



CITY of HOLLADAY

**PLANNING COMMISSION
MEETING AGENDA**

April 21, 2020

City Council Chambers – 4580 S 2300 E

Due to the declared State and Local of Emergency, declared by Governor of Utah and Mayor of Holladay, the Holladay Planning Commission will hold virtual meetings until further notice. This meeting will be held electronically as public gatherings are currently prohibited.

Interested parties and the public are encouraged to watch the video stream on the meeting the City of Holladay's Facebook page.

Interested parties and the public can comment in any of the following ways:

- Call or email your comments in to the Community Development Department during regular business hours; jteerlink@cityofholladay.com pallred@cityofholladay.com , and or
- During the meeting, go to www.zoom.us in your web browser and join a meeting:
Meeting ID is:
Password is:
- During the meeting, call Zoom on your telephone:
Meeting ID is:
Password is:

6:30 PM CONVENE ELETRONIC MEETING – Public Welcome & Chair Opening Statement

PUBLIC HEARING

1. **Residential Subdivision – “Weyburn Retreat” Concept Plan (PUD) – 1306 East Spring Lane (RM)**
Continued Public Hearing - Applicant Jeff Kruckenberg to present a conceptual layout for eight twin-homes on 1.19 acres as permitted in the RM zone and according to Holladay Ordinance §13.08.020. *File #20-1-02*
2. **Residential Subdivision, “Terry Acres” – 1306 East Spring Lane - (R-1-10)**
***ITEM POSTPONED UNTIL FURTHER NOTICE**

ADJOURN

On _____ at ____ pm a copy of the foregoing notice was posted in conspicuous view in the front foyer of the City of Holladay City Hall, Holladay, Utah. A copy of this notice was faxed to the Salt Lake Tribune and Deseret News, newspapers of general circulation in the City by the Office of the City Recorder. A copy was also faxed or emailed to the Salt Lake County Council, Cottonwood Heights City and Murray City. The agenda was also posted at city hall, Holladay Library, city internet website at www.cityofholladay.com and state noticing website at <http://pmn.utah.gov>.

The Chair shall call the meeting to order at the appropriate time, greet the people, and read the following statement:

- *The City of Holladay Planning Commission is a volunteer citizen board whose function is to review land use plans and other special studies, make recommendations to the City Council on proposed zoning map and ordinance changes, and approve conditional uses and subdivisions.*
- *The Planning Commission does not initiate land use applications; rather acts on applications as they are submitted. Commissioners do not meet with applicants except at publicly noticed meetings.*
- *Commissioners attempt to visit each property on the agenda, where the location, the nature of the neighborhood, existing structures and uses related to the proposed change are noted.*
- *Decisions are based on observations, recommendations from the professional planning staff, the City's General Plan, zoning ordinance and other reports, by all verbal and written comments, and by evidence submitted, all of which are part of the public record.*
- *Meeting procedure can be found on the back of the agenda.*

Rules of the City of Holladay Planning Commission for Public Hearings

The Planning Commission Chair or Vice Chair is the Presiding Officer and will conduct the hearing.

1. **Introduction.** The Presiding Officer informs those attending of the procedure and order of business for the hearing.
2. **Staff Presentation.** City Staff briefly introduces the request that prompted the public hearing. The presentation shall not last more than five minutes.
3. **Sponsor Presentation.** If desired, the applicant or his/her representative may also make a presentation. The presentation shall not last more than fifteen minutes.
4. **Public Comment.** The Presiding Officer asks for public comment on the matter before the Commission. Comments are limited to three minutes and speakers are allowed to speak only once. Speakers are requested to:
 - (a) Complete the Citizen Comment Form
 - (b) Wait until recognized before speaking
 - (c) Come to the microphone and state their name and address for the record
 - (d) Be brief and to the point
 - (e) Not restate points made by other speakers
 - (f) Address questions through the Presiding Officer
 - (g) Confine remarks to the topic
 - (h) Avoid personalities

After each citizen has spoken, Commission members may ask questions of the participant before the Presiding Officer resumes or closes the hearing.

5. **Applicant Summation/Response.** Following citizen comment and questions by the Commission, the applicant shall be given an opportunity to give up to fifteen minutes summation and/or response prior to closing of the public hearing.
6. **Closing the Hearing.** If there is no further public comment, questions by Commission members, or final response by the applicant, the Presiding Officer shall conclude the hearing at least ten minutes in advance of a subsequently scheduled public hearing. The Commission may vote to extend the public hearing past the starting time of a subsequent public hearing.
7. **Consideration of Item.** At the close of the public hearing, the Commission shall consider the item, discuss its merits and vote on the matter or vote to continue it at a future meeting.

COMMUNITY DEVELOPMENT DEPARTMENT
4580 South 2300 East
City of Holladay, Utah 84117



*NOTICE OF CONTINUED PUBLIC HEARING

Date: Tuesday, April 21st, 2020
Time: As close to 7:00 pm as possible
Location: 4580 South 2300 East, Holladay City Hall, City Council Chambers,
Hearing Body: Planning Commission

Notice is hereby given that the City of Holladay Planning Commission will hold a continued public hearing to receive comment and consider an application from Alan Kruckenberg Construction for an 8 Twin Home, residential Planned Unit Development, Weyburn Retreat, on 1.19 acres of land located at 1306 East Spring Lane, in the Residential Multi-Family (RM) zone.

**Due to the declared state of emergency, the meeting will be held electronically as public gatherings are currently prohibited. Public comment may only be received via email.*

**Please submit any comment via email to Paul Allred, pallred@cityofholladay.com or Jon Teerlink, jteerlink@cityofholladay.com by 5:00 pm 4/21. Public comments received by the designated times will be read and evaluated by the Commission.*

**The public may listen to this meeting online. Find and click the City's "Listen Live" button located at the top of the page at www.cityofholladay.com*

**The staff report will be available on the City's website, www.cityofholladay.com, by 5:00pm on Friday 4/17.*

If you have questions please contact either Paul Allred or Jonathan Teerlink at 801-527-3890 during regular business hours.

ATTENTION: This notice has been delivered to all residents within an area extending approximately 500 feet from the subject property. If you know of anyone who may not have received a notice but may have an interest in the meeting, please pass along the information. If you are not the owner of your residence, please notify the owner regarding this matter. Thank you.





Request: Conceptual Subdivision Review – Continued from March 3/3/20

Applicant: Jeff Kruckenberg for Alan Kruckenberg Construction

File No: 20-1-02

Planner: Paul Allred, Community Development Director

BACKGROUND & SUMMARY

- **Field Trip.** Staff recommends the PC *once again* visit the property in question, as well as the Tobermory Ridge property to the south. Special attention should be paid to the location of existing accesses as they relate to the 1300 East intersection and access to St. Vincent’s school to the north.
- **Public Notice and Public hearing.** – This public hearing has been continued since the matter was delayed for further study on 3/3. *Additional notice was sent (attached below).* Neighboring residents have expressed a great deal of frustration to Staff regarding the way this hearing will be conducted. The Commission is fully aware of the constraints regarding this hearing due to the “remote” or “virtual” hearing that will be conducted. The public may submit comment to the Planning Commission prior to the meeting. These comments will be read into the record and evaluated during the meeting.
- **Traffic Study.** The Planning Commission specifically requested that a traffic study be performed regarding the adequacy and safety of the accesses for this development. The study commissioned and paid for by the City, was performed by A-Trans Engineering (Dr. Joe Perrin). The study is detailed and provides a comprehensive review of the issues identified as important by the Staff and Commission. The most vital points of the study are outlined later in this report.
- **Previous Staff Report.** The staff report from 3/3/20 is included in backup materials for Commissioner convenience.
- **Potential Motion(s).** For the Conceptual Plan, the Commission may approve, approve with conditions, continue, or deny with findings to provide support for any motion. (Staff is not of the opinion that there is evidence to deny the concept plan). The Commission may also attach appropriate recommendations / requirements for the proposal to proceed to remaining steps.

TECHNICAL ANALYSIS

- **Applicant Narrative.** PC should review the applicant’s narrative description (attached) of the proposed development including - statistical information requested by Staff regarding the development. This narrative provides support for finding compliance with Conceptual Plan approval requirements.
- **Traffic Study.** This matter was continued specifically to look at existing and proposed capacity of access to and from the site, existing street capacity, turn movement and visibility concerns, and to address issues expressed by Staff and neighbors, etc. Here are the most critical results of the study:
 1. **WIDENING OF TOBERMORY DRIVEWAY OPENING FOR SIMULTANEOUS LEFT AND RIGHT TURNS.** The study concludes on Page 1, “there is very little operational benefit to this improvement”. And, Page 19, “operationally, the amount of traffic is relatively low and interactions between inbound and outbound traffic is infrequent”.
 2. **LEVEL OF SERVICE (LOS = EFFICIENCY).** The study concludes on Page 1, “Tobermory Way / Spring Lane operates with a critical side street delay at LOS A in the AM and LOS B in the PM peak period. 1300 East/Spring Lane operate at an overall LOS B (very efficient). “This level of service is maintained with and without the site throughout 2025. The site traffic increases traffic at this intersection by 1.3% in the AM and 1.0 % in the PM”.

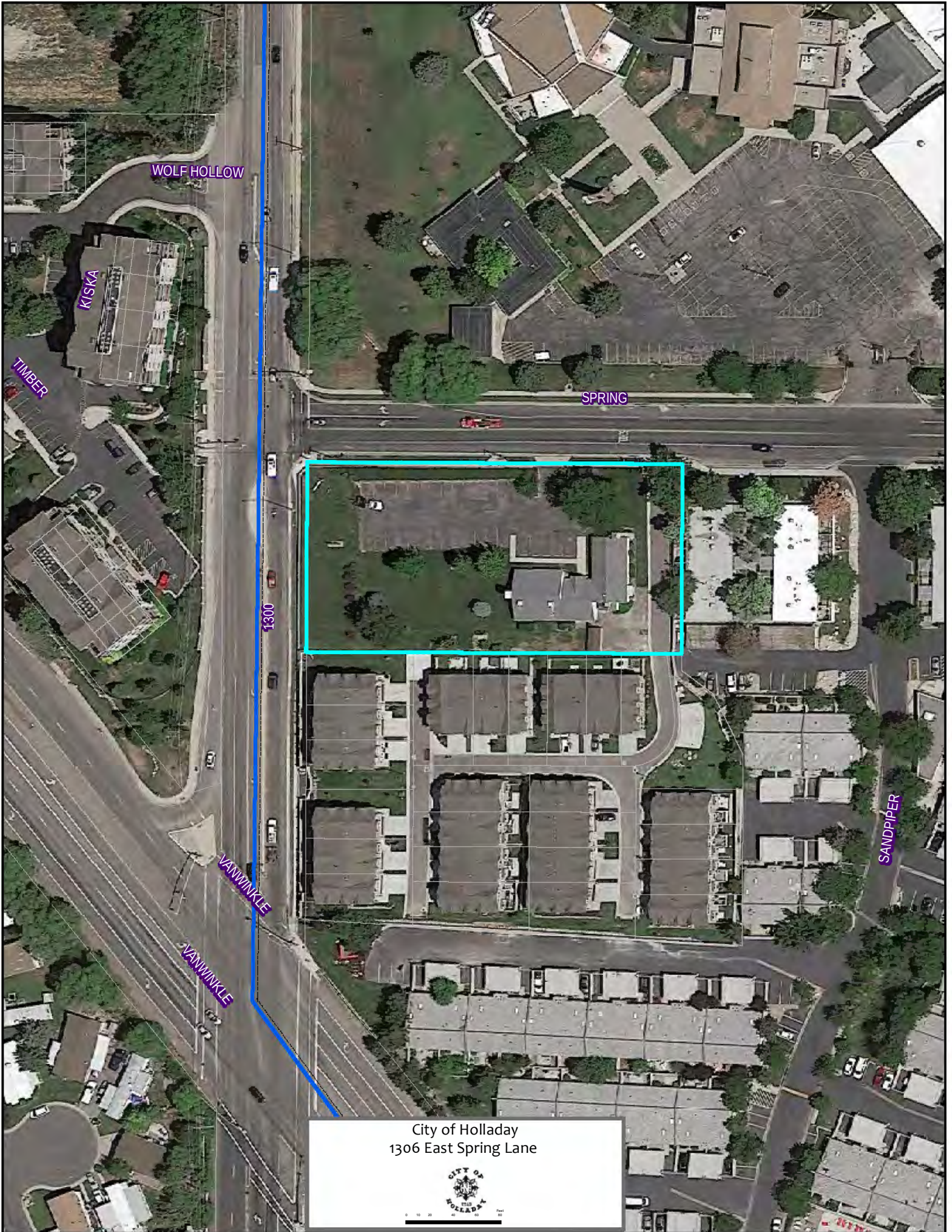
3. PROJECTED TRIP GENERATION FROM WEYBURN PROJECT. Page 9 of the study, Table 4, indicates a total of 151 trips generated from Weyburn daily, or 9.44 trips per dwelling each day. Spring Lane has a current total traffic load of 4,000 vehicles daily. 1300 East current traffic load is 16,000 vehicles daily.
4. WIDTH OF THE ACCESS (TOBERMORY) FOR TWO WAY TRAFFIC OPERATIONS. Page 19, “The addition of the proposed 16 dwellings will proportionally add two-thirds more traffic. Operationally the amount of traffic is relatively low and interactions between inbound and outbound traffic is infrequent”. Furthermore, “The analysis indicates that because of the low volumes, addition of separate left and right turn lanes for egress or adding a center turn lane will have minimal impacts on operations or delays. “The concern is not a capacity issue and most likely related to the fact that if egressing vehicles don’t stay to their side of the access, then they restrict ingress vehicles. If access is not widened, then as a minimum, a center strip should be added to better define the egress and ingress lanes.”
5. SIGHT DISTANCE. Page 20, “The sight distance for the access is when vehicles are parked to the west along the southern curb. This usually occurs during events at the St. Vincent Parish and school. To the east the curb line is recessed to the south and therefore sight distance is not a concern. It is recommended that the curb along the project frontage be striped red and “No Parking” signs be posted.”
6. CENTER TURN LANE ON SPRING LANE. Page 20, “There appears to be no need for auxiliary lanes to accommodate the increase in traffic from the development”.
7. WHETHER OR NOT TO KEEP THE CHURCH OPENING. Page 21, “Based on the analysis, the need for the existing Church opening does not provide an operational benefit and the proximity of to the main driveway increases the number of conflict points. Therefore, the closure of the existing access and the traffic utilizing Tobermory Way is recommended”.
8. PARKING ON SPRING LANE. Page 21, “Parking on the southern frontage of Spring Lane is NOT recommended. The curb should be painted red and “No Parking” signs posted.
9. FIRE CIRCULATION. Shirl White, UFA representative to Holladay, indicates that the present configuration of Tobermory and planned access to the new site is acceptable. (See attached letter)

TECHNICAL REVIEW COMMITTEE RECOMMENDATIONS

- The TRC recommends that the PC motion to approve subject to conditions and findings, motion to continue for further study with findings to do so, other motion as deemed appropriate by Commission. (Staff does not believe that a denial is merited based on the information in this report)
- Findings for possible motion to approve:
 1. Sufficient information has been received and reviewed by the city to show compliance with the requirement for conceptual subdivision approval.
 2. A traffic study has been performed to examine capacity, safety and other concerns related to the proposed development.
 3. As noted earlier in the report, the traffic study directly addresses many of the concerns and concludes that the subdivision street and access plan as proposed is appropriate given the level of proposed development. The study also includes a few recommendations to improve upon the plan such as striping Tobermory Lane and banning parking on the south side of Spring Lane with red curbs and signs. These recommendations should be specifically implemented as conditions of any future approval of the subdivision and conditional use permit.
 4. Unified Fire Authority indicates support for the proposal.
 5. Any corrections, edits to the concept plan as identified by city staff.

SUPPORTING MATERIALS

- Public Notice for 4/21 meeting
- Revised applicant project narrative.
- Aerial photo of the site
- Revised standard subdivision layout in preparation for PUD request
- Proposed tentative PUD layout.
- Tobermory Ridge subdivision plat.
- UFA letter from Shirl White
- A-Trans Engineering Traffic Study



City of Holladay
1306 East Spring Lane





ALAN KRUCKENBERG CONSTRUCTION INC.
5411 SOUTH VINE STREET - SUITE 4A - MURRAY, UTAH 84107
801-352-1511 - AKHOMES@YAHOO.COM

ALAN KRUCKENBERG CONSTRUCTION, INC.

FOR CITY OF HOLLADAY
4-21-20 PLANNING COMMISSION MEETING
PUBLIC HEARING
AND
SUBDIVISION CONCEPT REVIEW

WEYBURN RETREAT
File # 20-1-02

1306 East Spring Lane
Holladay, Utah 84117

Alan Kruckenberg Construction, Inc. has submitted application for Weyburn Retreat, a Planned Unit Development Subdivision in the RM Zone located at 1306 East Spring Lane, Holladay, Utah 84117.

This is a request to complete the Public Hearing initiated and subsequently continued on 3 March 2020.

This is also a request to approve the PUD Concept for Weyburn Retreat Subdivision.

Addressing the Continued City of Holladay Planning Commission Meeting and Public Hearing for this application, City of Holladay Planning Commissioners, City of Holladay Planning and Zoning Staff and a small number of Residents of the Tobermory Ridge Subdivision expressed concern with traffic safety and access issues for this proposal.

In consideration of these concerns and issues, the City of Holladay commissioned a Traffic Impact Analysis (TIA). During March of 2020, A Trans Engineering collected on-site traffic data and completed a report detailing the impact the proposed Weyburn Retreat Subdivision would have upon traffic on Tobermory Way and Spring Lane Street. Please find attached.

The Study has been reviewed by Jeff Kruckenberg, Alan Kruckenberg Construction and Paul Allred, City of Holladay Community Development Director. The findings and recommendations are as follows:

- 1 - The closure and removal of the existing access previously used for Church functions is recommended and access for the proposed Weyburn Retreat Subdivision should be provided by using the existing Tobermory Way.
- 2 - The current width of Tobermory Way is acceptable for the low volume of traffic served - capacity is not an issue and there is no recommendation to widen the existing Tobermory Way.
- 3 - There is no benefit to providing a separate northbound left turn lane and northbound right turn lane or providing a westbound left deceleration lane on the existing Tobermory Way.



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4 – The TIA does recommend that a center stripe on the existing Tobermory Way be added and that the curb along south side of Spring Lane Street be striped red and no parking signs posted.

In 2014, a Right-of-Way Agreement was recorded, establishing non-exclusive vehicular traffic access for the 24-lot Tobermory Ridge Subdivision. Please find attached. The new homes in Weyburn Retreat Subdivision will be accessed from the existing Tobermory Way located within the recorded easement.

Addressing the request to approve the Weyburn Retreat Concept, the Proposed Subdivision is a Sixteen (16) Lot Planned Unit Development consisting of Eight (8) Twin Homes. The Parcel is 1.19 acres and is located in the RM Zone.

The City of Holladay PUD Ordinance requires that a Standard Subdivision design site plan, utilizing the criteria of the underlying zone, specifically minimum lot size and minimum lot width, be submitted as part of the application to calculate the maximum density for the proposed development.

A Standard Subdivision design site plan for Weyburn Retreat has been submitted to the City of Holladay Planning and Zoning Department. Please find attached.

In the RM Zone, the minimum area for a PUD is 12,000 SF. The surveyed property area is 1.189 acres (51,807 SF). Along Spring Lane, .039 acres (1,714 SF) will be dedicated to City of Holladay. The property, after dedication, will be 1.15 acres (50,093 SF). The proposed driveway shown on the Standard Subdivision design site plan is .146 acres (6,377 SF). The property, less proposed driveway, will be 1.04 acres (43,716 SF). The minimum lot size in the RM Zone is .063 acres (2,722.5 SF). The Density Calculation provides that 43,716 SF divided by 2,722.5 SF results in 16.06 units allowed. The submitted Standard Subdivision design site plan provides sixteen (16) lots. Each lot is a minimum of 2,722.5 SF. The minimum lot width in the RM Zone for Attached Two-Family Dwelling Units is 35'. Each Lot shown on the submitted Standard Subdivision design site plan is a minimum of 35' wide. Please find calculations attached.

