



# Hillsburgh Residential Subdivision

## *Updated* Transportation Impact Study

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Town of Erin

Prepared for:  
**Thomasfield Homes**

April 2023  
*Updated December 2025*

# Table of Contents

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|     |  |    |
|-----|--|----|
| 1   | Introduction .....   | 1  |
| 2   | Proposal and Site Transportation Context.....                | 2  |
| 3   | Existing Traffic.....  | 3  |
| 4   | Future Background Traffic .....                              | 4  |
| 5   | Site Traffic .....   | 5  |
| 6   | Future Total Traffic .....                                   | 6  |
| 6.1 | Turn Lane Assessment – Street A Intersection with WR22 ..... | 6  |
| 6.2 | Traffic Operations Assessment .....                          | 8  |
| 7   | Conclusions and Recommendations.....                         | 11 |

Table 1: Existing Traffic Operations – WR22/WR24/Trafalgar (signalized)

Table 2: Future Background Traffic Operations – WR22/WR24/Trafalgar (signalized)

Table 3: Site Traffic Generation Rates and Estimated Trips

Table 4: Site Traffic Distribution

Table 5: Carson Lands Traffic Generation Rates and Estimated Trips

Table 6: Future Total Traffic Operations – WR22/WR24/Trafalgar (signalized)

Table 7: Future Total Traffic Operations – WR22/WR24/Trafalgar, PM Peak Hour Options

Table 8: Future Total Traffic Operations – WR22/Street A (unsignalized)

Figure 1: EB Left Turn Lane Warrant at Street A/WR22 - AM Peak Hour

Figure 2: EB Left Turn Lane Warrant at Street A/WR22 - PM Peak Hour

Appendix A: Figures

Appendix B: Existing Data – WR22/WR24/Trafalgar

Appendix C: Existing Capacity Analysis

Appendix D: Future Background Capacity Analysis

Appendix E: ITE Trip Generation Manual Excerpts

Appendix F: Future Total Capacity Analysis

# 1 Introduction

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This Updated Transportation Impact Study (“TIS”) has been prepared in support of applications for Zoning By-law Amendment and Draft Plan of Subdivision for the lands owned by Thomasfield Homes in Hillsburgh in the Town of Erin. The TIS has been updated to reflect a revised concept plan and to address comments received from both the Town of Erin and the County of Wellington.

The site is located on the north side of Wellington Road 22 (WR22) about 500 metres west of the intersection with Wellington Road 24 (WR24) or Trafalgar Road. The study was undertaken as a submission requirement in accordance with pre-submission consultation with Town and Wellington County staff and is based on a Draft Plan of Subdivision prepared by GSP Group. The scope of the TIS was discussed and agreed upon with staff.

The primary purpose of this study is to assess the impact of the proposal on the transportation network in the area and identify any improvements that are needed to support the proposal. The study area includes the WR22/WR24/Trafalgar intersection and the new proposed intersection where Street A from the subdivision connects to WR22.

Two future scenarios were considered in this study. It is anticipated that this subdivision would develop initially on its own with access to the subdivision entirely from the WR22/Street A intersection. However, there is a land parcel to the north of the subject site (the Carson site) that is also planned for future development. When the Carson site develops, there will be a public road connection between the Carson site and the Thomasfield site. The Carson site will connect to Station Street/Side Road 24, providing the opportunity for Carson site traffic to access WR22 more directly and for traffic from the Thomasfield site to access the Town of Hillsburgh through the Carson site. A second future scenario considers the development of both sites together.

It is the finding of this study that the proposal will generate about 135 and 171 trips in the weekday morning and afternoon peak hours, respectively. Site traffic can be accommodated at the two study area intersections in both future scenarios. There is the potential for the addition of a westbound right turn lane at the WR22/Street A intersection as discussed later in this report. In addition, consideration could be given to developing eastbound and westbound left turn lanes at the WR22/WR24/Trafalgar intersection.



## 2 Proposal and Site Transportation Context

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The application proposes the construction of a new residential subdivision in Hillsburgh. The site is about 14 hectares in size and is presently used for agricultural purposes. The proposal includes 214 residential units in a mix of single detached units (148) and 66 multiple units. 18 of the multiple units are intended as street fronting townhomes and the remaining 48 multiple units are estimated in a block intended for townhomes or an apartment building. In addition, the subdivision includes blocks for a park, stormwater management, a pumping station, open space, and roads.

Two new public road connections are proposed as part of the development, connecting to both WR22 in the south and ultimately to the Carson subdivision to the north. An emergency access easement has been identified over the multiple block fronting on WR22 to provide a secondary point of access to the subdivision up until the northerly connection to the Carson subdivision is developed. A temporary turning circle has been identified at the northerly road connection until the new road connection through the Carson site is available. A Site Location Plan and the proposed Development Concept are attached to this report as figures in Appendix A.

In consultation with Township and County staff, this study is focused on the operation of the WR22/WR24/Trafalgar intersection along with the new public road intersection with WR22 during the weekday morning and afternoon peak hours when both street traffic and residential traffic will peak.

WR22 and WR24/Trafalgar Road are both arterial roads under the jurisdiction of Wellington County; they both have two lanes and a rural cross-section in the study area. The posted speed limit on WR22 in the vicinity of the site is 70 kph. East of WR24/Trafalgar Road, the speed transitions to 80 kph. The posted speed on WR24/Trafalgar Road is 80 kph south of the intersection with WR22 and 40 kph north of the intersection.

The site is located in an area where there is no transit service. There is also no active transportation infrastructure nearby, although the County's Active Transportation Plan has identified the provision of paved shoulders along WR22 as part of their future active transportation network.

Sight distance was reviewed at the proposed new intersection with WR22 in accordance with the County's Entrance Permit Policy. Given that the posted speed limit is 70 kph, a minimum sight distance of 180 metres is required with a driver's eye height of 1.05 metres measured at 3.0 metres from the outer edge of the traffic lane and an object height of 1.3 metres. Despite the fact that traffic would be approaching the new intersection up a hill in both directions on WR22, no adjustments for grade were made to the sight distance requirements. The County's policy does not have guidance on grade adjustments, but the Transportation Association of Canada methodology includes for adjustments related to the approaching grades of the road.

A figure prepared by Crozier Consulting Engineers illustrating that the County's minimum sight distance requirement can be met at the new road intersection with WR22 is attached with the figures in Appendix A.

The new public roads in the draft plan are intended to be built to an urban cross-section and will include a sidewalk or a multi-use path on both sides of the road in accordance with Town



standards. The draft plan has been modified to incorporate a collector road standard through the site in accordance with the Town’s Official Plan; the collector road cross-section has been designed for the potential to accommodate a multi-use path on one side and a sidewalk on the other side through the subdivision to provide cycling and pedestrian infrastructure subject to agreement with Town staff. The sidewalks and multi-use path will provide for active transportation connections throughout the subdivision, including to the park, and ultimately to the Carson site to the north and WR22 to the south.

### 3 Existing Traffic

Traffic count data was collected at the WR22/WR24/Trafalgar intersection on Tuesday, January 31, 2023, during the morning and afternoon peak periods. The data was compared to traffic count data collected at the same intersection by Salvini Consulting in October of 2021 and by the County in April of 2021. The updated 2023 data was higher than both 2021 counts in both the morning and afternoon peak hours. The January 2023 traffic count data is included in Appendix B of this report. Seasonal adjustments have not been incorporated as confirmed with County staff and their consultant.

The existing traffic data in the study area during the weekday morning and afternoon peak hours is illustrated in the figures attached in Appendix A.

Traffic capacity analysis was undertaken using Synchro 11 software to assess the intersection operations at the WR22/WR24/Trafalgar intersection in both peak hours. Signal timing was provided by County staff and is included in Appendix B. The detailed Synchro worksheets are attached in Appendix C and summarized in the table below.

**Table 1: Existing Traffic Operations – WR22/WR24/Trafalgar (signalized)**

| Peak Hour  | Measure of Effectiveness          | Approach Lane |      |      |      |      |      |
|------------|-----------------------------------|---------------|------|------|------|------|------|
|            |                                   | EB            | WB   | NBL  | NBTR | SBL  | SBTR |
| Weekday AM | Level of Service                  | B             | C    | A    | A    | A    | A    |
|            | Delay (s)                         | 19.6          | 22.3 | 7.5  | 6.7  | 7.9  | 8.3  |
|            | Volume/Capacity                   | 0.29          | 0.40 | 0.02 | 0.12 | 0.07 | 0.25 |
|            | 95 <sup>th</sup> Percentile Q (m) | 21.7          | 26.2 | 2.6  | 13.3 | 7.5  | 29.2 |
|            | Storage                           | -             | -    | 30   | -    | 30   | -    |
| Weekday PM | Level of Service                  | C             | C    | A    | A    | A    | A    |
|            | Delay (s)                         | 22.2          | 20.9 | 8.1  | 9.8  | 8.4  | 8.0  |
|            | Volume/Capacity                   | 0.36          | 0.52 | 0.06 | 0.35 | 0.08 | 0.18 |
|            | 95 <sup>th</sup> Percentile Q (m) | 24.8          | 35.1 | 6.0  | 39.5 | 6.8  | 19.7 |
|            | Storage                           | -             | -    | 30   | -    | 30   | -    |

The assessment indicates that the WR22/WR24/Trafalgar intersection is currently operating at acceptable levels with levels of service B or better in all the approach lanes in both weekday peak hours.

County staff provided collision data for the WR22/WR24/Trafalgar intersection for the five-year period starting in June of 2020. During that time there was only one collision at the intersection. The collision was a turning movement collision categorized as property damage only.



## 4 Future Background Traffic

An updated future horizon year of 2035 was chosen for study representing a 10-year horizon from the date of this study and roughly five years beyond completion of the subdivision. Background traffic for this study was estimated by including a simple growth rate for traffic in the study area of two (2) percent per year over the twelve-year horizon from the 2023 data for a growth factor of 1.24. Background traffic from five nearby developments was also included in the future background traffic as requested by staff and their consultants. The five developments included in the background traffic forecasts are:

1. Briarwood/Hillsburgh Heights
2. Ballantry
3. Chantler
4. Empire
5. Mattamy

Forecasts for the background developments were provided by the Town's consultant from the various studies that have been completed for the proposals. Background traffic for each of the developments, background growth and forecast background traffic are all illustrated in the figures in Appendix A for the weekday morning and afternoon peak hours.

Traffic capacity analysis was undertaken to assess the intersection operations at the WR22/WR24/Trafalgar intersection in both peak hours under future background traffic conditions. The detailed Synchro worksheets are attached in Appendix D and summarized in the table below.

**Table 2: Future Background Traffic Operations – WR22/WR24/Trafalgar (signalized)**

| Peak Hour  | Measure of Effectiveness          | Approach Lane |       |      |       |      |      |
|------------|-----------------------------------|---------------|-------|------|-------|------|------|
|            |                                   | EB            | WB    | NBL  | NBTR  | SBL  | SBTR |
| Weekday AM | Level of Service                  | B             | D     | B    | B     | B    | B    |
|            | Delay (s)                         | 17.4          | 40.2  | 12.6 | 13.0  | 15.6 | 18.4 |
|            | Volume/Capacity                   | 0.29          | 0.83  | 0.06 | 0.34  | 0.35 | 0.60 |
|            | 95 <sup>th</sup> Percentile Q (m) | 26.6          | 78.9  | 4.6  | 39.7  | 30.2 | 83.4 |
|            | Storage                           | -             | -     | 30   | -     | 30   | -    |
| Weekday PM | Level of Service                  | C             | D     | B    | C     | E    | B    |
|            | Delay (s)                         | 21.9          | 38.1  | 12.8 | 29.9  | 76.7 | 14.9 |
|            | Volume/Capacity                   | 0.44          | 0.87  | 0.10 | 0.85  | 0.87 | 0.41 |
|            | 95 <sup>th</sup> Percentile Q (m) | 34.8          | 101.2 | 9.3  | 161.6 | 46.5 | 51.9 |
|            | Storage                           | -             | -     | 30   | -     | 30   | -    |

The assessment indicates that the WR22/WR24/Trafalgar intersection is expected to generally continue to operate at acceptable levels under future background traffic conditions with levels of service D or better on most of the approach lanes in the two weekday peak hours. The southbound left turn lane is forecast to operate at level of service E in the weekday afternoon peak hour and the 95<sup>th</sup> percentile queue is forecast to begin to extend beyond the available storage of 30 metres in both the weekday morning and afternoon peak hours. In addition, the



westbound approach is forecast to operate at a volume to capacity ratio of 0.87 in the weekday peak hour with a level of service D.

These operational considerations were identified in the other studies for nearby development as well and those studies recommended consideration for both extending the southbound left turn lane at the intersection and also potentially adding eastbound and westbound left turn lanes. Potential intersection upgrades are discussed later in this report.

## 5 Site Traffic

The amount of vehicular traffic generated by the proposed subdivision was estimated based on information in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12<sup>th</sup> Edition (updated from the 11<sup>th</sup> edition in the previous version of this report).

Two categories were chosen to represent the two types of residential land uses in the proposal: Single-Family Detached Housing and Single-Family Attached Housing. The average rates for both land use categories were chosen as they appear to best represent the data in the range of the proposal and provide the more conservative estimate. The traffic generation estimates are summarized in the table below. Excerpts from the ITE Trip Generation Manual are included in Appendix E.

**Table 3: Site Traffic Generation Rates and Estimated Trips**

| Land Use                               | Description  | Units      | AM Peak Hour |           |            | PM Peak Hour |           |            |
|--|--------------|------------|--------------|-----------|------------|--------------|-----------|------------|
|  |              |            | In           | Out       | Total      | In           | Out       | Total      |
| Single-Family Detached<br>(ITE LU 210) | Trips/Unit   | -          | 0.19         | 0.51      | 0.70       | 0.58         | 0.35      | 0.93       |
|  | Trips        | 143        | 28           | 76        | 104        | 85           | 52        | 138        |
| Single-Family Attached<br>(ITE LU 215) | Trips/Unit   | -          | 0.12         | 0.35      | 0.47       | 0.29         | 0.22      | 0.51       |
|  | Trips        | 66         | 8            | 23        | 31         | 19           | 14        | 34         |
| <b>Total</b>                           | <b>Trips</b> | <b>214</b> | <b>36</b>    | <b>99</b> | <b>135</b> | <b>105</b>   | <b>67</b> | <b>171</b> |

NOTE: ITE Trip Generation Manual 12<sup>th</sup> Edition

The resulting estimated site traffic is 135 vehicle trips in the weekday morning peak hour and 171 vehicle trips in the weekday afternoon peak hour measured in both directions (inbound and outbound).

The site traffic trips were distributed in accordance with local traffic patterns at the WR22/WR24/Trafalgar intersection. A summary of the distribution is provided in the Table below. The existing distribution of traffic in the area and the site traffic volumes for the weekday morning and afternoon peak hours are illustrated in the figures in Appendix A. Two sets of figures are provided: the first illustrates the site traffic assignment with only the one connection to WR22, the second illustrates the site traffic assignment when a northerly connection through the Carson lands becomes available.



**Table 4: Site Traffic Distribution**

| Direction                | AM Peak Hour |             | PM Peak Hour |             |
|--------------------------|--------------|-------------|--------------|-------------|
|                          | Inbound      | Outbound    | Inbound      | Outbound    |
| North via WR24/Trafalgar | 45%          | 21%         | 23%          | 46%         |
| South via WR24/Trafalgar | 20%          | 44%         | 40%          | 21%         |
| East via WR22            | 19%          | 21%         | 23%          | 16%         |
| West via WR22            | 16%          | 14%         | 14%          | 16%         |
| <b>Total</b>             | <b>100%</b>  | <b>100%</b> | <b>100%</b>  | <b>100%</b> |

## 6 Future Total Traffic

Future total traffic was determined by adding site traffic to future background traffic. The future total traffic volumes for the two study peak hours are illustrated in the figures in Appendix A. The first scenario illustrates the future total traffic with only the one connection to WR22. A second scenario was developed to consider future traffic volumes when the Carson lands develop and are connected to the subject site.

The Carson lands located immediately to the north of the subject site is a triangular site intended for the development of single family homes. It is estimated that the site would accommodate no more than 100 residential units.

Traffic generation and distribution for the Carson lands was estimated similarly to the subject site. A summary of the traffic generation estimates is provided in the table below and the Carson site traffic volumes are illustrated in the figures in Appendix A.

**Table 5: Carson Lands Traffic Generation Rates and Estimated Trips**

| Land Use                               | Description | Units | AM Peak Hour |      |       | PM Peak Hour |      |       |
|--|-------------|-------|--------------|------|-------|--------------|------|-------|
|  |             |       | In           | Out  | Total | In           | Out  | Total |
| Single-Family Detached<br>(ITE LU 210) | Trips/Unit  | -     | 0.19         | 0.51 | 0.70  | 0.58         | 0.35 | 0.93  |
|  | Trips       | 100   | 19           | 51   | 70    | 58           | 35   | 93    |

NOTE: ITE Trip Generation Manual 12<sup>th</sup> Edition

The Carson site is estimated to generate about 70 weekday morning vehicle peak hour trips and about 93 weekday afternoon vehicle peak hour trips.

A future total traffic scenario that includes the development of both the subject site and the Carson site with a connection between the two is also included in the figures in Appendix A.

### 6.1 Turn Lane Assessment – Street A Intersection with WR22

Turn lanes can be provided at intersections to minimize delay to through traffic and to provide additional capacity where they are needed. Typically, in locations like Hillsburgh, right turn lanes are considered when peak hour right turn volumes reach about 60 vehicles in one or both peak hours. Right turn volumes in the study area are expected to exceed 90 vehicles in the afternoon peak hour in both future traffic scenarios, indicating that a right turn lane could be considered in consultation with County staff. A right turn lane was not included in the analysis to understand



how the intersection would operate without one; if a right turn lane were provided, intersection operations would be as good or better than the analysis in this report.

The need for a left turn lane is typically assessed using information from the Ministry of Transportation Design Supplement for the TAC (Transportation Association of Canada) Geometric Design Guide for Canadian Roads. The assessment is based on the design speed of the road, the percent left turns in the stream of traffic and the traffic volumes at the intersection.

Turning traffic to the new subdivision on WR22 is expected to vary between six (6) and 22 vehicles in the future total peak hours included in this study, so a warrant analysis was undertaken and is outlined below.

A design speed of 90 kph was chosen for WR22 given the posted speed of 70 kph. The eastbound left turn volume to Street A is expected to vary between four (4) and 12 percent of the advancing eastbound traffic in the four peak hour scenarios included in this study. Traffic volumes advancing with and opposing the left turns were plotted on the chosen nomographs as illustrated in the following figures.

**Figure 1: EB Left Turn Lane Warrant at Street A/WR22 - AM Peak Hour**

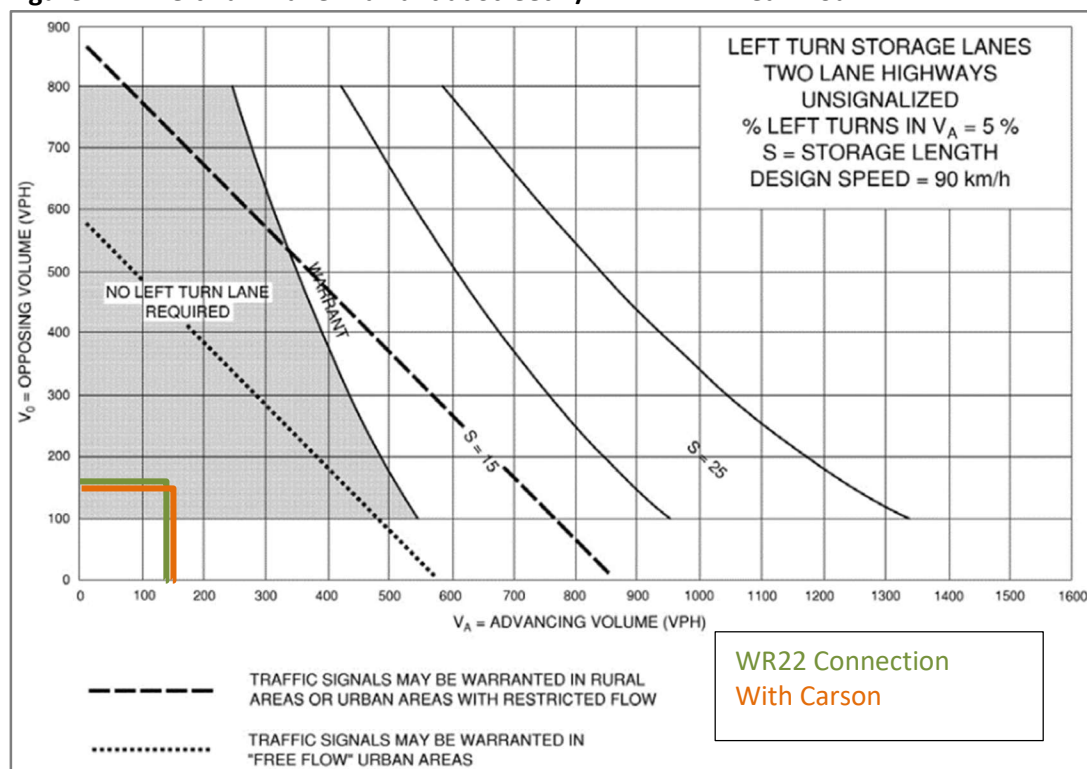
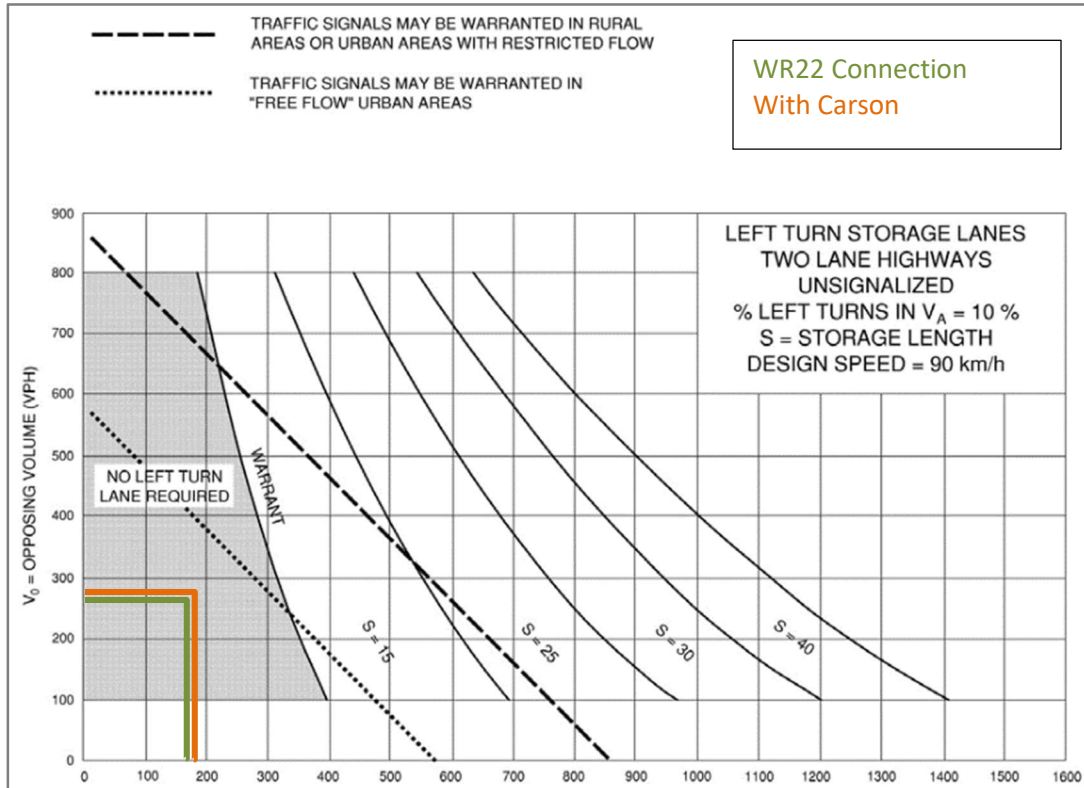


Figure 2: EB Left Turn Lane Warrant at Street A/WR22 - PM Peak Hour



The analysis indicates that a left turn lane will not be warranted eastbound at the Street A intersection with WR22 under any of the four future total scenarios.

## 6.2 Traffic Operations Assessment

A traffic operations assessment was undertaken for the WR22/WR24/Trafalgar intersection along with the new road connection to WR22 in both the weekday morning and afternoon peak hours for future total traffic conditions. The assessment was undertaken for both future scenarios with only the WR22 connection and with the development of the Carson lands. The results of the analysis are summarized in the tables below and the detailed worksheets are included in Appendix F.



**Table 6: Future Total Traffic Operations – WR22/WR24/Trafalgar (signalized)**

| Scenario    | Peak Hour | Measure of Effectiveness          | Approach Lane |       |      |       |       |      |
|-------------|-----------|-----------------------------------|---------------|-------|------|-------|-------|------|
|             |           |                                   | EB            | WB    | NBL  | NBTR  | SBL   | SBTR |
| WR22 only   | AM        | Level of Service                  | C             | D     | B    | B     | B     | B    |
|             |           | Delay (s)                         | 20.2          | 46.8  | 13.3 | 13.3  | 16.0  | 19.5 |
|             |           | Volume/Capacity                   | 0.48          | 0.88  | 0.09 | 0.34  | 0.35  | 0.63 |
|             |           | 95 <sup>th</sup> Percentile Q (m) | 42.0          | 86.9  | 6.2  | 39.7  | 30.2  | 87.6 |
|             |           | Storage                           | -             | -     | 30   | -     | 30    | -    |
|             | PM        | Level of Service                  | C             | D     | B    | C     | F     | B    |
|             |           | Delay (s)                         | 28.3          | 43.5  | 14.7 | 31.8  | 97.8  | 15.6 |
|             |           | Volume/Capacity                   | 0.63          | 0.91  | 0.22 | 0.87  | 0.95  | 0.45 |
|             |           | 95 <sup>th</sup> Percentile Q (m) | 50.4          | 113.6 | 17.0 | 161.6 | 47.7  | 55.9 |
|             |           | Storage                           | -             | -     | 30   | -     | 30    | -    |
| With Carson | AM        | Level of Service                  | B             | D     | B    | B     | B     | B    |
|             |           | Delay (s)                         | 19.3          | 47.8  | 13.5 | 13.4  | 16.3  | 19.9 |
|             |           | Volume/Capacity                   | 0.46          | 0.88  | 0.11 | 0.35  | 0.37  | 0.64 |
|             |           | 95 <sup>th</sup> Percentile Q (m) | 42.2          | 88.3  | 6.6  | 39.9  | 31.2  | 88.5 |
|             |           | Storage                           | -             | -     | 30   | -     | 30    | -    |
|             | PM        | Level of Service                  | C             | D     | B    | C     | F     | B    |
|             |           | Delay (s)                         | 25.3          | 45.2  | 15.1 | 33.9  | 140.3 | 15.6 |
|             |           | Volume/Capacity                   | 0.57          | 0.92  | 0.25 | 0.89  | 1.09  | 0.44 |
|             |           | 95 <sup>th</sup> Percentile Q (m) | 46.6          | 117.7 | 19.3 | 166.2 | 51.3  | 54.7 |
|             |           | Storage                           | -             | -     | 30   | -     | 30    | -    |

The analysis indicates that the WR22/WR24/Trafalgar intersection is expected to experience increased delays for traffic making a southbound left turn and travelling westbound through the intersection. 95<sup>th</sup> percentile queues are also forecast to extend beyond the available storage in the southbound left turn lane in both peak hours. The southbound left turn movement is not impacted by the subject site and there is very little traffic from the subject site forecast on the westbound approach to this intersection.

The weekday afternoon peak hour is the constraining peak hour at the intersection for future total traffic operations. Two options were tested to see if intersection operations could be improved. In the first option, the signal timing was optimized and in the second option eastbound and westbound left turn lanes were added to the intersection and the signal timing was optimized in keeping with the recommendations of other studies in the area. The detailed worksheets for the two options are included in Appendix F and summarized in the table below. Measures of effectiveness (MOE) include level of service (LOS), delay in seconds, volume to capacity ratios (V/C) and 95<sup>th</sup> percentile queues in metres. The option with the additional left turn lanes was only tested for the scenario with the development of the Carson lands because that is the more constraining scenario.



