Your electronic signature is a representation that you are a subscriber as defined by the Land Title Act, RSBC 1996 c.250, and that you have applied your electronic signature in accordance with Section 168.3, and a true copy, or a copy of that true copy, is in your possession.

1. APPLICATION: (Name, address, phone number of applicant, applicant's solicitor or agent)

## Import Profile

RUSSELL F. CRUM
RUSSELL F. CRUM LAW OFFICE
6048860004
100-938 GIBSONS WAY
GIBSONS
BC VON1V7
Document Fees: \$71.58
Deduct LTSA Fees? Yes
2. PARCEL IDENTIFIER AND LEGAL DESCRIPTION OF LAND:
[PID]
[LEGAL DESCRIPTION]
011-961-929
BLOCK 9 EXCEPT: FIRSTLY; PART IN REFERENCE PLAN 18037, No PID NMBR SECONDLY; PART SUBDIVIDED BY PLAN LMP21605, STC? YES $\square$ DISTRICT LOT 1328 GROUP 1 NEW WESTMINSTER DISTRICT PLAN 4014
STC? YES
$\quad$ Pick up STC?
3. NATURE OF INTEREST

CHARGE NO.
Use 30 Parcel Schedule
Use 3 Parcel Schedule

## Covenant

|  | Use 30 Parcel Schedule | Use 3 Parcel Schedule |
| :---: | :---: | :---: |
| CHARGE NO. | ADDITIONAL INFORMATION | U Use Schedule |
|  | S. 219 |  |

4. TERMS: Part 2 of this instrument consists of (select one only)
(a) $\square$ Filed Standard Charge Terms D.F. No.
(b) $\triangle$ Express Charge Terms Annexed as Part 2

A selection of (a) includes any additional or modified terms referred to in Item 7 or in a schedule annexed to this instrument.
5. TRANSFEROR(S):

Use Schedule

## TCD DEVELOPMENTS (GIBSONS) LTD., INC.NO. BC1089556

6. TRANSFEREE(S): (including postal address(es) and postal code(s))

TOWN OF GIBSONS
474 SOUTH FLETCHER ROAD, BOX 340, GIBSONS

BRITISH COLUMBIA
VON 1V0 CANADA Joint Tenants?
7. ADDITIONAL OR MODIFIED TERMS: Use Schedule
8. EXECUTION(S): This instrument creates, assigns, modifies, enlarges, discharges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Officer Signature(s)

| Execution Date |  |  |
| :---: | :---: | :---: |
| $\mathbf{Y}$ | $\mathbf{M}$ | $\mathbf{D}$ |
| 18 | 06 | 07 |
|  |  |  |
|  |  |  |

Transferor(s) Signature(s)
TCD DEVELOPMENTS (GIBSONS) LTD., INC.NO. BC1089556, by it's authorized signatory: JUN BI

Print name: JUN BI, Partner

OFFICER CERTIFICATION:
Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the Evidence Act, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the Land Title Act as they pertain to the execution of this instrument.

| Officer Signature(s) |
| :--- |
| Karlene Ostrosky |
| ARTICLED STUDENT |
| 100-938 Gibsons Way, Gibsons, BC, |
| V0N 1 V 7 |
| 604-886-0004 |
| as to the signature of Selina Williams |
|  |


| Execution D |  |  |
| :---: | :---: | :---: |
| Y | M | D |
| 18 | 06 | 11 |
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Transferor / Borrower / Party Signature(s)
TOWN OF GIBSONS, by it's authorized signatory(ies):

Silas White
Print Name \& Title: Silas White, Deputy Mayor
Selina Williams
Print Name: Selina Williams, corporate officer

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the Evidence Act, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the Land Title Act as they pertain to the execution of this instrument.

## SECTION 219 COVENANT-DEVELOPMENT COVENANT

```
TERMS OF INSTRUMENT—PART 2
```

THIS AGREEMENT dated for reference $\qquad$ is

## BETWEEN:

TCD DEVELOPMENTS (GIBSONS) LTD., BC1089556, a British Columbia corporation having a registered office at 2827 West $43^{\text {rd }}$ Avenue, Vancouver, B.C., V6N 3H9
(the "Owner")
AND:
THE TOWN OF GIBSONS, located at 474 South Fletcher Road, Box 340, Gibsons, B.C., V0N 1V0
(the "Town")

## GIVEN THAT:

A. The Owner is the registered owner in fee simple of the land in Gibsons, British Columbia, legally described as: BLOCK 9 EXCEPT: FIRSTLY; PART IN REFERENCE PLAN 18037, SECONDLY; PART SUBDIVIDED BY PLAN LMP21605, DISTRICT LOT 1328 GROUP 1 NEW WESTMINSTER DISTRICT PLAN 4014 (the "Land");
B. It is proposed that the Land be developed for the purpose of selling individual townhomes and condominiums;
C. The Owner has asked the Town to accept the covenant created by this Agreement as a condition of rezoning; and
D. The Owner wishes to grant, and the Town accepts, the s. 219 covenant contained in this Agreement over the Land.

THIS AGREEMENT is evidence that in consideration of payment of $\$ 1.00$ by the Town to the Owner (the receipt of which is acknowledged by the Owner), and in consideration of the promises exchanged below, the Owner covenants and agrees with the Town in accordance with s. 219 of the Land Title Act as follows:

1. The Owner covenants and agrees with the Town that:
(a) the development will substantially comply with the Site Plan, attached as Schedule A. (b) prior to the issuance of a Form and Character Development Permit, the Owner will:
i. provide a $\$ 150,000$ payment to the Town as a Community Amenity Contribution; and
ii. provide a $\$ 270,000$ payment to the Town as an Affordable Housing Contribution.
(c) prior to issuance of a Building Permit, the Owner will:
i. register a statutory Right-of-Way, creating pedestrian and cycle access that connects Eaglecrest Drive and Stewart Road;
ii. Provide a security deposit to implement the recommendations in the Traffic Impact Study completed by Creative Transportation Solutions Ltd. and dated December 2017, attached as Schedule B, and as approved by the Director of Infrastructure Services, in the same manner as off-site improvements required by the Town's Subdivision and Development Servicing and Stormwater Management Bylaw 1175, 2012 including:
2. constructing a curb bulb-out in the northwest quadrant and the northeast quadrant of the intersection of Eaglecrest Drive and Inglis Road;
3. constructing a crosswalk with sidewalk letdowns on the north side of Eaglecrest Drive; and
4. connecting the sidewalk from the site at the lower bench to the existing sidewalk on Winn Road at Abbs Road.
iii. survey and register a blanket statutory Right-of-Way over the greenspace for the purpose of public access shown on Plan attached as Schedule C.
(d) prior to issuance of occupancy for final dwelling, the Owner will:
i. register Right-of-Ways after construction and survey of trails; and
ii. install evergreen screening along the North property line;
(e) no building will be constructed to a height exceeding 8 metres except for two buildings located to the south of the third row, shown on the Site Plan diagram attached as Schedule C.
5. The Town will execute and deliver to the Owner a discharge, in registrable form, of this Agreement from title to the Land, at the expense of the Owner, if the Owner has at its expense completed all things necessary to comply with section 1 to the satisfaction of the Town.
6. Any opinion, decision, act or expression of satisfaction provided for in this Agreement is to be taken or made by the Town's Director of Planning or his or her delegate authorized as such in writing.
7. The Owner releases, and must indemnify and save harmless, the Town, its elected and appointed officials and employees, from and against all liability, actions, causes of action, claims, damages, expenses, costs, debts, demands or losses suffered or incurred by the Owner, or anyone else, arising from the granting or existence of this Agreement, from the performance by the Owner of this Agreement, or any default of the Owner under or in respect of this Agreement.
8. The parties agree that this Agreement creates only contractual obligations and obligations arising out of the nature of this document as a covenant under seal. The parties agree that no tort obligations or liabilities of any kind exist between the parties in connection with the performance of, or any default under or in respect of, this Agreement. The intent of this section is to exclude tort liability of any kind and to limit the parties to their rights and remedies under the law of contract and under the law pertaining to covenants under seal.
9. The rights given to the Town by this Agreement are permissive only and nothing in this Agreement imposes any legal duty of any kind on the Town to anyone, or obliges the Town to enforce this Agreement, to perform any act or to incur any expense in respect of this Agreement.
10. This Agreement does not
(a) affect or limit the discretion, rights or powers of the Town under any enactment (as defined in the Interpretation Act, R.S.B.C. 1996, c. 238, on the reference date of this Agreement) or at common law, including in relation to the use or subdivision of the Land,
(b) affect or limit any enactment relating to the use or subdivision of the Land, or
(c) relieve the Owner from complying with any enactment, including in relation to the use or subdivision of the Land.
11. Every obligation and covenant of the Owner in this Agreement constitutes both a contractual obligation and a covenant granted under s. 219 of the Land Title Act in respect of the Land and this Agreement burdens the Land and runs with it and binds the successors in title to the Land. This Agreement burdens and charges all of the Land and any parcel into which it is subdivided by any means and any parcel into which the Land is consolidated. The Owner is only liable for breaches of this Agreement that occur while the Owner is the registered owner of the Land.
12. The Owner agrees to do everything reasonably necessary, at the Owner's expense, to ensure that this Agreement is registered against title to the Land with priority over all financial charges, liens and encumbrances registered, or the registration of which is pending, at the time of application for registration of this Agreement.
13. An alleged waiver of any breach of this Agreement is effective only if it is an express waiver in writing of the breach in respect of which the waiver is asserted. A waiver of a breach of this Agreement does not operate as a waiver of any other breach of this Agreement.
14. If any part of this Agreement is held to be invalid, illegal or unenforceable by a court having the jurisdiction to do so, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part.
15. This Agreement is the entire agreement between the parties regarding its subject.
16. This Agreement binds the parties to it and their respective successors, heirs, executors and administrators.
17. The Owner must do everything reasonably necessary to given effect to the intent of this Agreement, including execution of further instruments.
18. By executing and delivering this Agreement each of the parties intends to create both a contract and a deed executed and delivered under seal.
As evidence of their agreement to be bound by the above terms, the parties each have executed and delivered this Agreement under seal by executing Part 1 of the Land Title Act Form C to which this Agreement is attached and which forms part of this Agreement.