As evidenced by both the attached Standard Subdivision Design Site Plan and the attached density calculation, the application for the Weyburn Retreat PUD Subdivision meets the requirements of the City of Holladay PUD Ordinance 13.78 and allows for 16 homes to be built.

In requesting Planned Unit Development Concept approval, the Applicant, Alan Kruckenberg Construction, strongly believes that the provisions afforded by the City of Holladay PUD Ordinance result in better and more carefully conceived land use. Imaginative design, in addition to meeting the requirements of the Ordinance, can be modified and improved upon to meet the spirit of the legislation in providing well-built and well-maintained subdivisions that benefit all Residents of the City.

Weyburn Retreat will provide much needed lower-cost, owner-occupied and professionally maintained housing for all income and age groups for the City of Holladay. The location in the RM Zone allows for a transition from low density housing to medium density housing and provides housing for First-time Buyers, Move-up Buyers or Non-Traditional Buyers who want to live in the



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City of Holladay but may be unable to afford the more expensive new and or existing single family home option; desire a new home that does not require remodeling, renovation or landscape maintenance; and provides a housing option for a new and vibrant demographic whose interests do not include many of the traditional aspects of home ownership.

Additionally, Weyburn Retreat will maximize outdoor living space for each of the homes, providing private rear yards comparable in size to single family homes built in R-1 zones. Side yards will be smaller and will allow access to rear yards and placement of required equipment including air conditioners and utility meters and will be landscaped with low water use plant material and decorative hardscape materials.

Again, the City of Holladay PUD Ordinance allows for maximization of open space by allowing flexibility in site plan layout resulting in more landscaping coverage than would otherwise be possible. In the case of the Weyburn Retreat Subdivision, the proposed Planned Unit Development Design provides .59 acres (25,718 SF) of landscaped area. This is more than 50% of the land available in the proposed development, easily meeting the 40 % Minimum Landscape Requirement for the RM Zone. Please find Planned Unit Development Design Concept Site Plan attached.

A variety of evergreen trees, deciduous trees, evergreen and decorative shrubs will be central to landscaping in Weyburn Retreat. Careful consideration will be given to plant and tree selection to ensure water conservation, plant longevity, long term landscape maintenance and maximum benefit to Weyburn Retreat Homeowners and Residents of the City of Holladay in general. Visual beauty, privacy screening and shade will be the focus of the landscaping included in the completion of this subdivision.

Alan Kruckenberg Construction is also excited to announce that an existing irrigation well on the property will be used for irrigating all landscaping in Weyburn Retreat. Using this existing infrastructure is an example of low-impact development and will utilize existing natural resources while lessening the impact of new construction on a critical public utility – culinary water. This benefits City of Holladay Residents by eliminating the demand for culinary water used for irrigation and benefits the Owners of new homes in Weyburn Retreat by providing very low-cost secondary water for irrigation.

The homes in the Weyburn Retreat Subdivision will be two storeys tall and approximately 30 feet in height. This is significantly less than the maximum building height of 40 feet allowed in the RM Zone. The size and mass of the proposed homes will be consistent with the surrounding neighborhood and similar to the adjoining Tobermory Ridge Subdivision to the south.

The architectural style of the new homes will be Craftsman, featuring Stone, Stucco and Siding. The architecture, material and colors will be consistent with the established style of Alan Kruckenberg Construction homes. Photos of a Craftsman style home completed in November 2019 have been submitted to the City of Holladay for consideration by City of Holladay Planning Commissioners, City of Holladay Planning and Zoning Staff and other interested parties.

In addition to the reclaiming under-utilized housing areas, embracing creative land use planning, creating landscaping opportunities and incorporating low impact development techniques, the City



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of Holladay Development Ordinances and Standards can and will be met in the Weyburn Retreat Subdivision. Specifically, parking requirements for the RM Zone have been met with the attached Planned Unit Development Design Concept Site Plan. Two (2) parking spaces located in the attached garage of the propose homes have been included and eight (8) guest parking stalls have been provided at various location across the development. This will allow dispersed parking for the community that does not adversely affect the adjacent streets and or properties.

Access to the proposed homes and requisite parking, Owner or Guest, will be provided by a 20' wide private driveway as required by the Standards for the City of Holladay RM Zone. Alan Kruckenberg Construction has met with City of Holladay Planning and Zoning Staff and Unified Fire Authority Representatives, and as shown on the attached Planned Unit Development Design Concept Site Plan, provided the required drive width, turn radius and approved turn-a-round for safe and efficient vehicular access for the proposed subdivision.

Moreover, during construction, Alan Kruckenberg Construction will seek to minimize the impact to Residents of the Tobermory Ridge Subdivision. The existing access, previously used for church functions, will be used for construction traffic for as long as possible, reducing traffic congestion and wear and tear on the existing Tobermory Way. Additionally, requisite utilities, including sanitary sewer, culinary water, natural gas and electrical power will be accessed in Spring Lane Street and new services lines will be extended into Weyburn Retreat at a designated site.

Finally, Alan Kruckenberg Construction, Inc. will work with City of Holladay Planning and Zoning Staff in meeting established development and construction standards and will incorporate recommendations made by the City of Holladay Planning Commission to ensure that Weyburn Retreat is a quality development that benefits all Residents in the City of Holladay.

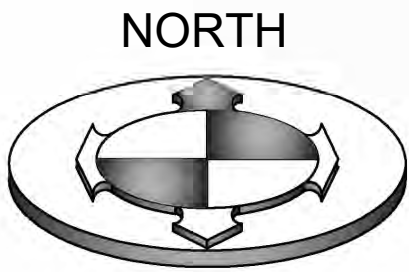
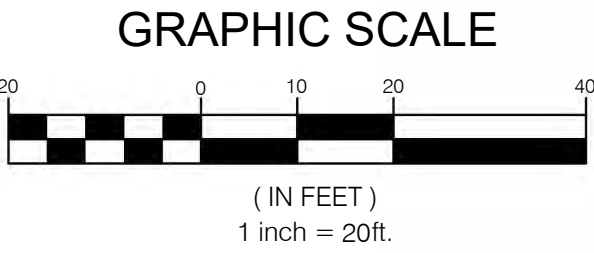
Thank you for your time and consideration.

Sincerely,

Jeff Kruckenberg
Alan Kruckenberg Construction
10 April 2020

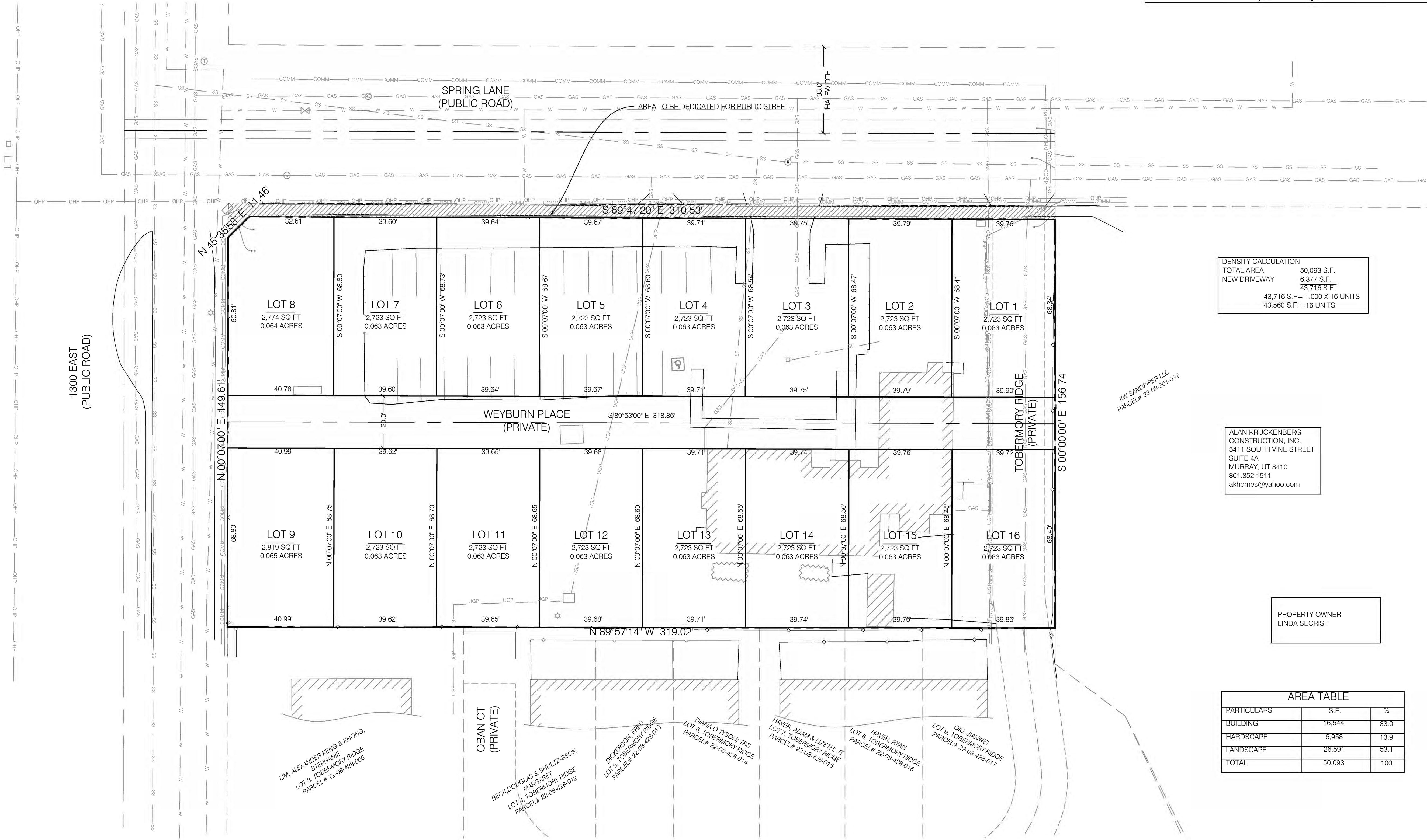
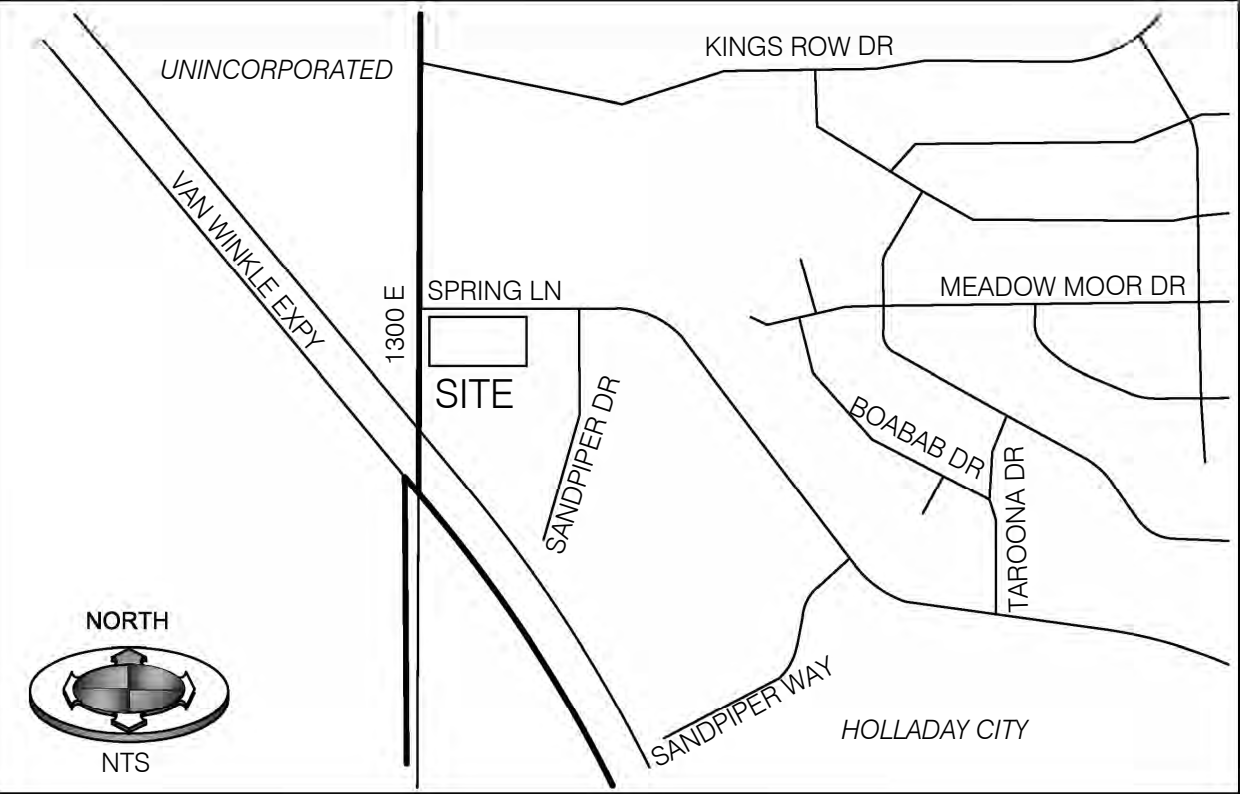
TRADITIONAL SUBDIVISION CONCEPT

LOCATED IN THE SOUTHEAST QUARTER OF SECTION 8,
TOWNSHIP 2 SOUTH, RANGE 1 EAST,
SALT LAKE BASE AND MERIDIAN
HOLLADAY CITY, SALT LAKE COUNTY, UTAH



ZONE:RM

VICINITY MAP



DENSITY CALCULATION

TOTAL AREA	50,093 S.F.
NEW DRIVEWAY	6,377 S.F.
	43,716 S.F. = 1,000 X 16 UNITS
	43,560 S.F. = 16 UNITS

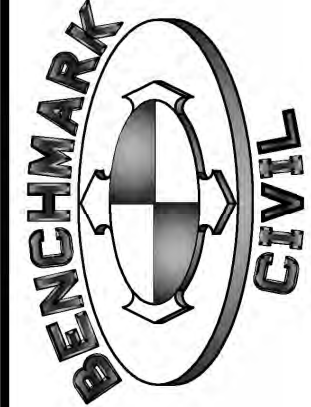
ALAN KRUCKENBERG
CONSTRUCTION, INC.
5411 SOUTH VINE STREET
SUITE 4A
MURRAY, UT 8410
801.352.1511
akhomes@yahoo.com

PROPERTY OWNER
LINDA SECRIST

AREA TABLE

PARTICULARS	S.F.	%
BUILDING	16,544	33.0
HARDSCAPE	6,958	13.9
LANDSCAPE	26,591	53.1
TOTAL	50,093	100

BENCHMARK
ENGINEERING &
LAND SURVEYING



WEYBURN RETREAT
1306 E SPRING LANE
HOLLADAY, UT

TRADITIONAL
SUBDIVISION
PLAN

SHEET
1 OF 1

PROJECT NO.	CONCEPT	DATE	SCALE	MEASURES
04132020	CONCEPT	04/13/2020	1" = 20'	SCALE MEASURES 1-INCH ON FULL SIZE SHEETS ADJUST ACCORDINGLY FOR REDUCED SIZE SHEETS

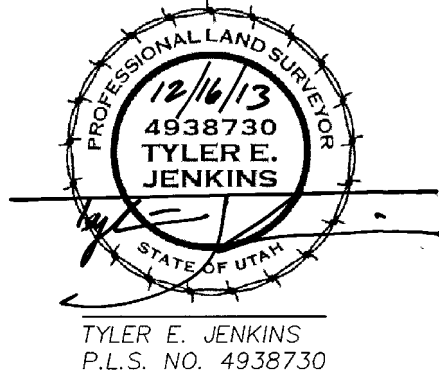
DENSITY CALCULATION

	SF	ACRES	
TOTAL GROSS AREA	51,807.00	1.189	BENCHMARK SURVEY
DEDICATION AREA	(1,714.00)	(0.039)	BENCHMARK SURVEY
TOTAL AREA AFTER DEDICATION	50,093.00	1.150	BENCHMARK SURVEY
PROPOSED DRIVEWAY AREA	(6,377.00)	(0.146)	BENCHMARK SURVEY
TOTAL NET AREA	43,716.00	1.004	GROSS LESS DEDICATION LESS DRIVEWAY
MINIMUM AREA / LOT	2,722.50	0.063	CITY OF HOLLADAY RM ZONE REQUIREMENT
ALLOWABLE LOTS	16.06		TOTAL NET AREA DIVIDED BY MINIMUM LOT AREA



SURVEYOR'S CERTIFICATE

I, TYLER E. JENKINS DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR, AND THAT I HOLD CERTIFICATE NO. 4938730 AS PRESCRIBED BY THE LAWS OF THE STATE OF UTAH. I FURTHER CERTIFY THAT BY THE DIRECTION OF HAMLET DEVELOPMENT, I HAVE MADE A SURVEY OF THE TRACT OF LAND SHOWN ON THIS PLAT AND DESCRIBED HEREWITH AND THE MONUMENTS DEPICTED ON THE PLAT ARE OF THE CHARACTER SHOWN, OCCUPY THE POSITIONS INDICATED, AND ARE OF SUFFICIENT NUMBER AND DURABILITY.



DEC 16, 2013
DATE

OWNER'S DEDICATION

KNOW THAT ALL PEOPLE BY THESE PRESENTS THAT WE, THE UNDERSIGNED OWNERS OF THE ABOVE DESCRIBED TRACT OF LAND, HAVING CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS AND STREETS TO BE HEREAFTER KNOWN AS: **TOBERMORY RIDGE SUBDIVISION**

DO HEREBY GRANT UNTO EACH PRIVATE UTILITY COMPANY AND PUBLIC UTILITY AGENCY PROVIDING UTILITY SERVICES TO THIS PROJECT, A PERPETUAL NON-EXCLUSIVE EASEMENT IN ALL AREAS SHOWN HEREON TO INSTALL, USE, KEEP, MAINTAIN, REPAIR AND REPLACE, AS REQUIRED, UNDERGROUND UTILITY LINES, PIPES AND CONDUITS OF ALL TYPES AND APPURTENANCES THERETO SERVING THIS PROJECT.

OWNER'S:

BY: [Signature]
NAME: MICHAEL BRODSKY
TITLE: CHAIRMAN OF HAMLET HOMES, A MANAGING MEMBER OF TOBERMORY RIDGE LLC.
FOR: TOBERMORY RIDGE, LLC

LIMITED LIABILITY COMPANY ACKNOWLEDGEMENT

ON THE 16 DAY OF December A.D., 2013, MICHAEL BRODSKY PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR SAID COUNTY OF SALT LAKE IN THE STATE OF UTAH, WHO AFTER BEING DULY SWORN, ACKNOWLEDGED TO ME THAT HE IS THE CHAIRMAN OF HAMLET HOMES, A MANAGER OF TOBERMORY RIDGE LLC, A UTAH LIMITED LIABILITY COMPANY AND THAT HE SIGNED THE OWNER'S DEDICATION FREELY AND VOLUNTARILY FOR AND IN BEHALF OF SAID LIMITED LIABILITY COMPANY FOR THE PURPOSES THEREIN MENTIONED.

