

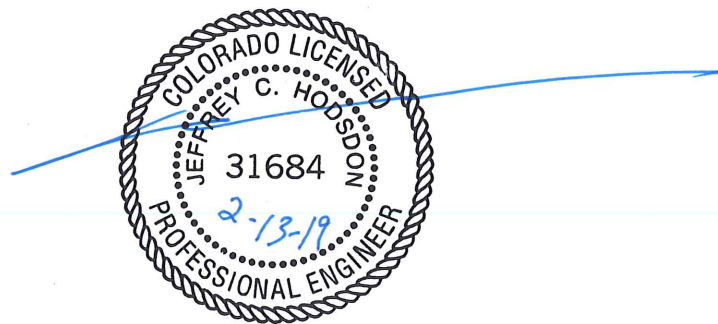


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Trails at Aspen Ridge PUD Traffic Impact and Access Analysis (LSC #184362) February 13, 2019

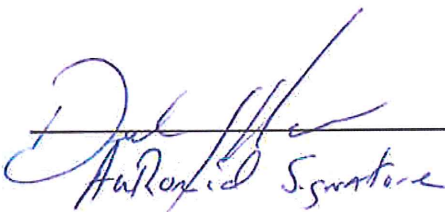
Traffic Engineer's Statement

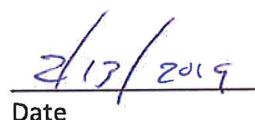
This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.


Authorized Signature


Date



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February 13, 2019

Mr. Dan Romano
COLA, LLC
555 Middle Creek Parkway, Suite 380
Colorado Springs, CO 80921

RE: Trails at Aspen Ridge PUD
Traffic Impact and Access Analysis
El Paso County, Colorado
LSC #184362

Dear Mr. Romano,

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact and access analysis for The Trails at Aspen Ridge PUD Plan. As shown in Figure 1, the site is located southeast of the intersection of Powers Boulevard and Bradley Road in El Paso County, Colorado. This parcel was included in *The Springs at Waterview East Preliminary Plan Traffic Impact and Access Analysis* dated June 22, 2018 (Revised August 24, 2018). This report contains the following:

- A determination of the existing traffic and roadway conditions in the vicinity of the site including the lane geometries and traffic controls.
- The projected average weekday and peak-hour vehicle-trips to be generated by the Trails at Aspen Ridge.
- The assignment of the projected trips on the area roadways.
- Projections of the future background and resulting total traffic volumes on the area roadways.
- Level of service analysis at key intersections adjacent to and in the vicinity of the site.
- Recommendations for intersection laneage and traffic control.
- Recommendations for street functional classifications for streets within the Trails at Aspen Ridge.
- The required Countywide Road Impact Fees.

LAND USE AND ACCESS

Land Use

Currently Proposed PUD

The currently proposed Trails at Aspen Ridge PUD is located within the Springs at Waterview East Preliminary Plan Area. The site plan is shown in Figure 2. The currently proposed PUD includes

516 lots for single-family homes located within the areas identified as Filings 2, 3, and 4. The area in the northeast corner of the site labeled Future Filing 5 is not included in the PUD plan. This report assumes the Filing 5 area will be developed with about 88 residential dwelling units in the short-term future.

The Trails at Aspen Ridge Filing No. 1 located in the southeast corner of the Springs at Waterview East Preliminary Plan area is currently under review by El Paso County. Filing 1 includes 180 lots for single-family homes. LSC prepared a transportation memorandum for this filing dated December 20, 2018.

This report assumes a total of 784 residential dwelling units in Trails at Aspen Ridge Filings 1 through 4 plus the future Filing 5. This is about 70 more homes than assumed in *The Springs at Waterview East Preliminary Plan Traffic Impact and Access Analysis* dated June 22, 2018 (Revised August 24, 2018).

The future commercial parcels located in the northwest corner of the Springs at Waterview East Preliminary Plan area are not included in the currently proposed PUD. This report assumes these lots will be developed with commercial uses as shown in *The Springs at Waterview East Preliminary Plan Traffic Impact and Access Analysis* dated June 22, 2018 (Revised August 24, 2018).

Access

Access to Bradley Road is proposed via a full-movement intersection 1,030 feet east of Powers Boulevard and an additional right-in/right-out-only access about 1,310 feet east of the full-movement access. These access points are consistent with the access assumed in the Master TIS and deviations to the El Paso County *Engineering Criteria Manual (ECM)* for these access points have been approved.

Internal access for the proposed land uses within the site are proposed to a north/south Non-Residential Urban Collector (Legacy Drive) and an east/west Non-Residential Urban Collector (Frontside Drive).

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

Figure 1 shows the roadways in the vicinity of the two sites. The major roadways are identified below, followed by a brief description.

- **Powers Boulevard** (State Highway 21) is classified as a Freeway (FW). Powers Boulevard is one of the region's main north/south corridors. Powers Boulevard has a center median and a posted speed limit of 60 miles per hour (mph) north of Crestera Parkway. South of this point the posted speed limit is 65 mph. Powers Boulevard is ultimately planned to be converted to a Freeway with grade-separated intersections.

- **Bradley Road** is shown with a Minor Arterial classification east of Grinnell Boulevard on the 2016 update to the DRAFT 2040 El Paso County *Major Transportation Corridors Plan (MTCP)*. Adjacent to the site Bradley Road is a four-lane roadway with a 50-mph posted speed limit and has a raised median, left-turn lanes, and rural paved shoulders.

Existing Traffic Conditions

Figure 5 shows the existing traffic volumes at the intersection of Powers Boulevard/Bradley Road. The traffic volumes are based on the attached traffic counts conducted by LSC in April 2018. Figure 5 also shows the 2017 Colorado Department of Transportation (CDOT) Average Annual Daily Traffic Volume (AADT) on Powers Boulevard and estimates of the average daily traffic volume on Bradley Road based on the peak-hour traffic counts. Figure 5 also shows the daily traffic volume on Bradley Road shown in the El Paso County *2016 Major Transportation Corridors Plan Update*.

Existing Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from “A” to “F.” LOS A represents control delay of less than 10 seconds for unsignalized and signalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections and more than 80 seconds for signalized intersections. Table 1 shows the level of service delay ranges.

Table 1 Intersection Levels of Service Delay Ranges			
Level of Service	Signalized Intersections		Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	V/C ⁽¹⁾	Average Control Delay (seconds per vehicle) ⁽²⁾
A	10.0 sec or less	less than 0.60	10.0 sec or less
B	10.1-20.0 sec	0.60-0.69	10.1-15.0 sec
C	20.1-35.0 sec	0.70-0.79	15.1-25.0 sec
D	35.1-55.0 sec	0.80-0.89	25.1-35.0 sec
E	55.1-80.0 sec	0.90-0.99	35.1-50.0 sec
F	80.1 sec or more	1.00 and greater	50.1 sec or more
(1) Source: <i>Transportation Research Circular 212</i>			
(2) For unsignalized intersections if V/C ratio is greater than 1.0 the level of service is LOS F regardless of the projected average control delay per vehicle.			

The signalized intersection of Powers/Bradley has been analyzed to determine the existing levels of service using Synchro. All movements at this intersection are currently operating at LOS C or better during the peak hours.

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the roadways without the Trails at Aspen Ridge PUD traffic. The short-term background traffic volumes are shown in Figure 4. The background traffic volumes are based on the existing traffic volumes shown in Figure 3 plus traffic estimated to be generated by the 180 residential units in Trails at Aspen Ridge Filing No 1 currently under separate review and 88 residential units in the future Trails at Aspen Ridge Filing 5 (not a part of this PUD plan). The traffic projected to be generated by Filing 1 was taken from the transportation memorandum by LSC dated December 20, 2018. Note: The short-term background traffic does not include trips to be generated by the future commercial parcels.

The background traffic volumes for the year 2040 are shown on Figure 5. The 2040 background traffic volumes were based on *The Springs at Waterview East Preliminary Plan Traffic Impact and Access Analysis* dated June 22, 2018 (Revised August 24, 2018). The 2040 background traffic assumes buildout of 180 residential dwelling units in the Trails at Aspen Ridge Filing 1 and 88 residential dwelling units in the Trails at Aspen Ridge Filing 5 (future -- not a part of this PUD plan). The 2040 background traffic also assumes buildout of the commercial lots located in the northwest corner of the Springs at Waterview East Preliminary Plan area.

TRIP GENERATION

The traffic volumes to be generated by the land uses within the currently proposed preliminary plan have been estimated using the nationally published trip generation rates from *Trip Generation, 10th Edition*, by the Institute of Transportation Engineers (ITE). Table 2 shows the average weekday and weekday morning and afternoon peak hour. Table 2 also shows the trip generation estimate for this same area assumed in the Master TIS for comparison.

The site is projected to generate about 4,871 new external vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 95 vehicles would enter and 286 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 322 vehicles would enter and 189 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated traffic volumes on the adjacent roadway system is one of the most important factors in determining the traffic impacts of the site. Figure 6 shows the short-term and long-term directional distributions of traffic projected to be generated by the residential uses. The short-term directional distribution estimates were based on the existing area roadway system and the traffic counts. The long-term directional distribution estimates were based on the anticipated regional development and future roadway networks.

When the distribution percentages (from Figure 6) are applied to the trip generation estimates (from Table 2), the resulting site-generated traffic volumes can be determined. Figures 7 and 8 show the projected short-term and long-term site-generated traffic volume due to The Trails at Aspen Ridge Filings 2 through 4 only.

TOTAL TRAFFIC

Figure 9 shows the sum of the short-term background traffic volumes from Figure 4 plus the short-term site-generated traffic volumes from Figure 7. These figures represent the short-term impacts of the site. These volumes assume buildout of The Trails at Aspen Ridge Filings 1 through 4 only.

Figure 10 shows the sum of the 2040 background traffic volumes from Figure 5 plus the long-term site-generated traffic volumes from Figure 8. These volumes assume buildout of the Springs at Waterview East Preliminary Plan including The Trails at Aspen Ridge Filings 1 through 5 and the commercial parcels located in the southeast of Powers Boulevard and Bradley Road.

PROJECTED LEVELS OF SERVICE

The key area intersections have been analyzed to determine the projected levels of service for the short-term and 2040 background and short-term and 2040 total traffic volumes based on the signalized and unsignalized method of analysis procedures found in Synchro and the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. Figures 4, 5, 9, and 10 show the level of service analysis results. The level of service reports are attached.

Powers/Bradley

The intersection of Powers/Bradley is currently signalized and is operating at a satisfactory level of service. All movements at this intersection are projected to operate at LOS D or better during the peak hours based on the short-term total traffic volumes. By 2040 it was assumed that the section of Bradley Road between Goldfield Drive and Powers Boulevard would be constructed. It was also assumed that Powers Boulevard would be widened to provide three through lanes in each direction by 2040. Based on the 2040 total traffic volumes shown and the lane geometry shown in Figure 10, some of the minor movements are projected to operate at LOS E during the peak hours. It is common for left-turn and side-street through movements to have projected delays in the LOS E range as signal coordination timing plans generally give priority to moving through traffic. This often results in higher delay for left-turn and side-street movements and can result in movement/approach delays in the E range even though they are projected to have sufficient capacity for the projected traffic volumes. Note: This intersection is planned to be converted to a grade-separated interchange in the long-term future.

Legacy/Bradley

The northbound left-turn movement at the intersection of Bradley Road/Legacy Drive is projected to operate at LOS F during the peak hours if this intersection is two-way stop-sign controlled. If this intersection is signalized, all movements are projected to operate at LOS D or better during the peak hours based on the short-term total traffic volumes. By 2040 some of the minor movements are projected to operate at LOS E during the peak hours.

Blackmer/Bradley

All movements at the right-in/right-out intersection of Bradley Road and Blackmer Street are projected to operate at LOS B or better during the peak hours based on the projected short-term and 2040 total traffic volumes.

Legacy/Frontside

The intersection of the north/south Non-Residential Urban Collector (Legacy Drive) and the east/west Non-Residential Urban Collector (Frontside Drive) is planned to be constructed as a modern one-lane roundabout as part of The Trails at Aspen Ridge Filing No 1. All movements at this intersection are projected to operate at LOS A during the peak hours based on the projected short-term and 2040 total traffic volumes.

Other Legacy drive Intersections

All movements at the intersections of Legacy Drive/Moose Meadows Street, Legacy Drive/Sunday Gulch Drive and Legacy Drive/Big Johnson Drive are projected to operate at LOS B or better for all movements during the peak hours as stop-sign-controlled intersections based on the projected short-term and 2040 total traffic volumes.

TRAFFIC SIGNAL WARRANT ANALYSIS

The intersection of Bradley Road and Legacy Drive was analyzed to determine when either an Eight-Hour or a Four-Hour Vehicular Volume Traffic Signal Warrant would be met or be close to being met. The lower threshold volume for an Eight-Hour Vehicular Volume Traffic Signal Warrant for Condition B - Interruption of Continuous Traffic for a major street with two or more lanes and a posted speed limit greater than 40 mph and a minor street approach with one lane is 53 vehicles per hour. This lower threshold is applicable when the major street volumes (northbound and southbound left, through, and right movements) exceeds 630 vehicles per hour. The lower threshold volume for a Four-Hour Vehicular Volume Traffic Signal Warrant for a major street with two or more lanes and a posted speed limit greater than 40 mph and a minor street approach with one lane is 60 vehicles per hour. This lower threshold is applicable when the major street volumes (northbound and southbound left, through, and right movements) exceeds 1,000 vehicles per hour. The existing through volumes on Bradley Road adjacent to the site currently exceeds 1,000 vehicles per hour during both the morning and afternoon peak hours.

Detailed analyses are presented in Table 3. The off-peak through volumes on Bradley Road were estimated based on 24-hour counts conducted by CDOT on Powers Boulevard just south of Bradley Road. The off-peak volumes on Legacy Drive were based on the short-term site-generated traffic volumes for The Trails at Aspen Ridge Filing 1 shown in the Transportation Memorandum for that filing prepared by LSC dated December 20, 2018 plus the short-term site-generated traffic volumes shown in Figure 7 and the hourly variation data published by the Institute of Transportation Engineers in August 2018.

Table 3 shows that a Four-Hour Vehicular Volume Traffic Signal Warrant is projected to be met once about 242 dwelling units are developed (180 dwelling units in Filing 1 plus 62 dwelling units in the currently proposed PUD). The satisfaction of warrants does not indicate that a signal must be installed. The decision to require a signal to be installed at this location rests with the County.

TRAFFIC SIGNAL ESCROW PERCENTAGES/AMOUNTS

The Springs at Waterview East Preliminary Plan TIS dated June 22, 2018 (revised August 24, 2018) presented a traffic escrow analysis for the cost of a future signal at the intersection of Bradley Road and Legacy Drive (formerly "A" Street). That report determined that a fair share contribution for the residential portion of the Springs at Waterview East would be \$163,833.09. A fair share contribution of \$39,971.49 was presented for the Trails at Aspen Ridge Filing No. 1 in the December 20, 2018 traffic memorandum by LSC. A per dwelling unit contribution was calculated based on the remaining \$123,911 and a total of 604 additional dwelling units (516 in the currently proposed PUD plus 88 in the future Filing 5). Table 4 presents a running escrow analysis based on the currently anticipated number of dwelling units. As shown in Table 4, a fair share contribution for the 516 dwelling units proposed under the currently proposed PUD is \$105,858.26.

ROADWAY CLASSIFICATIONS

Figure 11 shows the recommended street classification for all streets within the Trails at Aspen Ridge PUD based on the projected 2040 weekday traffic volumes.

COUNTY ROAD IMPACT FEE PROGRAM

The applicant will be required to participate in the County Road Impact Fee Program. Assuming this development joins the ten-mil PID, the building permit fee portion is \$923 per single-family dwelling unit. The net fee for the proposed 516 lots would be \$476,268.

RECOMMENDED IMPROVEMENTS

- The Springs at Waterview East Preliminary Plan TIS dated *June 22, 2018 (revised August 24, 2018)* presented a summary of needed improvements. This table has been updated to indicate if the need for each improvement is projected to be triggered with the Trails at Aspen

Ridge Filing No. 1 and the currently proposed PUD. The updated table has been included as Table 5 in this report. All recommendations for the turn lane lengths shown in the Preliminary Plan TIS are still applicable. Recommendations for additional auxiliary turn lanes needed on Legacy Drive not identified in the Preliminary Plan TIS are provided below.

- Based on the 2040 total traffic volumes and the criteria contained in the *El Paso County Engineering Criteria Manual* (ECM) left-turn lanes would be required on Legacy Drive approaching Moose Meadows Drive, Sunday Gulch Drive, and Big Johnson Drive. Left-turn lanes will be provided as the non-Residential Collector cross section includes a striped, center, two-way left-turn lane (TWLTL).
- Based on the 2040 total traffic volumes and the criteria contained in the *El Paso County Engineering Criteria Manual* (ECM) southbound right-turn deceleration lanes would be required on Legacy Drive approaching Moose Meadows Drive and Sunday Gulch Drive. A southbound right-turn deceleration lane would not be required approaching Big Johnson Drive. Northbound right-turn deceleration lanes would not be required on Legacy Drive. The required southbound right-turn deceleration lanes should be 155 feet long plus a 160-foot taper.