Schedule A—Site Plan
Schedule B- Traffic Impact Study
Schedule C-Site Plan Diagram showing the Blanket SRW and the Two Buildings over 8 metres in height

## END OF DOCUMENT



## SCHEDULE B

## 464 Eaglecrest Drive Development Traffic Impact Study

Prepared for:

TCD Development Group



Prepared by:

84a moody street port moody, bc canada v3h 2p5

우 604.936.6190
[AXX 604.936.6175
(6) www.cts-bc.com

Date: 12 December 2017
Our File No: 5602-01

## BY EMAIL

Mr. Rob Chetner

TCD Developments
1754 West $3^{\text {rd }}$ Avenue
Vancouver, BC,
V6J 1K4
Dear Mr. Chetner

## Re: 464 Eaglecrest Drive Development Traffic Impact Study, Sechelt, BC

Creative Transportation Solutions Ltd. (CTS) is pleased to submit this report summarising our work on the above study. CTS was commissioned to undertake a traffic impact assessment of the proposed residential development located at 464 Eaglecrest Drive in the Town of Gibsons. This letter report documents the analysis and findings of the study.

### 1.0 BACKGROUND

The proposed residential development will consist of 87 multi-family units (63 unit in the upper site and 24 units in the lower site) and is located on the east side of Eaglecrest Drive as illustrated on FIGURE 1. A copy of the site plan is included in APPENDIX A. The steep topography of this site makes the provision for an internal road connecting the entire site extremely difficult and if constructed, would result in very large retaining walls and removal of significant natural terrain. Therefore, the provision of one driveway connecting to Eaglecrest Drive opposite Inglis Road to access the upper portion of the site and a second driveway connecting to Stewart Road to access the lower portion of the site is being proposed.

The design hour of analysis for traffic impact studies on the Sunshine Coast is the Friday afternoon peak hour, which is when traffic volumes are typically their highest. This is due to it being a combination of commuters heading home, local shopping trips and the influx of weekend visitors arriving for the weekend from the late afternoon BC Ferries departure from Horseshoe Bay.

FIGURE 1
STUDY AREA \& ROAD NETWORK


### 2.0 EXISTING CONDITIONS

### 2.1 Study Area

The study area is bounded by O'Shea Road to the north, Gower Point Road to the east, Winn Road to the south, and Shaw Road to the west. The following intersections were included in the traffic impact assessment:

1) Shaw Road \& Inglis Road (unsignalized);
2) Eaglecrest Drive \& Inglis Road (unsignalized);
3) Eaglecrest Drive \& O'Shea Road (unsignalized);
4) Winn Road \& Abbs Road (unsignalized);
5) Winn Road \& Gower Point Road (unsignalized); and
6) All site Accesses.

### 2.2 Traffic Volumes

CTS conducted intersection traffic movement counts on Friday, 13 October 2017 from 14:00 to 17:30 in order to capture both school peak and residential peak periods when the adjacent road network is most congested. Also, schools were in session and there were no significant ferry disruptions that day which could have negatively impacted traffic volumes in the study area. The traffic count data was tabulated and reviewed to ensure data integrity and validity. The tabulated traffic movement count data sheets are in APPENDIX B.

For the purpose of this study, the collected October data was factored up to represent estimated peak August volumes in Gibsons. FIGURE 2 illustrates the daily traffic volume on Highway 101 for day of week from the permanent count station maintained by the Ministry of Transportation \& Infrastructure, which shows that Fridays is the busiest day of the week. FIGURE 3 illustrates the traffic volumes between October and August data and the calculated seasonal adjustment factor of $12 \%$. The October data was then factored up by 1.12 (12\%) to estimate the design traffic volumes for the study area. FIGURE 4 illustrates the estimated August Friday afternoon peak hour vehicle volumes respectively for the year 2017.

FIGURE 2
AUGUEST 2016 DAILY TRAFFIC VOLUMES BY DATE OF WEEK (MOTI's PERMANENT COUNT STATION)


FIGURE 3
2016 DAILY FRIDAY TRAFFIC VOLUMES BY MONTH (MOTI's PERMANENT COUNT STATION)


FIGURE 4

## 2017 ESTIMATED AUGUST FRIDAY AFTERNOON

 PEAK HOUR BASE TRAFFIC VOLUMES

### 3.0 FUTURE BASE TRAFFIC VOLUMES

## 2020 Future Base Traffic Volumes

Year 2020 is anticipated to be the year of full buildout for the proposed development. Therefore, in order to access the traffic impacts of the proposed development on the base traffic volumes, the 2017 base traffic volumes were factored up by a traffic volume growth rate of $2.5 \%$ per annum (simple straight line) to represent the year 2020 base traffic volumes. FIGURE 5 illustrates the projected 2020 Friday afternoon peak hour volumes for the future base conditions with no development traffic.

FIGURE 5
2020 ESTIMATED AUGUST FRIDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES


## 2025 Future Base Traffic Volumes

CTS also examined the year 2025 as this represents 5 years "post-buildout". The summer 2017 base traffic volumes were factored up by a traffic volume growth rate of $2.5 \%$ per annum (simple straight line) to represent the year 2025 base traffic volumes. FIGURE 6 illustrates the projected 2025 Friday afternoon peak hour volumes for the future base conditions with no development traffic.

FIGURE 6
2025 ESTIMATED AUGUST FRIDAY AFTERNOON
PEAK HOUR BASE TRAFFIC VOLUMES


### 4.0 SITE TRAFFIC VOLUME

### 4.1 Traffic Generation

The published vehicle trip generation rates from the Institute of Transportation Engineers (ITE) Traffic Generation Manual $10^{\text {th }}$ Edition were used to forecast the site generated traffic volumes in accordance with MOTI requirements and current accepted traffic engineering standards. TABLE 1 summarizes the forecast site generated traffic for the proposed development. Of note, internal trip making credits and pass-by traffic were all assumed to be zero so that the projected volumes would represent the worst case scenario such that all the traffic would be "new" traffic to the adjacent road network.

TABLE 1
SUMMARY OF SITE GENERATED TRAFFIC

| Land Use | Peak Hour | Trip Generation Variable | Horizon Year | Scope of Development | Vehicle Trip Generation Rate | Trip Rate Source | Directional Split |  | Peak Hour Volumes (vph) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | \% in | \% out | in | out | total |
| Upper Block Townhouse | Weekday Morning | Dwelling Units | 2020 | 16 | 0.46 | ITE 10th Edition, Code (220) | 23\% | 77\% | 2 | 6 | 8 |
|  | Weekday Afternoon |  |  |  | 0.56 |  | 63\% | 37\% | 6 | 3 | 9 |
| Upper Block Condos | Weekday Morning | Dwelling Units | 2020 | 47 | 0.46 | ITE 10th Edition, Code (220) | 23\% | 77\% | 5 | 17 | 22 |
|  | Weekday Afternoon |  |  |  | 0.56 |  | 63\% | 37\% | 17 | 10 | 27 |
| Lower Block Condos | Weekday Morning | Dwelling Units | 2020 | 24 | 0.46 | ITE 10th Edition, Code (220) | 23\% | 77\% | 3 | 9 | 12 |
|  | Weekday Afternoon |  |  |  | 0.56 |  | 63\% | 37\% | 9 | 5 | 14 |
| TOTAL WEEKDAY MORNING PEAK HOUR |  |  |  |  |  |  |  |  | 10 | 32 | 42 |
| TOTAL WEEKDAY AFTERNOON PEAK HOUR |  |  |  |  |  |  |  |  | 32 | 18 | 50 |

The proposed development is forecast to 42 vehicle trips during the weekday morning peak hour (i.e. 10 inbound and 32 outbound) and 50 vehicle trips during the weekday afternoon peak hour (i.e. 32 inbound and 18 outbound). This is equivalent to an average of 1 vehicle movement every 1.2 minutes combined for both driveways, which from a traffic engineering point of view is not considered significant.

