

TRAFFIC IMPACT ANALYSIS

Harvest Crossing Filing 2

Prepared for:

Jerry B. Richmond III
Integrity Land Ventures, LLC
7200 S Alton Way
Centennial, CO 80112

Prepared by:



Felsburg Holt & Ullevig
6400 S Fiddlers Green Circle, Suite 1500
Greenwood Village, CO 80111
303.721.1440

Project Manager: Paul F. Brown, PE, PTOE
Principal-in-Charge: Christopher J. Fasching, PE, PTOE

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I. INTRODUCTION

Harvest Crossing is a planned development encompassing approximately 200 acres east of E-470 in Aurora, Colorado. The site is located in the southeast quadrant of the Harvest Rd / E. Jewell Ave intersection and is directly east of the Murphy Creek East development. The development stretches east to the future Kewaunee Street and south to the future Yale Ave. **Figure 1** shows the site location in relation to major roadways and developments in the area.

The Harvest Crossing development is anticipated to be constructed in several phases. Filing 1 (residential) was approved and is currently under construction with completion anticipated in late 2024. It is located between Pacific Ave and Warren Ave roughly representing the middle third of the site in the north-south direction. Filing 2 (commercial and additional residential) is proposed to be completed in 2026 (after Filing 1) and will be located between Jewell Ave and Pacific Ave immediately north of Filing 1. Filing 3 (residential) is expected to follow as the final phase based on market conditions and includes the area south of Filing 1 between Warren Avenue and Yale Ave.

The proposed Harvest Crossing land uses include:

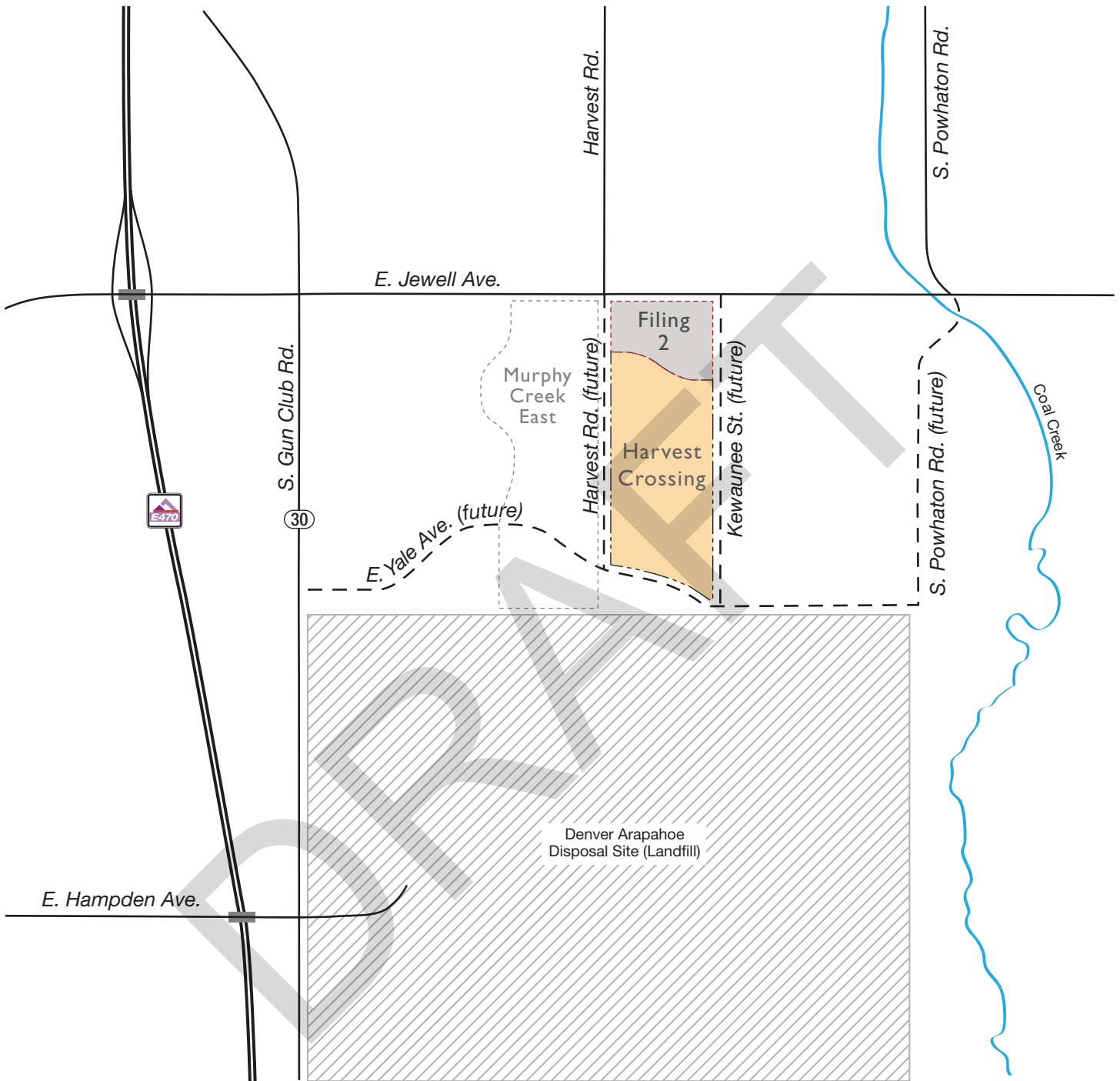
- The previously approved 145 single family dwelling units (DU) in Filing 1
- Filing 2, the subject of this study, currently proposed to include 260 single family DU and 76,500 square feet of commercial
- An additional 449 single family DUs in Filing 3

Hence, the total buildout of Harvest Crossing will include approximately 854 DUs and 76,500 square feet of commercial space. These land uses are anticipated maximums and represent a conservative analysis.

Several access points onto the adjacent transportation network will be provided in the short-term. Filing 1 is expected to add a fourth leg to the Pacific Ave / Harvest Rd and Warren Ave / Harvest Rd intersections. These will align with roadways constructed by Murphy Creek East west of Harvest Rd. Filing 2 is expected to add additional site access points to support the remaining development, including two access points onto E. Jewell Ave, two access points on Kewaunee St between E. Pacific Ave and E. Jewell Ave, and one access on Harvest Rd between E. Jewell and E. Pacific Ave. Filing 3 is anticipated to add additional site access points to accommodate the remaining development in the future. **Figure 2** shows the Filing 2 site plan and access points.

Two future planning horizons have been evaluated for the site:

- **Short-Term Future (Filing 2):** The Year 2026 time-period (3-year horizon) was chosen to assess traffic related to the proposed Filing 2 development. It includes full buildout of Filing 1 as a background condition.
- **Long-Term Future:** Year 2040 was selected for long-term analyses (20-year horizon), consistent with the current long-term planning timeframe used in the 2018 Refresh of the Northeast Area Transportation Study (NEATS). The 2040 time-period was chosen to determine the effects of proposed project-related traffic for the overall buildout of the site (854 DUs plus 76,500 square feet commercial).



II. EXISTING CONDITIONS

The existing roadway network and local land uses near the proposed Harvest Crossing site are described below.

II.A. Surrounding Land Use

The area around the Harvest Crossing Filing 2 development is mostly vacant. The site is located approximately 1.5 miles east of E-470 along Jewell Ave. The anticipated Murphy Creek East development is located to the west, and the Denver Arapahoe Disposal Site (DADS) is located directly south of the site. The northern portion of the Murphy Creek East development (generally from Jewell Ave to Warren Ave north-south and between Harvest Rd and S. Flat Rock Trail east-west) has started construction and model homes are open. The roadway network required to support Harvest Crossing Filing 1 is also under construction, and site grading has begun.

II.B. Other Relevant Studies

Previous traffic analyses were identified as relevant for this evaluation:

- Felsburg Holt & Ullevig (FHU) had previously evaluated the site location for residential development in the *Villages at Murphy Creek Traffic Impact Analysis Report* dated December 2005.
- The *Murphy Creek East Traffic Impact Study* (dated March 2019) analyzed the development site directly to the west of the Harvest Crossing site. Given the lack of existing roadway network and nearby development, the Murphy Creek East study was used to provide background traffic and roadway geometry in the Harvest Crossing area, particularly along Harvest Rd.
- The *Harvest Crossing Traffic Impact Analysis* (dated August 2021) serves as the master traffic study for Harvest Crossing and also evaluated Filing 1 of the proposed development.

II.C. Transportation Network

The Harvest Crossing development site will be located southeast of the E. Jewell Ave and Harvest Rd intersection. The following roadways exist in the area today.

E. Jewell Avenue

E. Jewell Ave, generally an east-west two-lane arterial east of E-470, is the only existing roadway adjacent to the site. A 1-mile segment of E. Jewell Ave between Gun Club Rd and Harvest Rd has been improved to a 6-lane section (in accordance with NEATS), but it is currently striped as a two-lane facility east of S. Flat Rock Trail due to construction in Murphy Creek East. It remains a 2-lane roadway from that point east past the project site to Powhatan Rd. The posted speed limit is 40 miles per hour (mph).

Harvest Road

Between E. Mississippi Ave and E. Jewell Ave (north of Harvest Crossing), Harvest Rd has been constructed as a 2-lane roadway. In accordance with NEATS, this will be expanded to a 6-lane major arterial in the future. Harvest Rd is proposed as a 2-lane collector (with turn lanes) between E. Jewell Ave and E. Yale Ave (adjacent to Harvest Crossing). It is currently under construction between E. Jewell Ave and Warren Ave to provide access to Filing 1 and is planned to be extended south to Yale Ave as part of Filing 3.

II.D. Traffic Volumes

The project team collected intersection and daily counts along E. Jewell Ave in February 2020. The daily count (conducted adjacent to the site / east of Harvest Rd) indicated that E. Jewell Ave is carrying approximately 2,225 vehicles per day on a typical commuter day. At the request of City of Aurora staff, three years of background growth has been applied to these volumes using the 3.6 percent per year growth rate documented in the master traffic impact study. Hence, the volumes were increased by 11.1 percent to approximate current conditions, resulting in a daily volume of 2,475 vehicles per day along E. Jewell Ave.

The intersection traffic count was collected at the existing E. Jewell Ave / Harvest Rd intersection in 15-minute increments during the hours of 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. The counts were compiled and evaluated to determine peak hours. The morning peak hour was determined to be 6:45 AM to 7:45 AM, and the evening peak hour was determined to be 4:30 PM to 5:30 PM. These peak hour volumes have also been increased based on three years of background growth.

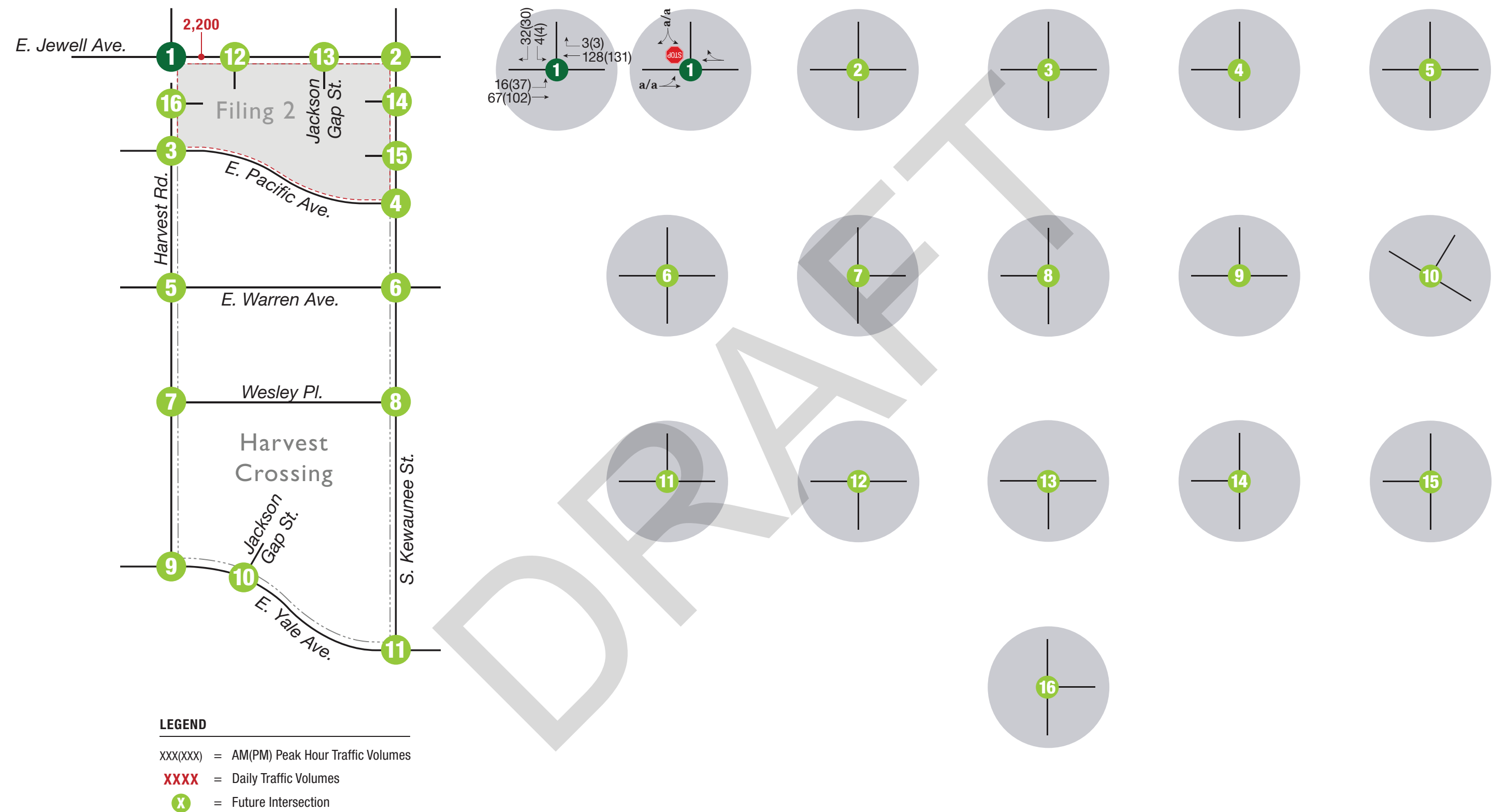
Figure 3 shows the existing traffic volumes, and **Appendix A** includes the traffic count data.

II.E. Traffic Operations

Existing operational conditions were analyzed at the existing E. Jewell Ave / Harvest Rd intersection near the project site. The analysis is based on procedures documented in the *Highway Capacity Manual*. This analysis procedure provides a Level of Service (LOS), a qualitative measure based on the average delay per vehicle at a controlled intersection described by a letter ranging from “A” to “F.” LOS A represents minimal delay, while LOS F represents excessive congestion and delay. The City uses a target LOS D (indicative of an average of 35 seconds or 55 seconds [or less] of delay for vehicles passing through an unsignalized intersection or a signalized intersection, respectively) during the peak hours to determine acceptable vehicular delays. The signalized intersection analysis reports a LOS rating for the entire intersection, while the unsignalized analysis reports a movement LOS for left-turn movements and stop-controlled movements. Trafficware’s Synchro traffic analysis software (Version 11.1) was used to perform the LOS calculations.

The existing conditions analysis evaluated the current intersection control. The individual movements at the unsignalized E. Jewell Ave with Harvest Rd intersection currently operate at LOS A, as shown in **Appendix B. Figure 3** shows existing traffic operations.

KEY MAP



III. FUTURE ROADWAY NETWORK

As noted previously, the existing roadway network in the project area is limited. The conceptual future roadway network in the Harvest Crossing area was evaluated in the master traffic impact analysis. It examined the NEATS Refresh Study and other Aurora planning documents and traffic impact studies for nearby developments. Since the Murphy Creek East study was the most recent effort, the master traffic impact analysis maintained consistency with that report. The following sections detail internal Harvest Crossing roadways and site-related intersections (including any changes since the master traffic impact analysis).

As noted previously, Harvest Rd is anticipated to be constructed from E. Jewell Ave south to E. Yale Ave as a 2-lane collector. The northerly portion (from E. Jewell Ave to E. Warren Ave) is currently under construction and will be completed this year to provide access to Harvest Crossing Filing 1. Internal roadways needed to support Filing 1 are also under construction, as is Kewaunee St between Warren Ave and Pacific Ave.

III.A. Filing 2

The development of Harvest Crossing Filing 2 will include a supporting roadway network that was not evaluated in detail in the master traffic impact analysis. The site plan presented on **Figure 2** shows the roadway layout. The proposed Filing 2 roadway network includes the following boundary facilities:

- E. Pacific Ave is being constructed in Filing 1 and forms the southern boundary of Filing 2. No changes are proposed as part of Filing 2.
- Kewaunee St is being constructed between E. Pacific Ave and E. Warren Ave as part of Filing 1. Filing 2 will extend Kewaunee St north to E. Jewell Ave to form the eastern Filing 2 boundary, in accordance with the master traffic impact analysis.
- E. Jewell Ave exists today and forms the northern boundary of Filing 2. It will be widened to the south to complete the southerly half of the ultimate 6-lane cross-section in accordance with the master traffic impact analysis. The northerly half will be constructed by others.
- Harvest Rd is being constructed between E. Warren Ave and E. Jewell Ave in Filing 1 and forms the western boundary of Filing 2. No changes are proposed as part of Filing 2.

In addition, the following internal roadways are proposed:

- Road A is a local road that will extend east-west from Harvest Rd to Kewaunee St.
- Road B is a local road that will extend east-west from Road C (Irvington St) to Kewaunee St.
- Road C is the local road extension of Irvington St in Filing 1 north through Filing 2 to E. Jewell Ave.
- Road E is the local road extension of Jackson Gap St in Filing 1 north through Filing 2 to E. Jewell Ave. This connection was anticipated in the master traffic impact analysis.

Note: The master traffic impact analysis assumed a $\frac{3}{4}$ -movement access along E. Jewell Ave at Jackson Gap St, between Harvest Rd and Kewaunee St. Based on discussions with City staff since completion of the master traffic impact analysis, Filing 2 is now planned to have Road E (Jackson Gap St) meet E. Jewell Ave at a right-in / right-out intersection. A second full-movement access is proposed at Road C, approximately 660 feet east of Harvest Rd. This intersection may be signalized in the future if signal warrants are met.

III.B. Filing 3

Filing 3 of the development is expected to extend Harvest Rd and Kewaunee St south to Yale Ave and complete Yale Ave in accordance with the master traffic impact analysis. These connections are included in the Filing 2 long-term future analysis based on the assumptions in the master traffic impact analysis.

IV. BACKGROUND TRAFFIC CONDITIONS

Background traffic has been estimated for the short-term and long-term timeframes and accounts for existing traffic already using the transportation system, expected growth in the study area, and the addition of anticipated trips from surrounding developments. It does not include traffic generated from the Harvest Crossing Filing 2 development.

IV.A. Short-Term Background Projections and Operations

The short-term background traffic reflects traffic growth to the year 2026, which is the year that Filing 2 of the Harvest Crossing development is anticipated to be completed. In general, traffic volumes at Harvest Rd and E. Jewell Ave were estimated to increase by approximately 11 percent (3.6 percent per year) over existing conditions. In addition to the projected growth, site generated trips from the Murphy Creek developments, as well as the Harvest Crossing Filing 1 development, were added to the site. Harvest Crossing Filing 1 volumes have been distributed to the network in accordance with the short-term distribution in the approved Harvest Crossing master traffic impact analysis. **Figure 4** shows the final short-term background volumes.

The short-term background scenario would add several intersections to the study area, in addition to the existing Jewell Ave & Harvest Rd intersection. The anticipated roadway geometry used at each intersection is based on the master traffic impact analysis and is described as follows:

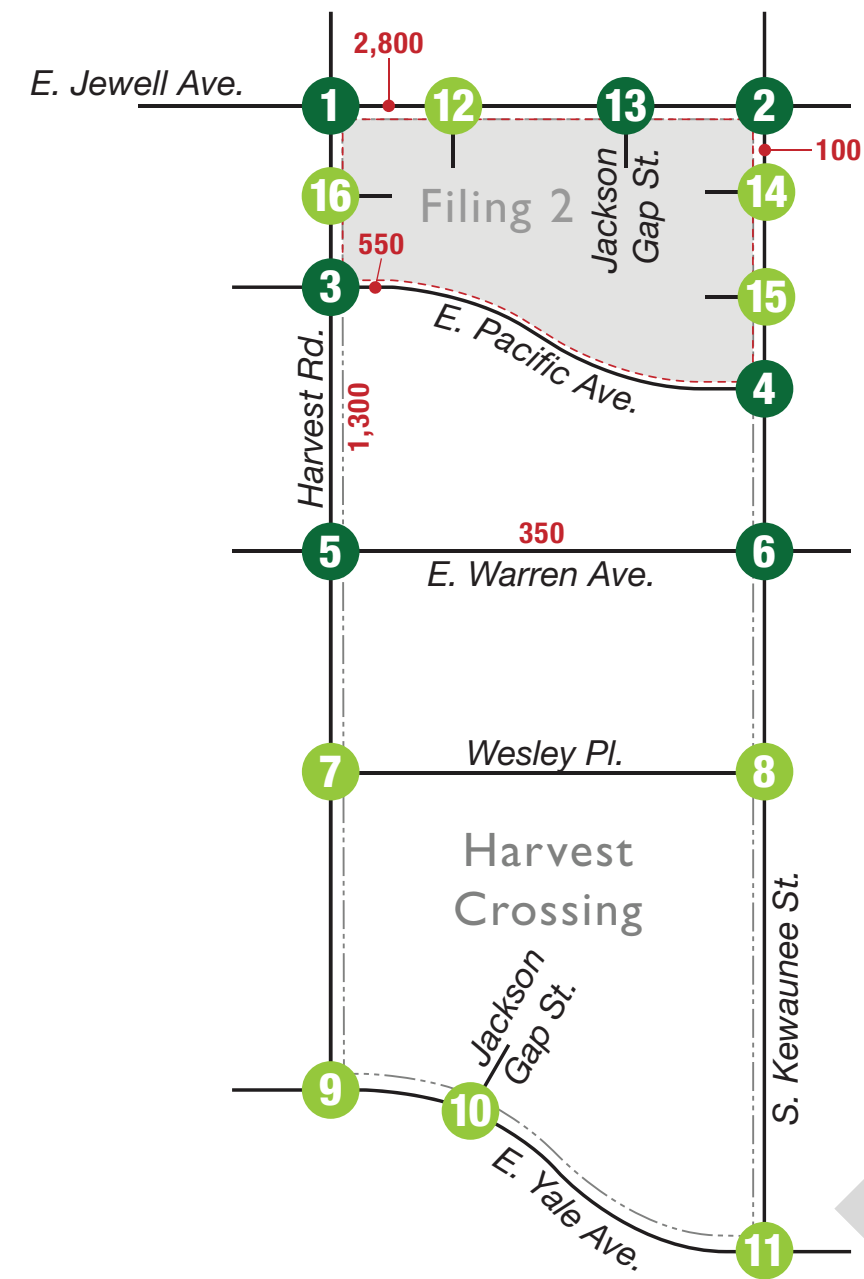
- **E. Jewell Ave & Harvest Rd** is an unsignalized four-leg intersection with two-way stop control on the north-south approaches. The southbound and westbound approaches each have one shared left/through/right lane, while the eastbound approach has an exclusive left turn lane and the northbound approach has both an exclusive left and right turn lane. Note: The eastbound approach has been built to its final 6-lane cross-section as part of Murphy Creek. Since the roadway to the east is not assumed to be complete in the Harvest Crossing short-term background scenario, single eastbound and westbound through lanes have been assumed.
- **Harvest Rd & Pacific Dr** is an unsignalized four-leg intersection with two-way stop control on the east and west approaches. The east and westbound approaches share a single lane for all movements, while the northbound and southbound approaches each have an exclusive left turn lane.
- **Harvest Rd & Warren Ave** is an unsignalized four-leg intersection with two-way stop control on the east and west approaches. The east and westbound approaches share a single lane for all movements, while the northbound and southbound approaches each have an exclusive left turn lane.

Although Kewaunee St will be constructed between E. Pacific Ave and E. Jewell Ave as part of Filing 2, some background traffic from Filing 1 will use this connection once it is opened. Hence, it is included in the short-term background analysis to appropriately reflect Filing 1 trips.

- **E Jewell Ave & Kewaunee St** is an unsignalized three leg intersection with a stop sign on the northbound approach. All approaches are assumed to have one shared lane for each movement.
- **Kewaunee & Pacific Ave** is an unsignalized T intersection with all approaches sharing a single lane.
- **Kewaunee St & Warren Ave** is an unsignalized three leg intersection with each approach sharing a single lane.

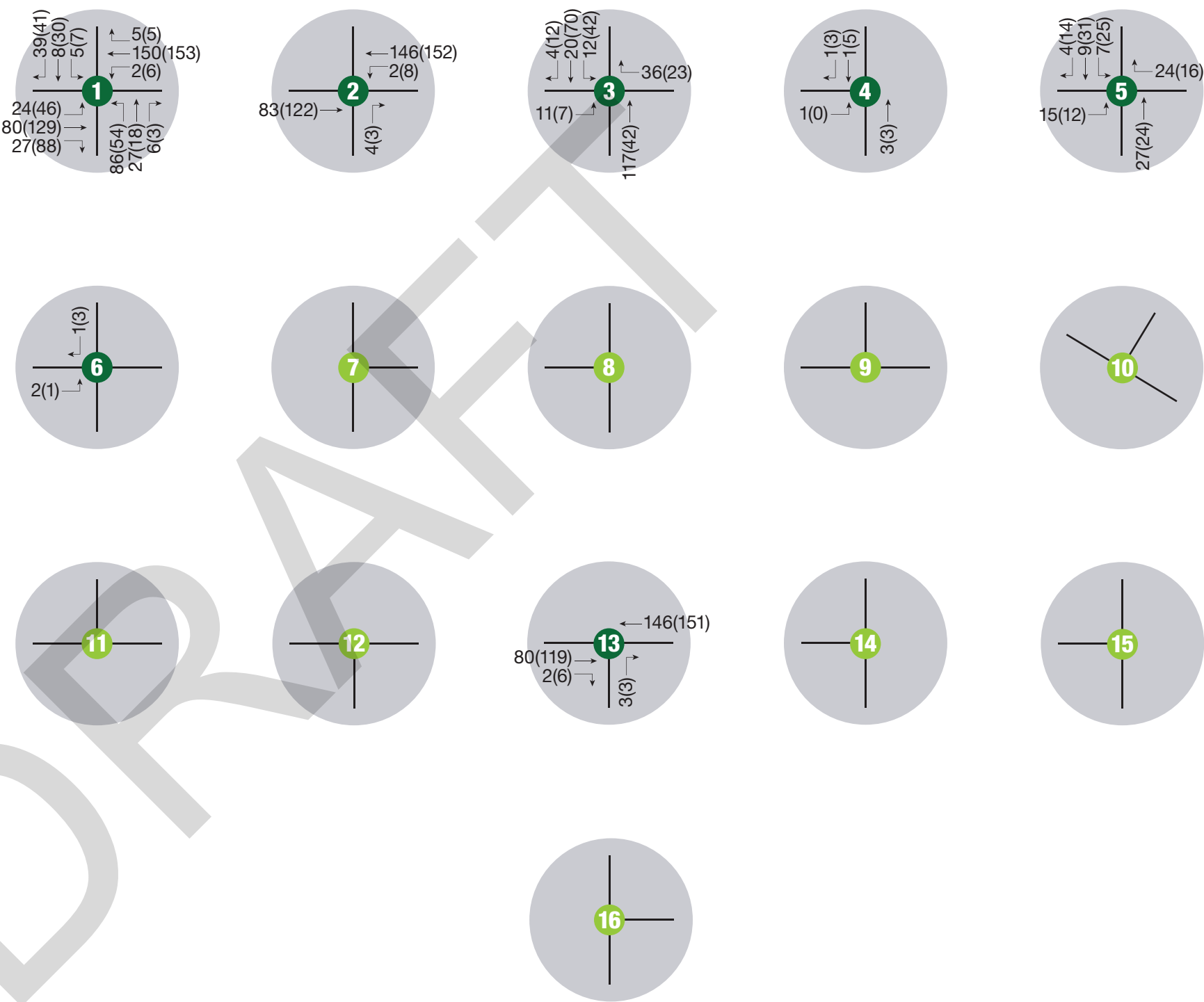
Figure 5 presents the intersection operational results for the short-term background traffic projections. The individual movements at the unsignalized intersections all operate at LOS C or better.

KEY MAP

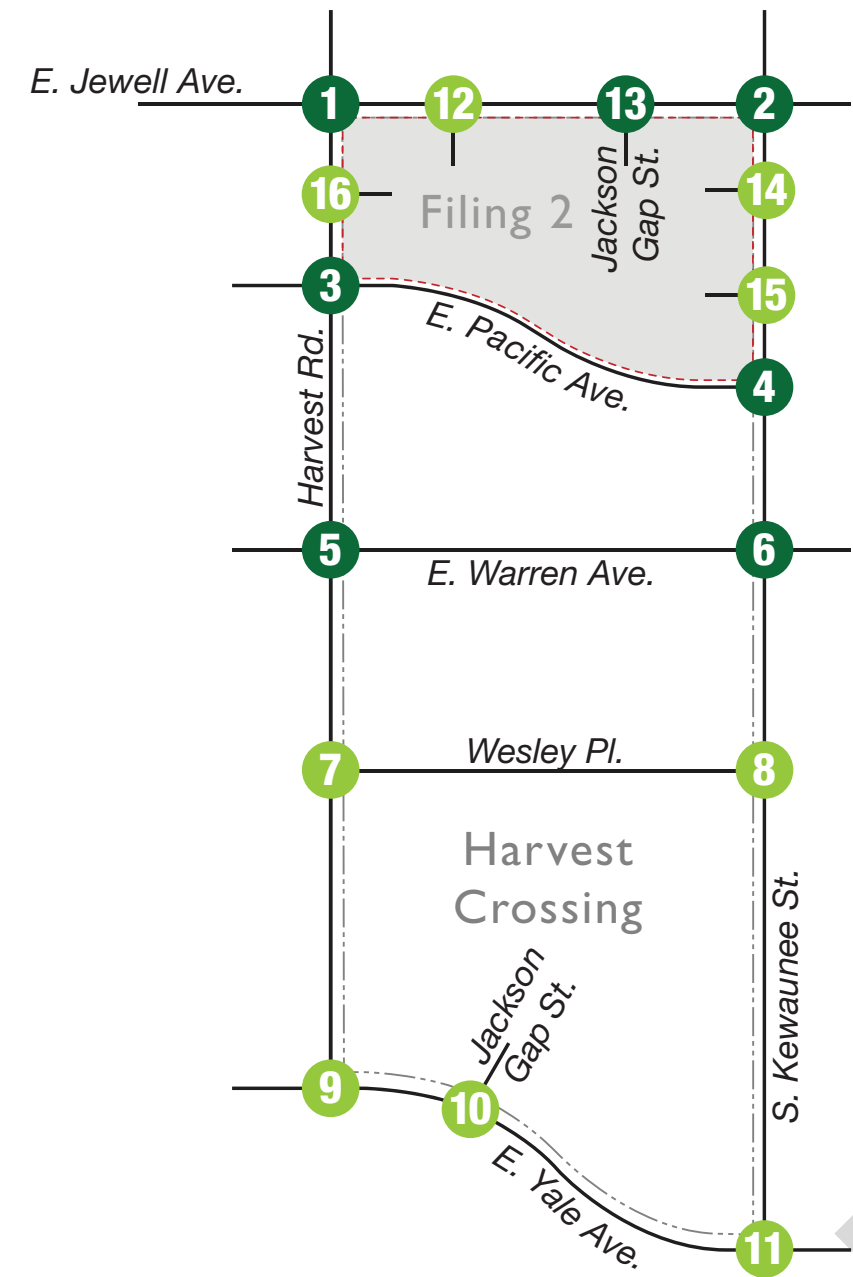


- LEGEND**
- XXX(XXX) = AM(PM) Peak Hour Traffic Volumes
 - XXXX = Daily Traffic Volumes
 - X = Future Intersection