6-14-2017
MY COMMISSION EXPIRES

NOTARY PUBLIC
RESIDING IN Salt Lake COUNTY

OWNER'S:

BY: [Signature]
NAME: LARRY BURTON
TITLE: PRESIDENT
FOR: US TITLE COMPANY OF UTAH

CORPORATE ACKNOWLEDGEMENT

ON THE 17 DAY OF December A.D., 2013, LARRY BURTON PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR SAID COUNTY OF SALT LAKE IN THE STATE OF UTAH, WHO AFTER BEING DULY SWORN, ACKNOWLEDGED TO ME THAT HE IS THE PRESIDENT OF US TITLE COMPANY OF UTAH, A CORPORATION IN THE STATE OF UTAH, AND THAT HE SIGNED THE OWNER'S DEDICATION FREELY AND VOLUNTARILY FOR AND IN BEHALF OF SAID CORPORATION FOR THE PURPOSES THEREIN MENTIONED.

6-14-2017
MY COMMISSION EXPIRES

NOTARY PUBLIC
RESIDING IN Salt Lake COUNTY

OWNER'S:

BY: [Signature]
NAME: ROBERT SACKS
TITLE: PRESIDENT
FOR: THE SACKS GROUP, INC.

CORPORATE ACKNOWLEDGEMENT

ON THE 17 DAY OF December A.D., 2013, ROBERT SACKS PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR SAID COUNTY OF SALT LAKE IN THE STATE OF UTAH, WHO AFTER BEING DULY SWORN, ACKNOWLEDGED TO ME THAT HE IS THE PRESIDENT OF THE SACKS GROUP, INC., A CORPORATION IN THE STATE OF UTAH, AND THAT HE SIGNED THE OWNER'S DEDICATION FREELY AND VOLUNTARILY FOR AND IN BEHALF OF SAID CORPORATION FOR THE PURPOSES THEREIN MENTIONED.

ARN LARSEN
#12-7411-1

6-14-2017
MY COMMISSION EXPIRES

NOTARY PUBLIC
RESIDING IN Utah COUNTY

LEGAL DESCRIPTION

COMMENCING AT THE WEST QUARTER (W 1/4) OF SECTION 9, TOWNSHIP 2 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN, THENCE SOUTH 00°00'51" WEST 195.02 FEET TO THE POINT OF BEGINNING. THENCE SOUTH 00°00'00" EAST, 14.00 FEET TO A POINT ON THE WEST PROPERTY LINE OF A PARCEL OF LAND CONVEYED TO MAJOR ENTERPRISES, INC. AS DEFINED IN THAT CERTAIN WARRANTY DEED, RECORDED NOVEMBER 17, 1970, AS ENTRY 2358944, BOOK 2916, PAGE 814, THENCE THE NEXT FOUR (4) CALLS ALONG THE WESTERLY AND NORTHERLY PROPERTY LINES OF SAID PARCEL: 1) SOUTH 53°28'00" EAST, 33.60 FEET; 2) SOUTH 26°36'11" EAST, 57.33 FEET; 3) SOUTH 00°00'00" EAST, 163.12 FEET; 4) NORTH 86°53'00" WEST, 372.70 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF 1300 EAST STREET AS DEFINED IN THAT TRUSTEE DEED, RECORDED AUGUST 1, 1991, AS ENTRY 5105651, BOOK 6342, PAGE 656, THENCE NORTH 00°07'00" EAST, 228.38 FEET PARALLEL WITH AND 40.00 FEET EASTERLY MEASURED AT RIGHT ANGLES FROM THE MONUMENT LINE OF SAID 1300 EAST STREET; THENCE DEPARTING THE EAST RIGHT-OF-WAY LINE OF SAID 1300 EAST STREET SOUTH 89°57'14" EAST, 319.02 FEET TO THE POINT OF BEGINNING.

COMMUNITY DEVELOPMENT

I HEREBY CERTIFY THAT THIS OFFICE HAS EXAMINED THIS PLAT AND IT IS CORRECT IN ACCORDANCE WITH INFORMATION ON FILE IN THIS OFFICE.

[Signature] 12/24/13
COMMUNITY DEVELOPMENT DIRECTOR DATE

SALT LAKE COUNTY HEALTH DEPARTMENT

APPROVED THIS 23rd DAY OF December, 2013,
BY THE SALT LAKE VALLEY HEALTH DEPARTMENT.

[Signature]
SALT LAKE COUNTY HEALTH DEPARTMENT

PROPERTY OWNER / DEVELOPER

TOBERMORY RIDGE, LLC
308 EAST 4500 SOUTH, SUITE 200
MURRAY, UT 84107

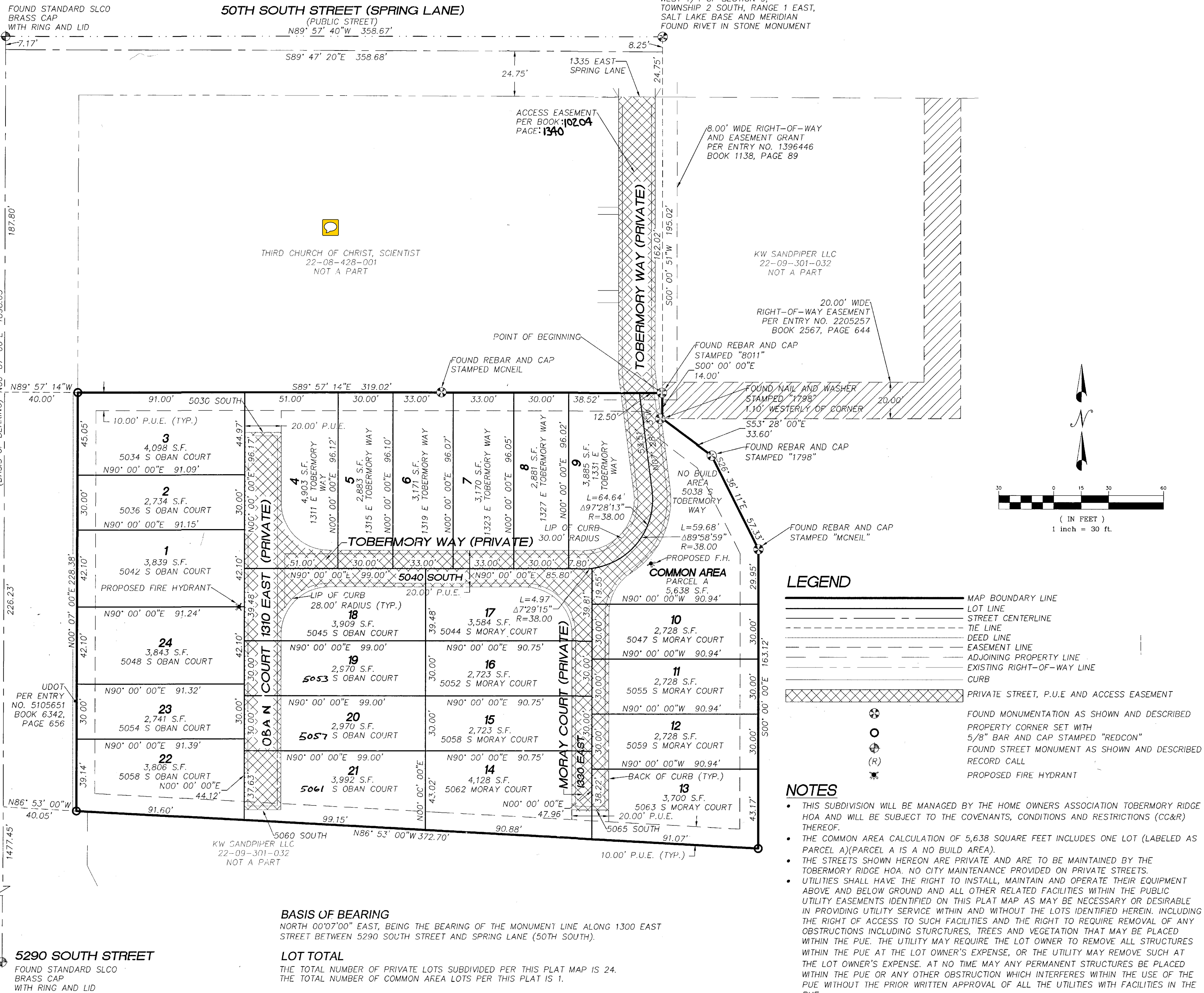
PLANNING COMMISSION

APPROVED THIS 20th DAY OF December, 2013,
BY THE CITY OF HOLLADAY.

[Signature]
PLANNING COMMISSION CHAIR

TOBERMORY RIDGE SUBDIVISION

LYING WITHIN THE SOUTHEAST QUARTER (SE 1/4) OF SECTION 8, TOWNSHIP 2 SOUTH, RANGE 1 EAST, AND THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 9, TOWNSHIP 2 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN HOLLADAY CITY, ZONE: RM



BASIS OF BEARING

NORTH 00°07'00" EAST, BEING THE BEARING OF THE MONUMENT LINE ALONG 1300 EAST STREET BETWEEN 5290 SOUTH STREET AND SPRING LANE (50TH SOUTH).

LOT TOTAL

THE TOTAL NUMBER OF PRIVATE LOTS SUBDIVIDED PER THIS PLAT MAP IS 24.
THE TOTAL NUMBER OF COMMON AREA LOTS PER THIS PLAT IS 1.

CITY ENGINEER

APPROVED THIS 2nd DAY OF January, 2014,
BY THE CITY OF HOLLADAY.

[Signature]
HOLLADAY CITY ENGINEER

CITY OF HOLLADAY

PRESENTED TO THE CITY OF HOLLADAY
THIS 2nd DAY OF January, 2013, AT WHICH TIME THIS
SUBDIVISION PLAT WAS APPROVED AND ACCEPTED.
[Signature] RECORDER
[Signature] CITY MANAGER

RECORDED NO: 11786795

STATE OF UTAH, COUNTY OF SALT LAKE, RECORDED AND FILED AT
REQUEST OF: TOBERMORY RIDGE, LLC

DATE: 01/08/2014 TIME: 4:04 PM BOOK: 2014p PAGE: 5
FEE: \$56.00 [Signature] SALT LAKE COUNTY RECORDER

TOBERMORY RIDGE SUBDIVISION
SE1/4 SEC. 8, T. 2 S., R. 1 E., SLBM.
SW1/4 SEC. 9, T. 2 S., R. 1 E., SLBM.
HOLLADAY CITY, ZONE: RM

REDCON, INC.
LAND SURVEYORS
90 NORTH MAIN STREET
BOUNTIFUL, UTAH 84010
(801) 298-2401 FAX (801) 298-2024
REDCON.COM

JOB NUMBER
413000-12

DWG: 413000-12 P PLAT
DATE: 12/11/2013

SHEET 1 OF 1

From: [Shirl White](#)
To: [Paul Allred](#)
Cc: [Jonathan Teerlink](#); [Robert Hobbs](#); ["Jared Bunch"](#)
Subject: RE: Spring Lane TIA
Date: Friday, April 3, 2020 1:04:12 PM

Paul,

Thank you for sending this email. I just got off the phone with Jeff. He stated that the building heights will be a fair amount below 30'. Based on this it appears that their project will meet the minimums and I will feel comfortable signing off on the access. This would include 28' radius measurements on all the turns and 20' wide drive lanes and an approved turn-a-round. After learning that the existing road can be painted to show ingress and egress, without additional obstructions to impede access, we will be able to respond for emergencies. Of course there will be No Parking allowed in the fire lane.

Thanks again,

Shirl White

SHIRL WHITE
FIRE INSPECTOR
UNIFIED FIRE AUTHORITY
3380 SOUTH 900 WEST
SALT LAKE CITY, UT 84119
PHONE: 801-824-3717
swhite@unifiedfire.org



From: Paul Allred [mailto:PAIred@cityofholladay.com]
Sent: Friday, April 3, 2020 11:57 AM
To: ALAN KRUCKENBERG
Cc: Dale Bennett; Jonathan Teerlink; Shirl White; Tosh Kano
Subject: RE: Spring Lane TIA

From: ALAN KRUCKENBERG [mailto:akhomes@yahoo.com]
Sent: Friday, April 3, 2020 11:13 AM
To: Paul Allred
Cc: Dale Bennett
Subject: Re: Spring Lane TIA

Paul -

Good morning.

Thank you for forwarding the Traffic Impact Analysis (TIA).

Careful review of the TIA provides :

- 1 - No benefit to providing separate northbound left and northbound right turn lanes.
- 2 - No benefit to providing westbound left deceleration lane.
- 3 - Current width of Tobermory Ridge is acceptable for low volume of traffic served - capacity is not an issue.
- 4 - No recommendation to widen Tobermory Ridge.
- 5 - Center strip on Tobermory Ridge should be added.
- 6 - Recommend curb along south side of Spring Lane be striped red and no parking signs posted.
- 7 - Closure and removal of existing access previously used for Church functions recommended

Based on these finds, we will review, refine and re-submit the subdivision application for Weyburn Retreat File # 20-1-02. Agree. I read the recommendations similarly. My only remaining concern is if UFA feels we need to widen the road. I suggest a call to Shirl White, copied, 801-824-3717, to arrange to meet with him on-site, if you have not done so already, and see if he is willing to put something in writing to you/City on the existing ability of Tobermory to handle UFA needs. I can be there if requested.

Would you please advise on schedule for City of Holladay Planning Commission? I'm planning on this being back on the PC for 4/21 for review of the traffic analysis and possible vote to approve the Concept Plan. We will send a 10-day notice to the neighbors as the PC requested to come back to the PC meeting a week from today.

Then next step is for the Conditional Use Permit for the PUD and preliminary plat as soon as ready after that. We can talk, meet and discuss this coming week, ok? I'm in the office Monday PM, all day Wednesday, Thurs PM and Friday AM. Otherwise I work from home as I can. Jon Teerlink works almost the opposite schedule as we are "social distancing". Let me know what you and Dale need.

Thank you,

Jeff Kruckenberg
Alan Kruckenberg Construction, Inc.
801-352-1511
801-792-6250

On Thursday, April 2, 2020, 04:30:19 PM MDT, Paul Allred <pallred@cityofholladay.com> wrote:

Here is the report. We'll review immediately and prepare for a return to the PC for their consideration of the concept plan.

Paul

Sent from [Mail](#) for Windows 10

From: [Joe Perrin](#)
Sent: Wednesday, April 1, 2020 7:04 PM
To: [Paul Allred](#); [Tosh Kano](#)
Cc: atrans@comcast.net
Subject: Spring Lane TIA

Attached please find the traffic study for the SE corner development on Spring Lane and 1300E.

Let me know if you have any questions or topics that need more discussions.

Thank you,

Joe

Joseph Perrin, PhD, PE, PTOE
A-Trans Engineering, LLC
PO Box 521651
Salt Lake City, UT 84152
(801) 949-0348 Mobile

**Weyburn Retreat
1306 E Spring Lane
Traffic Impact Study**

Holladay, UT

March 2020



A-Trans Engineering
P.O. Box 521651
Salt Lake City, Utah 84152
(801) 949-0348 telephone
(801) 582-6252 fax

TRAFFIC STUDY



Weyburn Retreat 1306 East Spring Lane Traffic Impact Analysis

Holladay, Utah

Category II

March 2020

Prepared by:

A-Trans Engineering
Joseph Perrin, PhD, PE, PTOE
P.O. Box City, 521651
Salt Lake City, Utah 84152
(801) 949-0348
atrans@comcast.net

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I. Introduction and Summary

The proposed Weyburn Retreat residential development is located south of Spring Lane at 1306 East in Holladay, Utah. The site is planning to include 8 single family duplex units (16 units) and is projected to generate 12 AM and 16 PM peak hour trips with 151 daily trips. The site is planning to access Spring Lane via the existing Tobermory Way.

1300 East / Spring Lane operates at an overall LOS B. This level of service is maintained with and without the site throughout 2025. The site traffic increases traffic at this intersection by 1.3% in the AM and 1.0% in the PM peak period.

Tobermory Way / Spring Lane operates with critical side street delay at LOS A in the AM and LOS B in the PM peak period. This level of service is maintained with and without the site throughout 2025.

Evaluations of various improvements include:

- (1) Assumes separate northbound left and right turn lanes; this will increase the left turn delay by less than 0.3 seconds and improve the right turn delay by up to 1.3 seconds. There is very little operational benefit to this improvement.
- (2) Assumes a westbound left deceleration lane. There was no change in LOS with this improvement. In the AM peak period a vehicle enters the access every 7.5 minutes (8 vehicles) and leaves every 2.5 minutes (24 vehicles). In the PM peak period a vehicle enters the access every 1.9 minutes (31 vehicles) and leaves every 3.5 minutes (17 vehicles).

Sandpiper Drive / Spring Lane operates with critical side street delay at LOS A in the AM and LOS B in the PM peak period. This level of service is maintained with and without the site throughout 2025.

II. Proposed Project

The proposed site is located south of Spring Lane at 1306 East in Holladay, Utah. The site is planned to include a 16 single family duplex units and is projected to generate 12 AM and 16 PM peak hour trips with 151 daily trips. The site is planning to access Spring Lane via the existing Tobermory Way. Tobermory Way is located approximately 280 feet west of 1300 East and 130 feet west of Sandpiper Drive. Figure 1 shows the conceptual site plan.

III. Study Area Conditions

The study area includes the following intersection.

- 1300 East / Spring Lane
- Tobermory Way / Spring Lane (Site Access)
- Sandpiper Drive / Spring Lane

Figure 2 shows the location of the site and the site accesses. Figure 3 shows existing intersection geometry.

Spring Lane

Spring Lane or Rt 2125 is currently a two lane facility with one lane in each direction. The 2019 AADT is estimated at 4,000 vehicles per day with a posted speed limit is 25 MPH.

1300 East

1300 East or Rt 2076 is currently a four lane facility with two southbound lanes, one northbound lane and a center turn lane. The 2017 AADT is 16,000 vehicles per day with a posted speed limit is 40 MPH.





IV. Analysis of Existing Condition

The existing traffic counts were performed March 30, 2020 during the AM and PM peak periods. Due to the disruption to current traffic conditions throughout the country due to the COVID-19 pandemic, adjustments to the collected data were necessary to create existing traffic volumes that are reasonable and reflective of conditions that would occur if this disruption did not occur. This was done utilizing the traffic data available on UDOT's Automated Traffic Signal Performance Measures Website. Data from 1300 East and 3900 South on February 5, 2020 and February 12, 2020 was compared against data extracted on March 30, 2020 (the same day of the traffic count). This data is shown in Table 1.

Table 1: 1300 East 3900 South Approach Volumes

	Typical Weekday				Day of Data Collection		Difference between average of Typical Weekday and Actual Data Collection Day	
	5-Feb-2020	12-Feb-2020	12-Feb-2020	12-Feb-2020	30-Mar-2020	30-Mar-2020		
	AM	PM	AM	PM	AM	PM	AM	PM
Northbound	532	481	481	452	256	287	51%	62%
Southbound	411	775	447	693	270	482	63%	66%
Eastbound	346	509	365	439	236	303	66%	64%
Westbound	579	682	577	572	358	376	62%	60%
Total	1868	2447	1870	2156	1120	1448	60%	63%

The comparison showed that the AM traffic was approximately 60% of the typical traffic and the PM traffic was approximately 63% of the typical traffic. The existing traffic counts were increased by the resulting reduction to generate volumes more similar to those that would have been expected on typical traffic days. These volumes were compared against the existing AADT data to check for accuracy. The base existing counts utilized in the study are the existing counts adjusted up to the projected "normal" condition traffic volumes. These adjusted normal volumes used for the study are shown in Figure 4. Traffic signal timing was taken from UDOT's Automated Traffic Signal Performance Measures Website.

The Highway Capacity Manual defines the Level of Service (LOS) for both signalized and unsignalized intersections as a range of average experienced delay. LOS is a qualitative rating of traveler satisfaction from A to F whereby LOS A is good and LOS F poor. Table 2 shows the LOS range by delay for unsignalized and signalized intersections and accesses.

