

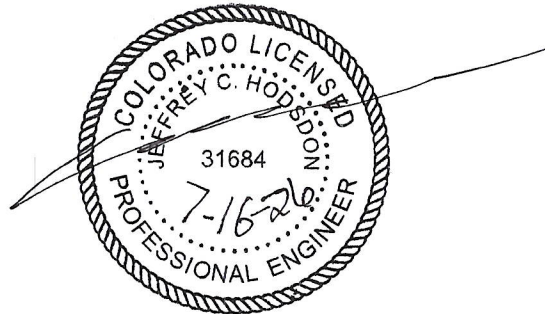


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Waterview East Commercial
Filing No. 1
Traffic Impact and Access Analysis
EPC PCD File No.: SP229
(LSC #S214971)
July 16, 2026

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.

Date

Waterview East Commercial

Filing No. 1

Traffic Impact and Access Analysis

Prepared for:

Waterview Commercial Developers Inc.
Westerra Development Company, LLC
2727 Glen Arbor Drive
Colorado Springs, CO 80920

Contact: Mr. Heath Herber

JULY 16, 2026

LSC Transportation Consultants
Prepared by: Kirstin D. Ferrin, P.E.
Reviewed by: Jeffrey C. Hodsdon, P.E.

LSC #S214971
SP229



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July 16, 2026

Heath Herber
Waterview Commercial Developers Inc.
Westerra Development Company, LLC
2727 Glen Arbor Drive
Colorado Springs, CO 80920

RE: Waterview East Commercial
Filing No. 1
Traffic Impact and Access Analysis
El Paso County, CO
EPC PCD File No.: [SP229](#)
LSC #S214971

Dear Mr. Herber,

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact and access analysis for Filing No. 1 of the Waterview East Commercial development. As shown in Figure 1, the site is located southeast of the intersection of Powers Boulevard and Bradley Road in El Paso County, Colorado.

REPORT CONTENTS

This report has been prepared to address the project's traffic impact at the proposed access points and adjacent intersections.

This report contains the following:

- The existing street and traffic conditions in the site's vicinity including the street widths, lane geometries, traffic controls, and existing traffic counts at key area intersections;
- The projected future background traffic volumes, which include estimates of traffic from other area development projects and increases in through traffic on the adjacent arterial streets;
- The estimated average weekday and peak-hour trip generation;
- The estimated directional distribution of site-generated trips and the projected site-generated traffic volumes;
- Estimates of the resulting total traffic volumes on the adjacent streets and intersections;
- The projected levels of service at the site access point and adjacent intersections;
- Traffic-signal-warrant analysis at the intersection of Bradley Road/Legacy Hill Drive; and
- Recommendations and conclusions.

PREVIOUS TRAFFIC REPORTS COMPLETED FOR THIS SITE AND IN THE AREA

This report follows the most recent TIS prepared for the overall development, which was completed as part of the Preliminary Plan application ([SP229](#)). That report was dated August 15, 2023 (with minor revisions September 12, 2023).

Appendix Table 1: Area Traffic Impact Studies includes a list of other traffic studies in the area of study completed within the past five years (that LSC is aware of) and is attached for reference. This study accounts for the land use, trip generation, and the roadway network included in these studies. Figure 2 shows the location of the other known developments in the area.

LAND USE AND ACCESS

The site location is shown in Figure 1. Figure 2 presents a context map showing other area developments. The site plan for Waterview East Commercial is shown in Figure 3.

Land Use

Figure 3 shows the Filing No. 1 development planned for Lots 1 and 2. This first phase of development is planned to include a 4,824-square-foot convenience store with 10 vehicle fueling positions and a 2,313-square-foot coffee shop with drive-through window. Figure 3 also shows the boundary of the total 22-acre development, with areas outside of Phase 1 shown as “future phases.” The entire development, at buildout, is anticipated to include additional retail/shopping-center land uses and mini storage.

Access

The northern full-movement access point of the two full-movement access points to Frontside Drive shown on the approved Preliminary Plan will be installed with Filing No. 1. Additionally, the right-in-only access from Legacy Hill Drive will also be installed with Filing No. 1.

The right-in-only access to Legacy Hill Drive (about 325 feet south of Bradley Road) was previously approved with a deviation to the El Paso County Access Code. A copy has been attached for reference. Please refer to the CDs prepared by Kimley Horn for design details.

Pedestrian and Bicycle Accommodations

Sidewalks will be provided on Legacy Hill Drive and Frontside Drive adjacent to the site. Frontside Drive will have multi-use paved shoulders which are suitable for bicycles.

Public Transportation

The *2050 Regional Transportation Plan – Transit Mountain Metropolitan Transit* does not show any future plans to provide transit service to the area.

Access Sight Distance

Figure 4 shows the sight distance analysis for the proposed Filing No. 1 access to Frontside Drive just west of Legacy Hill Drive. Based on a design speed of 40 miles per hour (mph) and the criteria contained in Table 2-21 of the *Engineering Criteria Manual (ECM)*, the required intersection sight distance at this intersection is 445 feet. The required stopping sight distance from *ECM* Table 2-17 is 305 feet. As shown in Figure 4, the intersection sight-distance requirement can be met at this intersection.

Figure 5 shows the sight-distance analysis for the proposed right-in-only access point on Legacy Hill Drive (only stopping sight distance applies, entering sight distance is not applicable) Based on a turning speed of 25 mph or less, the required stopping sight distance from Table 2-17 of the *ECM* is 155 feet. This requirement can be met with the proposed spacing. This analysis is consistent with the site analysis done as part of the deviation request for this access that was approved as part of PCD File No. SP-22-009.

Internal Filing No. 1 Infrastructure

Regarding internal access drives, individual lot driveways, and other infrastructure, please refer to the subdivision plat and CDs submitted with this application. These documents were not prepared by LSC, rather by Ridgeline Land Surveying LLC and Kimley Horn, respectively.

STREET AND TRAFFIC CONDITIONS

Area Streets

The adjacent streets are shown in Figure 1 and are described below. Copies of the 2016 El Paso County *Major Transportation Corridors Plan (MTCP)* 2040 Roadway Plan and 2016 MTCP 2060 Corridor Preservation Plan with the site location identified on them have been attached to this report.

- **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** extends, locally, east from Powers Boulevard to Curtis Road. In the vicinity, Bradley Road is a City street and is shown as a Principal Arterial on the City of Colorado Springs *Plan COS Major Thoroughfare Plan Overview Map*. Adjacent to the site, Bradley Road is a four-lane roadway with a 50-mph posted speed limit and has an edge-of-asphalt median, left-turn lanes, and rural paved shoulders. There is a short existing section of raised median approaching Powers Boulevard. Improvements to Bradley Road along the site frontage are under design by the Waterview North Metro District.
- **Legacy Hill Drive** is an El Paso County, Non-Residential Collector Street which extends south from Bradley Road, through the Frontside Drive roundabout intersection and into the Trails at

Aspen Ridge development. The street is planned to be extended north of Bradley Road with the Villages at Waterview North development. This intersection of Legacy Hill Drive/Bradley Road is planned to be signalized in the future. This site has frontage along Legacy Hill Drive between Bradley Road and Frontside Drive, and a right-in-only access is proposed.

- **Frontside Drive** is a planned Non-Residential Collector Street which will extend southwest from the roundabout at Legacy Hill Drive along the site frontage. The street will provide the primary access to this development. The roadway is planned to be constructed along the site frontage and connect to the Trails at Aspen Ridge residential subdivision to the south (with a future development phase). Frontside Drive is also planned to extend east from Legacy Hill Drive as an Urban Local street (future-by others) to provide access to residential development on the east side of Legacy Hill Drive.

Existing Traffic Volumes

Figure 6 shows the traffic volumes at the intersections of Powers Boulevard/Bradley Road and Legacy Hill Drive/Bradley Road, based on traffic counts conducted by LSC in October 2025 and March 2026, respectively. Data sheets are attached, for reference.

Figure 6 also shows the 2024 Colorado Department of Transportation (CDOT) Average Annual Daily Traffic Volume (AADT) on Powers Boulevard and the average daily traffic volume on Bradley Road based on 2025 CDOT data.

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)	Average Control Delay (seconds per vehicle) ⁽¹⁾
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more
(1) 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 intersection of Powers/Bradley has been analyzed using Synchro. Figure 6 shows the level of service analysis results. The intersection of Legacy Hill Drive/Bradley Road has been analyzed based on the unsignalized method of analysis from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board.

All movements at the signalized intersections of Powers/Bradley and Marksheffel/Bradley are currently operating at LOS D or better during the peak hours.

The northbound left-turn movement at the stop-sign-controlled intersection of Legacy Hill/Bradley is currently operating at LOS F during the morning peak hours and LOS E during the afternoon peak hour.

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the adjacent roadways and at adjacent intersections without the proposed development's trip generation and site-generated traffic volumes. Background traffic includes through traffic and the traffic generated by nearby developments but assumes zero traffic generated by the site.

Figure 7 shows the projected short-term (Year 2031) background traffic volumes. These traffic volumes are based on the existing traffic volumes shown in Figure 6, assuming a growth rate of 1 percent per year. The short-term background traffic volumes also include additional traffic projected to be generated by development of The Trails at Aspen Ridge Filing Nos. 1 through 6, Waterview North Phases 1 through 3, Bradley Heights, Foreign Trade Zone, and Meadoworks Filings 1-4. The short-term background traffic volumes are likely conservative as some of these developments may not reach full buildout by 2031. Many of these developments are currently under construction. The total project-generated traffic volumes shown in each report were reduced to account for traffic currently represented in the traffic counts, based on a field-inventory of the number of homes that were constructed and occupied at the time of the counts. Note: no reductions were taken into account for home-construction and development-site-infrastructure construction traffic that is also represented in the current traffic counts.

Figure 8 shows the projected 2046 background traffic volumes. The 2046 background traffic volumes were based on recent traffic studies completed by LSC in the vicinity of the site. These volumes assume buildout of Waterview North and the Trails at Aspen Ridge. The 2046 background traffic volumes do not include any traffic projected to be generated by Waterview East Commercial. The long-term background volumes assume Bradley Road has been constructed between Goldfield Drive and Powers Boulevard.

TRIP GENERATION

The site-generated vehicle trips were estimated using the nationally-published trip-generation rates from *Trip Generation, 12th Edition, 2025* by the Institute of Transportation Engineers (ITE). Table 2 shows the average weekday and peak-hour trip-generation estimates. Table 2 also shows a comparison to the trip-generation estimate assumed in the previously-approved traffic study for the Waterview East Commercial Preliminary Plan dated September 12, 2023.

The total number of external vehicle trips generated by the land uses has been reduced to account for the internal vehicle trips made within the site between land uses, without use of the external streets surrounding the site.

The total number of vehicle trips generated has also been reduced to account for the “pass-by” and “diverted” phenomena. A pass-by trip is made by a motorist who would already be on the adjacent roadways regardless of the proposed development, but who stops in at the site while passing by. The motorist would then continue on his or her way to a final destination in the original direction. A diverted trip is made by a motorist that changes their route to visit a new development before continuing to their final destination. Unlike a “pass-by” trip, which occurs on the street immediately adjacent to a site’s driveway, a diverted trip involves travel on nearby streets to which the site does not access directly.

The pass-by percentages shown in Table 2 are from the Pass-By Data and Rate Tables/2025 Pass-By Tables for ITETripGen Appendices. The values from the table were assumed to include both passby and diverted trips.

As there are limited existing mass-transit options in the vicinity of the site, no reductions were assumed to account for multimodal travel.

Following buildout of Phase 1, Waterview East Commercial is projected to generate about 674 new external vehicle trips on the average weekday, with about half entering and half exiting the site. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 183 vehicles would enter and 174 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 126 vehicles would enter and 126 vehicles would exit the site.

Following buildout of the entire Waterview East Commercial development, it is projected to generate about 5,289 new external vehicle trips on the average weekday, with about half entering and half exiting the site. This is about 1,406 fewer trips than were assumed for the same area in the recent traffic studies completed by LSC in the area, including studies for Waterview North. During the morning peak hour, about 400 vehicles would enter and 348 vehicles would exit the site. During the afternoon peak hour, about 453 vehicles would enter and 454 vehicles would exit the site.

TRIP DISTRIBUTION

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 9a shows the directional-distribution estimates for passby and diverted traffic projected to be generated by the site. The directional-distribution estimates were based on the existing traffic patterns adjacent to site with a consideration of drive preference for the minimization of turns and a driver preference of right turns over left turns.

Figure 9b shows the short-term and long-term directional distributions of new, external traffic projected to be generated site.

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 including the construction of Bradley Road between Grinnell Street and Powers Boulevard.

This distribution was estimated with a focus on peak-hour trip assignment, as the intersection analysis is based on peak-hour volumes.

- The distribution percentages to/from the east account for:
 - o Some longer trip lengths by commuters;
 - o The proximity of this development to Marksheffel Road;
 - o Anticipated use of Marksheffel Road north as a viable alternative to Powers to/from many destinations east of and within the Powers Boulevard corridor. Powers Boulevard intersections experience congestion during peak hours. Marksheffel has recently been upgraded north and south of Bradley with a PPRTA project, which has increased its attractiveness as a north/south travel route;
 - o Bradley to/from the east being the route to Schriever Air Force Base and the improved east gate of Peterson Air Force Base; and
 - o Development occurring in the Marksheffel corridor and, over time, the number of trip destinations continuing to increase.
- The distribution percentages to/from the Bradley Heights connection account for:
 - o Planned alternative street connections within Bradley Heights to Bradley Road and Marksheffel Road (south);
 - o Future trip destinations within Bradley Heights;
 - o The school and some potential future commercial within Lorson Ranch to the southeast;
 - o The long-term distribution split accounts for a north-south road connection between Bradley Heights and Fontaine Boulevard, as shown on the Banning Lewis Master Plan and the City of Colorado Springs Intermodal Transportation Plan. This includes trips oriented to the south and southeast.

- The percentages to/from the south on Powers account for trips from the south and southwest, paired with destinations primarily in Fountain and Fort Carson, as well as the south connection to Interstate 25.
- The percentages to/from the north on Powers primarily account for trips using Milton Proby Parkway and the Powers Boulevard corridor for travel.

TRIP ASSIGNMENT

When the passby and diverted distribution percentages (from Figure 9a) are applied to the passby trip-generation estimates (from Table 2), the resulting passby site-generated traffic volumes can be determined.

Figures 10a shows the assignment of pass-by and diverted trips estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1. Figure 10b shows the assignment of pass-by trips estimated to be generated by land uses anticipated for future filings within the Waterview East Commercial development.

When the distribution percentages (from Figure 9b) are applied to the new, external trip-generation estimates (from Table 2), the resulting new-external site-generated traffic volumes can be determined.

Figure 11a show the projected short-term new, external site-generated traffic volumes estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1. Figure 11b shows the projected short-term-total external site-generated traffic volumes estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1. These volumes are the sum of the pass-by and diverted trips estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1 from Figure 10a plus the new, external site-generated trips from Figure 11a.

Figure 12a shows the projected long-term new, external site-generated traffic volumes estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1. Figure 12b shows the projected long-term total, external site-generated traffic volumes estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1. These volumes are the sum of the pass-by and diverted trips estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1 from Figure 10a plus the new, external site-generated trips from Figure 12a.

Figure 13a shows the projected long-term new, external site-generated traffic volumes estimated to be generated by land uses anticipated for future filings within the Waterview East Commercial development. Figure 13b shows the projected long-term total, external site-generated traffic volumes estimated to be generated by land uses anticipated for future filings within the Waterview East Commercial development. These volumes are the sum of the pass-by and diverted trips estimated to be generated by land uses anticipated for future filings within the

Waterview East Commercial development from Figure 10b plus the new, external site-generated trips from Figure 13a.

BUILDOUT TOTAL TRAFFIC

Figure 14 shows the sum of the existing traffic volumes from Figure 6 plus the projected short-term-total external site-generated traffic volumes estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1 (from Figure 11b).

Figure 15 shows the projected 2031 total traffic volumes. These volumes assume buildout of Waterview Commercial East Filing No. 1 only. The short-term total traffic volumes are the sum of the 2031 background traffic volumes (from Figure 7) plus the short-term total, external site-generated traffic volumes estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1 (from Figure 11b).

Figure 16 shows the projected 2046 total traffic volumes. The 2046 total volumes assume buildout of the entire Waterview Commercial East development. The 2046 total traffic volumes are the sum of the 2046 background traffic volumes (from Figure 8) plus the long-term total, external site-generated traffic volumes estimated to be generated by the currently-proposed land uses within Waterview East Filing No. 1 (from Figure 12b) plus the projected long-term total, external site-generated traffic volumes estimated to be generated by land uses anticipated for future filings within the Waterview East Commercial development (from Figure 13b).

SIGNAL WARRANT ANALYSIS

The intersection of Bradley Road/Legacy Hill Drive was analyzed to estimate when *MUTCD (Manual on Uniform Traffic Control Devices)* Four-Hour and/or Eight-Hour Vehicular-Volume Traffic-Signal Warrant thresholds may be reached or exceeded, based on the projected traffic volumes. The satisfaction of warrants does not indicate that a signal must be installed. The decision to install the signal rests with the City of Colorado Springs. Table 3 shows the results of the analysis.

As shown in Table 3, based on traffic counts conducted in March 2026, three of the seven hours analyzed currently meet the thresholds for both the Four-Hour and the Eight-Hour Vehicular-Volume Traffic-Signal Warrant. With the estimated additional traffic to be generated by this development (the currently-proposed Waterview East Commercial Filing No. 1) added to the current volumes, all seven hours analyzed are expected to meet or exceed the thresholds for both the Four-Hour and the Eight-Hour Vehicular-Volume Traffic Signal Warrant. Based on the analysis, it is likely that multiple signal warrants will be met at this intersection in the near term. Home building within several nearby developments is continuing.

PROJECTED LEVELS OF SERVICE

The key area intersections have been analyzed to determine the projected levels of service for the 2031 background, 2046 background, existing plus Waterview East Commercial Filing No. 1 generated traffic, 2031 total, and 2046 total traffic volumes. The signalized intersection of Powers/Bradley and Legacy Hill/Bradley (currently unsignalized but assumed signalized in the near-term) were analyzed using Synchro. The site access points to Frontside Drive and the intersection of Legacy Hill/Frontside were analyzed based on the unsignalized method of analysis from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. Figures 7, 8, 14, 15, and 16 show the results of the level of service analysis. 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 continue to operate at LOS D or better during the peak hours with the addition of traffic projected to be generated by the land uses within the currently-proposed Waterview East Commercial Filing No. 1 assuming no improvements to the intersection.

By 2031, it was assumed that the future, second southbound left-turn lane will have been - constructed (by CDOT) on Powers Boulevard approaching Bradley Road. Based on the 2031 total traffic volumes and lane geometry shown in Figure 15, all movements at this intersection are projected to operate at LOS D or better during the peak hours.

By 2046, it was assumed that the section of Bradley Road between Goldfield Drive and Powers Boulevard will have been completed per the El Paso County *MTCP*. Based on the 2046 total traffic volumes shown and the lane geometry shown in Figure 16, the intersection is projected to operate at an overall LOS D during the peak hours. However, 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 or F 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 or F 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 Hill/Bradley

The northbound left-turn movement at this existing two-way, stop-sign-controlled intersection currently operates at LOS F during the morning peak hour and LOS E during the afternoon peak hour. As discussed in the Traffic Signal Warrant section above, this intersection has the potential to meet multiple traffic-signal warrants in the near-term future. This intersection is expected to operate at an overall LOS D or better during the peak hours through 2046 once it is converted to traffic-signal control. The City is collecting escrow from developments impacting this intersection.

Legacy Hill/Right-in only Access

The access to Legacy Hill is planned to be restricted to right-in only and will operate as a “free” movement except if access is signed and marked with “yield to pedestrians.”

Legacy Hill/Frontside

The intersection of Legacy Hill/Frontside is a one-lane modern roundabout. All approaches are projected to operate at LOS B or better during the peak hours, based on the projected existing plus Waterview East Commercial Filing No. 1 generated traffic, 2031 total, and 2046 total traffic volumes.

Frontside Northeast Access Point

The proposed site access to Frontside Drive planned to be constructed as part of the currently-proposed Waterview East Commercial Filing No. 1 is projected to operate at LOS B or better for all movements during the peak hours through 2046 as a two-way, stop-sign-controlled intersection.

Frontside Southwest Access Point

The future Waterview Commercial East access to Frontside Drive is planned to be constructed as a one-lane modern roundabout as part of a future filing. All approaches at this intersection are expected to operate at LOS A during the peak hours, based on the 2046 total traffic volumes.

QUEUING ANALYSIS

A queuing analysis was performed using Synchro/SimTraffic to determine the storage length needed to accommodate the projected northbound queues on Legacy Hill Drive approaching Bradley Road, based on the 2046 total traffic volumes. The 2046 total morning and afternoon peak-hour traffic volumes were entered into the Synchro model. The simulation was run five times. The queuing reports are attached.

The projected maximum northbound left-turn queue on Legacy Hill Drive approaching Bradley Road is about 242 feet in the first lane and 300 feet in the second lane during the morning peak hour and 240 feet in the first lane and 287 feet in the second lane in the afternoon peak hour. This queue can be accommodated by existing left-turn lane.

SH 21A (POWERS BOULEVARD)/BRADLEY ROAD INTERSECTION (CDOT)

As of late January 2026, per CDOT, in lieu of constructing any of the following improvements, area developments will not be required to construct improvements at the Powers/Bradley intersection, rather will be required to escrow a fair-share amount towards the previously estimated \$1.3M total cost of the set of improvements to the Powers Boulevard (SH 21)/Bradley Road intersection, which have been identified as needed by CDOT. CDOT is planning to complete

the intersection improvements, which will be funded, in part, by escrow funds collected. A such, CDOT will continue to require all area developments which will impact the intersection to escrow an amount based on relative, fair-share projected traffic impacts.