NOTE: Drawing Not to Scale



KEY MAP



LEGEND

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

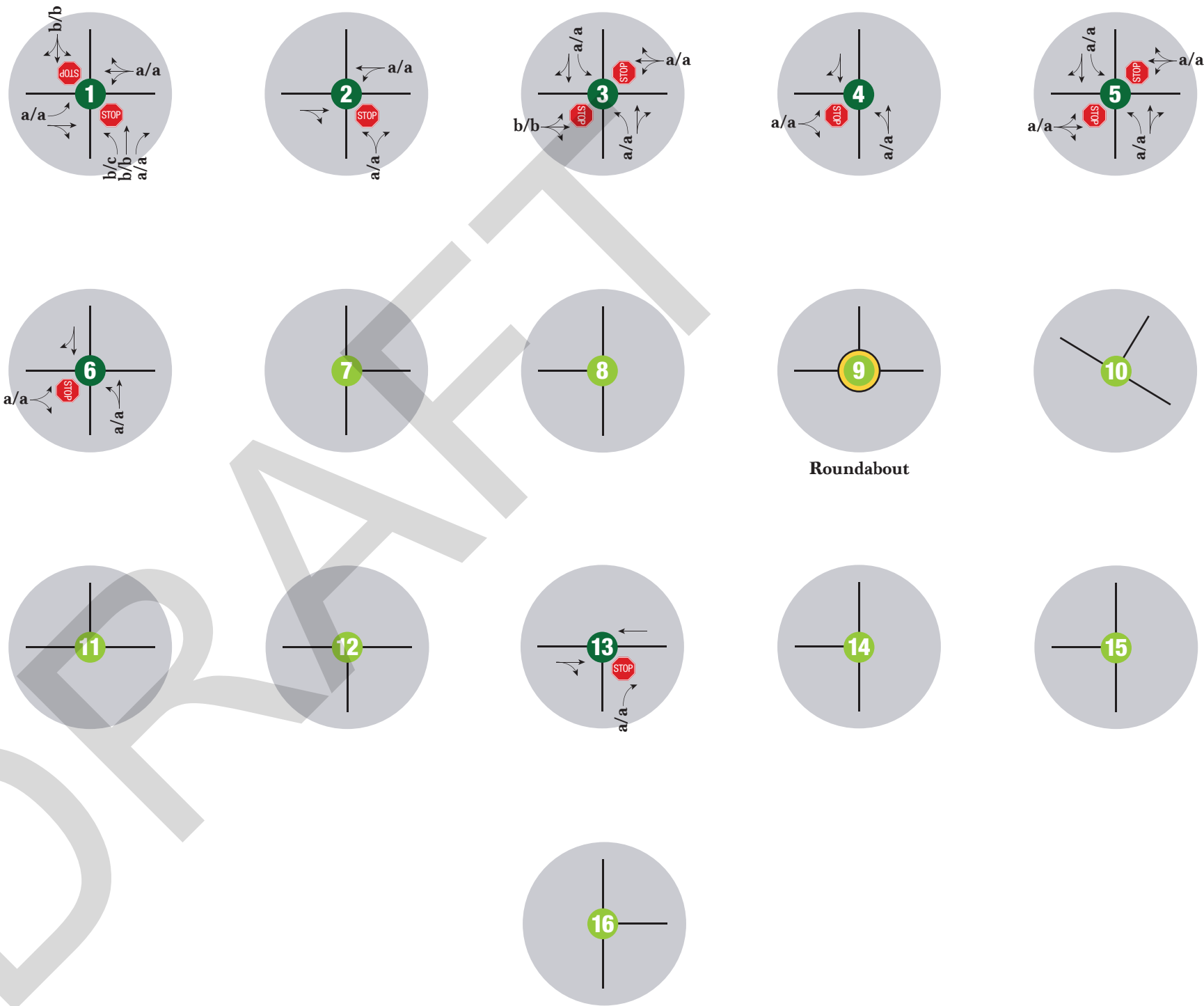
x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

STOP = Stop Sign

Traffic Signal = Traffic Signal

X = Future Intersection

NOTE: Drawing Not to Scale



IV.B. Long-Term Background Projections and Operations

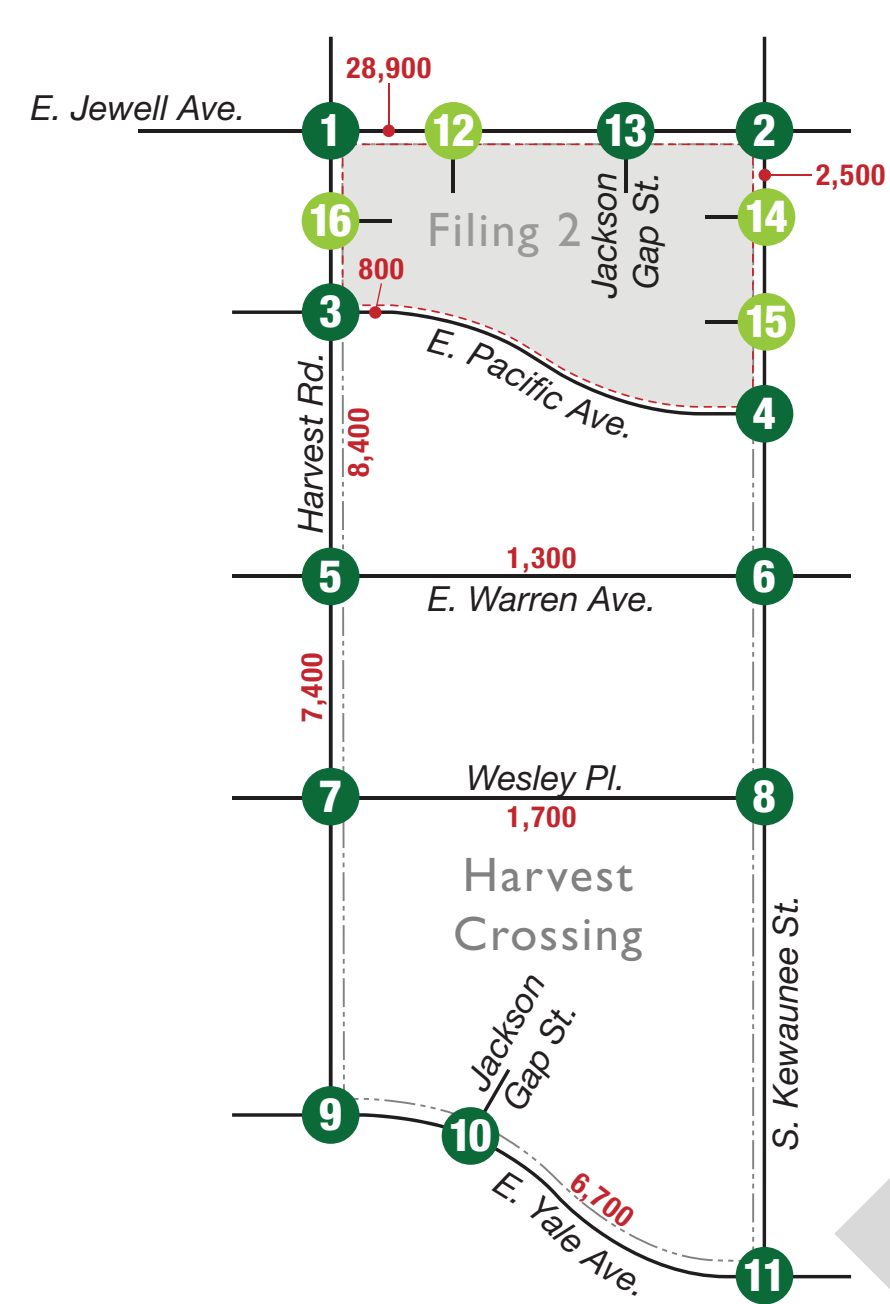
The long-term background traffic reflects traffic growth to the year 2040. The full buildout of the Harvest Crossing development is anticipated to be completed before 2040. Background volumes were extracted from the Harvest Crossing master traffic impact analysis, and then site generated trips from Murphy Creek East, Harvest Crossing Filing 1, and Harvest Crossing Filing 3 were added to represent projected 2040 conditions. The long-term background volumes are shown on **Figure 6**.

Similar to the short-term condition, both Filing 1 and Filing 3 volumes have been distributed through the network in accordance with the long-term distribution in the approved Harvest Crossing master traffic impact analysis.

The anticipated long-term background geometry used at the intersections along Harvest Rd was obtained from the master traffic impact analysis. Kewaunee St was assumed to be a 2-lane local street per the master traffic impact analysis. The various long-term geometric conditions are described as follows:

- **E. Jewell Ave and Harvest Rd** is a signalized four-leg intersection with the following geometry. The eastbound approach has two left turn lanes, two thru lanes, and a shared thru/right lane. The westbound approach has one left turn lane, three thru lanes, and a right turn lane. The northbound approach has a left turn lane, a thru lane, and a thru/right lane. The southbound approach has two left turn lanes, a thru lane, and a right turn lane.
- **Harvest Rd and Pacific Dr** is an unsignalized four-leg intersection with two-way stop control on the east and west approaches. All approaches have a single left/thru/right lane.
- **Harvest Rd and Warren Ave** is an unsignalized four-leg intersection with two-way stop control on the east and west approaches. All approaches have a single left/thru/right lane.
- **Kewaunee St and Warren Ave** is an unsignalized four-leg intersection with two-way stop control on the east and west approaches. The easterly leg is anticipated to serve the undefined development east of Harvest Crossing. All approaches have a single left/thru/right lane.
- **Harvest Rd and Wesley Pl** is an unsignalized four-leg intersection with two-way stop control on the east and west approaches. All approaches have a single left/thru/right lane.
- **Kewaunee St and Wesley Pl** is an unsignalized three-leg intersection with two-way stop control on the west approach. All approaches have a single left/thru/right lane.
- **Harvest Rd and E. Yale Ave** is a three-leg single-lane roundabout. West of Harvest Rd, E. Yale Ave is anticipated to connect to Gun Club Rd, increasing volumes along E. Yale Ave and driving the need for the roundabout.
- **Jackson Gap St and E. Yale Ave** is an unsignalized three-leg intersection with side street stop control on the Jackson Gap St approach. All approaches have one lane for all movements.
- **Kewaunee St and E. Yale Ave** is an unsignalized three-leg intersection with side street stop control on the Kewaunee St approach. All approaches have one lane for all movements.
- **E. Jewell Ave and Kewaunee St** is a signalized four-leg intersection with the following geometry. The eastbound approach has one left turn lane, two thru lanes, and a shared thru/right turn lane. The westbound approach has one left turn lane, two thru lanes, and a shared thru/right turn lane. The northbound approach has a left turn lane, two thru lanes, and a shared thru/right turn lane. The southbound approach has a left turn lane and a shared thru/right lane.

KEY MAP



- LEGEND**
- xxx(xxx) = AM(PM) Peak Hour Traffic Volumes
 - xxxx = Daily Traffic Volumes
 - x = Future Intersection

NOTE: Drawing Not to Scale

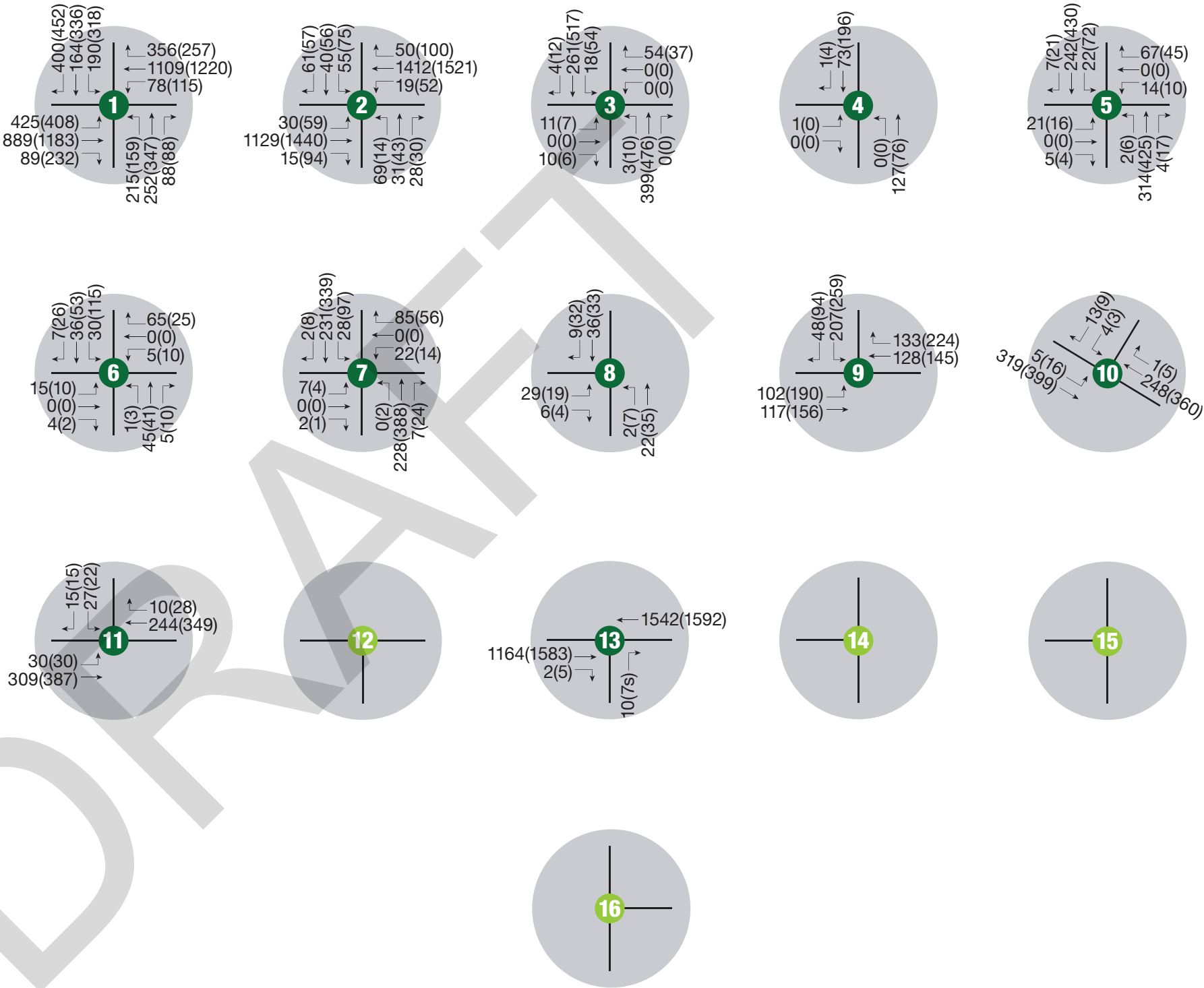


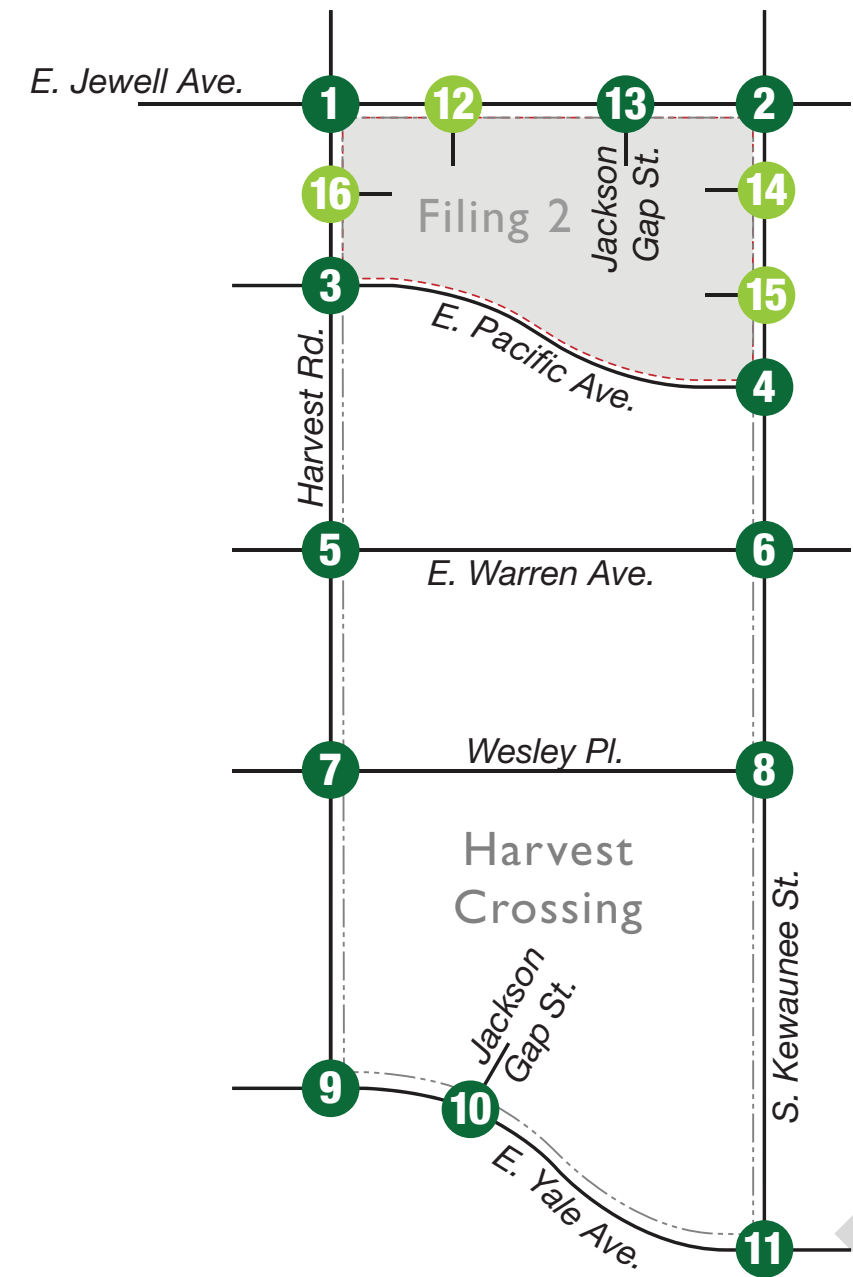
Figure 7 presents the intersection operational results for the long-term background traffic projections. Note: The intersections of Jewell Ave with Harvest Rd and Kewaunee St are assumed to be signalized by the long-term scenario. Further detail of the signal warrant analyses is contained in the following section. All of the intersections, both signalized and unsignalized, evaluated in this study operate at or above City LOS standards in the long-term background scenario. **Appendix E** summarizes the short-term and long-term background LOS results.

Traffic Signalization Warrant Analyses – Long-Term

The *Manual on Uniform Traffic Control Devices* (MUTCD) identifies eight warrants that provide guidance to determine whether installation of a traffic signal is justified. Some of these warrants are based on traffic volume levels, while others are based on the accident history of an intersection or whether the intersection is a designated school crossing. The master traffic impact analysis conducted a long-term scenario warrant analysis and recommends monitoring this location for signalization between the short-term and long-term scenarios.

Based on the volumes calculated herein, the intersections of Jewell Ave with Kewaunee St and Harvest Rd would meet the eight-hour volume, four-hour volume, and peak hour volume warrants by the long-term background scenario. **Appendix E** contains signal warrant analysis results.

KEY MAP



LEGEND

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

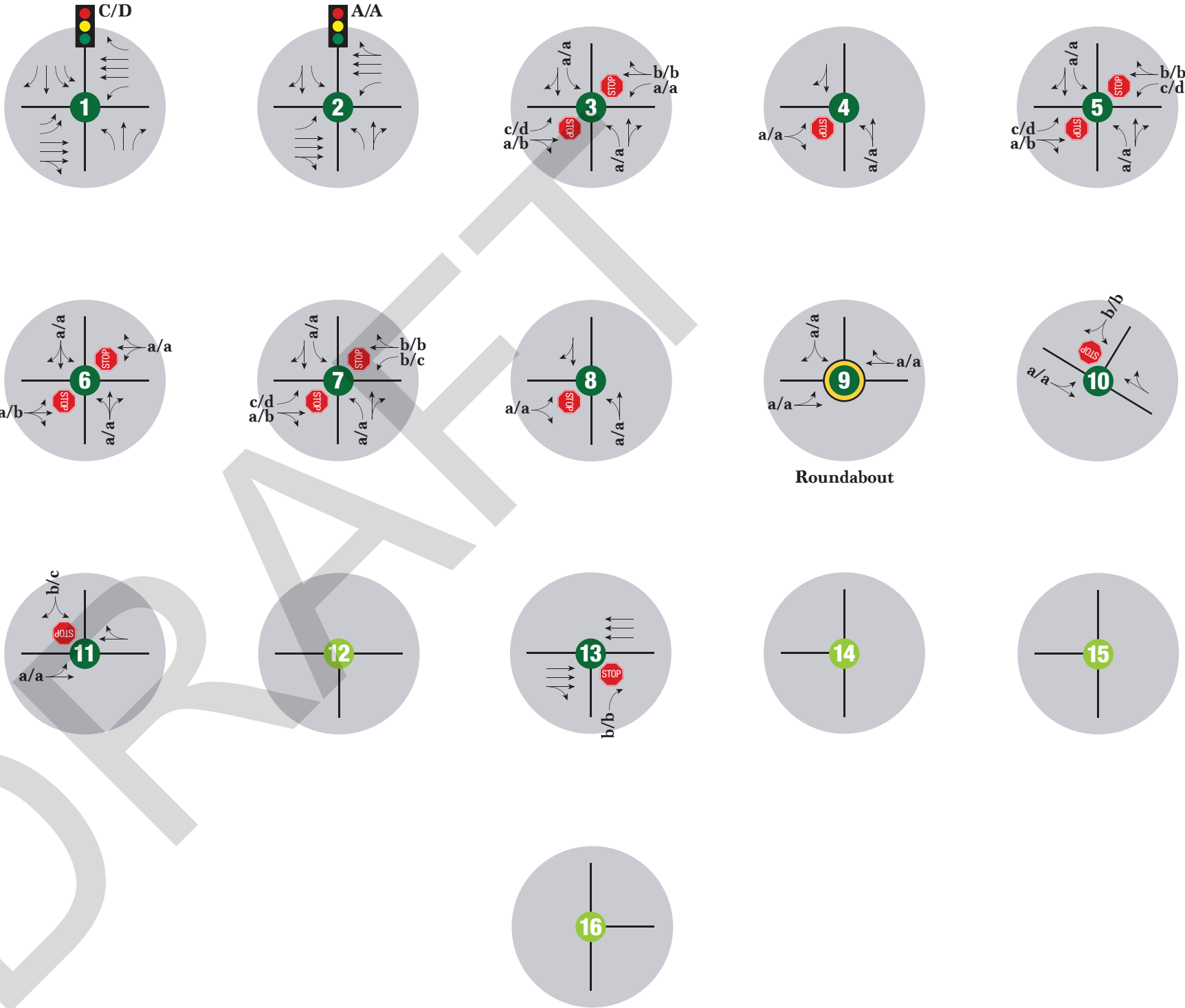
x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

STOP = Stop Sign

Traffic Signal Icon = Traffic Signal

X = Future Intersection

NOTE: Drawing Not to Scale



V. PROJECTED CONDITIONS

The proposed Harvest Crossing development will consist of residential and commercial land uses. The following subsections describe the proposed development and how it is anticipated to interact with the adjacent street network.

V.A. Site Trip Generation

The number of vehicle-trips that will be generated by the proposed development was forecast based on trip rates and procedures documented in *Trip Generation* (Institute of Transportation Engineers, 11th Edition, 2021). The categories used in this analysis include Single Family Detached Housing (ITE land use code 210) and two shopping center categories (ITE land use codes 821 and 822). Land use code 821 is used for small shopping plazas of 40k sf to 150k sf; whereas land use code 822 is used for small strip plazas of less than 40k sf.

Table 1 summarizes the trip generation rates, and **Table 2** includes trip generation estimates by phases developed for purposes of traffic assignment.

Table 1. Trip Generation Rates

Land Use	LUC Code	Daily	AM	Distribution	PM	Distribution
Single Family Detached	210	$T = X * 9.43$	$T = X * 0.7$	In: 25%	$T = X * 0.94$	In: 63%
				Out: 75%		Out: 37%
Shopping Plaza	821	$T = X * 67.52$	$T = X * 1.73$	In: 62%	$T = X * 5.19$	In: 49%
				Out: 38%		Out: 51%
Strip Retail Plaza	822	$T = X * 54.45$	$T = X * 2.36$	In: 60%	$T = X * 6.59$	In: 50%
				Out: 40%		Out: 50%

Filing 2 is anticipated to include 260 single family detached DUs and 76,500 square feet of commercial space, with 54,500 square feet in Tract A and 22,000 square feet in Tract B. The total buildout scenario includes 854 single family detached DUs and 76,500 square feet of commercial land use. Although limited internal capture may occur between some commercial land uses and residential units, this study did not adjust trips for internal capture as the nature of the commercial land use is unknown. Similarly, no pass-by trip credits were taken for the commercial area due to the unknown nature of the commercial land use.

In total, the entire Harvest Crossing development is estimated to generate approximately 744 trips during the AM peak hour, 1,230 trips during the PM peak hour, and 12,930 trips per day. This represents a reduction of overall trips from the master traffic impact analysis. The reduction is due to the changes in land uses (and particularly a reduction in commercial space) and minor changes in ITE trip generation rates between the 10th Edition and the 11th Edition. Of these trips, the Filing 2 development is anticipated to contribute 329 trips in the AM, 672 trips in the PM, and 7,330 trips per day. Filing 2 contributes approximately 45 to 55 percent of the overall Harvest Crossing trips generated.

Table 2. Trip Generation Estimates

	Land Use	LUC Code	Quantity	Units	Daily Trips	AM Peak Hour Trips*			PM Peak Hour Trips*		
						In	Out	Total	In	Out	Total
Filing 1	Single Family Detached	210	145	DU	1,367	25	76	101	86	51	137
Background Trips					1,367	25	76	101	86	51	137
Filing 2	Single Family Detached (north of Pacific)	210	260	DU	2,452	46	137	183	154	91	245
	Commercial (north of Pacific)	821	54.5	KSF	3,680	58	36	94	139	144	283
		822	22	KSF	1,198	31	21	52	72	72	144
Filing 2 Trips					7,330	135	194	329	365	307	672
Total Trips (Short-Term)					8,697	160	270	430	451	358	809
Future Phase(s)	Single Family Detached (south of Warren)	210	449	DU	4,233	79	235	314	266	155	421
Trips from Future Phases					4,233	79	235	314	266	155	421
Total Trips (Long-Term)					12,930	239	505	744	717	513	1,230
*Peak hour trips were calculated using the 11 th edition of the ITE Trip Generation Manual and are based on peak hour of adjacent street.											

V.B. Trip Distribution and Traffic Assignment

The external trips generated by the site were assigned to the study area roadway network using percentages of trips expected to travel in different directions to/from the site. Trip distribution percentages were carried forward from the master traffic impact analysis. The distributions differed for short-term and long-term given the development of the roadway network timelines associated with each phase of development. Directional distributions for site-generated trips are illustrated on **Figure 8** and **Figure 9** and are described as follows:

Short-Term

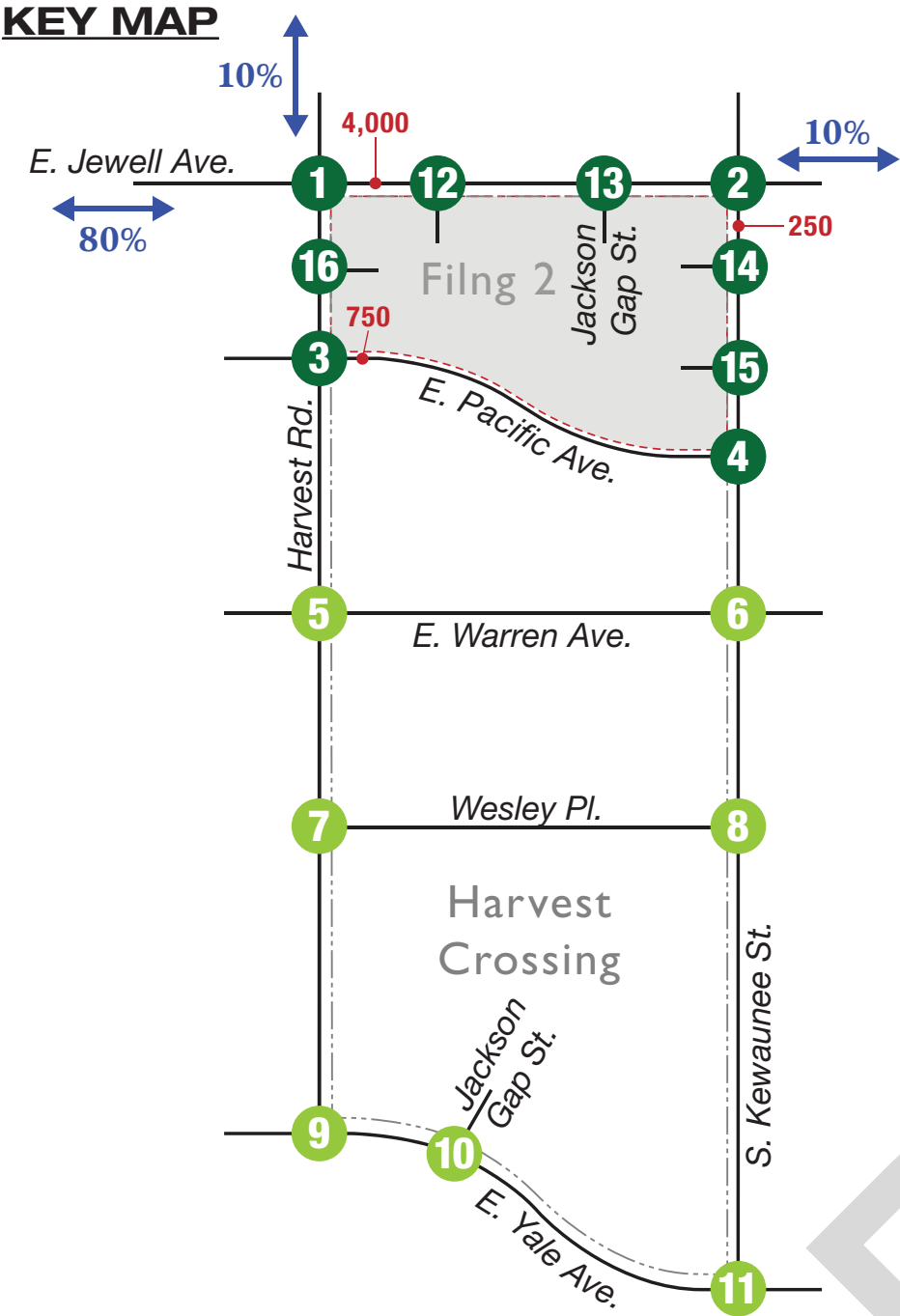
- 80 percent to/from the west on E. Jewell Ave (west of Harvest Rd)
- 10 percent to/from the east on E. Jewell Ave (east of Kewaunee St)
- 10 percent to/from the north on Harvest Rd (north of E. Jewell Ave)

Long-Term

- 40 percent to/from the west on E. Jewell Ave (west of Harvest Rd)
- 15 percent to/from the north on Harvest Rd (north of E. Jewell Ave)
- 15 percent to/from the west on Yale Ave (west of Harvest Rd)
- 10 percent to/from the east on E. Jewell Ave (east of Kewaunee St)
- 5 percent to/from the north on Kewaunee St (north of E. Jewell Ave)
- 5 percent to/from the east on Yale Ave (east of Kewaunee St)

The peak hour site generated traffic volumes were assigned to the roadway network and site access points based on these trip distribution percentages. **Figure 8** and **Figure 9** show the trip distribution and the estimated site generated traffic for the proposed development for both planning horizons.