Table 2: Intersection LOS-Delay Relationship

	Unsignalized	Signalized
Level of Service	Total Delay per Vehicle (sec)	Total Delay per Vehicle (sec)
A	≤ 10.0	≤ 10.0
B	> 10.0 and ≤ 15.0	> 10.0 and ≤ 20.0
C	> 15.0 and ≤ 25.0	> 20.0 and ≤ 35.0
D	> 25.0 and ≤ 35.0	> 35.0 and ≤ 55.0
E	> 35.0 and ≤ 50.0	> 55.0 and ≤ 80.0
F	> 50.0	> 80.0

1300 East / Spring Lane operates at an overall LOS B. Tobermory Way / Spring Lane operates with critical side street delay at LOS A in the AM and LOS B in the PM peak period. Sandpiper Drive / Spring Lane operates with critical side street delay at LOS A in the AM and LOS B in the PM peak period. Table 3 shows the Existing LOS.

Table 3: Existing Level of Service

Delay (sec/veh)	1300 East / Spring Lane (Overall)	Tobermory Way / Spring Lane (NBL)	Sandpiper Drive / Spring Lane (NBL)
AM	11.1 B	9.7 A	9.9 A
PM	10.4 B	10.9 B	11.5 B

AM (PM)



V. Projected Traffic

A. Trip Generation

Trip generation for the site was done using The Institute of Transportation Engineers (ITE) *Trip Generation* (10th Edition) handbook. The site is planning to include a 16 single family duplex units and is projected to generate 12 AM and 16 PM peak hour trips with 151 daily trips. The trip generation for the site is shown in Table 4.

Table 4: Trip Generation for Site

Land Use	Size	Trip Rate	Trips	% IN	% Out	Trips In	Trips Out
AM							
Single Family	16	0.74	12	25%	75%	3	9
PM							
Single Family	16	0.99	16	63%	37%	10	6
Daily							
Single Family	16	9.44	151				

B. Trip Distribution

Project site traffic was applied to the origin-destination (O-D) for the site. Origin-destination was determined from evaluating the existing traffic patterns and hourly traffic volumes on each leg of the included intersections as well as the location of retail centers and freeways relative to this site. This was used as a baseline for origin destination and engineering judgment was applied to this to determine the following OD for the site.

- 25% to/from north on 1300 East
- 65% to/from south on 1300 East
- 10% to/from east on Spring Lane

Origin Destination is shown in Figure 5. Site trip distribution is shown in Figure 6.





A-TRANS TRANSPORTATION ENGINEERING
 P.O. BOX 521651, SLC, UT 84152
 Phone: 801-949-0348 Fax: 801-582-6252

Figure 6

Site Generated Traffic

VI. Growth

Growth in the area was determined from UDOT's Traffic on Utah Highways and Wasatch Front Regional Council. The volumes and projections utilized to determine growth in the area is shown in Table 5. Based on this information an average growth of 0.51% was found, to provide a conservative analysis a 1% growth was utilized. The growth factor for 2025 is 1.05.

Table 5: Growth Projections

Year	1300 East
2019	16,000
2040	18,000
Growth	0.51%

Background traffic is determined by multiplying the existing traffic by the growth factor for 2025. 2025 Background Traffic is shown in Figure 7. Total traffic in the area for the future projection years is derived by adding the non-site volume forecasts to the site trip distribution. 2020 Total Traffic is shown in Figure 9 and 2025 Total Traffic is shown in Figure 9.

AM (PM)



AM (PM)



AM (PM)



VII. Traffic Analysis

A. Level of Service Analysis

The intersection and access analysis evaluates the performance of each intersection and access using the measure of performance of delay and level of service (LOS). Tables 6-8 show the intersection and access analysis.

Analysis Results

- 1300 East / Spring Lane operates at an overall LOS B. This level of service is maintained with and without the site throughout 2025. The site traffic increases traffic at this intersection by 1.3% in the AM and 1.0% in the PM peak period.
- Tobermory Way / Spring Lane operates with critical side street delay at LOS A in the AM and LOS B in the PM peak period. This level of service is maintained with and without the site throughout 2025. The
 - Improvement (1) Assumes separate northbound left and right turn lanes; this will increase the left turn delay by less than 0.3 seconds and improve the right turn delay by up to 1.3 seconds. There is very little operational benefit to this improvement.
 - Improvement (2) Assumes a westbound left deceleration lane. There was no change in LOS with this improvement.
 - In the AM peak period a vehicle enters the access every 7.5 minutes (8 veh) and leaves every 2.5 minutes (24 veh). In the PM peak period a vehicle enters the access every 1.9 minutes (31 veh) and leaves every 3.5 minutes (17 veh).
- Sandpiper Drive / Spring Lane operates with critical side street delay at LOS A in the AM and LOS B in the PM peak period. This level of service is maintained with and without the site throughout 2025.

Table 6: 1300 East / Spring Lane Intersection Analysis

		EBL		EBR		NBTR		SBL		SBT		INT	
2020 Existing	AM	47.9	D	12.9	B	5.8	A	2.8	A	2.8	A	11.1	B
	PM	47.3	D	11.9	B	10.6	B	3.3	A	3.1	A	10.4	B
Opening Day	AM	48.9	D	12.7	B	5.8	A	2.8	A	2.9	A	11.5	B
	PM	47.6	D	11.9	B	10.8	B	3.4	A	3.1	A	10.6	B
2025 Background	AM	48.9	D	12.7	B	5.9	A	2.8	A	2.9	A	11.3	B
	PM	47.8	D	11.7	B	11.3	B	3.5	A	3.2	A	10.8	B
2025 Total	AM	50.6	D	12.2	B	6.2	A	2.9	A	3	A	11.9	B
	PM	49.1	D	11.5	B	12.3	B	3.7	A	3.3	A	11.4	B

Table 7: Tobermory Way / Spring Lane Intersection Analysis

		NBL		NBR		WBL	
2020 Existing	AM	9.7	A			7.3	A
	PM	10.9	B			7.7	A
Opening Day	AM	9.7	A			7.4	A
	PM	11.0	B			7.7	A
2025 Background	AM	9.7	A			7.4	A
	PM	11.0	B			7.8	A
2025 Total	AM	9.9	A			7.4	A
	PM	11.4	B			7.8	A
2025 Total (1)	AM	10.0	B	8.6	A	7.4	A
	PM	11.7	B	9.7	A	7.8	A
2025 Total (2)	AM	9.9	A			7.4	A
	PM	11.4	B			7.8	A

(1) Assumes separate northbound left and right turn lanes.

(2) Assumes a westbound left deceleration lane.

Table 8: Sandpiper Drive / Spring Lane Intersection Analysis

		NBL		EBL		WBL		SBL	
2020 Existing	AM	9.9	A	7.4	A	7.3	A	9.2	A
	PM	11.5	B	7.5	A	7.7	A	9.5	A
Opening Day	AM	9.9	A	7.4	A	7.3	A	9.2	A
	PM	11.5	B	7.5	A	7.7	A	9.5	A
2025 Background	AM	10.0	B	7.4	A	7.3	A	9.3	A
	PM	11.7	B	7.5	A	7.7	A	9.6	A
2025 Total	AM	10.1	B	7.5	A	7.4	A	9.3	A
	PM	12.0	B	7.5	A	7.8	A	9.7	A

B. Queue Analysis

Based on the projected traffic, queue storage length requirements can be determined. To determine if sufficient storage space exists to accommodate the projected demand, the intersection and accesses included in this traffic study are analyzed for queue storage capacity. The queue lengths are provided by the HCM analysis and are done through Synchro. Once the storage length is determined, this can typically be compared to the available storage length within the provided turn pockets or between intersections. The projected 2025 queue is shown in Table 9.

Table 9: 2025 Queue Analysis

		EBL	SBL
1300 East / Spring Lane	Available	125	100
	Recommended	150	100

The projected queue for the eastbound left at 1300 East and Spring Lane extend beyond the available 125 feet of storage.

VIII. Conclusions

The proposed Weyburn Retreat residential development is located south of Spring Lane at 1306 East in Holladay, Utah. The site is planning to include a 16 single family duplex units and is projected to generate 12 AM and 16 PM peak hour trips with 151 daily trips. The site is planning to access Spring Lane via the existing Tobermory Way.

The following comments are made about the site:

- 1300 East / Spring Lane operates at an overall LOS B. This level of service is maintained with and without the site throughout 2025. The site traffic increases traffic at this intersection by 1.3% in the AM and 1.0% in the PM peak period.
- Tobermory Way / Spring Lane operates with critical side street delay at LOS A in the AM and LOS B in the PM peak period. This level of service is maintained with and without the site throughout 2025. The
 - Improvement (1) Assumes separate northbound left and right turn lanes; this will increase the left turn delay by less than 0.3 seconds and improve the right turn delay by up to 1.3 seconds. There is very little operational benefit to this improvement.
 - Improvement (2) Assumes a westbound left deceleration lane. There was no change in LOS with this improvement.
 - In the AM peak period a vehicle enters the access every 7.5 minutes (8 veh) and leaves every 2.5 minutes (24 veh). In the PM peak period a vehicle enters the access every 1.9 minutes (31 veh) and leaves every 3.5 minutes (17 veh).

- Sandpiper Drive / Spring Lane operates with critical side street delay at LOS A in the AM and LOS B in the PM peak period. This level of service is maintained with and without the site throughout 2025.
- The projected queue for the eastbound left at 1300 East and Spring Lane extend beyond the available 125 feet of storage.

IX. Key Issues / Findings

The following key issues were discussed in the on-site meeting. These include:

- Width of the access for two way traffic operations
 - The width of the current driveway is 16 feet of asphalt with 2 foot mountable curb on each side. This is not normally the width of a two-way driveway as the minimum lane width is typically 10 feet. If the concrete mountable curb is considered, then the driveway width is 20 feet. This driveway was installed for the current 24 unit Tobermory Ridge. The addition of the proposed 8 twin homes (16 units) will proportionally add two-thirds more traffic. Operationally, the amount of traffic is relatively low and interactions between inbound and outbound traffic is infrequent. Based on the ITE trip generation manual, there is a projected 40 peak hour trips that will utilize the access in the highest PM peak hour. This is projected to be 25 inbound and 15 outbound indicating that an inbound vehicle will occur approximately every 2.4 minutes and an outbound vehicle every 4 minutes.

ITE 10th Ed	Size	Land Use	AM	PM	Daily	AM	PM	Daily
Tobermory Ridge	24	210	0.74	0.99	9.44	18	24	227
Weyburn Retreat	16	210	0.74	0.99	9.44	12	16	151
Total	Total 40					30	40	378

		AM IN	AM Out	PM IN	PM OUT
Tobermory Ridge	24	5	14	15	9
Weyburn Retreat	16	3	9	10	6
Total	Total 40	8	23	25	15

The analysis indicates that because of the low volumes, addition of separate left and right turn lanes for egress or adding a center turn lane will have minimal impacts on operations or delays. These would be more changes of convenience. The width of the access has been raised as a concern. The existing transformer and Rocky Mountain Power pole would need to be relocated if widening were to occur. The concern is not a capacity issue and most likely related to the fact

that if egressing vehicles don't stay to their side of the access, then they restrict ingress vehicles. If the access is not widened, then as a minimum, a center strip should be added to better define the egress and ingress lanes.



- Sight Distance for the access
 - The sight distance for the access is when vehicles are parked to the west along the southern curb. This usually occurs during events at the St Vincent Parish and school. To the east, the curb line is recessed to the south and therefore sight distance is not a concern. It is recommended that the curb along the project frontage be striped red and no parking signs posted.
- Traffic flow and operations
- Need for separate left and right turn northbound lanes for egress from the site
- Need for a center turn lane on Spring Lane and/or a different striping along Spring Lane
 - The analysis indicates that the traffic level of service is at acceptable average delays. There appears no need for auxiliary lanes to accommodate the increase in traffic from the development.

- Whether or not to keep the Church Opening
 - Based on the analysis, the need for the existing Church opening does not provide an operational benefit and the proximity to the main driveway increases the number of conflict points. Therefore, the closure of the existing access and the traffic utilizing the Tobermory Way is recommended.
- Parking on Spring Lane
 - Parking along the southern property frontage of Spring Lane is NOT recommended. The curb should be painted red and no parking signage should be installed.
- Address Fire Circulation
 - The fire department will need to address the width of the driveway and the need for secondary access. Currently, there is a secondary gate from Sandpiper which allows connections to the site and Tobermory.



APPENDICES

Appendix A	Traffic Counts and Projections
Appendix B	Without Site Intersection Analyses
Appendix C	With Site Intersection Analysis



Appendix A Traffic Counts and Projections

AM PEAK HOUR VOLUMES

INTERSECTION: 1300 East and Spring Lane

Ped = 1

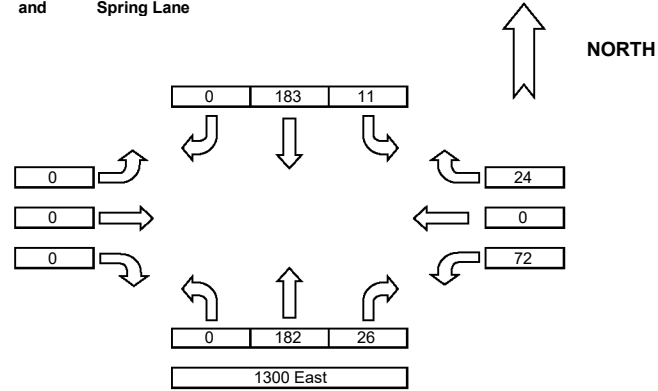
N-S STREET: 1300 East
E-W STREET: Spring Lane

PK HR VOLUME:	498
PHF:	0.82
PEAK HOUR:	
FROM: TO:	
7:15 AM 8:15 AM	

COUNT DATE: March 24, 2020
Day of the Week: Tuesday
NOTES:

COUNT TIME:
FROM: 7:00 AM
TO: 9:00 AM

Spring Lane



AM Traffic

COUNT DATA INPUT:

Name: Lacie

Name: Lacie

Name: Lacie

Name: Lacie

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL 5' VOLUMES	TOTAL 15' VOLUMES	PEDESTRIAN	
FROM:	TO:	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR			E/W	N/S
7:00 AM	7:05 AM	0	18	2	0	0	0	1	8	0	4	0	0	33	79	0	0
7:05 AM	7:10 AM	1	9	1	0	0	1	0	13	0	2	0	1	28	78	0	0
7:10 AM	7:15 AM	0	5	2	0	0	0	2	6	0	3	0	0	18	89	0	0
7:15 AM	7:20 AM	0	9	2	0	0	0	1	14	0	5	0	1	32	108	0	0
7:20 AM	7:25 AM	0	17	0	0	0	0	0	13	0	6	0	3	39	131	0	0
7:25 AM	7:30 AM	0	10	1	0	0	0	1	16	0	9	0	0	37	130	0	0
7:30 AM	7:35 AM	0	17	2	0	0	0	1	23	0	7	0	5	55	150	0	0
7:35 AM	7:40 AM	0	12	4	0	0	0	1	14	0	6	0	1	38	137	1	0
7:40 AM	7:45 AM	0	19	3	0	0	0	0	22	0	10	0	3	57	152	0	0
7:45 AM	7:50 AM	0	18	2	0	0	0	0	17	0	2	0	3	42	124	0	0
7:50 AM	7:55 AM	0	25	4	0	0	0	2	13	0	7	0	2	53	120	0	0
7:55 AM	8:00 AM	0	10	4	0	0	0	0	9	0	4	0	2	29	103	0	0
8:00 AM	8:05 AM	0	15	0	0	0	0	1	16	0	5	0	1	38	116	0	0
8:05 AM	8:10 AM	0	12	4	0	0	0	2	10	0	6	0	2	36	110	0	0
8:10 AM	8:15 AM	0	18	0	0	0	0	2	16	0	5	0	1	42	108	0	0
8:15 AM	8:20 AM	0	15	1	0	0	0	0	12	0	3	0	1	32	100	0	0
8:20 AM	8:25 AM	0	13	2	0	0	0	1	15	0	2	0	1	34	115	0	0
8:25 AM	8:30 AM	0	10	1	0	0	0	0	16	0	6	0	1	34	135	1	0
8:30 AM	8:35 AM	0	26	1	0	0	0	0	14	0	6	0	0	47	148	0	0
8:35 AM	8:40 AM	0	20	4	0	0	0	0	18	0	10	0	2	54	152	0	0
8:40 AM	8:45 AM	0	21	1	0	0	0	0	18	0	7	0	0	47	130	0	0
8:45 AM	8:50 AM	0	24	1	0	0	0	2	16	0	3	0	5	51	123	0	0
8:50 AM	8:55 AM	1	11	1	0	0	0	0	13	0	4	0	2	32	72	0	0
8:55 AM	9:00 AM	0	13	5	0	0	0	0	15	0	3	0	4	40	40	0	0

PM PEAK HOUR VOLUMES

INTERSECTION: 1300 East and Sping Lane

Ped = 4

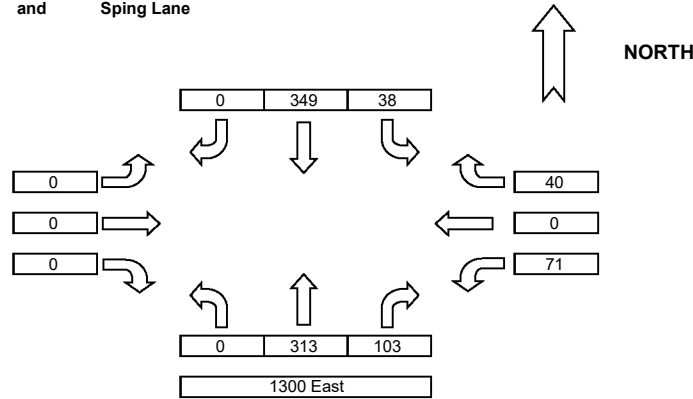
N-S STREET: 1300 East
E-W STREET: Sping Lane

PK HR VOLUME:	914
PHF:	0.91
PEAK HOUR:	
FROM:	TO:
4:20 PM	5:20 PM

COUNT DATE: March 24, 2020
Day of the Week: Tuesday
NOTES:

COUNT TIME:
FROM: 4:00 PM
TO: 6:00 PM

Sping Lane



PM Traffic

COUNT DATA INPUT:

Name: Lacie

Name: Lacie

Name: Lacie

Name: Lacie

		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL 5' VOLUMES	TOTAL 15' VOLUMES	PEDESTRIAN	
FROM:	TO:	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR			E/W	N/S
4:00 PM	4:05 PM	0	18	7	0	0	0	1	24	0	4	0	3	57	177	0	0
4:05 PM	4:10 PM	0	23	6	0	0	0	0	28	0	5	0	2	64	191	1	0
4:10 PM	4:15 PM	0	18	7	0	0	0	1	24	0	3	1	2	56	201	0	0
4:15 PM	4:20 PM	0	29	6	0	0	0	3	29	0	3	0	1	71	223	0	0
4:20 PM	4:25 PM	0	25	7	0	0	0	6	28	0	5	0	3	74	217	0	0
4:25 PM	4:30 PM	0	30	6	0	0	0	0	31	0	6	0	5	78	220	2	0
4:30 PM	4:35 PM	0	21	7	0	0	0	6	28	0	2	0	1	65	216	0	0
4:35 PM	4:40 PM	0	22	19	0	0	0	4	28	0	2	0	2	77	228	0	0
4:40 PM	4:45 PM	0	21	10	0	0	0	4	27	0	9	0	3	74	228	0	0
4:45 PM	4:50 PM	0	23	8	0	0	0	3	29	0	6	0	8	77	226	0	0
4:50 PM	4:55 PM	0	32	5	0	0	0	1	28	0	5	0	6	77	218	2	0
4:55 PM	5:00 PM	0	30	12	0	0	0	2	23	0	4	0	1	72	221	0	0
5:00 PM	5:05 PM	0	15	10	0	0	0	1	29	0	8	0	6	69	225	0	0
5:05 PM	5:10 PM	0	34	5	0	0	0	3	29	0	7	0	2	80	251	0	0
5:10 PM	5:15 PM	0	24	7	0	0	0	3	33	0	7	0	2	76	226	0	0
5:15 PM	5:20 PM	0	36	7	0	0	0	5	36	0	10	0	1	95	230	0	0
5:20 PM	5:25 PM	0	13	8	0	0	0	3	26	0	5	0	0	55	191	0	0
5:25 PM	5:30 PM	0	37	11	0	0	0	1	25	0	4	0	2	80	205	0	0
5:30 PM	5:35 PM	0	17	10	0	0	0	3	19	0	2	0	5	56	210	0	0
5:35 PM	5:40 PM	0	23	6	0	0	0	4	22	0	10	0	4	69	234	0	0
5:40 PM	5:45 PM	0	41	4	0	0	0	3	26	0	4	0	7	85	219	0	0
5:45 PM	5:50 PM	0	36	10	0	0	0	3	20	0	10	0	1	80	194	0	0
5:50 PM	5:55 PM	0	13	12	0	0	0	3	16	0	5	0	5	54	114	0	0
5:55 PM	6:00 PM	0	22	6	0	0	0	0	24	0	6	0	2	60	60	0	0

AM PEAK HOUR VOLUMES

INTERSECTION: Sandpiper Drive and Spring Lane

Ped = 0

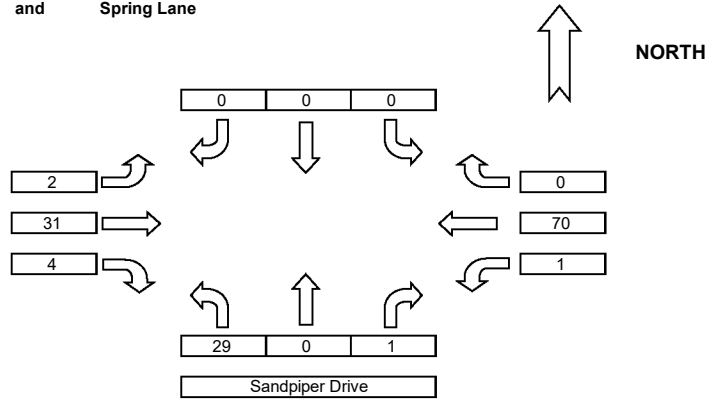
N-S STREET: Sandpiper Drive
E-W STREET: Spring Lane

PK HR VOLUME:	138
PHF:	0.80
PEAK HOUR:	
FROM:	TO:
7:25 AM	8:25 AM

COUNT DATE: March 24, 2020
Day of the Week: Tuesday
NOTES:

COUNT TIME:
FROM: 7:00 AM
TO: 9:00 AM

Spring Lane



AM Traffic

COUNT DATA INPUT:

Name: Kim V.