Of note, the threshold of the Government of British Columbia for determining when a development triggers a formal traffic impact assessment is when a site generates 100 or more vehicles during the design hour. Therefore, the proposed development does not meet this requirement as the maximum volume forecast is only 50 vehicles, which is $50 \%$ of the warrant. This confirms that the site generated traffic volumes for the site are negligible and any traffic impacts associated with this development would be localized to just the site access

### 4.2 Trip Distribution

Trip distribution parameters to distribute the site generated vehicle trips to/from the site were developed from existing traffic patterns entering and exiting the study area for the weekday afternoon peak hour. The trip distribution parameters used in this study are summarized in TABLE 2A and TABLE 2B while the associated traffic volumes assignment is summarized in TABLE 3A and TABLE 3B.

TABLE 2A
TRIP DISTRIBUTION PERCENTAGES FOR UPPER SITE GENERATED TRAFFIC

| FROM / TO | WEEKDAY AFTERNOON PEAK HOUR |  |
| :--- | :---: | :---: |
|  | INBOUND | OUTBOUND |
| North - Shaw Rd | $8.6 \%$ | $6.3 \%$ |
| East - O'Shea Rd | $47.9 \%$ | $47.6 \%$ |
| West - O'Shea Rd | $43.6 \%$ | $46.2 \%$ |

TABLE 2B
TRIP DISTRIBUTION PERCENTAGES FOR LOWER SITE GENERATED TRAFFIC

| FROM / TO | WEEKDAY AFTERNOON PEAK HOUR |  |
| :--- | :---: | :---: |
|  | INBOUND | OUTBOUND |
| North - Abbs Rd | $6.1 \%$ | $9.0 \%$ |
| North - Gower Point Rd | $53.4 \%$ | $45.2 \%$ |
| South - Gower Point Rd | $38.5 \%$ | $43.6 \%$ |
| South - Stewart Rd | $2.0 \%$ | $2.2 \%$ |

TABLE 3A
TRIP DISTRIBUTION VEHICLE VOLUMES FOR UPPER SITE GENERATED TRAFFIC

| FROM / TO | WEEKDAY AFTERNOON PEAK HOUR |  |
| :---: | :---: | :---: |
|  | INBOUND | OUTBOUND |
| North - Shaw Rd | 2 | 1 |
| East - O'Shea Rd | 11 | 6 |
| West - O'Shea Rd | 10 | 6 |
| TOTAL | 23 | 13 |
|  | 36 |  |

TABLE 3B
TRIP DISTRIBUTION VEHICLE VOLUMES FOR LOWER SITE GENERATED TRAFFIC

| FROM / TO | WEEKDAY AFTERNOON PEAK HOUR |  |
| :--- | :---: | :---: |
|  | INBOUND | OUTBOUND |
| North - Abbs Rd | 1 | 1 |
| North - Gower Point Rd | 5 | 2 |
| South - Gower Point Rd | 3 | 2 |
| South - Stewart Rd | 0 | 0 |
| TOTAL | 9 | 5 |
|  | 14 |  |

FIGURE 7 illustrates the projected site generated volumes on the road network for buildout in the year of 2020 weekday afternoon peak hour respectively.

FIGURE 7
SITE TRAFFIC VOLUMES FOR THE WEEKDAY AFTERNOON PEAK HOUR


### 5.0 TOTAL PROJECTED TRAFFIC VOLUMES

FIGURE 8 illustrates the total projected traffic for the year 2020 Friday afternoon peak hour consisting of both future base and site traffic resulting from the proposed development. It is the result of superimposing FIGURE 7 onto FIGURE 5.

FIGURE 9 illustrates the total projected traffic for the year 2025 Friday afternoon peak hour consisting of both future base and site traffic resulting from the proposed development. It is the result of superimposing FIGURE 7 onto FIGURE 6.

FIGURE 8
2020 FRIDAY AFTERNOON PEAK HOUR BASE + SITE TRAFFIC VOLUMES


FIGURE 9
2025 FRIDAY AFTERNOON PEAK HOUR BASE + SITE TRAFFIC VOLUMES


### 6.0 TRAFFIC ENGINEERING ANALYSIS

### 6.1 Intersection Capacity Analysis

Capacity analysis was performed at each of the locations in order to determine the intersection levels of service (LOS) that is provided to motorists. LOS for intersections is defined in terms of delay (seconds per vehicle), which is a measure of driver discomfort and frustration, fuel consumption and lost travel time.

An intersection or movement LOS can range from " A " (which is excellent) to " E " (which is capacity). A LOS of "F" indicates that an intersection or movement capacity is failing because vehicle delays are excessive. A LOS of "D" during the critical peak hours for unsignalized intersections is considered acceptable by the Ministry of Transportation \& Infrastructure for overall intersection operation.

Volume to capacity (v/c) ratios typically ranges from 0.25 to 1.20 with a v/c ratio of 1.0 indicating the movement, approach or intersection is at capacity.

Highway Capacity Software 2017 (HCS 7) was used for the unsignalized intersection analysis. The following assumptions were made with respect to the intersection capacity analysis:

- Saturation flow rate $=1,800$ passenger cars/hour of green time/lane (pcphgpl)
- Heavy vehicle percentage for all roads $=2 \%$
- Peak hour factor (PHF) $=0.82$ in the afternoon peak hour, which are based on the average PHF from the intersections surveyed.

TABLE 4 summarizes and compares the main performance parameters of the intersection capacity analysis for unsignalized intersections. Delay time in seconds for each lane group is summarized for unsignalized intersections. Wherever necessary, attempts at improvements have been made to maintain intersection and approach movement level of service standards for each of the post-development scenarios. The capacity analysis worksheets are included in APPENDIX C.