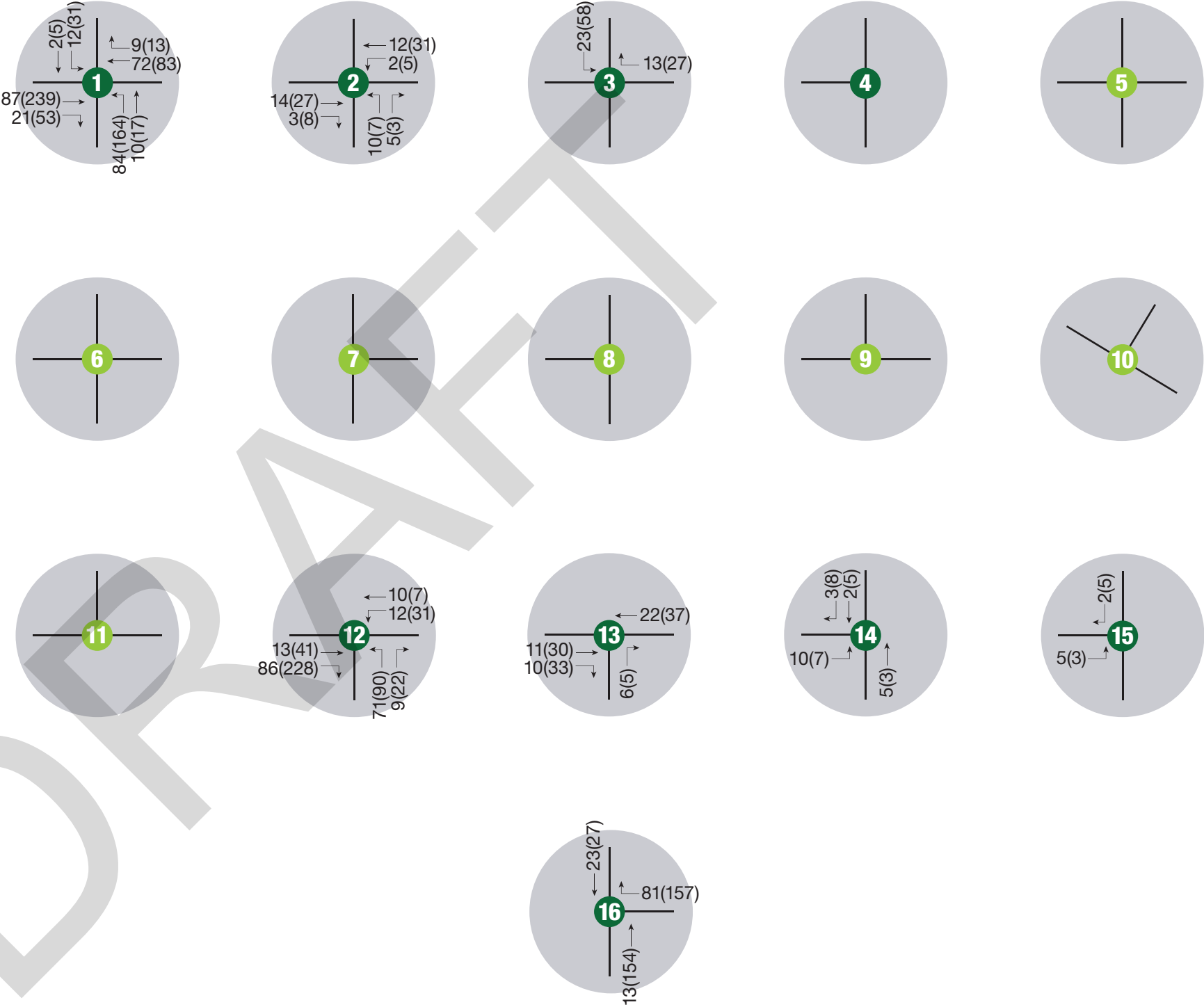
KEY MAP



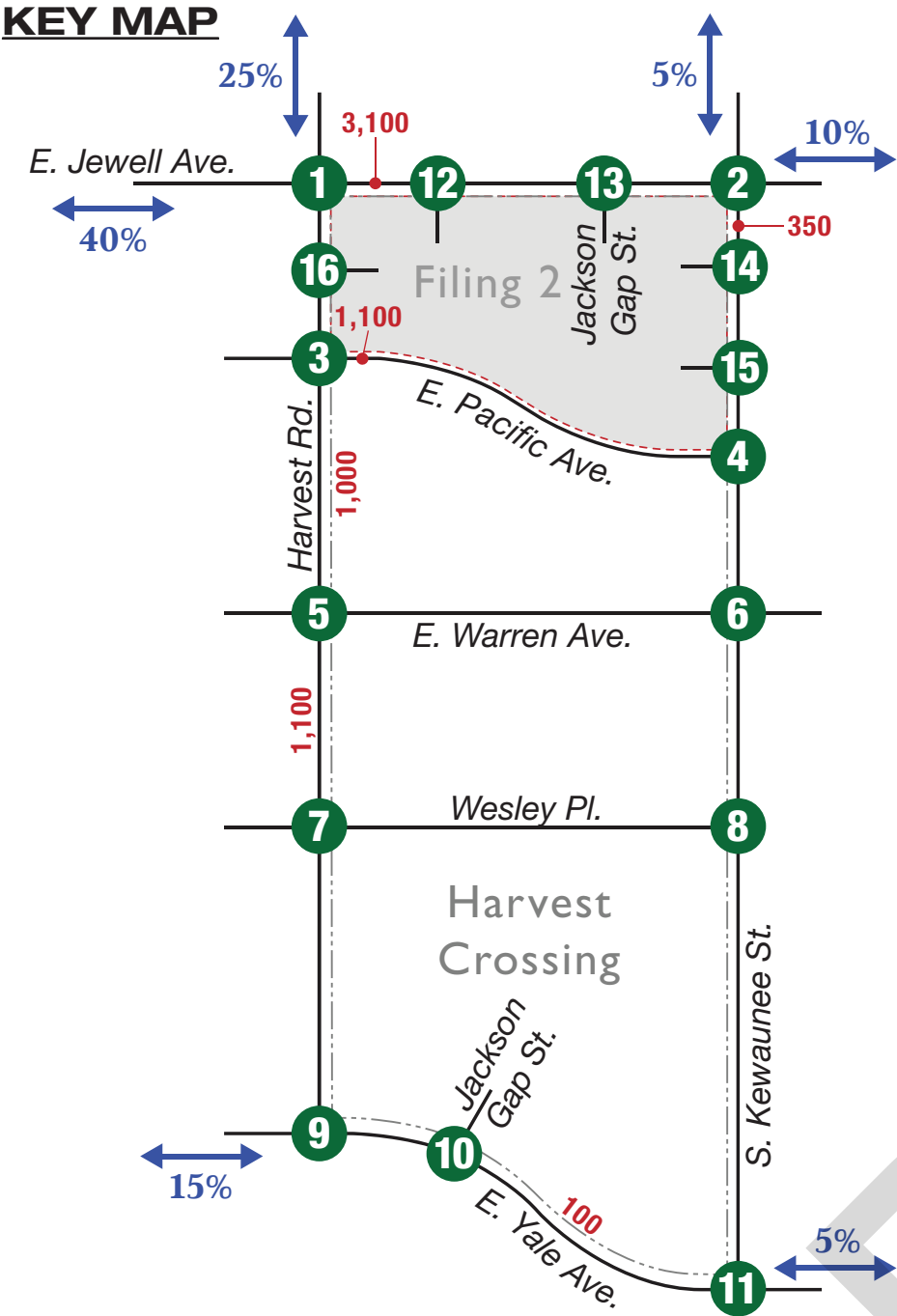
LEGEND

- xxx(xxx) = AM(PM) Peak Hour Traffic Volumes
- XXXX = Daily Traffic Volumes
- XX% = Site Trip Distribution
- X = Future Intersection

NOTE: Drawing Not to Scale

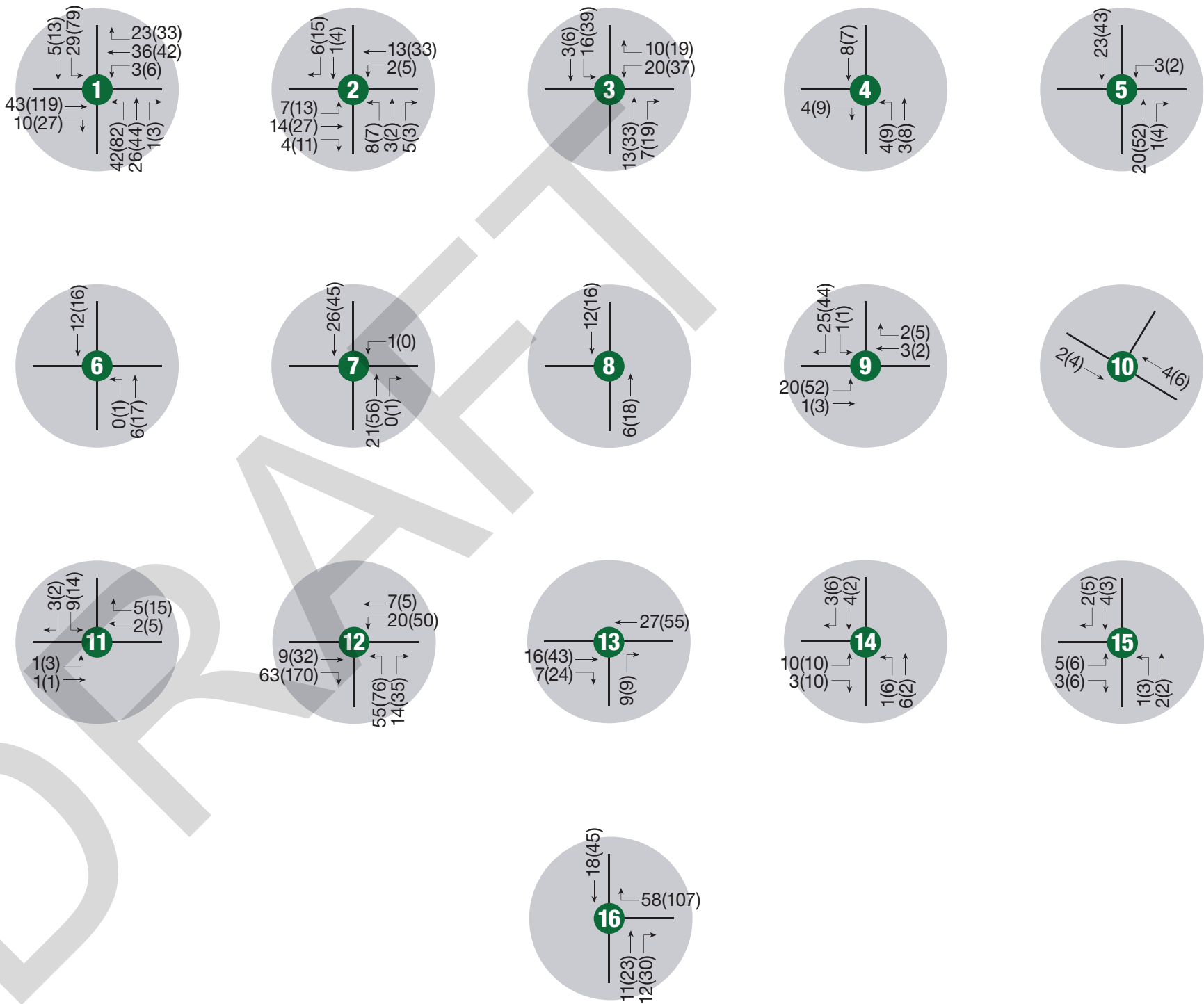


KEY MAP



- LEGEND**
- xxx(xxx) = AM(PM) Peak Hour Traffic Volumes
 - xxxx = Daily Traffic Volumes
 - xx% = Site Trip Distribution

NOTE: Drawing Not to Scale



VI. TOTAL TRAFFIC CONDITIONS

The external site generated traffic was added to the short-term (2026) and long-term background (2040) volumes to develop total traffic volumes. These total traffic scenarios were then evaluated to determine LOS and project-related operational affects. LOS worksheets are shown in **Appendix D**.

VI.A. Short-Term Total Projections and Operations

The short-term total traffic reflects traffic estimates for the short-term timeframe (year 2026), including short-term background traffic and trips generated from the Harvest Crossing Filing 2 development. These volumes are shown on **Figure 10**.

Figure 11 presents the intersection operational results for the short-term total traffic projections. All signalized intersections and unsignalized movements are projected to operate at LOS D or better. It should be noted that the intersection of Jewell Ave with Harvest Rd is anticipated to meet signal warrants by this timeframe and should be monitored for signalization. The following section details the signal warrant analysis.

Traffic Signalization Warrant Analyses – Short-Term

The master traffic impact analysis assumed a signal would be warranted by 2040 at the intersection of E. Jewell Ave and Harvest Rd and recommends monitoring this location for signalization between the short-term and long-term scenarios. Based on the volumes calculated herein, this intersection would meet the eight-hour volume, four-hour volume, and peak hour volume warrants by the short-term total scenario. **Appendix E** contains signal warrant analysis results.

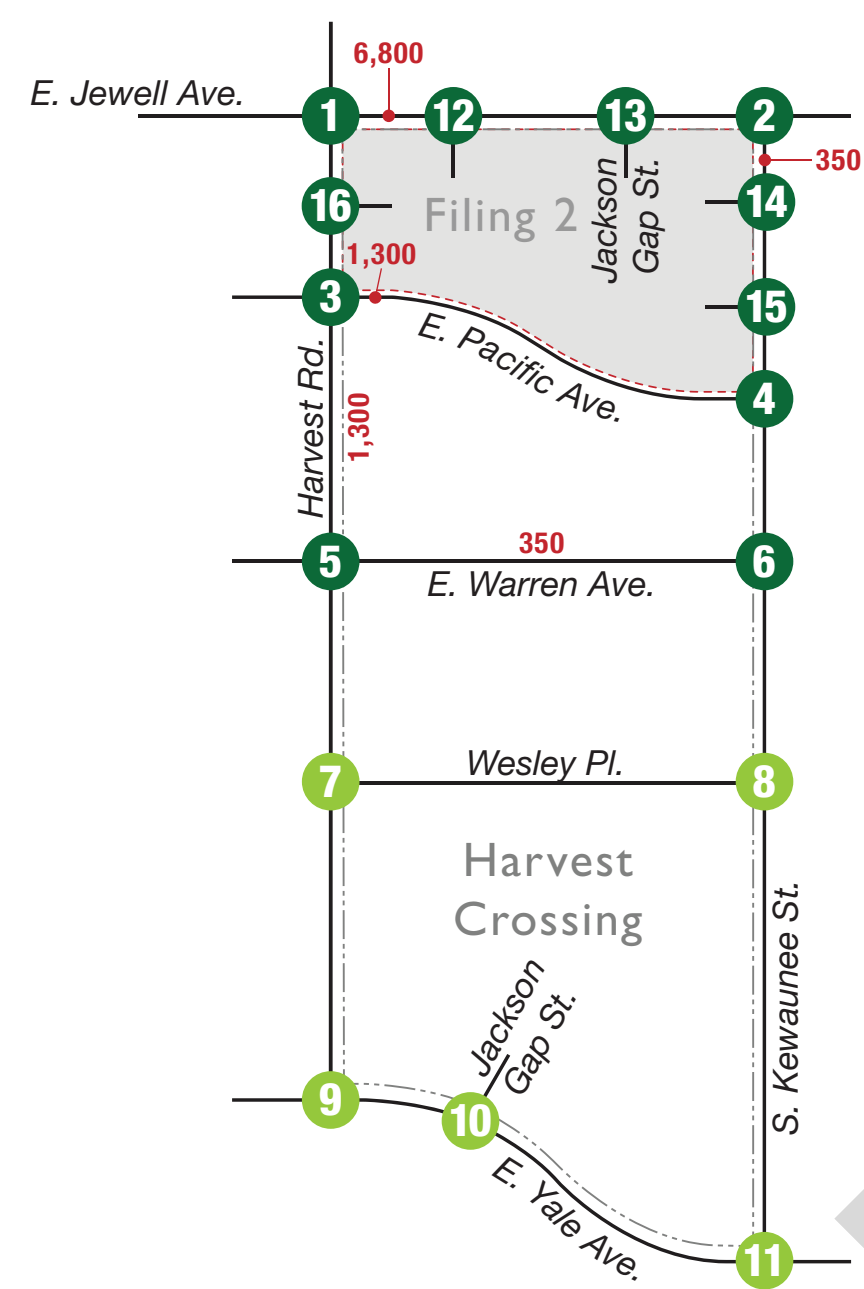
Internal Intersection Controls – Short-Term

The local street network internal to the Filing 2 site was not analyzed for operations. The peak hour volumes are very low (typically less than 100 vehicles per hour), which is normal for local residential streets within subdivisions. The following intersection controls are assumed based on internal connectivity and geometric layouts:

- Stop control for S Irvington St approaching Pacific Ave and Jewell Ave
- Stop control for Jackson Gap St approaching E. Pacific Ave and Jewell Ave
- Stop control for northern site access approaching Irvington St, Jackson Gap St, and Kewaunee St
- Stop control for southern site access approaching Irvington St, Jackson Gap St, and Kewaunee St
- Stop control for southern site access right in/right out approaching Harvest Rd

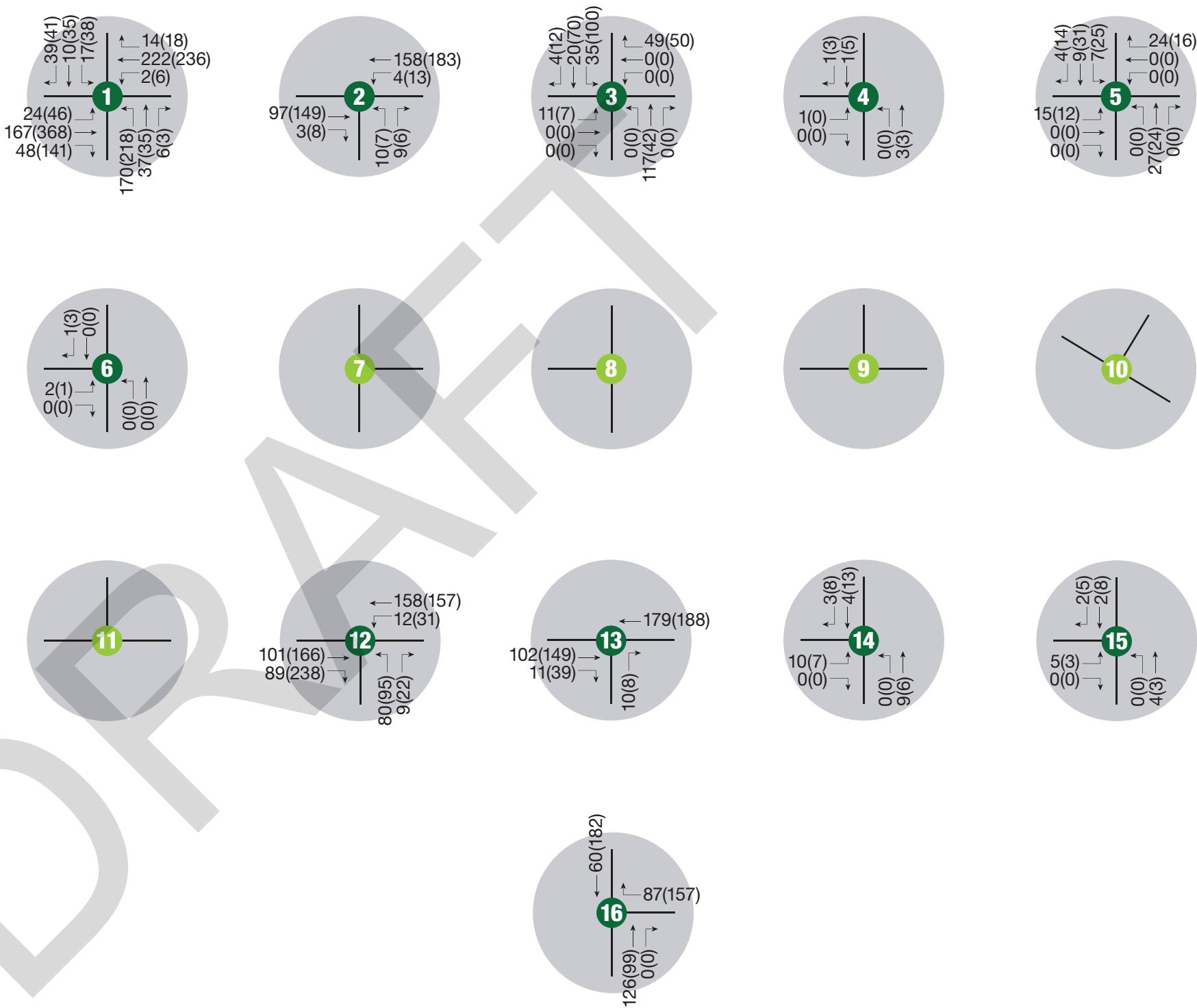
No turn lanes are assumed at these internal intersections.

KEY MAP

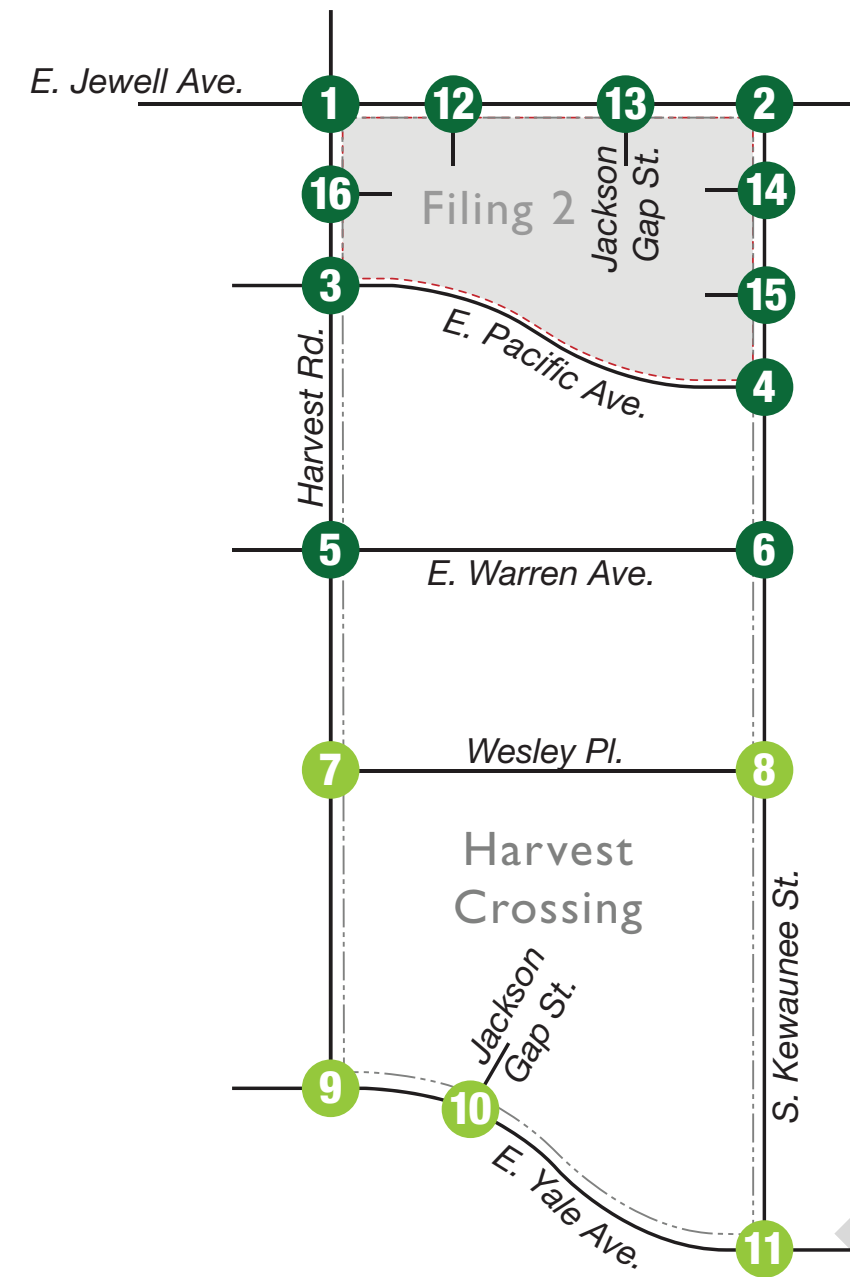


- LEGEND**
- XXX(XXX) = AM(PM) Peak Hour Traffic Volumes
 - XXXX = Daily Traffic Volumes
 - X = Future Intersection

NOTE: Drawing Not to Scale

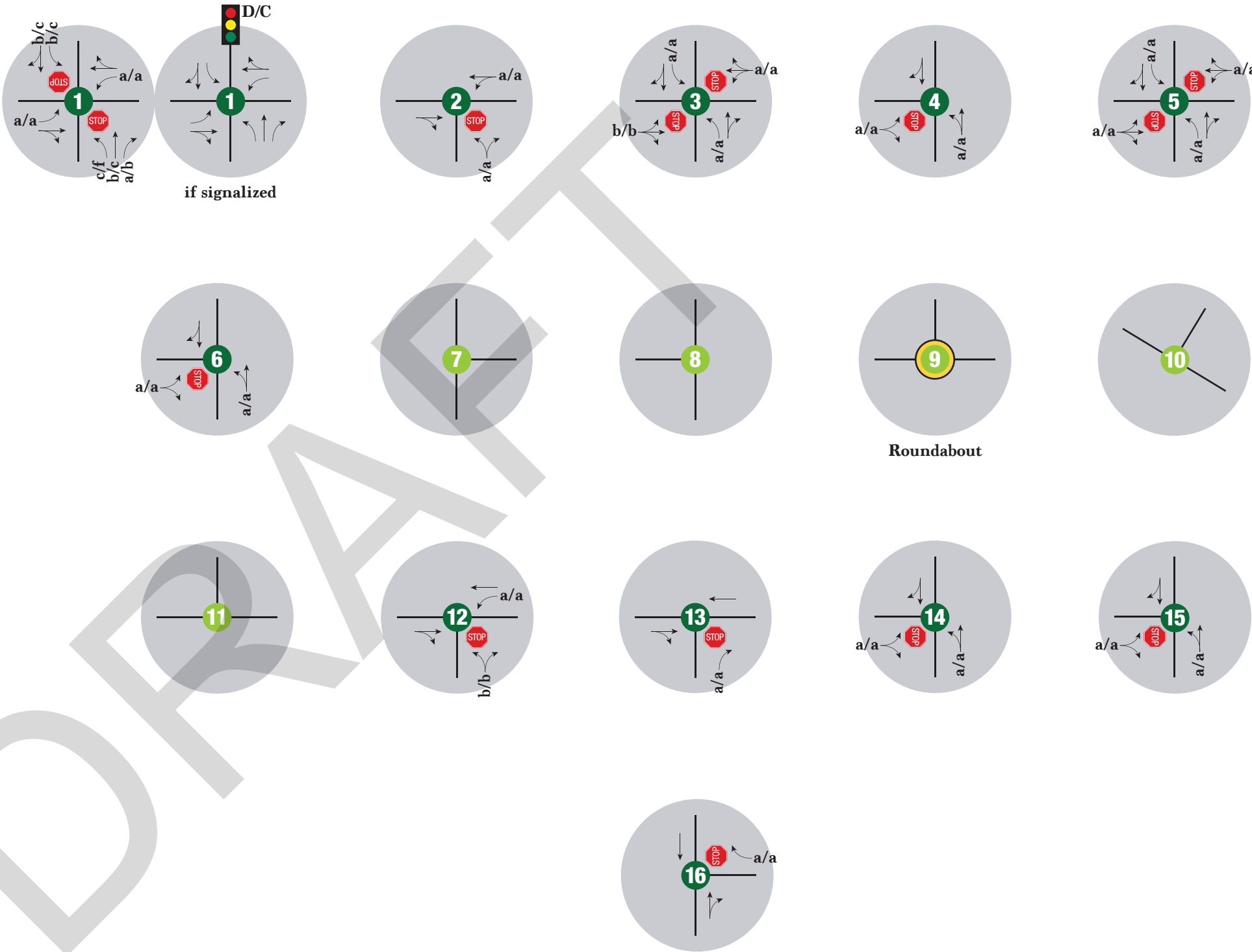


KEY MAP



- LEGEND**
- X/X = AM/PM Peak Hour Signalized Intersection Level of Service
 - x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
 - STOP = Stop Sign
 - Traffic Signal
 - X = Future Intersection

NOTE: Drawing Not to Scale



VI.B. Long-Term Total Projections and Operations

The long-term total traffic reflects traffic estimates for the long-term timeframe (year 2040), including long-term background traffic and trips generated from the Harvest Crossing Filing 2 development. These volumes are shown on **Figure 12**.

Figure 13 presents the intersection operational results for the long-term total traffic projections. The individual movements and overall intersection operations are projected to operate with acceptable LOS (LOS D and better) with the exception of the following:

Harvest Road & Pacific Avenue

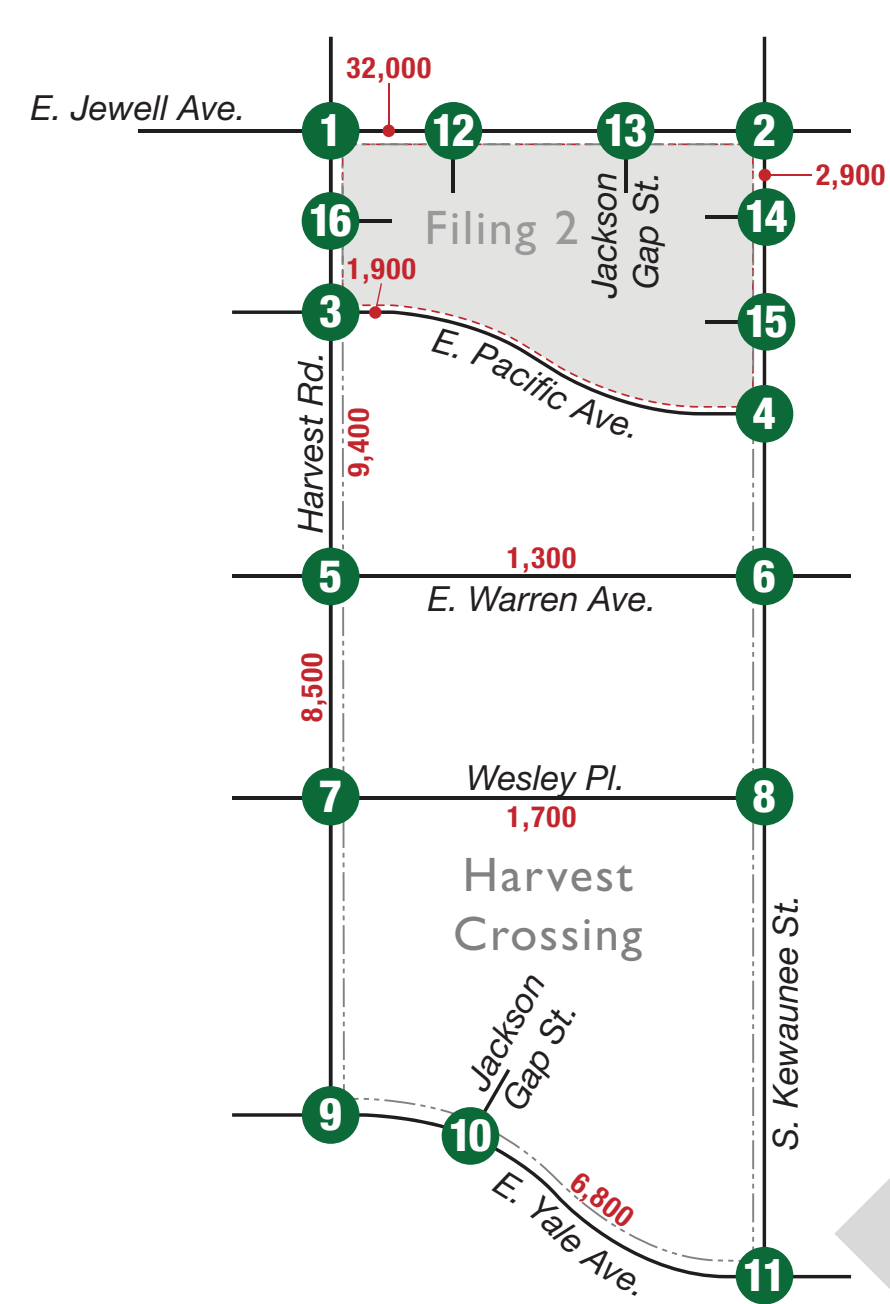
- The eastbound left turn operates at LOS E in the PM peak hour.
- The westbound left turn operates at LOS F in the PM peak hour.

Harvest Road / Warren Avenue

- The eastbound left turn operates at LOS E in the PM peak hour.

Note: These operational analyses assumed signalization of the intersection of Jewell Ave with Kewaunee St and Harvest Rd as outlined in the long-term background condition. **Appendix F** summarizes all study intersections and the anticipated LOS results for both the short- and long-term scenarios. **Appendix D** contains LOS worksheets for both the short- and long-term scenarios.

KEY MAP



LEGEND

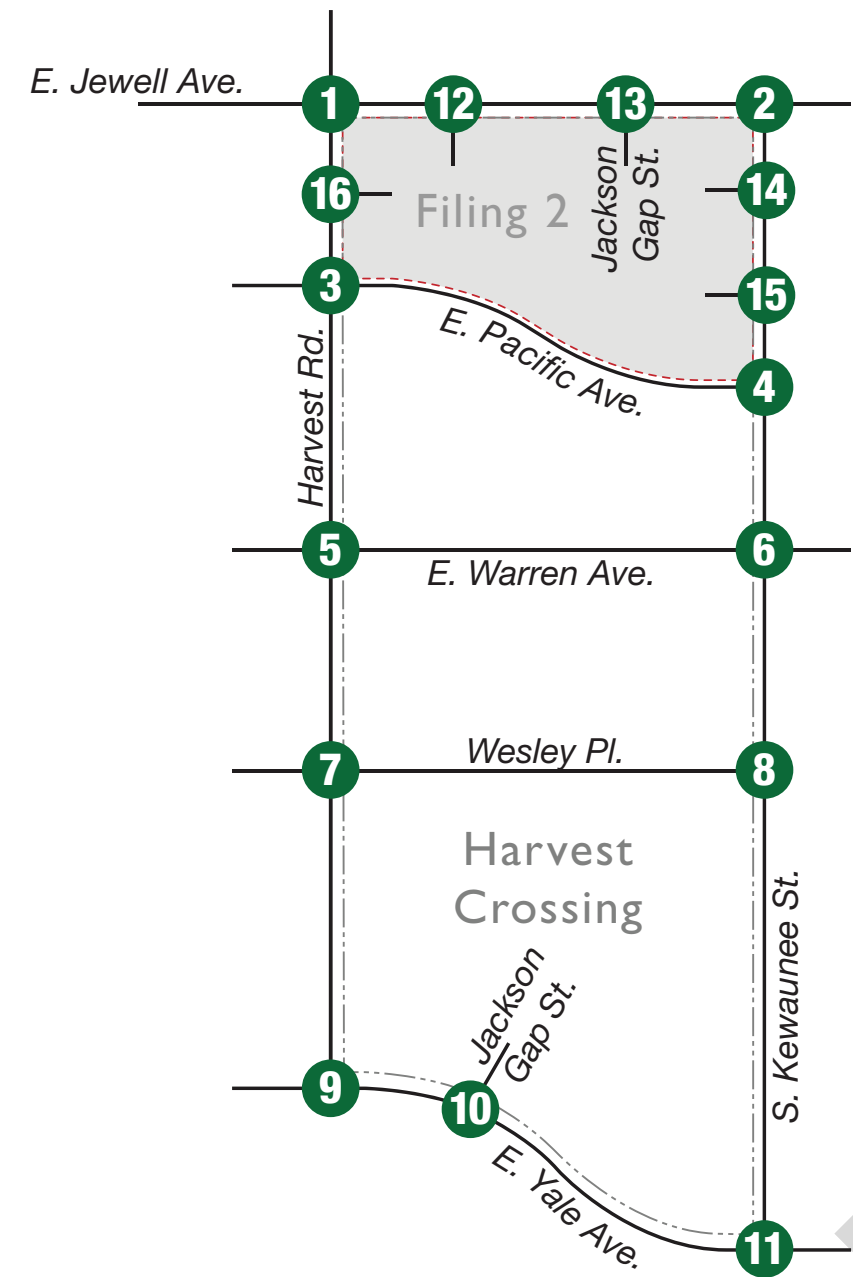
XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

NOTE: Drawing Not to Scale




KEY MAP




LEGEND

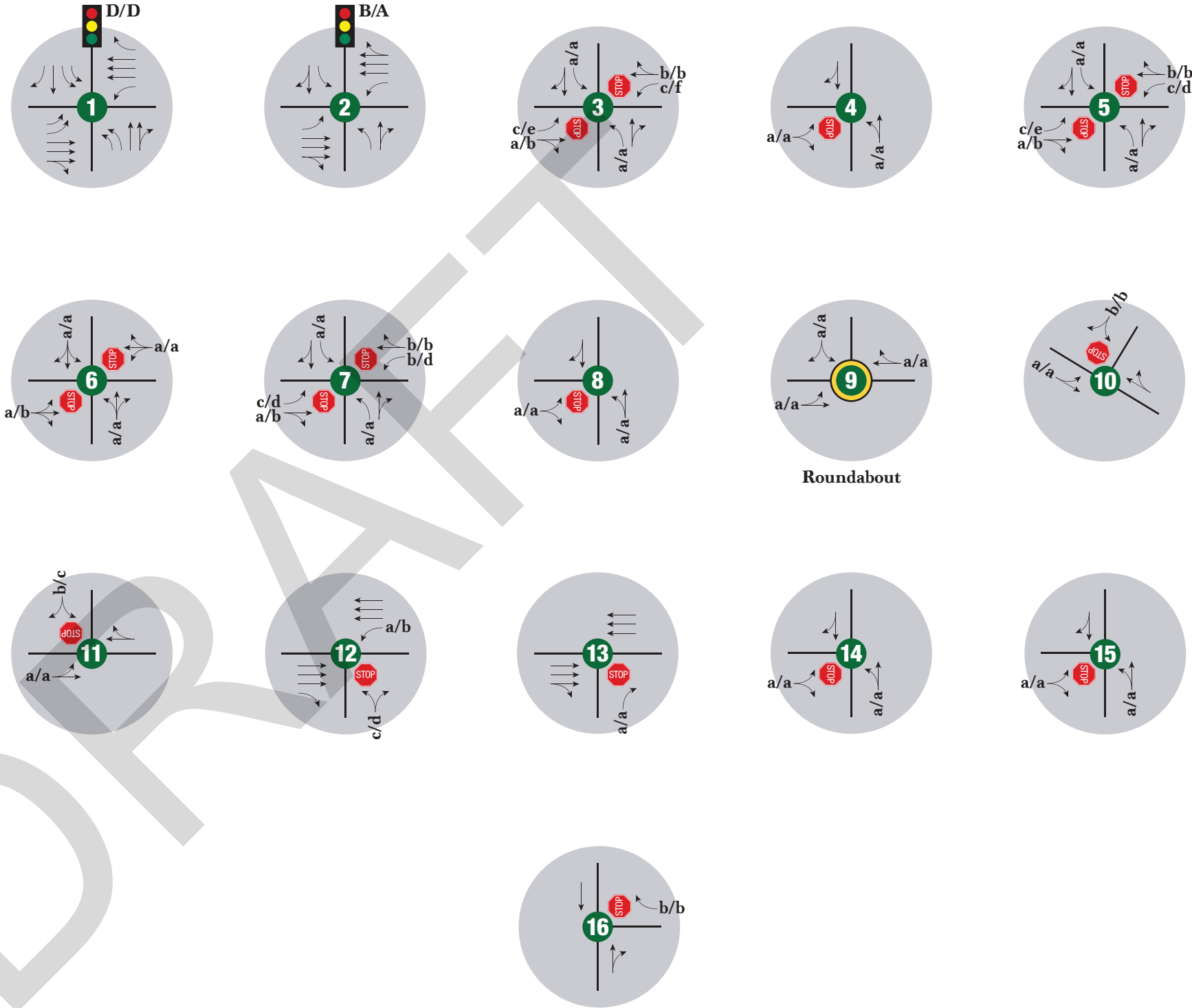
X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

 = Stop Sign

 = Traffic Signal

NOTE: Drawing Not to Scale



Other Mitigations

Signalization of the E. Jewell Ave / Harvest Rd intersection will address identified operational issues at that location. The signal is reasonably anticipated in Aurora's long-range planning efforts and is shown to be warranted in the master traffic impact analysis. The remaining operational issues are addressed as follows:

- The eastbound and westbound left-turn movements at the Pacific Ave / Harvest Rd intersection are expected to operate at LOS E and LOS F during the PM peak hour, respectively. The left turn volumes are low (less than 40 vehicles per hour in both peak periods), and the left turns operate from exclusive lanes. The recommended storage length for both the eastbound and westbound approach is 50 feet. This is not anticipated to interfere with nearby internal intersections. The poorly operating left-turn condition is common for left-turn movements from side streets onto collector roadways. Hence, no mitigations have been proposed.
- The eastbound left-turn movement at the Warren Ave / Harvest Rd intersection is expected to operate at LOS E during the PM peak hour. The left turn volumes are low at 16 vehicles per hour, and the left turn operates from an exclusive lane. The recommended storage length for this movement is 50 feet. This is not anticipated to interfere with nearby internal intersections. The poorly operating left-turn condition is common for left-turn movements from side streets onto collector roadways. Hence, no mitigations have been proposed.
- The E. Jewell Ave / Road C (Irvington St) intersection does not meet signal warrants solely with Harvest Crossing traffic. It is anticipated that future development north of E. Jewell Ave will eventually result in a signal being warranted at this location. Hence, it should be monitored for signalization.
- The E. Jewell Ave / Kewaunee St intersection does not meet signal warrants solely with Harvest Crossing traffic. It is anticipated that future development north of E. Jewell Ave and east of Kewaunee St will eventually result in a signal being warranted at this location. Hence, it should also be monitored for signalization.

