2596 Carp Road Transportation Impact Assessment

Step 2 Scoping Report

Prepared for:

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Prepared by:



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PN: 2019-04

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1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for TIA Study PM. As shown in the Screening Form, a TIA is required including the Design Review component and the Network Impact Component.

2 Existing and Planned Conditions

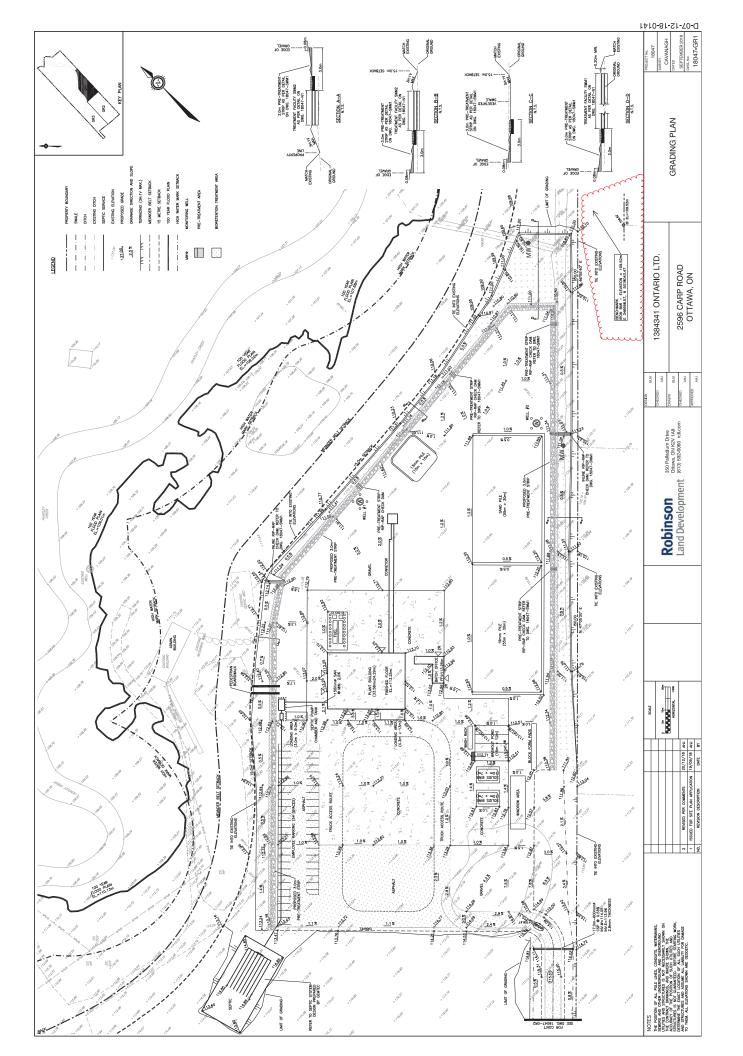
2.1 Proposed Development

The proposed development, located at 2596 Carp Road, is within the Carp Road Corridor Rural Employment zone. The site is zoned as RG5, RG5, and RG5[275r]-h Rural General that permits retail limited to the sale of agricultural, construction, gardening or landscape-related products, equipment or supplies. The proposed development is for a concrete batching plant and related services. The site will access Carp Road at the existing driveway location, opposite Cavanmore Road, as a full movement access. The anticipated full build-out and occupancy horizon is 2022. Figure 1 illustrates the Study Area Context. Figure 2 illustrates the proposed concept plan.



Figure 1: Area Context Plan





2.2 Existing Conditions

2.2.1 Area Road Network

Carp Road: Carp Road is a City of Ottawa arterial road with a two-lane rural cross-section including a paved shoulder. The posted speed limit is 80 km/h. The Ottawa Official Plan reserves a 37.5 metre right of way south of Richardson Side Road and the Carp Road Corridor Community Design Plan identifies 30.0 metres north to the north.

Richardson Side Road: Richardson Side Road is a City of Ottawa arterial road with a two-lane rural cross-section including a paved shoulder. The posted speed limit is 80 km/h and the right-of-way is 26.0 metres.

Cavanmore Road: Cavanmore Road is a City of Ottawa collector road with a two-lane unpaved rural cross-section. The unposted speed limit is 80 km/h. The right-of-way is 13.5 metre at Carp Road and expands to 26.0 metres to the west.

Cardevco Road: Cardevco Road is a City of Ottawa local road with a two-lane rural cross-section with gravel shoulders. The posted speed limit is 40 km/h and the right-of-way is currently 27.0 metres.

2.2.2 Existing Intersections

Carp Road / Richardson Side Road

The intersection of Carp Road at Richardson Side Road is a signalized intersection with auxiliary left turn lanes on the north and south bound approaches. No turn restrictions were noted.

2.2.3 Existing Driveways

There are existing driveways on both side of Carp Road within 200 metres of the proposed site access. None of the driveways would provide access to significant traffic generators and would be captured within the existing turning movement counts at the adjacent intersection.

2.2.4 Cycling and Pedestrian Facilities

No pedestrian facilities are provided within the vicinity of the site. Paved shoulders are provided along Carp Road and Richardson Side Road.

Carp Road and Richardson Side Road are designated as City spine routes and Cavanmore Road is designated as a local route.

Figure 3 illustrates the cycling networks in the study area.



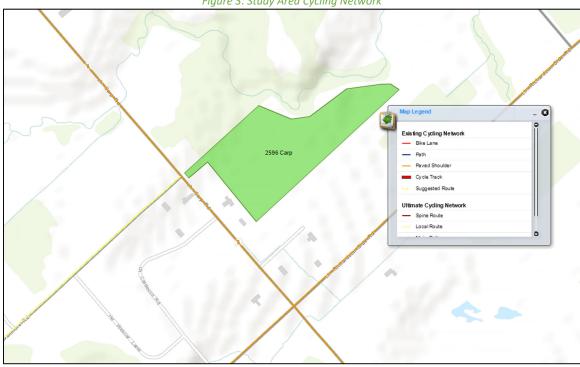


Figure 3: Study Area Cycling Network

Source: http://maps.ottawa.ca/geoOttawa/ Accessed: February 22, 2019

2.2.5 Existing Transit

Route 303 runs along Carp Road on Wednesdays only, between Dunrobin and Carlingwood Mall. The route has a single trip during the AM peak and the PM peak. No other existing routes currently exist.

2.2.6 Existing Area Traffic Management Measures

There are no existing area traffic management measures within the Study Area.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the City of Ottawa for the existing Study Area intersection. Table 1 summarizes the intersection count dates.

Table 1: Intersection Count Date

| Intersection | Count Date | |
|------------------------------|------------------------|--|
| Carp Rd @ Richardson Side Rd | Thursday, May 04, 2017 | |

Detailed turning movement count data is included in Appendix B. Figure 4 illustrates the existing traffic counts and Table 2 summarizes the existing intersection operations. The level of service is based on the HCM criteria for average delay at signalized intersections. Detailed turning movement count data is included in Appendix B and the synchro worksheets are provided in Appendix C.



Figure 4: Existing Traffic Counts 68(70) 26(111) 38(91) 20(20) Richardson Side 118(79) 155(148) ## AM Volume

Table 2: Existing Intersection Operations

| | | | 0.0.0 = . = | ·g ····te··ocet· | on operation. | | | | |
|-------------------------|---------|--------------|-------------|------------------|-----------------------|-----|-------|------|-----------------------|
| Interception | Long | AM Peak Hour | | | PM Peak Hour | | | | |
| Intersection | Lane | LOS | Delay | V/C | Q (95 th) | LOS | Delay | V/C | Q (95 th) |
| | EB | D | 40.2 | 0.79 | 73.3 | С | 23.8 | 0.55 | 53.8 |
| C D 1 0 | WB | С | 23.1 | 0.49 | 30.7 | Ε | 64.4 | 0.92 | 86.8 |
| Carp Road & | NBL | Α | 9.0 | 0.17 | 16.4 | В | 18.6 | 0.52 | 62.1 |
| Richardson Side Road | NBT/R | В | 11.9 | 0.54 | 102.9 | В | 15.0 | 0.54 | 116.8 |
| Signalized | SBL | Α | 9.6 | 0.18 | 15.0 | В | 15.2 | 0.35 | 34.1 |
| Signulized | SBT/R | Α | 9.9 | 0.39 | 68.1 | В | 13.8 | 0.46 | 95.0 |
| | Overall | В | 17.6 | - | - | С | 23.9 | - | - |

Overall, the intersection of Carp Road and Richardson Side Road operates well during the AM and PM peak hours. The eastbound approach experiences the highest delay during the AM peak with over40 seconds of delay, and the westbound approach experiences the highest delay during the PM peak with over 64 seconds of delay. During both peak hours, the northbound through/right-turn lane have the longest 95th percentile queues with each potentially over 100m long. The GB Pre-Fab Garden Sheds access on the eastbound approach may become blocked during both peak hours.

2.2.8 Collision Analysis

Collision data has been acquired from the City of Ottawa for five years (2013-2017) prior to the commencement of this TIA at each of the Study Area intersections. Table 3 summarizes the collisions for the study area and Figure 5 illustrates a representation of the collision locations in the study area.

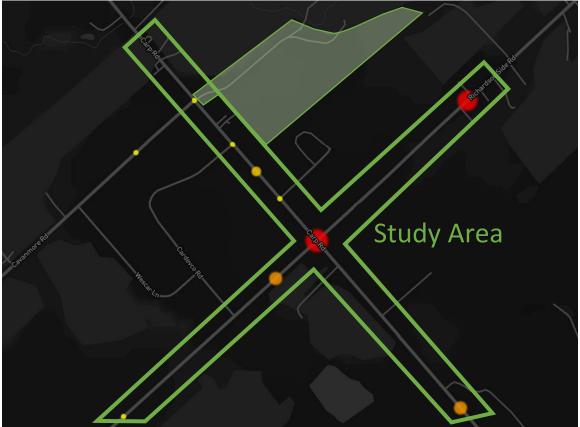
Table 3: Collision Summary - 2013-2017

| | | Number | % |
|---------------------|----------------------|--------|------|
| Total (| Collisions | 54 | 100% |
| | Fatality | 0 | 0% |
| Classification | Non-Fatal Injury | 7 | 13% |
| | Property Damage Only | 47 | 87% |
| | Approaching | 3 | 6% |
| Initial Impact Type | Angle | 7 | 13% |
| Initial Impact Type | Rear end | 13 | 24% |
| | Turning Movement | 6 | 11% |



| | SMV Other | 21 | 39% |
|-------------------------------|----------------|----|-----|
| | SMV Unattended | 1 | 2% |
| | Other | 3 | 6% |
| | Dry | 34 | 63% |
| | Wet | 12 | 22% |
| Road Surface Condition | Loose Snow | 5 | 9% |
| | Packed Snow | 1 | 2% |
| | Ice | 2 | 4% |
| Pedestriar | Involved | 0 | 0% |
| Cyclists I | nvolved | 0 | 0% |

Figure 5: Study Area Collision Records – Representation of 2014-2016



The collisions within the study area are generally property damage collisions (83%) with the primary impact types of rear end (24%) and single motor vehicle other (39%), with the road conditions area typically dry (63%) or wet (22%). Of the 54 total collisions, 13 (or 24%) occurred at the intersection of Carp Road and Richardson Side Road, 12 (or 22%) along Richardson Side Road between Carp Road and Highway 417 interchange, and 11 (or 20%) Richardson Side Road between Carp Road and Oak Creek Road. Overall no trends were identified that would be exacerbated by the operation of the concrete batching plant.