TABLE 4
VEHICLE DELAY BY INDIVIDUAL MOVEMENTS FOR UNSIGNALIZED INTERSECTIONS

| INTERSECTION | TIME OF DAY | SCENARIO | PERFORMANCE MEASURE | EASTBOUND |  |  | WESTBOUND |  |  | NORTHBOUND |  |  | SOUTHBOUND |  |  | LOS | NOTES |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |  |  |
| Shaw Road (N/S) \& Inglis Road (E/W) | Weekday <br> Afternoon <br> Peak Hour | 2017 Base | Volumes | 3 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 7 | 2 | 4 | A | Okay. |
|  |  |  | Delay | 8.8 |  |  | 8.4 |  |  | 7.2 |  |  | 7.2 |  |  |  |  |
|  |  | 2020 Base | Volumes | 4 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 7 | 2 | 5 | A | Okay. |
|  |  |  | Delay | 8.8 |  |  | 8.4 |  |  | 7.2 |  |  | 7.2 |  |  |  |  |
|  |  | $\begin{aligned} & 2020 \text { Base + } \\ & \text { Site } \end{aligned}$ | Volumes | 4 | 0 | 0 | 0 | 0 | 13 | 0 | 1 | 0 | 18 | 2 | 5 | A | Okay. |
|  |  |  | Delay | 9.0 |  |  | 8.4 |  |  | 7.2 |  |  | 7.3 |  |  |  |  |
|  |  | $\begin{aligned} & 2025 \text { Base + } \\ & \text { Site } \end{aligned}$ | Volumes | 4 | 0 | 0 | 0 | 0 | 14 | 0 | 1 | 0 | 19 | 3 | 5 | A | Okay. |
|  |  |  | Delay | 9.1 |  |  | 8.4 |  |  | 7.2 |  |  | 7.3 |  |  |  |  |
| Eaglecrest Drive (N/S) \& Inglis Road (E/W) | Weekday Afternoon Peak Hour | 2017 Base | Volumes | 7 |  | 0 |  |  |  | 0 | 0 |  |  | 1 | 2 | A | Okay. |
|  |  |  | Delay | 8.6 |  |  |  |  |  | 7.2 |  |  |  | 0.0 |  |  |  |
|  |  | 2020 Base | Volumes | 7 |  | 0 |  |  |  | 0 | 0 |  |  | 1 | 2 | A | Okay. |
|  |  |  | Delay | 8.6 |  |  |  |  |  | 7.2 |  |  |  | 0.0 |  |  |  |
|  |  | 2020 Base + Site | Volumes | 7 | 11 | 0 | 0 | 7 | 6 | 0 | 0 | 0 | 12 | 1 | 2 | A | Okay. |
|  |  |  | Delay | 9.1 |  |  | 8.9 |  |  | 7.2 |  |  | 7.2 |  |  |  |  |
|  |  | $\begin{aligned} & 2025 \text { Base + } \\ & \text { Site } \end{aligned}$ | Volumes | 8 | 11 | 0 | 0 | 7 | 6 | 0 | 0 | 0 | 12 | 1 | 3 | A | Okay |
|  |  |  | Delay | 9.1 |  |  | 8.9 |  |  | 7.2 |  |  | 7.2 |  |  |  |  |
| Eaglecrest Drive (N/S) \& O' Shea Road (E/W) | Weekday Afternoon Peak Hour | 2017 Base | Volumes |  | 59 | 9 | 12 | 63 |  | 11 |  | 17 |  |  |  | A | Okay. |
|  |  |  | Delay |  | 0.0 |  | 7.4 |  |  | 9.3 |  |  |  |  |  |  |  |
|  |  | 2020 Base | Volumes |  | 64 | 10 | 13 | 67 |  | 12 |  | 18 |  |  |  | A | Okay. |
|  |  |  | Delay |  | 0.0 |  | 7.5 |  |  | 9.4 |  |  |  |  |  |  |  |
|  |  | 2020 Base + | Volumes |  | 64 | 11 | 24 | 67 |  | 12 |  | 24 |  |  |  | A | Okay. |
|  |  | Site | Delay |  | 0.0 |  | 7.5 |  |  | 9.5 |  |  |  |  |  |  |  |
|  |  | $\begin{aligned} & 2025 \text { Base + } \\ & \text { Site } \end{aligned}$ | Volumes |  | 71 | 12 | 26 | 75 |  | 13 |  | 26 |  |  |  | A | Okay. |
|  |  |  | Delay |  | 0.0 |  | 7.5 |  |  | 9.6 |  |  |  |  |  |  |  |
| Abbs Road (N/S) \& Winn Road (E/W) | Weekday Afternoon Peak Hour | 2017 Base | Volumes | 8 | 0 |  |  | 0 | 25 |  |  |  | 16 |  | 8 |  | Okay. |
|  |  |  | Delay | 7.3 |  |  |  | 0.0 |  |  |  |  | 8.7 |  |  | A |  |
|  |  | 2020 Base | Volumes | 8 | 0 |  |  | 0 | 26 |  |  |  | 17 |  | 8 |  |  |
|  |  |  | Delay | 7.3 |  |  |  | 0.0 |  |  |  |  | 8.7 |  |  | A | Okay. |
|  |  | $\begin{aligned} & 2020 \text { Base + } \\ & \text { Site } \end{aligned}$ | Volumes | 9 | 4 |  |  | 8 | 26 |  |  |  | 17 |  | 9 | A | Okay. |
|  |  |  | Delay | 7.3 |  |  |  | 0.0 |  |  |  |  | 8.8 |  |  |  |  |
|  |  | 2025 Base + Site | Volumes | 10 | 4 |  |  | 8 | 30 |  |  |  | 19 |  | 10 |  |  |
|  |  |  | Delay | 7.3 |  |  |  | 0.0 |  |  |  |  | 8.8 |  |  | A | Okay |
| Gower Point Road (N/S) \& Winn Road (E/W) | Weekday Afternoon Peak Hour | 2017 Base | Volumes | 37 | 0 | 24 | 0 | 0 | 1 | 24 | 124 | 0 | 0 | 133 | 72 | A |  |
|  |  |  | Delay | 8.3 |  |  | 7.4 |  |  | 8.7 |  |  | 8.7 |  |  |  | Okay. |
|  |  | 2020 Base | Volumes | 40 | 0 | 25 | 0 | 0 | 1 | 25 | 134 | 0 | 0 | 143 | 77 | A |  |
|  |  |  | Delay | 8.4 |  |  | 7.5 |  |  | 8.8 |  |  | 9.0 |  |  |  | Okay. |
|  |  | $\begin{aligned} & 2020 \text { Base + } \\ & \text { Site } \end{aligned}$ | Volumes | 42 | 0 | 27 | 0 | 0 | 1 | 28 | 134 | 0 | 0 | 143 | 82 |  |  |
|  |  |  | Delay | 8.5 |  |  | 7.5 |  |  | 8.9 |  |  | 9.1 |  |  | A | Okay. |
|  |  | $\begin{aligned} & 2025 \text { Base + } \\ & \text { Site } \end{aligned}$ | Volumes | 46 | 0 | 30 | 0 | 0 | 1 | 31 | 149 | 0 | 0 | 160 | 91 | A | Okay. |
|  |  |  | Delay | 8.7 |  |  | 7.6 |  |  | 9.3 |  |  | 9.5 |  |  |  |  |
| Site Access (N/S) \& Winn Rd/ Steward Rd | Weekday Afternoon Peak Hour | $\begin{aligned} & 2020 \text { Base + } \\ & \text { Site } \end{aligned}$ | Volumes | 0 | 8 |  |  | 8 | 9 |  |  |  | 5 |  | 0 | A | Okay. |
|  |  |  | Delay | 7.3 |  |  |  | 0.0 |  |  |  |  | 8.8 |  |  |  |  |
|  |  | $\begin{aligned} & 2025 \text { Base + } \\ & \text { Site } \end{aligned}$ | Volumes | 0 | 9 |  |  | 9 | 9 |  |  |  | 5 |  | 0 | A | Okay |
|  |  |  | Delay | 7.3 |  |  |  | 0.0 |  |  |  |  |  | 8.8 |  |  |  |
| Delay $=$ Average Delay (seconds/vehicle) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Intersection approaching capacity (LOS 'D' or 'E'); ; or medium approach delays ( 25 sec to $<50 \mathrm{sec}$ ) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Intersection equals or exceeds capacity (LOS 'F'); or high approach delays ( $=>50 \mathrm{sec}$ ) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

All of the intersections and/or movements in this study area are currently operating or projected to operate at LOS A (excellent) for all scenarios tested and no operational and/or geometrical improvements are warranted.

However, it is recommended that on the north side of the intersection of Eaglecrest Drive \& Inglis Road, a curb bulb-out be constructed in both the northwest quadrant and the northeast quadrant for the following reasons:

1. A narrowing of the cross section of Eaglecrest Drive will deter some motorists from using Eaglecrest Drive to access or egress the site as it reduces the vehicle capacity of that roadway; and
2. The narrowing of the cross section of Eaglecrest Drive also reduces the width of the crosswalk for pedestrians wishing to cross Eaglecrest Drive, which will reduce the exposure of pedestrians to vehicles.

With this geometric improvement, CTS is forecasting a $50 / 50$ split on site traffic volumes using Eaglecrest Drive and Inglis Road (or 18 vehicles per hour during the design hour). This is equivalent to an additional vehicle movement on either Eaglecrest Drive or Inglis Road from the proposed development of 1 vehicle every 3 minutes. From a traffic engineering point of view, this is considered negligible.

### 7.0 CONCLUSIONS \& RECOMMENDATIONS

### 7.1 Conclusions

1) CTS was retained by TCD Developments to prepare a traffic impact study for the proposed residential development at 464 Eaglecrest Drive in the Town of Gibsons, BC.
2) The current proposed development contains 87 multi-family units in the site (63 units in upper site and 24 units in lower site). One site access is provided to connect to Eaglecrest Drive opposite Inglis Road for the upper site while the second access connects to Stewart Road for the lower site. For the purposes of this study, construction was assumed to be completed and the residential units fully occupied by the year 2020.
3) CTS conducted turning movement counts on Friday, 13 October 2017. Schools were in session and there were no significant ferry disruptions that day which could have negatively impacted traffic volumes on Highway 101.
4) For the purposes of this study, the collected October data was factored up by a 1.12 factor to convert the Friday October data to peak August Friday data, which was derived by examining one year of traffic volume data on Highway 101 from the Ministry of Transportation \& Infrastructure.
5) In order to be consistent with previous traffic studies done by CTS in Gibsons and which were approved by the Town of Gibsons, future base traffic volumes were
projected with a $2.5 \%$ annual traffic growth rate (simple straight line) to estimate future conditions. The design hour of analysis was the Friday afternoon peak hour.
6) The proposed development is forecast to generate a total of 50 vehicle trips during the weekday afternoon peak hour ( 32 inbound, 18 outbound), which is equivalent to an average of just less than 1 vehicle movement per minute. From a traffic engineering point of view, the projected traffic volume for the site is not considered significant.
7) The Ministry of Transportation \& Infrastructure's warrant for requiring a traffic impact study for a proposed development is 100 or more new vehicle trips during any one hour period. Therefore, the proposed development does not meet this warrant as the projected driveway volumes are only $50 \%$ of the threshold and a formal traffic impact study is not technically warranted.
8) The capacity analysis determined that the existing intersections in the study area can accommodate the projected site traffic without any operational and/or geometrical improvements were warranted.
9) However, it is recommended that on the north side of the intersection of Eaglecrest Drive \& Inglis Road, a curb bulb-out be constructed in both the northwest quadrant and the northeast quadrant for the following reasons:

- A narrowing of the cross section of Eaglecrest Drive will deter some motorists from using Eaglecrest Drive to access or egress the site as it reduces the vehicle capacity of that roadway; and
- The narrowing of the cross section of Eaglecrest Drive also reduces the width of the crosswalk for pedestrians wishing to cross Eaglecrest Drive, which will reduce the exposure of pedestrians to vehicles.

With this geometric improvement, CTS is forecasting a $50 / 50$ split on site traffic volumes using Eaglecrest Drive and Inglis Road (18 vehicles per hour during the design hour). This is equivalent to an additional vehicle movement on either Eaglecrest Drive or Inglis Road from the proposed development of 1 vehicle every 3 minutes. From a traffic engineering point of view, this is considered negligible.

### 7.2 Recommendations

Based on the findings of this updated traffic impact study, the following is recommended:

1. That a crosswalk with sidewalk letdowns and curb bulb-outs be constructed on the north side of Eaglecrest Drive to link the site to the existing neighbourhood pedestrian network; and
2. That a sidewalk will need to be connected from the site at the lower bench to the existing sidewalk on Winn Road at Abbs Road to link the site to the pedestrian network of Lower Gibsons.

We would like to take this opportunity to thank you for this unique and challenging assignment and we look forward to working with you again in the future. Please call the undersigned should you have any questions or comments regarding this report.