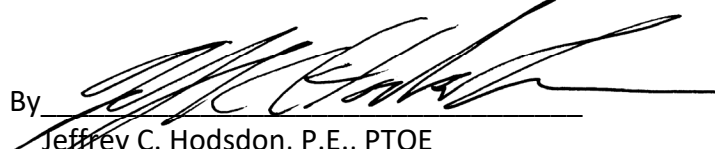
* * * * *

Please contact me if you have any questions regarding this report.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By


Jeffrey C. Hodsdon, P.E., PTOE
Principal

JCH:KDF:bjwb

Enclosures: Tables 2-5
Figures 1-11
Traffic Count Reports
Level of Service Reports

Table 2
Trip Generation Estimate
Trails at Aspen Ridge PUD

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾					Total Future Trips Generated				
			Average Weekday Traffic	Morning Peak-Hour		Afternoon Peak-Hour		Average Weekday Traffic	Morning Peak-Hour		Afternoon Peak-Hour	
				In	Out	In	Out		In	Out	In	Out
Currently Proposed Filings 2-4												
210	Single-Family Detached Housing	516 DU ⁽²⁾	9.44	0.19	0.56	0.62	0.37	4,871	95	286	322	189
Future Filing 5												
210	Single-Family Detached Housing	88 DU	9.44	0.19	0.56	0.62	0.37	831	16	49	55	32
	Total Filings 2-5	604 DU						5,702	111	335	377	221
Filing 1 (Under Review)												
210	Single-Family Detached Housing	180 DU	9.44	0.19	0.56	0.62	0.37	1,699	33	100	112	66
	Total Filings 1-5	784 DU						7401	144	435	489	287

Notes:

(1) Source: based on *Trip Generation*, 10th Edition, 2017 by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Table 3
Trails at Aspen Ridge PUD
Traffic Signal Warrant Analysis of Full-Movement Site Access to Bradley Road

Period	2 or More Lanes on Major Approach & 1 Lane on Minor Approach																								
	Traffic Volumes												Warrant 1, Eight Hour Vehicular Volume Evaluation								Warrant 2, Four Hour Vehicular Volume Evaluation				
Hour													Warrant Threshold Met?												
													Warrant Thresholds				Existing + 242 DUs within Filings 1 and 2		Existing + Buildout of Filings 1-4						
	Condition A 70%		Condition B 70%		Existing + Buildout of Filings 1-4	Existing + Buildout of Filings 1-4																			
	Major ⁽²⁾	Minor ⁽³⁾	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	A 70%	B 70%	A 70%	B 70%	Minor Street Minimum	Met?	Minor Street Minimum	Met?	
6:00 AM	1002	0	14	36	5	12	34	91	1021	48	1055	139	420	105	630	53	No	No	Yes	Yes	60	No	60	Yes	
7:00 AM	1237	0	33	72	9	22	78	185	1279	94	1357	279	420	105	630	53	No	Yes	Yes	Yes	60	Yes	60	Yes	
8:00 AM	1098	0	31	53	11	18	79	133	1140	71	1219	204	420	105	630	53	No	Yes	Yes	Yes	60	Yes	60	Yes	
9:00 AM	866	0	27	33	9	11	69	83	902	44	971	127	420	105	630	53	No	No	Yes	Yes	65	No	61	Yes	
10:00 AM	884	0	36	33	12	11	90	83	932	44	1022	127	420	105	630	53	No	No	Yes	Yes	63	No	60	Yes	
11:00 AM	1039	0	46	31	16	11	116	79	1101	42	1217	121	420	105	630	53	No	No	Yes	Yes	60	No	60	Yes	
12:00 Noon	824	0	47	34	16	12	118	86	887	46	1005	132	420	105	630	53	No	No	Yes	Yes	67	No	60	Yes	
1:00 PM	789	0	51	36	18	12	129	91	858	48	987	139	420	105	630	53	No	No	Yes	Yes	71	No	61	Yes	
2:00 PM	792	0	60	38	21	13	150	96	873	51	1023	147	420	105	630	53	No	No	Yes	Yes	69	No	60	Yes	
3:00 PM	949	0	72	37	25	13	182	93	1046	50	1228	143	420	105	630	53	No	No	Yes	Yes	60	No	60	Yes	
4:00 PM	1165	0	112	48	31	16	264	121	1308	64	1572	185	420	105	630	53	No	Yes	Yes	Yes	60	Yes	60	Yes	
5:00 PM	1222	0	88	45	30	16	221	114	1340	61	1561	175	420	105	630	53	No	Yes	Yes	Yes	60	Yes	60	Yes	
6:00 PM	995	0	73	36	25	12	184	91	1093	48	1277	139	420	105	630	53	No	No	Yes	Yes	60	No	60	Yes	
																		0	4	13	13		4		13
																		No	No	Yes	Yes			Yes	

Notes:

- (1) Hourly variation based on traffic counts on Powers Boulevard south of Bradley Road
- (2) The major street volumes include all (left/through/right) movements on Bradley Rd
- (3) The minor street volumes includes only the northbound left movement
- (4) DU = Dwelling Unit

Source: LSC Transportation Consultants, Inc.

Table 4
Running Escrow Analysis Template
Bradley Road and Legacy Drive
Trails at Aspen Ridge PUD

Subdivisions Currently Proposed			Signal Escrow Amounts (Portion of Total Escrow of \$279,749.48 ⁽¹⁾)	
Subdivision Name	Number of Residential Lots or Acres of Commercial Development	Status	Escrow Per Lot or Acre	Total Escrow
Residential				
Trails at Aspen Ridge Filing No. 1	180	Under Review	\$222.06	\$39,971.49
Trails at Aspen Ridge Filing Nos. 2-4	516	Currently Proposed	\$205.15	\$105,858.26
Trails at Aspen Ridge Filing No. 5	88	Future	\$205.15	\$18,053.35
Total Residential Escrow				\$163,883.09
Commercial				
Future Commercial	26	Future	\$4,456.40	\$115,866.39
Total Commercial Escrow				\$115,866.39
Total Springs at Waterview East Escrow				\$279,749.48
Notes: (1) See Table 4 from <i>The Springs at Waterview East Preliminary Plan Traffic Impact Study</i> dated June 22, 2018 (revised August 24, 2018)				
Source: LSC Transportation Consultants, Inc.				

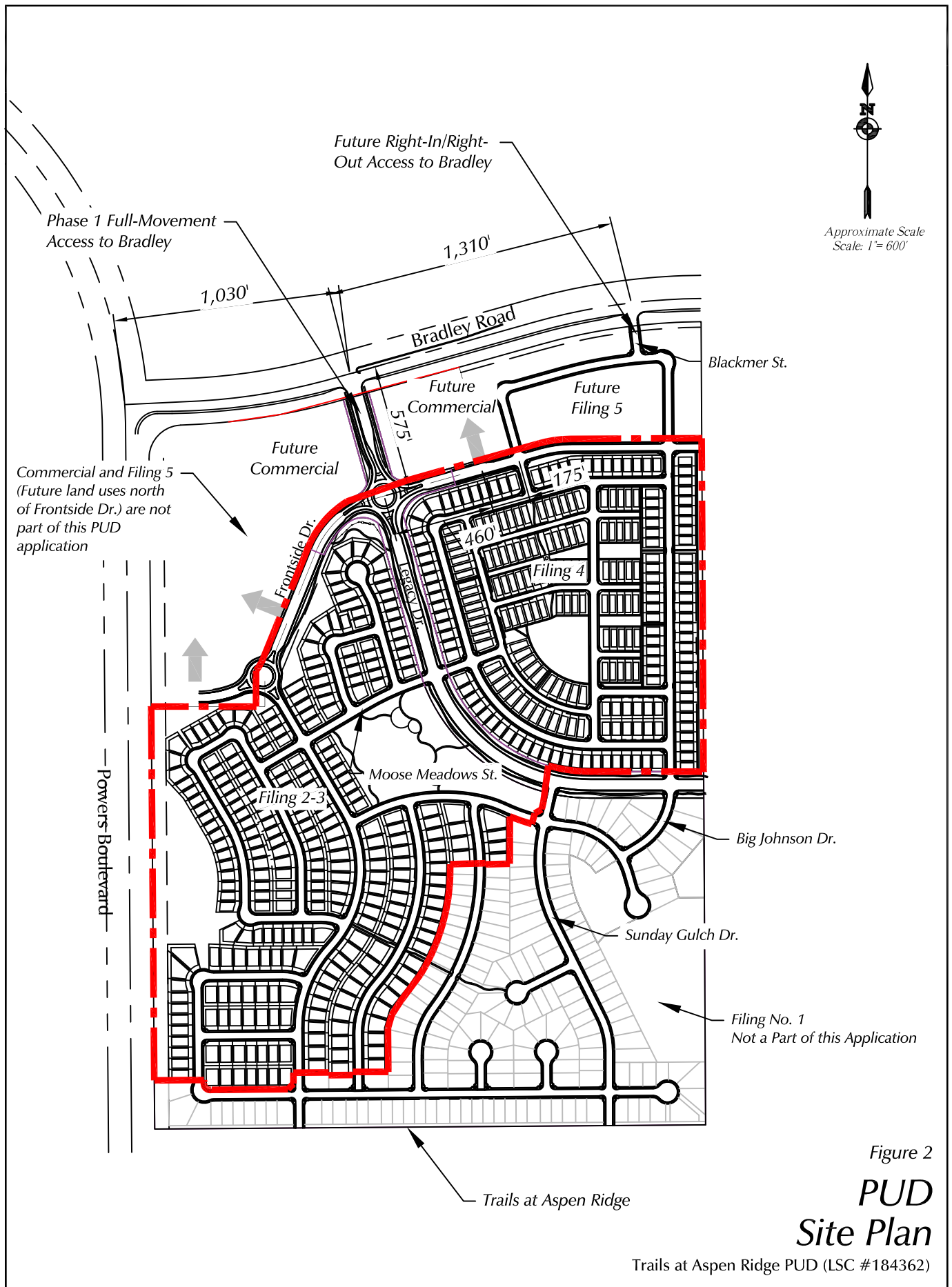
Table 5 Improvements Table Trails at Aspen Ridge PUD Plan				
Improvement	Timing /"Trigger Point(s)"	Projected To Be Triggered With Trails at Aspen Ridge Filing No. 1?	Projected To Be Triggered With Trails at Aspen Ridge PUD (Filing Nos. 2-4)?	Responsibility ⁽¹⁾
Access Points to Bradley Road				
Full-movement access to Bradley Road 1,030 feet east of Powers Boulevard (Legacy Drive)	With development of either the residential or commercial portion of the Springs at Waterview East.	Yes	Yes	Applicant
Right-in/right-out access 1,300 feet east of Legacy Drive	This access would be constructed with the adjacent portion of the residential subdivision or it may be required to provide a second access if a connection east to Bradley Heights (City development) is not available.	No - Not from a traffic capacity standpoint. It may be needed as a second access per the LDC.	Yes	Applicant
Traffic Signals				
Traffic Signal Escrow - Prorated escrow amount with each final plat toward the planned traffic signal at the full-movement access to Bradley Road 1,030 feet east of Powers Boulevard (Legacy Drive)	Not necessary if an IGA between the County and the Waterview 2 Metro District is established and the district becomes responsible for signal installation when warranted/directed by the County PWD. Otherwise, an escrow amount would be payable with each residential and commercial final plat.	Yes	Yes	Waterview II Metropolitan District
Traffic Signal Installation - Installation of the traffic signal at the full-movement access to Bradley Road 1,030 feet east of Powers Boulevard (Legacy Drive). Any funds held in escrow would be returned to the applicant.	As determined by El Paso County Public Works - typically this is when traffic signal warrants are met, however traffic signal warrants are guidelines and the actual timing of installation is at the discretion of El Paso County Public Works. The estimated timing based on the traffic volumes projected in this report is as follows: With either development of 34% of the residential portion of Springs at Waterview East (242 DUs) or development of about 23% of the commercial portion of Springs at Waterview East. These trigger points/timing estimates and the need for the signal are subject to change and would be evaluated with each final plat application. County public works approval is required for signal installation.	No	No	Waterview II Metropolitan District
Auxiliary Turn Lanes				
Eastbound right-turn deceleration lane on Bradley Road approaching Legacy Drive	With initial development/final plat of either the residential or commercial portion of the Springs at Waterview East. The trigger is a westbound left-turn volume of 25 vehicles per hour.	Yes	Yes	Applicant
Westbound left-turn lane on Bradley Road approaching Legacy Drive	With initial development/final plat of either the residential or commercial portion of the Springs at Waterview East. The trigger is a westbound left-turn volume of 10 vehicles per hour.	Yes	Yes	Applicant
Eastbound right-turn acceleration lanes on Bradley Road in the form of continuous accel/decel lanes between Legacy Drive and the right-in/right-out site access and between the right-in/right-out site access and the city access point to the east	With the applicable final plat of either the residential or commercial portion of the Springs at Waterview East which results in the turn lane threshold to be exceeded (as determined by final plat traffic reports). The threshold is a northbound right-turn volume of 50 vehicles per hour.	No	No	Applicant
Eastbound right-turn deceleration lane on Bradley Road approaching the right-in/right-out access	With development of the residential portion of the Springs at Waterview East (Parcel P-18) OR if the access is required for a secondary access and the right turning volume would exceed 25 vehicles per hour.	No	Yes	Applicant
Restripe Bradley Road for dual westbound left-turn lanes approaching Powers Boulevard	With development of the commercial portion of Springs at Waterview East	No	No	Applicant
Restripe Powers Boulevard for dual southbound left-turn lanes approaching Bradley Road	With development of the commercial portion of Springs at Waterview East if not completed by other development(s) or CDOT. The timing of this improvement could be evaluated with each final plat.	No	No	Likely the commercial portion of Springs at Waterview East if not completed by other development(s) or CDOT.
Street Widening/Construction				
Construct Bradley Road between Goldfield Drive and Powers Boulevard. This would include intersection modifications at the Powers/Bradley intersection associated with conversion of this intersection from a three-leg to a four-leg intersection.	Future with development of the Waterview parcel northwest of Powers/Bradley or by El Paso County/PPRTA ⁽²⁾ if that parcel is not developed. The 2040 MTCP shows the roadway segment constructed.	No	No	The developer of the Waterview parcel northwest of Powers/Bradley (if this parcel is developed) or El Paso County/PPRTA if that parcel is not developed.
Notes: (1) Preliminary concept of responsibility; the actual construction responsibility would be determined through subdivision applications and cost recovery if applicable agreements. (2) PPRTA = Pikes Peak Rural Transportation Authority.				
Source: LSC Transportation Consultants, Inc. 5/18/2018				

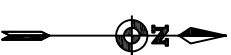
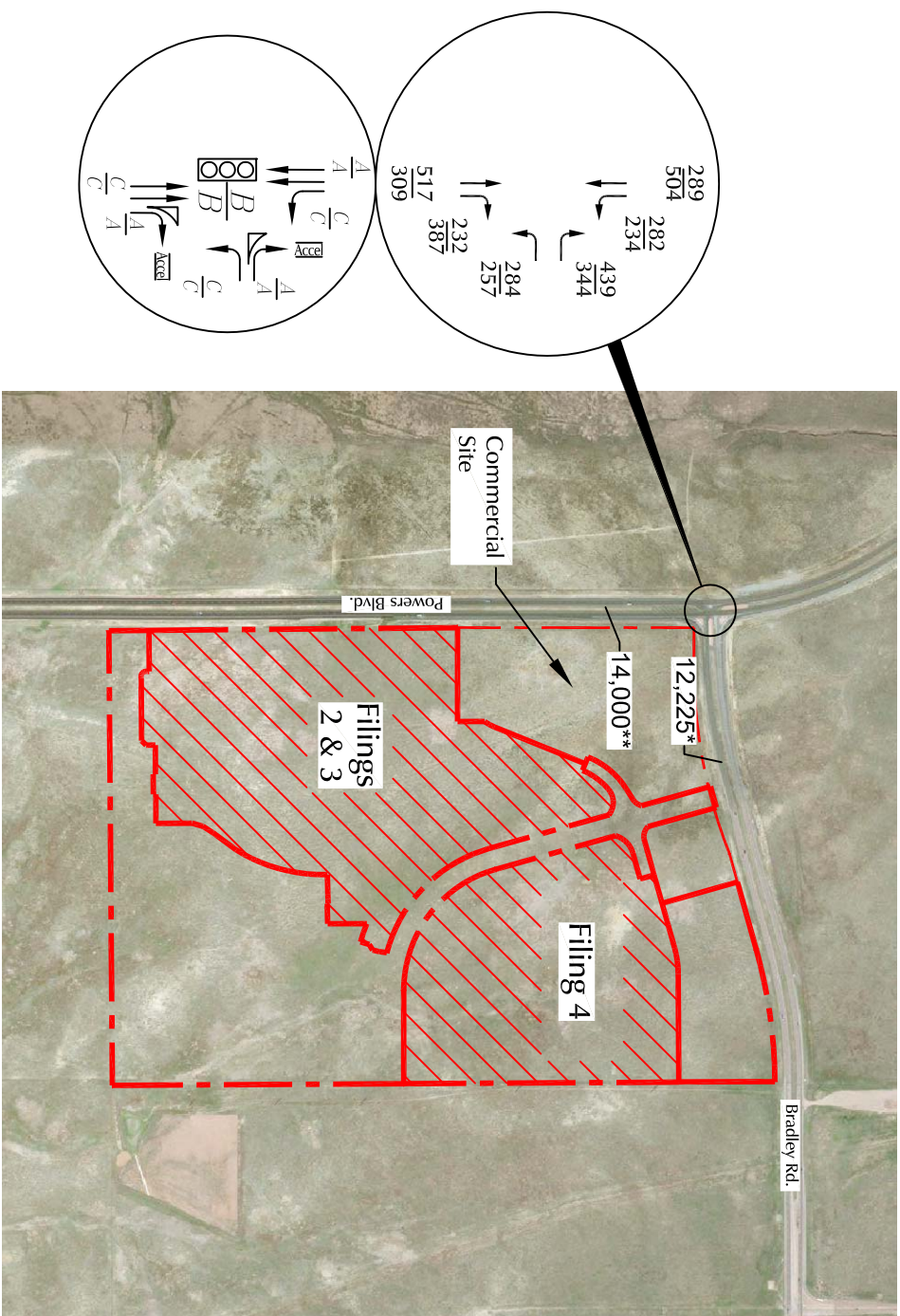


Vicinity Map

Figure 1

Trails at Aspen Ridge PUD (LSC #184362)





Approximate Scale
Scale: 1" = 1,000'

LEGEND:

= Traffic Signal

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
PM Weekday Peak-Hour Traffic (vehicles per hour)

$\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service
PM Individual Movement Peak-Hour Level of Service

$\frac{C}{C}$ = AM Entire Intersection Peak-Hour Level of Service
PM Entire Intersection Peak-Hour Level of Service

X,XXX = Average Daily Traffic (vehicles per day)