The auxiliary turn-lane improvements needed at the Powers Boulevard (SH 21)/Bradley Road Intersection have been itemized in prior CDOT comment letters and are shown in an **exhibit** (with cost estimate) prepared by Matrix Design Group as part of Access Permit No. 221066 (attached for reference). The following is a summary of Powers/Bradley improvements for which fair-share escrow is being required):

- Southbound left-turn center-median improvements to lengthen the dual SB lefts to meet stacking/storage requirements, providing additional deceleration distance/length as needed to meet CDOT criteria
- Northbound right-turn acceleration lane lengthening
- Northbound right-turn deceleration lane lengthening to CDOT standards, and the addition of a second northbound right-turn deceleration and stacking lanes and corner-island improvements with signalization of the northbound right-turn movement
- Associated signal-system modifications

LSC has prepared an escrow analysis table containing:

- Estimated access permit volumes, which are the site-generated volumes in the east-west direction on Bradley Road just east of the Powers/Bradley intersection.
- Fair-share escrow percentages and amounts for Waterview East Commercial Filing No. 1 and the remaining future development in the overall Waterview East Commercial development. Please refer to Table 4 (attached).

LEGACY HILL/BRADLEY SIGNAL ESCROW (CITY OF COLORADO SPRINGS)

[July 2026] The City of Colorado Springs has indicated that an escrow amount of \$200,000 from the south section of Bradley Road/Legacy Hill Drive intersection [will be required] to cover their portion of the future signal at this intersection. Please submit the construction plans to ProjectDox for the city's review.

[Original – April 2026] The intersection of Legacy Hill/Bradley has recently been transferred to the City of Colorado Springs. The City will require the applicant to escrow \$200,000 towards the future signal at the intersection of Legacy Hill/Bradley prior to construction plan approval. LSC recommends that the escrow amount called out by the City for the southeast and southwest corners (one half of the signal cost), should be shared by this development, Aspen Ridge, and the future multi-family development on the SE corner. The cost sharing could be based on peak-hour trips creating the need for a signal at this intersection (generally, traffic on the northbound approach) this cost-sharing agreement should consider any amount already escrowed by the Aspen Ridge Development. Since this intersection was approved as an eligible intersection by the El Paso County Roadway Improvement Fee program, amounts escrowed by county developments on the south side of Bradley should be eligible for credit, based on fee program unit costs for signals once the signal is installed.

COUNTY ROAD IMPACT FEE PROGRAM

The applicant will be required to participate in the County Road Impact Fee Program. The applicant intends to “opt out” of a PID option and pay the full fee at building permit. The fee for a 2,313-square-foot fast-food restaurant is \$31,674.22 and the fee for a gas station with 10 vehicle fueling positions is \$22,830.

An EPC "Road Impact Fee Acknowledgement" form showing an amount of \$54,504.22 has been included as part of the submittal.

ROADWAY IMPROVEMENTS

A list of area roadway system improvements in the vicinity of the site is presented in Table 5.

Bradley Road/Legacy Hill Drive Intersection

Frontside Drive

As identified above, Frontside Drive is a planned Non-Residential Collector Street which will extend southwest from the roundabout at Legacy Hill Drive along the site frontage. The street will provide the primary access to this development. The Preliminary Plan shows the street extending southwest along the site frontage and connecting to the Trails at Aspen Ridge residential subdivision to the south. This will ultimately provide another street connection for the Trails at Aspen Ridge residential subdivision to the south.

Frontside Drive will initially be constructed between the roundabout and the northeast access to the development with Filing No. 1. Please refer to the CDs submitted with this application for design details.

Legacy Hill Drive/Frontside Drive Intersection

Signage and markings for the west leg of this intersection are already in-place in the field. Please refer to the CDs submitted with this application for any modifications/additions.

Internal Filing No. 1 Infrastructure

Please refer to the subdivision plat and CDs submitted with this application. These documents were not prepared by LSC, rather by Ridgeline Land Surveying LLC and Kimley Horn, respectively.

DEVIATIONS

- A deviation to the El Paso County *Engineering Criteria Manual* for the proposed right-in-only access to Legacy Hill Drive about 305 feet south of Bradley Road was approved as part of PCD File No. SP-22-009. A copy of the approved deviation has been attached.

CDOT ACCESS PERMITTING

The current CDOT access permit is CDOT Permit number 221066. LSC will be submitting new application forms and associated documents to replace the previously-submitted application forms. These new applications will be submitted shortly via the new online application process. Applications for Filing No. 1 and “benchmark” permits will be submitted:

- **BENCHMARK** Permit application for the overall Waterview East Commercial development.
- **Filing No. 1 (initial phase of development)** permit application for Filing No. 1 Lots 1 and 2.

Note: No direct access to Powers Boulevard (or Bradley Road) is proposed.

* * * * *

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

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By Jeffrey C. Hodsdon, P.E.
Principal

JCH/KDF:jas

Enclosures: Tables 2-5
Figures 1-16
Traffic Count Reports
Level of Service Reports
Queuing Reports
Appendix Table 1
MTCP Maps
Matrix Exhibit and Cost Estimate
Approved Deviation

Tables 2-5

Table 2: Trip Generation Estimate

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾					Total Trips Generated					Internal Trips ⁽²⁾	Total Internal Trips Generated					Total External Trips Generated					Pass-by Trip Percent ⁽²⁾			Total Passby Trips Generated					Total New "External" Trips Generated				
			Average Weekday Traffic	Morning Peak-Hour		Afternoon Peak-Hour		Average Weekday Traffic	Morning Peak-Hour		Afternoon Peak-Hour			Average Weekday Traffic	Morning Peak-Hour		Afternoon Peak-Hour		Average Weekday Traffic	Morning Peak Hour	Afternoon Peak Hour	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			In	Out	In	Out					In	Out			In	Out		In	Out					
Trip Generation Estimate Based on the Currently Proposed Land Uses																																				
Phase 1																																				
945	Gasoline/Service Station with Convenience Market ⁽³⁾	10 VFP ⁽⁴⁾	203.49	10.15	9.76	9.58	9.58	2,035	102	97	96	96	10%	203	10	10	10	10	1,832	92	87	86	86	76%	76%	75%	1,383	68	68	65	65	449	24	19	21	21
937	Coffee/Donut Shop With Drive-Through Window	2.313 KSF ⁽⁵⁾	600.50	43.56	41.85	19.50	19.50	1,389	101	97	45	45	10%	139	10	10	5	5	1,250	91	87	40	40	82%	83%	81%	1,025	74	74	32	32	225	17	13	8	8
								3,424	203	194	141	141		342	20	20	15	15	3,082	183	174	126	126				2,408	142	142	97	97	674	41	32	29	29
Future Phases																																				
821	Shopping Plaza (40-150 KSF With Supermarket)	59.39 KSF	101.43	2.12	1.42	4.20	4.38	6,024	126	84	250	260	10%	602	13	8	25	26	5,422	113	76	225	234	40%	40%	40%	2,169	38	38	92	92	3,253	75	38	133	142
934	Fast-Food Restaurant with Drive-Through Window	6.5 KSF	448.12	16.95	16.29	16.43	15.17	2,913	110	106	107	98	10%	291	11	11	11	10	2,622	99	95	96	88	53%	50%	55%	1,376	49	49	51	51	1,246	50	46	45	37
151	Mini-Warehouse	100 KSF	1.29	0.05	0.03	0.07	0.07	129	5	3	7	7	10%	13	0	0	1	1	116	5	3	6	6	0%	0%	0%	0	0	0	0	0	116	5	3	6	6
								9,066	241	193	364	365		906	24	19	37	37	8,160	217	174	327	328				3,545	87	87	143	143	4,615	130	87	184	185
Total Trip Generation Estimate at Buildout								12,490	444	387	505	506		1,248	44	39	52	52	11,242	400	348	453	454				5,953	229	229	240	240	5,289	171	119	213	214
Trip Generation Estimate From the Waterview East Commercial Traffic Impact and Access Analysis August 15, 2023 (With Minor Revision September 12, 2023)																																				
821	Shopping Plaza (40-150 KSF With Supermarket)	59.392 KSF	100.75	2.19	1.34	4.64	5.03	5,984	130	80	276	299	10%	598	13	8	28	30	5,386	117	72	248	269	34%	34%	34%	1,831	32	32	88	88	3,555	85	40	160	181
934	Fast-Food Restaurant with Drive-Through Window	6.5 KSF	467.48	22.75	21.86	17.18	15.85	3,039	148	142	112	103	10%	304	15	14	11	10	2,735	133	128	101	93	50%	50%	50%	1,368	65	65	49	49	1,367	68	63	52	44
945	Gasoline/Service Station with Convenience Market ⁽⁴⁾	12 VFP	345.75	15.80	15.80	13.45	13.45	4,149	190	190	161	161	10%	415	19	19	16	16	3,734	171	171	145	145	56%	56%	56%	2,091	96	96	81	81	1,643	75	75	64	64
151	Mini-Warehouse	100 KSF	1.45	0.05	0.04	0.07	0.08	145	5	4	7	8	10%	15	1	0	1	1	130	4	4	6	7	0%	0%	0%	0	0	0	0	0	130	4	4	6	7
Total Trip Generation Estimate for P-14, P15, and P-19 (Waterview North)								13,317	473	416	556	571		1,332	48	41	56	57	11,985	425	375	500	514				5,290	193	193	218	218	6,695	232	182	282	296
Decrease in the Total Trip Generation Estimate Below the September 2023 Estimate								-827	-29	-29	-51	-65		-84	-4	-2	-4	-5	-743	-25	-27	-47	-60				663	36	36	22	22	-1,406	-61	-63	-69	-82
Perecent Decrease Below the September 2023 Estimate								-6.2%	-6.2%	-6.9%	-9.2%	-11.3%																								
Notes:																																				
(1) Source: based on <i>Trip Generation</i> , 12th Edition, 2025 by the Institute of Transportation Engineers (ITE)																																				
(2) Source: Pass-By Data and Rate Tables/2025 Pass-By Tables for ITETripGen Appendices																																				
(3) The trip generation rates used are for Convenience Store/Gas Stations with a 4,000 to 5,500 square foot convenience store																																				
(4) VFP = vehicle fueling position																																				
(5) KSF = 1,000 square feet																																				
Source: LSC Transportation Consultants, Inc.																																				
11/5/2025																																				

Table 3: Traffic Signal Warrant Analysis - Bradley Road/Legacy Hill Drive

Waterview East Commercial Filing No. 1										Warrant Analysis ⁽¹⁾											
										Warrant 1: Eight-Hour Vehicular-Volume Evaluation								Warrant 2: Four-Hour Vehicular-Volume Evaluation			
										Warrant Thresholds				Warrant Threshold Met?				Short-Term Background		Short-Term Total	
														Existing Traffic		Short-Term Total		70% Warrant Threshold Minor Minimum	Warrant Threshold Met? WB	70% Warrant Threshold Minor Minimum	Warrant Threshold Met? WB
Hour	Major ⁽⁴⁾ Bradley	Minor ⁽⁵⁾ Legacy Hill	Major Bradley	Minor Legacy Hill	Major Bradley	Minor Legacy Hill	Condition A (70%) Major	Condition B (70%) Minor	Major	Minor	Condition A	Condition B	Condition A	Condition B	Minimum	WB	Minimum	WB			
Short-Term Total Traffic ⁽⁴⁾																					
6:30-7:30	1476	128	78	117	1554	245	420	105	630	53	Yes	Yes	Yes	Yes	60	Yes	60	Yes			
7:30-8:30	1415	109	82	126	1497	235	420	105	630	53	Yes	Yes	Yes	Yes	60	Yes	60	Yes			
11:30-12:30	742	46	67	106	809	152	420	105	630	53	No	No	Yes	Yes	92	No	79	Yes			
12:30-1:30	782	43	46	67	828	110	420	105	630	53	No	No	Yes	Yes	84	No	76	Yes			
3:00-4:00	1406	52	55	24	1461	76	420	105	630	53	No	No	No	Yes	60	No	60	Yes			
4:00-5:00	1632	49	58	23	1690	72	420	105	630	53	No	No	No	Yes	60	No	60	Yes			
5:00-6:00	1394	61	53	18	1447	79	420	105	630	53	No	Yes	No	Yes	60	Yes	60	Yes			
Numbers of Hours the Warrant Thresholds Are Met												2	3	4	7						
Warrant Met?												No		Likely							

Table 4: Escrow Analysis for CDOT Access Permitting Powers Boulevard/Bradley Road Intersection

[illegible]

Table 5: Roadway Improvements
Waterview East Commercial Filing No. 1

Item #	Improvement			Trigger	Timing	Responsibility
Roadway Segment Improvements						
1	Frontside Drive	Legacy Hill Drive to the north site access.	Construct Non-Residential Collector street - standard xsection - except at tie in to the roundabout at Legacy Hill Drive.	Needed to provide access to this first phase of development	With this plat and site development plan	Applicant
2	Frontside Drive	The north site access to the south end of the development (tying in with Trails at Aspen Ridge street)	Construct Non-Residential Collector street - standard xsection - except transition section to the Trails at Aspen Ridge development street connection (if applicable)	As needed to provide access to the remainder of this development and/or as required by the Trails at Aspen Ridge development	Future	Applicant and/or the Trails at Aspen Ridge developer.
3	Bradley Road	Powers Blvd. to Legacy Hill Drive	Improvement to City standards with curb & gutter, sidewalk, etc.	With adjacent development	Currently under design by the Metro District	Metro District
4	Internal Subdivision Streets	As shown on the plat and CDs		Needed to provide access to this first phase of development	With this plat and site development plan	Metro District
Intersection Improvements						
Powers/Bradley						
4	Powers/Bradley	Escrow towards Intersection Improvemtns As of late January 2026, per CDOT, in lieu of constructing any of the following improvements, the applicant will not be required to construct improvements at the Powers/Bradley intersection, rather will be required to escrow a fair-share amount towards the previously estimated \$1.3M total cost of the set of improvements to the Powers Boulevard (SH 21)/Bradley Road intersection, which have been identified as needed by CDOT. CDOT will be completing the auxiliary turn lanes project but will continue to require all area developments which impact the intersection to escrow an amount based on relative, fair-share projected traffic impacts.- Please refer to details in the report letter		With this and future subdivision filings	With this and future subdivision filings	Applicant
Bradley/Legacy Hill						
5	Bradley/Legacy Hill (Short Term)	Auxiliary Turn Lane	Eastbound Left Turn Lane	With Filing No.1	Currently under design by the Metro District	This Development/Metro District
6	Bradley/Legacy Hill (Long Term)	Auxiliary Turn Lane	Eastbound Left Turn Lane	With Future development	Currently under design by the Metro District	This Development/Metro District
7	Bradley/Legacy Hill (Short Term)	(Escrow towards) Traffic-Control Upgrade	Conversion from Stop-Sign Control to Traffic-Signal Control: Escrow funds to the City of Colorado Springs per City requirements	Phase 1 portion of the escrow will be required with the development; Trigger for traffic-control change - 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 The City of Colorado Springs.	Phase 1 portion of the escrow will be required with the development;Timing will be determined by the City of Colorado Springs - 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 The City of Colorado Springs. Eight-Hour and Four-Hour Vehicular-Volume Traffic-Signal Warrants are projected to be met within the near term	Applicant - responsible for Escrow amount PREVIOUS NOTE (for reference): The City will require the applicant to escrow \$200,000 towards the future signal at the intersection of Legacy Hill/Bradley prior to construction plan approval. LSC recommends that the escrow amount called out by the City for the southeast and southwest corners (one half of the signal cost), should be shared by this development, Aspen Ridge, and the future multi-family development on the SE corner. The cost sharing could be based on peak-hour trips creating the need for a signal at this intersection (generally, traffic on the northbound approach) this cost-sharing agreement should consider any amount already escrowed by the Aspen Ridge Development. Since this intersection was approved as an eligible intersection by the El Paso County Roadway Improvement Fee program, amounts escrowed by county developments on the south side of Bradley should be eligible for credit, based on fee program unit costs for signals once the signal is installed.
8	Bradley/Legacy Hill (Short Term)	Restriping/signing of the northbound approach	Restriping/signing of the northbound approach for straight through movement and/or the 2nd northbound left turn lane	If not completed by others and/or as part of signal installation	Restriping for thru lane - prior to opening of the north leg Restriping for NB Dual left turn lanes - not prior to conversion to a traffic signal; potentially concurrent with that.	Metro District
Legacy Hill/Right-In-Only Site Access						
9	Legacy Hill/Right-In-Only Site Access	Auxiliary Turn Lane	Southbound right-turn deceleration lane on Legacy Hill Drive approaching the right-in only access; Per approved deviation; please refer to CDs for details.	With Filing No. 1	With Filing No. 1	Applicant
Frontside/Northeast Access						
10	Frontside/Northeast Access	Auxiliary Turn Lane	Southbound right-turn declaration lane on Frontside Drive approaching the northeast access, if triggers are reached (in which case, unless waived with future deviation)	1) Upon completion of the connection of the street to the south to connect to the Trails at Aspen Ridge development and 2) southbound right-turn volume of 50 vehicles per hour or higher Note: The future need for the turn lane could potentially be waived by deviation with low through volume proceeding straight through the access intersection as justification citing the provision in the CDOT Access Code 3.5 (5).	Future (Deferred)* unless waived Deferred until triggers are met (not shown on CD set with Filing No 1); *or waived with future deviation as noted in under "trigger" notes.	Applicant
11	Frontside/Northeast Access	Auxiliary Turn Lane	Northbound left-turn lane on Frontside Drive approaching the northeast access. Not Likely to be necessary based on turning volume, but a TWLTL is included in the street cross section regardless.	1) Completion of the connection of the street to the south (not planned with Filing No.1) and 2) IF northbound left-turn volume exceeds of 25 vehicles per hour (projected volume is less than 25 vph)	Future, but unlikely to be required.	Applicant
Source: LSC Transportation Consultants, Inc.						