Yours truly,

## CREATIVE TRANSPORTATION SOLUTIONS LTD.



## APPENDIX A

## Site Plan

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## APPENDIX B

## Traffic Movement Count Summary Sheets

Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services


Abbs Rd \& Winn Rd - Stewart Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: All Motorized Vehicles


Abbs Rd \& Winn Rd - Stewart Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Passenger Cars


Abbs Rd \& Winn Rd - Stewart Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Heavy Vehicles (3 or more axles)


Abbs Rd \& Winn Rd - Stewart Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Bicycles
Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals


Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Gibsons, BC
Sunny





Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Sunny
Vehicle Class: Bicycles
Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals


Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Gibsons, BC
Sunny






Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Gibsons, BC
Sunny





Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Sunny
Vehicle Class: Bicycles
Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals


Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Gibsons, BC
Clear, Sunny



Shaw Rd \& Inglis Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Passenger Cars


Shaw Rd \& Inglis Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Heavy Vehicles (3 or more axles)


Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Bicycles
Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals


## APPENDIX C

## Intersection Capacity <br> Analysis Worksheets

HCS7 Two-Way Stop-Control Report


HCS7 Two-Way Stop-Control Report

| General Information |  | Site Information |  |  |
| :--- | :--- | :--- | :--- | :---: |
| Analyst | RC | Intersection | Shaw Rd \& Inglis Rd |  |
| Agency/Co. | CTS | Jurisdiction | Gibsons, BC |  |
| Date Performed | Base | East/West Street | Inglis Road |  |
| Analysis Year | 2020 | North/South Street | Shaw Road |  |
| Time Analyzed | Weekday PM Peak Hour | Peak Hour Factor | 0.82 |  |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 |  |
| Project Description | $5602-464$ Eaglecrest Dr Traffic Engineer Service |  |  |  |
|  |  |  |  |  |

Lanes


## Vehicle Volumes and Adjustments

| $\begin{aligned} & \text { Approach } \\ & \hline \text { Movement } \end{aligned}$ | Eastbound |  |  |  | Westbound |  |  |  | Northbound |  |  |  | Southbound |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U | L | T | R | u | L | T | R | $u$ | L | T | R | $u$ | L | T | R |
| Priority |  | 10 | 11 | 12 |  | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 40 | 4 | 5 | 6 |
| Number of Lanes |  | 0 | 1 | 0 |  | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration |  |  | LTR |  |  |  | LR |  |  |  | LTR |  |  |  | LTR |  |
| Volume, V (veh/h) |  | 4 | 0 | 0 |  | 0 |  | 6 |  | 0 | 1 | 0 |  | 7 | 2 | 5 |
| Percent Heavy Vehicles (\%) |  | 2 | 2 | 2 |  | 2 |  | 2 |  | 2 |  |  |  | 2 |  |  |
| Proportion Time Blocked |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percent Grade (\%) | 0 |  |  |  | 0 |  |  |  |  |  |  |  |  |  |  |  |
| Right Turn Channelized | No |  |  |  | No |  |  |  | No |  |  |  | No |  |  |  |

## Critical and Follow-up Headways

| Critical and Foilow-up Headways |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Base Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Follow-Up Headway (sec)
Delay, Queue Length, and Level of Service


HCS7 Two-Way Stop-Control Report


HCS7 Two-Way Stop-Control Report

| General Information |  | Site Information |  |
| :--- | :--- | :--- | :--- |
| Analyst | RC | Intersection | Shaw Rd \& Inglis Rd |
| Agency/Co. | CTS | Jurisdiction | Gibsons, BC |
| Date Performed | Base + Site | East/West Street | Inglis Road |
| Anallysis Year | 2025 | North/South Street | Shaw Road |
| Time Analyzed | Weekday PM Peak Hour | Peak Hour Factor | 0.82 |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 |
| Project Description | $5602-464$ Eaglecrest Dr Traffic Engineer Service |  |  |

Lanes


## Vehicle Volumes and Adjustments

| $\begin{aligned} & \text { Approach } \\ & \hline \text { Movement } \end{aligned}$ | Eastbound |  |  |  | Westbound |  |  |  | Northbound |  |  |  | Southbound |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U | L | T | R | u | L | T | R | $u$ | L | T | R | $u$ | L | T | R |
| Priority |  | 10 | 11 | 12 |  | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 40 | 4 | 5 | 6 |
| Number of Lanes |  | 0 | 1 | 0 |  | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration |  |  | LTR |  |  |  | LR |  |  |  | LTR |  |  |  | LTR |  |
| Volume, V (veh/h) |  | 4 | 0 | 0 |  | 0 |  | 14 |  | 0 | 1 | 0 |  | 19 | 3 | 5 |
| Percent Heavy Vehicles (\%) |  | 2 | 2 | 2 |  | 2 |  | 2 |  | 2 |  |  |  | 2 |  |  |
| Proportion Time Blocked |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percent Grade (\%) | 0 |  |  |  | 0 |  |  |  |  |  |  |  |  |  |  |  |
| Right Turn Channelized | No |  |  |  | No |  |  |  | No |  |  |  | No |  |  |  |

## Critical and Follow-up Headways

Critical and Foilow-up Headways

| Base Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| Follow-Up Headway (sec) |
| :--- | :--- |
| Delay, Queue Length, and Level of Service |



HCS7 Two-Way Stop-Control Report


HCS7 Two-Way Stop-Control Report

| General Information |  |  | Site Information |
| :--- | :--- | :--- | :--- |
| Analyst | RC | Intersection | Eaglecrest Dr \& Inglis Rd |
| Agency/Co. | CTS | Jurisdiction | Gibsons, BC |
| Date Performed | Base | East/West Street | Inglis Road |
| Analysis Year | 2020 | North/South Street | Eaglecrest Drive |
| Time Analyzed | Weekday PM Peak Hour | Peak Hour Factor | 0.82 |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 |
| Project Description | $5602-464$ Eaglecrest Dr Traffic Engineer Service |  |  |
| Lanes |  |  |  |

Lanes


| Vehicle Volumes and Adjustments |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { Approach } \\ & \hline \text { Movement } \end{aligned}$ | Eastbound |  |  |  | Westbound |  |  |  | Northbound |  |  |  | Southbound |  |  |  |
|  | $u$ | L | T | R | U | L | T | R | u | L | T | R | $u$ | L | T | R |
| Priority |  | 10 | 11 | 12 |  | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 40 | 4 | 5 | 6 |
| Number of Lanes |  | 0 | 1 | 0 |  | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration |  |  | LR |  |  |  |  |  |  | LT |  |  |  |  |  | TR |
| Volume, V (veh/h) |  | 7 |  | 0 |  |  |  |  |  | 0 | 0 |  |  |  | 1 | 2 |
| Percent Heavy Vehicles (\%) |  | 2 |  | 2 |  |  |  |  |  | 2 |  |  |  |  |  |  |
| Proportion Time Blocked |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percent Grade (\%) | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Right Turn Channelized | No |  |  |  | No |  |  |  | No |  |  |  | No |  |  |  |
| Median Type/Storage | Undivided |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Critical and Follow-up Headways

| Critical and Foilow-up Headways |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Base Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| Follow-Up Headway (sec) |
| :--- | :--- |
| Delay, Queue Length, and Level of Service |



HCS7 Two-Way Stop-Control Report


HCS7 Two-Way Stop-Control Report

| General Information |  |  | Site Information |
| :--- | :--- | :--- | :--- |
| Analyst | RC | Intersection | Eaglecrest Dr \& Inglis Rd |
| Agency/Co. | CTS | Jurisdiction | Gibsons, BC |
| Date Performed | Base + Site | East/West Street | Inglis Road |
| Analysis Year | 2025 | North/South Street | Eaglecrest Drive |
| Time Analyzed | Weekday PM Peak Hour | Peak Hour Factor | 0.82 |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 |
| Project Description | $5602-464$ Eaglecrest Dr Traffic Engineer Service |  |  |
| Lanes |  |  |  |

Lanes


## Vehicle Volumes and Adjustments

| $\begin{aligned} & \text { Approach } \\ & \hline \text { Movement } \end{aligned}$ | Eastbound |  |  |  | Westbound |  |  |  | Northbound |  |  |  | Southbound |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $u$ | L | T | R | u | L | T | R | u | L | T | R | $u$ | L | T | R |
| Priority |  | 10 | 11 | 12 |  | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 40 | 4 | 5 | 6 |
| Number of Lanes |  | 0 | 1 | 0 |  | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration |  |  | LTR |  |  |  | LTR |  |  |  | LTR |  |  |  | LTR |  |
| Volume, V (veh/h) |  | 8 | 11 | 0 |  | 0 | 7 | 6 |  | 0 | 0 | 0 |  | 12 | 1 | 3 |
| Percent Heavy Vehicles (\%) |  | 2 | 2 | 2 |  | 2 | 2 | 2 |  | 2 |  |  |  | 2 |  |  |
| Proportion Time Blocked |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percent Grade (\%) | 0 |  |  |  | 0 |  |  |  |  |  |  |  |  |  |  |  |
| Right Turn Channelized | No |  |  |  | No |  |  |  | No |  |  |  | No |  |  |  |

## Critical and Follow-up Headways

Critical and Foilow-up Headways

| Base Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Follow-Up Headway (sec)
Delay, Queue Length, and Level of Service