Auxiliary Lane Requirements

Auxiliary lanes were evaluated using two methodologies. First, 95th percentile queues were extracted directly from the project's Synchro software analyses. These queue lengths are based on projected operating conditions (including heavy vehicles, opposing traffic flows, and signal timings). Second, City of Aurora *Traffic Impact Study Guidelines* indicate that the Colorado Department of Transportation's *State Highway Access Code* (SHAC) should be used to determine storage and taper lengths. However, the SHAC procedures do not account for other conditions in the intersection such as low opposing through movements if a left-turn movement is in question. The project team evaluated these two sets of results to develop ultimate recommendations for auxiliary lanes. These recommendations for vehicle storage lengths (in feet) are presented in **Table 3** for use in identifying construction needs for Harvest Crossing.

Output from the traffic analysis effort was used to recommend these storage lengths, using the following methodology:

- **Left turn lane storage lengths.** At signalized intersections, the greater of the HCM 6th Edition or Synchro methodology queue calculations were reported. For unsignalized intersections, the HCM 6th Edition calculation was reported.
- **Through movements.** For signalized intersections, Synchro calculation results were reported. No through movement queues are reported for unsignalized intersections as the through movements are free.
- **Right turn movements.** The Synchro queue length was used. HCM 6th Edition information was not used because HCM's signalized intersection methodology does not account for right turns on red.

The first column of queue lengths presented in **Table 3** is the long-term 95th percentile queue length results from Synchro/HCM, rounded up to the nearest 25 feet. These are shown for both AM and PM peak hours to account for directionality of traffic flows. These values are presented for all turn lanes included in the study except two-way left turn lanes. Generally, the higher of these two values is used for the storage length.

The second column of queue lengths presented in **Table 3** is the storage length recommendations from the SHAC. As noted previously, SHAC requirements are based on assumed arterial conditions. Hence, they have been applied to only the collector and arterial roadways, not local roadways. It was assumed E. Jewell Ave is classified as a NR-B Regional Highway operating at 40 mph adjacent to the project site, where a 12:1 transition taper ratio + storage length would be required. SHAC requirements for NR-C Arterials were applied to Harvest Rd, Yale Ave, and Warren Ave, and the operating speed was assumed to be 30 mph, where an 8:1 transition taper ratio + storage length would be required. The results of this evaluation are summarized in **Table 3**.

The final column in **Table 3** provides recommended auxiliary lane lengths along study area roadways based on results from both the 95th percentile and SHAC evaluations.

Table 3. Year 2040 Intersection Auxiliary Lane Results

Intersection	Movement	Existing Storage (ft)	95th Percentile Queue (ft)	SHAC Recommended Storage (ft)	Overall Recommended Storage (ft)
1. Harvest Rd & E Jewell Ave	EB Left	100	325	220	325
	EB Through	Continuous	Continuous	Continuous	Continuous
	EB Right	Continuous	Continuous	Continuous	Continuous
	WB Left	–	225	130	225
	WB Through	Continuous	Continuous	Continuous	Continuous
	WB Right	–	Continuous	380	380
	NB Left	–	400	260	400
	NB Through	Continuous	Continuous	Continuous	Continuous
	NB Right	–	50	100	100
	SB Left	–	325	200	325
	SB Through	Continuous	Continuous	Continuous	Continuous
	SB Right	–	360	460	460
2. Kewaunee St & Jewell Avenue	EB Left	–	50	80	80
	EB Through	Continuous	Continuous	Continuous	Continuous
	EB Right	Continuous	Continuous	Continuous	Continuous
	WB Left	–	50	60	60
	WB Through	Continuous	Continuous	Continuous	Continuous
	WB Right	Continuous	Continuous	Continuous	Continuous
	NB Left	–	125	80	125
	NB Through/Right	Continuous	Continuous	Continuous	Continuous
	SB Left	–	125	80	125
	SB Through/Right	Continuous	Continuous	Continuous	Continuous
3. Harvest Rd & Pacific Ave	EB Left	–	50	40	50
	EB Through/Right	Continuous	Continuous	Continuous	Continuous
	WB Left	–	50	40	50
	WB Through/Right	Continuous	Continuous	Continuous	Continuous
	NB Left	–	50	40	50
	SB Left	–	50	100	100
4. Kewaunee St & Pacific Ave	EB Left/Right	Continuous	Continuous	Continuous	Continuous
	NB Left	–	50	40	50

Intersection	Movement	Existing Storage (ft)	95th Percentile Queue (ft)	SHAC Recommended Storage (ft)	Overall Recommended Storage (ft)
5. Harvest Rd & Warren Ave	EB Left	–	50	40	50
	EB Through/Right	Continuous	Continuous	Continuous	Continuous
	WB Left	–	50	40	50
	WB Through/Right	Continuous	Continuous	Continuous	Continuous
	NB Left	–	50	40	50
	SB Left	–	50	80	80
6. Kewaunee St & Warren Ave	EB Left/Through/Right	Continuous	Continuous	Continuous	Continuous
	WB Left/Through/Right	Continuous	Continuous	Continuous	Continuous
	NB Left	–	50	40	50
	SB Left	–	50	120	120
7. Harvest Rd & Wesley Pl	EB Left	–	50	40	50
	EB Through/Right	Continuous	Continuous	Continuous	Continuous
	WB Left	–	50	40	50
	WB Through/Right	Continuous	Continuous	Continuous	Continuous
	NB Left	–	50	40	50
	SB Left	–	50	100	100
8. Kewaunee St & Wesley Pl	EB Left/Right	Continuous	Continuous	Continuous	Continuous
	NB Left	–	50	40	50
9. Harvest Rd & Yale Ave	EB Left/Through	Continuous	Continuous	Continuous	Continuous
	WB Through/Right	Continuous	Continuous	Continuous	Continuous
	SB Left/Right	Continuous	Continuous	Continuous	Continuous
10. Yale Ave & Jackson Gap St	EB Left/Through	Continuous	Continuous	Continuous	Continuous
	SB Left/Right	Continuous	Continuous	Continuous	Continuous
11. Yale Ave & Kewaunee St	EB Left/Through	Continuous	Continuous	Continuous	Continuous
	SB Left/Right	Continuous	Continuous	Continuous	Continuous
12. Jewell Ave & Access	WB Left	-	50	50	50
	NB Left/Right	Continuous	Continuous	Continuous	Continuous
13. Jewell Ave & Jackson Gap St	NB Right	Continuous	Continuous	Continuous	Continuous
14. Kewaunee St & North Site Access	EB Left/Right	Continuous	Continuous	Continuous	Continuous
	NB Left	–	50	40	50

Intersection	Movement	Existing Storage (ft)	95th Percentile Queue (ft)	SHAC Recommended Storage (ft)	Overall Recommended Storage (ft)
15. Kewaunee St & South Site Access	EB Left/Right	Continuous	Continuous	Continuous	Continuous
	NB Left	–	50	40	50
16. Harvest Rd & Access	WB Right	Continuous	Continuous	Continuous	Continuous

VII. SUMMARY AND RECOMMENDATIONS

Harvest Crossing is a planned development encompassing approximately 200 acres in Aurora, Colorado. The site is located in the southeast quadrant of the Harvest Rd / E. Jewell Ave intersection and is directly east of the Murphy Creek East development. The proposed land uses include 145 single family dwelling units in Filing 1 and 260 single family dwelling units in Filing 2 (year 2026). The total buildout of 854 single family dwelling units and 76,500 square feet of commercial space is expected by 2040. The total buildout of the development is estimated to generate approximately 12,930 daily vehicle-trips per day.

Roadway classifications were based on the approved Harvest Crossing master traffic impact analysis. Traffic signals are anticipated to be installed at the major intersections, including:

- **E. Jewell Ave & Harvest Rd**, which is anticipated to meet warrants between 2025 and 2040. The developer should anticipate a 25 percent contribution to the signal construction at this location.
- **E. Jewell Ave & Road C (Irvington St)**, which is anticipated to meet warrants when development north of Harvest Crossing begins to occur. The developer should anticipate a 50 percent contribution to the eventual signal construction at this location.
- **E. Jewell Ave & Kewaunee St**, which is anticipated to meet warrants when development north and east of Harvest Crossing begins to occur. The developer should anticipate a 25 percent contribution to the eventual signal construction at this location.

Most of the studied intersections operate at LOS D or better in the short-term and long-term total traffic scenarios. The individual movements at the unsignalized intersection operate with acceptable LOS (LOS D and better) except for the following:

- Harvest Rd / Pacific Ave
 - The eastbound left-turn operates at LOS E in the PM peak hour.
 - The westbound left-turn operates at LOS F in the PM peak hour.
- Harvest Rd / Warren Ave
 - The eastbound left-turn operates at LOS E in the PM peak hour.

The study has also demonstrated that two means of egress can be provided during both Filing 2 and full buildout scenarios.

APPENDIX A. EXISTING TRAFFIC COUNTS

DRAFT

All Traffic Data Services
Wheat Ridge, CO 80033

Page 1

Site Code: 2
Station ID: 2
JEWELL AVE E.O. HARVEST RD

Start Time	13-Feb-20 Thu	EB	WB							Total
12:00 AM		5	17							22
01:00		3	8							11
02:00		7	3							10
03:00		6	4							10
04:00		21	1							22
05:00		74	21							95
06:00		86	69							155
07:00		59	120							179
08:00		65	63							128
09:00		45	56							101
10:00		38	52							90
11:00		34	52							86
12:00 PM		52	59							111
01:00		64	53							117
02:00		53	97							150
03:00		62	114							176
04:00		90	114							204
05:00		80	110							190
06:00		61	61							122
07:00		44	41							85
08:00		29	19							48
09:00		37	18							55
10:00		13	10							23
11:00		8	25							33
Total		1036	1187							2223
Percent		46.6%	53.4%							
AM Peak	-	06:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	86	120	-	-	-	-	-	-	179
PM Peak	-	16:00	15:00	-	-	-	-	-	-	16:00
Vol.	-	90	114	-	-	-	-	-	-	204
Grand Total		1036	1187							2223
Percent		46.6%	53.4%							
ADT		ADT 2,223	AADT 2,223							



(303) 216-2439
www.alltrafficdata.net

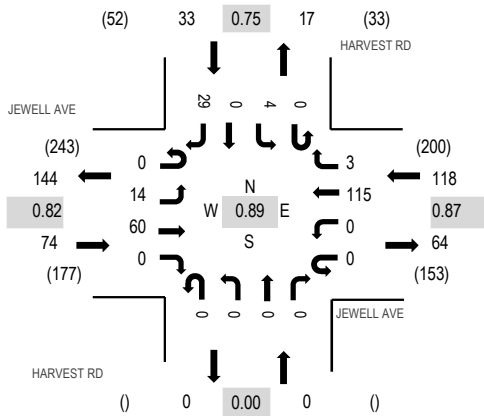
Location: 1 HARVEST RD & JEWELL AVE AM

Date: Thursday, February 13, 2020

Peak Hour: 06:45 AM - 07:45 AM

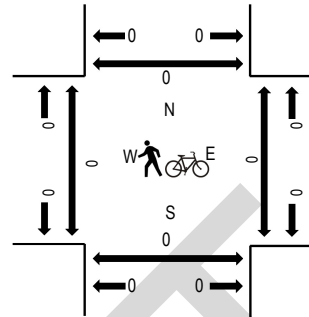
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	JEWELL AVE Eastbound				JEWELL AVE Westbound				HARVEST RD Northbound				HARVEST RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	2	30	0	0	0	0	19	1	0	0	0	0	0	0	5	57	219	0	0	0	0
6:45 AM	0	4	22	0	0	0	0	29	0	0	0	0	0	1	0	4	60	225	0	0	0	0
7:00 AM	0	4	13	0	0	0	0	27	1	0	0	0	0	0	0	11	56	218	0	0	0	0
7:15 AM	0	4	9	0	0	0	0	25	2	0	0	0	0	0	0	6	46	210	0	0	0	0
7:30 AM	0	2	16	0	0	0	0	34	0	0	0	0	0	3	0	8	63	210	0	0	0	0
7:45 AM	0	1	18	0	0	0	0	29	0	0	0	0	0	0	0	5	53		0	0	0	0
8:00 AM	1	6	20	0	0	0	0	17	0	0	0	0	0	0	0	4	48		0	0	0	0
8:15 AM	0	5	20	0	0	0	0	15	1	0	0	0	0	1	0	4	46		0	0	0	0
Count Total	1	28	148	0	0	0	0	195	5	0	0	0	0	5	0	47	429		0	0	0	0
Peak Hour	0	14	60	0	0	0	0	115	3	0	0	0	0	4	0	29	225		0	0	0	0



(303) 216-2439
www.alltrafficdata.net

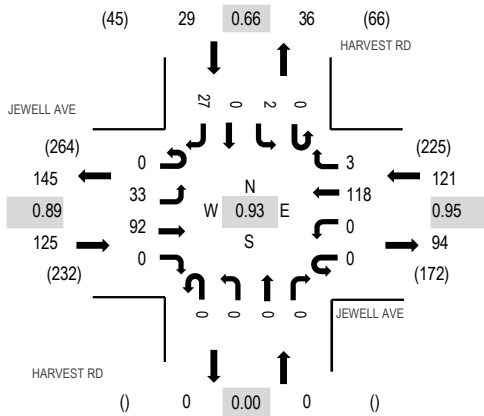
Location: 1 HARVEST RD & JEWELL AVE PM

Date: Thursday, February 13, 2020

Peak Hour: 04:30 PM - 05:30 PM

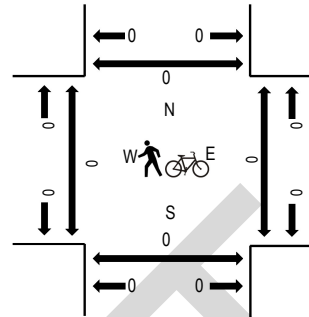
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts




Interval Start Time	JEWELL AVE Eastbound				JEWELL AVE Westbound				HARVEST RD Northbound				HARVEST RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	4	19	0	0	0	0	27	0	0	0	0	0	0	0	0	54	251	0	0	0	0
4:15 PM	0	8	19	0	0	0	0	27	1	0	0	0	0	1	0	0	60	261	0	0	0	0
4:30 PM	0	5	30	0	0	0	0	32	0	0	0	0	0	1	0	0	73	275	0	0	0	0
4:45 PM	0	10	20	0	0	0	0	27	1	0	0	0	0	1	0	0	64	269	0	0	0	0
5:00 PM	0	9	19	0	0	0	0	29	1	0	0	0	0	0	0	0	64	251	0	0	0	0
5:15 PM	0	9	23	0	0	0	0	30	1	0	0	0	0	0	0	0	74		0	0	0	0
5:30 PM	0	11	23	0	0	0	0	30	0	0	0	0	0	0	0	0	67		0	0	0	0
5:45 PM	1	6	16	0	0	0	0	19	0	0	0	0	0	0	0	0	46		0	0	0	0
Count Total	1	62	169	0	0	0	0	221	4	0	0	0	0	3	0	0	502		0	0	0	0
Peak Hour	0	33	92	0	0	0	0	118	3	0	0	0	0	2	0	0	275		0	0	0	0

APPENDIX B. EXISTING LEVEL OF SERVICE

DRAFT

HCM 6th TWSC
1: Jewell Avenue & Harvest Road

Existing Conditions
AM Peak

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	60	115	3	4	29
Future Vol, veh/h	14	60	115	3	4	29
Conflicting Peds, #/hr	0	0	0	0	4	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	82	82	87	87	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	73	132	3	5	39
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	135	0	-	0	245	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	111	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1449	-	-	-	743	915
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	914	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1449	-	-	-	734	915
Mov Cap-2 Maneuver	-	-	-	-	734	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	914	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1449	-	-	-	888	
HCM Lane V/C Ratio	0.012	-	-	-	0.05	
HCM Control Delay (s)	7.5	0	-	-	9.3	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

HCM 6th TWSC
1: Jewell Avenue & Harvest Road

Existing Conditions
PM Peak

Intersection

Int Delay, s/veh 2.3

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↰	↱		↰	↱
Traffic Vol, veh/h	33	92	118	3	4	27
Future Vol, veh/h	33	92	118	3	4	27
Conflicting Peds, #/hr	0	0	0	0	4	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	89	89	95	95	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	103	124	3	6	41

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	127	0	-	0	307	126
Stage 1	-	-	-	-	126	-
Stage 2	-	-	-	-	181	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1459	-	-	-	685	924
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	850	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1459	-	-	-	667	924
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	850	-

Approach EB WB SB

HCM Control Delay, s	2	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1459	-	-	-	880
HCM Lane V/C Ratio	0.025	-	-	-	0.053
HCM Control Delay (s)	7.5	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

APPENDIX C. BACKGROUND TRAFFIC LEVEL OF SERVICE WORKSHEETS

DRAFT

HCM 6th TWSC
1: Harvest Road & Jewell Avenue

Short Term Background Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱			↕		↰	↱	↰		↕	
Traffic Vol, veh/h	24	80	27	2	150	5	86	27	6	5	8	39
Future Vol, veh/h	24	80	27	2	150	5	86	27	6	5	8	39
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	250	-	-	-	-	-	250	-	250	-	-	-
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	26	87	29	2	163	5	93	29	7	5	9	42
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	168	0	0	116	0	0	349	326	102	342	338	166
Stage 1	-	-	-	-	-	-	154	154	-	170	170	-
Stage 2	-	-	-	-	-	-	195	172	-	172	168	-
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	1410	-	-	1473	-	-	606	592	953	612	583	878
Stage 1	-	-	-	-	-	-	848	770	-	832	758	-
Stage 2	-	-	-	-	-	-	807	756	-	830	759	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1410	-	-	1473	-	-	562	581	953	576	572	878
Mov Cap-2 Maneuver	-	-	-	-	-	-	562	581	-	576	572	-
Stage 1	-	-	-	-	-	-	833	756	-	817	757	-
Stage 2	-	-	-	-	-	-	758	755	-	778	745	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			0.1			12.2			10		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1			NBLn2			EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	562			581			1410	-	-	1473	-	-
HCM Lane V/C Ratio	0.166			0.051			0.019	-	-	0.001	-	-
HCM Control Delay (s)	12.7			11.5			8.8	-	-	7.4	0	-
HCM Lane LOS	B			B			A	-	-	A	-	B
HCM 95th %tile Q(veh)	0.6			0.2			0	-	-	0	-	-

HCM 6th TWSC
2: Kewaunee Street & Jewell Avenue

Short Term Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Vol, veh/h	83	0	2	146	0	4
Future Vol, veh/h	83	0	2	146	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	90	0	2	159	0	4
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	90	0	253	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1505	-	736	968
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1505	-	735	968
Mov Cap-2 Maneuver	-	-	-	-	735	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	865	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		8.7	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	968	-	-	1505	-	
HCM Lane V/C Ratio	0.004	-	-	0.001	-	
HCM Control Delay (s)	8.7	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	




HCM 6th TWSC
3: Harvest Road & Pacific Avenue

Short Term Background Conditions
AM Peak Hour

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	11	0	0	0	0	36	0	117	0	12	20	4
Future Vol, veh/h	11	0	0	0	0	36	0	117	0	12	20	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
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	12	0	0	0	0	39	0	127	0	13	22	4
Major/Minor	Minor2		Minor1		Major1				Major2			
Conflicting Flow All	197	177	24	177	179	127	26	0	0	127	0	0
Stage 1	50	50	-	127	127	-	-	-	-	-	-	-
Stage 2	147	127	-	50	52	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	762	717	1052	785	715	923	1588	-	-	1459	-	-
Stage 1	963	853	-	877	791	-	-	-	-	-	-	-
Stage 2	856	791	-	963	852	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	725	711	1052	780	709	923	1588	-	-	1459	-	-
Mov Cap-2 Maneuver	725	711	-	780	709	-	-	-	-	-	-	-
Stage 1	963	845	-	877	791	-	-	-	-	-	-	-
Stage 2	820	791	-	954	844	-	-	-	-	-	-	-
Approach	EB		WB		NB				SB			
HCM Control Delay, s	10		9.1		0				2.5			
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1588	-	-	725	923	1459	-	-				
HCM Lane V/C Ratio	-	-	-	0.016	0.042	0.009	-	-				
HCM Control Delay (s)	0	-	-	10	9.1	7.5	-	-				
HCM Lane LOS	A	-	-	B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

HCM 6th TWSC
4: Kewaunee Street & Pacific Avenue

Short Term Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	3	1	1
Future Vol, veh/h	1	0	0	3	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	1	0	0	3	1	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	5	2	2	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1017	1082	1620	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1017	1082	1620	-	-	-
Mov Cap-2 Maneuver	1017	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1620	-	1017	-	-	
HCM Lane V/C Ratio	-	-	0.001	-	-	
HCM Control Delay (s)	0	-	8.5	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	




HCM 6th TWSC
5: Harvest Road & Warren Avenue

Short Term Background Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↗		↙	↗	
Traffic Vol, veh/h	15	0	0	0	0	24	0	27	0	7	9	4
Future Vol, veh/h	15	0	0	0	0	24	0	27	0	7	9	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
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	16	0	0	0	0	26	0	29	0	8	10	4
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	70	57	12	57	59	29	14	0	0	29	0	0
Stage 1	28	28	-	29	29	-	-	-	-	-	-	-
Stage 2	42	29	-	28	30	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	922	834	1069	940	832	1046	1604	-	-	1584	-	-
Stage 1	989	872	-	988	871	-	-	-	-	-	-	-
Stage 2	972	871	-	989	870	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	895	830	1069	936	828	1046	1604	-	-	1584	-	-
Mov Cap-2 Maneuver	895	830	-	936	828	-	-	-	-	-	-	-
Stage 1	989	868	-	988	871	-	-	-	-	-	-	-
Stage 2	948	871	-	984	866	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.5			0			2.5			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1604	-	-	895	1046	1584	-	-				
HCM Lane V/C Ratio	-	-	-	0.018	0.025	0.005	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.5	7.3	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

HCM 6th TWSC
6: Kewaunee Street & Warren Avenue

Short Term Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	0	0	1
Future Vol, veh/h	2	0	0	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	2	0	0	0	0	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1622	-	1022	-	-	
HCM Lane V/C Ratio	-	-	0.002	-	-	
HCM Control Delay (s)	0	-	8.5	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	




HCM 6th TWSC
7: Harvest Road & Wesley Place

Short Term Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	27	0	0	9
Future Vol, veh/h	0	0	27	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	0	0	29	0	0	10
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	39	29	0	0	29	0
Stage 1	29	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	973	1046	-	-	1584	-
Stage 1	994	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	973	1046	-	-	1584	-
Mov Cap-2 Maneuver	973	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1584	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	




HCM 6th TWSC
8: Kewaunee Street & Wesley Place




Short Term Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	6	3	0
Future Vol, veh/h	0	0	0	6	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	0	0	7	3	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	10	3	3	0	-	0
Stage 1	3	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1010	1081	1619	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1010	1081	1619	-	-	-
Mov Cap-2 Maneuver	1010	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1619	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th TWSC
10: Yale Avenue & Jackson Gap Street (South)

Short Term Background Conditions
AM Peak Hour








Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
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	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1	0	-	0	1	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	1022	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1622	-	-	-	1022	1084
Mov Cap-2 Maneuver	-	-	-	-	1022	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1622	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	6	3	0
Future Vol, veh/h	0	0	0	6	3	0
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	0	0	0	7	3	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	7	0	-	0	4	4
Stage 1	-	-	-	-	4	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1614	-	-	-	1018	1080
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1614	-	-	-	1018	1080
Mov Cap-2 Maneuver	-	-	-	-	1018	-
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		8.5	
HCM LOS					A	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1614	-	-	-	1018	
HCM Lane V/C Ratio	-	-	-	-	0.003	
HCM Control Delay (s)	0	-	-	-	8.5	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱		↱
Traffic Vol, veh/h	80	2	0	146	0	3
Future Vol, veh/h	80	2	0	146	0	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
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	87	2	0	159	0	3
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	88
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	970
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	970
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		8.7	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	970	-	-	-		
HCM Lane V/C Ratio	0.003	-	-	-		
HCM Control Delay (s)	8.7	-	-	-		
HCM Lane LOS	A	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		




HCM 6th TWSC
1: Harvest Road & Jewell Avenue

Short Term Background Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	129	88	6	153	5	54	18	3	7	30	41
Future Vol, veh/h	46	129	88	6	153	5	54	18	3	7	30	41
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	250	-	-	-	-	-	250	-	250	-	-	-
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	50	140	96	7	166	5	59	20	3	8	33	45
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	171	0	0	236	0	0	510	473	188	483	519	169
Stage 1	-	-	-	-	-	-	288	288	-	183	183	-
Stage 2	-	-	-	-	-	-	222	185	-	300	336	-
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	1406	-	-	1331	-	-	474	490	854	494	461	875
Stage 1	-	-	-	-	-	-	720	674	-	819	748	-
Stage 2	-	-	-	-	-	-	780	747	-	709	642	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1406	-	-	1331	-	-	411	469	854	461	442	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	411	469	-	461	442	-
Stage 1	-	-	-	-	-	-	694	650	-	790	744	-
Stage 2	-	-	-	-	-	-	704	743	-	661	619	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.3			0.3			14.4			12		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	411	469	854	1406	-	-	1331	-	-	600		
HCM Lane V/C Ratio	0.143	0.042	0.004	0.036	-	-	0.005	-	-	0.141		
HCM Control Delay (s)	15.2	13	9.2	7.7	-	-	7.7	0	-	12		
HCM Lane LOS	C	B	A	A	-	-	A	A	-	B		
HCM 95th %tile Q(veh)	0.5	0.1	0	0.1	-	-	0	-	-	0.5		

HCM 6th TWSC
2: Kewaunee Street & Jewell Avenue

Short Term Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	122	0	8	152	0	3
Future Vol, veh/h	122	0	8	152	0	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	-	-	-	-	-	-
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	133	0	9	165	0	3
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	133	0	316	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1452	-	677	916
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1452	-	672	916
Mov Cap-2 Maneuver	-	-	-	-	672	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	842	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		8.9	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	916	-	-	1452	-	
HCM Lane V/C Ratio	0.004	-	-	0.006	-	
HCM Control Delay (s)	8.9	-	-	7.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC
3: Harvest Road & Pacific Avenue

Short Term Background Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↗		↙	↗	
Traffic Vol, veh/h	7	0	0	0	0	23	0	42	0	42	70	12
Future Vol, veh/h	7	0	0	0	0	23	0	42	0	42	70	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
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	8	0	0	0	0	25	0	46	0	46	76	13
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	234	221	83	221	227	46	89	0	0	46	0	0
Stage 1	175	175	-	46	46	-	-	-	-	-	-	-
Stage 2	59	46	-	175	181	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	721	678	976	735	672	1023	1506	-	-	1562	-	-
Stage 1	827	754	-	968	857	-	-	-	-	-	-	-
Stage 2	953	857	-	827	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	688	658	976	719	653	1023	1506	-	-	1562	-	-
Mov Cap-2 Maneuver	688	658	-	719	653	-	-	-	-	-	-	-
Stage 1	827	732	-	968	857	-	-	-	-	-	-	-
Stage 2	930	857	-	803	728	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.3			8.6			0			2.5		
HCM LOS	B			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1506	-	-	688	1023	1562	-	-				
HCM Lane V/C Ratio	-	-	-	0.011	0.024	0.029	-	-				
HCM Control Delay (s)	0	-	-	10.3	8.6	7.4	-	-				
HCM Lane LOS	A	-	-	B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-				

HCM 6th TWSC
4: Kewaunee Street & Pacific Avenue




Short Term Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	✕✕			↰↱	↰↱	
Traffic Vol, veh/h	0	0	0	3	5	3
Future Vol, veh/h	0	0	0	3	5	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	0	0	3	5	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	10	7	8	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1010	1075	1612	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1010	1075	1612	-	-	-
Mov Cap-2 Maneuver	1010	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1612	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	12	0	0	0	0	16	0	24	0	25	31	14
Future Vol, veh/h	12	0	0	0	0	16	0	24	0	25	31	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
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	13	0	0	0	0	17	0	26	0	27	34	15
Major/Minor	Minor2		Minor1		Major1				Major2			
Conflicting Flow All	131	122	42	122	129	26	49	0	0	26	0	0
Stage 1	96	96	-	26	26	-	-	-	-	-	-	-
Stage 2	35	26	-	96	103	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	841	768	1029	853	762	1050	1558	-	-	1588	-	-
Stage 1	911	815	-	992	874	-	-	-	-	-	-	-
Stage 2	981	874	-	911	810	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	817	755	1029	842	749	1050	1558	-	-	1588	-	-
Mov Cap-2 Maneuver	817	755	-	842	749	-	-	-	-	-	-	-
Stage 1	911	801	-	992	874	-	-	-	-	-	-	-
Stage 2	965	874	-	896	796	-	-	-	-	-	-	-
Approach	EB		WB		NB				SB			
HCM Control Delay, s	9.5		8.5		0				2.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1558	-	-	817 1050	1588	-	-					
HCM Lane V/C Ratio	-	-	-	0.016 0.017 0.017	-	-	-					
HCM Control Delay (s)	0	-	-	9.5 8.5 7.3	-	-	-					
HCM Lane LOS	A	-	-	A A A	-	-	-					
HCM 95th %tile Q(veh)	0	-	-	0 0.1 0.1	-	-	-					




HCM 6th TWSC
6: Kewaunee Street & Warren Avenue

Short Term Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	0	0	3
Future Vol, veh/h	1	0	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	1	0	0	0	0	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2	2	3	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1021	1082	1619	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1021	1082	1619	-	-	-
Mov Cap-2 Maneuver	1021	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1619	-	1021	-	-	
HCM Lane V/C Ratio	-	-	0.001	-	-	
HCM Control Delay (s)	0	-	8.5	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	