Collision data is included in Appendix C.



2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

The subject development is within the Carp Road Corridor Rural Employment area. No transportation network changes are identified, and individual transportation impact assessments should recommend any local improvements to support specific developments.

No improvements are identified within the Transportation Master Plan Ultimate Network.

2.3.2 Other Study Area Developments

The following developments are listed on the City's Development Application Search tool:

- 2491 Carp Rd proposed to rezone to allow the sale of sheds within the existing business
- 2688 Carp proposed construction of a repair garage and office, with a total 599 square metres, to support the existing heavy equipment yard/business
- 512 William Mooney Road & 2349 to 2437 Carp Road proposed landfill with less than 5 trips anticipated to travel north along Carp Road to the Richardson Side Road intersection
- 127 Cardevco Rd proposed new 2-storey 670 square metre warehouse within the existing business park
- 210-220 Maple Creek Ct proposed new 7,432 square metre warehouse that will consist of multiple phases for four tenants

With the exception of the proposed landfill, no traffic studies were prepared for these applications and it is assumed that they will have minimal impact on the traffic volumes at the Carp Road and Richardson Side Road intersection and be accounted for within the background growth projections.

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersection of Carp Road and Richardson Side Road intersection and will include examining Carp Road as a Boundary Road.

3.2 Time Periods

As the proposed development is composed entirely of concrete batching plant the AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2022. As a result, the full build-out plus five years horizon year is 2027.

4 Exemption Review

Table 4 summarizes the exemptions for this TIA.

Table 4: Exemption Review

| Module | Element | Explanation | Exempt/Required | | |
|-------------------------|------------------------------|--|-----------------|--|--|
| Design Review Component | | | | | |
| 4.1 Development | 4.1.2 Circulation and Access | Only required for site plans | Required | | |
| Design | 4.2.3 New Street Networks | Only required for plans of subdivision | Exempt | | |
| 4.2 Parking | 4.2.1 Parking Supply | Only required for site plans | Required | | |



| Module | Element | Explanation | Exempt/Required |
|---|----------------------------------|--|-----------------|
| | 4.2.2 Spillover Parking | Only required for site plans where parking supply is 15% below unconstrained demand | Exempt |
| Network Impact Comp | onent | | |
| 4.5 Transportation Demand Management | All Elements | Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time | Exempt |
| 4.6 Neighbourhood Traffic Management | 4.6.1 Adjacent Neighbourhoods | Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds | Exempt |
| 4.8 Network Concept | | Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning | Exempt |

In addition to the above TIA requirements and exemptions, the following exemptions in Table 5 are also recommended for this TIA.

Table 5: Recommended Additional Exemptions

| Module | Element | Explanation |
|--|--------------|--|
| Forecasting | | |
| 3.1 Development Generated Travel Demand | All Elements | Trip generation trigger was not met, therefore trip and mode share forecasting is not required for the subject site. An estimation of the on-site activity (developed for the noise assessment) is approximately 29 vehicles per hour. With office staff and operators assumed to start at 7am on site, the estimated inbound volume would be approximately 35 vehicles and outbound 10 vehicles. Additionally, the anticipated operation of 7am-7pm day shift is outside the peak hours of the adjacent roadways. The anticipated trip distribution will be predominantly to the south (95%) to Highway 417 and limited to the north (5%) as Carp Road is a designated trucking route. For non-truck vehicles and local trips, the distribution will see the south (75%) remain the primary route, east (15%) having a much lower usage, and nominal trips coming from the west and north (5% each). Reference data is provided in Appendix E. |
| 3.2 Background Network Travel Demand | All Elements | No intersection constraints were noted for the existing volumes and the background growth would continue to be accommodated within the network. |
| 3.3 Demand Rationalization | All Elements | Subject to the trip generation trigger not being met, no demand rationalization is required as part of this TIA. The existing conditions summarized in Section 2.2.7 illustrates residual capacity in the existing road network and the network can support the anticipated trip generation of the proposed development. |



| Module | Element | Explanation |
|--------------------------------|--|--|
| Design Review Component | | |
| 4.1 Development Design | 4.1.1 Design for Sustainable Modes | The rural nature of the site does not provide any pedestrian, cycling, and transit service/facilities. Furthermore, the internal site is a function of the concrete batching plant operation and has been prepared to support that operation. Therefore, the need to for a TIA to outline the internal auto parking and pedestrian access to the site office is not required. |
| 4.3 Boundary Street Design | All Elements | No boundary street frontage is limited to the access to the site and limited opportunity exists to increase the MMLOS of Carp Road due to the lack of existing/connecting facilities, speed of the roadway, and vehicular volumes along the roadway. |
| 4.4 Access Intersection Design | All Elements | The access intersection is anticipated to be a typical private approach design, completed as per City standards and operational requirements for site vehicles. Therefore, the need for a TIA to review the access is not required and can be completed as part of the site plan review process within the existing submission. |
| Network Impact Components | | |
| 4.7 Transit | All Elements | No transit service is provided in the area. |
| 4.9 Network Intersections | All Elements | As outlined previously in this table, the low traffic generation will have minimal impact on network intersections and sufficient capacity if currently provided to accommodate an increase in line with background growth. |

5 Summary and Conclusion

The proposed development was initially submitted without the need for a TIA through the Screening Form during pre-consultation. Subsequent to the submission, the City requested that a TIA be completed for the proposed concrete batching plant at 2596 Carp Road.

In reviewing the Screening Form, the proposed site did not meet Trip Generation Trigger, met the Location Trigger solely on the Ultimate Cycling Plan classification of Carp Road as a spine route, and the Safety Trigger was met solely on the posted speed limit of Carp Road at 80 km/h. In addition to the low volumes anticipated during the daily operations, the peak site trips occurring outside the adjacent roadway peaks, and residual capacity on the network intersections further reduces the need to assess the background operations. For example, a 2% background growth would see the intersection volumes increase between 180-220 vehicles by the 2025 during the peak hours, easily accounting for the site generated trips. This increase in volume can be accommodated by the existing signal timing.

The Carp Road Corridor Rural Employment zone does not recommend any cycling facility upgrades, and paved shoulders achieve the spine corridor for a rural area. The proposed site will have limited impact on Carp Road as the only frontage is the site access. The private approach access is assumed to be full movement, consistent with the surrounding area, and is assumed to accommodate the anticipated site vehicles as per the City standards.

The collisions for the area were reviewed as part of the Screening Report, meeting the need to assess any safety risks with the proposed development. The collision review noted a single collision at the access location of Carp



Road and Cavanmore Road in 2015. The adjacent road segments experienced a one single motor vehicle collision immediately to the south and four immediately to the north involving single motor vehicles. All but one occurred in 2013.

The remaining modules and elements of the TIA Guidelines, outlined in Table 4, are internal to the site and can be reviewed as part of the existing site plan submission without the need for a TIA. At a high level, the parking spaces provided on site for employee parking is currently 50 spaces, allowing for shift change to occur and is not representative of the employees anticipated on site during normal operations. The access will be shifted south by approximately 7 metre, may be either asphalt or gravel surface, and will maintain the 8 metre radius to tie into the existing shoulder.

Given the above, it is the recommendation of this Screening Report that the TIA requirements for the proposed development have been met and no further review or assessment of the development is required.

Prepared By:

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March 22, 2019

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Senior Transportation Engineer



Appendix A

TIA Screening Form and PM Certification Form



City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address

Description of Location

Land Use Classification

Development Size (units)

Development Size (m²)

Number of Accesses and Locations

Phase of Development

Buildout Year

Plant 2019

Address

If available, please attach a sketch of the development or site plan to this form.

2. Trip Generation Trigger

Considering the Development's Land Use type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

| Land Use Type | Minimum Development Size |
|-------------------------------------|--------------------------|
| Single-family homes | 40 units |
| Townhomes or apartments | 90 units |
| Office | 3,500 m² |
| Industrial | 5,000 m ² |
| Fast-food restaurant or coffee shop | 100 m ² |
| Destination retail | 1,000 m² |
| Gas station or convenience market | 75 m ² |

^{*} If the development has a land use type other than what is presented in the table above, estimates of person-trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.

If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.



3. Location Triggers

| | Yes | No |
|--|-----|----|
| Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks? | V | |
| Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?* | | V |

^{*}DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6). See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA).

If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

4. Safety Triggers

| | Yes | No |
|---|----------|----------|
| Are posted speed limits on a boundary street are 80 km/hr or greater? | V | |
| Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway? | | V |
| Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)? | | / |
| Is the proposed driveway within auxiliary lanes of an intersection? | | / |
| Does the proposed driveway make use of an existing median break that serves an existing site? | | V |
| Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development? | | / |
| Does the development include a drive-thru facility? | | |

If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

5. Summary

| | Yes | No |
|---|-----|----|
| Does the development satisfy the Trip Generation Trigger? | , | V |
| Does the development satisfy the Location Trigger? | | |
| Does the development satisfy the Safety Trigger? | V | |

If none of the triggers are satisfied, <u>the TIA Study is complete</u>. If one or more of the triggers is satisfied, <u>the TIA Study must continue into the next stage</u> (Screening and Scoping).



TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below.