Name: Kim V.

Name: Kim V.

Name: Kim V.

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL 5' VOLUMES	TOTAL 15' VOLUMES	PEDESTRIAN	
FROM:	TO:	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR			E/W	N/S
7:00 AM	7:05 AM	0	0	0	0	1	0	0	0	0	0	9	0	10	25	0	0
7:05 AM	7:10 AM	3	0	0	0	3	0	0	0	0	0	1	0	7	21	0	0
7:10 AM	7:15 AM	0	0	0	0	3	0	0	0	0	0	5	0	8	22	0	0
7:15 AM	7:20 AM	1	0	0	0	1	0	0	0	0	0	4	0	6	23	0	0
7:20 AM	7:25 AM	0	0	0	0	3	1	0	0	0	0	4	0	8	26	0	0
7:25 AM	7:30 AM	3	0	0	0	2	1	0	0	0	0	3	0	9	30	0	0
7:30 AM	7:35 AM	5	0	0	0	0	0	0	0	0	0	4	0	9	33	0	0
7:35 AM	7:40 AM	2	0	0	0	1	0	0	0	0	1	8	0	12	35	0	0
7:40 AM	7:45 AM	2	0	0	0	2	1	0	0	0	0	7	0	12	43	0	0
7:45 AM	7:50 AM	3	0	0	0	4	0	0	0	0	0	4	0	11	38	0	0
7:50 AM	7:55 AM	4	0	0	0	5	0	0	0	0	0	11	0	20	41	0	0
7:55 AM	8:00 AM	1	0	0	1	1	0	0	0	0	0	4	0	7	33	0	0
8:00 AM	8:05 AM	1	0	0	0	5	0	0	0	0	0	8	0	14	33	0	0
8:05 AM	8:10 AM	3	0	1	1	3	0	0	0	0	0	4	0	12	34	0	0
8:10 AM	8:15 AM	0	0	0	0	1	1	0	0	0	0	5	0	7	32	0	0
8:15 AM	8:20 AM	3	0	0	0	4	1	0	0	0	0	7	0	15	30	0	0
8:20 AM	8:25 AM	2	0	0	0	3	0	0	0	0	0	5	0	10	26	0	0
8:25 AM	8:30 AM	1	0	0	0	1	0	0	0	0	0	3	0	5	23	0	0
8:30 AM	8:35 AM	0	0	0	0	4	1	0	0	0	0	6	0	11	25	0	0
8:35 AM	8:40 AM	4	0	1	0	0	0	0	0	0	0	2	0	7	29	0	0
8:40 AM	8:45 AM	1	0	1	1	2	0	0	0	0	0	2	0	7	32	0	0
8:45 AM	8:50 AM	1	0	0	1	3	0	0	0	1	1	8	0	15	36	0	0
8:50 AM	8:55 AM	2	0	0	1	2	0	0	0	0	0	5	0	10	21	0	0
8:55 AM	9:00 AM	3	0	0	0	2	0	0	0	1	0	5	0	11	11	0	0

PM PEAK HOUR VOLUMES

INTERSECTION: Sandpiper Drive and Spring Lane

Ped = 0

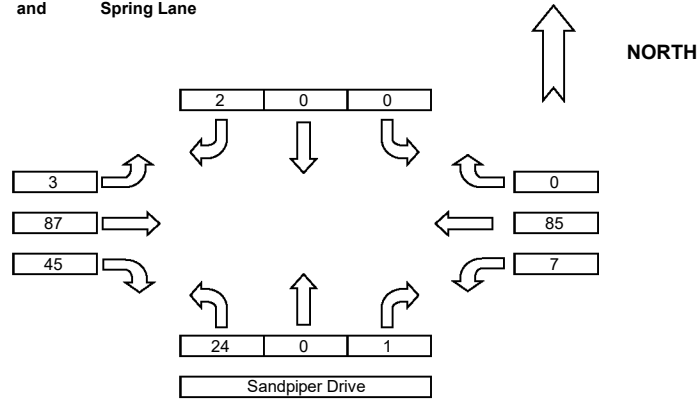
N-S STREET: Sandpiper Drive
E-W STREET: Spring Lane

PK HR VOLUME:	254
PHF:	0.88
PEAK HOUR:	
FROM:	TO:
4:40 PM	5:40 PM

COUNT DATE: March 24, 2020
Day of the Week: Tuesday
NOTES:

COUNT TIME:
FROM: 4:00 PM
TO: 6:00 PM

Spring Lane



PM Traffic

COUNT DATA INPUT:

Name: Kim V.

Name: Kim V.

Name: Kim V.

Name: Kim V.

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL 5' VOLUMES	TOTAL 15' VOLUMES	PEDESTRIAN	
FROM:	TO:	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR			E/W	N/S
4:00 PM	4:05 PM	0	0	0	1	7	0	0	0	0	2	6	0	16	47	0	0
4:05 PM	4:10 PM	1	0	0	0	10	1	0	0	2	0	3	0	17	43	0	0
4:10 PM	4:15 PM	3	0	0	0	6	0	0	0	0	0	5	0	14	44	0	0
4:15 PM	4:20 PM	0	0	0	0	7	2	0	0	0	0	3	0	12	50	0	0
4:20 PM	4:25 PM	5	0	0	0	2	5	0	0	0	1	5	0	18	55	0	0
4:25 PM	4:30 PM	1	0	0	1	9	5	0	0	0	0	4	0	20	55	0	0
4:30 PM	4:35 PM	6	0	1	0	6	1	0	0	1	0	2	0	17	63	0	0
4:35 PM	4:40 PM	1	0	1	0	9	5	0	0	0	0	2	0	18	66	0	0
4:40 PM	4:45 PM	1	0	0	1	13	3	0	0	0	0	10	0	28	72	0	0
4:45 PM	4:50 PM	1	0	0	0	6	6	0	0	0	0	7	0	20	61	0	0
4:50 PM	4:55 PM	2	0	1	1	5	2	0	0	0	1	12	0	24	59	0	0
4:55 PM	5:00 PM	2	0	0	0	5	3	0	0	0	0	7	0	17	57	0	0
5:00 PM	5:05 PM	0	0	0	0	9	3	0	0	1	1	4	0	18	59	0	0
5:05 PM	5:10 PM	4	0	0	0	2	4	0	0	0	2	10	0	22	60	0	0
5:10 PM	5:15 PM	1	0	0	0	6	2	0	0	1	1	8	0	19	61	0	0
5:15 PM	5:20 PM	3	0	0	0	4	4	0	0	0	0	8	0	19	61	0	0
5:20 PM	5:25 PM	3	0	0	0	7	6	0	0	0	0	7	0	23	56	0	0
5:25 PM	5:30 PM	4	0	0	1	8	4	0	0	0	1	1	0	19	64	0	0
5:30 PM	5:35 PM	0	0	0	0	9	2	0	0	0	0	3	0	14	61	0	0
5:35 PM	5:40 PM	3	0	0	0	13	6	0	0	0	1	8	0	31	67	0	0
5:40 PM	5:45 PM	2	0	0	0	4	0	0	0	0	0	10	0	16	63	0	0
5:45 PM	5:50 PM	3	0	0	0	7	1	0	0	1	0	8	0	20	69	0	0
5:50 PM	5:55 PM	2	0	0	1	10	7	0	0	0	0	7	0	27	49	0	0
5:55 PM	6:00 PM	1	0	0	0	9	1	0	0	0	0	11	0	22	22	0	0

Ped = 0

NORTH

Spring Lane

Diagram of a roundabout with 8 lanes. The top approach (Spring Lane) has 3 lanes (0, 0, 0) with a large straight-ahead arrow. The right approach has 3 lanes (0, 0, 0) with a large straight-ahead arrow. The bottom approach (Tobermory Way) has 3 lanes (2, 0, 1) with a large straight-ahead arrow. The left approach has 3 lanes (0, 0, 1) with a large straight-ahead arrow. Arrows indicate turning movements: left, through, and right.

AM Traffic

Name: Kim V.

[illegible]

Ped =

NORTH

PK HR VOLUME:	15
PHF:	0.75
PEAK HOUR:	
FROM:	TO:
4:15 PM	5:15 PM

Spring Lane

Diagram illustrating the intersection of Spring Lane and Tobermory Way. The intersection is a T-intersection where Tobermory Way (one-way northbound) meets Spring Lane (two-way). The signalized movements are as follows:

- Spring Lane (Left Turn):** 0
- Spring Lane (Through/Right Turn):** 0
- Spring Lane (Center Turn Lane):** 0
- Tobermory Way (Northbound):** 2, 0, 1

COUNT DATA INPUT:

Name: Kim V.

Name: Kim V.

Name: Kim V.

Name: Kim V.

[illegible]

Intersection	4017	Normal		Normal		School Close	
13 E 39 S		19-Feb-20		26-Feb-20		17-Mar	
Movement		AM	PM	AM	PM	AM	PM
NBL		350	350	316	320	217	234
NBT		157	100	154	103	89	77
NBR		25	31	11	29	5	15
SBL		58	97	56	87	32	65
SBT		258	545	267	508	185	413
SBR		95	133	124	98	83	95
EBL		75	131	81	107	59	94
EBT		253	314	247	284	189	265
EBR		18	64	37	48	16	44
WBL		60	92	75	89	37	54
WBT		459	511	451	394	363	344
WBR		60	79	51	89	24	64
		1868	2447	1870	2156	1299	1764

Difference between average of Normal Days and Actual Count Day	
AM	PM
50%	61%
52%	66%
50%	50%
63%	72%
64%	64%
61%	70%
60%	59%
67%	69%
44%	52%
68%	63%
60%	63%

		Normal		Normal		School Close	
		5-Feb-20		12-Feb-20		17-Mar	
		AM	PM	AM	PM	AM	PM
Northbound		532	481	481	452	311	326
Southbound		411	775	447	693	300	573
Eastbound		346	509	365	439	264	403
Westbouond		579	682	577	572	424	462
Intersection		1868	2447	1870	2156	1299	1764

AM	PM
51%	62%
63%	66%
66%	64%
62%	60%
60%	63%

Long Term Growth

1.00%	Growth Factor	Years	Analysis Year
	1.00	0	2020
	1.05	5	2025
	1.22	20	2040

Straight line growth assumed between 2016 and 2040

1300 East			
2017	16,000	UDOT Traffic on Utah Highways	
2040	18,000	WFRC	
growth	0.51%		

2017	86.96	16000	
2018	86.96	16087	0.54%
2019	86.96	16174	0.54%
2020	86.96	16261	0.54%
2021	86.96	16348	0.53%
2022	86.96	16435	0.53%
2023	86.96	16522	0.53%
2024	86.96	16609	0.53%
2025	86.96	16696	0.52%
2026	86.96	16783	0.52%
2027	86.96	16870	0.52%
2028	86.96	16957	0.52%
2029	86.96	17043	0.51%
2030	86.96	17130	0.51%
2031	86.96	17217	0.51%
2032	86.96	17304	0.51%
2033	86.96	17391	0.50%
2034	86.96	17478	0.50%
2035	86.96	17565	0.50%
2036	86.96	17652	0.50%
2037	86.96	17739	0.49%
2038	86.96	17826	0.49%
2039	86.96	17913	0.49%
2040	86.96	18000	0.49%
			0.51%

TRIP GENERATION

ITE 10th Ed	Size	Land Use	Trip Rate			Trips			In / Out %				New			
			AM	PM	Daily	AM	PM	Daily	AM IN	AM Out	PM IN	PM OUT	AM IN	AM Out	PM IN	PM OUT
Single Family	16	210	0.74	0.99	9.44	12	16	151	25%	75%	63%	37%	3	9	10	6
			0	0	0	0	0	0	0%	0%	0%	0%	0	0	0	0
Total						12	16	151					3	9	10	6

Trip Distribution

1300 East / Spring Lane 1.1					
	2020	Site	2020	2025	2025
AM	Existing	Traffic	Total	Growth	Total
EBL			0	0	0
EBT			0	0	0
EBR			0	0	0
WBL	120	6	126	132	138
WBT			0	0	0
WBR	40	2	42	44	46
NBL			0	0	0
NBT	303		303	333	333
NBR	43	2	45	47	49
SBL	18	1	19	20	21
SBT	305		305	336	336
SBR			0	0	0

East 221 243 1.33%
 West 0 0
 North 666 733
 South 771 848

	2020	Site	2020	2025	2025
PM	Existing	Traffic	Total	Growth	Total
EBL			0	0	0
EBT			0	0	0
EBR			0	0	0
WBL	113	4	117	124	128
WBT			0	0	0
WBR	63	1	64	69	70
NBL			0	0	0
NBT	497		497	547	547
NBR	163	6	169	179	185
SBL	60	3	63	66	69
SBT	554		554	609	609
SBR			0	0	0

East 399 439 0.97%
 West 0 0
 North 1174 1291
 South 1327 1460

Spring Lane / Tobermory Way 1.1					
	2020	Site	2020	2025	2025
AM	Existing	Traffic	Total	Growth	Total
EBL			0	0	0
EBT	57		57	63	63
EBR	4	3	7	4	7
WBL	1	0	1	1	1
WBT	148		148	163	163
WBR			0	0	0
NBL	12	8	20	13	21
NBT			0	0	0
NBR	2	1	3	2	3
SBL			0	0	0
SBT			0	0	0
SBR			0	0	0

East 208 229 5.36%
 West 221 243
 North 0 0
 South 19 21

	2020	Site	2020	2025	2025
PM	Existing	Traffic	Total	Growth	Total
EBL			0	0	0
EBT	206		206	227	227
EBR	17	9	26	19	28
WBL	2	1	3	2	3
WBT	168		168	185	185
WBR			0	0	0
NBL	8	5	13	9	14
NBT			0	0	0
NBR	2	1	3	2	3
SBL			0	0	0
SBT			0	0	0
SBR			0	0	0

East 378 416 3.97%
 West 399 439
 North 0 0
 South 29 32

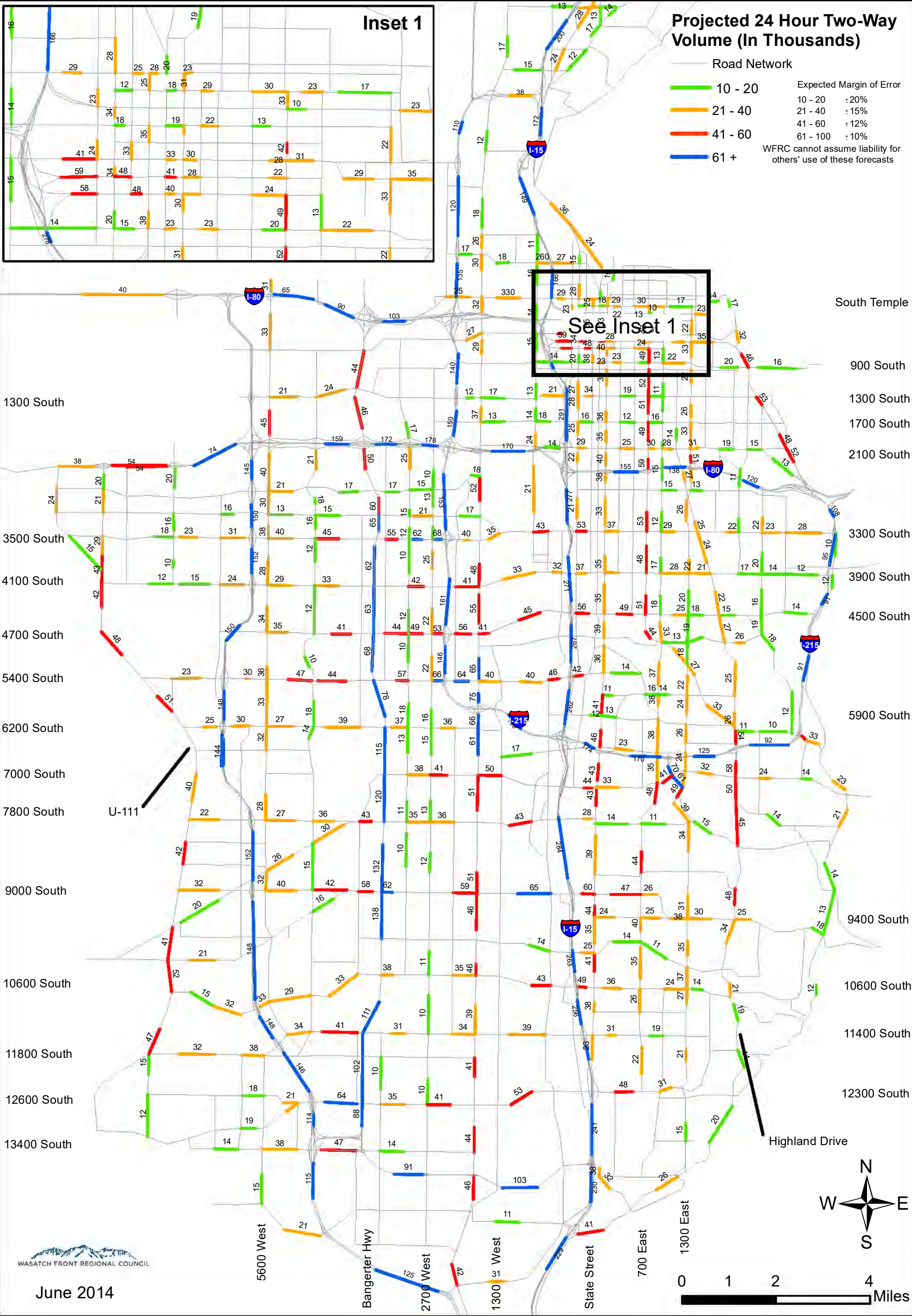
Spring Lane / Sandpiper Drive 1.1					
	2020	Site	2020	2025	2025
AM	Existing	Traffic	Total	Growth	Total
EBL	3		3	3	3
EBT	49	1	50	54	55
EBR	7		7	8	8
WBL	2		2	2	2
WBT	100	0	100	110	110
WBR	1		1	1	1
NBL	48		48	53	53
NBT	0		0	0	0
NBR	2		2	2	2
SBL	1		1	1	1
SBT	0		0	0	0
SBR	1		1	1	1

