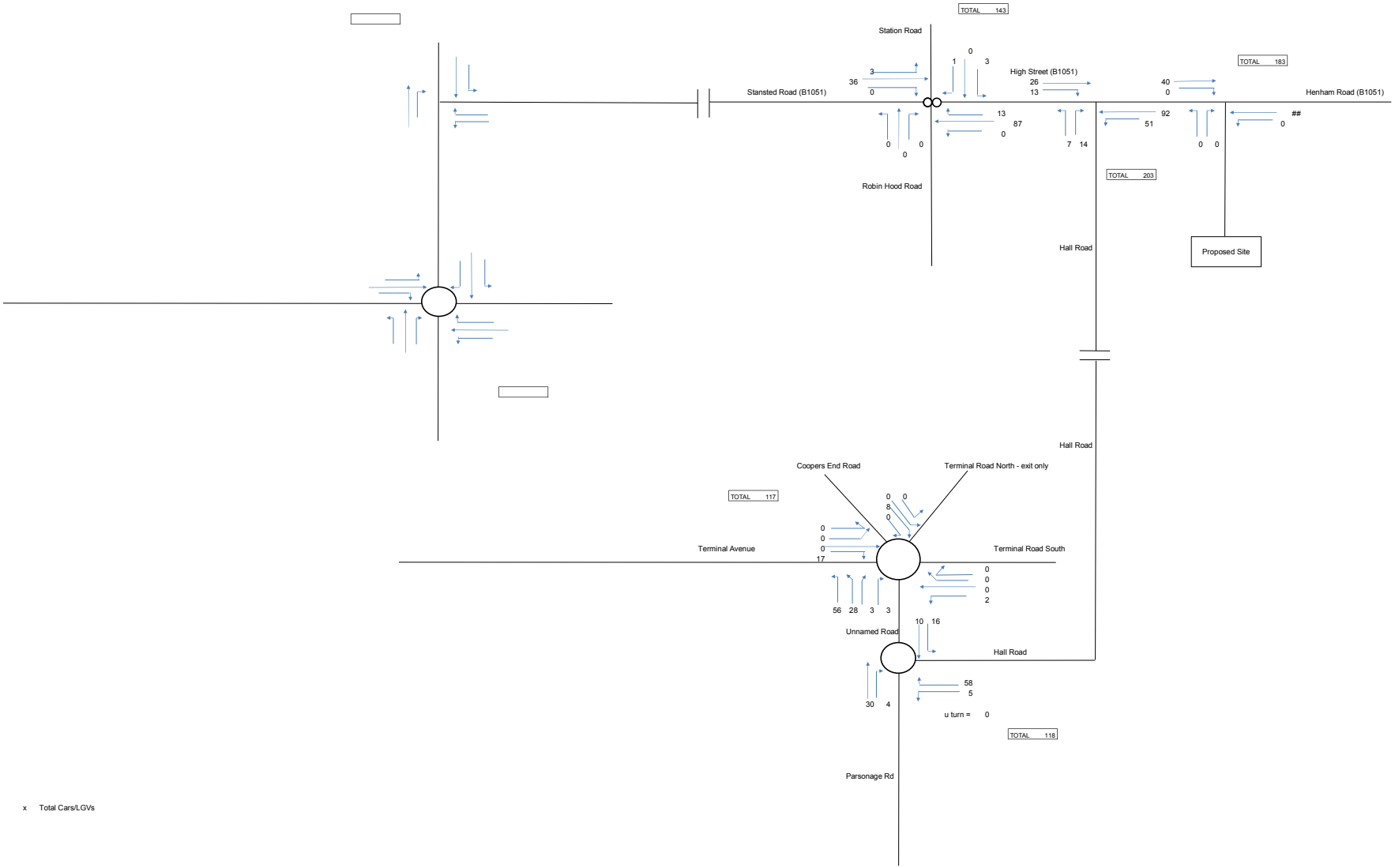
| | Date<br>**July 2022** | Job No<br>**2008170** | Drawing No |
| | **Committed Development Flows (as used in E Elsenham) - PM Peak** | | |

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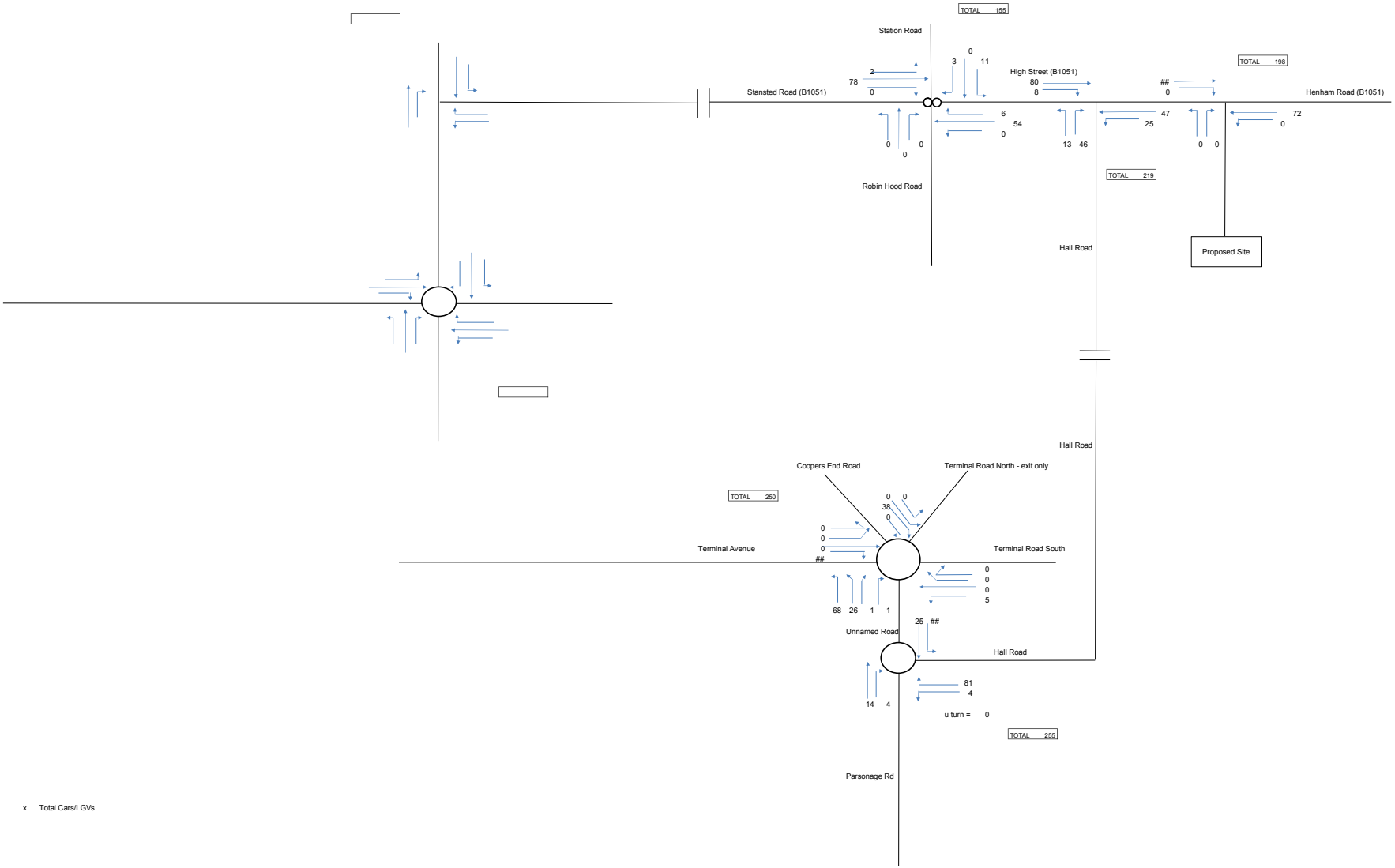
| Drawing No | |

**Total Additional Committed Development Flows - AM Peak**

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| | Date<br>**July 2022** | Job No<br>**2008170** | Drawing No |
| | **Total Additional Committed Development Flows - PM Peak** | | |

**ATC DATA ON LINK ROAD BETWEEN COOPERS ROUNDABOUT AND MINI-ROUNDABOUT PROVIDED BY STEERS - PEAK HOURS:**

Thremhall to/from Terminal Rd N and S

| | AM | PM |
|---|---|---|
| Arrivals | 0 | 0 |
| Departures | 0 | 0 |

Mini-roundabout link to/from Terminal Rd N

| | AM | PM |
|---|---|---|
| Arrivals | 324 | 221 |
| Departures | 338 | 303 |

**AIRPORT FLOWS DEFINED AS 34% OF LINK ROAD TRAFFIC BETWEEN COOPERS ROUNDABOUT AND MINI-ROUNDABOUT PROVIDED BY STEERS - PEAK HOURS:**

Thremhall to/from Terminal Rd N and S

| | AM | PM |
|---|---|---|
| Arrivals | 0 | 0 |
| Departures | 0 | 0 |

Mini-roundabout link to/from Terminal Rd N

| | AM | PM |
|---|---|---|
| Arrivals | 110 | 75 |
| Departures | 115 | 103 |

**The following tables include factor above to take account of mppa at 2032**

**Flows for Stansted Airport**

Thremhall to/from Terminal Rd N and S

| | AM | PM |
|---|---|---|
| Arrivals | 0 | 0 |
| Departures | 0 | 0 |

Mini-roundabout link to/from Terminal Rd N

| | AM | PM |
|---|---|---|
| Arrivals | 175 | 120 |
| Departures | 183 | 164 |

**At the time of 2017 survey data provided by Steers there was equivalent of:**
**27 mppa**
**By 2027, the airport growth should have reached an equivalent of:**
**38 mppa**
**Therefore, factor of 37mppa/27mppa should be applied to the airport traffic**
**1.4**

**Flows for Stansted Airport**

Thremhall to/from Terminal Rd N and S

| | AM | PM |
|---|---|---|
| Arrivals | 0 | 0 |
| Departures | 0 | 0 |

Mini-roundabout link to/from Terminal Rd N

| | AM | PM |
|---|---|---|
| Arrivals | 154 | 105 |
| Departures | 160 | 144 |

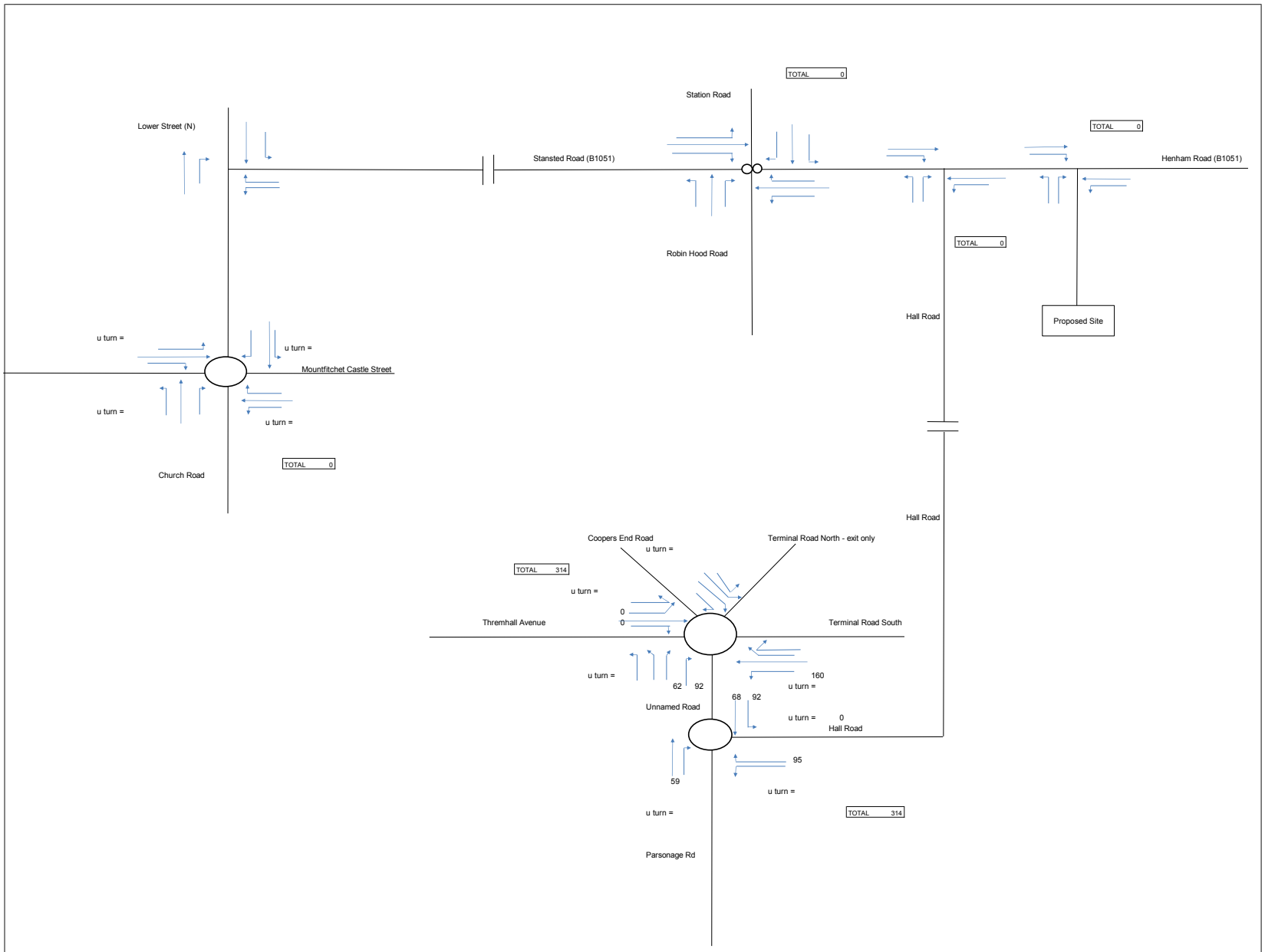
**Difference between link road flows given by Steer for airport arrivals/departures to the east and the TA 2018 observed flows:**

Mini-roundabout link to/from Terminal Rd N and S - 2018 Observed Flows

| | AM | PM |
|---|---|---|
| Arrivals | 57 | 65 |
| Departures | 55 | 78 |

Mini-roundabout link to/from Terminal Rd N and S - Additional Flows to be added to mini-roundabout arms

| | AM | PM |
|---|---|---|
| Arrivals | 97 | 40 |
| Departures | 105 | 66 |

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|---|---|
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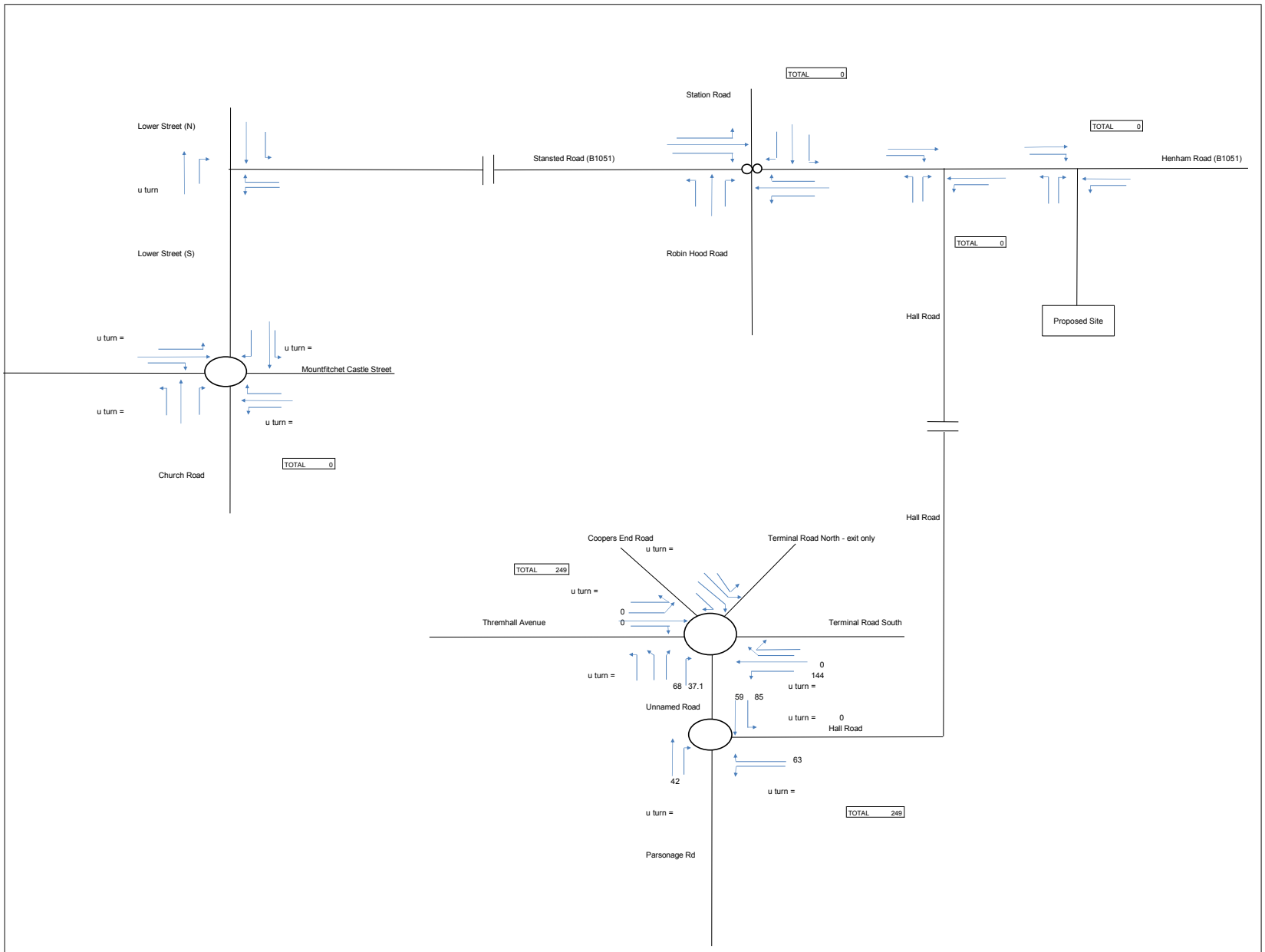
| Date **February 2023** | Drawing No |

**Airport Flows - AM Peak - PINS WORK**

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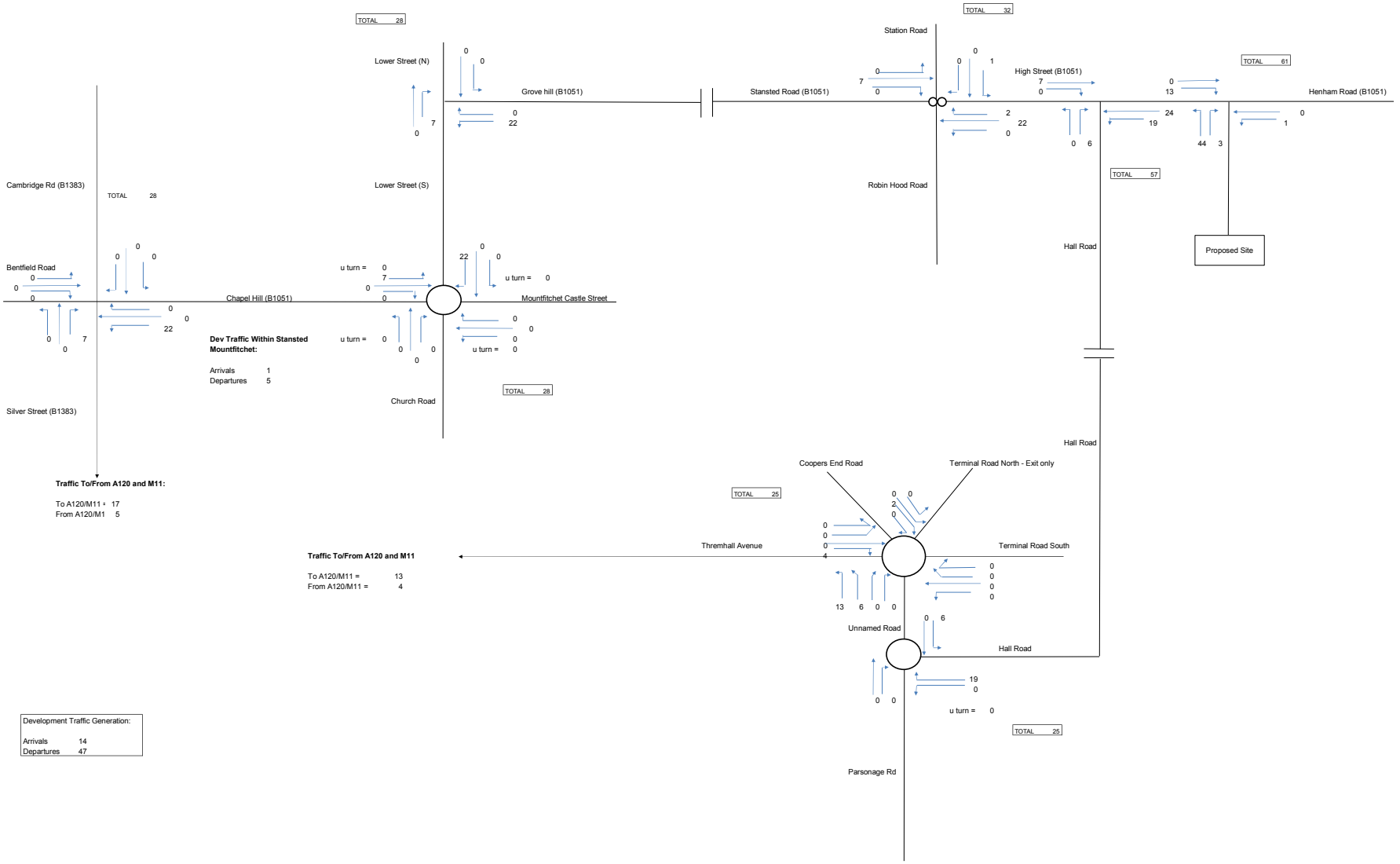
|---|---|
| Client<br>**Countryside** | Project<br>**Land South of Henham Road, Elsenham** |
| Date<br>**February 2023** | Drawing No |
| **Airport Flows - PM Peak - PINS WORK** | |

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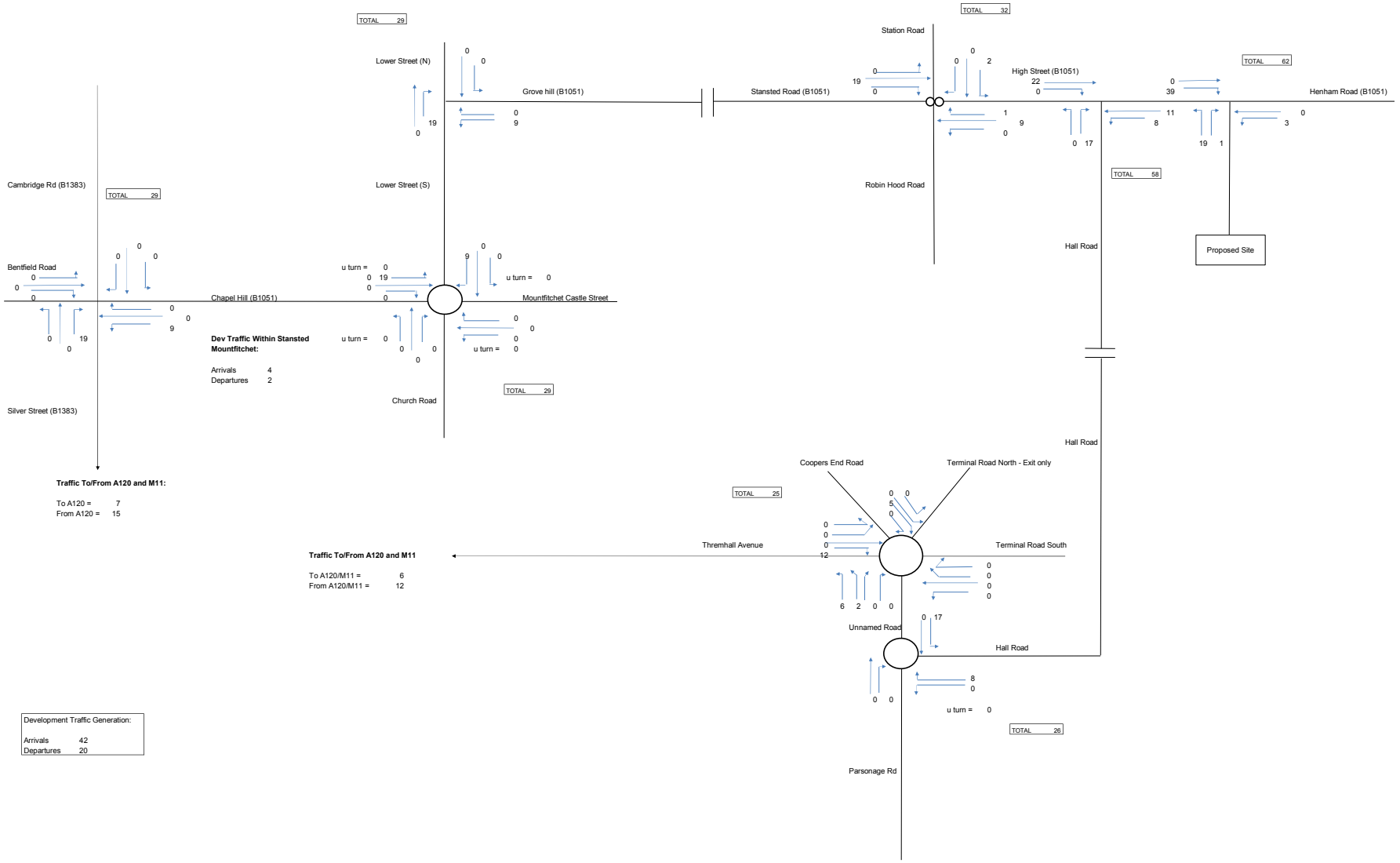
| Project | **Land South of Henham Road, Elsenham** |
| Date | **July 2022** |
| Job No | **2008170** |
| Drawing No | |

**Proposed Development Flows - AM Peak**

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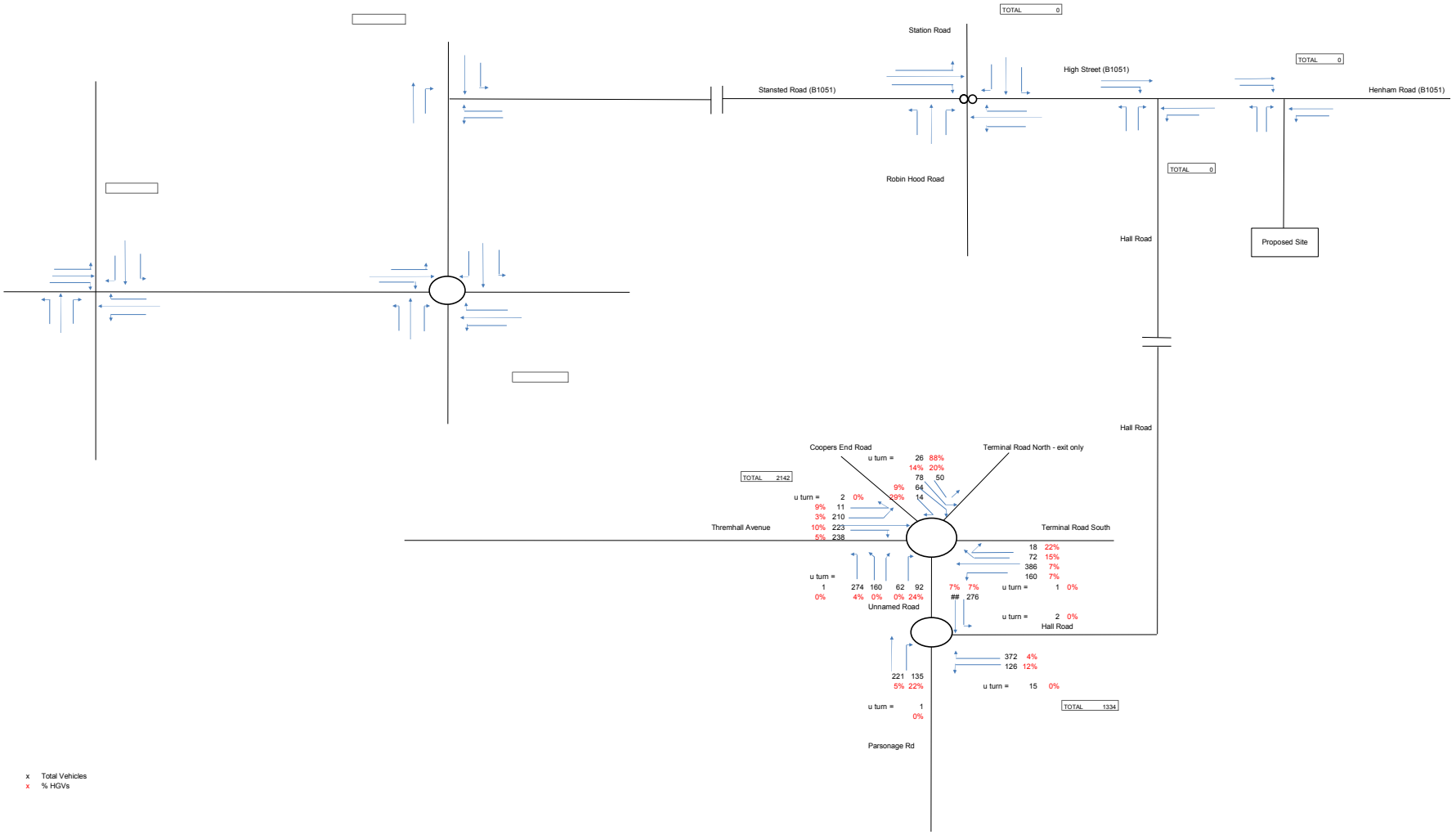
| Date | **July 2022** |
| Job No | **2008170** |
| Drawing No | |

**Proposed Development Flows - PM Peak**

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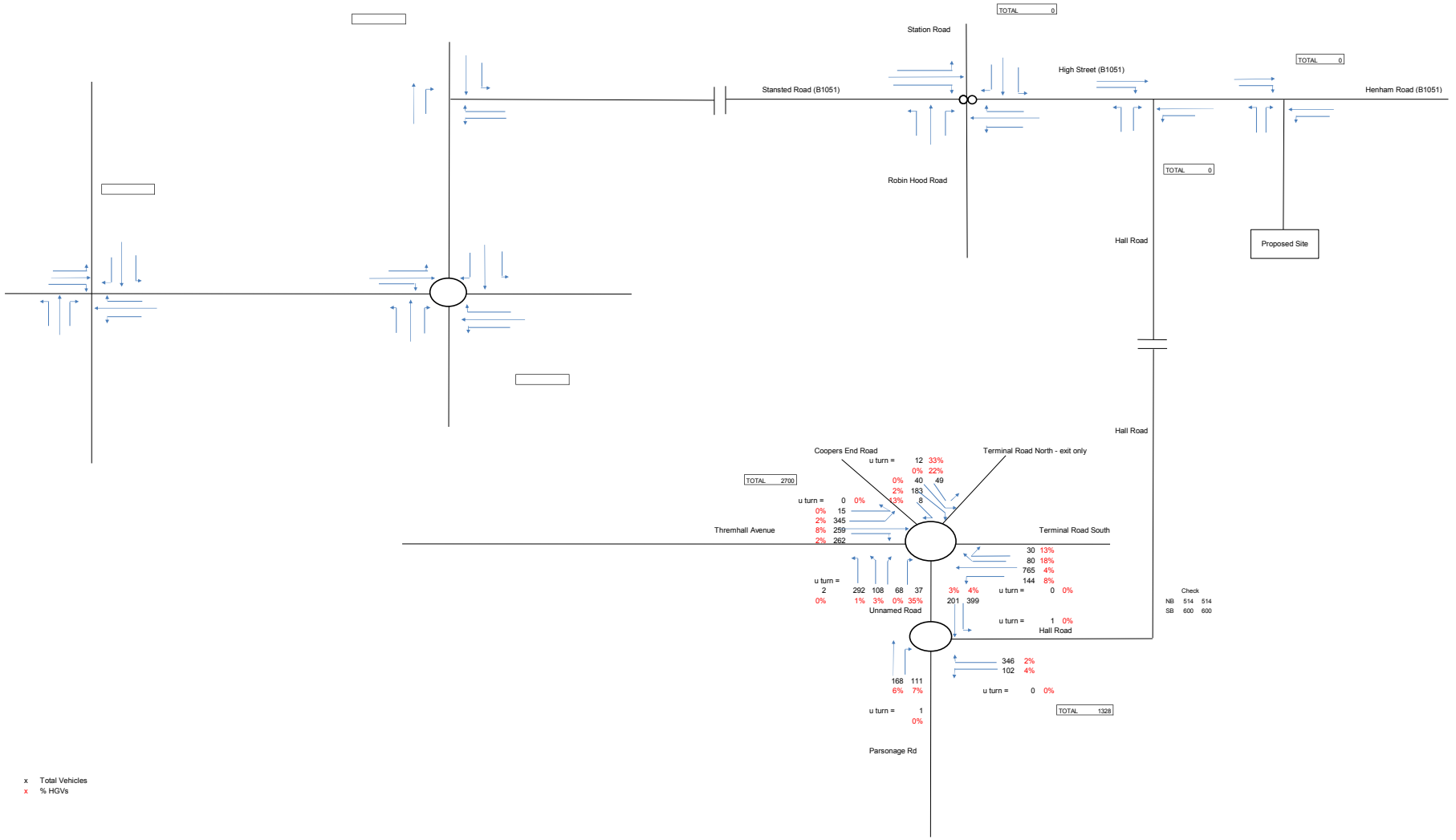
|---|---|
| Client: **Countryside** | Project: **Land South of Henham Road, Elsenham** |
| Date: **Febuary 2023** | Job No: **2008170** |
| Drawing No: | |

**2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic**

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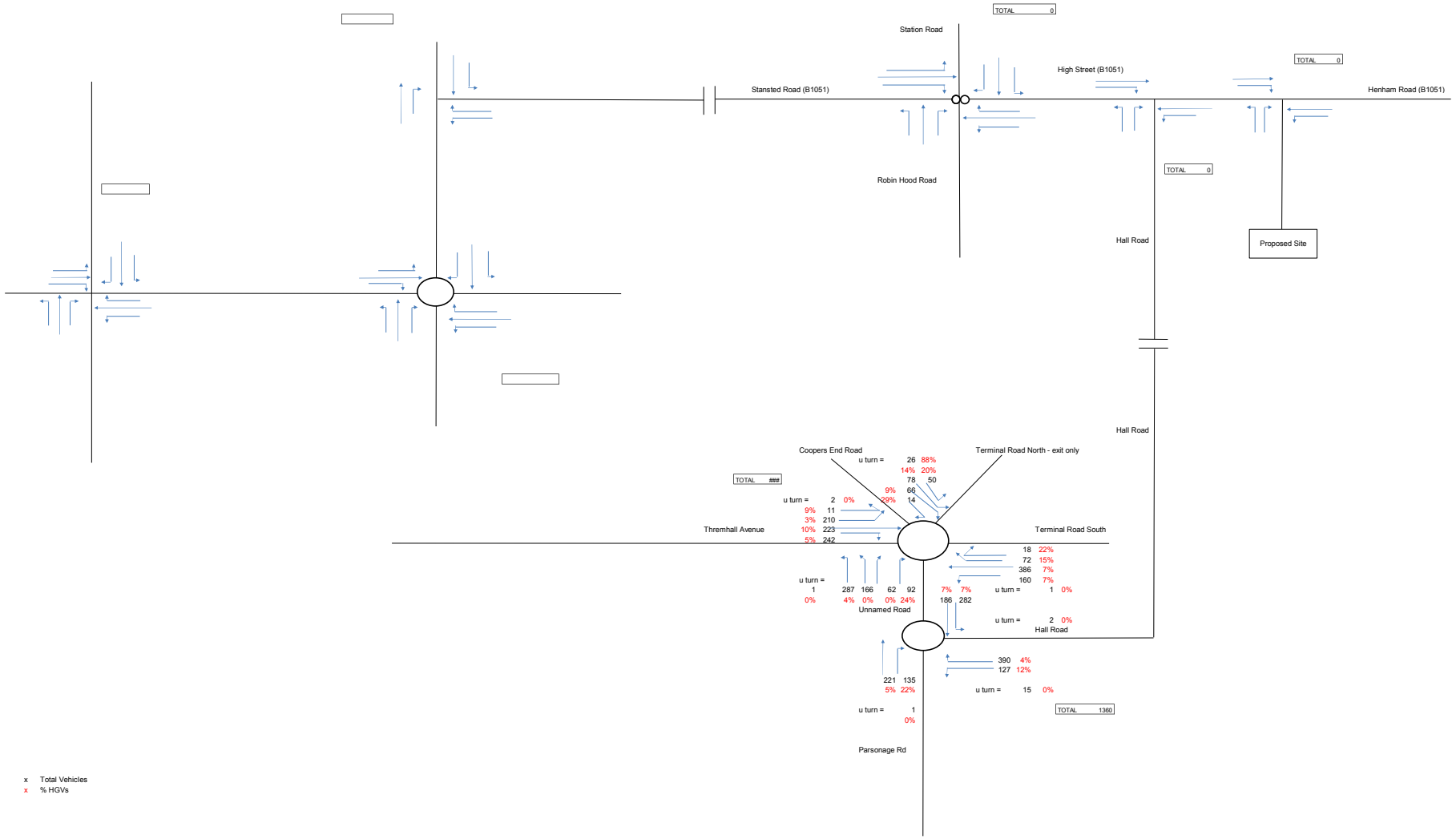
| | Date<br>**February 2023** | Job No<br>**2008170** |
| | | Drawing No |
| | **2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak** | |

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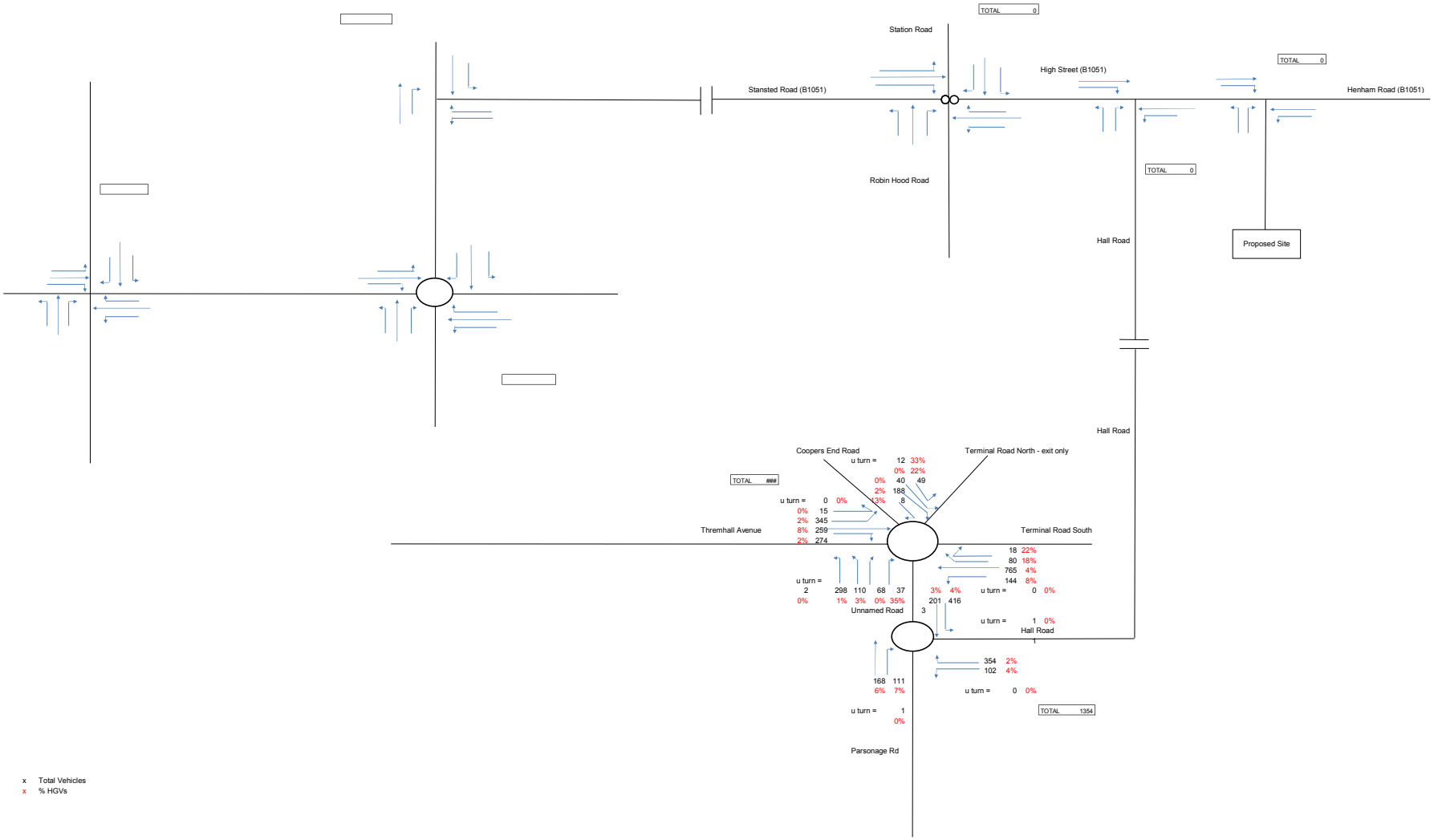
| | | |
|---|---|---|
| Client: **Countryside** | | Project: **Land South of Henham Road, Elsenham** |
| Date: **February 2023** | Job No: **2008170** | Drawing No |

**2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak**

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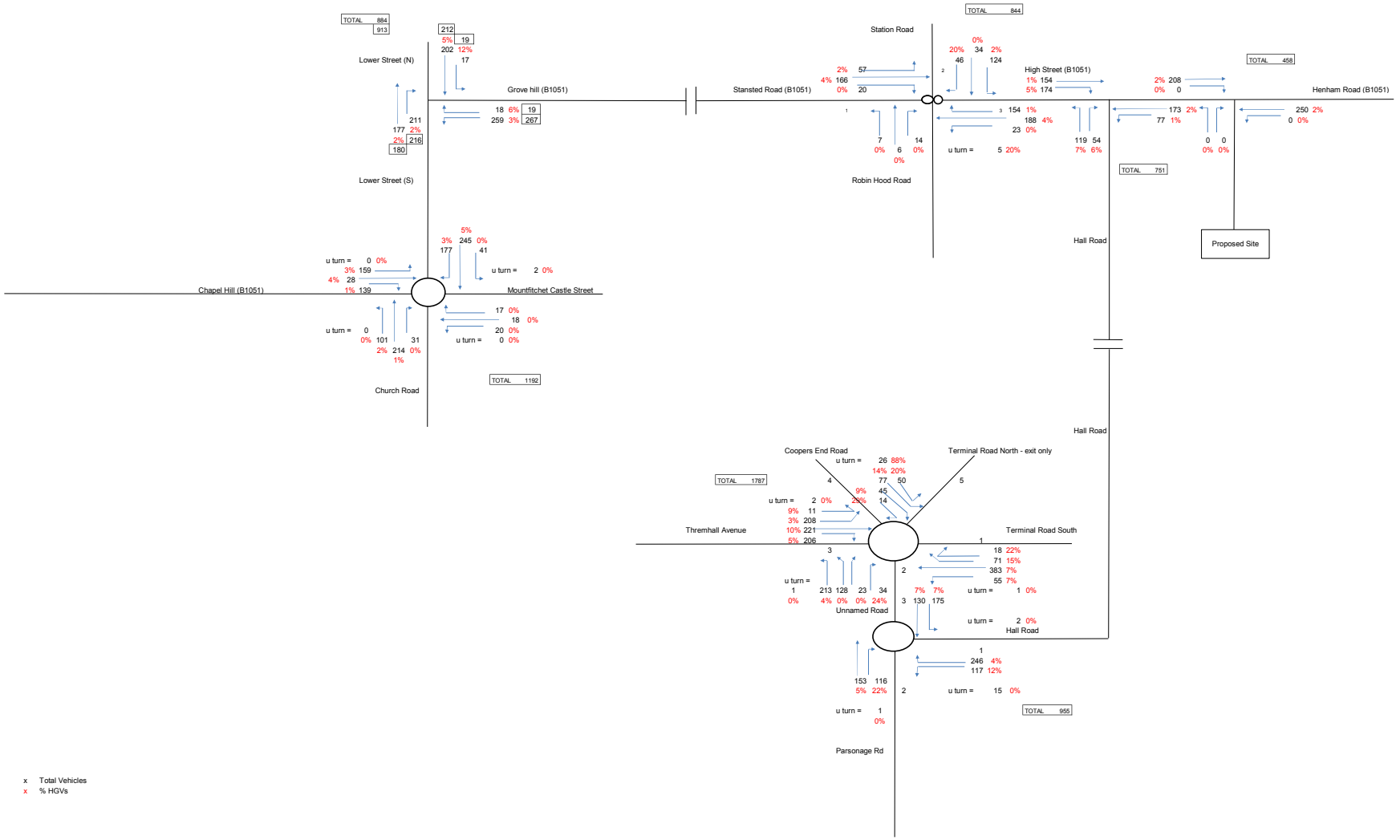
| | Date<br>**February 2023** | Job No<br>**2008170** | Drawing No |
| | **2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak** | | |