HCS7 Two-Way Stop-Control Report


HCS7 Two-Way Stop-Control Report

| General Information |  |  | Site Information |
| :--- | :--- | :--- | :--- |
| Analyst | RC | Intersection | Eaglecrest Dr \& O'Shea Rd |
| Agency/Co. | CTS | Juristiction | Gibsons, BC |
| Date Performed | Rase | East/West Street | O'Shea Road |
| Analysis Year | 2020 | North/South Street | Eaglecrest Drive |
| Time Analyzed | Weekday PM Peak Hour | Peak Hour Factor | 0.82 |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 |
| Project Description | $5602-464$ Eaglecrest Dr Traffic Engineer Service |  |  |
| Lanes |  |  |  |

Lanes


## Vehicle Volumes and Adjustments

| $\begin{aligned} & \text { Approach } \\ & \hline \text { Movement } \end{aligned}$ | Eastbound |  |  |  | Westbound |  |  |  | Northbound |  |  |  | Southbound |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $u$ | L | T | R | $u$ | L | T | R | $u$ | L | T | R | $u$ | L | T | R |
| Priority | 10 | 1 | 2 | 3 | 4 U | 4 | 5 | 6 |  | 7 | 8 | 9 |  | 10 | 11 | 12 |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |  | 0 | 1 | 0 |  | 0 | 0 | 0 |
| Configuration |  |  |  | TR |  | LT |  |  |  |  | LR |  |  |  |  |  |
| Volume, V (veh/h) |  |  | 64 | 10 |  | 13 | 67 |  |  | 12 |  | 18 |  |  |  |  |
| Percent Heavy Vehicles (\%) |  |  |  |  |  | 2 |  |  |  | 2 |  | 2 |  |  |  |  |
| Proportion Time Blocked |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percent Grade (\%) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Right Turn Channelized | No |  |  |  | No |  |  |  | No |  |  |  | No |  |  |  |

## Critical and Follow-up Headways

| Critical and Follow-up Headways |
| :--- |
| Base Critical Headway (sec)                  |
| Critical Headway (sec) |
| Base Follow-Up Headway (sec) |
|  |
| Follow-Up Headway (sec) |

Follow-Up Headway (sec)


HCS7 Two-Way Stop-Control Report


HCS7 Two-Way Stop-Control Report

| General Information |  |  | Site Information |
| :--- | :--- | :--- | :--- |
| Analyst | RC | Intersection | Eaglecrest Dr \& O'Shea Rd |
| Agency/Co. | CTS | Juristiction | Gibsons, BC |
| Date Performed | Rase + Site | East/West Street | O'Shea Road |
| Analysis Year | 2025 | North/South Street | Eaglecrest Drive |
| Time Analyzed | Weekday PM Peak Hour | Peak Hour Factor | 0.82 |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 |
| Project Description | $5602-464$ Eaglecrest Dr Traffic Engineer Service |  |  |
| Lanes |  |  |  |

Lanes


## Vehicle Volumes and Adjustments

| Approach <br> Movement | Eastbound |  |  |  | Westbound |  |  |  | Northbound |  |  |  | Southbound |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $u$ | L | T | R | $u$ | L | T | R | u | L | T | R | u | L | T | R |
| Priority | 10 | 1 | 2 | 3 | 4 U | 4 | 5 | 6 |  | 7 | 8 | 9 |  | 10 | 11 | 12 |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |  | 0 | 1 | 0 |  | 0 | 0 | 0 |
| Configuration |  |  |  | TR |  | LT |  |  |  |  | LR |  |  |  |  |  |
| Volume, V (veh/h) |  |  | 71 | 12 |  | 26 | 75 |  |  | 13 |  | 26 |  |  |  |  |
| Percent Heavy Vehicles (\%) |  |  |  |  |  | 2 |  |  |  | 2 |  | 2 |  |  |  |  |
| Proportion Time Blocked |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percent Grade (\%) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Right Turn Channelized | No |  |  |  | No |  |  |  | No |  |  |  | No |  |  |  |

## Critical and Follow-up Headways

Critical and Follow-up Headways

| Base Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Follow-Up Headway (sec)


HCS7 Two-Way Stop-Control Report


HCS7 Two-Way Stop-Control Report

| General Information |  | Site Information |  |
| :---: | :---: | :---: | :---: |
| Analyst | RC | Intersection | Abbs Rd \& Winn Rd |
| Agency/Co. | CTS | Jurisdiction | Gibsons, BC |
| Date Performed | Base | East/West Street | Winn Road |
| Analysis Year | 2020 | North/South Street | Abbs Road |
| Time Analyzed | Weekday PM Peak Hour | Peak Hour Factor | 0.82 |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 |
| Project Description | 5602 - 464 Eaglecrest Dr Traffic Engineer Service |  |  |

Lanes


| Vehicle Volumes and Adjustments |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { Approach } \\ & \hline \text { Movement } \end{aligned}$ | Eastbound |  |  |  | Westbound |  |  |  | Northbound |  |  |  | Southbound |  |  |  |
|  | U | L | T | R | $u$ | L | T | R | $u$ | L | T | R | $u$ | L | T | R |
| Priority | 10 | 1 | 2 | 3 | 40 | 4 | 5 | 6 |  | 7 | 8 | 9 |  | 10 | 11 | 12 |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |  | 0 | 0 | 0 |  | 0 | 1 | 0 |
| Configuration |  | LT |  |  |  |  |  | TR |  |  |  |  |  |  | LR |  |
| Volume, V (veh/h) |  | 8 | 0 |  |  |  | 0 | 26 |  |  |  |  |  | 17 |  | 8 |
| Percent Heary Vehicles (\%) |  | 2 |  |  |  |  |  |  |  |  |  |  |  | 2 |  | 2 |
| Proportion Time Blocked |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percent Grade (\%) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Right Turn Channelized | No |  |  |  | No |  |  |  | No |  |  |  | No |  |  |  |
| Median Type/Storage | Undi |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Critical and Follow-up Headways

| Critical and Foilow-up Headways |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Base Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| Follow-Up Headway (sec) |
| :--- |
| Delay, Queue Length, and Level of Service |



HCS7 Two-Way Stop-Control Report


HCS7 Two-Way Stop-Control Report

| General Information |  | Site Information |  |
| :---: | :---: | :---: | :---: |
| Analyst | RC | Intersection | Abbs Rd \& Winn Rd |
| Agency/Co. | CTS | Jurisdiction | Gibsons, BC |
| Date Performed | Base + Site | East/West Street | Winn Road |
| Analysis Year | 2025 | North/South Street | Abbs Road |
| Time Analyzed | Weekday PM Peak Hour | Peak Hour Factor | 0.82 |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 |
| Project Description | 5602 - 464 Eaglecrest Dr Traffic Engineer Service |  |  |

Lanes


## Vehicle Volumes and Adjustments



## Critical and Follow-up Headways

| Critical and Follow-up Headways |
| :--- |
| Base Critical Headway (sec)                  |
| Critical Headway (sec) |
| Base Follow-Up Headway (sec) |
|  |
| Follow-Up Headway (sec) |


| Follow-Up Headway (sec) |
| :--- | :--- |
| Delay, Queue Length, and Level of Service |




| HCS7 All-Way Stop Control Report |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| General Information |  |  |  |  | Site Information |  |  |  |  |  |  |  |
| Analyst | RC |  |  |  | Intersection |  |  |  | Gower Point Rd \& Winn Rd |  |  |  |
| Agency/Co. | CTS |  |  |  | Jurisdiction |  |  |  | Gibsons, BC |  |  |  |
| Date Performed | Base |  |  |  | East/West Street |  |  |  | Winn Road |  |  |  |
| Analysis Year | 2020 |  |  |  | North/South Street |  |  |  | Gower Point Road |  |  |  |
| Analysis Time Period (hrs) | 0.25 |  |  |  | Peak Hour Factor |  |  |  | 0.82 |  |  |  |
| Time Analyzed | Weekday PM Peak Hour |  |  |  |  |  |  |  |  |  |  |  |
| Project Description | 5602-464 Eaglecrest Drive Traffic Eng. Service |  |  |  |  |  |  |  |  |  |  |  |
| Lanes |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle Volume and Adjustments |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach | Eastbound |  |  | Westbound |  |  | Northbound |  |  | Southbound |  |  |
| Movement | L | T | R | เ | T | R | L | T | R | L | T | R |
| Volume | 40 | 0 | 25 | 0 | 0 | 1 | 25 | 134 | 0 | 0 | 143 | 77 |
| \% Thrus in Shared Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| Configuration | LTR |  |  | LTR |  |  | LTR |  |  | LTR |  |  |
| Flow Rate, v (veh/h) | 79 |  |  | 1 |  |  | 194 |  |  | 268 |  |  |
| Percent Heavy Vehicles | 2 |  |  | 2 |  |  | 2 |  |  | 2 |  |  |
| Departure Headway and Service Time |  |  |  |  |  |  |  |  |  |  |  |  |
| Initial Departure Headway, hd (s) | 3.20 |  |  | 3.20 |  |  | 3.20 |  |  | 3.20 |  |  |
| Initial Degree of Utilization, x | 0.070 |  |  | 0.001 |  |  | 0.172 |  |  | 0.238 |  |  |
| Final Departure Headway, hd (s) | 4.84 |  |  | 4.46 |  |  | 4.44 |  |  | 4.14 |  |  |
| Final Degree of Utilization, x | 0.106 |  |  | 0.002 |  |  | 0.239 |  |  | 0.308 |  |  |
| Move-Up Time, m (s) | 2.0 |  |  | 2.0 |  |  | 2.0 |  |  | 2.0 |  |  |
| Service Time, ts (s) | 2.84 |  |  | 2.46 |  |  | 2.44 |  |  | 2.14 |  |  |
| Capacity, Delay and Level of Service |  |  |  |  |  |  |  |  |  |  |  |  |
| Flow Rate, v (veh/h) | 79 |  |  | 1 |  |  | 194 |  |  | 268 |  |  |
| Capacity | 744 |  |  | 807 |  |  | 810 |  |  | 870 |  |  |
| 95\% Queue Length, Qos (veh) | 0.4 |  |  | 0.0 |  |  | 0.9 |  |  | 1.3 |  |  |
| Control Delay (s/veh) | 8.4 |  |  | 7.5 |  |  | 8.8 |  |  | 9.0 |  |  |
| Level of Service, LOS | A |  |  | A |  |  | A |  |  | A |  |  |
| Approach Delay (s/veh) | 8.4 |  |  | 7.5 |  |  | 8.8 |  |  | 9.0 |  |  |
| Approach LOS | A |  |  | A |  |  | A |  |  | A |  |  |
| Intersection Delay, s/veh \| LOS | $8.8$ |  |  |  |  |  | A |  |  |  |  |  |
| Copyright © 2017 University of Florida. All Rights Reserved.HCS57 Tw AWSC Version 7.2.1 <br> Gower Point Rd \& Winn Rd 2020 BM. |  |  |  |  |  |  |  |  |  |  |  |  |