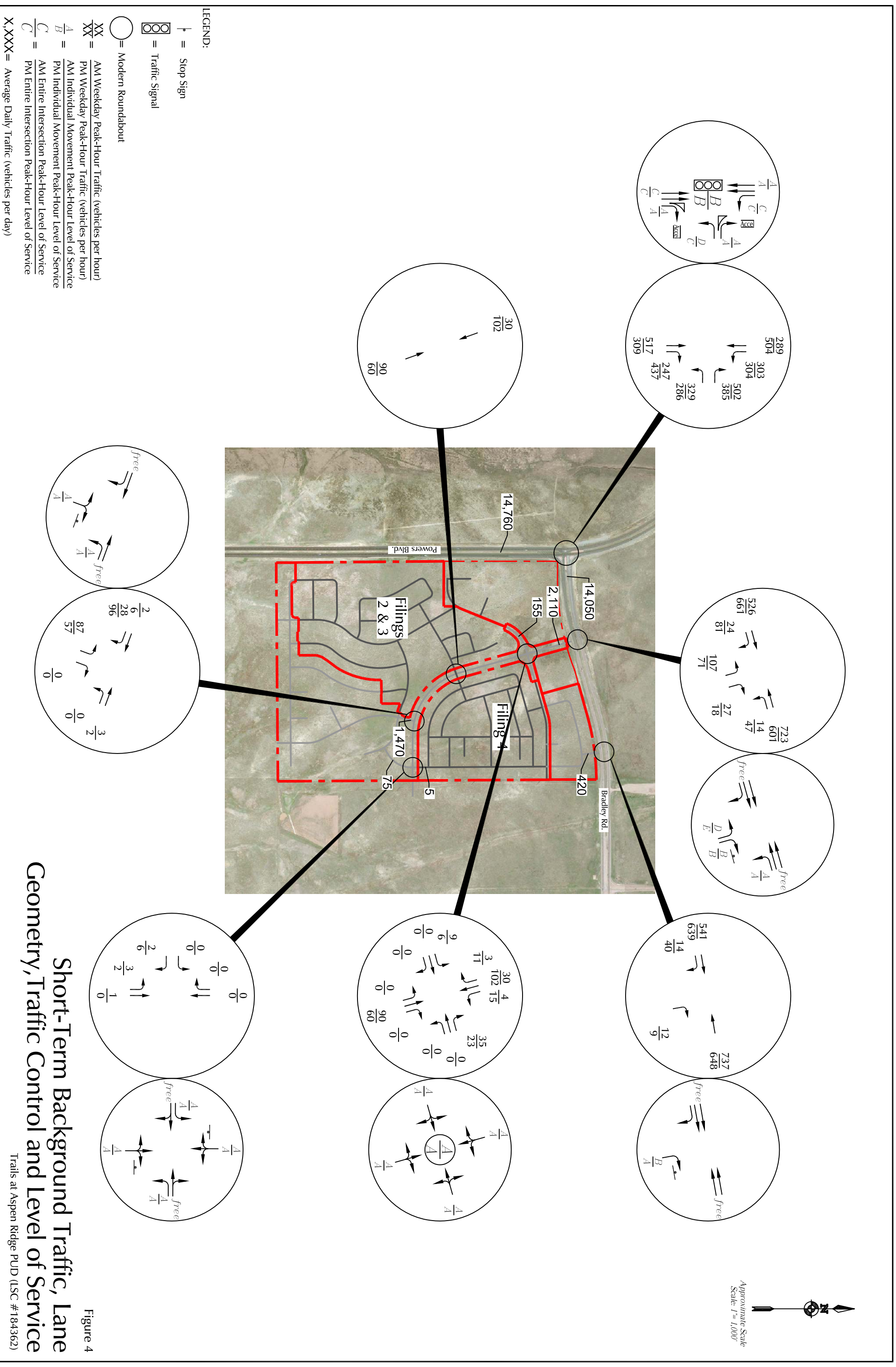
Counts by LSC April 2018

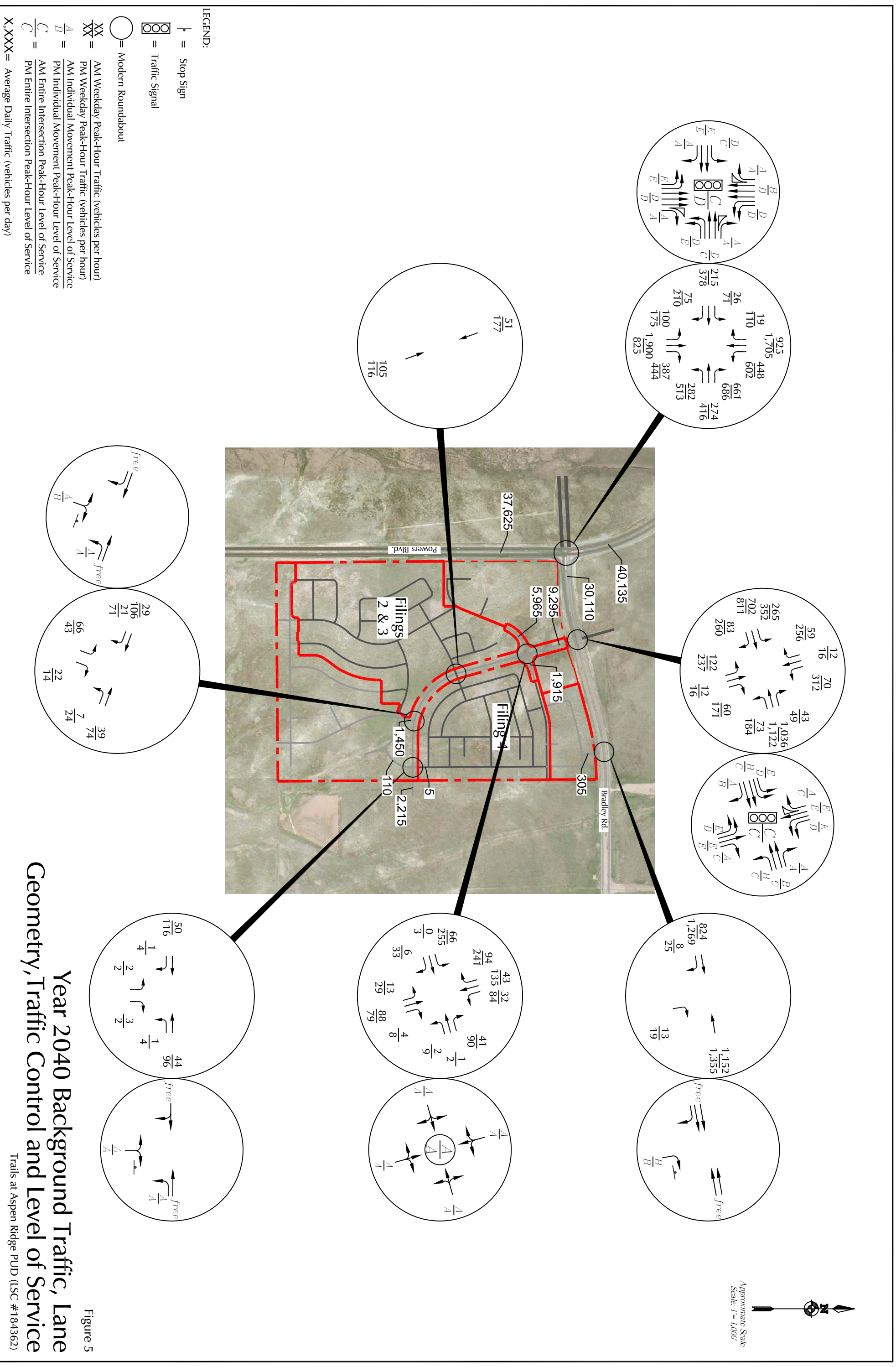
* Estimate by LSC
** 2017 AADT CDOT

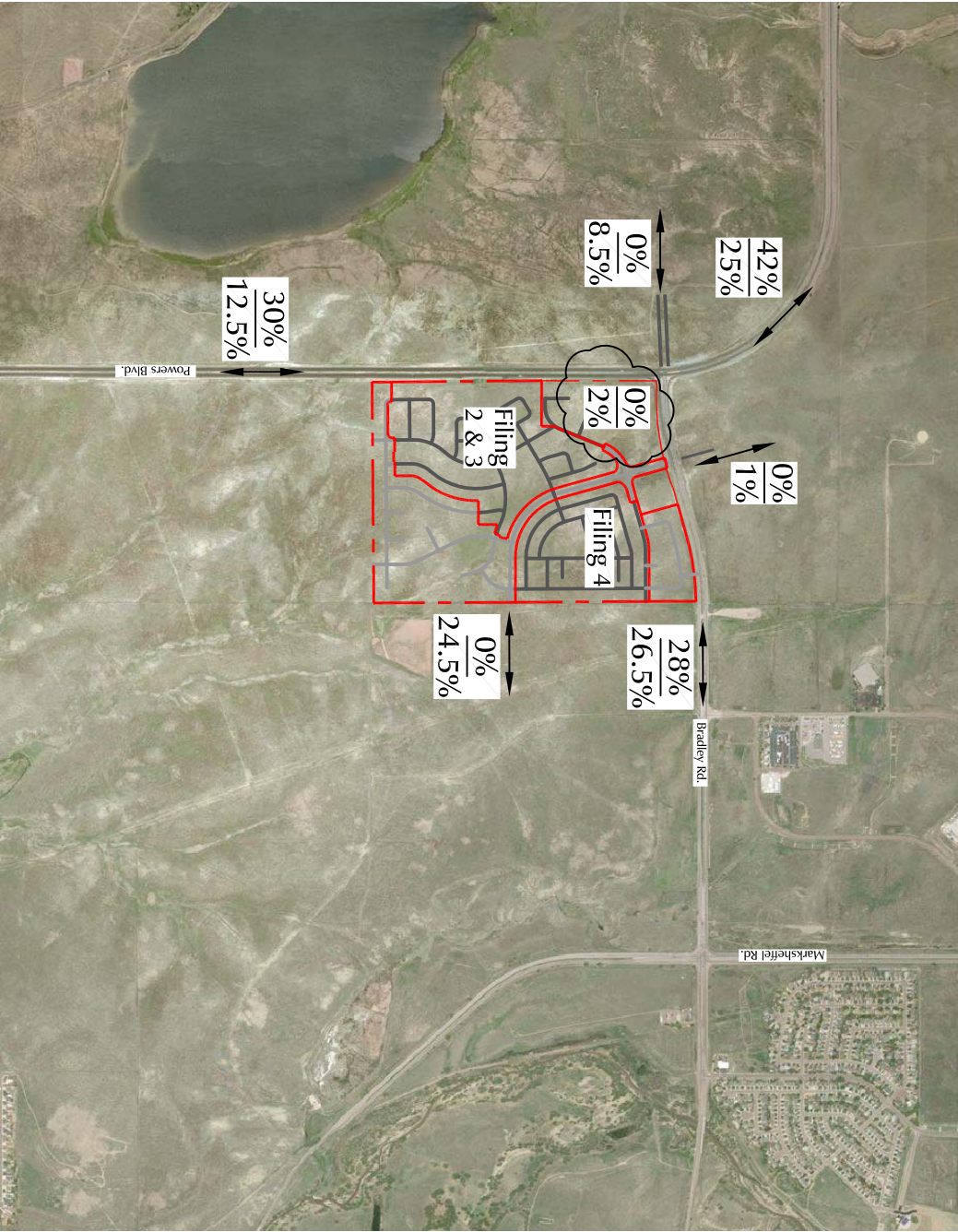
Figure 3

Existing Traffic, Lane Geometry, Traffic Control and Level of Service

Trails at Aspen Ridge PUD (LSC #184362)



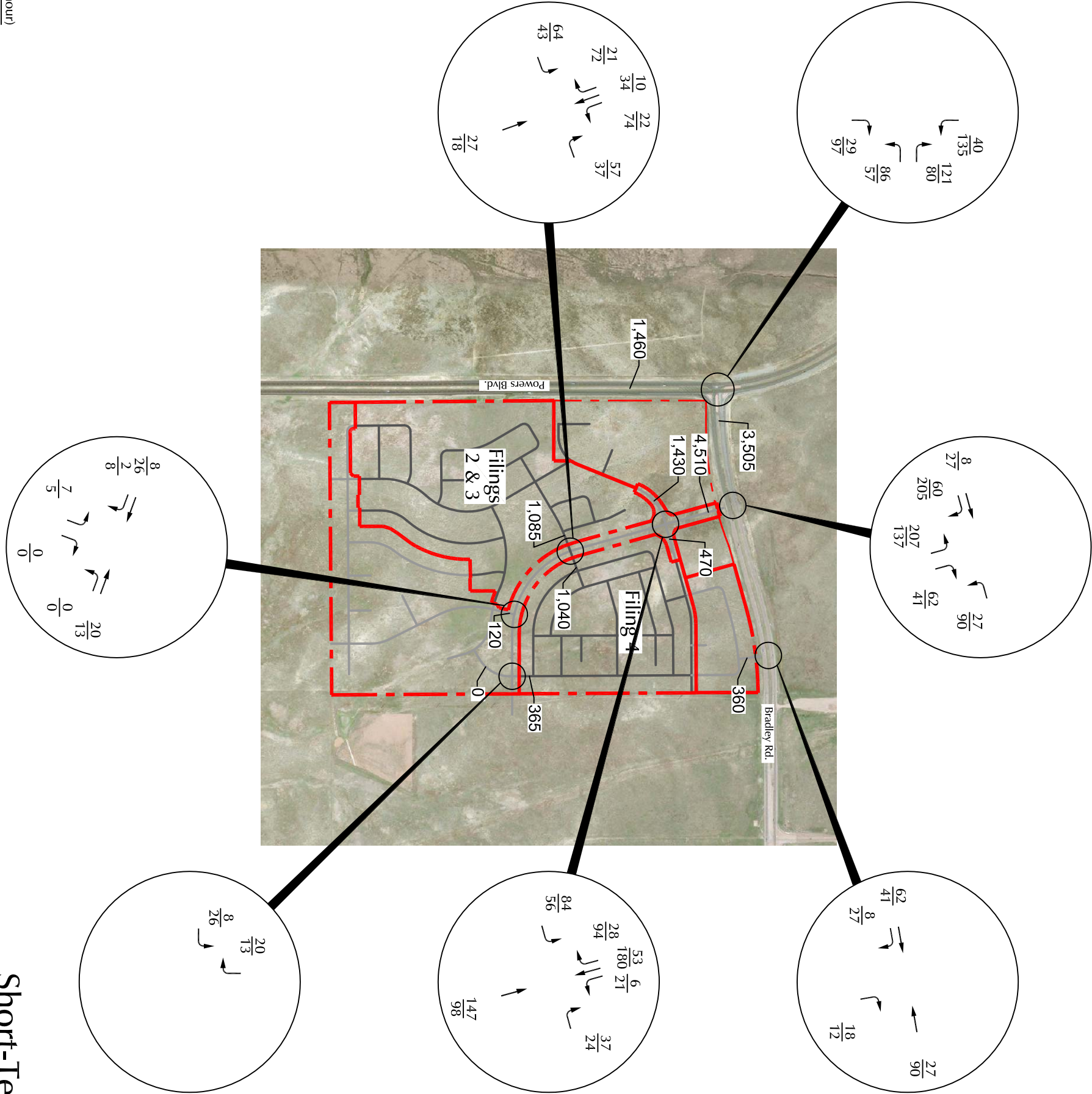
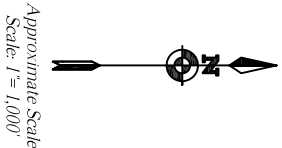




Approximate Scale
Scale: 1" = 2,000'

LEGEND:
 XX%
 XX%
 = Short-Term Percent Directional Distribution
 = Long-Term Percent Directional Distribution

Figure 6
Directional Distribution
of Site Generated Traffic
 Trails at Aspen Ridge PUD (LSC #184362)



LEGEND:

XX = AM Weekday Peak-Hour Traffic (vehicles per hour)

XX = PM Weekday Peak-Hour Traffic (vehicles per hour)

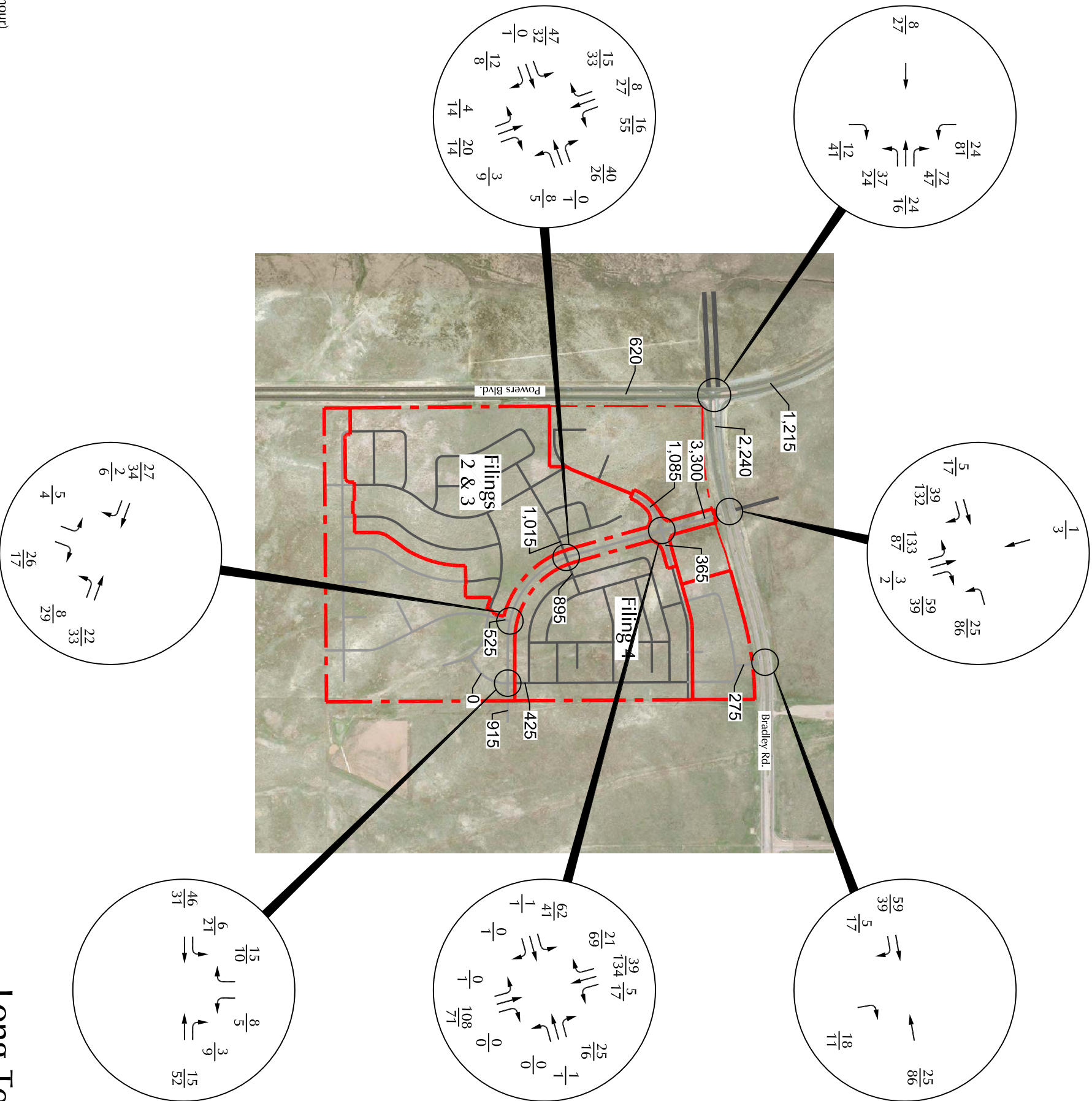
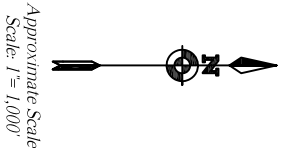
X,XXX = Average Daily Traffic (vehicles per day)