**Sensitivity Scenario**

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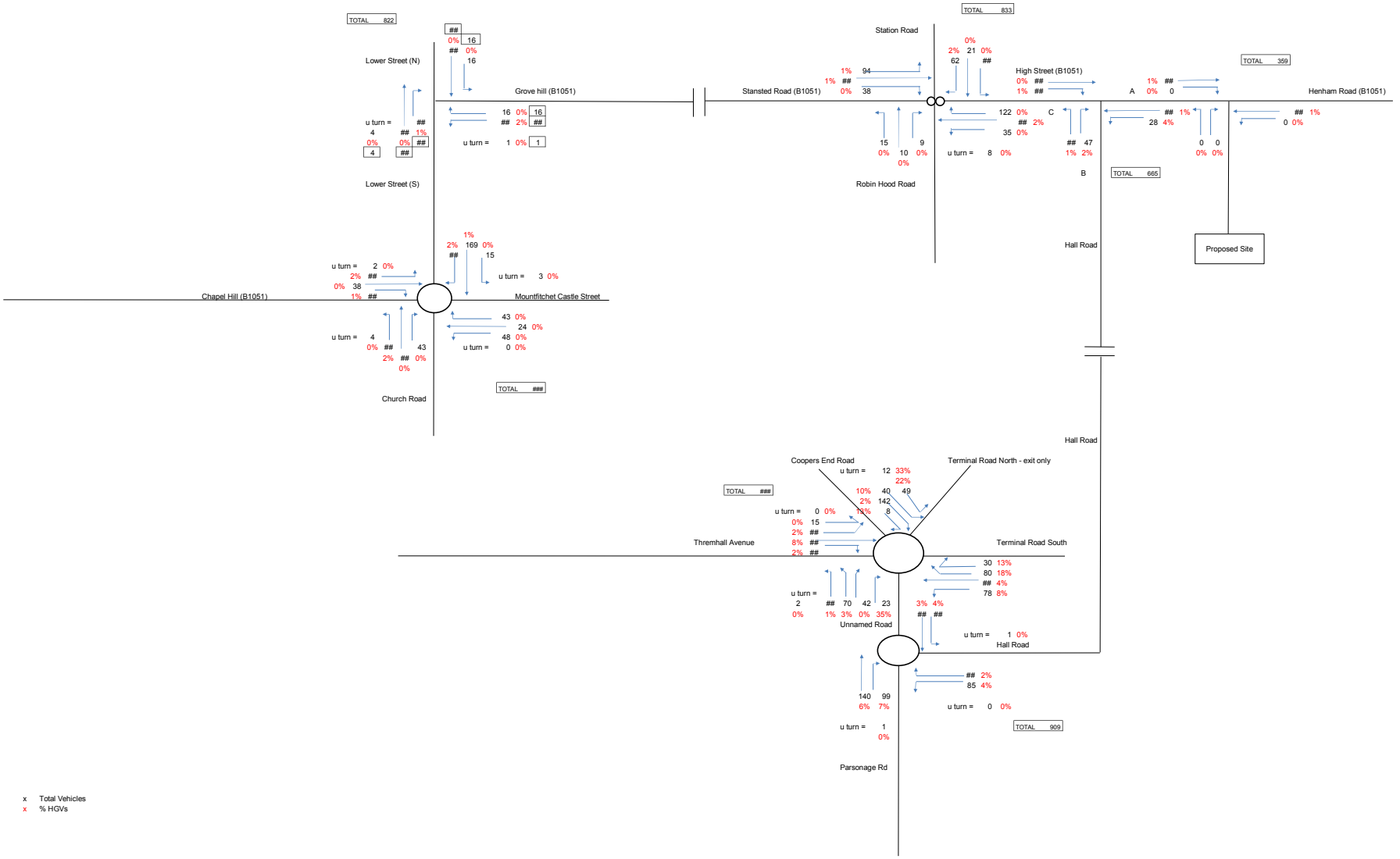
| | Date<br>**July 2022** | Job No<br>**2008170** | Drawing No |
| | **2018 Surveyed Flows - AM Peak** | | |

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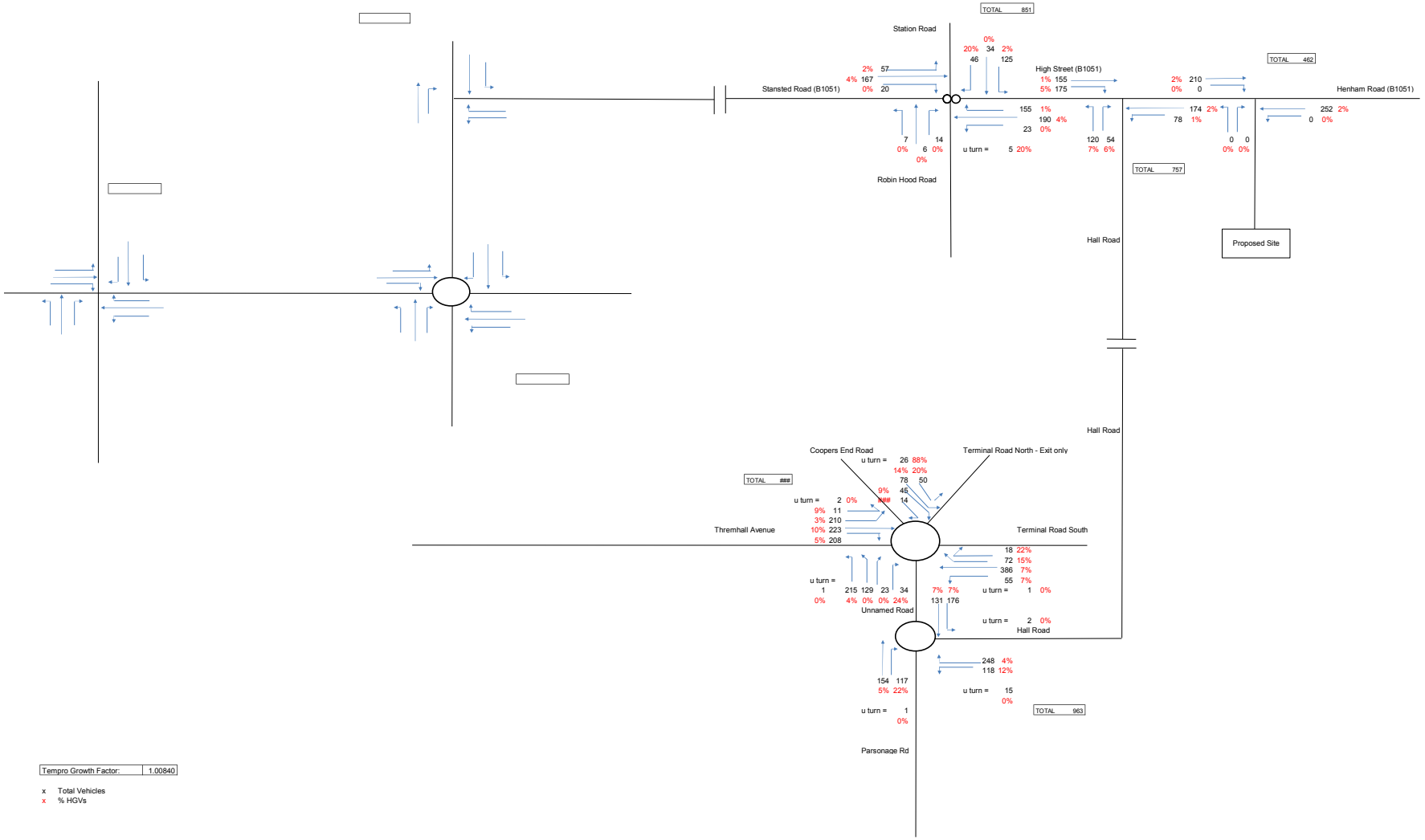
| | **2018 Surveyed Flows - PM Peak** | | |




| Tempro Growth Factor: | 1.00840 |
|---|---|

x Total Vehicles
x % HGVs

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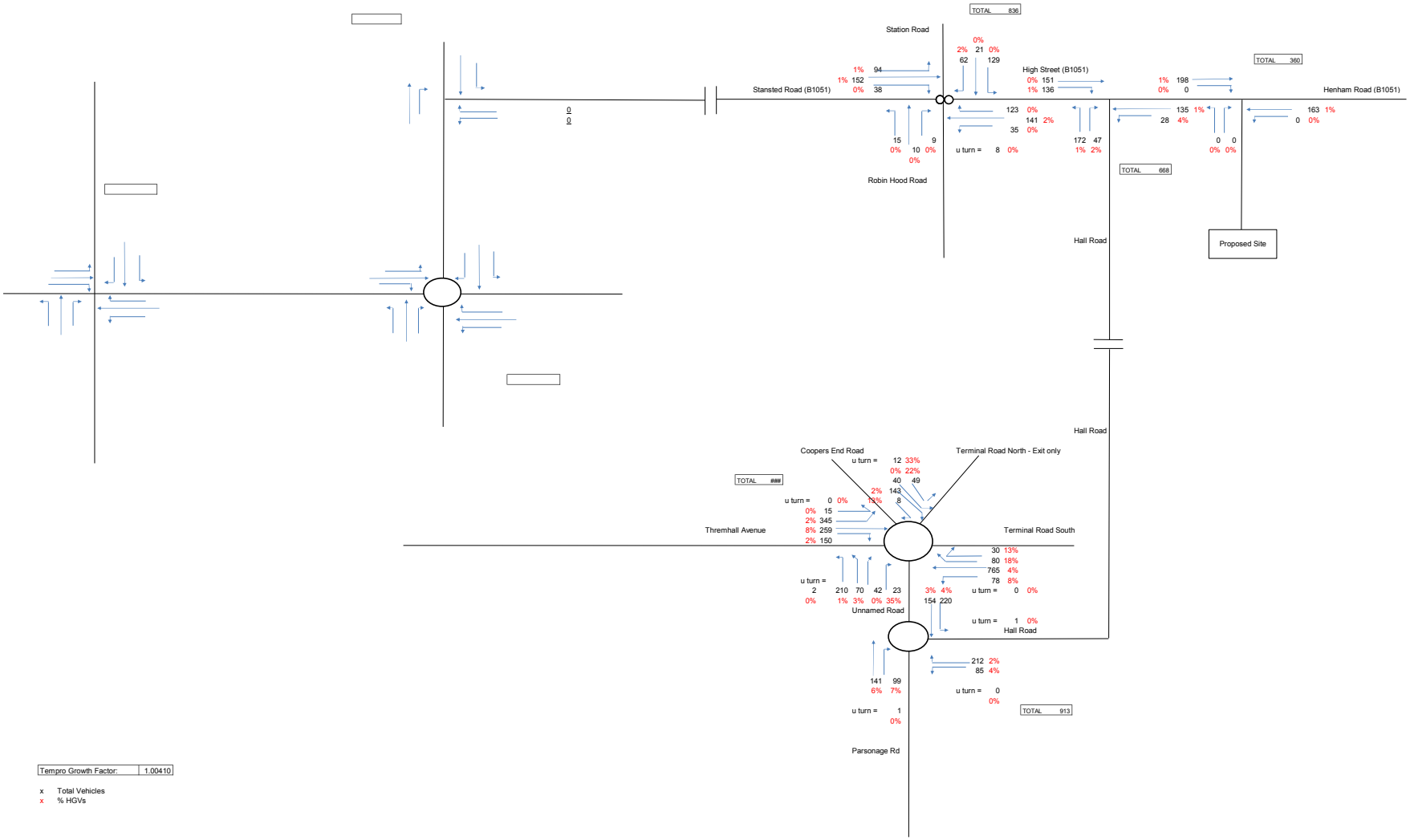
| Drawing No | |

**2027 Alternative Background Flows (using 2018 survey flows + Tempro Growth) - AM Peak**




| Tempro Growth Factor: | 1.00410 |
|---|---|

x Total Vehicles
x % HGVs

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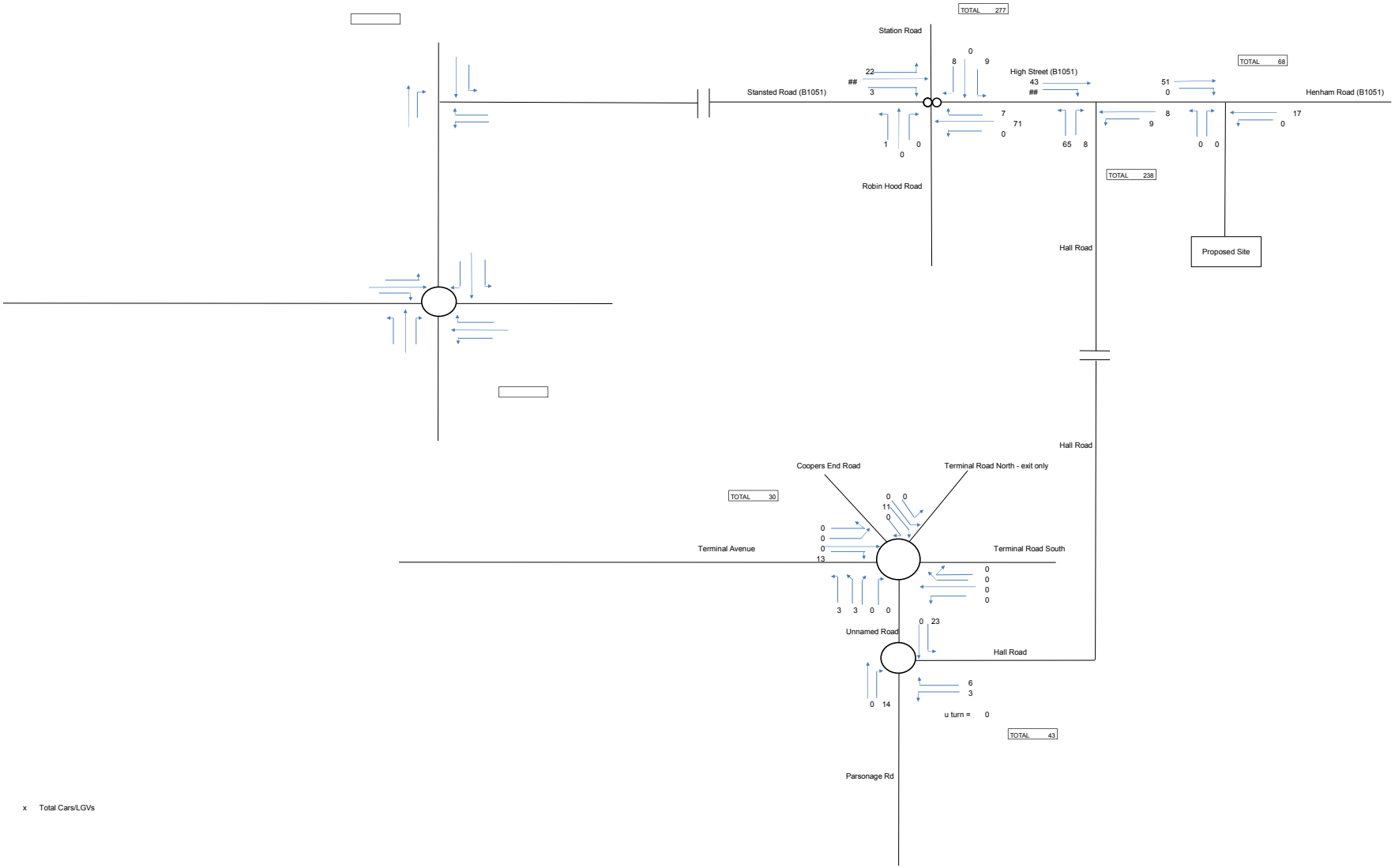


x Total Cars/LGVs

| | | | |
|---|---|---|---|
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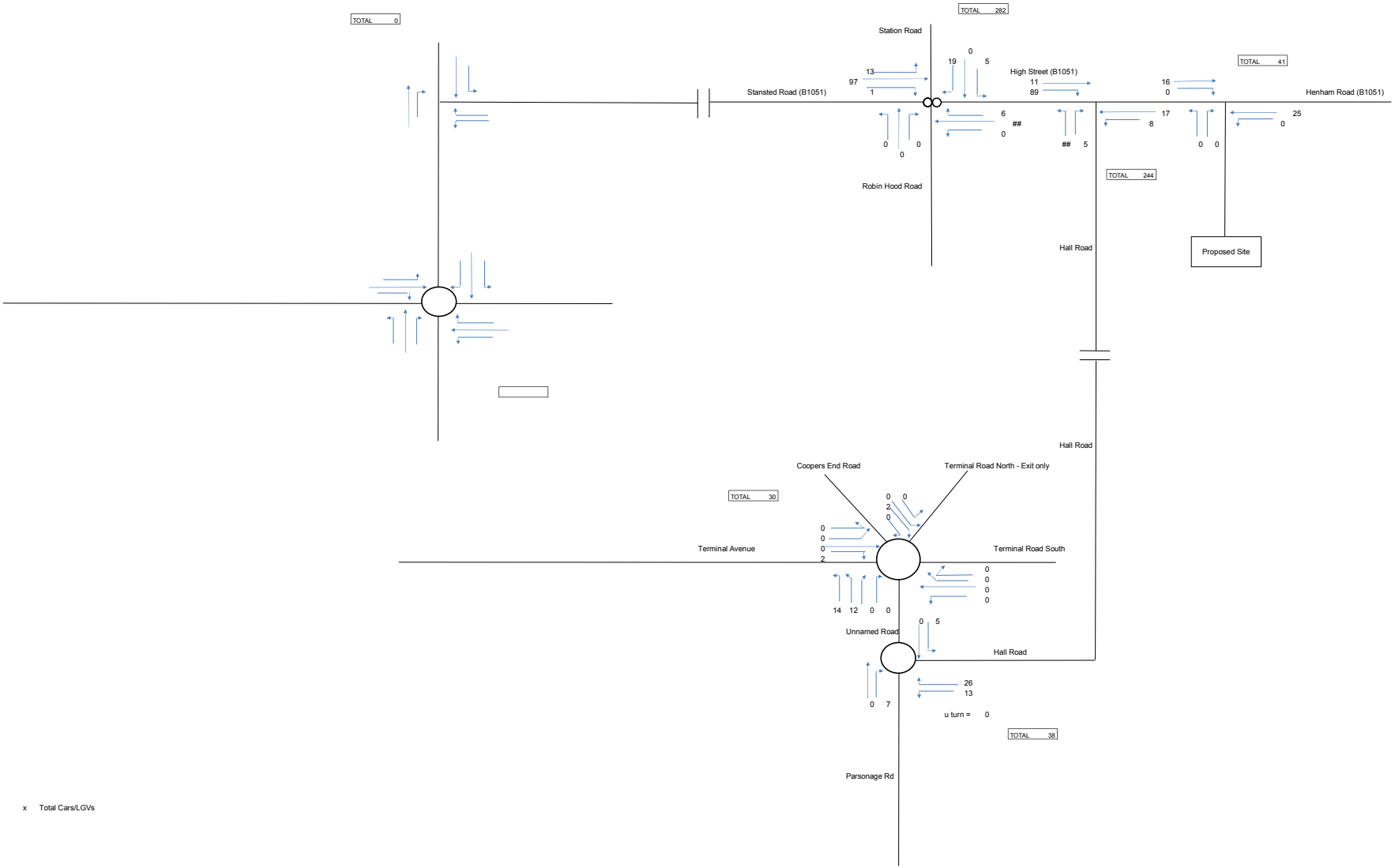
| | **Committed Development Flows (as used in E Elsenham) - AM Peak** | | |




x Total Cars/LGVs

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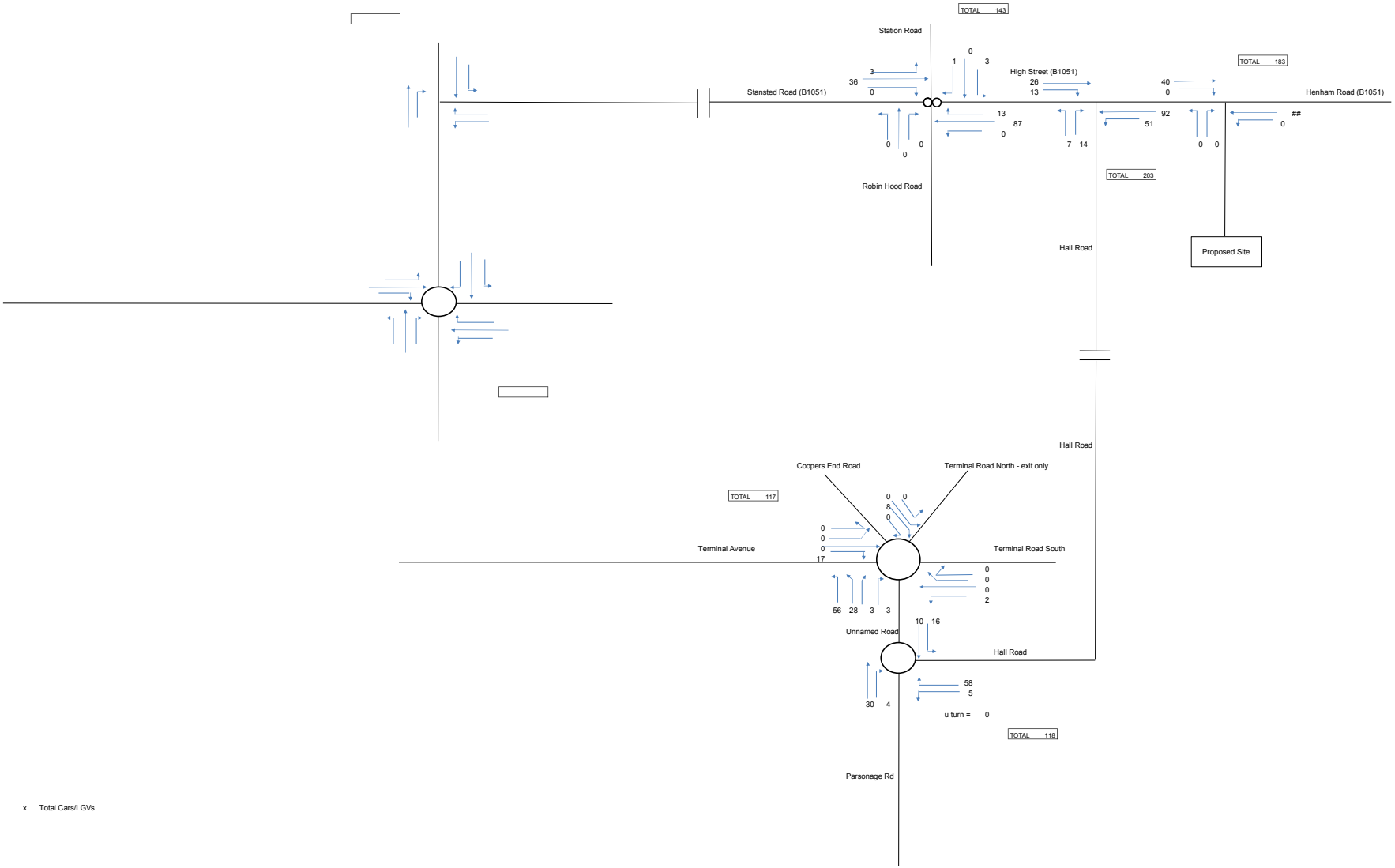


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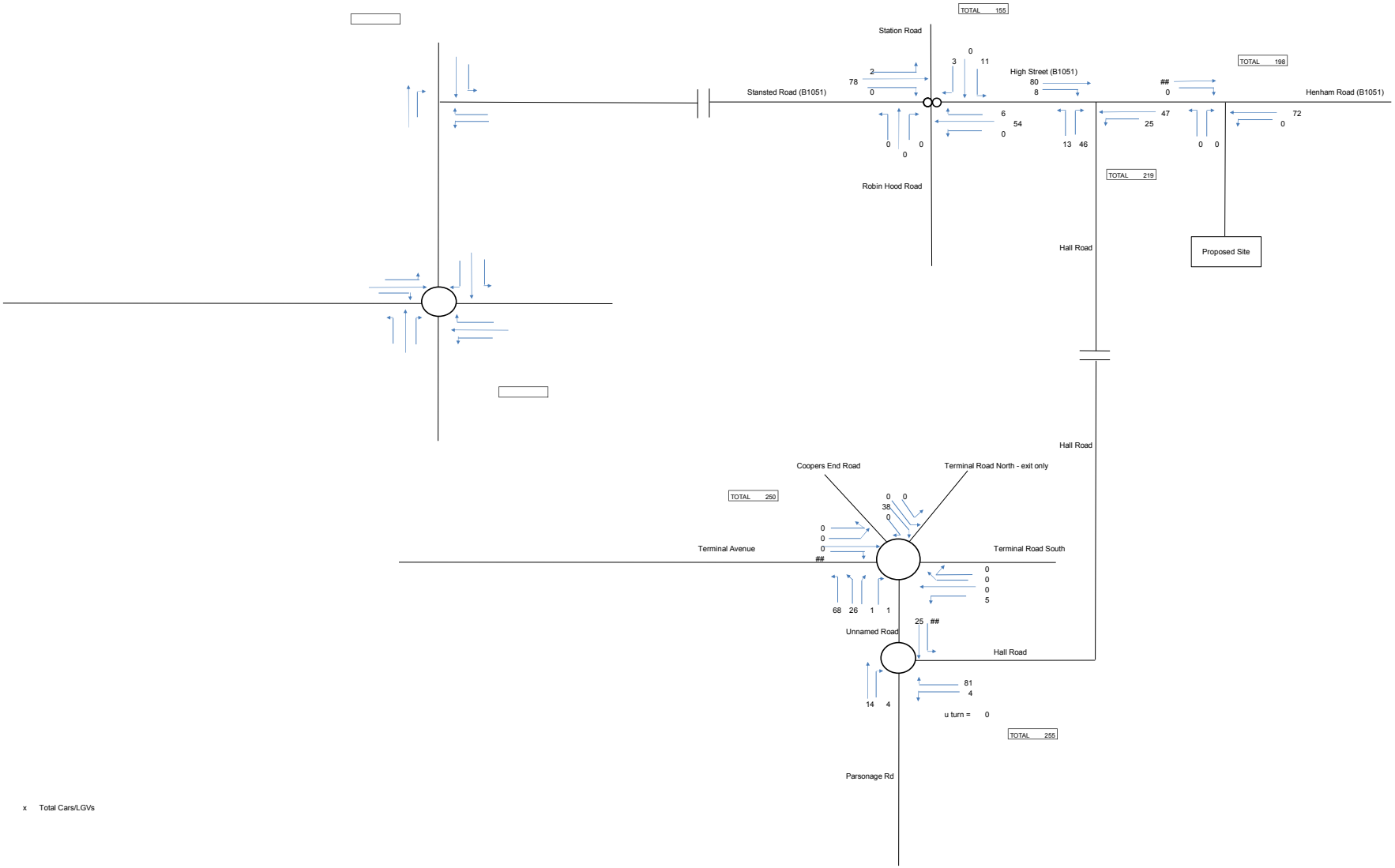
| Drawing No | |

**Total Additional Committed Development Flows - AM Peak**

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| | **Total Additional Committed Development Flows - PM Peak** | | |

**ATC DATA ON LINK ROAD BETWEEN COOPERS ROUNDABOUT AND MINI-ROUNDABOUT PROVIDED BY STEERS - PEAK HOURS:**

Thremhall to/from Terminal Rd N and S

| | AM | PM |
|---|---|---|
| Arrivals | 0 | 0 |
| Departures | 0 | 0 |

Mini-roundabout link to/from Terminal Rd N

| | AM | PM |
|---|---|---|
| Arrivals | 324 | 221 |
| Departures | 338 | 303 |

**AIRPORT FLOWS DEFINED AS 34% OF LINK ROAD TRAFFIC BETWEEN COOPERS ROUNDABOUT AND MINI-ROUNDABOUT PROVIDED BY STEERS - PEAK HOURS:**

Thremhall to/from Terminal Rd N and S

| | AM | PM |
|---|---|---|
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| Departures | 0 | 0 |

Mini-roundabout link to/from Terminal Rd N

| | AM | PM |
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| Arrivals | 110 | 75 |
| Departures | 115 | 103 |

**The following tables include factor above to take account of mppa at 2032**

**Flows for Stansted Airport**

Thremhall to/from Terminal Rd N and S

| | AM | PM |
|---|---|---|
| Arrivals | 0 | 0 |
| Departures | 0 | 0 |

Mini-roundabout link to/from Terminal Rd N

| | AM | PM |
|---|---|---|
| Arrivals | 175 | 120 |
| Departures | 183 | 164 |

**At the time of 2017 survey data provided by Steers there was equivalent of:**
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**By 2027, the airport growth should have reached an equivalent of:**
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**Therefore, factor of 37mppa/27mppa should be applied to the airport traffic**
**1.4**

**Flows for Stansted Airport**

Thremhall to/from Terminal Rd N and S

| | AM | PM |
|---|---|---|
| Arrivals | 0 | 0 |
| Departures | 0 | 0 |

Mini-roundabout link to/from Terminal Rd N

| | AM | PM |
|---|---|---|
| Arrivals | 154 | 105 |
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**Difference between link road flows given by Steer for airport arrivals/departures to the east and the TA 2018 observed flows:**

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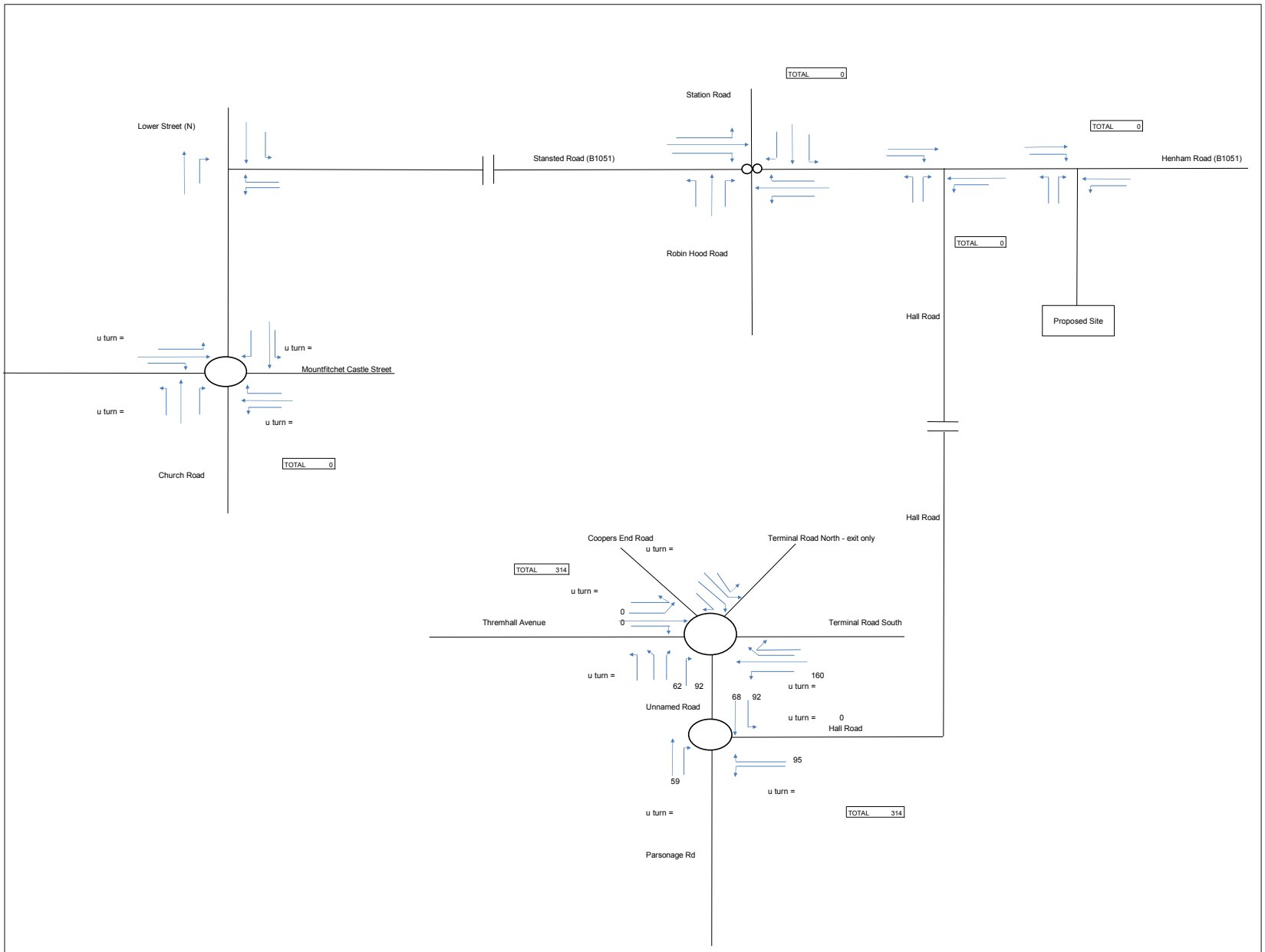
| Departures | 105 | 66 |

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|---|---|
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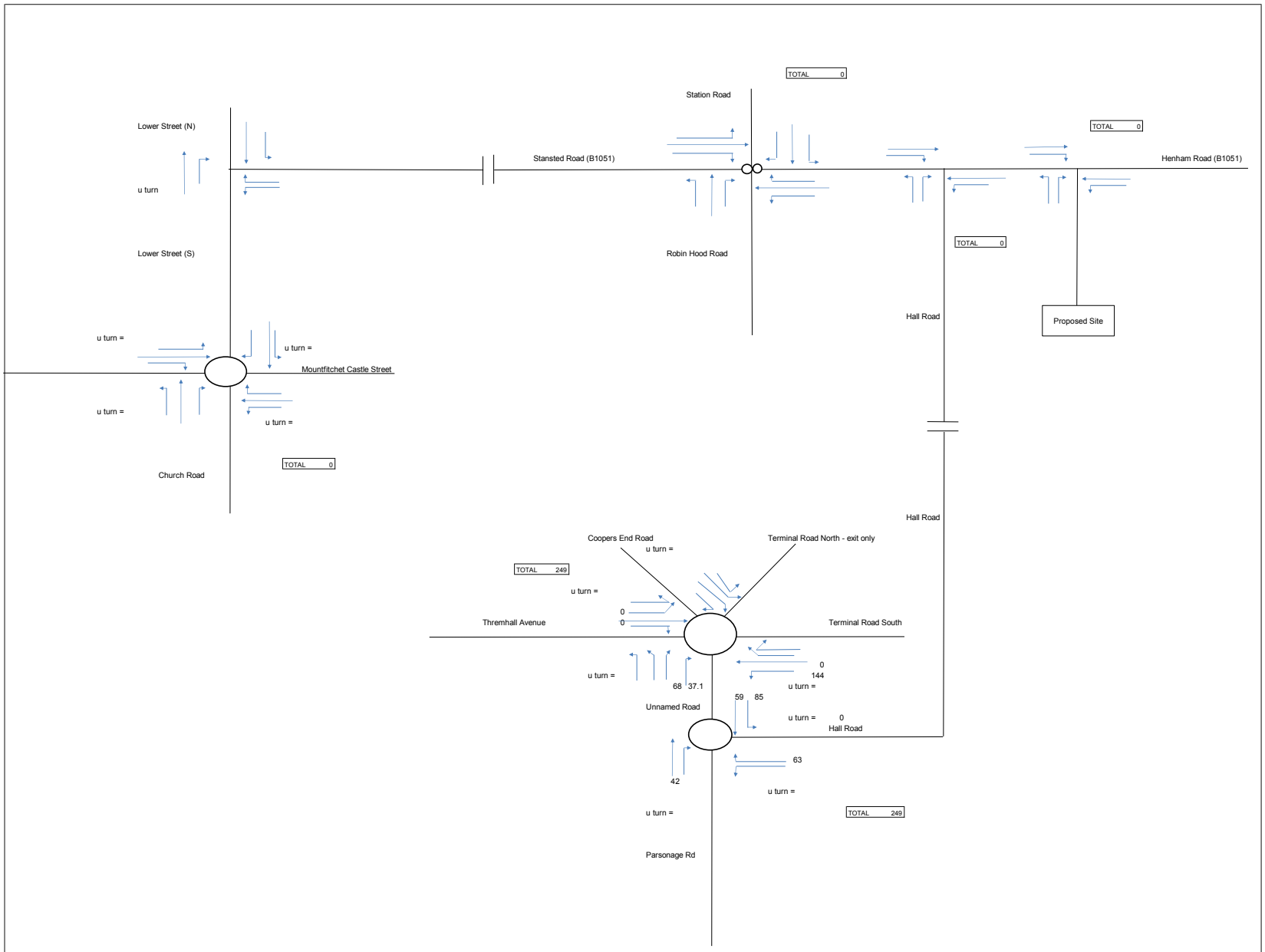
**Airport Flows - AM Peak - PINS WORK**

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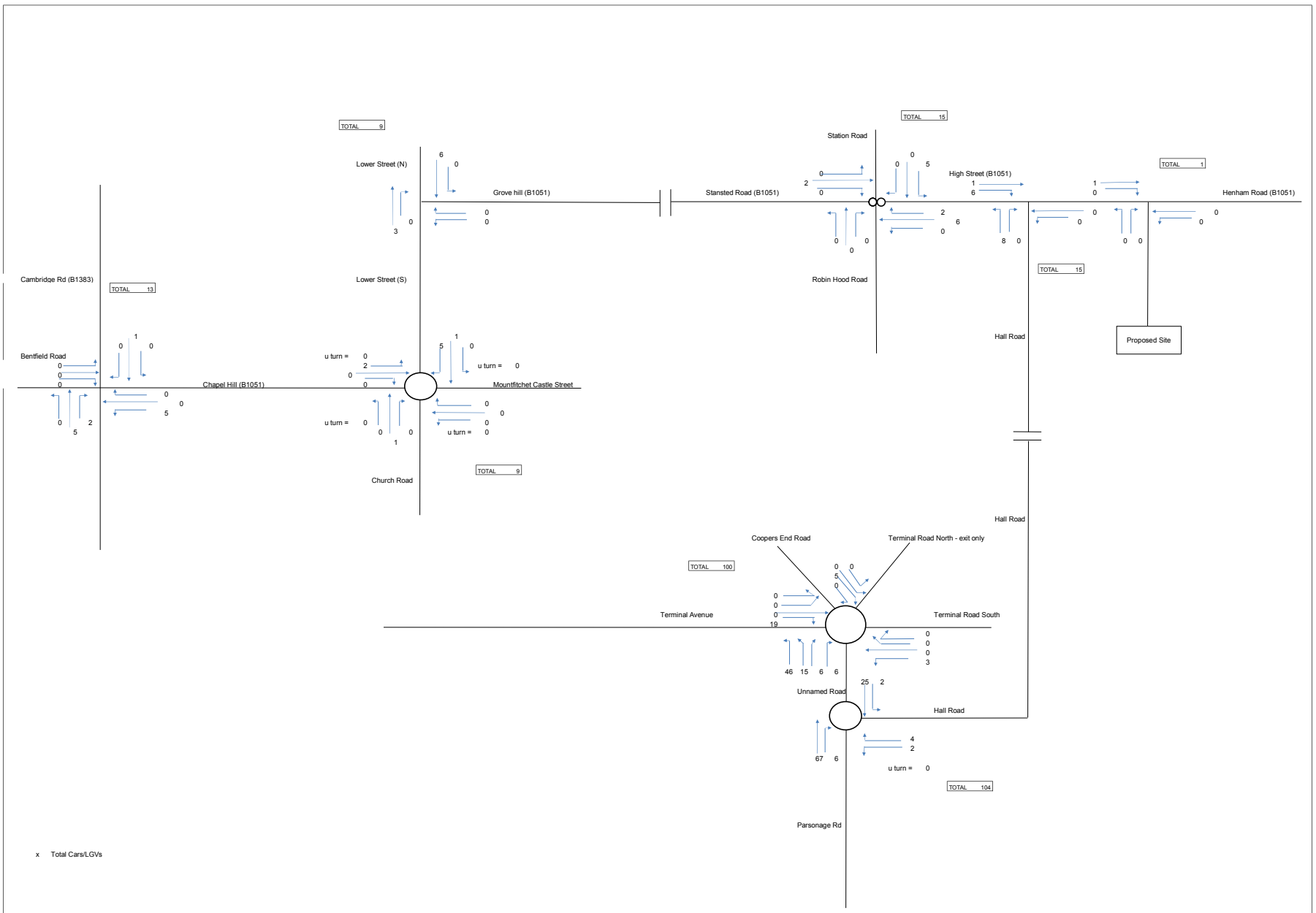
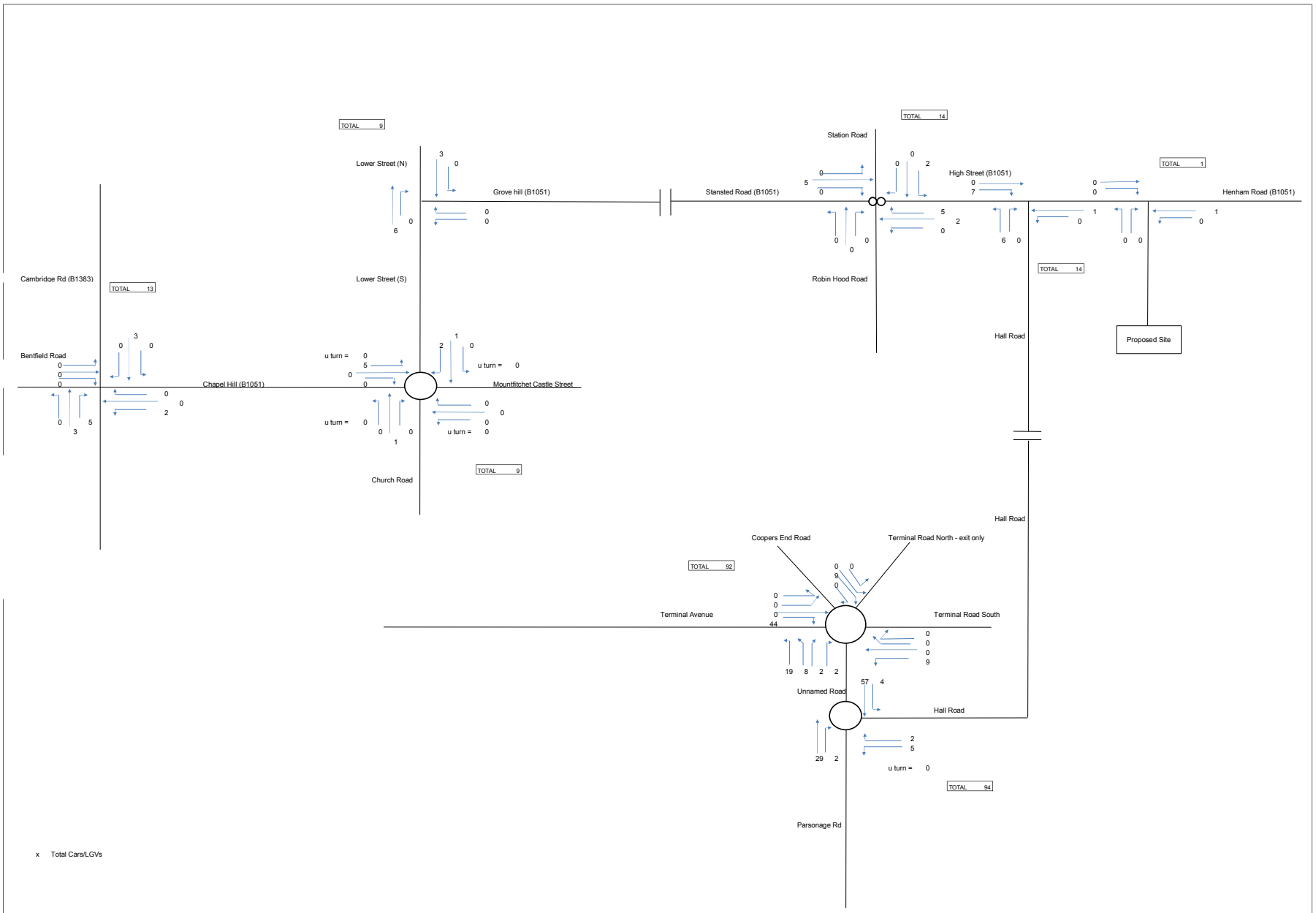
|---|---|
| Client<br>**Countryside** | Project<br>**Land South of Henham Road, Elsenham** |
| Date<br>**February 2023** | Drawing No |
| **Airport Flows - PM Peak - PINS WORK** | |




| | | | |
|---|---|---|---|
| ARDENT CONSULTING ENGINEERS<br>Third Floor, The Hallmark Building<br>52-56 Leadenhall Street<br>London EC3M 5JE | Client<br>**Countryside** | | Project<br>**Land South of Henham Road, Elsenham** |
| | Date<br>**July 2022** | Job No<br>**2008170** | Drawing No |
| | **Total Sensitivity Committed Development Flows - AM Peak** | | |