CERTIFICATION

- 1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
- 2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- 3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
- 4. I am either a licensed¹ or registered² professional in good standing, whose field of expertise [check $\sqrt{\text{appropriate field(s)}}$] is either transportation engineering $\sqrt{\text{or}}$ or transportation planning \square .
- License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

| Dated at Ottawa (City) | this 20 day of September | , 2018 |
|------------------------|---|--------|
| Name: | Andrew Harte (Please Print) | _ |
| Professional Title: | Professional Engineer | |
| Signature | of Individual certifier that s/he meets the above four criteria | |

| Office Contact Information (Please Print) |
|--|
| Address: 13 Markham Avenue |
| City / Postal Code: Ottawa / K2G 3Z1 |
| Telephone / Extension: (613) 697-3797 |
| E-Mail Address: Andrew.Harte@CGHTransportation.com |



Appendix B

Turning Movement Counts



11 84 Miovision *****0 36994 4 297 Total 38 **₽**↓∘ 3 WO No: Device: Turning Movement Count - Peak Hour Diagram CARP RD @ RICHARDSON SIDE RD ₫\ **→ (<t**) -Cars 257 36 0 113 105 U **₹** 806 Ł 45 461 418 377 4 <u>ح</u> **—** 296 0 0 612 AM Period 07:15 08:15 Peak Hour CARP RD Ł 89 13 55 69 12 81 1180 **+** Ç **♣** 94 378 320 28 ٦ § **}** 4 រា ٢ 502 99 Survey Date: Thursday, May 04, 2017 146 Cars ***** Heavy Vehicles **€** RICHARDSON SIDE RD **%1** Start Time: 07:00 116 152 20 + ***** ¹² 7 288 409

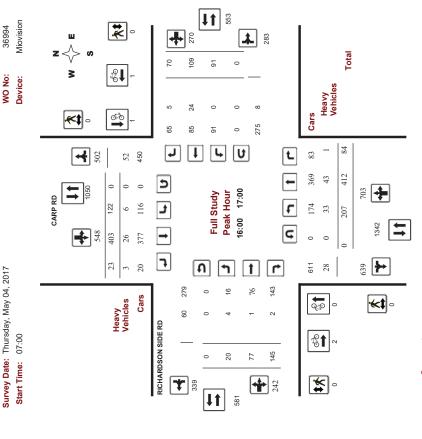
Comments

2019-Feb-04



Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram CARP RD @ RICHARDSON SIDE RD



Comments

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11 758 Miovision *****0 36994 Total 20 8 **₽**↓∘ 3 WO No: Device: Turning Movement Count - Peak Hour Diagram CARP RD @ RICHARDSON SIDE RD ₫\ **→ (<t**) -Cars 175 0 U 370 Ł 99 45 325 264 298 34 <u>ح</u> **\$** 434 11:45 12:45 **MD Period** Peak Hour CARP RD Ł 90 98 69 10 79 **+** 922 Ç **♣** 650 347 306 41 ٦ 88 **+** 12 រា 1 ٢ 432 56 Survey Date: Thursday, May 04, 2017 28 Cars **<** Heavy Vehicles **€** 13 RICHARDSON SIDE RD **%1** Start Time: 07:00 35 91 **♣** ₹ *** ♣** 55 267

2019-Feb-04

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Ottawa

Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram CARP RD @ RICHARDSON SIDE RD

Miovision

WO No: Device:

36994

Survey Date: Thursday, May 04, 2017

Start Time: 07:00

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Comments

Comments

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Turning Movement Count - Full Study Diagram CARP RD @ RICHARDSON SIDE RD Miovision

Device:

36994

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Survey Date: Thursday, May 04, 2017

Comments

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2019-Feb-04

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Transportation Services - Traffic Services

Work Order 36994

Turning Movement Count - Full Study Summary Report CARP RD @ RICHARDSON SIDE RD

| Survey Date: Thursday, May 04, 2017 | te: | Inurs | aay, M | ay 04, | 71.07 | | | | Iotal Observed U-Lurns | pser | ed C | nrns | | | | | AAD | AADI Factor | ö |
|--|---------|------------|-----------|----------|-----------|------------|----------|-------------|------------------------|-----------|-----------|-------------|------|--------------------|-----------|------|------|-------------|----------------|
| | | | | | | | _ | Northbound: | 0 :pur | | South | Southbound: | 0 | | | | 06: | | |
| | | | | | | | _ | Eastbound: | 0 :pu | | West | Westbound: | 0 | | | | | | |
| | | | | | | | | _ | Full Study | dy | | | | | | | | | |
| | | | | CARP RD | RD | | | | | | IL. | ICHA | RDSO | RICHARDSON SIDE RD | ≣ RD | | | | |
| | _ | Northbound | puno | | 0) | Southbound | pund | | ı | _ | Eastbound | pund | | | Westbound | pund | | | |
| Period | ₽ | ST | RT | A TO | 5 | ST | R | SB TOT | STR | ₽ | ST | R | 10E | h | ST | R | TOT | STR | Grand Total |
| 07:00 08:00 | 72 | 413 | 104 | 589 | 28 | 373 | 6 | 440 | 1029 | 18 | 110 | 170 | 298 | 31 | 24 | 99 | 120 | 418 | 1447 |
| 00:60 00:80 | 35 | 362 | 136 | 230 | 83 | 337 | 16 | 436 | 1026 | 10 | 87 | 142 | 239 | 48 | 34 | 47 | 129 | 368 | 1394 |
| 09:00 10:00 | 101 | 295 | 82 | 481 | 40 | 278 | 10 | 328 | 808 | 10 | 99 | 153 | 228 | 23 | 36 | 43 | 132 | 360 | 1169 |
| 11:30 12:30 | 78 | 283 | 62 | 423 | 92 | 339 | 4 | 445 | 898 | 6 | 33 | 98 | 128 | 52 | 38 | 69 | 159 | 287 | 1155 |
| 12:30 13:30 | 93 | 314 | 89 | 475 | 48 | 295 | 6 | 352 | 827 | 6 | 45 | 92 | 146 | 22 | 46 | 62 | 163 | 309 | 1136 |
| 15:00 16:00 | 131 | 332 | 26 | 519 | 75 | 426 | 13 | 514 | 1033 | 12 | 49 | 72 | 133 | 78 | 84 | 73 | 235 | 368 | 1401 |
| 16:00 17:00 | 207 | 412 | \$ | 703 | 122 | 403 | 23 | 548 | 1251 | 20 | 77 | 145 | 242 | 91 | 109 | 20 | 270 | 512 | 1763 |
| 17:00 18:00 | 152 | 334 | 78 | 564 | 70 | 324 | 4 | 408 | 972 | 12 | 48 | 93 | 156 | 66 | 81 | 62 | 242 | 398 | 1370 |
| Sub Total | 926 | 2745 | 673 | 4344 | 288 | 2775 | 108 | 3471 | 7815 | 103 | 514 | 953 | 1570 | 202 | 452 | 491 | 1450 | 3020 | 10835 |
| U Turns | | | | 0 | | | | 0 | 0 | | | | 0 | | | | 0 | 0 | |
| Total | 926 | 2745 | 673 | 4344 | 588 | 2775 | 108 | 3471 | 7815 | 103 | 514 | 953 | 1570 | 202 | 452 | 491 | 1450 | 3020 | 10835 |
| EQ.12Hr 1287 3816 935 6038 817 3857 150 4825 10863 143 | 1287 | 3816 | 935 | 6038 | 817 | 3857 | 150 | 4825 | 10863 | 143 | 714 | 1325 | 2182 | 705 | 628 | 682 | 2015 | 4197 | 15060 |
| NOIG. HIGSE V | aines a | i e calcr | liated D | idninii | n find | (Otalis D) | a a | ріоріта | e expans | OII Iacit | | | | 60. | | | | | |
| AVG 12Hr | 1158 | 3434 | 842 | 5434 | 736 | 3472 | 135 | 4342 | 9776 | 129 | 643 | 1192 | 1964 | 634 | 292 | 614 | 1814 | 3778 | 13554 |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | olumes | are cal | culated | by multi | plying th | ne Equiva | alent 12 | 2 hr. tota | Is by the | AADT f | actor. | | • | .90 | | | | | |
| AVG 24Hr | 1518 | | 4499 1103 | 7119 | 964 | 4548 | 177 | 2688 | 12807 | 169 | 842 | 1562 | 2573 | 831 | 741 | 802 | 2376 | 4949 | 17756 |
| | | | | | | | | | | | | | | | | | | | |