East 155 171 0.47%
 West 208 229
 North 6 7
 South 59 65

	2020	Site	2020	2025	2025
PM	Existing	Traffic	Total	Growth	Total
EBL	5		5	6	6
EBT	132	1	133	145	146
EBR	71		71	78	78
WBL	11		11	12	12
WBT	129	1	130	142	143
WBR	1		1	1	1
NBL	38		38	42	42
NBT	0		0	0	0
NBR	2		2	2	2
SBL	1		1	1	1
SBT	0		0	0	0
SBR	3		3	3	3

East 276 304 0.51%
 West 378 416
 North 10 11
 South 122 134

Projected 2040 Average Weekday Traffic Salt Lake Urbanized Area



Signal

Signal Selection

Signal ID

4098

Select

1300 East @ Spring Lane

Signal List

Signal Map

Region

--Select Region--

Metric Type

--Select a Metric--

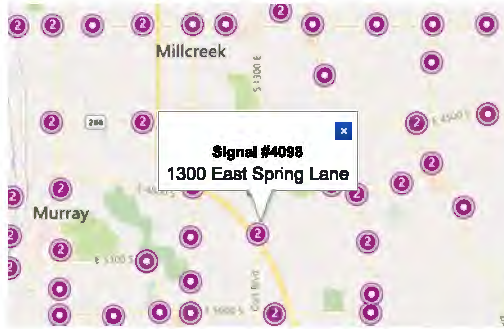


Chart Selection

Metrics List

Purdue Phase Termination
Split Monitor
Pedestrian Delay
Preemption Details
Timing And Actuation
Left Turn Gap Analysis

Split Monitor Options

Y-axis Max

Auto

Percentile Split

85

- ☒ Show Plans
- ☒ Show Ped Activity
- ☒ Show Average Split
- ☒ Show % Max Out/ForceOff
- ☒ Show Percent GapOuts
- ☒ Show Percent Skip

Date Selection

Start Date

03/24/2020

7:00

AM

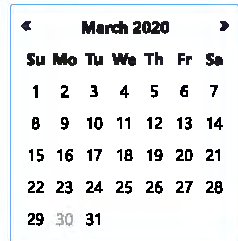
End Date

03/24/2020

9:00

AM

Reset Date



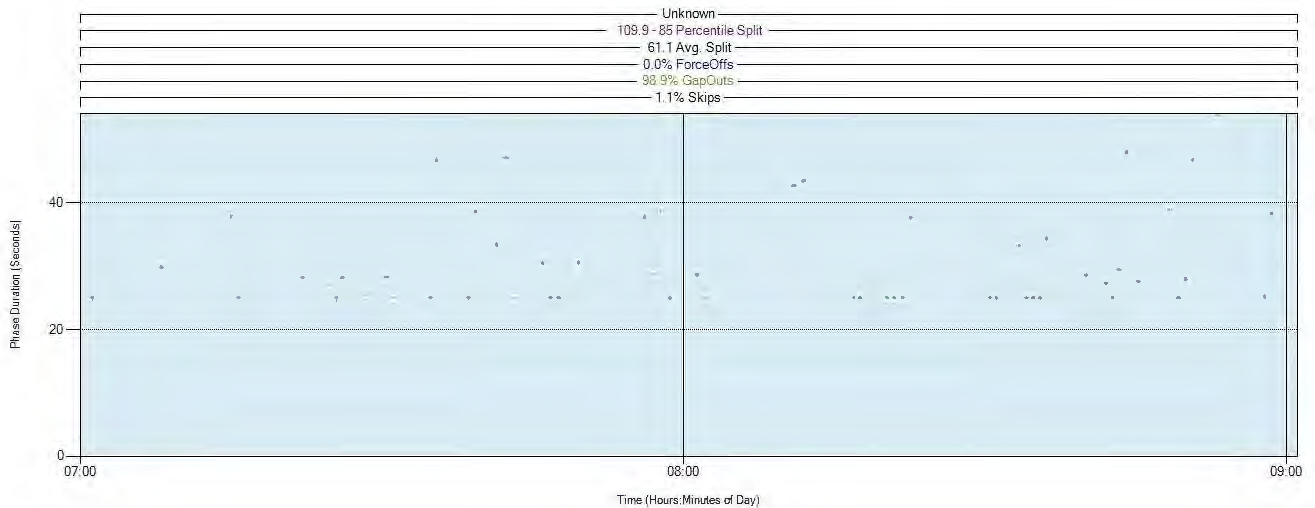
Create Chart



Split Monitor

1300 East @ Spring Lane - SIG#4098
Tuesday, March 24, 2020 7:00 AM - Tuesday, March 24, 2020 9:01 AM

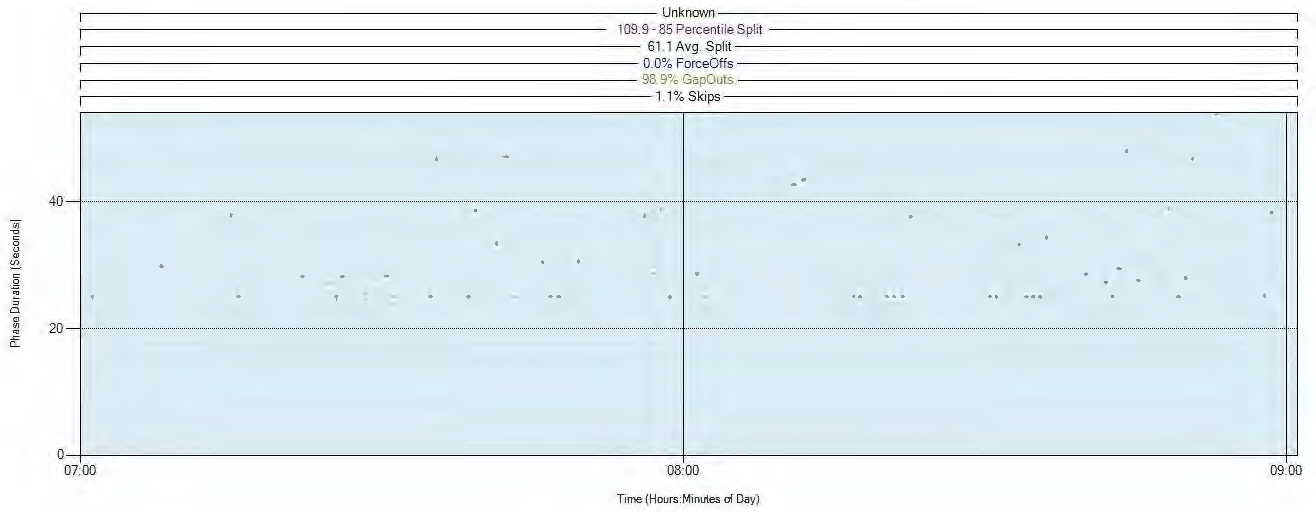
Phase 2



Split Monitor

1300 East @ Spring Lane - SIG#4098
Tuesday, March 24, 2020 7:00 AM - Tuesday, March 24, 2020 9:01 AM

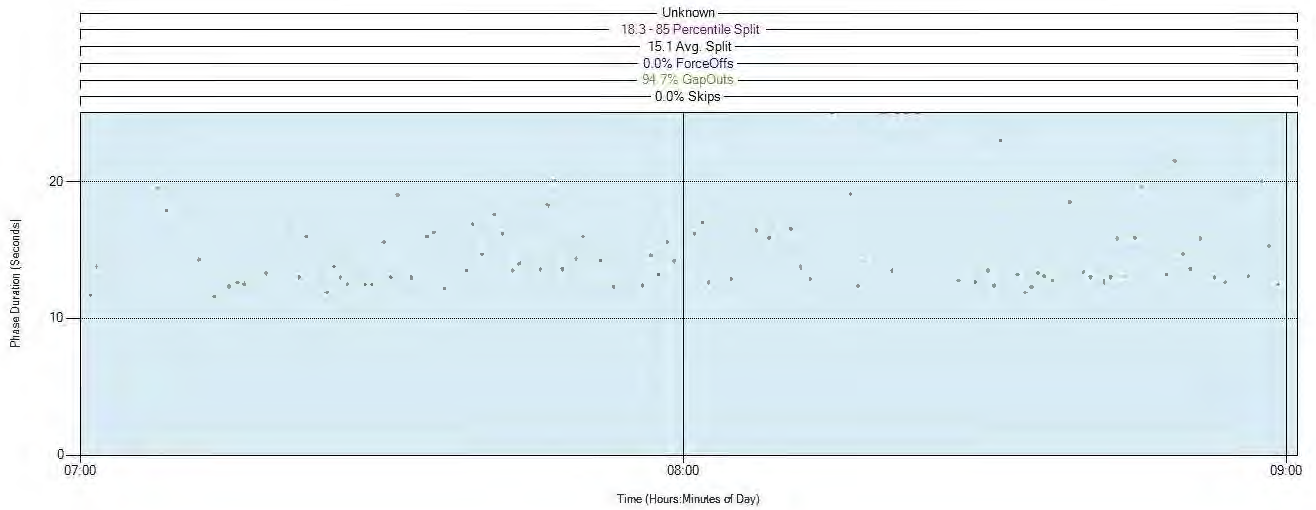
Phase 6



Split Monitor

1300 East @ Spring Lane - SIG#4098
Tuesday, March 24, 2020 7:00 AM - Tuesday, March 24, 2020 9:01 AM

Phase 8



Signal

Signal Selection

Signal ID

4098

Select

1300 East @ Spring Lane

Signal List

Signal Map

Region

--Select Region--

Metric Type

--Select a Metric--

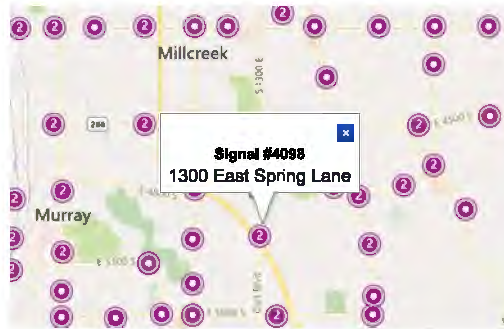


Chart Selection

Metrics List

Purdue Phase Termination
Split Monitor
Pedestrian Delay
Preemption Details
Timing And Actuation
Left Turn Gap Analysis

Split Monitor Options

Y-axis Max

Auto

Percentile Split

85

- ☒ Show Plans
- ☒ Show Ped Activity
- ☒ Show Average Split
- ☒ Show % Max Out/ForceOff
- ☒ Show Percent GapOuts
- ☒ Show Percent Skip

Date Selection

Start Date

03/24/2020

4:00

PM

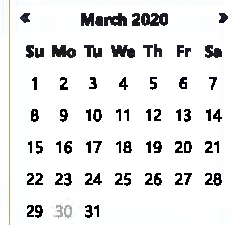
End Date

03/24/2020

6:00

PM

Reset Date



Create Chart

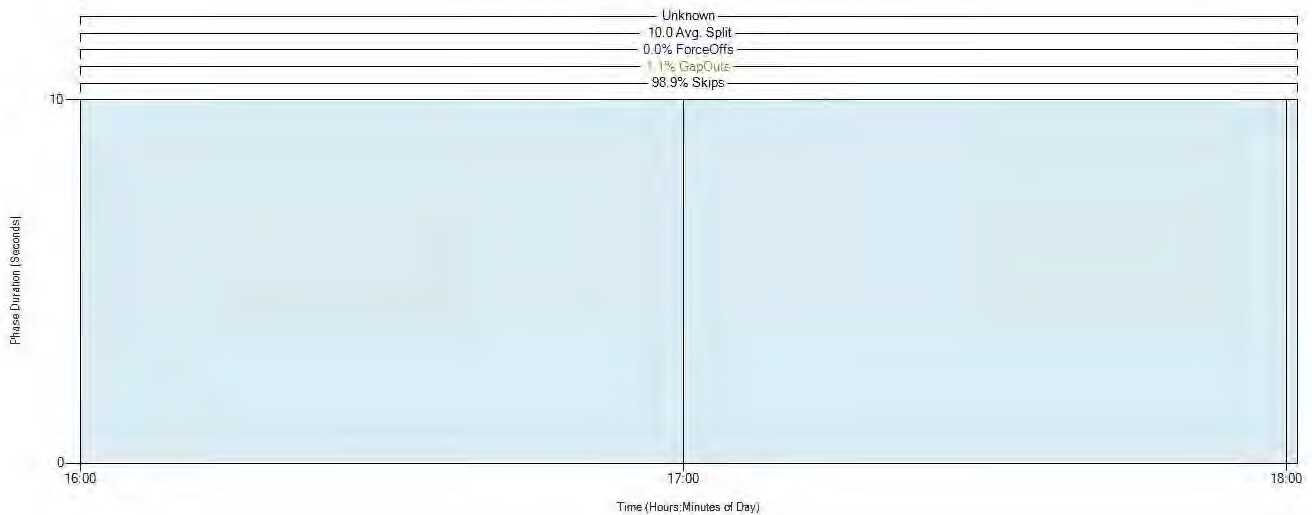
Chart Legend

Programmed Split Gap Out Max Out Force Off Unknown Termination Cause Ped Activity

Split Monitor

1300 East @ Spring Lane - SIG#4098
Tuesday, March 24, 2020 4:00 PM - Tuesday, March 24, 2020 6:01 PM

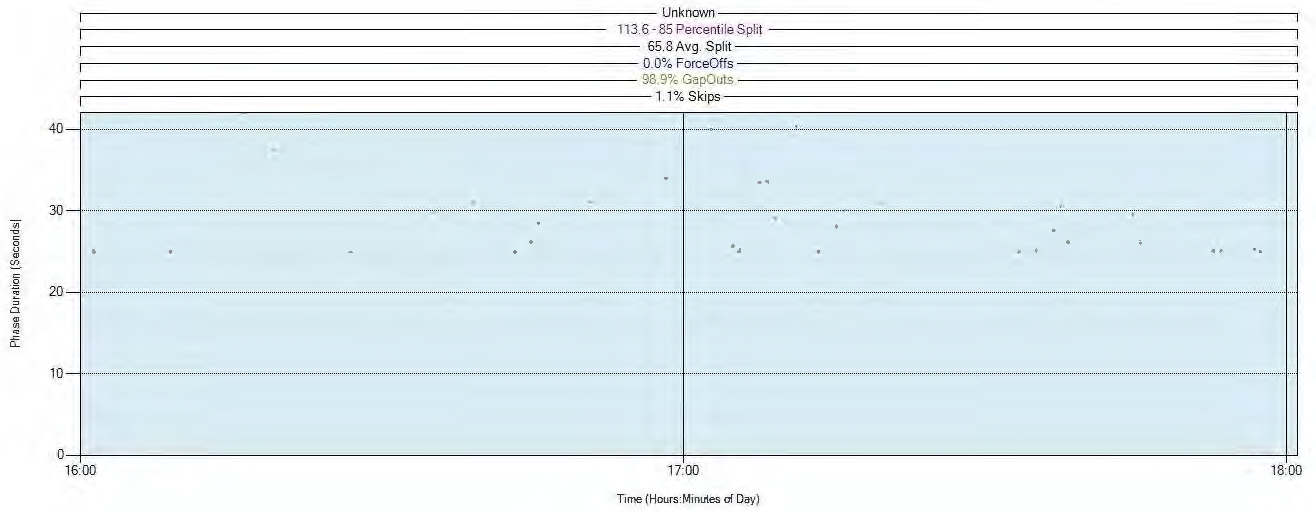
Phase 1



Split Monitor

1300 East @ Spring Lane - SIG#4098
Tuesday, March 24, 2020 4:00 PM - Tuesday, March 24, 2020 6:01 PM

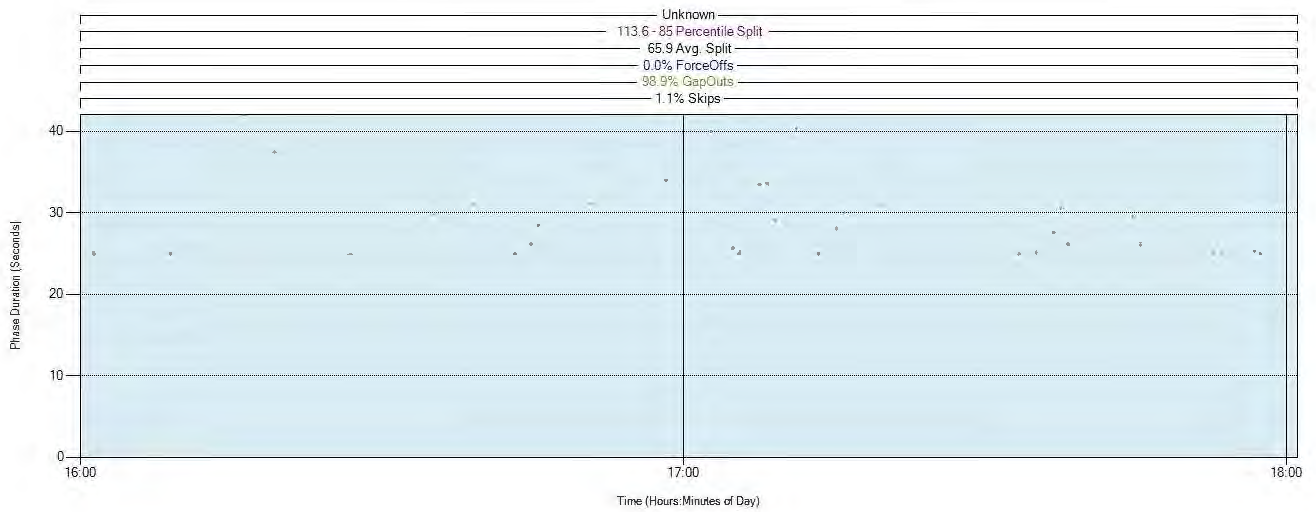
Phase 2



Split Monitor

1300 East @ Spring Lane - SIG#4098
Tuesday, March 24, 2020 4:00 PM - Tuesday, March 24, 2020 6:01 PM

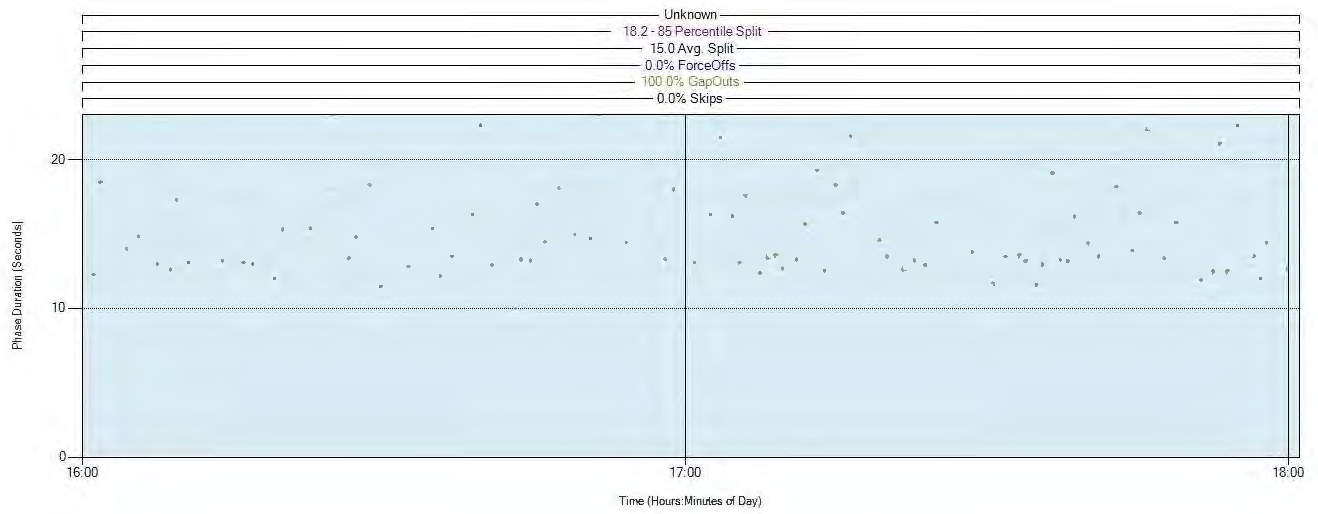
Phase 6



Split Monitor

1300 East @ Spring Lane - SIG#4098
Tuesday, March 24, 2020 4:00 PM - Tuesday, March 24, 2020 6:01 PM

Phase 8



Automated Traffic Signal Performance Measures Ver 4.2.3



Appendix B Without Site Intersection Analyses

Timings

1: 1300 East & Spring Lane

03/31/2020

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	120	40	303	18	305
Future Volume (vph)	120	40	303	18	305
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5
Total Split (s)	18.0	18.0	60.0	12.0	72.0
Total Split (%)	20.0%	20.0%	66.7%	13.3%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effect Green (s)	11.2	11.2	65.5	69.8	69.8
Actuated g/C Ratio	0.12	0.12	0.73	0.78	0.78
v/c Ratio	0.59	0.18	0.28	0.03	0.12
Control Delay	47.9	12.9	5.8	2.8	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	12.9	5.8	2.8	2.8
LOS	D	B	A	A	A
Approach Delay	39.2		5.8		2.8
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 11.1