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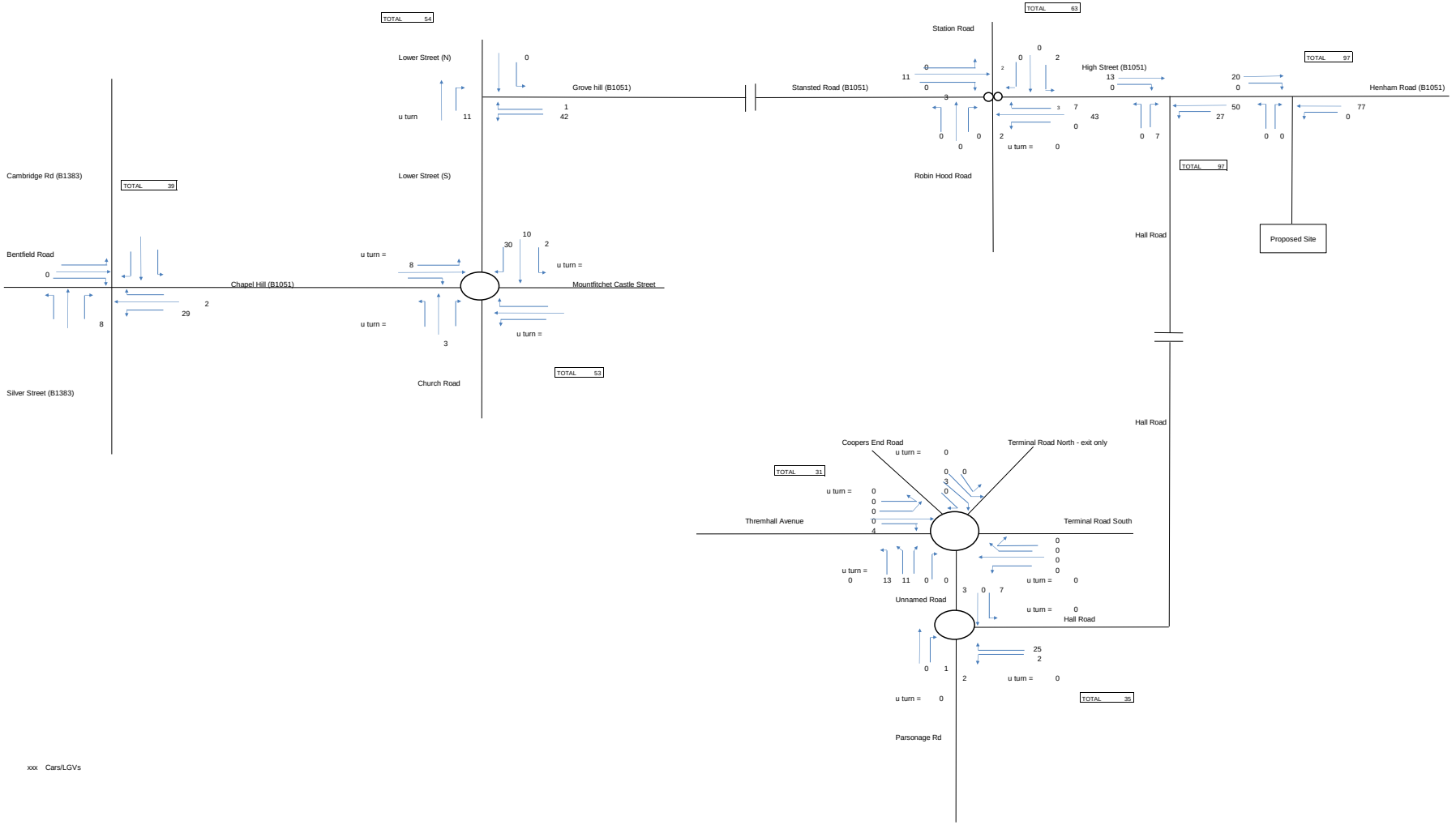
| | |
|---|---|
| Client | **Countryside** |
| Project | **Land South of Henham Road, Elsenham** |
| Date | **July 2022** |
| Job No | **2008170** |
| Drawing No | |

**Total Sensitivity Committed Development Flows - PM Peak**

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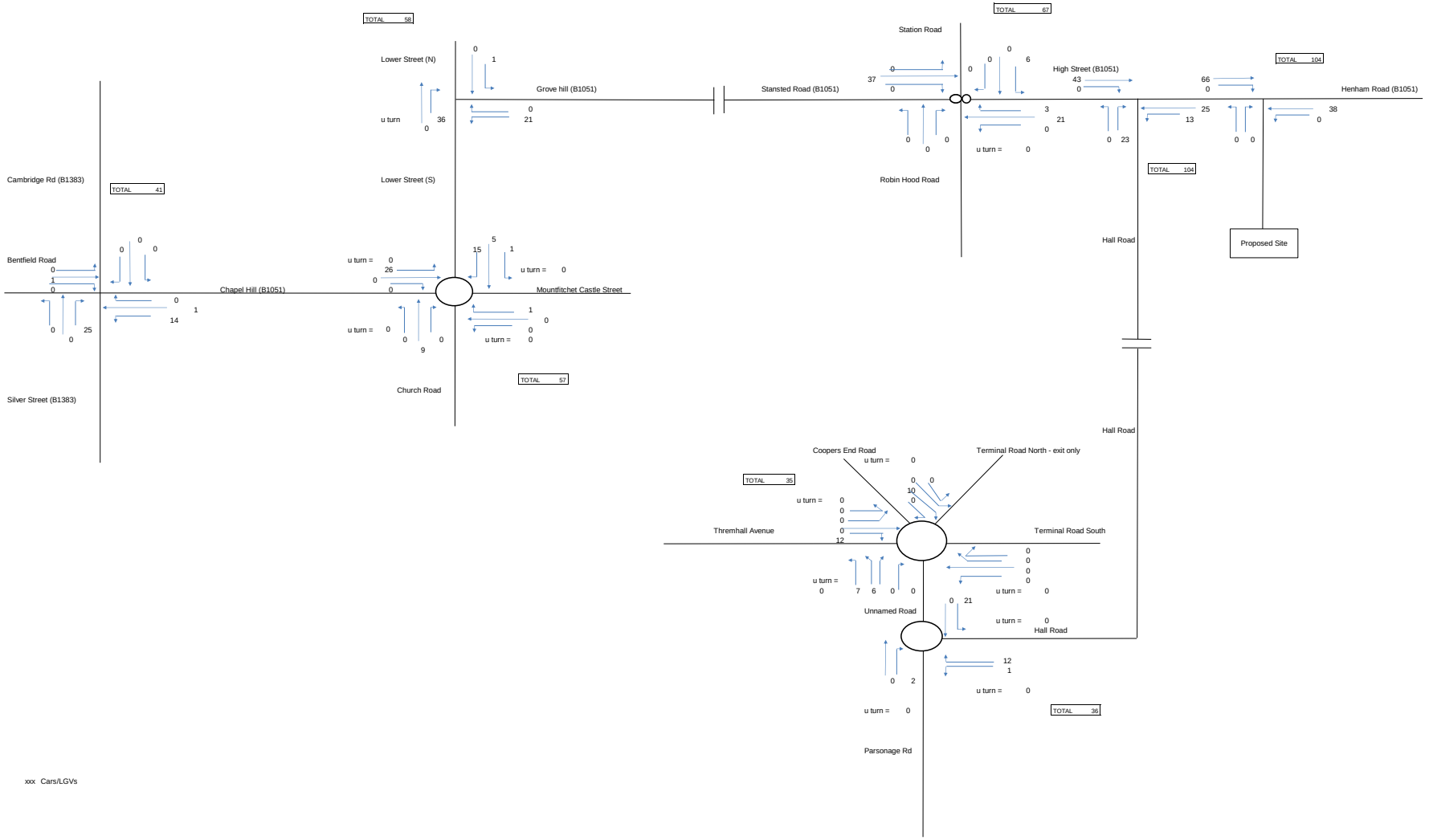
| | |
|---|---|
| Client | **Countryside** |
| Project | **Land South of Henham Road, Elsenham** |
| Date | **February 2023** |
| Job No | **2008170** |
| Drawing No | |

**Sensitivity Test (Land East of Station Road - 200 dwellings) - AM Peak - PINS WORK**

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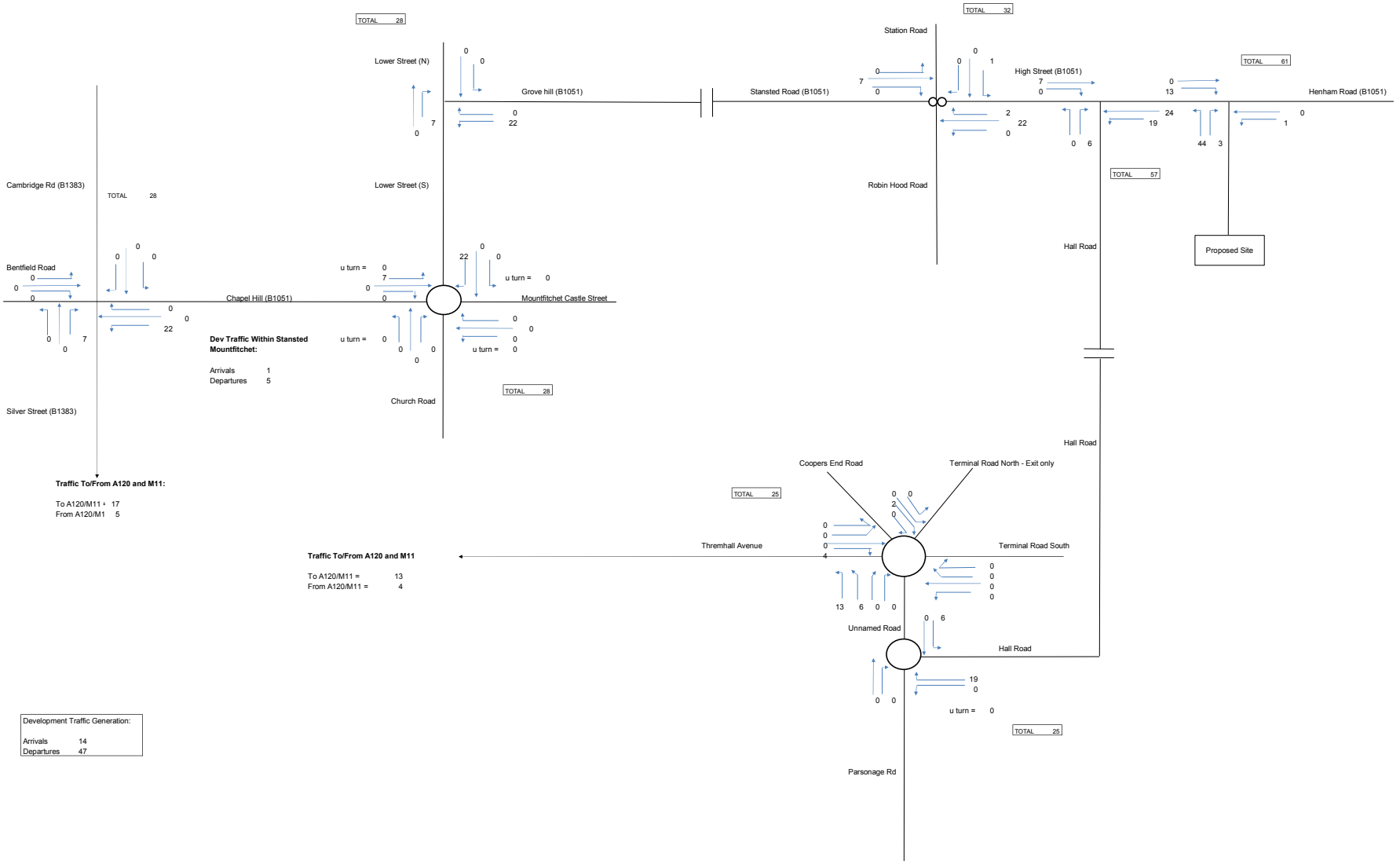
| | | |
|---|---|---|
| Client: **Countryside** | | Project: **Land South of Henham Road, Elsenham** |
| Date: **Febrary 2023** | Job No: **2008170** | Drawing No |

**Sensitivity Test (Land East of Station Road - 200 dwellings) - PM Peak - PINS WORK**

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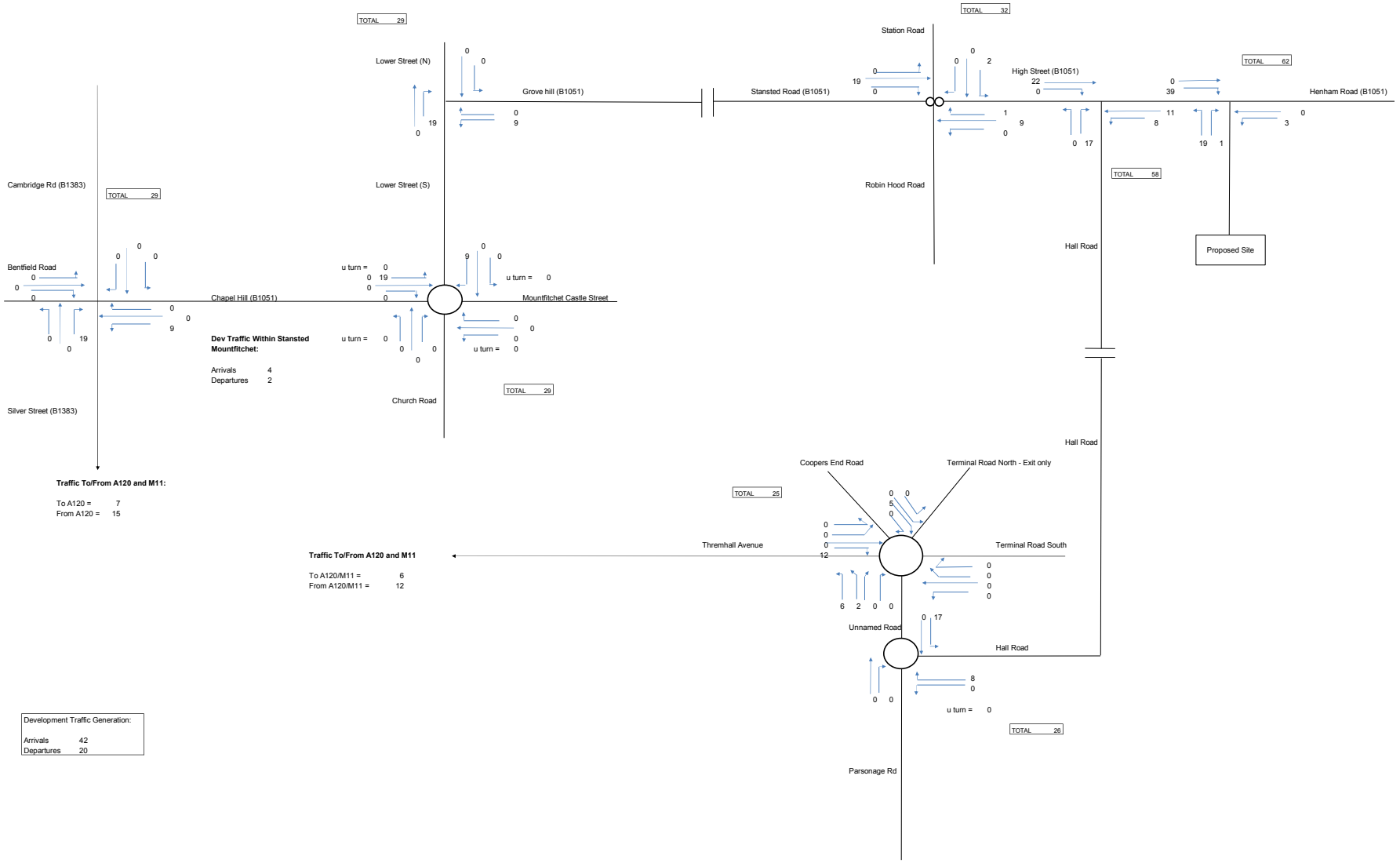
| | |
|---|---|
| Client | **Countryside** |
| Project | **Land South of Henham Road, Elsenham** |
| Date | **July 2022** |
| Job No | **2008170** |
| Drawing No | |

**Proposed Development Flows - AM Peak**

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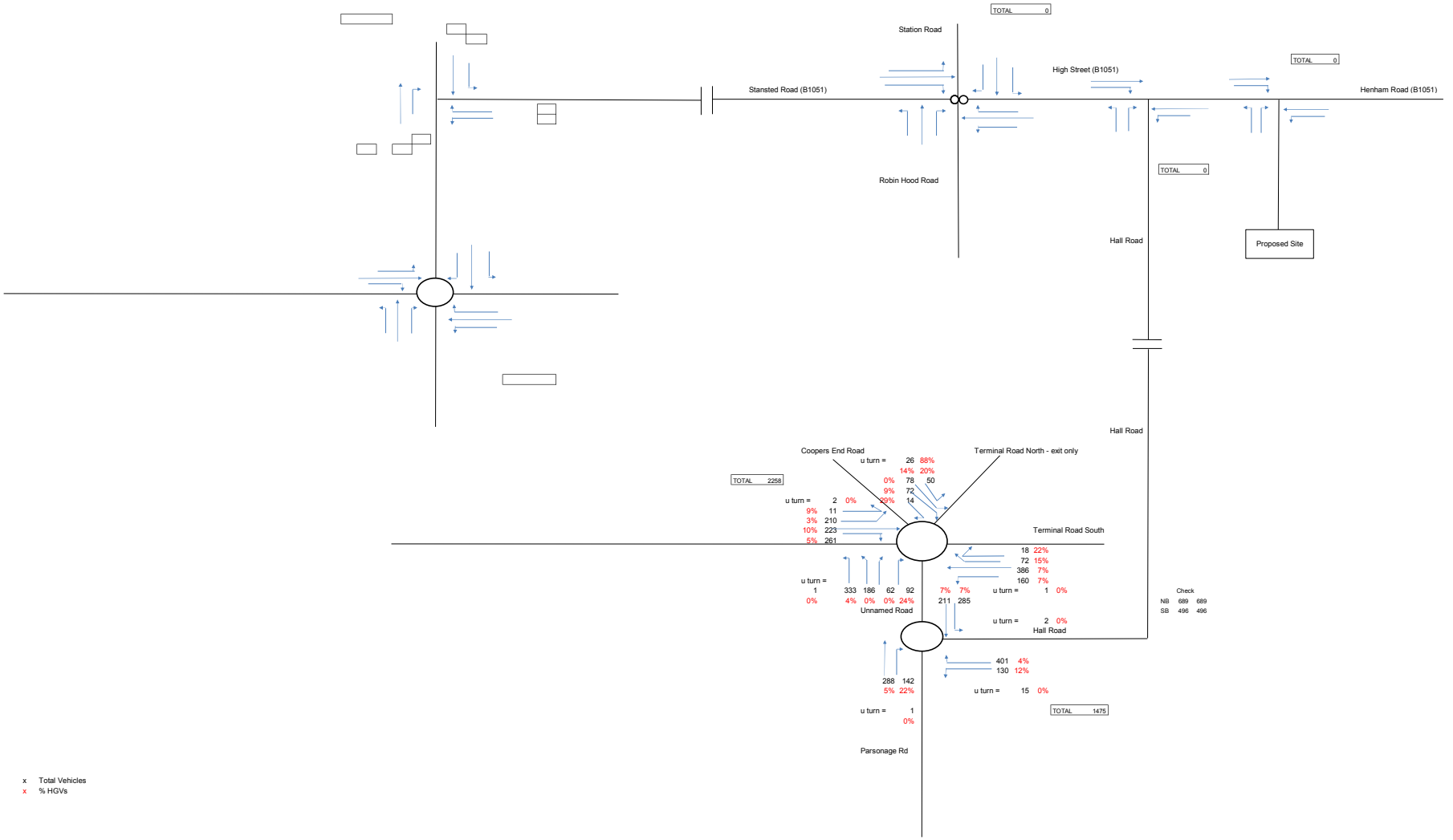
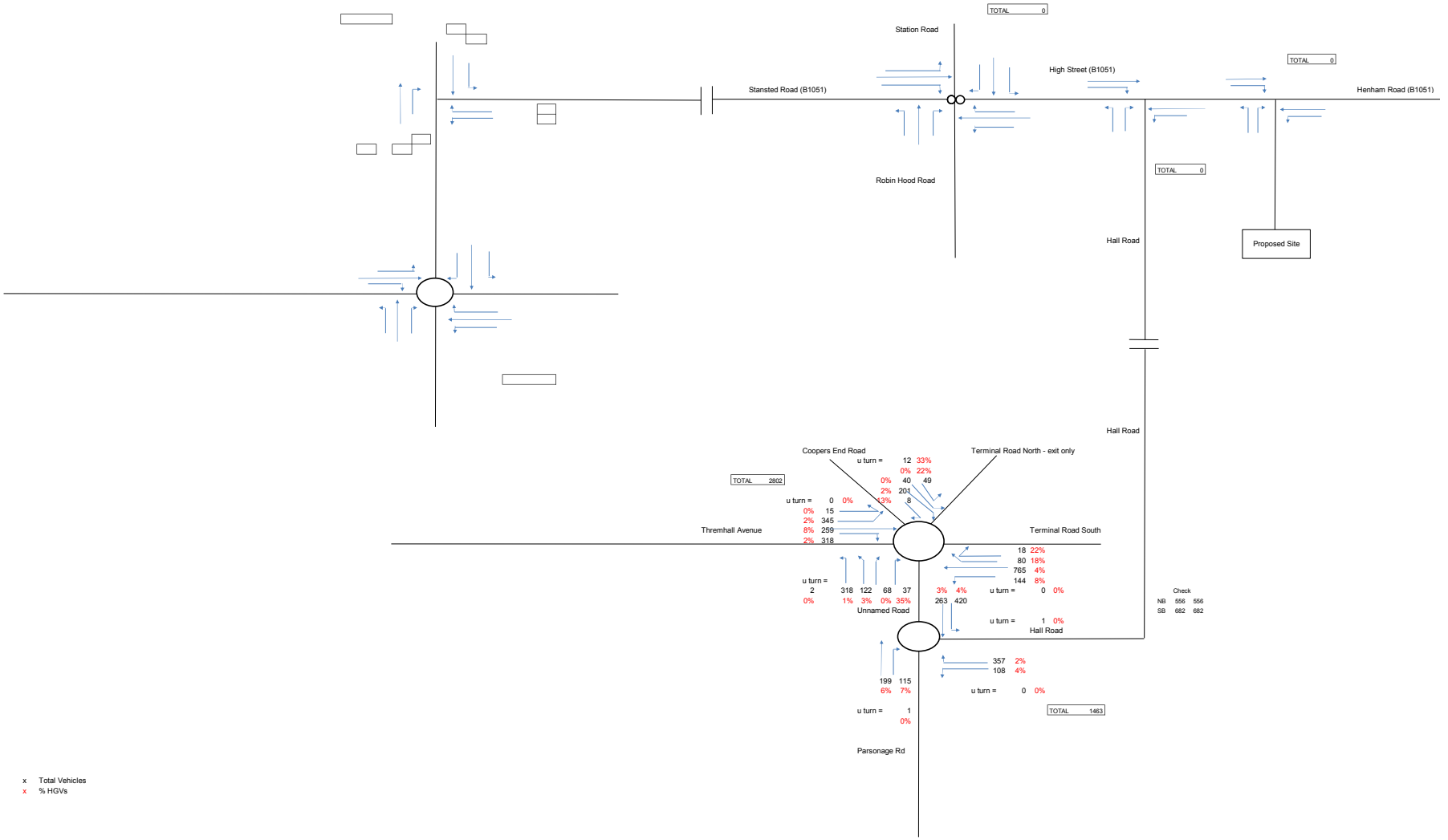
|---|---|
| Client | **Countryside** |
| Project | **Land South of Henham Road, Elsenham** |
| Date | **July 2022** |
| Job No | **2008170** |
| Drawing No | |

**Proposed Development Flows - PM Peak**




| | | |
|---|---|---|
| ARDENT CONSULTING ENGINEERS<br>Third Floor, The Hallmark Building<br>52-56 Leadenhall Street<br>London EC3M 5JE | Client<br>**Countryside** | Project<br>**Land South of Henham Road, Elsenham** |
| | Date<br>**February 2023** | Job No<br>**2008170** |
| | | Drawing No |
| | **2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak** | |

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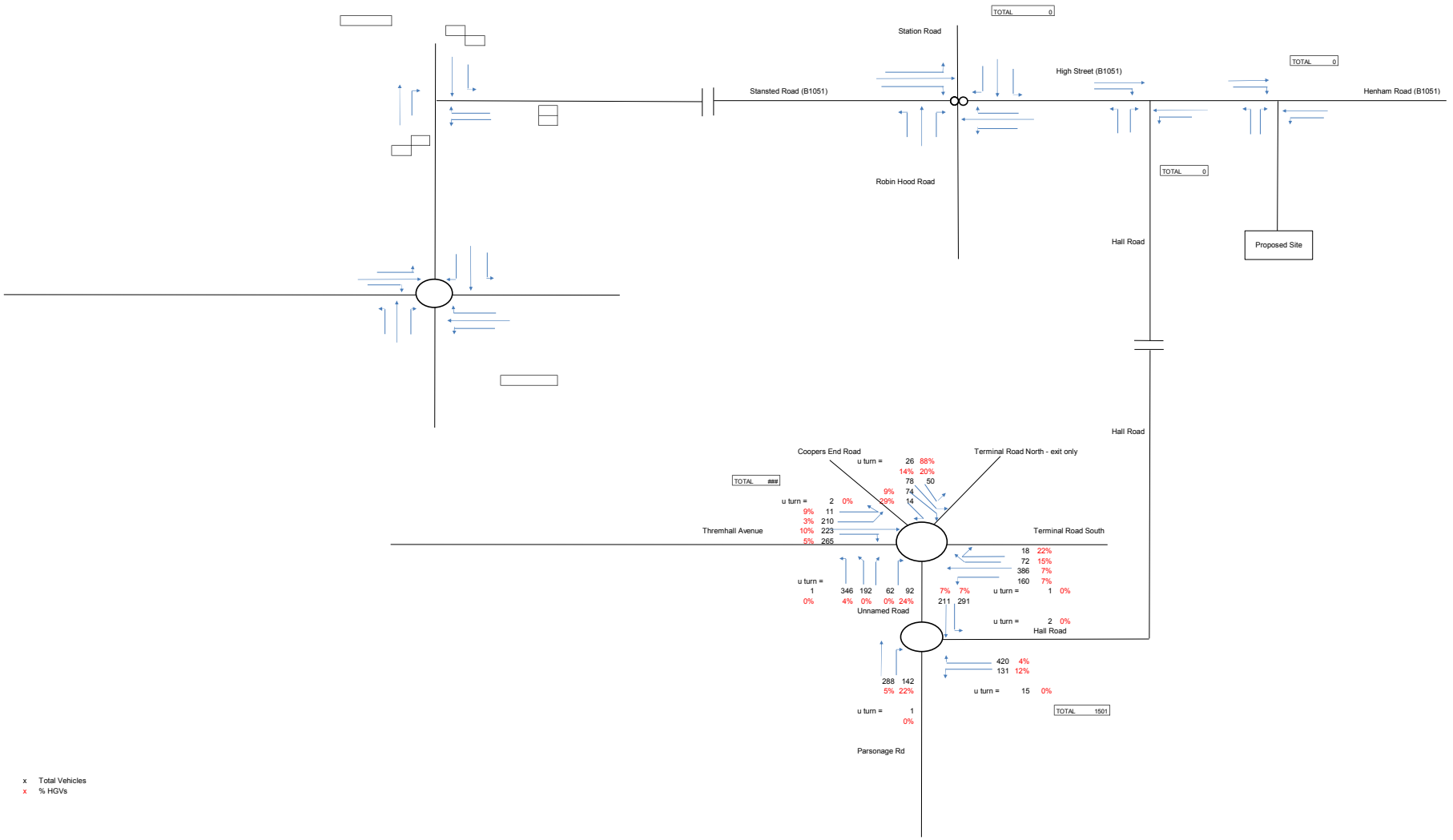
| | | |
|---|---|---|
| Client: **Countryside** | | Project: **Land South of Henham Road, Elsenham** |
| Date: **February 2023** | Job No: **2008170** | Drawing No |

**2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak**

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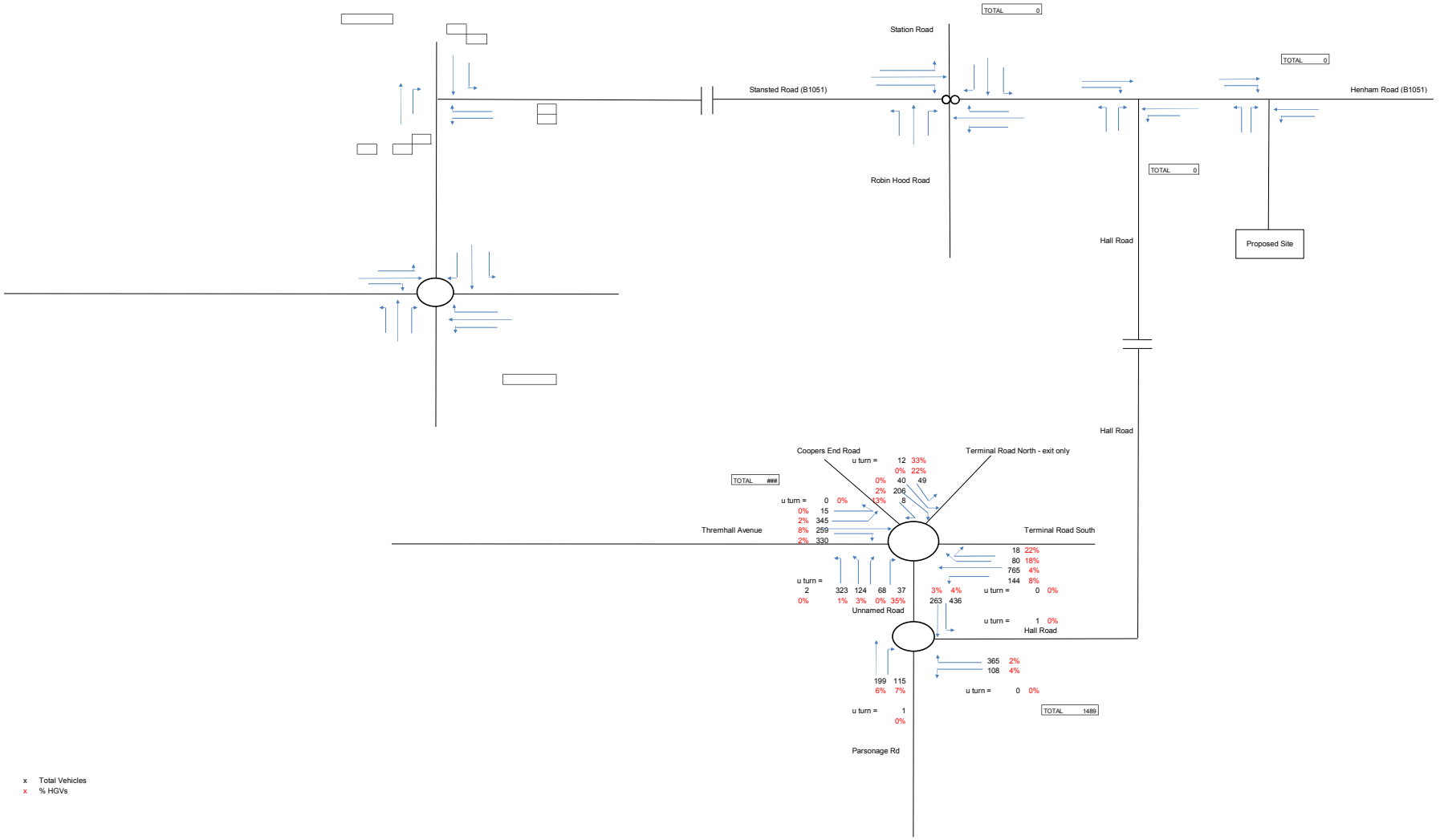
| | |
|---|---|
| Client | Project |
| **Countryside** | **Land South of Henham Road, Elsenham** |
| Date | Job No / Drawing No |
| **February 2023** | **2008170** |

**2027 Alt Base Sensitivity + Development Flows - AM Peak**

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| | |
|---|---|
| Client | **Countryside** |
| Project | **Land South of Henham Road, Elsenham** |
| Date | **February 2023** |
| Job No | **2008170** |
| Drawing No | |

**2027 Alt Base Sensitivity + Development Flows - PM Peak**

**Appendix I**

# Junctions 10

## ARCADY 10 - Roundabout Module



**Filename:** Coopers End Parsonage Linked Roundabouts (Existing).j10
**Path:** Y:\ARDENT PROJECTS\2008170 - Land South of Henham Road, Elsenham\Transport\ARCADY\Models used in PINS work
**Report generation date:** 31/01/2023 17:17:17

---



### Summary of junction performance

| | AM | | PM | |
|---|---|---|---|---|
| | Queue (PCU) | RFC | Queue (PCU) | RFC |
| | 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic | | | |
| Junction 1 - Arm 1 | 0.4 | 0.29 | | |
| Junction 1 - Arm 2 | 13.1 | 0.96 | | |
| Junction 1 - Arm 3 | 0.9 | 0.46 | | |
| Junction 1 - Arm 4 | 0.3 | 0.20 | | |
| Junction 2 - Arm 1 | 2.6 | 0.72 | | |
| Junction 2 - Arm 2 | 1.0 | 0.47 | | |
| Junction 2 - Arm 3 | 5.2 | 0.85 | | |
| | 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak | | | |
| Junction 1 - Arm 1 | | | 1.0 | 0.48 |
| Junction 1 - Arm 2 | | | 18.0 | 1.01 |
| Junction 1 - Arm 3 | | | 1.4 | 0.58 |
| Junction 1 - Arm 4 | | | 0.4 | 0.27 |
| Junction 2 - Arm 1 | | | 1.7 | 0.63 |
| Junction 2 - Arm 2 | | | 0.6 | 0.35 |
| Junction 2 - Arm 3 | | | 24.8 | 1.04 |
| | 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak | | | |
| Junction 1 - Arm 1 | 0.4 | 0.29 | | |
| Junction 1 - Arm 2 | 17.3 | 0.99 | | |
| Junction 1 - Arm 3 | 0.9 | 0.46 | | |

| | | | | |
|---|---|---|---|---|
| **Junction 1 - Arm 4** | 0.3 | 0.21 | | |
| **Junction 2 - Arm 1** | 3.0 | 0.75 | | |
| **Junction 2 - Arm 2** | 1.0 | 0.48 | | |
| **Junction 2 - Arm 3** | 5.6 | 0.86 | | |
| | **2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak** | | | |
| **Junction 1 - Arm 1** | | | 1.0 | 0.48 |
| **Junction 1 - Arm 2** | | | 19.6 | 1.02 |
| **Junction 1 - Arm 3** | | | 1.4 | 0.58 |
| **Junction 1 - Arm 4** | | | 0.4 | 0.28 |
| **Junction 2 - Arm 1** | | | 1.8 | 0.64 |
| **Junction 2 - Arm 2** | | | 0.6 | 0.35 |
| **Junction 2 - Arm 3** | | | 32.0 | 1.07 |
| | **2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak** | | | |
| **Junction 1 - Arm 1** | 0.4 | 0.29 | | |
| **Junction 1 - Arm 2** | 49.2 | 1.12 | | |
| **Junction 1 - Arm 3** | 1.0 | 0.48 | | |
| **Junction 1 - Arm 4** | 0.3 | 0.21 | | |
| **Junction 2 - Arm 1** | 3.6 | 0.78 | | |
| **Junction 2 - Arm 2** | 1.5 | 0.58 | | |
| **Junction 2 - Arm 3** | 8.2 | 0.91 | | |
| | **2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak** | | | |
| **Junction 1 - Arm 1** | | | 1.0 | 0.48 |
| **Junction 1 - Arm 2** | | | 33.1 | 1.08 |
| **Junction 1 - Arm 3** | | | 1.6 | 0.61 |
| **Junction 1 - Arm 4** | | | 0.4 | 0.30 |
| **Junction 2 - Arm 1** | | | 2.1 | 0.67 |
| **Junction 2 - Arm 2** | | | 0.7 | 0.40 |
| **Junction 2 - Arm 3** | | | 63.6 | 1.17 |
| | **2027 Alt Base Sensitivity + Development Flows - AM Peak** | | | |
| **Junction 1 - Arm 1** | 0.4 | 0.29 | | |
| **Junction 1 - Arm 2** | 59.0 | 1.15 | | |
| **Junction 1 - Arm 3** | 1.0 | 0.48 | | |
| **Junction 1 - Arm 4** | 0.3 | 0.21 | | |
| **Junction 2 - Arm 1** | 4.3 | 0.81 | | |
| **Junction 2 - Arm 2** | 1.6 | 0.59 | | |
| **Junction 2 - Arm 3** | 8.9 | 0.92 | | |
| | **2027 Alt Base Sensitivity + Development Flows - PM Peak** | | | |
| **Junction 1 - Arm 1** | | | 1.0 | 0.49 |
| **Junction 1 - Arm 2** | | | 36.9 | 1.10 |
| **Junction 1 - Arm 3** | | | 1.7 | 0.62 |
| **Junction 1 - Arm 4** | | | 0.5 | 0.30 |
| **Junction 2 - Arm 1** | | | 2.1 | 0.68 |
| **Junction 2 - Arm 2** | | | 0.7 | 0.40 |
| **Junction 2 - Arm 3** | | | 73.8 | 1.20 |

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*

## File summary

### File Description

| | |
|---|---|
| **Title** | |
| **Location** | |
| **Site number** | |
| **Date** | 17/03/2022 |
| **Version** | |
| **Status** | (new file) |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | ARDENTCE\jsymington |
| **Description** | |

## Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |


*The junction diagram reflects the last run of Junctions.*

## Analysis Options

| Mini-roundabout model | Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Show lane queues in feet / metres | Show all PICADY stream intercepts | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) | Use iterations with HCM roundabouts | Max number of iterations for roundabouts |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JUNCTIONS 9 | 5.75 | | | | | | 0.85 | 36.00 | 20.00 | | 500 |

## Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|---|---|---|---|---|---|---|
| D1 | 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic | AM | ONE HOUR | 07:45 | 09:15 | 15 |
| D2 | 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak | PM | ONE HOUR | 16:45 | 18:15 | 15 |
| D3 | 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak | AM | ONE HOUR | 07:45 | 09:15 | 15 |
| D4 | 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak | PM | ONE HOUR | 16:45 | 18:15 | 15 |
| D5 | 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak | AM | ONE HOUR | 07:45 | 09:15 | 15 |
| D6 | 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak | PM | ONE HOUR | 16:45 | 18:15 | 15 |
| D7 | 2027 Alt Base Sensitivity + Development Flows - AM Peak | AM | ONE HOUR | 07:45 | 09:15 | 15 |
| D8 | 2027 Alt Base Sensitivity + Development Flows - PM Peak | PM | ONE HOUR | 16:45 | 18:15 | 15 |

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|
| A1 | ✓ | 100.000 | 100.000 |

# 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic, AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D1 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic, AM | Demand Set 15: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D2 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak, PM | Demand Set 16: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D3 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak, AM | Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D4 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak, PM | Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D5 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak, AM | Demand Set 21: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D6 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak, PM | Demand Set 22: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D7 - 2027 Alt Base Sensitivity + Development Flows - AM Peak, AM | Demand Set 23: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D8 - 2027 Alt Base Sensitivity + Development Flows - PM Peak, PM | Demand Set 24: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 23.43 | C |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 22.71 | C |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 23.16 | C |

# Arms

### Arms

| Junction | Arm | Name | Description | No give-way line |
|---|---|---|---|---|
| 1 | 1 | Terminal Road South | | |
| | 2 | Link | | |
| | 3 | Thremhall Avenue | | |
| | 4 | Coopers End Road | | |
| | 5 | Terminal Road North | | |
| 2 | 1 | Parsonage Road North | | |
| | 2 | Parsonage Road South | | |
| | 3 | Link | | |

### Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Entry only | Exit only |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 7.35 | 10.06 | 11.2 | 50.1 | 90.4 | 43.3 | | |
| | 2 | 3.02 | 6.03 | 2.5 | 7.9 | 90.4 | 77.0 | | |
| | 3 | 4.36 | 7.10 | 19.8 | 154.3 | 90.4 | 48.0 | | |
| | 4 | 3.70 | 6.93 | 18.9 | 30.0 | 90.4 | 50.5 | | |
| | 5 | | | | | | | | ✓ |

### Mini Roundabout Geometry

| Junction | Arm | Approach road half-width (m) | Minimum approach road half-width (m) | Entry width (m) | Effective flare length (m) | Distance to next arm (m) | Entry corner kerb line distance (m) | Gradient over 50m (%) | Kerbed central island |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | 2.69 | 2.69 | 4.28 | 4.7 | 19.92 | 17.88 | 0.0 | |
| | 2 | 2.48 | 2.48 | 3.91 | 7.8 | 19.93 | 18.95 | 0.0 | |
| | 3 | 3.35 | 3.04 | 4.08 | 1.7 | 14.79 | 9.21 | 0.0 | |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Junction | Arm | Final slope | Final intercept (PCU/hr) |
|---|---|---|---|
| 1 | 1 | 0.586 | 2645 |
| | 2 | 0.283 | 840 |
| | 3 | 0.474 | 1859 |
| | 4 | 0.438 | 1657 |
| | 5 | | |
| 2 | 1 | 0.712 | 931 |
| | 2 | 0.784 | 1175 |
| | 3 | 0.606 | 702 |

*The slope and intercept shown above include any corrections and adjustments.*

# Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | R autom |
|---|---|---|---|---|---|---|---|
| D1 | 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic | AM | ONE HOUR | 07:45 | 09:15 | 15 | |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 637 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 684 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 232 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 513 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 357 | 100.000 |
| | 3 | ✓ | | | | |

## Origin-Destination Data

### Junction 1

#### Demand (PCU/hr)

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1 | 160 | 386 | 72 | 18 |
| | 2 | 92 | 1 | 274 | 160 | 62 |
| | 3 | 223 | 238 | 2 | 11 | 210 |
| | 4 | 78 | 64 | 14 | 26 | 50 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

### Junction 2

#### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 15 | 126 | 372 |
| | 2 | 135 | 1 | 221 |
| | 3 | 276 | 186 | 2 |

## Vehicle Mix

### Junction 1

#### Heavy Vehicle Percentages

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 7 | 7 | 15 | 22 |
| | 2 | 24 | 0 | 4 | 0 | 0 |
| | 3 | 10 | 5 | 0 | 9 | 3 |
| | 4 | 14 | 9 | 29 | 88 | 20 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

### Heavy Vehicle Percentages

**Junction 2**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 12 | 4 |
| | 2 | 22 | 0 | 5 |
| | 3 | 7 | 7 | 0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.29 | 2.26 | 0.4 | A | 585 | 877 |
| | 2 | 0.96 | 75.57 | 13.1 | F | 545 | 818 |
| | 3 | 0.46 | 4.33 | 0.9 | A | 628 | 941 |
| | 4 | 0.20 | 4.34 | 0.3 | A | 213 | 319 |
| | 5 | | | | | | |
| 2 | 1 | 0.72 | 17.28 | 2.6 | C | 471 | 706 |
| | 2 | 0.47 | 8.93 | 1.0 | A | 328 | 491 |
| | 3 | 0.85 | 39.35 | 5.2 | E | 425 | 637 |

## Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 259 | 2494 | 0.192 | 479 | 295 | 0.0 | 0.3 | 1.932 | A |
| | 2 | 444 | 111 | 390 | 730 | 0.609 | 438 | 347 | 0.0 | 1.6 | 12.694 | B |
| | 3 | 515 | 129 | 322 | 1706 | 0.302 | 513 | 506 | 0.0 | 0.5 | 3.195 | A |
| | 4 | 175 | 44 | 634 | 1379 | 0.127 | 174 | 201 | 0.0 | 0.2 | 3.579 | A |
| | 5 | | | 554 | | | | 255 | | | | |
| 2 | 1 | 386 | 97 | 139 | 832 | 0.464 | 383 | 316 | 0.0 | 0.9 | 8.408 | A |
| | 2 | 269 | 67 | 290 | 948 | 0.284 | 267 | 232 | 0.0 | 0.4 | 5.849 | A |
| | 3 | 347 | 87 | 113 | 634 | 0.548 | 342 | 444 | 0.0 | 1.3 | 13.002 | B |

### 08:00 - 08:15

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 310 | 2464 | 0.232 | 572 | 354 | 0.3 | 0.3 | 2.059 | A |
| | 2 | 533 | 133 | 466 | 708 | 0.753 | 528 | 416 | 1.6 | 2.9 | 20.316 | C |
| | 3 | 615 | 154 | 387 | 1675 | 0.367 | 614 | 607 | 0.5 | 0.6 | 3.595 | A |
| | 4 | 209 | 52 | 760 | 1324 | 0.157 | 208 | 241 | 0.2 | 0.2 | 3.868 | A |
| | 5 | | | 663 | | | | 305 | | | | |
| 2 | 1 | 461 | 115 | 168 | 811 | 0.568 | 459 | 380 | 0.9 | 1.4 | 10.754 | B |
| | 2 | 321 | 80 | 348 | 902 | 0.356 | 320 | 279 | 0.4 | 0.6 | 6.850 | A |
| | 3 | 416 | 104 | 135 | 620 | 0.671 | 413 | 533 | 1.3 | 2.1 | 18.257 | C |