Figures 1-16



1" =
3,000'
scale

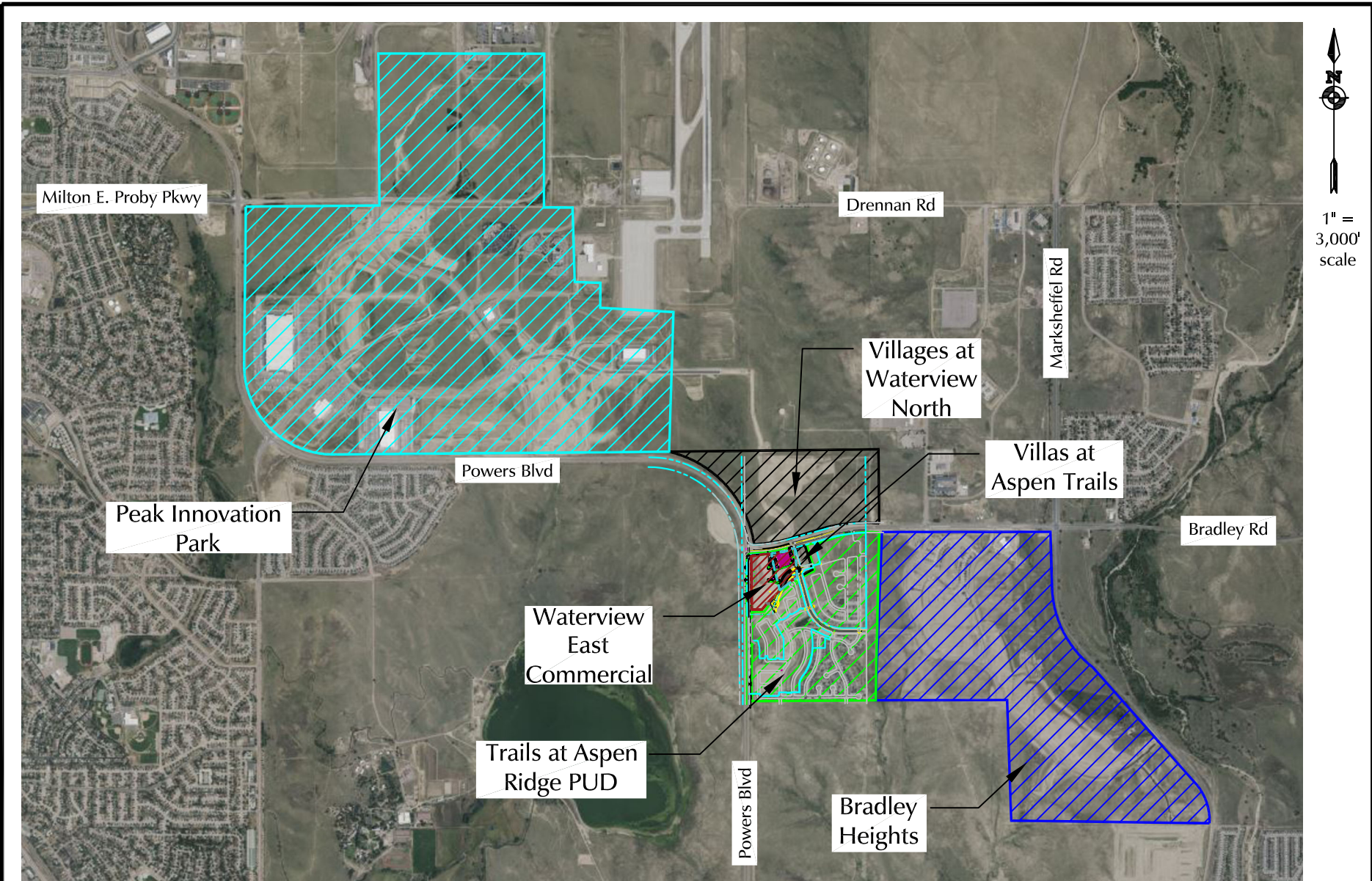
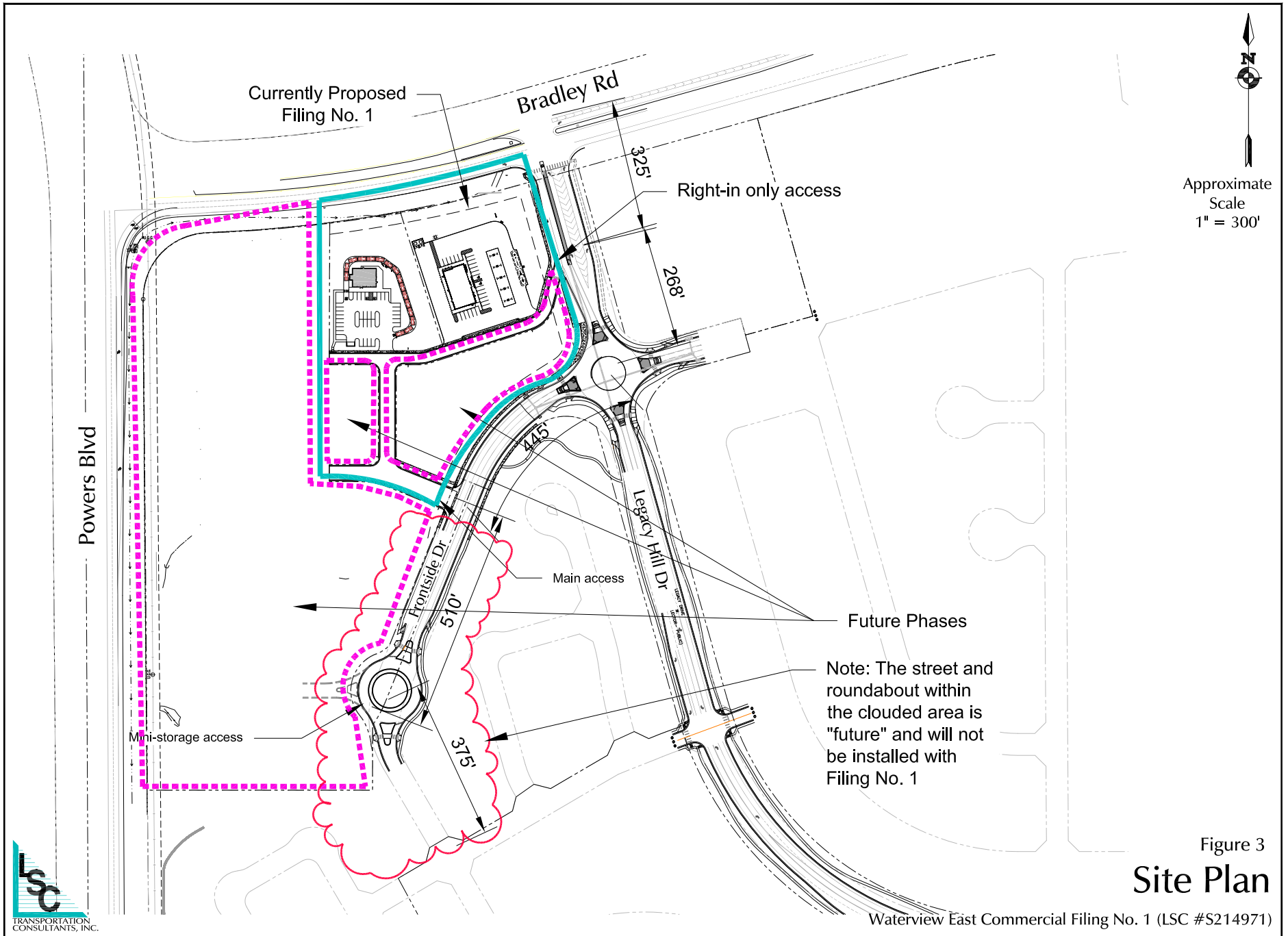
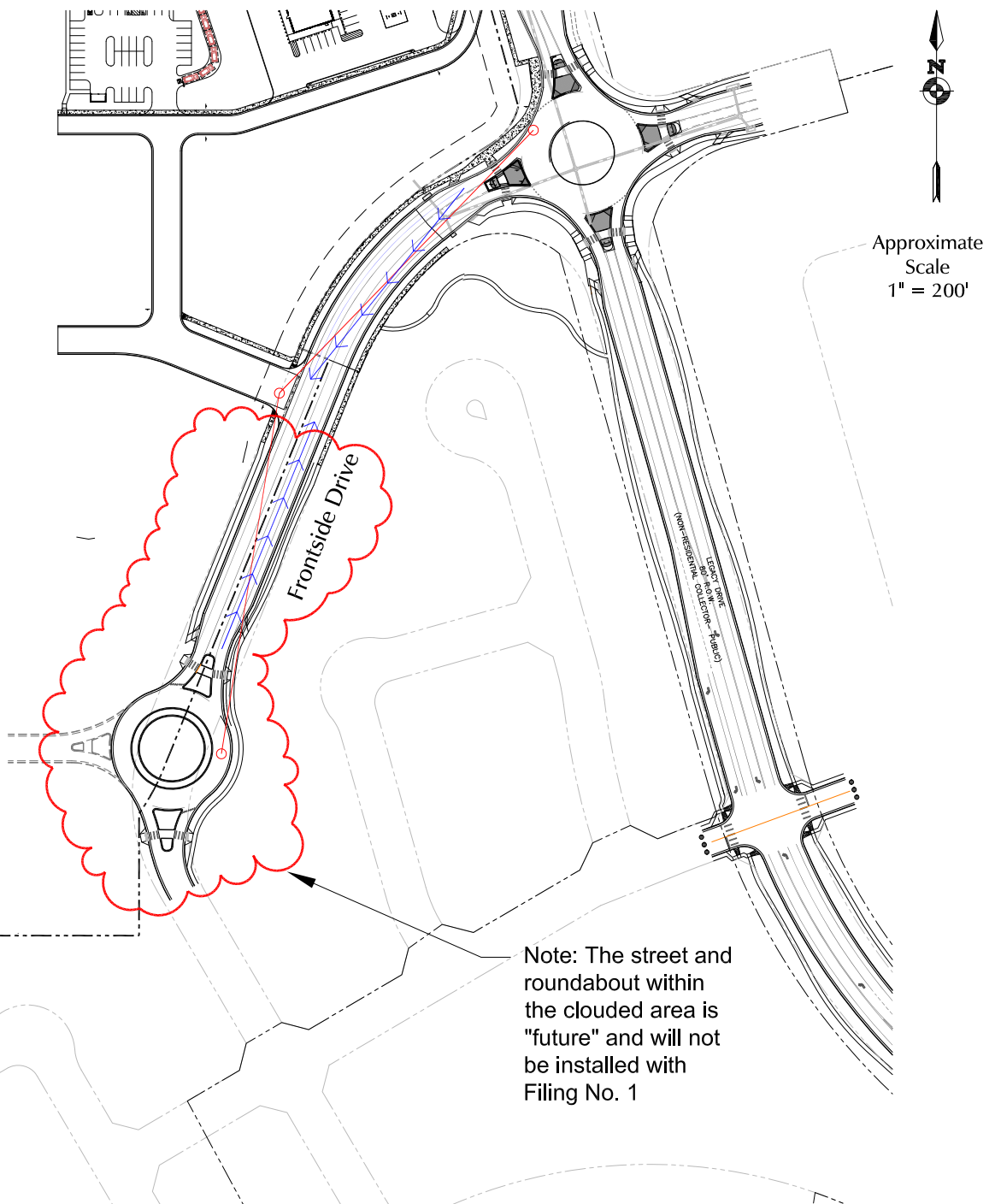


Figure 2
Context Map

Waterview East Commercial Filing No. 1 (LSC #S214971)





- = 445' intersection sight distance (based on a design speed of 40mph)
- = 305' stopping sight distance (based on a design speed of 40mph)

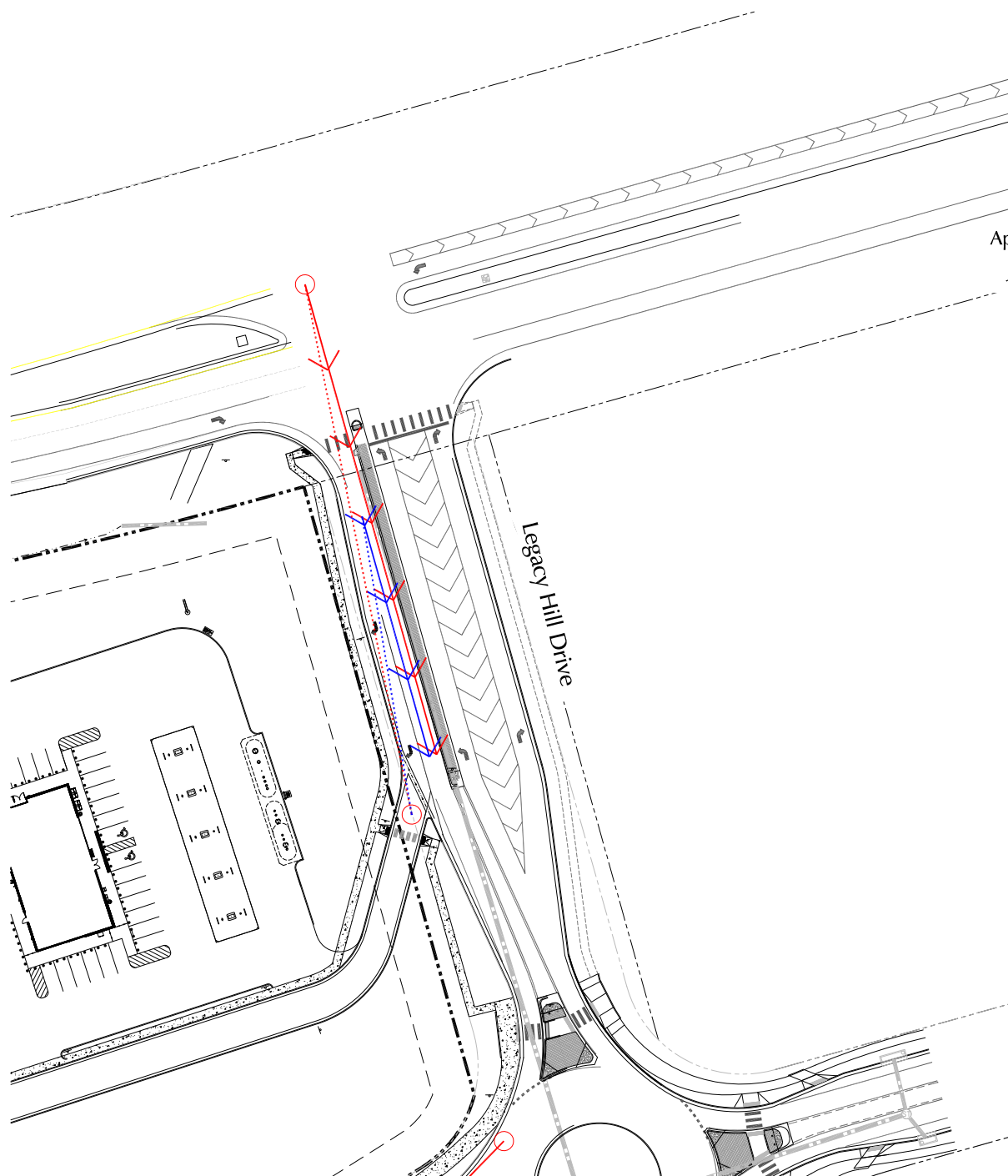
Figure 4

Sight Distance Analysis - Frontside Drive

Waterview East Commercial Filing No. 1 (LSC #S214971)



Approximate
Scale
1" = 100'



-  = 155' stopping sight distance (based on a turning speed of 25mph)
-  = 305' stopping sight distance (based on a design speed of 40mph for through traffic)
-  = Lines of sight to downstream near-side ped ramp and to right out portion of access (vehicle entry point to Legacy Hill Dr.)

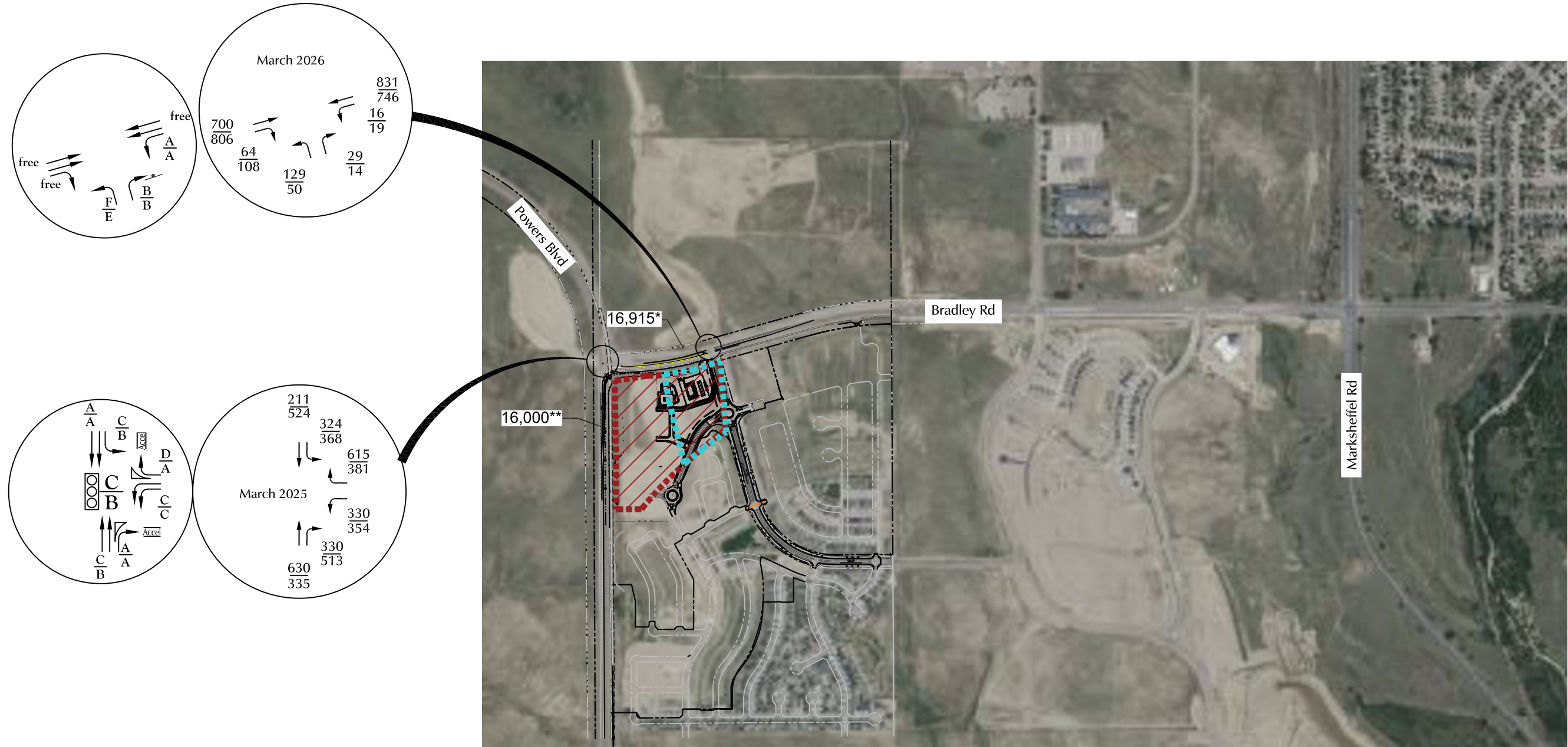
Figure 5

Sight Distance Analysis - Legacy Hill Dr.

Waterview East Commercial Filing No. 1 (LSC #S214971)



1" =
1,000'
scale



LEGEND:

= Traffic Signal = Stop Sign

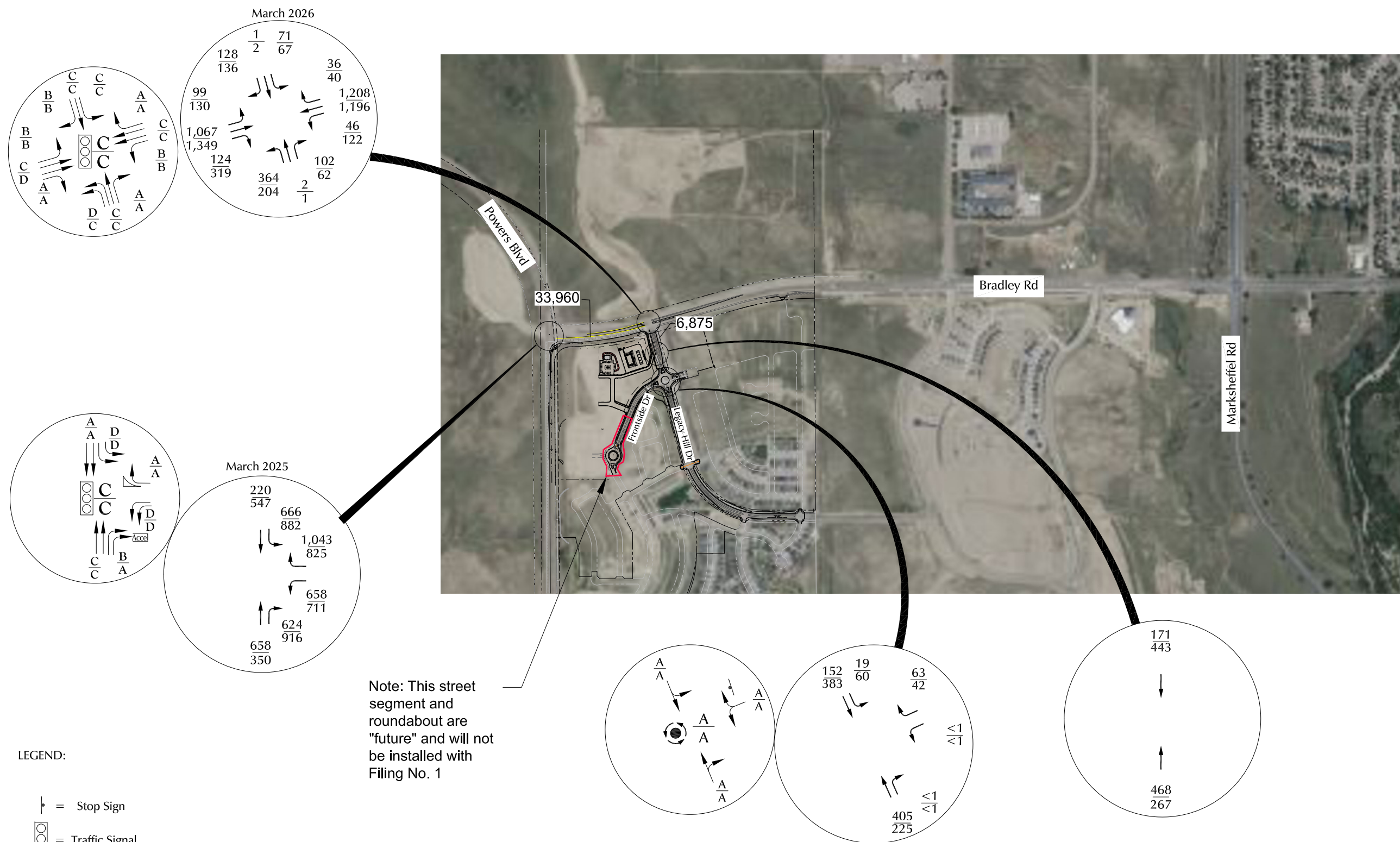
$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 PM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service
 PM Individual Movement Peak-Hour Level of Service
 $\frac{C}{C}$ = AM Entire Intersection Peak-Hour Level of Service
 PM Entire Intersection Peak-Hour Level of Service

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

* 2025 CDOT
** 2024 AADT CDOT

Figure 6
Existing Traffic, Lane Geometry,
Traffic Control, and Level of Service

Waterview East Commercial Filing No. 1 (LSC #S214971)



LEGEND:

⊥ = Stop Sign

⊡ = Traffic Signal

⊙ = Roundabout

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

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

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

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

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

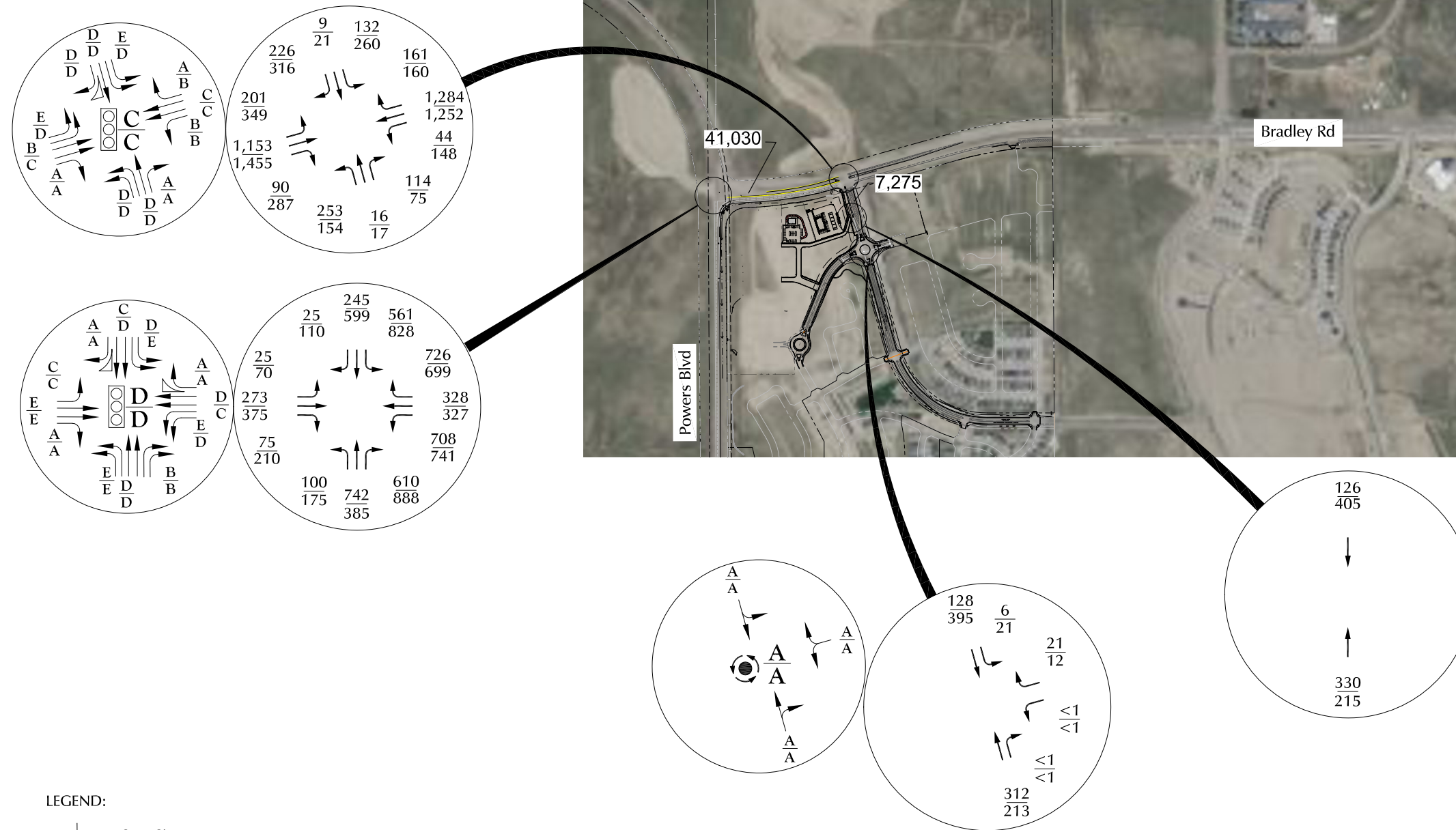
$\frac{C}{C}$ = PM Entire Intersection Peak-Hour Level of Service