HCM 6th TWSC
7: Harvest Road & Wesley Place

Short Term Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	24	0	0	31
Future Vol, veh/h	0	0	24	0	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	0	0	26	0	0	34
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	60	26	0	0	26	0
Stage 1	26	-	-	-	-	-
Stage 2	34	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	947	1050	-	-	1588	-
Stage 1	997	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	947	1050	-	-	1588	-
Mov Cap-2 Maneuver	947	-	-	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1588	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 6th TWSC
8: Kewaunee Street & Wesley Place

Short Term Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	0	0	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1622	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
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	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1	0	-	0	1	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	1022	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1622	-	-	-	1022	1084
Mov Cap-2 Maneuver	-	-	-	-	1022	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1622	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
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	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1	0	-	0	1	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	1022	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1622	-	-	-	1022	1084
Mov Cap-2 Maneuver	-	-	-	-	1022	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1622	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷		↷
Traffic Vol, veh/h	119	6	0	151	0	3
Future Vol, veh/h	119	6	0	151	0	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
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	129	7	0	164	0	3





























Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 133
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.22
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.318
Pot Cap-1 Maneuver	-	-	0 - 0 916
Stage 1	-	-	0 - 0 -
Stage 2	-	-	0 - 0 -
Platoon blocked, %	-	-	- - -
Mov Cap-1 Maneuver	-	-	- - - 916
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	916	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-
HCM Control Delay (s)	8.9	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Timings 1: Harvest Road & Jewell Avenue

Long Term Background Conditions
AM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  					 		
Traffic Volume (vph)	425	889	78	1109	356	215	252	88	190	164	400
Future Volume (vph)	425	889	78	1109	356	215	252	88	190	164	400
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	1	6		3	8		7	4	5
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	6	3	8	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	9.0
Total Split (s)	28.0	55.0	17.0	44.0	44.0	26.0	32.0	32.0	16.0	22.0	28.0
Total Split (%)	23.3%	45.8%	14.2%	36.7%	36.7%	21.7%	26.7%	26.7%	13.3%	18.3%	23.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	21.0	57.7	10.2	44.6	44.6	19.2	23.8	23.8	10.6	15.2	41.2
Actuated g/C Ratio	0.18	0.48	0.08	0.37	0.37	0.16	0.20	0.20	0.09	0.13	0.34
v/c Ratio	0.77	0.44	0.56	0.64	0.48	0.83	0.74	0.22	0.68	0.75	0.71
Control Delay	56.2	22.6	66.6	28.1	4.4	72.4	57.5	1.9	65.0	70.5	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	22.6	66.6	28.1	4.4	72.4	57.5	1.9	65.0	70.5	31.5
LOS	E	C	E	C	A	E	E	A	E	E	C
Approach Delay		32.8		24.6			54.4			48.4	
Approach LOS		C		C			D			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 35.4

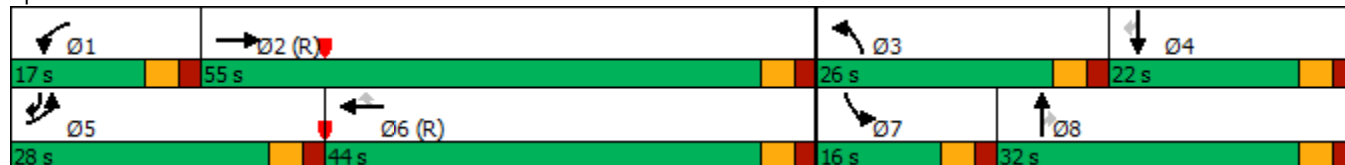
Intersection LOS: D

Intersection Capacity Utilization 70.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Harvest Road & Jewell Avenue
































HCM 6th Signalized Intersection Summary

1: Harvest Road & Jewell Avenue

















Long Term Background Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  					 		
Traffic Volume (veh/h)	425	889	89	78	1109	356	215	252	88	190	164	400
Future Volume (veh/h)	425	889	89	78	1109	356	215	252	88	190	164	400
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	462	966	97	85	1205	387	234	274	96	207	178	435
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	537	2282	229	107	1982	615	263	398	337	265	265	471
Arrive On Green	0.16	0.48	0.49	0.12	0.78	0.78	0.15	0.21	0.21	0.08	0.14	0.14
Sat Flow, veh/h	3456	4717	472	1781	5106	1585	1781	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	462	696	367	85	1205	387	234	274	96	207	178	435
Grp Sat Flow(s),veh/h/ln	1728	1702	1785	1781	1702	1585	1781	1870	1585	1728	1870	1585
Q Serve(g_s), s	15.6	15.9	16.0	5.6	12.0	12.8	15.5	16.2	6.1	7.1	10.8	17.0
Cycle Q Clear(g_c), s	15.6	15.9	16.0	5.6	12.0	12.8	15.5	16.2	6.1	7.1	10.8	17.0
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	537	1647	864	107	1982	615	263	398	337	265	265	471
V/C Ratio(X)	0.86	0.42	0.42	0.80	0.61	0.63	0.89	0.69	0.28	0.78	0.67	0.92
Avail Cap(c_a), veh/h	662	1647	864	178	1982	615	312	421	357	317	265	471
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	20.1	20.0	52.1	9.5	9.6	50.2	43.6	39.6	54.4	48.9	40.8
Incr Delay (d2), s/veh	9.4	0.8	1.5	12.5	1.4	4.8	22.8	4.4	0.5	10.0	6.5	23.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.8	10.3	11.0	4.9	5.4	6.4	13.3	12.6	4.4	6.2	9.4	21.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	20.9	21.5	64.6	10.9	14.4	72.9	47.9	40.0	64.4	55.3	64.8
LnGrp LOS	E	C	C	E	B	B	E	D	D	E	E	E
Approach Vol, veh/h		1525			1677			604			820	
Approach Delay, s/veh		32.5			14.5			56.4			62.6	
Approach LOS		C			B			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	63.1	22.7	22.0	23.7	51.6	14.2	30.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	50.0	21.0	17.0	23.0	39.0	11.0	27.0				
Max Q Clear Time (g_c+I1), s	7.6	18.0	17.5	19.0	17.6	14.8	9.1	18.2				
Green Ext Time (p_c), s	0.1	5.2	0.3	0.0	1.0	8.7	0.2	1.0				
Intersection Summary												
HCM 6th Ctrl Delay			34.4									
HCM 6th LOS			C									

Timings 2: Kewaunee Street & Jewell Avenue

Long Term Background Conditions
AM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	1129	19	1412	69	31	55	40
Future Volume (vph)	30	1129	19	1412	69	31	55	40
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	13.0	74.0	12.0	73.0	34.0	34.0	34.0	34.0
Total Split (%)	10.8%	61.7%	10.0%	60.8%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effect Green (s)	95.5	93.0	94.2	90.6	12.6	12.6	12.6	12.6
Actuated g/C Ratio	0.80	0.78	0.78	0.76	0.10	0.10	0.10	0.10
v/c Ratio	0.12	0.32	0.06	0.42	0.66	0.31	0.43	0.47
Control Delay	4.0	4.4	3.3	6.6	77.1	32.0	58.3	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	4.4	3.3	6.6	77.1	32.0	58.3	29.9
LOS	A	A	A	A	E	C	E	C
Approach Delay		4.4		6.6		56.3		40.0
Approach LOS		A		A		E		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 9.6
 Intersection Capacity Utilization 47.2%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 2: Kewaunee Street & Jewell Avenue



























HCM 6th Signalized Intersection Summary

2: Kewaunee Street & Jewell Avenue









Long Term Background Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	30	1129	15	19	1412	50	69	31	28	55	40	61
Future Volume (veh/h)	30	1129	15	19	1412	50	69	31	28	55	40	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1227	16	21	1535	54	75	34	30	60	43	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	3745	49	410	3623	127	160	126	111	199	91	140
Arrive On Green	0.04	1.00	1.00	0.02	0.72	0.72	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	5194	68	1781	5064	178	1284	916	809	1338	665	1021
Grp Volume(v), veh/h	33	804	439	21	1032	557	75	0	64	60	0	109
Grp Sat Flow(s),veh/h/ln	1781	1702	1858	1781	1702	1838	1284	0	1725	1338	0	1687
Q Serve(g_s), s	0.6	0.0	0.0	0.4	14.8	14.9	6.9	0.0	4.0	5.0	0.0	7.2
Cycle Q Clear(g_c), s	0.6	0.0	0.0	0.4	14.8	14.9	14.0	0.0	4.0	9.0	0.0	7.2
Prop In Lane	1.00		0.04	1.00		0.10	1.00		0.47	1.00		0.61
Lane Grp Cap(c), veh/h	290	2454	1340	410	2436	1315	160	0	237	199	0	231
V/C Ratio(X)	0.11	0.33	0.33	0.05	0.42	0.42	0.47	0.00	0.27	0.30	0.00	0.47
Avail Cap(c_a), veh/h	369	2454	1340	484	2436	1315	294	0	417	339	0	408
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.1	0.0	0.0	4.4	7.0	7.0	54.2	0.0	46.4	50.4	0.0	47.7
Incr Delay (d2), s/veh	0.2	0.4	0.7	0.1	0.5	1.0	2.1	0.0	0.6	0.8	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.2	0.4	0.2	8.3	9.1	4.2	0.0	3.2	3.1	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	0.4	0.7	4.4	7.5	8.0	56.3	0.0	47.0	51.3	0.0	49.2
LnGrp LOS	A	A	A	A	A	A	E	A	D	D	A	D
Approach Vol, veh/h	1276				1610				139			
Approach Delay, s/veh	0.6				7.6				52.0			
Approach LOS	A				A				D			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	91.5		21.5	7.7	90.9		21.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	69.0		29.0	8.0	68.0		29.0				
Max Q Clear Time (g_c+I1), s	2.4	2.0		11.0	2.6	16.9		16.0				
Green Ext Time (p_c), s	0.0	6.5		0.7	0.0	9.6		0.5				
Intersection Summary												
HCM 6th Ctrl Delay	9.0											
HCM 6th LOS	A											




HCM 6th TWSC
3: Harvest Road & Pacific Avenue

Long Term Background Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	10	0	0	54	3	399	0	18	261	4
Future Vol, veh/h	11	0	10	0	0	54	3	399	0	18	261	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	12	0	11	0	0	59	3	434	0	20	284	4
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	796	766	286	772	768	434	288	0	0	434	0	0
Stage 1	326	326	-	440	440	-	-	-	-	-	-	-
Stage 2	470	440	-	332	328	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	305	333	753	317	332	622	1274	-	-	1126	-	-
Stage 1	687	648	-	596	578	-	-	-	-	-	-	-
Stage 2	574	578	-	681	647	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	272	326	753	307	325	622	1274	-	-	1126	-	-
Mov Cap-2 Maneuver	272	326	-	307	325	-	-	-	-	-	-	-
Stage 1	686	636	-	595	577	-	-	-	-	-	-	-
Stage 2	519	577	-	659	635	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	14.6			11.4			0.1			0.5		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1274	-	-	272	753	-	622	1126	-	-		
HCM Lane V/C Ratio	0.003	-	-	0.044	0.014	-	0.094	0.017	-	-		
HCM Control Delay (s)	7.8	-	-	18.8	9.9	0	11.4	8.3	-	-		
HCM Lane LOS	A	-	-	C	A	A	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	0.3	0.1	-	-		









HCM 6th TWSC
4: Kewaunee Street & Pacific Avenue

Long Term Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	127	73	1
Future Vol, veh/h	1	0	0	127	73	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	1	0	0	138	79	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	218	80	80	0	-	0
Stage 1	80	-	-	-	-	-
Stage 2	138	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	788	1006	1528	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	788	1006	1528	-	-	-
Mov Cap-2 Maneuver	788	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1528	-	788	-	-	
HCM Lane V/C Ratio	-	-	0.001	-	-	
HCM Control Delay (s)	0	-	9.6	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
5: Harvest Road & Warren Avenue

Long Term Background Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	0	5	14	0	67	2	314	4	22	242	7
Future Vol, veh/h	21	0	5	14	0	67	2	314	4	22	242	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	23	0	5	15	0	73	2	341	4	24	263	8
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	699	664	267	665	666	343	271	0	0	345	0	0
Stage 1	315	315	-	347	347	-	-	-	-	-	-	-
Stage 2	384	349	-	318	319	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	354	381	772	374	380	700	1292	-	-	1214	-	-
Stage 1	696	656	-	669	635	-	-	-	-	-	-	-
Stage 2	639	633	-	693	653	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	312	373	772	365	372	700	1292	-	-	1214	-	-
Mov Cap-2 Maneuver	312	373	-	365	372	-	-	-	-	-	-	-
Stage 1	695	643	-	668	634	-	-	-	-	-	-	-
Stage 2	572	632	-	675	640	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	15.9			11.5			0			0.7		
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1292	-	-	312	772	365	700	1214	-	-		
HCM Lane V/C Ratio	0.002	-	-	0.073	0.007	0.042	0.104	0.02	-	-		
HCM Control Delay (s)	7.8	-	-	17.4	9.7	15.3	10.7	8	-	-		
HCM Lane LOS	A	-	-	C	A	C	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.1	0.3	0.1	-	-		









HCM 6th TWSC
6: Kewaunee Street & Warren Avenue

Long Term Background Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	0	4	5	0	65	1	45	5	30	36	7
Future Vol, veh/h	15	0	4	5	0	65	1	45	5	30	36	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
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	16	0	4	5	0	71	1	49	5	33	39	8
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	198	165	43	165	167	52	47	0	0	54	0	0
Stage 1	109	109	-	54	54	-	-	-	-	-	-	-
Stage 2	89	56	-	111	113	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	766	731	1034	805	729	1016	1563	-	-	1551	-	-
Stage 1	901	807	-	958	850	-	-	-	-	-	-	-
Stage 2	918	848	-	899	804	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	700	714	1034	788	712	1016	1563	-	-	1551	-	-
Mov Cap-2 Maneuver	700	714	-	788	712	-	-	-	-	-	-	-
Stage 1	900	790	-	957	849	-	-	-	-	-	-	-
Stage 2	853	847	-	875	787	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.9			8.9			0.1			3		
HCM LOS	A			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1563	-	-	751	995	1551	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.027	0.076	0.021	-	-				
HCM Control Delay (s)	7.3	0	-	9.9	8.9	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-				




HCM 6th TWSC
7: Harvest Road & Wesley Place

Long Term Background Conditions
AM Peak Hour

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	7	0	2	22	0	85	0	228	7	28	231	2
Future Vol, veh/h	7	0	2	22	0	85	0	228	7	28	231	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	8	0	2	24	0	92	0	248	8	30	251	2
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	610	568	252	565	565	252	253	0	0	256	0	0
Stage 1	312	312	-	252	252	-	-	-	-	-	-	-
Stage 2	298	256	-	313	313	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	407	432	787	436	434	787	1312	-	-	1309	-	-
Stage 1	699	658	-	752	698	-	-	-	-	-	-	-
Stage 2	711	696	-	698	657	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	353	422	787	427	424	787	1312	-	-	1309	-	-
Mov Cap-2 Maneuver	353	422	-	427	424	-	-	-	-	-	-	-
Stage 1	699	643	-	752	698	-	-	-	-	-	-	-
Stage 2	628	696	-	680	642	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.1		11		0		0.8					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1312	-	-	353	787	427	787	1309	-	-		
HCM Lane V/C Ratio	-	-	-	0.022	0.003	0.056	0.117	0.023	-	-		
HCM Control Delay (s)	0	-	-	15.4	9.6	13.9	10.2	7.8	-	-		
HCM Lane LOS	A	-	-	C	A	B	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.2	0.4	0.1	-	-		




HCM 6th TWSC
8: Kewaunee Street & Wesley Place




Long Term Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	6	2	22	36	9
Future Vol, veh/h	29	6	2	22	36	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	32	7	2	24	39	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	72	44	49	0	-	0
Stage 1	44	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	932	1026	1558	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	931	1026	1558	-	-	-
Mov Cap-2 Maneuver	931	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0.6		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1558	-	946	-	-	
HCM Lane V/C Ratio	0.001	-	0.04	-	-	
HCM Control Delay (s)	7.3	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
10: Yale Avenue & Jackson Gap Street (South)

Long Term Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	319	248	1	4	13
Future Vol, veh/h	5	319	248	1	4	13
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	5	347	270	1	4	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	271	0	-	0	628	271
Stage 1	-	-	-	-	271	-
Stage 2	-	-	-	-	357	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1292	-	-	-	447	768
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	708	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1292	-	-	-	445	768
Mov Cap-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	708	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		10.6		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1292	-	-	-	-	656
HCM Lane V/C Ratio	0.004	-	-	-	-	0.028
HCM Control Delay (s)	7.8	0	-	-	-	10.6
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	309	244	10	27	15
Future Vol, veh/h	30	309	244	10	27	15
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	33	336	265	11	29	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	276	0	-	0	673	271
Stage 1	-	-	-	-	271	-
Stage 2	-	-	-	-	402	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1287	-	-	-	421	768
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	676	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1287	-	-	-	408	768
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	676	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		13.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1287	-	-	-	-	490
HCM Lane V/C Ratio	0.025	-	-	-	-	0.093
HCM Control Delay (s)	7.9	0	-	-	-	13.1
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.3

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Traffic Vol, veh/h	1164	2	0	1542	0	10
Future Vol, veh/h	1164	2	0	1542	0	10
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	1265	2	0	1676	0	11
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	634
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	*653
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	-	*653
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		10.6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	653	-	-	-		
HCM Lane V/C Ratio	0.017	-	-	-		
HCM Control Delay (s)	10.6	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

MOVEMENT SUMMARY

 Site: 9 [AM_Harvest & Yale (Site Folder: General)]

AM_9

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] ft				
East: Yale Ave														
6	T1	128	3.0	139	3.0	0.238	5.1	LOS A	1.2	30.7	0.30	0.16	0.30	35.1
16	R2	133	3.0	145	3.0	0.238	5.1	LOS A	1.2	30.7	0.30	0.16	0.30	34.1
Approach		261	3.0	284	3.0	0.238	5.1	LOS A	1.2	30.7	0.30	0.16	0.30	34.6
North: Harvest Rd														
7	L2	207	3.0	225	3.0	0.239	5.3	LOS A	1.2	30.6	0.34	0.20	0.34	32.8
14	R2	48	3.0	52	3.0	0.239	5.3	LOS A	1.2	30.6	0.34	0.20	0.34	31.9
Approach		255	3.0	277	3.0	0.239	5.3	LOS A	1.2	30.6	0.34	0.20	0.34	32.6
West: Yale Ave														
5	L2	102	3.0	111	3.0	0.225	5.5	LOS A	1.1	27.4	0.42	0.29	0.42	33.7
2	T1	117	3.0	127	3.0	0.225	5.5	LOS A	1.1	27.4	0.42	0.29	0.42	33.6
Approach		219	3.0	238	3.0	0.225	5.5	LOS A	1.1	27.4	0.42	0.29	0.42	33.6
All Vehicles		735	3.0	799	3.0	0.239	5.3	LOS A	1.2	30.7	0.35	0.21	0.35	33.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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



























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Project: I:\124044-01 Harvest Xing F2 TIS Update\08_TRF\Analysis\SIDRA\Background\LT_Background.sip9

Timings

1: Harvest Road & Jewell Avenue

Long Term Background Conditions
PM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  				 	 		
Traffic Volume (vph)	408	1183	115	1220	257	159	347	88	318	336	452
Future Volume (vph)	408	1183	115	1220	257	159	347	88	318	336	452
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	1	6		3	8		7	4	5
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	6	3	8	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	9.0
Total Split (s)	24.0	49.0	18.0	43.0	43.0	20.0	33.0	33.0	20.0	33.0	24.0
Total Split (%)	20.0%	40.8%	15.0%	35.8%	35.8%	16.7%	27.5%	27.5%	16.7%	27.5%	20.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	18.7	46.7	11.9	39.9	39.9	14.3	26.7	26.7	14.6	27.1	50.8
Actuated g/C Ratio	0.16	0.39	0.10	0.33	0.33	0.12	0.22	0.22	0.12	0.23	0.42
v/c Ratio	0.83	0.79	0.71	0.78	0.39	0.82	0.91	0.20	0.83	0.87	0.69
Control Delay	63.1	35.6	70.9	38.8	8.4	80.6	72.2	1.7	68.5	66.3	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	35.6	70.9	38.8	8.4	80.6	72.2	1.7	68.5	66.3	30.2
LOS	E	D	E	D	A	F	E	A	E	E	C
Approach Delay		41.8		36.2			64.0			52.2	
Approach LOS		D		D			E			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 44.9

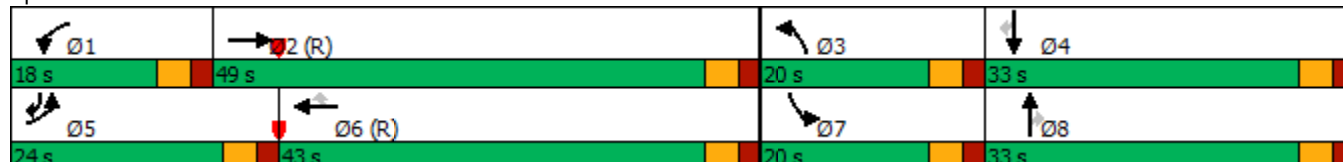
Intersection LOS: D

Intersection Capacity Utilization 79.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Harvest Road & Jewell Avenue


























HCM 6th Signalized Intersection Summary

1: Harvest Road & Jewell Avenue

















Long Term Background Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	1183	232	115	1220	257	159	347	88	318	336	452
Future Volume (veh/h)	408	1183	232	115	1220	257	159	347	88	318	336	452
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	443	1286	252	125	1326	279	173	377	96	346	365	491
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	504	1725	338	151	1745	542	200	429	363	403	436	601
Arrive On Green	0.15	0.40	0.41	0.11	0.45	0.45	0.11	0.23	0.23	0.12	0.23	0.23
Sat Flow, veh/h	3456	4284	839	1781	5106	1585	1781	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	443	1022	516	125	1326	279	173	377	96	346	365	491
Grp Sat Flow(s),veh/h/ln	1728	1702	1719	1781	1702	1585	1781	1870	1585	1728	1870	1585
Q Serve(g_s), s	15.1	30.7	30.7	8.2	26.0	15.0	11.5	23.4	6.0	11.8	22.3	28.0
Cycle Q Clear(g_c), s	15.1	30.7	30.7	8.2	26.0	15.0	11.5	23.4	6.0	11.8	22.3	28.0
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	504	1371	692	151	1745	542	200	429	363	403	436	601
V/C Ratio(X)	0.88	0.75	0.75	0.83	0.76	0.52	0.86	0.88	0.26	0.86	0.84	0.82
Avail Cap(c_a), veh/h	547	1371	692	193	1745	542	223	436	370	432	436	601
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	30.6	30.4	52.4	28.6	25.7	52.3	44.7	37.9	52.0	43.8	33.5
Incr Delay (d2), s/veh	14.4	3.7	7.2	20.4	3.2	3.5	25.9	18.1	0.4	15.0	13.3	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.9	18.7	19.5	7.8	14.9	9.7	10.8	18.8	0.1	9.9	17.5	20.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.7	34.3	37.5	72.7	31.8	29.1	78.3	62.7	38.3	67.1	57.1	42.2
LnGrp LOS	E	C	D	E	C	C	E	E	D	E	E	D
Approach Vol, veh/h	1981				1730				646			
Approach Delay, s/veh	41.9				34.3				63.3			
Approach LOS	D				C				E			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.2	53.3	18.5	33.0	22.5	46.0	19.0	32.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	13.0	44.0	15.0	28.0	19.0	38.0	15.0	28.0				
Max Q Clear Time (g_c+I1), s	10.2	32.7	13.5	30.0	17.1	28.0	13.8	25.4				
Green Ext Time (p_c), s	0.1	5.6	0.1	0.0	0.4	5.5	0.2	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	44.6											
HCM 6th LOS	D											

Timings 2: Kewaunee Street & Jewell Avenue

Long Term Background Conditions
PM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	59	1440	52	1521	14	43	75	56
Future Volume (vph)	59	1440	52	1521	14	43	75	56
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	16.0	80.0	13.0	77.0	27.0	27.0	27.0	27.0
Total Split (%)	13.3%	66.7%	10.8%	64.2%	22.5%	22.5%	22.5%	22.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effect Green (s)	93.3	88.0	93.1	87.9	12.8	12.8	12.8	12.8
Actuated g/C Ratio	0.78	0.73	0.78	0.73	0.11	0.11	0.11	0.11
v/c Ratio	0.27	0.45	0.23	0.48	0.14	0.38	0.59	0.57
Control Delay	8.5	5.9	5.1	8.0	49.3	38.6	66.9	44.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.5	5.9	5.1	8.0	49.3	38.6	66.9	44.9
LOS	A	A	A	A	D	D	E	D
Approach Delay		6.0		7.9		40.2		53.7
Approach LOS		A		A		D		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 10.3
 Intersection Capacity Utilization 58.3%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 2: Kewaunee Street & Jewell Avenue



























HCM 6th Signalized Intersection Summary

2: Kewaunee Street & Jewell Avenue

Long Term Background Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	59	1440	94	52	1521	100	14	43	30	75	56	57
Future Volume (veh/h)	59	1440	94	52	1521	100	14	43	30	75	56	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	64	1565	102	57	1653	109	15	47	33	82	61	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	3539	231	325	3532	233	131	127	89	168	105	107
Arrive On Green	0.06	1.00	1.00	0.03	0.72	0.72	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	4898	319	1781	4894	322	1268	1023	718	1319	850	864
Grp Volume(v), veh/h	64	1087	580	57	1149	613	15	0	80	82	0	123
Grp Sat Flow(s),veh/h/ln	1781	1702	1813	1781	1702	1812	1268	0	1741	1319	0	1715
Q Serve(g_s), s	1.1	0.0	0.0	1.0	17.0	17.1	1.4	0.0	5.1	7.3	0.0	8.1
Cycle Q Clear(g_c), s	1.1	0.0	0.0	1.0	17.0	17.1	9.5	0.0	5.1	12.4	0.0	8.1
Prop In Lane	1.00		0.18	1.00		0.18	1.00		0.41	1.00		0.50
Lane Grp Cap(c), veh/h	270	2460	1310	325	2456	1308	131	0	216	168	0	213
V/C Ratio(X)	0.24	0.44	0.44	0.18	0.47	0.47	0.11	0.00	0.37	0.49	0.00	0.58
Avail Cap(c_a), veh/h	381	2460	1310	394	2456	1308	207	0	319	246	0	314
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.3	0.0	0.0	3.9	7.0	7.0	54.1	0.0	48.3	53.9	0.0	49.6
Incr Delay (d2), s/veh	0.4	0.6	1.1	0.3	0.6	1.2	0.4	0.0	1.1	2.2	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.4	0.7	0.6	9.2	9.9	0.8	0.0	4.1	4.5	0.0	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	0.6	1.1	4.1	7.7	8.2	54.5	0.0	49.3	56.1	0.0	52.1
LnGrp LOS	A	A	A	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h	1731				1819				95		205	
Approach Delay, s/veh	0.9				7.7				50.1		53.7	
Approach LOS	A				A				D		D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	91.7		19.9	8.5	91.6		19.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	8.0	75.0		22.0	11.0	72.0		22.0				
Max Q Clear Time (g_c+I1), s	3.0	2.0		14.4	3.1	19.1		11.5				
Green Ext Time (p_c), s	0.0	10.7		0.5	0.1	11.6		0.3				
Intersection Summary												
HCM 6th Ctrl Delay	8.2											
HCM 6th LOS	A											




HCM 6th TWSC
3: Harvest Road & Pacific Avenue

Long Term Background Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	0	6	0	0	37	10	476	0	54	517	12
Traffic Vol, veh/h	7	0	6	0	0	37	10	476	0	54	517	12
Future Vol, veh/h	7	0	6	0	0	37	10	476	0	54	517	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	8	0	7	0	0	40	11	517	0	59	562	13
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1246	1226	569	1229	1232	517	575	0	0	517	0	0
Stage 1	687	687	-	539	539	-	-	-	-	-	-	-
Stage 2	559	539	-	690	693	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	151	179	522	155	177	558	998	-	-	1049	-	-
Stage 1	437	447	-	527	522	-	-	-	-	-	-	-
Stage 2	513	522	-	435	445	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	133	167	522	145	165	558	998	-	-	1049	-	-
Mov Cap-2 Maneuver	133	167	-	145	165	-	-	-	-	-	-	-
Stage 1	432	422	-	521	516	-	-	-	-	-	-	-
Stage 2	471	516	-	405	420	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	23.7			12			0.2			0.8		
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	998	-	-	133	522	-	558	1049	-	-		
HCM Lane V/C Ratio	0.011	-	-	0.057	0.012	-	0.072	0.056	-	-		
HCM Control Delay (s)	8.6	-	-	33.7	12	0	12	8.6	-	-		
HCM Lane LOS	A	-	-	D	B	A	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0	-	0.2	0.2	-	-		









HCM 6th TWSC
4: Kewaunee Street & Pacific Avenue

Long Term Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	76	196	4
Future Vol, veh/h	0	0	0	76	196	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	0	0	83	213	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	298	215	217	0	-	0
Stage 1	215	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	*779	*920	*1377	-	-	-
Stage 1	*867	-	-	-	-	-
Stage 2	*940	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*779	*920	*1377	-	-	-
Mov Cap-2 Maneuver	*779	-	-	-	-	-
Stage 1	*867	-	-	-	-	-
Stage 2	*940	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	* 1377	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 6th TWSC
5: Harvest Road & Warren Avenue

Long Term Background Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	0	4	10	0	45	6	425	17	72	430	21
Future Vol, veh/h	16	0	4	10	0	45	6	425	17	72	430	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	17	0	4	11	0	49	7	462	18	78	467	23
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1145	1129	479	1122	1131	471	490	0	0	480	0	0
Stage 1	635	635	-	485	485	-	-	-	-	-	-	-
Stage 2	510	494	-	637	646	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	177	204	587	183	203	593	1073	-	-	1082	-	-
Stage 1	467	472	-	563	552	-	-	-	-	-	-	-
Stage 2	546	546	-	465	467	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	153	188	587	171	187	593	1073	-	-	1082	-	-
Mov Cap-2 Maneuver	153	188	-	171	187	-	-	-	-	-	-	-
Stage 1	464	438	-	559	548	-	-	-	-	-	-	-
Stage 2	498	542	-	428	433	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	27.4			14.5			0.1			1.2		
HCM LOS	D			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1073	-	-	153	587	171	593	1082	-	-		
HCM Lane V/C Ratio	0.006	-	-	0.114	0.007	0.064	0.082	0.072	-	-		
HCM Control Delay (s)	8.4	-	-	31.5	11.2	27.5	11.6	8.6	-	-		
HCM Lane LOS	A	-	-	D	B	D	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0.2	0.3	0.2	-	-		









HCM 6th TWSC
6: Kewaunee Street & Warren Avenue

Long Term Background Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	2	10	0	25	3	41	10	115	53	26
Future Vol, veh/h	10	0	2	10	0	25	3	41	10	115	53	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
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	11	0	2	11	0	27	3	45	11	125	58	28
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	392	384	72	380	393	51	86	0	0	56	0	0
Stage 1	322	322	-	57	57	-	-	-	-	-	-	-
Stage 2	70	62	-	323	336	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	580	557	1016	591	551	1017	1520	-	-	1549	-	-
Stage 1	701	655	-	955	847	-	-	-	-	-	-	-
Stage 2	940	843	-	700	645	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	528	509	1016	551	503	1017	1520	-	-	1549	-	-
Mov Cap-2 Maneuver	528	509	-	551	503	-	-	-	-	-	-	-
Stage 1	699	599	-	953	845	-	-	-	-	-	-	-
Stage 2	913	841	-	639	590	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.4		9.6		0.4		4.5					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1520	-	-	574	819	1549	-					
HCM Lane V/C Ratio	0.002	-	-	0.023	0.046	0.081	-					
HCM Control Delay (s)	7.4	0	-	11.4	9.6	7.5	0					
HCM Lane LOS	A	A	-	B	A	A	A					
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.3	-					




HCM 6th TWSC
7: Harvest Road & Wesley Place

Long Term Background Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	14	0	56	2	388	24	97	339	8
Future Vol, veh/h	4	0	1	14	0	56	2	388	24	97	339	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	4	0	1	15	0	61	2	422	26	105	368	9
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1053	1035	373	1022	1026	435	377	0	0	448	0	0
Stage 1	583	583	-	439	439	-	-	-	-	-	-	-
Stage 2	470	452	-	583	587	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	204	232	673	214	235	621	1181	-	-	1112	-	-
Stage 1	498	499	-	597	578	-	-	-	-	-	-	-
Stage 2	574	570	-	498	497	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	171	210	673	198	212	621	1181	-	-	1112	-	-
Mov Cap-2 Maneuver	171	210	-	198	212	-	-	-	-	-	-	-
Stage 1	497	452	-	596	577	-	-	-	-	-	-	-
Stage 2	517	569	-	450	450	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	23.4			14.1			0			1.9		
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1181	-	-	171	673	198	621	1112	-	-		
HCM Lane V/C Ratio	0.002	-	-	0.025	0.002	0.077	0.098	0.095	-	-		
HCM Control Delay (s)	8.1	-	-	26.6	10.4	24.7	11.4	8.6	-	-		
HCM Lane LOS	A	-	-	D	B	C	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.2	0.3	0.3	-	-		




HCM 6th TWSC
8: Kewaunee Street & Wesley Place




Long Term Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	4	7	35	33	32
Future Vol, veh/h	19	4	7	35	33	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	21	4	8	38	36	35
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	108	54	71	0	-	0
Stage 1	54	-	-	-	-	-
Stage 2	54	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	889	1013	1529	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	885	1013	1529	-	-	-
Mov Cap-2 Maneuver	885	-	-	-	-	-
Stage 1	964	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	1.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1529	-	905	-	-	
HCM Lane V/C Ratio	0.005	-	0.028	-	-	
HCM Control Delay (s)	7.4	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
10: Yale Avenue & Jackson Gap Street (South)