Figure 7

Assignment of

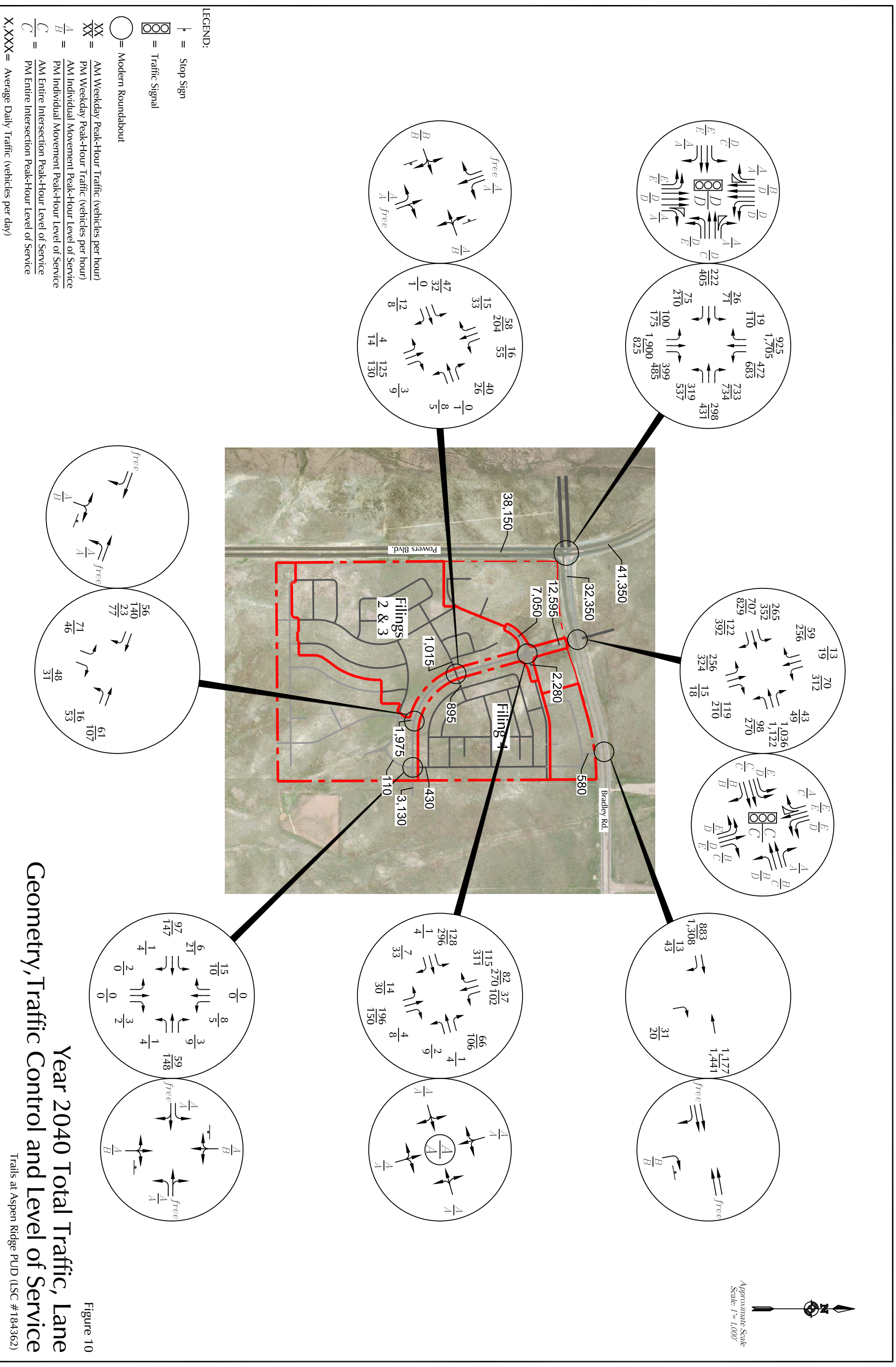
Short-Term Site-Generated Traffic

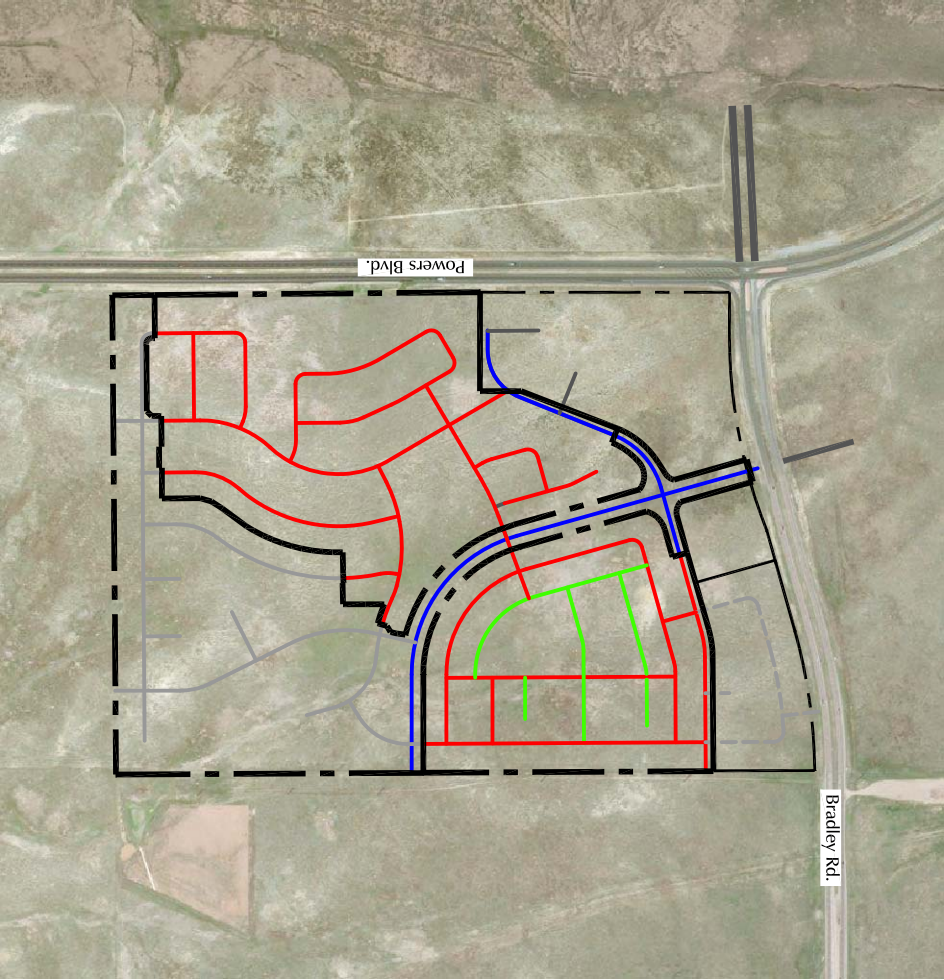
Trails at Aspen Ridge PUD (LSC #184362)



LEGEND:
XX = AM Weekday Peak-Hour Traffic (vehicles per hour)
XX = PM Weekday Peak-Hour Traffic (vehicles per hour)
X,XXX = Average Daily Traffic (vehicles per day)

Figure 8
Assignment of
Long-Term Site-Generated Traffic
Trails at Aspen Ridge PUD (LSC #184362)





Approximate Scale
Scale: 1" = 1,000'

LEGEND:

- = Urban Non-Residential Collector
- = Urban Local
- = Private

Figure 11

Recommended Classifications

Trails at Aspen Ridge PUD (LSC #184362)

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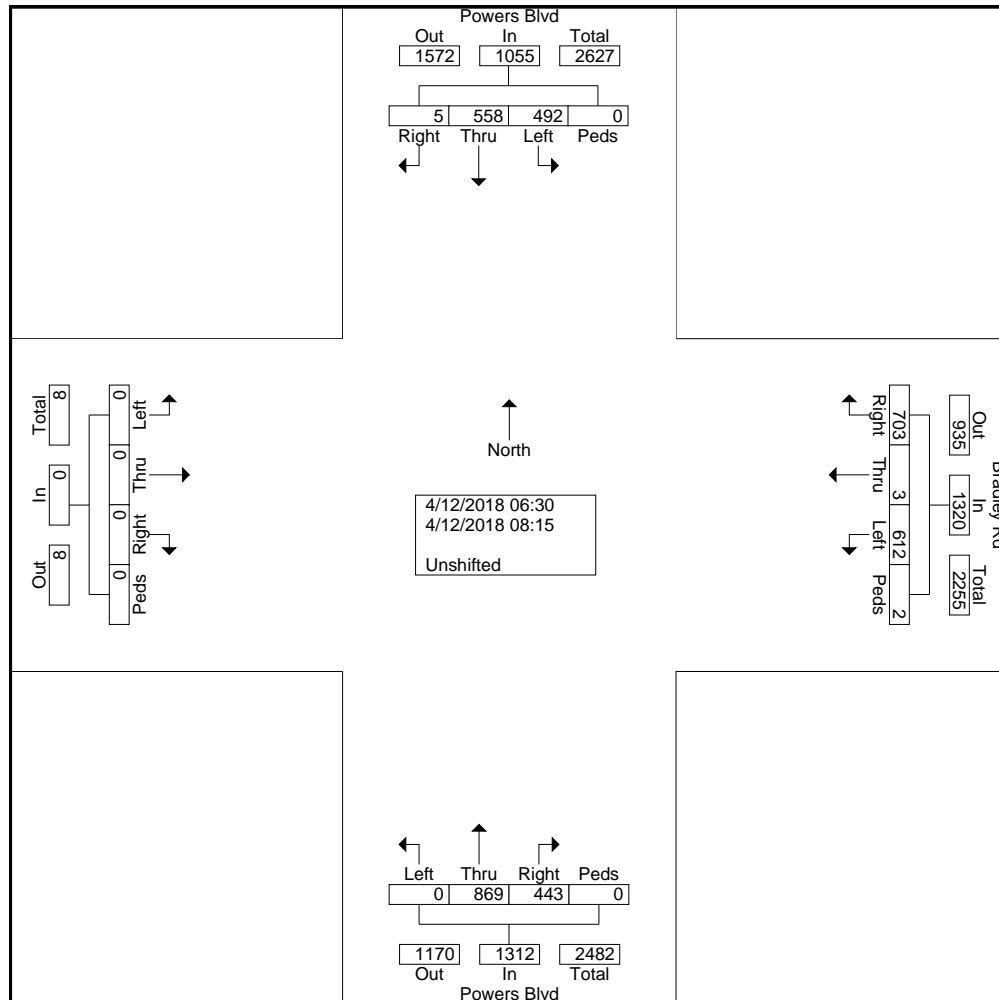
Groups Printed- Unshifted

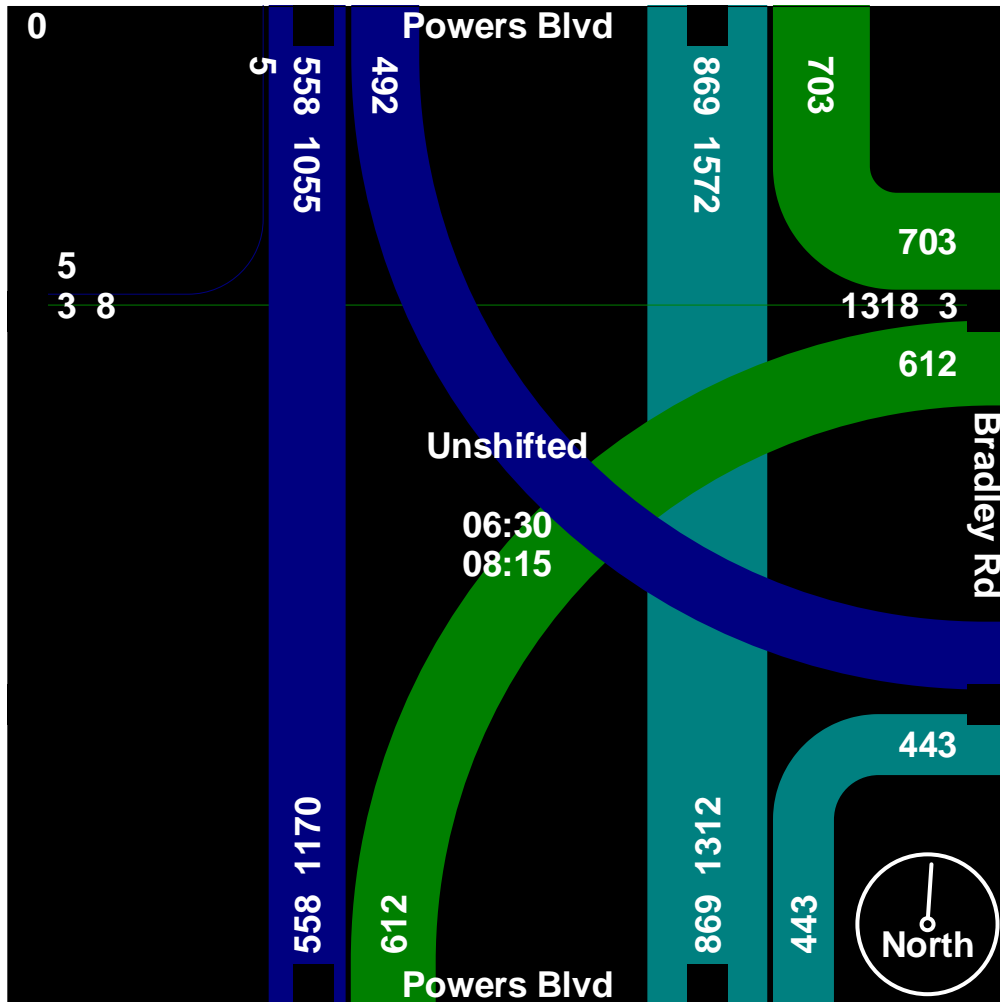
	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30	61	54	0	0	115	68	0	71	0	139	0	89	73	0	162	0	0	0	0	0	416
06:45	67	68	0	0	135	80	0	104	0	184	0	110	55	0	165	0	0	0	0	0	484
Total	128	122	0	0	250	148	0	175	0	323	0	199	128	0	327	0	0	0	0	0	900
07:00	67	87	0	0	154	71	0	119	0	190	0	120	58	0	178	0	0	0	0	0	522
07:15	66	56	5	0	127	65	3	111	2	181	0	154	65	0	219	0	0	0	0	0	527
07:30	82	78	0	0	160	68	0	105	0	173	0	133	54	0	187	0	0	0	0	0	520
07:45	63	77	0	0	140	78	0	62	0	140	0	93	54	0	147	0	0	0	0	0	427
Total	278	298	5	0	581	282	3	397	2	684	0	500	231	0	731	0	0	0	0	0	1996
08:00	36	66	0	0	102	89	0	70	0	159	0	97	47	0	144	0	0	0	0	0	405
08:15	50	72	0	0	122	93	0	61	0	154	0	73	37	0	110	0	0	0	0	0	386

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Groups Printed- Unshifted

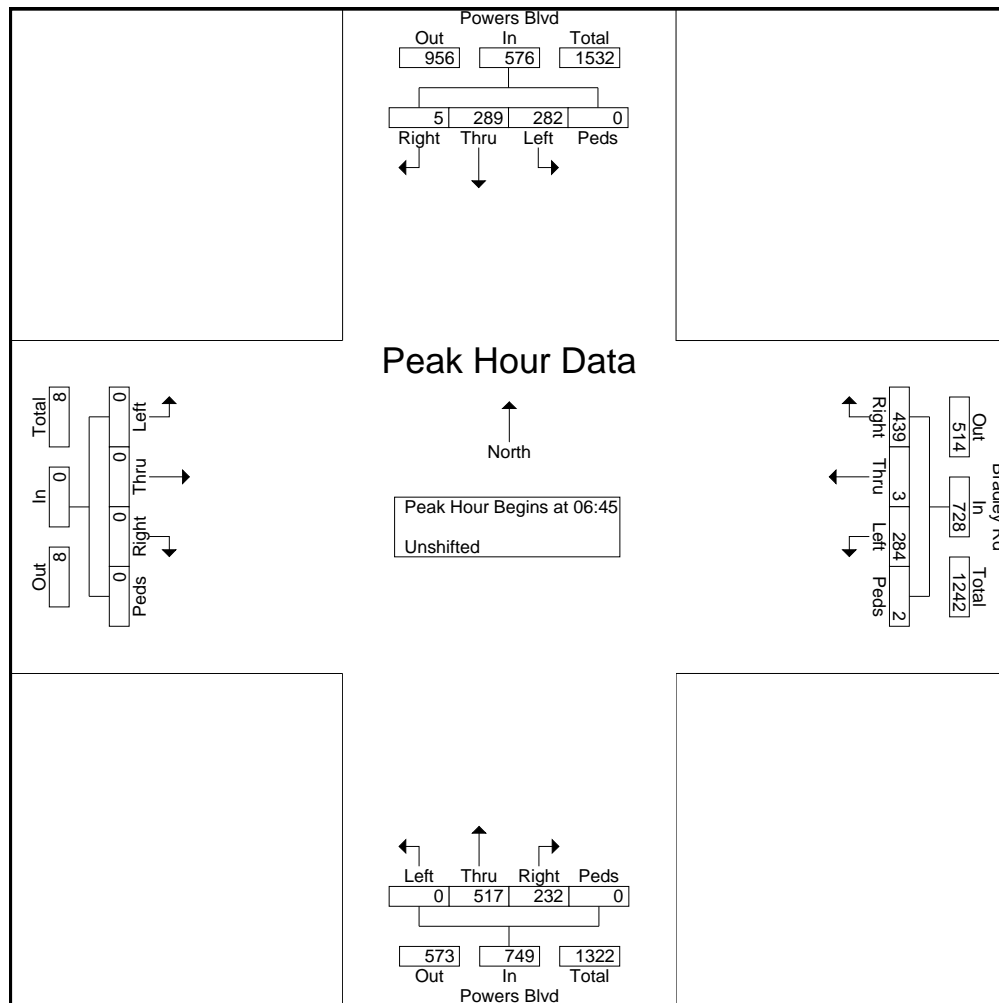
	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Grand Total	492	558	5	0	1055	612	3	703	2	1320	0	869	443	0	1312	0	0	0	0	0	3687
Apprch %	46.6	52.9	0.5	0		46.4	0.2	53.3	0.2		0	66.2	33.8	0		0	0	0	0	0	
Total %	13.3	15.1	0.1	0	28.6	16.6	0.1	19.1	0.1	35.8	0	23.6	12	0	35.6	0	0	0	0	0	