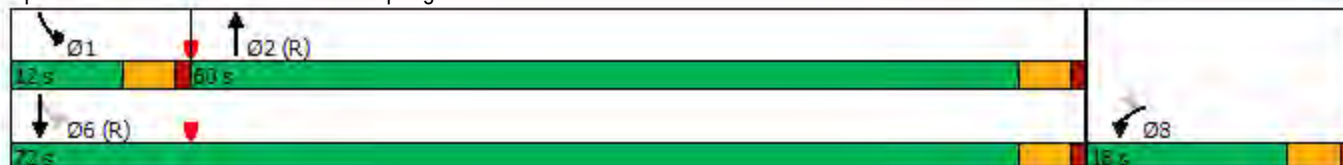
Intersection LOS: B

Intersection Capacity Utilization 32.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: 1300 East & Spring Lane



HCM 2010 TWSC 2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations	T			T	T	
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Traffic Vol, veh/h	57	4	1	148	12	2
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Future Vol, veh/h	57	4	1	148	12	2
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	-	-	0	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	62	4	1	161	13	2
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	66
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Stage 1	-	-	64
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Stage 2	-	-	163
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Critical Hdwy	-	4.12	6.22
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Critical Hdwy Stg 1	-	-	5.42
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Critical Hdwy Stg 2	-	-	5.42
---------------------	---	---	------

Follow-up Hdwy	-	2.218	3.318
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Pot Cap-1 Maneuver	-	1536	1000
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Stage 1	-	-	959
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Stage 2	-	-	866
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Platoon blocked, %	-	-	-
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Mov Cap-1 Maneuver	-	1536	1000
--------------------	---	------	------

Mov Cap-2 Maneuver	-	-	760
--------------------	---	---	-----

Stage 1	-	-	959
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Stage 2	-	-	865
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Approach	EB	WB	NB
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HCM Control Delay, s	0	0	9.7
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HCM LOS			A
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	787	-	-	1536	-
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HCM Lane V/C Ratio	0.019	-	-	0.001	-
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HCM Control Delay (s)	9.7	-	-	7.3	0
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HCM Lane LOS	A	-	-	A	A
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HCM 95th %tile Q(veh)	0.1	-	-	0	-
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HCM 2010 TWSC
3: Sandpiper Drive & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	3	49	7	2	100	1	48	0	2	1	0	1
Future Vol, veh/h	3	49	7	2	100	1	48	0	2	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	53	8	2	109	1	52	0	2	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	110	0	0	61	0	0	177	177	57	178	181	110
Stage 1	-	-	-	-	-	-	63	63	-	114	114	-
Stage 2	-	-	-	-	-	-	114	114	-	64	67	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1480	-	-	1542	-	-	785	717	1009	784	713	943
Stage 1	-	-	-	-	-	-	948	842	-	891	801	-
Stage 2	-	-	-	-	-	-	891	801	-	947	839	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1480	-	-	1542	-	-	783	715	1009	781	711	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	783	715	-	781	711	-
Stage 1	-	-	-	-	-	-	946	840	-	889	800	-
Stage 2	-	-	-	-	-	-	889	800	-	943	837	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			9.9			9.2		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	790	1480	-	-	1542	-	-	854
HCM Lane V/C Ratio	0.069	0.002	-	-	0.001	-	-	0.003
HCM Control Delay (s)	9.9	7.4	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Timings

1: 1300 East & Spring Lane

03/31/2020

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	113	63	497	60	554
Future Volume (vph)	113	63	497	60	554
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5
Total Split (s)	18.0	18.0	61.0	11.0	72.0
Total Split (%)	20.0%	20.0%	67.8%	12.2%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effect Green (s)	11.0	11.0	61.3	70.0	70.0
Actuated g/C Ratio	0.12	0.12	0.68	0.78	0.78
v/c Ratio	0.57	0.27	0.58	0.13	0.22
Control Delay	47.3	11.9	10.6	3.3	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	11.9	10.6	3.3	3.1
LOS	D	B	B	A	A
Approach Delay	34.7		10.6		3.1
Approach LOS	C		B		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 10.4

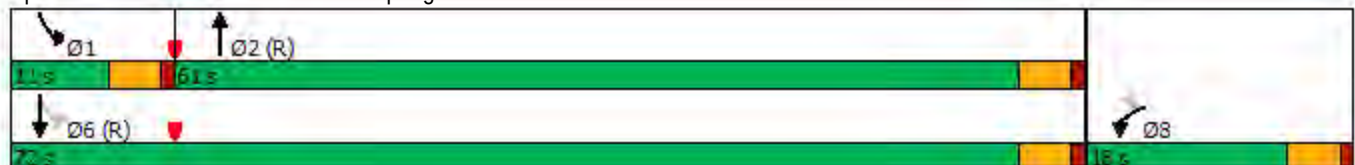
Intersection LOS: B

Intersection Capacity Utilization 57.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: 1300 East & Spring Lane



HCM 2010 TWSC 2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations	T			T	T	
---------------------	---	--	--	---	---	--

Traffic Vol, veh/h	206	17	2	168	8	2
--------------------	-----	----	---	-----	---	---

Future Vol, veh/h	206	17	2	168	8	2
-------------------	-----	----	---	-----	---	---

Conflicting Peds, #/hr	0	0	0	0	0	0
------------------------	---	---	---	---	---	---

Sign Control	Free	Free	Free	Free	Stop	Stop
--------------	------	------	------	------	------	------

RT Channelized	-	None	-	None	-	None
----------------	---	------	---	------	---	------

Storage Length	-	-	-	-	0	-
----------------	---	---	---	---	---	---

Veh in Median Storage, #	0	-	-	0	0	-
--------------------------	---	---	---	---	---	---

Grade, %	0	-	-	0	0	-
----------	---	---	---	---	---	---

Peak Hour Factor	92	92	92	92	92	92
------------------	----	----	----	----	----	----

Heavy Vehicles, %	2	2	2	2	2	2
-------------------	---	---	---	---	---	---

Mvmt Flow	224	18	2	183	9	2
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	242	0	420	233
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Stage 1	-	-	-	-	233	-
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Stage 2	-	-	-	-	187	-
---------	---	---	---	---	-----	---

Critical Hdwy	-	-	4.12	-	6.42	6.22
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Critical Hdwy Stg 1	-	-	-	-	5.42	-
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Critical Hdwy Stg 2	-	-	-	-	5.42	-
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Follow-up Hdwy	-	-	2.218	-	3.518	3.318
----------------	---	---	-------	---	-------	-------

Pot Cap-1 Maneuver	-	-	1324	-	590	806
--------------------	---	---	------	---	-----	-----

Stage 1	-	-	-	-	806	-
---------	---	---	---	---	-----	---

Stage 2	-	-	-	-	845	-
---------	---	---	---	---	-----	---

Platoon blocked, %	-	-	-	-	-	-
--------------------	---	---	---	---	---	---

Mov Cap-1 Maneuver	-	-	1324	-	589	806
--------------------	---	---	------	---	-----	-----

Mov Cap-2 Maneuver	-	-	-	-	589	-
--------------------	---	---	---	---	-----	---

Stage 1	-	-	-	-	806	-
---------	---	---	---	---	-----	---

Stage 2	-	-	-	-	843	-
---------	---	---	---	---	-----	---

Approach	EB	WB	NB
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HCM Control Delay, s	0	0.1	10.9
----------------------	---	-----	------

HCM LOS			B
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	623	-	-	1324	-
------------------	-----	---	---	------	---

HCM Lane V/C Ratio	0.017	-	-	0.002	-
--------------------	-------	---	---	-------	---

HCM Control Delay (s)	10.9	-	-	7.7	0
-----------------------	------	---	---	-----	---

HCM Lane LOS	B	-	-	A	A
--------------	---	---	---	---	---

HCM 95th %tile Q(veh)	0.1	-	-	0	-
-----------------------	-----	---	---	---	---

HCM 2010 TWSC
3: Sandpiper Drive & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	132	71	11	129	1	38	0	2	1	0	3
Future Vol, veh/h	5	132	71	11	129	1	38	0	2	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	143	77	12	140	1	41	0	2	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	141	0	0	220	0	0	358	357	182	358	395	141
Stage 1	-	-	-	-	-	-	192	192	-	165	165	-
Stage 2	-	-	-	-	-	-	166	165	-	193	230	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1442	-	-	1349	-	-	597	569	861	597	542	907
Stage 1	-	-	-	-	-	-	810	742	-	837	762	-
Stage 2	-	-	-	-	-	-	836	762	-	809	714	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1442	-	-	1349	-	-	589	561	861	589	534	907
Mov Cap-2 Maneuver	-	-	-	-	-	-	589	561	-	589	534	-
Stage 1	-	-	-	-	-	-	807	739	-	834	754	-
Stage 2	-	-	-	-	-	-	825	754	-	804	711	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.6			11.5			9.5		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	598	1442	-	-	1349	-	-	799
HCM Lane V/C Ratio	0.073	0.004	-	-	0.009	-	-	0.005
HCM Control Delay (s)	11.5	7.5	0	-	7.7	0	-	9.5
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Timings

1: 1300 East & Spring Lane

03/31/2020

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	113	63	497	60	554
Future Volume (vph)	113	63	497	60	554
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5
Total Split (s)	18.0	18.0	61.0	11.0	72.0
Total Split (%)	20.0%	20.0%	67.8%	12.2%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effect Green (s)	11.2	11.2	61.2	69.8	69.8
Actuated g/C Ratio	0.12	0.12	0.68	0.78	0.78
v/c Ratio	0.59	0.28	0.61	0.15	0.23
Control Delay	47.8	11.7	11.3	3.5	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	11.7	11.3	3.5	3.2
LOS	D	B	B	A	A
Approach Delay	34.9		11.3		3.2
Approach LOS	C		B		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 10.8

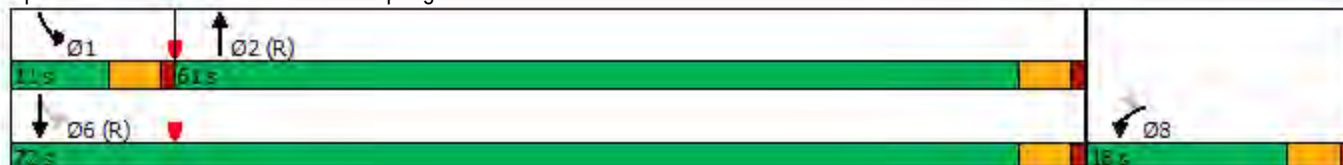
Intersection LOS: B

Intersection Capacity Utilization 59.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: 1300 East & Spring Lane



HCM 2010 TWSC

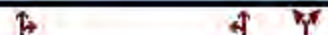
2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations 

Traffic Vol, veh/h	206	17	2	168	8	2
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Future Vol, veh/h	206	17	2	168	8	2
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	-	-	0	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	235	19	2	192	9	2
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	254	0	441	245
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Stage 1	-	-	-	-	245	-
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Stage 2	-	-	-	-	196	-
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Critical Hdwy	-	-	4.12	-	6.42	6.22
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Critical Hdwy Stg 1	-	-	-	-	5.42	-
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Critical Hdwy Stg 2	-	-	-	-	5.42	-
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Follow-up Hdwy	-	-	2.218	-	3.518	3.318
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Pot Cap-1 Maneuver	-	-	1311	-	574	794
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Stage 1	-	-	-	-	796	-
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Stage 2	-	-	-	-	837	-
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Platoon blocked, %	-	-	-	-	-	-
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Mov Cap-1 Maneuver	-	-	1311	-	573	794
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Mov Cap-2 Maneuver	-	-	-	-	573	-
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Stage 1	-	-	-	-	796	-
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Stage 2	-	-	-	-	835	-
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Approach	EB	WB	NB
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HCM Control Delay, s	0	0.1	11
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HCM LOS			B
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	607	-	-	1311	-
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HCM Lane V/C Ratio	0.019	-	-	0.002	-
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HCM Control Delay (s)	11	-	-	7.8	0
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HCM Lane LOS	B	-	-	A	A
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HCM 95th %tile Q(veh)	0.1	-	-	0	-
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HCM 2010 TWSC
3: Sandpiper Drive & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	132	71	11	129	1	38	0	2	1	0	3
Future Vol, veh/h	5	132	71	11	129	1	38	0	2	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	151	81	13	147	1	43	0	2	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	148	0	0	232	0	0	379	378	192	379	418	148
Stage 1	-	-	-	-	-	-	204	204	-	174	174	-
Stage 2	-	-	-	-	-	-	175	174	-	205	244	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1434	-	-	1336	-	-	579	554	850	579	526	899
Stage 1	-	-	-	-	-	-	798	733	-	828	755	-
Stage 2	-	-	-	-	-	-	827	755	-	797	704	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1434	-	-	1336	-	-	570	545	850	570	518	899
Mov Cap-2 Maneuver	-	-	-	-	-	-	570	545	-	570	518	-
Stage 1	-	-	-	-	-	-	794	729	-	824	747	-
Stage 2	-	-	-	-	-	-	815	747	-	791	700	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	11.7	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	580	1434	-	-	1336	-	-	786
HCM Lane V/C Ratio	0.079	0.004	-	-	0.009	-	-	0.006
HCM Control Delay (s)	11.7	7.5	0	-	7.7	0	-	9.6
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0

Timings

1: 1300 East & Spring Lane

03/31/2020

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	113	63	497	60	554
Future Volume (vph)	113	63	497	60	554
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5
Total Split (s)	18.0	18.0	61.0	11.0	72.0
Total Split (%)	20.0%	20.0%	67.8%	12.2%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effect Green (s)	11.2	11.2	61.2	69.8	69.8
Actuated g/C Ratio	0.12	0.12	0.68	0.78	0.78
v/c Ratio	0.59	0.28	0.61	0.15	0.23
Control Delay	47.8	11.7	11.3	3.5	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	11.7	11.3	3.5	3.2
LOS	D	B	B	A	A
Approach Delay	34.9		11.3		3.2
Approach LOS	C		B		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 10.8

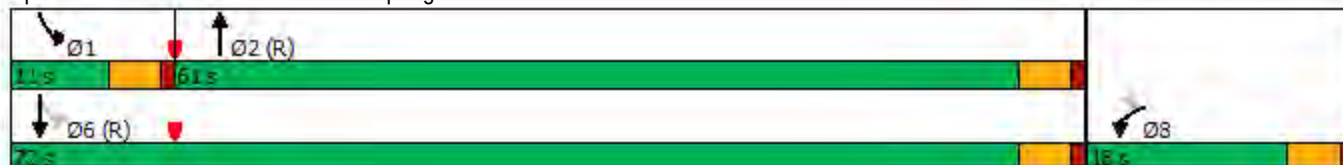
Intersection LOS: B

Intersection Capacity Utilization 59.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: 1300 East & Spring Lane



HCM 2010 TWSC 2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations	T			T	T	
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Traffic Vol, veh/h	206	17	2	168	8	2
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Future Vol, veh/h	206	17	2	168	8	2
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	-	-	0	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	235	19	2	192	9	2
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	254	0	441	245
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Stage 1	-	-	-	-	245	-
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Stage 2	-	-	-	-	196	-
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Critical Hdwy	-	-	4.12	-	6.42	6.22
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Critical Hdwy Stg 1	-	-	-	-	5.42	-
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Critical Hdwy Stg 2	-	-	-	-	5.42	-
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Follow-up Hdwy	-	-	2.218	-	3.518	3.318
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Pot Cap-1 Maneuver	-	-	1311	-	574	794
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Stage 1	-	-	-	-	796	-
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Stage 2	-	-	-	-	837	-
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Platoon blocked, %	-	-	-	-	-	-
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Mov Cap-1 Maneuver	-	-	1311	-	573	794
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Mov Cap-2 Maneuver	-	-	-	-	573	-
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Stage 1	-	-	-	-	796	-
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Stage 2	-	-	-	-	835	-
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Approach	EB	WB	NB
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HCM Control Delay, s	0	0.1	11
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HCM LOS			B
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	607	-	-	1311	-
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HCM Lane V/C Ratio	0.019	-	-	0.002	-
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HCM Control Delay (s)	11	-	-	7.8	0
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HCM Lane LOS	B	-	-	A	A
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HCM 95th %tile Q(veh)	0.1	-	-	0	-
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HCM 2010 TWSC
3: Sandpiper Drive & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	132	71	11	129	1	38	0	2	1	0	3
Future Vol, veh/h	5	132	71	11	129	1	38	0	2	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	151	81	13	147	1	43	0	2	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	148	0	0	232	0	0	379	378	192	379	418	148
Stage 1	-	-	-	-	-	-	204	204	-	174	174	-
Stage 2	-	-	-	-	-	-	175	174	-	205	244	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1434	-	-	1336	-	-	579	554	850	579	526	899
Stage 1	-	-	-	-	-	-	798	733	-	828	755	-
Stage 2	-	-	-	-	-	-	827	755	-	797	704	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1434	-	-	1336	-	-	570	545	850	570	518	899
Mov Cap-2 Maneuver	-	-	-	-	-	-	570	545	-	570	518	-
Stage 1	-	-	-	-	-	-	794	729	-	824	747	-
Stage 2	-	-	-	-	-	-	815	747	-	791	700	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	11.7	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	580	1434	-	-	1336	-	-	786
HCM Lane V/C Ratio	0.079	0.004	-	-	0.009	-	-	0.006
HCM Control Delay (s)	11.7	7.5	0	-	7.7	0	-	9.6
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0