**Table 7: Future Total Traffic Operations – WR22/WR24/Trafalgar, PM Peak Hour Options**

| Scenario    | Option | MOE                | Approach Lane |      |      |       |      |       |      |      |
|-------------|--------|--------------------|---------------|------|------|-------|------|-------|------|------|
|             |        |                    | EBL           | EB   | WBL  | WB    | NBL  | NBTR  | SBL  | SBTR |
| WR22 only   | Opt    | LOS                | -             | C    | -    | D     | B    | C     | E    | B    |
|             |        | Delay (s)          | -             | 32.2 | -    | 51.8  | 13.7 | 27.8  | 63.9 | 14.7 |
|             |        | V/C                | -             | 0.67 | -    | 0.94  | 0.21 | 0.84  | 0.82 | 0.43 |
|             |        | 95 <sup>th</sup> Q | -             | 55.3 | -    | 122.6 | 16.6 | 158.7 | 45.5 | 54.4 |
|             |        | Storage            | -             | -    | -    | -     | 30   | -     | 30   | -    |
| With Carson | Opt    | LOS                | -             | C    | -    | E     | B    | C     | E    | B    |
|             |        | Delay (s)          | -             | 30.8 | -    | 56.4  | 14.9 | 28.6  | 72.2 | 15.5 |
|             |        | V/C                | -             | 0.60 | -    | 0.95  | 0.24 | 0.83  | 0.86 | 0.41 |
|             |        | 95 <sup>th</sup> Q | -             | 55.4 | -    | 138.9 | 20.0 | 174.7 | 51.6 | 57.7 |
|             |        | Storage            | -             | -    | -    | -     | 30   | -     | 30   | -    |
|             | EWLT   | LOS                | D             | C    | C    | D     | B    | B     | C    | B    |
|             |        | Delay (s)          | 51.9          | 23.9 | 30.4 | 37.0  | 10.9 | 18.5  | 23.3 | 11.2 |
|             |        | V/C                | 0.63          | 0.33 | 0.38 | 0.81  | 0.19 | 0.72  | 0.53 | 0.35 |
|             |        | 95 <sup>th</sup> Q | 30.3          | 33.0 | 30.2 | 80.6  | 17.2 | 138.0 | 33.3 | 50.2 |
|             |        | Storage            | 30            | -    | 30   | -     | 30   | -     | 30   | -    |

The option analysis indicates that the capacity of the intersection could be managed with optimization of both the cycle length and the signal timing in the future, but that there would still be volume to capacity ratios over 0.85 in the westbound direction and for the southbound left turn movement in the weekday afternoon peak hour. The addition of eastbound and westbound left turn lanes would address the volume to capacity ratios by providing for level of service D or better for all lanes and volume to capacity ratios of less than 0.85 for all lanes as well. The eastbound and westbound left turn lanes would need a minimum storage of about 35 metres.

**Table 8: Future Total Traffic Operations – WR22/Street A (unsignalized)**

| Scenario    | Measure of Effectiveness          | Approach Lane |      |      |              |      |      |
|-------------|-----------------------------------|---------------|------|------|--------------|------|------|
|             |                                   | AM Peak Hour  |      |      | PM Peak Hour |      |      |
|             |                                   | EBLT          | WBTR | SBLR | EBLT         | WBTR | SBLR |
| WR22 only   | Level of Service                  | A             | -    | B    | A            | -    | B    |
|             | Delay (s)                         | 0.4           | -    | 11.2 | 0.7          | -    | 12.1 |
|             | Volume/Capacity                   | 0.01          | -    | 0.16 | 0.01         | -    | 0.13 |
|             | 95 <sup>th</sup> Percentile Q (m) | 0.1           | -    | 4.2  | 0.3          | -    | 3.3  |
| With Carson | Level of Service                  | A             | -    | B    | A            | -    | B    |
|             | Delay (s)                         | 0.5           | -    | 11.3 | 1.1          | -    | 12.0 |
|             | Volume/Capacity                   | 0.01          | -    | 0.18 | 0.02         | -    | 0.12 |
|             | 95 <sup>th</sup> Percentile Q (m) | 0.2           | -    | 4.8  | 0.4          | -    | 3.0  |

The analysis indicates that the new public road connection intersection with WR22 is expected to operate at acceptable levels in both weekday peak hours under both future total traffic scenarios without auxiliary turn lanes. As discussed earlier in this report, a westbound right turn lane could be considered at the intersection in discussion with County staff.



## 7 Conclusions and Recommendations

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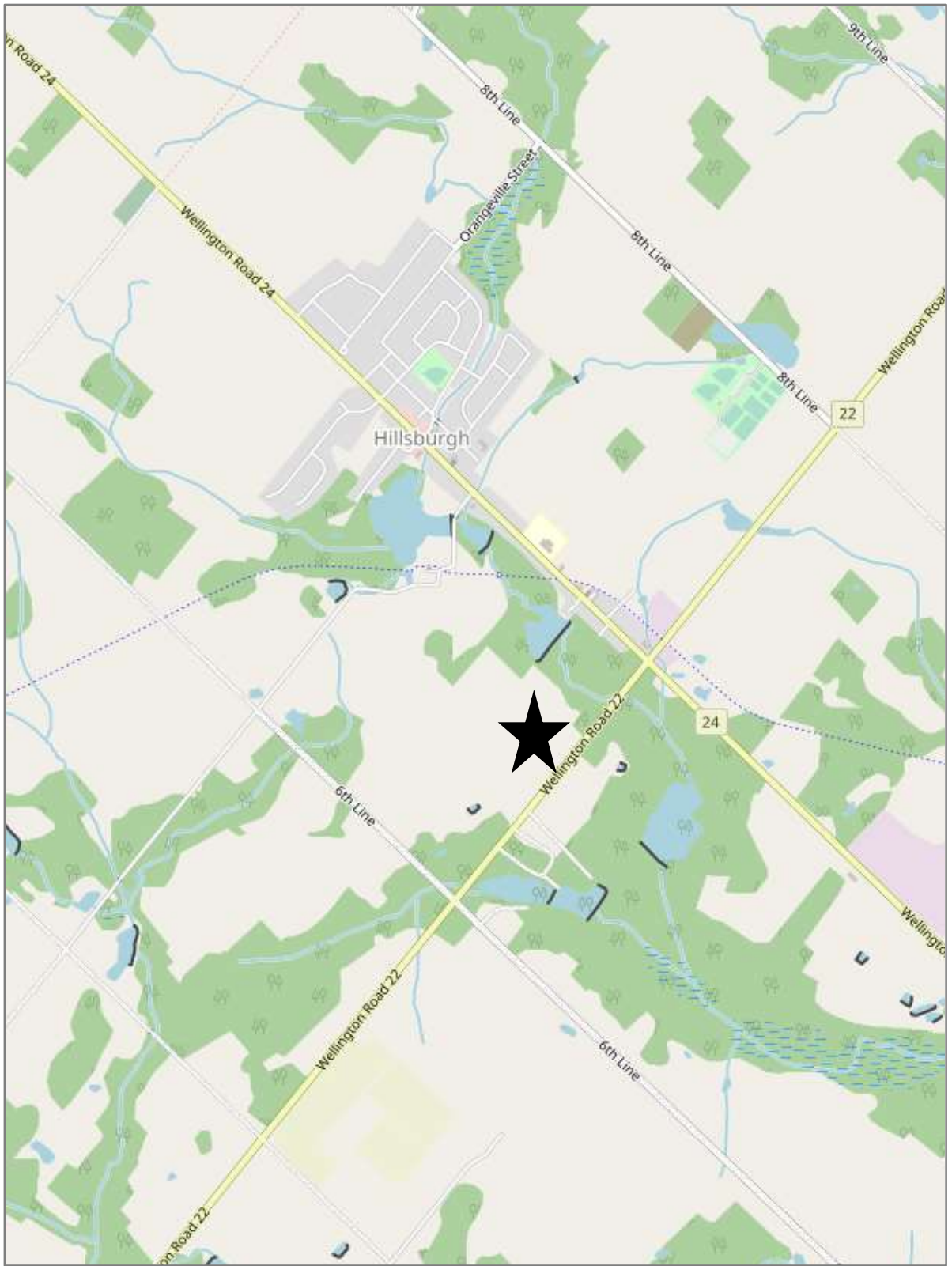
This Transportation Impact Study has been undertaken in accordance with Town and County requirements in order to understand the transportation context and infrastructure required to support the proposed Draft Plan of Subdivision. The conclusions of this study are as follows:

- The proposal includes 214 residential units in a mix of single units (148) and multiple units (66). 18 of the multiple units are intended as street fronting townhomes and the remaining 48 units are estimated in a block intended for townhomes or an apartment building.
- The new public roads in the draft plan are intended to be built to an urban cross-section and will include a sidewalk or multi-use path on both sides of the road. The infrastructure will provide for active transportation connections throughout the subdivision, including to the park, and ultimately to the Carson site to the north and WR22 to the south. The street layout includes for a road designed to a collector road standard through the subdivision in accordance with the Town's Official Plan.
- The Site is estimated to generate 135 and 171 vehicle trips in each of the weekday morning and afternoon peak hours, respectively.
- The concept includes a new public road connection to WR22 at Street A. The new road connection meets the County's minimum sight distance requirements. When the Carson lands to the north develop, it is intended that the two sites would be connected, allowing additional routing options for both site traffic from the subject site and the Carson site.
- An emergency access has been incorporated into the multiple block to allow for a secondary connection for the subdivision until the connection to the north through the Carson lands is developed.
- A westbound right turn lane from WR22 to Street A could be considered in discussion with County staff. An eastbound left turn lane is not warranted at the intersection.
- The new road intersection with WR22 at Street A is expected to operate at acceptable levels of service under both future total traffic scenarios in both weekday peak hours without auxiliary turn lanes.
- The WR22/WR24/Trafalgar intersection is currently operating at acceptable levels and is expected to experience delays to westbound traffic and southbound left turning traffic in the future both with and without the subject proposal. There are opportunities to manage the capacity through the intersection by optimizing the signal timing in the future and/or adding eastbound and westbound left turn lanes, which is consistent with other studies in the area.



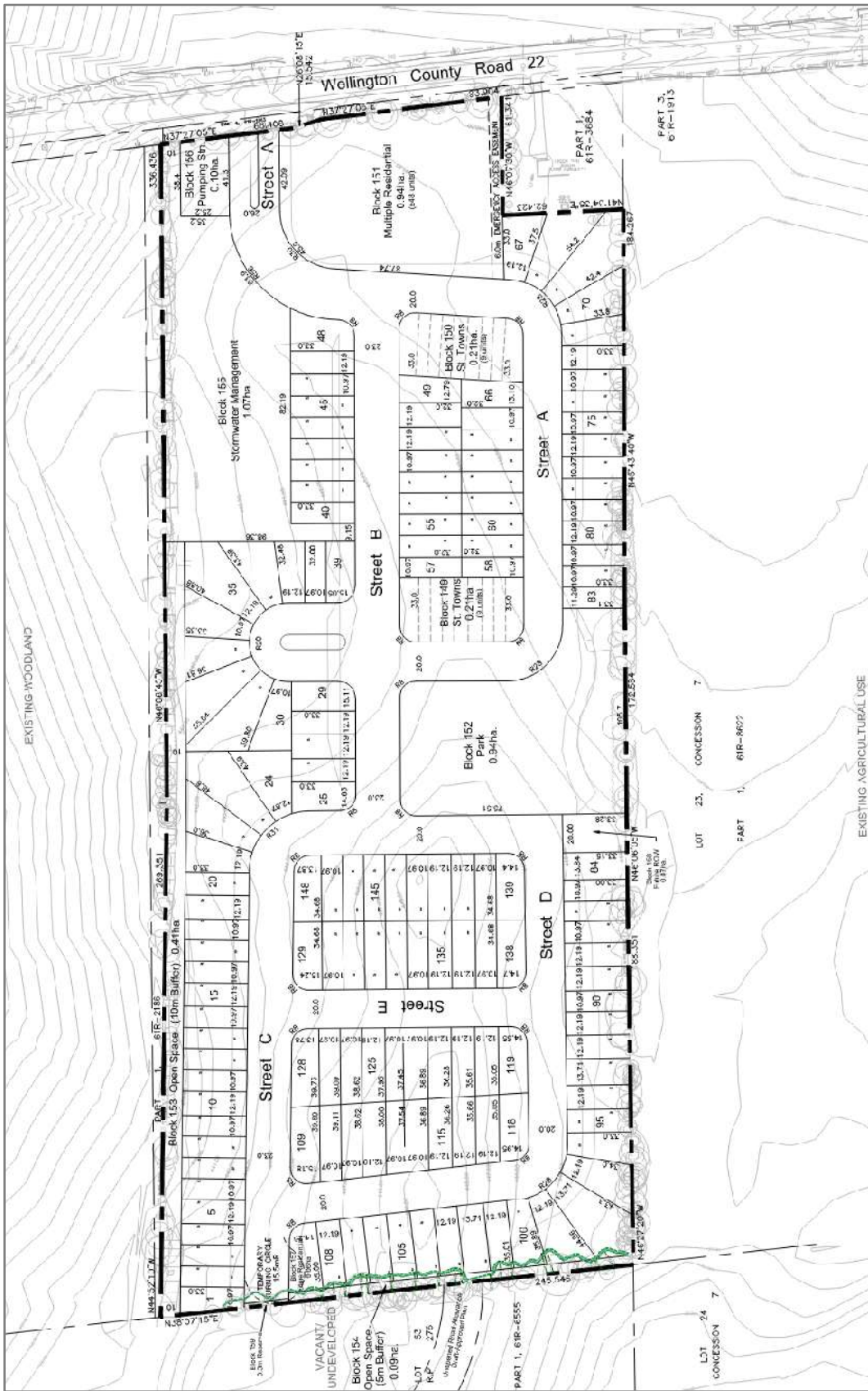
## Appendix A: Figures

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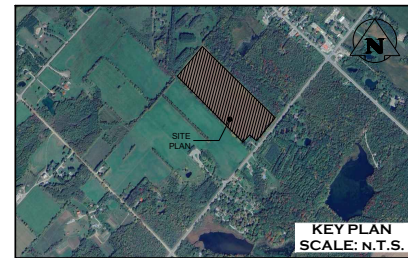
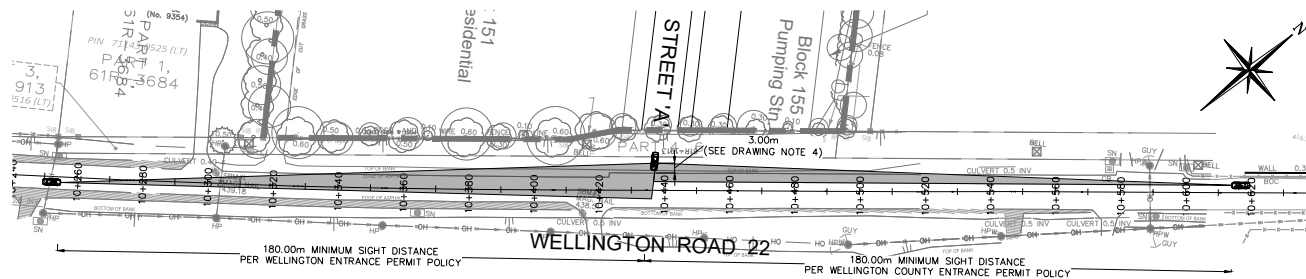


**Site Location Plan**

© OpenStreetMap contributors 2023



**Site Development Concept**  
 Source: GSP Group



**SURVEY NOTES:**  
 SURVEY COMPLETED BY VAN HARTEN SURVEYING INC. ON THE 2ND DAY OF FEBRUARY, 2017.  
 BEARINGS ARE GRID BEARINGS AND ARE DERIVED FROM GPS OBSERVATIONS AND ARE REFERRED TO THE UTM PROJECTION, ZONE 17, NAD 83 (CSRS-2010) ADJUSTMENT.

**ELEVATION NOTES:**  
 ELEVATIONS ARE BASED ON GPS OBSERVATIONS FROM PERMANENT REFERENCE STATIONS IN NAD83 (CSRS-2010) COORDINATE SYSTEM, WITH HEIGHTS CONVERTED TO OPTIMIZING ELEVATIONS ON THE CYG28 DATUM (1978 ADJUSTMENT) WITH GEOID MODEL HT42.0, AS SUPPLIED BY NATURAL RESOURCES CANADA.

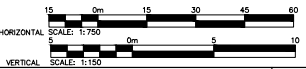
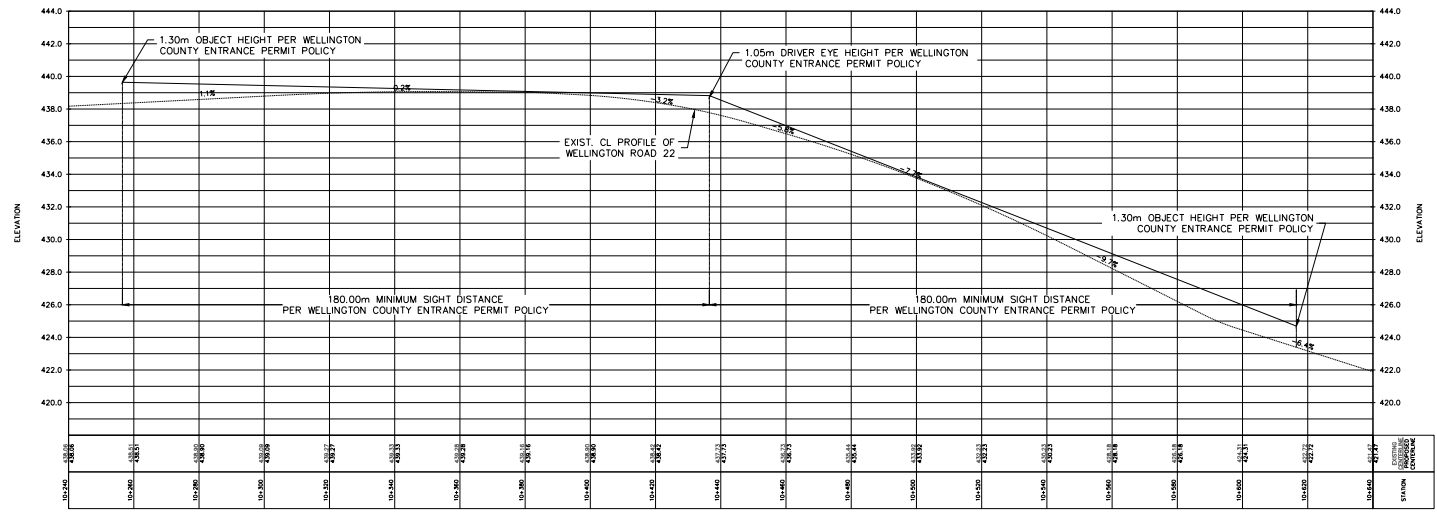
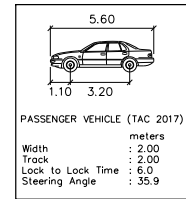
**SITE BENCHMARK #1:** MAGNETIC NAIL IN ASPHALT APPROX. 18 METRES SOUTH OF SOUTH-WEST CORNER OF THE SUBJECT PROPERTY, HAVING AN ELEVATION OF 439.18.

**SITE BENCHMARK #2:** MAGNETIC NAIL IN ASPHALT APPROX. 100 METRES EAST OF SOUTH-WEST CORNER OF THE SUBJECT PROPERTY, HAVING AN ELEVATION OF 438.51.

| MINIMUM SIGHT DISTANCE REQUIREMENTS |               |
|-------------------------------------|---------------|
| VEHICLE TYPE                        | PASSENGER CAR |
| POSTED SPEED                        | 70 KM/H       |
| MINIMUM SIGHT DISTANCE*             | 180 m         |

\* REFER TO WELLINGTON COUNTY ENTRANCE PERMIT POLICY - 2024)

- DRAWING NOTES:**
- MINIMUM SIGHT DISTANCE REQUIREMENTS ARE DESCRIBED IN WELLINGTON COUNTY ENTRANCE PERMIT POLICY (2024).
  - SIGHT DISTANCE REVIEW HAS BEEN COMPLETED USING DESKTOP METHODOLOGY ONLY, AND MAY BE SUBJECT TO CHANGE PENDING AS-CONSTRUCTED CONDITIONS.
  - VERTEX OF SIGHT TRIANGLE SHALL BE LOCATED 3.00M FROM THE EDGE OF THE MAJOR-ROAD TRAVELER WAY PER WELLINGTON COUNTY ENTRANCE PERMIT POLICY (2024).
  - LANE CONFIGURATION SPECIFICS OF STREET 'A' ARE UNKNOWN AT THE TIME OF THIS SUBMISSION, THEREFORE, A VEHICLE IS CURRENTLY SHOWN CENTERED IN THE EXPECTED OUTBOUND LANE.



- NOTES:**
- THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY PROHIBITED.
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
  - THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
  - DO NOT SCALE THE DRAWINGS.
  - ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

| No. | ISSUE                     | DATE: MM/DD/YYYY | Engineer | Engineer | Project |
|-----|---------------------------|------------------|----------|----------|---------|
| 1   | ISSUED FOR 1st SUBMISSION | NOV/28/2025      |          |          |         |
|     |                           |                  |          |          |         |
|     |                           |                  |          |          |         |
|     |                           |                  |          |          |         |
|     |                           |                  |          |          |         |

**FOR REVIEW**  
NOT TO BE USED FOR CONSTRUCTION

HILLSBURGH TRAILS SUBDIVISION  
 9354 WELLINGTON ROAD 22,  
 TOWN OF ERIN, WELLINGTON COUNTY

SIGHT DISTANCE ANALYSIS



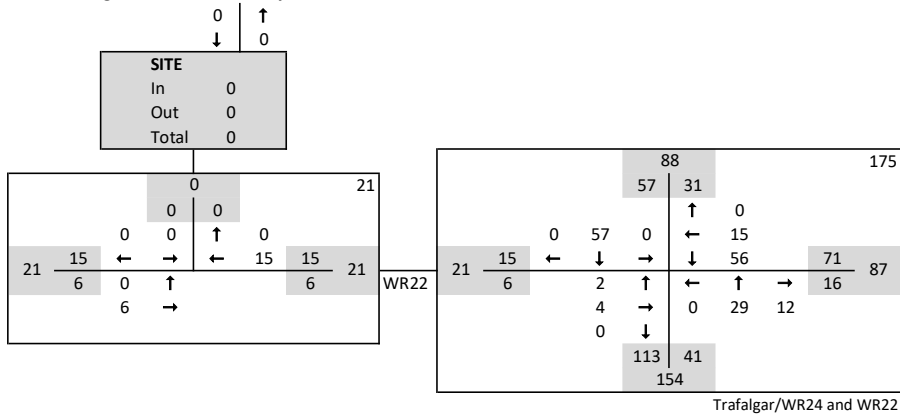
|          |      |           |         |                          |
|----------|------|-----------|---------|--------------------------|
| Drawn By | N.F. | Design By | Project | 1808-7463                |
| Check By | R.M. | Check By  | Scale   | 1:750 (Drawing)<br>1:150 |