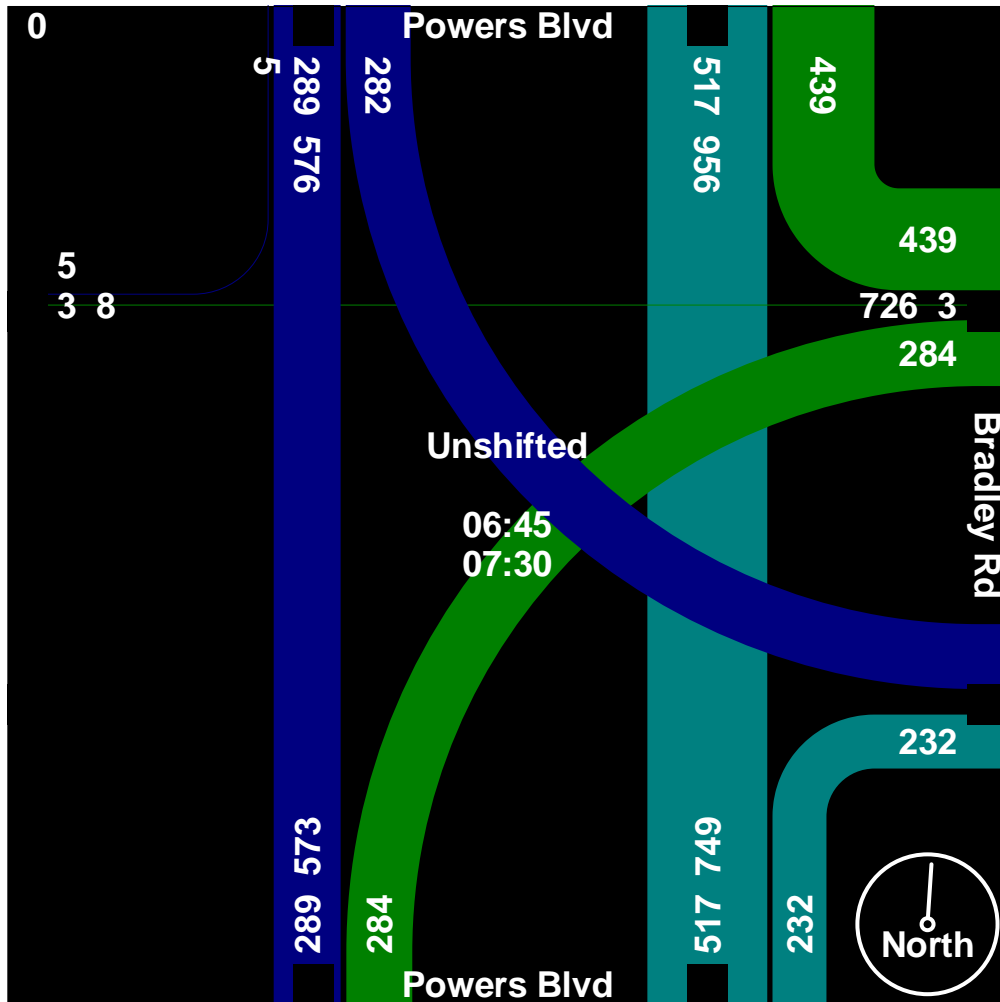


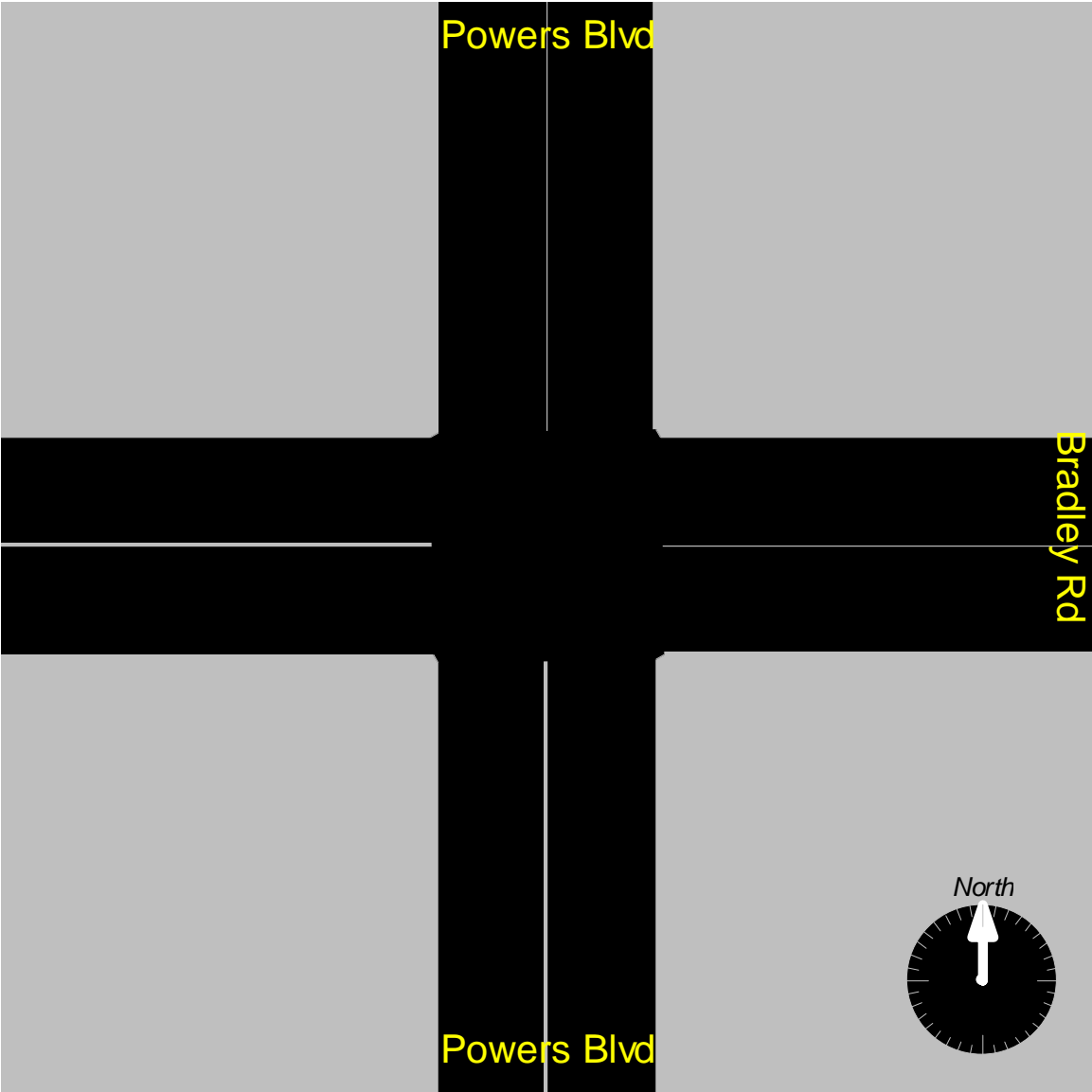


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	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:45																					
06:45	67	68	0	0	135	80	0	104	0	184	0	110	55	0	165	0	0	0	0	0	484
07:00	67	87	0	0	154	71	0	119	0	190	0	120	58	0	178	0	0	0	0	0	522
07:15	66	56	5	0	127	65	3	111	2	181	0	154	65	0	219	0	0	0	0	0	527
07:30	82	78	0	0	160	68	0	105	0	173	0	133	54	0	187	0	0	0	0	0	520
Total Volume	282	289	5	0	576	284	3	439	2	728	0	517	232	0	749	0	0	0	0	0	2053
% App. Total	49	50.2	0.9	0		39	0.4	60.3	0.3		0	69	31	0		0	0	0	0		
PHF	.860	.830	.250	.000	.900	.888	.250	.922	.250	.958	.000	.839	.892	.000	.855	.000	.000	.000	.000	.000	.974







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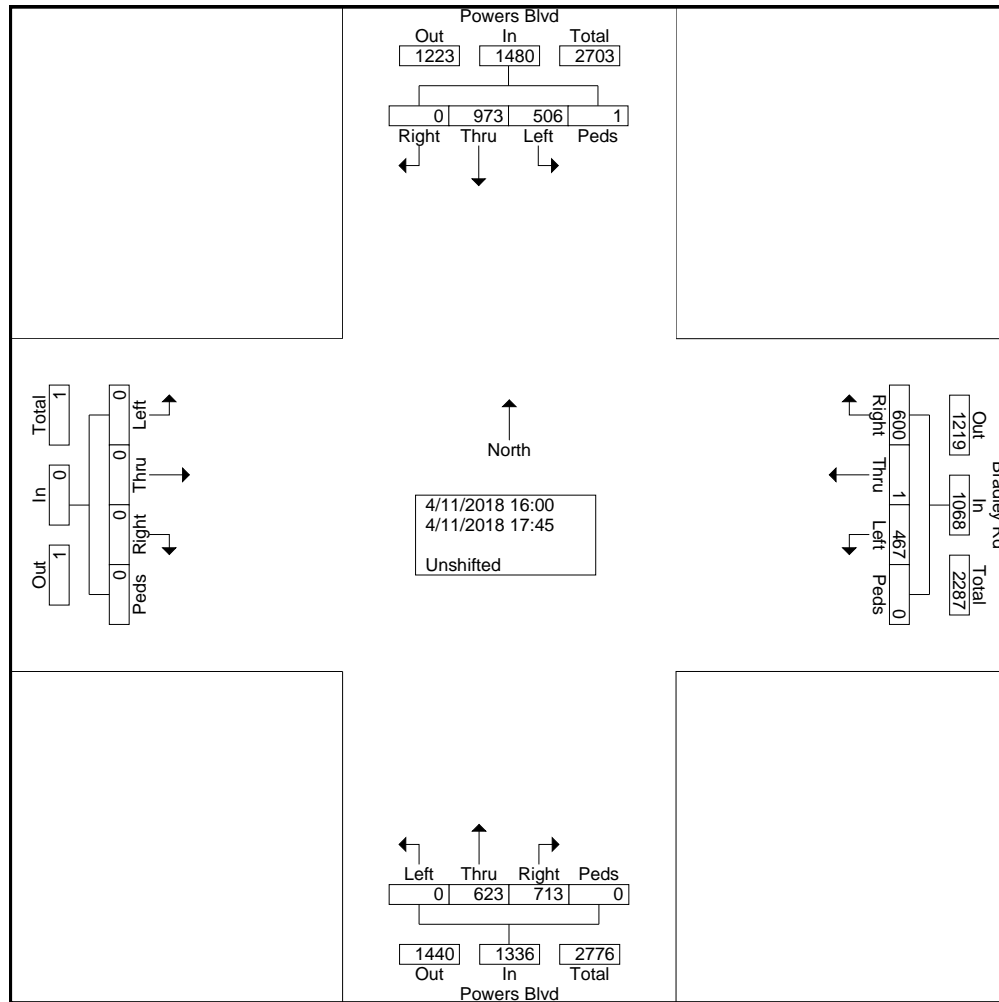
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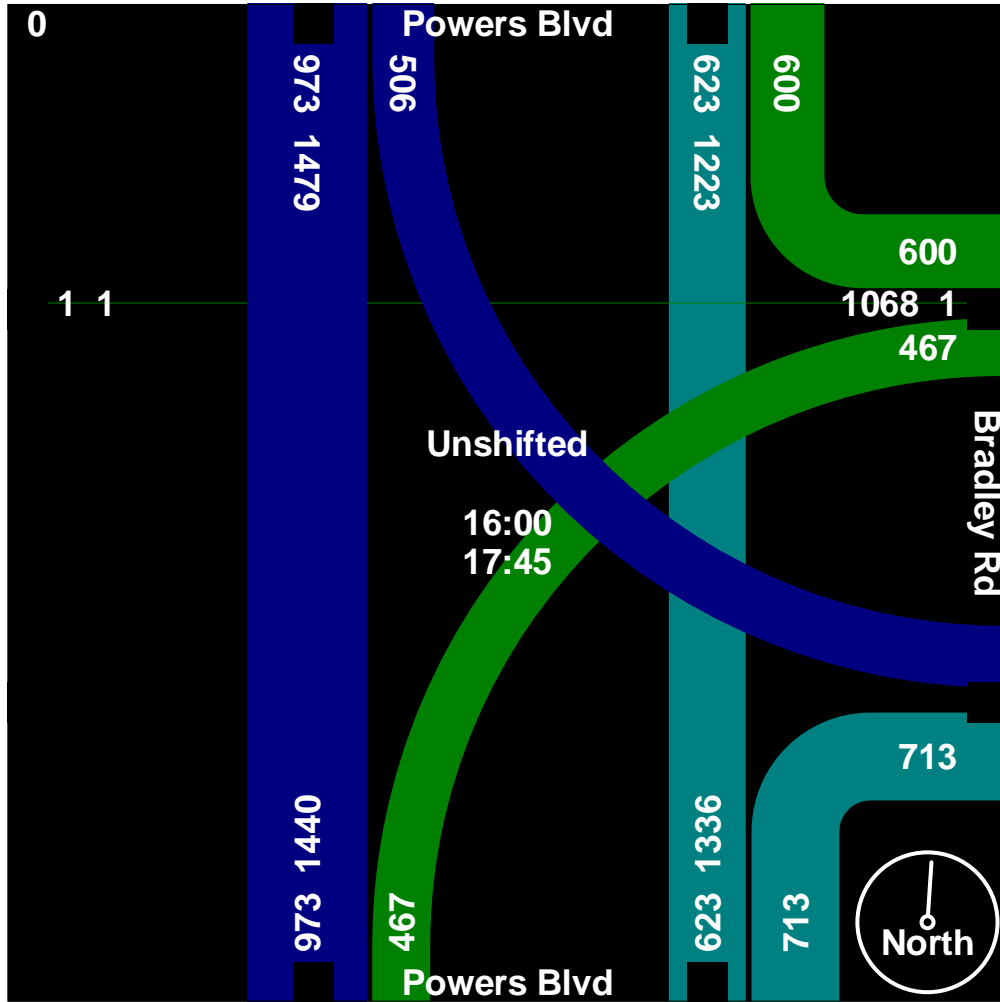
	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	82	119	0	0	201	55	1	100	0	156	0	75	70	0	145	0	0	0	0	0	502
16:15	66	121	0	0	187	63	0	90	0	153	0	55	115	0	170	0	0	0	0	0	510
16:30	64	122	0	0	186	65	0	95	0	160	0	81	80	0	161	0	0	0	0	0	507
16:45	45	124	0	1	170	64	0	95	0	159	0	66	103	0	169	0	0	0	0	0	498
Total	257	486	0	1	744	247	1	380	0	628	0	277	368	0	645	0	0	0	0	0	2017
17:00	59	137	0	0	196	65	0	64	0	129	0	107	89	0	196	0	0	0	0	0	521
17:15	78	125	0	0	203	52	0	58	0	110	0	77	97	0	174	0	0	0	0	0	487
17:30	55	109	0	0	164	54	0	46	0	100	0	80	78	0	158	0	0	0	0	0	422
17:45	57	116	0	0	173	49	0	52	0	101	0	82	81	0	163	0	0	0	0	0	437
Total	249	487	0	0	736	220	0	220	0	440	0	346	345	0	691	0	0	0	0	0	1867

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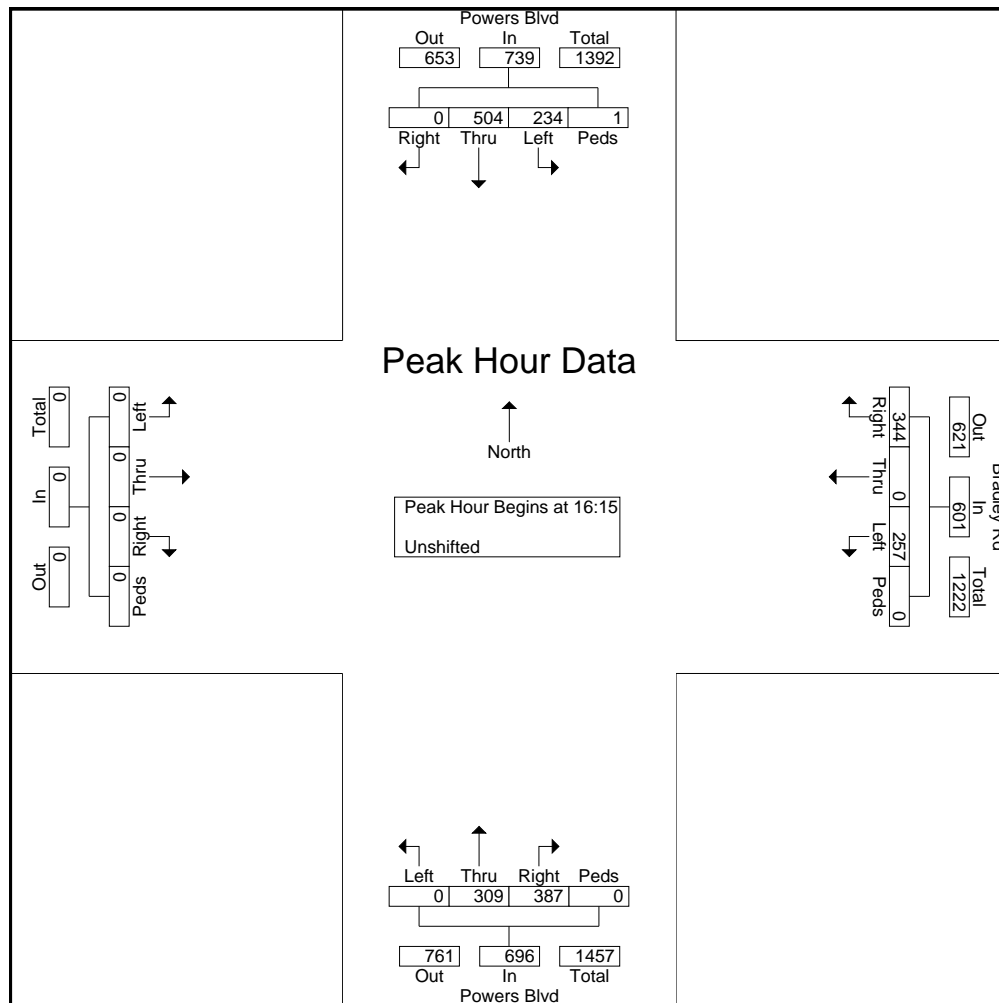
	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Grand Total	506	973	0	1	1480	467	1	600	0	1068	0	623	713	0	1336	0	0	0	0	0	3884
Apprch %	34.2	65.7	0	0.1		43.7	0.1	56.2	0		0	46.6	53.4	0		0	0	0	0	0	
Total %	13	25.1	0	0	38.1	12	0	15.4	0	27.5	0	16	18.4	0	34.4	0	0	0	0	0	