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



| JUMMA | 2 | - | ì | ٠ | • | | | | | , | | , | • | | | | , | | |
|--------------|-----|------------|-------|----------|----------|------------------------|----|----------|----------------------------------|-----------------------|---|---|--|------|-----------|------|-----|-----|----------------|
| | | | | <u> </u> | <u>≥</u> | love | me | i C | onn | <u>1</u> | 2 | Turning Movement Count - 15 Minute Summary Report | Sul | Ĕ | ary I | Zep, | T C | | |
| | | | | | CA | CARP RD | | (9) R | SH | ARE | @ RICHARDSON SIDE RD | S | DE | RD. | | | | | |
| Survey Date: | te: | • | Thurs | day, I | May (| Thursday, May 04, 2017 | 17 | | Tol Northbound: Eastbound: | Total und: ind: | Total Observed U-Turns nd: 0 Southbound: nd: 0 Westbound: | Sc W | d U-Turns Southbound: Westbound: | | 0 | | | | |
| | | | S | CARP RD | ۵ | | | | | | RIC | RICHARDSON SIDE RD | SON | SIDE | ZD. | | | | |
| | Š | Northbound | Þ | | Š | Southbound | pu | | | | Eastbound | ъ | | We | Westbound | | | | |
| Time Period | Þ | ST | R | ≥₽ | 占 | ST | R | s Į | STR | Þ | ST | RT | ᄪᅝ | 5 | ST | R | × t | STR | Grand Total |
| 07:00 07:15 | 5 | 66 | 21 | 133 | 10 | 82 | 0 | 92 | 225 | က | 18 | 51 | 72 | 4 | 4 | 6 | 17 | 89 | 314 |
| 07:15 07:30 | 8 | 109 | 24 | 151 | 20 | 102 | 2 | 124 | 275 | 4 | 58 | 37 | 20 | 80 | 3 | 4 | 25 | 92 | 370 |
| 07:30 07:45 | 15 | 28 | 25 | 121 | 13 | 105 | 4 | 122 | 243 | 80 | 28 | 39 | 75 | 9 | 80 | 20 | 34 | 109 | 352 |
| 07:45 08:00 | 56 | 124 | 8 | 184 | 15 | 8 | 3 | 102 | 286 | ю | 35 | 43 | 81 | 13 | 6 | 22 | 44 | 125 | 411 |
| 08:00 08:15 | 22 | 104 | 30 | 156 | 20 | 87 | 9 | 113 | 269 | 2 | 24 | 33 | 62 | = | 2 | 12 | 28 | 06 | 359 |
| 08:15 08:30 | 24 | 93 | 32 | 149 | 9 | 95 | ~ | 11 | 260 | က | 19 | 20 | 72 | 15 | 7 | 7 | 29 | 101 | 361 |
| 08:30 08:45 | 21 | 25 | 4 | 146 | 17 | 82 | 4 | 103 | 249 | 2 | 20 | 56 | 48 | 10 | 10 | 17 | 37 | 82 | 334 |
| 08:45 09:00 | 25 | 81 | 33 | 139 | 28 | 9/ | 2 | 109 | 248 | 0 | 24 | 33 | 22 | 12 | 12 | 7 | 35 | 92 | 340 |
| 09:00 09:15 | 21 | 81 | 18 | 120 | 12 | 8 | 3 | 66 | 219 | 2 | 16 | 32 | 20 | 15 | 7 | 80 | 30 | 80 | 299 |
| 09:15 09:30 | 38 | 72 | 25 | 135 | 12 | 2 | 2 | 78 | 213 | 0 | 18 | 48 | 99 | 6 | 20 | 10 | 39 | 105 | 318 |
| 09:30 09:45 | 26 | 92 | 19 | 110 | 10 | 29 | 0 | 69 | 179 | - | 19 | 43 | 63 | 16 | 9 | 9 | 28 | 91 | 270 |
| 09:45 10:00 | 16 | 11 | 23 | 116 | 9 | 71 | 2 | 82 | 198 | 7 | 12 | 30 | 49 | 13 | 8 | 19 | 35 | 84 | 282 |
| 11:30 11:45 | 17 | 25 | 18 | 89 | 17 | 69 | 8 | 88 | 178 | ю | 13 | 20 | 36 | 15 | 80 | 18 | 4 | 22 | 255 |
| 11:45 12:00 | 24 | 11 | 24 | 125 | 25 | 86 | 4 | 127 | 252 | 3 | 9 | 18 | 27 | 6 | 7 | 12 | 28 | 22 | 307 |
| 12:00 12:15 | 13 | 89 | 10 | 93 | 26 | 82 | 2 | 116 | 209 | 2 | 80 | 27 | 37 | 4 | 13 | 21 | 48 | 85 | 294 |
| 12:15 12:30 | 22 | 8 | 10 | 116 | 24 | 87 | 2 | 113 | 229 | - | 9 | 21 | 78 | 4 | 10 | 18 | 42 | 20 | 299 |
| 12:30 12:45 | 8 | 69 | 13 | 100 | 15 | 77 | 2 | 94 | 194 | 2 | 15 | 25 | 45 | 13 | £ | 13 | 37 | 42 | 273 |
| 12:45 13:00 | 21 | 11 | 20 | 118 | 15 | 83 | က | 101 | 219 | က | 13 | 56 | 45 | 15 | 15 | 12 | 42 | 84 | 303 |
| 13:00 13:15 | 27 | 78 | 15 | 120 | 10 | 63 | 0 | 73 | 193 | 2 | 7 | 18 | 27 | 15 | 80 | 56 | 49 | 92 | 569 |
| 13:15 13:30 | 27 | 06 | 20 | 137 | œ | 72 | 4 | 84 | 221 | 2 | 10 | 23 | 35 | 12 | 12 | 7 | 35 | 20 | 291 |
| 15:00 15:15 | 32 | 8 | 15 | 131 | 25 | 11 | 9 | 142 | 273 | 2 | 13 | 17 | 35 | 15 | 13 | 13 | 4 | 92 | 349 |
| 15:15 15:30 | 20 | 75 | 19 | 114 | 15 | 26 | 4 | 116 | 230 | - | 10 | 21 | 32 | 22 | 28 | 17 | 29 | 66 | 329 |
| 15:30 15:45 | 4 | 8 | 10 | 135 | 16 | 103 | ~ | 120 | 255 | 2 | 80 | 6 | 19 | 21 | 21 | 56 | 89 | 87 | 342 |
| 15:45 16:00 | 38 | 88 | 12 | 139 | 19 | 115 | 2 | 136 | 275 | 4 | 18 | 25 | 47 | 20 | 22 | 17 | 29 | 106 | 381 |
| 16:00 16:15 | 20 | 80 | 20 | 150 | 8 | 138 | 4 | 176 | 326 | 2 | 20 | 34 | 29 | 24 | 35 | 20 | 42 | 138 | 464 |
| 16:15 16:30 | 22 | 100 | 20 | 175 | 28 | 8 | 9 | 118 | 293 | က | 19 | 4 | 99 | 28 | 58 | 16 | 73 | 139 | 432 |
| 16:30 16:45 | 53 | 129 | 22 | 204 | 23 | 104 | 6 | 136 | 340 | 4 | 19 | 36 | 29 | 19 | 23 | 20 | 62 | 121 | 461 |
| 16:45 17:00 | 49 | 103 | 22 | 174 | 37 | 77 | 4 | 118 | 292 | 80 | 19 | 31 | 28 | 20 | 22 | 4 | 26 | 114 | 406 |
| 17:00 17:15 | 4 | 69 | 18 | 128 | 20 | 109 | က | 132 | 260 | 2 | 17 | 33 | 22 | 27 | 25 | 17 | 69 | 124 | 384 |
| 17:15 17:30 | 4 | 06 | 26 | 160 | 17 | 71 | 4 | 92 | 252 | 2 | 4 | 21 | 37 | 22 | 20 | 4 | 26 | 93 | 345 |
| 17:30 17:45 | 37 | 101 | 16 | 154 | 18 | 89 | 4 | 90 | 244 | 4 | 6 | 22 | 35 | 34 | 18 | 15 | 29 | 102 | 346 |
| 17:45 18:00 | 30 | 74 | 18 | 122 | 15 | 9/ | က | 94 | 216 | 4 | 00 | 17 | 59 | 16 | 18 | 16 | 20 | 42 | 295 |
| | ١ | | | | | | | | | | | | | | | | | | |

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Transportation Services - Traffic Services Ottawa Turning Movement Count - Cyclist Volume Report

Work Order 36994

| | | CA | CARP RD @ RICHARDSON SIDE RD | CHARDSON | SIDE RD | | |
|-------------|------------------------------------|--------------|------------------------------|-----------|--------------------|-------------------|-------------|
| Count Dat | Count Date: Thursday, May 04, 2017 | May 04, 2017 | | | | Start Time: 07:00 | 00:20 |
| | | CARP RD | | RIC | RICHARDSON SIDE RD | E RD | |
| Time Period | Northbound | Southbound | Street Total | Eastbound | Westbound | Street Total | Grand Total |
| 00:80 00:20 | 0 | 0 | 0 | - | - | 2 | 2 |
| 08:00 00:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 10:00 | _ | 0 | - | 0 | 0 | 0 | - |
| 11:30 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 13:30 | 0 | 0 | 0 | - | 0 | - | - |
| 15:00 16:00 | 0 | _ | - | 0 | 0 | 0 | - |
| 16:00 17:00 | 0 | _ | - | 2 | _ | က | 4 |
| 17:00 18:00 | 0 | 0 | 0 | 0 | _ | - | - |
| Total | - | 2 | က | 4 | 3 | 7 | 10 |

Comment:

Note: These volumes consists of bloydes only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary.

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2019-Feb-04



W.O. 36994

Turning Movement Count - Heavy Vehicle Report

CARP RD @ RICHARDSON SIDE RD

Thursday, May 04, 2017 Survey Date:

| No. Southbound Southbound Southbound Southbound Southbound Str. Southbound Str. | | | | Ü | CARP RD | SD. | | | | | | œ | RICHARDSON SIDE RD | RDSC | N SIC | 2 | | | | | |
|---|-------|---------|--------|---------|---------|-------|-------|------|----|----------|-----|-------|--------------------|------|-------|--------|------|----|----------|-----|----------------|
| Nat Nat | | | North | puno | | | South | puno | | | | Eastb | punc | | | Westbo | pund | ı | | | |
| 6 54 13 63 1 77 131 1 28 18 47 1 3 3 3 4 3 90 2 41 1 61 12 2 1 16 6 10 5 11 6 10 5 11 6 10 6 10 5 21 4 10 11 6 10 10 6 10 10 6 10 | Time | Period | 占 | ST | RT | N TOT | ᆸ | ST | RT | s тот | STR | LT | ST | RT | T0T | LT | ST | RT | W TOT | STR | Grand Total |
| 3 4 | 00:20 | | 80 | 37 | 6 | 54 | 13 | 63 | ~ | 77 | 131 | - | 28 | 18 | 47 | - | 3 | 3 | 7 | 54 | 185 |
| 3 90 2 48 2 52 142 1 7 11 19 8 18 9 36 4 51 2 46 1 49 100 1 2 10 13 3 3 10 16 3 58 4 1 2 13 17 3 0 3 6 1 58 4 1 4 6 1 5 10 16 1 77 6 26 3 35 112 4 1 4 6 1 5 10 16 1 77 6 26 3 35 112 4 1 2 7 0 2 2 2 1 7 6 1 1 4 1 1 1 1 1 1 1 1 1 1 1 1 | 00:80 | | | 20 | 9 | 75 | 6 | 4 | ~ | 21 | 126 | 2 | 2 | 7 | 15 | 9 | 10 | 2 | 77 | 36 | 162 |
| 4 51 2 46 1 49 100 1 2 10 43 3 3 3 3 3 40 46 3 68 4 36 87 2 2 13 17 3 0 3 6 1 77 6 26 3 35 112 4 1 4 6 1 5 10 16 3 29 12 14 43 0 0 1 1 0 3 4 3 485 12 4 1 2 7 0 2 29 29 3 2 1 1 1 1 1 0 3 4 4 4 1 <t< td=""><td>00:60</td><td></td><td>34</td><td>23</td><td>6</td><td>90</td><td>2</td><td>48</td><td>2</td><td>52</td><th>142</th><td>~</td><td>7</td><td>7</td><td>19</td><td>œ</td><td>18</td><td>6</td><td>35</td><td>54</td><td>196</td></t<> | 00:60 | | 34 | 23 | 6 | 90 | 2 | 48 | 2 | 52 | 142 | ~ | 7 | 7 | 19 | œ | 18 | 6 | 35 | 54 | 196 |
| 4 51 7 28 1 36 87 2 2 13 17 3 0 3 6 3 58 4 1 1 4 6 1 5 10 16 1 77 6 26 3 35 112 4 1 2 7 0 24 5 29 3 485 12 0 1 1 1 1 0 3 4 4 485 45 296 9 350 835 12 43 70 125 23 63 48 134 5 6 4 1 2 7 1 1 0 3 4 134 5 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 11:30 | | 6 | 38 | 4 | 51 | 2 | 46 | ~ | 49 | 100 | ~ | 2 | 10 | 13 | т | 6 | 10 | 16 | 59 | 129 |
| 12 43 58 4 32 0 36 94 1 1 4 6 1 5 10 14 2 2 2 2 2 2 2 2 2 | 12:30 | | 12 | 32 | 4 | 51 | 7 | 28 | ~ | 36 | 87 | 2 | 2 | 13 | 17 | е | 0 | က | 9 | 23 | 110 |
| 1 77 6 26 3 35 112 4 1 2 7 0 24 5 29 3 29 2 12 14 43 0 0 1 1 1 0 3 4 30 485 29 350 835 12 43 70 125 23 63 43 134 30 48 29 9 350 83 12 43 70 125 23 63 48 134 | 15:00 | | 12 | 43 | က | 28 | 4 | 32 | 0 | 36 | 94 | ~ | ~ | 4 | 9 | - | 2 | 10 | 16 | 22 | 116 |
| 0 29 2 12 0 14 43 0 0 1 1 1 0 3 4 30 486 59 350 83 12 43 70 125 23 63 48 134 30 3 3 3 3 3 4 134 3 30 4 3 3 3 4 4 14 4< | 16:00 | | 33 | 43 | ~ | 77 | 9 | 26 | က | 35 | 112 | 4 | ~ | 2 | 7 | 0 | 24 | 2 | 53 | 36 | 148 |
| 30 486 45 296 9 360 83 5 12 43 70 125 23 63 48 134 134 3 3 0 45 296 9 350 83 5 12 43 70 125 23 63 48 134 | 17:00 | | 2 | 24 | 0 | 29 | 2 | 12 | 0 | 4 | 43 | 0 | 0 | - | - | _ | 0 | က | 4 | ю | 48 |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Sub | Total | 132 | 323 | 30 | 485 | 45 | 296 | 6 | 350 | 835 | 12 | 43 | 20 | 125 | 23 | 63 | 48 | 134 | 259 | 1094 |
| 132 323 30 0 45 296 9 350 835 12 43 70 125 23 63 48 134 | J-Tur | ıs (Неа | vy Vet | nicles) | | 0 | | | | 0 | 0 | | | | 0 | | | | 0 | 0 | 0 |
| | 욘 | tal | 132 | 323 | 30 | 0 | 45 | 296 | 6 | 350 | 835 | 12 | 43 | 02 | 125 | 23 | 63 | 48 | 134 | 259 | 1094 |