| HCS7 All-Way Stop Control Report |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| General Information |  |  |  |  | Site Information |  |  |  |  |  |  |  |
| Analyst | RC |  |  |  | Intersection |  |  |  | Gower Point Rd \& Winn Rd |  |  |  |
| Agency/Co. | CTS |  |  |  | Jurisdiction |  |  |  | Gibsons, BC |  |  |  |
| Date Performed | Base + Sit |  |  |  | East/West Street |  |  |  | Winn Road |  |  |  |
| Analysis Year | 2020 |  |  |  | North/South Street |  |  |  | Gower Point Road |  |  |  |
| Analysis Time Period (hrs) | 0.25 |  |  |  | Peak Hour Factor |  |  |  | 0.82 |  |  |  |
| Time Analyzed | Weekday PM Peak Hour |  |  |  |  |  |  |  |  |  |  |  |
| Project Description | 5602-464 Eaglecrest Drive Traffic Eng. Service |  |  |  |  |  |  |  |  |  |  |  |
| Lanes |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle Volume and Adjustments |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach | Eastbound |  |  | Westbound |  |  | Northbound |  |  | Southbound |  |  |
| Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Volume | 42 | 0 | 27 | 0 | 0 | 1 | 28 | 134 | 0 | 0 | 143 | 82 |
| \% Thrus in Shared Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| Configuration | LTR |  |  | LTR |  |  | LTR |  |  | LTR |  |  |
| Flow Rate, v (veh/h) | 84 |  |  | 1 |  |  | 198 |  |  | 274 |  |  |
| Percent Heary Vehicles | 2 |  |  | 2 |  |  | 2 |  |  | 2 |  |  |
| Departure Headway and Service Time |  |  |  |  |  |  |  |  |  |  |  |  |
| Intitial Departure Headway, hd (s) | 3.20 |  |  | 3.20 |  |  | 3.20 |  |  | 3.20 |  |  |
| Initial Degree of Utilization, x | 0.075 |  |  | 0.001 |  |  | 0.176 |  |  | 0.244 |  |  |
| Final Departure Headway, hd (s) | 4.85 |  |  | 4.49 |  |  | 4.47 |  |  | 4.15 |  |  |
| Final Degree of Utilization, x | 0.113 |  |  | 0.002 |  |  | 0.245 |  |  | 0.316 |  |  |
| Move-Up Time, m (s) | 2.0 |  |  | 2.0 |  |  | 2.0 |  |  | 2.0 |  |  |
| Service Time, ts (s) | 2.85 |  |  | 2.49 |  |  | 2.47 |  |  | 2.15 |  |  |
| Capacity, Delay and Level of Service |  |  |  |  |  |  |  |  |  |  |  |  |
| Flow Rate, v (veh/h) | 84 |  |  | 1 |  |  | 198 |  |  | 274 |  |  |
| Capacity | 742 |  |  | 802 |  |  | 806 |  |  | 868 |  |  |
| 95\% Queue Length, Q995 (veh) | 0.4 |  |  | 0.0 |  |  | 1.0 |  |  | 1.4 |  |  |
| Control Delay (s/veh) | 8.5 |  |  | 7.5 |  |  | 8.9 |  |  | 9.1 |  |  |
| Level of Service, LOS | A |  |  | A |  |  | A |  |  | A |  |  |
| Approach Delay (s/veh) | 8.5 |  |  | 7.5 |  |  | 8.9 |  |  | 9.1 |  |  |
| Approach LOS | A |  |  | A |  |  | A |  |  | A |  |  |
| Intersection Delay, s/veh \| LOS | 8.9 |  |  |  |  |  | A |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |


| HCS7 All-Way Stop Control Report |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| General Information |  |  |  |  | Site Information |  |  |  |  |  |  |  |
| Analyst | RC |  |  |  | Intersection |  |  |  | Gower Point Rd \& Winn Rd |  |  |  |
| Agency/Co. | CTS |  |  |  | Jurisciction |  |  |  | Gibsons, BC |  |  |  |
| Date Performed | Base+Site |  |  |  | East/West Street |  |  |  | Winn Road |  |  |  |
| Analysis Year | 2025 |  |  |  | North/South Street |  |  |  | Gower Point Road |  |  |  |
| Analysis Time Period (hrs) | 0.25 |  |  |  | Peak Hour Factor |  |  |  | 0.82 |  |  |  |
| Time Analyzed | Weekday PM Peak Hour |  |  |  |  |  |  |  |  |  |  |  |
| Project Description | 5602-464 Eaglecrest Drive Traffic Eng. Service |  |  |  |  |  |  |  |  |  |  |  |
| Lanes |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle Volume and Adjustments |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach | Eastbound |  |  | Westbound |  |  | Northbound |  |  | Southbound |  |  |
| Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Volume | 46 | 0 | 30 | 0 | 0 | 1 | 31 | 149 | 0 | 0 | 160 | 91 |
| \% Thrus in Shared Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| Configuration | LTR |  |  | LTR |  |  | LTR |  |  | LTR |  |  |
| Flow Rate, v (veh/h) | 93 |  |  | 1 |  |  | 220 |  |  | 306 |  |  |
| Percent Heavy Vehicles | 2 |  |  | 2 |  |  | 2 |  |  | 2 |  |  |
| Departure Headway and Service Time |  |  |  |  |  |  |  |  |  |  |  |  |
| Initial Departure Headway, hd (s) | 3.20 |  |  | 3.20 |  |  | 3.20 |  |  | 3.20 |  |  |
| Initial Degree of Utilization, x | 0.082 |  |  | 0.001 |  |  | 0.195 |  |  | 0.272 |  |  |
| Final Departure Headway, hd (s) | 4.98 |  |  | 4.64 |  |  | 4.53 |  |  | 4.21 |  |  |
| Final Degree of Utilization, x | 0.128 |  |  | 0.002 |  |  | 0.276 |  |  | 0.358 |  |  |
| Move-Up Time, m (s) | 2.0 |  |  | 2.0 |  |  | 2.0 |  |  | 2.0 |  |  |
| Service Time, ts (s) | 2.98 |  |  | 2.64 |  |  | 2.53 |  |  | 2.21 |  |  |
| Capacity, Delay and Level of Service |  |  |  |  |  |  |  |  |  |  |  |  |
| Flow Rate, v (veh/h) | 93 |  |  | 1 |  |  | 220 |  |  | 306 |  |  |
| Capacity | 723 |  |  | 776 |  |  | 794 |  |  | 856 |  |  |
| 95\% Queue Length, Qas (veh) | 0.4 |  |  | 0.0 |  |  | 1.1 |  |  | 1.6 |  |  |
| Control Delay (s/veh) | 8.7 |  |  | 7.6 |  |  | 9.3 |  |  | 9.5 |  |  |
| Level of Service, LOS | A |  |  | A |  |  | A |  |  | A |  |  |
| Approach Delay (s/veh) | 8.7 |  |  | 7.6 |  |  | 9.3 |  |  | 9.5 |  |  |
| Approach LOS | A |  |  | A |  |  | A |  |  | A |  |  |
| Intersection Delay, s/veh \| LOS | 9.3 |  |  |  |  |  | A |  |  |  |  |  |