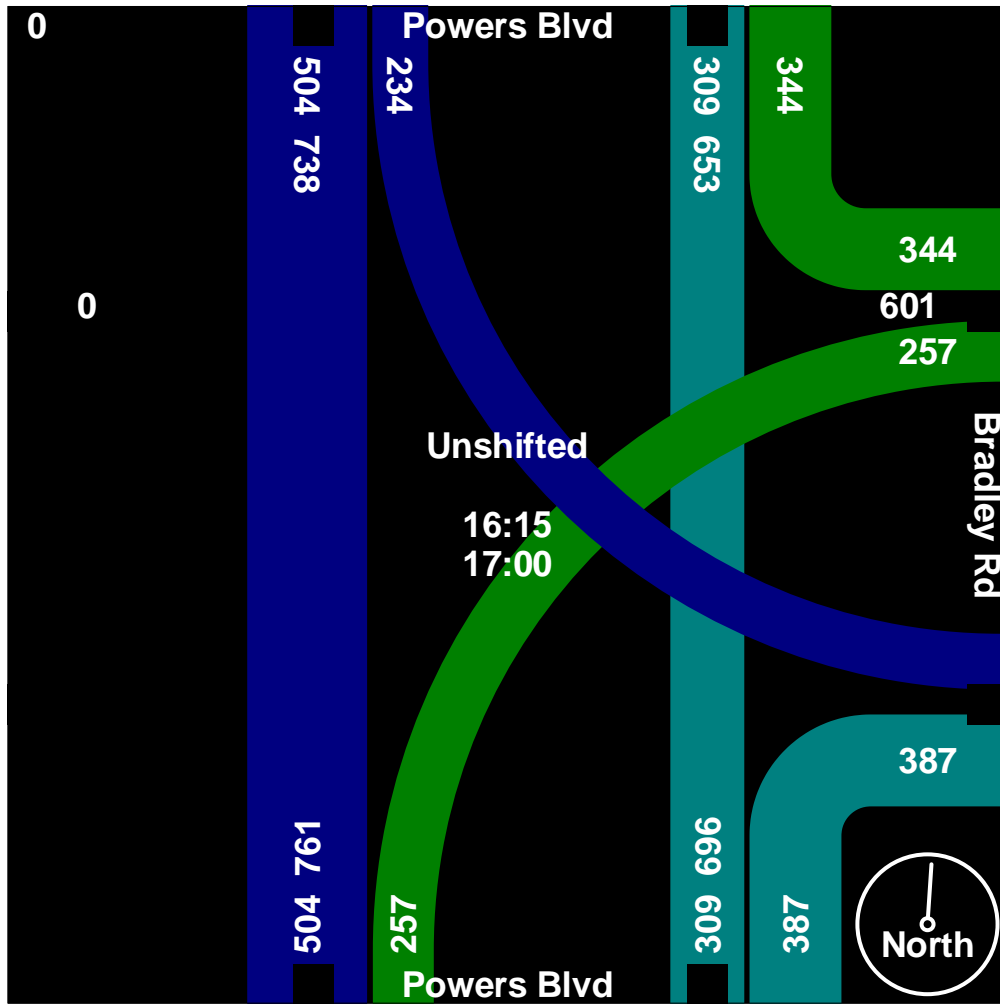


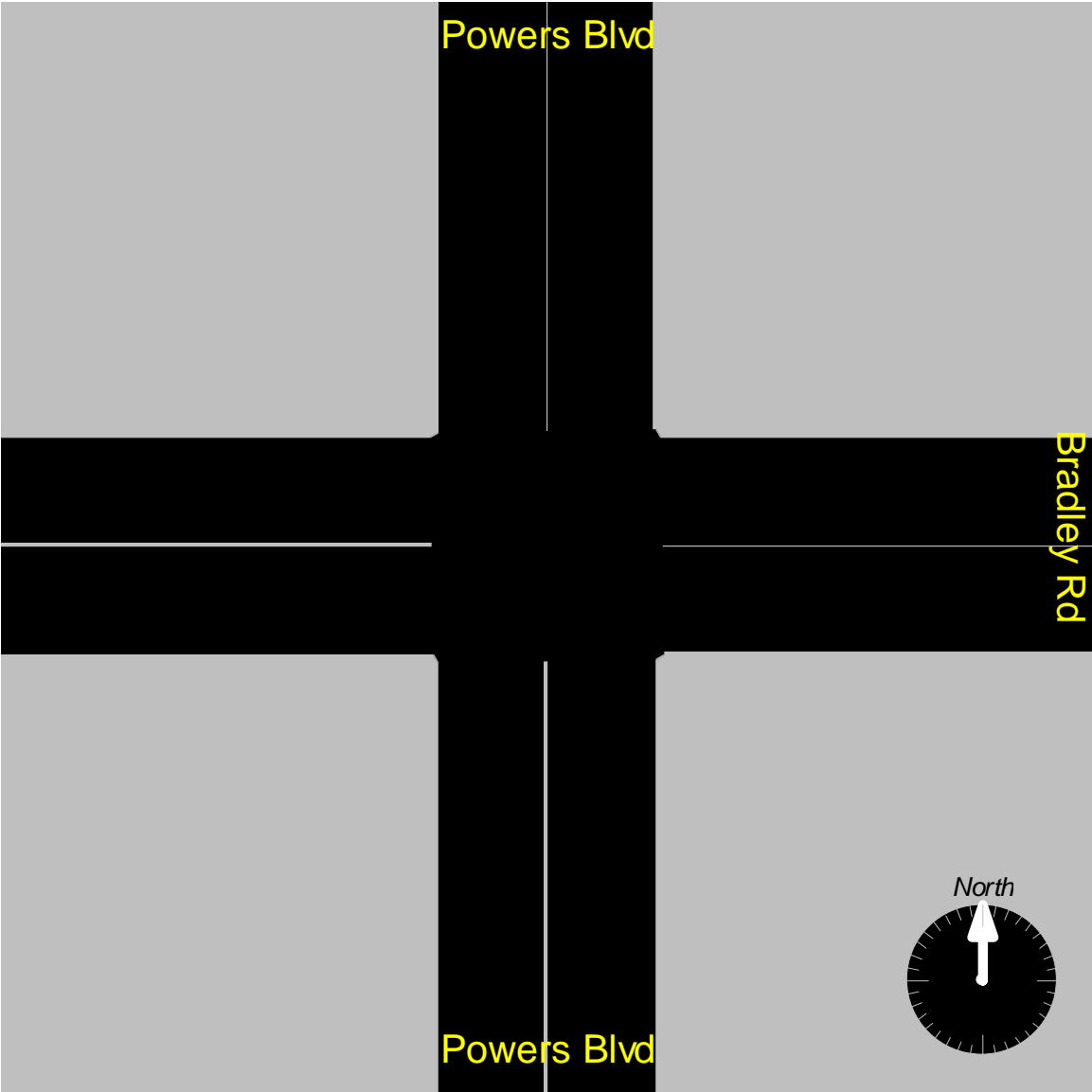


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	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	66	121	0	0	187	63	0	90	0	153	0	55	115	0	170	0	0	0	0	0	510
16:30	64	122	0	0	186	65	0	95	0	160	0	81	80	0	161	0	0	0	0	0	507
16:45	45	124	0	1	170	64	0	95	0	159	0	66	103	0	169	0	0	0	0	0	498
17:00	59	137	0	0	196	65	0	64	0	129	0	107	89	0	196	0	0	0	0	0	521
Total Volume	234	504	0	1	739	257	0	344	0	601	0	309	387	0	696	0	0	0	0	0	2036
% App. Total	31.7	68.2	0	0.1		42.8	0	57.2	0		0	44.4	55.6	0		0	0	0	0		
PHF	.886	.920	.000	.250	.943	.988	.000	.905	.000	.939	.000	.722	.841	.000	.888	.000	.000	.000	.000	.000	.977



















Timings
1: Powers & Bradley Rd.

Existing Traffic
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	284	439	517	232	282	289
Future Volume (vph)	284	439	517	232	282	289
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	20.0	20.0	60.0	60.0	20.0	80.0
Total Split (%)	20.0%	20.0%	60.0%	60.0%	20.0%	80.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None
Act Effect Green (s)	15.0	15.0	14.4	14.4	15.0	34.4
Actuated g/C Ratio	0.25	0.25	0.24	0.24	0.25	0.58
v/c Ratio	0.67	0.62	0.61	0.42	0.68	0.15
Control Delay	30.2	6.6	23.1	5.5	30.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	6.6	23.1	5.5	30.6	5.9
LOS	C	A	C	A	C	A
Approach Delay	15.9		17.7			18.1
Approach LOS	B		B			B

Intersection Summary













Cycle Length: 100
 Actuated Cycle Length: 59.5
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 17.1
 Intersection LOS: B
 Intersection Capacity Utilization 58.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd.



Timings
1: Powers & Bradley Rd.

Existing Traffic
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	257	344	309	387	234	504
Future Volume (vph)	257	344	309	387	234	504
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	20.0	20.0	61.0	61.0	19.0	80.0
Total Split (%)	20.0%	20.0%	61.0%	61.0%	19.0%	80.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None
Act Effect Green (s)	14.9	14.9	11.3	11.3	14.0	30.3
Actuated g/C Ratio	0.27	0.27	0.20	0.20	0.25	0.55
v/c Ratio	0.54	0.51	0.48	0.65	0.55	0.28
Control Delay	22.9	5.6	21.6	7.5	24.2	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	5.6	21.6	7.5	24.2	7.0
LOS	C	A	C	A	C	A
Approach Delay	13.0		13.8			12.4
Approach LOS	B		B			B

Intersection Summary















Cycle Length: 100
 Actuated Cycle Length: 55.2
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 13.1
 Intersection LOS: B
 Intersection Capacity Utilization 48.2%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd.



Timings
1: Powers & Bradley Rd.

Short-Term Background Traffic
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	329	502	517	247	303	289
Future Volume (vph)	329	502	517	247	303	289
Turn Type	Prot	Free	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	9.0		9.0	9.0	9.0	9.0
Total Split (s)	20.0		60.0	60.0	20.0	80.0
Total Split (%)	20.0%		60.0%	60.0%	20.0%	80.0%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		None	None	None	None
Act Effect Green (s)	15.1	60.1	14.9	14.9	15.1	35.0
Actuated g/C Ratio	0.25	1.00	0.25	0.25	0.25	0.58
v/c Ratio	0.78	0.33	0.59	0.43	0.74	0.15
Control Delay	37.2	0.6	22.6	5.3	34.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	0.6	22.6	5.3	34.2	5.8
LOS	D	A	C	A	C	A
Approach Delay	15.1		17.0			20.3
Approach LOS	B		B			C

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 60.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 17.2
 Intersection Capacity Utilization 61.8%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Powers & Bradley Rd.









Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	526	24	14	723	107	27
Future Vol, veh/h	526	24	14	723	107	27
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	415	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	572	26	15	786	116	29
Major/Minor	Major1		Major2	Minor1		
Conflicting Flow All	0	0	598	0	995	286
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	423	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	975	-	242	711
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	629	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	975	-	238	711
Mov Cap-2 Maneuver	-	-	-	-	238	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	629	-
Approach	EB		WB	NB		
HCM Control Delay, s	0		0.2	29.1		
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	238	711	-	-	975	-
HCM Lane V/C Ratio	0.489	0.041	-	-	0.016	-
HCM Control Delay (s)	33.8	10.3	-	-	8.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	2.5	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	541	12	0	737	0	14
Future Vol, veh/h	541	12	0	737	0	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	-	500	-	-	-	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	588	13	0	801	0	15
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	294
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	702
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	702
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		10.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	702	-	-	-		
HCM Lane V/C Ratio	0.022	-	-	-		
HCM Control Delay (s)	10.2	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

Intersection				
Intersection Delay, s/veh	3.1			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	10	38	98	40
Demand Flow Rate, veh/h	10	38	100	41
Vehicles Circulating, veh/h	38	110	14	0
Vehicles Exiting, veh/h	3	4	34	148
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	2.8	3.2	3.3	2.9
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	10	38	100	41
Cap Entry Lane, veh/h	1327	1233	1360	1380
Entry HV Adj Factor	1.000	1.000	0.980	0.984
Flow Entry, veh/h	10	38	98	40
Cap Entry, veh/h	1327	1233	1334	1357
V/C Ratio	0.008	0.031	0.074	0.030
Control Delay, s/veh	2.8	3.2	3.3	2.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection						
Int Delay, s/veh	6.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	2	28	0	3	87	0
Future Vol, veh/h	2	28	0	3	87	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	-	155	205	-	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	30	0	3	95	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	32	0	5	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	3	-
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	-	-	1580	-	1017	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1020	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1580	-	1017	1082
Mov Cap-2 Maneuver	-	-	-	-	930	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1020	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.3	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	930	-	-	1580	-	
HCM Lane V/C Ratio	0.102	-	-	-	-	
HCM Control Delay (s)	9.3	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	

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	0	0	2	0	0	0	3	1	0	0	0	0
Future Vol, veh/h	0	0	2	0	0	0	3	1	0	0	0	0
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	205	-	-	205	-	-	-	-	-	-	-	-
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	0	0	2	0	0	0	3	1	0	0	0	0













Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	2	0	0	2	2	1	3	3	1
Stage 1	-	-	-	-	-	-	1	1	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	2	2	-
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	-	-	1620	-	-	1020	894	1084	1019	893	1084
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1021	894	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1622	-	-	1620	-	-	1020	894	1084	1018	893	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1020	894	-	1018	893	-
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1020	894	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			8.7			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	985	1622	-	-	1620	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-	-	-	-	-
HCM Control Delay (s)	8.7	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Timings
1: Powers & Bradley Rd.

Short-Term Background Traffic
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	286	385	309	437	304	504
Future Volume (vph)	286	385	309	437	304	504
Turn Type	Prot	Free	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	9.0		9.0	9.0	9.0	9.0
Total Split (s)	20.0		60.0	60.0	20.0	80.0
Total Split (%)	20.0%		60.0%	60.0%	20.0%	80.0%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		None	None	None	None
Act Effect Green (s)	15.0	57.9	12.8	12.8	15.0	32.8
Actuated g/C Ratio	0.26	1.00	0.22	0.22	0.26	0.57
v/c Ratio	0.65	0.26	0.45	0.67	0.70	0.27
Control Delay	28.8	0.4	21.1	7.3	31.1	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	0.4	21.1	7.3	31.1	6.7
LOS	C	A	C	A	C	A
Approach Delay	12.5		13.0			15.8
Approach LOS	B		B			B

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 57.9
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 13.9
 Intersection LOS: B
 Intersection Capacity Utilization 53.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd.









Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	661	81	47	601	71	18
Future Vol, veh/h	661	81	47	601	71	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	415	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	718	88	51	653	77	20
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	806	0	1147	359
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	814	-	192	638
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	624	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	814	-	180	638
Mov Cap-2 Maneuver	-	-	-	-	180	-
Stage 1	-	-	-	-	416	-
Stage 2	-	-	-	-	624	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.7	33.5			
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	180	638	-	-	814	-
HCM Lane V/C Ratio	0.429	0.031	-	-	0.063	-
HCM Control Delay (s)	39.2	10.8	-	-	9.7	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	2	0.1	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	639	40	0	648	0	9
Future Vol, veh/h	639	40	0	648	0	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	-	500	-	-	-	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	695	43	0	704	0	10
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	348
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	648
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	648
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)	648	-	-	-		
HCM Lane V/C Ratio	0.015	-	-	-		
HCM Control Delay (s)	10.6	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		

Intersection				
Intersection Delay, s/veh	3.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	7	25	65	139
Demand Flow Rate, veh/h	7	25	66	141
Vehicles Circulating, veh/h	129	73	23	0
Vehicles Exiting, veh/h	12	16	113	98
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.0	3.0	3.1	3.5
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	7	25	66	141
Cap Entry Lane, veh/h	1210	1281	1348	1380
Entry HV Adj Factor	1.000	1.000	0.980	0.984
Flow Entry, veh/h	7	25	65	139
Cap Entry, veh/h	1210	1281	1321	1358
V/C Ratio	0.006	0.020	0.049	0.102
Control Delay, s/veh	3.0	3.0	3.1	3.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	6	96	0	2	57	0
Future Vol, veh/h	6	96	0	2	57	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	-	155	205	-	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	104	0	2	62	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	111	0	9	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	2	-
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	-	-	1479	-	1011	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1021	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1479	-	1011	1075
Mov Cap-2 Maneuver	-	-	-	-	926	-
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1021	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.2	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	926	-	-	1479	-	
HCM Lane V/C Ratio	0.067	-	-	-	-	
HCM Control Delay (s)	9.2	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

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	0	0	6	0	0	0	2	0	0	0	0	0
Future Vol, veh/h	0	0	6	0	0	0	2	0	0	0	0	0
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	205	-	-	205	-	-	-	-	-	-	-	-
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	0	0	7	0	0	0	2	0	0	0	0	0













Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	7	0	0	5	5	4	5	8	1
Stage 1	-	-	-	-	-	-	4	4	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	4	7	-
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	-	-	1614	-	-	1016	890	1080	1016	887	1084
Stage 1	-	-	-	-	-	-	1018	892	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1018	890	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1622	-	-	1614	-	-	1016	890	1080	1016	887	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1016	890	-	1016	887	-
Stage 1	-	-	-	-	-	-	1018	892	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1018	890	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			8.6			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1016	1622	-	-	1614	-	-	-
HCM Lane V/C Ratio	0.002	-	-	-	-	-	-	-
HCM Control Delay (s)	8.6	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Timings
1: Powers & Bradley Rd.

Short-Term Total Traffic
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	415	622	517	275	342	289
Future Volume (vph)	415	622	517	275	342	289
Turn Type	Prot	Free	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	9.0		9.0	9.0	9.0	9.0
Total Split (s)	25.0		54.0	54.0	21.0	75.0
Total Split (%)	25.0%		54.0%	54.0%	21.0%	75.0%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		None	None	None	None
Act Effect Green (s)	20.1	67.5	16.3	16.3	16.1	37.4
Actuated g/C Ratio	0.30	1.00	0.24	0.24	0.24	0.55
v/c Ratio	0.83	0.41	0.60	0.47	0.88	0.16
Control Delay	39.5	0.8	25.7	5.7	50.3	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	0.8	25.7	5.7	50.3	7.4
LOS	D	A	C	A	D	A
Approach Delay	16.3		18.7			30.7
Approach LOS	B		B			C

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 67.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 20.9
 Intersection Capacity Utilization 68.7%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 1: Powers & Bradley Rd.



Intersection						
Int Delay, s/veh	61.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	533	84	40	723	314	89
Future Vol, veh/h	533	84	40	723	314	89
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	415	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	579	91	43	786	341	97
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	670	0	1058	290
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	479	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	916	-	~ 220	707
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	916	-	~ 210	707
Mov Cap-2 Maneuver	-	-	-	-	~ 210	-
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	589	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.5	269.3			
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	210	707	-	-	916	-
HCM Lane V/C Ratio	1.625	0.137	-	-	0.047	-
HCM Control Delay (s)	\$ 342.6	10.9	-	-	9.1	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	22.2	0.5	-	-	0.1	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	603	19	0	763	0	33
Future Vol, veh/h	603	19	0	763	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	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	655	21	0	829	0	36
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	328
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	668
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	668
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		10.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	668	-	-	-		
HCM Lane V/C Ratio	0.054	-	-	-		
HCM Control Delay (s)	10.7	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.2	-	-	-		

HCM 6th Roundabout
5: Legacy Dr & Frontside Dr

Short-Term Total Traffic
AM Peak Hour

Intersection				
Intersection Delay, s/veh	4.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	101	78	259	136
Demand Flow Rate, veh/h	103	79	264	139
Vehicles Circulating, veh/h	104	367	115	0
Vehicles Exiting, veh/h	35	12	92	446
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.6	4.6	4.9	3.5
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	103	79	264	139
Cap Entry Lane, veh/h	1241	949	1227	1380
Entry HV Adj Factor	0.981	0.987	0.980	0.980
Flow Entry, veh/h	101	78	259	136
Cap Entry, veh/h	1217	937	1203	1352
V/C Ratio	0.083	0.083	0.215	0.101
Control Delay, s/veh	3.6	4.6	4.9	3.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

HCM 6th TWSC
6: Legacy Dr & Moose Meadow St

Short-Term Total Traffic
AM 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	64	0	0	0	0	57	0	117	0	22	40	21
Future Vol, veh/h	64	0	0	0	0	57	0	117	0	22	40	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	-	-	-	-	-	-	205	-	-	205	-	155
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	70	0	0	0	0	62	0	127	0	24	43	23

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	249	218	43	230	241	127	66	0	0	127	0	0
Stage 1	91	91	-	127	127	-	-	-	-	-	-	-
Stage 2	158	127	-	103	114	-	-	-	-	-	-	-
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	705	680	1027	725	660	923	1536	-	-	1459	-	-
Stage 1	916	820	-	877	791	-	-	-	-	-	-	-
Stage 2	844	791	-	903	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	649	669	1027	716	649	923	1536	-	-	1459	-	-
Mov Cap-2 Maneuver	649	669	-	716	649	-	-	-	-	-	-	-
Stage 1	916	807	-	877	791	-	-	-	-	-	-	-
Stage 2	787	791	-	888	788	-	-	-	-	-	-	-







Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.2		9.2		0		2	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1536	-	-	649 923	1459	-	-
HCM Lane V/C Ratio	-	-	-	0.107 0.067	0.016	-	-
HCM Control Delay (s)	0	-	-	11.2 9.2	7.5	-	-
HCM Lane LOS	A	-	-	B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4 0.2	0.1	-	-

Intersection						
Int Delay, s/veh	5.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	9	31	0	23	94	0
Future Vol, veh/h	9	31	0	23	94	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	-	155	205	-	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	10	34	0	25	102	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	44	0	35	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	25	-
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	-	-	1564	-	978	1071
Stage 1	-	-	-	-	1013	-
Stage 2	-	-	-	-	998	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1564	-	978	1071
Mov Cap-2 Maneuver	-	-	-	-	905	-
Stage 1	-	-	-	-	1013	-
Stage 2	-	-	-	-	998	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.5	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	905	-	-	1564	-	
HCM Lane V/C Ratio	0.113	-	-	-	-	
HCM Control Delay (s)	9.5	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

HCM 6th TWSC
8: Big Johnson Dr & Legacy Dr

Short-Term Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	2	0	0	0	3	1	0	0	0	20
Future Vol, veh/h	8	0	2	0	0	0	3	1	0	0	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	205	-	-	205	-	-	-	-	-	-	-	-
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	9	0	2	0	0	0	3	1	0	0	0	22
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	2	0	0	31	20	1	21	21	1
Stage 1	-	-	-	-	-	-	19	19	-	1	1	-
Stage 2	-	-	-	-	-	-	12	1	-	20	20	-
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	-	-	1620	-	-	977	874	1084	992	873	1084
Stage 1	-	-	-	-	-	-	1000	880	-	1022	895	-
Stage 2	-	-	-	-	-	-	1009	895	-	999	879	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1620	-	-	954	869	1084	987	868	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	954	869	-	987	868	-
Stage 1	-	-	-	-	-	-	994	875	-	1016	895	-
Stage 2	-	-	-	-	-	-	989	895	-	992	874	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.8			0			8.9			8.4		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	931	1622	-	-	1620	-	-	1084				
HCM Lane V/C Ratio	0.005	0.005	-	-	-	-	-	0.02				
HCM Control Delay (s)	8.9	7.2	-	-	0	-	-	8.4				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1				

Timings
2: Legacy Dr & Bradley Rd.