### 08:15 - 08:30

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 379 | 2423 | 0.289 | 701 | 429 | 0.3 | 0.4 | 2.262 | A |
| | 2 | 651 | 163 | 571 | 679 | 0.959 | 623 | 509 | 2.9 | 9.9 | 51.430 | F |
| | 3 | 753 | 188 | 462 | 1640 | 0.459 | 752 | 732 | 0.6 | 0.9 | 4.292 | A |
| | 4 | 255 | 64 | 925 | 1252 | 0.204 | 255 | 289 | 0.2 | 0.3 | 4.328 | A |
| | 5 | | | 809 | | | | 371 | | | | |
| 2 | 1 | 565 | 141 | 203 | 787 | 0.718 | 560 | 461 | 1.4 | 2.5 | 16.463 | C |
| | 2 | 393 | 98 | 425 | 842 | 0.467 | 392 | 338 | 0.6 | 1.0 | 8.833 | A |
| | 3 | 509 | 127 | 166 | 602 | 0.846 | 498 | 651 | 2.1 | 4.8 | 33.992 | D |

### 08:30 - 08:45

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 380 | 2423 | 0.290 | 701 | 433 | 0.4 | 0.4 | 2.262 | A |
| | 2 | 655 | 164 | 571 | 679 | 0.965 | 642 | 510 | 9.9 | 13.1 | 75.566 | F |
| | 3 | 753 | 188 | 472 | 1635 | 0.461 | 753 | 741 | 0.9 | 0.9 | 4.326 | A |
| | 4 | 255 | 64 | 931 | 1250 | 0.204 | 255 | 294 | 0.3 | 0.3 | 4.341 | A |
| | 5 | | | 813 | | | | 374 | | | | |
| 2 | 1 | 565 | 141 | 207 | 784 | 0.721 | 564 | 467 | 2.5 | 2.6 | 17.276 | C |
| | 2 | 393 | 98 | 428 | 839 | 0.468 | 393 | 343 | 1.0 | 1.0 | 8.934 | A |
| | 3 | 510 | 127 | 166 | 602 | 0.847 | 508 | 655 | 4.8 | 5.2 | 39.355 | E |

### 08:45 - 09:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 311 | 2463 | 0.232 | 573 | 362 | 0.4 | 0.3 | 2.061 | A |
| | 2 | 539 | 135 | 467 | 708 | 0.761 | 577 | 417 | 13.1 | 3.7 | 34.416 | D |
| | 3 | 615 | 154 | 414 | 1663 | 0.370 | 616 | 630 | 0.9 | 0.6 | 3.648 | A |
| | 4 | 209 | 52 | 775 | 1318 | 0.158 | 209 | 255 | 0.3 | 0.2 | 3.893 | A |
| | 5 | | | 673 | | | | 311 | | | | |
| 2 | 1 | 461 | 115 | 175 | 807 | 0.572 | 466 | 390 | 2.6 | 1.4 | 11.312 | B |
| | 2 | 321 | 80 | 353 | 898 | 0.357 | 322 | 287 | 1.0 | 0.6 | 6.946 | A |
| | 3 | 417 | 104 | 136 | 620 | 0.673 | 428 | 539 | 5.2 | 2.3 | 21.205 | C |

### 09:00 - 09:15

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 260 | 2493 | 0.192 | 480 | 299 | 0.3 | 0.3 | 1.935 | A |
| | 2 | 450 | 112 | 391 | 730 | 0.617 | 458 | 349 | 3.7 | 1.8 | 14.284 | B |
| | 3 | 515 | 129 | 333 | 1701 | 0.303 | 516 | 516 | 0.6 | 0.5 | 3.222 | A |
| | 4 | 175 | 44 | 642 | 1376 | 0.127 | 175 | 206 | 0.2 | 0.2 | 3.593 | A |
| | 5 | | | 559 | | | | 258 | | | | |
| 2 | 1 | 386 | 97 | 144 | 829 | 0.466 | 388 | 323 | 1.4 | 0.9 | 8.679 | A |
| | 2 | 269 | 67 | 294 | 944 | 0.285 | 269 | 238 | 0.6 | 0.4 | 5.919 | A |
| | 3 | 349 | 87 | 114 | 633 | 0.551 | 353 | 450 | 2.3 | 1.4 | 13.920 | B |

# 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak, PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D1 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic, AM | Demand Set 15: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D2 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak, PM | Demand Set 16: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D3 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak, AM | Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D4 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak, PM | Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D5 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak, AM | Demand Set 21: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D6 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak, PM | Demand Set 22: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D7 - 2027 Alt Base Sensitivity + Development Flows - AM Peak, AM | Demand Set 23: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D8 - 2027 Alt Base Sensitivity + Development Flows - PM Peak, PM | Demand Set 24: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 25.24 | D |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 65.83 | F |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 38.54 | E |

# Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D2 | 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 1019 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 881 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 292 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 448 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 280 | 100.000 |
| | 3 | ✓ | | | | |

# Origin-Destination Data

**Junction 1**

**Demand (PCU/hr)**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 144 | 765 | 80 | 30 |
| | 2 | 37 | 2 | 292 | 108 | 68 |
| | 3 | 259 | 262 | 0 | 15 | 345 |
| | 4 | 40 | 183 | 8 | 12 | 49 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Demand (PCU/hr)**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 102 | 346 |
| | 2 | 111 | 1 | 168 |
| | 3 | 399 | 201 | 1 |

# Vehicle Mix

### Junction 1

**Heavy Vehicle Percentages**

| | To | | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 8 | 4 | 18 | 13 |
| | 2 | 35 | 0 | 1 | 3 | 0 |
| | 3 | 8 | 2 | 0 | 0 | 2 |
| | 4 | 0 | 2 | 13 | 33 | 22 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

### Junction 2

**Heavy Vehicle Percentages**

| | To | | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 4 | 2 |
| | 2 | 7 | 0 | 6 |
| | 3 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.48 | 3.12 | 1.0 | A | 935 | 1403 |
| | 2 | 1.01 | 115.14 | 18.0 | F | 472 | 708 |
| | 3 | 0.58 | 5.21 | 1.4 | A | 808 | 1213 |
| | 4 | 0.27 | 4.47 | 0.4 | A | 268 | 402 |
| | 5 | | | | | | |
| 2 | 1 | 0.63 | 12.71 | 1.7 | B | 411 | 617 |
| | 2 | 0.35 | 6.75 | 0.6 | A | 257 | 385 |
| | 3 | 1.04 | 134.13 | 24.8 | F | 542 | 813 |

## Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 767 | 192 | 350 | 2440 | 0.314 | 765 | 252 | 0.0 | 0.5 | 2.272 | A |
| | 2 | 385 | 96 | 672 | 650 | 0.592 | 379 | 443 | 0.0 | 1.4 | 13.439 | B |
| | 3 | 663 | 166 | 252 | 1739 | 0.381 | 661 | 799 | 0.0 | 0.6 | 3.454 | A |
| | 4 | 220 | 55 | 752 | 1328 | 0.166 | 219 | 161 | 0.0 | 0.2 | 3.437 | A |
| | 5 | | | 602 | | | | 369 | | | | |
| 2 | 1 | 337 | 84 | 147 | 826 | 0.408 | 334 | 372 | 0.0 | 0.7 | 7.456 | A |
| | 2 | 211 | 53 | 259 | 972 | 0.217 | 210 | 222 | 0.0 | 0.3 | 5.017 | A |
| | 3 | 443 | 111 | 84 | 652 | 0.681 | 435 | 385 | 0.0 | 2.0 | 16.109 | C |

### 17:00 - 17:15

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 916 | 229 | 419 | 2399 | 0.382 | 915 | 302 | 0.5 | 0.7 | 2.564 | A |
| | 2 | 462 | 115 | 804 | 613 | 0.754 | 456 | 531 | 1.4 | 2.9 | 22.873 | C |
| | 3 | 792 | 198 | 303 | 1715 | 0.462 | 791 | 957 | 0.6 | 0.9 | 4.034 | A |
| | 4 | 263 | 66 | 901 | 1263 | 0.208 | 262 | 193 | 0.2 | 0.3 | 3.811 | A |
| | 5 | | | 721 | | | | 442 | | | | |
| 2 | 1 | 403 | 101 | 176 | 805 | 0.500 | 402 | 446 | 0.7 | 1.0 | 9.102 | A |
| | 2 | 252 | 63 | 311 | 931 | 0.270 | 251 | 267 | 0.3 | 0.4 | 5.628 | A |
| | 3 | 531 | 133 | 101 | 641 | 0.827 | 522 | 462 | 2.0 | 4.1 | 28.353 | D |

### 17:15 - 17:30

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1122 | 280 | 513 | 2344 | 0.479 | 1121 | 367 | 0.7 | 1.0 | 3.109 | A |
| | 2 | 564 | 141 | 984 | 562 | 1.005 | 526 | 650 | 2.9 | 12.4 | 69.819 | F |
| | 3 | 970 | 242 | 357 | 1689 | 0.574 | 968 | 1153 | 0.9 | 1.4 | 5.159 | A |
| | 4 | 321 | 80 | 1096 | 1177 | 0.273 | 321 | 230 | 0.3 | 0.4 | 4.451 | A |
| | 5 | | | 880 | | | | 537 | | | | |
| 2 | 1 | 493 | 123 | 203 | 786 | 0.627 | 491 | 521 | 1.0 | 1.7 | 12.353 | B |
| | 2 | 308 | 77 | 380 | 877 | 0.351 | 308 | 314 | 0.4 | 0.6 | 6.715 | A |
| | 3 | 650 | 162 | 123 | 628 | 1.035 | 601 | 564 | 4.1 | 16.2 | 77.928 | F |

### 17:30 - 17:45

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1122 | 280 | 514 | 2344 | 0.479 | 1122 | 369 | 1.0 | 1.0 | 3.115 | A |
| | 2 | 567 | 142 | 985 | 561 | 1.010 | 544 | 651 | 12.4 | 18.0 | 115.144 | F |
| | 3 | 970 | 242 | 365 | 1686 | 0.575 | 970 | 1164 | 1.4 | 1.4 | 5.213 | A |
| | 4 | 321 | 80 | 1101 | 1175 | 0.274 | 321 | 234 | 0.4 | 0.4 | 4.467 | A |
| | 5 | | | 883 | | | | 540 | | | | |
| 2 | 1 | 493 | 123 | 208 | 783 | 0.630 | 493 | 531 | 1.7 | 1.7 | 12.712 | B |
| | 2 | 308 | 77 | 382 | 876 | 0.352 | 308 | 320 | 0.6 | 0.6 | 6.749 | A |
| | 3 | 651 | 163 | 123 | 628 | 1.037 | 616 | 567 | 16.2 | 24.8 | 134.126 | F |

### 17:45 - 18:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 916 | 229 | 421 | 2398 | 0.382 | 917 | 308 | 1.0 | 0.7 | 2.572 | A |
| | 2 | 465 | 116 | 806 | 612 | 0.760 | 523 | 533 | 18.0 | 3.8 | 54.356 | F |
| | 3 | 792 | 198 | 331 | 1702 | 0.465 | 794 | 997 | 1.4 | 0.9 | 4.121 | A |
| | 4 | 263 | 66 | 918 | 1255 | 0.209 | 263 | 208 | 0.4 | 0.3 | 3.843 | A |
| | 5 | | | 729 | | | | 452 | | | | |
| 2 | 1 | 403 | 101 | 204 | 786 | 0.513 | 405 | 502 | 1.7 | 1.1 | 9.754 | A |
| | 2 | 252 | 63 | 314 | 929 | 0.271 | 252 | 296 | 0.6 | 0.4 | 5.668 | A |
| | 3 | 533 | 133 | 101 | 641 | 0.831 | 605 | 465 | 24.8 | 6.6 | 95.020 | F |

**18:00 - 18:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 767 | 192 | 352 | 2439 | 0.315 | 768 | 254 | 0.7 | 0.5 | 2.281 | A |
| | 2 | 389 | 97 | 674 | 649 | 0.599 | 398 | 446 | 3.8 | 1.6 | 15.226 | C |
| | 3 | 663 | 166 | 261 | 1735 | 0.382 | 664 | 812 | 0.9 | 0.6 | 3.490 | A |
| | 4 | 220 | 55 | 760 | 1325 | 0.166 | 220 | 165 | 0.3 | 0.2 | 3.455 | A |
| | 5 | | | 607 | | | | 373 | | | | |
| 2 | 1 | 337 | 84 | 156 | 820 | 0.411 | 339 | 391 | 1.1 | 0.7 | 7.690 | A |
| | 2 | 211 | 53 | 262 | 969 | 0.217 | 211 | 233 | 0.4 | 0.3 | 5.055 | A |
| | 3 | 446 | 111 | 84 | 651 | 0.684 | 463 | 389 | 6.6 | 2.3 | 20.644 | C |

# 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D1 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic, AM | Demand Set 15: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D2 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak, PM | Demand Set 16: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D3 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak, AM | Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D4 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak, PM | Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D5 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak, AM | Demand Set 21: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D6 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak, PM | Demand Set 22: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D7 - 2027 Alt Base Sensitivity + Development Flows - AM Peak, AM | Demand Set 23: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D8 - 2027 Alt Base Sensitivity + Development Flows - PM Peak, PM | Demand Set 24: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |

# Junction Network

## Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 29.00 | D |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 24.32 | C |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 27.20 | D |

# Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|---|---|---|---|---|---|---|
| D3 | 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak | AM | ONE HOUR | 07:45 | 09:15 | 15 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 637 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 688 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 234 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 532 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 357 | 100.000 |
| | 3 | ✓ | | | | |

# Origin-Destination Data

**Junction 1**

**Demand (PCU/hr)**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1 | 160 | 386 | 72 | 18 |
| | 2 | 92 | 1 | 287 | 166 | 62 |
| | 3 | 223 | 242 | 2 | 11 | 210 |
| | 4 | 78 | 66 | 14 | 26 | 50 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Demand (PCU/hr)**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 15 | 127 | 390 |
| | 2 | 135 | 1 | 221 |
| | 3 | 282 | 186 | 2 |

# Vehicle Mix

## Junction 1

### Heavy Vehicle Percentages

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 7 | 7 | 15 | 22 |
| | 2 | 24 | 0 | 4 | 0 | 0 |
| | 3 | 10 | 5 | 0 | 9 | 3 |
| | 4 | 14 | 9 | 29 | 88 | 20 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

## Junction 2

### Heavy Vehicle Percentages

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 12 | 4 |
| | 2 | 22 | 0 | 5 |
| | 3 | 7 | 7 | 0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.29 | 2.27 | 0.4 | A | 585 | 877 |
| | 2 | 0.99 | 93.94 | 17.3 | F | 562 | 843 |
| | 3 | 0.46 | 4.35 | 0.9 | A | 631 | 947 |
| | 4 | 0.21 | 4.35 | 0.3 | A | 215 | 322 |
| | 5 | | | | | | |
| 2 | 1 | 0.75 | 19.03 | 3.0 | C | 488 | 732 |
| | 2 | 0.48 | 9.26 | 1.0 | A | 328 | 491 |
| | 3 | 0.86 | 41.80 | 5.6 | E | 430 | 645 |

## Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 263 | 2491 | 0.193 | 479 | 295 | 0.0 | 0.3 | 1.935 | A |
| | 2 | 458 | 114 | 390 | 730 | 0.627 | 451 | 352 | 0.0 | 1.7 | 13.238 | B |
| | 3 | 518 | 129 | 326 | 1704 | 0.304 | 516 | 515 | 0.0 | 0.5 | 3.207 | A |
| | 4 | 176 | 44 | 637 | 1378 | 0.128 | 175 | 205 | 0.0 | 0.2 | 3.584 | A |
| | 5 | | | 558 | | | | 255 | | | | |
| 2 | 1 | 401 | 100 | 139 | 832 | 0.481 | 397 | 320 | 0.0 | 1.0 | 8.669 | A |
| | 2 | 269 | 67 | 303 | 937 | 0.287 | 267 | 233 | 0.0 | 0.4 | 5.939 | A |
| | 3 | 352 | 88 | 113 | 634 | 0.555 | 347 | 458 | 0.0 | 1.3 | 13.190 | B |

### 08:00 - 08:15

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 315 | 2460 | 0.233 | 572 | 353 | 0.3 | 0.3 | 2.063 | A |
| | 2 | 549 | 137 | 466 | 708 | 0.775 | 543 | 421 | 1.7 | 3.3 | 21.990 | C |
| | 3 | 618 | 155 | 392 | 1673 | 0.370 | 618 | 617 | 0.5 | 0.6 | 3.614 | A |
| | 4 | 210 | 53 | 763 | 1323 | 0.159 | 210 | 246 | 0.2 | 0.2 | 3.876 | A |
| | 5 | | | 669 | | | | 305 | | | | |
| 2 | 1 | 478 | 120 | 168 | 811 | 0.589 | 476 | 385 | 1.0 | 1.5 | 11.277 | B |
| | 2 | 321 | 80 | 364 | 889 | 0.361 | 320 | 280 | 0.4 | 0.6 | 7.002 | A |
| | 3 | 421 | 105 | 135 | 620 | 0.679 | 418 | 549 | 1.3 | 2.1 | 18.705 | C |

### 08:15 - 08:30

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 386 | 2419 | 0.290 | 701 | 428 | 0.3 | 0.4 | 2.267 | A |
| | 2 | 670 | 167 | 571 | 679 | 0.987 | 634 | 516 | 3.3 | 12.2 | 59.359 | F |
| | 3 | 758 | 189 | 464 | 1639 | 0.462 | 756 | 742 | 0.6 | 0.9 | 4.317 | A |
| | 4 | 258 | 64 | 927 | 1251 | 0.206 | 257 | 293 | 0.2 | 0.3 | 4.338 | A |
| | 5 | | | 814 | | | | 370 | | | | |
| 2 | 1 | 586 | 146 | 203 | 787 | 0.744 | 580 | 467 | 1.5 | 2.9 | 17.934 | C |
| | 2 | 393 | 98 | 444 | 827 | 0.475 | 392 | 339 | 0.6 | 1.0 | 9.133 | A |
| | 3 | 516 | 129 | 166 | 602 | 0.857 | 504 | 670 | 2.1 | 5.1 | 35.577 | E |

### 08:30 - 08:45

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 386 | 2419 | 0.290 | 701 | 431 | 0.4 | 0.4 | 2.268 | A |
| | 2 | 674 | 169 | 571 | 679 | 0.994 | 654 | 516 | 12.2 | 17.3 | 93.936 | F |
| | 3 | 758 | 189 | 474 | 1634 | 0.464 | 757 | 751 | 0.9 | 0.9 | 4.352 | A |
| | 4 | 258 | 64 | 933 | 1249 | 0.206 | 258 | 299 | 0.3 | 0.3 | 4.351 | A |
| | 5 | | | 818 | | | | 373 | | | | |
| 2 | 1 | 586 | 146 | 207 | 784 | 0.747 | 585 | 474 | 2.9 | 3.0 | 19.031 | C |
| | 2 | 393 | 98 | 448 | 824 | 0.477 | 393 | 344 | 1.0 | 1.0 | 9.256 | A |
| | 3 | 516 | 129 | 166 | 602 | 0.858 | 514 | 674 | 5.1 | 5.6 | 41.803 | E |

### 08:45 - 09:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 316 | 2460 | 0.233 | 573 | 364 | 0.4 | 0.3 | 2.064 | A |
| | 2 | 556 | 139 | 467 | 708 | 0.785 | 608 | 422 | 17.3 | 4.4 | 47.278 | E |
| | 3 | 618 | 155 | 426 | 1657 | 0.373 | 620 | 648 | 0.9 | 0.6 | 3.681 | A |
| | 4 | 210 | 53 | 782 | 1315 | 0.160 | 211 | 264 | 0.3 | 0.2 | 3.906 | A |
| | 5 | | | 680 | | | | 312 | | | | |
| 2 | 1 | 478 | 120 | 175 | 807 | 0.593 | 484 | 397 | 3.0 | 1.6 | 11.986 | B |
| | 2 | 321 | 80 | 370 | 885 | 0.363 | 322 | 289 | 1.0 | 0.6 | 7.112 | A |
| | 3 | 422 | 106 | 136 | 620 | 0.682 | 435 | 556 | 5.6 | 2.4 | 22.092 | C |

**09:00 - 09:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 265 | 2490 | 0.193 | 480 | 299 | 0.3 | 0.3 | 1.939 | A |
| | 2 | 464 | 116 | 391 | 730 | 0.635 | 474 | 353 | 4.4 | 1.9 | 15.294 | C |
| | 3 | 518 | 129 | 338 | 1698 | 0.305 | 519 | 526 | 0.6 | 0.5 | 3.237 | A |
| | 4 | 176 | 44 | 645 | 1375 | 0.128 | 176 | 211 | 0.2 | 0.2 | 3.599 | A |
| | 5 | | | 564 | | | | 258 | | | | |
| 2 | 1 | 401 | 100 | 144 | 829 | 0.483 | 403 | 328 | 1.6 | 1.0 | 8.980 | A |
| | 2 | 269 | 67 | 308 | 933 | 0.288 | 270 | 238 | 0.6 | 0.5 | 6.016 | A |
| | 3 | 353 | 88 | 114 | 633 | 0.558 | 358 | 464 | 2.4 | 1.4 | 14.174 | B |

# 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak, PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D1 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic, AM | Demand Set 15: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D2 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak, PM | Demand Set 16: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D3 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak, AM | Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D4 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak, PM | Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D5 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak, AM | Demand Set 21: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D6 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak, PM | Demand Set 22: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D7 - 2027 Alt Base Sensitivity + Development Flows - AM Peak, AM | Demand Set 23: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D8 - 2027 Alt Base Sensitivity + Development Flows - PM Peak, PM | Demand Set 24: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 26.78 | D |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 80.27 | F |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 44.47 | E |

# Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|---|---|---|---|---|---|---|
| D4 | 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak | PM | ONE HOUR | 16:45 | 18:15 | 15 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 1007 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 893 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 297 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 456 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 280 | 100.000 |
| | 3 | ✓ | | | | |

# Origin-Destination Data

**Junction 1**

**Demand (PCU/hr)**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 144 | 765 | 80 | 18 |
| | 2 | 37 | 2 | 298 | 110 | 68 |
| | 3 | 259 | 274 | 0 | 15 | 345 |
| | 4 | 40 | 188 | 8 | 12 | 49 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Demand (PCU/hr)**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 102 | 354 |
| | 2 | 111 | 1 | 168 |
| | 3 | 416 | 201 | 1 |

# Vehicle Mix

## Junction 1

### Heavy Vehicle Percentages

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 8 | 4 | 18 | 22 |
| | 2 | 35 | 0 | 1 | 3 | 0 |
| | 3 | 8 | 2 | 0 | 0 | 2 |
| | 4 | 0 | 2 | 13 | 33 | 22 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

## Junction 2

### Heavy Vehicle Percentages

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 4 | 2 |
| | 2 | 7 | 0 | 6 |
| | 3 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.48 | 3.11 | 1.0 | A | 924 | 1386 |
| | 2 | 1.02 | 121.86 | 19.6 | F | 479 | 719 |
| | 3 | 0.58 | 5.27 | 1.4 | A | 819 | 1229 |
| | 4 | 0.28 | 4.49 | 0.4 | A | 273 | 409 |
| | 5 | | | | | | |
| 2 | 1 | 0.64 | 12.97 | 1.8 | B | 418 | 628 |
| | 2 | 0.35 | 6.83 | 0.6 | A | 257 | 385 |
| | 3 | 1.07 | 164.61 | 32.0 | F | 558 | 836 |

## Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 758 | 190 | 363 | 2432 | 0.312 | 756 | 252 | 0.0 | 0.5 | 2.271 | A |
| | 2 | 391 | 98 | 663 | 653 | 0.599 | 385 | 456 | 0.0 | 1.5 | 13.587 | B |
| | 3 | 672 | 168 | 245 | 1743 | 0.386 | 670 | 803 | 0.0 | 0.6 | 3.468 | A |
| | 4 | 224 | 56 | 752 | 1328 | 0.168 | 223 | 163 | 0.0 | 0.2 | 3.446 | A |
| | 5 | | | 615 | | | | 360 | | | | |
| 2 | 1 | 343 | 86 | 147 | 826 | 0.415 | 340 | 384 | 0.0 | 0.7 | 7.545 | A |
| | 2 | 211 | 53 | 265 | 967 | 0.218 | 210 | 222 | 0.0 | 0.3 | 5.048 | A |
| | 3 | 456 | 114 | 84 | 652 | 0.700 | 447 | 391 | 0.0 | 2.2 | 16.981 | C |

### 17:00 - 17:15

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 905 | 226 | 435 | 2390 | 0.379 | 905 | 302 | 0.5 | 0.6 | 2.562 | A |
| | 2 | 469 | 117 | 793 | 616 | 0.761 | 463 | 546 | 1.5 | 3.0 | 23.383 | C |
| | 3 | 803 | 201 | 294 | 1719 | 0.467 | 802 | 962 | 0.6 | 0.9 | 4.061 | A |
| | 4 | 267 | 67 | 901 | 1263 | 0.211 | 267 | 195 | 0.2 | 0.3 | 3.825 | A |
| | 5 | | | 736 | | | | 431 | | | | |
| 2 | 1 | 410 | 102 | 176 | 806 | 0.509 | 409 | 460 | 0.7 | 1.0 | 9.257 | A |
| | 2 | 252 | 63 | 318 | 926 | 0.272 | 251 | 267 | 0.3 | 0.4 | 5.675 | A |
| | 3 | 546 | 136 | 101 | 641 | 0.851 | 536 | 469 | 2.2 | 4.7 | 31.402 | D |

### 17:15 - 17:30

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1109 | 277 | 532 | 2333 | 0.475 | 1107 | 367 | 0.6 | 1.0 | 3.105 | A |
| | 2 | 573 | 143 | 971 | 565 | 1.014 | 532 | 668 | 3.0 | 13.1 | 72.447 | F |
| | 3 | 983 | 246 | 345 | 1695 | 0.580 | 981 | 1158 | 0.9 | 1.4 | 5.212 | A |
| | 4 | 327 | 82 | 1095 | 1178 | 0.278 | 327 | 231 | 0.3 | 0.4 | 4.475 | A |
| | 5 | | | 899 | | | | 523 | | | | |
| 2 | 1 | 502 | 126 | 200 | 789 | 0.636 | 499 | 531 | 1.0 | 1.7 | 12.612 | B |
| | 2 | 308 | 77 | 389 | 870 | 0.354 | 308 | 310 | 0.4 | 0.6 | 6.797 | A |
| | 3 | 668 | 167 | 123 | 628 | 1.064 | 608 | 573 | 4.7 | 19.8 | 90.201 | F |

### 17:30 - 17:45

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1109 | 277 | 533 | 2333 | 0.475 | 1109 | 369 | 1.0 | 1.0 | 3.111 | A |
| | 2 | 576 | 144 | 972 | 565 | 1.018 | 550 | 669 | 13.1 | 19.6 | 121.861 | F |
| | 3 | 983 | 246 | 353 | 1691 | 0.581 | 983 | 1169 | 1.4 | 1.4 | 5.267 | A |
| | 4 | 327 | 82 | 1101 | 1175 | 0.278 | 327 | 235 | 0.4 | 0.4 | 4.492 | A |
| | 5 | | | 901 | | | | 526 | | | | |
| 2 | 1 | 502 | 126 | 204 | 786 | 0.639 | 502 | 540 | 1.7 | 1.8 | 12.967 | B |
| | 2 | 308 | 77 | 391 | 869 | 0.355 | 308 | 315 | 0.6 | 0.6 | 6.832 | A |
| | 3 | 669 | 167 | 123 | 628 | 1.066 | 621 | 576 | 19.8 | 32.0 | 164.610 | F |

### 17:45 - 18:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 905 | 226 | 436 | 2389 | 0.379 | 906 | 308 | 1.0 | 0.6 | 2.572 | A |
| | 2 | 473 | 118 | 795 | 615 | 0.768 | 535 | 548 | 19.6 | 4.0 | 60.803 | F |
| | 3 | 803 | 201 | 324 | 1705 | 0.471 | 805 | 1005 | 1.4 | 0.9 | 4.155 | A |
| | 4 | 267 | 67 | 919 | 1255 | 0.213 | 267 | 211 | 0.4 | 0.3 | 3.862 | A |
| | 5 | | | 744 | | | | 442 | | | | |
| 2 | 1 | 410 | 102 | 204 | 786 | 0.522 | 412 | 519 | 1.8 | 1.1 | 9.944 | A |
| | 2 | 252 | 63 | 321 | 923 | 0.273 | 252 | 295 | 0.6 | 0.4 | 5.715 | A |
| | 3 | 548 | 137 | 101 | 641 | 0.855 | 622 | 473 | 32.0 | 13.5 | 137.912 | F |

**18:00 - 18:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 758 | 190 | 365 | 2431 | 0.312 | 759 | 255 | 0.6 | 0.5 | 2.280 | A |
| | 2 | 395 | 99 | 665 | 652 | 0.606 | 405 | 458 | 4.0 | 1.7 | 15.531 | C |
| | 3 | 672 | 168 | 253 | 1739 | 0.387 | 673 | 817 | 0.9 | 0.7 | 3.507 | A |
| | 4 | 224 | 56 | 760 | 1325 | 0.169 | 224 | 167 | 0.3 | 0.2 | 3.464 | A |
| | 5 | | | 620 | | | | 364 | | | | |
| 2 | 1 | 343 | 86 | 165 | 814 | 0.422 | 345 | 422 | 1.1 | 0.8 | 7.892 | A |
| | 2 | 211 | 53 | 269 | 964 | 0.219 | 211 | 241 | 0.4 | 0.3 | 5.086 | A |
| | 3 | 458 | 115 | 84 | 651 | 0.704 | 502 | 395 | 13.5 | 2.6 | 30.012 | D |

# 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D1 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic, AM | Demand Set 15: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D2 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak, PM | Demand Set 16: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D3 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak, AM | Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D4 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak, PM | Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D5 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak, AM | Demand Set 21: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D6 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak, PM | Demand Set 22: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D7 - 2027 Alt Base Sensitivity + Development Flows - AM Peak, AM | Demand Set 23: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D8 - 2027 Alt Base Sensitivity + Development Flows - PM Peak, PM | Demand Set 24: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |

# Junction Network

## Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 68.65 | F |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 31.33 | D |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 53.99 | F |

# Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatic |
|---|---|---|---|---|---|---|---|
| D5 | 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 637 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 707 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 240 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 546 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 431 | 100.000 |
| | 3 | ✓ | | | | |

# Origin-Destination Data

## Junction 1

Demand (PCU/hr)

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1 | 160 | 386 | 72 | 18 |
| | 2 | 92 | 1 | 333 | 186 | 62 |
| | 3 | 223 | 261 | 2 | 11 | 210 |
| | 4 | 78 | 72 | 14 | 26 | 50 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

## Junction 2

Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 15 | 130 | 401 |
| | 2 | 142 | 1 | 288 |
| | 3 | 285 | 211 | 2 |

# Vehicle Mix

## Junction 1

### Heavy Vehicle Percentages

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 7 | 7 | 15 | 22 |
| | 2 | 24 | 0 | 4 | 0 | 0 |
| | 3 | 10 | 5 | 0 | 9 | 3 |
| | 4 | 14 | 9 | 29 | 88 | 20 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

## Junction 2

### Heavy Vehicle Percentages

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 12 | 4 |
| | 2 | 22 | 0 | 5 |
| | 3 | 7 | 7 | 0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.29 | 2.29 | 0.4 | A | 585 | 877 |
| | 2 | 1.12 | 218.02 | 49.2 | F | 633 | 950 |
| | 3 | 0.48 | 4.45 | 1.0 | A | 649 | 973 |
| | 4 | 0.21 | 4.39 | 0.3 | A | 220 | 330 |
| | 5 | | | | | | |
| 2 | 1 | 0.78 | 22.66 | 3.6 | C | 501 | 752 |
| | 2 | 0.58 | 11.63 | 1.5 | B | 395 | 593 |
| | 3 | 0.91 | 58.11 | 8.2 | F | 453 | 680 |

## Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 282 | 2480 | 0.193 | 479 | 296 | 0.0 | 0.3 | 1.945 | A |
| | 2 | 516 | 129 | 390 | 730 | 0.706 | 506 | 371 | 0.0 | 2.4 | 16.230 | C |
| | 3 | 532 | 133 | 344 | 1696 | 0.314 | 530 | 552 | 0.0 | 0.5 | 3.267 | A |
| | 4 | 181 | 45 | 653 | 1371 | 0.132 | 180 | 221 | 0.0 | 0.2 | 3.609 | A |
| | 5 | | | 578 | | | | 255 | | | | |
| 2 | 1 | 411 | 103 | 157 | 819 | 0.502 | 407 | 326 | 0.0 | 1.0 | 9.132 | A |
| | 2 | 324 | 81 | 311 | 931 | 0.349 | 322 | 252 | 0.0 | 0.6 | 6.484 | A |
| | 3 | 371 | 93 | 118 | 631 | 0.588 | 365 | 516 | 0.0 | 1.5 | 14.190 | B |

### 08:00 - 08:15

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 338 | 2447 | 0.234 | 572 | 354 | 0.3 | 0.3 | 2.077 | A |
| | 2 | 619 | 155 | 466 | 708 | 0.873 | 606 | 444 | 2.4 | 5.7 | 33.006 | D |
| | 3 | 636 | 159 | 411 | 1664 | 0.382 | 635 | 660 | 0.5 | 0.7 | 3.706 | A |
| | 4 | 216 | 54 | 781 | 1315 | 0.164 | 216 | 265 | 0.2 | 0.2 | 3.913 | A |
| | 5 | | | 692 | | | | 305 | | | | |
| 2 | 1 | 491 | 123 | 189 | 797 | 0.616 | 488 | 392 | 1.0 | 1.6 | 12.245 | B |
| | 2 | 387 | 97 | 374 | 882 | 0.439 | 386 | 303 | 0.6 | 0.8 | 7.979 | A |
| | 3 | 444 | 111 | 142 | 616 | 0.720 | 439 | 619 | 1.5 | 2.5 | 21.211 | C |

### 08:15 - 08:30

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 413 | 2403 | 0.292 | 701 | 423 | 0.3 | 0.4 | 2.289 | A |
| | 2 | 754 | 188 | 571 | 679 | 1.111 | 664 | 543 | 5.7 | 28.0 | 108.440 | F |
| | 3 | 778 | 195 | 465 | 1638 | 0.475 | 777 | 771 | 0.7 | 1.0 | 4.423 | A |
| | 4 | 264 | 66 | 939 | 1246 | 0.212 | 264 | 303 | 0.2 | 0.3 | 4.379 | A |
| | 5 | | | 836 | | | | 367 | | | | |
| 2 | 1 | 601 | 150 | 226 | 770 | 0.780 | 594 | 473 | 1.6 | 3.4 | 20.781 | C |
| | 2 | 475 | 119 | 455 | 818 | 0.580 | 472 | 365 | 0.8 | 1.5 | 11.353 | B |
| | 3 | 543 | 136 | 173 | 598 | 0.909 | 526 | 754 | 2.5 | 6.9 | 45.117 | E |

### 08:30 - 08:45

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 414 | 2403 | 0.292 | 701 | 425 | 0.4 | 0.4 | 2.289 | A |
| | 2 | 760 | 190 | 571 | 679 | 1.120 | 675 | 544 | 28.0 | 49.2 | 218.017 | F |
| | 3 | 778 | 195 | 470 | 1636 | 0.476 | 778 | 776 | 1.0 | 1.0 | 4.449 | A |
| | 4 | 264 | 66 | 943 | 1244 | 0.212 | 264 | 306 | 0.3 | 0.3 | 4.388 | A |
| | 5 | | | 839 | | | | 368 | | | | |
| 2 | 1 | 601 | 150 | 232 | 766 | 0.785 | 600 | 481 | 3.4 | 3.6 | 22.662 | C |
| | 2 | 475 | 119 | 460 | 815 | 0.583 | 474 | 372 | 1.5 | 1.5 | 11.634 | B |
| | 3 | 544 | 136 | 174 | 597 | 0.911 | 539 | 760 | 6.9 | 8.2 | 58.111 | F |

### 08:45 - 09:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 339 | 2447 | 0.234 | 573 | 367 | 0.4 | 0.3 | 2.079 | A |
| | 2 | 628 | 157 | 467 | 708 | 0.887 | 693 | 445 | 49.2 | 32.9 | 215.231 | F |
| | 3 | 636 | 159 | 456 | 1643 | 0.387 | 637 | 704 | 1.0 | 0.7 | 3.798 | A |
| | 4 | 216 | 54 | 803 | 1305 | 0.165 | 216 | 289 | 0.3 | 0.2 | 3.951 | A |
| | 5 | | | 705 | | | | 314 | | | | |
| 2 | 1 | 491 | 123 | 200 | 789 | 0.622 | 498 | 409 | 3.6 | 1.8 | 13.399 | B |
| | 2 | 387 | 97 | 381 | 876 | 0.442 | 390 | 317 | 1.5 | 0.9 | 8.194 | A |
| | 3 | 445 | 111 | 143 | 616 | 0.723 | 465 | 628 | 8.2 | 3.0 | 28.374 | D |

**09:00 - 09:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 284 | 2479 | 0.193 | 480 | 315 | 0.3 | 0.3 | 1.948 | A |
| | 2 | 523 | 131 | 391 | 730 | 0.717 | 643 | 372 | 32.9 | 3.0 | 72.344 | F |
| | 3 | 532 | 133 | 413 | 1663 | 0.320 | 533 | 620 | 0.7 | 0.5 | 3.377 | A |
| | 4 | 181 | 45 | 687 | 1357 | 0.133 | 181 | 259 | 0.2 | 0.2 | 3.659 | A |
| | 5 | | | 599 | | | | 269 | | | | |
| 2 | 1 | 411 | 103 | 163 | 815 | 0.504 | 414 | 335 | 1.8 | 1.1 | 9.542 | A |
| | 2 | 324 | 81 | 317 | 927 | 0.350 | 326 | 260 | 0.9 | 0.6 | 6.606 | A |
| | 3 | 372 | 93 | 119 | 630 | 0.591 | 378 | 523 | 3.0 | 1.6 | 15.618 | C |

# 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak, PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D1 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic, AM | Demand Set 15: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D2 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak, PM | Demand Set 16: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D3 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak, AM | Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D4 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak, PM | Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D5 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak, AM | Demand Set 21: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D6 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak, PM | Demand Set 22: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D7 - 2027 Alt Base Sensitivity + Development Flows - AM Peak, AM | Demand Set 23: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D8 - 2027 Alt Base Sensitivity + Development Flows - PM Peak, PM | Demand Set 24: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 40.03 | E |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 164.17 | F |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 82.18 | F |

# Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatic |
|---|---|---|---|---|---|---|---|
| D6 | 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 1007 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 937 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 310 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 465 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 315 | 100.000 |
| | 3 | ✓ | | | | |

# Origin-Destination Data

**Junction 1**

**Demand (PCU/hr)**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 144 | 765 | 80 | 18 |
| | 2 | 37 | 2 | 318 | 122 | 68 |
| | 3 | 259 | 318 | 0 | 15 | 345 |
| | 4 | 40 | 201 | 8 | 12 | 49 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Demand (PCU/hr)**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 108 | 357 |
| | 2 | 115 | 1 | 199 |
| | 3 | 420 | 263 | 1 |

# Vehicle Mix

## Junction 1

### Heavy Vehicle Percentages

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 8 | 4 | 18 | 22 |
| | 2 | 35 | 0 | 1 | 3 | 0 |
| | 3 | 8 | 2 | 0 | 0 | 2 |
| | 4 | 0 | 2 | 13 | 33 | 22 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

## Junction 2

### Heavy Vehicle Percentages

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 4 | 2 |
| | 2 | 7 | 0 | 6 |
| | 3 | 4 | 3 | 0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.48 | 3.21 | 1.0 | A | 924 | 1386 |
| | 2 | 1.08 | 184.27 | 33.1 | F | 510 | 766 |
| | 3 | 0.61 | 5.66 | 1.6 | A | 860 | 1290 |
| | 4 | 0.30 | 4.67 | 0.4 | A | 284 | 427 |
| | 5 | | | | | | |
| 2 | 1 | 0.67 | 14.88 | 2.1 | B | 427 | 640 |
| | 2 | 0.40 | 7.37 | 0.7 | A | 289 | 434 |
| | 3 | 1.17 | 342.90 | 63.6 | F | 610 | 915 |

## Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 758 | 190 | 406 | 2407 | 0.315 | 756 | 252 | 0.0 | 0.5 | 2.306 | A |
| | 2 | 416 | 104 | 663 | 653 | 0.637 | 409 | 499 | 0.0 | 1.7 | 14.846 | B |
| | 3 | 705 | 176 | 254 | 1738 | 0.406 | 703 | 818 | 0.0 | 0.7 | 3.591 | A |
| | 4 | 233 | 58 | 785 | 1314 | 0.178 | 232 | 172 | 0.0 | 0.2 | 3.515 | A |
| | 5 | | | 658 | | | | 360 | | | | |
| 2 | 1 | 350 | 88 | 189 | 797 | 0.439 | 347 | 385 | 0.0 | 0.8 | 8.141 | A |
| | 2 | 237 | 59 | 267 | 966 | 0.246 | 236 | 268 | 0.0 | 0.3 | 5.236 | A |
| | 3 | 499 | 125 | 87 | 650 | 0.768 | 486 | 416 | 0.0 | 3.1 | 21.482 | C |

### 17:00 - 17:15

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 905 | 226 | 486 | 2360 | 0.384 | 905 | 302 | 0.5 | 0.7 | 2.615 | A |
| | 2 | 499 | 125 | 793 | 616 | 0.811 | 491 | 597 | 1.7 | 3.8 | 27.940 | D |
| | 3 | 842 | 211 | 304 | 1714 | 0.491 | 841 | 980 | 0.7 | 1.0 | 4.264 | A |
| | 4 | 279 | 70 | 940 | 1246 | 0.224 | 278 | 206 | 0.2 | 0.3 | 3.932 | A |
| | 5 | | | 787 | | | | 431 | | | | |
| 2 | 1 | 418 | 105 | 223 | 772 | 0.542 | 416 | 457 | 0.8 | 1.2 | 10.329 | B |
| | 2 | 283 | 71 | 321 | 924 | 0.307 | 283 | 319 | 0.3 | 0.5 | 5.973 | A |
| | 3 | 597 | 149 | 104 | 639 | 0.934 | 577 | 499 | 3.1 | 8.2 | 48.131 | E |

### 17:15 - 17:30

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1109 | 277 | 594 | 2297 | 0.483 | 1107 | 365 | 0.7 | 1.0 | 3.201 | A |
| | 2 | 610 | 152 | 971 | 565 | 1.079 | 546 | 731 | 3.8 | 19.8 | 96.723 | F |
| | 3 | 1032 | 258 | 350 | 1693 | 0.609 | 1029 | 1168 | 1.0 | 1.6 | 5.596 | A |
| | 4 | 341 | 85 | 1139 | 1158 | 0.295 | 341 | 239 | 0.3 | 0.4 | 4.651 | A |
| | 5 | | | 960 | | | | 521 | | | | |
| 2 | 1 | 512 | 128 | 240 | 761 | 0.673 | 509 | 506 | 1.2 | 2.0 | 14.445 | B |
| | 2 | 347 | 87 | 391 | 868 | 0.400 | 346 | 357 | 0.5 | 0.7 | 7.317 | A |
| | 3 | 731 | 183 | 127 | 625 | 1.169 | 618 | 610 | 8.2 | 36.4 | 147.308 | F |

### 17:30 - 17:45

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1109 | 277 | 595 | 2296 | 0.483 | 1109 | 367 | 1.0 | 1.0 | 3.207 | A |
| | 2 | 613 | 153 | 972 | 565 | 1.084 | 560 | 732 | 19.8 | 33.1 | 184.267 | F |
| | 3 | 1032 | 258 | 355 | 1690 | 0.610 | 1032 | 1176 | 1.6 | 1.6 | 5.659 | A |
| | 4 | 341 | 85 | 1144 | 1156 | 0.295 | 341 | 243 | 0.4 | 0.4 | 4.669 | A |
| | 5 | | | 962 | | | | 523 | | | | |
| 2 | 1 | 512 | 128 | 242 | 759 | 0.675 | 512 | 509 | 2.0 | 2.1 | 14.885 | B |
| | 2 | 347 | 87 | 394 | 866 | 0.400 | 347 | 360 | 0.7 | 0.7 | 7.370 | A |
| | 3 | 732 | 183 | 128 | 625 | 1.171 | 623 | 613 | 36.4 | 63.6 | 300.270 | F |