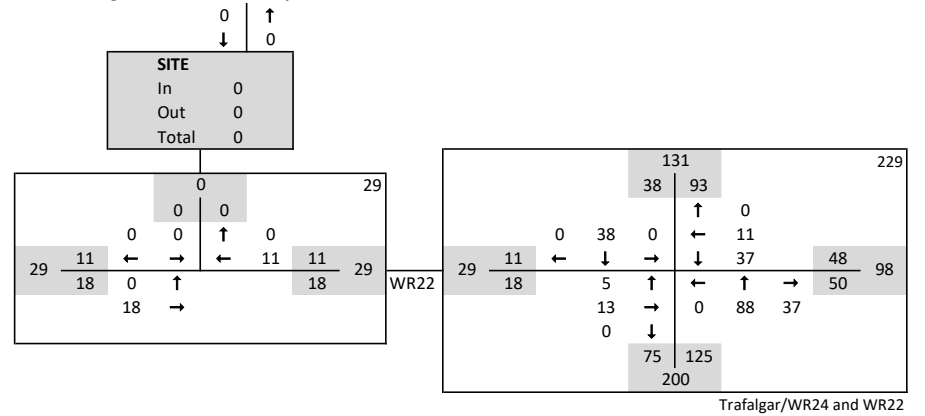
**AM Peak Hour**

**Future Background Traffic Ballanry**

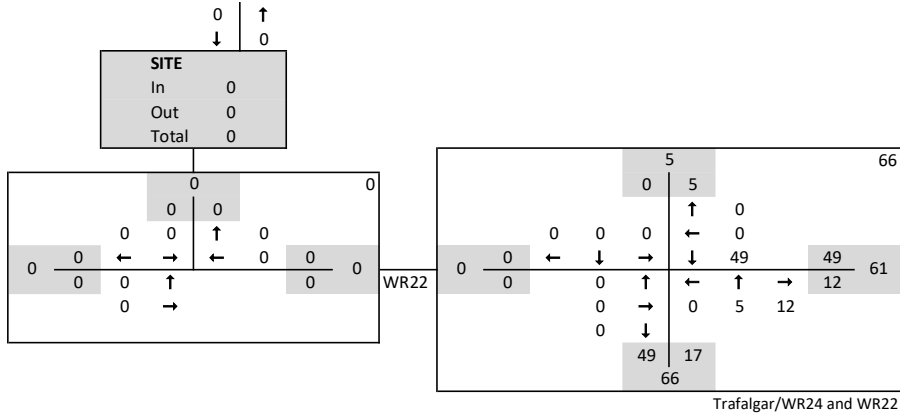


**PM Peak Hour**

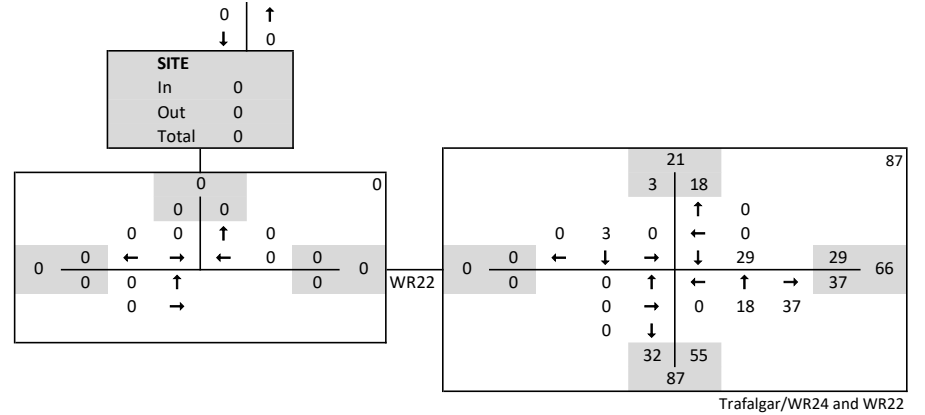
**Future Background Traffic Ballanry**



**Future Background Traffic Chantler**

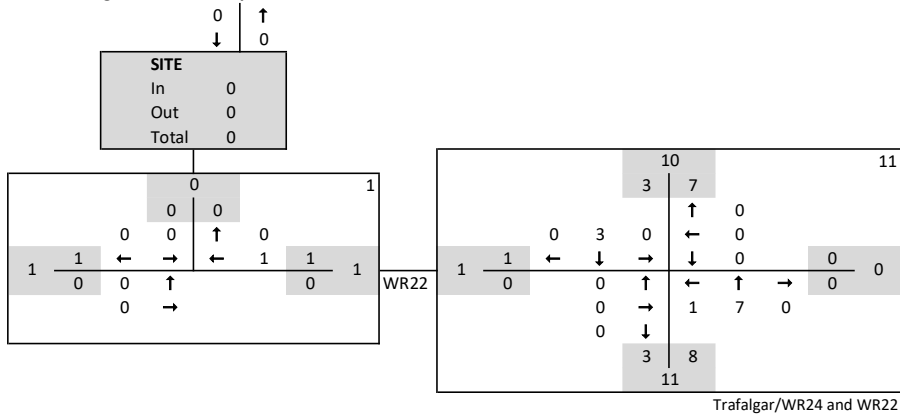


**Future Background Traffic Chantler**



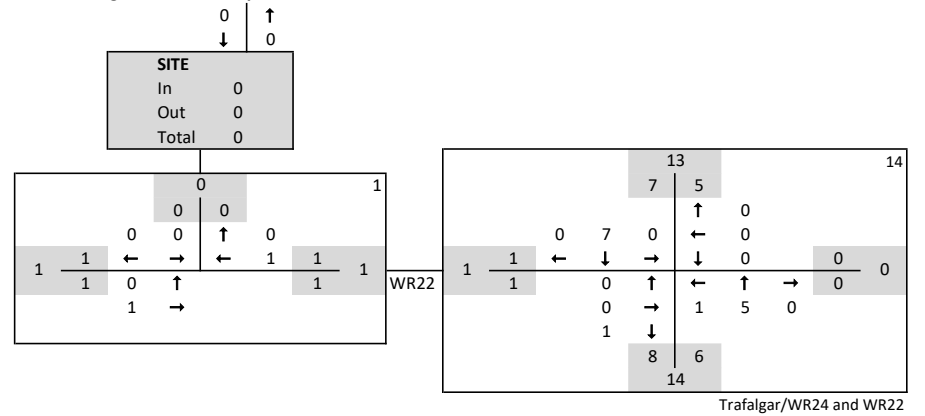
**AM Peak Hour**

**Future Background Traffic Empire**

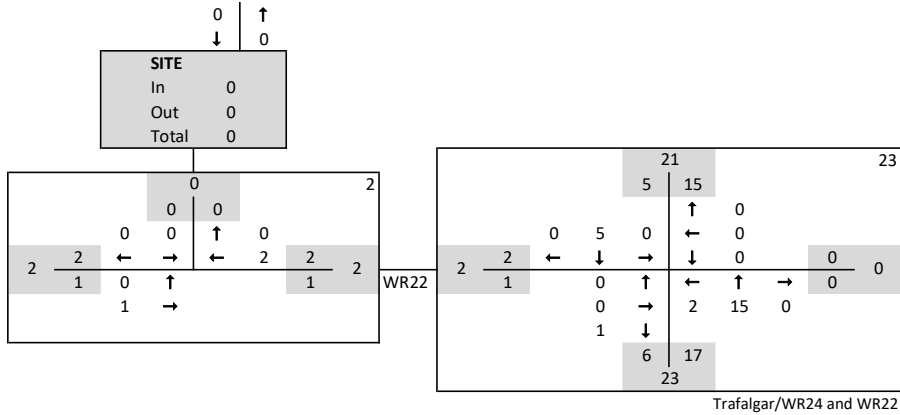


**PM Peak Hour**

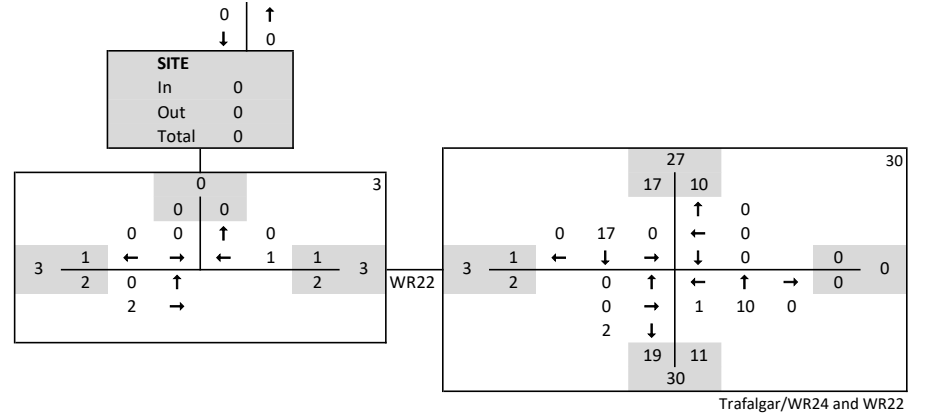
**Future Background Traffic Empire**



**Future Background Traffic Mattamy**



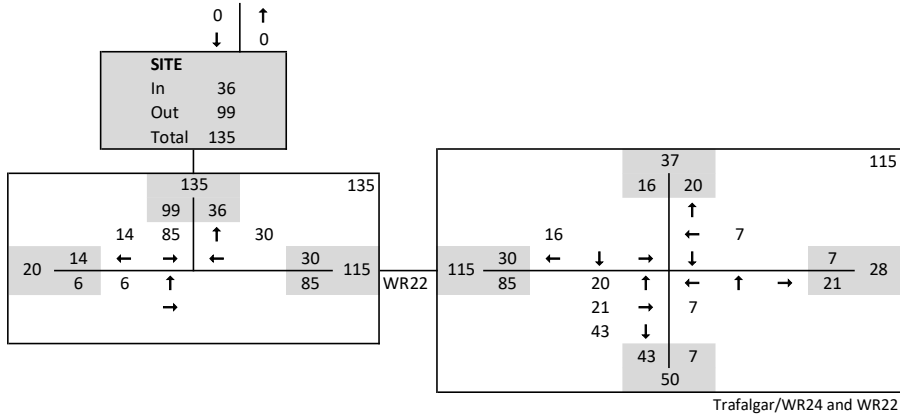
**Future Background Traffic Mattamy**





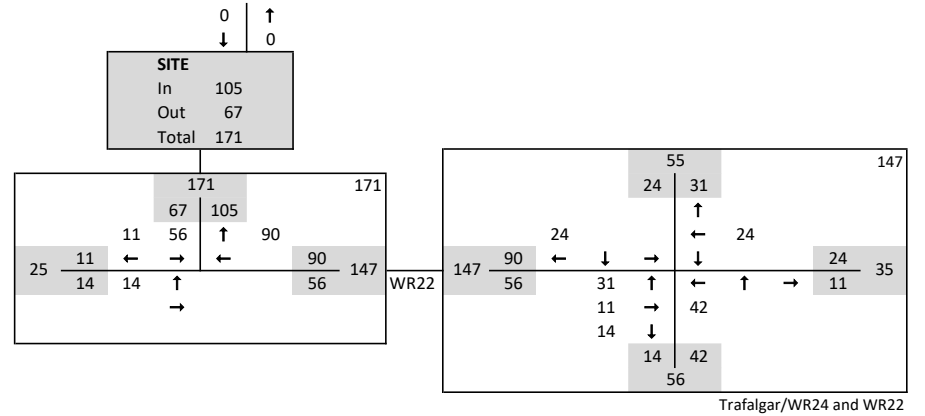
**AM Peak Hour**

**Site Traffic - WR22 Connection**

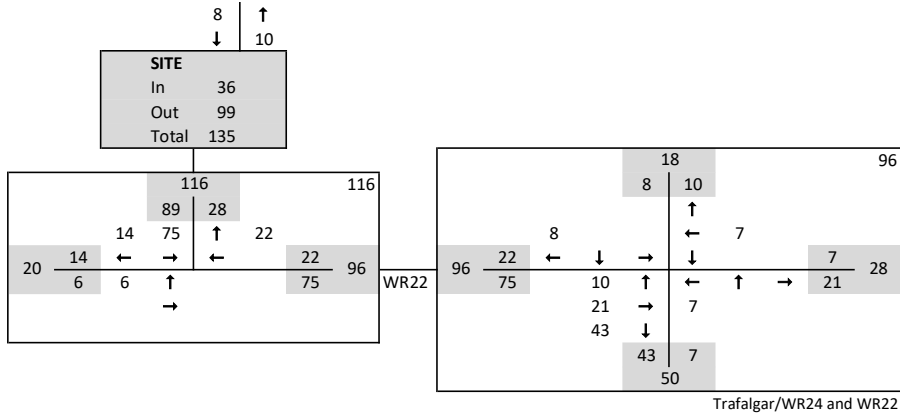


**PM Peak Hour**

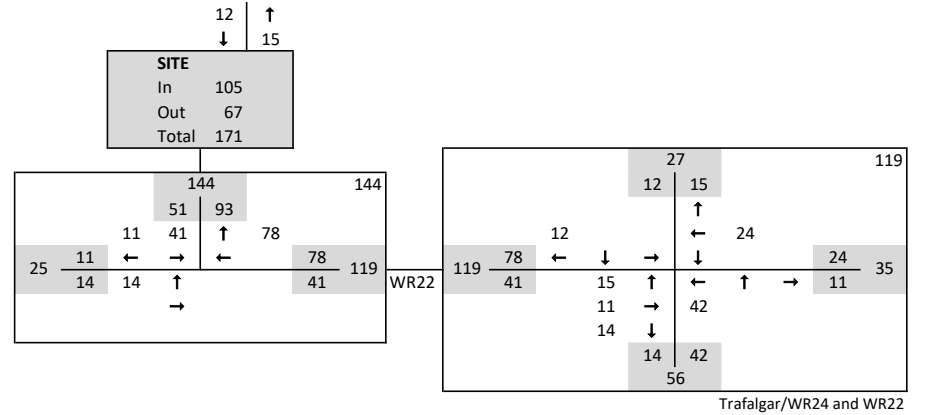
**Site Traffic - WR22 Connection**



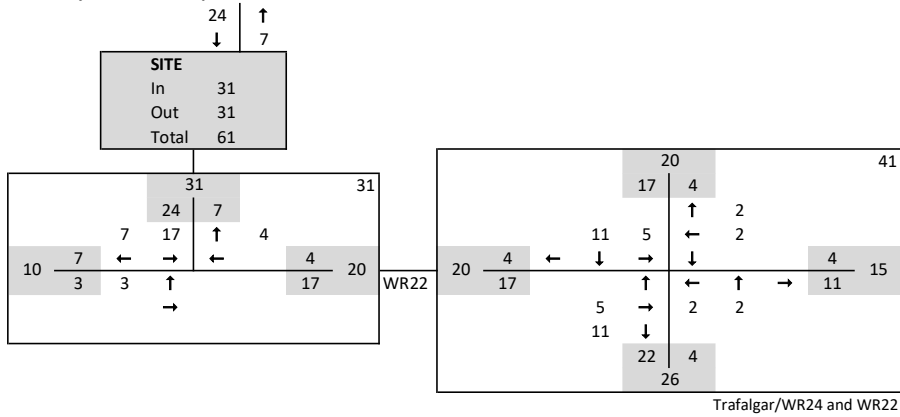
**Site Traffic with northerly connection**



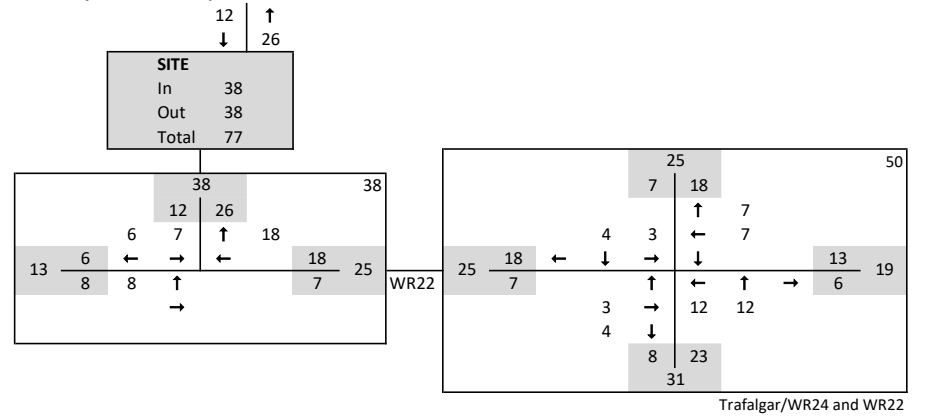
**Site Traffic with northerly connection**



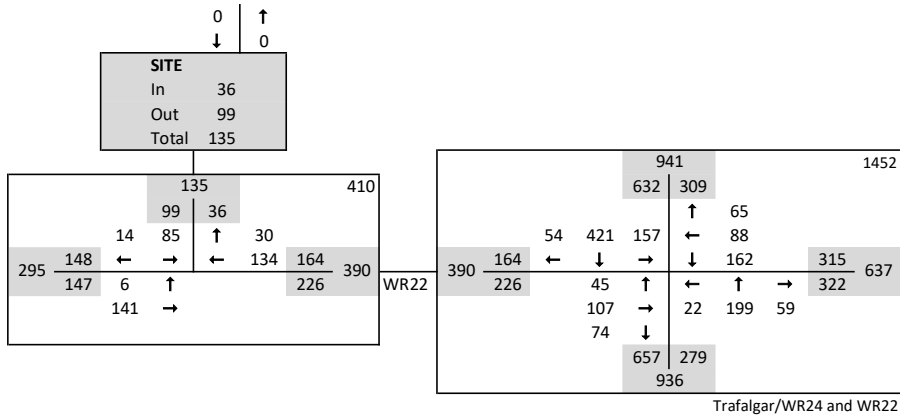
**AM Peak Hour**  
**Northerly Carson Development Traffic**



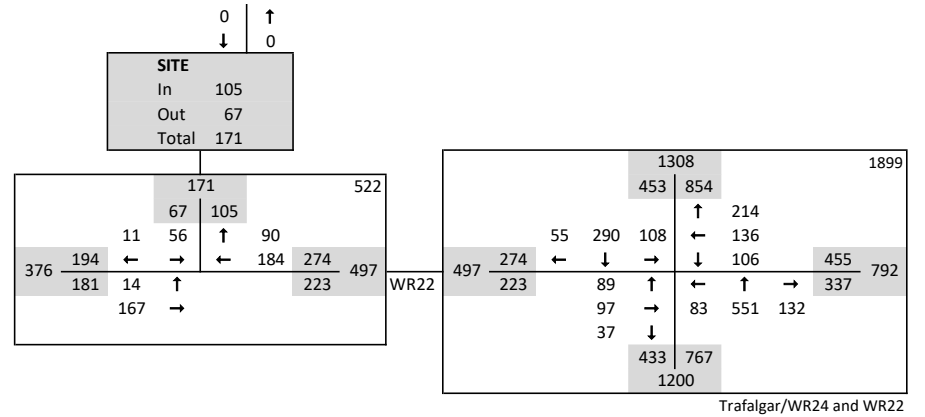
**PM Peak Hour**  
**Northerly Carson Development Traffic**



**Future Total Traffic WR22**



**Future Total Traffic WR22**





## **Appendix B: Existing Data – WR22/WR24/Trafalgar**

---

# Trafalgar Rd @ Wellington Rd 22

## Morning Peak Diagram

### Specified Period

**From:** 7:00:00

**To:** 9:00:00

### One Hour Peak

**From:** 7:30:00

**To:** 8:30:00

**Municipality:** Hillsburgh  
**Site #:** 000000002  
**Intersection:** Trafalgar Rd & Wellington Rd 22  
**TFR File #:** 2  
**Count date:** 31-Jan-2023

**Weather conditions:**  
 Clear/Dry, Snow  
**Person(s) who counted:**  
 Cam

**\*\* Signalized Intersection \*\***

**Major Road:** Trafalgar Rd runs N/S

North Leg Total: 434  
 North Entering: 297  
 North Peds: 0  
 Peds Cross:  $\times$

|               |           |            |           |     |
|---------------|-----------|------------|-----------|-----|
| Heavys        | 1         | 17         | 5         | 23  |
| Trucks        | 0         | 6          | 0         | 6   |
| Cars          | 30        | 195        | 43        | 268 |
| <b>Totals</b> | <b>31</b> | <b>218</b> | <b>48</b> |     |



|               |            |
|---------------|------------|
| Heavys        | 21         |
| Trucks        | 4          |
| Cars          | 112        |
| <b>Totals</b> | <b>137</b> |

East Leg Total: 268  
 East Entering: 126  
 East Peds: 0  
 Peds Cross:  $\times$

|        |        |      |        |
|--------|--------|------|--------|
| Heavys | Trucks | Cars | Totals |
| 3      | 3      | 88   | 94     |



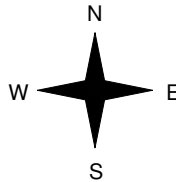
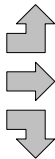
Trafalgar Rd

|            |          |           |        |
|------------|----------|-----------|--------|
| Cars       | Trucks   | Heavys    | Totals |
| 16         | 1        | 10        | 27     |
| 51         | 2        | 0         | 53     |
| 42         | 0        | 4         | 46     |
| <b>109</b> | <b>3</b> | <b>14</b> |        |



Wellington Rd 22

|          |          |            |        |
|----------|----------|------------|--------|
| Heavys   | Trucks   | Cars       | Totals |
| 2        | 1        | 15         | 18     |
| 1        | 0        | 65         | 66     |
| 0        | 0        | 24         | 24     |
| <b>3</b> | <b>1</b> | <b>104</b> |        |



Trafalgar Rd

|      |        |        |        |
|------|--------|--------|--------|
| Cars | Trucks | Heavys | Totals |
| 136  | 0      | 6      | 142    |



Peds Cross:  $\times$   
 West Peds: 0  
 West Entering: 108  
 West Leg Total: 202

|               |            |               |           |           |           |     |
|---------------|------------|---------------|-----------|-----------|-----------|-----|
| Cars          | 261        | Cars          | 7         | 81        | 28        | 116 |
| Trucks        | 6          | Trucks        | 1         | 2         | 0         | 3   |
| Heavys        | 21         | Heavys        | 2         | 9         | 0         | 11  |
| <b>Totals</b> | <b>288</b> | <b>Totals</b> | <b>10</b> | <b>92</b> | <b>28</b> |     |



Peds Cross:  $\times$   
 South Peds: 1  
 South Entering: 130  
 South Leg Total: 418

## Comments

# Trafalgar Rd @ Wellington Rd 22

## Afternoon Peak Diagram

### Specified Period

**From:** 16:00:00

**To:** 18:00:00

### One Hour Peak

**From:** 16:30:00

**To:** 17:30:00

**Municipality:** Hillsburgh  
**Site #:** 000000002  
**Intersection:** Trafalgar Rd & Wellington Rd 22  
**TFR File #:** 2  
**Count date:** 31-Jan-2023

**Weather conditions:**  
 Clear/Dry, Snow  
**Person(s) who counted:**  
 Cam

**\*\* Signalized Intersection \*\***

**Major Road:** Trafalgar Rd runs N/S

North Leg Total: 604  
 North Entering: 200  
 North Peds: 0  
 Peds Cross:  $\times$

|        |    |     |    |     |
|--------|----|-----|----|-----|
| Heavys | 0  | 5   | 1  | 6   |
| Trucks | 1  | 2   | 4  | 7   |
| Cars   | 24 | 131 | 32 | 187 |
| Totals | 25 | 138 | 37 |     |



|        |     |
|--------|-----|
| Heavys | 5   |
| Trucks | 5   |
| Cars   | 394 |
| Totals | 404 |

East Leg Total: 346  
 East Entering: 203  
 East Peds: 0  
 Peds Cross:  $\times$

|        |     |
|--------|-----|
| Heavys | 5   |
| Trucks | 1   |
| Cars   | 132 |
| Totals | 138 |



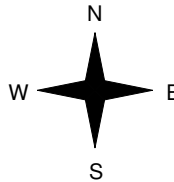
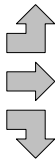
Trafalgar Rd

|      |     |        |   |        |   |        |    |
|------|-----|--------|---|--------|---|--------|----|
| Cars | 88  | Trucks | 2 | Heavys | 0 | Totals | 90 |
| Cars | 79  | Trucks | 0 | Heavys | 2 | Totals | 81 |
| Cars | 31  | Trucks | 0 | Heavys | 1 | Totals | 32 |
| Cars | 198 | Trucks | 2 | Heavys | 3 | Totals |    |



Wellington Rd 22

|        |     |
|--------|-----|
| Heavys | 0   |
| Trucks | 0   |
| Cars   | 43  |
| Totals | 43  |
| Heavys | 0   |
| Trucks | 0   |
| Cars   | 59  |
| Totals | 59  |
| Heavys | 0   |
| Trucks | 0   |
| Cars   | 16  |
| Totals | 16  |
| Heavys | 0   |
| Trucks | 0   |
| Cars   | 118 |
| Totals | 118 |



Trafalgar Rd

|      |     |        |   |        |   |        |     |
|------|-----|--------|---|--------|---|--------|-----|
| Cars | 136 | Trucks | 5 | Heavys | 2 | Totals | 143 |
|------|-----|--------|---|--------|---|--------|-----|



Peds Cross:  $\times$   
 West Peds: 0  
 West Entering: 118  
 West Leg Total: 256

|        |     |        |    |     |    |     |
|--------|-----|--------|----|-----|----|-----|
| Cars   | 178 | Cars   | 29 | 263 | 45 | 337 |
| Trucks | 2   | Trucks | 0  | 3   | 1  | 4   |
| Heavys | 6   | Heavys | 3  | 5   | 1  | 9   |
| Totals | 186 | Totals | 32 | 271 | 47 |     |



Peds Cross:  $\times$   
 South Peds: 0  
 South Entering: 350  
 South Leg Total: 536

## Comments

# Trafalgar Rd @ Wellington Rd 22

## Total Count Diagram

**Municipality:** Hillsburgh  
**Site #:** 000000002  
**Intersection:** Trafalgar Rd & Wellington Rd 22  
**TFR File #:** 2  
**Count date:** 31-Jan-2023

**Weather conditions:**  
 Clear/Dry, Snow  
**Person(s) who counted:**  
 Cam

**\*\* Signalized Intersection \*\***

**Major Road:** Trafalgar Rd runs N/S

North Leg Total: 1985  
 North Entering: 949  
 North Peds: 0  
 Peds Cross:  $\times$

|               |            |            |            |     |
|---------------|------------|------------|------------|-----|
| Heavys        | 1          | 41         | 18         | 60  |
| Trucks        | 1          | 12         | 12         | 25  |
| Cars          | 105        | 596        | 163        | 864 |
| <b>Totals</b> | <b>107</b> | <b>649</b> | <b>193</b> |     |



|               |             |
|---------------|-------------|
| Heavys        | 60          |
| Trucks        | 23          |
| Cars          | 953         |
| <b>Totals</b> | <b>1036</b> |

East Leg Total: 1156  
 East Entering: 589  
 East Peds: 0  
 Peds Cross:  $\times$

|        |        |      |        |
|--------|--------|------|--------|
| Heavys | Trucks | Cars | Totals |
| 9      | 7      | 400  | 416    |



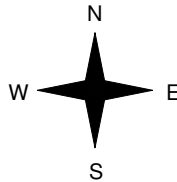
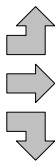
Trafalgar Rd

|            |           |           |        |
|------------|-----------|-----------|--------|
| Cars       | Trucks    | Heavys    | Totals |
| 183        | 8         | 23        | 214    |
| 228        | 3         | 3         | 234    |
| 134        | 0         | 7         | 141    |
| <b>545</b> | <b>11</b> | <b>33</b> |        |



Wellington Rd 22

|          |          |            |        |
|----------|----------|------------|--------|
| Heavys   | Trucks   | Cars       | Totals |
| 3        | 3        | 104        | 110    |
| 2        | 1        | 244        | 247    |
| 2        | 0        | 85         | 87     |
| <b>7</b> | <b>4</b> | <b>433</b> |        |



Trafalgar Rd

|      |        |        |        |
|------|--------|--------|--------|
| Cars | Trucks | Heavys | Totals |
| 527  | 15     | 25     | 567    |



Peds Cross:  $\times$   
 West Peds: 0  
 West Entering: 444  
 West Leg Total: 860

|               |            |               |           |            |            |     |
|---------------|------------|---------------|-----------|------------|------------|-----|
| Cars          | 815        | Cars          | 67        | 666        | 120        | 853 |
| Trucks        | 12         | Trucks        | 3         | 12         | 2          | 17  |
| Heavys        | 50         | Heavys        | 5         | 34         | 5          | 44  |
| <b>Totals</b> | <b>877</b> | <b>Totals</b> | <b>75</b> | <b>712</b> | <b>127</b> |     |



Peds Cross:  $\times$   
 South Peds: 1  
 South Entering: 914  
 South Leg Total: 1791

### Comments

Configuration

|                     | Controller Sequence Priority |   |   |   |    |    |   |   |   |    |    |    |
|---------------------|------------------------------|---|---|---|----|----|---|---|---|----|----|----|
|                     | 1                            | 2 | 3 | 4 | 5  | 6  | 7 | 8 | 9 | 10 | 11 | 12 |
| Ring 1 Phases . . . | 1                            | 2 | 3 | 4 | 9  | 10 | 0 | 0 | 0 | 0  | 0  | 0  |
| Ring 2 Phases . . . | 5                            | 6 | 7 | 8 | 11 | 12 | 0 | 0 | 0 | 0  | 0  | 0  |
|                     | Phase                        |   |   |   |    |    |   |   |   |    |    |    |
|                     | 1                            | 2 | 3 | 4 | 5  | 6  | 7 | 8 | 9 | 10 | 11 | 12 |
| In Use. . . . .     | .                            | X | . | X | .  | X  | . | X | . | .  | .  | .  |
| Exclusive Ped . . . | .                            | . | . | . | .  | .  | . | . | . | .  | .  | .  |
| Direction . . . . . |                              |   |   |   |    |    |   |   |   |    |    |    |
|                     | Overlap                      |   |   |   |    |    |   |   |   |    |    |    |
| Direction . . . . . | A                            | B | C | D |    |    |   |   |   |    |    |    |

Load Switch Channel/Driver Group Assign (Info Only):

| Load Switch (MMU) Channel | Driver Phase/Ovlap | Signal Group Ped |
|---------------------------|--------------------|------------------|
| 1 . . . . .               | 1                  | .                |
| 2 . . . . .               | 2                  | .                |
| 3 . . . . .               | 3                  | .                |
| 4 . . . . .               | 4                  | .                |
| 5 . . . . .               | 5                  | .                |
| 6 . . . . .               | 6                  | .                |
| 7 . . . . .               | 7                  | .                |
| 8 . . . . .               | 8                  | .                |
| 9 . . . . .               | 2                  | X                |
| 10 . . . . .              | 4                  | X                |
| 11 . . . . .              | 6                  | X                |
| 12 . . . . .              | 8                  | X                |
| 13 . . . . .              | A                  | .                |
| 14 . . . . .              | B                  | .                |
| 15 . . . . .              | C                  | .                |
| 16 . . . . .              | D                  | .                |



Configuration Continued

| Event Enabling                        | Alarm Enabling      |
|---------------------------------------|---------------------|
| Critical RFE'S (MMU/TF) . . . . . X   | ALARM 1 . . . . . X |
| Non-Critical RFE'S (DET/TEST) . . . X | ALARM 2 . . . . . X |
| Detector Errors . . . . . X           | ALARM 3 . . . . . X |
| Coordination Errors . . . . . X       | ALARM 4 . . . . . . |
| MMU Flash Faults. . . . . X           | ALARM 5 . . . . . . |
| Local Flash Faults. . . . . X         | ALARM 6 . . . . . . |
| Preempt . . . . . X                   | ALARM 7 . . . . . . |
| Power On/Off. . . . . X               | ALARM 8 . . . . . . |
| Low Battery . . . . . X               | ALARM 9 . . . . . . |
|                                       | ALARM 10. . . . . . |
|                                       | ALARM 11. . . . . . |
|                                       | ALARM 12. . . . . . |
|                                       | ALARM 13. . . . . . |
|                                       | ALARM 14. . . . . . |
|                                       | ALARM 15. . . . . . |
|                                       | ALARM 16. . . . . . |

Supervisor Access Code. . . \*\*\*\*  
 Data Change Access Code . . \*\*\*\*

MMU Compatibility Program (Info Only)

| Channel   | Is Allowed to Time With Channel |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
|-----------|---------------------------------|----|----|----|----|----|----|---|---|---|---|---|---|---|---|
|           | 16                              | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 |
| 1 . . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 2 . . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 3 . . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 4 . . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 5 . . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 6 . . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 7 . . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 8 . . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 9 . . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 10. . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 11. . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 12. . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 13. . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 14. . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |
| 15. . . . | .                               | .  | .  | .  | .  | .  | .  | . | . | . | . | . | . | . | . |

| Version Info:  |          |         |
|----------------|----------|---------|
| Software Assy. | Part No. | Version |
| Boot           | 27831    | 2.83    |
| Program        | 45561    | 7.9     |
| Application    |          | . 3     |
| Help           | 27891    | 6.33    |
| Configuration  | 27918    | C000r   |