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Transportation Services - Traffic Services

36994

Work Order

Turning Movement Count - Pedestrian Volume Report

| ount Da | Count Date: Thursday, May 04, 2017 | lay 04, 2017 | | | | Start Time: | 02:00 |
|-------------|------------------------------------|----------------------------------|-------|----------------------------------|----------------------------------|-------------|-------------|
| Time Period | NB Approach (E or W Crossing) | SB Approach (E or W Crossing) | Total | EB Approach (N or S Crossing) | WB Approach (N or S Crossing) | Total | Grand Total |
| 07:00 07:15 | 0 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 07:30 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 08:00 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:00 08:00 | 0 (| 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 08:15 | 0 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 08:30 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 09:00 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 09:00 | 0 (| 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 09:15 | 0 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 09:30 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 10:00 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 10:00 | 0 (| 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 11:45 | 0 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 12:00 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 12:15 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 12:30 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 12:30 | 0 (| 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 12:45 | 0 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 13:15 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:15 13:30 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 13:30 | 0 (| 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 15:15 | 0 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:15 15:30 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:45 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 16:00 | 0 (| 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 16:15 | 0 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:15 16:30 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:45 17:00 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 17:00 | 0 (| 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 17:15 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:15 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:30 17:45 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:45 18:00 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 18:00 | 0 (| 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | |

Comment:

2019-Feb-04

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Survey Date:

Transportation Services - Traffic Services

Work Order 36994

Turning Movement Count - 15 Min U-Turn Total Report CARP RD @ RICHARDSON SIDE RD Thursday, May 04, 2017

| Time Period | Northbound U-Turn Total | Southbound U-Turn Total | Eastbound U-Turn Total | Westbound U-Turn Total | Total |
|-------------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
| 07:15 | 0 | 0 | 0 | 0 | 0 |
| 07:30 | 0 | 0 | 0 | 0 | 0 |
| 07:45 | 0 | 0 | 0 | 0 | 0 |
| 08:00 | 0 | 0 | 0 | 0 | 0 |
| 08:15 | 0 | 0 | 0 | 0 | 0 |
| 08:30 | 0 | 0 | 0 | 0 | 0 |
| 08:45 | 0 | 0 | 0 | 0 | 0 |
| 00:60 | 0 | 0 | 0 | 0 | 0 |
| 09:15 | 0 | 0 | 0 | 0 | 0 |
| 08:60 | 0 | 0 | 0 | 0 | 0 |
| 09:45 | 0 | 0 | 0 | 0 | 0 |
| 10:00 | 0 | 0 | 0 | 0 | 0 |
| 11:45 | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 0 | 0 | 0 | 0 | 0 |
| 12:15 | 0 | 0 | 0 | 0 | 0 |
| 12:30 | 0 | 0 | 0 | 0 | 0 |
| 12:45 | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 0 | 0 | 0 | 0 | 0 |
| 13:15 | 0 | 0 | 0 | 0 | 0 |
| 13:30 | 0 | 0 | 0 | 0 | 0 |
| 15:15 | 0 | 0 | 0 | 0 | 0 |
| 15:30 | 0 | 0 | 0 | 0 | 0 |
| 15:45 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 0 | 0 | 0 | 0 | 0 |
| 16:15 | 0 | 0 | 0 | 0 | 0 |
| 16:30 | 0 | 0 | 0 | 0 | 0 |
| 16:45 | 0 | 0 | 0 | 0 | 0 |
| 17:00 | 0 | 0 | 0 | 0 | 0 |
| 17:15 | 0 | 0 | 0 | 0 | 0 |
| 17:30 | 0 | 0 | 0 | 0 | 0 |
| 17:45 | 0 | 0 | 0 | 0 | 0 |
| 18:00 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 |
| | | | | | |

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Appendix C

Synchro Worksheets – Existing Conditions

Lanes, Volumes, Timings 1: Carp & Richardson Side

| Feb. | | 1 | † | > | > | ļ | 4 | • | ← | • | ۶ | → | • |
|--|----------------------------|-------|-------|-----|-------------|---------|-----|-------|----------|------|-------|----------|-----|
| 20 146 152 38 25 68 81 418 113 68 68 10 1616 152 38 25 68 81 418 113 68 68 10 1616 0 1600 0 1658 1699 0 1658 0 1574 0 1500 0 1658 1699 0 1658 0 1574 0 1500 0 1658 1699 0 1658 0 1574 0 1500 0 1658 0 199 0 90 0 1574 0 1500 0 146 0 90 990 0 176 0 1600 0 146 0 90 990 0 176 0 146 | Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR. | SBL | SBT | SBR |
| 20 116 152 38 25 68 81 418 113 68 68 61 418 113 68 69 60 116 0 0 600 0 1668 169 0 0.368 0 0.472 0 60 642 60 0.371 0 60 90 60 0 0.472 0 60 642 60 0 | Lane Configurations | | 4 | | | 4 | | F | 4 | | × | 4 | |
| 20 116 152 38 25 68 81 418 113 68 68 10 1688 | Traffic Volume (vph) | 20 | 116 | 152 | 88 | 52 | 89 | 8 | 418 | 113 | 89 | 378 | 15 |
| 1616 0 1600 0 1658 1689 0 1658 0 16 | Future Volume (vph) | 20 | 116 | 152 | 88 | 52 | 89 | 8 | 418 | 113 | 99 | 378 | 15 |
| 0.971 0.0590 0.472 0.368 0.642 0.368 0.642 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.389 0.0472 0.399 0.077 0.079 0.049 0.077 0.079 0.049 0.077 0.079 0.049 0.077 0.049 0.079 0.079 0.049 0.077 0.049 0.079 0.049 0.077 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.049 0.079 0.09 0.00 0.00 0.00 0.00 0.00 0. | Satd. Flow (prot) | 0 | 1616 | 0 | 0 | 1600 | 0 | 1658 | 1689 | 0 | 1658 | 1735 | 0 |
| Def | Fit Permitted | • | 1.971 | • | c | 0.690 | • | 0.472 | 0007 | • | 0.368 | | • |
| Perm NA Perm | Satd. Flow (perm) | 0 | 1574 | 0 | 0 | 1120 | 0 | 824 | 1689 | 0 | 642 | 1735 | 0 |
| Perm NA Perm N | Lane Group Flow (vph) | 0 | 320 | 0 | 0 | 8 4 | 0 | 8 | 290 | 0 | 9/ | 437 | 0 |
| 4 4 8 8 2 2 6 6 4 4 4 8 8 8 2 2 5 6 6 6 6 6 6 6 0 6 0 27.5 27.5 27.5 27.5 27.5 62.0 62.0 62.0 45.5 45.5 45.5 45.5 62.0 62.0 62.0 62.0 42.3% 42.3% 42.3% 42.3% 57.7% 57.7% 57.7% 5.0 62.0 42.3% 42.3% 42.3% 42.3% 57.7% 57.7% 57.7% 5.0 62.0 42.3% 42.3% 42.3% 42.3% 57.7% 57.7% 57.7% 5.0 62.0 42.3% 42.3% 42.3% 42.3% 57.7% 57.7% 5.0 62.0 5.5 5.5 6.0 6.0 6.0 6.0 5.5 5.5 6.0 6. | Turn Type | Perm | Ą | | Perm | ΑN | | Perm | Ν | | Perm | ≨ | |
| 100 | Protected Phases | | 4 | | | 80 | | | 2 | | | 9 | |
| 100 100 100 100 100 100 100 100 100 100 | Permitted Phases | 4 | | | 80 | | | 2 | | | 9 | | |
| 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 | Detector Phase | 4 | 4 | | ∞ | ∞ | | 2 | 2 | | 9 | 9 | |
| 100 100 100 100 100 100 100 100 100 100 | Switch Phase | | | | | | | | | | | | |
| 27.5 27.5 27.5 27.5 62.0 62.0 62.0 62.0 62.0 62.0 62.0 62.0 | Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| 455 455 455 820 820 820 820 820 820 820 820 820 820 | Minimum Split (s) | 27.5 | 27.5 | | 27.5 | 27.5 | | 62.0 | 62.0 | | 62.0 | 62.0 | |
| 42.3% 42.3% 42.3% 57.7% | Total Split (s) | 45.5 | 45.5 | | 45.5 | 45.5 | | 62.0 | 62.0 | | 62.0 | 62.0 | |
| 3.7 3.7 3.7 46 46 46 46 1.8 1.8 1.8 1.8 1.8 1.8 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 | Total Split (%) | 42.3% | 42.3% | | 42.3% | 42.3% | | 21.7% | 21.7% | | 27.7% | 21.7% | |
| 1.8 1.8 1.8 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 | Yellow Time (s) | 3.7 | 3.7 | | 3.7 | 3.7 | | 4.6 | 4.6 | | 4.6 | 4.6 | |
| Signature | All-Red Time (s) | 1.8 | 1.8 | | 1.8 | - 8: | | 1.4 | 1.4 | | 1.4 | 1.4 | |
| 5.5 5.5 6.0 6.0 6.0 6.0 None None None None Max Max Max 1,000.0 20.0 20.0 20.0 56.3 56.3 56.3 56.3 56.3 56.3 56.3 56.3 | Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| None None None None Max Max Max Max 10.20.0 20.0 56.3 56.3 56.3 56.3 56.3 56.3 56.3 56.3 | Total Lost Time (s) | | 5.5 | | | 5.5 | | 0.9 | 0.9 | | 0.9 | 0.9 | |
| None None None None Max | Lead/Lag | | | | | | | | | | | | |
| None None None None Max Max Max Max Control Co | Lead-Lag Optimize? | | | | | | | | | | | | |
| 200 200 56.3 56.3 56.3 56.3 6.0 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0 | Recall Mode | None | None | | None | None | | Max | Max | | Max | Max | |
| 0.23 0.64 0.64 0.64 0.64 0.64 0.64 0.64 0.64 | Act Effct Green (s) | | 20.0 | | | 20.0 | | 56.3 | 56.3 | | 56.3 | 56.3 | |
| 0.79 0.49 0.17 0.54 0.18 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 | Actuated g/C Ratio | | 0.23 | | | 0.23 | | 0.64 | 0.64 | | 0.64 | 0.64 | |
| 402 23.1 9.0 11.9 9.6 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0. | //c Ratio | | 0.79 | | | 0.49 | | 0.17 | 0.54 | | 0.18 | 0.39 | |
| 00 00 00 00 00 00 00 00 00 00 00 00 00 | Control Delay | | 40.2 | | | 23.1 | | 9.0 | 11.9 | | 9.6 | 6.6 | |
| 40.2 23.1 9.0 11.9 9.6 A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A A B A B A A B A B A A B A B A A B A | Queue Delay | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| A B A B A B A B A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A A B B A B B A B | Total Delay | | 40.2 | | | 23.1 | | 9.0 | 11.9 | | 9.6 | 6.6 | |
| 40.2 23.1 11.5 | SOT | | Ω | | | O | | ⋖ | ш | | ¥ | ⋖ | |
| A 26 | Approach Delay | | 40.2 | | | 23.1 | | | 11.5 | | | 6.6 | |
| 436 131 57 492 49 73.3 30.7 164 102.9 15.0 335.7 351.7 54.0 15.0 752 544 527 1089 411 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Approach LOS | | ۵ | | | ပ | | | ш | | | ⋖ | |
| 73.3 30.7 16.4 102.9 15.0 335.7 351.7 54.0 322.4 95.0 54.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Queue Length 50th (m) | | 43.6 | | | 13.1 | | 2.7 | 49.2 | | 4.9 | 32.7 | |
| 335.7 351.7 322.4 55.0 752 544 527 1089 411 0 | Queue Length 95th (m) | | 73.3 | | | 30.7 | | 16.4 | 102.9 | | 15.0 | 68.1 | |
| 762 544 54,0 95,0 | Internal Link Dist (m) | | 335.7 | | | 351.7 | | | 322.4 | | | 371.5 | |
| 752 544 527 1089 411 0.43 0.27 0.17 0.54 0.18 | Turn Bay Length (m) | | | | | | | 54.0 | | | 92.0 | | |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Base Capacity (vph) | | 752 | | | 544 | | 527 | 1089 | | 411 | 1112 | |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Starvation Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Spillback Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| 0.43 0.27 0.17 0.54 0.18 | Storage Cap Reductn | | | | | 0 | | 0 | 0 | | 0 | 0 | |
| Intersection Summary Cycle Length: 107.5 Actuated Cycle Length: 87.8 Asturated Cycle. 90 in: Control Type: Semi Act Uncord Maximum virte Ratio, 67.9 | Reduced v/c Ratio | | 0.43 | | | 0.27 | | 0.17 | 0.54 | | 0.18 | 0.39 | |
| Cyple Length: 107.5 Actuated Cycle Length: 87.8 Astuated Cycle Son University of the Control Type: Semi Act-Uncord Maximum vir Ratio: 0.79 | Intersection Summary | | | | | | | | | | | | |
| Actuated Cyde Length: 87.8 Matural Cycle: 90 Control Type: Semil Act Uncord Maximum vic Ratio: 679 | Cvcle Lenath: 107.5 | | | | | | | | | | | | |
| Natural Cycle; 90 Control Type: Semi Act-Uncoord Maximum vic Radio: n 70 | Actuated Cycle Length: 87. | | | | | | | | | | | | |
| Control Type: Semi Act-Uncoord Maximum vic Ratio: 0.70 | Natural Cycle: 90 | | | | | | | | | | | | |
| Maximum vic Ratio. D 79 | Control Type: Semi Act-Und | coord | | | | | | | | | | | |
| | Maximum v/c Ratio: 0.79 | | | | | | | | | | | | |