### 17:45 - 18:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 905 | 226 | 488 | 2359 | 0.384 | 907 | 310 | 1.0 | 0.7 | 2.624 | A |
| | 2 | 504 | 126 | 795 | 615 | 0.819 | 597 | 600 | 33.1 | 9.9 | 137.681 | F |
| | 3 | 842 | 211 | 349 | 1693 | 0.497 | 845 | 1043 | 1.6 | 1.0 | 4.405 | A |
| | 4 | 279 | 70 | 964 | 1235 | 0.226 | 279 | 229 | 0.4 | 0.3 | 3.982 | A |
| | 5 | | | 798 | | | | 446 | | | | |
| 2 | 1 | 418 | 105 | 244 | 758 | 0.552 | 421 | 490 | 2.1 | 1.3 | 11.060 | B |
| | 2 | 283 | 71 | 324 | 921 | 0.308 | 284 | 340 | 0.7 | 0.5 | 6.023 | A |
| | 3 | 600 | 150 | 105 | 639 | 0.938 | 629 | 504 | 63.6 | 56.3 | 342.903 | F |

**18:00 - 18:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 758 | 190 | 408 | 2406 | 0.315 | 759 | 256 | 0.7 | 0.5 | 2.315 | A |
| | 2 | 421 | 105 | 665 | 652 | 0.646 | 453 | 502 | 9.9 | 2.0 | 21.251 | C |
| | 3 | 705 | 176 | 272 | 1730 | 0.408 | 707 | 846 | 1.0 | 0.7 | 3.650 | A |
| | 4 | 233 | 58 | 797 | 1308 | 0.178 | 234 | 182 | 0.3 | 0.2 | 3.544 | A |
| | 5 | | | 664 | | | | 367 | | | | |
| 2 | 1 | 350 | 88 | 247 | 755 | 0.463 | 352 | 478 | 1.3 | 0.9 | 9.172 | A |
| | 2 | 237 | 59 | 271 | 963 | 0.246 | 238 | 328 | 0.5 | 0.4 | 5.284 | A |
| | 3 | 502 | 125 | 88 | 649 | 0.772 | 638 | 421 | 56.3 | 22.3 | 226.722 | F |

# 2027 Alt Base Sensitivity + Development Flows - AM Peak, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D1 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic, AM | Demand Set 15: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D2 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak, PM | Demand Set 16: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D3 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak, AM | Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D4 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak, PM | Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D5 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak, AM | Demand Set 21: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D6 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak, PM | Demand Set 22: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D7 - 2027 Alt Base Sensitivity + Development Flows - AM Peak, AM | Demand Set 23: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D8 - 2027 Alt Base Sensitivity + Development Flows - PM Peak, PM | Demand Set 24: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |

# Junction Network

## Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 87.00 | F |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 34.17 | D |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 66.17 | F |

# Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D7 | 2027 Alt Base Sensitivity + Development Flows - AM Peak | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 637 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 711 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 242 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 566 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 431 | 100.000 |
| | 3 | ✓ | | | | |

# Origin-Destination Data

**Junction 1**

Demand (PCU/hr)

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1 | 160 | 386 | 72 | 18 |
| | 2 | 92 | 1 | 346 | 192 | 62 |
| | 3 | 223 | 265 | 2 | 11 | 210 |
| | 4 | 78 | 74 | 14 | 26 | 50 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 15 | 131 | 420 |
| | 2 | 142 | 1 | 288 |
| | 3 | 291 | 211 | 2 |

# Vehicle Mix

### Junction 1

**Heavy Vehicle Percentages**

| | To | | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 7 | 7 | 15 | 22 |
| | 2 | 24 | 0 | 4 | 0 | 0 |
| | 3 | 10 | 5 | 0 | 9 | 3 |
| | 4 | 14 | 9 | 29 | 88 | 20 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

### Junction 2

**Heavy Vehicle Percentages**

| | To | | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 12 | 4 |
| | 2 | 22 | 0 | 5 |
| | 3 | 7 | 7 | 0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.29 | 2.29 | 0.4 | A | 585 | 877 |
| | 2 | 1.15 | 274.06 | 59.0 | F | 651 | 976 |
| | 3 | 0.48 | 4.46 | 1.0 | A | 652 | 979 |
| | 4 | 0.21 | 4.40 | 0.3 | A | 222 | 333 |
| | 5 | | | | | | |
| 2 | 1 | 0.81 | 25.83 | 4.3 | D | 519 | 779 |
| | 2 | 0.59 | 12.21 | 1.6 | B | 395 | 593 |
| | 3 | 0.92 | 62.55 | 8.9 | F | 459 | 688 |

## Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 287 | 2477 | 0.194 | 479 | 295 | 0.0 | 0.3 | 1.948 | A |
| | 2 | 530 | 132 | 390 | 730 | 0.725 | 519 | 375 | 0.0 | 2.6 | 17.146 | C |
| | 3 | 535 | 134 | 348 | 1694 | 0.316 | 533 | 561 | 0.0 | 0.5 | 3.281 | A |
| | 4 | 182 | 46 | 655 | 1370 | 0.133 | 181 | 226 | 0.0 | 0.2 | 3.614 | A |
| | 5 | | | 582 | | | | 255 | | | | |
| 2 | 1 | 426 | 107 | 157 | 819 | 0.520 | 422 | 330 | 0.0 | 1.1 | 9.456 | A |
| | 2 | 324 | 81 | 326 | 920 | 0.353 | 322 | 253 | 0.0 | 0.6 | 6.598 | A |
| | 3 | 375 | 94 | 118 | 631 | 0.595 | 369 | 530 | 0.0 | 1.5 | 14.410 | B |

### 08:00 - 08:15

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 343 | 2444 | 0.234 | 572 | 353 | 0.3 | 0.3 | 2.081 | A |
| | 2 | 635 | 159 | 466 | 708 | 0.897 | 619 | 449 | 2.6 | 6.6 | 36.956 | E |
| | 3 | 639 | 160 | 415 | 1662 | 0.385 | 638 | 670 | 0.5 | 0.7 | 3.725 | A |
| | 4 | 218 | 54 | 784 | 1314 | 0.166 | 217 | 270 | 0.2 | 0.2 | 3.919 | A |
| | 5 | | | 696 | | | | 305 | | | | |
| 2 | 1 | 509 | 127 | 189 | 797 | 0.639 | 506 | 397 | 1.1 | 1.8 | 12.961 | B |
| | 2 | 387 | 97 | 391 | 869 | 0.446 | 386 | 304 | 0.6 | 0.9 | 8.189 | A |
| | 3 | 449 | 112 | 142 | 617 | 0.728 | 445 | 635 | 1.5 | 2.6 | 21.799 | C |

### 08:15 - 08:30

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 420 | 2399 | 0.292 | 701 | 421 | 0.3 | 0.4 | 2.294 | A |
| | 2 | 773 | 193 | 571 | 679 | 1.140 | 668 | 550 | 6.6 | 33.0 | 123.512 | F |
| | 3 | 783 | 196 | 463 | 1639 | 0.478 | 782 | 776 | 0.7 | 1.0 | 4.441 | A |
| | 4 | 266 | 67 | 940 | 1246 | 0.214 | 266 | 305 | 0.2 | 0.3 | 4.387 | A |
| | 5 | | | 841 | | | | 365 | | | | |
| 2 | 1 | 623 | 156 | 225 | 771 | 0.809 | 615 | 478 | 1.8 | 4.0 | 23.148 | C |
| | 2 | 475 | 119 | 474 | 803 | 0.591 | 472 | 365 | 0.9 | 1.5 | 11.868 | B |
| | 3 | 550 | 137 | 173 | 598 | 0.920 | 531 | 773 | 2.6 | 7.4 | 47.462 | E |

### 08:30 - 08:45

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 420 | 2399 | 0.292 | 701 | 422 | 0.4 | 0.4 | 2.294 | A |
| | 2 | 781 | 195 | 571 | 679 | 1.150 | 676 | 550 | 33.0 | 59.0 | 255.676 | F |
| | 3 | 783 | 196 | 468 | 1637 | 0.478 | 783 | 780 | 1.0 | 1.0 | 4.464 | A |
| | 4 | 266 | 67 | 943 | 1244 | 0.214 | 266 | 307 | 0.3 | 0.3 | 4.395 | A |
| | 5 | | | 843 | | | | 367 | | | | |
| 2 | 1 | 623 | 156 | 231 | 766 | 0.813 | 622 | 487 | 4.0 | 4.3 | 25.832 | D |
| | 2 | 475 | 119 | 480 | 798 | 0.594 | 474 | 373 | 1.5 | 1.6 | 12.210 | B |
| | 3 | 550 | 138 | 174 | 597 | 0.922 | 544 | 781 | 7.4 | 8.9 | 62.548 | F |

### 08:45 - 09:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 344 | 2444 | 0.234 | 573 | 364 | 0.4 | 0.3 | 2.084 | A |
| | 2 | 647 | 162 | 467 | 708 | 0.913 | 696 | 450 | 59.0 | 46.8 | 274.063 | F |
| | 3 | 639 | 160 | 454 | 1644 | 0.389 | 640 | 709 | 1.0 | 0.7 | 3.804 | A |
| | 4 | 218 | 54 | 803 | 1306 | 0.167 | 218 | 291 | 0.3 | 0.2 | 3.953 | A |
| | 5 | | | 708 | | | | 313 | | | | |
| 2 | 1 | 509 | 127 | 201 | 788 | 0.646 | 518 | 415 | 4.3 | 2.0 | 14.506 | B |
| | 2 | 387 | 97 | 400 | 861 | 0.450 | 390 | 319 | 1.6 | 0.9 | 8.451 | A |
| | 3 | 450 | 113 | 143 | 616 | 0.731 | 473 | 647 | 8.9 | 3.2 | 30.321 | D |

**09:00 - 09:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 288 | 2476 | 0.194 | 480 | 322 | 0.3 | 0.3 | 1.951 | A |
| | 2 | 538 | 134 | 391 | 730 | 0.737 | 708 | 377 | 46.8 | 4.2 | 134.853 | F |
| | 3 | 535 | 134 | 443 | 1649 | 0.325 | 536 | 656 | 0.7 | 0.5 | 3.430 | A |
| | 4 | 182 | 46 | 700 | 1351 | 0.135 | 182 | 278 | 0.2 | 0.2 | 3.682 | A |
| | 5 | | | 610 | | | | 273 | | | | |
| 2 | 1 | 426 | 107 | 163 | 815 | 0.523 | 429 | 340 | 2.0 | 1.2 | 9.938 | A |
| | 2 | 324 | 81 | 332 | 915 | 0.355 | 326 | 261 | 0.9 | 0.6 | 6.734 | A |
| | 3 | 377 | 94 | 119 | 630 | 0.599 | 383 | 538 | 3.2 | 1.7 | 15.968 | C |

# 2027 Alt Base Sensitivity + Development Flows - PM Peak, PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D1 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - AM Peak - for PINS additional Airport Traffic, AM | Demand Set 15: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D2 - 2027 Alternative Base (using 2018 BG Flows + Committed Dev) - PM Peak, PM | Demand Set 16: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D3 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - AM Peak, AM | Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D4 - 2027 Alternative Base (using 2018 survey flows + Tempro Growth + Committed Dev) + Development Flows - PM Peak, PM | Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D5 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - AM Peak, AM | Demand Set 21: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D6 - 2027 Alternative Base (using 2018 flows + Tempro Growth + Committed Dev) Sensitivity Flows - PM Peak, PM | Demand Set 22: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |
| Warning | Demand Sets | D7 - 2027 Alt Base Sensitivity + Development Flows - AM Peak, AM | Demand Set 23: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Demand Sets | D8 - 2027 Alt Base Sensitivity + Development Flows - PM Peak, PM | Demand Set 24: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct? |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 43.63 | E |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 196.48 | F |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 95.81 | F |

# Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period | Traffic | Start time | Finish time | Time segment | Run |
|---|---|---|---|---|---|---|---|
| D8 | 2027 Alt Base Sensitivity + Development Flows - PM Peak | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 1007 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 949 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 315 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 473 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 315 | 100.000 |
| | 3 | ✓ | | | | |

# Origin-Destination Data

### Junction 1

Demand (PCU/hr)

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 144 | 765 | 80 | 18 |
| | 2 | 37 | 2 | 323 | 124 | 68 |
| | 3 | 259 | 330 | 0 | 15 | 345 |
| | 4 | 40 | 206 | 8 | 12 | 49 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

### Junction 2

Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 108 | 365 |
| | 2 | 115 | 1 | 199 |
| | 3 | 436 | 263 | 1 |

# Vehicle Mix

### Junction 1

**Heavy Vehicle Percentages**

| | To | | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 8 | 4 | 18 | 22 |
| | 2 | 35 | 0 | 1 | 3 | 0 |
| | 3 | 8 | 2 | 0 | 0 | 2 |
| | 4 | 0 | 2 | 13 | 33 | 22 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

### Junction 2

**Heavy Vehicle Percentages**

| | To | | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 4 | 2 |
| | 2 | 7 | 0 | 6 |
| | 3 | 4 | 3 | 0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.49 | 3.24 | 1.0 | A | 924 | 1386 |
| | 2 | 1.10 | 201.11 | 36.9 | F | 518 | 777 |
| | 3 | 0.62 | 5.77 | 1.7 | A | 871 | 1306 |
| | 4 | 0.30 | 4.73 | 0.5 | A | 289 | 434 |
| | 5 | | | | | | |
| 2 | 1 | 0.68 | 15.19 | 2.1 | C | 434 | 651 |
| | 2 | 0.40 | 7.47 | 0.7 | A | 289 | 434 |
| | 3 | 1.20 | 409.60 | 73.8 | F | 626 | 938 |

## Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 758 | 190 | 418 | 2400 | 0.316 | 756 | 252 | 0.0 | 0.5 | 2.314 | A |
| | 2 | 422 | 105 | 663 | 653 | 0.646 | 415 | 512 | 0.0 | 1.8 | 15.174 | C |
| | 3 | 714 | 179 | 256 | 1738 | 0.411 | 712 | 822 | 0.0 | 0.7 | 3.622 | A |
| | 4 | 237 | 59 | 794 | 1310 | 0.181 | 236 | 173 | 0.0 | 0.2 | 3.539 | A |
| | 5 | | | 670 | | | | 360 | | | | |
| 2 | 1 | 356 | 89 | 189 | 797 | 0.447 | 353 | 396 | 0.0 | 0.8 | 8.248 | A |
| | 2 | 237 | 59 | 273 | 961 | 0.247 | 236 | 268 | 0.0 | 0.3 | 5.270 | A |
| | 3 | 512 | 128 | 87 | 650 | 0.787 | 498 | 422 | 0.0 | 3.4 | 22.894 | C |

### 17:00 - 17:15

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 905 | 226 | 501 | 2352 | 0.385 | 905 | 302 | 0.5 | 0.7 | 2.631 | A |
| | 2 | 506 | 127 | 793 | 616 | 0.822 | 497 | 612 | 1.8 | 4.1 | 29.228 | D |
| | 3 | 853 | 213 | 306 | 1714 | 0.498 | 852 | 984 | 0.7 | 1.0 | 4.319 | A |
| | 4 | 283 | 71 | 951 | 1241 | 0.228 | 283 | 207 | 0.2 | 0.3 | 3.968 | A |
| | 5 | | | 803 | | | | 431 | | | | |
| 2 | 1 | 425 | 106 | 222 | 773 | 0.550 | 424 | 469 | 0.8 | 1.2 | 10.511 | B |
| | 2 | 283 | 71 | 328 | 918 | 0.308 | 283 | 318 | 0.3 | 0.5 | 6.020 | A |
| | 3 | 612 | 153 | 104 | 639 | 0.958 | 587 | 506 | 3.4 | 9.7 | 54.370 | F |

### 17:15 - 17:30

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1109 | 277 | 613 | 2286 | 0.485 | 1107 | 365 | 0.7 | 1.0 | 3.230 | A |
| | 2 | 619 | 155 | 971 | 566 | 1.094 | 548 | 749 | 4.1 | 21.6 | 103.216 | F |
| | 3 | 1045 | 261 | 350 | 1693 | 0.617 | 1042 | 1170 | 1.0 | 1.6 | 5.707 | A |
| | 4 | 347 | 87 | 1152 | 1153 | 0.301 | 346 | 240 | 0.3 | 0.5 | 4.711 | A |
| | 5 | | | 978 | | | | 520 | | | | |
| 2 | 1 | 521 | 130 | 235 | 764 | 0.682 | 517 | 512 | 1.2 | 2.1 | 14.741 | B |
| | 2 | 347 | 87 | 400 | 861 | 0.403 | 346 | 352 | 0.5 | 0.7 | 7.414 | A |
| | 3 | 749 | 187 | 127 | 625 | 1.199 | 620 | 619 | 9.7 | 42.1 | 167.183 | F |

### 17:30 - 17:45

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1109 | 277 | 614 | 2285 | 0.485 | 1109 | 367 | 1.0 | 1.0 | 3.237 | A |
| | 2 | 622 | 155 | 972 | 565 | 1.100 | 561 | 751 | 21.6 | 36.9 | 201.112 | F |
| | 3 | 1045 | 261 | 355 | 1690 | 0.618 | 1045 | 1178 | 1.6 | 1.7 | 5.770 | A |
| | 4 | 347 | 87 | 1156 | 1151 | 0.301 | 347 | 243 | 0.5 | 0.5 | 4.729 | A |
| | 5 | | | 981 | | | | 522 | | | | |
| 2 | 1 | 521 | 130 | 236 | 763 | 0.683 | 521 | 515 | 2.1 | 2.1 | 15.189 | C |
| | 2 | 347 | 87 | 403 | 859 | 0.404 | 347 | 354 | 0.7 | 0.7 | 7.469 | A |
| | 3 | 751 | 188 | 128 | 625 | 1.201 | 624 | 622 | 42.1 | 73.8 | 344.800 | F |

### 17:45 - 18:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 905 | 226 | 503 | 2350 | 0.385 | 907 | 309 | 1.0 | 0.7 | 2.643 | A |
| | 2 | 511 | 128 | 795 | 615 | 0.831 | 599 | 615 | 36.9 | 15.0 | 161.787 | F |
| | 3 | 853 | 213 | 349 | 1693 | 0.504 | 856 | 1045 | 1.7 | 1.1 | 4.460 | A |
| | 4 | 283 | 71 | 974 | 1231 | 0.230 | 284 | 230 | 0.5 | 0.3 | 4.017 | A |
| | 5 | | | 813 | | | | 445 | | | | |
| 2 | 1 | 425 | 106 | 239 | 761 | 0.559 | 428 | 496 | 2.1 | 1.3 | 11.191 | B |
| | 2 | 283 | 71 | 332 | 915 | 0.309 | 284 | 335 | 0.7 | 0.5 | 6.076 | A |
| | 3 | 615 | 154 | 105 | 639 | 0.962 | 630 | 511 | 73.8 | 70.0 | 409.605 | F |

**18:00 - 18:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 758 | 190 | 421 | 2398 | 0.316 | 759 | 257 | 0.7 | 0.5 | 2.324 | A |
| | 2 | 427 | 107 | 665 | 652 | 0.655 | 479 | 514 | 15.0 | 2.1 | 27.216 | D |
| | 3 | 714 | 179 | 282 | 1725 | 0.414 | 716 | 862 | 1.1 | 0.7 | 3.700 | A |
| | 4 | 237 | 59 | 810 | 1302 | 0.182 | 237 | 188 | 0.3 | 0.2 | 3.571 | A |
| | 5 | | | 678 | | | | 369 | | | | |
| 2 | 1 | 356 | 89 | 242 | 759 | 0.469 | 358 | 485 | 1.3 | 0.9 | 9.234 | A |
| | 2 | 237 | 59 | 277 | 958 | 0.248 | 238 | 323 | 0.5 | 0.4 | 5.319 | A |
| | 3 | 514 | 129 | 88 | 649 | 0.792 | 640 | 427 | 70.0 | 38.6 | 308.666 | F |

**Appendix J**

# Junctions 10

## ARCADY 10 - Roundabout Module

Version: 10.0.4.1693


For sales and distribution information, program advice and maintenance, contact TRL Software:
+44 (0)1344 379777 software@trl.co.uk trlsoftware.com



**Filename:** Coopers End Parsonage Linked Roundabouts (Mini Rbt Amends Only).j10
**Path:** Y:\ARDENT PROJECTS\2008170 - Land South of Henham Road, Elsenham\Transport\ARCADY\Models used in PINS work\Stansted Airport - Mtigation
**Report generation date:** 27/01/2023 14:13:54

---



### Summary of junction performance

| | AM | | PM | |
|---|---|---|---|---|
| | Queue (PCU) | RFC | Queue (PCU) | RFC |
| | Alternate Scenario (Base Case) | | | |
| Junction 1 - Arm 1 | 0.3 | 0.24 | 0.9 | 0.45 |
| Junction 1 - Arm 2 | 4.0 | 0.81 | 9.0 | 0.93 |
| Junction 1 - Arm 3 | 0.9 | 0.45 | 1.4 | 0.57 |
| Junction 1 - Arm 4 | 0.3 | 0.20 | 0.4 | 0.27 |
| Junction 2 - Arm 1 | 1.2 | 0.53 | 1.1 | 0.51 |
| Junction 2 - Arm 2 | 0.9 | 0.44 | 0.6 | 0.37 |
| Junction 2 - Arm 3 | 0.8 | 0.44 | 1.7 | 0.63 |
| | Alternate Scenario (Development Case) | | | |
| Junction 1 - Arm 1 | 0.4 | 0.29 | 1.0 | 0.48 |
| Junction 1 - Arm 2 | 17.2 | 0.99 | 20.6 | 1.03 |
| Junction 1 - Arm 3 | 0.9 | 0.46 | 1.4 | 0.58 |
| Junction 1 - Arm 4 | 0.3 | 0.21 | 0.4 | 0.28 |
| Junction 2 - Arm 1 | 1.8 | 0.63 | 1.3 | 0.56 |
| Junction 2 - Arm 2 | 1.2 | 0.52 | 0.7 | 0.40 |
| Junction 2 - Arm 3 | 1.4 | 0.57 | 2.5 | 0.72 |
| | Alternate Sensitivity Scenario (Base Case) | | | |
| Junction 1 - Arm 1 | 0.4 | 0.25 | 0.9 | 0.46 |
| Junction 1 - Arm 2 | 8.9 | 0.92 | 15.3 | 0.99 |
| Junction 1 - Arm 3 | 0.9 | 0.46 | 1.5 | 0.60 |
| Junction 1 - Arm 4 | 0.3 | 0.20 | 0.4 | 0.28 |
| Junction 2 - Arm 1 | 1.3 | 0.55 | 1.2 | 0.54 |
| Junction 2 - Arm 2 | 1.3 | 0.54 | 0.7 | 0.41 |
| Junction 2 - Arm 3 | 0.9 | 0.47 | 2.3 | 0.70 |
| | Alternate Sensitivity Scenario (Development Case) | | | |
| Junction 1 - Arm 1 | 0.4 | 0.29 | 0.9 | 0.47 |
| Junction 1 - Arm 2 | 59.6 | 1.15 | 38.6 | 1.11 |
| Junction 1 - Arm 3 | 1.0 | 0.48 | 1.8 | 0.64 |
| Junction 1 - Arm 4 | 0.3 | 0.21 | 0.5 | 0.32 |
| Junction 2 - Arm 1 | 2.4 | 0.70 | 1.5 | 0.60 |
| Junction 2 - Arm 2 | 2.1 | 0.66 | 0.9 | 0.45 |
| Junction 2 - Arm 3 | 1.6 | 0.61 | 3.1 | 0.77 |

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*

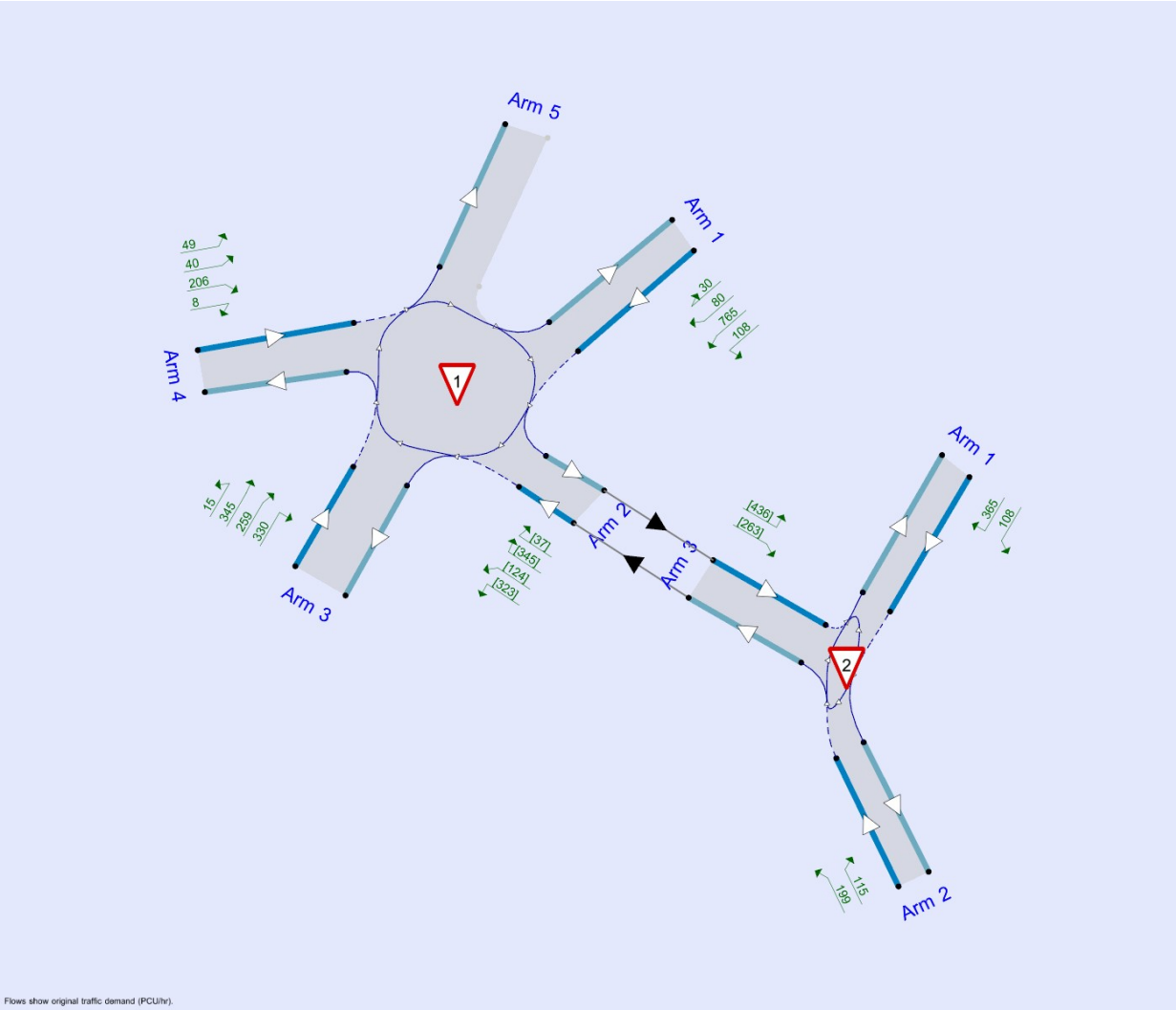
### File summary

### File Description

| | |
|---|---|
| **Title** | |
| **Location** | |
| **Site number** | |
| **Date** | 17/03/2022 |
| **Version** | |
| **Status** | (new file) |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | ARDENTCE\jsymington |
| **Description** | |

## Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |




*The junction diagram reflects the last run of Junctions.*

## Analysis Options

| Mini-roundabout model | Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Show lane queues in feet / metres | Show all PICADY stream intercepts | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) | Use iterations with HCM roundabouts | Max number of iterations for roundabouts |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JUNCTIONS 9 | 5.75 | | | | | | 0.85 | 36.00 | 20.00 | | 500 |

## Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | Alternate Scenario (Base Case) | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **D2** | Alternate Scenario (Base Case) | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |
| **D3** | Alternate Scenario (Development Case) | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| **D4** | Alternate Scenario (Development Case) | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |
| **D5** | Alternate Sensitivity Scenario (Base Case) | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| **D6** | Alternate Sensitivity Scenario (Base Case) | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |
| **D7** | Alternate Sensitivity Scenario (Development Case) | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| **D8** | Alternate Sensitivity Scenario (Development Case) | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|
| **A1** | ✓ | 100.000 | 100.000 |

# Alternate Scenario (Base Case), AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 9.54 | A |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 8.44 | A |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 9.14 | A |

## Arms

### Arms

| Junction | Arm | Name | Description | No give-way line |
|---|---|---|---|---|
| 1 | 1 | Terminal Road South | | |
| | 2 | Link | | |
| | 3 | Thremhall Avenue | | |
| | 4 | Coopers End Road | | |
| | 5 | Terminal Road North | | |
| 2 | 1 | Parsonage Road North | | |
| | 2 | Parsonage Road South | | |
| | 3 | Link | | |

### Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Entry only | Exit only |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 7.35 | 10.06 | 11.2 | 50.1 | 90.4 | 43.3 | | |
| | 2 | 3.02 | 6.03 | 2.5 | 7.9 | 90.4 | 77.0 | | |
| | 3 | 4.36 | 7.10 | 19.8 | 154.3 | 90.4 | 48.0 | | |
| | 4 | 3.70 | 6.93 | 18.9 | 30.0 | 90.4 | 50.5 | | |
| | 5 | | | | | | | | ✓ |

### Mini Roundabout Geometry

| Junction | Arm | Approach road half-width (m) | Minimum approach road half-width (m) | Entry width (m) | Effective flare length (m) | Distance to next arm (m) | Entry corner kerb line distance (m) | Gradient over 50m (%) | Kerbed central island |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | 2.69 | 2.69 | 4.03 | 4.7 | 11.68 | 16.94 | 0.0 | |
| | 2 | 2.48 | 2.48 | 5.24 | 8.6 | 11.52 | 14.10 | 0.0 | |
| | 3 | 3.35 | 3.04 | 6.36 | 4.4 | 12.75 | 5.46 | 0.0 | |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Junction | Arm | Final slope | Final intercept (PCU/hr) |
|---|---|---|---|
| 1 | 1 | 0.586 | 2645 |
| | 2 | 0.283 | 840 |
| | 3 | 0.474 | 1859 |
| | 4 | 0.438 | 1657 |
| | 5 | | |

| | | | |
|---|---|---|---|
| 2 | 1 | 0.671 | 1043 |
| | 2 | 0.638 | 1029 |
| | 3 | 0.629 | 1008 |

*The slope and intercept shown above include any corrections and adjustments.*

# Traffic Demand

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | Alternate Scenario (Base Case) | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

## Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

## Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 534 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 684 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 232 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 453 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 320 | 100.000 |
| | 3 | ✓ | | | | |

# Origin-Destination Data

### Junction 1

**Demand (PCU/hr)**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1 | 57 | 386 | 72 | 18 |
| | 2 | 37 | 1 | 274 | 160 | 26 |
| | 3 | 223 | 238 | 2 | 11 | 210 |
| | 4 | 78 | 64 | 14 | 26 | 50 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

### Junction 2

**Demand (PCU/hr)**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 15 | 126 | 312 |
| | 2 | 135 | 1 | 184 |
| | 3 | 216 | 141 | 2 |

# Vehicle Mix

### Junction 1

**Heavy Vehicle Percentages**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 7 | 7 | 15 | 22 |
| | 2 | 0 | 0 | 4 | 0 | 0 |
| | 3 | 10 | 5 | 0 | 9 | 3 |
| | 4 | 14 | 9 | 29 | 88 | 20 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

Junction 2

**Heavy Vehicle Percentages**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 12 | 4 |
| | 2 | 22 | 0 | 5 |
| | 3 | 7 | 7 | 0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.24 | 2.13 | 0.3 | A | 490 | 735 |
| | 2 | 0.81 | 27.48 | 4.0 | D | 457 | 685 |
| | 3 | 0.45 | 4.11 | 0.9 | A | 628 | 941 |
| | 4 | 0.20 | 4.16 | 0.3 | A | 213 | 319 |
| | 5 | | | | | | |
| 2 | 1 | 0.53 | 8.71 | 1.2 | A | 416 | 624 |
| | 2 | 0.44 | 9.00 | 0.9 | A | 294 | 440 |
| | 3 | 0.44 | 7.60 | 0.8 | A | 330 | 495 |

## Main Results for each time segment

**07:45 - 08:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 402 | 101 | 259 | 2494 | 0.161 | 401 | 254 | 0.0 | 0.2 | 1.865 | A |
| | 2 | 372 | 93 | 390 | 730 | 0.510 | 368 | 270 | 0.0 | 1.0 | 10.058 | B |
| | 3 | 515 | 129 | 253 | 1739 | 0.296 | 513 | 505 | 0.0 | 0.4 | 3.110 | A |
| | 4 | 175 | 44 | 567 | 1409 | 0.124 | 174 | 200 | 0.0 | 0.2 | 3.492 | A |
| | 5 | | | 513 | | | | 228 | | | | |
| 2 | 1 | 341 | 85 | 108 | 971 | 0.351 | 339 | 274 | 0.0 | 0.6 | 6.015 | A |
| | 2 | 241 | 60 | 246 | 872 | 0.276 | 239 | 200 | 0.0 | 0.4 | 6.327 | A |
| | 3 | 270 | 68 | 113 | 937 | 0.288 | 268 | 372 | 0.0 | 0.4 | 5.745 | A |

**08:00 - 08:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 310 | 2464 | 0.195 | 480 | 304 | 0.2 | 0.3 | 1.968 | A |
| | 2 | 447 | 112 | 466 | 708 | 0.631 | 444 | 323 | 1.0 | 1.7 | 13.793 | B |
| | 3 | 615 | 154 | 305 | 1714 | 0.359 | 614 | 606 | 0.4 | 0.6 | 3.467 | A |
| | 4 | 209 | 52 | 679 | 1360 | 0.153 | 208 | 241 | 0.2 | 0.2 | 3.747 | A |
| | 5 | | | 614 | | | | 273 | | | | |
| 2 | 1 | 407 | 102 | 129 | 956 | 0.426 | 406 | 329 | 0.6 | 0.8 | 6.930 | A |
| | 2 | 288 | 72 | 295 | 841 | 0.342 | 287 | 241 | 0.4 | 0.6 | 7.242 | A |
| | 3 | 323 | 81 | 135 | 923 | 0.350 | 323 | 447 | 0.4 | 0.6 | 6.414 | A |

**08:15 - 08:30**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 588 | 147 | 379 | 2423 | 0.243 | 588 | 372 | 0.3 | 0.3 | 2.127 | A |
| | 2 | 547 | 137 | 571 | 679 | 0.805 | 538 | 396 | 1.7 | 3.7 | 24.845 | C |
| | 3 | 753 | 188 | 371 | 1683 | 0.447 | 752 | 739 | 0.6 | 0.9 | 4.095 | A |
| | 4 | 255 | 64 | 830 | 1294 | 0.197 | 255 | 293 | 0.2 | 0.3 | 4.155 | A |
| | 5 | | | 751 | | | | 334 | | | | |
| 2 | 1 | 499 | 125 | 158 | 937 | 0.532 | 497 | 402 | 0.8 | 1.2 | 8.646 | A |
| | 2 | 352 | 88 | 361 | 799 | 0.441 | 351 | 294 | 0.6 | 0.9 | 8.943 | A |
| | 3 | 396 | 99 | 166 | 904 | 0.438 | 395 | 547 | 0.6 | 0.8 | 7.553 | A |

**08:30 - 08:45**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 588 | 147 | 380 | 2423 | 0.243 | 588 | 373 | 0.3 | 0.3 | 2.127 | A |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 548 | 137 | 571 | 679 | 0.808 | 547 | 396 | 3.7 | 4.0 | 27.479 | D |
| | 3 | 753 | 188 | 375 | 1681 | 0.448 | 753 | 744 | 0.9 | 0.9 | 4.111 | A |
| | 4 | 255 | 64 | 832 | 1293 | 0.198 | 255 | 296 | 0.3 | 0.3 | 4.160 | A |
| | 5 | | | 753 | | | | 335 | | | | |
| 2 | 1 | 499 | 125 | 159 | 936 | 0.533 | 499 | 404 | 1.2 | 1.2 | 8.715 | A |
| | 2 | 352 | 88 | 362 | 798 | 0.441 | 352 | 295 | 0.9 | 0.9 | 9.004 | A |
| | 3 | 396 | 99 | 166 | 903 | 0.439 | 396 | 548 | 0.8 | 0.8 | 7.595 | A |

**08:45 - 09:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 311 | 2463 | 0.195 | 480 | 306 | 0.3 | 0.3 | 1.969 | A |
| | 2 | 449 | 112 | 467 | 708 | 0.635 | 458 | 324 | 4.0 | 1.8 | 15.163 | C |
| | 3 | 615 | 154 | 311 | 1711 | 0.359 | 616 | 614 | 0.9 | 0.6 | 3.486 | A |
| | 4 | 209 | 52 | 682 | 1359 | 0.154 | 209 | 245 | 0.3 | 0.2 | 3.754 | A |
| | 5 | | | 617 | | | | 274 | | | | |
| 2 | 1 | 407 | 102 | 130 | 955 | 0.426 | 409 | 331 | 1.2 | 0.8 | 6.998 | A |
| | 2 | 288 | 72 | 297 | 840 | 0.343 | 289 | 242 | 0.9 | 0.6 | 7.301 | A |
| | 3 | 324 | 81 | 136 | 922 | 0.352 | 325 | 449 | 0.8 | 0.6 | 6.462 | A |

**09:00 - 09:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 402 | 101 | 260 | 2493 | 0.161 | 402 | 256 | 0.3 | 0.2 | 1.869 | A |
| | 2 | 376 | 94 | 391 | 730 | 0.515 | 379 | 271 | 1.8 | 1.1 | 10.571 | B |
| | 3 | 515 | 129 | 259 | 1736 | 0.297 | 516 | 511 | 0.6 | 0.4 | 3.129 | A |
| | 4 | 175 | 44 | 570 | 1408 | 0.124 | 175 | 204 | 0.2 | 0.2 | 3.504 | A |
| | 5 | | | 516 | | | | 229 | | | | |
| 2 | 1 | 341 | 85 | 109 | 970 | 0.352 | 342 | 277 | 0.8 | 0.6 | 6.086 | A |
| | 2 | 241 | 60 | 248 | 871 | 0.277 | 242 | 203 | 0.6 | 0.4 | 6.386 | A |
| | 3 | 271 | 68 | 114 | 936 | 0.290 | 272 | 376 | 0.6 | 0.4 | 5.804 | A |

# Alternate Scenario (Base Case), PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 15.44 | C |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 9.01 | A |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 13.39 | B |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D2 | Alternate Scenario (Base Case) | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 958 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 881 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 292 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 421 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 267 | 100.000 |
| | 3 | ✓ | | | | |

## Origin-Destination Data

**Demand (PCU/hr)**

**Junction 1**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 83 | 765 | 80 | 30 |
| | 2 | 24 | 2 | 292 | 108 | 43 |
| | 3 | 259 | 262 | 0 | 15 | 345 |
| | 4 | 40 | 183 | 8 | 12 | 49 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Demand (PCU/hr)**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 102 | 319 |
| | 2 | 111 | 1 | 155 |
| | 3 | 355 | 179 | 1 |

## Vehicle Mix

**Junction 1**

**Heavy Vehicle Percentages**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 8 | 4 | 18 | 13 |
| | 2 | 0 | 0 | 1 | 3 | 0 |
| | 3 | 8 | 2 | 0 | 0 | 2 |
| | 4 | 0 | 2 | 13 | 33 | 22 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Heavy Vehicle Percentages**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 4 | 2 |
| | 2 | 7 | 0 | 6 |
| | 3 | 0 | 0 | 0 |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.45 | 2.95 | 0.9 | A | 879 | 1319 |
| | 2 | 0.93 | 66.67 | 9.0 | F | 435 | 653 |
| | 3 | 0.57 | 5.09 | 1.4 | A | 808 | 1213 |
| | 4 | 0.27 | 4.38 | 0.4 | A | 268 | 402 |
| | 5 | | | | | | |
| 2 | 1 | 0.51 | 8.25 | 1.1 | A | 386 | 579 |
| | 2 | 0.37 | 7.50 | 0.6 | A | 245 | 368 |
| | 3 | 0.63 | 10.37 | 1.7 | B | 486 | 729 |

### Main Results for each time segment

**16:45 - 17:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 721 | 180 | 350 | 2440 | 0.296 | 719 | 242 | 0.0 | 0.4 | 2.209 | A |
| | 2 | 355 | 89 | 672 | 650 | 0.547 | 351 | 398 | 0.0 | 1.2 | 11.997 | B |
| | 3 | 663 | 166 | 224 | 1753 | 0.378 | 661 | 799 | 0.0 | 0.6 | 3.411 | A |
| | 4 | 220 | 55 | 724 | 1340 | 0.164 | 219 | 161 | 0.0 | 0.2 | 3.399 | A |
| | 5 | | | 592 | | | | 350 | | | | |
| 2 | 1 | 317 | 79 | 134 | 953 | 0.332 | 315 | 345 | 0.0 | 0.5 | 5.743 | A |
| | 2 | 201 | 50 | 239 | 877 | 0.229 | 200 | 209 | 0.0 | 0.3 | 5.649 | A |
| | 3 | 398 | 99 | 84 | 955 | 0.416 | 395 | 355 | 0.0 | 0.7 | 6.393 | A |

**17:00 - 17:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 861 | 215 | 419 | 2399 | 0.359 | 861 | 290 | 0.4 | 0.6 | 2.472 | A |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 426 | 107 | 804 | 613 | 0.696 | 422 | 476 | 1.2 | 2.2 | 18.751 | C |
| | 3 | 792 | 198 | 269 | 1731 | 0.457 | 791 | 957 | 0.6 | 0.9 | 3.965 | A |
| | 4 | 263 | 66 | 867 | 1278 | 0.205 | 262 | 193 | 0.2 | 0.3 | 3.755 | A |
| | 5 | | | 709 | | | | 419 | | | | |
| 2 | 1 | 378 | 95 | 161 | 935 | 0.405 | 378 | 415 | 0.5 | 0.7 | 6.610 | A |
| | 2 | 240 | 60 | 287 | 846 | 0.284 | 240 | 251 | 0.3 | 0.4 | 6.311 | A |
| | 3 | 476 | 119 | 101 | 945 | 0.504 | 475 | 426 | 0.7 | 1.0 | 7.643 | A |

**17:15 - 17:30**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1055 | 264 | 513 | 2344 | 0.450 | 1054 | 354 | 0.6 | 0.9 | 2.944 | A |
| | 2 | 521 | 130 | 984 | 562 | 0.928 | 501 | 583 | 2.2 | 7.4 | 48.458 | E |
| | 3 | 970 | 242 | 323 | 1706 | 0.569 | 968 | 1162 | 0.9 | 1.3 | 5.047 | A |
| | 4 | 321 | 80 | 1058 | 1194 | 0.269 | 321 | 233 | 0.3 | 0.4 | 4.367 | A |
| | 5 | | | 867 | | | | 512 | | | | |
| 2 | 1 | 464 | 116 | 196 | 911 | 0.509 | 462 | 507 | 0.7 | 1.0 | 8.187 | A |
| | 2 | 294 | 73 | 351 | 805 | 0.365 | 293 | 307 | 0.4 | 0.6 | 7.470 | A |
| | 3 | 583 | 146 | 123 | 930 | 0.626 | 580 | 521 | 1.0 | 1.6 | 10.199 | B |

**17:30 - 17:45**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1055 | 264 | 514 | 2344 | 0.450 | 1055 | 356 | 0.9 | 0.9 | 2.949 | A |
| | 2 | 523 | 131 | 985 | 561 | 0.931 | 516 | 584 | 7.4 | 9.0 | 66.672 | F |
| | 3 | 970 | 242 | 329 | 1703 | 0.570 | 970 | 1172 | 1.3 | 1.4 | 5.092 | A |
| | 4 | 321 | 80 | 1062 | 1192 | 0.270 | 321 | 237 | 0.4 | 0.4 | 4.380 | A |
| | 5 | | | 870 | | | | 514 | | | | |
| 2 | 1 | 464 | 116 | 197 | 911 | 0.509 | 463 | 509 | 1.0 | 1.1 | 8.251 | A |
| | 2 | 294 | 73 | 352 | 804 | 0.365 | 294 | 309 | 0.6 | 0.6 | 7.501 | A |
| | 3 | 584 | 146 | 123 | 930 | 0.627 | 583 | 523 | 1.6 | 1.7 | 10.370 | B |

**17:45 - 18:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 861 | 215 | 421 | 2399 | 0.359 | 862 | 293 | 0.9 | 0.6 | 2.478 | A |
| | 2 | 428 | 107 | 806 | 612 | 0.700 | 454 | 478 | 9.0 | 2.5 | 26.222 | D |
| | 3 | 792 | 198 | 281 | 1725 | 0.459 | 794 | 979 | 1.4 | 0.9 | 4.015 | A |
| | 4 | 263 | 66 | 874 | 1274 | 0.206 | 263 | 201 | 0.4 | 0.3 | 3.770 | A |
| | 5 | | | 714 | | | | 424 | | | | |
| 2 | 1 | 378 | 95 | 162 | 934 | 0.405 | 380 | 419 | 1.1 | 0.7 | 6.676 | A |
| | 2 | 240 | 60 | 289 | 845 | 0.284 | 241 | 254 | 0.6 | 0.4 | 6.345 | A |
| | 3 | 478 | 119 | 101 | 944 | 0.506 | 480 | 428 | 1.7 | 1.0 | 7.796 | A |