Appendix C With Site Intersection Analyses

Timings

1: 1300 East & Spring Lane

03/31/2020

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	126	42	303	19	305
Future Volume (vph)	126	42	303	19	305
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5
Total Split (s)	18.0	18.0	60.0	12.0	72.0
Total Split (%)	20.0%	20.0%	66.7%	13.3%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effect Green (s)	11.4	11.4	65.4	69.6	69.6
Actuated g/C Ratio	0.13	0.13	0.73	0.77	0.77
v/c Ratio	0.61	0.19	0.28	0.03	0.12
Control Delay	48.9	12.7	5.8	2.8	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	12.7	5.8	2.8	2.9
LOS	D	B	A	A	A
Approach Delay	39.8		5.8		2.9
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 11.5

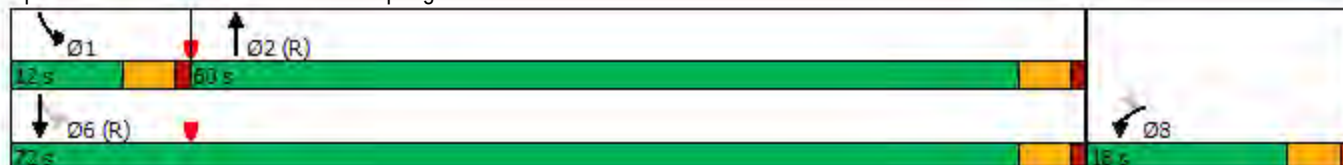
Intersection LOS: B

Intersection Capacity Utilization 33.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: 1300 East & Spring Lane



HCM 2010 TWSC

2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations	T			T	T	
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Traffic Vol, veh/h	57	7	1	148	20	3
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Future Vol, veh/h	57	7	1	148	20	3
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	-	-	0	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	62	8	1	161	22	3
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	70
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Stage 1	-	-	66
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Stage 2	-	-	163
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Critical Hdwy	-	4.12	6.22
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Critical Hdwy Stg 1	-	-	5.42
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Critical Hdwy Stg 2	-	-	5.42
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Follow-up Hdwy	-	2.218	3.318
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Pot Cap-1 Maneuver	-	1531	998
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Stage 1	-	-	957
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Stage 2	-	-	866
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Platoon blocked, %	-	-	-
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Mov Cap-1 Maneuver	-	1531	998
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Mov Cap-2 Maneuver	-	-	758
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Stage 1	-	-	957
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Stage 2	-	-	865
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Approach	EB	WB	NB
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HCM Control Delay, s	0	0	9.7
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HCM LOS			A
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	783	-	-	1531	-
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HCM Lane V/C Ratio	0.032	-	-	0.001	-
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HCM Control Delay (s)	9.7	-	-	7.4	0
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HCM Lane LOS	A	-	-	A	A
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HCM 95th %tile Q(veh)	0.1	-	-	0	-
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HCM 2010 TWSC
3: Sandpiper Drive & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	3	50	7	2	100	1	48	0	2	1	0	1
Future Vol, veh/h	3	50	7	2	100	1	48	0	2	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	54	8	2	109	1	52	0	2	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	110	0	0	62	0	0	178	178	58	179	182	110
Stage 1	-	-	-	-	-	-	64	64	-	114	114	-
Stage 2	-	-	-	-	-	-	114	114	-	65	68	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1480	-	-	1541	-	-	784	716	1008	783	712	943
Stage 1	-	-	-	-	-	-	947	842	-	891	801	-
Stage 2	-	-	-	-	-	-	891	801	-	946	838	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1480	-	-	1541	-	-	782	714	1008	780	710	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	782	714	-	780	710	-
Stage 1	-	-	-	-	-	-	945	840	-	889	800	-
Stage 2	-	-	-	-	-	-	889	800	-	942	836	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	9.9	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	789	1480	-	-	1541	-	-	854
HCM Lane V/C Ratio	0.069	0.002	-	-	0.001	-	-	0.003
HCM Control Delay (s)	9.9	7.4	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Timings

1: 1300 East & Spring Lane

03/31/2020

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	117	64	497	63	554
Future Volume (vph)	117	64	497	63	554
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5
Total Split (s)	18.0	18.0	61.0	11.0	72.0
Total Split (%)	20.0%	20.0%	67.8%	12.2%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effect Green (s)	11.2	11.2	61.2	69.8	69.8
Actuated g/C Ratio	0.12	0.12	0.68	0.78	0.78
v/c Ratio	0.58	0.27	0.59	0.14	0.22
Control Delay	47.6	11.9	10.8	3.4	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	11.9	10.8	3.4	3.1
LOS	D	B	B	A	A
Approach Delay	34.9		10.8		3.2
Approach LOS	C		B		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 10.6

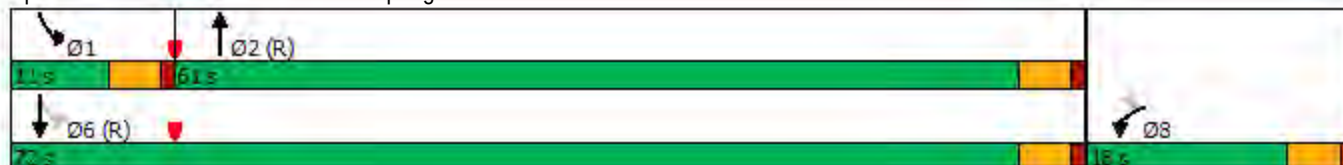
Intersection LOS: B

Intersection Capacity Utilization 58.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: 1300 East & Spring Lane



HCM 2010 TWSC 2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations

Traffic Vol, veh/h	206	26	3	168	13	3
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Future Vol, veh/h	206	26	3	168	13	3
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	-	-	0	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	224	28	3	183	14	3
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	252	0	427	238
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Stage 1	-	-	-	-	238	-
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Stage 2	-	-	-	-	189	-
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Critical Hdwy	-	-	4.12	-	6.42	6.22
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Critical Hdwy Stg 1	-	-	-	-	5.42	-
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Critical Hdwy Stg 2	-	-	-	-	5.42	-
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Follow-up Hdwy	-	-	2.218	-	3.518	3.318
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Pot Cap-1 Maneuver	-	-	1313	-	584	801
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Stage 1	-	-	-	-	802	-
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Stage 2	-	-	-	-	843	-
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Platoon blocked, %	-	-	-	-	-	-
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Mov Cap-1 Maneuver	-	-	1313	-	582	801
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Mov Cap-2 Maneuver	-	-	-	-	582	-
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Stage 1	-	-	-	-	802	-
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Stage 2	-	-	-	-	840	-
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Approach	EB	WB	NB
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HCM Control Delay, s	0	0.1	11
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HCM LOS			B
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	613	-	-	1313	-
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HCM Lane V/C Ratio	0.028	-	-	0.002	-
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HCM Control Delay (s)	11	-	-	7.7	0
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HCM Lane LOS	B	-	-	A	A
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HCM 95th %tile Q(veh)	0.1	-	-	0	-
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HCM 2010 TWSC
3: Sandpiper Drive & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	133	71	11	130	1	38	0	2	1	0	3
Future Vol, veh/h	5	133	71	11	130	1	38	0	2	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	145	77	12	141	1	41	0	2	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	142	0	0	222	0	0	361	360	184	361	398	142
Stage 1	-	-	-	-	-	-	194	194	-	166	166	-
Stage 2	-	-	-	-	-	-	167	166	-	195	232	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1441	-	-	1347	-	-	595	567	858	595	540	906
Stage 1	-	-	-	-	-	-	808	740	-	836	761	-
Stage 2	-	-	-	-	-	-	835	761	-	807	713	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1441	-	-	1347	-	-	587	559	858	587	532	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	587	559	-	587	532	-
Stage 1	-	-	-	-	-	-	805	737	-	833	753	-
Stage 2	-	-	-	-	-	-	824	753	-	802	710	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	11.5	9.5
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	596	1441	-	-	1347	-	-	798
HCM Lane V/C Ratio	0.073	0.004	-	-	0.009	-	-	0.005
HCM Control Delay (s)	11.5	7.5	0	-	7.7	0	-	9.5
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Timings

1: 1300 East & Spring Lane

03/31/2020

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	138	46	333	21	336
Future Volume (vph)	138	46	333	21	336
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5
Total Split (s)	18.0	18.0	60.0	12.0	72.0
Total Split (%)	20.0%	20.0%	66.7%	13.3%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effect Green (s)	11.7	11.7	65.0	69.3	69.3
Actuated g/C Ratio	0.13	0.13	0.72	0.77	0.77
v/c Ratio	0.65	0.20	0.31	0.03	0.13
Control Delay	50.6	12.2	6.2	2.9	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	12.2	6.2	2.9	3.0
LOS	D	B	A	A	A
Approach Delay	41.0		6.2		3.0
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 11.9

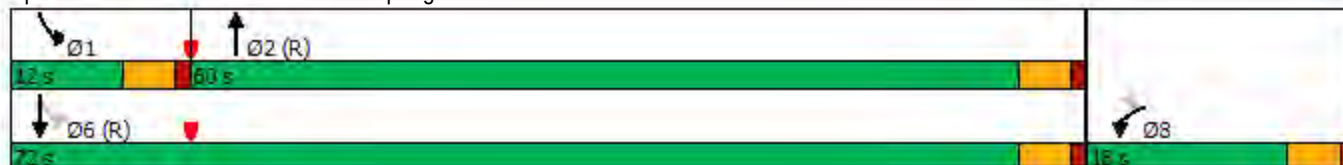
Intersection LOS: B

Intersection Capacity Utilization 35.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: 1300 East & Spring Lane



HCM 2010 TWSC 2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations	T			T	T	
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Traffic Vol, veh/h	63	7	1	163	21	3
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Future Vol, veh/h	63	7	1	163	21	3
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	-	-	0	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	68	8	1	177	23	3
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	76
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Stage 1	-	-	72
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Stage 2	-	-	179
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Critical Hdwy	-	4.12	6.22
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Critical Hdwy Stg 1	-	-	5.42
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Critical Hdwy Stg 2	-	-	5.42
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Follow-up Hdwy	-	2.218	3.318
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Pot Cap-1 Maneuver	-	1523	990
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Stage 1	-	-	951
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Stage 2	-	-	852
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Platoon blocked, %	-	-	-
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Mov Cap-1 Maneuver	-	1523	990
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Mov Cap-2 Maneuver	-	-	737
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Stage 1	-	-	951
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Stage 2	-	-	851
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Approach	EB	WB	NB
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HCM Control Delay, s	0	0	9.9
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HCM LOS			A
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	761	-	-	1523	-
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HCM Lane V/C Ratio	0.034	-	-	0.001	-
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HCM Control Delay (s)	9.9	-	-	7.4	0
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HCM Lane LOS	A	-	-	A	A
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HCM 95th %tile Q(veh)	0.1	-	-	0	-
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HCM 2010 TWSC

3: Sandpiper Drive & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	3	55	8	2	110	1	53	0	2	1	0	1
Future Vol, veh/h	3	55	8	2	110	1	53	0	2	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	60	9	2	120	1	58	0	2	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	121	0	0	69	0	0	196	196	65	197	200	121
Stage 1	-	-	-	-	-	-	71	71	-	125	125	-
Stage 2	-	-	-	-	-	-	125	125	-	72	75	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1467	-	-	1532	-	-	763	699	999	762	696	930
Stage 1	-	-	-	-	-	-	939	836	-	879	792	-
Stage 2	-	-	-	-	-	-	879	792	-	938	833	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1467	-	-	1532	-	-	761	697	999	759	694	930
Mov Cap-2 Maneuver	-	-	-	-	-	-	761	697	-	759	694	-
Stage 1	-	-	-	-	-	-	937	834	-	877	791	-
Stage 2	-	-	-	-	-	-	877	791	-	934	831	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.1			10.1			9.3		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	768	1467	-	-	1532	-	-	836
HCM Lane V/C Ratio	0.078	0.002	-	-	0.001	-	-	0.003
HCM Control Delay (s)	10.1	7.5	0	-	7.4	0	-	9.3
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0

Timings

1: 1300 East & Spring Lane

03/31/2020

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	128	70	547	69	609
Future Volume (vph)	128	70	547	69	609
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5
Total Split (s)	18.0	18.0	61.0	11.0	72.0
Total Split (%)	20.0%	20.0%	67.8%	12.2%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effect Green (s)	11.5	11.5	60.9	69.5	69.5
Actuated g/C Ratio	0.13	0.13	0.68	0.77	0.77
v/c Ratio	0.62	0.28	0.65	0.18	0.24
Control Delay	49.1	11.5	12.3	3.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	11.5	12.3	3.7	3.3
LOS	D	B	B	A	A
Approach Delay	35.8		12.3		3.3
Approach LOS	D		B		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 11.4

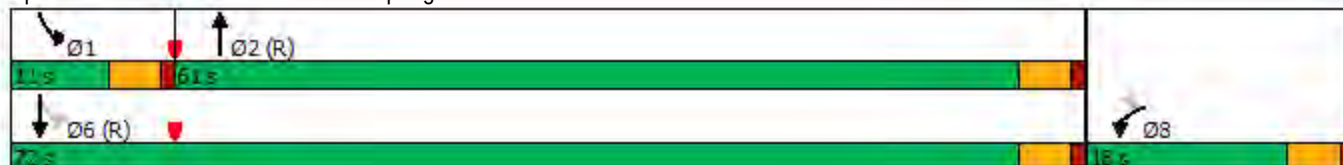
Intersection LOS: B

Intersection Capacity Utilization 62.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: 1300 East & Spring Lane



HCM 2010 TWSC 2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations	T			T	T	
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Traffic Vol, veh/h	227	28	3	185	14	3
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Future Vol, veh/h	227	28	3	185	14	3
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	-	-	0	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	247	30	3	201	15	3
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	277	0	469	262
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Stage 1	-	-	-	-	262	-
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Stage 2	-	-	-	-	207	-
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Critical Hdwy	-	-	4.12	-	6.42	6.22
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Critical Hdwy Stg 1	-	-	-	-	5.42	-
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Critical Hdwy Stg 2	-	-	-	-	5.42	-
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Follow-up Hdwy	-	-	2.218	-	3.518	3.318
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Pot Cap-1 Maneuver	-	-	1286	-	553	777
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Stage 1	-	-	-	-	782	-
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Stage 2	-	-	-	-	828	-
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Platoon blocked, %	-	-	-	-	-	-
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Mov Cap-1 Maneuver	-	-	1286	-	551	777
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Mov Cap-2 Maneuver	-	-	-	-	551	-
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Stage 1	-	-	-	-	782	-
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Stage 2	-	-	-	-	826	-
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Approach	EB	WB	NB
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HCM Control Delay, s	0	0.1	11.4
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HCM LOS			B
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	581	-	-	1286	-
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HCM Lane V/C Ratio	0.032	-	-	0.003	-
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HCM Control Delay (s)	11.4	-	-	7.8	0
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HCM Lane LOS	B	-	-	A	A
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HCM 95th %tile Q(veh)	0.1	-	-	0	-
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HCM 2010 TWSC

3: Sandpiper Drive & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	6	146	78	12	143	1	42	0	2	1	0	3
Future Vol, veh/h	6	146	78	12	143	1	42	0	2	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	159	85	13	155	1	46	0	2	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	244	0	0	399	398	202	399	440	156
Stage 1	-	-	-	-	-	-	216	216	-	182	182	-
Stage 2	-	-	-	-	-	-	183	182	-	217	258	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1424	-	-	1322	-	-	561	540	839	561	511	890
Stage 1	-	-	-	-	-	-	786	724	-	820	749	-
Stage 2	-	-	-	-	-	-	819	749	-	785	694	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1424	-	-	1322	-	-	551	531	839	553	502	890
Mov Cap-2 Maneuver	-	-	-	-	-	-	551	531	-	553	502	-
Stage 1	-	-	-	-	-	-	781	720	-	815	741	-
Stage 2	-	-	-	-	-	-	807	741	-	778	690	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	12	9.7
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	560	1424	-	-	1322	-	-	772
HCM Lane V/C Ratio	0.085	0.005	-	-	0.01	-	-	0.006
HCM Control Delay (s)	12	7.5	0	-	7.8	0	-	9.7
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0

HCM 2010 TWSC

2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.9

Movement

	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	63	7	1	163	21	3
Future Vol, veh/h	63	7	1	163	21	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	8	1	177	23	3

Major/Minor

	Major1	Major2	Minor1
Conflicting Flow All	0	0	76
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1523
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1523
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	EB	WB	NB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	737	990	-	-	1523	-
HCM Lane V/C Ratio	0.031	0.003	-	-	0.001	-
HCM Control Delay (s)	10	8.6	-	-	7.4	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

HCM 2010 TWSC
2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
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Traffic Vol, veh/h	227	28	3	185	14	3
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Future Vol, veh/h	227	28	3	185	14	3
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	-	-	0	0
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	247	30	3	201	15	3
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	277	0	469	262
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Stage 1	-	-	-	-	262	-
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Stage 2	-	-	-	-	207	-
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Critical Hdwy	-	-	4.12	-	6.42	6.22
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Critical Hdwy Stg 1	-	-	-	-	5.42	-
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Critical Hdwy Stg 2	-	-	-	-	5.42	-
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Follow-up Hdwy	-	-	2.218	-	3.518	3.318
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Pot Cap-1 Maneuver	-	-	1286	-	553	777
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Stage 1	-	-	-	-	782	-
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Stage 2	-	-	-	-	828	-
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Platoon blocked, %	-	-	-	-	-	-
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Mov Cap-1 Maneuver	-	-	1286	-	551	777
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Mov Cap-2 Maneuver	-	-	-	-	551	-
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Stage 1	-	-	-	-	782	-
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Stage 2	-	-	-	-	826	-
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Approach	EB	WB	NB
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HCM Control Delay, s	0	0.1	11.3
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HCM LOS			B
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Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
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Capacity (veh/h)	551	777	-	-	1286	-
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HCM Lane V/C Ratio	0.028	0.004	-	-	0.003	-
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HCM Control Delay (s)	11.7	9.7	-	-	7.8	0
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HCM Lane LOS	B	A	-	-	A	A
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HCM 95th %tile Q(veh)	0.1	0	-	-	0	-
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HCM 2010 TWSC

2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.9

Movement

	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	63	7	1	163	21	3
Future Vol, veh/h	63	7	1	163	21	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	8	1	177	23	3

Major/Minor

	Major1	Major2	Minor1
Conflicting Flow All	0	0	76
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1523
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1523
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	EB	WB	NB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt

	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	761	-	-	1523	-
HCM Lane V/C Ratio	0.034	-	-	0.001	-
HCM Control Delay (s)	9.9	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 TWSC

2: Tobermory Way & Spring Lane

03/31/2020

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations	↔		↔	↔	↔	↔
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Traffic Vol, veh/h	227	28	3	185	14	3
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Future Vol, veh/h	227	28	3	185	14	3
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	0	-	0	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	247	30	3	201	15	3
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Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	277
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Stage 1	-	-	262
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Stage 2	-	-	207
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Critical Hdwy	-	4.12	6.22
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Critical Hdwy Stg 1	-	-	5.42
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Critical Hdwy Stg 2	-	-	5.42
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Follow-up Hdwy	-	2.218	3.318
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Pot Cap-1 Maneuver	-	1286	777
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Stage 1	-	-	782
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Stage 2	-	-	828
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Platoon blocked, %	-	-	-
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Mov Cap-1 Maneuver	-	1286	777
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Mov Cap-2 Maneuver	-	-	552
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Stage 1	-	-	782
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Stage 2	-	-	826
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Approach	EB	WB	NB
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HCM Control Delay, s	0	0.1	11.4
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HCM LOS			B
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	582	-	-	1286	-
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HCM Lane V/C Ratio	0.032	-	-	0.003	-
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HCM Control Delay (s)	11.4	-	-	7.8	-
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HCM Lane LOS	B	-	-	A	-
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HCM 95th %tile Q(veh)	0.1	-	-	0	-
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