Ped Carryover

---

| Ped Start Phase | Carry Over Phase |
|-----------------|------------------|
| 1               | 0                |
| 2               | 0                |
| 3               | 0                |
| 4               | 0                |
| 5               | 0                |
| 6               | 0                |
| 7               | 0                |
| 8               | 0                |
| 9               | 0                |
| 10              | 0                |
| 11              | 0                |
| 12              | 0                |





Power Start, Remote Flash

-----

|                               | Phase |   |   |   |   |   |   |   |   |    |    |    |         |   |   |   |
|-------------------------------|-------|---|---|---|---|---|---|---|---|----|----|----|---------|---|---|---|
|                               | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |         |   |   |   |
| Power Start . . . . .         | .     | X | . | . | . | X | . | . | . | .  | .  | .  |         |   |   |   |
| External Start . . . . .      | .     | X | . | . | . | X | . | . | . | .  | .  | .  |         |   |   |   |
| Into Remote Flash . . . . .   | .     | X | . | . | . | X | . | . | . | .  | .  | .  |         |   |   |   |
| Exit Remote Flash . . . . .   | .     | X | . | . | . | X | . | . | . | .  | .  | .  | Overlap |   |   |   |
| Remote Flash Yellow . . . . . | .     | . | . | . | . | . | . | . | . | .  | .  | .  | A       | B | C | D |
| Flash Together . . . . .      | .     | X | . | X | . | X | . | X | . | X  | .  | X  | .       | X | . | X |

Initialization Interval:

Power Start . . . . . Yellow  
 External Start . . . . . Yellow

Power Start All Red Time . . . . . 0  
 Power Start Flash Time . . . . . 0

Remote Flash Options:

Out of Flash Yellow . . . . . NO  
 Out of Flash All Red . . . . . NO  
 Minimum Recall . . . . . NO  
 Alternate Flash . . . . . NO  
 Flash Thru Load Switches . . . . . NO  
 Cycle Through Phases . . . . . NO

Option Data

|                                 | Phase |   |   |   |   |   |   |   |   |    |    |    |
|---------------------------------|-------|---|---|---|---|---|---|---|---|----|----|----|
|                                 | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Guaranteed Passage . . . . .    | .     | . | . | . | . | . | . | . | . | .  | .  | .  |
| Call To NonActuated 1 . . . . . | .     | X | . | . | . | X | . | . | . | .  | .  | .  |
| Call To NonActuated 2 . . . . . | .     | . | . | X | . | . | . | X | . | .  | .  | .  |
| Dual Entry. . . . .             | .     | X | . | X | . | X | . | X | . | X  | .  | X  |
| Conditional Service . . . . .   | X     | . | X | . | X | . | X | . | X | .  | X  | .  |
| Conditional Reservice . . . . . | .     | . | . | . | . | . | . | . | . | .  | .  | .  |
| Actuated Rest in Walk . . . . . | .     | . | . | . | . | . | . | . | . | .  | .  | .  |
| Flashing Walk . . . . .         | .     | . | . | . | . | . | . | . | . | .  | .  | .  |

Enable Programmable Options

|   |     |                                     |     |
|---|-----|-------------------------------------|-----|
| Dual Entry. . . . .                     | ON  | Backup Protection Group 1 . . . . . | OFF |
| Conditional Service . . . . .           | OFF | Backup Protection Group 2 . . . . . | OFF |
| Ped Clearance Protection. . . . .       | OFF | Backup Protection Group 3 . . . . . | OFF |
| Special Preempt Overlap Flash . . . . . | OFF | Simultaneous Gap Group 1. . . . .   | OFF |
| Cond Service Det Cross Switch . . . . . | OFF | Simultaneous Gap Group 2. . . . .   | OFF |
| Lock Detectors in Red Only. . . . .     | OFF | Simultaneous Gap Group 3. . . . .   | OFF |

Five Section Left Turn Control

|                         | Phases: 5-2 | 7-4 | 1-6 | 3-8 | 11-10 | 9-12 |
|-------------------------|-------------|-----|-----|-----|-------|------|
| Left Turn Head. . . . . | .           | .   | .   | .   | .     | .    |



## Detector Type/Timers

| Det. | Locking | Log    | Timers |       | Don't  | Reset | Type         |
|------|---------|--------|--------|-------|--------|-------|--------------|
|      | Memory  | Enable | Extend | Delay | Extend |       |              |
| 1    | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 2    | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 3    | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 4    | NO      | NO     | 0.0    | 7     | .      | 1     | Extend/Delay |
| 5    | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 6    | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 7    | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 8    | NO      | NO     | 0.0    | 7     | .      | 1     | Extend/Delay |
| 9    | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 10   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 11   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 12   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 13   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 14   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 15   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 16   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 17   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 18   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 19   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 20   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 21   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 22   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 23   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 24   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 25   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 26   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 27   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 28   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 29   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 30   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 31   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |
| 32   | NO      | NO     | 0.0    | 0     | .      | 0     | Normal       |

## Detector Names

|                     |                     |
|---------------------|---------------------|
| Det 1: Detector 1   | Det 17: Detector 17 |
| Det 2: Detector 2   | Det 18: Detector 18 |
| Det 3: Detector 3   | Det 19: Detector 19 |
| Det 4: Detector 4   | Det 20: Detector 20 |
| Det 5: Detector 5   | Det 21: Detector 21 |
| Det 6: Detector 6   | Det 22: Detector 22 |
| Det 7: Detector 7   | Det 23: Detector 23 |
| Det 8: Detector 8   | Det 24: Detector 24 |
| Det 9: Detector 9   | Det 25: Detector 25 |
| Det 10: Detector 10 | Det 26: Detector 26 |
| Det 11: Detector 11 | Det 27: Detector 27 |
| Det 12: Detector 12 | Det 28: Detector 28 |
| Det 13: Detector 13 | Det 29: Detector 29 |
| Det 14: Detector 14 | Det 30: Detector 30 |
| Det 15: Detector 15 | Det 31: Detector 31 |
| Det 16: Detector 16 | Det 32: Detector 32 |

## Detector Type/Timers

```

-----
33    NO      NO      0.0    0      .      0 - Normal
34    NO      NO      0.0    0      .      0 - Normal
35    NO      NO      0.0    0      .      0 - Normal
36    NO      NO      0.0    0      .      0 - Normal
37    NO      NO      0.0    0      .      0 - Normal
38    NO      NO      0.0    0      .      0 - Normal
39    NO      NO      0.0    0      .      0 - Normal
40    NO      NO      0.0    0      .      0 - Normal
41    NO      NO      0.0    0      .      0 - Normal
42    NO      NO      0.0    0      .      0 - Normal
43    NO      NO      0.0    0      .      0 - Normal
44    NO      NO      0.0    0      .      0 - Normal
45    NO      NO      0.0    0      .      0 - Normal
46    NO      NO      0.0    0      .      0 - Normal
47    NO      NO      0.0    0      .      0 - Normal
48    NO      NO      0.0    0      .      0 - Normal
49    NO      NO      0.0    0      .      0 - Normal
50    NO      NO      0.0    0      .      0 - Normal
51    NO      NO      0.0    0      .      0 - Normal
52    NO      NO      0.0    0      .      0 - Normal
53    NO      NO      0.0    0      .      0 - Normal
54    NO      NO      0.0    0      .      0 - Normal
55    NO      NO      0.0    0      .      0 - Normal
56    NO      NO      0.0    0      .      0 - Normal
57    NO      NO      0.0    0      .      0 - Normal
58    NO      NO      0.0    0      .      0 - Normal
59    NO      NO      0.0    0      .      0 - Normal
60    NO      NO      0.0    0      .      0 - Normal
61    NO      NO      0.0    0      .      0 - Normal
62    NO      NO      0.0    0      .      0 - Normal
63    NO      NO      0.0    0      .      0 - Normal
64    NO      NO      0.0    0      .      0 - Normal

```

## Detector Names

```

Det 33: Detector 33
Det 34: Detector 34
Det 35: Detector 35
Det 36: Detector 36
Det 37: Detector 37
Det 38: Detector 38
Det 39: Detector 39
Det 40: Detector 40
Det 41: Detector 41
Det 42: Detector 42
Det 43: Detector 43
Det 44: Detector 44
Det 45: Detector 45
Det 46: Detector 46
Det 47: Detector 47
Det 48: Detector 48
Det 49: Detector 49
Det 50: Detector 50
Det 51: Detector 51
Det 52: Detector 52
Det 53: Detector 53
Det 54: Detector 54
Det 55: Detector 55
Det 56: Detector 56
Det 57: Detector 57
Det 58: Detector 58
Det 59: Detector 59
Det 60: Detector 60
Det 61: Detector 61
Det 62: Detector 62
Det 63: Detector 63
Det 64: Detector 64

```







Ped/SD Local Assign,Log Interval

-----

|                           | Phase Ped Detector |   |   |   |   |   |   |   |   |    |    |    |
|---------------------------|--------------------|---|---|---|---|---|---|---|---|----|----|----|
|                           | 1                  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Is Ped Detector No. . . . | 1                  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

|                           | *Local System Detector No. |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|---------------------------|----------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
|                           | 1                          | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Is Local Detector No. . . | 0                          | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

Detector Log Interval . . 0

\*NOTE: System master designations cross referenced to local system detector numbers are:

- SDA1 = 1 & 9
- SDA2 = 2 & 10
- SDB1 = 3 & 11
- SDB2 = 4 & 12
- SDC1 = 5 & 13
- SDC2 = 6 & 14
- SDD1 = 7 & 15
- SDD2 = 8 & 16

## Diagnostic Plans/Fail Action

| Plan |              | Detector |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|------|--------------|----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
|      |              | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1    | Diagnostic   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 2    | Diagnostic   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 3    | Diagnostic   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 4    | Diagnostic   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 5    | Diagnostic   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 6    | Diagnostic   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 7    | Diagnostic   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 8    | Diagnostic   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
|      | *Fail Action | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

| Plan |              | Detector |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------|--------------|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|      |              | 17       | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| 1    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 2    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 3    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 4    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 5    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 6    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 7    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 8    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
|      | *Fail Action | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

\*NOTE: 0 = No Action, 1 = Min Recall, 2 = Max Recall in Effect  
 3 = Detector Fail Max Time from By-Phase Timing Data

## Diagnostic Plans/Fail Action

| Plan |              | Detector |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------|--------------|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|      |              | 33       | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| 1    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 2    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 3    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 4    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 5    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 6    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 7    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 8    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
|      | *Fail Action | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

| Plan |              | Detector |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------|--------------|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|      |              | 49       | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
| 1    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 2    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 3    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 4    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 5    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 6    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 7    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
| 8    | Diagnostic   | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
|      | Scaling      | 1        | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |
|      | *Fail Action | 0        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

\*NOTE: 0 = No Action, 1 = Min Recall, 2 = Max Recall in Effect  
 3 = Detector Fail Max Time from By-Phase Timing Data



## Detector Diagnostic Intervals

---

| Diagnostic<br>Number | *No-Activity<br>Diagnostic Interval | *Max Presence<br>Diagnostic Interval | Erratic Counts |
|----------------------|-------------------------------------|--------------------------------------|----------------|
| 1                    | 0                                   | 0                                    | 0              |
| 2                    | 0                                   | 0                                    | 0              |
| 3                    | 0                                   | 0                                    | 0              |
| 4                    | 0                                   | 0                                    | 0              |
| 5                    | 0                                   | 0                                    | 0              |
| 6                    | 0                                   | 0                                    | 0              |
| 7                    | 0                                   | 0                                    | 0              |
| 8                    | 0                                   | 0                                    | 0              |
| 9                    | 0                                   | 0                                    | 0              |
| 10                   | 0                                   | 0                                    | 0              |
| 11                   | 0                                   | 0                                    | 0              |
| 12                   | 0                                   | 0                                    | 0              |
| 13                   | 0                                   | 0                                    | 0              |
| 14                   | 0                                   | 0                                    | 0              |
| 15                   | 0                                   | 0                                    | 0              |
| 16                   | 0                                   | 0                                    | 0              |
| 17                   | 0                                   | 0                                    | 0              |
| 18                   | 0                                   | 0                                    | 0              |
| 19                   | 0                                   | 0                                    | 0              |
| 20                   | 0                                   | 0                                    | 0              |
| 21                   | 0                                   | 0                                    | 0              |
| 22                   | 0                                   | 0                                    | 0              |
| 23                   | 0                                   | 0                                    | 0              |
| 24                   | 0                                   | 0                                    | 0              |
| 25                   | 0                                   | 0                                    | 0              |
| 26                   | 0                                   | 0                                    | 0              |
| 27                   | 0                                   | 0                                    | 0              |
| 28                   | 0                                   | 0                                    | 0              |
| 29                   | 0                                   | 0                                    | 0              |
| 30                   | 0                                   | 0                                    | 0              |
| 31                   | 0                                   | 0                                    | 0              |
| 32                   | 0                                   | 0                                    | 0              |

\*NOTE: Scaling is specified in each detector diagnostic plan.

Speed Detectors

---

|                                | Local Speed Detector |   |   |   |   |   |   |   |
|--------------------------------|----------------------|---|---|---|---|---|---|---|
| One Detector Speed:            | 1                    | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Local Detector Number. . . . . | 0                    | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vehicle Length . . . . .       | 0                    | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Loop Length. . . . .           | 0                    | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Two Detector Speed:            |                      |   |   |   |   |   |   |   |
| Local Detector Number. . . . . | 0                    | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Speed Trap Length. . . . .     | 0                    | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

|                                | Local Speed Detector |    |    |    |    |    |    |    |
|--------------------------------|----------------------|----|----|----|----|----|----|----|
| One Detector Speed:            | 9                    | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Local Detector Number. . . . . | 0                    | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Vehicle Length . . . . .       | 0                    | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Loop Length. . . . .           | 0                    | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Two Detector Speed:            |                      |    |    |    |    |    |    |    |
| Local Detector Number. . . . . | 0                    | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Speed Trap Length. . . . .     | 0                    | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

Units. . . . . Inches

NOTE: Speed Detector 1 = STA, Speed Detector 2 = STB

Coordinator Manual Command and Options

```

-----
Manual Enable . . . . . Pattern . . . . . 0

Split Units . . . . . Percent          OffsetUnits . . . . . Percent
Interconnect Format . STD              Interconnect Source . NIC
Transition. . . . . SMOOTH            Dwell Period. . . . . 0
Resync Count. . . . . 0

```

```

Actuated Coord Phase . . . . . Actuated Walk Rest . . . . .
Inhibit Max Timing . . . . . Max 2 Select . . . . .
Floating Force Off . . . . . Multisync. . . . .

```

| Split Demand: Call | Time | Cyc | Count | Phase |   |   |   |   |   |   |   |   |    |    |    |   |
|--------------------|------|-----|-------|-------|---|---|---|---|---|---|---|---|----|----|----|---|
|                    |      |     |       | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |   |
| Demand 1 . .       | 0    |     | 0     | .     | . | . | . | . | . | . | . | . | .  | .  | .  | . |
| Demand 2 . .       | 0    |     | 0     | .     | . | . | . | . | . | . | . | . | .  | .  | .  | . |

| Auto Permissive Min Green . | Phase |   |   |   |   |   |   |   |   |    |    |    |
|-----------------------------|-------|---|---|---|---|---|---|---|---|----|----|----|
|                             | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|                             | 0     | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  |

| Free Alternate Sequence . . | Phase |   |   |   |   |   |
|-----------------------------|-------|---|---|---|---|---|
|                             | A     | B | C | D | E | F |
|                             | .     | . | . | . | . | . |

Coordination Patterns

---

Preemptors

Preemptor 1

```

Active . . . . . Det Lock. . . . . Ped Dark . . . . .
Priority Preemption. . . . . Yel-Red To Grn. . . . . Ped Active . . . . .
Outputs Only During Hold . . . . . Flash All Outputs . . . . . Zero Ped Clr Time. .
Terminate Overlap ASAP . . . . . Terminate Phases. . . . . Ped Clr Thru Yel . .
Don't Override Flash . . . . . Duration Time. . . . . 0
Flash During Hold. . . . . Delay Time . . . . . 0
No CVM in Flash. . . . . Inhibit Time . . . . . 0
Fast Flash Grn on Hold Phase. . . . . Min Ped Clear. . . . . 0
Enable Max Time. . . . . Max Time . . . . . 0
                               Exit Max . . . . . 0
                               Min Hold Time. . . . . 0
                               Hold Delay Time. . . . . 0

```

```

                               Green           Yellow           Red
Minimum . . . . .           0             0.0             0.0
Track Clear . . . . .           0             0.0             0.0
Hold. . . . . . . . . . .           0             0.0             0.0

```

```

Phase/Overlap  1  2  3  4  5  6  7  8  9  10  11  12/ A  B  C  D
Terminate Overlap . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Track Clearance Phase . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Hold Phases . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Exit Phases . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Exit Calls on Phase . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

```

Out of Flash Color for Exit Phases . . . . Green

Preemptor 2

```

Active . . . . . Det Lock. . . . . Ped Dark . . . . .
Priority Preemption. . . . . Yel-Red To Grn. . . . . Ped Active . . . . .
Outputs Only During Hold . . . . . Flash All Outputs . . . . . Zero Ped Clr Time. .
Terminate Overlap ASAP . . . . . Terminate Phases. . . . . Ped Clr Thru Yel . .
Don't Override Flash . . . . . Duration Time. . . . . 0
Flash During Hold. . . . . Delay Time . . . . . 0
No CVM in Flash. . . . . Inhibit Time . . . . . 0
Fast Flash Grn on Hold Phase. . . . . Min Ped Clear. . . . . 0
Enable Max Time. . . . . Max Time . . . . . 0
                               Exit Max . . . . . 0
                               Min Hold Time. . . . . 0
                               Hold Delay Time. . . . . 0

```

```

                               Green           Yellow           Red
Minimum . . . . .           0             0.0             0.0
Track Clear . . . . .           0             0.0             0.0
Hold. . . . . . . . . . .           0             0.0             0.0

```

```

Phase/Overlap  1  2  3  4  5  6  7  8  9  10  11  12/ A  B  C  D
Terminate Overlap . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Track Clearance Phase . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Hold Phases . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Exit Phases . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Exit Calls on Phase . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

```

Out of Flash Color for Exit Phases . . . . Green

Linked Preemptor . . . . 0







NIC/TOD Clock/Calendar

-----  
Manual NIC Program Step . . . . . 0

Manual TOD Program Step . . . . . 0

NIC Resync Time . . . . . 0000

Sync Reference is . . . . . Reference Time

Week 1 Begins on 1st Sunday . . . . . NO If NO, then week containing Jan. 1

Disable Daylight Savings Time . . . . . NO

Daylight Savings  
Begins Last Sunday in March . . . . . NO If NO, then Second Sunday as per 2007 DST Law



## Holiday Programs

---

| Holiday | Type  | Month | Day of Week/<br>Day of Month | Week of Year/<br>Year | Program |
|---------|-------|-------|------------------------------|-----------------------|---------|
| 1       | Fixed | 0     | 0                            | 0                     | 0       |
| 2       | Fixed | 0     | 0                            | 0                     | 0       |
| 3       | Fixed | 0     | 0                            | 0                     | 0       |
| 4       | Fixed | 0     | 0                            | 0                     | 0       |
| 5       | Fixed | 0     | 0                            | 0                     | 0       |
| 6       | Fixed | 0     | 0                            | 0                     | 0       |
| 7       | Fixed | 0     | 0                            | 0                     | 0       |
| 8       | Fixed | 0     | 0                            | 0                     | 0       |
| 9       | Fixed | 0     | 0                            | 0                     | 0       |
| 10      | Fixed | 0     | 0                            | 0                     | 0       |
| 11      | Fixed | 0     | 0                            | 0                     | 0       |
| 12      | Fixed | 0     | 0                            | 0                     | 0       |
| 13      | Fixed | 0     | 0                            | 0                     | 0       |
| 14      | Fixed | 0     | 0                            | 0                     | 0       |
| 15      | Fixed | 0     | 0                            | 0                     | 0       |
| 16      | Fixed | 0     | 0                            | 0                     | 0       |
| 17      | Fixed | 0     | 0                            | 0                     | 0       |
| 18      | Fixed | 0     | 0                            | 0                     | 0       |
| 19      | Fixed | 0     | 0                            | 0                     | 0       |
| 20      | Fixed | 0     | 0                            | 0                     | 0       |
| 21      | Fixed | 0     | 0                            | 0                     | 0       |
| 22      | Fixed | 0     | 0                            | 0                     | 0       |
| 23      | Fixed | 0     | 0                            | 0                     | 0       |
| 24      | Fixed | 0     | 0                            | 0                     | 0       |
| 25      | Fixed | 0     | 0                            | 0                     | 0       |
| 26      | Fixed | 0     | 0                            | 0                     | 0       |
| 27      | Fixed | 0     | 0                            | 0                     | 0       |
| 28      | Fixed | 0     | 0                            | 0                     | 0       |
| 29      | Fixed | 0     | 0                            | 0                     | 0       |
| 30      | Fixed | 0     | 0                            | 0                     | 0       |
| 31      | Fixed | 0     | 0                            | 0                     | 0       |
| 32      | Fixed | 0     | 0                            | 0                     | 0       |
| 33      | Fixed | 0     | 0                            | 0                     | 0       |
| 34      | Fixed | 0     | 0                            | 0                     | 0       |
| 35      | Fixed | 0     | 0                            | 0                     | 0       |
| 36      | Fixed | 0     | 0                            | 0                     | 0       |

NIC Program Steps

---

| Step | Program | Step Begins | Pattern | Override |
|------|---------|-------------|---------|----------|
|------|---------|-------------|---------|----------|

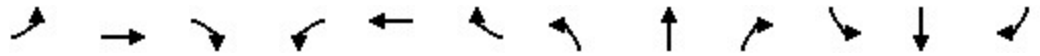


## **Appendix C: Existing Capacity Analysis**

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Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

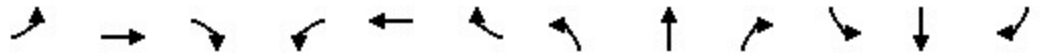
11/06/2025



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations     |       | ↕     |      |       | ↕     |      | ↗     | ↘     |      | ↗     | ↘     |      |
| Traffic Volume (vph)    | 18    | 66    | 24   | 46    | 53    | 27   | 10    | 92    | 28   | 48    | 218   | 31   |
| Future Volume (vph)     | 18    | 66    | 24   | 46    | 53    | 27   | 10    | 92    | 28   | 48    | 218   | 31   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (m)      | 0.0   |       | 0.0  | 0.0   |       | 0.0  | 30.0  |       | 0.0  | 30.0  |       | 0.0  |
| Storage Lanes           | 0     |       | 0    | 0     |       | 0    | 1     |       | 0    | 1     |       | 0    |
| Taper Length (m)        | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Ped Bike Factor         |       | 0.99  |      |       | 1.00  |      |       |       |      |       |       |      |
| Frt                     |       | 0.970 |      |       | 0.971 |      |       | 0.965 |      |       | 0.981 |      |
| Flt Protected           |       | 0.992 |      |       | 0.982 |      | 0.950 |       |      | 0.950 |       |      |
| Satd. Flow (prot)       | 0     | 1767  | 0    | 0     | 1612  | 0    | 1404  | 1697  | 0    | 1659  | 1713  | 0    |
| Flt Permitted           |       | 0.917 |      |       | 0.831 |      | 0.593 |       |      | 0.674 |       |      |
| Satd. Flow (perm)       | 0     | 1633  | 0    | 0     | 1363  | 0    | 876   | 1697  | 0    | 1177  | 1713  | 0    |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes  |       |       | Yes  |
| Satd. Flow (RTOR)       |       | 20    |      |       | 19    |      |       | 26    |      |       | 12    |      |
| Link Speed (k/h)        |       | 70    |      |       | 70    |      |       | 40    |      |       | 40    |      |
| Link Distance (m)       |       | 523.9 |      |       | 684.4 |      |       | 847.5 |      |       | 805.2 |      |
| Travel Time (s)         |       | 26.9  |      |       | 35.2  |      |       | 76.3  |      |       | 72.5  |      |
| Confl. Peds. (#/hr)     |       |       | 1    | 1     |       |      |       |       |      |       |       |      |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 17%   | 2%    | 0%   | 9%    | 4%    | 41%  | 30%   | 12%   | 0%   | 10%   | 11%   | 3%   |
| Adj. Flow (vph)         | 20    | 72    | 26   | 50    | 58    | 29   | 11    | 100   | 30   | 52    | 237   | 34   |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 118   | 0    | 0     | 137   | 0    | 11    | 130   | 0    | 52    | 271   | 0    |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      |
| Protected Phases        |       | 4     |      |       | 8     |      |       | 2     |      |       | 6     |      |
| Permitted Phases        | 4     |       |      | 8     |       |      | 2     |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 2     | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |      |       |       |      |       |       |      |       |       |      |
| Minimum Initial (s)     | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 30.0  | 30.0  |      | 30.0  | 30.0  |      |
| Minimum Split (s)       | 22.5  | 22.5  |      | 22.5  | 22.5  |      | 37.5  | 37.5  |      | 37.5  | 37.5  |      |
| Total Split (s)         | 34.5  | 34.5  |      | 34.5  | 34.5  |      | 42.5  | 42.5  |      | 42.5  | 42.5  |      |
| Total Split (%)         | 44.8% | 44.8% |      | 44.8% | 44.8% |      | 55.2% | 55.2% |      | 55.2% | 55.2% |      |
| Maximum Green (s)       | 27.0  | 27.0  |      | 27.0  | 27.0  |      | 35.0  | 35.0  |      | 35.0  | 35.0  |      |
| Yellow Time (s)         | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |
| Total Lost Time (s)     |       | 7.5   |      |       | 7.5   |      | 7.5   | 7.5   |      | 7.5   | 7.5   |      |
| Lead/Lag                |       |       |      |       |       |      |       |       |      |       |       |      |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |      |       |       |      |
| Vehicle Extension (s)   | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Recall Mode             | None  | None  |      | None  | None  |      | Max   | Max   |      | Max   | Max   |      |
| Walk Time (s)           | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      |
| Flash Don't Walk (s)    | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      |
| Pedestrian Calls (#/hr) | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      |
| Act Effct Green (s)     |       | 15.3  |      |       | 15.3  |      | 40.1  | 40.1  |      | 40.1  | 40.1  |      |
| Actuated g/C Ratio      |       | 0.24  |      |       | 0.24  |      | 0.63  | 0.63  |      | 0.63  | 0.63  |      |
| v/c Ratio               |       | 0.29  |      |       | 0.40  |      | 0.02  | 0.12  |      | 0.07  | 0.25  |      |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025

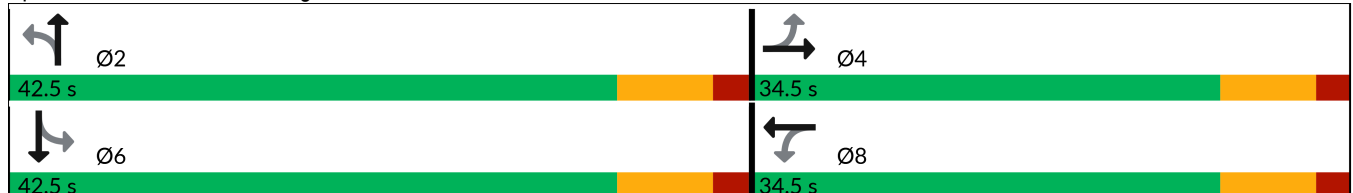


| Lane Group             | EBL | EBT   | EBR | WBL | WBT   | WBR | NBL  | NBT   | NBR | SBL  | SBT   | SBR |
|------------------------|-----|-------|-----|-----|-------|-----|------|-------|-----|------|-------|-----|
| Control Delay (s/veh)  |     | 19.6  |     |     | 22.3  |     | 7.5  | 6.7   |     | 7.9  | 8.3   |     |
| Queue Delay            |     | 0.0   |     |     | 0.0   |     | 0.0  | 0.0   |     | 0.0  | 0.0   |     |
| Total Delay (s/veh)    |     | 19.6  |     |     | 22.3  |     | 7.5  | 6.7   |     | 7.9  | 8.3   |     |
| LOS                    |     | B     |     |     | C     |     | A    | A     |     | A    | A     |     |
| Approach Delay (s/veh) |     | 19.6  |     |     | 22.3  |     |      | 6.7   |     |      |       | 8.3 |
| Approach LOS           |     | B     |     |     | C     |     |      | A     |     |      |       | A   |
| Queue Length 50th (m)  |     | 9.7   |     |     | 12.0  |     | 0.6  | 5.6   |     | 2.8  | 15.5  |     |
| Queue Length 95th (m)  |     | 21.7  |     |     | 26.2  |     | 2.6  | 13.3  |     | 7.5  | 29.2  |     |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4 |     |      | 823.5 |     |      | 781.2 |     |
| Turn Bay Length (m)    |     |       |     |     |       |     | 30.0 |       |     | 30.0 |       |     |
| Base Capacity (vph)    |     | 704   |     |     | 589   |     | 550  | 1076  |     | 739  | 1081  |     |
| Starvation Cap Reductn |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Spillback Cap Reductn  |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Storage Cap Reductn    |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Reduced v/c Ratio      |     | 0.17  |     |     | 0.23  |     | 0.02 | 0.12  |     | 0.07 | 0.25  |     |