**18:00 - 18:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 721 | 180 | 352 | 2439 | 0.296 | 722 | 244 | 0.6 | 0.4 | 2.217 | A |
| | 2 | 358 | 90 | 674 | 649 | 0.552 | 363 | 400 | 2.5 | 1.3 | 12.962 | B |
| | 3 | 663 | 166 | 229 | 1750 | 0.379 | 664 | 809 | 0.9 | 0.6 | 3.441 | A |
| | 4 | 220 | 55 | 729 | 1338 | 0.164 | 220 | 164 | 0.3 | 0.2 | 3.413 | A |
| | 5 | | | 596 | | | | 353 | | | | |
| 2 | 1 | 317 | 79 | 136 | 952 | 0.333 | 318 | 350 | 0.7 | 0.5 | 5.823 | A |
| | 2 | 201 | 50 | 241 | 875 | 0.230 | 201 | 212 | 0.4 | 0.3 | 5.687 | A |
| | 3 | 400 | 100 | 84 | 955 | 0.419 | 401 | 358 | 1.0 | 0.7 | 6.514 | A |

# Alternate Scenario (Development Case), AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 28.86 | D |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 10.75 | B |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 21.94 | C |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D3 | Alternate Scenario (Development Case) | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 637 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 688 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 234 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 519 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 357 | 100.000 |
| | 3 | ✓ | | | | |

## Origin-Destination Data

**Demand (PCU/hr)**

**Junction 1**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1 | 160 | 386 | 72 | 18 |
| | 2 | 92 | 1 | 287 | 166 | 62 |
| | 3 | 223 | 242 | 2 | 11 | 210 |
| | 4 | 78 | 66 | 14 | 26 | 50 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Demand (PCU/hr)**

**Junction 2**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 2 | 127 | 390 |
| | 2 | 135 | 1 | 221 |
| | 3 | 282 | 186 | 2 |

## Vehicle Mix

**Heavy Vehicle Percentages**

**Junction 1**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 7 | 7 | 15 | 22 |
| | 2 | 0 | 0 | 4 | 0 | 0 |
| | 3 | 10 | 5 | 0 | 9 | 3 |
| | 4 | 14 | 9 | 29 | 88 | 20 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Heavy Vehicle Percentages**

**Junction 2**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 12 | 4 |
| | 2 | 22 | 0 | 5 |
| | 3 | 7 | 7 | 0 |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.29 | 2.27 | 0.4 | A | 585 | 877 |
| | 2 | 0.99 | 93.44 | 17.2 | F | 562 | 843 |
| | 3 | 0.46 | 4.35 | 0.9 | A | 631 | 947 |
| | 4 | 0.21 | 4.35 | 0.3 | A | 215 | 322 |
| | 5 | | | | | | |
| 2 | 1 | 0.63 | 11.45 | 1.8 | B | 476 | 714 |
| | 2 | 0.52 | 11.09 | 1.2 | B | 328 | 491 |
| | 3 | 0.57 | 9.72 | 1.4 | A | 430 | 645 |

### Main Results for each time segment

**07:45 - 08:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 263 | 2491 | 0.193 | 479 | 295 | 0.0 | 0.3 | 1.935 | A |
| | 2 | 458 | 115 | 390 | 730 | 0.627 | 451 | 352 | 0.0 | 1.7 | 12.878 | B |
| | 3 | 518 | 129 | 326 | 1704 | 0.304 | 516 | 515 | 0.0 | 0.5 | 3.208 | A |
| | 4 | 176 | 44 | 637 | 1378 | 0.128 | 175 | 205 | 0.0 | 0.2 | 3.584 | A |
| | 5 | | | 558 | | | | 255 | | | | |
| 2 | 1 | 391 | 98 | 141 | 949 | 0.412 | 388 | 312 | 0.0 | 0.7 | 6.758 | A |
| | 2 | 269 | 67 | 294 | 841 | 0.319 | 267 | 234 | 0.0 | 0.5 | 6.917 | A |
| | 3 | 352 | 88 | 103 | 943 | 0.373 | 349 | 458 | 0.0 | 0.6 | 6.462 | A |

**08:00 - 08:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 573 | 143 | 315 | 2460 | 0.233 | 572 | 353 | 0.3 | 0.3 | 2.063 | A |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 550 | 137 | 466 | 708 | 0.776 | 543 | 421 | 1.7 | 3.2 | 21.429 | C |
| | 3 | 618 | 155 | 392 | 1673 | 0.370 | 618 | 618 | 0.5 | 0.6 | 3.614 | A |
| | 4 | 210 | 53 | 764 | 1323 | 0.159 | 210 | 246 | 0.2 | 0.2 | 3.876 | A |
| | 5 | | | 669 | | | | 305 | | | | |
| 2 | 1 | 467 | 117 | 169 | 930 | 0.502 | 465 | 375 | 0.7 | 1.0 | 8.184 | A |
| | 2 | 321 | 80 | 353 | 804 | 0.399 | 320 | 281 | 0.5 | 0.7 | 8.231 | A |
| | 3 | 421 | 105 | 124 | 930 | 0.453 | 420 | 550 | 0.6 | 0.9 | 7.542 | A |

**08:15 - 08:30**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 386 | 2419 | 0.290 | 701 | 428 | 0.3 | 0.4 | 2.267 | A |
| | 2 | 672 | 168 | 571 | 679 | 0.990 | 636 | 516 | 3.2 | 12.2 | 58.965 | F |
| | 3 | 758 | 189 | 464 | 1639 | 0.462 | 756 | 742 | 0.6 | 0.9 | 4.319 | A |
| | 4 | 258 | 64 | 927 | 1251 | 0.206 | 257 | 293 | 0.2 | 0.3 | 4.338 | A |
| | 5 | | | 814 | | | | 370 | | | | |
| 2 | 1 | 571 | 143 | 207 | 904 | 0.632 | 569 | 458 | 1.0 | 1.8 | 11.249 | B |
| | 2 | 393 | 98 | 432 | 754 | 0.521 | 391 | 344 | 0.7 | 1.2 | 10.946 | B |
| | 3 | 516 | 129 | 151 | 913 | 0.565 | 514 | 672 | 0.9 | 1.4 | 9.606 | A |

**08:30 - 08:45**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 386 | 2419 | 0.290 | 701 | 432 | 0.4 | 0.4 | 2.268 | A |
| | 2 | 675 | 169 | 571 | 679 | 0.994 | 655 | 516 | 12.2 | 17.2 | 93.435 | F |
| | 3 | 758 | 189 | 475 | 1634 | 0.464 | 757 | 752 | 0.9 | 0.9 | 4.353 | A |
| | 4 | 258 | 64 | 933 | 1249 | 0.206 | 258 | 299 | 0.3 | 0.3 | 4.352 | A |
| | 5 | | | 818 | | | | 373 | | | | |
| 2 | 1 | 571 | 143 | 208 | 904 | 0.632 | 571 | 461 | 1.8 | 1.8 | 11.451 | B |
| | 2 | 393 | 98 | 434 | 753 | 0.522 | 393 | 345 | 1.2 | 1.2 | 11.091 | B |
| | 3 | 516 | 129 | 152 | 912 | 0.566 | 516 | 675 | 1.4 | 1.4 | 9.720 | A |

**08:45 - 09:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 316 | 2460 | 0.233 | 573 | 364 | 0.4 | 0.3 | 2.066 | A |
| | 2 | 554 | 139 | 467 | 708 | 0.783 | 606 | 422 | 17.2 | 4.2 | 45.711 | E |
| | 3 | 618 | 155 | 425 | 1657 | 0.373 | 620 | 648 | 0.9 | 0.6 | 3.683 | A |
| | 4 | 210 | 53 | 781 | 1315 | 0.160 | 211 | 264 | 0.3 | 0.2 | 3.906 | A |
| | 5 | | | 680 | | | | 312 | | | | |
| 2 | 1 | 467 | 117 | 171 | 928 | 0.503 | 469 | 378 | 1.8 | 1.1 | 8.349 | A |
| | 2 | 321 | 80 | 356 | 802 | 0.400 | 323 | 284 | 1.2 | 0.8 | 8.357 | A |
| | 3 | 422 | 106 | 125 | 929 | 0.454 | 424 | 554 | 1.4 | 0.9 | 7.654 | A |

**09:00 - 09:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 265 | 2490 | 0.193 | 480 | 299 | 0.3 | 0.3 | 1.939 | A |
| | 2 | 463 | 116 | 391 | 730 | 0.635 | 472 | 353 | 4.2 | 1.8 | 14.738 | B |
| | 3 | 518 | 129 | 338 | 1699 | 0.305 | 519 | 526 | 0.6 | 0.5 | 3.234 | A |
| | 4 | 176 | 44 | 645 | 1375 | 0.128 | 176 | 211 | 0.2 | 0.2 | 3.601 | A |
| | 5 | | | 564 | | | | 258 | | | | |
| 2 | 1 | 391 | 98 | 143 | 947 | 0.412 | 392 | 316 | 1.1 | 0.8 | 6.880 | A |
| | 2 | 269 | 67 | 298 | 839 | 0.320 | 270 | 237 | 0.8 | 0.5 | 7.016 | A |
| | 3 | 353 | 88 | 104 | 942 | 0.375 | 354 | 463 | 0.9 | 0.6 | 6.562 | A |

# Alternate Scenario (Development Case), PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 27.78 | D |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 11.11 | B |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 22.28 | C |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D4 | Alternate Scenario (Development Case) | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 1019 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 893 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 297 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 457 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 280 | 100.000 |
| | 3 | ✓ | | | | |

## Origin-Destination Data

**Demand (PCU/hr)**

**Junction 1**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 144 | 765 | 80 | 30 |
| | 2 | 37 | 2 | 298 | 110 | 68 |
| | 3 | 259 | 274 | 0 | 15 | 345 |
| | 4 | 40 | 188 | 8 | 12 | 49 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **5** | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Demand (PCU/hr)**

| | | To | | |
|---|---|---|---|---|
| | | **1** | **2** | **3** |
| **From** | **1** | 1 | 102 | 354 |
| | **2** | 111 | 1 | 168 |
| | **3** | 416 | 201 | 1 |

## Vehicle Mix

**Junction 1**

**Heavy Vehicle Percentages**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | **1** | **2** | **3** | **4** | **5** |
| **From** | **1** | 0 | 8 | 4 | 18 | 13 |
| | **2** | 0 | 0 | 1 | 3 | 0 |
| | **3** | 8 | 2 | 0 | 0 | 2 |
| | **4** | 0 | 2 | 13 | 33 | 22 |
| | **5** | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Heavy Vehicle Percentages**

| | | To | | |
|---|---|---|---|---|
| | | **1** | **2** | **3** |
| **From** | **1** | 0 | 4 | 2 |
| | **2** | 7 | 0 | 6 |
| | **3** | 0 | 0 | 0 |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.48 | 3.14 | 1.0 | A | 935 | 1403 |
| | **2** | 1.03 | 127.44 | 20.6 | F | 479 | 719 |
| | **3** | 0.58 | 5.31 | 1.4 | A | 819 | 1229 |
| | **4** | 0.28 | 4.52 | 0.4 | A | 273 | 409 |
| | **5** | | | | | | |
| **2** | **1** | 0.56 | 9.39 | 1.3 | A | 419 | 629 |
| | **2** | 0.40 | 8.13 | 0.7 | A | 257 | 385 |
| | **3** | 0.72 | 13.78 | 2.5 | B | 558 | 836 |

### Main Results for each time segment

**16:45 - 17:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 767 | 192 | 363 | 2432 | 0.315 | 765 | 252 | 0.0 | 0.5 | 2.282 | A |
| | **2** | 391 | 98 | 672 | 650 | 0.602 | 385 | 456 | 0.0 | 1.5 | 13.476 | B |
| | **3** | 672 | 168 | 254 | 1738 | 0.387 | 670 | 803 | 0.0 | 0.6 | 3.482 | A |
| | **4** | 224 | 56 | 761 | 1324 | 0.169 | 223 | 163 | 0.0 | 0.2 | 3.460 | A |
| | **5** | | | 615 | | | | 369 | | | | |
| **2** | **1** | 344 | 86 | 149 | 943 | 0.365 | 342 | 388 | 0.0 | 0.6 | 6.108 | A |
| | **2** | 211 | 53 | 266 | 859 | 0.245 | 209 | 224 | 0.0 | 0.3 | 5.880 | A |
| | **3** | 456 | 114 | 85 | 955 | 0.478 | 453 | 391 | 0.0 | 0.9 | 7.121 | A |

**17:00 - 17:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | 916 | 229 | 435 | 2390 | 0.383 | 915 | 302 | 0.5 | 0.7 | 2.580 | A |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 469 | 117 | 804 | 613 | 0.766 | 463 | 546 | 1.5 | 3.0 | 23.411 | C |
| | 3 | 803 | 201 | 305 | 1714 | 0.468 | 802 | 962 | 0.6 | 0.9 | 4.084 | A |
| | 4 | 267 | 67 | 911 | 1258 | 0.212 | 267 | 195 | 0.2 | 0.3 | 3.843 | A |
| | 5 | | | 736 | | | | 442 | | | | |
| 2 | 1 | 411 | 103 | 179 | 923 | 0.445 | 410 | 467 | 0.6 | 0.8 | 7.174 | A |
| | 2 | 252 | 63 | 319 | 826 | 0.305 | 251 | 269 | 0.3 | 0.5 | 6.662 | A |
| | 3 | 546 | 136 | 101 | 944 | 0.578 | 544 | 469 | 0.9 | 1.3 | 8.965 | A |

**17:15 - 17:30**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1122 | 280 | 532 | 2333 | 0.481 | 1121 | 367 | 0.7 | 1.0 | 3.137 | A |
| | 2 | 574 | 143 | 984 | 562 | 1.021 | 531 | 668 | 3.0 | 13.7 | 74.496 | F |
| | 3 | 983 | 246 | 358 | 1689 | 0.582 | 981 | 1157 | 0.9 | 1.4 | 5.254 | A |
| | 4 | 327 | 82 | 1108 | 1172 | 0.279 | 327 | 231 | 0.3 | 0.4 | 4.504 | A |
| | 5 | | | 898 | | | | 536 | | | | |
| 2 | 1 | 503 | 126 | 218 | 897 | 0.561 | 501 | 570 | 0.8 | 1.3 | 9.281 | A |
| | 2 | 308 | 77 | 390 | 780 | 0.395 | 307 | 329 | 0.5 | 0.7 | 8.085 | A |
| | 3 | 668 | 167 | 124 | 930 | 0.719 | 664 | 574 | 1.3 | 2.4 | 13.314 | B |

**17:30 - 17:45**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1122 | 280 | 533 | 2333 | 0.481 | 1122 | 369 | 1.0 | 1.0 | 3.144 | A |
| | 2 | 576 | 144 | 985 | 561 | 1.025 | 548 | 669 | 13.7 | 20.6 | 127.437 | F |
| | 3 | 983 | 246 | 365 | 1686 | 0.583 | 983 | 1168 | 1.4 | 1.4 | 5.311 | A |
| | 4 | 327 | 82 | 1114 | 1170 | 0.280 | 327 | 235 | 0.4 | 0.4 | 4.522 | A |
| | 5 | | | 901 | | | | 539 | | | | |
| 2 | 1 | 503 | 126 | 220 | 895 | 0.562 | 503 | 574 | 1.3 | 1.3 | 9.393 | A |
| | 2 | 308 | 77 | 392 | 779 | 0.396 | 308 | 331 | 0.7 | 0.7 | 8.131 | A |
| | 3 | 669 | 167 | 124 | 930 | 0.720 | 669 | 576 | 2.4 | 2.5 | 13.782 | B |

**17:45 - 18:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 916 | 229 | 436 | 2389 | 0.383 | 917 | 308 | 1.0 | 0.7 | 2.590 | A |
| | 2 | 472 | 118 | 806 | 612 | 0.771 | 539 | 548 | 20.6 | 4.0 | 65.220 | F |
| | 3 | 803 | 201 | 337 | 1699 | 0.472 | 805 | 1007 | 1.4 | 0.9 | 4.182 | A |
| | 4 | 267 | 67 | 930 | 1250 | 0.214 | 267 | 211 | 0.4 | 0.3 | 3.882 | A |
| | 5 | | | 744 | | | | 453 | | | | |
| 2 | 1 | 411 | 103 | 181 | 921 | 0.446 | 413 | 473 | 1.3 | 0.8 | 7.279 | A |
| | 2 | 252 | 63 | 321 | 824 | 0.305 | 253 | 273 | 0.7 | 0.5 | 6.711 | A |
| | 3 | 548 | 137 | 102 | 944 | 0.581 | 552 | 472 | 2.5 | 1.4 | 9.299 | A |

**18:00 - 18:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 767 | 192 | 365 | 2431 | 0.316 | 768 | 255 | 0.7 | 0.5 | 2.289 | A |
| | 2 | 395 | 99 | 674 | 649 | 0.608 | 404 | 458 | 4.0 | 1.6 | 15.394 | C |
| | 3 | 672 | 168 | 262 | 1734 | 0.388 | 673 | 816 | 0.9 | 0.7 | 3.519 | A |
| | 4 | 224 | 56 | 769 | 1321 | 0.169 | 224 | 167 | 0.3 | 0.2 | 3.477 | A |
| | 5 | | | 619 | | | | 373 | | | | |
| 2 | 1 | 344 | 86 | 151 | 941 | 0.365 | 345 | 394 | 0.8 | 0.6 | 6.191 | A |
| | 2 | 211 | 53 | 269 | 858 | 0.246 | 211 | 227 | 0.5 | 0.3 | 5.929 | A |
| | 3 | 458 | 115 | 85 | 954 | 0.480 | 460 | 395 | 1.4 | 0.9 | 7.320 | A |

# Alternate Sensitivity Scenario (Base Case), AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 17.71 | C |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 9.28 | A |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 14.53 | B |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D5 | Alternate Sensitivity Scenario (Base Case) | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 537 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 703 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 237 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 459 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 393 | 100.000 |
| | 3 | ✓ | | | | |

## Origin-Destination Data

**Demand (PCU/hr)**

**Junction 1**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1 | 60 | 386 | 72 | 18 |
| | 2 | 43 | 1 | 320 | 175 | 32 |
| | 3 | 223 | 257 | 2 | 11 | 210 |
| | 4 | 78 | 69 | 14 | 26 | 50 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **5** | 0 | 0 | 0 | 0 | 0 |

**Demand (PCU/hr)**

**Junction 2**

| | | To | | |
|---|---|---|---|---|
| | | **1** | **2** | **3** |
| **From** | **1** | 15 | 128 | 316 |
| | **2** | 141 | 1 | 251 |
| | **3** | 217 | 166 | 2 |

## Vehicle Mix

**Heavy Vehicle Percentages**

**Junction 1**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | **1** | **2** | **3** | **4** | **5** |
| **From** | **1** | 0 | 7 | 7 | 15 | 0 |
| | **2** | 0 | 0 | 4 | 0 | 0 |
| | **3** | 10 | 5 | 0 | 9 | 3 |
| | **4** | 14 | 9 | 29 | 88 | 20 |
| | **5** | 0 | 0 | 0 | 0 | 0 |

**Heavy Vehicle Percentages**

**Junction 2**

| | | To | | |
|---|---|---|---|---|
| | | **1** | **2** | **3** |
| **From** | **1** | 0 | 12 | 4 |
| | **2** | 22 | 0 | 5 |
| | **3** | 0 | 0 | 0 |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.25 | 2.14 | 0.4 | A | 493 | 739 |
| | 2 | 0.92 | 54.68 | 8.9 | F | 522 | 782 |
| | 3 | 0.46 | 4.26 | 0.9 | A | 645 | 968 |
| | 4 | 0.20 | 4.23 | 0.3 | A | 217 | 326 |
| | 5 | | | | | | |
| 2 | 1 | 0.55 | 9.25 | 1.3 | A | 421 | 632 |
| | 2 | 0.54 | 10.96 | 1.3 | B | 361 | 541 |
| | 3 | 0.47 | 7.61 | 0.9 | A | 355 | 532 |

### Main Results for each time segment

**07:45 - 08:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 404 | 101 | 277 | 2483 | 0.163 | 403 | 258 | 0.0 | 0.2 | 1.864 | A |
| | 2 | 425 | 106 | 390 | 730 | 0.583 | 420 | 290 | 0.0 | 1.4 | 11.665 | B |
| | 3 | 529 | 132 | 272 | 1730 | 0.306 | 527 | 537 | 0.0 | 0.5 | 3.169 | A |
| | 4 | 178 | 45 | 589 | 1399 | 0.128 | 178 | 210 | 0.0 | 0.2 | 3.524 | A |
| | 5 | | | 535 | | | | 232 | | | | |
| 2 | 1 | 346 | 86 | 127 | 958 | 0.361 | 343 | 279 | 0.0 | 0.6 | 6.182 | A |
| | 2 | 296 | 74 | 249 | 870 | 0.340 | 294 | 221 | 0.0 | 0.6 | 6.872 | A |
| | 3 | 290 | 73 | 117 | 934 | 0.311 | 289 | 425 | 0.0 | 0.4 | 5.560 | A |

**08:00 - 08:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 483 | 121 | 331 | 2451 | 0.197 | 483 | 309 | 0.2 | 0.3 | 1.970 | A |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 510 | 128 | 466 | 708 | 0.720 | 506 | 348 | 1.4 | 2.5 | 17.794 | C |
| | 3 | 632 | 158 | 328 | 1703 | 0.371 | 631 | 645 | 0.5 | 0.6 | 3.556 | A |
| | 4 | 213 | 53 | 706 | 1348 | 0.158 | 213 | 253 | 0.2 | 0.2 | 3.793 | A |
| | 5 | | | 641 | | | | 278 | | | | |
| 2 | 1 | 413 | 103 | 152 | 941 | 0.439 | 412 | 335 | 0.6 | 0.8 | 7.200 | A |
| | 2 | 353 | 88 | 299 | 839 | 0.421 | 352 | 265 | 0.6 | 0.8 | 8.166 | A |
| | 3 | 348 | 87 | 141 | 919 | 0.378 | 347 | 510 | 0.4 | 0.6 | 6.284 | A |

**08:15 - 08:30**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 591 | 148 | 406 | 2407 | 0.246 | 591 | 378 | 0.3 | 0.3 | 2.135 | A |
| | 2 | 624 | 156 | 571 | 679 | 0.919 | 604 | 426 | 2.5 | 7.4 | 41.307 | E |
| | 3 | 774 | 194 | 394 | 1672 | 0.463 | 773 | 781 | 0.6 | 0.9 | 4.238 | A |
| | 4 | 261 | 65 | 862 | 1280 | 0.204 | 261 | 305 | 0.2 | 0.3 | 4.226 | A |
| | 5 | | | 783 | | | | 340 | | | | |
| 2 | 1 | 505 | 126 | 186 | 918 | 0.551 | 504 | 410 | 0.8 | 1.3 | 9.164 | A |
| | 2 | 433 | 108 | 365 | 796 | 0.543 | 431 | 324 | 0.8 | 1.3 | 10.827 | B |
| | 3 | 426 | 106 | 172 | 900 | 0.473 | 424 | 624 | 0.6 | 0.9 | 7.557 | A |

**08:30 - 08:45**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 591 | 148 | 406 | 2407 | 0.246 | 591 | 379 | 0.3 | 0.4 | 2.135 | A |
| | 2 | 626 | 157 | 571 | 679 | 0.923 | 621 | 426 | 7.4 | 8.9 | 54.685 | F |
| | 3 | 774 | 194 | 402 | 1668 | 0.464 | 774 | 790 | 0.9 | 0.9 | 4.264 | A |
| | 4 | 261 | 65 | 865 | 1278 | 0.204 | 261 | 310 | 0.3 | 0.3 | 4.233 | A |
| | 5 | | | 785 | | | | 341 | | | | |
| 2 | 1 | 505 | 126 | 187 | 917 | 0.551 | 505 | 412 | 1.3 | 1.3 | 9.253 | A |
| | 2 | 433 | 108 | 367 | 795 | 0.544 | 433 | 326 | 1.3 | 1.3 | 10.963 | B |
| | 3 | 426 | 107 | 173 | 899 | 0.474 | 426 | 626 | 0.9 | 0.9 | 7.609 | A |

**08:45 - 09:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 483 | 121 | 332 | 2450 | 0.197 | 483 | 312 | 0.4 | 0.3 | 1.971 | A |
| | 2 | 514 | 128 | 467 | 708 | 0.726 | 538 | 348 | 8.9 | 2.9 | 24.068 | C |
| | 3 | 632 | 158 | 342 | 1697 | 0.372 | 633 | 663 | 0.9 | 0.6 | 3.589 | A |
| | 4 | 213 | 53 | 712 | 1346 | 0.158 | 213 | 263 | 0.3 | 0.2 | 3.804 | A |
| | 5 | | | 645 | | | | 280 | | | | |
| 2 | 1 | 413 | 103 | 153 | 940 | 0.439 | 414 | 338 | 1.3 | 0.8 | 7.282 | A |
| | 2 | 353 | 88 | 301 | 837 | 0.422 | 355 | 267 | 1.3 | 0.8 | 8.284 | A |
| | 3 | 348 | 87 | 142 | 919 | 0.379 | 350 | 514 | 0.9 | 0.6 | 6.341 | A |

**09:00 - 09:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 404 | 101 | 278 | 2482 | 0.163 | 405 | 260 | 0.3 | 0.2 | 1.868 | A |
| | 2 | 430 | 107 | 391 | 730 | 0.589 | 435 | 292 | 2.9 | 1.5 | 12.725 | B |
| | 3 | 529 | 132 | 279 | 1726 | 0.307 | 530 | 547 | 0.6 | 0.5 | 3.191 | A |
| | 4 | 178 | 45 | 594 | 1397 | 0.128 | 179 | 216 | 0.2 | 0.2 | 3.534 | A |
| | 5 | | | 539 | | | | 234 | | | | |
| 2 | 1 | 346 | 86 | 128 | 957 | 0.361 | 347 | 283 | 0.8 | 0.6 | 6.259 | A |
| | 2 | 296 | 74 | 251 | 869 | 0.341 | 297 | 223 | 0.8 | 0.6 | 6.968 | A |
| | 3 | 292 | 73 | 119 | 933 | 0.313 | 292 | 430 | 0.6 | 0.5 | 5.622 | A |

# Alternate Sensitivity Scenario (Base Case), PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 22.49 | C |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 10.63 | B |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 18.60 | C |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D6 | Alternate Sensitivity Scenario (Base Case) | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 967 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 925 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 300 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 428 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 298 | 100.000 |
| | 3 | ✓ | | | | |

## Origin-Destination Data

**Demand (PCU/hr)**

**Junction 1**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 92 | 765 | 80 | 30 |
| | 2 | 26 | 2 | 311 | 116 | 45 |
| | 3 | 259 | 306 | 0 | 15 | 345 |
| | 4 | 40 | 191 | 8 | 12 | 49 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Demand (PCU/hr)**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 107 | 321 |
| | 2 | 113 | 1 | 184 |
| | 3 | 360 | 236 | 1 |

## Vehicle Mix

**Junction 1**

**Heavy Vehicle Percentages**

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 8 | 4 | 18 | 0 |
| | 2 | 0 | 0 | 1 | 3 | 0 |
| | 3 | 8 | 2 | 0 | 0 | 2 |
| | 4 | 0 | 2 | 13 | 33 | 22 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

**Junction 2**

**Heavy Vehicle Percentages**

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 4 | 2 |
| | 2 | 7 | 0 | 6 |
| | 3 | 0 | 0 | 0 |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.46 | 3.04 | 0.9 | A | 887 | 1331 |
| | 2 | 0.99 | 101.45 | 15.3 | F | 464 | 696 |
| | 3 | 0.60 | 5.48 | 1.5 | A | 849 | 1273 |
| | 4 | 0.28 | 4.54 | 0.4 | A | 275 | 413 |
| | 5 | | | | | | |
| 2 | 1 | 0.54 | 9.27 | 1.2 | A | 393 | 589 |
| | 2 | 0.41 | 8.06 | 0.7 | A | 273 | 410 |
| | 3 | 0.70 | 12.90 | 2.3 | B | 542 | 813 |

### Main Results for each time segment

**16:45 - 17:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 728 | 182 | 389 | 2417 | 0.301 | 726 | 244 | 0.0 | 0.5 | 2.239 | A |
| | 2 | 378 | 95 | 672 | 650 | 0.582 | 373 | 443 | 0.0 | 1.4 | 12.922 | B |
| | 3 | 696 | 174 | 233 | 1748 | 0.398 | 694 | 812 | 0.0 | 0.7 | 3.526 | A |
| | 4 | 226 | 56 | 759 | 1325 | 0.171 | 225 | 167 | 0.0 | 0.2 | 3.458 | A |
| | 5 | | | 633 | | | | 352 | | | | |
| 2 | 1 | 322 | 81 | 175 | 925 | 0.348 | 320 | 350 | 0.0 | 0.5 | 6.074 | A |
| | 2 | 224 | 56 | 241 | 876 | 0.256 | 223 | 255 | 0.0 | 0.4 | 5.853 | A |
| | 3 | 443 | 111 | 85 | 954 | 0.465 | 440 | 378 | 0.0 | 0.9 | 6.955 | A |

**17:00 - 17:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 869 | 217 | 466 | 2372 | 0.366 | 869 | 292 | 0.5 | 0.6 | 2.519 | A |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 454 | 113 | 804 | 613 | 0.741 | 449 | 531 | 1.4 | 2.7 | 21.557 | C |
| | 3 | 832 | 208 | 279 | 1726 | 0.482 | 830 | 974 | 0.7 | 1.0 | 4.156 | A |
| | 4 | 270 | 67 | 909 | 1259 | 0.214 | 269 | 200 | 0.2 | 0.3 | 3.848 | A |
| | 5 | | | 758 | | | | 421 | | | | |
| 2 | 1 | 385 | 96 | 211 | 901 | 0.427 | 384 | 420 | 0.5 | 0.8 | 7.118 | A |
| | 2 | 268 | 67 | 289 | 845 | 0.317 | 267 | 306 | 0.4 | 0.5 | 6.623 | A |
| | 3 | 531 | 133 | 102 | 943 | 0.563 | 529 | 454 | 0.9 | 1.3 | 8.653 | A |

**17:15 - 17:30**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1065 | 266 | 570 | 2311 | 0.461 | 1064 | 356 | 0.6 | 0.9 | 3.035 | A |
| | 2 | 555 | 139 | 984 | 562 | 0.988 | 522 | 649 | 2.7 | 11.0 | 63.992 | F |
| | 3 | 1018 | 255 | 331 | 1702 | 0.599 | 1016 | 1175 | 1.0 | 1.5 | 5.421 | A |
| | 4 | 330 | 83 | 1109 | 1172 | 0.282 | 330 | 239 | 0.3 | 0.4 | 4.522 | A |
| | 5 | | | 926 | | | | 513 | | | | |
| 2 | 1 | 471 | 118 | 257 | 870 | 0.541 | 470 | 513 | 0.8 | 1.2 | 9.166 | A |
| | 2 | 328 | 82 | 353 | 804 | 0.408 | 327 | 374 | 0.5 | 0.7 | 8.015 | A |
| | 3 | 649 | 162 | 125 | 929 | 0.699 | 646 | 555 | 1.3 | 2.2 | 12.525 | B |

**17:30 - 17:45**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1065 | 266 | 571 | 2310 | 0.461 | 1065 | 357 | 0.9 | 0.9 | 3.041 | A |
| | 2 | 557 | 139 | 985 | 561 | 0.992 | 540 | 651 | 11.0 | 15.3 | 101.449 | F |
| | 3 | 1018 | 255 | 338 | 1698 | 0.600 | 1018 | 1187 | 1.5 | 1.5 | 5.483 | A |
| | 4 | 330 | 83 | 1114 | 1170 | 0.282 | 330 | 243 | 0.4 | 0.4 | 4.538 | A |
| | 5 | | | 929 | | | | 515 | | | | |
| 2 | 1 | 471 | 118 | 259 | 869 | 0.542 | 471 | 517 | 1.2 | 1.2 | 9.272 | A |
| | 2 | 328 | 82 | 354 | 803 | 0.409 | 328 | 376 | 0.7 | 0.7 | 8.060 | A |
| | 3 | 651 | 163 | 126 | 929 | 0.700 | 650 | 557 | 2.2 | 2.3 | 12.901 | B |

**17:45 - 18:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 869 | 217 | 468 | 2371 | 0.367 | 870 | 296 | 0.9 | 0.6 | 2.527 | A |
| | 2 | 457 | 114 | 806 | 612 | 0.746 | 505 | 533 | 15.3 | 3.3 | 43.474 | E |
| | 3 | 832 | 208 | 301 | 1716 | 0.485 | 834 | 1010 | 1.5 | 1.0 | 4.237 | A |
| | 4 | 270 | 67 | 921 | 1254 | 0.215 | 270 | 213 | 0.4 | 0.3 | 3.873 | A |
| | 5 | | | 764 | | | | 428 | | | | |
| 2 | 1 | 385 | 96 | 214 | 899 | 0.428 | 386 | 425 | 1.2 | 0.8 | 7.215 | A |
| | 2 | 268 | 67 | 291 | 844 | 0.318 | 269 | 310 | 0.7 | 0.5 | 6.671 | A |
| | 3 | 533 | 133 | 103 | 943 | 0.565 | 536 | 457 | 2.3 | 1.3 | 8.936 | A |

**18:00 - 18:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 728 | 182 | 391 | 2416 | 0.301 | 729 | 246 | 0.6 | 0.5 | 2.246 | A |
| | 2 | 382 | 95 | 674 | 649 | 0.588 | 389 | 446 | 3.3 | 1.5 | 14.385 | B |
| | 3 | 696 | 174 | 239 | 1745 | 0.399 | 698 | 825 | 1.0 | 0.7 | 3.561 | A |
| | 4 | 226 | 56 | 766 | 1322 | 0.171 | 226 | 171 | 0.3 | 0.2 | 3.478 | A |
| | 5 | | | 637 | | | | 355 | | | | |
| 2 | 1 | 322 | 81 | 178 | 923 | 0.349 | 323 | 355 | 0.8 | 0.6 | 6.156 | A |
| | 2 | 224 | 56 | 243 | 874 | 0.257 | 225 | 258 | 0.5 | 0.4 | 5.903 | A |
| | 3 | 446 | 111 | 86 | 954 | 0.467 | 447 | 382 | 1.3 | 0.9 | 7.133 | A |

# Alternate Sensitivity Scenario (Development Case), AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 87.19 | F |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 13.49 | B |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 58.12 | F |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D7 | Alternate Sensitivity Scenario (Development Case) | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 637 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 711 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 242 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 566 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 431 | 100.000 |
| | 3 | ✓ | | | | |

## Origin-Destination Data

**Demand (PCU/hr)**

**Junction 1**

| | To | | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | 1 | 1 | 160 | 386 | 72 | 18 |
| | 2 | 92 | 1 | 346 | 192 | 62 |

| | | | | | | |
|---|---|---|---|---|---|---|
| From | 3 | 223 | 265 | 2 | 11 | 210 |
| | 4 | 78 | 74 | 14 | 26 | 50 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

Junction 2

Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 15 | 131 | 420 |
| | 2 | 142 | 1 | 288 |
| | 3 | 291 | 211 | 2 |

## Vehicle Mix

Junction 1

Heavy Vehicle Percentages

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 7 | 7 | 15 | 0 |
| | 2 | 0 | 0 | 4 | 0 | 0 |
| | 3 | 10 | 5 | 0 | 9 | 3 |
| | 4 | 14 | 9 | 29 | 88 | 20 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

Junction 2

Heavy Vehicle Percentages

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 12 | 4 |
| | 2 | 22 | 0 | 5 |
| | 3 | 0 | 0 | 0 |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.29 | 2.28 | 0.4 | A | 585 | 877 |
| | 2 | 1.15 | 274.64 | 59.6 | F | 651 | 976 |
| | 3 | 0.48 | 4.46 | 1.0 | A | 652 | 979 |
| | 4 | 0.21 | 4.40 | 0.3 | A | 222 | 333 |
| | 5 | | | | | | |
| 2 | 1 | 0.70 | 14.41 | 2.4 | B | 519 | 779 |
| | 2 | 0.66 | 15.93 | 2.1 | C | 395 | 593 |
| | 3 | 0.61 | 10.33 | 1.6 | B | 459 | 688 |

### Main Results for each time segment

07:45 - 08:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 287 | 2477 | 0.194 | 479 | 296 | 0.0 | 0.3 | 1.937 | A |
| | 2 | 530 | 133 | 390 | 730 | 0.726 | 520 | 375 | 0.0 | 2.5 | 16.762 | C |
| | 3 | 535 | 134 | 348 | 1694 | 0.316 | 533 | 562 | 0.0 | 0.5 | 3.281 | A |
| | 4 | 182 | 46 | 656 | 1370 | 0.133 | 181 | 226 | 0.0 | 0.2 | 3.614 | A |
| | 5 | | | 582 | | | | 255 | | | | |
| 2 | 1 | 426 | 107 | 158 | 937 | 0.455 | 423 | 332 | 0.0 | 0.9 | 7.349 | A |
| | 2 | 324 | 81 | 326 | 821 | 0.395 | 322 | 255 | 0.0 | 0.7 | 7.889 | A |
| | 3 | 375 | 94 | 118 | 934 | 0.402 | 373 | 530 | 0.0 | 0.7 | 6.388 | A |

08:00 - 08:15

| Junction | Arm | Total Demand | Junction Arrivals | Circulating flow | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) | Start queue | End queue | Delay (s) | Unsignalised level of |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | (PCU/hr) | (PCU) | (PCU/hr) | | | | (PCU/hr) | (PCU) | (PCU) | | service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 343 | 2444 | 0.234 | 572 | 354 | 0.3 | 0.3 | 2.069 | A |
| | 2 | 636 | 159 | 466 | 708 | 0.898 | 620 | 449 | 2.5 | 6.5 | 36.310 | E |
| | 3 | 639 | 160 | 416 | 1662 | 0.385 | 638 | 671 | 0.5 | 0.7 | 3.726 | A |
| | 4 | 218 | 54 | 784 | 1314 | 0.166 | 217 | 270 | 0.2 | 0.2 | 3.919 | A |
| | 5 | | | 697 | | | | 305 | | | | |
| 2 | 1 | 509 | 127 | 190 | 915 | 0.556 | 507 | 399 | 0.9 | 1.3 | 9.276 | A |
| | 2 | 387 | 97 | 392 | 779 | 0.497 | 386 | 306 | 0.7 | 1.1 | 10.032 | B |
| | 3 | 449 | 112 | 142 | 919 | 0.489 | 448 | 636 | 0.7 | 0.9 | 7.628 | A |

**08:15 - 08:30**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 420 | 2399 | 0.292 | 701 | 421 | 0.3 | 0.4 | 2.281 | A |
| | 2 | 776 | 194 | 571 | 679 | 1.143 | 668 | 550 | 6.5 | 33.4 | 123.922 | F |
| | 3 | 783 | 196 | 463 | 1639 | 0.478 | 782 | 776 | 0.7 | 1.0 | 4.442 | A |
| | 4 | 266 | 67 | 940 | 1246 | 0.214 | 266 | 305 | 0.2 | 0.3 | 4.388 | A |
| | 5 | | | 841 | | | | 365 | | | | |
| 2 | 1 | 623 | 156 | 232 | 887 | 0.703 | 619 | 488 | 1.3 | 2.4 | 13.953 | B |
| | 2 | 475 | 119 | 478 | 724 | 0.655 | 471 | 373 | 1.1 | 2.0 | 15.393 | C |
| | 3 | 550 | 137 | 173 | 899 | 0.611 | 547 | 776 | 0.9 | 1.5 | 10.160 | B |

**08:30 - 08:45**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 701 | 175 | 420 | 2399 | 0.292 | 701 | 422 | 0.4 | 0.4 | 2.282 | A |
| | 2 | 781 | 195 | 571 | 679 | 1.151 | 677 | 550 | 33.4 | 59.6 | 257.788 | F |
| | 3 | 783 | 196 | 468 | 1637 | 0.478 | 783 | 780 | 1.0 | 1.0 | 4.464 | A |
| | 4 | 266 | 67 | 943 | 1244 | 0.214 | 266 | 307 | 0.3 | 0.3 | 4.395 | A |
| | 5 | | | 843 | | | | 367 | | | | |
| 2 | 1 | 623 | 156 | 234 | 886 | 0.703 | 623 | 490 | 2.4 | 2.4 | 14.409 | B |
| | 2 | 475 | 119 | 481 | 722 | 0.657 | 474 | 376 | 2.0 | 2.1 | 15.928 | C |
| | 3 | 550 | 138 | 174 | 898 | 0.613 | 550 | 781 | 1.5 | 1.6 | 10.332 | B |

**08:45 - 09:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 573 | 143 | 344 | 2444 | 0.234 | 573 | 364 | 0.4 | 0.3 | 2.071 | A |
| | 2 | 644 | 161 | 467 | 708 | 0.909 | 696 | 450 | 59.6 | 46.5 | 274.645 | F |
| | 3 | 639 | 160 | 454 | 1644 | 0.389 | 640 | 709 | 1.0 | 0.7 | 3.808 | A |
| | 4 | 218 | 54 | 803 | 1306 | 0.167 | 218 | 291 | 0.3 | 0.2 | 3.953 | A |
| | 5 | | | 708 | | | | 313 | | | | |
| 2 | 1 | 509 | 127 | 192 | 914 | 0.557 | 513 | 404 | 2.4 | 1.4 | 9.585 | A |
| | 2 | 387 | 97 | 396 | 776 | 0.499 | 391 | 309 | 2.1 | 1.1 | 10.377 | B |
| | 3 | 450 | 113 | 143 | 918 | 0.491 | 453 | 644 | 1.6 | 1.0 | 7.780 | A |

**09:00 - 09:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 480 | 120 | 288 | 2476 | 0.194 | 480 | 321 | 0.3 | 0.3 | 1.942 | A |
| | 2 | 537 | 134 | 391 | 730 | 0.736 | 707 | 377 | 46.5 | 4.0 | 132.654 | F |
| | 3 | 535 | 134 | 442 | 1649 | 0.325 | 536 | 656 | 0.7 | 0.5 | 3.427 | A |
| | 4 | 182 | 46 | 700 | 1351 | 0.135 | 182 | 278 | 0.2 | 0.2 | 3.682 | A |
| | 5 | | | 610 | | | | 273 | | | | |
| 2 | 1 | 426 | 107 | 161 | 935 | 0.456 | 428 | 337 | 1.4 | 0.9 | 7.523 | A |
| | 2 | 324 | 81 | 330 | 818 | 0.396 | 326 | 258 | 1.1 | 0.7 | 8.071 | A |
| | 3 | 377 | 94 | 120 | 933 | 0.404 | 378 | 537 | 1.0 | 0.7 | 6.507 | A |

# Alternate Sensitivity Scenario (Development Case), PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 2 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Coopers End Roundabout | Standard Roundabout | | 1, 2, 3, 4, 5 | 46.01 | E |
| 2 | Parsonage Road | Mini-roundabout | | 1, 2, 3 | 12.93 | B |

### Junction Network

| Driving side | Lighting | Road surface | In London | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Left | Normal/unknown | Normal/unknown | | 34.85 | D |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D8 | Alternate Sensitivity Scenario (Development Case) | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | | ONE HOUR | ✓ | 984 | 100.000 |
| | 2 | ✓ | | | | |
| | 3 | | ONE HOUR | ✓ | 949 | 100.000 |
| | 4 | | ONE HOUR | ✓ | 315 | 100.000 |
| | 5 | | | | | |
| 2 | 1 | | ONE HOUR | ✓ | 473 | 100.000 |
| | 2 | | ONE HOUR | ✓ | 315 | 100.000 |
| | 3 | ✓ | | | | |

## Origin-Destination Data

**Demand (PCU/hr)**

**Junction 1**

| | To | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 1 | 1 | 108 | 765 | 80 | 30 |
| 2 | 37 | 2 | 323 | 124 | 345 |

| | | | | | | |
|---|---|---|---|---|---|---|
| From | 3 | 259 | 330 | 0 | 15 | 345 |
| | 4 | 40 | 206 | 8 | 12 | 49 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

Junction 2

Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 108 | 365 |
| | 2 | 115 | 1 | 199 |
| | 3 | 436 | 263 | 1 |

## Vehicle Mix

Junction 1

Heavy Vehicle Percentages

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0 | 8 | 4 | 18 | 0 |
| | 2 | 0 | 0 | 1 | 3 | 0 |
| | 3 | 8 | 2 | 0 | 0 | 2 |
| | 4 | 0 | 2 | 13 | 33 | 22 |
| | 5 | 0 | 0 | 0 | 0 | 0 |

Junction 2

Heavy Vehicle Percentages

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 4 | 2 |
| | 2 | 7 | 0 | 6 |
| | 3 | 0 | 0 | 0 |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.47 | 3.15 | 0.9 | A | 903 | 1354 |
| | 2 | 1.11 | 210.23 | 38.6 | F | 518 | 777 |
| | 3 | 0.64 | 6.33 | 1.8 | A | 871 | 1306 |
| | 4 | 0.32 | 5.19 | 0.5 | A | 289 | 434 |
| | 5 | | | | | | |
| 2 | 1 | 0.60 | 10.78 | 1.5 | B | 434 | 651 |
| | 2 | 0.45 | 9.00 | 0.9 | A | 289 | 434 |
| | 3 | 0.77 | 16.44 | 3.1 | C | 592 | 888 |