Short-Term Total Traffic
AM Peak Hour

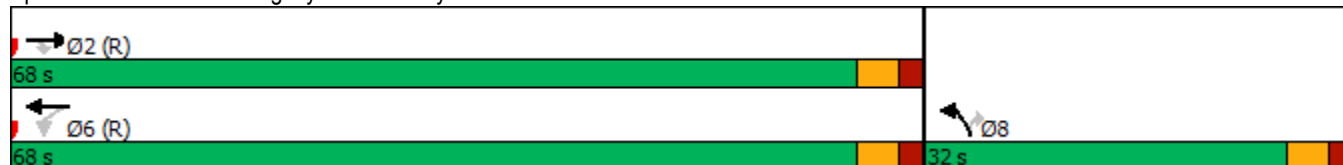
	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (vph)	533	84	40	723	314	89
Future Volume (vph)	533	84	40	723	314	89
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	68.0	68.0	68.0	68.0	32.0	32.0
Total Split (%)	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	66.7	66.7	66.7	66.7	23.3	23.3
Actuated g/C Ratio	0.67	0.67	0.67	0.67	0.23	0.23
v/c Ratio	0.25	0.08	0.08	0.33	0.83	0.22
Control Delay	7.4	1.8	7.4	8.0	53.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	1.8	7.4	8.0	53.6	7.3
LOS	A	A	A	A	D	A
Approach Delay	6.6			8.0	43.3	
Approach LOS	A			A	D	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 15.5
 Intersection Capacity Utilization 48.8%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 2: Legacy Dr & Bradley Rd.



Timings
1: Powers & Bradley Rd.

Short-Term Total Traffic
PM Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	343	465	309	534	439	504
Future Volume (vph)	343	465	309	534	439	504
Turn Type	Prot	Free	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	9.0		9.0	9.0	9.0	9.0
Total Split (s)	20.0		57.0	57.0	23.0	80.0
Total Split (%)	20.0%		57.0%	57.0%	23.0%	80.0%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		None	None	None	None
Act Effect Green (s)	15.1	64.1	15.7	15.7	18.2	38.9
Actuated g/C Ratio	0.24	1.00	0.24	0.24	0.28	0.61
v/c Ratio	0.87	0.31	0.40	0.77	0.93	0.25
Control Delay	48.8	0.5	21.0	11.5	53.7	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	0.5	21.0	11.5	53.7	6.0
LOS	D	A	C	B	D	A
Approach Delay	21.0		15.0			28.2
Approach LOS	C		B			C

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 64.1
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 21.6
 Intersection LOS: C
 Intersection Capacity Utilization 65.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd.



HCM 6th TWSC
2: Legacy Dr & Bradley Rd.

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	64.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	687	286	137	601	207	59
Future Vol, veh/h	687	286	137	601	207	59
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	415	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	747	311	149	653	225	64

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1058
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	654
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	654
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	\$ 470.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	106	623	-	-	654	-
HCM Lane V/C Ratio	2.123	0.103	-	-	0.228	-
HCM Control Delay (s)	\$ 601.8	11.4	-	-	12.1	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	19.3	0.3	-	-	0.9	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	680	66	0	738	0	21
Future Vol, veh/h	680	66	0	738	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	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	739	72	0	802	0	23
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	370
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	627
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	627
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	11			
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	627	-	-	-		
HCM Lane V/C Ratio	0.036	-	-	-		
HCM Control Delay (s)	11	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

HCM 6th Roundabout
5: Legacy Dr & Frontside Dr

Short-Term Total Traffic
PM Peak Hour

Intersection				
Intersection Delay, s/veh	5.1			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	67	51	171	460
Demand Flow Rate, veh/h	68	52	174	468
Vehicles Circulating, veh/h	352	242	107	0
Vehicles Exiting, veh/h	116	39	313	294
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.4	3.8	4.2	5.7
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	68	52	174	468
Cap Entry Lane, veh/h	964	1078	1237	1380
Entry HV Adj Factor	0.985	0.981	0.980	0.983
Flow Entry, veh/h	67	51	171	460
Cap Entry, veh/h	949	1057	1213	1356
V/C Ratio	0.071	0.048	0.141	0.339
Control Delay, s/veh	4.4	3.8	4.2	5.7
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	2

HCM 6th TWSC
6: Legacy Dr & Moose Meadow St

Short-Term Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	43	0	0	0	0	37	0	77	0	74	136	72
Future Vol, veh/h	43	0	0	0	0	37	0	77	0	74	136	72
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	-	-	-	-	-	-	205	-	-	205	-	155
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	47	0	0	0	0	40	0	84	0	80	148	78

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	412	392	148	431	470	84	226	0	0	84	0	0
Stage 1	308	308	-	84	84	-	-	-	-	-	-	-
Stage 2	104	84	-	347	386	-	-	-	-	-	-	-
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	550	544	899	535	492	975	1342	-	-	1513	-	-
Stage 1	702	660	-	924	825	-	-	-	-	-	-	-
Stage 2	902	825	-	669	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	506	515	899	514	466	975	1342	-	-	1513	-	-
Mov Cap-2 Maneuver	506	515	-	514	466	-	-	-	-	-	-	-
Stage 1	702	625	-	924	825	-	-	-	-	-	-	-
Stage 2	865	825	-	634	578	-	-	-	-	-	-	-







Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	8.9	0	2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1342	-	-	506 975	1513	-	-
HCM Lane V/C Ratio	-	-	-	0.092 0.041	0.053	-	-
HCM Control Delay (s)	0	-	-	12.8 8.9	7.5	-	-
HCM Lane LOS	A	-	-	B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.1	0.2	-	-

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	32	104	0	15	62	0
Future Vol, veh/h	32	104	0	15	62	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	-	155	205	-	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	35	113	0	16	67	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	148	0	51	35
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	16	-
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	-	-	1434	-	958	1038
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1434	-	958	1038
Mov Cap-2 Maneuver	-	-	-	-	891	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	1007	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.4	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	891	-	-	1434	-	
HCM Lane V/C Ratio	0.076	-	-	-	-	
HCM Control Delay (s)	9.4	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

HCM 6th TWSC
8: Big Johnson Dr & Legacy Dr

Short-Term Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	0	6	0	0	0	2	0	0	0	0	13
Future Vol, veh/h	26	0	6	0	0	0	2	0	0	0	0	13
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	205	-	-	205	-	-	-	-	-	-	-	-
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	28	0	7	0	0	0	2	0	0	0	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	7	0	0	68	61	4	61	64	1
Stage 1	-	-	-	-	-	-	60	60	-	1	1	-
Stage 2	-	-	-	-	-	-	8	1	-	60	63	-
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	-	-	1614	-	-	925	830	1080	934	827	1084
Stage 1	-	-	-	-	-	-	951	845	-	1022	895	-
Stage 2	-	-	-	-	-	-	1013	895	-	951	842	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1622	-	-	1614	-	-	901	816	1080	922	813	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	901	816	-	922	813	-
Stage 1	-	-	-	-	-	-	935	831	-	1005	895	-
Stage 2	-	-	-	-	-	-	1000	895	-	935	828	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.9	0	9	8.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	901	1622	-	-	1614	-	-	1084
HCM Lane V/C Ratio	0.002	0.017	-	-	-	-	-	0.013
HCM Control Delay (s)	9	7.3	-	-	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0

Timings 2: Legacy Dr & Bradley Rd.

Short-Term Total Traffic
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↗
Traffic Volume (vph)	687	286	137	601	207	59
Future Volume (vph)	687	286	137	601	207	59
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	72.1	72.1	72.1	72.1	17.9	17.9
Actuated g/C Ratio	0.72	0.72	0.72	0.72	0.18	0.18
v/c Ratio	0.29	0.25	0.31	0.26	0.71	0.19
Control Delay	5.8	1.2	8.1	5.5	50.8	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	1.2	8.1	5.5	50.8	9.6
LOS	A	A	A	A	D	A
Approach Delay	4.4			6.0	41.7	
Approach LOS	A			A	D	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 10.0
Intersection Capacity Utilization 50.5%
Analysis Period (min) 15

























Intersection LOS: B
ICU Level of Service A

Splits and Phases: 2: Legacy Dr & Bradley Rd.



Timings
1: Powers & Bradley Rd

2040 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	215	75	282	274	661	100	1900	387	448	925	19
Future Volume (vph)	26	215	75	282	274	661	100	1900	387	448	925	19
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			Free			6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	9.0	15.0		9.0	9.0		9.0	9.0		9.0	9.0	9.0
Total Split (s)	10.0	17.0		25.0	32.0		17.0	57.0		31.0	71.0	71.0
Total Split (%)	7.7%	13.1%		19.2%	24.6%		13.1%	43.8%		23.8%	54.6%	54.6%
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		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None		C-Max	None	None
Act Effect Green (s)	17.3	12.3	130.0	16.1	27.5	130.0	9.3	52.0	130.0	29.5	72.3	72.3
Actuated g/C Ratio	0.13	0.09	1.00	0.12	0.21	1.00	0.07	0.40	1.00	0.23	0.56	0.56
v/c Ratio	0.16	0.67	0.05	0.68	0.38	0.43	0.42	0.96	0.25	0.59	0.34	0.02
Control Delay	38.1	67.3	0.1	49.7	35.0	2.5	62.7	51.2	0.4	49.4	16.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	67.3	0.1	49.7	35.0	2.5	62.7	51.2	0.4	49.4	16.9	0.1
LOS	D	E	A	D	D	A	E	D	A	D	B	A
Approach Delay		48.9			20.8			43.4			27.1	
Approach LOS		D			C			D			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 125 (96%), Referenced to phase 1:SBL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 34.3

Intersection LOS: C

Intersection Capacity Utilization 82.5%

ICU Level of Service E

























Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd



Timings 2: Legacy Dr & Bradley Rd

2040 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	702	83	73	1036	43	122	12	60	70	12	59
Future Volume (vph)	265	702	83	73	1036	43	122	12	60	70	12	59
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	68.0	68.0	12.0	60.0	60.0	35.0	15.0	15.0	35.0	15.0	15.0
Total Split (%)	15.4%	52.3%	52.3%	9.2%	46.2%	46.2%	26.9%	11.5%	11.5%	26.9%	11.5%	11.5%
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	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	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	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	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	15.0	89.6	89.6	80.4	80.4	80.4	10.2	8.6	8.6	8.2	6.5	6.5
Actuated g/C Ratio	0.12	0.69	0.69	0.62	0.62	0.62	0.08	0.07	0.07	0.06	0.05	0.05
v/c Ratio	0.70	0.30	0.08	0.18	0.50	0.04	0.47	0.11	0.26	0.34	0.14	0.29
Control Delay	71.4	19.3	9.8	12.3	15.5	0.1	62.7	58.2	2.7	62.2	61.9	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.4	19.3	9.8	12.3	15.5	0.1	62.7	58.2	2.7	62.2	61.9	3.4
LOS	E	B	A	B	B	A	E	E	A	E	E	A
Approach Delay		31.7			14.8			43.9			37.7	
Approach LOS		C			B			D			D	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 74 (57%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 25.3

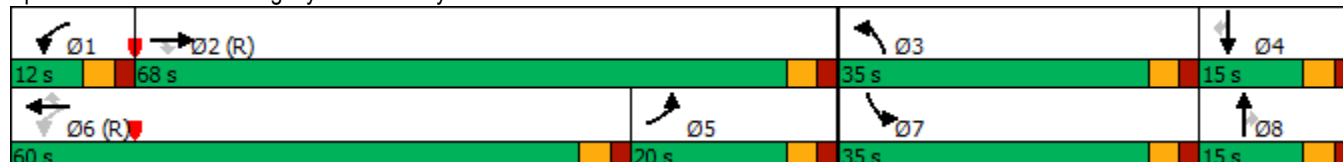
Intersection LOS: C

Intersection Capacity Utilization 58.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Legacy Dr & Bradley Rd



Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑		↑
Traffic Vol, veh/h	824	8	0	1152	0	13
Future Vol, veh/h	824	8	0	1152	0	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	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	95	95	98	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	841	8	0	1176	0	14






Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 421
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	-	-	0 - 0 581
Stage 1	-	-	0 - 0
Stage 2	-	-	0 - 0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 581
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	581	-	-	-
HCM Lane V/C Ratio	0.024	-	-	-
HCM Control Delay (s)	11.3	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

























Intersection				
Intersection Delay, s/veh	3.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	79	48	114	184
Demand Flow Rate, veh/h	80	49	116	188
Vehicles Circulating, veh/h	86	185	109	17
Vehicles Exiting, veh/h	119	40	57	217
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.4	3.6	3.7	3.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	80	49	116	188
Cap Entry Lane, veh/h	1264	1143	1235	1356
Entry HV Adj Factor	0.988	0.979	0.983	0.979
Flow Entry, veh/h	79	48	114	184
Cap Entry, veh/h	1248	1119	1214	1328
V/C Ratio	0.063	0.043	0.094	0.139
Control Delay, s/veh	3.4	3.6	3.7	3.8
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection						
Int Delay, s/veh	4.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘↗	
Traffic Vol, veh/h	29	21	7	39	66	22
Future Vol, veh/h	29	21	7	39	66	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	-	155	205	-	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	23	8	42	72	24
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	55	0	90	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	58	-
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	-	-	1550	-	910	1042
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1550	-	905	1042
Mov Cap-2 Maneuver	-	-	-	-	855	-
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	965	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.1		9.5	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	895	-	-	1550	-	
HCM Lane V/C Ratio	0.107	-	-	0.005	-	
HCM Control Delay (s)	9.5	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	50	1	1	44	2	3
Future Vol, veh/h	50	1	1	44	2	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	-	-	205	-	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	54	1	1	48	2	3
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	55	0	105	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	50	-
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	-	-	1550	-	893	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1550	-	892	1012
Mov Cap-2 Maneuver	-	-	-	-	850	-
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	972	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.2		8.9		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	940	-	-	1550	-	
HCM Lane V/C Ratio	0.006	-	-	0.001	-	
HCM Control Delay (s)	8.9	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Timings
1: Powers & Bradley Rd

2040 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	378	210	513	416	686	175	825	444	602	1705	110
Future Volume (vph)	71	378	210	513	416	686	175	825	444	602	1705	110
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			Free			6
Detector Phase	7	4		3	8		5	2		1	6	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	9.0		9.0	9.0		9.0	9.0		9.0	9.0	9.0
Total Split (s)	10.0	29.0		30.0	49.0		15.0	33.0		38.0	56.0	56.0
Total Split (%)	7.7%	22.3%		23.1%	37.7%		11.5%	25.4%		29.2%	43.1%	43.1%
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		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max		C-Max	Max	Max
Act Effect Green (s)	24.7	19.7	130.0	23.5	40.2	130.0	10.8	28.0	130.0	38.8	56.0	56.0
Actuated g/C Ratio	0.19	0.15	1.00	0.18	0.31	1.00	0.08	0.22	1.00	0.30	0.43	0.43
v/c Ratio	0.36	0.74	0.14	0.85	0.39	0.45	0.63	0.78	0.29	0.61	0.80	0.15
Control Delay	34.0	61.5	0.2	65.7	26.1	0.9	68.0	53.8	0.5	43.1	36.6	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	61.5	0.2	65.7	26.1	0.9	68.0	53.8	0.5	43.1	36.6	2.2
LOS	C	E	A	E	C	A	E	D	A	D	D	A
Approach Delay		39.0			28.0			39.1			36.7	
Approach LOS		D			C			D			D	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 1 (1%), Referenced to phase 1:SBL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 35.2

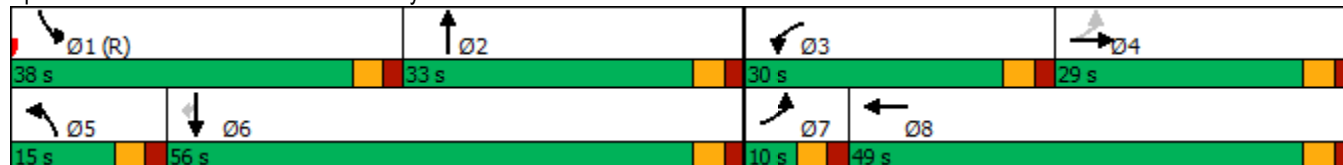
Intersection LOS: D

Intersection Capacity Utilization 79.7%

ICU Level of Service D

























Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd



Timings 2: Legacy Dr & Bradley Rd

2040 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	811	260	184	1122	49	237	16	171	312	16	256
Future Volume (vph)	352	811	260	184	1122	49	237	16	171	312	16	256
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	77.0	77.0	15.0	70.0	70.0	20.0	16.0	16.0	22.0	18.0	18.0
Total Split (%)	16.9%	59.2%	59.2%	11.5%	53.8%	53.8%	15.4%	12.3%	12.3%	16.9%	13.8%	13.8%
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	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	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	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	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	17.7	76.9	76.9	69.2	69.2	69.2	20.6	7.6	7.6	25.6	10.0	10.0
Actuated g/C Ratio	0.14	0.59	0.59	0.53	0.53	0.53	0.16	0.06	0.06	0.20	0.08	0.08
v/c Ratio	0.80	0.41	0.26	0.47	0.63	0.06	0.50	0.16	0.69	0.58	0.12	0.74
Control Delay	54.4	32.0	13.5	27.5	23.9	0.1	46.2	60.2	22.2	47.9	56.6	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	32.0	13.5	27.5	23.9	0.1	46.2	60.2	22.2	47.9	56.6	20.5
LOS	D	C	B	C	C	A	D	E	C	D	E	C
Approach Delay		34.2			23.6			37.0			36.2	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 31.0