Intersection Summary



















|                                    |                  |
|------------------------------------|------------------|
| Area Type:                         | Other            |
| Cycle Length:                      | 77               |
| Actuated Cycle Length:             | 63.8             |
| Natural Cycle:                     | 60               |
| Control Type:                      | Semi Act-Uncoord |
| Maximum v/c Ratio:                 | 0.40             |
| Intersection Signal Delay (s/veh): | 12.5             |
| Intersection LOS:                  | B                |
| Intersection Capacity Utilization: | 51.0%            |
| ICU Level of Service:              | A                |
| Analysis Period (min):             | 15               |

Splits and Phases: 3: Trafalgar/WR24 & WR22



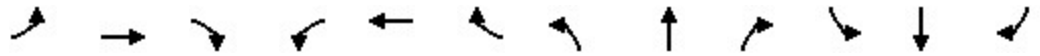
Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

11/06/2025

|                         |  |  |  |  |  |  |   |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations     |   |  |   |   |  |   |  |  |   |  |  |   |
| Traffic Volume (vph)    | 43  | 59  | 16  | 32  | 81  | 90  | 32  | 271   | 47  | 37  | 138   | 25  |
| Future Volume (vph)     | 43  | 59  | 16  | 32  | 81  | 90  | 32  | 271   | 47  | 37  | 138   | 25  |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (m)      | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 30.0  |   | 0.0   | 30.0  |   | 0.0   |
| Storage Lanes           | 0   |   | 0   | 0   |   | 0   | 1   |   | 0   | 1   |   | 0   |
| Taper Length (m)        | 2.5   |   |   | 2.5   |   |   | 2.5   |   |   | 2.5   |   |   |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                     |   | 0.982   |   |   | 0.940   |   |   | 0.978   |   |   |   | 0.977   |
| Flt Protected           |   | 0.982   |   |   | 0.992   |   | 0.950   |   |   | 0.950   |   |   |
| Satd. Flow (prot)       | 0   | 1853  | 0   | 0   | 1754  | 0   | 1674  | 1822  | 0   | 1601  | 1790  | 0   |
| Flt Permitted           |   | 0.793   |   |   | 0.920   |   | 0.646   |   |   | 0.553   |   |   |
| Satd. Flow (perm)       | 0   | 1496  | 0   | 0   | 1626  | 0   | 1139  | 1822  | 0   | 932   | 1790  | 0   |
| Right Turn on Red       |   |   | Yes   |   |   | Yes   |   |   | Yes   |   |   | Yes   |
| Satd. Flow (RTOR)       |   | 11  |   |   | 57  |   |   | 15  |   |   |   | 15  |
| Link Speed (k/h)        |   | 70  |   |   | 70  |   |   | 40  |   |   |   | 40  |
| Link Distance (m)       |   | 523.9   |   |   | 684.4   |   |   | 847.5   |   |   |   | 805.2   |
| Travel Time (s)         |   | 26.9  |   |   | 35.2  |   |   | 76.3  |   |   |   | 72.5  |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  |
| Heavy Vehicles (%)      | 0%  | 0%  | 0%  | 3%  | 2%  | 2%  | 9%  | 3%  | 4%  | 14%   | 5%  | 4%  |
| Adj. Flow (vph)         | 47  | 64  | 17  | 35  | 88  | 98  | 35  | 295   | 51  | 40  | 150   | 27  |
| Shared Lane Traffic (%) |   |   |   |   |   |   |   |   |   |   |   |   |
| Lane Group Flow (vph)   | 0   | 128   | 0   | 0   | 221   | 0   | 35  | 346   | 0   | 40  | 177   | 0   |
| Turn Type               | Perm  | NA  |   | Perm  | NA  |   | Perm  | NA  |   | Perm  | NA  |   |
| Protected Phases        |   | 4   |   |   | 8   |   |   | 2   |   |   |   | 6   |
| Permitted Phases        | 4   |   |   | 8   |   |   | 2   |   |   | 6   |   |   |
| Detector Phase          | 4   | 4   |   | 8   | 8   |   | 2   | 2   |   | 6   | 6   |   |
| Switch Phase            |   |   |   |   |   |   |   |   |   |   |   |   |
| Minimum Initial (s)     | 15.0  | 15.0  |   | 15.0  | 15.0  |   | 30.0  | 30.0  |   | 30.0  | 30.0  |   |
| Minimum Split (s)       | 22.5  | 22.5  |   | 22.5  | 22.5  |   | 37.5  | 37.5  |   | 37.5  | 37.5  |   |
| Total Split (s)         | 34.5  | 34.5  |   | 34.5  | 34.5  |   | 42.5  | 42.5  |   | 42.5  | 42.5  |   |
| Total Split (%)         | 44.8%   | 44.8%   |   | 44.8%   | 44.8%   |   | 55.2%   | 55.2%   |   | 55.2%   | 55.2%   |   |
| Maximum Green (s)       | 27.0  | 27.0  |   | 27.0  | 27.0  |   | 35.0  | 35.0  |   | 35.0  | 35.0  |   |
| Yellow Time (s)         | 5.5   | 5.5   |   | 5.5   | 5.5   |   | 5.5   | 5.5   |   | 5.5   | 5.5   |   |
| All-Red Time (s)        | 2.0   | 2.0   |   | 2.0   | 2.0   |   | 2.0   | 2.0   |   | 2.0   | 2.0   |   |
| Lost Time Adjust (s)    |   | 0.0   |   |   | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 0.0   |   |
| Total Lost Time (s)     |   | 7.5   |   |   | 7.5   |   | 7.5   | 7.5   |   | 7.5   | 7.5   |   |
| Lead/Lag                |   |   |   |   |   |   |   |   |   |   |   |   |
| Lead-Lag Optimize?      |   |   |   |   |   |   |   |   |   |   |   |   |
| Vehicle Extension (s)   | 4.0   | 4.0   |   | 4.0   | 4.0   |   | 3.0   | 3.0   |   | 3.0   | 3.0   |   |
| Recall Mode             | None  | None  |   | None  | None  |   | Max   | Max   |   | Max   | Max   |   |
| Walk Time (s)           | 5.0   | 5.0   |   | 5.0   | 5.0   |   | 5.0   | 5.0   |   | 5.0   | 5.0   |   |
| Flash Don't Walk (s)    | 7.0   | 7.0   |   | 7.0   | 7.0   |   | 7.0   | 7.0   |   | 7.0   | 7.0   |   |
| Pedestrian Calls (#/hr) | 0   | 0   |   | 0   | 0   |   | 0   | 0   |   | 0   | 0   |   |
| Act Effct Green (s)     |   | 15.7  |   |   | 15.7  |   | 36.3  | 36.3  |   | 36.3  | 36.3  |   |
| Actuated g/C Ratio      |   | 0.23  |   |   | 0.23  |   | 0.54  | 0.54  |   | 0.54  | 0.54  |   |
| v/c Ratio               |   | 0.36  |   |   | 0.52  |   | 0.06  | 0.35  |   | 0.08  | 0.18  |   |
| Control Delay (s/veh)   |   | 22.2  |   |   | 20.9  |   | 8.1   | 9.8   |   | 8.4   | 8.0   |   |
| Queue Delay             |   | 0.0   |   |   | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 0.0   |   |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025



| Lane Group             | EBL | EBT   | EBR | WBL | WBT   | WBR | NBL  | NBT   | NBR | SBL  | SBT   | SBR |
|------------------------|-----|-------|-----|-----|-------|-----|------|-------|-----|------|-------|-----|
| Total Delay (s/veh)    |     | 22.2  |     |     | 20.9  |     | 8.1  | 9.8   |     | 8.4  | 8.0   |     |
| LOS                    |     | C     |     |     | C     |     | A    | A     |     | A    | A     |     |
| Approach Delay (s/veh) |     | 22.2  |     |     | 20.9  |     |      | 9.6   |     |      | 8.1   |     |
| Approach LOS           |     | C     |     |     | C     |     |      | A     |     |      | A     |     |
| Queue Length 50th (m)  |     | 11.8  |     |     | 17.0  |     | 1.8  | 20.5  |     | 2.1  | 9.1   |     |
| Queue Length 95th (m)  |     | 24.8  |     |     | 35.1  |     | 6.0  | 39.5  |     | 6.8  | 19.7  |     |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4 |     |      | 823.5 |     |      | 781.2 |     |
| Turn Bay Length (m)    |     |       |     |     |       |     | 30.0 |       |     | 30.0 |       |     |
| Base Capacity (vph)    |     | 610   |     |     | 690   |     | 617  | 994   |     | 504  | 976   |     |
| Starvation Cap Reductn |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Spillback Cap Reductn  |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Storage Cap Reductn    |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Reduced v/c Ratio      |     | 0.21  |     |     | 0.32  |     | 0.06 | 0.35  |     | 0.08 | 0.18  |     |

Intersection Summary

|                                    |                  |
|------------------------------------|------------------|
| Area Type:                         | Other            |
| Cycle Length:                      | 77               |
| Actuated Cycle Length:             | 67               |
| Natural Cycle:                     | 60               |
| Control Type:                      | Semi Act-Uncoord |
| Maximum v/c Ratio:                 | 0.52             |
| Intersection Signal Delay (s/veh): | 13.6             |
| Intersection LOS:                  | B                |
| Intersection Capacity Utilization: | 56.1%            |
| ICU Level of Service:              | B                |
| Analysis Period (min):             | 15               |

Splits and Phases: 3: Trafalgar/WR24 & WR22

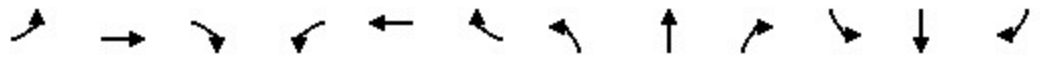


## **Appendix D: Future Background Capacity Analysis**

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Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

11/06/2025



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations     |       | ↕     |      |       | ↕     |      | ↗     | ↘     |      | ↗     | ↘     |      |
| Traffic Volume (vph)    | 24    | 86    | 31   | 162   | 81    | 66   | 15    | 199   | 59   | 157   | 421   | 38   |
| Future Volume (vph)     | 24    | 86    | 31   | 162   | 81    | 66   | 15    | 199   | 59   | 157   | 421   | 38   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (m)      | 0.0   |       | 0.0  | 0.0   |       | 0.0  | 30.0  |       | 0.0  | 30.0  |       | 0.0  |
| Storage Lanes           | 0     |       | 0    | 0     |       | 0    | 1     |       | 0    | 1     |       | 0    |
| Taper Length (m)        | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Ped Bike Factor         |       | 0.99  |      |       | 1.00  |      |       |       |      |       |       |      |
| Frt                     |       | 0.970 |      |       | 0.971 |      |       | 0.966 |      |       | 0.988 |      |
| Flt Protected           |       | 0.992 |      |       | 0.974 |      | 0.950 |       |      | 0.950 |       |      |
| Satd. Flow (prot)       | 0     | 1767  | 0    | 0     | 1586  | 0    | 1404  | 1699  | 0    | 1659  | 1720  | 0    |
| Flt Permitted           |       | 0.905 |      |       | 0.771 |      | 0.385 |       |      | 0.588 |       |      |
| Satd. Flow (perm)       | 0     | 1612  | 0    | 0     | 1254  | 0    | 569   | 1699  | 0    | 1027  | 1720  | 0    |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes  |       |       | Yes  |
| Satd. Flow (RTOR)       |       | 21    |      |       | 20    |      |       | 25    |      |       | 8     |      |
| Link Speed (k/h)        |       | 70    |      |       | 70    |      |       | 40    |      |       | 40    |      |
| Link Distance (m)       |       | 523.9 |      |       | 684.4 |      |       | 847.5 |      |       | 805.2 |      |
| Travel Time (s)         |       | 26.9  |      |       | 35.2  |      |       | 76.3  |      |       | 72.5  |      |
| Confl. Peds. (#/hr)     |       |       | 1    | 1     |       |      |       |       |      |       |       |      |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 17%   | 2%    | 0%   | 9%    | 4%    | 41%  | 30%   | 12%   | 0%   | 10%   | 11%   | 3%   |
| Adj. Flow (vph)         | 26    | 93    | 34   | 176   | 88    | 72   | 16    | 216   | 64   | 171   | 458   | 41   |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 153   | 0    | 0     | 336   | 0    | 16    | 280   | 0    | 171   | 499   | 0    |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      |
| Protected Phases        |       | 4     |      |       | 8     |      |       | 2     |      |       | 6     |      |
| Permitted Phases        | 4     |       |      | 8     |       |      | 2     |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 2     | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |      |       |       |      |       |       |      |       |       |      |
| Minimum Initial (s)     | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 30.0  | 30.0  |      | 30.0  | 30.0  |      |
| Minimum Split (s)       | 22.5  | 22.5  |      | 22.5  | 22.5  |      | 37.5  | 37.5  |      | 37.5  | 37.5  |      |
| Total Split (s)         | 34.5  | 34.5  |      | 34.5  | 34.5  |      | 42.5  | 42.5  |      | 42.5  | 42.5  |      |
| Total Split (%)         | 44.8% | 44.8% |      | 44.8% | 44.8% |      | 55.2% | 55.2% |      | 55.2% | 55.2% |      |
| Maximum Green (s)       | 27.0  | 27.0  |      | 27.0  | 27.0  |      | 35.0  | 35.0  |      | 35.0  | 35.0  |      |
| Yellow Time (s)         | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |
| Total Lost Time (s)     |       | 7.5   |      |       | 7.5   |      | 7.5   | 7.5   |      | 7.5   | 7.5   |      |
| Lead/Lag                |       |       |      |       |       |      |       |       |      |       |       |      |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |      |       |       |      |
| Vehicle Extension (s)   | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Recall Mode             | None  | None  |      | None  | None  |      | Max   | Max   |      | Max   | Max   |      |
| Walk Time (s)           | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      |
| Flash Don't Walk (s)    | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      |
| Pedestrian Calls (#/hr) | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      |
| Act Effct Green (s)     |       | 22.9  |      |       | 22.9  |      | 35.1  | 35.1  |      | 35.1  | 35.1  |      |
| Actuated g/C Ratio      |       | 0.31  |      |       | 0.31  |      | 0.48  | 0.48  |      | 0.48  | 0.48  |      |
| v/c Ratio               |       | 0.29  |      |       | 0.83  |      | 0.06  | 0.34  |      | 0.35  | 0.60  |      |

Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

11/06/2025

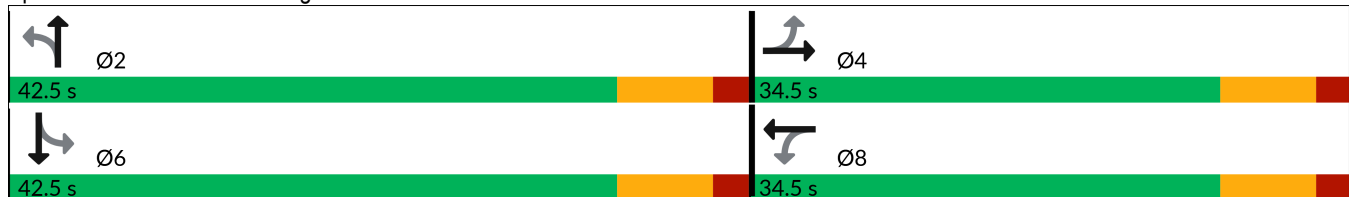


| Lane Group             | EBL | EBT   | EBR | WBL | WBT   | WBR | NBL  | NBT   | NBR | SBL  | SBT   | SBR |
|------------------------|-----|-------|-----|-----|-------|-----|------|-------|-----|------|-------|-----|
| Control Delay (s/veh)  |     | 17.4  |     |     | 40.2  |     | 12.6 | 13.0  |     | 15.6 | 18.4  |     |
| Queue Delay            |     | 0.0   |     |     | 0.0   |     | 0.0  | 0.0   |     | 0.0  | 0.0   |     |
| Total Delay (s/veh)    |     | 17.4  |     |     | 40.2  |     | 12.6 | 13.0  |     | 15.6 | 18.4  |     |
| LOS                    |     | B     |     |     | D     |     | B    | B     |     | B    | B     |     |
| Approach Delay (s/veh) |     | 17.4  |     |     | 40.2  |     |      | 13.0  |     |      | 17.7  |     |
| Approach LOS           |     | B     |     |     | D     |     |      | B     |     |      | B     |     |
| Queue Length 50th (m)  |     | 13.4  |     |     | 39.8  |     | 1.2  | 22.1  |     | 15.1 | 50.8  |     |
| Queue Length 95th (m)  |     | 26.6  |     |     | #78.9 |     | 4.6  | 39.7  |     | 30.2 | 83.4  |     |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4 |     |      | 823.5 |     |      | 781.2 |     |
| Turn Bay Length (m)    |     |       |     |     |       |     | 30.0 |       |     | 30.0 |       |     |
| Base Capacity (vph)    |     | 610   |     |     | 477   |     | 273  | 829   |     | 493  | 830   |     |
| Starvation Cap Reductn |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Spillback Cap Reductn  |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Storage Cap Reductn    |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Reduced v/c Ratio      |     | 0.25  |     |     | 0.70  |     | 0.06 | 0.34  |     | 0.35 | 0.60  |     |

Intersection Summary

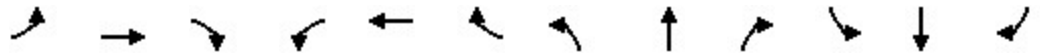
|   |                  |
|---|------------------|
| Area Type:  | Other            |
| Cycle Length:   | 77               |
| Actuated Cycle Length:  | 73.1             |
| Natural Cycle:  | 65               |
| Control Type:   | Semi Act-Uncoord |
| Maximum v/c Ratio:  | 0.83             |
| Intersection Signal Delay (s/veh):                              | 21.9             |
| Intersection LOS:   | C                |
| Intersection Capacity Utilization:                              | 92.7%            |
| ICU Level of Service:   | F                |
| Analysis Period (min):  | 15               |
| # 95th percentile volume exceeds capacity, queue may be longer. |                  |
| Queue shown is maximum after two cycles.                        |                  |

Splits and Phases: 3: Trafalgar/WR24 & WR22



Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

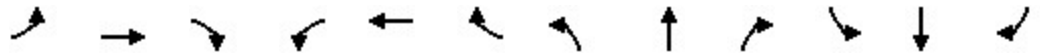
11/06/2025



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-------|
| Lane Configurations     |       | ↕     |      |       | ↕     |      | ↗     | ↘     |      | ↗     | ↘     |       |
| Traffic Volume (vph)    | 58    | 86    | 23   | 106   | 111   | 214  | 41    | 551   | 132  | 108   | 290   | 31    |
| Future Volume (vph)     | 58    | 86    | 23   | 106   | 111   | 214  | 41    | 551   | 132  | 108   | 290   | 31    |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  |
| Storage Length (m)      | 0.0   |       | 0.0  | 0.0   |       | 0.0  | 30.0  |       | 0.0  | 30.0  |       | 0.0   |
| Storage Lanes           | 0     |       | 0    | 0     |       | 0    | 1     |       | 0    | 1     |       | 0     |
| Taper Length (m)        | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      | 2.5   |       |       |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| Frt                     |       | 0.981 |      |       | 0.933 |      |       | 0.971 |      |       |       | 0.985 |
| Flt Protected           |       | 0.983 |      |       | 0.988 |      | 0.950 |       |      | 0.950 |       |       |
| Satd. Flow (prot)       | 0     | 1853  | 0    | 0     | 1732  | 0    | 1674  | 1808  | 0    | 1601  | 1804  | 0     |
| Flt Permitted           |       | 0.668 |      |       | 0.872 |      | 0.523 |       |      | 0.168 |       |       |
| Satd. Flow (perm)       | 0     | 1259  | 0    | 0     | 1529  | 0    | 922   | 1808  | 0    | 283   | 1804  | 0     |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes  |       |       | Yes   |
| Satd. Flow (RTOR)       |       | 12    |      |       | 71    |      |       | 20    |      |       |       | 9     |
| Link Speed (k/h)        |       | 70    |      |       | 70    |      |       | 40    |      |       |       | 40    |
| Link Distance (m)       |       | 523.9 |      |       | 684.4 |      |       | 847.5 |      |       |       | 805.2 |
| Travel Time (s)         |       | 26.9  |      |       | 35.2  |      |       | 76.3  |      |       |       | 72.5  |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92  |
| Heavy Vehicles (%)      | 0%    | 0%    | 0%   | 3%    | 2%    | 2%   | 9%    | 3%    | 4%   | 14%   | 5%    | 4%    |
| Adj. Flow (vph)         | 63    | 93    | 25   | 115   | 121   | 233  | 45    | 599   | 143  | 117   | 315   | 34    |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |      |       |       |       |
| Lane Group Flow (vph)   | 0     | 181   | 0    | 0     | 469   | 0    | 45    | 742   | 0    | 117   | 349   | 0     |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |       |
| Protected Phases        |       | 4     |      |       | 8     |      |       | 2     |      |       |       | 6     |
| Permitted Phases        | 4     |       |      | 8     |       |      | 2     |       |      | 6     |       |       |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 2     | 2     |      | 6     | 6     |       |
| Switch Phase            |       |       |      |       |       |      |       |       |      |       |       |       |
| Minimum Initial (s)     | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 30.0  | 30.0  |      | 30.0  | 30.0  |       |
| Minimum Split (s)       | 22.5  | 22.5  |      | 22.5  | 22.5  |      | 37.5  | 37.5  |      | 37.5  | 37.5  |       |
| Total Split (s)         | 34.5  | 34.5  |      | 34.5  | 34.5  |      | 42.5  | 42.5  |      | 42.5  | 42.5  |       |
| Total Split (%)         | 44.8% | 44.8% |      | 44.8% | 44.8% |      | 55.2% | 55.2% |      | 55.2% | 55.2% |       |
| Maximum Green (s)       | 27.0  | 27.0  |      | 27.0  | 27.0  |      | 35.0  | 35.0  |      | 35.0  | 35.0  |       |
| Yellow Time (s)         | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |       |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |       |
| Lost Time Adjust (s)    |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |       |
| Total Lost Time (s)     |       | 7.5   |      |       | 7.5   |      | 7.5   | 7.5   |      | 7.5   | 7.5   |       |
| Lead/Lag                |       |       |      |       |       |      |       |       |      |       |       |       |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |      |       |       |       |
| Vehicle Extension (s)   | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |       |
| Recall Mode             | None  | None  |      | None  | None  |      | Max   | Max   |      | Max   | Max   |       |
| Walk Time (s)           | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |       |
| Flash Don't Walk (s)    | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |       |
| Pedestrian Calls (#/hr) | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      | 0     | 0     |       |
| Act Effct Green (s)     |       | 23.8  |      |       | 23.8  |      | 35.1  | 35.1  |      | 35.1  | 35.1  |       |
| Actuated g/C Ratio      |       | 0.32  |      |       | 0.32  |      | 0.47  | 0.47  |      | 0.47  | 0.47  |       |
| v/c Ratio               |       | 0.44  |      |       | 0.87  |      | 0.10  | 0.85  |      | 0.87  | 0.41  |       |
| Control Delay (s/veh)   |       | 21.9  |      |       | 38.1  |      | 12.8  | 29.9  |      | 76.7  | 14.9  |       |
| Queue Delay             |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |       |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025

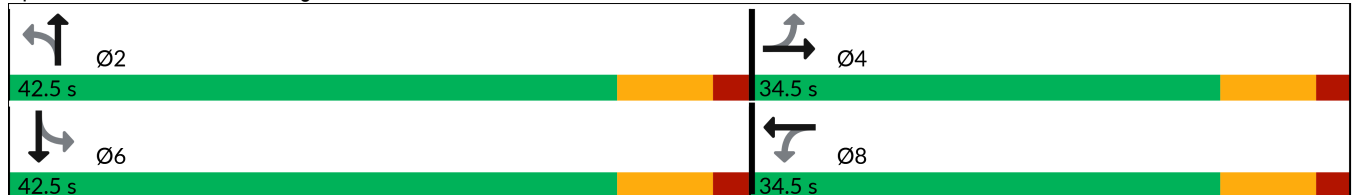


| Lane Group             | EBL | EBT   | EBR | WBL | WBT    | WBR | NBL  | NBT    | NBR | SBL   | SBT   | SBR |
|------------------------|-----|-------|-----|-----|--------|-----|------|--------|-----|-------|-------|-----|
| Total Delay (s/veh)    |     | 21.9  |     |     | 38.1   |     | 12.8 | 29.9   |     | 76.7  | 14.9  |     |
| LOS                    |     | C     |     |     | D      |     | B    | C      |     | E     | B     |     |
| Approach Delay (s/veh) |     | 21.9  |     |     | 38.1   |     |      | 28.9   |     |       | 30.4  |     |
| Approach LOS           |     | C     |     |     | D      |     |      | C      |     |       | C     |     |
| Queue Length 50th (m)  |     | 18.2  |     |     | 52.1   |     | 3.6  | 92.8   |     | 15.2  | 32.0  |     |
| Queue Length 95th (m)  |     | 34.8  |     |     | #101.2 |     | 9.3  | #161.6 |     | #46.5 | 51.9  |     |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4  |     |      | 823.5  |     |       | 781.2 |     |
| Turn Bay Length (m)    |     |       |     |     |        |     | 30.0 |        |     | 30.0  |       |     |
| Base Capacity (vph)    |     | 468   |     |     | 604    |     | 437  | 868    |     | 134   | 860   |     |
| Starvation Cap Reductn |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Spillback Cap Reductn  |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Storage Cap Reductn    |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Reduced v/c Ratio      |     | 0.39  |     |     | 0.78   |     | 0.10 | 0.85   |     | 0.87  | 0.41  |     |

Intersection Summary

|   |                  |
|---|------------------|
| Area Type:  | Other            |
| Cycle Length:   | 77               |
| Actuated Cycle Length:  | 74               |
| Natural Cycle:  | 80               |
| Control Type:   | Semi Act-Uncoord |
| Maximum v/c Ratio:  | 0.87             |
| Intersection Signal Delay (s/veh):                              | 30.8             |
| Intersection LOS:   | C                |
| Intersection Capacity Utilization:                              | 110.1%           |
| ICU Level of Service:   | H                |
| Analysis Period (min):  | 15               |
| # 95th percentile volume exceeds capacity, queue may be longer. |                  |
| Queue shown is maximum after two cycles.                        |                  |