### Main Results for each time segment

16:45 - 17:00

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 741 | 185 | 418 | 2400 | 0.309 | 739 | 243 | 0.0 | 0.5 | 2.280 | A |
| | 2 | 422 | 106 | 673 | 650 | 0.650 | 415 | 484 | 0.0 | 1.8 | 15.049 | C |
| | 3 | 714 | 179 | 346 | 1695 | 0.422 | 711 | 742 | 0.0 | 0.7 | 3.780 | A |
| | 4 | 237 | 59 | 915 | 1256 | 0.189 | 236 | 142 | 0.0 | 0.2 | 3.723 | A |
| | 5 | | | 661 | | | | 490 | | | | |
| 2 | 1 | 356 | 89 | 182 | 921 | 0.387 | 354 | 385 | 0.0 | 0.6 | 6.471 | A |
| | 2 | 237 | 59 | 274 | 855 | 0.277 | 236 | 262 | 0.0 | 0.4 | 6.166 | A |
| | 3 | 484 | 121 | 87 | 953 | 0.508 | 480 | 422 | 0.0 | 1.0 | 7.544 | A |

17:00 - 17:15

| Junction | Arm | Total Demand | Junction Arrivals | Circulating flow | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) | Start queue | End queue | Delay (s) | Unsignalised level of |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | (PCU/hr) | (PCU) | (PCU/hr) | | | | (PCU/hr) | (PCU) | (PCU) | | service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 885 | 221 | 500 | 2352 | 0.376 | 884 | 291 | 0.5 | 0.6 | 2.581 | A |
| | 2 | 507 | 127 | 805 | 613 | 0.827 | 497 | 579 | 1.8 | 4.1 | 29.379 | D |
| | 3 | 853 | 213 | 415 | 1662 | 0.513 | 852 | 888 | 0.7 | 1.1 | 4.592 | A |
| | 4 | 283 | 71 | 1096 | 1177 | 0.241 | 283 | 170 | 0.2 | 0.3 | 4.248 | A |
| | 5 | | | 792 | | | | 587 | | | | |
| 2 | 1 | 425 | 106 | 219 | 896 | 0.474 | 424 | 463 | 0.6 | 0.9 | 7.786 | A |
| | 2 | 283 | 71 | 328 | 820 | 0.345 | 283 | 315 | 0.4 | 0.6 | 7.117 | A |
| | 3 | 579 | 145 | 104 | 942 | 0.615 | 577 | 507 | 1.0 | 1.6 | 9.800 | A |

**17:15 - 17:30**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1083 | 271 | 612 | 2286 | 0.474 | 1082 | 354 | 0.6 | 0.9 | 3.145 | A |
| | 2 | 619 | 155 | 985 | 561 | 1.103 | 546 | 709 | 4.1 | 22.5 | 106.433 | F |
| | 3 | 1045 | 261 | 469 | 1636 | 0.639 | 1042 | 1062 | 1.1 | 1.8 | 6.240 | A |
| | 4 | 347 | 87 | 1312 | 1083 | 0.320 | 346 | 199 | 0.3 | 0.5 | 5.158 | A |
| | 5 | | | 966 | | | | 692 | | | | |
| 2 | 1 | 521 | 130 | 266 | 864 | 0.603 | 518 | 564 | 0.9 | 1.5 | 10.585 | B |
| | 2 | 347 | 87 | 401 | 773 | 0.448 | 346 | 384 | 0.6 | 0.8 | 8.925 | A |
| | 3 | 709 | 177 | 127 | 928 | 0.764 | 703 | 619 | 1.6 | 3.0 | 15.608 | C |

**17:30 - 17:45**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1083 | 271 | 613 | 2286 | 0.474 | 1083 | 355 | 0.9 | 0.9 | 3.152 | A |
| | 2 | 622 | 155 | 987 | 561 | 1.108 | 557 | 710 | 22.5 | 38.6 | 210.235 | F |
| | 3 | 1045 | 261 | 476 | 1633 | 0.640 | 1045 | 1068 | 1.8 | 1.8 | 6.333 | A |
| | 4 | 347 | 87 | 1320 | 1079 | 0.321 | 347 | 201 | 0.5 | 0.5 | 5.191 | A |
| | 5 | | | 969 | | | | 698 | | | | |
| 2 | 1 | 521 | 130 | 269 | 863 | 0.604 | 521 | 569 | 1.5 | 1.5 | 10.778 | B |
| | 2 | 347 | 87 | 403 | 772 | 0.449 | 347 | 387 | 0.8 | 0.9 | 8.996 | A |
| | 3 | 710 | 178 | 128 | 927 | 0.766 | 710 | 622 | 3.0 | 3.1 | 16.440 | C |

**17:45 - 18:00**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 885 | 221 | 503 | 2351 | 0.376 | 886 | 297 | 0.9 | 0.6 | 2.589 | A |
| | 2 | 510 | 128 | 807 | 612 | 0.834 | 596 | 582 | 38.6 | 17.1 | 173.443 | F |
| | 3 | 853 | 213 | 475 | 1633 | 0.522 | 856 | 928 | 1.8 | 1.1 | 4.811 | A |
| | 4 | 283 | 71 | 1146 | 1155 | 0.245 | 284 | 185 | 0.5 | 0.3 | 4.365 | A |
| | 5 | | | 800 | | | | 630 | | | | |
| 2 | 1 | 425 | 106 | 223 | 894 | 0.476 | 428 | 470 | 1.5 | 0.9 | 7.954 | A |
| | 2 | 283 | 71 | 331 | 818 | 0.346 | 284 | 319 | 0.9 | 0.6 | 7.188 | A |
| | 3 | 582 | 145 | 105 | 942 | 0.618 | 588 | 510 | 3.1 | 1.7 | 10.330 | B |

**18:00 - 18:15**

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 741 | 185 | 421 | 2399 | 0.309 | 741 | 248 | 0.6 | 0.5 | 2.289 | A |
| | 2 | 427 | 107 | 675 | 649 | 0.657 | 487 | 487 | 17.1 | 2.1 | 30.042 | D |
| | 3 | 714 | 179 | 390 | 1674 | 0.427 | 716 | 772 | 1.1 | 0.8 | 3.897 | A |
| | 4 | 237 | 59 | 953 | 1240 | 0.191 | 238 | 153 | 0.3 | 0.3 | 3.793 | A |
| | 5 | | | 669 | | | | 522 | | | | |
| 2 | 1 | 356 | 89 | 185 | 919 | 0.388 | 357 | 392 | 0.9 | 0.7 | 6.582 | A |
| | 2 | 237 | 59 | 276 | 853 | 0.278 | 238 | 266 | 0.6 | 0.4 | 6.231 | A |
| | 3 | 487 | 122 | 88 | 953 | 0.511 | 489 | 427 | 1.7 | 1.1 | 7.808 | A |

**Appendix K**

**COUNTRYSIDE PROPERTIES LTD**

# LAND SOUTH OF HENHAM ROAD, ELSENHAM

# DESIGNER'S RESPONSE – STAGE 1 ROAD SAFETY AUDIT -

# PARSONAGE ROAD MINI-ROUNDABOUT

**REPORT REF NO. 2008170-014**
**PROJECT NO. 2008170**
**FEBRUARY 2023**

## 1.0 INTRODUCTION

1.1 Ardent Consulting Engineers (ACE) has been appointed by Countryside Properties Ltd to support the proposed residential development of Land South of Henham Road, Elsenham, Essex.

1.2 The proposals under consideration are shown on **ACE Drawing No:**

- 2008170-043

1.3 This report addresses matters raised in the Stage I Road Safety Audit (RSA) undertaken by M&S Traffic Ltd dated 7th February 2023.

**APPENDICES**

**APPENDIX A** **M&S Stage 1 Road Safety Audit**

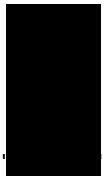
**DRAWINGS**

**2008170-043** **Parsonage Road Mini-Roundabout**

| Rev | Issue Purpose | Author | Checked | Approved | Date |
|---|---|---|---|---|---|
| - | Planning | FM | FM | IW [redacted] FM | 10.02.23 |
| | | | | | |
| | | | | | |

## 2.0 ROAD SAFETY AUDIT

| Audit Item No. | Problem accepted (yes/no) | Recommended measure accepted (yes/no) | Alternative Measures (describe) | Alternative measures accepted by Audit Team (yes/no) |
|---|---|---|---|---|
| **3.** | **Items raised at the Stage 1 Audit** | | | |
| 3.3.1 | Yes | Yes | The swept path of the single decker bus undertaking the left turn from the link road on the existing road network already enters the opposing running lane and so is an existing situation that is not changing as a result of the proposals. The proposed layout does not make the situation any worse than the existing layout.<br><br>In addition, the link road to / from the airport network doesn't carry larger vehicles, with the signed route being via Parsonage Road and Hall Road. There is a 7.5t size limit on the link road and is signed as such, therefore the size of vehicle using the link road would be smaller vehicles able to make such turns. Buses using that route are also low frequency with around an hourly frequency in each direction.<br><br>Tracking for the right turn out of the link road has been undertaken and included as an update to the drawing for submission to ECC. | |

**Signed: ……**  **…… Design Team Leader**

**Date: 10th February 2023**

**Signed: …… Audit Team Leader**

**Date: 10th February 2023**

**PLEASE COMPLETE AND RETURN TO SAFETY AUDIT TEAM**

M & S Traffic

# Road Safety Audit Stage 1

# Parsonage Road Mini-Roundabout

# Land South of Henham Road

# Elsenham

# Essex

**Date: 7th February 2023**

**Report produced for: Ardent Consulting Engineers**

**Report produced by: M & S Traffic**

**DOCUMENT CONTROL SHEET**

M&S Traffic has prepared this report in accordance with the instructions from Ardent Consulting Engineers. M&S Traffic shall not be liable for the use of any information contained herein for any purpose other than the sole and specific use for which it was prepared.

| | |
|---|---|
| **Report Title:** | Parsonage Road Mini-roundabout,<br>Land South of Henham Road, Elsenham<br><br>Road Safety Audit Stage 1 |
| **Date:** | 7th February 2023 |
| **Document reference and revision:** | ARD/23/OFF/2008170/1/BS |
| **Prepared by:** | M & S Traffic |
| **On behalf of:** | Essex County Council |

Distribution

| Organisation | Contact | Copies |
|---|---|---|
| Ardent Consulting Engineers | Faye Murray | - |
| Ardent Consulting Engineers | Ian Wharton | - |

**CONTENTS**

# 1 INTRODUCTION

1.1 This report describes a Stage 1 Road Safety Audit carried out on proposed improvements to Parsonage Road mini-roundabout associated with a 130 units residential development, known as 'Land South of Henham Road, Elsenham', as detailed below:

- Two-lane discharge on to the mini-roundabout from the link road connecting to Coopers End Roundabout.
- Central island relocated and reduced to 2m diameter.
- Give markings on arms of the mini-roundabout are proposed to be brought forward.

The Audit was requested by the design organisation, Ardent Consulting Engineers, Suite 10, 40 Churchill Square Business Centre, Kings Hill, West Malling, Kent ME19 4YU, on behalf of Essex County Council as the Overseeing Organisation.

1.2 The Audit Team membership was as follows:

Bryan Shawyer BEng (Hons), MSc, MCIHT, MSoRSA – Audit Team Leader
Highways England Approved RSA Certificate of Competency

Martin Morris, PGD, MCIHT, MSoRSA – Audit Team Member
Highways England Approved RSA Certificate of Competency

1.3 The audit was undertaken following the principles of GG119, The Design Manual for Roads and Bridges. The documents available at the time of the report are detailed in Appendix A.

1.4 The Audit took place at the Gillingham offices of M&S Traffic during February 2023 and comprised an examination of the documents provided as listed in Appendix A. A joint site visit and inspection was undertaken during the morning of the 6th February between 11:00 and 12:00 hours. Weather conditions at the time were fine and the road surface was dry. Traffic flows were low and free flow speeds were low, where to the northeast of the proposed access Henham Road was subject to temporary traffic lights. There were low-level pedestrian flows and no cycle movements observed.

1.5 The report has been compiled, only with regards to the safety implications for road users of the layout presented in the supplied drawings. It has not been examined or verified for compliance with any other standards or criteria. This safety audit does not perform any "Technical Check function on these proposals. It is assumed that the Project Sponsor is satisfied that such a Technical Check" has been successfully completed prior to requesting this safety audit.

1.6 The auditors have not been informed of any Departures from Standards in this scheme construction.

1.7 All comments and recommendations are referenced to the detailed drawings and the locations have been detailed relating to the plans supplied with the audit brief, Appendix B.

## 2 ITEMS RAISED BY PREVIOUS AUDITS

2.1 No previous safety audits were submitted for assessment.

## 3 ITEMS RAISED AT THE STAGE 1 AUDIT

### 3.1 General

3.1.1 No comment.

### 3.2 Local Alignment

3.2.1 No comment.

### 3.3 Junctions

3.3.1 **PROBLEM**

**Location**: Parsonage Road mini-roundabout.

**Summary:** Proposed junction layout may lead to side impact collisions or side-swipe collisions.

Give way road markings at the mini-roundabout are proposed to be brought forward on all arms. Swept paths were supplied for assessment; however, these did not include the right turn from the link road connecting to Coopers End Roundabout to Parsonage Road. There is concern that larger vehicles may cross the give markings at the Parsonage Road junction with the mini-roundabout which could lead to side impact collisions. Further, the swept path of the single decker bus undertaking the left turn from the link road into Hall Road enters the opposing running lane, which could lead to side-swipe collisions.

**RECOMMENDATION**

It is recommended that swept path movements for all expected vehicle movements should be checked to ensure that all movements can be safely accommodated. It is also recommended that Hall Road should be widened so that there is no vehicle entry into the southbound lane.

### 3.4 Non-Motorised User (NMU) Provision

3.4.1 No comment.

### 3.5 Road Signs, Carriageway Markings and Lighting

3.5.1 No comment.

## 4 ISSUES IDENTIFIED DURING THE ROAD SAFETY AUDIT THAT ARE OUTSIDE THE TERMS OF REFERENCE

4.1 Safety issues identified during the audit and site inspection that are outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in this section. It is to be understood that, in raising these issues, the Audit Team in no way warrant that a full review of the highway environment has been undertaken beyond that necessary to undertake the Audit as commissioned.

4.2 The Audit Team had no issues to raise within this section.

## 5 AUDITOR TEAM STATEMENT

5.1 We certify that this audit has been carried out following the principles of GG 119.

**Audit Team Leader**

Bryan Shawyer
BEng (Hons), MSc, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency

Signed: [redacted] Date: 07/02/2023

**Audit Team Member**

Martin Morris
PGD, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency

Signed: [redacted] Date: 07/02/2023

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contact@mstraffic.co.uk

www.mstraffic.co.uk

**APPENDIX A**

List of Drawings and other information submitted for auditing:

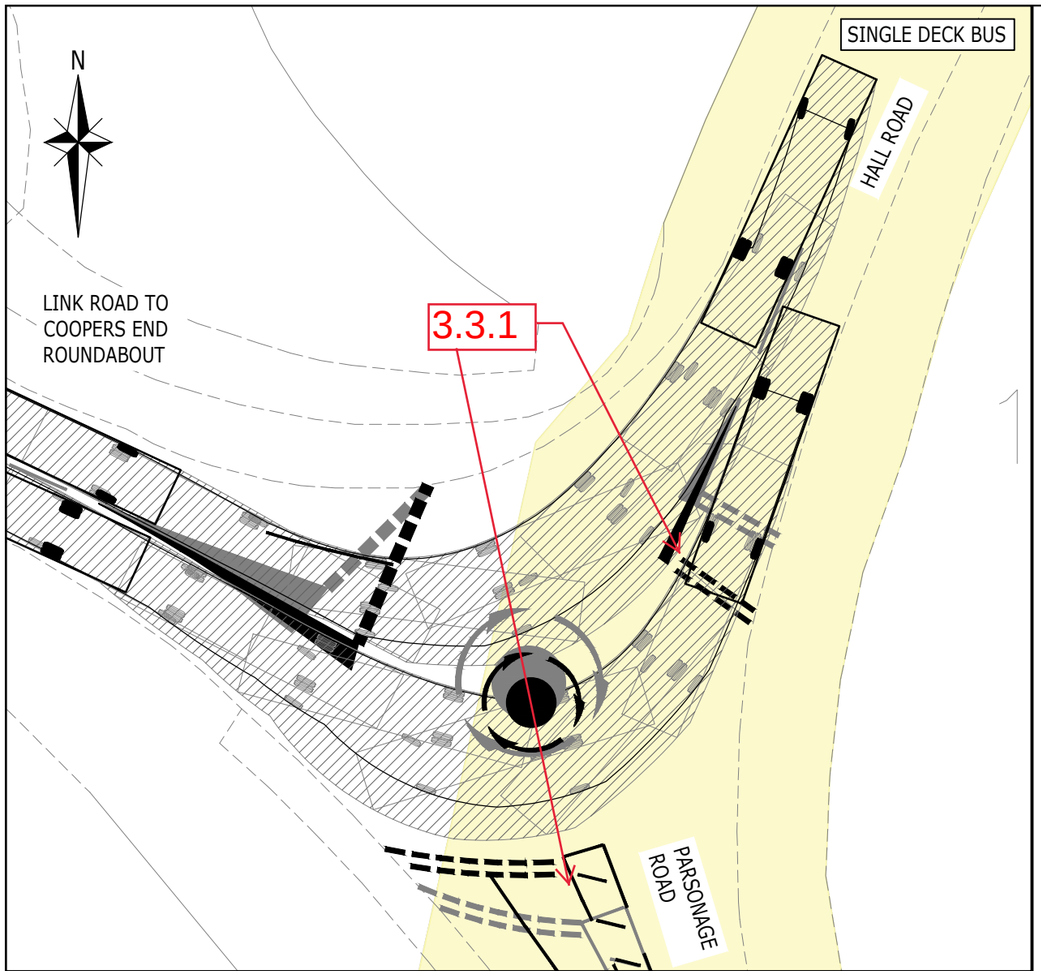
| Drawing Number | Title |
|---|---|
| 2008170-043 | Parsonage Road Mini Roundabout Amendments |

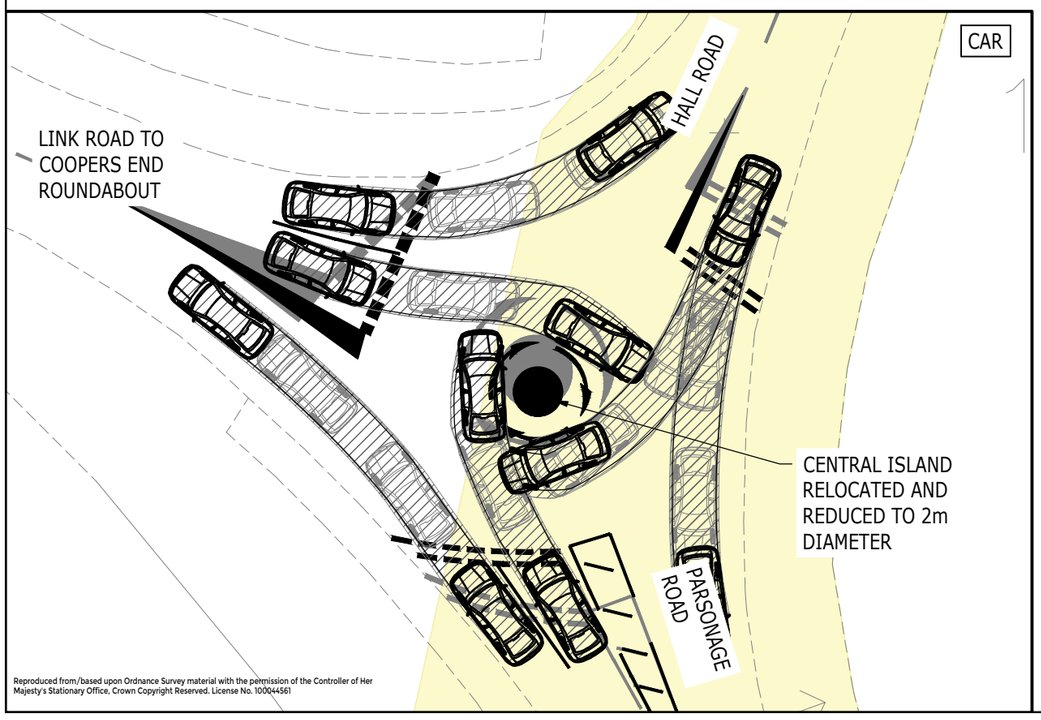
**Supporting documentation:**

- Covering emails Ardent Consulting Engineers.

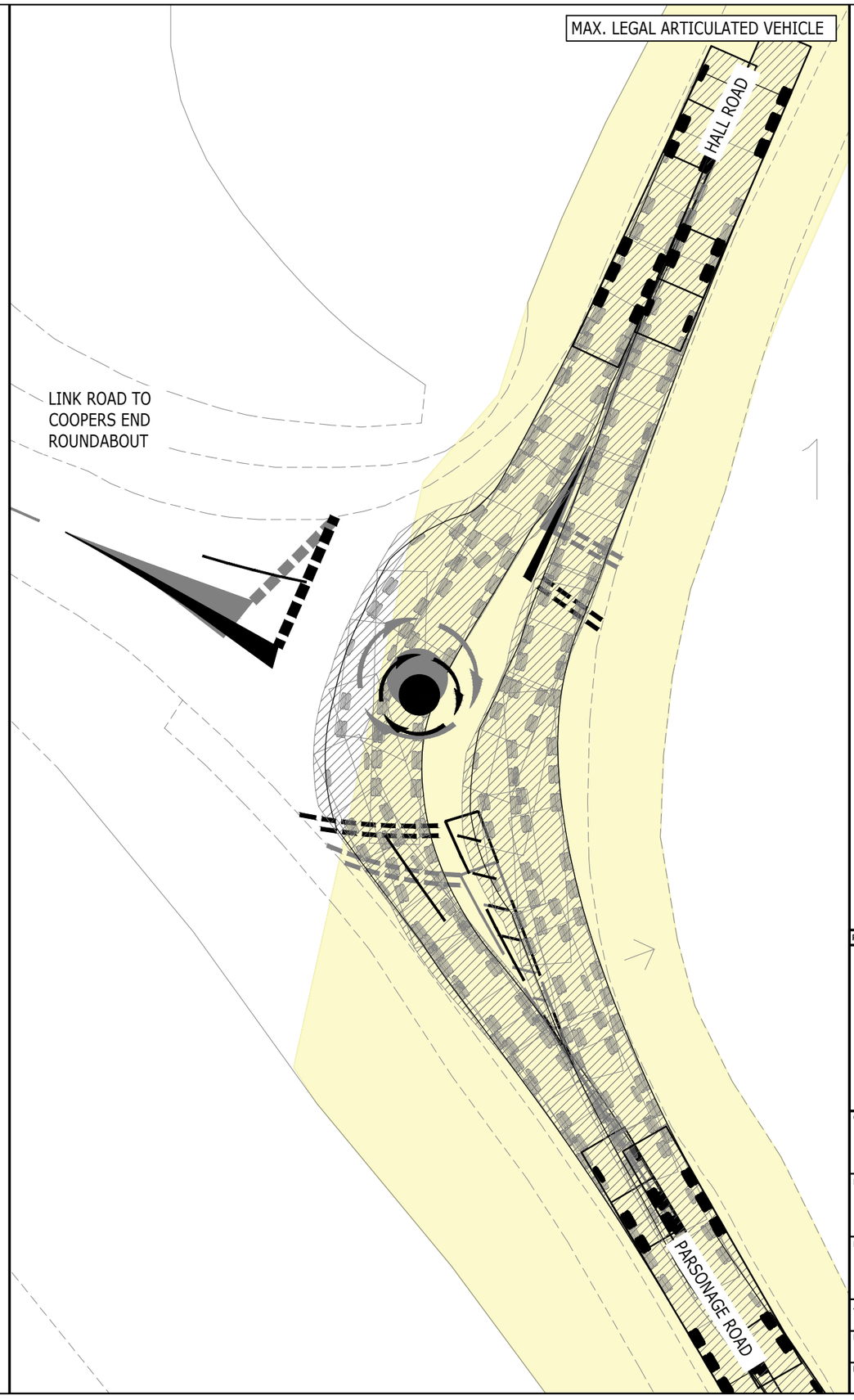
**APPENDIX B**

Plan attached showing the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report).



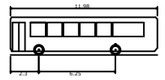





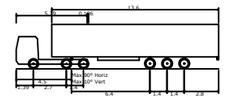




NOTES:

DESIGN SUBJECT TO LAND BOUNDARIES, HIGHWAY BOUNDARY, TOPOGRAPHICAL SURVEY, DETAIL DESIGN AND HIGHWAY APPROVAL.



| Single Deck Bus | |
|---|---|
| Overall Length | 11.980m |
| Overall Width | 2.440m |
| Overall Body Height | 3.070m |
| Min Body Ground Clearance | 0.306m |
| Track Width | 2.322m |
| Lock to lock time | 6.00s |
| Kerb to Kerb Turning Radius | 10.368m |



| Max Legal Articulated Vehicle (16.5m) | |
|---|---|
| Overall Length | 16.500m |
| Overall Width | 2.500m |
| Overall Body Height | 3.632m |
| Min Body Ground Clearance | 0.396m |
| Max Track Width | 2.500m |
| Lock to lock time | 6.00s |
| Kerb to Kerb Turning Radius | 6.870m |

| Skoda Octavia | |
|---|---|
| Overall Length | 4.572m |
| Overall Width | 1.769m |
| Overall Body Height | 1.488m |
| Min Body Ground Clearance | 0.249m |
| Max Track Width | 1.713m |
| Lock to lock time | 4.00s |
| Kerb to Kerb Turning Radius | 5.100m |

KEY:

PROPOSED KERB / ROAD MARKINGS

HIGHWAY BOUNDARY TRANSCRIBED FROM ECC RECORDS

DRAFT

| Rev | Description | Drn | Chk | App | Date |
|---|---|---|---|---|---|

ARDENT | CONSULTING ENGINEERS

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Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

COUNTRYSIDE PROPERTIES LTD

Project Title:

LAND SOUTH OF HENHAM ROAD, ELSENHAM

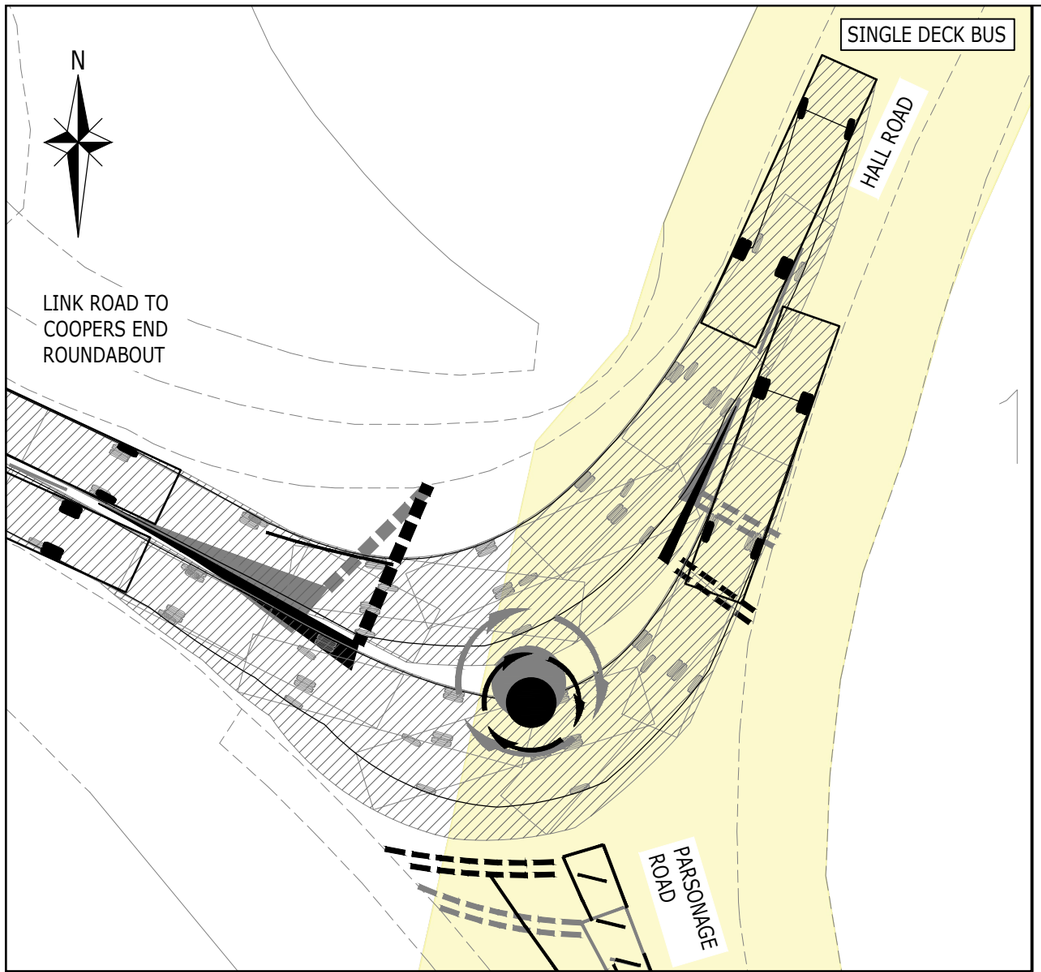
Drawing Title:

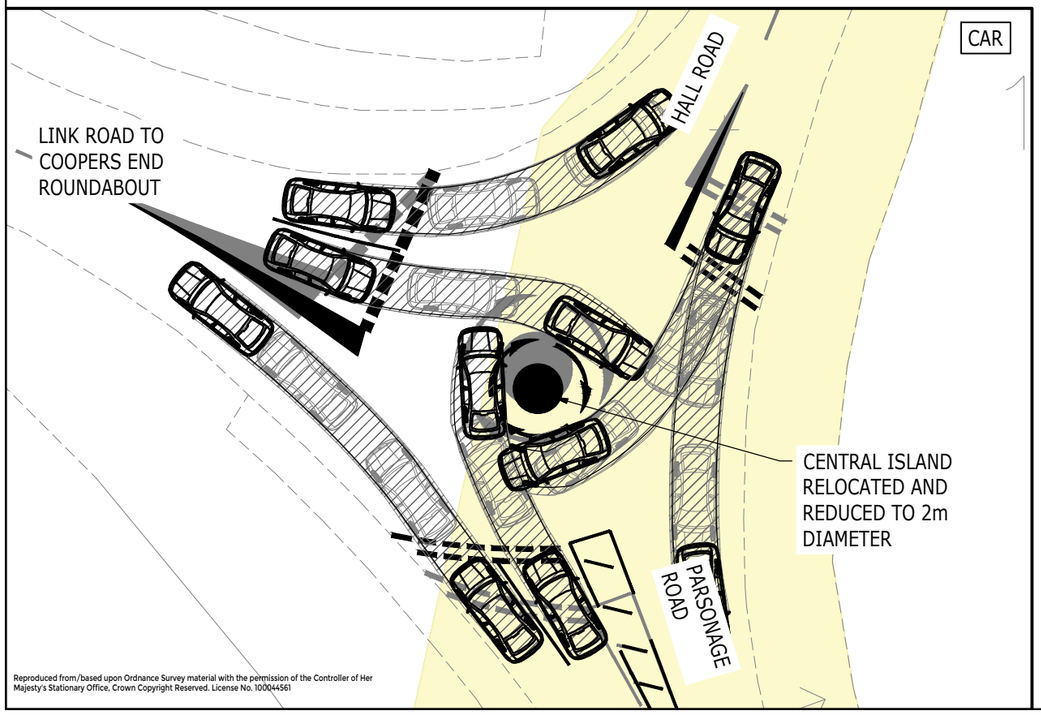
PARSONAGE ROAD MINI ROUNDABOUT AMENDMENTS

| A3 Scale | Date | Designed by |
|---|---|---|
| 1:250 | 03.01.23 | RN |
| **Drawn by** | **Checked by** | **Approved by** |
| RN | FM | IW |

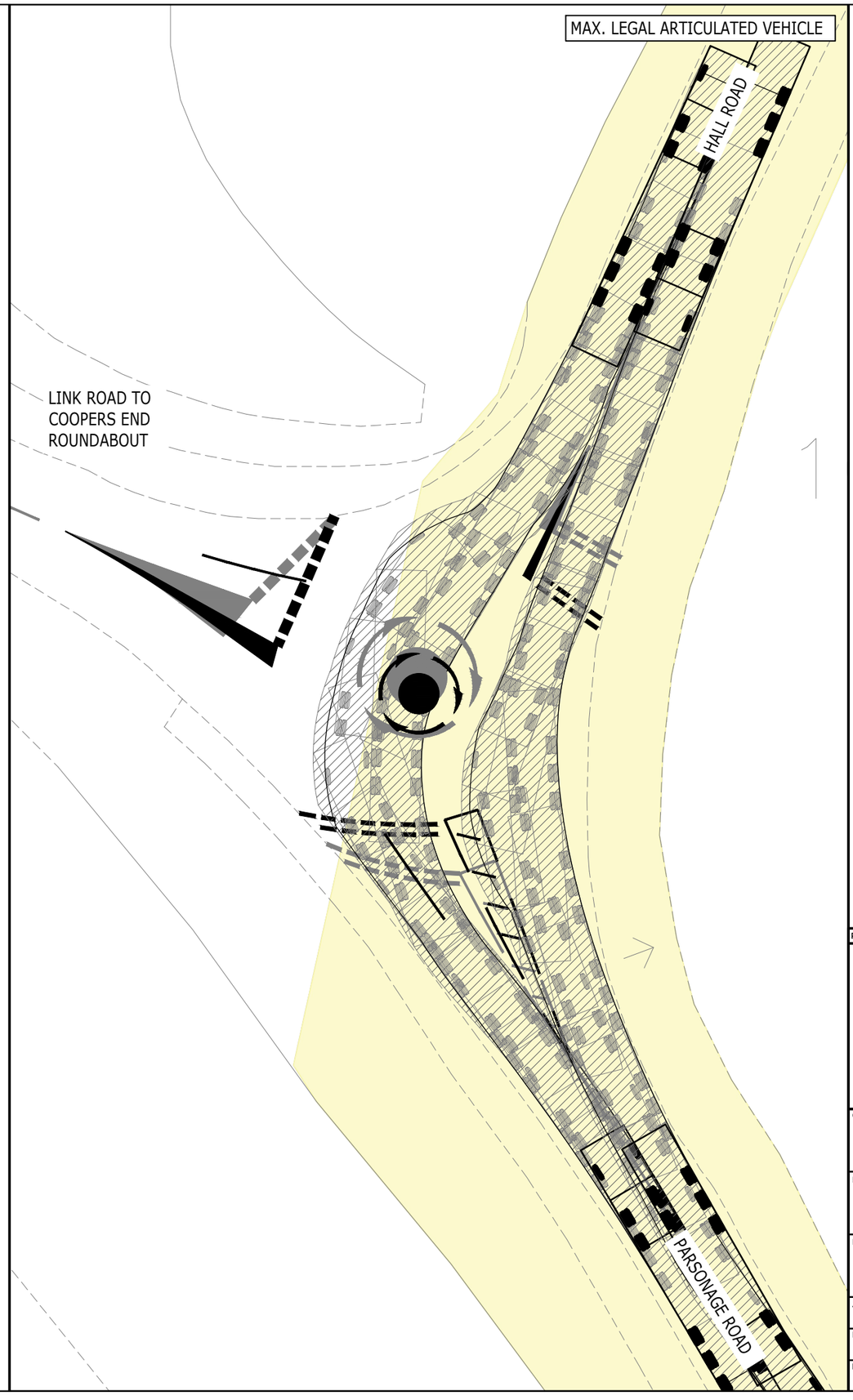
Drawing Number: 2008170-043 Rev -

**Drawings**



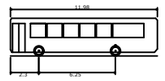





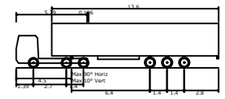

NOTES:

DESIGN SUBJECT TO LAND BOUNDARIES, HIGHWAY BOUNDARY, TOPOGRAPHICAL SURVEY, DETAIL DESIGN AND HIGHWAY APPROVAL.



Single Deck Bus

| | |
|---|---|
| Overall Length | 11.980m |
| Overall Width | 2.440m |
| Overall Body Height | 3.070m |
| Min Body Ground Clearance | 0.306m |
| Track Width | 2.322m |
| Lock to lock time | 6.00s |
| Kerb to Kerb Turning Radius | 10.368m |



Max Legal Articulated Vehicle (16.5m)

| | |
|---|---|
| Overall Length | 16.500m |
| Overall Width | 2.500m |
| Overall Body Height | 3.632m |
| Min Body Ground Clearance | 0.396m |
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Drawing Title:

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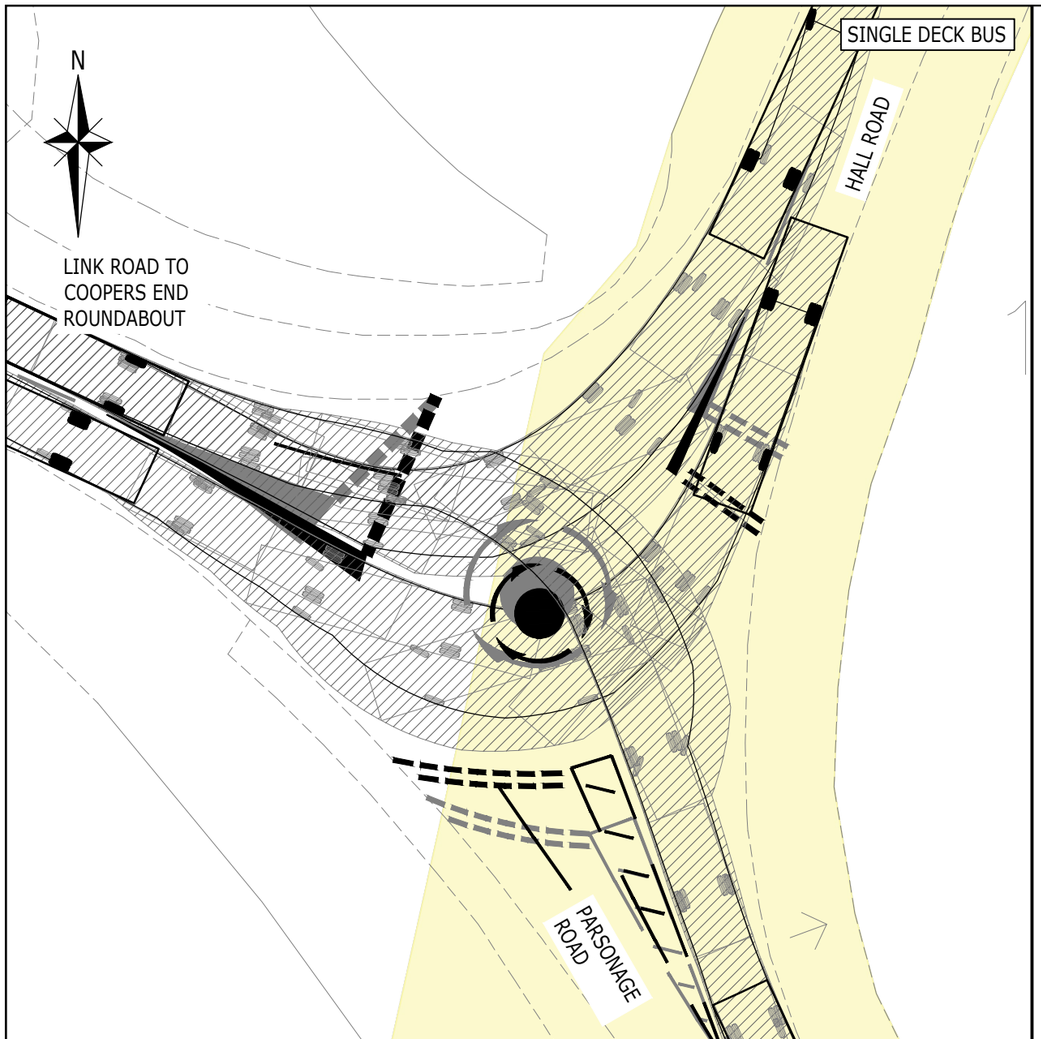
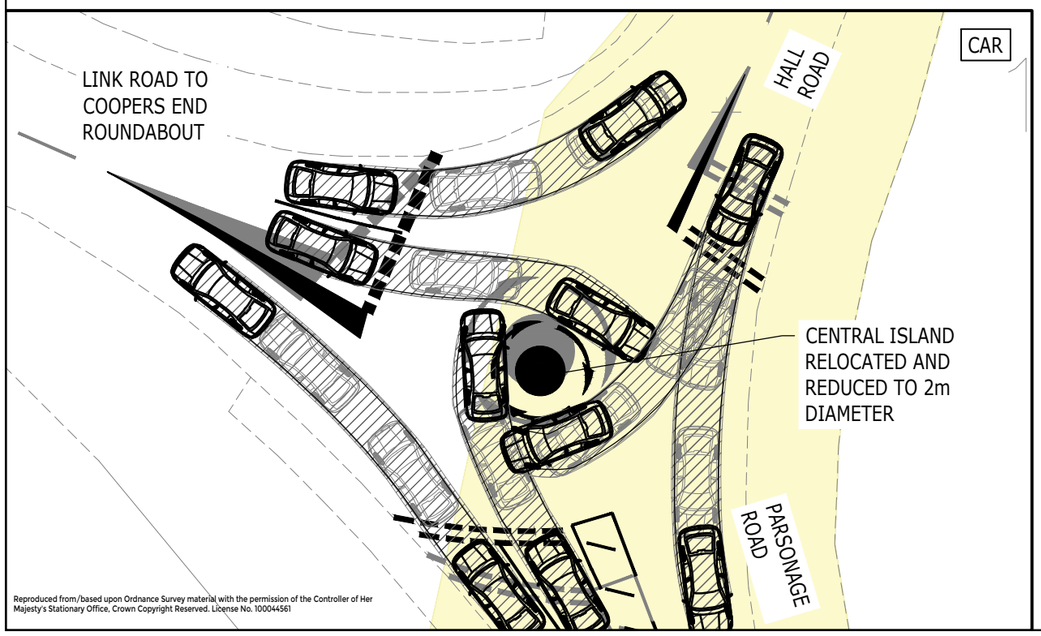
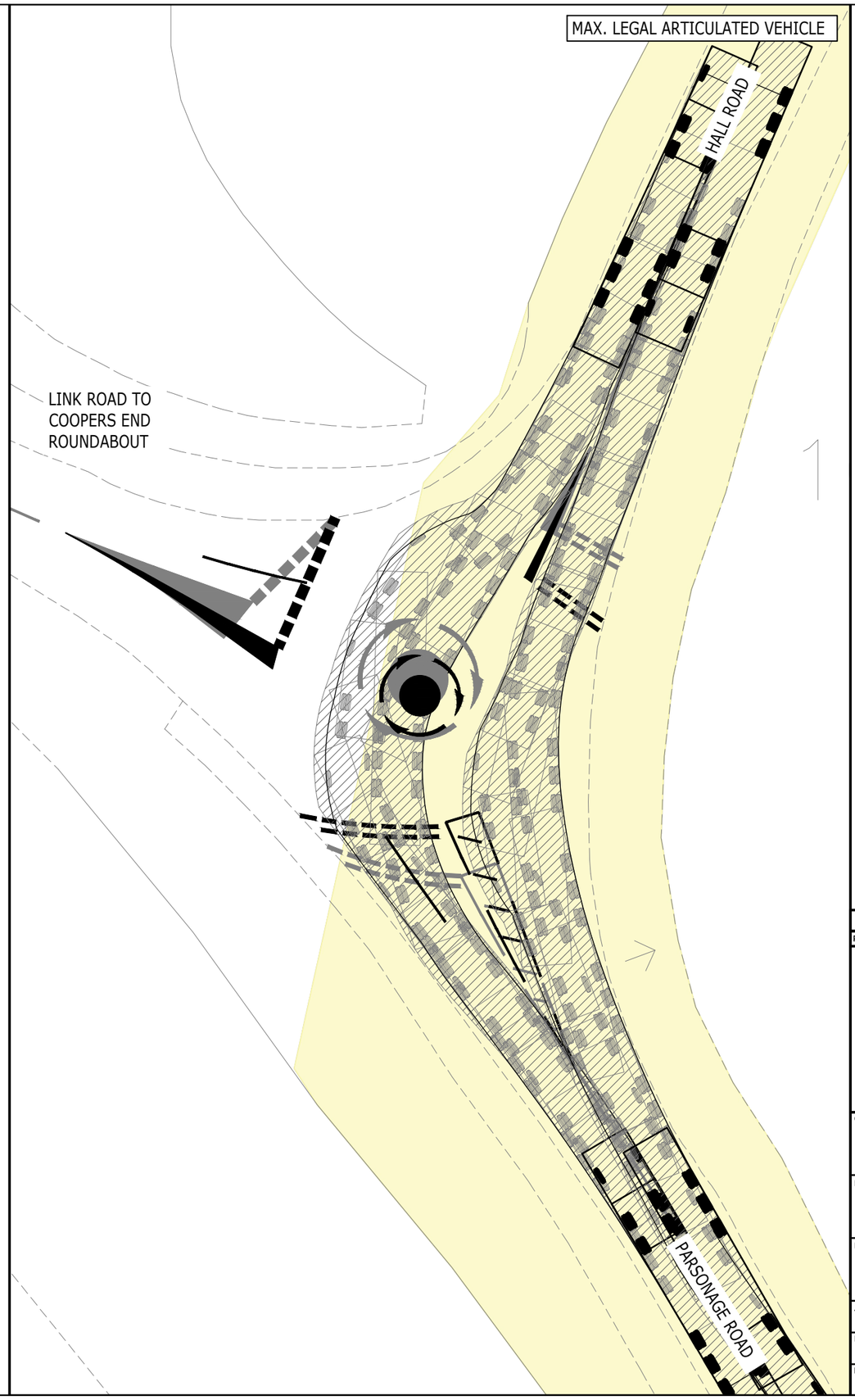
| A3 Scale | Date | Designed by |
|---|---|---|
| 1:250 | 03.01.23 | RN |
| **Drawn by** | **Checked by** | **Approved by** |
| RN | FM | IW |

Drawing Number: 2008170-043 Rev -



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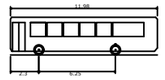

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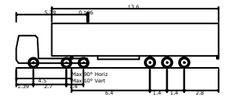

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KEY:

PROPOSED KERB / ROAD MARKINGS

HIGHWAY BOUNDARY TRANSCRIBED FROM ECC RECORDS

DRAFT

| Rev | Description | Drn | Chk | App | Date |
|---|---|---|---|---|---|
| A | FURTHER BUS SWEPT PATH ADDED | RN | FM | IW | 13.02.23 |

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LAND SOUTH OF HENHAM ROAD, ELSENHAM

Drawing Title:

PARSONAGE ROAD MINI ROUNDABOUT AMENDMENTS

| A3 Scale | Date | Designed by |
|---|---|---|
| 1:250 | 03.01.23 | RN |
| Drawn by | Checked by | Approved by |
| RN | FM | IW |

Drawing Number 2008170-043 Rev A

**Appendix L**

**COUNTRYSIDE PROPERTIES LTD**

# LAND SOUTH OF HENHAM ROAD, ELSENHAM

# DESIGNER'S RESPONSE – STAGE 1 ROAD SAFETY AUDIT -

# HALL ROAD AND HENHAM ROAD OFF SITE WORKS

**REPORT REF NO. 2008170-012**
**PROJECT NO. 2008170**
**FEBRUARY 2023**

## 1.0 INTRODUCTION

1.1 Ardent Consulting Engineers (ACE) has been appointed by Countryside Properties Ltd to support the proposed residential development of Land South of Henham Road, Elsenham, Essex.