Long Term Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	399	360	5	3	9
Future Vol, veh/h	16	399	360	5	3	9
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	17	434	391	5	3	10
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	396	0	-	0	862	394
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	468	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1163	-	-	-	325	655
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	630	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1163	-	-	-	319	655
Mov Cap-2 Maneuver	-	-	-	-	319	-
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	630	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		12.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1163	-	-	-	518	
HCM Lane V/C Ratio	0.015	-	-	-	0.025	
HCM Control Delay (s)	8.1	0	-	-	12.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	387	349	28	22	15
Future Vol, veh/h	30	387	349	28	22	15
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	33	421	379	30	24	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	409	0	-	0	881	394
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	487	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1150	-	-	-	317	655
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1150	-	-	-	305	655
Mov Cap-2 Maneuver	-	-	-	-	305	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	618	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		15.3		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1150	-	-	-	389	
HCM Lane V/C Ratio	0.028	-	-	-	0.103	
HCM Control Delay (s)	8.2	0	-	-	15.3	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↓			↑↑↑		↗
Traffic Vol, veh/h	1583	5	0	1592	0	7
Future Vol, veh/h	1583	5	0	1592	0	7
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	1721	5	0	1730	0	8
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	863
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	*536
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	-	*536
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	11.8			
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	536	-	-	-		
HCM Lane V/C Ratio	0.014	-	-	-		
HCM Control Delay (s)	11.8	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

MOVEMENT SUMMARY

 Site: 9 [PM_Harvest & Yale (Site Folder: General)]

PM_9

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] ft				
East: Yale Ave														
6	T1	145	3.0	158	3.0	0.372	7.2	LOS A	2.1	53.0	0.47	0.33	0.47	34.0
16	R2	224	3.0	243	3.0	0.372	7.2	LOS A	2.1	53.0	0.47	0.33	0.47	33.0
Approach		369	3.0	401	3.0	0.372	7.2	LOS A	2.1	53.0	0.47	0.33	0.47	33.4
North: Harvest Rd														
7	L2	259	3.0	282	3.0	0.338	6.5	LOS A	1.9	47.7	0.40	0.25	0.40	32.5
14	R2	94	3.0	102	3.0	0.338	6.5	LOS A	1.9	47.7	0.40	0.25	0.40	31.5
Approach		353	3.0	384	3.0	0.338	6.5	LOS A	1.9	47.7	0.40	0.25	0.40	32.2
West: Yale Ave														
5	L2	190	3.0	207	3.0	0.377	7.7	LOS A	2.0	51.8	0.53	0.43	0.53	32.4
2	T1	156	3.0	170	3.0	0.377	7.7	LOS A	2.0	51.8	0.53	0.43	0.53	32.4
Approach		346	3.0	376	3.0	0.377	7.7	LOS A	2.0	51.8	0.53	0.43	0.53	32.4
All Vehicles		1068	3.0	1161	3.0	0.377	7.1	LOS A	2.1	53.0	0.47	0.34	0.47	32.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: I:\124044-01 Harvest Xing F2 TIS Update\08_TRF\Analysis\SIDRA\Background\LT_Background.sip9

APPENDIX D. TOTAL TRAFFIC LEVEL OF SERVICE WORKSHEETS

DRAFT

Timings 1: Harvest Road & Jewell Avenue

Short Term Total Conditions
AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	24	167	2	222	170	37	6	17	10
Future Volume (vph)	24	167	2	222	170	37	6	17	10
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases	4		8		2		2	6	
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	21.0	21.0	9.0	21.0
Total Split (s)	12.0	50.0	15.0	53.0	29.0	43.0	43.0	12.0	26.0
Total Split (%)	10.0%	41.7%	12.5%	44.2%	24.2%	35.8%	35.8%	10.0%	21.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effect Green (s)	28.6	27.2	25.7	22.2	80.6	76.0	76.0	71.0	65.0
Actuated g/C Ratio	0.24	0.23	0.21	0.18	0.67	0.63	0.63	0.59	0.54
v/c Ratio	0.13	0.56	0.01	0.75	0.21	0.03	0.01	0.02	0.06
Control Delay	30.8	42.6	27.5	58.5	9.8	13.5	0.0	10.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	42.6	27.5	58.5	9.8	13.5	0.0	10.5	8.1
LOS	C	D	C	E	A	B	A	B	A
Approach Delay		41.4		58.3		10.2			8.7
Approach LOS		D		E		B			A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 28 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 35.1

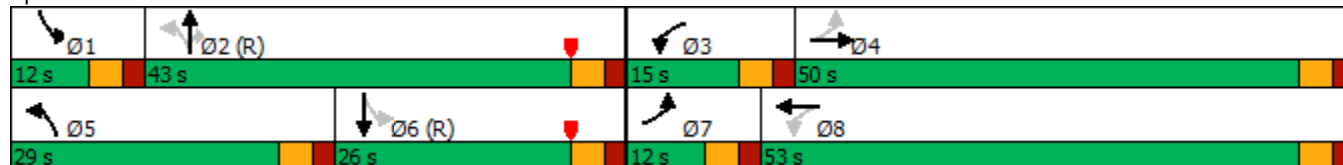
Intersection LOS: D

Intersection Capacity Utilization 44.4%

ICU Level of Service A

Analysis Period (min) 15























Splits and Phases: 1: Harvest Road & Jewell Avenue



HCM 6th Signalized Intersection Summary

1: Harvest Road & Jewell Avenue

Short Term Total Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	167	48	2	222	14	170	37	6	17	10	39
Future Volume (veh/h)	24	167	48	2	222	14	170	37	6	17	10	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	182	52	2	241	15	185	40	7	18	11	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	253	72	131	286	18	945	1188	1007	890	201	767
Arrive On Green	0.02	0.18	0.18	0.00	0.16	0.16	0.06	0.64	0.64	0.02	0.59	0.59
Sat Flow, veh/h	1781	1399	400	1781	1742	108	1781	1870	1585	1781	340	1297
Grp Volume(v), veh/h	26	0	234	2	0	256	185	40	7	18	0	53
Grp Sat Flow(s),veh/h/ln	1781	0	1798	1781	0	1851	1781	1870	1585	1781	0	1637
Q Serve(g_s), s	1.5	0.0	14.7	0.1	0.0	16.1	4.6	1.0	0.2	0.5	0.0	1.6
Cycle Q Clear(g_c), s	1.5	0.0	14.7	0.1	0.0	16.1	4.6	1.0	0.2	0.5	0.0	1.6
Prop In Lane	1.00		0.22	1.00		0.06	1.00		1.00	1.00		0.79
Lane Grp Cap(c), veh/h	128	0	326	131	0	303	945	1188	1007	890	0	968
V/C Ratio(X)	0.20	0.00	0.72	0.02	0.00	0.84	0.20	0.03	0.01	0.02	0.00	0.05
Avail Cap(c_a), veh/h	197	0	674	276	0	740	1197	1188	1007	967	0	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	0.0	46.3	42.4	0.0	48.7	7.5	8.2	8.0	9.4	0.0	10.4
Incr Delay (d2), s/veh	0.8	0.0	3.0	0.0	0.0	6.4	0.1	0.1	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	6.8	0.1	0.0	8.0	1.7	0.4	0.1	0.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	0.0	49.2	42.5	0.0	55.0	7.6	8.2	8.0	9.4	0.0	10.5
LnGrp LOS	D	A	D	D	A	E	A	A	A	A	A	B
Approach Vol, veh/h	260			258			232			71		
Approach Delay, s/veh	48.6			54.9			7.7			10.2		
Approach LOS	D			D			A			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	81.2	5.3	26.7	12.1	75.9	7.3	24.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	38.0	10.0	45.0	24.0	21.0	7.0	48.0				
Max Q Clear Time (g_c+I1), s	2.5	3.0	2.1	16.7	6.6	3.6	3.5	18.1				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.4	0.5	0.2	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay	35.7											
HCM 6th LOS	D											

HCM 6th TWSC
2: Kewaunee Street & Jewell Avenue

Short Term Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	👉			👈	👉👈	
Traffic Vol, veh/h	97	3	4	158	10	9
Future Vol, veh/h	97	3	4	158	10	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	105	3	4	172	11	10
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	108	0	287	107
Stage 1	-	-	-	-	107	-
Stage 2	-	-	-	-	180	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1500	-	729	992
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1500	-	727	992
Mov Cap-2 Maneuver	-	-	-	-	727	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	848	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		9.4	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	832	-	-	1500	-	
HCM Lane V/C Ratio	0.025	-	-	0.003	-	
HCM Control Delay (s)	9.4	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	




HCM 6th TWSC
3: Harvest Road & Pacific Avenue

Short Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↗		↙	↗	
Traffic Vol, veh/h	11	0	0	0	0	49	0	117	0	35	20	4
Future Vol, veh/h	11	0	0	0	0	49	0	117	0	35	20	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
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	12	0	0	0	0	53	0	127	0	38	22	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	254	227	24	227	229	127	26	0	0	127	0	0
Stage 1	100	100	-	127	127	-	-	-	-	-	-	-
Stage 2	154	127	-	100	102	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	699	672	1052	728	671	923	1588	-	-	1459	-	-
Stage 1	906	812	-	877	791	-	-	-	-	-	-	-
Stage 2	848	791	-	906	811	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	646	655	1052	713	654	923	1588	-	-	1459	-	-
Mov Cap-2 Maneuver	646	655	-	713	654	-	-	-	-	-	-	-
Stage 1	906	791	-	877	791	-	-	-	-	-	-	-
Stage 2	799	791	-	882	790	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.7		9.1		0		4.5					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1588	-	-	646	923	1459	-	-				
HCM Lane V/C Ratio	-	-	-	0.019	0.058	0.026	-	-				
HCM Control Delay (s)	0	-	-	10.7	9.1	7.5	-	-				
HCM Lane LOS	A	-	-	B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-				

HCM 6th TWSC
4: Kewaunee Street & Pacific Avenue

Short Term Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	3	1	1
Future Vol, veh/h	1	0	0	3	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	1	0	0	3	1	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	5	2	2	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1017	1082	1620	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1017	1082	1620	-	-	-
Mov Cap-2 Maneuver	1017	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1620	-	1017	-	-	
HCM Lane V/C Ratio	-	-	0.001	-	-	
HCM Control Delay (s)	0	-	8.5	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	




HCM 6th TWSC
5: Harvest Road & Warren Avenue

Short Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↘		↙	↘	
Traffic Vol, veh/h	15	0	0	0	0	24	0	27	0	7	9	4
Future Vol, veh/h	15	0	0	0	0	24	0	27	0	7	9	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
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	16	0	0	0	0	26	0	29	0	8	10	4
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	70	57	12	57	59	29	14	0	0	29	0	0
Stage 1	28	28	-	29	29	-	-	-	-	-	-	-
Stage 2	42	29	-	28	30	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	922	834	1069	940	832	1046	1604	-	-	1584	-	-
Stage 1	989	872	-	988	871	-	-	-	-	-	-	-
Stage 2	972	871	-	989	870	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	895	830	1069	936	828	1046	1604	-	-	1584	-	-
Mov Cap-2 Maneuver	895	830	-	936	828	-	-	-	-	-	-	-
Stage 1	989	868	-	988	871	-	-	-	-	-	-	-
Stage 2	948	871	-	984	866	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.5			0			2.5			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1604	-	-	895	1046	1584	-	-				
HCM Lane V/C Ratio	-	-	-	0.018	0.025	0.005	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.5	7.3	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

HCM 6th TWSC
6: Kewaunee Street & Warren Avenue

Short Term Total Conditions
AM Peak Hour




Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	0	0	1
Future Vol, veh/h	2	0	0	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	2	0	0	0	0	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1622	-	1022	-	-	
HCM Lane V/C Ratio	-	-	0.002	-	-	
HCM Control Delay (s)	0	-	8.5	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↱	↱	↱↲	
Traffic Vol, veh/h	101	89	12	158	80	9
Future Vol, veh/h	101	89	12	158	80	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	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	110	97	13	172	87	10
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	207	0	357	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1373	-	661	925
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	835	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1373	-	656	925
Mov Cap-2 Maneuver	-	-	-	-	656	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	827	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		11.2	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	676	-	-	1373	-	
HCM Lane V/C Ratio	0.143	-	-	0.009	-	
HCM Control Delay (s)	11.2	-	-	7.6	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱		↗
Traffic Vol, veh/h	102	11	0	179	0	10
Future Vol, veh/h	102	11	0	179	0	10
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	111	12	0	195	0	11
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	117
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	979
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	-	979
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		8.7	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	979	-	-	-		
HCM Lane V/C Ratio	0.011	-	-	-		
HCM Control Delay (s)	8.7	-	-	-		
HCM Lane LOS	A	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		

HCM 6th TWSC
14: Kewaunee St & Northern Site Access




Short Term Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	0	0	9	4	3
Future Vol, veh/h	10	0	0	9	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	11	0	0	10	4	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	16	6	7	0	-	0
Stage 1	6	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1002	1077	1614	-	-	-
Stage 1	1017	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1002	1077	1614	-	-	-
Mov Cap-2 Maneuver	1002	-	-	-	-	-
Stage 1	1017	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1614	-	1002	-	-	
HCM Lane V/C Ratio	-	-	0.011	-	-	
HCM Control Delay (s)	0	-	8.6	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
15: Kewaunee St & Southern Site Access

Short Term Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	✕			↩	↩	
Traffic Vol, veh/h	5	0	0	4	2	2
Future Vol, veh/h	5	0	0	4	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	5	0	0	4	2	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	7	3	4	0	-	0
Stage 1	3	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1014	1081	1618	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1014	1081	1618	-	-	-
Mov Cap-2 Maneuver	1014	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1618	-	1014	-	-	
HCM Lane V/C Ratio	-	-	0.005	-	-	
HCM Control Delay (s)	0	-	8.6	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	87	126	0	0	60
Future Vol, veh/h	0	87	126	0	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	95	137	0	0	65
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	137	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	911	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	911	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	- 911		-		
HCM Lane V/C Ratio	-	- 0.104		-		
HCM Control Delay (s)	-	- 9.4		-		
HCM Lane LOS	-	- A		-		
HCM 95th %tile Q(veh)	-	- 0.3		-		

HCM 6th TWSC
17: Pacific Ave & Western Site Access

Short Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	11	5	1	30	9	15	6	1	2	1	7
Future Vol, veh/h	20	11	5	1	30	9	15	6	1	2	1	7
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	22	12	5	1	33	10	16	7	1	2	1	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	43	0	0	17	0	0	104	104	15	103	101	38
Stage 1	-	-	-	-	-	-	59	59	-	40	40	-
Stage 2	-	-	-	-	-	-	45	45	-	63	61	-
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	1566	-	-	1600	-	-	876	786	1065	877	789	1034
Stage 1	-	-	-	-	-	-	953	846	-	975	862	-
Stage 2	-	-	-	-	-	-	969	857	-	948	844	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1566	-	-	1600	-	-	858	774	1065	860	777	1034
Mov Cap-2 Maneuver	-	-	-	-	-	-	858	774	-	860	777	-
Stage 1	-	-	-	-	-	-	940	834	-	961	861	-
Stage 2	-	-	-	-	-	-	960	856	-	926	832	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.1			0.2			9.4			8.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	841	1566	-	-	1600	-	-	963				
HCM Lane V/C Ratio	0.028	0.014	-	-	0.001	-	-	0.011				
HCM Control Delay (s)	9.4	7.3	0	-	7.3	0	-	8.8				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				



















HCM 6th TWSC
18: Pacific Ave & Eastern Site Access

Short Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	10	0	0	0	33	2	1	0	2	7
Future Vol, veh/h	5	0	10	0	0	0	33	2	1	0	2	7
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	0	11	0	0	0	36	2	1	0	2	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	11	0	0	22	17	6	18	22	1
Stage 1	-	-	-	-	-	-	16	16	-	1	1	-
Stage 2	-	-	-	-	-	-	6	1	-	17	21	-
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	1622	-	-	1608	-	-	990	877	1077	996	872	1084
Stage 1	-	-	-	-	-	-	1004	882	-	1022	895	-
Stage 2	-	-	-	-	-	-	1016	895	-	1002	878	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1608	-	-	979	874	1077	991	869	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	979	874	-	991	869	-
Stage 1	-	-	-	-	-	-	1001	879	-	1019	895	-
Stage 2	-	-	-	-	-	-	1006	895	-	996	875	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.4			0			8.8			8.5		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	975	1622	-	-	1608	-	-	1028				
HCM Lane V/C Ratio	0.04	0.003	-	-	-	-	-	0.01				
HCM Control Delay (s)	8.8	7.2	0	-	0	-	-	8.5				
HCM Lane LOS	A	A	A	-	A	-	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Timings 1: Harvest Road & Jewell Avenue

Short Term Total Conditions
PM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	46	368	6	236	218	35	3	38	35
Future Volume (vph)	46	368	6	236	218	35	3	38	35
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2	1	6	3	8		7	4
Permitted Phases	2		6		8		8	4	
Detector Phase	5	2	1	6	3	8	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	21.0	21.0	9.0	21.0
Total Split (s)	12.0	63.0	12.0	63.0	23.0	33.0	33.0	12.0	22.0
Total Split (%)	10.0%	52.5%	10.0%	52.5%	19.2%	27.5%	27.5%	10.0%	18.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effect Green (s)	81.9	80.0	78.1	72.7	29.7	22.5	22.5	16.0	9.7
Actuated g/C Ratio	0.68	0.67	0.65	0.61	0.25	0.19	0.19	0.13	0.08
v/c Ratio	0.07	0.46	0.01	0.25	0.69	0.11	0.01	0.20	0.47
Control Delay	8.0	12.7	8.2	13.7	48.7	40.5	0.0	34.7	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	12.7	8.2	13.7	48.7	40.5	0.0	34.7	36.9
LOS	A	B	A	B	D	D	A	C	D
Approach Delay		12.3		13.6		47.1			36.1
Approach LOS		B		B		D			D

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 22.4

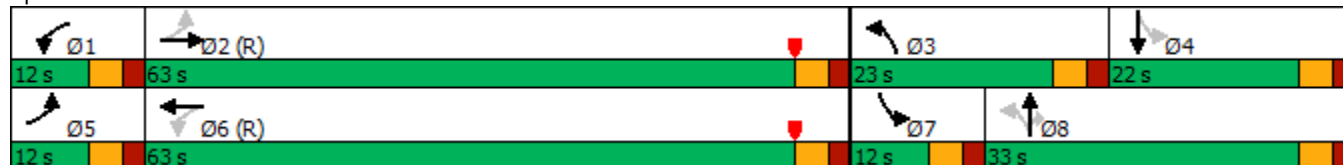
Intersection LOS: C

Intersection Capacity Utilization 60.0%

ICU Level of Service B

Analysis Period (min) 15























Splits and Phases: 1: Harvest Road & Jewell Avenue



HCM 6th Signalized Intersection Summary

1: Harvest Road & Jewell Avenue

Short Term Total Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	368	141	6	236	18	218	35	3	38	35	41
Future Volume (veh/h)	46	368	141	6	236	18	218	35	3	38	35	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	50	400	153	7	257	20	237	38	3	41	38	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	724	817	312	488	1051	82	351	339	287	226	58	68
Arrive On Green	0.04	0.63	0.63	0.02	0.61	0.61	0.14	0.18	0.18	0.04	0.07	0.07
Sat Flow, veh/h	1781	1289	493	1781	1713	133	1781	1870	1585	1781	780	924
Grp Volume(v), veh/h	50	0	553	7	0	277	237	38	3	41	0	83
Grp Sat Flow(s),veh/h/ln	1781	0	1782	1781	0	1846	1781	1870	1585	1781	0	1704
Q Serve(g_s), s	1.2	0.0	19.8	0.2	0.0	8.2	14.1	2.0	0.2	2.5	0.0	5.7
Cycle Q Clear(g_c), s	1.2	0.0	19.8	0.2	0.0	8.2	14.1	2.0	0.2	2.5	0.0	5.7
Prop In Lane	1.00		0.28	1.00		0.07	1.00		1.00	1.00		0.54
Lane Grp Cap(c), veh/h	724	0	1129	488	0	1133	351	339	287	226	0	126
V/C Ratio(X)	0.07	0.00	0.49	0.01	0.00	0.24	0.68	0.11	0.01	0.18	0.00	0.66
Avail Cap(c_a), veh/h	780	0	1129	580	0	1133	377	452	383	280	0	256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.8	0.0	11.7	9.6	0.0	10.5	40.9	41.1	40.3	48.6	0.0	54.1
Incr Delay (d2), s/veh	0.0	0.0	1.5	0.0	0.0	0.5	4.3	0.1	0.0	0.4	0.0	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	7.6	0.1	0.0	3.3	6.6	1.0	0.1	1.1	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	0.0	13.2	9.6	0.0	11.0	45.2	41.2	40.3	49.0	0.0	59.9
LnGrp LOS	A	A	B	A	A	B	D	D	D	D	A	E
Approach Vol, veh/h	603			284			278			124		
Approach Delay, s/veh	12.7			11.0			44.6			56.3		
Approach LOS	B			B			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	80.1	21.2	12.9	8.2	77.7	8.4	25.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	58.0	18.0	17.0	7.0	58.0	7.0	28.0				
Max Q Clear Time (g_c+I1), s	2.2	21.8	16.1	7.7	3.2	10.2	4.5	4.0				
Green Ext Time (p_c), s	0.0	3.9	0.1	0.2	0.0	1.6	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay 23.4

HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
2: Kewaunee Street & Jewell Avenue

Short Term Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Vol, veh/h	149	8	13	183	7	6
Future Vol, veh/h	149	8	13	183	7	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	162	9	14	199	8	7
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	171	0	394	167
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	227	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1432	-	646	953
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	811	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1432	-	639	953
Mov Cap-2 Maneuver	-	-	-	-	639	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	802	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		9.9	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	754	-	-	1432	-	
HCM Lane V/C Ratio	0.019	-	-	0.01	-	
HCM Control Delay (s)	9.9	-	-	7.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC
3: Harvest Road & Pacific Avenue

Short Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↘		↙	↘	
Traffic Vol, veh/h	7	0	0	0	0	50	0	42	0	100	70	12
Future Vol, veh/h	7	0	0	0	0	50	0	42	0	100	70	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
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	8	0	0	0	0	54	0	46	0	109	76	13
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	374	347	83	347	353	46	89	0	0	46	0	0
Stage 1	301	301	-	46	46	-	-	-	-	-	-	-
Stage 2	73	46	-	301	307	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	597	585	1002	622	581	1023	1516	-	-	1562	-	-
Stage 1	719	670	-	968	857	-	-	-	-	-	-	-
Stage 2	937	857	-	719	666	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	535	544	1002	589	541	1023	1516	-	-	1562	-	-
Mov Cap-2 Maneuver	535	544	-	589	541	-	-	-	-	-	-	-
Stage 1	719	623	-	968	857	-	-	-	-	-	-	-
Stage 2	887	857	-	669	619	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.8		8.7		0		4.1					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1516	-	-	535	1023	1562	-	-				
HCM Lane V/C Ratio	-	-	-	0.014	0.053	0.07	-	-				
HCM Control Delay (s)	0	-	-	11.8	8.7	7.5	-	-				
HCM Lane LOS	A	-	-	B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.2	-	-				

HCM 6th TWSC
4: Kewaunee Street & Pacific Avenue

Short Term Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	✕✕			↱	↱	
Traffic Vol, veh/h	0	0	0	3	5	3
Future Vol, veh/h	0	0	0	3	5	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	0	0	3	5	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	10	7	8	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1010	1075	1612	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1010	1075	1612	-	-	-
Mov Cap-2 Maneuver	1010	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1612	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	




HCM 6th TWSC
5: Harvest Road & Warren Avenue

Short Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↖		↙	↖	
Traffic Vol, veh/h	12	0	0	0	0	16	0	24	0	25	31	14
Future Vol, veh/h	12	0	0	0	0	16	0	24	0	25	31	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
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	13	0	0	0	0	17	0	26	0	27	34	15
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	131	122	42	122	129	26	49	0	0	26	0	0
Stage 1	96	96	-	26	26	-	-	-	-	-	-	-
Stage 2	35	26	-	96	103	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	841	768	1029	853	762	1050	1558	-	-	1588	-	-
Stage 1	911	815	-	992	874	-	-	-	-	-	-	-
Stage 2	981	874	-	911	810	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	817	755	1029	842	749	1050	1558	-	-	1588	-	-
Mov Cap-2 Maneuver	817	755	-	842	749	-	-	-	-	-	-	-
Stage 1	911	801	-	992	874	-	-	-	-	-	-	-
Stage 2	965	874	-	896	796	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.5		8.5			0			2.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1558	-	-	817	1050	1588	-	-				
HCM Lane V/C Ratio	-	-	-	0.016	0.017	0.017	-	-				
HCM Control Delay (s)	0	-	-	9.5	8.5	7.3	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-				

HCM 6th TWSC
6: Kewaunee Street & Warren Avenue

Short Term Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	0	0	3
Future Vol, veh/h	1	0	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	1	0	0	0	0	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2	2	3	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1021	1082	1619	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1021	1082	1619	-	-	-
Mov Cap-2 Maneuver	1021	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1619	-	1021	-	-	
HCM Lane V/C Ratio	-	-	0.001	-	-	
HCM Control Delay (s)	0	-	8.5	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↱	↱	↱↲	
Traffic Vol, veh/h	166	238	31	157	95	22
Future Vol, veh/h	166	238	31	157	95	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	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	180	259	34	171	103	24
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	439	0	549	310
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	239	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1115	-	522	796
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	801	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1115	-	506	796
Mov Cap-2 Maneuver	-	-	-	-	506	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	777	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.4		13.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	543	-	-	1115	-	
HCM Lane V/C Ratio	0.234	-	-	0.03	-	
HCM Control Delay (s)	13.6	-	-	8.3	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↶		↶
Traffic Vol, veh/h	149	39	0	188	0	8
Future Vol, veh/h	149	39	0	188	0	8
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	162	42	0	204	0	9




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 183
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.22
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.318
Pot Cap-1 Maneuver	-	-	0 - 0 935
Stage 1	-	-	0 - 0 -
Stage 2	-	-	0 - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - 935
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	935	-	-	-
HCM Lane V/C Ratio	0.009	-	-	-
HCM Control Delay (s)	8.9	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

HCM 6th TWSC
14: Kewaunee St & Northern Site Access

Short Term Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	6	13	8
Future Vol, veh/h	7	0	0	6	13	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	8	0	0	7	14	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	26	19	23	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	989	1059	1592	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	989	1059	1592	-	-	-
Mov Cap-2 Maneuver	989	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1592	-	989	-	-	
HCM Lane V/C Ratio	-	-	0.008	-	-	
HCM Control Delay (s)	0	-	8.7	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
15: Kewaunee St & Southern Site Access

Short Term Total Conditions
PM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 3 0 0 3 8 5

Future Vol, veh/h 3 0 0 3 8 5

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

Sign Control Stop Stop Free Free Free Free

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 3 0 0 3 9 5

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 15 12 14 0 - 0

Stage 1 12 - - - - -

Stage 2 3 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 1004 1069 1604 - - -

Stage 1 1011 - - - - -

Stage 2 1020 - - - - -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver 1004 1069 1604 - - -

Mov Cap-2 Maneuver 1004 - - - - -

Stage 1 1011 - - - - -

Stage 2 1020 - - - - -

Approach EB NB SB

HCM Control Delay, s 8.6 0 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1604 - 1004 - -

HCM Lane V/C Ratio - - 0.003 - -

HCM Control Delay (s) 0 - 8.6 - -

HCM Lane LOS A - A - -

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

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↖			↑
Traffic Vol, veh/h	0	157	99	0	0	182
Future Vol, veh/h	0	157	99	0	0	182
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	171	108	0	0	198
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	108	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	946	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	946	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.6	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	-	946			
HCM Lane V/C Ratio	-	-	0.18			
HCM Control Delay (s)	-	-	9.6			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0.7			

HCM 6th TWSC
17: Pacific Ave & Western Site Access

Short Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	35	17	4	18	6	10	4	1	6	4	23
Future Vol, veh/h	47	35	17	4	18	6	10	4	1	6	4	23
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	51	38	18	4	20	7	11	4	1	7	4	25
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	27	0	0	56	0	0	195	184	47	184	190	24
Stage 1	-	-	-	-	-	-	149	149	-	32	32	-
Stage 2	-	-	-	-	-	-	46	35	-	152	158	-
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	1587	-	-	1549	-	-	764	710	1022	777	705	1052
Stage 1	-	-	-	-	-	-	854	774	-	984	868	-
Stage 2	-	-	-	-	-	-	968	866	-	850	767	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1587	-	-	1549	-	-	722	684	1022	751	680	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	722	684	-	751	680	-
Stage 1	-	-	-	-	-	-	826	748	-	952	865	-
Stage 2	-	-	-	-	-	-	937	863	-	816	742	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.5			1			10.1			9.1		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	725	1587	-	-	1549	-	-	923				
HCM Lane V/C Ratio	0.022	0.032	-	-	0.003	-	-	0.039				
HCM Control Delay (s)	10.1	7.3	0	-	7.3	0	-	9.1				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1				





























HCM 6th TWSC
18: Pacific Ave & Eastern Site Access

Short Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	0	30	1	2	0	19	1	0	0	6	6
Future Vol, veh/h	12	0	30	1	2	0	19	1	0	0	6	6
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	13	0	33	1	2	0	21	1	0	0	7	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	33	0	0	54	47	17	47	63	2
Stage 1	-	-	-	-	-	-	43	43	-	4	4	-
Stage 2	-	-	-	-	-	-	11	4	-	43	59	-
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	1620	-	-	1579	-	-	944	845	1062	954	828	1082
Stage 1	-	-	-	-	-	-	971	859	-	1018	892	-
Stage 2	-	-	-	-	-	-	1010	892	-	971	846	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1579	-	-	926	837	1062	946	821	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	926	837	-	946	821	-
Stage 1	-	-	-	-	-	-	963	852	-	1010	891	-
Stage 2	-	-	-	-	-	-	996	891	-	962	839	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.1			2.4			9			8.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	921	1620	-	-	1579	-	-	934				
HCM Lane V/C Ratio	0.024	0.008	-	-	0.001	-	-	0.014				
HCM Control Delay (s)	9	7.2	0	-	7.3	0	-	8.9				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Timings 1: Harvest Road & Jewell Avenue









Long Term Total Conditions
AM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  					 		
Traffic Volume (vph)	425	932	81	1145	379	257	278	89	219	169	400
Future Volume (vph)	425	932	81	1145	379	257	278	89	219	169	400
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	1	6	7	3	8		7	4	5
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	7	3	8	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	9.0	21.0	21.0	9.0	21.0	9.0
Total Split (s)	26.0	52.0	16.0	42.0	18.0	30.0	34.0	34.0	18.0	22.0	26.0
Total Split (%)	21.7%	43.3%	13.3%	35.0%	15.0%	25.0%	28.3%	28.3%	15.0%	18.3%	21.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 43 (36%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
























Splits and Phases: 1: Harvest Road & Jewell Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
16 s	52 s	30 s	22 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
26 s	42 s	18 s	34 s

HCM 6th Signalized Intersection Summary























1: Harvest Road & Jewell Avenue

Long Term Total Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	425	932	99	81	1145	379	257	278	89	219	169	400
Future Volume (veh/h)	425	932	99	81	1145	379	257	278	89	219	169	400
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	462	1013	108	88	1245	412	279	302	97	238	184	435
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	2181	232	126	1924	746	321	442	375	324	281	491
Arrive On Green	0.16	0.47	0.47	0.02	0.12	0.12	0.18	0.24	0.24	0.09	0.15	0.15
Sat Flow, veh/h	3456	4686	499	1781	5106	1585	1781	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	462	735	386	88	1245	412	279	302	97	238	184	435
Grp Sat Flow(s),veh/h/ln	1728	1702	1781	1781	1702	1585	1781	1870	1585	1728	1870	1585
Q Serve(g_s), s	15.6	17.7	17.7	5.9	27.9	25.4	18.3	17.6	6.0	8.0	11.1	18.0
Cycle Q Clear(g_c), s	15.6	17.7	17.7	5.9	27.9	25.4	18.3	17.6	6.0	8.0	11.1	18.0
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	552	1585	829	126	1924	746	321	442	375	324	281	491
V/C Ratio(X)	0.84	0.46	0.47	0.70	0.65	0.55	0.87	0.68	0.26	0.73	0.66	0.89
Avail Cap(c_a), veh/h	634	1585	829	178	1924	746	386	468	396	403	281	491
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.9	21.9	21.9	57.3	44.9	33.1	47.8	41.7	37.3	52.9	48.1	39.4
Incr Delay (d2), s/veh	8.6	1.0	1.9	6.7	1.7	2.9	16.4	3.8	0.4	5.2	5.4	17.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.7	11.3	12.1	5.3	18.9	16.9	14.6	13.4	0.1	6.7	9.5	20.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	22.8	23.8	64.1	46.6	36.0	64.2	45.5	37.6	58.1	53.5	56.9
LnGrp LOS	E	C	C	E	D	D	E	D	D	E	D	E
Approach Vol, veh/h	1583			1745			678			857		
Approach Delay, s/veh	33.2			45.0			52.1			56.5		
Approach LOS	C			D			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	59.9	25.6	22.0	23.2	49.2	15.3	32.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	47.0	25.0	17.0	21.0	37.0	13.0	29.0				
Max Q Clear Time (g_c+I1), s	7.9	19.7	20.3	20.0	17.6	29.9	10.0	19.6				
Green Ext Time (p_c), s	0.0	8.0	0.4	0.0	0.6	4.9	0.2	1.4				
Intersection Summary												
HCM 6th Ctrl Delay	44.2											
HCM 6th LOS	D											