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



Figure 7
2031 Background Traffic, Lane Geometry,
Traffic Control, and Level of Service

Waterview East Commercial Filing No. 1 (LSC #S214971)



LEGEND:

- Stop Sign
- Traffic Signal
- Modern Roundabout

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour)
 PM Weekday Peak-Hour Traffic (vehicles per hour)
 A/B = AM Individual Movement Peak-Hour Level of Service
 PM Individual Movement Peak-Hour Level of Service
 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)

Figure 8
 2046 Background Traffic, Lane Geometry,
 Traffic Control, and Level of Service



Figure 9a



LEGEND:



$\frac{XX\%}{XX\%} = \frac{\text{AM Percent Directional Distribution}}{\text{PM Percent Directional Distribution}}$

Directional Distribution of Pass-By, Site-Generated Traffic

Waterview East Commercial Filing No. 1 (LSC #S214971)



Figure 9b



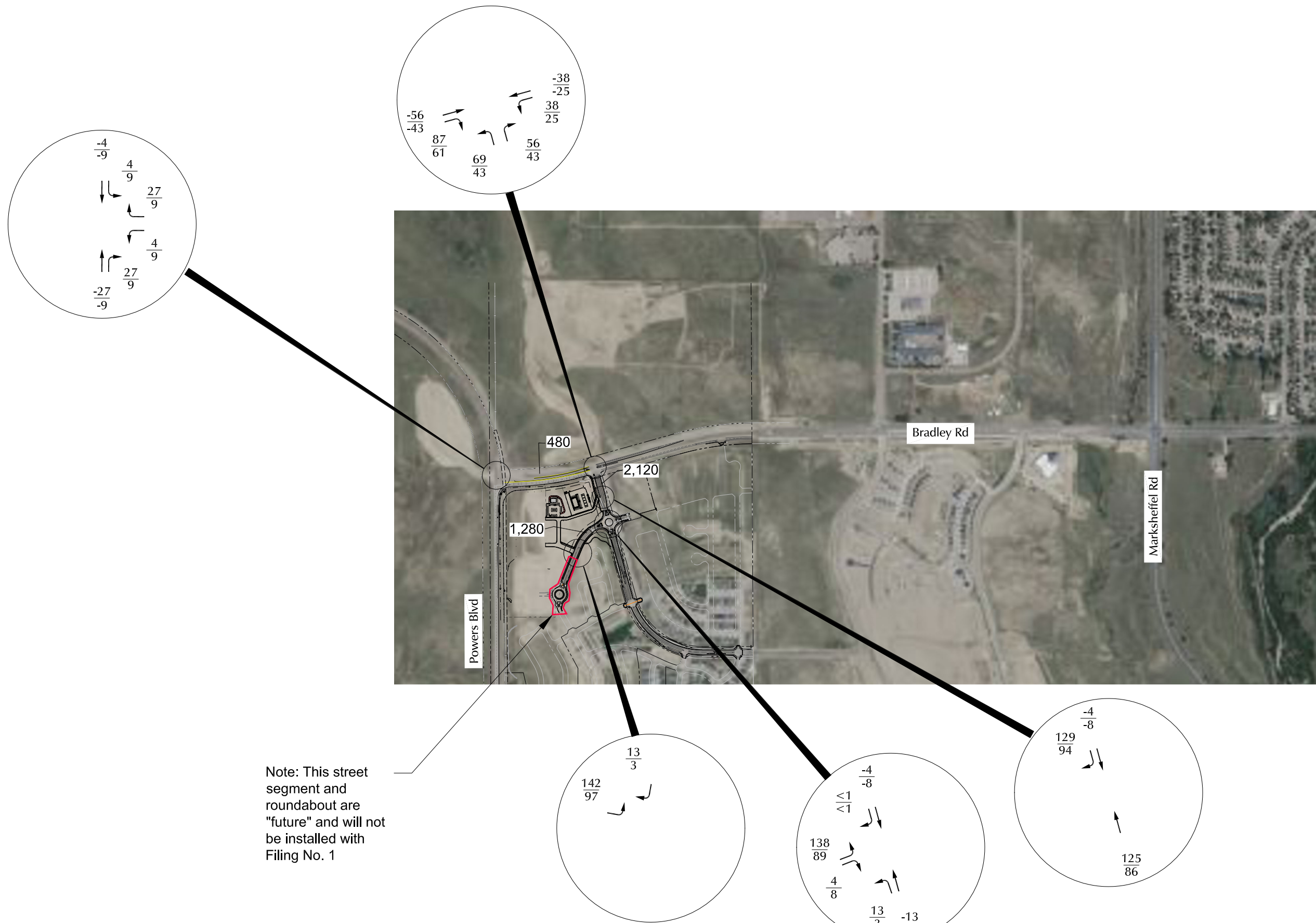
LEGEND:



= Short-Term Percent Directional Distribution
Long-Term Percent Directional Distribution

Directional Distribution of Non-Passby, External Site-Generated Traffic

Waterview East Commercial Filing No. 1 (LSC #S214971)

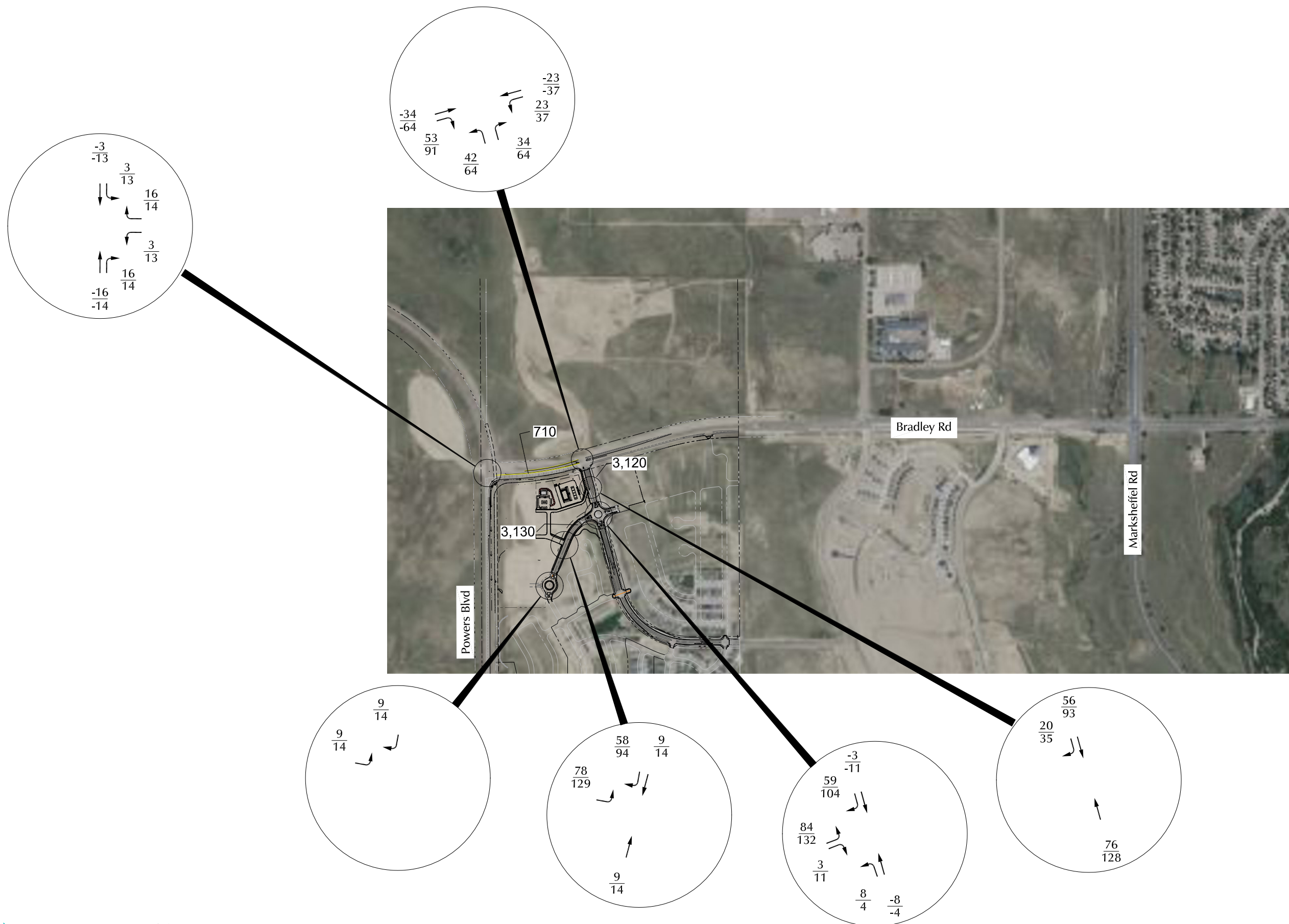


Note: This street segment and roundabout are "future" and will not be installed with Filing No. 1

LEGEND:

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
 X,XXX= Average Daily Traffic (vehicles per day)

Figure 10a
 Pass-by Filing No. 1-Generated Traffic
 Waterview East Commercial Filing No. 1 (LSC #S214971)



LEGEND:

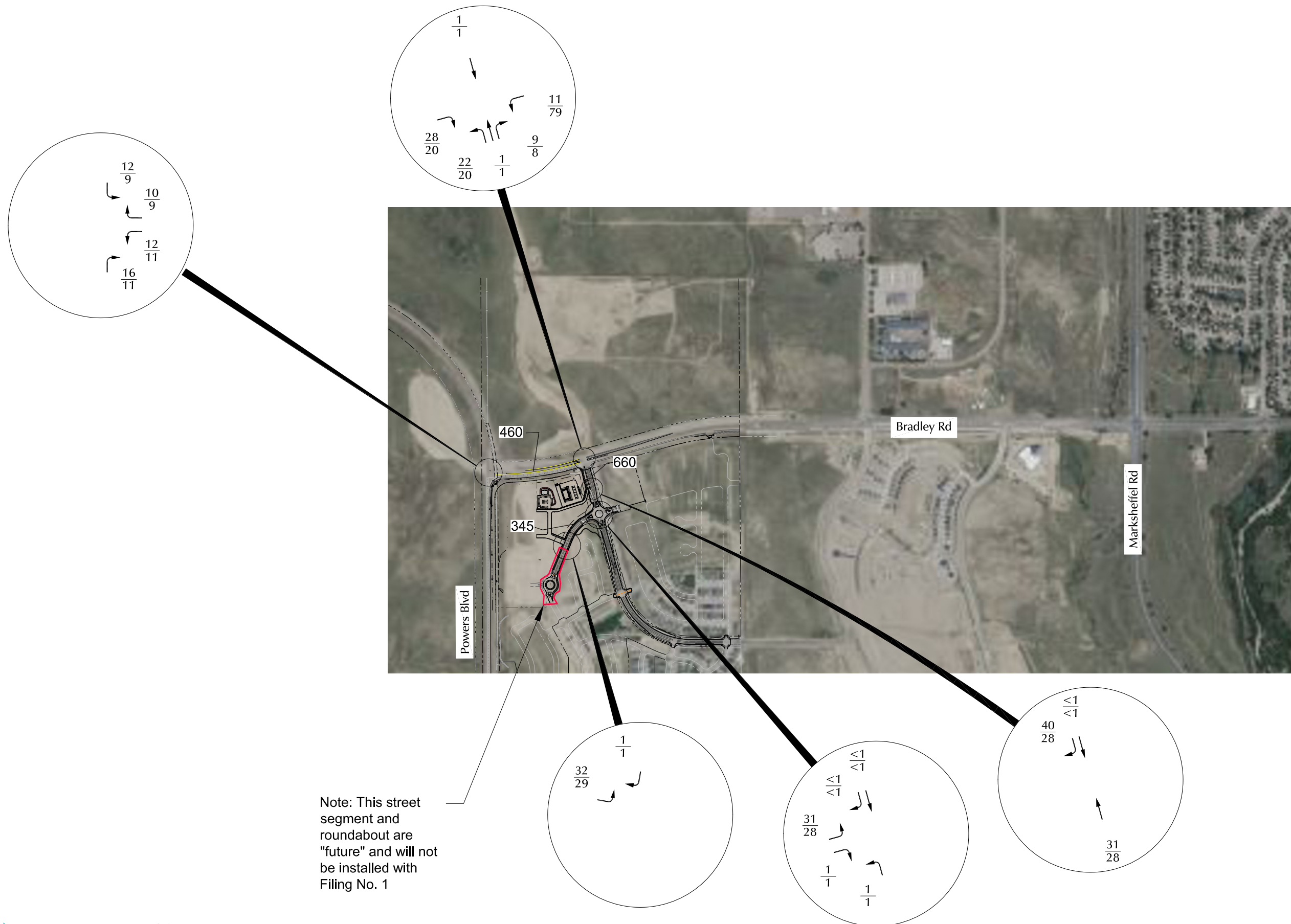
$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)

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

Pass-by Future Waterview East Commercial Filings-Generated Traffic

Figure 10b

Waterview East Commercial Filing No. 1 (LSC #S214971)

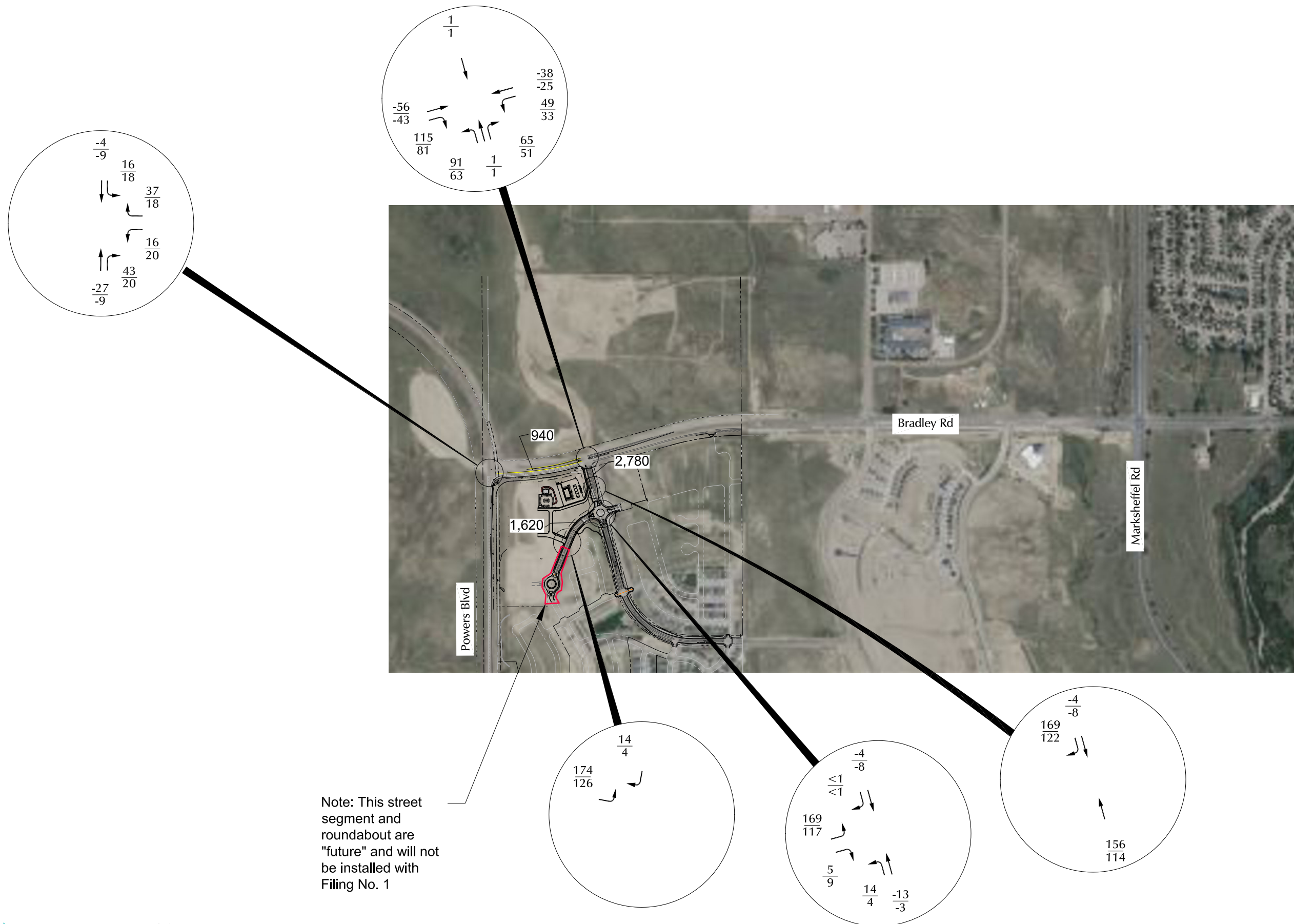


LEGEND:

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 PM Weekday Peak-Hour Traffic (vehicles per hour)
 X,XXX= Average Daily Traffic (vehicles per day)

Short-Term Non-Pass-by, External Filing No. 1-Generated Traffic

Figure 11a
 Waterview East Commercial Filing No. 1 (LSC #S214971)

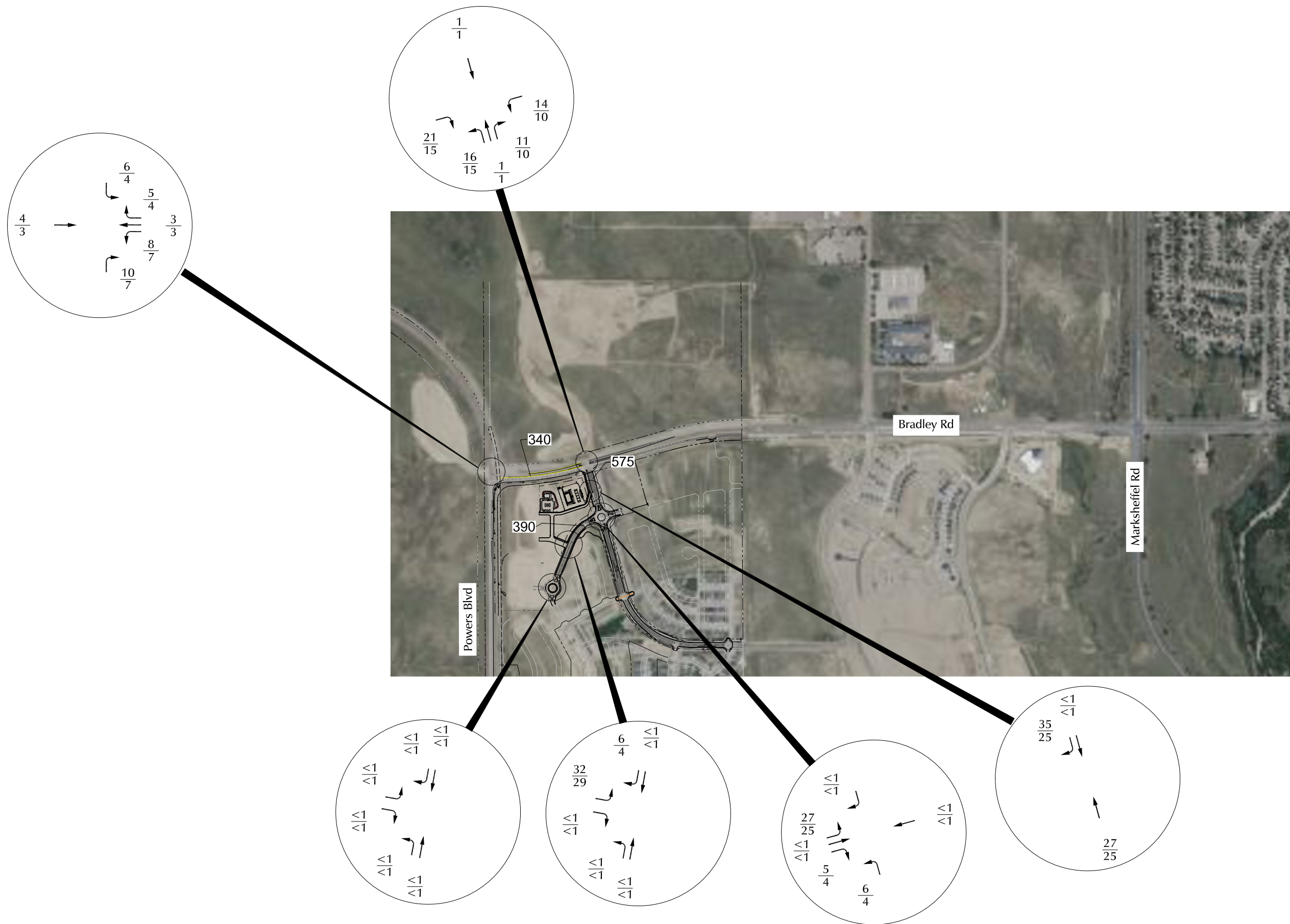


LEGEND:

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
 X,XXX= Average Daily Traffic (vehicles per day)

Short-Term Total, External Filing No. 1-Generated Traffic

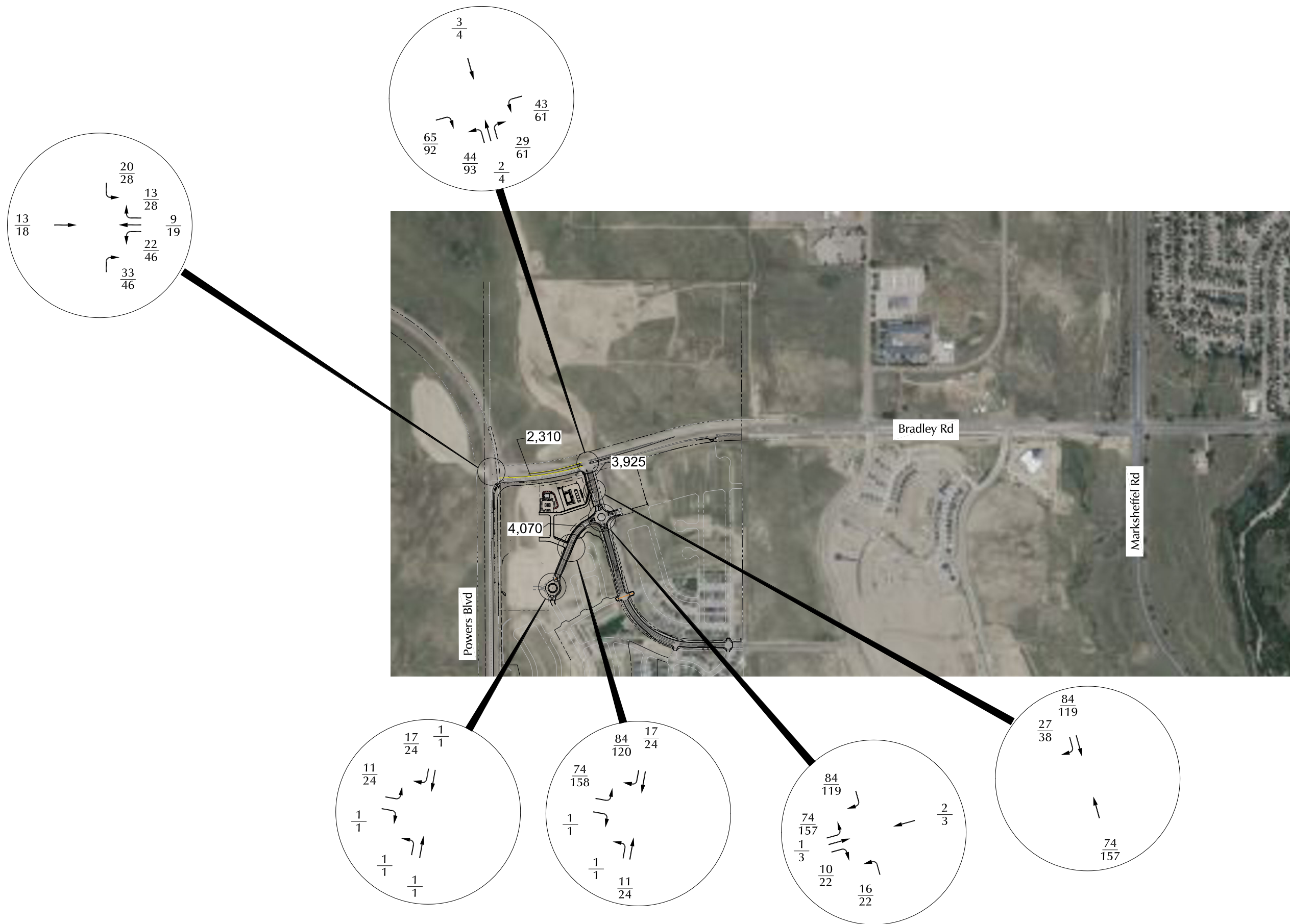
Figure 11b
Waterview East Commercial Filing No. 1 (LSC #S214971)



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

Figure 12a
 Long-Term Non-Pass-by, External Filing No. 1-Generated Traffic
 Waterview East Commercial Filing No. 1 (LSC #S214971)





LEGEND:

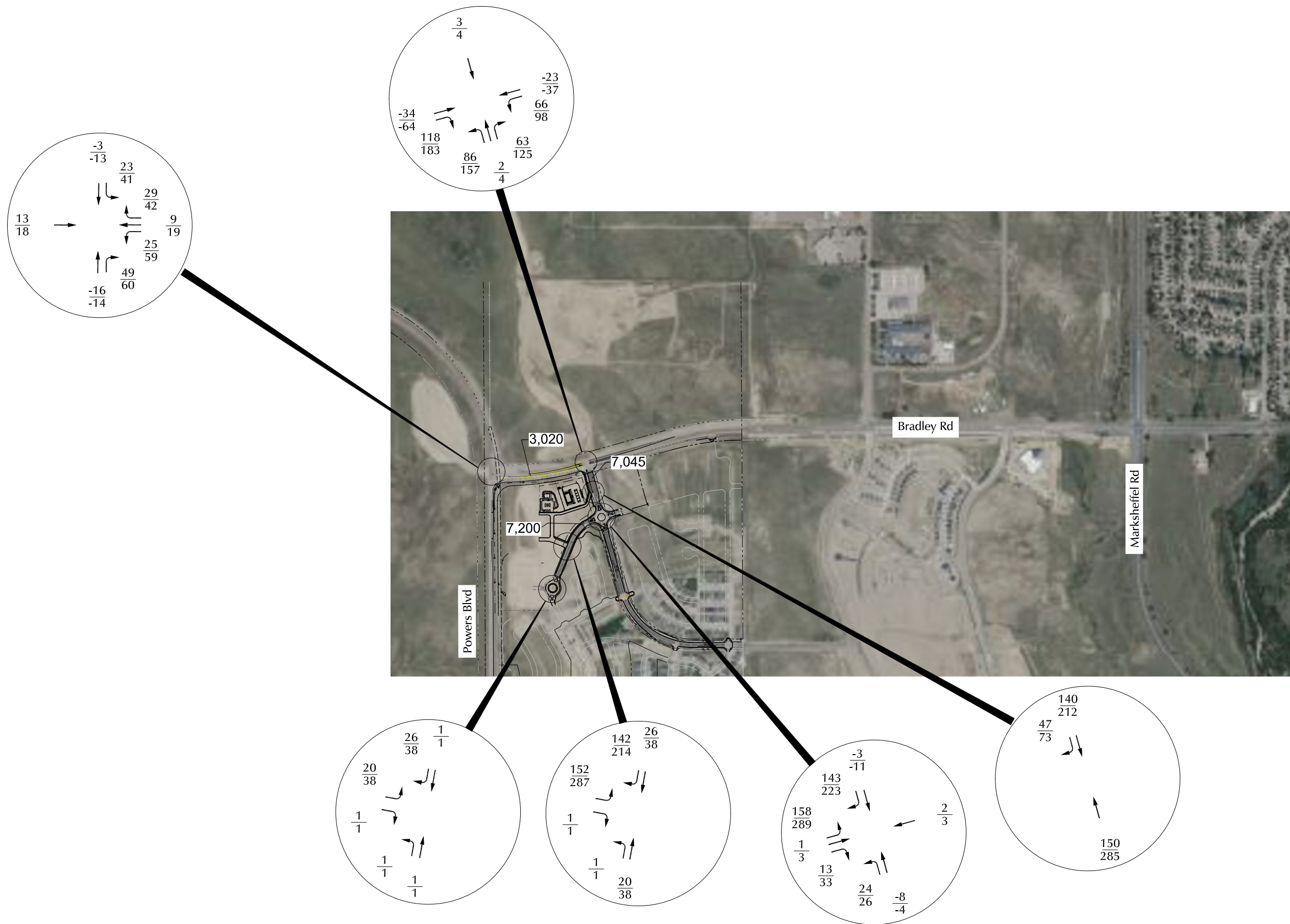
$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
 X,XXX = Average Daily Traffic (vehicles per day)

Long-Term Non-Pass-by, External Future Waterview East Filings-Generated Traffic

Figure 13a

Waterview East Commercial Filing No. 1 (LSC #S214971)





LEGEND:

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

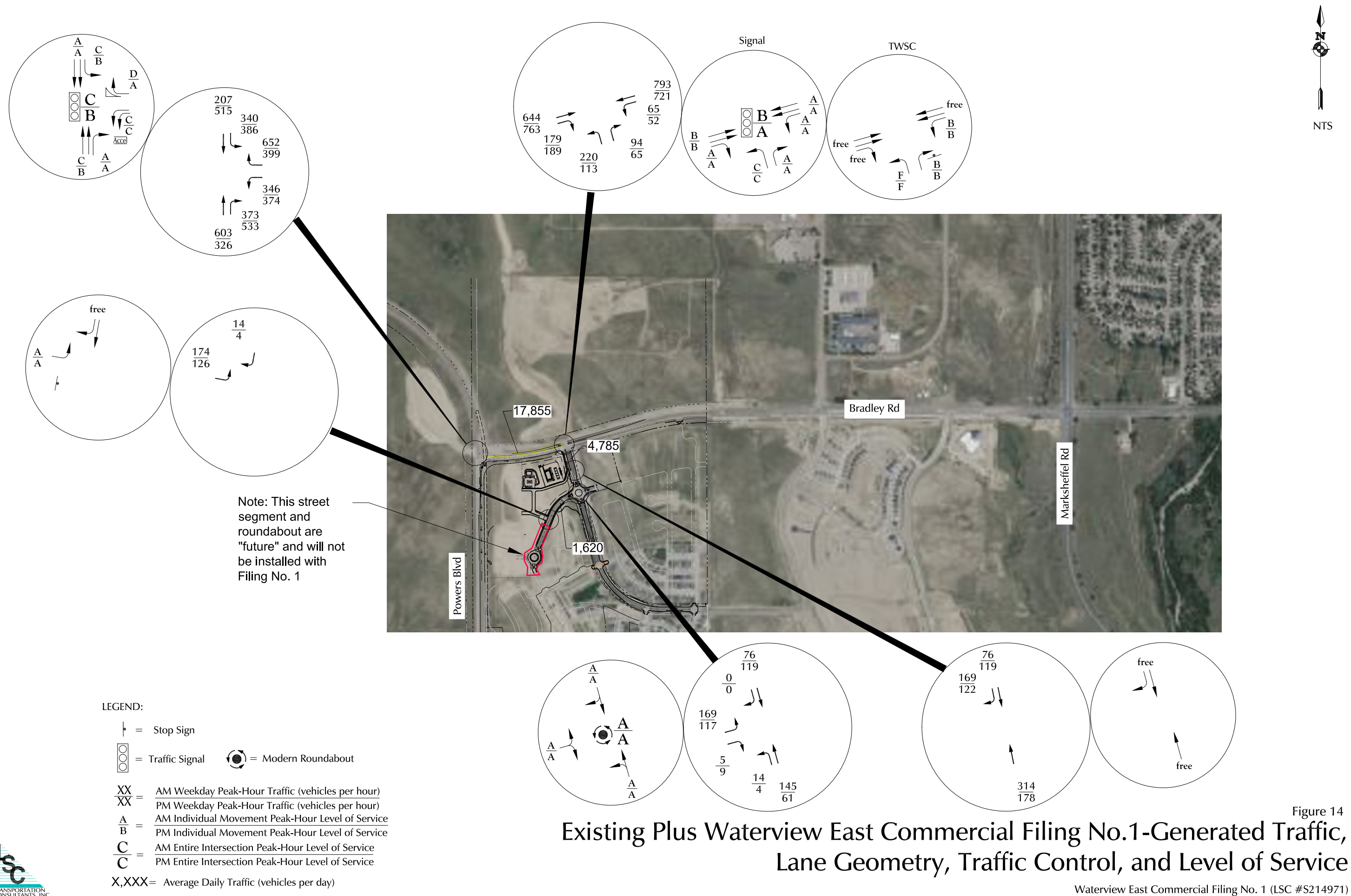
X,XXX= Average Daily Traffic (vehicles per day)

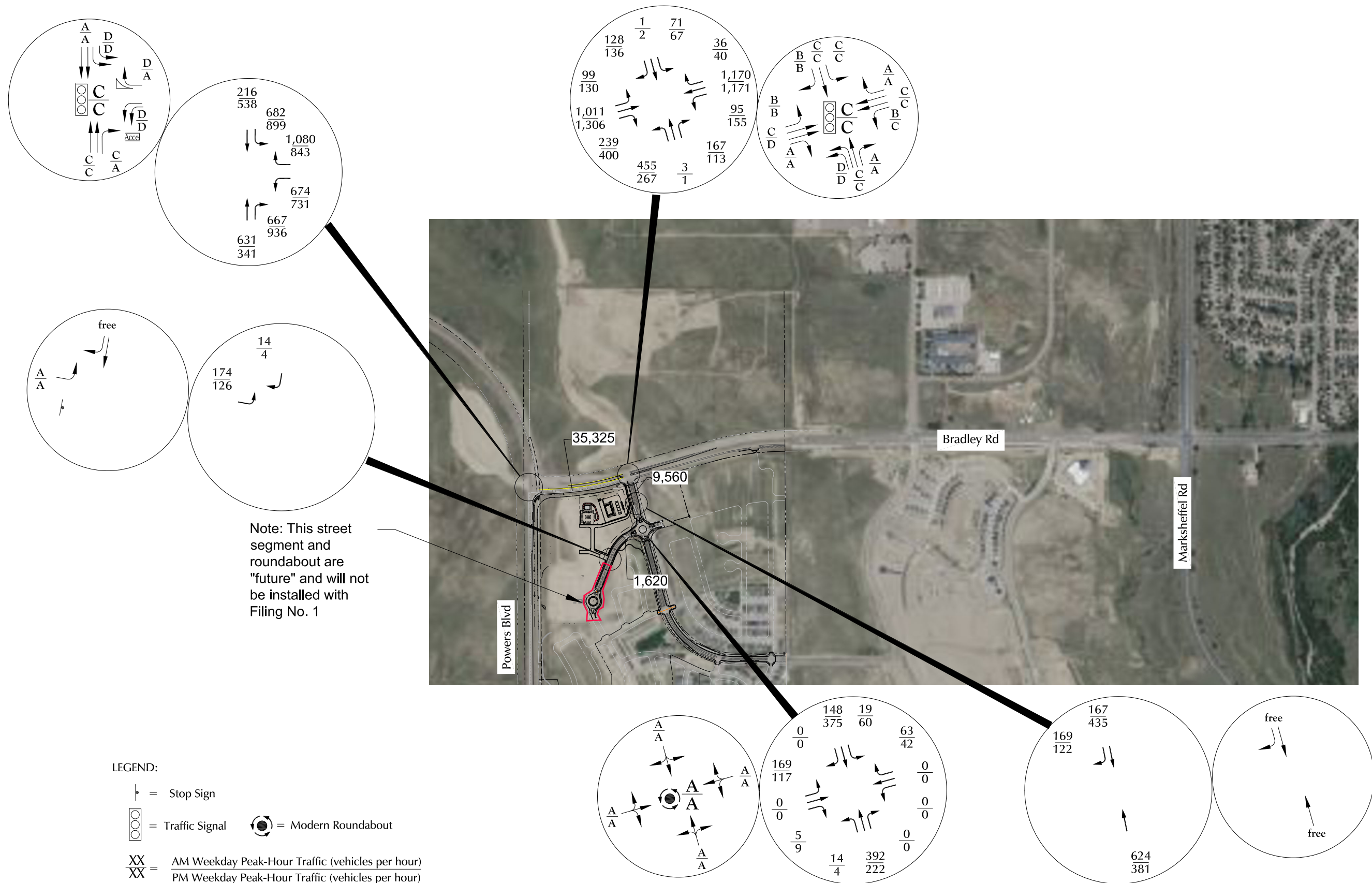
Long-Term Total, External Future Waterview East Commercial-Generated Traffic

Figure 13b

Waterview East Commercial Filing No. 1 (LSC #S214971)





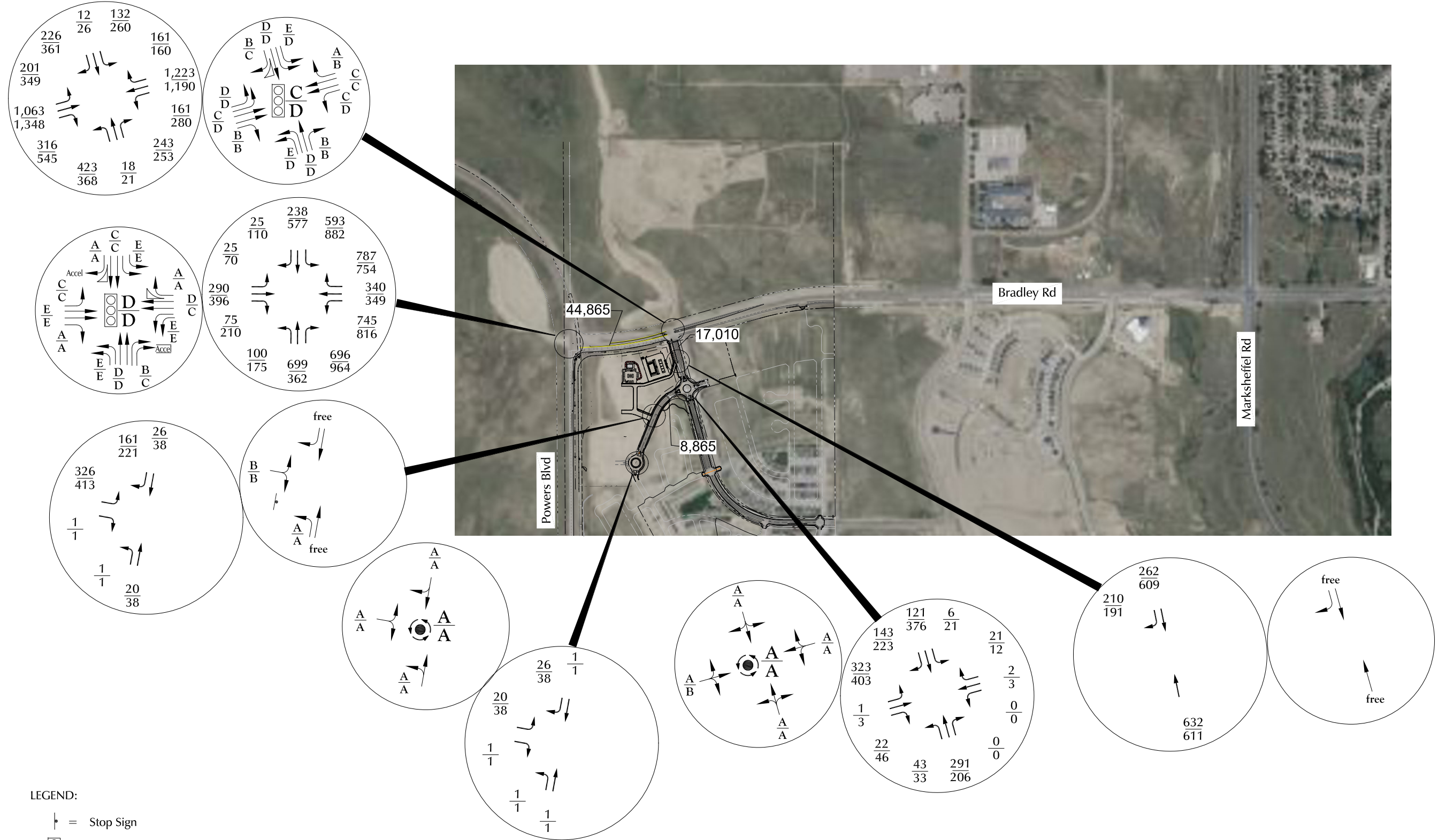


LEGEND:

- = Stop Sign
- = Traffic Signal = Modern Roundabout
- $\frac{XX}{XX}$ = 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)

Figure 15
2031 Total Traffic, Lane Geometry,
Traffic Control, and Level of Service

Waterview East Commercial Filing No. 1 (LSC #S214971)



LEGEND:

- = Stop Sign
- = Traffic Signal = Modern Roundabout

$\frac{XX}{XX}$ = 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)

Figure 16
2046 Total Traffic, Lane Geometry,
Traffic Control, and Level of Service

Waterview East Commercial Filing No. 1 (LSC #S214971)

Traffic Counts

LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304
Colorado Springs, CO 80909
719-633-2868