Synchro 10 Light Report Page 1 2596 Carp Rd AM Peak Hour Existing

Lanes, Volumes, Timings 1: Carp & Richardson Side

03-11-2019

Intersection LOS: B ICU Level of Service D Intersection Signal Delay: 17.6 Intersection Capacity Utilization 73.7% Analysis Period (min) 15

03-11-2019

404 Splits and Phases: 1: Carp & Richardson Side

2596 Carp Rd AM Peak Hour Existing

Synchro 10 Light Report Page 2

Lanes, Volumes, Timings 1: Carp & Richardson Side

| Color Colo | EBL EBT EBR WBL A | * | ļ | 1 | - | Ļ | * | + | * |
|---|--|-------------|----------------|--------|-------|-----|------|-------|-----|
| 1597 145 91 149 70 277 412 84 122 403 20 | 20 77 145 91 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | L EBT EBR | | 3R NBL | NBT | NBR | SBL | SBT | SBR |
| 20 77 145 91 109 70 207 412 84 122 403 20 1587 0 10557 0 1658 10 1658 10 1688 1731 403 1731 403 1731 403 10 1658 10 1688 1701 0 649 1731 403 1731 403 1731 403 1731 403 1731 403 1731 403 1731 403 1731 403 1731 403 1731 403 1731 403 1731 403 474 403 474 403 474 403 474 403 474 403 474 403 474 403 474 403 474 403 474 403 474 403 474 403 474 403 403 474 403 403 403 474 403 403 403 403 403 4 | 20 77 145 91 20 177 145 91 0 1587 0 0 0 1587 0 0 0 1587 0 0 0 1587 0 0 0 269 0 0 0 269 0 0 0 269 0 0 0 269 0 0 0 269 0 0 0 269 0 0 0 10.0 10.0 10.0 22.5 27.5 27.5 27.5 1.8 45 5 45 5 45 5 6 6 6 0 | 4 | (‡ | * | 2 | | ۴ | \$ | |
| 20 77 145 91 109 70 412 84 122 403 0.980 0 0.667 0 1656 0 1668 1731 0 44 0 1731 0 44 0 1731 0 44 1731 0 649 1731 0 44 4 4 4 4 4 4 4 8 1731 0 4 4 4 4 4 4 4 8 2 2 6 | 20 77 145 91 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 77 145 | 109 | | 412 | 84 | 122 | 403 | 23 |
| 1597 0 1655 0 1656 1701 0 1656 1701 0 1705 1701 0 1705 1701 0 1705 1701 0 1705 1701 0 1705 1701 0 1705 1701 0 1705 1701 0 1705 1701 0 1705 1701 0 1705 1701 | 0.159Y 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 77 145 9 | 109 | | 412 | 84 | 122 | 403 | 23 |
| 0 1540 0 0 1123 0 745 1701 0 649 8 0 19 0 230 551 0 136 4 4 4 8 8 8 2 2 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | 0 1540 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 0 0 0 0 | 1655 0 667 | ٦ | 1/01 | > | 1658 | 1/31 | 0 |
| 80 19 14 18 18 14 18 18 18 18 | 0 269 0 0 4 4 8 8 4 4 4 8 6 4 4 8 6 0 100 100 100 100 100 100 100 100 100 | 1540 0 | 1123 | 5 | 1701 | 0 | 649 | 1731 | 0 |
| 0 289 0 0 300 0 230 551 0 136 4 4 8 8 2 2 6 6 4 4 8 8 8 2 2 6 100 10.0 10.0 10.0 10.0 10.0 10.0 77.5 27.5 27.5 27.5 62.0 62.0 62.0 77.5 27.5 27.5 62.0 62.0 62.0 62.0 77.5 27.5 27.5 62.0 62.0 62.0 62.0 3.7 3.7 3.7 45.5 46.5 46.5 46.6 46.6 62.0 | 0.00 269 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 80 | 19 | | 14 | | | 4 | |
| em NA Perm NA Perm Perm NA Perm Perm A Perm | Ham NA Perm 4 4 8 8 4 4 4 8 8 60.0 10.0 10.0 77.5 27.5 27.5 27.5 155. 45.5 42.3% 42.3% 42.3% 42.3% 42.3% 42.3% 42.3% 42.3% 60.0 60.0 60.0 60.0 60.0 60.0 60.0 60.0 | 269 0 | 300 | | 551 | 0 | 136 | 474 | 0 |
| 4 4 8 8 2 2 6 6 4 4 4 8 8 8 2 2 2 6 4 4 4 8 8 8 2 2 2 6 4 4 4 4 8 8 8 2 2 2 6 4 5 45 5 27.5 27.5 62.0 62.0 62.0 62.0 5.5 45.5 45.5 45.5 62.0 62.0 62.0 62.0 5.3% 42.3% 42.3% 5.77% 5.77% 5.77% 5.77% 5.71% 5.3 42.3% 42.3% 42.3% 5.77% 5.77% 5.77% 5.77% 5.71% 5.5 45.5 45.5 45.5 62.0 62.0 62.0 5.5 45.5 45.5 45.5 62.0 62.0 62.0 5.5 5 5 6.4 64.4 1.4 1.4 1.4 5.5 5 6.4 66.4 66.0 0.0 5.5 6.4 66.4 66.0 0.0 5.5 6.4 66.4 66.0 0.0 5.5 6.4 66.4 66.1 1.2 5.5 6.4 66.4 66.1 1.2 5.5 6.4 66.4 6.5 5.5 6.4 66.4 6.5 5.5 6.4 66.4 6.5 5.5 6.4 66.4 6.5 5.5 6.4 66.4 6.5 5.5 6.4 66.4 6.5 5.5 6.4 6.5 5.5 6.4 6.5 5.5 6.4 6.5 5.5 6.4 6.5 5.5 6.4 6.5 5.4 6.4 1.4 5.4 1.4 | 4 4 8 8 4 4 8 8 10.0 10.0 10.0 10.0 10.0 10.0 10.0 | AN. | ¥° | Perm | ¥, | | Perm | ≨ ' | |
| 4 4 8 8 2 6 4 4 4 8 8 2 2 6 27.5 27.5 27.5 27.5 27.5 27.0 62.0 62.0 27.5 27.5 27.5 27.5 62.0 62.0 62.0 3.7 3.7 3.7 42.3% 42.3% 42.3% 42.3% 42.0 62.0 62.0 62.0 3.7 3.7 3.7 47.5 47.7% 57.7% | 4 4 4 8 8 8 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 | 4 | ∞ | | 2 | | , | 9 | |
| 100 | 0.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 | | c | 2 | • | | 9 | • | |
| 15.5 27.5 27.5 62.0 62.0 62.0 62.0 62.0 62.0 62.0 62.0 | 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 | 4 | ∞ | 2 | 2 | | 9 | 9 | |
| 77.5 77.5 77.6 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10 | 77.5 27.5 47.5 47.5 47.5 47.5 47.5 47.5 47.5 4 | | | | | | | | |
| 77.5 27.5 27.5 27.5 62.0 62.0 62.0 62.0 62.0 62.0 62.0 62.0 | 7.5 27.5 27.5 47.5 47.5 47.5 47.5 47.5 47.5 47.5 4 | 10.0 | 10.0 | 10:0 | 10.0 | | 10.0 | 10.0 | |
| 145 45 45 62.0 62.0 62.0 3.7 42.3% 42.3% 45.3% 67.7% 67.7% 67.7% 1.8 1.8 1.8 1.4 1.4 4.6 4.6 1.8 1.8 1.8 1.8 1.4 1.4 4.6 4.6 1.0 1.0 0. | 145.5 45.5 45.5 45.5 45.3 42.3% 42.3 | 27.5 | 27.5 | 62.0 | 62.0 | | 62.0 | 62.0 | |
| 3.7 42.3% 42.3% 57.7% 57.7% 57.7% 51 | 3.% 42.3% 42.3% 1.8 1.8 1.8 0.0 0.0 0.28 0.02 0.28 0.0 0.23 0.0 0.23 0.0 0.23 0.0 0.23 0.0 0.23 0.0 0.23 0.0 0.33 0.0 0.38 0.0 0.0 0.38 0.0 0.0 0.0 0.38 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0. | 45.5 | 45.5 | 62.0 | 62.0 | | | 62.0 | |
| 3.7 3.7 3.7 4.6 4.6 1.8 1.8 1.8 1.4 1.4 1.4 5.5 5.0 6.0 6.0 6.0 5.5 5.5 6.0 6.0 6.0 5.5 5.5 6.0 6.0 6.0 26.2 26.2 56.4 56.4 56.4 26.2 26.2 56.4 56.4 56.4 26.2 6.4 56.4 56.4 56.4 23.8 64.4 18.6 15.0 15.2 20.0 0.0 0.0 0.0 0.0 23.8 64.4 18.6 15.0 15.2 2 C E B B B 2 C E B B B 2 C E B B B 2 S 38.7 32.4 38.6 3 S 35.7 32.4 38.6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <t< td=""><td>1.8 1.8 1.8 1.8 1.8 5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0</td><td>42.3%</td><td>42.3%</td><td>22.7%</td><td>21.7%</td><td></td><td></td><td>27.7%</td><td></td></t<> | 1.8 1.8 1.8 1.8 1.8 5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 | 42.3% | 42.3% | 22.7% | 21.7% | | | 27.7% | |
| 1.8 1.8 1.8 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 | 1.8 1.8 1.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 | 3.7 | 3.7 | 4.6 | 4.6 | | 4.6 | 4.6 | |