Timings 2: Kewaunee Street & Jewell Avenue




Long Term Total Conditions
AM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		  		  		 		 
Traffic Volume (vph)	37	1143	21	1425	77	34	55	41
Future Volume (vph)	37	1143	21	1425	77	34	55	41
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	21.0	9.0	21.0
Total Split (s)	12.0	69.0	12.0	69.0	13.0	27.0	12.0	26.0
Total Split (%)	10.0%	57.5%	10.0%	57.5%	10.8%	22.5%	10.0%	21.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-1.0	-1.0	-1.0	-1.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

























Splits and Phases: 2: Kewaunee Street & Jewell Avenue

					
Ø1	Ø2 (R)		Ø3	Ø4	
12 s	69 s		13 s	26 s	
					
Ø5	Ø6 (R)		Ø7	Ø8	
12 s	69 s		12 s	27 s	

HCM 6th Signalized Intersection Summary









2: Kewaunee Street & Jewell Avenue

Long Term Total Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	37	1143	19	21	1425	50	77	34	33	55	41	67
Future Volume (veh/h)	37	1143	19	21	1425	50	77	34	33	55	41	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	1242	21	23	1549	54	84	37	36	60	45	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	269	3518	59	402	3413	119	208	89	87	216	57	92
Arrive On Green	0.05	1.00	1.00	0.03	0.67	0.67	0.06	0.10	0.10	0.04	0.09	0.09
Sat Flow, veh/h	1781	5171	87	1781	5066	177	1781	871	847	1781	642	1041
Grp Volume(v), veh/h	40	818	445	23	1041	562	84	0	73	60	0	118
Grp Sat Flow(s),veh/h/ln	1781	1702	1855	1781	1702	1839	1781	0	1718	1781	0	1683
Q Serve(g_s), s	0.9	0.0	0.0	0.5	17.2	17.3	5.0	0.0	4.8	3.6	0.0	8.2
Cycle Q Clear(g_c), s	0.9	0.0	0.0	0.5	17.2	17.3	5.0	0.0	4.8	3.6	0.0	8.2
Prop In Lane	1.00		0.05	1.00		0.10	1.00		0.49	1.00		0.62
Lane Grp Cap(c), veh/h	269	2316	1262	402	2293	1239	208	0	176	216	0	149
V/C Ratio(X)	0.15	0.35	0.35	0.06	0.45	0.45	0.40	0.00	0.41	0.28	0.00	0.79
Avail Cap(c_a), veh/h	329	2316	1262	475	2293	1239	230	0	315	247	0	295
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.1	0.0	0.0	5.5	9.2	9.2	44.7	0.0	50.5	47.1	0.0	53.6
Incr Delay (d2), s/veh	0.3	0.4	0.8	0.1	0.7	1.2	1.3	0.0	1.5	0.7	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.2	0.5	0.3	9.8	10.7	4.1	0.0	3.8	3.0	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	0.4	0.8	5.5	9.9	10.4	46.0	0.0	52.0	47.8	0.0	62.6
LnGrp LOS	A	A	A	A	A	B	D	A	D	D	A	E
Approach Vol, veh/h	1303			1626				157		178		
Approach Delay, s/veh	0.8			10.0				48.8		57.6		
Approach LOS	A			A				D		E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	85.6	11.6	15.6	7.9	84.8	9.9	17.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	64.0	8.0	21.0	7.0	64.0	7.0	22.0				
Max Q Clear Time (g_c+I1), s	2.5	2.0	7.0	10.2	2.9	19.3	5.6	6.8				
Green Ext Time (p_c), s	0.0	10.8	0.0	0.4	0.0	15.3	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	10.8											
HCM 6th LOS	B											




HCM 6th TWSC
3: Harvest Road & Pacific Avenue

Long Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	10	20	0	64	3	412	7	34	264	4
Future Vol, veh/h	11	0	10	20	0	64	3	412	7	34	264	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	12	0	11	22	0	70	3	448	8	37	287	4
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	856	825	289	827	823	452	291	0	0	456	0	0
Stage 1	363	363	-	458	458	-	-	-	-	-	-	-
Stage 2	493	462	-	369	365	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	278	308	750	291	309	608	1271	-	-	1105	-	-
Stage 1	656	625	-	583	567	-	-	-	-	-	-	-
Stage 2	558	565	-	651	623	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	239	297	750	279	298	608	1271	-	-	1105	-	-
Mov Cap-2 Maneuver	239	297	-	279	298	-	-	-	-	-	-	-
Stage 1	655	604	-	582	566	-	-	-	-	-	-	-
Stage 2	493	564	-	620	602	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	15.7			13.4			0.1			0.9		
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1271	-	-	239	750	279	608	1105	-	-		
HCM Lane V/C Ratio	0.003	-	-	0.05	0.014	0.078	0.114	0.033	-	-		
HCM Control Delay (s)	7.8	-	-	20.9	9.9	19	11.7	8.4	-	-		
HCM Lane LOS	A	-	-	C	A	C	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.3	0.4	0.1	-	-		









HCM 6th TWSC
4: Kewaunee Street & Pacific Avenue

Long Term Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	4	4	130	81	1
Future Vol, veh/h	1	4	4	130	81	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	1	4	4	141	88	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	238	89	89	0	-	0
Stage 1	89	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	781	1017	1525	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	778	1017	1525	-	-	-
Mov Cap-2 Maneuver	778	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	0.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1525	-	958	-	-	
HCM Lane V/C Ratio	0.003	-	0.006	-	-	
HCM Control Delay (s)	7.4	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
5: Harvest Road & Warren Avenue

Long Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	0	5	17	0	67	2	334	5	22	265	7
Future Vol, veh/h	21	0	5	17	0	67	2	334	5	22	265	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	23	0	5	18	0	73	2	363	5	24	288	8
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	746	712	292	713	714	366	296	0	0	368	0	0
Stage 1	340	340	-	370	370	-	-	-	-	-	-	-
Stage 2	406	372	-	343	344	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	330	358	747	347	357	679	1265	-	-	1191	-	-
Stage 1	675	639	-	650	620	-	-	-	-	-	-	-
Stage 2	622	619	-	672	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	290	350	747	339	349	679	1265	-	-	1191	-	-
Mov Cap-2 Maneuver	290	350	-	339	349	-	-	-	-	-	-	-
Stage 1	674	626	-	649	619	-	-	-	-	-	-	-
Stage 2	554	618	-	654	624	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	16.8			12			0			0.6		
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1265	-	-	290	747	339	679	1191	-	-		
HCM Lane V/C Ratio	0.002	-	-	0.079	0.007	0.055	0.107	0.02	-	-		
HCM Control Delay (s)	7.9	-	-	18.5	9.9	16.2	10.9	8.1	-	-		
HCM Lane LOS	A	-	-	C	A	C	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.2	0.4	0.1	-	-		









HCM 6th TWSC
6: Kewaunee Street & Warren Avenue

Long Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	0	4	5	0	65	1	51	5	30	48	7
Future Vol, veh/h	15	0	4	5	0	65	1	51	5	30	48	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
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	16	0	4	5	0	71	1	55	5	33	52	8
Major/Minor	Minor2		Minor1		Major1				Major2			
Conflicting Flow All	217	184	56	184	186	58	60	0	0	60	0	0
Stage 1	122	122	-	60	60	-	-	-	-	-	-	-
Stage 2	95	62	-	124	126	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	762	726	1039	802	724	1008	1554	-	-	1544	-	-
Stage 1	902	804	-	951	845	-	-	-	-	-	-	-
Stage 2	912	843	-	900	801	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	-	-	-
Mov Cap-1 Maneuver	696	709	1039	785	707	1008	1554	-	-	1544	-	-
Mov Cap-2 Maneuver	696	709	-	785	707	-	-	-	-	-	-	-
Stage 1	901	787	-	950	844	-	-	-	-	-	-	-
Stage 2	847	842	-	877	784	-	-	-	-	-	-	-
Approach	EB		WB		NB				SB			
HCM Control Delay, s	9.9		8.9		0.1				2.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1554	-	-	748	988	1544	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.028	0.077	0.021	-	-				
HCM Control Delay (s)	7.3	0	-	9.9	8.9	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-				

HCM 6th TWSC
7: Harvest Road & Wesley Place

Long Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	2	23	0	85	0	249	7	28	257	2
Future Vol, veh/h	7	0	2	23	0	85	0	249	7	28	257	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	8	0	2	25	0	92	0	271	8	30	279	2
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	661	619	280	616	616	275	281	0	0	279	0	0
Stage 1	340	340	-	275	275	-	-	-	-	-	-	-
Stage 2	321	279	-	341	341	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	376	404	759	403	406	764	1282	-	-	1284	-	-
Stage 1	675	639	-	731	683	-	-	-	-	-	-	-
Stage 2	691	680	-	674	639	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	324	395	759	395	397	764	1282	-	-	1284	-	-
Mov Cap-2 Maneuver	324	395	-	395	397	-	-	-	-	-	-	-
Stage 1	675	624	-	731	683	-	-	-	-	-	-	-
Stage 2	607	680	-	656	624	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	14.9			11.3			0			0.8		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1282	-	-	324	759	395	764	1284	-	-		
HCM Lane V/C Ratio	-	-	-	0.023	0.003	0.063	0.121	0.024	-	-		
HCM Control Delay (s)	0	-	-	16.4	9.8	14.7	10.4	7.9	-	-		
HCM Lane LOS	A	-	-	C	A	B	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.2	0.4	0.1	-	-		

HCM 6th TWSC
8: Kewaunee Street & Wesley Place

Long Term Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	YT			YT	YT	
Traffic Vol, veh/h	29	6	2	28	48	9
Future Vol, veh/h	29	6	2	28	48	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	32	7	2	30	52	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	91	57	62	0	-	0
Stage 1	57	-	-	-	-	-
Stage 2	34	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	909	1009	1541	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	908	1009	1541	-	-	-
Mov Cap-2 Maneuver	908	-	-	-	-	-
Stage 1	965	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	0.5		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1541	-	924	-	-	
HCM Lane V/C Ratio	0.001	-	0.041	-	-	
HCM Control Delay (s)	7.3	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
10: Yale Avenue & Jackson Gap Street (South)

Long Term Total Conditions
AM Peak Hour

Intersection

Int Delay, s/veh 0.4

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations 

Traffic Vol, veh/h 5 321 252 1 4 13

Future Vol, veh/h 5 321 252 1 4 13

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 5 349 274 1 4 14

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 275 0 - 0 634 275

Stage 1 - - - - 275 -

Stage 2 - - - - 359 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1288 - - - 443 764

Stage 1 - - - - 771 -

Stage 2 - - - - 707 -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver 1288 - - - 441 764

Mov Cap-2 Maneuver - - - - 441 -

Stage 1 - - - - 767 -

Stage 2 - - - - 707 -

Approach EB WB SB

HCM Control Delay, s 0.1 0 10.7

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1




Capacity (veh/h) 1288 - - - 652

HCM Lane V/C Ratio 0.004 - - - 0.028

HCM Control Delay (s) 7.8 0 - - 10.7

HCM Lane LOS A A - - B

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

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	310	246	15	36	18
Future Vol, veh/h	31	310	246	15	36	18
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	34	337	267	16	39	20
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	283	0	-	0	680	275
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	405	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1279	-	-	-	417	764
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1279	-	-	-	403	764
Mov Cap-2 Maneuver	-	-	-	-	403	-
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	673	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		13.6		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1279	-	-	-	-	478
HCM Lane V/C Ratio	0.026	-	-	-	-	0.123
HCM Control Delay (s)	7.9	0	-	-	-	13.6
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑	↑
Traffic Vol, veh/h	1175	63	20	1550	55	14
Future Vol, veh/h	1175	63	20	1550	55	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	-
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	1277	68	22	1685	60	15
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1345	0	1995	639
Stage 1	-	-	-	-	1277	-
Stage 2	-	-	-	-	718	-
Critical Hdwy	-	-	5.34	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	3.12	-	3.82	3.92
Pot Cap-1 Maneuver	-	-	795	-	*320	*646
Stage 1	-	-	-	-	*663	-
Stage 2	-	-	-	-	*572	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	795	-	*311	*646
Mov Cap-2 Maneuver	-	-	-	-	*311	-
Stage 1	-	-	-	-	*663	-
Stage 2	-	-	-	-	*556	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		18.2	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	348	-	-	795	-	
HCM Lane V/C Ratio	0.216	-	-	0.027	-	
HCM Control Delay (s)	18.2	-	-	9.7	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						




HCM 6th TWSC
13: Jackson Gap Street (North) & Jewell Avenue

Long Term Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Traffic Vol, veh/h	1180	9	0	1569	0	19
Future Vol, veh/h	1180	9	0	1569	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
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	1283	10	0	1705	0	21
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-
Pot Cap-1 Maneuver	-	-	0	-	0	0
Stage 1	-	-	0	-	0	0
Stage 2	-	-	0	-	0	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	0	-	-	-		
HCM Lane LOS	A	-	-	-		
HCM 95th %tile Q(veh)	-	-	-	-		

HCM 6th TWSC
14: Kewaunee St & Northern Site Access

Long Term Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	3	1	134	78	3
Future Vol, veh/h	10	3	1	134	78	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	11	3	1	146	85	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	235	87	88	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	784	1020	1526	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	784	1020	1526	-	-	-
Mov Cap-2 Maneuver	784	-	-	-	-	-
Stage 1	961	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.4	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1526	-	828	-	-	
HCM Lane V/C Ratio	0.001	-	0.017	-	-	
HCM Control Delay (s)	7.4	0	9.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
15: Kewaunee St & Southern Site Access

Long Term Total Conditions
AM Peak Hour

Intersection

Int Delay, s/veh 0.4

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 5 3 1 130 79 2

Future Vol, veh/h 5 3 1 130 79 2

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

Sign Control Stop Stop Free Free Free Free

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 5 3 1 141 86 2

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 230 87 88 0 - 0

Stage 1 87 - - - - -

Stage 2 143 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 789 1020 1526 - - -

Stage 1 962 - - - - -

Stage 2 884 - - - - -

Platoon blocked, % 1 1 1 - - -

Mov Cap-1 Maneuver 788 1020 1526 - - -

Mov Cap-2 Maneuver 788 - - - - -

Stage 1 961 - - - - -

Stage 2 884 - - - - -

Approach EB NB SB

HCM Control Delay, s 9.2 0.1 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1526 - 861 - -

HCM Lane V/C Ratio 0.001 - 0.01 - -

HCM Control Delay (s) 7.4 0 9.2 - -

HCM Lane LOS A A A - -

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

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↑
Traffic Vol, veh/h	0	58	475	12	0	302
Future Vol, veh/h	0	58	475	12	0	302
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	63	516	13	0	328
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	523	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	554	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	554	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.3	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	-	554			
HCM Lane V/C Ratio	-	-	0.114			
HCM Control Delay (s)	-	-	12.3			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.4			

HCM 6th TWSC
17: Pacific Ave & Western Site Access

Long Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	17	5	0	52	1	12	0	1	2	0	20
Future Vol, veh/h	19	17	5	0	52	1	12	0	1	2	0	20
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	21	18	5	0	57	1	13	0	1	2	0	22
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	23	0	0	132	121	21	121	123	58
Stage 1	-	-	-	-	-	-	63	63	-	58	58	-
Stage 2	-	-	-	-	-	-	69	58	-	63	65	-
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	1546	-	-	1592	-	-	840	769	1056	854	767	1008
Stage 1	-	-	-	-	-	-	948	842	-	954	847	-
Stage 2	-	-	-	-	-	-	941	847	-	948	841	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1546	-	-	1592	-	-	813	758	1056	844	756	1008
Mov Cap-2 Maneuver	-	-	-	-	-	-	813	758	-	844	756	-
Stage 1	-	-	-	-	-	-	935	830	-	941	847	-
Stage 2	-	-	-	-	-	-	921	847	-	934	829	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.4			0			9.4			8.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	828	1546	-	-	1592	-	-	991				
HCM Lane V/C Ratio	0.017	0.013	-	-	-	-	-	0.024				
HCM Control Delay (s)	9.4	7.4	0	-	0	-	-	8.7				
HCM Lane LOS	A	A	A	-	A	-	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

HCM 6th TWSC
18: Pacific Ave & Eastern Site Access

Long Term Total Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	2	13	1	1	3	43	11	1	2	6	9
Future Vol, veh/h	5	2	13	1	1	3	43	11	1	2	6	9
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	2	14	1	1	3	47	12	1	2	7	10
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	4	0	0	16	0	0	32	25	9	31	31	3
Stage 1	-	-	-	-	-	-	19	19	-	5	5	-
Stage 2	-	-	-	-	-	-	13	6	-	26	26	-
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	1618	-	-	1602	-	-	976	868	1073	977	862	1081
Stage 1	-	-	-	-	-	-	1000	880	-	1017	892	-
Stage 2	-	-	-	-	-	-	1007	891	-	992	874	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1618	-	-	1602	-	-	958	865	1073	962	859	1081
Mov Cap-2 Maneuver	-	-	-	-	-	-	958	865	-	962	859	-
Stage 1	-	-	-	-	-	-	997	877	-	1014	891	-
Stage 2	-	-	-	-	-	-	990	890	-	975	871	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.8			1.4			9.1			8.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	940	1618	-	-	1602	-	-	978				
HCM Lane V/C Ratio	0.064	0.003	-	-	0.001	-	-	0.019				
HCM Control Delay (s)	9.1	7.2	0	-	7.2	0	-	8.8				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

MOVEMENT SUMMARY

 **Site: 9 [Harvest & Yale AM (Site Folder: General)]**

AM_9_LongTerm Total

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] ft				
East: Yale Ave														
6	T1	131	3.0	142	3.0	0.248	5.3	LOS A	1.3	32.1	0.33	0.19	0.33	35.0
16	R2	135	3.0	147	3.0	0.248	5.3	LOS A	1.3	32.1	0.33	0.19	0.33	34.0
Approach		266	3.0	289	3.0	0.248	5.3	LOS A	1.3	32.1	0.33	0.19	0.33	34.5
North: Harvest Rd														
7	L2	208	3.0	226	3.0	0.265	5.6	LOS A	1.4	34.7	0.35	0.21	0.35	32.9
14	R2	73	3.0	79	3.0	0.265	5.6	LOS A	1.4	34.7	0.35	0.21	0.35	31.9
Approach		281	3.0	305	3.0	0.265	5.6	LOS A	1.4	34.7	0.35	0.21	0.35	32.6
West: Yale Ave														
5	L2	122	3.0	133	3.0	0.247	5.8	LOS A	1.2	30.7	0.43	0.30	0.43	33.4
2	T1	118	3.0	128	3.0	0.247	5.8	LOS A	1.2	30.7	0.43	0.30	0.43	33.4
Approach		240	3.0	261	3.0	0.247	5.8	LOS A	1.2	30.7	0.43	0.30	0.43	33.4
All Vehicles		787	3.0	855	3.0	0.265	5.5	LOS A	1.4	34.7	0.37	0.23	0.37	33.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.





























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Project: I:\124044-01 Harvest Xing F2 TIS Update\08_TRF\Analysis\SIDRA\Total\LT Total.sip9

Timings
1: Harvest Road & Jewell Avenue

Long Term Total Conditions
PM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  					 		
Traffic Volume (vph)	408	1302	121	1262	290	241	391	91	397	349	452
Future Volume (vph)	408	1302	121	1262	290	241	391	91	397	349	452
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	1	6	7	3	8		7	4	5
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	7	3	8	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	9.0	21.0	21.0	9.0	21.0	9.0
Total Split (s)	30.0	46.0	16.0	32.0	23.0	28.0	35.0	35.0	23.0	30.0	30.0
Total Split (%)	25.0%	38.3%	13.3%	26.7%	19.2%	23.3%	29.2%	29.2%	19.2%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

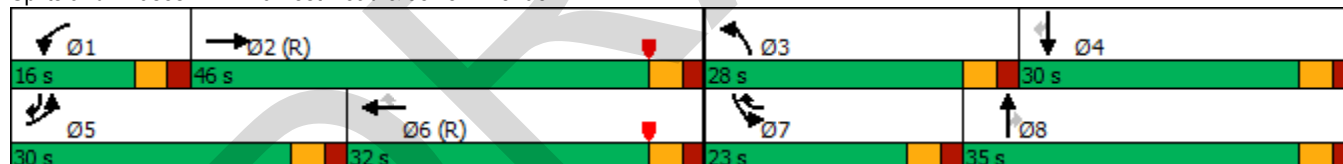
Actuated Cycle Length: 120

Offset: 44 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated
























Splits and Phases: 1: Harvest Road & Jewell Avenue



HCM 6th Signalized Intersection Summary





















1: Harvest Road & Jewell Avenue

Long Term Total Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	1302	259	121	1262	290	241	391	91	397	349	452
Future Volume (veh/h)	408	1302	259	121	1262	290	241	391	91	397	349	452
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	443	1415	282	132	1372	315	262	425	99	432	379	491
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	544	1584	315	174	1586	728	304	467	396	514	427	611
Arrive On Green	0.16	0.37	0.37	0.03	0.10	0.10	0.17	0.25	0.25	0.15	0.23	0.23
Sat Flow, veh/h	3456	4272	850	1781	5106	1585	1781	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	443	1127	570	132	1372	315	262	425	99	432	379	491
Grp Sat Flow(s),veh/h/ln	1728	1702	1717	1781	1702	1585	1781	1870	1585	1728	1870	1585
Q Serve(g_s), s	14.9	37.4	37.5	8.8	31.8	18.0	17.2	26.5	6.0	14.6	23.5	27.4
Cycle Q Clear(g_c), s	14.9	37.4	37.5	8.8	31.8	18.0	17.2	26.5	6.0	14.6	23.5	27.4
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	544	1262	637	174	1586	728	304	467	396	514	427	611
V/C Ratio(X)	0.81	0.89	0.90	0.76	0.86	0.43	0.86	0.91	0.25	0.84	0.89	0.80
Avail Cap(c_a), veh/h	749	1262	637	178	1586	728	356	483	409	547	427	611
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	35.5	35.6	56.7	51.4	29.1	48.4	43.7	36.0	49.7	44.8	32.8
Incr Delay (d2), s/veh	4.9	9.9	17.6	16.9	6.6	1.9	17.1	20.9	0.3	10.7	19.9	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.9	23.3	25.1	8.6	21.9	12.6	14.0	21.2	4.3	11.4	19.2	19.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	45.4	53.1	73.6	57.9	31.0	65.5	64.6	36.4	60.4	64.7	40.5
LnGrp LOS	D	D	D	E	E	C	E	E	D	E	E	D
Approach Vol, veh/h	2140			1819				786			1302	
Approach Delay, s/veh	49.2			54.4				61.4			54.1	
Approach LOS	D			D				E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.7	48.5	24.4	31.4	22.9	41.3	21.9	34.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	41.0	23.0	25.0	25.0	27.0	18.0	30.0				
Max Q Clear Time (g_c+I1), s	10.8	39.5	19.2	29.4	16.9	33.8	16.6	28.5				
Green Ext Time (p_c), s	0.0	1.3	0.3	0.0	1.0	0.0	0.3	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	53.4											
HCM 6th LOS	D											

Timings 2: Kewaunee Street & Jewell Avenue


Long Term Total Conditions
PM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		  		  				
Traffic Volume (vph)	72	1467	57	1554	21	45	75	60
Future Volume (vph)	72	1467	57	1554	21	45	75	60
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	21.0	9.0	21.0
Total Split (s)	16.0	72.0	12.0	68.0	12.0	23.0	13.0	24.0
Total Split (%)	13.3%	60.0%	10.0%	56.7%	10.0%	19.2%	10.8%	20.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-1.0	-1.0	-1.0	-1.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated

























Splits and Phases: 2: Kewaunee Street & Jewell Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
12 s	72 s		12 s	24 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
16 s	68 s		13 s	23 s

HCM 6th Signalized Intersection Summary









2: Kewaunee Street & Jewell Avenue

Long Term Total Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	72	1467	105	57	1554	100	21	45	33	75	60	72
Future Volume (veh/h)	72	1467	105	57	1554	100	21	45	33	75	60	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	1595	114	62	1689	109	23	49	36	82	65	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	3362	240	324	3379	218	144	67	49	182	80	96
Arrive On Green	0.06	1.00	1.00	0.04	0.69	0.68	0.03	0.07	0.07	0.05	0.10	0.10
Sat Flow, veh/h	1781	4864	347	1781	4902	316	1781	1002	736	1781	774	929
Grp Volume(v), veh/h	78	1116	593	62	1172	626	23	0	85	82	0	143
Grp Sat Flow(s),veh/h/ln	1781	1702	1808	1781	1702	1813	1781	0	1738	1781	0	1703
Q Serve(g_s), s	1.6	0.0	0.0	1.2	19.6	19.7	1.4	0.0	5.8	5.0	0.0	9.9
Cycle Q Clear(g_c), s	1.6	0.0	0.0	1.2	19.6	19.7	1.4	0.0	5.8	5.0	0.0	9.9
Prop In Lane	1.00		0.19	1.00		0.17	1.00		0.42	1.00		0.55
Lane Grp Cap(c), veh/h	251	2353	1250	324	2347	1250	144	0	116	182	0	176
V/C Ratio(X)	0.31	0.47	0.47	0.19	0.50	0.50	0.16	0.00	0.73	0.45	0.00	0.81
Avail Cap(c_a), veh/h	359	2353	1250	376	2347	1250	216	0	261	203	0	270
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	0.0	0.0	4.6	8.8	8.9	49.2	0.0	55.0	47.5	0.0	52.6
Incr Delay (d2), s/veh	0.7	0.7	1.3	0.3	0.8	1.4	0.5	0.0	8.7	1.7	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.4	0.8	0.7	10.7	11.7	1.2	0.0	5.0	4.2	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	0.7	1.3	4.9	9.6	10.3	49.8	0.0	63.6	49.2	0.0	62.9
LnGrp LOS	A	A	A	A	A	B	D	A	E	D	A	E
Approach Vol, veh/h		1787			1860			108			225	
Approach Delay, s/veh		1.2			9.7			60.7			57.9	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	86.9	7.1	17.4	8.7	86.7	11.6	13.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	67.0	7.0	19.0	11.0	63.0	8.0	18.0				
Max Q Clear Time (g_c+I1), s	3.2	2.0	3.4	11.9	3.6	21.7	7.0	7.8				
Green Ext Time (p_c), s	0.0	18.7	0.0	0.4	0.1	18.0	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			10.0									
HCM 6th LOS			A									




HCM 6th TWSC
3: Harvest Road & Pacific Avenue

Long Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	6	37	0	56	10	509	19	93	523	12
Future Vol, veh/h	7	0	6	37	0	56	10	509	19	93	523	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	8	0	7	40	0	61	11	553	21	101	568	13
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1393	1373	575	1366	1369	564	581	0	0	574	0	0
Stage 1	777	777	-	586	586	-	-	-	-	-	-	-
Stage 2	616	596	-	780	783	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	119	146	518	124	146	525	993	-	-	999	-	-
Stage 1	390	407	-	496	497	-	-	-	-	-	-	-
Stage 2	478	492	-	388	404	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	96	130	518	112	130	525	993	-	-	999	-	-
Mov Cap-2 Maneuver	96	130	-	112	130	-	-	-	-	-	-	-
Stage 1	386	366	-	491	492	-	-	-	-	-	-	-
Stage 2	418	487	-	344	363	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	30.1			29.2			0.2			1.3		
HCM LOS	D			D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	993	-	-	96	518	112	525	999	-	-		
HCM Lane V/C Ratio	0.011	-	-	0.079	0.013	0.359	0.116	0.101	-	-		
HCM Control Delay (s)	8.7	-	-	45.7	12	54.1	12.8	9	-	-		
HCM Lane LOS	A	-	-	E	B	F	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.3	0	1.4	0.4	0.3	-	-		









HCM 6th TWSC
4: Kewaunee Street & Pacific Avenue

Long Term Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	9	84	203	4
Future Vol, veh/h	0	9	9	84	203	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	10	10	91	221	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	334	223	225	0	-	0
Stage 1	223	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	*738	*920	*1377	-	-	-
Stage 1	*867	-	-	-	-	-
Stage 2	*914	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*732	*920	*1377	-	-	-
Mov Cap-2 Maneuver	*732	-	-	-	-	-
Stage 1	*860	-	-	-	-	-
Stage 2	*914	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0.7		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	* 1377	-	920	-	-	
HCM Lane V/C Ratio	0.007	-	0.011	-	-	
HCM Control Delay (s)	7.6	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 6th TWSC
5: Harvest Road & Warren Avenue

Long Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	0	4	12	0	45	6	477	21	72	473	21
Future Vol, veh/h	16	0	4	12	0	45	6	477	21	72	473	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	17	0	4	13	0	49	7	518	23	78	514	23
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1250	1237	526	1228	1237	530	537	0	0	541	0	0
Stage 1	682	682	-	544	544	-	-	-	-	-	-	-
Stage 2	568	555	-	684	693	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	150	176	552	155	176	549	1031	-	-	1028	-	-
Stage 1	440	450	-	523	519	-	-	-	-	-	-	-
Stage 2	508	513	-	439	445	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	128	162	552	144	162	549	1031	-	-	1028	-	-
Mov Cap-2 Maneuver	128	162	-	144	162	-	-	-	-	-	-	-
Stage 1	437	416	-	519	515	-	-	-	-	-	-	-
Stage 2	460	509	-	402	411	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	32.3			16.5			0.1			1.1		
HCM LOS	D			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1031	-	-	128	552	144	549	1028	-	-		
HCM Lane V/C Ratio	0.006	-	-	0.136	0.008	0.091	0.089	0.076	-	-		
HCM Control Delay (s)	8.5	-	-	37.5	11.6	32.5	12.2	8.8	-	-		
HCM Lane LOS	A	-	-	E	B	D	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0.3	0.3	0.2	-	-		









HCM 6th TWSC
6: Kewaunee Street & Warren Avenue

Long Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	2	10	0	25	4	58	10	115	69	26
Future Vol, veh/h	10	0	2	10	0	25	4	58	10	115	69	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
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	11	0	2	11	0	27	4	63	11	125	75	28
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	429	421	89	417	430	69	103	0	0	74	0	0
Stage 1	339	339	-	77	77	-	-	-	-	-	-	-
Stage 2	90	82	-	340	353	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	547	531	994	558	524	994	1498	-	-	1526	-	-
Stage 1	685	643	-	932	831	-	-	-	-	-	-	-
Stage 2	917	827	-	684	635	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	-	-	-
Mov Cap-1 Maneuver	496	483	994	519	477	994	1498	-	-	1526	-	-
Mov Cap-2 Maneuver	496	483	-	519	477	-	-	-	-	-	-	-
Stage 1	683	587	-	929	829	-	-	-	-	-	-	-
Stage 2	889	825	-	623	579	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	11.8			9.8			0.4			4.1		
HCM LOS	B			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1498	-	-	541	788	1526	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.024	0.048	0.082	-	-				
HCM Control Delay (s)	7.4	0	-	11.8	9.8	7.6	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.3	-	-				




HCM 6th TWSC
7: Harvest Road & Wesley Place

Long Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	14	0	56	2	444	25	97	384	8
Future Vol, veh/h	4	0	1	14	0	56	2	444	25	97	384	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	4	0	1	15	0	61	2	483	27	105	417	9
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1163	1146	422	1133	1137	497	426	0	0	510	0	0
Stage 1	632	632	-	501	501	-	-	-	-	-	-	-
Stage 2	531	514	-	632	636	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	172	199	632	180	202	573	1133	-	-	1055	-	-
Stage 1	468	474	-	552	543	-	-	-	-	-	-	-
Stage 2	532	535	-	468	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	142	179	632	166	181	573	1133	-	-	1055	-	-
Mov Cap-2 Maneuver	142	179	-	166	181	-	-	-	-	-	-	-
Stage 1	467	427	-	551	542	-	-	-	-	-	-	-
Stage 2	475	534	-	421	425	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	27.1			15.4			0			1.7		
HCM LOS	D			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1133	-	-	142	632	166	573	1055	-	-		
HCM Lane V/C Ratio	0.002	-	-	0.031	0.002	0.092	0.106	0.1	-	-		
HCM Control Delay (s)	8.2	-	-	31.2	10.7	28.9	12	8.8	-	-		
HCM Lane LOS	A	-	-	D	B	D	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.3	0.4	0.3	-	-		




HCM 6th TWSC
8: Kewaunee Street & Wesley Place

Long Term Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	4	7	53	49	32
Future Vol, veh/h	19	4	7	53	49	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	21	4	8	58	53	35
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	145	71	88	0	-	0
Stage 1	71	-	-	-	-	-
Stage 2	74	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	847	991	1508	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	843	991	1508	-	-	-
Mov Cap-2 Maneuver	843	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	9.3		0.9		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1508	-	865	-	-	
HCM Lane V/C Ratio	0.005	-	0.029	-	-	
HCM Control Delay (s)	7.4	0	9.3	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
10: Yale Avenue & Jackson Gap Street (South)

Long Term Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	403	366	5	3	9
Future Vol, veh/h	16	403	366	5	3	9
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	17	438	398	5	3	10
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	403	0	-	0	873	401
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	472	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1156	-	-	-	321	649
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1156	-	-	-	315	649
Mov Cap-2 Maneuver	-	-	-	-	315	-
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	628	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		12.2		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1156	-	-	-	513	
HCM Lane V/C Ratio	0.015	-	-	-	0.025	
HCM Control Delay (s)	8.2	0	-	-	12.2	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection

Int Delay, s/veh 1.4

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations

Traffic Vol, veh/h 33 388 354 43 36 17

Future Vol, veh/h 33 388 354 43 36 17

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 36 422 385 47 39 18

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 432 0 - 0 903 409

Stage 1 - - - - 409 -

Stage 2 - - - - 494 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1128 - - - 308 642

Stage 1 - - - - 671 -

Stage 2 - - - - 613 -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver 1128 - - - 295 642