Splits and Phases: 3: Trafalgar/WR24 & WR22



## **Appendix E: ITE Trip Generation Manual Excerpts**

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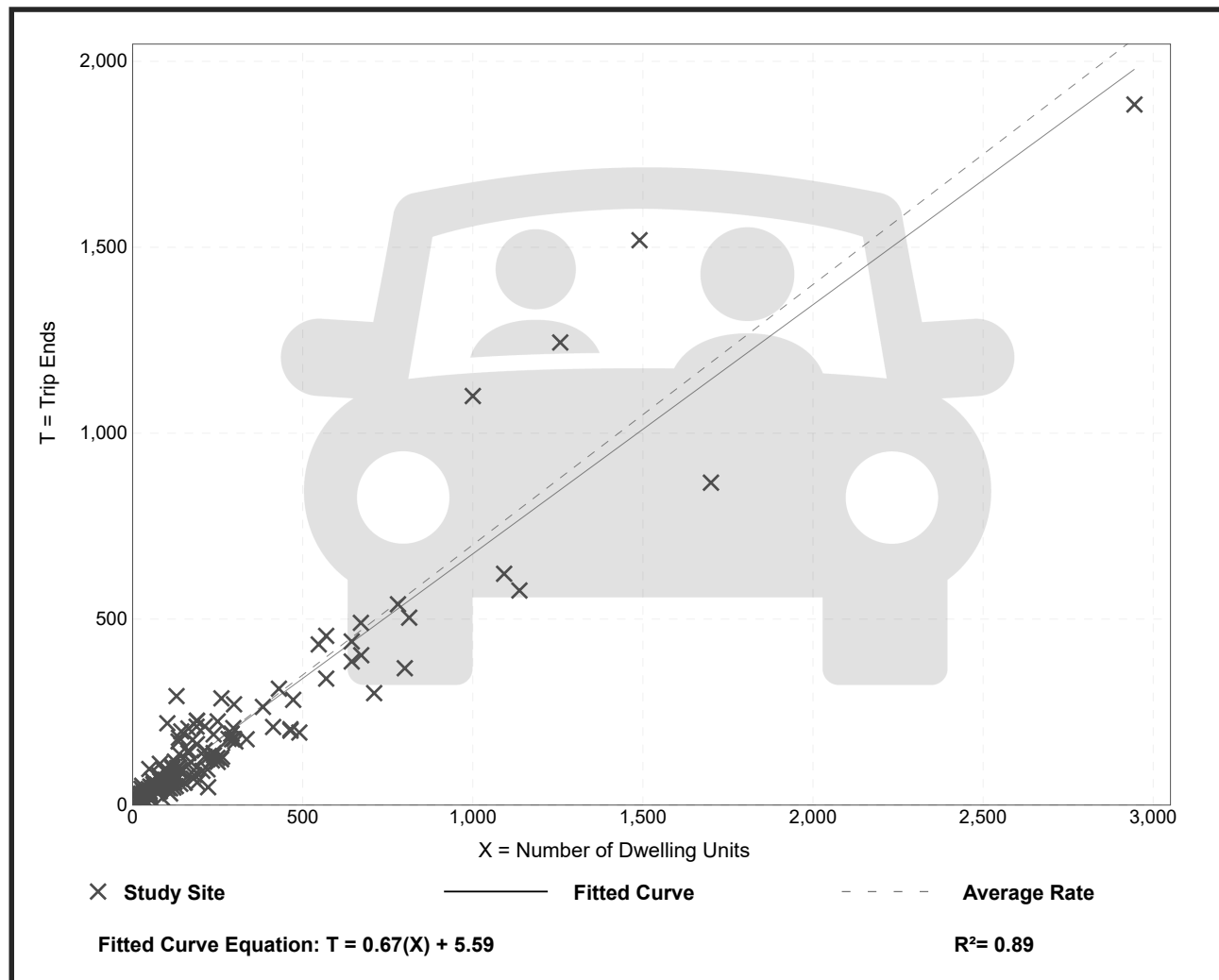
# Single-Family Detached Housing (210)

**Vehicle Trip Ends vs: Dwelling Units**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 153  
 Avg. Num. of Dwelling Units: 239  
 Directional Distribution: 27% entering, 73% exiting

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.70         | 0.22 - 2.27    | 0.26               |

## Data Plot and Equation



# Single-Family Detached Housing (210)

**Vehicle Trip Ends vs: Dwelling Units**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**

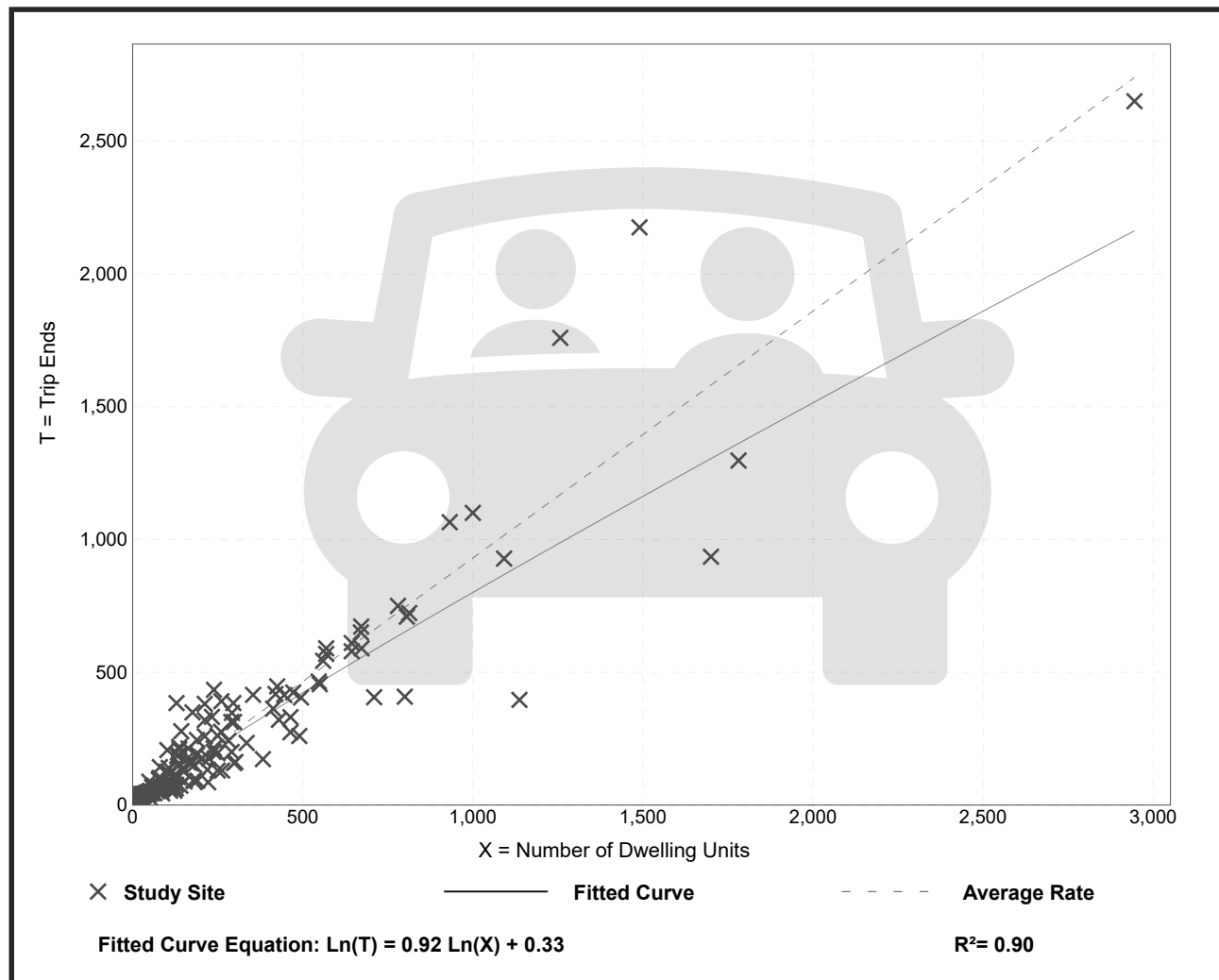
**Setting/Location: General Urban/Suburban**

Number of Studies: 166  
 Avg. Num. of Dwelling Units: 266  
 Directional Distribution: 62% entering, 38% exiting

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.93         | 0.35 - 2.98    | 0.33               |

## Data Plot and Equation



# Single-Family Attached Housing (215)

**Vehicle Trip Ends vs: Dwelling Units**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**

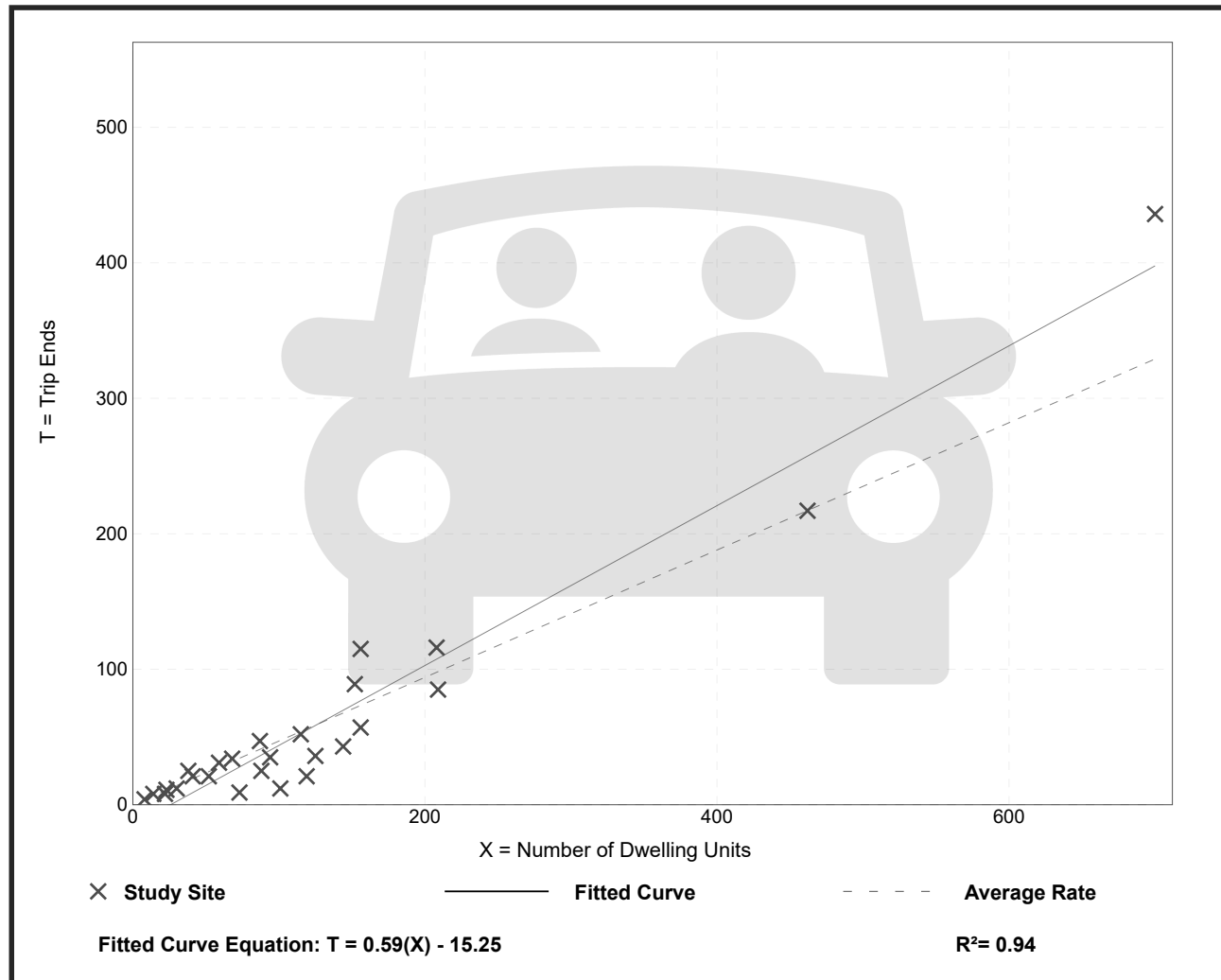
**Setting/Location: General Urban/Suburban**

Number of Studies: 26  
 Avg. Num. of Dwelling Units: 129  
 Directional Distribution: 25% entering, 75% exiting

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.47         | 0.12 - 0.74    | 0.16               |

## Data Plot and Equation



# Single-Family Attached Housing (215)

**Vehicle Trip Ends vs: Dwelling Units**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**

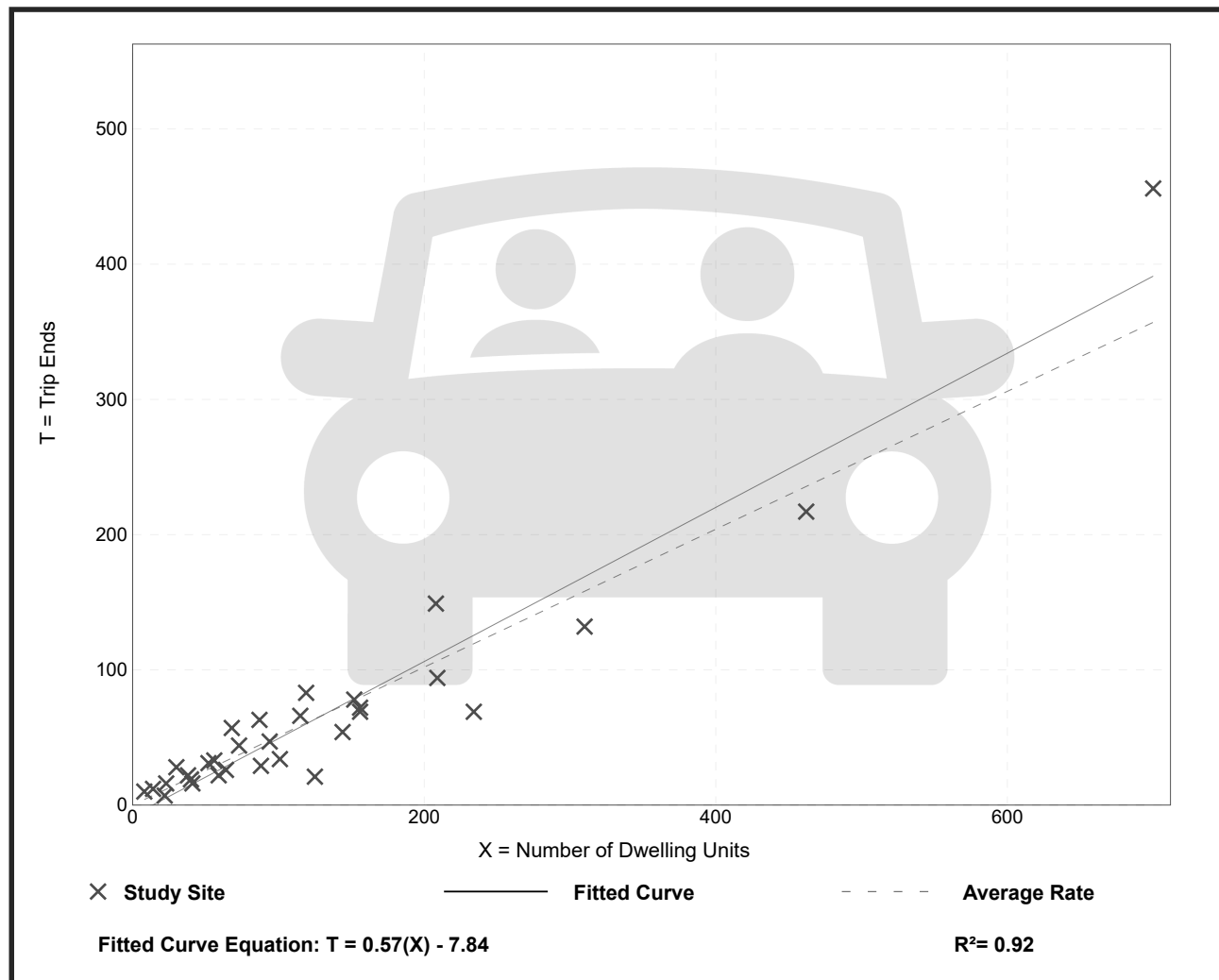
**Setting/Location: General Urban/Suburban**

Number of Studies: 31  
 Avg. Num. of Dwelling Units: 131  
 Directional Distribution: 57% entering, 43% exiting

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.51         | 0.17 - 1.25    | 0.16               |

## Data Plot and Equation

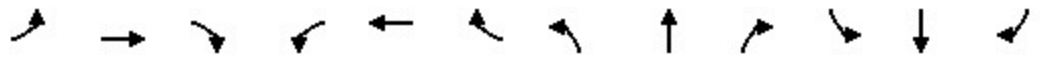


## **Appendix F: Future Total Capacity Analysis**

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Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

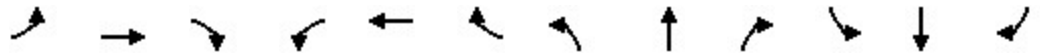
11/06/2025



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations     |       | ↕     |      |       | ↕     |      | ↗     | ↘     |      | ↗     | ↘     |      |
| Traffic Volume (vph)    | 45    | 107   | 74   | 162   | 88    | 66   | 22    | 199   | 59   | 157   | 421   | 54   |
| Future Volume (vph)     | 45    | 107   | 74   | 162   | 88    | 66   | 22    | 199   | 59   | 157   | 421   | 54   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (m)      | 0.0   |       | 0.0  | 0.0   |       | 0.0  | 30.0  |       | 0.0  | 30.0  |       | 0.0  |
| Storage Lanes           | 0     |       | 0    | 0     |       | 0    | 1     |       | 0    | 1     |       | 0    |
| Taper Length (m)        | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Ped Bike Factor         |       | 0.99  |      |       | 1.00  |      |       |       |      |       |       |      |
| Frt                     |       | 0.956 |      |       | 0.972 |      |       | 0.966 |      |       | 0.983 |      |
| Flt Protected           |       | 0.990 |      |       | 0.975 |      | 0.950 |       |      | 0.950 |       |      |
| Satd. Flow (prot)       | 0     | 1729  | 0    | 0     | 1593  | 0    | 1404  | 1699  | 0    | 1659  | 1715  | 0    |
| Flt Permitted           |       | 0.867 |      |       | 0.719 |      | 0.362 |       |      | 0.588 |       |      |
| Satd. Flow (perm)       | 0     | 1514  | 0    | 0     | 1173  | 0    | 535   | 1699  | 0    | 1027  | 1715  | 0    |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes  |       |       | Yes  |
| Satd. Flow (RTOR)       |       | 35    |      |       | 19    |      |       | 25    |      |       | 11    |      |
| Link Speed (k/h)        |       | 70    |      |       | 70    |      |       | 40    |      |       | 40    |      |
| Link Distance (m)       |       | 523.9 |      |       | 684.4 |      |       | 847.5 |      |       | 805.2 |      |
| Travel Time (s)         |       | 26.9  |      |       | 35.2  |      |       | 76.3  |      |       | 72.5  |      |
| Confl. Peds. (#/hr)     |       |       | 1    | 1     |       |      |       |       |      |       |       |      |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 17%   | 2%    | 0%   | 9%    | 4%    | 41%  | 30%   | 12%   | 0%   | 10%   | 11%   | 3%   |
| Adj. Flow (vph)         | 49    | 116   | 80   | 176   | 96    | 72   | 24    | 216   | 64   | 171   | 458   | 59   |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 245   | 0    | 0     | 344   | 0    | 24    | 280   | 0    | 171   | 517   | 0    |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      |
| Protected Phases        |       | 4     |      |       | 8     |      |       | 2     |      |       | 6     |      |
| Permitted Phases        | 4     |       |      | 8     |       |      | 2     |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 2     | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |      |       |       |      |       |       |      |       |       |      |
| Minimum Initial (s)     | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 30.0  | 30.0  |      | 30.0  | 30.0  |      |
| Minimum Split (s)       | 22.5  | 22.5  |      | 22.5  | 22.5  |      | 37.5  | 37.5  |      | 37.5  | 37.5  |      |
| Total Split (s)         | 34.5  | 34.5  |      | 34.5  | 34.5  |      | 42.5  | 42.5  |      | 42.5  | 42.5  |      |
| Total Split (%)         | 44.8% | 44.8% |      | 44.8% | 44.8% |      | 55.2% | 55.2% |      | 55.2% | 55.2% |      |
| Maximum Green (s)       | 27.0  | 27.0  |      | 27.0  | 27.0  |      | 35.0  | 35.0  |      | 35.0  | 35.0  |      |
| Yellow Time (s)         | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |
| Total Lost Time (s)     |       | 7.5   |      |       | 7.5   |      | 7.5   | 7.5   |      | 7.5   | 7.5   |      |
| Lead/Lag                |       |       |      |       |       |      |       |       |      |       |       |      |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |      |       |       |      |
| Vehicle Extension (s)   | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Recall Mode             | None  | None  |      | None  | None  |      | Max   | Max   |      | Max   | Max   |      |
| Walk Time (s)           | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      |
| Flash Don't Walk (s)    | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      |
| Pedestrian Calls (#/hr) | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      |
| Act Effct Green (s)     |       | 24.1  |      |       | 24.1  |      | 35.1  | 35.1  |      | 35.1  | 35.1  |      |
| Actuated g/C Ratio      |       | 0.32  |      |       | 0.32  |      | 0.47  | 0.47  |      | 0.47  | 0.47  |      |
| v/c Ratio               |       | 0.48  |      |       | 0.88  |      | 0.09  | 0.34  |      | 0.35  | 0.63  |      |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025

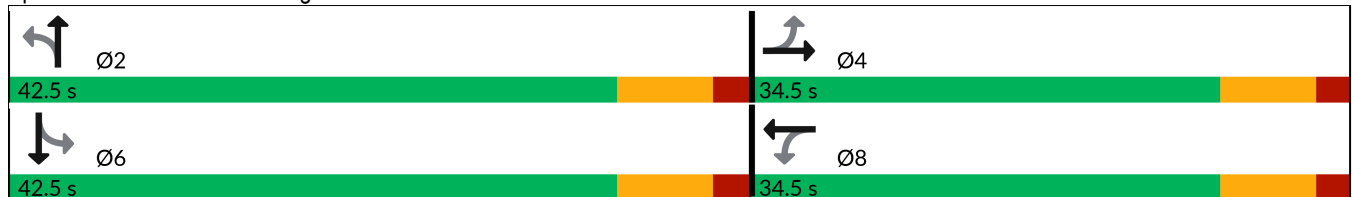


| Lane Group             | EBL | EBT   | EBR | WBL | WBT   | WBR | NBL  | NBT   | NBR | SBL  | SBT   | SBR  |
|------------------------|-----|-------|-----|-----|-------|-----|------|-------|-----|------|-------|------|
| Control Delay (s/veh)  |     | 20.2  |     |     | 46.8  |     | 13.3 | 13.3  |     | 16.0 | 19.5  |      |
| Queue Delay            |     | 0.0   |     |     | 0.0   |     | 0.0  | 0.0   |     | 0.0  | 0.0   |      |
| Total Delay (s/veh)    |     | 20.2  |     |     | 46.8  |     | 13.3 | 13.3  |     | 16.0 | 19.5  |      |
| LOS                    |     | C     |     |     | D     |     | B    | B     |     | B    | B     |      |
| Approach Delay (s/veh) |     | 20.2  |     |     | 46.8  |     |      | 13.3  |     |      |       | 18.7 |
| Approach LOS           |     | C     |     |     | D     |     |      | B     |     |      |       | B    |
| Queue Length 50th (m)  |     | 22.8  |     |     | 42.4  |     | 1.9  | 22.8  |     | 15.6 | 54.9  |      |
| Queue Length 95th (m)  |     | 42.0  |     |     | #86.9 |     | 6.2  | 39.7  |     | 30.2 | 87.6  |      |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4 |     |      | 823.5 |     |      | 781.2 |      |
| Turn Bay Length (m)    |     |       |     |     |       |     | 30.0 |       |     | 30.0 |       |      |
| Base Capacity (vph)    |     | 574   |     |     | 439   |     | 253  | 816   |     | 485  | 816   |      |
| Starvation Cap Reductn |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |      |
| Spillback Cap Reductn  |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |      |
| Storage Cap Reductn    |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |      |
| Reduced v/c Ratio      |     | 0.43  |     |     | 0.78  |     | 0.09 | 0.34  |     | 0.35 | 0.63  |      |

Intersection Summary

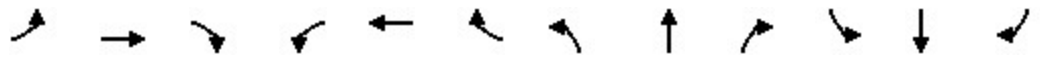
|   |                  |
|---|------------------|
| Area Type:  | Other            |
| Cycle Length:   | 77               |
| Actuated Cycle Length:  | 74.3             |
| Natural Cycle:  | 65               |
| Control Type:   | Semi Act-Uncoord |
| Maximum v/c Ratio:  | 0.88             |
| Intersection Signal Delay (s/veh):                              | 24.0             |
| Intersection LOS:   | C                |
| Intersection Capacity Utilization:                              | 105.7%           |
| ICU Level of Service:   | G                |
| Analysis Period (min):  | 15               |
| # 95th percentile volume exceeds capacity, queue may be longer. |                  |
| Queue shown is maximum after two cycles.                        |                  |

Splits and Phases: 3: Trafalgar/WR24 & WR22



Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

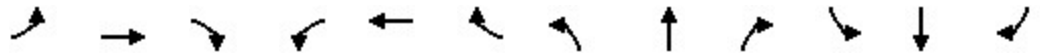
11/06/2025



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations     |       | ↔     |      |       | ↔     |      | ↗     | ↘     |      | ↗     | ↘     |      |
| Traffic Volume (vph)    | 89    | 97    | 37   | 106   | 136   | 214  | 83    | 551   | 132  | 108   | 290   | 55   |
| Future Volume (vph)     | 89    | 97    | 37   | 106   | 136   | 214  | 83    | 551   | 132  | 108   | 290   | 55   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (m)      | 0.0   |       | 0.0  | 0.0   |       | 0.0  | 30.0  |       | 0.0  | 30.0  |       | 0.0  |
| Storage Lanes           | 0     |       | 0    | 0     |       | 0    | 1     |       | 0    | 1     |       | 0    |
| Taper Length (m)        | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Frt                     |       | 0.978 |      |       | 0.937 |      |       | 0.971 |      |       | 0.976 |      |
| Flt Protected           |       | 0.980 |      |       | 0.989 |      | 0.950 |       |      | 0.950 |       |      |
| Satd. Flow (prot)       | 0     | 1841  | 0    | 0     | 1741  | 0    | 1674  | 1808  | 0    | 1601  | 1788  | 0    |
| Flt Permitted           |       | 0.592 |      |       | 0.855 |      | 0.491 |       |      | 0.157 |       |      |
| Satd. Flow (perm)       | 0     | 1112  | 0    | 0     | 1505  | 0    | 865   | 1808  | 0    | 265   | 1788  | 0    |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes  |       |       | Yes  |
| Satd. Flow (RTOR)       |       | 14    |      |       | 64    |      |       | 20    |      |       | 16    |      |
| Link Speed (k/h)        |       | 70    |      |       | 70    |      |       | 40    |      |       | 40    |      |
| Link Distance (m)       |       | 523.9 |      |       | 684.4 |      |       | 847.5 |      |       | 805.2 |      |
| Travel Time (s)         |       | 26.9  |      |       | 35.2  |      |       | 76.3  |      |       | 72.5  |      |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 0%    | 0%    | 0%   | 3%    | 2%    | 2%   | 9%    | 3%    | 4%   | 14%   | 5%    | 4%   |
| Adj. Flow (vph)         | 97    | 105   | 40   | 115   | 148   | 233  | 90    | 599   | 143  | 117   | 315   | 60   |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 242   | 0    | 0     | 496   | 0    | 90    | 742   | 0    | 117   | 375   | 0    |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      |
| Protected Phases        |       | 4     |      |       | 8     |      |       | 2     |      |       | 6     |      |
| Permitted Phases        | 4     |       |      | 8     |       |      | 2     |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 2     | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |      |       |       |      |       |       |      |       |       |      |
| Minimum Initial (s)     | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 30.0  | 30.0  |      | 30.0  | 30.0  |      |
| Minimum Split (s)       | 22.5  | 22.5  |      | 22.5  | 22.5  |      | 37.5  | 37.5  |      | 37.5  | 37.5  |      |
| Total Split (s)         | 34.5  | 34.5  |      | 34.5  | 34.5  |      | 42.5  | 42.5  |      | 42.5  | 42.5  |      |
| Total Split (%)         | 44.8% | 44.8% |      | 44.8% | 44.8% |      | 55.2% | 55.2% |      | 55.2% | 55.2% |      |
| Maximum Green (s)       | 27.0  | 27.0  |      | 27.0  | 27.0  |      | 35.0  | 35.0  |      | 35.0  | 35.0  |      |
| Yellow Time (s)         | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |
| Total Lost Time (s)     |       | 7.5   |      |       | 7.5   |      | 7.5   | 7.5   |      | 7.5   | 7.5   |      |
| Lead/Lag                |       |       |      |       |       |      |       |       |      |       |       |      |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |      |       |       |      |
| Vehicle Extension (s)   | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Recall Mode             | None  | None  |      | None  | None  |      | Max   | Max   |      | Max   | Max   |      |
| Walk Time (s)           | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      |
| Flash Don't Walk (s)    | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      |
| Pedestrian Calls (#/hr) | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      |
| Act Effct Green (s)     |       | 25.3  |      |       | 25.3  |      | 35.1  | 35.1  |      | 35.1  | 35.1  |      |
| Actuated g/C Ratio      |       | 0.34  |      |       | 0.34  |      | 0.47  | 0.47  |      | 0.47  | 0.47  |      |
| v/c Ratio               |       | 0.63  |      |       | 0.91  |      | 0.22  | 0.87  |      | 0.95  | 0.45  |      |
| Control Delay (s/veh)   |       | 28.3  |      |       | 43.5  |      | 14.7  | 31.8  |      | 97.8  | 15.6  |      |
| Queue Delay             |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025



| Lane Group             | EBL | EBT   | EBR | WBL | WBT    | WBR | NBL  | NBT    | NBR | SBL   | SBT   | SBR |
|------------------------|-----|-------|-----|-----|--------|-----|------|--------|-----|-------|-------|-----|
| Total Delay (s/veh)    |     | 28.3  |     |     | 43.5   |     | 14.7 | 31.8   |     | 97.8  | 15.6  |     |
| LOS                    |     | C     |     |     | D      |     | B    | C      |     | F     | B     |     |
| Approach Delay (s/veh) |     | 28.3  |     |     | 43.5   |     |      | 30.0   |     |       | 35.1  |     |
| Approach LOS           |     | C     |     |     | D      |     |      | C      |     |       | D     |     |
| Queue Length 50th (m)  |     | 26.9  |     |     | 58.8   |     | 7.6  | 92.8   |     | 16.0  | 34.2  |     |
| Queue Length 95th (m)  |     | 50.4  |     |     | #113.6 |     | 17.0 | #161.6 |     | #47.7 | 55.9  |     |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4  |     |      | 823.5  |     |       | 781.2 |     |
| Turn Bay Length (m)    |     |       |     |     |        |     | 30.0 |        |     | 30.0  |       |     |
| Base Capacity (vph)    |     | 408   |     |     | 580    |     | 402  | 851    |     | 123   | 839   |     |
| Starvation Cap Reductn |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Spillback Cap Reductn  |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Storage Cap Reductn    |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Reduced v/c Ratio      |     | 0.59  |     |     | 0.86   |     | 0.22 | 0.87   |     | 0.95  | 0.45  |     |