Intersection LOS: C

Intersection Capacity Utilization 69.1%

ICU Level of Service C

Analysis Period (min) 15






Splits and Phases: 2: Legacy Dr & Bradley Rd



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	1269	25	0	1355	0	9
Future Vol, veh/h	1269	25	0	1355	0	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	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	95	95	98	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1295	26	0	1383	0	9
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	648
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	413
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	413
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	13.9			
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	413	-	-	-		
HCM Lane V/C Ratio	0.023	-	-	-		
HCM Control Delay (s)	13.9	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

























Intersection				
Intersection Delay, s/veh	6.0			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	306	106	122	484
Demand Flow Rate, veh/h	312	107	125	493
Vehicles Circulating, veh/h	243	390	365	43
Vehicles Exiting, veh/h	293	100	190	454
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.2	5.0	5.1	6.3
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	312	107	125	493
Cap Entry Lane, veh/h	1077	927	951	1321
Entry HV Adj Factor	0.981	0.990	0.979	0.982
Flow Entry, veh/h	306	106	122	484
Cap Entry, veh/h	1056	918	931	1297
V/C Ratio	0.290	0.115	0.131	0.373
Control Delay, s/veh	6.2	5.0	5.1	6.3
LOS	A	A	A	A
95th %tile Queue, veh	1	0	0	2

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	106	71	24	74	43	14
Future Vol, veh/h	106	71	24	74	43	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	-	155	205	-	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	115	77	26	80	47	15
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	192	0	247	115
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	132	-
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	-	-	1381	-	741	937
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	894	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1381	-	727	937
Mov Cap-2 Maneuver	-	-	-	-	733	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	894	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.9		10.1	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	774	-	-	1381	-	
HCM Lane V/C Ratio	0.08	-	-	0.019	-	
HCM Control Delay (s)	10.1	-	-	7.7	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	116	4	4	96	2	2
Future Vol, veh/h	116	4	4	96	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	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	126	4	4	104	2	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	130	0	240	128
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	112	-
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	-	-	1455	-	748	922
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	913	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1455	-	746	922
Mov Cap-2 Maneuver	-	-	-	-	752	-
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	913	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.3		9.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	828	-	-	1455	-	
HCM Lane V/C Ratio	0.005	-	-	0.003	-	
HCM Control Delay (s)	9.4	-	-	7.5	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Timings
1: Powers & Bradley Rd

2040 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	222	75	319	298	733	100	1900	399	472	925	19
Future Volume (vph)	26	222	75	319	298	733	100	1900	399	472	925	19
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			Free			6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	9.0	15.0		9.0	9.0		9.0	9.0		9.0	9.0	9.0
Total Split (s)	10.0	17.0		25.0	32.0		17.0	57.0		31.0	71.0	71.0
Total Split (%)	7.7%	13.1%		19.2%	24.6%		13.1%	43.8%		23.8%	54.6%	54.6%
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		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None		C-Max	None	None
Act Effect Green (s)	17.2	12.2	130.0	17.2	28.4	130.0	9.3	52.0	130.0	28.6	71.3	71.3
Actuated g/C Ratio	0.13	0.09	1.00	0.13	0.22	1.00	0.07	0.40	1.00	0.22	0.55	0.55
v/c Ratio	0.16	0.70	0.05	0.72	0.40	0.48	0.42	0.96	0.26	0.65	0.34	0.02
Control Delay	38.0	69.2	0.1	49.1	35.0	2.9	62.7	51.2	0.4	51.4	17.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	69.2	0.1	49.1	35.0	2.9	62.7	51.2	0.4	51.4	17.3	0.1
LOS	D	E	A	D	D	A	E	D	A	D	B	A
Approach Delay		50.6			20.9			43.2			28.4	
Approach LOS		D			C			D			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 125 (96%), Referenced to phase 1:SBL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 34.4

Intersection LOS: C

Intersection Capacity Utilization 84.3%

ICU Level of Service E

























Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd



Timings 2: Legacy Dr & Bradley Rd

2040 Total Traffic
AM Peak Hour

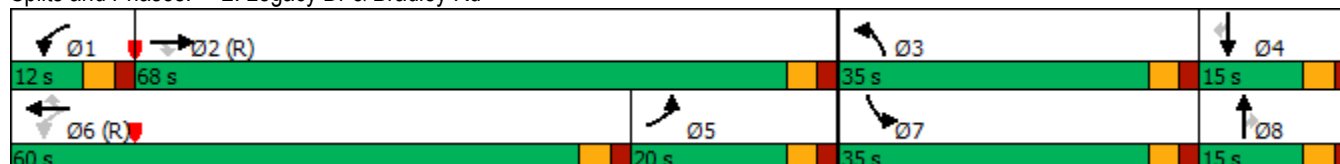
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	707	122	98	1036	43	256	15	119	70	13	59
Future Volume (vph)	265	707	122	98	1036	43	256	15	119	70	13	59
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	68.0	68.0	12.0	60.0	60.0	35.0	15.0	15.0	35.0	15.0	15.0
Total Split (%)	15.4%	52.3%	52.3%	9.2%	46.2%	46.2%	26.9%	11.5%	11.5%	26.9%	11.5%	11.5%
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	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	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	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	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	15.0	80.9	80.9	75.0	75.0	75.0	15.5	14.0	14.0	8.2	6.6	6.6
Actuated g/C Ratio	0.12	0.62	0.62	0.58	0.58	0.58	0.12	0.11	0.11	0.06	0.05	0.05
v/c Ratio	0.70	0.34	0.12	0.26	0.53	0.05	0.66	0.08	0.42	0.34	0.15	0.29
Control Delay	72.9	24.4	12.3	15.7	19.1	0.1	62.3	51.8	10.0	62.2	62.1	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	24.4	12.3	15.7	19.1	0.1	62.3	51.8	10.0	62.2	62.1	3.4
LOS	E	C	B	B	B	A	E	D	B	E	E	A
Approach Delay		34.8			18.1			46.0			37.8	
Approach LOS		C			B			D			D	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 74 (57%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 29.5
 Intersection Capacity Utilization 62.7%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 2: Legacy Dr & Bradley Rd



HCM 6th TWSC
3: Blackmer St & Bradley Rd

2040 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑		↗
Traffic Vol, veh/h	883	13	0	1177	0	31
Future Vol, veh/h	883	13	0	1177	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	95	95	98	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	901	14	0	1201	0	33
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	451
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	556
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	556
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11.9	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBT	
Capacity (veh/h)	556		-	-	-	
HCM Lane V/C Ratio	0.059		-	-	-	
HCM Control Delay (s)	11.9		-	-	-	
HCM Lane LOS	B		-	-	-	
HCM 95th %tile Q(veh)	0.2		-	-	-	

HCM 6th Roundabout
5: Legacy Dr & Frontside Dr

2040 Total Traffic
AM Peak Hour

Intersection				
Intersection Delay, s/veh	4.6			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	148	75	232	254
Demand Flow Rate, veh/h	151	76	236	260
Vehicles Circulating, veh/h	134	374	184	18
Vehicles Exiting, veh/h	143	46	101	432
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.1	4.6	5.1	4.3
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	151	76	236	260
Cap Entry Lane, veh/h	1204	942	1144	1355
Entry HV Adj Factor	0.980	0.987	0.982	0.978
Flow Entry, veh/h	148	75	232	254
Cap Entry, veh/h	1180	930	1123	1325
V/C Ratio	0.125	0.081	0.206	0.192
Control Delay, s/veh	4.1	4.6	5.1	4.3
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

HCM 6th TWSC
6: Legacy Dr & Moose Meadow St

2040 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↔	↔		↔	↔	↔
Traffic Vol, veh/h	47	0	12	8	0	40	4	125	3	16	58	15
Future Vol, veh/h	47	0	12	8	0	40	4	125	3	16	58	15
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	-	-	-	-	-	-	205	-	-	205	-	155
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	0	13	9	0	43	4	136	3	17	63	16

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	264	244	63	258	259	138	79	0	0	139	0	0
Stage 1	97	97	-	146	146	-	-	-	-	-	-	-
Stage 2	167	147	-	112	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	689	658	1002	695	645	910	1519	-	-	1445	-	-
Stage 1	910	815	-	857	776	-	-	-	-	-	-	-
Stage 2	835	775	-	893	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	649	648	1002	678	635	910	1519	-	-	1445	-	-
Mov Cap-2 Maneuver	649	648	-	678	635	-	-	-	-	-	-	-
Stage 1	907	805	-	854	774	-	-	-	-	-	-	-
Stage 2	793	773	-	871	792	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.7		9.5		0.2		1.4	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1519	-	-	699 861	1445	-	-
HCM Lane V/C Ratio	0.003	-	-	0.092 0.061	0.012	-	-
HCM Control Delay (s)	7.4	-	-	10.7 9.5	7.5	-	-
HCM Lane LOS	A	-	-	B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.2	0	-	-

HCM 6th TWSC
7: Sunday Gulch Dr & Legacy Dr

2040 Total Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	56	23	16	61	71	48
Future Vol, veh/h	56	23	16	61	71	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	205	-	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	61	25	17	66	77	52







Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	86
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1510
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1510
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	869	-	-	1510	-
HCM Lane V/C Ratio	0.149	-	-	0.012	-
HCM Control Delay (s)	9.9	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0	-

HCM 6th TWSC
8: Big Johnson Dr & Legacy Dr

2040 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	97	1	1	59	3	2	0	3	8	0	15
Future Vol, veh/h	6	97	1	1	59	3	2	0	3	8	0	15
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	205	-	-	205	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	105	1	1	64	3	2	0	3	9	0	16

























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	106	0	0	196	189	106	189	188	66
Stage 1	-	-	-	-	-	-	120	120	-	68	68	-
Stage 2	-	-	-	-	-	-	76	69	-	121	120	-
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	1535	-	-	1485	-	-	763	706	948	771	707	998
Stage 1	-	-	-	-	-	-	884	796	-	942	838	-
Stage 2	-	-	-	-	-	-	933	837	-	883	796	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1535	-	-	1485	-	-	748	702	948	766	703	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	748	702	-	766	703	-
Stage 1	-	-	-	-	-	-	880	792	-	937	837	-
Stage 2	-	-	-	-	-	-	917	836	-	876	792	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			9.2			9.1		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	856	1535	-	-	1485	-	-	903
HCM Lane V/C Ratio	0.006	0.004	-	-	0.001	-	-	0.028
HCM Control Delay (s)	9.2	7.4	-	-	7.4	-	-	9.1
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Timings
1: Powers & Bradley Rd

2040 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	405	210	537	431	734	175	825	485	683	1705	110
Future Volume (vph)	71	405	210	537	431	734	175	825	485	683	1705	110
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			Free			6
Detector Phase	7	4		3	8		5	2		1	6	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	9.0		9.0	9.0		9.0	9.0		9.0	9.0	9.0
Total Split (s)	10.0	29.0		30.0	49.0		15.0	33.0		38.0	56.0	56.0
Total Split (%)	7.7%	22.3%		23.1%	37.7%		11.5%	25.4%		29.2%	43.1%	43.1%
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		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max		C-Max	Max	Max
Act Effect Green (s)	25.4	20.4	130.0	23.9	41.4	130.0	10.6	28.0	130.0	37.6	55.0	55.0
Actuated g/C Ratio	0.20	0.16	1.00	0.18	0.32	1.00	0.08	0.22	1.00	0.29	0.42	0.42
v/c Ratio	0.35	0.77	0.14	0.88	0.39	0.48	0.64	0.78	0.32	0.71	0.82	0.15
Control Delay	33.3	61.9	0.2	66.4	27.1	1.0	69.0	53.8	0.5	46.8	37.7	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	61.9	0.2	66.4	27.1	1.0	69.0	53.8	0.5	46.8	37.7	2.3
LOS	C	E	A	E	C	A	E	D	A	D	D	A
Approach Delay		40.1			28.3			38.2			38.7	
Approach LOS		D			C			D			D	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 1 (1%), Referenced to phase 1:SBL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 35.9

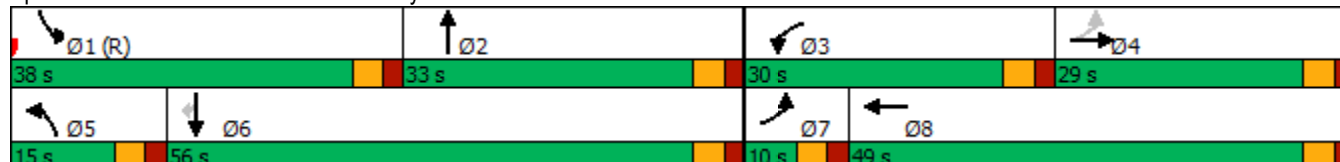
Intersection LOS: D

Intersection Capacity Utilization 81.1%

ICU Level of Service D

























Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd



Timings 2: Legacy Dr & Bradley Rd

2040 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	829	392	270	1122	49	324	18	210	312	19	256
Future Volume (vph)	352	829	392	270	1122	49	324	18	210	312	19	256
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	77.0	77.0	15.0	70.0	70.0	20.0	16.0	16.0	22.0	18.0	18.0
Total Split (%)	16.9%	59.2%	59.2%	11.5%	53.8%	53.8%	15.4%	12.3%	12.3%	16.9%	13.8%	13.8%
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	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	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	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	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	17.5	76.6	76.6	69.1	69.1	69.1	22.5	8.0	8.0	24.3	8.9	8.9
Actuated g/C Ratio	0.13	0.59	0.59	0.53	0.53	0.53	0.17	0.06	0.06	0.19	0.07	0.07
v/c Ratio	0.81	0.42	0.37	0.69	0.63	0.06	0.62	0.17	0.73	0.57	0.16	0.80
Control Delay	53.5	32.1	13.8	39.3	24.0	0.1	49.0	59.9	21.5	47.6	57.9	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	32.1	13.8	39.3	24.0	0.1	49.0	59.9	21.5	47.6	57.9	27.4
LOS	D	C	B	D	C	A	D	E	C	D	E	C
Approach Delay		32.3			26.0			38.9			39.1	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 32.0

Intersection LOS: C

Intersection Capacity Utilization 69.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Legacy Dr & Bradley Rd



Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑		↑
Traffic Vol, veh/h	1308	43	0	1441	0	20
Future Vol, veh/h	1308	43	0	1441	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	95	95	98	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1335	45	0	1470	0	21

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 668
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	-	-	0 - 0 401
Stage 1	-	-	0 - 0 -
Stage 2	-	-	0 - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 401
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	401	-	-	-
HCM Lane V/C Ratio	0.053	-	-	-
HCM Control Delay (s)	14.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

HCM 6th Roundabout
5: Legacy Dr & Frontside Dr

2040 Total Traffic
PM Peak Hour

Intersection				
Intersection Delay, s/veh	8.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	351	125	198	717
Demand Flow Rate, veh/h	358	126	202	731
Vehicles Circulating, veh/h	406	512	429	46
Vehicles Exiting, veh/h	371	119	335	592
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.6	6.0	6.5	9.0
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	358	126	202	731
Cap Entry Lane, veh/h	912	819	891	1317
Entry HV Adj Factor	0.980	0.991	0.979	0.981
Flow Entry, veh/h	351	125	198	717
Cap Entry, veh/h	894	812	873	1292
V/C Ratio	0.393	0.154	0.227	0.555
Control Delay, s/veh	8.6	6.0	6.5	9.0
LOS	A	A	A	A
95th %tile Queue, veh	2	1	1	4

HCM 6th TWSC
6: Legacy Dr & Moose Meadow St

2040 Total Traffic
PM 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	32	1	8	5	1	26	14	130	9	55	204	53
Future Vol, veh/h	32	1	8	5	1	26	14	130	9	55	204	53
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	-	-	-	-	-	-	205	-	-	205	-	155
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	35	1	9	5	1	28	15	141	10	60	222	58

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	533	523	222	552	576	146	280	0	0	151	0	0
Stage 1	342	342	-	176	176	-	-	-	-	-	-	-
Stage 2	191	181	-	376	400	-	-	-	-	-	-	-
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	458	459	818	444	428	901	1283	-	-	1430	-	-
Stage 1	673	638	-	826	753	-	-	-	-	-	-	-
Stage 2	811	750	-	645	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	425	435	818	420	405	901	1283	-	-	1430	-	-
Mov Cap-2 Maneuver	425	435	-	420	405	-	-	-	-	-	-	-
Stage 1	665	611	-	816	744	-	-	-	-	-	-	-
Stage 2	775	741	-	610	577	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.5		10.1		0.7		1.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1283	-	-	469 740	1430	-	-
HCM Lane V/C Ratio	0.012	-	-	0.095 0.047	0.042	-	-
HCM Control Delay (s)	7.8	-	-	13.5 10.1	7.6	-	-
HCM Lane LOS	A	-	-	B B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.1	0.1	-	-

HCM 6th TWSC
7: Sunday Gulch Dr & Legacy Dr

2040 Total Traffic
PM Peak Hour

Intersection

Int Delay, s/veh 2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	140	77	53	107	46	31
Future Vol, veh/h	140	77	53	107	46	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	205	-	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	152	84	58	116	50	34







Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	236
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1331
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1331
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	713	-	-	1331	-
HCM Lane V/C Ratio	0.117	-	-	0.043	-
HCM Control Delay (s)	10.7	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

HCM 6th TWSC
8: Big Johnson Dr & Legacy Dr

2040 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	147	4	4	148	9	2	0	2	5	0	10
Future Vol, veh/h	21	147	4	4	148	9	2	0	2	5	0	10
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	205	-	-	205	-	-	-	-	-	-	-	-
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	160	4	4	161	10	2	0	2	5	0	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	171	0	0	164	0	0	388	387	162	383	384	166
Stage 1	-	-	-	-	-	-	208	208	-	174	174	-
Stage 2	-	-	-	-	-	-	180	179	-	209	210	-
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	-	-	1414	-	-	571	547	883	575	550	878
Stage 1	-	-	-	-	-	-	794	730	-	828	755	-
Stage 2	-	-	-	-	-	-	822	751	-	793	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1406	-	-	1414	-	-	556	537	883	565	540	878
Mov Cap-2 Maneuver	-	-	-	-	-	-	556	537	-	565	540	-
Stage 1	-	-	-	-	-	-	781	718	-	815	753	-
Stage 2	-	-	-	-	-	-	810	749	-	778	716	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.2			10.3			10		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	682	1406	-	-	1414	-	-	741				
HCM Lane V/C Ratio	0.006	0.016	-	-	0.003	-	-	0.022				
HCM Control Delay (s)	10.3	7.6	-	-	7.6	-	-	10				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1				