| 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 | 0.0 5.5 0.0 0.28 0.28 0.55 0.55 23.8 23.8 23.8 704 0 0 0 0 0 0 0 0 0 0 0 0 0 | 8:1 | 8:1 | 1.4 | 1.4 | | 1.4 | 1.4 | |
| 5.5 5.5 6.0 6.0 6.0 one None None None Max Max Max 26.2 26.2 56.4 56.4 56.4 56.4 56.4 20.2 0.55 0.52 0.54 0.35 0.54 0.56 0.5 0.2 0.54 0.56 0.56 0.50 0.00 0.0 | 5.5 0.28 0.28 0.35 23.8 0.0 23.8 0.0 23.8 0.0 0 0 0 0 0 0 0 0 0 33.6 704 0 0 0 0 0 33.6 0 30.0 53.8 53.8 53.8 53.8 60.0 70 | 0:0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| One None None Max Max Max 26.2 26.2 56.4 56.0 56.0 56.0 56.0 56.0 </td <td>One None None 1 26.2 26.2 26.2 26.5 26.5 26.5 26.6 26.6</td> <td>5.5</td> <td>5.5</td> <td>0.9</td> <td>0.9</td> <td></td> <td>0.9</td> <td>0.9</td> <td></td> | One None None 1 26.2 26.2 26.2 26.5 26.5 26.5 26.6 26.6 | 5.5 | 5.5 | 0.9 | 0.9 | | 0.9 | 0.9 | |
| One None None Max Max </td <td>One None None 1 26.2 26.2 26.2 26.5 25.8 25.8 25.8 25.8 25.8 25.8 25.8 25</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | One None None 1 26.2 26.2 26.2 26.5 25.8 25.8 25.8 25.8 25.8 25.8 25.8 25 | | | | | | | | |
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| 26.2 26.2 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 56.4 66.4 66.0 60.0 <th< td=""><td>26.2 0.28 0.55 23.8 0.0 23.8 C 20.0 53.8 53.8 53.8 0 0 0</td><td>None</td><td>None</td><td>Max</td><td>Max</td><td></td><td>Max</td><td>Max</td><td></td></th<> | 26.2 0.28 0.55 23.8 0.0 23.8 C 20.0 53.8 53.8 53.8 0 0 0 | None | None | Max | Max | | Max | Max | |
| 0.28 0.60 0.60 0.60 0.65 0.55 0.55 0.55 0.55 | 0.28 23.8 0.0 0.0 23.8 23.8 53.8 53.8 53.8 0 0 0 0 0 0.38 | 26.2 | 26.2 | 56.4 | 56.4 | | 56.4 | 56.4 | |
| 0.55 0.92 0.54 0.35 23.8 0.44 18.6 15.0 15.2 23.8 64.4 18.6 15.0 0.0 23.8 64.4 18.6 15.0 15.2 23.8 64.4 18.6 15.0 15.2 23.8 64.4 18.6 15.0 15.2 23.8 64.4 16.1 16.1 16.1 23.8 62.1 16.8 34.1 335.7 351.7 64.0 95.0 | 0.55 23.8 23.8 23.8 23.8 23.8 53.8 53.8 704 0 0 0 0.38 | 0.28 | 0.28 | 09:0 | 09.0 | | 09.0 | 09:0 | |
| 238 644 186 150 152 0.0 0.0 0.0 0.0 238 644 186 150 152 0.0 62.1 29.3 55.2 12.0 53.8 86.8 62.1 16.8 34.1 335.7 351.7 54.0 95.0 | 238 0.0 238 238 200 300 53.8 355.7 0 0 0 0.38 | 0.55 | 0.92 | 0.52 | 0.54 | | 0.35 | 0.46 | |
| 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 | 0.0 23.8 C C 23.8 30.0 53.8 335.7 704 0 0 | 23.8 | 64.4 | 18.6 | 15.0 | | 15.2 | 13.8 | |
| 23.8 64.4 18.6 15.0 15.2 C E B B B B C S E C S E C S E C S E C S E C E C E C | 23.8 C 23.8 53.0 53.8 335.7 704 0 0 | 0:0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| C E B B B B B B B C C C E E C C C E E C C C E E C C C C | 23.8 23.8 30.0 53.8 335.7 704 0 0 | 23.8 | 64.4 | 18.6 | 15.0 | | 15.2 | 13.8 | |
| 23.8 64.4 16.1 C E E B 30.0 52.1 23.3 55.2 12.0 53.8 68.8 62.1 116.8 34.1 335.7 351.7 54.0 95.0 704 491 446 1024 388 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 23.8 C 30.0 53.8 335.7 704 0 0 0 0 0.38 | O | ш | В | ш | | മ | ш | |
| C E B B 12.0 53.8 86.8 62.1 116.8 34.1 53.8 86.8 62.1 116.8 34.1 335.7 351.7 54.0 95.0 704 491 446 1024 95.0 | 30.0 53.8 53.8 335.7 704 0 0 0 0.38 | 23.8 | 64.4 | | 16.1 | | | 14.1 | |
| 30.0 52.1 23.3 56.2 12.0 53.8 66.8 62.1 116.8 34.1 335.7 351.7 54.0 322.4 95.0 704 491 446 1024 388 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <t< td=""><td>30.0 53.8 335.7 704 0 0 0 0 0 0.38</td><td>O</td><td>ш</td><td></td><td>ш</td><td></td><td></td><td>ш</td><td></td></t<> | 30.0 53.8 335.7 704 0 0 0 0 0 0.38 | O | ш | | ш | | | ш | |
| 53.8 66.8 62.1 116.8 34.1 34.1 355.7 351.7 54.0 55.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 53.8 335.7 704 0 0 0 0.38 | 30.0 | 52.1 | 23.3 | 55.2 | | 12.0 | 45.1 | |
| 335.7 351.7 322.4 95.0 704 491 446 1024 388 0 | 335.7 351. 704 49 0 0 0 0 0.38 0.6 | 53.8 | 86.8 | 62.1 | 116.8 | | 84.1 | 95.0 | |
| 704 491 54,0 95,0 0.38 0.61 0.52 0.54 0.35 | 704 49 0 0 0 0 0 0.38 0.6 | 335.7 | 351.7 | | 322.4 | | | 371.5 | |
| 704 491 446 1024 388 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.38 0.61 0.52 0.54 0.35 | 704 49 0 0 0 0 0.38 0.6 | | | 54.0 | | | 92.0 | | |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 0.38 | 704 | 491 | 446 | 1024 | | 388 | 1038 | |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.38 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| 0.38 0.61 0.52 0.54 0.35 | 0.38 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Intersection Summary Cycle Length: 107.5 Actuated Cycle Length: 94.2 Natural Cycle: 90 | Intersection Summary Cycle Length: 107.5 Actuated Cycle Length: 94.2 Actual Cycles of Cycle Length: 94.2 Cycles of Cycle Length: 94.2 Cycles C | ധ | 0.61 | | 0.54 | | 0.35 | 0.46 | |
| Oyele Length, 107.5 Actuated Cycle Length: 94.2 Natural Cycle: 90 Marginia Wall Act Uncoord | Oyole Length: 107.5 Actuated Cyde Length: 94.2 Actuated Cyde Length: 94.2 Contail Cycles of Actual Cycles Contail Cycles Contail Cycles Contail Cycles Contail Actual Cycles Contail Cycles Cycles Contail Cycles Cycles Cycles Contail Cycles C | | | | | | | | |
| Actuated Cycle Length: 94.2 Natural Cycle: 90 Martinal Cycle: 90 Martina Cycle: 70 Date: 0 to 70 Date: 0 to 70 Date: 0 to 70 Date: 0 Date: 0 to 70 Date: 0 t | Option Longui. 107.3 Actuated Cyde Length: 94.2 Natural Types. Sani A+1 Incomed | | | | | | | | |
| Natural Cycles Cangair 2-1-1. Control Cycles Semi Act-Uncoord Maximum Viz Berfac it no | Natural Cycle: Card Art Hanner | | | | | | | | |
| Contain Systes Seni Act-Uncoord Managing Type Seni Act-Uncoord | Natural Cycle: 30 | | | | | | | | |
| Macinal Types Cell International | | 7 | | | | | | | |
| | Meximum v/a Betia: 0 00 | 5 | | | | | | | |

Synchro 10 Light Report Page 1 2596 Carp Rd PM Peak Hour Existing

Lanes, Volumes, Timings 1: Carp & Richardson Side

03-11-2019

03-11-2019

Intersection LOS: C ICU Level of Service E Intersection Signal Delay: 23.9 Intersection Capacity Utilization 86.5% Analysis Period (min) 15