Intersection Summary

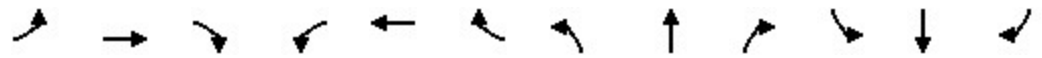
|   |                  |
|---|------------------|
| Area Type:  | Other            |
| Cycle Length:   | 77               |
| Actuated Cycle Length:  | 75.4             |
| Natural Cycle:  | 80               |
| Control Type:   | Semi Act-Uncoord |
| Maximum v/c Ratio:  | 0.95             |
| Intersection Signal Delay (s/veh):                              | 34.3             |
| Intersection LOS:   | C                |
| Intersection Capacity Utilization:                              | 110.1%           |
| ICU Level of Service:   | H                |
| Analysis Period (min):  | 15               |
| # 95th percentile volume exceeds capacity, queue may be longer. |                  |
| Queue shown is maximum after two cycles.                        |                  |

Splits and Phases: 3: Trafalgar/WR24 & WR22



Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

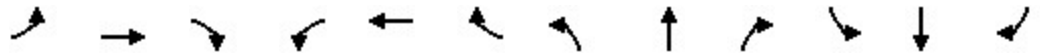
11/06/2025



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations     |       | ↕     |      |       | ↕     |      | ↗     | ↘     |      | ↗     | ↘     |      |
| Traffic Volume (vph)    | 35    | 113   | 85   | 162   | 89    | 67   | 24    | 200   | 59   | 162   | 433   | 46   |
| Future Volume (vph)     | 35    | 113   | 85   | 162   | 89    | 67   | 24    | 200   | 59   | 162   | 433   | 46   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (m)      | 0.0   |       | 0.0  | 0.0   |       | 0.0  | 30.0  |       | 0.0  | 30.0  |       | 0.0  |
| Storage Lanes           | 0     |       | 0    | 0     |       | 0    | 1     |       | 0    | 1     |       | 0    |
| Taper Length (m)        | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Ped Bike Factor         |       | 0.99  |      |       | 1.00  |      |       |       |      |       |       |      |
| Frt                     |       | 0.951 |      |       | 0.972 |      |       | 0.966 |      |       | 0.986 |      |
| Flt Protected           |       | 0.993 |      |       | 0.975 |      | 0.950 |       |      | 0.950 |       |      |
| Satd. Flow (prot)       | 0     | 1738  | 0    | 0     | 1592  | 0    | 1404  | 1698  | 0    | 1659  | 1718  | 0    |
| Flt Permitted           |       | 0.905 |      |       | 0.711 |      | 0.356 |       |      | 0.587 |       |      |
| Satd. Flow (perm)       | 0     | 1584  | 0    | 0     | 1160  | 0    | 526   | 1698  | 0    | 1025  | 1718  | 0    |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes  |       |       | Yes  |
| Satd. Flow (RTOR)       |       | 41    |      |       | 19    |      |       | 25    |      |       | 9     |      |
| Link Speed (k/h)        |       | 70    |      |       | 70    |      |       | 40    |      |       | 40    |      |
| Link Distance (m)       |       | 523.9 |      |       | 684.4 |      |       | 847.5 |      |       | 805.2 |      |
| Travel Time (s)         |       | 26.9  |      |       | 35.2  |      |       | 76.3  |      |       | 72.5  |      |
| Confl. Peds. (#/hr)     |       |       | 1    | 1     |       |      |       |       |      |       |       |      |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 17%   | 2%    | 0%   | 9%    | 4%    | 41%  | 30%   | 12%   | 0%   | 10%   | 11%   | 3%   |
| Adj. Flow (vph)         | 38    | 123   | 92   | 176   | 97    | 73   | 26    | 217   | 64   | 176   | 471   | 50   |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 253   | 0    | 0     | 346   | 0    | 26    | 281   | 0    | 176   | 521   | 0    |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      |
| Protected Phases        |       | 4     |      |       | 8     |      |       | 2     |      |       | 6     |      |
| Permitted Phases        | 4     |       |      | 8     |       |      | 2     |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 2     | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |      |       |       |      |       |       |      |       |       |      |
| Minimum Initial (s)     | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 30.0  | 30.0  |      | 30.0  | 30.0  |      |
| Minimum Split (s)       | 22.5  | 22.5  |      | 22.5  | 22.5  |      | 37.5  | 37.5  |      | 37.5  | 37.5  |      |
| Total Split (s)         | 34.5  | 34.5  |      | 34.5  | 34.5  |      | 42.5  | 42.5  |      | 42.5  | 42.5  |      |
| Total Split (%)         | 44.8% | 44.8% |      | 44.8% | 44.8% |      | 55.2% | 55.2% |      | 55.2% | 55.2% |      |
| Maximum Green (s)       | 27.0  | 27.0  |      | 27.0  | 27.0  |      | 35.0  | 35.0  |      | 35.0  | 35.0  |      |
| Yellow Time (s)         | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |
| Total Lost Time (s)     |       | 7.5   |      |       | 7.5   |      | 7.5   | 7.5   |      | 7.5   | 7.5   |      |
| Lead/Lag                |       |       |      |       |       |      |       |       |      |       |       |      |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |      |       |       |      |
| Vehicle Extension (s)   | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Recall Mode             | None  | None  |      | None  | None  |      | Max   | Max   |      | Max   | Max   |      |
| Walk Time (s)           | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      |
| Flash Don't Walk (s)    | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      |
| Pedestrian Calls (#/hr) | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      |
| Act Effct Green (s)     |       | 24.4  |      |       | 24.4  |      | 35.1  | 35.1  |      | 35.1  | 35.1  |      |
| Actuated g/C Ratio      |       | 0.33  |      |       | 0.33  |      | 0.47  | 0.47  |      | 0.47  | 0.47  |      |
| v/c Ratio               |       | 0.46  |      |       | 0.88  |      | 0.11  | 0.35  |      | 0.37  | 0.64  |      |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025

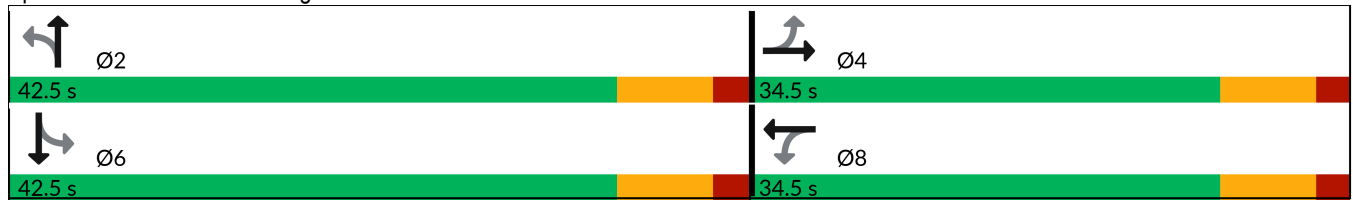


| Lane Group             | EBL | EBT   | EBR | WBL | WBT   | WBR | NBL  | NBT   | NBR | SBL  | SBT   | SBR |
|------------------------|-----|-------|-----|-----|-------|-----|------|-------|-----|------|-------|-----|
| Control Delay (s/veh)  |     | 19.3  |     |     | 47.8  |     | 13.5 | 13.4  |     | 16.3 | 19.9  |     |
| Queue Delay            |     | 0.0   |     |     | 0.0   |     | 0.0  | 0.0   |     | 0.0  | 0.0   |     |
| Total Delay (s/veh)    |     | 19.3  |     |     | 47.8  |     | 13.5 | 13.4  |     | 16.3 | 19.9  |     |
| LOS                    |     | B     |     |     | D     |     | B    | B     |     | B    | B     |     |
| Approach Delay (s/veh) |     | 19.3  |     |     | 47.8  |     |      | 13.4  |     |      | 19.0  |     |
| Approach LOS           |     | B     |     |     | D     |     |      | B     |     |      | B     |     |
| Queue Length 50th (m)  |     | 22.8  |     |     | 43.0  |     | 2.1  | 22.9  |     | 16.2 | 55.7  |     |
| Queue Length 95th (m)  |     | 42.2  |     |     | #88.3 |     | 6.6  | 39.9  |     | 31.2 | 88.5  |     |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4 |     |      | 823.5 |     |      | 781.2 |     |
| Turn Bay Length (m)    |     |       |     |     |       |     | 30.0 |       |     | 30.0 |       |     |
| Base Capacity (vph)    |     | 601   |     |     | 433   |     | 247  | 812   |     | 482  | 813   |     |
| Starvation Cap Reductn |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Spillback Cap Reductn  |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Storage Cap Reductn    |     | 0     |     |     | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Reduced v/c Ratio      |     | 0.42  |     |     | 0.80  |     | 0.11 | 0.35  |     | 0.37 | 0.64  |     |

Intersection Summary

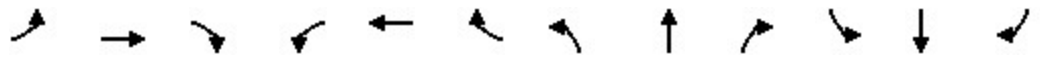
|   |                  |
|---|------------------|
| Area Type:  | Other            |
| Cycle Length:   | 77               |
| Actuated Cycle Length:  | 74.5             |
| Natural Cycle:  | 65               |
| Control Type:   | Semi Act-Uncoord |
| Maximum v/c Ratio:  | 0.88             |
| Intersection Signal Delay (s/veh):  | 24.2             |
| Intersection LOS:   | C                |
| Intersection Capacity Utilization:  | 106.4%           |
| ICU Level of Service:   | G                |
| Analysis Period (min):  | 15               |
| # 95th percentile volume exceeds capacity, queue may be longer.<br>Queue shown is maximum after two cycles. |                  |

Splits and Phases: 3: Trafalgar/WR24 & WR22



Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

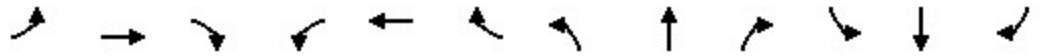
11/06/2025



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations     |       | ↕     |      |       | ↕     |      | ↗     | ↘     |      | ↗     | ↘     |      |
| Traffic Volume (vph)    | 74    | 100   | 41   | 106   | 143   | 220  | 95    | 563   | 132  | 111   | 294   | 43   |
| Future Volume (vph)     | 74    | 100   | 41   | 106   | 143   | 220  | 95    | 563   | 132  | 111   | 294   | 43   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (m)      | 0.0   |       | 0.0  | 0.0   |       | 0.0  | 30.0  |       | 0.0  | 30.0  |       | 0.0  |
| Storage Lanes           | 0     |       | 0    | 0     |       | 0    | 1     |       | 0    | 1     |       | 0    |
| Taper Length (m)        | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Frt                     |       | 0.974 |      |       | 0.937 |      |       | 0.972 |      |       | 0.981 |      |
| Flt Protected           |       | 0.983 |      |       | 0.989 |      | 0.950 |       |      | 0.950 |       |      |
| Satd. Flow (prot)       | 0     | 1839  | 0    | 0     | 1742  | 0    | 1674  | 1810  | 0    | 1601  | 1797  | 0    |
| Flt Permitted           |       | 0.628 |      |       | 0.861 |      | 0.498 |       |      | 0.143 |       |      |
| Satd. Flow (perm)       | 0     | 1175  | 0    | 0     | 1516  | 0    | 878   | 1810  | 0    | 241   | 1797  | 0    |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes  |       |       | Yes  |
| Satd. Flow (RTOR)       |       | 17    |      |       | 64    |      |       | 20    |      |       | 13    |      |
| Link Speed (k/h)        |       | 70    |      |       | 70    |      |       | 40    |      |       | 40    |      |
| Link Distance (m)       |       | 523.9 |      |       | 684.4 |      |       | 847.5 |      |       | 805.2 |      |
| Travel Time (s)         |       | 26.9  |      |       | 35.2  |      |       | 76.3  |      |       | 72.5  |      |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 0%    | 0%    | 0%   | 3%    | 2%    | 2%   | 9%    | 3%    | 4%   | 14%   | 5%    | 4%   |
| Adj. Flow (vph)         | 80    | 109   | 45   | 115   | 155   | 239  | 103   | 612   | 143  | 121   | 320   | 47   |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 234   | 0    | 0     | 509   | 0    | 103   | 755   | 0    | 121   | 367   | 0    |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      |
| Protected Phases        |       | 4     |      |       | 8     |      |       | 2     |      |       | 6     |      |
| Permitted Phases        | 4     |       |      | 8     |       |      | 2     |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 2     | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |      |       |       |      |       |       |      |       |       |      |
| Minimum Initial (s)     | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 30.0  | 30.0  |      | 30.0  | 30.0  |      |
| Minimum Split (s)       | 22.5  | 22.5  |      | 22.5  | 22.5  |      | 37.5  | 37.5  |      | 37.5  | 37.5  |      |
| Total Split (s)         | 34.5  | 34.5  |      | 34.5  | 34.5  |      | 42.5  | 42.5  |      | 42.5  | 42.5  |      |
| Total Split (%)         | 44.8% | 44.8% |      | 44.8% | 44.8% |      | 55.2% | 55.2% |      | 55.2% | 55.2% |      |
| Maximum Green (s)       | 27.0  | 27.0  |      | 27.0  | 27.0  |      | 35.0  | 35.0  |      | 35.0  | 35.0  |      |
| Yellow Time (s)         | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |
| Total Lost Time (s)     |       | 7.5   |      |       | 7.5   |      | 7.5   | 7.5   |      | 7.5   | 7.5   |      |
| Lead/Lag                |       |       |      |       |       |      |       |       |      |       |       |      |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |      |       |       |      |
| Vehicle Extension (s)   | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Recall Mode             | None  | None  |      | None  | None  |      | Max   | Max   |      | Max   | Max   |      |
| Walk Time (s)           | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      |
| Flash Don't Walk (s)    | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      |
| Pedestrian Calls (#/hr) | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      |
| Act Effct Green (s)     |       | 25.6  |      |       | 25.6  |      | 35.1  | 35.1  |      | 35.1  | 35.1  |      |
| Actuated g/C Ratio      |       | 0.34  |      |       | 0.34  |      | 0.46  | 0.46  |      | 0.46  | 0.46  |      |
| v/c Ratio               |       | 0.57  |      |       | 0.92  |      | 0.25  | 0.89  |      | 1.09  | 0.44  |      |
| Control Delay (s/veh)   |       | 25.3  |      |       | 45.2  |      | 15.1  | 33.9  |      | 140.3 | 15.6  |      |
| Queue Delay             |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025

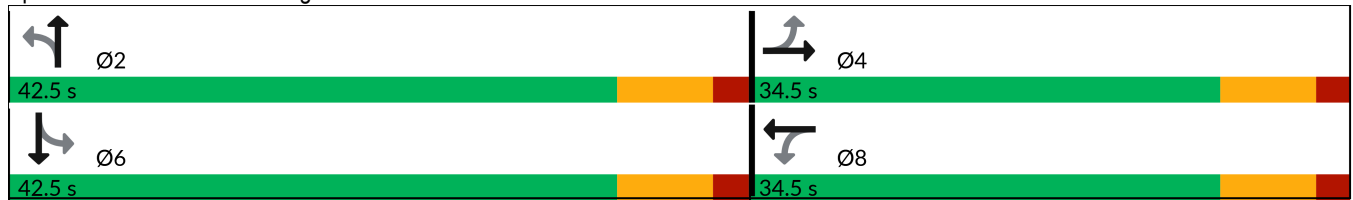


| Lane Group             | EBL | EBT   | EBR | WBL | WBT    | WBR | NBL  | NBT    | NBR | SBL   | SBT   | SBR |
|------------------------|-----|-------|-----|-----|--------|-----|------|--------|-----|-------|-------|-----|
| Total Delay (s/veh)    |     | 25.3  |     |     | 45.2   |     | 15.1 | 33.9   |     | 140.3 | 15.6  |     |
| LOS                    |     | C     |     |     | D      |     | B    | C      |     | F     | B     |     |
| Approach Delay (s/veh) |     | 25.3  |     |     | 45.2   |     |      | 31.6   |     |       | 46.5  |     |
| Approach LOS           |     | C     |     |     | D      |     |      | C      |     |       | D     |     |
| Queue Length 50th (m)  |     | 24.9  |     |     | 61.0   |     | 8.9  | 95.5   |     | ~20.4 | 33.6  |     |
| Queue Length 95th (m)  |     | 46.6  |     |     | #117.7 |     | 19.0 | #166.2 |     | #51.3 | 54.7  |     |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4  |     |      | 823.5  |     |       | 781.2 |     |
| Turn Bay Length (m)    |     |       |     |     |        |     | 30.0 |        |     | 30.0  |       |     |
| Base Capacity (vph)    |     | 431   |     |     | 582    |     | 406  | 848    |     | 111   | 838   |     |
| Starvation Cap Reductn |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Spillback Cap Reductn  |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Storage Cap Reductn    |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Reduced v/c Ratio      |     | 0.54  |     |     | 0.87   |     | 0.25 | 0.89   |     | 1.09  | 0.44  |     |

Intersection Summary

|   |                  |
|---|------------------|
| Area Type:  | Other            |
| Cycle Length:   | 77               |
| Actuated Cycle Length:  | 75.7             |
| Natural Cycle:  | 90               |
| Control Type:   | Semi Act-Uncoord |
| Maximum v/c Ratio:  | 1.09             |
| Intersection Signal Delay (s/veh):  | 37.7             |
| Intersection LOS:   | D                |
| Intersection Capacity Utilization:  | 112.7%           |
| ICU Level of Service:   | H                |
| Analysis Period (min):  | 15               |
| ~ Volume exceeds capacity, queue is theoretically infinite.<br>Queue shown is maximum after two cycles.     |                  |
| # 95th percentile volume exceeds capacity, queue may be longer.<br>Queue shown is maximum after two cycles. |                  |

Splits and Phases: 3: Trafalgar/WR24 & WR22



Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

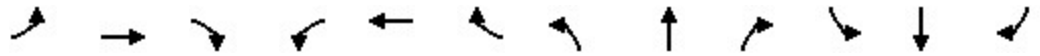
11/06/2025



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations     |       | ↕     |      |       | ↕     |      | ↗     | ↘     |      | ↗     | ↘     |      |
| Traffic Volume (vph)    | 89    | 97    | 37   | 106   | 136   | 214  | 83    | 551   | 132  | 108   | 290   | 55   |
| Future Volume (vph)     | 89    | 97    | 37   | 106   | 136   | 214  | 83    | 551   | 132  | 108   | 290   | 55   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (m)      | 0.0   |       | 0.0  | 0.0   |       | 0.0  | 30.0  |       | 0.0  | 30.0  |       | 0.0  |
| Storage Lanes           | 0     |       | 0    | 0     |       | 0    | 1     |       | 0    | 1     |       | 0    |
| Taper Length (m)        | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Frt                     |       | 0.978 |      |       | 0.937 |      |       | 0.971 |      |       | 0.976 |      |
| Flt Protected           |       | 0.980 |      |       | 0.989 |      | 0.950 |       |      | 0.950 |       |      |
| Satd. Flow (prot)       | 0     | 1841  | 0    | 0     | 1741  | 0    | 1674  | 1808  | 0    | 1601  | 1788  | 0    |
| Flt Permitted           |       | 0.581 |      |       | 0.852 |      | 0.494 |       |      | 0.174 |       |      |
| Satd. Flow (perm)       | 0     | 1092  | 0    | 0     | 1500  | 0    | 871   | 1808  | 0    | 293   | 1788  | 0    |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes  |       |       | Yes  |
| Satd. Flow (RTOR)       |       | 13    |      |       | 60    |      |       | 21    |      |       | 17    |      |
| Link Speed (k/h)        |       | 70    |      |       | 70    |      |       | 40    |      |       | 40    |      |
| Link Distance (m)       |       | 523.9 |      |       | 684.4 |      |       | 847.5 |      |       | 805.2 |      |
| Travel Time (s)         |       | 26.9  |      |       | 35.2  |      |       | 76.3  |      |       | 72.5  |      |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 0%    | 0%    | 0%   | 3%    | 2%    | 2%   | 9%    | 3%    | 4%   | 14%   | 5%    | 4%   |
| Adj. Flow (vph)         | 97    | 105   | 40   | 115   | 148   | 233  | 90    | 599   | 143  | 117   | 315   | 60   |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 242   | 0    | 0     | 496   | 0    | 90    | 742   | 0    | 117   | 375   | 0    |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      |
| Protected Phases        |       | 4     |      |       | 8     |      |       | 2     |      |       | 6     |      |
| Permitted Phases        | 4     |       |      | 8     |       |      | 2     |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 2     | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |      |       |       |      |       |       |      |       |       |      |
| Minimum Initial (s)     | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 30.0  | 30.0  |      | 30.0  | 30.0  |      |
| Minimum Split (s)       | 22.5  | 22.5  |      | 22.5  | 22.5  |      | 37.5  | 37.5  |      | 37.5  | 37.5  |      |
| Total Split (s)         | 34.0  | 34.0  |      | 34.0  | 34.0  |      | 46.0  | 46.0  |      | 46.0  | 46.0  |      |
| Total Split (%)         | 42.5% | 42.5% |      | 42.5% | 42.5% |      | 57.5% | 57.5% |      | 57.5% | 57.5% |      |
| Maximum Green (s)       | 26.5  | 26.5  |      | 26.5  | 26.5  |      | 38.5  | 38.5  |      | 38.5  | 38.5  |      |
| Yellow Time (s)         | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |
| Total Lost Time (s)     |       | 7.5   |      |       | 7.5   |      | 7.5   | 7.5   |      | 7.5   | 7.5   |      |
| Lead/Lag                |       |       |      |       |       |      |       |       |      |       |       |      |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |      |       |       |      |
| Vehicle Extension (s)   | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Recall Mode             | None  | None  |      | None  | None  |      | Max   | Max   |      | Max   | Max   |      |
| Walk Time (s)           | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      |
| Flash Don't Walk (s)    | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      |
| Pedestrian Calls (#/hr) | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      |
| Act Effct Green (s)     |       | 25.8  |      |       | 25.8  |      | 38.5  | 38.5  |      | 38.5  | 38.5  |      |
| Actuated g/C Ratio      |       | 0.33  |      |       | 0.33  |      | 0.49  | 0.49  |      | 0.49  | 0.49  |      |
| v/c Ratio               |       | 0.67  |      |       | 0.94  |      | 0.21  | 0.84  |      | 0.82  | 0.43  |      |
| Control Delay (s/veh)   |       | 32.2  |      |       | 51.8  |      | 13.7  | 27.8  |      | 63.9  | 14.7  |      |
| Queue Delay             |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025



| Lane Group             | EBL | EBT   | EBR | WBL | WBT    | WBR | NBL  | NBT    | NBR | SBL   | SBT   | SBR |
|------------------------|-----|-------|-----|-----|--------|-----|------|--------|-----|-------|-------|-----|
| Total Delay (s/veh)    |     | 32.2  |     |     | 51.8   |     | 13.7 | 27.8   |     | 63.9  | 14.7  |     |
| LOS                    |     | C     |     |     | D      |     | B    | C      |     | E     | B     |     |
| Approach Delay (s/veh) |     | 32.2  |     |     | 51.8   |     |      | 26.3   |     |       | 26.4  |     |
| Approach LOS           |     | C     |     |     | D      |     |      | C      |     |       | C     |     |
| Queue Length 50th (m)  |     | 29.3  |     |     | 64.3   |     | 7.5  | 91.3   |     | 14.6  | 33.7  |     |
| Queue Length 95th (m)  |     | #55.3 |     |     | #122.6 |     | 16.6 | #158.7 |     | #45.5 | 54.4  |     |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4  |     |      | 823.5  |     |       | 781.2 |     |
| Turn Bay Length (m)    |     |       |     |     |        |     | 30.0 |        |     | 30.0  |       |     |
| Base Capacity (vph)    |     | 373   |     |     | 542    |     | 423  | 888    |     | 142   | 877   |     |
| Starvation Cap Reductn |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Spillback Cap Reductn  |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Storage Cap Reductn    |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Reduced v/c Ratio      |     | 0.65  |     |     | 0.92   |     | 0.21 | 0.84   |     | 0.82  | 0.43  |     |

Intersection Summary

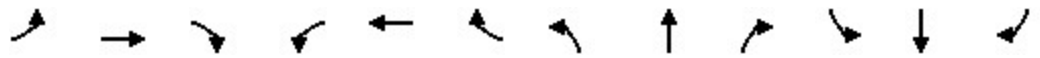
|   |                  |
|---|------------------|
| Area Type:  | Other            |
| Cycle Length:   | 80               |
| Actuated Cycle Length:  | 79.3             |
| Natural Cycle:  | 80               |
| Control Type:   | Semi Act-Uncoord |
| Maximum v/c Ratio:  | 0.94             |
| Intersection Signal Delay (s/veh):                              | 33.2             |
| Intersection LOS:   | C                |
| Intersection Capacity Utilization:                              | 110.1%           |
| ICU Level of Service:   | H                |
| Analysis Period (min):  | 15               |
| # 95th percentile volume exceeds capacity, queue may be longer. |                  |
| Queue shown is maximum after two cycles.                        |                  |