Mov Cap-2 Maneuver - - - - 295 -

Stage 1 - - - - 643 -

Stage 2 - - - - 613 -

Approach EB WB SB

HCM Control Delay, s 0.7 0 17

HCM LOS C

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1128 - - - 357

HCM Lane V/C Ratio 0.032 - - - 0.161

HCM Control Delay (s) 8.3 0 - - 17

HCM Lane LOS A A - - C

HCM 95th %tile Q(veh) 0.1 - - - 0.6

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑	↑
Traffic Vol, veh/h	1620	170	50	1597	76	35
Future Vol, veh/h	1620	170	50	1597	76	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	-
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	1761	185	54	1736	83	38
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1946	0	2563	881
Stage 1	-	-	-	-	1761	-
Stage 2	-	-	-	-	802	-
Critical Hdwy	-	-	5.34	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	3.12	-	3.82	3.92
Pot Cap-1 Maneuver	-	-	589	-	*222	*536
Stage 1	-	-	-	-	*550	-
Stage 2	-	-	-	-	*550	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	589	-	*202	*536
Mov Cap-2 Maneuver	-	-	-	-	*202	-
Stage 1	-	-	-	-	*550	-
Stage 2	-	-	-	-	*499	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		31.9	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	251	-	-	589	-	
HCM Lane V/C Ratio	0.481	-	-	0.092	-	
HCM Control Delay (s)	31.9	-	-	11.7	-	
HCM Lane LOS	D	-	-	B	-	
HCM 95th %tile Q(veh)	2.4	-	-	0.3	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						




HCM 6th TWSC
13: Jackson Gap Street (North) & Jewell Avenue




Long Term Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Traffic Vol, veh/h	1626	29	0	1647	0	16
Future Vol, veh/h	1626	29	0	1647	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
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	1767	32	0	1790	0	17
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-
Pot Cap-1 Maneuver	-	-	0	-	0	0
Stage 1	-	-	0	-	0	0
Stage 2	-	-	0	-	0	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	0	-	-	-		
HCM Lane LOS	A	-	-	-		
HCM 95th %tile Q(veh)	-	-	-	-		

HCM 6th TWSC
14: Kewaunee St & Northern Site Access

Long Term Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	2	2	82	209	10
Future Vol, veh/h	6	2	2	82	209	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	7	2	2	89	227	11
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	326	233	238	0	-	0
Stage 1	233	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	746	912	1362	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	745	912	1362	-	-	-
Mov Cap-2 Maneuver	745	-	-	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.7	0.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1362	-	781	-	-	
HCM Lane V/C Ratio	0.002	-	0.011	-	-	
HCM Control Delay (s)	7.6	0	9.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	2	3	81	205	6
Future Vol, veh/h	3	2	3	81	205	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	3	2	3	88	223	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	321	227	230	0	-	0
Stage 1	227	-	-	-	-	-
Stage 2	94	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	752	921	1373	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	750	921	1373	-	-	-
Mov Cap-2 Maneuver	750	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.5	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1373	-	810	-	-	
HCM Lane V/C Ratio	0.002	-	0.007	-	-	
HCM Control Delay (s)	7.6	0	9.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↑
Traffic Vol, veh/h	0	107	542	30	0	628
Future Vol, veh/h	0	107	542	30	0	628
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	116	589	33	0	683
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	606	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	497	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	497	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.4	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	-	497			
HCM Lane V/C Ratio	-	-	0.234			
HCM Control Delay (s)	-	-	14.4			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.9			

HCM 6th TWSC
17: Pacific Ave & Western Site Access

Long Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	53	14	2	35	1	8	0	1	8	0	50
Future Vol, veh/h	47	53	14	2	35	1	8	0	1	8	0	50
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	51	58	15	2	38	1	9	0	1	9	0	54
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	39	0	0	73	0	0	238	211	66	211	218	39
Stage 1	-	-	-	-	-	-	168	168	-	43	43	-
Stage 2	-	-	-	-	-	-	70	43	-	168	175	-
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	1571	-	-	1527	-	-	716	686	998	746	680	1033
Stage 1	-	-	-	-	-	-	834	759	-	971	859	-
Stage 2	-	-	-	-	-	-	940	859	-	834	754	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1571	-	-	1527	-	-	660	662	998	725	656	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	660	662	-	725	656	-
Stage 1	-	-	-	-	-	-	806	733	-	938	858	-
Stage 2	-	-	-	-	-	-	890	858	-	805	728	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3			0.4			10.3			8.9		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	686	1571	-	-	1527	-	-	976				
HCM Lane V/C Ratio	0.014	0.033	-	-	0.001	-	-	0.065				
HCM Control Delay (s)	10.3	7.4	0	-	7.4	0	-	8.9				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.2				

HCM 6th TWSC
18: Pacific Ave & Eastern Site Access

Long Term Total Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	8	42	3	3	8	29	11	0	1	7	6
Future Vol, veh/h	13	8	42	3	3	8	29	11	0	1	7	6
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	14	9	46	3	3	9	32	12	0	1	8	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	12	0	0	55	0	0	81	78	32	80	97	8
Stage 1	-	-	-	-	-	-	60	60	-	14	14	-
Stage 2	-	-	-	-	-	-	21	18	-	66	83	-
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	1607	-	-	1550	-	-	907	812	1042	908	793	1074
Stage 1	-	-	-	-	-	-	951	845	-	1006	884	-
Stage 2	-	-	-	-	-	-	998	880	-	945	826	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1607	-	-	1550	-	-	887	803	1042	890	784	1074
Mov Cap-2 Maneuver	-	-	-	-	-	-	887	803	-	890	784	-
Stage 1	-	-	-	-	-	-	942	837	-	997	882	-
Stage 2	-	-	-	-	-	-	981	878	-	923	819	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.6			9.4			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	862	1607	-	-	1550	-	-	895				
HCM Lane V/C Ratio	0.05	0.009	-	-	0.002	-	-	0.017				
HCM Control Delay (s)	9.4	7.3	0	-	7.3	0	-	9.1				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

MOVEMENT SUMMARY

 **Site: 9 [Harvest & Yale PM (Site Folder: General)]**

PM_9_Long Term Total
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] ft				
East: Yale Ave														
6	T1	147	3.0	160	3.0	0.402	7.9	LOS A	2.2	57.2	0.53	0.42	0.53	33.6
16	R2	229	3.0	249	3.0	0.402	7.9	LOS A	2.2	57.2	0.53	0.42	0.53	32.7
Approach		376	3.0	409	3.0	0.402	7.9	LOS A	2.2	57.2	0.53	0.42	0.53	33.0
North: Harvest Rd														
7	L2	260	3.0	283	3.0	0.382	7.0	LOS A	2.2	56.6	0.42	0.27	0.42	32.4
14	R2	138	3.0	150	3.0	0.382	7.0	LOS A	2.2	56.6	0.42	0.27	0.42	31.5
Approach		398	3.0	433	3.0	0.382	7.0	LOS A	2.2	56.6	0.42	0.27	0.42	32.1
West: Yale Ave														
5	L2	242	3.0	263	3.0	0.438	8.6	LOS A	2.5	63.9	0.57	0.46	0.57	31.9
2	T1	159	3.0	173	3.0	0.438	8.6	LOS A	2.5	63.9	0.57	0.46	0.57	31.8
Approach		401	3.0	436	3.0	0.438	8.6	LOS A	2.5	63.9	0.57	0.46	0.57	31.9
All Vehicles		1175	3.0	1277	3.0	0.438	7.8	LOS A	2.5	63.9	0.51	0.39	0.51	32.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX E. SIGNAL WARRANT ANALYSES

DRAFT

MUTCD Volume-based Warrant Evaluation
Harvest Road & Jewell Avenue
Short Term Total (2026)



Major Street: Jewell Avenue
 Lanes Moving Traffic: 1
 Approach Speed: 40 MPH
 Option: Rural Community

Minor Street: Harvest Road
 Lanes Moving Traffic: 2 or more
 Right Turn Volume Included: 0% SB, 0% NB
 per NCHRP 457 Methodology

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied Yes

	Vehicles per hour 70% (56%)	Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
Both Apprchs. Major Street	350 (280)	815	765	715	665	615	565	515	465
Highest Apprch. Minor Street	140 (112)	253	237	222	206	191	175	160	144

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied No

	Vehicles per hour 70% (56%)	Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
Both Apprchs. Major Street	525 (420)	815	765	715	665	615	565	515	465
Highest Apprch. Minor Street	70 (56)	253	237	222	206	191	175	160	144

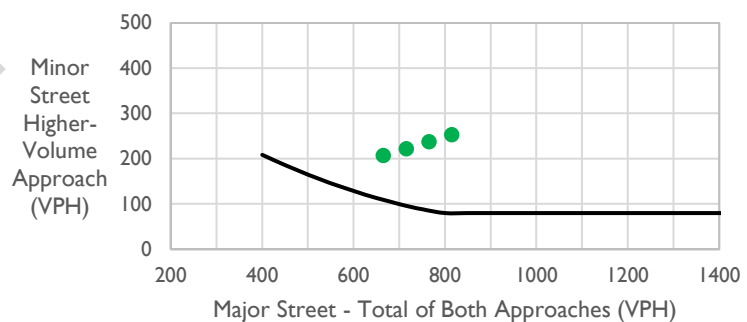
WARRANT 1, Condition A and Condition B

56% Satisfied Yes

WARRANT 2, Four Hour Volume

70% Satisfied Yes

	Both Apprchs. Major Street	Higher Vol. Apprch. Minor Street
Peak Hour	815	253
2nd Highest	765	237
3rd Highest	715	222
4th Highest	665	206



WARRANT 3, Peak Hour Volume

70% Satisfied Yes

	Both Apprchs. Major Street	Higher Vol. Apprch. Minor Street
Peak Hour	815	253

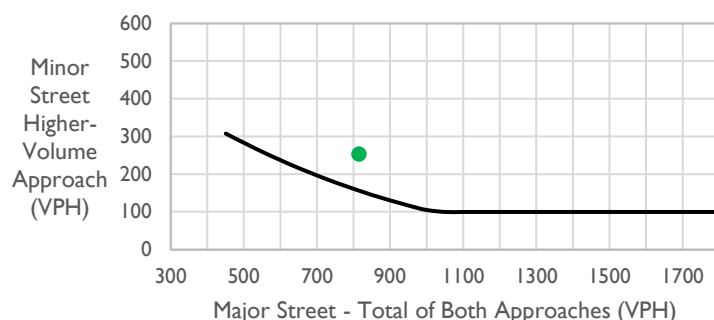
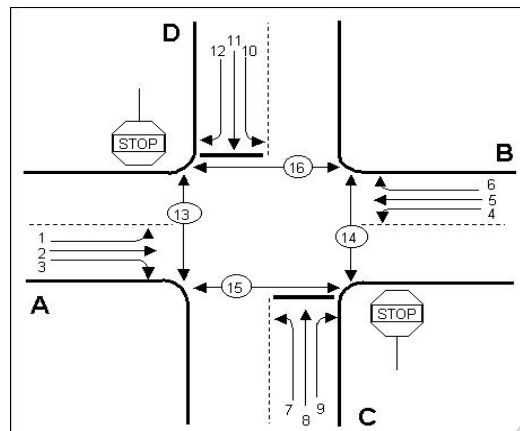


Figure 2 - 11. Minor-road right-turn volume reduction for warrant check.
Harvest Road & Jewell Avenue
Short Term Total (2026)



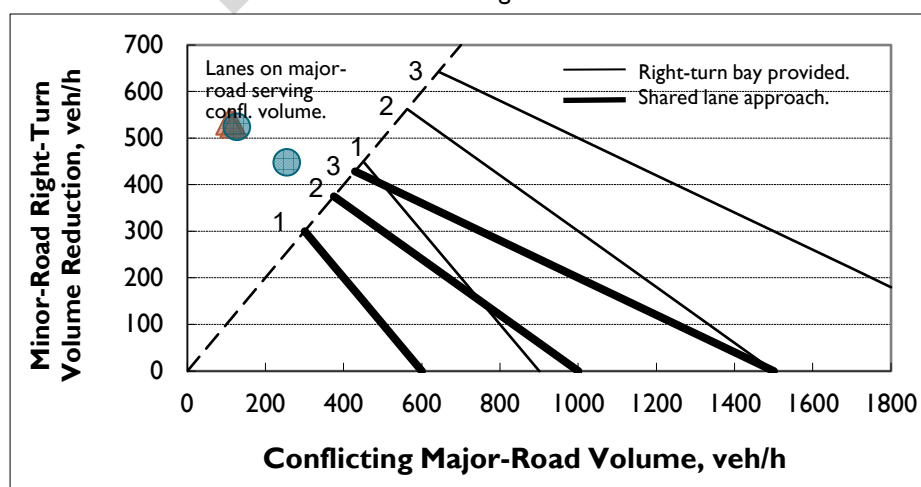
INPUT

Number of lanes on major-road approach:			2	
Right-turn geometry on minor-road:			Shared-lane approach	
Approach	Number	Movement	Volume (veh/hr)	
			AM	PM
Major A	2	Through	167	368
	3	Right	48	141
Major B	5	Through	222	236
	6	Right	14	18
Minor C	7	Left	170	218
	8	Through	37	35
	9	Right	6	3
Minor D	10	Left	17	38
	11	Through	10	35
	12	Right	39	41

OUTPUT

Variable	Volume (veh/hr)	
	AM	PM
Conflicting major-road volume (Vc9):	108	255
Conflicting major-road volume (Vc12):	118	127
Right-turn volume reduction (Vr9):	536	447
Right-turn volume reduction (Vr12):	529	524
Adjusted right-turn volume reduction (Vr9):	6	3
Adjusted right-turn volume reduction (Vr12):	39	41
Adjusted minor-road volume:	207	253

Chart Legend:



MUTCD Volume-based Warrant Evaluation
Harvest Road & Jewell Avenue
2040_LT Background



Major Street: Jewell Avenue
 Lanes Moving Traffic: 2 or more
 Approach Speed: 40 MPH
 Option: Rural Community

Minor Street: Harvest Road
 Lanes Moving Traffic: 2 or more
 Right Turn Volume Included: 100% SB, 100% NB
 per NCHRP 457 Methodology

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied Yes

	Vehicles per hour 70% (56%)	Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
Both Apprchs. Major Street	420 (336)	3415	3206	2996	2787	2578	2369	2159	1950
Highest Apprch. Minor Street	140 (112)	949	891	833	775	716	658	600	542

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied Yes

	Vehicles per hour 70% (56%)	Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
Both Apprchs. Major Street	630 (504)	3415	3206	2996	2787	2578	2369	2159	1950
Highest Apprch. Minor Street	70 (56)	949	891	833	775	716	658	600	542

WARRANT 1, Condition A and Condition B

56% Satisfied Yes

WARRANT 2, Four Hour Volume

70% Satisfied Yes

	Both Apprchs. Major Street	Higher Vol. Apprch. Minor Street
Peak Hour	3415	949
2nd Highest	3206	891
3rd Highest	2996	833
4th Highest	2787	775



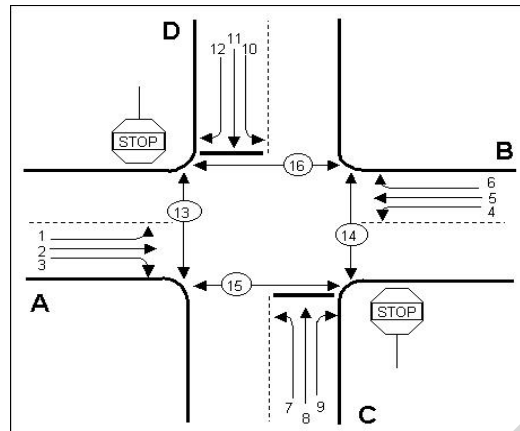
WARRANT 3, Peak Hour Volume

70% Satisfied Yes

	Both Apprchs. Major Street	Higher Vol. Apprch. Minor Street
Peak Hour	3415	949



Figure 2 - 11. Minor-road right-turn volume reduction for warrant check.
Harvest Road & Jewell Avenue
2040_LT Background



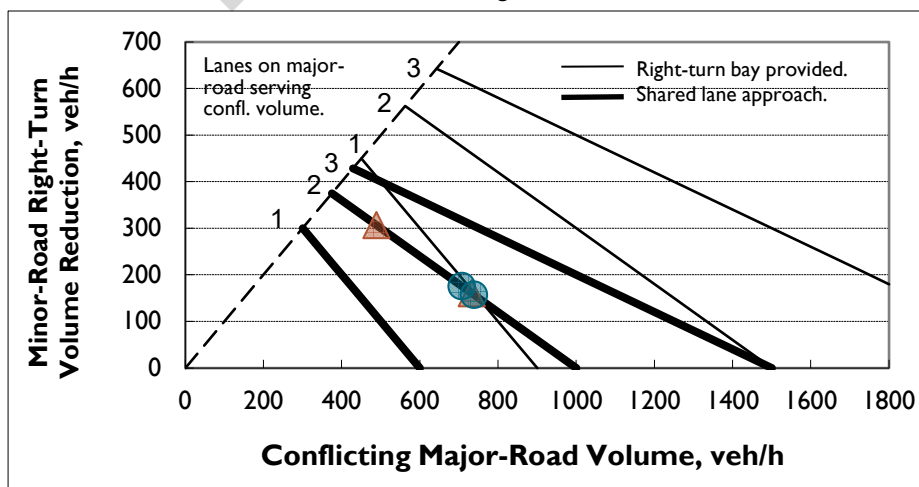
INPUT

Number of lanes on major-road approach:			2	
Right-turn geometry on minor-road:			Shared-lane approach	
Approach	Number	Movement	Volume (veh/hr)	
Major A	2	Through	AM 889	PM 1183
	3	Right	89	232
Major B	5	Through	1109	1220
	6	Right	356	257
Minor C	7	Left	215	159
	8	Through	252	347
	9	Right	88	88
Minor D	10	Left	190	318
	11	Through	164	336
	12	Right	400	452

OUTPUT

Variable	Volume (veh/hr)	
	AM	PM
Conflicting major-road volume (Vc9):	489	708
Conflicting major-road volume (Vc12):	733	739
Right-turn volume reduction (Vr9):	307	176
Right-turn volume reduction (Vr12):	161	157
Adjusted right-turn volume reduction (Vr9):	88	88
Adjusted right-turn volume reduction (Vr12):	161	157
Adjusted minor-road volume:	594	949

Chart Legend:



MUTCD Volume-based Warrant Evaluation
Kewaunee Street & Jewell Avenue
2040_LT Background



Major Street: Jewell Avenue
 Lanes Moving Traffic: 2 or more
 Approach Speed: 40 MPH
 Option: Rural Community

Minor Street: Kewaunee Street
 Lanes Moving Traffic: 2 or more
 Right Turn Volume Included: 0% SB, 0% NB
 per NCHRP 457 Methodology

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied No

	Vehicles per hour 70% (56%)	Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
Both Apprchs. Major Street	420 (336)	3266	3066	2866	2666	2465	2265	2065	1865
Highest Apprch. Minor Street	140 (112)	131	123	115	107	99	91	83	75

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied Yes

	Vehicles per hour 70% (56%)	Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
Both Apprchs. Major Street	630 (504)	3266	3066	2866	2666	2465	2265	2065	1865
Highest Apprch. Minor Street	70 (56)	131	123	115	107	99	91	83	75

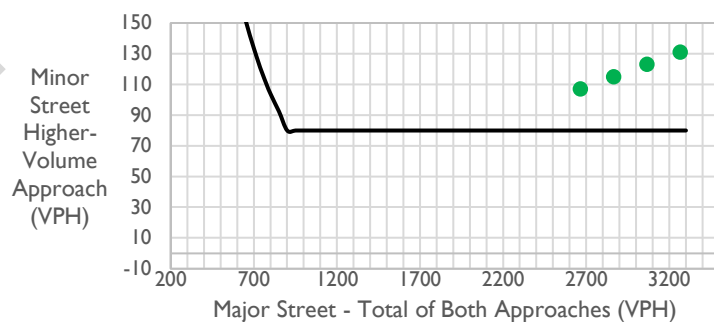
WARRANT 1, Condition A and Condition B

56% Satisfied No

WARRANT 2, Four Hour Volume

70% Satisfied Yes

	Both Apprchs. Major Street	Higher Vol. Apprch. Minor Street
Peak Hour	3266	131
2nd Highest	3066	123
3rd Highest	2866	115
4th Highest	2666	107



WARRANT 3, Peak Hour Volume

70% Satisfied Yes

	Both Apprchs. Major Street	Higher Vol. Apprch. Minor Street
Peak Hour	3266	131

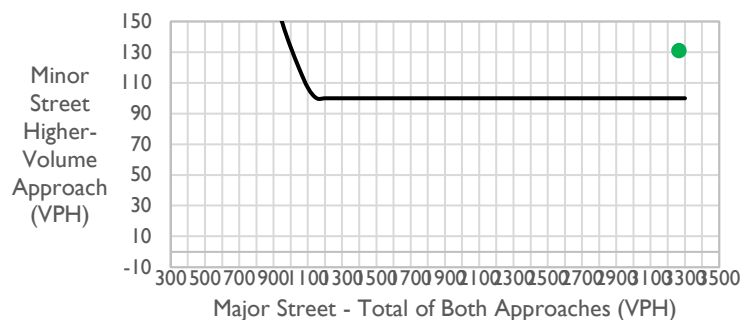
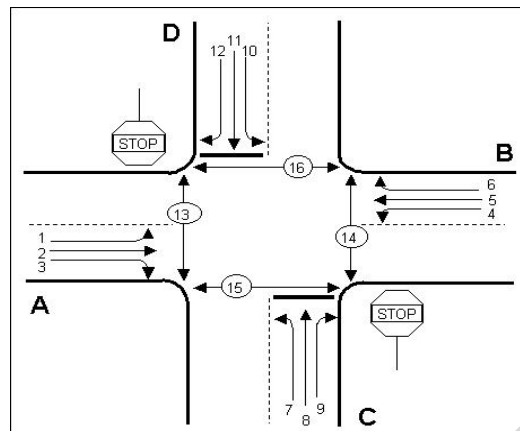


Figure 2 - 11. Minor-road right-turn volume reduction for warrant check.
Kewaunee Street & Jewell Avenue
2040_LT Background



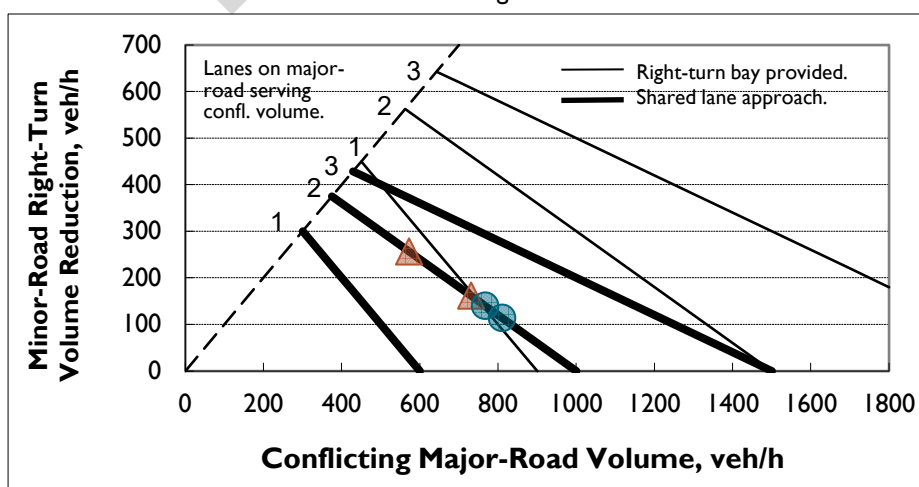
INPUT

Number of lanes on major-road approach:			2	
Right-turn geometry on minor-road:			Shared-lane approach	
Approach	Number	Movement	Volume (veh/hr)	
			AM	PM
Major A	2	Through	1129	1440
	3	Right	15	94
Major B	5	Through	1412	1521
	6	Right	50	100
Minor C	7	Left	69	14
	8	Through	31	43
	9	Right	28	30
Minor D	10	Left	55	75
	11	Through	40	56
	12	Right	61	57

OUTPUT

Variable	Volume (veh/hr)	
	AM	PM
Conflicting major-road volume (Vc9):	572	767
Conflicting major-road volume (Vc12):	731	811
Right-turn volume reduction (Vr9):	257	140
Right-turn volume reduction (Vr12):	161	114
Adjusted right-turn volume reduction (Vr9):	28	30
Adjusted right-turn volume reduction (Vr12):	61	57
Adjusted minor-road volume:	100	131

Chart Legend:



APPENDIX F. LEVEL OF SERVICE AND DELAY SUMMARY TABLE

DRAFT

Intersection	Movement	AM LOS (Delay) / PM LOS (delay)				
		Existing	Short Term Background	Long Term Background	Short Term Total	Long Term Total
1. Harvest Rd & E Jewell Ave	EB Left	N/A	a (7.6) / a (7.7)	e (58.8) / e (64.7)	d (42.5) / a (7.8)	e (57.5) / d (52.8)
	EB Through	a (7.6) / a (7.6)	N/A	c (20.9) / c (34.3)	d (49.2) / b (13.2)	c (22.8) / d (45.4)
	EB Right	N/A	N/A	c (21.5) / d (37.5)	N/A	c (23.8) / d (53.1)
	WB Left	N/A	a (7.5) / a (7.7)	e (64.6) / e (72.7)	d (42.5) / a (9.6)	e (64.1) / e (73.6)
	WB Through	N/A	N/A	b (10.9) / c (31.8)	d (55) / b (11)	d (46.6) / e (57.9)
	WB Right	N/A	N/A	b (14.4) / c (29.1)	N/A	d (36) / c (31)
	NB Left	N/A	b (12.7) / c (15.2)	e (72.9) / e (78.3)	a (7.6) / d (45.2)	e (64.2) / e (65.5)
	NB Through	N/A	b (11.5) / b (13)	d (47.9) / e (62.7)	a (8.2) / d (41.2)	d (45.5) / e (64.6)
	NB Right	N/A	a (8.8) / a (9.2)	d (40) / d (38.3)	a (8) / d (40.3)	d (37.6) / d (36.4)
	SB Left	a (9.4) / a (9.4)	b (10) / b (12)	e (64.4) / e (67.1)	a (9.4) / d (49)	e (58.1) / e (60.4)
	SB Through	N/A	N/A	e (55.3) / e (57.1)	b (10.5) / e (59.9)	d (52.5) / e (64.7)
	SB Right	N/A	N/A	e (64.8) / d (42.2)	N/A	e (56.9) / d (40.5)
	Overall	N/A	N/A	C (34.4) / D (44.6)	D (35.7) / C (23.4)	D (44.2) / D (53.4)
2. Kewaunee St & Jewell Avenue	EB Left	N/A	N/A	a (5.3) / a (5.7)	N/A	a (7.4) / a (7.9)
	EB Through	N/A	N/A	a (0.4) / a (0.6)	N/A	a (0.4) / a (0.7)
	EB Right	N/A	N/A	a (0.7) / a (1.1)	N/A	a (0.8) / a (1.3)
	WB Left	N/A	a (7.4) / a (7.5)	a (4.4) / a (4.1)	N/A	a (5.5) / a (4.9)
	WB Through	N/A	N/A	a (7.5) / a (7.7)	a (7.4) / a (7.5)	a (9.9) / a (9.6)
	WB Right	N/A	N/A	a (8) / a (8.2)	N/A	b (10.4) / b (10.3)
	NB Left	N/A	a (8.7) / a (8.9)	e (56.3) / d (54.5)	a (9.4) / a (9.9)	d (46) / d (49.8)
	NB Through	N/A	N/A	d (47) / d (49.3)	N/A	a (0) / a (0)
	NB Right	N/A	N/A	N/A	N/A	d (52) / e (63.6)
	SB Left	N/A	N/A	d (51.3) / e (56.1)	N/A	d (47.8) / d (49.2)
	SB Through	N/A	N/A	d (49.2) / d (51.2)	N/A	a (0) / a (0)
	SB Right	N/A	N/A	N/A	N/A	e (62.6) / e (62.9)
	Overall	N/A	N/A	A (9) / A (8.2)	N/A	B (10.8) / A (10)
3. Harvest Rd & Pacific Ave	EB Left	N/A	N/A	c (18.8) / d (33.7)	N/A	c (20.9) / e (45.7)
	EB Through/Right	N/A	b (10) / b (10.3)	a (9.9) / b (12)	b (10.7) / b (11.8)	a (9.9) / b (12)
	WB Left	N/A	N/A	a (0) / a (0)	N/A	c (19) / f (54.1)
	WB Through/Right	N/A	a (9.1) / a (8.6)	b (11.4) / b (12)	a (9.1) / a (8.7)	b (11.7) / b (12.8)
	NB Left	N/A	a (0) / a (0)	a (7.8) / a (8.6)	a (0) / a (0)	a (7.8) / a (8.7)
	SB Left	N/A	a (7.5) / a (7.4)	a (8.3) / a (8.6)	a (7.5) / a (7.5)	a (8.4) / a (9)
4. Kewaunee St & Pacific Ave	EB Left/Right	N/A	a (8.5) / a (0)	a (9.6) / a (0)	a (8.5) / a (0)	a (8.8) / a (9)
	NB Left	N/A	a (0) / a (0)	a (0) / a (0)	a (0) / a (0)	a (7.4) / a (7.6)
5. Harvest Rd & Warren Ave	EB Left	N/A	N/A	c (17.4) / d (31.5)	N/A	c (18.5) / e (37.5)
	EB Through/Right	N/A	a (9.1) / a (9.5)	a (9.7) / b (11.2)	a (9.1) / a (9.5)	a (9.9) / b (11.6)
	WB Left	N/A	N/A	c (15.3) / d (27.5)	N/A	c (16.2) / d (32.5)
	WB Through/Right	N/A	a (8.5) / a (8.5)	b (10.7) / b (11.6)	a (8.5) / a (8.5)	b (10.9) / b (12.2)
	NB Left	N/A	a (0) / a (0)	a (7.8) / a (8.4)	a (0) / a (0)	a (7.9) / a (8.5)
	SB Left	N/A	a (7.3) / a (7.3)	a (8) / a (8.6)	a (7.3) / a (7.3)	a (8.1) / a (8.8)
6. Kewaunee St & Warren Ave	EB Left/Through/Right	N/A	a (8.5) / a (8.5)	a (9.9) / b (11.4)	a (8.5) / a (8.5)	a (9.9) / b (11.8)
	WB Left/Through/Right	N/A	N/A	a (8.9) / a (9.6)	N/A	a (8.9) / a (9.8)
	NB Left	N/A	a (0) / a (0)	a (7.3) / a (7.4)	a (0) / a (0)	a (7.3) / a (7.4)
	SB Left	N/A	N/A	a (7.4) / a (7.5)	N/A	a (7.4) / a (7.6)
7. Harvest Rd & Wesley Pl	EB Left	N/A	N/A	c (15.4) / d (26.6)	N/A	c (16.4) / d (31.2)
	EB Through/Right	N/A	N/A	a (9.6) / b (10.4)	N/A	a (9.8) / b (10.7)
	WB Left	N/A	N/A	b (13.9) / c (24.7)	N/A	b (14.7) / d (28.9)
	WB Through/Right	N/A	N/A	b (10.2) / b (11.4)	N/A	b (10.4) / b (12)
	NB Left	N/A	N/A	a (0) / a (8.1)	N/A	a (0) / a (8.2)
	SB Left	N/A	N/A	a (7.8) / a (8.6)	N/A	a (7.9) / a (8.8)

Intersection	Movement	AM LOS (Delay) / PM LOS (delay)				
		Existing	Short Term Background	Long Term Background	Short Term Total	Long Term Total
8. Kewaunee ST & Wesley Pl	EB Left/Right	N/A	N/A	a (9) / a (9.1)	N/A	a (9.1) / a (9.3)
	NB Left	N/A	N/A	a (7.3) / a (7.4)	N/A	a (7.3) / a (7.4)
9. Harvest Rd & Yale Ave	EB Left/Through	N/A	N/A	a (7.7) / a (5.5)	N/A	a (5.8) / a (8.6)
	WB Through/Right	N/A	N/A	a (7.2) / a (5.1)	N/A	a (5.3) / a (7.9)
	SB Left/Right	N/A	N/A	a (6.5) / a (5.3)	N/A	a (5.6) / a (7)
	Overall	N/A	N/A	A (7.1) / A (5.3)	N/A	A (5.5) / A (7.8)
10. Yale Ave & Jackson Gap St	EB Left/Through	N/A	N/A	a (7.8) / a (8.1)	N/A	a (7.8) / a (8.2)
	SB Left/Right	N/A	N/A	b (10.6) / b (12.1)	N/A	b (10.7) / b (12.2)
11. Yale Ave & Kewaunee St	EB Left/Through	N/A	N/A	a (7.9) / a (8.2)	N/A	a (7.9) / a (8.3)
	SB Left/Right	N/A	N/A	b (13.1) / c (15.3)	N/A	b (13.6) / c (17)
12. Jewell Ave & Access	WB Left	N/A	N/A	N/A	a (7.6) / a (8.3)	a (9.7) / b (11.7)
	NB Left/Right	N/A	N/A	N/A	b (11.2) / b (13.6)	c (18.2) / d (31.9)
13. Jewell Ave & Jackson Gap St	NB Right	N/A	a (8.7) / a (8.9)	b (10.6) / b (11.8)	a (8.7) / a (8.9)	a (0) / a (0)
14. Kewaunee St & North Site Access	EB Left/Right	N/A	N/A	N/A	a (8.6) / a (8.7)	a (9.4) / a (9.7)
	NB Left	N/A	N/A	N/A	a (0) / a (0)	a (7.4) / a (7.6)
15. Kewaunee St & South Site Access	EB Left/Right	N/A	N/A	N/A	a (8.6) / a (8.6)	a (9.2) / a (9.5)
	NB Left	N/A	N/A	N/A	a (0) / a (0)	a (7.4) / a (7.6)
16. Harvest Rd & Access	WB Right	N/A	N/A	N/A	a (9.4) / a (9.6)	b (12.3) / b (14.4)

*Overall results are presented for signalized intersections. Some signalized locations have movements below City LOS standards as outlined in the text.