File Name : Powers Blvd - Bradley Rd AM 10-8-25

Site Code : S244360

Start Date : 10/8/2025

Page No : 1

Groups Printed- Unshifted

	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	0	20	26	0	46	44	0	30	0	74	31	29	0	0	60	0	0	0	0	0	180
06:35	0	6	30	0	36	22	0	21	0	43	33	24	0	0	57	0	0	0	0	0	136
06:40	0	16	23	0	39	31	0	21	0	52	34	36	0	0	70	0	0	0	0	0	161
06:45	0	17	20	0	37	36	0	26	0	62	22	42	0	0	64	0	0	0	0	0	163
06:50	0	23	25	0	48	52	0	29	0	81	27	33	0	0	60	0	0	0	0	0	189
06:55	0	27	36	0	63	54	0	30	0	84	24	46	0	0	70	0	0	0	0	0	217
Total	0	109	160	0	269	239	0	157	0	396	171	210	0	0	381	0	0	0	0	0	1046
07:00	0	17	22	0	39	39	0	29	0	68	17	58	0	0	75	0	0	0	0	0	182
07:05	0	18	25	0	43	44	0	43	0	87	21	44	0	0	65	0	0	0	0	0	195
07:10	0	18	18	0	36	46	0	26	0	72	30	66	0	0	96	0	0	0	0	0	204
07:15	0	15	30	0	45	59	0	17	0	76	19	61	0	0	80	0	0	0	0	0	201
07:20	0	10	28	0	38	56	0	24	1	81	43	55	0	0	98	0	0	0	0	0	217
07:25	0	11	21	0	32	60	0	25	0	85	31	70	0	0	101	0	0	0	0	0	218
07:30	0	12	28	1	41	56	0	24	0	80	29	49	0	0	78	0	0	0	0	0	199
07:35	0	10	40	0	50	53	0	27	0	80	30	60	0	1	91	0	0	0	0	0	221
07:40	0	23	21	0	44	42	0	26	0	68	27	54	0	0	81	0	0	0	0	0	193
07:45	0	27	30	0	57	54	0	30	0	84	32	34	0	0	66	0	0	0	0	0	207
07:50	0	28	32	1	61	34	0	46	0	80	19	23	0	0	42	0	0	0	0	0	183
07:55	0	25	20	0	45	52	0	28	0	80	20	43	0	0	63	0	0	0	0	0	188
Total	0	214	315	2	531	595	0	345	1	941	318	617	0	1	936	0	0	0	0	0	2408
08:00	0	11	37	0	48	37	0	40	0	77	26	35	0	0	61	0	0	0	0	0	186
08:05	0	26	25	0	51	35	0	34	0	69	23	22	0	0	45	0	0	0	0	0	165
08:10	0	18	30	0	48	34	0	29	0	63	17	22	0	0	39	0	0	0	0	0	150
08:15	0	27	24	0	51	38	0	24	0	62	17	25	0	0	42	0	0	0	0	0	155
08:20	0	20	22	0	42	30	0	30	0	60	22	31	0	0	53	0	0	0	0	0	155
08:25	0	20	26	0	46	22	0	23	0	45	30	36	0	0	66	0	0	0	0	0	157
Grand Total	0	445	639	2	1086	1030	0	682	1	1713	624	998	0	1	1623	0	0	0	0	0	4422
Apprch %	0	41	58.8	0.2		60.1	0	39.8	0.1		38.4	61.5	0	0.1		0	0	0	0		
Total %	0	10.1	14.5	0	24.6	23.3	0	15.4	0	38.7	14.1	22.6	0	0	36.7	0	0	0	0	0	

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2504 E. Pikes Peak Ave, Suite 304
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719-633-2868

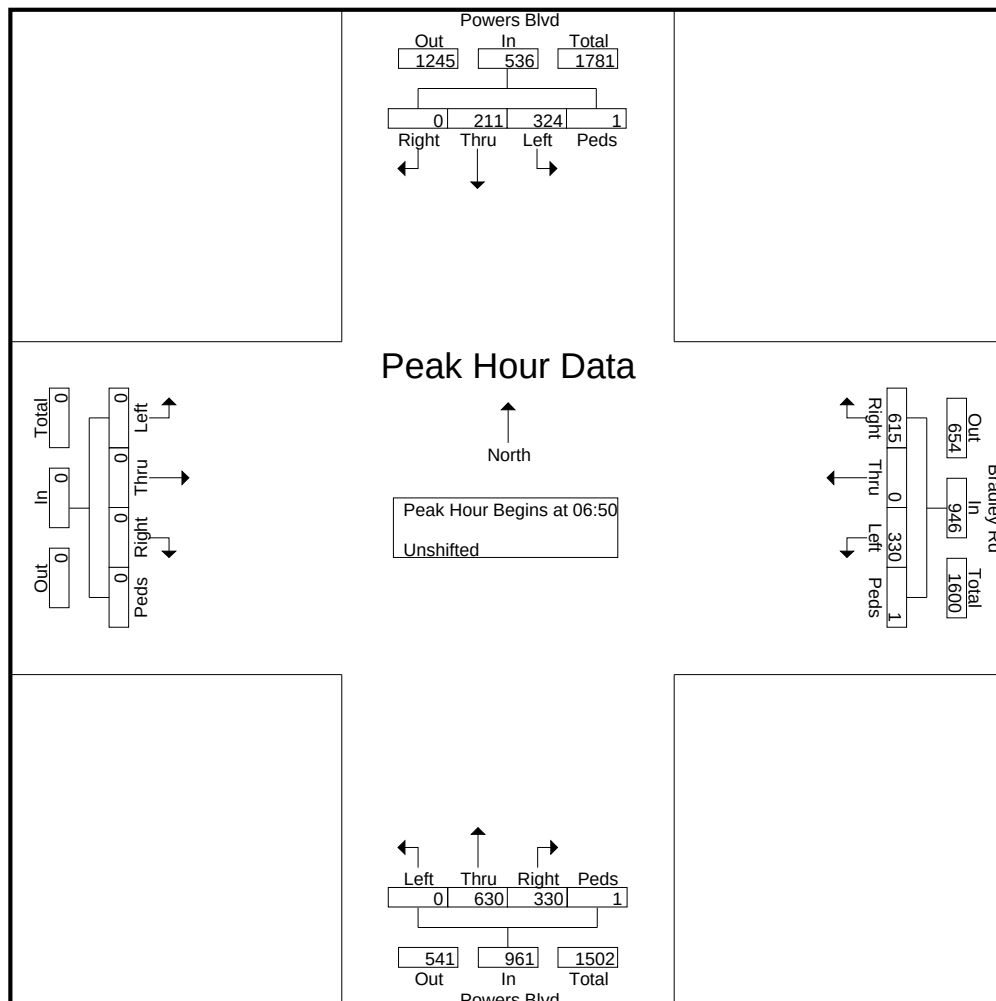
File Name : Powers Blvd - Bradley Rd AM 10-8-25

Site Code : S244360

Start Date : 10/8/2025

Page No : 2

	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:50																					
06:50	0	23	25	0	48	52	0	29	0	81	27	33	0	0	60	0	0	0	0	0	189
06:55	0	27	36	0	63	54	0	30	0	84	24	46	0	0	70	0	0	0	0	0	217
07:00	0	17	22	0	39	39	0	29	0	68	17	58	0	0	75	0	0	0	0	0	182
07:05	0	18	25	0	43	44	0	43	0	87	21	44	0	0	65	0	0	0	0	0	195
07:10	0	18	18	0	36	46	0	26	0	72	30	66	0	0	96	0	0	0	0	0	204
07:15	0	15	30	0	45	59	0	17	0	76	19	61	0	0	80	0	0	0	0	0	201
07:20	0	10	28	0	38	56	0	24	1	81	43	55	0	0	98	0	0	0	0	0	217
07:25	0	11	21	0	32	60	0	25	0	85	31	70	0	0	101	0	0	0	0	0	218
07:30	0	12	28	1	41	56	0	24	0	80	29	49	0	0	78	0	0	0	0	0	199
07:35	0	10	40	0	50	53	0	27	0	80	30	60	0	1	91	0	0	0	0	0	221
07:40	0	23	21	0	44	42	0	26	0	68	27	54	0	0	81	0	0	0	0	0	193
07:45	0	27	30	0	57	54	0	30	0	84	32	34	0	0	66	0	0	0	0	0	207
Total Volume	0	211	324	1	536	615	0	330	1	946	330	630	0	1	961	0	0	0	0	0	2443
% App. Total	0	39.4	60.4	0.2		65	0	34.9	0.1		34.3	65.6	0	0.1		0	0	0	0		
PHF	.000	.651	.675	.083	.709	.854	.000	.640	.083	.906	.640	.750	.000	.083	.793	.000	.000	.000	.000	.000	.921



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2504 E. Pikes Peak Ave, Suite 304
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719-633-2868

File Name : Powers Blvd - Bradley Rd PM 10-8-25

Site Code : S224360

Start Date : 10/8/2025

Page No : 1

Groups Printed- Unshifted

	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	0	47	33	0	80	27	0	33	1	61	34	17	0	0	51	0	0	0	0	0	192
16:05	0	55	28	0	83	31	0	24	0	55	46	26	0	0	72	0	0	0	0	0	210
16:10	0	35	45	0	80	26	0	27	0	53	37	22	0	0	59	0	0	0	0	0	192
16:15	0	54	44	0	98	30	0	23	0	53	37	40	0	0	77	0	0	0	0	0	228
16:20	0	61	29	0	90	32	0	41	0	73	27	29	0	0	56	0	0	0	0	0	219
16:25	0	44	23	0	67	35	0	31	0	66	42	21	0	0	63	0	0	0	0	0	196
16:30	0	26	19	0	45	30	0	27	0	57	36	29	0	0	65	0	0	0	0	0	167
16:35	0	44	25	0	69	35	0	38	0	73	57	30	0	0	87	0	0	0	0	0	229
16:40	0	42	37	0	79	33	0	37	0	70	44	25	0	0	69	0	0	0	0	0	218
16:45	0	43	33	0	76	31	0	24	0	55	51	27	0	0	78	0	0	0	0	0	209
16:50	0	43	27	0	70	26	0	33	0	59	41	32	0	0	73	0	0	0	0	0	202
16:55	0	39	33	0	72	34	0	24	0	58	48	29	0	0	77	0	0	0	0	0	207
Total	0	533	376	0	909	370	0	362	1	733	500	327	0	0	827	0	0	0	0	0	2469
17:00	0	38	25	0	63	38	0	25	0	63	47	25	0	0	72	0	0	0	0	0	198
17:05	0	43	24	0	67	29	0	26	0	55	35	18	0	0	53	0	0	0	0	0	175
17:10	0	59	32	0	91	33	0	21	0	54	41	31	0	0	72	0	0	0	0	0	217
17:15	0	33	21	0	54	34	0	31	0	65	37	19	0	0	56	0	0	0	0	0	175
17:20	0	46	33	0	79	27	0	23	0	50	54	40	0	0	94	0	0	0	0	0	223
17:25	0	52	31	0	83	27	0	25	0	52	41	25	0	0	66	0	0	0	0	0	201
17:30	0	37	30	0	67	24	0	28	0	52	34	21	0	0	55	0	0	0	0	0	174
17:35	0	58	22	0	80	30	0	23	0	53	35	37	0	0	72	0	0	0	0	0	205
17:40	0	36	35	0	71	23	0	18	0	41	28	44	0	0	72	0	0	0	0	0	184
17:45	0	43	34	0	77	27	0	29	0	56	24	24	0	0	48	0	0	0	0	0	181
17:50	0	47	25	0	72	24	0	29	0	53	29	25	0	0	54	0	0	0	0	0	179
17:55	0	48	31	0	79	25	0	18	0	43	34	22	0	0	56	0	0	0	0	0	178
Total	0	540	343	0	883	341	0	296	0	637	439	331	0	0	770	0	0	0	0	0	2290
Grand Total	0	1073	719	0	1792	711	0	658	1	1370	939	658	0	0	1597	0	0	0	0	0	4759
Apprch %	0	59.9	40.1	0		51.9	0	48	0.1		58.8	41.2	0	0		0	0	0	0		
Total %	0	22.5	15.1	0	37.7	14.9	0	13.8	0	28.8	19.7	13.8	0	0	33.6	0	0	0	0	0	

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2504 E. Pikes Peak Ave, Suite 304
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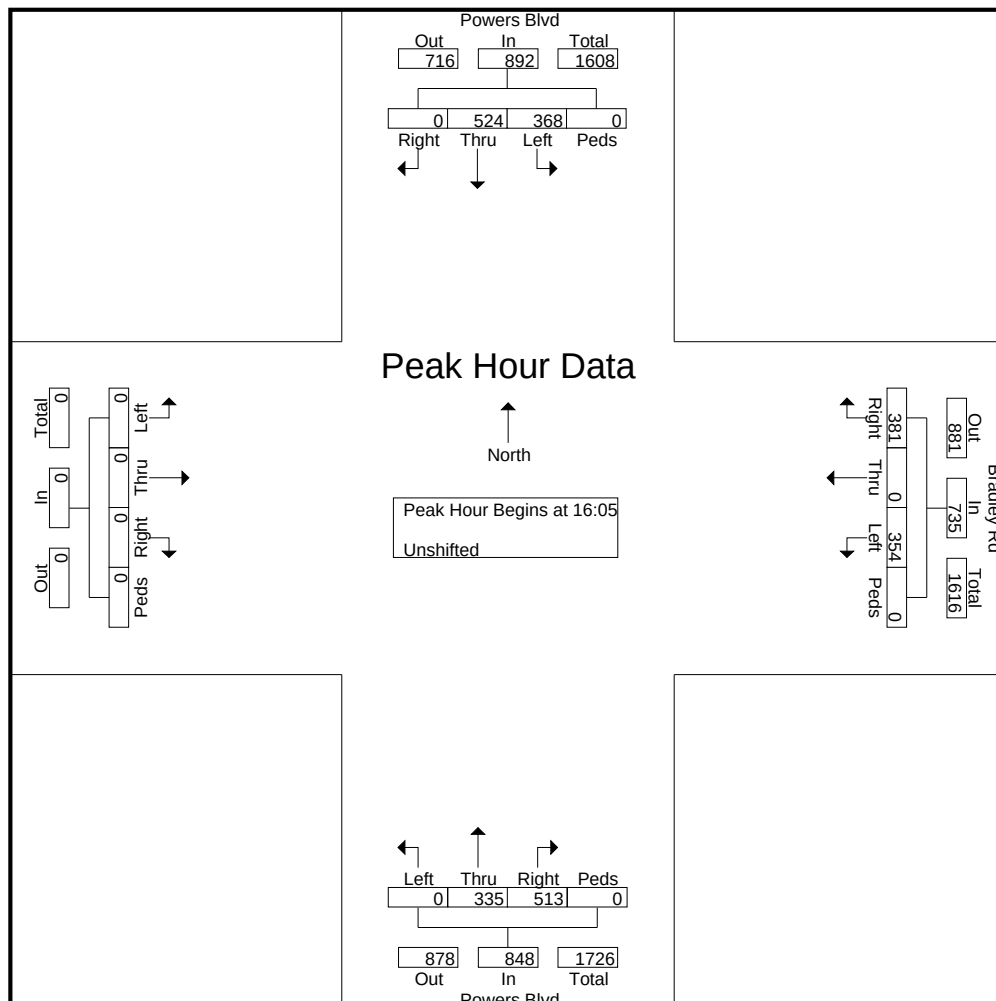
File Name : Powers Blvd - Bradley Rd PM 10-8-25

Site Code : S224360

Start Date : 10/8/2025

Page No : 2

	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:55 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:05																					
16:05	0	55	28	0	83	31	0	24	0	55	46	26	0	0	72	0	0	0	0	0	210
16:10	0	35	45	0	80	26	0	27	0	53	37	22	0	0	59	0	0	0	0	0	192
16:15	0	54	44	0	98	30	0	23	0	53	37	40	0	0	77	0	0	0	0	0	228
16:20	0	61	29	0	90	32	0	41	0	73	27	29	0	0	56	0	0	0	0	0	219
16:25	0	44	23	0	67	35	0	31	0	66	42	21	0	0	63	0	0	0	0	0	196
16:30	0	26	19	0	45	30	0	27	0	57	36	29	0	0	65	0	0	0	0	0	167
16:35	0	44	25	0	69	35	0	38	0	73	57	30	0	0	87	0	0	0	0	0	229
16:40	0	42	37	0	79	33	0	37	0	70	44	25	0	0	69	0	0	0	0	0	218
16:45	0	43	33	0	76	31	0	24	0	55	51	27	0	0	78	0	0	0	0	0	209
16:50	0	43	27	0	70	26	0	33	0	59	41	32	0	0	73	0	0	0	0	0	202
16:55	0	39	33	0	72	34	0	24	0	58	48	29	0	0	77	0	0	0	0	0	207
17:00	0	38	25	0	63	38	0	25	0	63	47	25	0	0	72	0	0	0	0	0	198
Total Volume	0	524	368	0	892	381	0	354	0	735	513	335	0	0	848	0	0	0	0	0	2475
% App. Total	0	58.7	41.3	0		51.8	0	48.2	0		60.5	39.5	0	0		0	0	0	0		
PHF	.000	.716	.681	.000	.759	.836	.000	.720	.000	.839	.750	.698	.000	.000	.812	.000	.000	.000	.000	.000	.901



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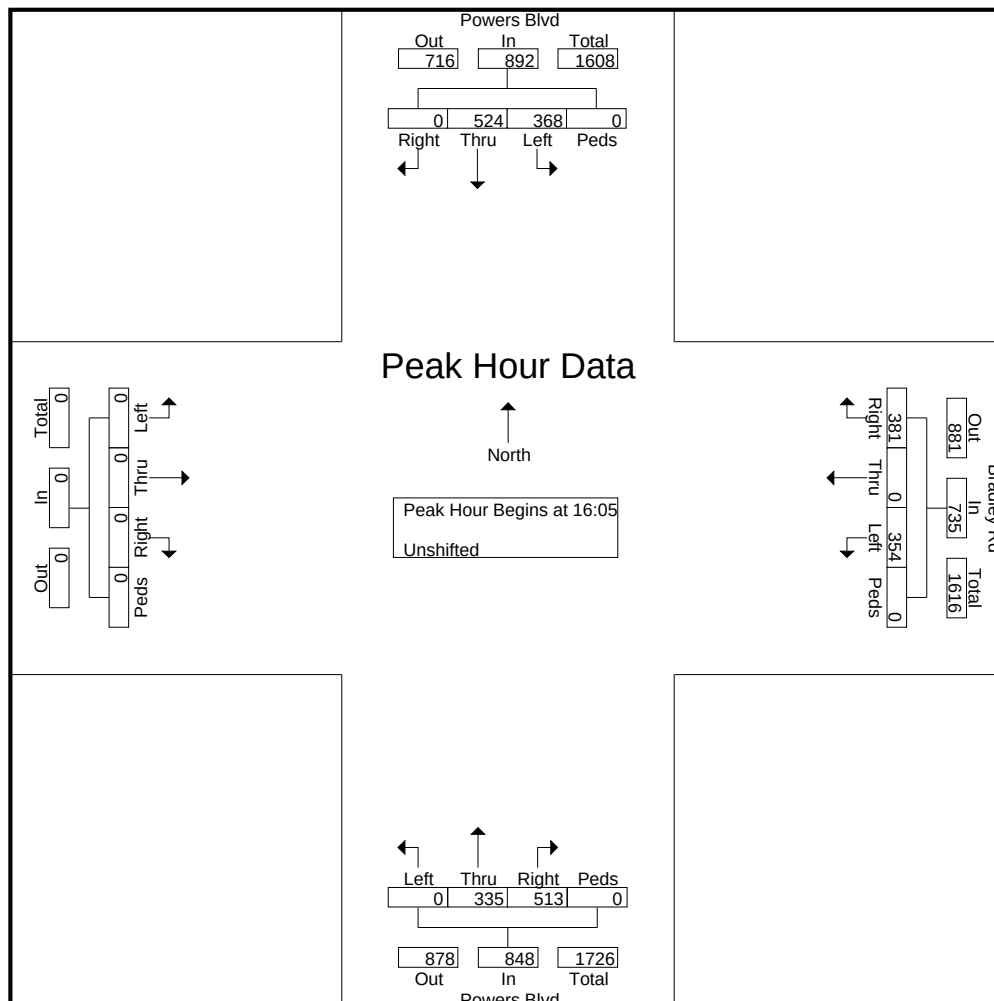
File Name : Powers Blvd - Bradley Rd PM 10-8-25

Site Code : S224360

Start Date : 10/8/2025

Page No : 2

	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:55 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:05																					
16:05	0	55	28	0	83	31	0	24	0	55	46	26	0	0	72	0	0	0	0	0	210
16:10	0	35	45	0	80	26	0	27	0	53	37	22	0	0	59	0	0	0	0	0	192
16:15	0	54	44	0	98	30	0	23	0	53	37	40	0	0	77	0	0	0	0	0	228
16:20	0	61	29	0	90	32	0	41	0	73	27	29	0	0	56	0	0	0	0	0	219
16:25	0	44	23	0	67	35	0	31	0	66	42	21	0	0	63	0	0	0	0	0	196
16:30	0	26	19	0	45	30	0	27	0	57	36	29	0	0	65	0	0	0	0	0	167
16:35	0	44	25	0	69	35	0	38	0	73	57	30	0	0	87	0	0	0	0	0	229
16:40	0	42	37	0	79	33	0	37	0	70	44	25	0	0	69	0	0	0	0	0	218
16:45	0	43	33	0	76	31	0	24	0	55	51	27	0	0	78	0	0	0	0	0	209
16:50	0	43	27	0	70	26	0	33	0	59	41	32	0	0	73	0	0	0	0	0	202
16:55	0	39	33	0	72	34	0	24	0	58	48	29	0	0	77	0	0	0	0	0	207
17:00	0	38	25	0	63	38	0	25	0	63	47	25	0	0	72	0	0	0	0	0	198
Total Volume	0	524	368	0	892	381	0	354	0	735	513	335	0	0	848	0	0	0	0	0	2475
% App. Total	0	58.7	41.3	0		51.8	0	48.2	0		60.5	39.5	0	0		0	0	0	0		
PHF	.000	.716	.681	.000	.759	.836	.000	.720	.000	.839	.750	.698	.000	.000	.812	.000	.000	.000	.000	.000	.901



LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304
Colorado Springs, CO 80909
719-633-2868