Splits and Phases: 3: Trafalgar/WR24 & WR22



Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

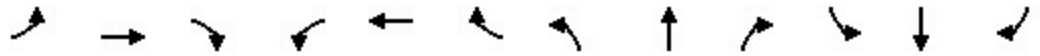
11/06/2025



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations     |       | ↕     |      |       | ↕     |      | ↗     | ↘     |      | ↗     | ↘     |      |
| Traffic Volume (vph)    | 74    | 100   | 41   | 106   | 143   | 220  | 95    | 563   | 132  | 111   | 294   | 43   |
| Future Volume (vph)     | 74    | 100   | 41   | 106   | 143   | 220  | 95    | 563   | 132  | 111   | 294   | 43   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (m)      | 0.0   |       | 0.0  | 0.0   |       | 0.0  | 30.0  |       | 0.0  | 30.0  |       | 0.0  |
| Storage Lanes           | 0     |       | 0    | 0     |       | 0    | 1     |       | 0    | 1     |       | 0    |
| Taper Length (m)        | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      | 2.5   |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Frt                     |       | 0.974 |      |       | 0.937 |      |       | 0.972 |      |       | 0.981 |      |
| Flt Protected           |       | 0.983 |      |       | 0.989 |      | 0.950 |       |      | 0.950 |       |      |
| Satd. Flow (prot)       | 0     | 1839  | 0    | 0     | 1742  | 0    | 1674  | 1810  | 0    | 1601  | 1797  | 0    |
| Flt Permitted           |       | 0.611 |      |       | 0.851 |      | 0.495 |       |      | 0.168 |       |      |
| Satd. Flow (perm)       | 0     | 1143  | 0    | 0     | 1499  | 0    | 872   | 1810  | 0    | 283   | 1797  | 0    |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes  |       |       | Yes  |
| Satd. Flow (RTOR)       |       | 14    |      |       | 54    |      |       | 18    |      |       | 12    |      |
| Link Speed (k/h)        |       | 70    |      |       | 70    |      |       | 40    |      |       | 40    |      |
| Link Distance (m)       |       | 523.9 |      |       | 684.4 |      |       | 847.5 |      |       | 805.2 |      |
| Travel Time (s)         |       | 26.9  |      |       | 35.2  |      |       | 76.3  |      |       | 72.5  |      |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 0%    | 0%    | 0%   | 3%    | 2%    | 2%   | 9%    | 3%    | 4%   | 14%   | 5%    | 4%   |
| Adj. Flow (vph)         | 80    | 109   | 45   | 115   | 155   | 239  | 103   | 612   | 143  | 121   | 320   | 47   |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 234   | 0    | 0     | 509   | 0    | 103   | 755   | 0    | 121   | 367   | 0    |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      | Perm  | NA    |      |
| Protected Phases        |       | 4     |      |       | 8     |      |       | 2     |      |       | 6     |      |
| Permitted Phases        | 4     |       |      | 8     |       |      | 2     |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 2     | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |      |       |       |      |       |       |      |       |       |      |
| Minimum Initial (s)     | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 30.0  | 30.0  |      | 30.0  | 30.0  |      |
| Minimum Split (s)       | 22.5  | 22.5  |      | 22.5  | 22.5  |      | 37.5  | 37.5  |      | 37.5  | 37.5  |      |
| Total Split (s)         | 38.0  | 38.0  |      | 38.0  | 38.0  |      | 52.0  | 52.0  |      | 52.0  | 52.0  |      |
| Total Split (%)         | 42.2% | 42.2% |      | 42.2% | 42.2% |      | 57.8% | 57.8% |      | 57.8% | 57.8% |      |
| Maximum Green (s)       | 30.5  | 30.5  |      | 30.5  | 30.5  |      | 44.5  | 44.5  |      | 44.5  | 44.5  |      |
| Yellow Time (s)         | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      | 5.5   | 5.5   |      |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |
| Total Lost Time (s)     |       | 7.5   |      |       | 7.5   |      | 7.5   | 7.5   |      | 7.5   | 7.5   |      |
| Lead/Lag                |       |       |      |       |       |      |       |       |      |       |       |      |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |      |       |       |      |
| Vehicle Extension (s)   | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Recall Mode             | None  | None  |      | None  | None  |      | Max   | Max   |      | Max   | Max   |      |
| Walk Time (s)           | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      | 5.0   | 5.0   |      |
| Flash Don't Walk (s)    | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   |      |
| Pedestrian Calls (#/hr) | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      | 0     | 0     |      |
| Act Effct Green (s)     |       | 29.7  |      |       | 29.7  |      | 44.5  | 44.5  |      | 44.5  | 44.5  |      |
| Actuated g/C Ratio      |       | 0.33  |      |       | 0.33  |      | 0.50  | 0.50  |      | 0.50  | 0.50  |      |
| v/c Ratio               |       | 0.60  |      |       | 0.95  |      | 0.24  | 0.83  |      | 0.86  | 0.41  |      |
| Control Delay (s/veh)   |       | 30.8  |      |       | 56.4  |      | 14.9  | 28.6  |      | 72.2  | 15.5  |      |
| Queue Delay             |       | 0.0   |      |       | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   |      |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025

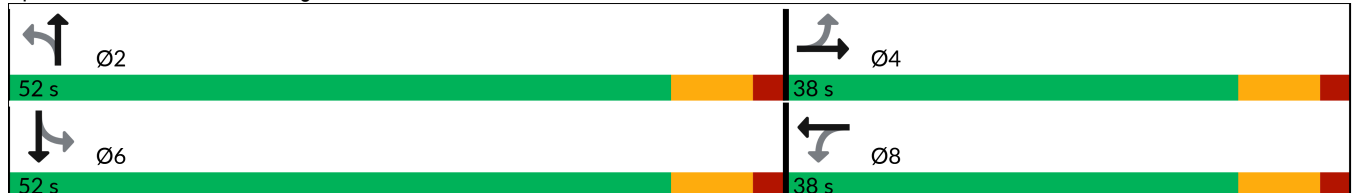


| Lane Group             | EBL | EBT   | EBR | WBL | WBT    | WBR | NBL  | NBT    | NBR | SBL   | SBT   | SBR |
|------------------------|-----|-------|-----|-----|--------|-----|------|--------|-----|-------|-------|-----|
| Total Delay (s/veh)    |     | 30.8  |     |     | 56.4   |     | 14.9 | 28.6   |     | 72.2  | 15.5  |     |
| LOS                    |     | C     |     |     | E      |     | B    | C      |     | E     | B     |     |
| Approach Delay (s/veh) |     | 30.8  |     |     | 56.4   |     |      | 26.9   |     |       | 29.5  |     |
| Approach LOS           |     | C     |     |     | E      |     |      | C      |     |       | C     |     |
| Queue Length 50th (m)  |     | 31.1  |     |     | 76.8   |     | 9.7  | 105.1  |     | 17.6  | 37.0  |     |
| Queue Length 95th (m)  |     | 55.4  |     |     | #138.9 |     | 20.0 | #174.7 |     | #51.6 | 57.7  |     |
| Internal Link Dist (m) |     | 499.9 |     |     | 660.4  |     |      | 823.5  |     |       | 781.2 |     |
| Turn Bay Length (m)    |     |       |     |     |        |     | 30.0 |        |     | 30.0  |       |     |
| Base Capacity (vph)    |     | 399   |     |     | 547    |     | 435  | 912    |     | 140   | 902   |     |
| Starvation Cap Reductn |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Spillback Cap Reductn  |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Storage Cap Reductn    |     | 0     |     |     | 0      |     | 0    | 0      |     | 0     | 0     |     |
| Reduced v/c Ratio      |     | 0.59  |     |     | 0.93   |     | 0.24 | 0.83   |     | 0.86  | 0.41  |     |

Intersection Summary





















|   |                  |
|---|------------------|
| Area Type:  | Other            |
| Cycle Length:   | 90               |
| Actuated Cycle Length:  | 89.2             |
| Natural Cycle:  | 90               |
| Control Type:   | Semi Act-Uncoord |
| Maximum v/c Ratio:  | 0.95             |
| Intersection Signal Delay (s/veh):                              | 35.1             |
| Intersection LOS:   | D                |
| Intersection Capacity Utilization:                              | 112.7%           |
| ICU Level of Service:   | H                |
| Analysis Period (min):  | 15               |
| # 95th percentile volume exceeds capacity, queue may be longer. |                  |
| Queue shown is maximum after two cycles.                        |                  |

Splits and Phases: 3: Trafalgar/WR24 & WR22



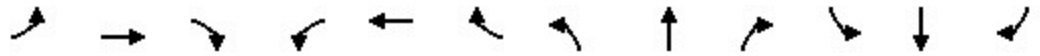
Lanes, Volumes, Timings  
3: Trafalgar/WR24 & WR22

11/06/2025

|                         |  |  |  |  |  |  |   |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations     |  |  |   |  |  |   |  |  |   |  |  |   |
| Traffic Volume (vph)    | 74  | 100   | 41  | 106   | 143   | 220   | 95  | 563   | 132   | 111   | 294   | 43  |
| Future Volume (vph)     | 74  | 100   | 41  | 106   | 143   | 220   | 95  | 563   | 132   | 111   | 294   | 43  |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (m)      | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 30.0  |   | 0.0   | 30.0  |   | 0.0   |
| Storage Lanes           | 1   |   | 0   | 1   |   | 0   | 1   |   | 0   | 1   |   | 0   |
| Taper Length (m)        | 2.5   |   |   | 2.5   |   |   | 2.5   |   |   | 2.5   |   |   |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                     |   | 0.956   |   |   | 0.909   |   |   | 0.972   |   |   | 0.981   |   |
| Flt Protected           | 0.950   |   |   | 0.950   |   |   | 0.950   |   |   | 0.950   |   |   |
| Satd. Flow (prot)       | 1825  | 1837  | 0   | 1772  | 1712  | 0   | 1674  | 1810  | 0   | 1601  | 1797  | 0   |
| Flt Permitted           | 0.267   |   |   | 0.659   |   |   | 0.523   |   |   | 0.235   |   |   |
| Satd. Flow (perm)       | 513   | 1837  | 0   | 1229  | 1712  | 0   | 922   | 1810  | 0   | 396   | 1797  | 0   |
| Right Turn on Red       |   |   | Yes   |   |   | Yes   |   |   | Yes   |   |   | Yes   |
| Satd. Flow (RTOR)       |   | 23  |   |   | 86  |   |   | 21  |   |   | 13  |   |
| Link Speed (k/h)        |   | 70  |   |   | 70  |   |   | 40  |   |   | 40  |   |
| Link Distance (m)       |   | 523.9   |   |   | 684.4   |   |   | 847.5   |   |   | 805.2   |   |
| Travel Time (s)         |   | 26.9  |   |   | 35.2  |   |   | 76.3  |   |   | 72.5  |   |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  |
| Heavy Vehicles (%)      | 0%  | 0%  | 0%  | 3%  | 2%  | 2%  | 9%  | 3%  | 4%  | 14%   | 5%  | 4%  |
| Adj. Flow (vph)         | 80  | 109   | 45  | 115   | 155   | 239   | 103   | 612   | 143   | 121   | 320   | 47  |
| Shared Lane Traffic (%) |   |   |   |   |   |   |   |   |   |   |   |   |
| Lane Group Flow (vph)   | 80  | 154   | 0   | 115   | 394   | 0   | 103   | 755   | 0   | 121   | 367   | 0   |
| Turn Type               | Perm  | NA  |   | Perm  | NA  |   | Perm  | NA  |   | Perm  | NA  |   |
| Protected Phases        |   | 4   |   |   | 8   |   |   | 2   |   |   | 6   |   |
| Permitted Phases        | 4   |   |   | 8   |   |   | 2   |   |   | 6   |   |   |
| Detector Phase          | 4   | 4   |   | 8   | 8   |   | 2   | 2   |   | 6   | 6   |   |
| Switch Phase            |   |   |   |   |   |   |   |   |   |   |   |   |
| Minimum Initial (s)     | 15.0  | 15.0  |   | 15.0  | 15.0  |   | 30.0  | 30.0  |   | 30.0  | 30.0  |   |
| Minimum Split (s)       | 22.5  | 22.5  |   | 22.5  | 22.5  |   | 37.5  | 37.5  |   | 37.5  | 37.5  |   |
| Total Split (s)         | 33.0  | 33.0  |   | 33.0  | 33.0  |   | 57.0  | 57.0  |   | 57.0  | 57.0  |   |
| Total Split (%)         | 36.7%   | 36.7%   |   | 36.7%   | 36.7%   |   | 63.3%   | 63.3%   |   | 63.3%   | 63.3%   |   |
| Maximum Green (s)       | 25.5  | 25.5  |   | 25.5  | 25.5  |   | 49.5  | 49.5  |   | 49.5  | 49.5  |   |
| Yellow Time (s)         | 5.5   | 5.5   |   | 5.5   | 5.5   |   | 5.5   | 5.5   |   | 5.5   | 5.5   |   |
| All-Red Time (s)        | 2.0   | 2.0   |   | 2.0   | 2.0   |   | 2.0   | 2.0   |   | 2.0   | 2.0   |   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 0.0   |   |
| Total Lost Time (s)     | 7.5   | 7.5   |   | 7.5   | 7.5   |   | 7.5   | 7.5   |   | 7.5   | 7.5   |   |
| Lead/Lag                |   |   |   |   |   |   |   |   |   |   |   |   |
| Lead-Lag Optimize?      |   |   |   |   |   |   |   |   |   |   |   |   |
| Vehicle Extension (s)   | 4.0   | 4.0   |   | 4.0   | 4.0   |   | 3.0   | 3.0   |   | 3.0   | 3.0   |   |
| Recall Mode             | None  | None  |   | None  | None  |   | Max   | Max   |   | Max   | Max   |   |
| Walk Time (s)           | 5.0   | 5.0   |   | 5.0   | 5.0   |   | 5.0   | 5.0   |   | 5.0   | 5.0   |   |
| Flash Don't Walk (s)    | 7.0   | 7.0   |   | 7.0   | 7.0   |   | 7.0   | 7.0   |   | 7.0   | 7.0   |   |
| Pedestrian Calls (#/hr) | 0   | 0   |   | 0   | 0   |   | 0   | 0   |   | 0   | 0   |   |
| Act Effct Green (s)     | 21.4  | 21.4  |   | 21.4  | 21.4  |   | 49.6  | 49.6  |   | 49.6  | 49.6  |   |
| Actuated g/C Ratio      | 0.25  | 0.25  |   | 0.25  | 0.25  |   | 0.58  | 0.58  |   | 0.58  | 0.58  |   |
| v/c Ratio               | 0.63  | 0.33  |   | 0.38  | 0.81  |   | 0.19  | 0.72  |   | 0.53  | 0.35  |   |
| Control Delay (s/veh)   | 51.9  | 23.9  |   | 30.4  | 37.0  |   | 10.9  | 18.5  |   | 23.3  | 11.2  |   |
| Queue Delay             | 0.0   | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 0.0   |   |

Lanes, Volumes, Timings  
 3: Trafalgar/WR24 & WR22

11/06/2025

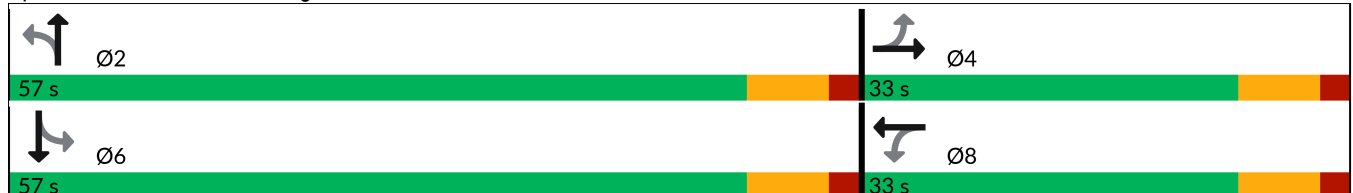


| Lane Group             | EBL   | EBT   | EBR | WBL  | WBT   | WBR | NBL  | NBT   | NBR | SBL  | SBT   | SBR |
|------------------------|-------|-------|-----|------|-------|-----|------|-------|-----|------|-------|-----|
| Total Delay (s/veh)    | 51.9  | 23.9  |     | 30.4 | 37.0  |     | 10.9 | 18.5  |     | 23.3 | 11.2  |     |
| LOS                    | D     | C     |     | C    | D     |     | B    | B     |     | C    | B     |     |
| Approach Delay (s/veh) |       | 33.5  |     |      | 35.5  |     |      | 17.6  |     |      | 14.2  |     |
| Approach LOS           |       | C     |     |      | D     |     |      | B     |     |      | B     |     |
| Queue Length 50th (m)  | 11.7  | 17.5  |     | 15.7 | 48.0  |     | 7.9  | 85.6  |     | 11.9 | 30.1  |     |
| Queue Length 95th (m)  | #30.3 | 33.0  |     | 30.2 | 80.6  |     | 17.2 | 138.0 |     | 33.3 | 50.2  |     |
| Internal Link Dist (m) |       | 499.9 |     |      | 660.4 |     |      | 823.5 |     |      | 781.2 |     |
| Turn Bay Length (m)    |       |       |     |      |       |     | 30.0 |       |     | 30.0 |       |     |
| Base Capacity (vph)    | 152   | 561   |     | 365  | 569   |     | 532  | 1052  |     | 228  | 1042  |     |
| Starvation Cap Reductn | 0     | 0     |     | 0    | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Spillback Cap Reductn  | 0     | 0     |     | 0    | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Storage Cap Reductn    | 0     | 0     |     | 0    | 0     |     | 0    | 0     |     | 0    | 0     |     |
| Reduced v/c Ratio      | 0.53  | 0.27  |     | 0.32 | 0.69  |     | 0.19 | 0.72  |     | 0.53 | 0.35  |     |

Intersection Summary

|   |                  |
|---|------------------|
| Area Type:  | Other            |
| Cycle Length:   | 90               |
| Actuated Cycle Length:  | 86               |
| Natural Cycle:  | 60               |
| Control Type:   | Semi Act-Uncoord |
| Maximum v/c Ratio:  | 0.81             |
| Intersection Signal Delay (s/veh):                              | 22.9             |
| Intersection LOS:   | C                |
| Intersection Capacity Utilization:                              | 121.2%           |
| ICU Level of Service:   | H                |
| Analysis Period (min):  | 15               |
| # 95th percentile volume exceeds capacity, queue may be longer. |                  |
| Queue shown is maximum after two cycles.                        |                  |

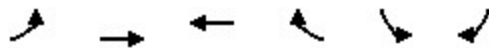
Splits and Phases: 3: Trafalgar/WR24 & WR22



# HCM Unsignalized Intersection Capacity Analysis

## 6: WR22 & Street A

11/06/2025



| Movement                          | EBL         | EBT         | WBT         | WBR                  | SBL  | SBR  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               |             |             |             |                      |      |      |
| Traffic Volume (veh/h)            | 6           | 141         | 134         | 30                   | 85   | 14   |
| Future Volume (Veh/h)             | 6           | 141         | 134         | 30                   | 85   | 14   |
| Sign Control                      |             | Free        | Free        |                      | Stop |      |
| Grade                             |             | 0%          | 0%          |                      | 0%   |      |
| Peak Hour Factor                  | 0.92        | 0.92        | 0.92        | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 7           | 153         | 146         | 33                   | 92   | 15   |
| <b>Pedestrians</b>                |             |             |             |                      |      |      |
| Lane Width (m)                    |             |             |             |                      |      |      |
| Walking Speed (m/s)               |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       |             | None        | None        |                      |      |      |
| Median storage veh                |             |             |             |                      |      |      |
| Upstream signal (m)               |             |             |             |                      |      |      |
| pX, platoon unblocked             |             |             |             |                      |      |      |
| vC, conflicting volume            | 179         |             |             |                      | 330  | 163  |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| vCu, unblocked vol                | 179         |             |             |                      | 330  | 163  |
| tC, single (s)                    | 4.1         |             |             |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            | 2.2         |             |             |                      | 3.5  | 3.3  |
| p0 queue free %                   | 99          |             |             |                      | 86   | 98   |
| cM capacity (veh/h)               | 1397        |             |             |                      | 662  | 882  |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>WB 1</b> | <b>SB 1</b> |                      |      |      |
| Volume Total                      | 160         | 179         | 107         |                      |      |      |
| Volume Left                       | 7           | 0           | 92          |                      |      |      |
| Volume Right                      | 0           | 33          | 15          |                      |      |      |
| cSH                               | 1397        | 1700        | 686         |                      |      |      |
| Volume to Capacity                | 0.01        | 0.11        | 0.16        |                      |      |      |
| Queue Length 95th (m)             | 0.1         | 0.0         | 4.2         |                      |      |      |
| Control Delay (s/veh)             | 0.4         | 0.0         | 11.2        |                      |      |      |
| Lane LOS                          | A           |             | B           |                      |      |      |
| Approach Delay (s/veh)            | 0.4         | 0.0         | 11.2        |                      |      |      |
| Approach LOS                      |             |             | B           |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 2.8         |                      |      |      |
| Intersection Capacity Utilization |             |             | 24.5%       | ICU Level of Service | A    |      |
| Analysis Period (min)             |             |             | 15          |                      |      |      |

HCM Unsignalized Intersection Capacity Analysis

6: WR22 & Street A

11/06/2025

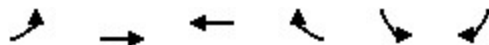


| Movement                          | EBL         | EBT         | WBT         | WBR                  | SBL  | SBR  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               |             | ↩           | ↩           |                      | ↩    |      |
| Traffic Volume (veh/h)            | 14          | 167         | 184         | 90                   | 56   | 11   |
| Future Volume (Veh/h)             | 14          | 167         | 184         | 90                   | 56   | 11   |
| Sign Control                      |             | Free        | Free        |                      | Stop |      |
| Grade                             |             | 0%          | 0%          |                      | 0%   |      |
| Peak Hour Factor                  | 0.92        | 0.92        | 0.92        | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 15          | 182         | 200         | 98                   | 61   | 12   |
| <b>Pedestrians</b>                |             |             |             |                      |      |      |
| Lane Width (m)                    |             |             |             |                      |      |      |
| Walking Speed (m/s)               |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       |             | None        | None        |                      |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| Upstream signal (m)               |             |             |             |                      |      |      |
| pX, platoon unblocked             |             |             |             |                      |      |      |
| vC, conflicting volume            | 298         |             |             | 461                  | 249  |      |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| vCu, unblocked vol                | 298         |             |             | 461                  | 249  |      |
| tC, single (s)                    | 4.1         |             |             | 6.4                  | 6.2  |      |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            | 2.2         |             |             | 3.5                  | 3.3  |      |
| p0 queue free %                   | 99          |             |             | 89                   | 98   |      |
| cM capacity (veh/h)               | 1263        |             |             | 552                  | 790  |      |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>WB 1</b> | <b>SB 1</b> |                      |      |      |
| Volume Total                      | 197         | 298         | 73          |                      |      |      |
| Volume Left                       | 15          | 0           | 61          |                      |      |      |
| Volume Right                      | 0           | 98          | 12          |                      |      |      |
| cSH                               | 1263        | 1700        | 581         |                      |      |      |
| Volume to Capacity                | 0.01        | 0.18        | 0.13        |                      |      |      |
| Queue Length 95th (m)             | 0.3         | 0.0         | 3.3         |                      |      |      |
| Control Delay (s/veh)             | 0.7         | 0.0         | 12.1        |                      |      |      |
| Lane LOS                          | A           |             | B           |                      |      |      |
| Approach Delay (s/veh)            | 0.7         | 0.0         | 12.1        |                      |      |      |
| Approach LOS                      |             |             | B           |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 1.8         |                      |      |      |
| Intersection Capacity Utilization |             |             | 30.8%       | ICU Level of Service | A    |      |
| Analysis Period (min)             |             |             | 15          |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis

## 6: WR22 & Street A

11/06/2025

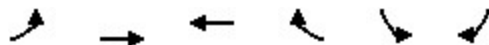


| Movement                          | EBL         | EBT         | WBT         | WBR                  | SBL  | SBR  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               |             |             |             |                      |      |      |
| Traffic Volume (veh/h)            | 9           | 141         | 134         | 26                   | 91   | 21   |
| Future Volume (Veh/h)             | 9           | 141         | 134         | 26                   | 91   | 21   |
| Sign Control                      |             | Free        | Free        |                      | Stop |      |
| Grade                             |             | 0%          | 0%          |                      | 0%   |      |
| Peak Hour Factor                  | 0.92        | 0.92        | 0.92        | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 10          | 153         | 146         | 28                   | 99   | 23   |
| <b>Pedestrians</b>                |             |             |             |                      |      |      |
| Lane Width (m)                    |             |             |             |                      |      |      |
| Walking Speed (m/s)               |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       |             | None        | None        |                      |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| Upstream signal (m)               |             |             |             |                      |      |      |
| pX, platoon unblocked             |             |             |             |                      |      |      |
| vC, conflicting volume            | 174         |             |             |                      | 333  | 160  |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| vCu, unblocked vol                | 174         |             |             |                      | 333  | 160  |
| tC, single (s)                    | 4.1         |             |             |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            | 2.2         |             |             |                      | 3.5  | 3.3  |
| p0 queue free %                   | 99          |             |             |                      | 85   | 97   |
| cM capacity (veh/h)               | 1403        |             |             |                      | 657  | 885  |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>WB 1</b> | <b>SB 1</b> |                      |      |      |
| Volume Total                      | 163         | 174         | 122         |                      |      |      |
| Volume Left                       | 10          | 0           | 99          |                      |      |      |
| Volume Right                      | 0           | 28          | 23          |                      |      |      |
| cSH                               | 1403        | 1700        | 691         |                      |      |      |
| Volume to Capacity                | 0.01        | 0.10        | 0.18        |                      |      |      |
| Queue Length 95th (m)             | 0.2         | 0.0         | 4.8         |                      |      |      |
| Control Delay (s/veh)             | 0.5         | 0.0         | 11.3        |                      |      |      |
| Lane LOS                          | A           |             | B           |                      |      |      |
| Approach Delay (s/veh)            | 0.5         | 0.0         | 11.3        |                      |      |      |
| Approach LOS                      |             |             | B           |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 3.2         |                      |      |      |
| Intersection Capacity Utilization |             |             | 27.8%       | ICU Level of Service | A    |      |
| Analysis Period (min)             |             |             | 15          |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis

## 6: WR22 & Street A

11/06/2025



| Movement                          | EBL         | EBT         | WBT         | WBR                  | SBL  | SBR  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               |             | ↔           | ↔           |                      | ↔    |      |
| Traffic Volume (veh/h)            | 22          | 167         | 184         | 97                   | 47   | 16   |
| Future Volume (Veh/h)             | 22          | 167         | 184         | 97                   | 47   | 16   |
| Sign Control                      |             | Free        | Free        |                      | Stop |      |
| Grade                             |             | 0%          | 0%          |                      | 0%   |      |
| Peak Hour Factor                  | 0.92        | 0.92        | 0.92        | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 24          | 182         | 200         | 105                  | 51   | 17   |
| <b>Pedestrians</b>                |             |             |             |                      |      |      |
| Lane Width (m)                    |             |             |             |                      |      |      |
| Walking Speed (m/s)               |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       |             | None        | None        |                      |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| Upstream signal (m)               |             |             |             |                      |      |      |
| pX, platoon unblocked             |             |             |             |                      |      |      |
| vC, conflicting volume            | 305         |             |             | 483                  | 253  |      |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| vCu, unblocked vol                | 305         |             |             | 483                  | 253  |      |
| tC, single (s)                    | 4.1         |             |             | 6.4                  | 6.2  |      |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            | 2.2         |             |             | 3.5                  | 3.3  |      |
| p0 queue free %                   | 98          |             |             | 90                   | 98   |      |
| cM capacity (veh/h)               | 1256        |             |             | 532                  | 786  |      |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>WB 1</b> | <b>SB 1</b> |                      |      |      |
| Volume Total                      | 206         | 305         | 68          |                      |      |      |
| Volume Left                       | 24          | 0           | 51          |                      |      |      |
| Volume Right                      | 0           | 105         | 17          |                      |      |      |
| cSH                               | 1256        | 1700        | 579         |                      |      |      |
| Volume to Capacity                | 0.02        | 0.18        | 0.12        |                      |      |      |
| Queue Length 95th (m)             | 0.4         | 0.0         | 3.0         |                      |      |      |
| Control Delay (s/veh)             | 1.1         | 0.0         | 12.0        |                      |      |      |
| Lane LOS                          | A           |             | B           |                      |      |      |
| Approach Delay (s/veh)            | 1.1         | 0.0         | 12.0        |                      |      |      |
| Approach LOS                      |             |             | B           |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 1.8         |                      |      |      |
| Intersection Capacity Utilization |             |             | 37.5%       | ICU Level of Service | A    |      |
| Analysis Period (min)             |             |             | 15          |                      |      |      |