404 Splits and Phases: 1: Carp & Richardson Side

2596 Carp Rd PM Peak Hour Existing

Synchro 10 Light Report Page 2

Appendix D

Collision Data

| Accident Date | Accident Year A | ccident Time | Location | Environment Condition | Light | Traffic Control | Traffic Control Condition | Classification Of Accident | Initial Impact Type | Road Surface Condition |
|---------------|-----------------|--------------|---|-----------------------|---------------|---------------------|---------------------------|----------------------------|-----------------------------|------------------------|
| 2015-03-20 | 2015 | 9:01 | CARDEVCO RD @ CARP RD | 01 - Clear | 01 - Daylight | 02 - Stop sign | | 02 - Non-fatal injury | 99 - Other | 01 - Dry |
| 2017-10-05 | 2017 | 13:45 | CARDEVCO RD @ CARP RD | 01 - Clear | 01 - Daylight | 02 - Stop sign | | 03 - P.D. only | 03 - Rear end | 01 - Dry |
| 2017-09-28 | 2017 | 12:30 | CARDEVCO RD @ CARP RD | 01 - Clear | 01 - Daylight | 02 - Stop sign | | 02 - Non-fatal injury | 03 - Rear end | 01 - Dry |
| 2015-10-16 | 2015 | 10:55 | CARP RD @ CAVANMORE RD | 01 - Clear | 01 - Daylight | 02 - Stop sign | | 02 - Non-fatal injury | 05 - Turning movement | 01 - Dry |
| 2014-03-27 | 2014 | 21:30 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | | 01 - Traffic signal | | 03 - P.D. only | 02 - Angle | 01 - Dry |
| 2014-04-29 | 2014 | 13:30 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | 01 - Daylight | 01 - Traffic signal | | 03 - P.D. only | 03 - Rear end | 01 - Dry |
| 2014-08-28 | 2014 | 17:51 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | 01 - Daylight | 01 - Traffic signal | | 03 - P.D. only | 05 - Turning movement | 01 - Dry |
| 2014-11-07 | 2014 | 11:22 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | 01 - Davlight | 01 - Traffic signal | | 03 - P.D. only | 02 - Angle | 01 - Dry |
| 2015-01-28 | 2015 | 8:28 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | , , | 01 - Traffic signal | | 02 - Non-fatal injury | 02 - Angle | 01 - Dry |
| 2016-09-03 | 2016 | 17:03 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | , , | 01 - Traffic signal | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2016-06-13 | 2016 | 8:08 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | 01 - Daylight | 01 - Traffic signal | | 03 - P.D. only | 05 - Turning movement | 01 - Dry |
| 2016-06-29 | 2016 | 17:15 | CARP RD @ RICHARDSON SIDE RD | 02 - Rain | 01 - Daylight | 01 - Traffic signal | | 03 - P.D. only | 03 - Rear end | 02 - Wet |
| 2017-11-17 | 2017 | 13:45 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | 01 - Daylight | 01 - Traffic signal | | 03 - P.D. only | 02 - Angle | 01 - Dry |
| 2017-03-19 | 2017 | 1:18 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | 07 - Dark | 01 - Traffic signal | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2013-05-16 | 2013 | 16:09 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | | 01 - Traffic signal | | 03 - P.D. only | 05 - Turning movement | 01 - Dry |
| 2013-06-23 | 2013 | 8:30 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | 01 - Daylight | 01 - Traffic signal | | 03 - P.D. only | 02 - Angle | 01 - Dry |
| 2013-10-09 | 2013 | 19:00 | CARP RD @ RICHARDSON SIDE RD | 01 - Clear | 05 - Dusk | 01 - Traffic signal | | 03 - P.D. only | 03 - Rear end | 01 - Dry |
| 2015-05-11 | 2015 | 16:15 | CARP RD @ WESTHUNT RD | 01 - Clear | 01 - Daylight | 02 - Stop sign | | 03 - P.D. only | 02 - Angle | 01 - Dry |
| 2016-06-20 | 2016 | 8:37 | CARP RD btwn CARDEVCO RD & WESTHUNT RD | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 03 - Rear end | 01 - Dry |
| 2016-06-22 | 2016 | 22:00 | CARP RD btwn CARDEVCO RD & WESTHUNT RD | 01 - Clear | 07 - Dark | 10 - No control | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2013-07-16 | 2013 | 4:50 | CARP RD btwn CAVANMORE RD & CARDEVCO RD | 01 - Clear | 03 - Dawn | 10 - No control | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2017-08-04 | 2017 | 22:00 | CARP RD btwn REIS RD & CAVANMORE RD | 02 - Rain | 07 - Dark | 10 - No control | | 03 - P.D. only | 07 - SMV other | 02 - Wet |
| 2013-02-06 | 2013 | 8:41 | CARP RD btwn REIS RD & CAVANMORE RD | 05 - Drifting Snow | 01 - Daylight | 10 - No control | | 03 - P.D. only | 07 - SMV other | 03 - Loose snow |
| 2013-06-19 | 2013 | 15:23 | CARP RD btwn REIS RD & CAVANMORE RD | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2013-10-31 | 2013 | 6:55 | CARP RD btwn REIS RD & CAVANMORE RD | 01 - Clear | 07 - Dark | 10 - No control | | 03 - P.D. only | 99 - Other | 02 - Wet |
| 2014-04-16 | 2014 | 7:44 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 01 - Clear | 01 - Daylight | 10 - No control | | 02 - Non-fatal injury | 03 - Rear end | 01 - Dry |
| 2015-07-07 | 2015 | 12:59 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2015-12-30 | 2015 | 6:11 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 04 - Freezing Rain | 07 - Dark | 10 - No control | | 03 - P.D. only | 03 - Rear end | 06 - Ice |
| 2017-09-11 | 2017 | 11:17 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 03 - Rear end | 01 - Dry |
| 2017-10-30 | 2017 | 11:33 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 02 - Rain | 01 - Daylight | 10 - No control | | 03 - P.D. only | 07 - SMV other | 02 - Wet |
| 2017-11-29 | 2017 | 6:30 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 02 - Rain | 03 - Dawn | 10 - No control | | 03 - P.D. only | 07 - SMV other | 02 - Wet |
| 2017-12-14 | 2017 | 10:01 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 03 - Rear end | 01 - Dry |
| 2017-01-22 | 2017 | 13:45 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 03 - Rear end | 02 - Wet |
| 2017-04-18 | 2017 | 7:45 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 03 - Rear end | 01 - Dry |
| 2013-01-10 | 2013 | 12:00 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 99 - Other | 02 - Wet |
| 2013-02-28 | 2013 | 6:20 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 03 - Snow | 07 - Dark | 10 - No control | | 03 - P.D. only | 01 - Approaching | 03 - Loose snow |
| 2013-03-28 | 2013 | 14:10 | CARP RD btwn RICHARDSON SIDE RD & HWY417 IC144 RAMP62 | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 05 - Turning movement | 01 - Dry |
| 2014-01-27 | 2014 | 13:08 | RICHARDSON SIDE RD btwn CARDEVCO RD & CARP RD | 03 - Snow | 01 - Daylight | 10 - No control | | 03 - P.D. only | 07 - SMV other | 03 - Loose snow |
| 2014-05-08 | 2014 | 20:11 | RICHARDSON SIDE RD btwn CARDEVCO RD & CARP RD | 02 - Rain | 05 - Dusk | 10 - No control | | 03 - P.D. only | 07 - SMV other | 02 - Wet |
| 2015-11-29 | 2015 | 17:09 | RICHARDSON SIDE RD btwn CARDEVCO RD & CARP RD | 01 - Clear | 07 - Dark | 10 - No control | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2013-05-19 | 2013 | 15:57 | RICHARDSON SIDE RD btwn CARDEVCO RD & CARP RD | 02 - Rain | 01 - Daylight | 10 - No control | | 02 - Non-fatal injury | 01 - Approaching | 02 - Wet |
| 2013-11-28 | 2013 | 6:42 | RICHARDSON SIDE RD btwn CARDEVCO RD & CARP RD | 01 - Clear | 03 - Dawn | 10 - No control | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2013-12-05 | 2013 | 20:11 | RICHARDSON SIDE RD btwn CARDEVCO RD & CARP RD | 01 - Clear | 07 - Dark | 10 - No control | | 03 - P.D. only | 07 - SMV other | 02 - Wet |
| 2014-03-13 | 2014 | 2:01 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 05 - Drifting Snow | 07 - Dark | 10 - No control | | 03 - P.D. only | 07 - SMV other | 05 - Packed snow |
| 2014-08-09 | 2014 | 9:34 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2015-11-13 | 2015 | 13:46 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 02 - Rain | 01 - Daylight | 10 - No control | | 03 - P.D. only | 02 - Angle | 02 - Wet |
| 2016-01-18 | 2016 | 10:08 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 01 - Clear | 01 - Daylight | 10 - No control | | 02 - Non-fatal injury | 07 - SMV other | 03 - Loose snow |
| 2016-10-27 | 2016 | 7:36 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2016-05-13 | 2016 | 17:17 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 05 - Turning movement | 01 - Dry |
| 2017-09-29 | 2017 | 0:00 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 01 - Clear | 00 - Unknown | 10 - No control | | 03 - P.D. only | 06 - SMV unattended vehicle | 01 - Dry |
| 2017-03-06 | 2017 | 22:30 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 04 - Freezing Rain | 07 - Dark | 10 - No control | | 03 - P.D. only | 07 - SMV other | 06 - Ice |
| 2013-08-12 | 2013 | 16:35 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 03 - Rear end | 02 - Wet |
| 2013-10-28 | 2013 | 9:42 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 01 - Clear | 01 - Daylight | 10 - No control | | 03 - P.D. only | 07 - SMV other | 01 - Dry |
| 2013-12-09 | 2013 | 7:50 | RICHARDSON SIDE RD btwn CARP RD & OAK CREEK RD | 03 - Snow | 03 - Dawn | 10 - No control | | 03 - P.D. only | 01 - Approaching | 03 - Loose snow |
| | | | | | | | | | _ | |

Appendix E

Site Vehicle Operation Estimates

Andrew Harte

From: Christopher Gordon
Sent: January 28, 2019 6:23 AM

To: Andrew Harte

Subject: FW: ECA follow up noise questions

Attachments: Car Road RMX Traffic Routes.docx; DRAFT Site Plan - Employee Parking Option 1.pdf



Christopher Gordon, P.Eng. CGH Transportation Inc.

P: 343-999-9117

E: Christopher.Gordon@CGHTransportation.com

From: Angela Jonkman <ajonkman@rcii.com>

Sent: January 25, 2019 2:19 PM

To: Christopher Gordon <christopher.gordon@cghtransportation.com>

Subject: FW: ECA follow up noise questions

Chris,

See email below from Cavanagh. Cavanagh felt that the information might necessary/helpful for you while you are preparing your proposal.

Angela Jonkman, P.Eng. | Senior Project Manager

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From: Ben Houle [mailto:BHoule@thomascavanagh.ca]

Sent: January-25-19 1:47 PM

To: Angela Jonkman **Cc:** Chris Collins

Subject: FW: ECA follow up noise questions

Angela,

I was looking back through my emails and found the following breakdown regarding the number of anticipated trip generations from the Concrete Plant.

Hopefully this can aid Chris Gordon in the preparation of his report.

Please let us know if you require any additional information.

Regards,

Ben Houle, P. Eng.

Project Engineer, Land Development

bhoule@thomascavanagh.ca

O: (613) 257-2918 | C: (613) 227-5162 |



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From: Kevin Brennan < KBrennan@cavanaghconcrete.ca>

Sent: June-14-18 11:30 AM

To: Phil White < PWhite@thomascavanagh.ca Cc: Ben Houle BHoule@thomascavanagh.ca Subject: RE: ECA follow up noise questions

Hi Phil,

| | Maximum Number of Vehicles per hour | | | | |
|-------------------------|-------------------------------------|-----------------------------|-------------|---------------------------|---------|
| Operations | Aggregate Trucks | Cement Tanker Trucks | Sand Trucks | Ready-Mix Concrete trucks | Loaders |
| Daytime [7am - 7pm] | 6 | 3 | 6 | 14 | 2 |
| Evening [7pm - 11pm] | 4 | 2 | 4 | 12 | 1 |
| Night Time [11pm - 7am] | 0 | 1 | 0 | 6 | 1 |