File Name : Legacy Hill Dr - Bradley Rd AM 3-4-26

Site Code : S214971

Start Date : 3/4/2026

Page No : 1

Groups Printed- Unshifted

	Southbound					Bradley Rd Westbound					Legacy Hill Dr Northbound					Bradley Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	0	0	0	0	0	0	45	1	0	46	2	0	6	0	8	3	46	0	0	49	103
06:35	0	0	0	0	0	0	52	2	0	54	1	0	9	0	10	7	53	0	0	60	124
06:40	0	0	0	0	0	0	50	2	0	52	5	0	7	0	12	2	52	0	0	54	118
06:45	0	0	0	0	0	0	56	0	0	56	1	0	10	0	11	3	45	0	0	48	115
06:50	0	0	0	0	0	0	71	1	0	72	2	0	14	0	16	3	58	0	0	61	149
06:55	0	0	0	0	0	0	86	0	0	86	4	0	12	0	16	1	36	0	0	37	139
Total	0	0	0	0	0	0	360	6	0	366	15	0	58	0	73	19	290	0	0	309	748
07:00	0	0	0	0	0	0	69	0	0	69	2	0	13	0	15	7	60	0	0	67	151
07:05	0	0	0	0	0	0	85	1	0	86	2	0	13	0	15	2	37	0	0	39	140
07:10	0	0	0	0	0	0	66	3	0	69	6	0	11	0	17	5	65	0	0	70	156
07:15	0	0	0	0	0	0	65	0	0	65	1	0	8	0	9	2	59	0	0	61	135
07:20	0	0	0	0	0	0	67	2	0	69	1	0	14	0	15	8	59	0	0	67	151
07:25	0	0	0	0	0	0	72	1	0	73	5	0	11	0	16	1	65	0	0	66	155
07:30	0	0	0	0	0	0	65	0	0	65	3	0	17	0	20	6	71	0	0	77	162
07:35	0	0	0	0	0	0	56	1	0	57	3	0	11	0	14	5	80	0	0	85	156
07:40	0	0	0	0	0	0	68	2	0	70	1	0	5	0	6	3	46	0	0	49	125
07:45	0	0	0	0	0	0	67	1	0	68	2	0	13	0	15	16	47	0	0	63	146
07:50	0	0	0	0	0	0	76	2	0	78	1	0	7	0	8	4	48	0	0	52	138
07:55	0	0	0	0	0	0	75	3	0	78	2	0	6	0	8	5	63	0	0	68	154
Total	0	0	0	0	0	0	831	16	0	847	29	0	129	0	158	64	700	0	0	764	1769
08:00	0	0	0	0	0	0	46	0	0	46	2	0	10	0	12	2	43	0	0	45	103
08:05	0	0	0	0	0	0	54	2	0	56	0	0	7	0	7	5	36	0	0	41	104
08:10	0	0	0	0	0	0	60	1	0	61	2	0	10	0	12	4	49	0	0	53	126
08:15	0	0	0	0	0	0	58	1	0	59	0	0	8	0	8	4	45	0	0	49	116
08:20	0	0	0	0	0	0	58	1	0	59	1	0	10	0	11	5	41	0	0	46	116
08:25	0	0	0	0	0	0	58	1	0	59	0	0	5	0	5	5	26	0	1	32	96
Grand Total	0	0	0	0	0	0	1525	28	0	1553	49	0	237	0	286	108	1230	0	1	1339	3178
Apprch %	0	0	0	0		0	98.2	1.8	0		17.1	0	82.9	0		8.1	91.9	0	0.1		
Total %	0	0	0	0	0	0	48	0.9	0	48.9	1.5	0	7.5	0	9	3.4	38.7	0	0	42.1	

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2504 E. Pikes Peak Ave, Suite 304
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719-633-2868

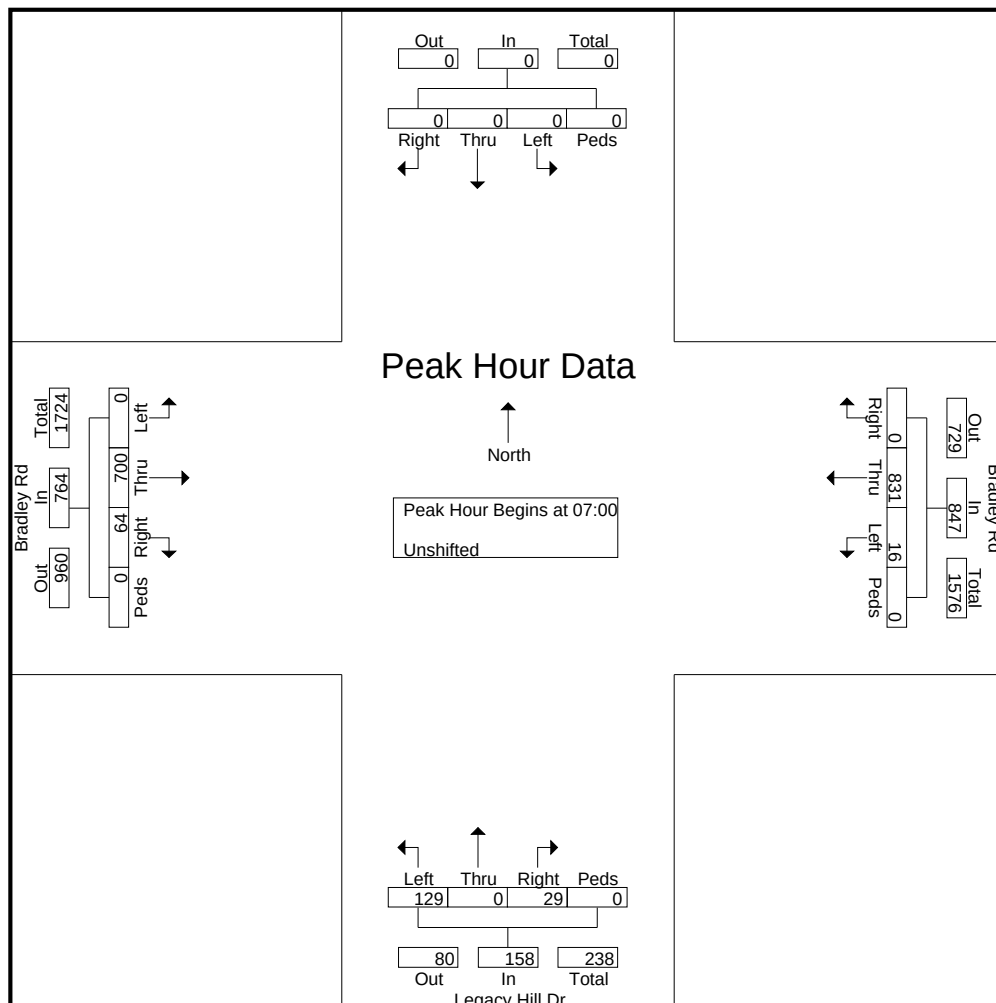
File Name : Legacy Hill Dr - Bradley Rd AM 3-4-26

Site Code : S214971

Start Date : 3/4/2026

Page No : 2

	Southbound					Bradley Rd Westbound					Legacy Hill Dr Northbound					Bradley Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	0	0	0	0	0	0	69	0	0	69	2	0	13	0	15	7	60	0	0	67	151
07:05	0	0	0	0	0	0	85	1	0	86	2	0	13	0	15	2	37	0	0	39	140
07:10	0	0	0	0	0	0	66	3	0	69	6	0	11	0	17	5	65	0	0	70	156
07:15	0	0	0	0	0	0	65	0	0	65	1	0	8	0	9	2	59	0	0	61	135
07:20	0	0	0	0	0	0	67	2	0	69	1	0	14	0	15	8	59	0	0	67	151
07:25	0	0	0	0	0	0	72	1	0	73	5	0	11	0	16	1	65	0	0	66	155
07:30	0	0	0	0	0	0	65	0	0	65	3	0	17	0	20	6	71	0	0	77	162
07:35	0	0	0	0	0	0	56	1	0	57	3	0	11	0	14	5	80	0	0	85	156
07:40	0	0	0	0	0	0	68	2	0	70	1	0	5	0	6	3	46	0	0	49	125
07:45	0	0	0	0	0	0	67	1	0	68	2	0	13	0	15	16	47	0	0	63	146
07:50	0	0	0	0	0	0	76	2	0	78	1	0	7	0	8	4	48	0	0	52	138
07:55	0	0	0	0	0	0	75	3	0	78	2	0	6	0	8	5	63	0	0	68	154
Total Volume	0	0	0	0	0	0	831	16	0	847	29	0	129	0	158	64	700	0	0	764	1769
% App. Total	0	0	0	0	0	0	98.1	1.9	0		18.4	0	81.6	0		8.4	91.6	0	0		
PHF	.000	.000	.000	.000	.000	.000	.815	.444	.000	.821	.403	.000	.632	.000	.658	.333	.729	.000	.000	.749	.910



LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304
Colorado Springs, CO 80909
719-633-2868

File Name : Legacy Hill Dr - Bradley Rd Mid 3-4-26

Site Code : S214971

Start Date : 3/3/2026

Page No : 1

Groups Printed- Unshifted

Start Time	Southbound					Bradley Rd Westbound					Legacy Hill Dr Northbound					Bradley Rd Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:30	0	0	0	0	0	0	26	6	0	32	1	0	3	0	4	7	30	0	0	37	73
11:35	0	0	0	0	0	0	22	1	0	23	0	0	1	0	1	11	33	0	0	44	68
11:40	0	0	0	0	0	0	28	1	0	29	3	0	6	0	9	9	28	0	0	37	75
11:45	0	0	0	0	0	0	27	0	0	27	2	0	4	0	6	10	30	0	0	40	73
11:50	0	0	0	0	0	0	31	1	0	32	2	0	7	0	9	2	20	0	0	22	63
11:55	0	0	0	0	0	0	25	2	1	28	0	0	1	0	1	4	26	0	0	30	59
Total	0	0	0	0	0	0	159	11	1	171	8	0	22	0	30	43	167	0	0	210	411
12:00	0	0	0	0	0	0	32	3	0	35	2	0	5	0	7	7	19	0	0	26	68
12:05	0	0	0	0	0	0	25	0	0	25	2	0	6	0	8	7	25	0	0	32	65
12:10	0	0	0	0	0	0	24	3	0	27	3	0	5	0	8	5	29	0	0	34	69
12:15	0	0	0	0	0	0	26	1	0	27	2	0	2	0	4	8	37	0	0	45	76
12:20	0	0	0	0	0	0	30	0	1	31	0	0	3	0	3	6	23	0	1	30	64
12:25	0	0	0	0	0	0	31	1	0	32	0	0	3	0	3	3	17	0	0	20	55
12:30	0	0	0	0	0	0	38	2	0	40	1	0	4	0	5	3	32	0	0	35	80
12:35	0	0	0	0	0	0	35	0	0	35	3	0	5	0	8	2	37	0	0	39	82
12:40	0	0	0	0	0	0	36	1	0	37	0	0	6	0	6	3	32	0	0	35	78
12:45	0	0	0	0	0	0	42	1	0	43	4	0	4	0	8	3	48	0	0	51	102
12:50	0	0	0	0	0	0	24	0	0	24	0	0	5	0	5	4	29	0	0	33	62
12:55	0	0	0	0	0	0	23	0	0	23	1	0	4	0	5	3	21	0	0	24	52
Total	0	0	0	0	0	0	366	12	1	379	18	0	52	0	70	54	349	0	1	404	853
13:00	0	0	0	0	0	0	36	1	0	37	1	0	1	0	2	5	33	0	0	38	77
13:05	0	0	0	0	0	0	21	0	0	21	0	0	3	0	3	6	23	0	0	29	53
13:10	0	0	0	0	0	0	21	1	0	22	2	0	3	0	5	7	32	0	0	39	66
13:15	0	0	0	0	0	0	25	4	0	29	2	0	2	0	4	1	30	0	0	31	64
13:20	0	0	0	0	0	0	25	1	0	26	2	0	3	0	5	4	36	0	0	40	71
13:25	0	0	0	0	0	0	28	0	0	28	0	0	3	0	3	3	20	0	0	23	54
Grand Total	0	0	0	0	0	0	681	30	2	713	33	0	89	0	122	123	690	0	1	814	1649
Apprch %	0	0	0	0	0	0	95.5	4.2	0.3		27	0	73	0		15.1	84.8	0	0.1		
Total %	0	0	0	0	0	0	41.3	1.8	0.1	43.2	2	0	5.4	0	7.4	7.5	41.8	0	0.1	49.4	

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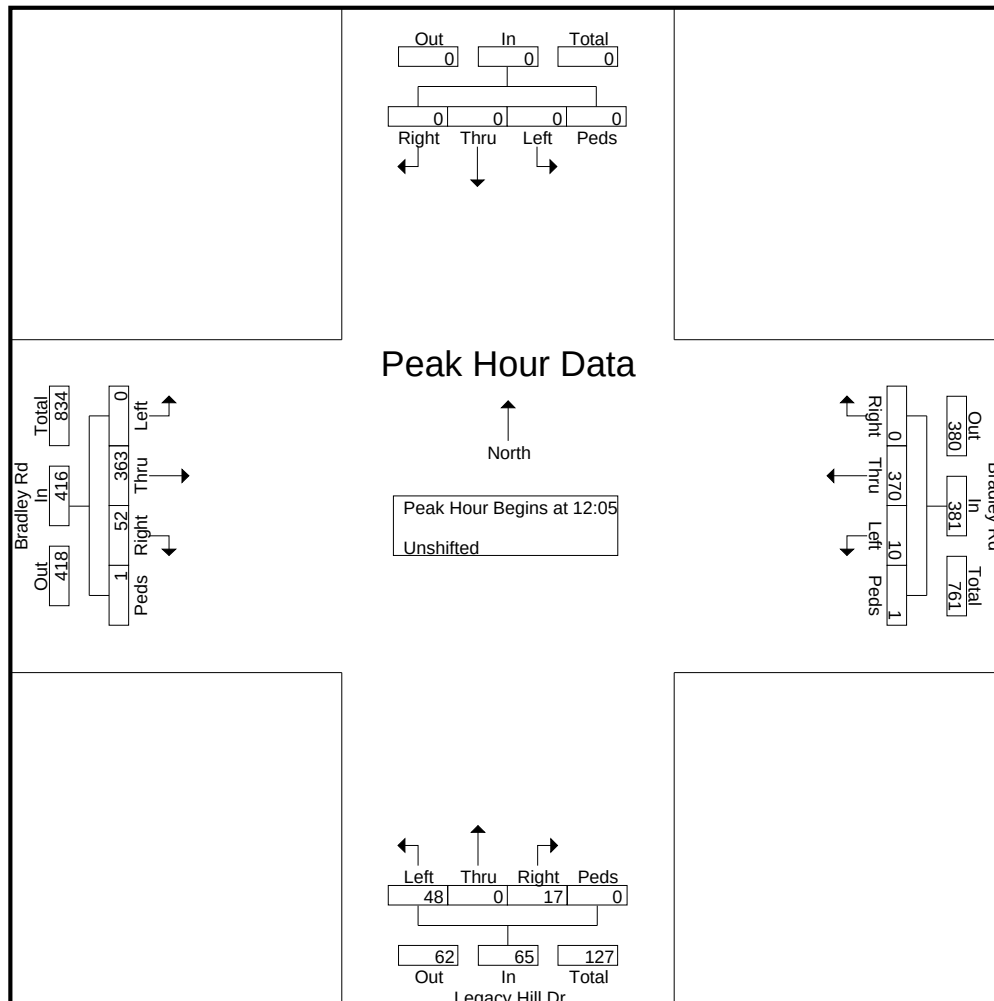
File Name : Legacy Hill Dr - Bradley Rd Mid 3-4-26

Site Code : S214971

Start Date : 3/3/2026

Page No : 2

	Southbound					Bradley Rd Westbound					Legacy Hill Dr Northbound					Bradley Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:30 to 13:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:05																					
12:05	0	0	0	0	0	0	25	0	0	25	2	0	6	0	8	7	25	0	0	32	65
12:10	0	0	0	0	0	0	24	3	0	27	3	0	5	0	8	5	29	0	0	34	69
12:15	0	0	0	0	0	0	26	1	0	27	2	0	2	0	4	8	37	0	0	45	76
12:20	0	0	0	0	0	0	30	0	1	31	0	0	3	0	3	6	23	0	1	30	64
12:25	0	0	0	0	0	0	31	1	0	32	0	0	3	0	3	3	17	0	0	20	55
12:30	0	0	0	0	0	0	38	2	0	40	1	0	4	0	5	3	32	0	0	35	80
12:35	0	0	0	0	0	0	35	0	0	35	3	0	5	0	8	2	37	0	0	39	82
12:40	0	0	0	0	0	0	36	1	0	37	0	0	6	0	6	3	32	0	0	35	78
12:45	0	0	0	0	0	0	42	1	0	43	4	0	4	0	8	3	48	0	0	51	102
12:50	0	0	0	0	0	0	24	0	0	24	0	0	5	0	5	4	29	0	0	33	62
12:55	0	0	0	0	0	0	23	0	0	23	1	0	4	0	5	3	21	0	0	24	52
13:00	0	0	0	0	0	0	36	1	0	37	1	0	1	0	2	5	33	0	0	38	77
Total Volume	0	0	0	0	0	0	370	10	1	381	17	0	48	0	65	52	363	0	1	416	862
% App. Total	0	0	0	0	0	0	97.1	2.6	0.3		26.2	0	73.8	0		12.5	87.3	0	0.2		
PHF	.000	.000	.000	.000	.000	.000	.734	.278	.083	.738	.354	.000	.667	.000	.677	.542	.630	.000	.083	.680	.704



LSC Transportation Consultants, Inc.

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719-633-2868

File Name : Powers Blvd - Bradley Rd PM 10-8-25

Site Code : S224360

Start Date : 10/8/2025

Page No : 1

Groups Printed- Unshifted

	Powers Blvd Southbound					Bradley Rd Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	0	47	33	0	80	27	0	33	1	61	34	17	0	0	51	0	0	0	0	0	192
16:05	0	55	28	0	83	31	0	24	0	55	46	26	0	0	72	0	0	0	0	0	210
16:10	0	35	45	0	80	26	0	27	0	53	37	22	0	0	59	0	0	0	0	0	192
16:15	0	54	44	0	98	30	0	23	0	53	37	40	0	0	77	0	0	0	0	0	228
16:20	0	61	29	0	90	32	0	41	0	73	27	29	0	0	56	0	0	0	0	0	219
16:25	0	44	23	0	67	35	0	31	0	66	42	21	0	0	63	0	0	0	0	0	196
16:30	0	26	19	0	45	30	0	27	0	57	36	29	0	0	65	0	0	0	0	0	167
16:35	0	44	25	0	69	35	0	38	0	73	57	30	0	0	87	0	0	0	0	0	229
16:40	0	42	37	0	79	33	0	37	0	70	44	25	0	0	69	0	0	0	0	0	218
16:45	0	43	33	0	76	31	0	24	0	55	51	27	0	0	78	0	0	0	0	0	209
16:50	0	43	27	0	70	26	0	33	0	59	41	32	0	0	73	0	0	0	0	0	202
16:55	0	39	33	0	72	34	0	24	0	58	48	29	0	0	77	0	0	0	0	0	207
Total	0	533	376	0	909	370	0	362	1	733	500	327	0	0	827	0	0	0	0	0	2469
17:00	0	38	25	0	63	38	0	25	0	63	47	25	0	0	72	0	0	0	0	0	198
17:05	0	43	24	0	67	29	0	26	0	55	35	18	0	0	53	0	0	0	0	0	175
17:10	0	59	32	0	91	33	0	21	0	54	41	31	0	0	72	0	0	0	0	0	217
17:15	0	33	21	0	54	34	0	31	0	65	37	19	0	0	56	0	0	0	0	0	175
17:20	0	46	33	0	79	27	0	23	0	50	54	40	0	0	94	0	0	0	0	0	223
17:25	0	52	31	0	83	27	0	25	0	52	41	25	0	0	66	0	0	0	0	0	201
17:30	0	37	30	0	67	24	0	28	0	52	34	21	0	0	55	0	0	0	0	0	174
17:35	0	58	22	0	80	30	0	23	0	53	35	37	0	0	72	0	0	0	0	0	205
17:40	0	36	35	0	71	23	0	18	0	41	28	44	0	0	72	0	0	0	0	0	184
17:45	0	43	34	0	77	27	0	29	0	56	24	24	0	0	48	0	0	0	0	0	181
17:50	0	47	25	0	72	24	0	29	0	53	29	25	0	0	54	0	0	0	0	0	179
17:55	0	48	31	0	79	25	0	18	0	43	34	22	0	0	56	0	0	0	0	0	178
Total	0	540	343	0	883	341	0	296	0	637	439	331	0	0	770	0	0	0	0	0	2290
Grand Total	0	1073	719	0	1792	711	0	658	1	1370	939	658	0	0	1597	0	0	0	0	0	4759
Apprch %	0	59.9	40.1	0		51.9	0	48	0.1		58.8	41.2	0	0		0	0	0	0		
Total %	0	22.5	15.1	0	37.7	14.9	0	13.8	0	28.8	19.7	13.8	0	0	33.6	0	0	0	0	0	

Level of Service Reports



Timings

1: Powers Blvd & Bradley Rd.

Existing Traffic

AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 		 	 
Traffic Volume (vph)	330	615	630	330	324	211
Future Volume (vph)	330	615	630	330	324	211
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	22.0		5.0	22.0
Minimum Split (s)	11.0	11.0	29.0		11.0	29.0
Total Split (s)	25.0	25.0	47.0		20.0	67.0
Total Split (%)	27.2%	27.2%	51.1%		21.7%	72.8%
Yellow Time (s)	3.0	3.0	5.0		3.0	5.0
All-Red Time (s)	3.0	3.0	2.0		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0		6.0	7.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effect Green (s)	19.0	19.0	23.4	73.8	42.7	41.7
Actuated g/C Ratio	0.26	0.26	0.32	1.00	0.58	0.57
v/c Ratio	0.39	0.94	0.65	0.24	0.77	0.11
Control Delay	24.8	35.9	25.0	0.4	22.1	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	35.9	25.0	0.4	22.1	7.5
LOS	C	D	C	A	C	A
Approach Delay	32.1		16.5			16.3
Approach LOS	C		B			B

Intersection Summary

Cycle Length: 92

Actuated Cycle Length: 73.8

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 22.2

Intersection LOS: C

Intersection Capacity Utilization 67.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Powers Blvd & Bradley Rd.