1.2 The proposals under consideration are shown on **ACE Drawing No:**

- 2008170-032B
- 2008170-034
- 2008170-035

1.3 This report addresses matters raised in the Stage I Road Safety Audit (RSA) undertaken by M&S Traffic Ltd dated 7th February 2023.

## APPENDICES

**APPENDIX A** **M&S Stage 1 Road Safety Audit**

## DRAWINGS

**2008170-032B** **Proposed Off Site Highway Works**
**2008170-034** **Proposed Hall Road Bus Shelter**
**2008170-035** **Proposed Henham Road Bus Shelter**

| Rev | Issue Purpose | Author | Checked | Approved | Date |
|---|---|---|---|---|---|
| - | Planning | FM | FM | IW | 10.02.23 |
| | | | | | |
| | | | | | |

## 2.0 ROAD SAFETY AUDIT

| Audit Item No. | Problem accepted (yes/no) | Recommended measure accepted (yes/no) | Alternative Measures (describe) | Alternative measures accepted by Audit Team (yes/no) |
|---|---|---|---|---|
| **3.** | **Items raised at the Stage 1 Audit** | | | |
| 3.4.1 | Yes | Yes | The internal layout of the site is to be subject to a further Reserved Matters application as the current application is for outline planning only (other than access being fixed). The gradient of the footway/cycleway will be taken into account from within the site through to the edge of Hall Road carriageway, and will not exceed 1 in 12 (and ideally will be 1 in 20). These further details will be provided as part of the Stage 2 RSA as part of the s278 works and internally confirmed via subsequent Reserved Matters / Section 38 proposals. | Yes |

**Signed: …… ……. Design Team Leader**

**Date: 10th February 2023**

**Signed: ……. Audit Team Leader**

**Date: 13th February 2023**

**PLEASE COMPLETE AND RETURN TO SAFETY AUDIT TEAM**

**Appendix A**

M & S Traffic

# Road Safety Audit Stage 1

# Proposed Off Site Works

# Land South of Henham Road

# Elsenham

# Essex

**Date: 7th February 2023**

**Report produced for: Ardent Consulting Engineers**

**Report produced by: M & S Traffic**

**DOCUMENT CONTROL SHEET**

M&S Traffic has prepared this report in accordance with the instructions from Ardent Consulting Engineers. M&S Traffic shall not be liable for the use of any information contained herein for any purpose other than the sole and specific use for which it was prepared.

| | |
|---|---|
| **Report Title:** | Off Site Works,<br>Land South of Henham Road, Elsenham<br><br>Road Safety Audit Stage 1 |
| **Date:** | 7th February 2023 |
| **Document reference and revision:** | ARD/23/OFF/2008170/1/BS |
| **Prepared by:** | M & S Traffic |
| **On behalf of:** | Essex County Council |

Distribution

| Organisation | Contact | Copies |
|---|---|---|
| Ardent Consulting Engineers | Faye Murray | - |
| Ardent Consulting Engineers | Ian Wharton | - |

**CONTENTS**

## 1 INTRODUCTION

1.1 This report describes a Stage 1 Road Safety Audit carried out on proposed offsite works associated with a 130 units residential development, known as 'Land South of Henham Road, Elsenham', as detailed below:

- Proposed pedestrian crossing across Henham Road to the east of the junction with Hall Road.
- Proposed relocated bus stop and border on the southern side of the carriageway to the west of the above crossing point on Henham Road.
- Existing island at the Hall Road junction with Henham Road to be amended to formalise crossing point with dropped kerbs and tactile paving.
- A 2m footway on the northeastern side of the carriageway to connect to the Public Right of Way (PROW) to existing footway to the north.
- Proposed bus stop and border on the northeastern side of the carriageway of Hall Road.
- Proposed pedestrian crossing across Hall Road at the PROW.

The Audit was requested by the design organisation, Ardent Consulting Engineers, Suite 10, 40 Churchill Square Business Centre, Kings Hill, West Malling, Kent ME19 4YU, on behalf of Essex County Council as the Overseeing Organisation.

1.2 The Audit Team membership was as follows:

Bryan Shawyer BEng (Hons), MSc, MCIHT, MSoRSA – Audit Team Leader
Highways England Approved RSA Certificate of Competency

Martin Morris, PGD, MCIHT, MSoRSA – Audit Team Member
Highways England Approved RSA Certificate of Competency

1.3 The audit was undertaken following the principles of GG119, The Design Manual for Roads and Bridges. The documents available at the time of the report are detailed in Appendix A.

1.4 The Audit took place at the Gillingham offices of M&S Traffic during February 2023 and comprised an examination of the documents provided as listed in Appendix A. A joint site visit and inspection was undertaken during the morning of the 6th February between 11:00 and 12:00 hours. Weather conditions at the time were fine and the road surface was dry. Traffic flows were low and free flow speeds were low, where to the northeast of the proposed access Henham Road was subject to temporary traffic lights. There were low-level pedestrian flows and no cycle movements observed.

1.5 The report has been compiled, only with regards to the safety implications for road users of the layout presented in the supplied drawings. It has not been examined or verified for compliance with any other standards or criteria. This safety audit does not perform any "Technical Check function on these proposals. It is assumed that the Project Sponsor is satisfied that such a Technical Check" has been successfully completed prior to requesting this safety audit.

1.6 The auditors have not been informed of any Departures from Standards in this scheme construction.

1.7 All comments and recommendations are referenced to the detailed drawings and the locations have been detailed relating to the plans supplied with the audit brief, Appendix B.

## 2 ITEMS RAISED BY PREVIOUS AUDITS

2.1 Elements of this scheme were subject to comment in March 2021 in a Stage 1 Road Safety Audit that was undertaken by M&S Traffic. The Stage 1 report was supplied as part of the audit, where item 3.4.3 remains a concern, this item is referred to again in this report in paragraphs 3.4.1.

# 3 ITEMS RAISED AT THE STAGE 1 AUDIT

## 3.1 General

3.1.1 No comment.

## 3.2 Local Alignment

3.2.1 No comment.

## 3.3 Junctions

3.3.1 No comment.

## 3.4 Non-Motorised User (NMU) Provision

3.4.1 **PROBLEM**

**Location:** Proposed pedestrian crossing point on Hall Road at the PROW.

**Summary:** Steepness of alignment may lead to discomfort or pedestrian injury.

A pedestrian crossing point is proposed on Hall Road; however, there is a significant level difference between the existing ground level and Hall Road, where the gradient of the footway has not been provided for assessment, see figure 1 overleaf. The steepness of the section of footway may give rise to considerable pedestrian discomfort for pedestrians, particularly the mobility impaired. Further, for wheelchair users the steep slope may lead to excessive speeds on the approach to the crossing point, which may lead to entering the carriageway and collisions with vehicles. These issues are likely to be exacerbated in icy conditions.

Figure 1: Significant height difference between ground level and Hall Road.

**RECOMMENDATION**

It is recommended that the gradient should not exceed 1 in 12, where a 1 in 20 gradient is preferred.

## 3.5 Road Signs, Carriageway Markings and Lighting

3.5.1 No comment.

## 4 ISSUES IDENTIFIED DURING THE ROAD SAFETY AUDIT THAT ARE OUTSIDE THE TERMS OF REFERENCE

4.1 Safety issues identified during the audit and site inspection that are outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in this section. It is to be understood that, in raising these issues, the Audit Team in no way warrant that a full review of the highway environment has been undertaken beyond that necessary to undertake the Audit as commissioned.

4.2 The Audit Team had no issues to raise within this section.

## 5 AUDITOR TEAM STATEMENT

5.1 We certify that this audit has been carried out following the principles of GG 119.

**Audit Team Leader**

Bryan Shawyer
BEng (Hons), MSc, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency

Signed: [redacted] Date: 07/02/2023

**Audit Team Member**

Martin Morris
PGD, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency

Signed: [redacted] Date: 07/02/2023

**M & S Traffic**
Aeolus House
32 Hamelin Road
Gillingham
Kent ME7 3EX

+44 (0) 1634 307 498

contact@mstraffic.co.uk

www.mstraffic.co.uk

**APPENDIX A**

List of Drawings and other information submitted for auditing:

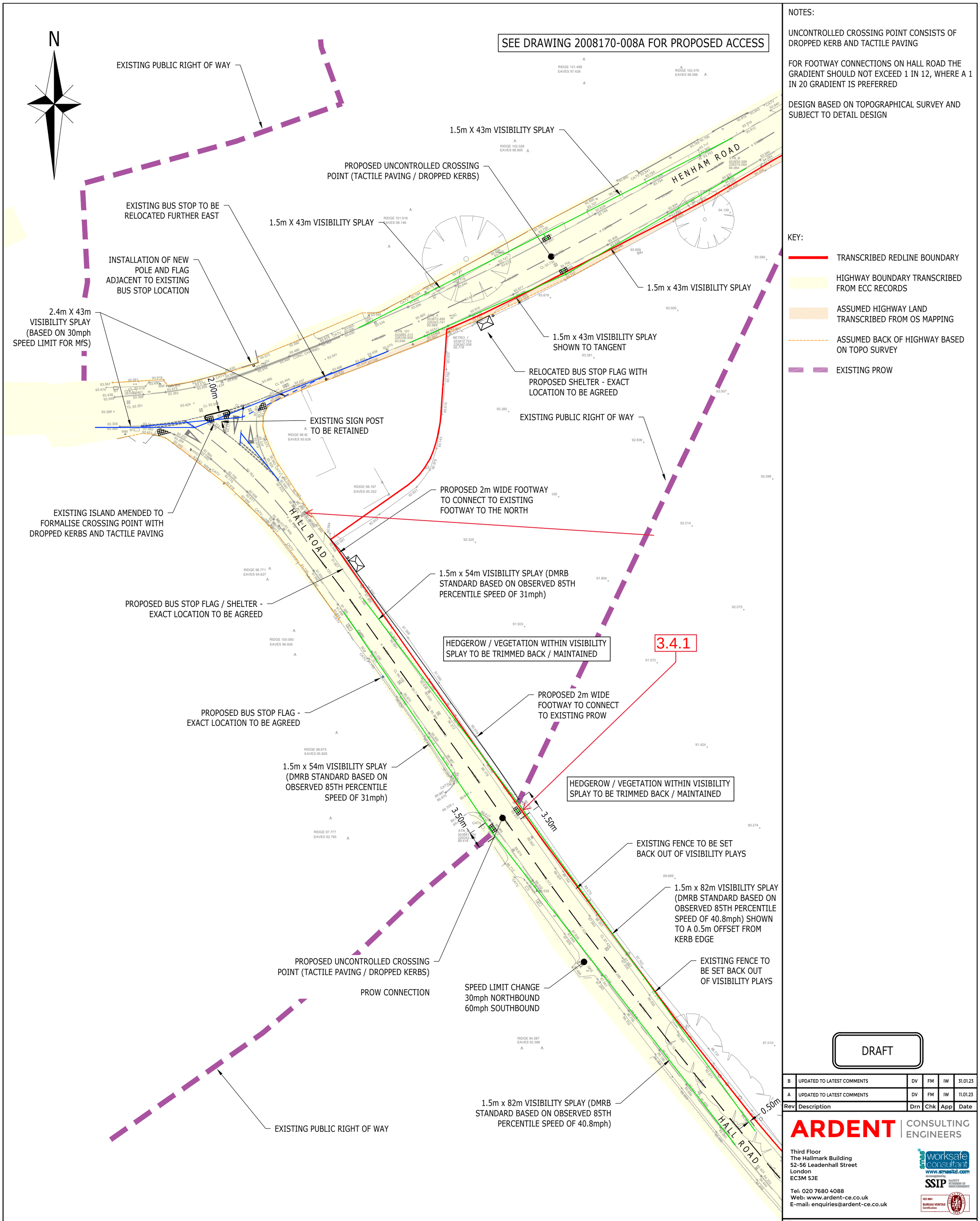
| Drawing Number | Title |
|---|---|
| 2008170-032 B | Proposed Off Site Highway Works |
| 2008170-034 | Proposed Hall Road Bus Shelter |
| 2008170-035 | Proposed Henham Road Bus Shelter |

**Supporting documentation:**

- Stage 1 Road Safety Audit, M&S Traffic, March 2021.
- Covering emails Ardent Consulting Engineers.

**APPENDIX B**

Plan attached showing the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report).




NOTES:

UNCONTROLLED CROSSING POINT CONSISTS OF DROPPED KERB AND TACTILE PAVING

FOR FOOTWAY CONNECTIONS ON HALL ROAD THE GRADIENT SHOULD NOT EXCEED 1 IN 12, WHERE A 1 IN 20 GRADIENT IS PREFERRED

DESIGN BASED ON TOPOGRAPHICAL SURVEY AND SUBJECT TO DETAIL DESIGN

KEY:

- TRANSCRIBED REDLINE BOUNDARY
- HIGHWAY BOUNDARY TRANSCRIBED FROM ECC RECORDS
- ASSUMED HIGHWAY LAND TRANSCRIBED FROM OS MAPPING
- ASSUMED BACK OF HIGHWAY BASED ON TOPO SURVEY
- EXISTING PROW

DRAFT

| Rev | Description | Drn | Chk | App | Date |
|---|---|---|---|---|---|
| B | UPDATED TO LATEST COMMENTS | DV | FM | IW | 31.01.23 |
| A | UPDATED TO LATEST COMMENTS | DV | FM | IW | 11.01.23 |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Client

COUNTRYSIDE PROPERTIES LTD

Project Title:

LAND SOUTH OF HENHAM ROAD, ELSENHAM

Drawing Title:

PROPOSED OFF SITE HIGHWAY WORKS

| A2 Scale | Date | Designed by |
|---|---|---|
| 1:500 | 23.06.22 | DV |
| **Drawn by** | **Checked by** | **Approved by** |
| DV | FM | IW |

Drawing Number: 2008170-032 Rev B

**Drawings**

N

SEE DRAWING 2008170-008A FOR PROPOSED ACCESS

EXISTING PUBLIC RIGHT OF WAY

1.5m X 43m VISIBILITY SPLAY

PROPOSED UNCONTROLLED CROSSING POINT (TACTILE PAVING / DROPPED KERBS)

EXISTING BUS STOP TO BE RELOCATED FURTHER EAST

1.5m X 43m VISIBILITY SPLAY

INSTALLATION OF NEW POLE AND FLAG ADJACENT TO EXISTING BUS STOP LOCATION

2.4m X 43m VISIBILITY SPLAY (BASED ON 30mph SPEED LIMIT FOR MfS)

1.5m x 43m VISIBILITY SPLAY

1.5m x 43m VISIBILITY SPLAY SHOWN TO TANGENT

RELOCATED BUS STOP FLAG WITH PROPOSED SHELTER - EXACT LOCATION TO BE AGREED

2.00m

EXISTING SIGN POST TO BE RETAINED

EXISTING PUBLIC RIGHT OF WAY

EXISTING ISLAND AMENDED TO FORMALISE CROSSING POINT WITH DROPPED KERBS AND TACTILE PAVING

PROPOSED 2m WIDE FOOTWAY TO CONNECT TO EXISTING FOOTWAY TO THE NORTH

1.5m x 54m VISIBILITY SPLAY (DMRB STANDARD BASED ON OBSERVED 85TH PERCENTILE SPEED OF 31mph)

PROPOSED BUS STOP FLAG / SHELTER - EXACT LOCATION TO BE AGREED

HEDGEROW / VEGETATION WITHIN VISIBILITY SPLAY TO BE TRIMMED BACK / MAINTAINED

PROPOSED BUS STOP FLAG - EXACT LOCATION TO BE AGREED

PROPOSED 2m WIDE FOOTWAY TO CONNECT TO EXISTING PROW

1.5m x 54m VISIBILITY SPLAY (DMRB STANDARD BASED ON OBSERVED 85TH PERCENTILE SPEED OF 31mph)

HEDGEROW / VEGETATION WITHIN VISIBILITY SPLAY TO BE TRIMMED BACK / MAINTAINED

3.50m

3.50m

EXISTING FENCE TO BE SET BACK OUT OF VISIBILITY PLAYS

1.5m x 82m VISIBILITY SPLAY (DMRB STANDARD BASED ON OBSERVED 85TH PERCENTILE SPEED OF 40.8mph) SHOWN TO A 0.5m OFFSET FROM KERB EDGE

EXISTING FENCE TO BE SET BACK OUT OF VISIBILITY PLAYS

PROPOSED UNCONTROLLED CROSSING POINT (TACTILE PAVING / DROPPED KERBS)

PROW CONNECTION

SPEED LIMIT CHANGE 30mph NORTHBOUND 60mph SOUTHBOUND

EXISTING PUBLIC RIGHT OF WAY

1.5m x 82m VISIBILITY SPLAY (DMRB STANDARD BASED ON OBSERVED 85TH PERCENTILE SPEED OF 40.8mph)

0.50m

HENHAM ROAD

HALL ROAD

NOTES:

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DRAFT

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PROPOSED OFF SITE HIGHWAY WORKS

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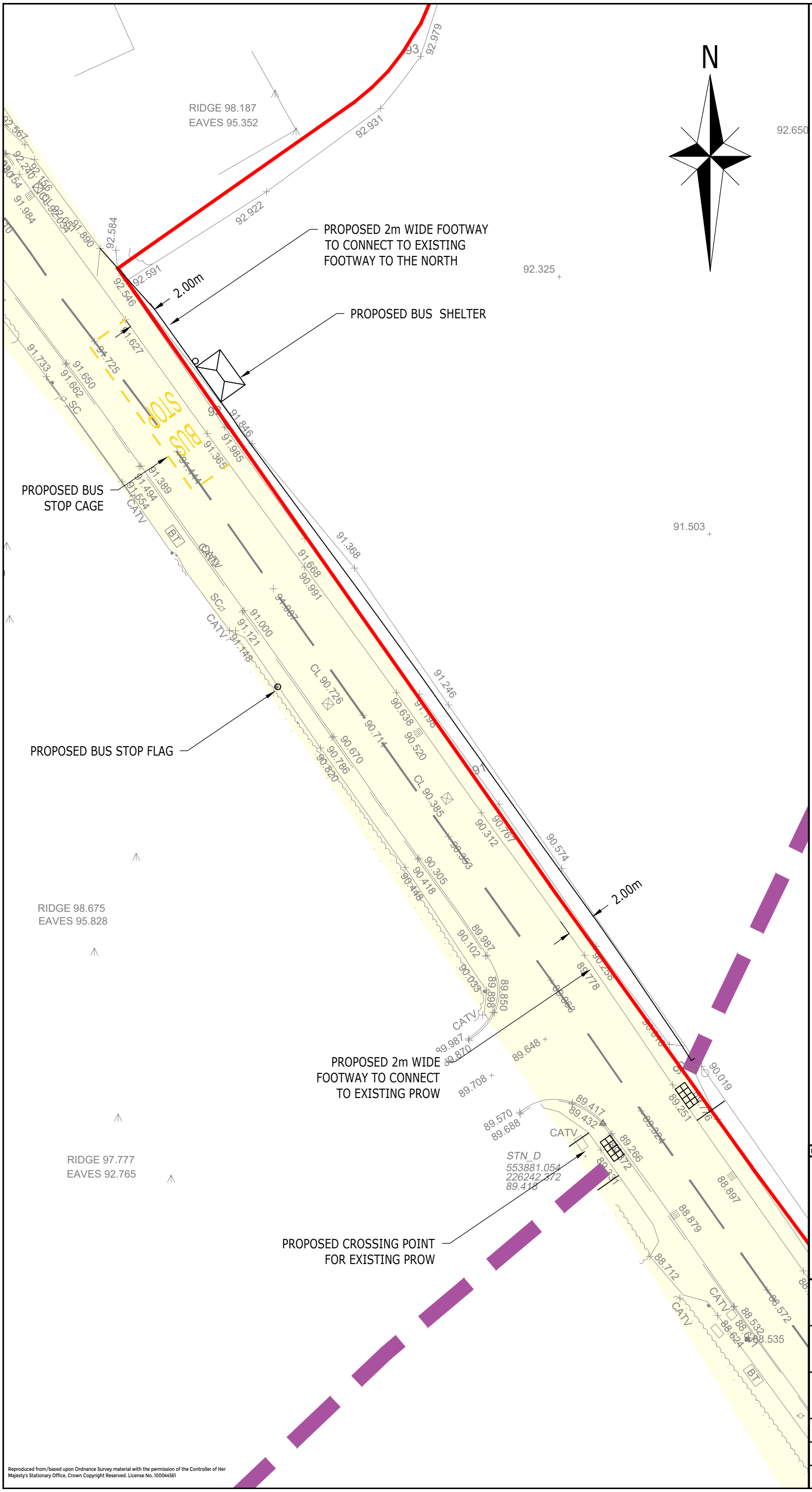
| 1:500 | 23.06.22 | DV |
| **Drawn by** | **Checked by** | **Approved by** |
| DV | FM | IW |

Drawing Number: 2008170-032 Rev B

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Project Title:

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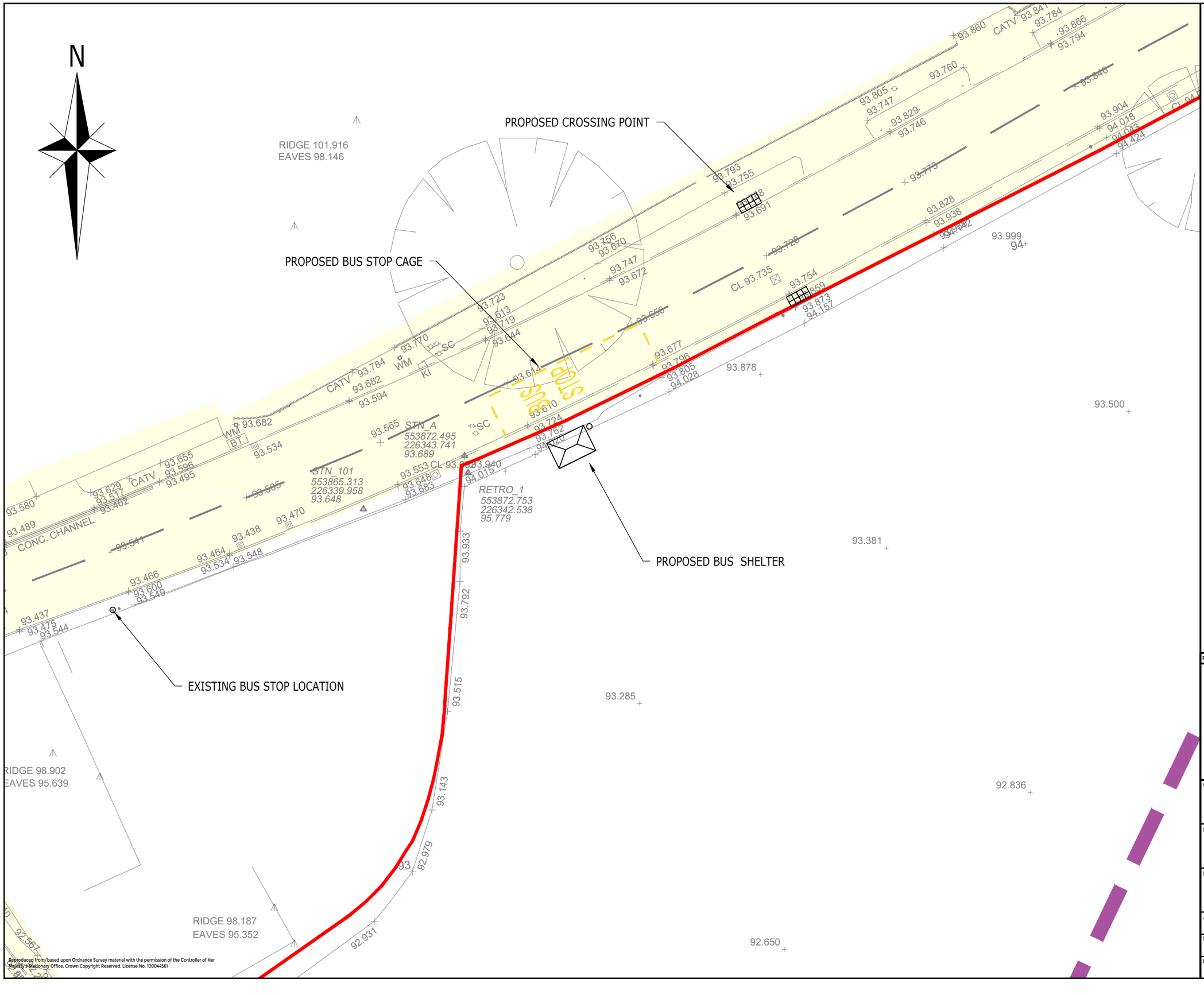
Drawing Title:

PROPOSED HALL ROAD BUS SHELTER

| A3 Scale | Date | Designed by |
|---|---|---|
| 1:250 | 23.01.23 | DV |
| **Drawn by** | **Checked by** | **Approved by** |
| DV | FM | IW |

Drawing Number: 2008170-034 Rev -




NOTES:

UNCONTROLLED CROSSING POINT CONSISTS OF DROPPED KERB AND TACTILE PAVING

DESIGN BASED ON TOPOGRAPHICAL SURVEY AND SUBJECT TO DETAIL DESIGN

KEY:

- TRANSCRIBED REDLINE BOUNDARY
- HIGHWAY BOUNDARY TRANSCRIBED FROM ECC RECORDS
- EXISTING PROW

DRAFT

| Rev | Description | Drn | Chk | App | Date |
|---|---|---|---|---|---|

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E-mail: enquiries@ardent-ce.co.uk

Client

COUNTRYSIDE PROPERTIES LTD

Project Title:

LAND SOUTH OF HENHAM ROAD, ELSENHAM

Drawing Title:

PROPOSED HENHAM ROAD BUS SHELTER

| A3 Scale | Date | Designed by |
|---|---|---|
| 1:250 | 23.01.23 | DV |
| Drawn by | Checked by | Approved by |
| DV | FM | IW |

| Drawing Number | Rev |
|---|---|
| 2008170-035 | - |

**COUNTRYSIDE PROPERTIES LTD**

# LAND SOUTH OF HENHAM ROAD, ELSENHAM

# DESIGNER'S RESPONSE – STAGE 1 ROAD SAFETY AUDIT -

# PROPOSED MAIN SITE ACCESS

**REPORT REF NO. 2008170-013**
**PROJECT NO. 2008170**
**FEBRUARY 2023**

## 1.0 INTRODUCTION

1.1 Ardent Consulting Engineers (ACE) has been appointed by Countryside Properties Ltd to support the proposed residential development of Land South of Henham Road, Elsenham, Essex.

1.2 The proposals under consideration are shown on **ACE Drawing No:**

- 2008170-008A

1.3 This report addresses matters raised in the Stage I Road Safety Audit (RSA) undertaken by M&S Traffic Ltd dated 7th February 2023.

## APPENDICES

**APPENDIX A** **M&S Stage 1 Road Safety Audit**

## DRAWINGS

**2008170-008A** **Henham Road, Proposed Site Access**

| Rev | Issue Purpose | Author | Checked | Approved | Date |
|---|---|---|---|---|---|
| - | Planning | FM | FM | IW | 10.02.23 |
| | | | | | |
| | | | | | |

## 2.0 ROAD SAFETY AUDIT

| Audit Item No. | Problem accepted (yes/no) | Recommended measure accepted (yes/no) | Alternative Measures (describe) | Alternative measures accepted by Audit Team (yes/no) |
|---|---|---|---|---|
| **3.** | **Items raised at the Stage 1 Audit** | | | |
| 3.6.1 | Yes | Yes | Road signs and utilities to be relocated as advised at Stage 2. | Yes |

**Signed: ……[redacted]…… Design Team Leader**

**Date: 10th February 2023**

**Signed: …[redacted] …… Audit Team Leader**

**Date: 13th February 2023**

**PLEASE COMPLETE AND RETURN TO SAFETY AUDIT TEAM**

**Appendix A**

M & S Traffic

# Road Safety Audit Stage 1

# Proposed Access Arrangements

# Henham Road

# Elsenham

# Essex

**Date: 7th February 2023**

**Report produced for: Ardent Consulting Engineers**

**Report produced by: M & S Traffic**

Registered Office: 32 Hamelin Road, Gillingham, Kent ME7 3EX Registered in Cardiff No:06730905

**DOCUMENT CONTROL SHEET**

M&S Traffic has prepared this report in accordance with the instructions from Ardent Consulting Engineers. M&S Traffic shall not be liable for the use of any information contained herein for any purpose other than the sole and specific use for which it was prepared.

| | |
|---|---|
| **Report Title:** | Henham Road, Land South of Henham Road, Elsenham<br><br>Road Safety Audit Stage 1 |
| **Date:** | 7th February 2023 |
| **Document reference and revision:** | ARD/23/2008170/1/BS<br><br>Revision A |
| **Prepared by:** | M & S Traffic |
| **On behalf of:** | Essex County Council |

Distribution

| Organisation | Contact | Copies |
|---|---|---|
| Ardent Consulting Engineers | Faye Murray | - |
| Ardent Consulting Engineers | Ian Wharton | - |

**CONTENTS**

## 1 INTRODUCTION

1.1 This report describes a Stage 1 Road Safety Audit carried out on the proposed access arrangements for a residential development for 130 units off Henham Road, Elsenham, as detailed below:

- A proposed priority junction on the southeastern side of the carriageway with a pedestrian crossing point across the junction.

The Audit was requested by the design organisation, Ardent Consulting Engineers, Suite 10, 40 Churchill Square Business Centre, Kings Hill, West Malling, Kent ME19 4YU, on behalf of Essex County Council as the Overseeing Organisation.

1.2 The Audit Team membership was as follows:

Bryan Shawyer BEng (Hons), MSc, MCIHT, MSoRSA – Audit Team Leader
Highways England Approved RSA Certificate of Competency

Martin Morris, PGD, MCIHT, MSoRSA – Audit Team Member
Highways England Approved RSA Certificate of Competency

1.3 The audit was undertaken following the principles of GG119, The Design Manual for Roads and Bridges. The documents available at the time of the report are detailed in Appendix A.

1.4 The Audit took place at the Gillingham offices of M&S Traffic during February 2023 and comprised an examination of the documents provided as listed in Appendix A. A joint site visit and inspection was undertaken during the morning of the 6th February between 11:00 and 12:00 hours. Weather conditions at the time were fine and the road surface was dry. Traffic flows were low and free flow speeds were low, where to the northeast of the proposed access Henham Road was subject to temporary traffic lights. There were low-level pedestrian flows and no cycle movements observed.

1.5 The report has been compiled, only with regards to the safety implications for road users of the layout presented in the supplied drawings. It has not been examined or verified for compliance with any other standards or criteria. This safety audit does not perform any "Technical Check function on these proposals. It is assumed that the Project Sponsor is satisfied that such a Technical Check" has been successfully completed prior to requesting this safety audit.

1.6 The auditors have not been informed of any Departures from Standards in this scheme construction.

1.7 All comments and recommendations are referenced to the detailed drawings and the locations have been detailed relating to the plans supplied with the audit brief, Appendix B.

## 2 ITEMS RAISED BY PREVIOUS AUDITS

2.1 The safety aspects of this scheme were subject to comment in March 2021 in a Stage 1 Road Safety Audit that was undertaken by M&S Traffic. The Stage 1 report was supplied as part of the audit, where there are no outstanding items.

## 3 ITEMS RAISED AT THE STAGE 1 AUDIT

### 3.1 General

3.1.1 No comment.

### 3.2 Local Alignment

3.2.1 No comment.

### 3.3 Junctions

3.3.1 No comment.

### 3.4 Non-Motorised User (NMU) Provision

3.4.1 No comment.

### 3.5 Road Signs, Carriageway Markings and Lighting

3.5.1 No comment.

### 3.6 Other Issue

3.6.1 At detailed design stage, all items of street furniture such as lighting columns, in particularly lamp column No. 40, and road signs should be appropriately relocated where positioned within the access.

## 4 ISSUES IDENTIFIED DURING THE ROAD SAFETY AUDIT THAT ARE OUTSIDE THE TERMS OF REFERENCE

4.1 Safety issues identified during the audit and site inspection that are outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in this section. It is to be understood that, in raising these issues, the Audit Team in no way warrant that a full review of the highway environment has been undertaken beyond that necessary to undertake the Audit as commissioned.

4.2 The Audit Team had no issues to raise within this section.

## 5 AUDITOR TEAM STATEMENT

5.1 We certify that this audit has been carried out following the principles of GG 119.

**Audit Team Leader**

Bryan Shawyer
BEng (Hons), MSc, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency

Signed: [redacted] Date: 07/02/2023

**Audit Team Member**

Martin Morris
PGD, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency

Signed: [redacted] Date: 07/02/2023

**M & S Traffic**
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32 Hamelin Road
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+44 (0) 1634 307 498

contact@mstraffic.co.uk

www.mstraffic.co.uk

**APPENDIX A**

List of Drawings and other information submitted for auditing:

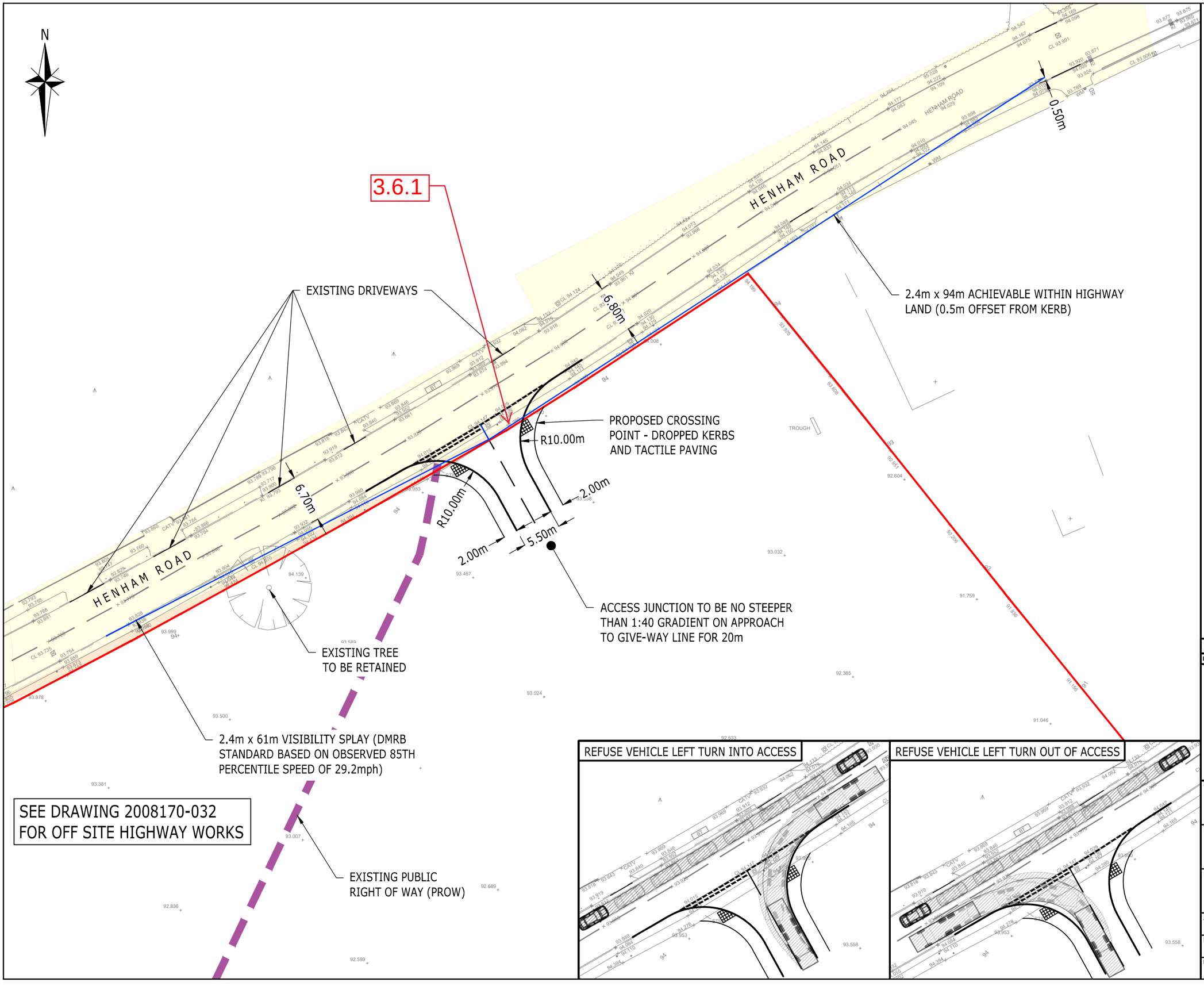
| Drawing Number | Title |
|---|---|
| 2008170-008 A | Henham Road, Proposed Site Access |

**Supporting documentation:**

- Stage 1 Road Safety Audit, M&S Traffic, March 2021.
- Covering emails Ardent Consulting Engineers.

**APPENDIX B**

Plan attached showing the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report).




REFUSE VEHICLE LEFT TURN INTO ACCESS



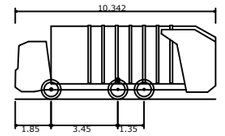
REFUSE VEHICLE LEFT TURN OUT OF ACCESS



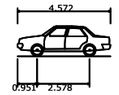
NOTES:

DESIGN SUBJECT TO HIGHWAYS APPROVAL DETAILED DESIGN.

VEHICLE USED:




| Essex Large Refuse Vehicle (3 axle) | |
|---|---|
| Overall Length | 10.342m |
| Overall Width | 2.450m |
| Overall Body Height | 3.814m |
| Min Body Ground Clearance | 0.366m |
| Track Width | 2.450m |
| Lock to lock time | 4.00s |
| Kerb to Kerb Turning Radius | 9.500m |




| Car | |
|---|---|
| Overall Length | 4.572m |
| Overall Width | 1.769m |
| Overall Body Height | 1.488m |
| Min Body Ground Clearance | 0.249m |
| Max Track Width | 1.713m |
| Lock to lock time | 4.00s |
| Kerb to Kerb Turning Radius | 5.100m |

KEY:

- TRANSCRIBED REDLINE BOUNDARY
- HIGHWAY BOUNDARY TRANSCRIBED FROM ECC RECORDS
- ASSUMED HIGHWAY LAND TRANSCRIBED FROM OS MAPPING
- EXISTING PROW

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|---|---|---|---|---|---|
| A | VISIBILITY SPLAYS UPDATED | DV | DV | IW | 10.03.22 |


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LAND SOUTH OF HENHAM ROAD, ELSENHAM

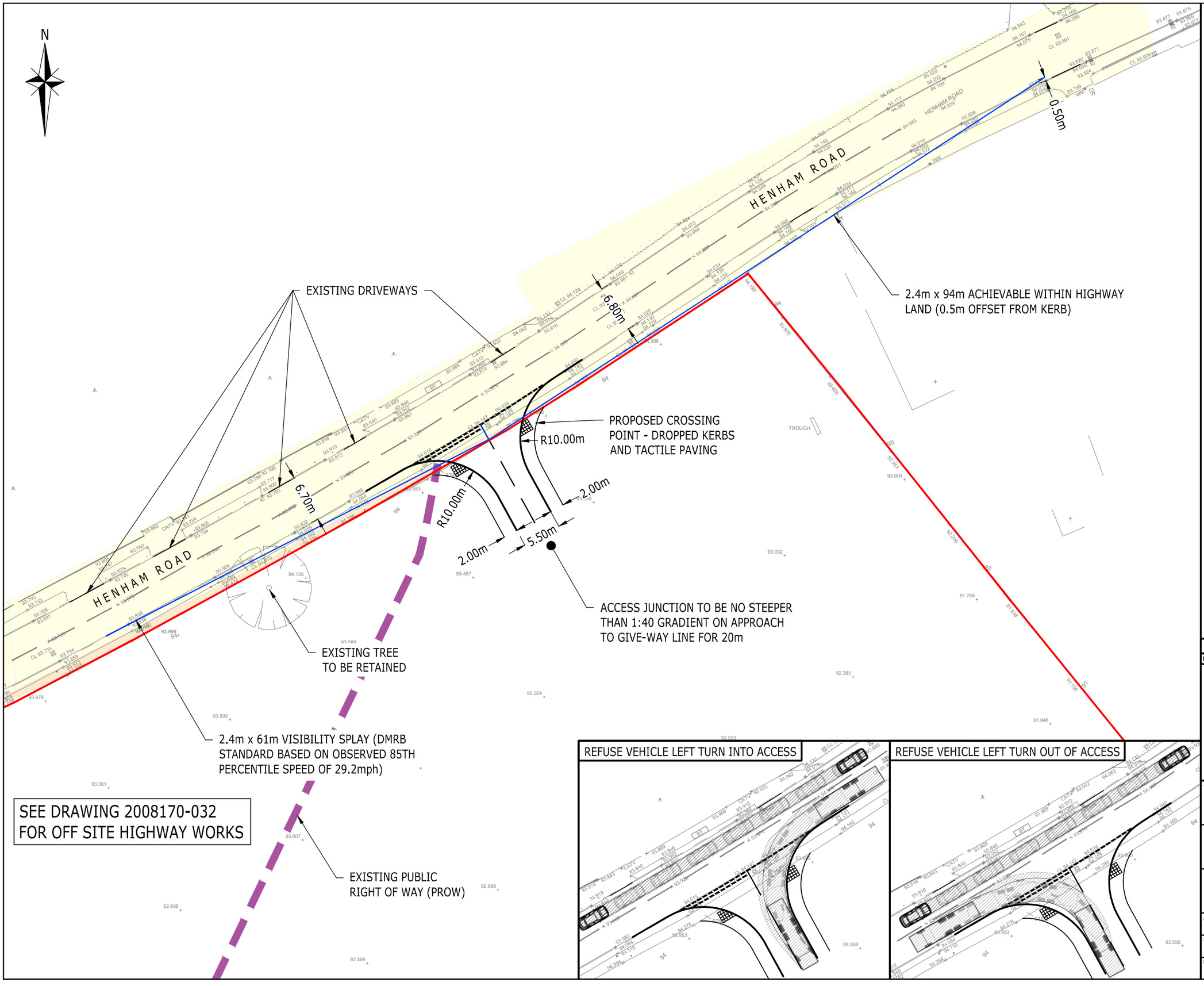
Drawing Title:

HENHAM ROAD PROPOSED SITE ACCESS

| A3 Scale | Date | Designed by |
|---|---|---|
| 1:500 | 15.04.21 | BT |
| Drawn by | Checked by | Approved by |
| BT | DV | IW |

Drawing Number: 2008170-008 Rev A

**Drawings**

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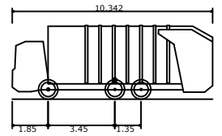


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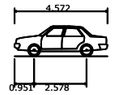


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| Drawn by | Checked by | Approved by |
| BT | DV | IW |

Drawing Number: 2008170-008 Rev A