HCS7 Two-Way Stop-Control Report


HCS7 Two-Way Stop-Control Report

| General Information |  |  | Site Information |
| :--- | :--- | :--- | :--- |
| Analyst | RC | Intersection | Site Access \& Winn Rd |
| Agency/Co. | CTS | Jurisdiction | Gibsons, BC |
| Date Performed | Base+Site | East/West Street | Winn Road |
| Analysis Year | 2025 | North/South Street | Site Access |
| Time Analyzed | Weekday PM Peak Hour | Peak Hour Factor | 0.82 |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 |
| Project Description | $5602-464$ Eaglecrest Dr Traffic Engineer Service |  |  |
| Lanes |  |  |  |

Lanes


| Vehicle Volumes and Adjustments |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { Approach } \\ & \hline \text { Movement } \end{aligned}$ | Eastbound |  |  |  | Westbound |  |  |  | Northbound |  |  |  | Southbound |  |  |  |
|  | $u$ | L | T | R | U | L | T | R | $u$ | L | T | R | $u$ | L | T | R |
| Priority | 10 | 1 | 2 | 3 | 4 U | 4 | 5 | 6 |  | 7 | 8 | 9 |  | 10 | 11 | 12 |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |  | 0 | 0 | 0 |  | 0 | 1 | 0 |
| Configuration |  | LT |  |  |  |  |  | TR |  |  |  |  |  |  | LR |  |
| Volume, V (veh/h) |  | 0 | 9 |  |  |  | 9 | 9 |  |  |  |  |  | 5 |  | 0 |
| Percent Heavy Vehicles (\%) |  | 2 |  |  |  |  |  |  |  |  |  |  |  | 2 |  | 2 |
| Proportion Time Blocked |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percent Grade (\%) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Right Turn Channelized | No |  |  |  | No |  |  |  |  | No |  |  | No |  |  |  |
| Median Type/Storage | Undivided |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Critical and Follow-up Headways

| Critical and Foilow-up Headways |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Base Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Follow-Up Headway (sec)


Date: 4 April 2018
Our File No: 5602-07

## BY EMAIL

Mr. Rob Chetner<br>TCD Developments<br>1754 West $3^{\text {rd }}$ Avenue<br>Vancouver, BC,<br>V6J 1K4

Dear Mr. Chetner

## Re: 464 Eaglecrest Drive Development - Follow up Traffic Engineering Comments Sechelt, BC

As requested, Creative Transportation Solutions Ltd. (CTS) has prepared this letter to provide some additional commentary to supplement the traffic impact study that was prepared and issued by CTS on 12 December 2017. The commentary contained in this letter is in regards to the volume of traffic that is currently in the study area versus the forecast volume of traffic after the proposed development is fully constructed and occupied.

For the traffic impact study. CTS conducted intersection traffic movement counts to document existing conditions in the study area on Friday, 13 October 2017. This is the Friday of the Thanksgiving holiday weekend and which is considered The traffic counts were undertaken from 14:00 to 17:30 in order to capture school peak and residential peak periods, as well as ferry traffic from Horseshoe Bay, when the adjacent road network is typically most congested. On the survey day, it was confirmed with School District 46 that schools were in session and that there were no significant ferry disruptions noted on the survey day which could have negatively impacted traffic volumes in the study area. The traffic count data was tabulated and reviewed by a professional traffic engineer to ensure data integrity and validity.

The tabulated traffic movement count data sheets were included in the traffic impact study report as Appendix B and which are also appended to this letter for ease of reference. The highest measured traffic volumes in the study area occurred between 2:15 and 3:30 pm for both the upper and lower neighbourhoods, which likely coincided with school pickup and departure traffic. FIGURE 1 illustrates the measured Friday individual afternoon peak hour traffic volumes for both the upper and lower neighbourhoods in the study area from 13 October 2017.

It is important to note that for residential neighbourhoods similar to those surveyed in the traffic impact study, the weekday afternoon peak hour has been consistently shown to be the hour carrying the highest traffic volumes for the entire day. The remaining 23 hours each weekday including the morning peak hour normally carry much lower traffic volumes. This is why the BC Ministry of Transportation \& Infrastructure requires that traffic impact studies on the Sunshine Coast always use the weekday afternoon peak hour as the design hour.

FIGURE 1
MEASURED TRAFFIC VOLUMES FOR FRIDAY, 13 OCTOBER 2017 INDIVIDUAL AFTERNOON PEAK HOURS


In reviewing the measured traffic volumes from the study area, the following observations can be made:

1. Inglis Road between Eaglecrest Drive and Shaw Road had measured two-way traffic volumes of 12 vehicles per hour at Shaw Road and 8 vehicles per hour at Eaglecrest Drive. Just east of Shaw Road, Inglis Road was carrying an average traffic demand of 1 vehicle movement every 5 minutes.
2. Eaglecrest Drive just north of Inglis Road had measured two way traffic volumes of 9 vehicles per hour at Inglis Road and 42 vehicles per hour at O'Shea Road. Just south of O'Shea Road, Eaglecrest Drive was carrying an average traffic demand of 1 vehicle movement every 1.4 minutes
3. Winn Road had measured two way traffic volumes of 14 vehicles per hour just east of Stewart Road and 139 vehicles per hour just west of Gower Point Road. Just west of Gower Point Road, Winn Road was carrying an average traffic demand of 2.3 vehicle movements every 1.4 minutes

CTS is forecasting in the traffic impact study that the proposed development will at full development generate 42 vehicle trips during the weekday morning peak hour (i.e. 10 inbound and 32 outbound) and 50 vehicle trips during the weekday afternoon peak hour (i.e. 32 inbound and 18 outbound). Therefore, the weekday afternoon peak hour will generate the highest volume of traffic for the development of which 36 vehicles per hour (i.e. 23 inbound and 13 outbound) will use the upper driveway on Eaglecrest Drive and 14 vehicles per hour (i.e. 9 inbound and 5 outbound) will use the lower driveway. This is illustrated on FIGURE 2.

FIGURE 2
SITE TRAFFIC VOLUMES FOR THE WEEKDAY AFTERNOON PEAK HOUR


As stated in the traffic impact study, the threshold of the Government of British Columbia for determining when a development triggers a formal traffic impact assessment is when a site generates 100 or more vehicles during the design hour. Therefore, the proposed development does not meet this requirement as the maximum volume forecast is only 50 vehicles, which is $50 \%$ of the warrant.

For the upper driveway, the forecast peak volume of 36 vehicles per hour is equivalent to an average of 1 vehicle movement every 1.7 minutes. For the lower driveway with a peak volume of 14 vehicles per hour forecast, this is equivalent to an average of 1 vehicle movement every 4.3 minutes. Therefore from a traffic engineering perspective, the site generated traffic volumes are considered negligible and any traffic impacts associated with this development would be localized to just the site access.

In reviewing FIGURE 2, the following commentary can be made on the site accesses:

1. For Inglis Drive between Eaglecrest Drive and Shaw Road, the site is forecast to add 18 vehicles per hour during the weekday afternoon peak hour (i.e. 7 westbound and 11 eastbound). This is equivalent to an average of 1 vehicle movement every 3.3 minutes combined for both directions.
2. For Eaglecrest Drive between Inglis Drive and O'Shea Road, the site is forecast to add 18 vehicles per hour as well during the weekday afternoon peak hour (i.e. 6 northbound and 12 southbound). This is equivalent to an average of 1 vehicle movement every 3.3 minutes combined for both directions.
3. For Winn Road between Stewart Road and Abbs Road, the site is forecast to add 14 vehicles per hour during the weekday afternoon peak hour (i.e. 9 westbound and 5 eastbound). This is equivalent to an average of 1 vehicle movement every 4.3 minutes combined for both directions.

Please call the undersigned should you have any questions or comments regarding the contents of this report.

Yours truly,

## CREATIVE TRANSPORTATION SOLUTIONS LTD.



Jan O. Voss, P.Eng., PToe
President
Attachment

Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services


Abbs Rd \& Winn Rd - Stewart Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: All Motorized Vehicles


Abbs Rd \& Winn Rd - Stewart Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Passenger Cars


Abbs Rd \& Winn Rd - Stewart Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Heavy Vehicles (3 or more axles)


Abbs Rd \& Winn Rd - Stewart Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Bicycles
Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals


Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Gibsons, BC
Sunny





Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Sunny
Vehicle Class: Bicycles
Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals


Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Gibsons, BC
Sunny






Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Gibsons, BC
Sunny





Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Sunny
Vehicle Class: Bicycles
Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals


Project:
Municipality: Weather:
\#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Gibsons, BC
Clear, Sunny



Shaw Rd \& Inglis Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Passenger Cars


Shaw Rd \& Inglis Rd
Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Heavy Vehicles (3 or more axles)


Friday, October 13, 2017

Project: \#5602: 464 Eaglecrest Drive - Traffic Engineering Services
Municipality: Gibsons, BC
Weather: Clear, Sunny
Vehicle Class: Bicycles
Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals


| Key Legend |  |
| ---: | :--- |
| \begin{tabular}{rl\|}
\hline
\end{tabular} | Buildings over 8.0m in height |
| $\square$ | Trail to be constructed on Town Land <br> Location/alignment of trail/right of way subject <br> to change |
| $\square$ | Future Trail <br> Location/alignment of trail/right of way subject <br> to change |
| $\square$ | Existing Trail |
| $\square$ | Stormwater Detention Pond |
| $\square$ |  |

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