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

Existing Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	700	64	16	831	129	29
Future Vol, veh/h	700	64	16	831	129	29
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	-	300	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	95	95	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	761	70	17	875	154	35
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	831	0	1233	381
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	472	-
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	-	-	797	-	169	617
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	797	-	165	617
Mov Cap-2 Maneuver	-	-	-	-	165	-
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	582	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.2	90.3			
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	165	617	-	-	797	-
HCM Lane V/C Ratio	0.931	0.056	-	-	0.021	-
HCM Control Delay (s)	108.1	11.2	-	-	9.6	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	6.9	0.2	-	-	0.1	-

Timings

1: Powers Blvd & Bradley Rd.

Existing Traffic

PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	354	381	335	513	368	524
Future Volume (vph)	354	381	335	513	368	524
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	22.0		5.0	22.0
Minimum Split (s)	11.0	11.0	29.0		11.0	29.0
Total Split (s)	25.0	25.0	47.0		20.0	67.0
Total Split (%)	27.2%	27.2%	51.1%		21.7%	72.8%
Yellow Time (s)	3.0	3.0	5.0		3.0	5.0
All-Red Time (s)	3.0	3.0	2.0		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0		6.0	7.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effect Green (s)	13.3	13.3	22.1	66.8	41.5	40.5
Actuated g/C Ratio	0.20	0.20	0.33	1.00	0.62	0.61
v/c Ratio	0.56	0.64	0.31	0.36	0.60	0.27
Control Delay	27.6	7.9	18.6	0.6	10.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	7.9	18.6	0.6	10.9	7.0
LOS	C	A	B	A	B	A
Approach Delay	17.4		7.7			8.6
Approach LOS	B		A			A

Intersection Summary

Cycle Length: 92

Actuated Cycle Length: 66.8

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 10.9

Intersection LOS: B

Intersection Capacity Utilization 64.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Powers Blvd & Bradley Rd.



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

Existing Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	806	108	19	746	50	14
Future Vol, veh/h	806	108	19	746	50	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	-	0	415	-	300	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	93	93	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	822	110	20	802	64	18
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	932	0	1263	411
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	441	-
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	-	-	730	-	162	590
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	730	-	158	590
Mov Cap-2 Maneuver	-	-	-	-	158	-
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	599	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		35.7	
HCM LOS	E					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	158	590	-	-	730	-
HCM Lane V/C Ratio	0.406	0.03	-	-	0.028	-
HCM Control Delay (s)	42.5	11.3	-	-	10.1	-
HCM Lane LOS	E	B	-	-	B	-
HCM 95th %tile Q(veh)	1.8	0.1	-	-	0.1	-

Timings

1: Powers Blvd & Bradley Rd.

Short-Term Background Traffic

AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 		 	 
Traffic Volume (vph)	658	1043	658	624	666	220
Future Volume (vph)	658	1043	658	624	666	220
Turn Type	Prot	Free	NA	pt+ov	Prot	NA
Protected Phases	8		2	2 8	1	6
Permitted Phases		Free				
Detector Phase	8		2	2 8	1	6
Switch Phase						
Minimum Initial (s)	5.0		22.0		5.0	22.0
Minimum Split (s)	11.0		29.0		11.0	29.0
Total Split (s)	28.0		34.0		28.0	62.0
Total Split (%)	31.1%		37.8%		31.1%	68.9%
Yellow Time (s)	3.0		5.0		3.0	5.0
All-Red Time (s)	3.0		2.0		3.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		7.0		6.0	7.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Min		None	Min
Act Effect Green (s)	20.9	87.0	26.0	53.0	21.0	53.0
Actuated g/C Ratio	0.24	1.00	0.30	0.61	0.24	0.61
v/c Ratio	0.83	0.69	0.72	0.74	0.88	0.11
Control Delay	41.7	2.4	32.0	17.7	45.3	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	2.4	32.0	17.7	45.3	7.4
LOS	D	A	C	B	D	A
Approach Delay	17.6		25.0			35.9
Approach LOS	B		C			D

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 87

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 24.4

Intersection LOS: C

Intersection Capacity Utilization 71.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Powers Blvd & Bradley Rd.



Timings

2: Legacy Hill Dr & Bradley Rd.

Short-Term Background Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	1067	124	46	1208	36	364	2	102	71	1	128
Future Volume (vph)	99	1067	124	46	1208	36	364	2	102	71	1	128
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			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	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	12.0	36.0	36.0	12.0	36.0	36.0	17.0	30.0	30.0	12.0	25.0	25.0
Total Split (%)	13.3%	40.0%	40.0%	13.3%	40.0%	40.0%	18.9%	33.3%	33.3%	13.3%	27.8%	27.8%
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	Lag	Lag	Lead	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	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	37.7	33.7	33.7	36.3	31.3	31.3	11.7	14.3	14.3	13.5	6.8	6.8
Actuated g/C Ratio	0.51	0.45	0.45	0.49	0.42	0.42	0.16	0.19	0.19	0.18	0.09	0.09
v/c Ratio	0.42	0.72	0.17	0.21	0.89	0.05	0.73	0.01	0.26	0.27	0.01	0.50
Control Delay	14.5	21.4	3.3	10.5	30.5	0.1	39.9	27.0	4.5	22.2	31.0	12.7
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	14.5	21.4	3.3	10.5	30.5	0.1	39.9	27.0	4.5	22.2	31.0	12.7
LOS	B	C	A	B	C	A	D	C	A	C	C	B
Approach Delay		19.1			29.0			32.2			16.2	
Approach LOS		B			C			C			B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 74.1

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 24.8

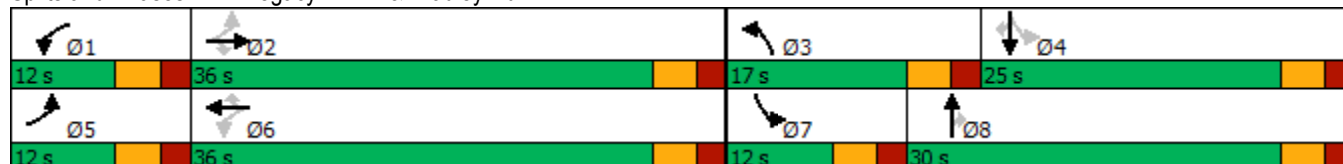
Intersection LOS: C

Intersection Capacity Utilization 68.4%

ICU Level of Service C

Analysis Period (min) 15

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



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	0	68	440	186
Demand Flow Rate, veh/h	0	69	449	189
Vehicles Circulating, veh/h	189	449	21	0
Vehicles Exiting, veh/h	0	21	168	518
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	4.9	5.7	3.8
Approach LOS	-	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	0	69	449	189
Cap Entry Lane, veh/h	1138	873	1351	1380
Entry HV Adj Factor	1.000	0.986	0.980	0.983
Flow Entry, veh/h	0	68	440	186
Cap Entry, veh/h	1138	860	1324	1356
V/C Ratio	0.000	0.079	0.332	0.137
Control Delay, s/veh	3.2	4.9	5.7	3.8
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

Timings

1: Powers Blvd & Bradley Rd.

Short-Term Background Traffic

PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 		 	 
Traffic Volume (vph)	711	825	350	916	882	547
Future Volume (vph)	711	825	350	916	882	547
Turn Type	Prot	Free	NA	custom	Prot	NA
Protected Phases	8		2	2 8	1	6
Permitted Phases		Free		1		
Detector Phase	8		2	2 8	1	6
Switch Phase						
Minimum Initial (s)	5.0		22.0		5.0	22.0
Minimum Split (s)	11.0		29.0		11.0	29.0
Total Split (s)	28.0		29.0		33.0	62.0
Total Split (%)	31.1%		32.2%		36.7%	68.9%
Yellow Time (s)	3.0		5.0		3.0	5.0
All-Red Time (s)	3.0		2.0		3.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		7.0		6.0	7.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Min		None	Min
Act Effect Green (s)	22.0	89.6	22.0	89.6	26.6	54.6
Actuated g/C Ratio	0.25	1.00	0.25	1.00	0.30	0.61
v/c Ratio	0.91	0.56	0.44	0.64	0.94	0.28
Control Delay	49.2	1.4	30.6	2.0	49.2	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	1.4	30.6	2.0	49.2	8.6
LOS	D	A	C	A	D	A
Approach Delay	23.5		9.9			33.6
Approach LOS	C		A			C

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 89.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 22.8

Intersection LOS: C

Intersection Capacity Utilization 92.7%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Powers Blvd & Bradley Rd.



Timings

2: Legacy Hill Dr & Bradley Rd.

Short-Term Background Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1349	319	122	1196	40	204	1	62	67	2	136
Future Volume (vph)	130	1349	319	122	1196	40	204	1	62	67	2	136
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	custom	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			3	4		4
Detector Phase	5	2	2	1	6	6	3	8	3	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	23.0	23.0	10.0	23.0	23.0	10.0	23.0	10.0	10.0	23.0	23.0
Total Split (s)	12.0	36.0	36.0	12.0	36.0	36.0	17.0	30.0	17.0	12.0	25.0	25.0
Total Split (%)	13.3%	40.0%	40.0%	13.3%	40.0%	40.0%	18.9%	33.3%	18.9%	13.3%	27.8%	27.8%
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	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	38.0	31.1	31.1	37.9	31.1	31.1	9.9	13.0	9.9	17.0	6.9	6.9
Actuated g/C Ratio	0.51	0.42	0.42	0.51	0.42	0.42	0.13	0.17	0.13	0.23	0.09	0.09
v/c Ratio	0.54	1.00	0.42	0.51	0.89	0.06	0.49	0.00	0.20	0.19	0.01	0.53
Control Delay	18.2	46.7	5.0	17.0	30.9	0.1	34.3	29.0	1.3	20.8	31.0	13.6
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	18.2	46.7	5.0	17.0	30.9	0.1	34.3	29.0	1.3	20.8	31.0	13.6
LOS	B	D	A	B	C	A	C	C	A	C	C	B
Approach Delay		37.2			28.7			26.7			16.1	
Approach LOS		D			C			C			B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 74.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 32.1

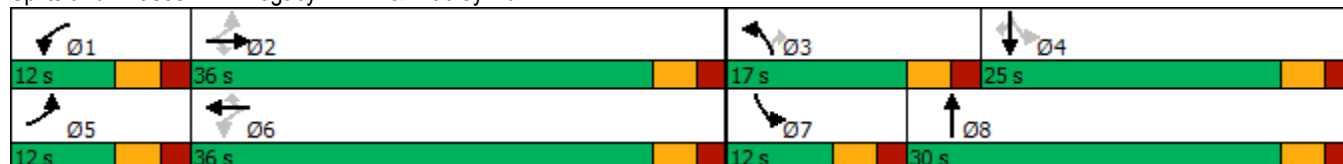
Intersection LOS: C

Intersection Capacity Utilization 69.0%

ICU Level of Service C

Analysis Period (min) 15

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



HCM 6th Roundabout
5: Legacy Hill Dr & Frontside Dr

Short-Term Background Traffic
PM Peak Hour

Intersection				
Intersection Delay, s/veh	5.3			
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	0	46	245	481
Demand Flow Rate, veh/h	0	47	250	490
Vehicles Circulating, veh/h	490	250	66	0
Vehicles Exiting, veh/h	0	66	424	297
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	3.8	4.5	5.9
Approach LOS	-	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	0	47	250	490
Cap Entry Lane, veh/h	837	1069	1290	1380
Entry HV Adj Factor	1.000	0.979	0.980	0.981
Flow Entry, veh/h	0	46	245	481
Cap Entry, veh/h	837	1047	1265	1354
V/C Ratio	0.000	0.044	0.194	0.355
Control Delay, s/veh	4.3	3.8	4.5	5.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	2

Timings

1: Powers & Bradley Rd

2046 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	273	75	708	328	726	100	742	610	561	245	25
Future Volume (vph)	25	273	75	708	328	726	100	742	610	561	245	25
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	pt+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases	4		Free			Free						6
Detector Phase	7	4		3	8		5	2	2 3	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)	15.0	25.0		31.0	41.0		15.0	44.0		30.0	59.0	59.0
Total Split (%)	11.5%	19.2%		23.8%	31.5%		11.5%	33.8%		23.1%	45.4%	45.4%
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)	22.5	15.8	130.0	29.3	42.6	130.0	9.0	35.7	70.0	29.2	55.9	55.9
Actuated g/C Ratio	0.17	0.12	1.00	0.23	0.33	1.00	0.07	0.27	0.54	0.22	0.43	0.43
v/c Ratio	0.12	0.67	0.05	0.93	0.29	0.47	0.44	0.78	0.40	0.74	0.16	0.03
Control Delay	29.0	62.2	0.1	75.5	52.9	0.8	63.9	49.4	15.4	54.1	23.2	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	29.0	62.2	0.1	75.5	52.9	0.8	63.9	49.4	15.4	54.1	23.2	0.1
LOS	C	E	A	E	D	A	E	D	B	D	C	A
Approach Delay		47.5			40.5			36.2			43.4	
Approach LOS		D			D			D			D	

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: 0.93

Intersection Signal Delay: 40.2

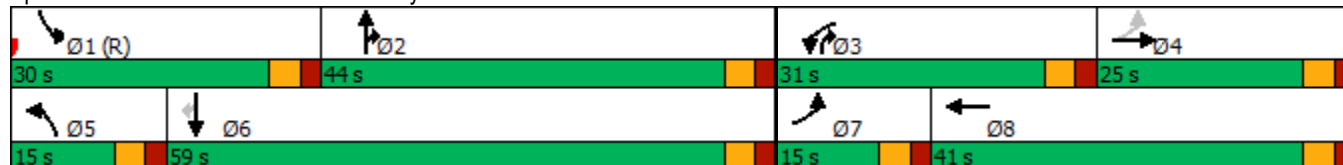
Intersection LOS: D

Intersection Capacity Utilization 81.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd



Timings 2: Legacy Dr & Bradley Rd

2046 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	1153	90	44	1284	161	253	16	114	132	9	226
Future Volume (vph)	201	1153	90	44	1284	161	253	16	114	132	9	226
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)	10.0	5.0	5.0	5.0	5.0	5.0	20.0	10.0	10.0	15.0	10.0	10.0
Minimum Split (s)	15.0	10.0	10.0	10.0	10.0	10.0	25.0	15.0	15.0	20.0	15.0	15.0
Total Split (s)	17.0	68.0	68.0	10.0	61.0	61.0	25.0	27.0	27.0	25.0	27.0	27.0
Total Split (%)	13.1%	52.3%	52.3%	7.7%	46.9%	46.9%	19.2%	20.8%	20.8%	19.2%	20.8%	20.8%
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	Lag	Lag	Lead	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)	12.4	71.2	71.2	69.1	62.9	62.9	20.0	19.7	19.7	15.0	14.7	14.7
Actuated g/C Ratio	0.10	0.55	0.55	0.53	0.48	0.48	0.15	0.15	0.15	0.12	0.11	0.11
v/c Ratio	0.65	0.63	0.10	0.21	0.79	0.20	0.50	0.06	0.33	0.35	0.04	0.78
Control Delay	69.7	18.8	4.1	14.0	33.3	5.7	54.2	44.8	6.6	55.8	48.2	39.5
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	69.7	18.8	4.1	14.0	33.3	5.7	54.2	44.8	6.6	55.8	48.2	39.5
LOS	E	B	A	B	C	A	D	D	A	E	D	D
Approach Delay		25.0			29.7			39.6			45.6	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 102 (78%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 30.5

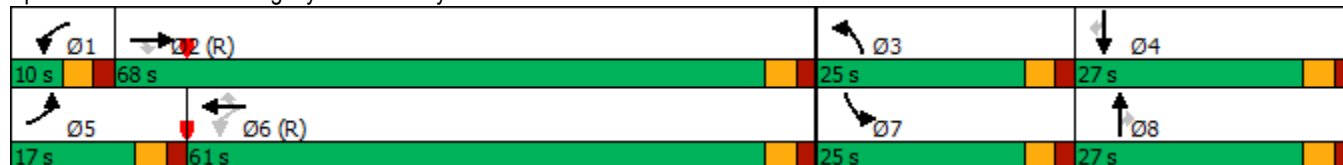
Intersection LOS: C

Intersection Capacity Utilization 70.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Legacy Dr & Bradley Rd



Intersection				
Intersection Delay, s/veh	4.4			
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	0	23	339	146
Demand Flow Rate, veh/h	0	23	346	149
Vehicles Circulating, veh/h	149	346	7	0
Vehicles Exiting, veh/h	0	7	142	369
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	3.9	4.8	3.5
Approach LOS	-	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	0	23	346	149
Cap Entry Lane, veh/h	1185	970	1370	1380
Entry HV Adj Factor	1.000	1.000	0.980	0.981
Flow Entry, veh/h	0	23	339	146
Cap Entry, veh/h	1185	970	1343	1354
V/C Ratio	0.000	0.024	0.253	0.108
Control Delay, s/veh	3.0	3.9	4.8	3.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

Intersection			
Intersection Delay, s/veh	0.0		
Intersection LOS	-		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	0	0	0
Demand Flow Rate, veh/h	0	0	0
Vehicles Circulating, veh/h	0	0	0
Vehicles Exiting, veh/h	0	0	0
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	0.0	0.0	0.0
Approach LOS	-	-	-
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	0	0	0
Cap Entry Lane, veh/h	1380	1380	1380
Entry HV Adj Factor	1.000	1.000	1.000
Flow Entry, veh/h	0	0	0
Cap Entry, veh/h	1380	1380	1380
V/C Ratio	0.000	0.000	0.000
Control Delay, s/veh	2.6	2.6	2.6
LOS	A	A	A
95th %tile Queue, veh	0	0	0

Timings

1: Powers & Bradley Rd

2046 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	375	210	741	327	699	175	385	888	828	599	110
Future Volume (vph)	70	375	210	741	327	699	175	385	888	828	599	110
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	pt+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases	4		Free			Free						6
Detector Phase	7	4		3	8		5	2	2 3	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)	11.0	25.0		36.0	50.0		15.0	28.0		41.0	54.0	54.0
Total Split (%)	8.5%	19.2%		27.7%	38.5%		11.5%	21.5%		31.5%	41.5%	41.5%
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)	24.4	18.4	130.0	30.9	45.5	130.0	10.0	23.0	58.9	37.7	50.7	50.7
Actuated g/C Ratio	0.19	0.14	1.00	0.24	0.35	1.00	0.08	0.18	0.45	0.29	0.39	0.39
v/c Ratio	0.33	0.79	0.14	0.94	0.27	0.46	0.68	0.63	0.69	0.86	0.45	0.16
Control Delay	30.3	65.7	0.2	56.5	19.2	1.1	72.1	54.8	28.3	53.9	31.0	2.4
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	30.3	65.7	0.2	56.5	19.2	1.1	72.1	54.8	28.3	53.9	31.0	2.4
LOS	C	E	A	E	B	A	E	D	C	D	C	A
Approach Delay		40.9			27.7			40.6			41.3	
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: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 36.6

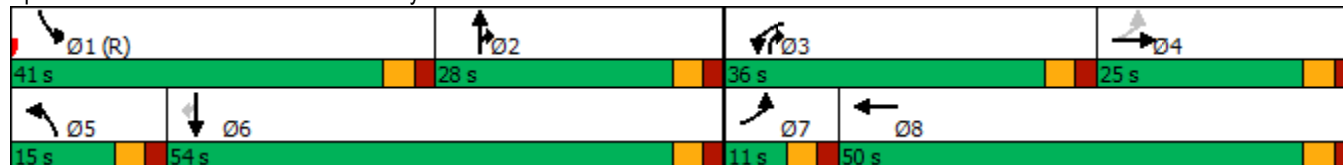
Intersection LOS: D

Intersection Capacity Utilization 82.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd



Timings 2: Legacy Dr & Bradley Rd

2046 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	349	1455	287	148	1252	160	154	17	75	260	21	361
Future Volume (vph)	349	1455	287	148	1252	160	154	17	75	260	21	361
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	25.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	30.0	15.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	30.0	50.0	50.0	30.0	50.0	50.0	24.0	25.0	25.0	25.0	26.0	26.0
Total Split (%)	23.1%	38.5%	38.5%	23.1%	38.5%	38.5%	18.5%	19.2%	19.2%	19.2%	20.0%	20.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	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	Lag	Lag	Lead	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)	19.1	62.8	62.8	91.9	68.8	68.8	17.8	8.3	8.3	26.4	11.5	11.5
Actuated g/C Ratio	0.15	0.48	0.48	0.71	0.53	0.53	0.14	0.06	0.06	0.20	0.09	0.09
v/c Ratio	0.73	0.90	0.35	0.39	0.70	0.19	0.38	0.15	0.41	0.50	0.13	0.78
Control Delay	54.1	41.3	13.2	23.3	27.5	8.9	44.9	58.1	11.5	46.3	53.5	17.1
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	54.1	41.3	13.2	23.3	27.5	8.9	44.9	58.1	11.5	46.3	53.5	17.1
LOS	D	D	B	C	C	A	D	E	B	D	D	B
Approach Delay		39.6			25.2			35.7			30.1	
Approach LOS		D			C			D			C	

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: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 33.1

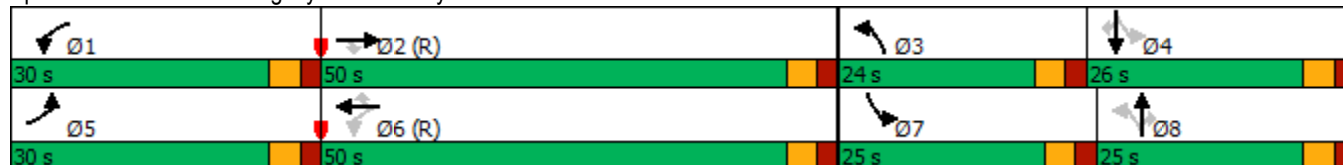
Intersection LOS: C

Intersection Capacity Utilization 87.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Legacy Dr & Bradley Rd



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	0	13	232	452
Demand Flow Rate, veh/h	0	13	237	461
Vehicles Circulating, veh/h	461	237	23	0
Vehicles Exiting, veh/h	0	23	438	250
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	3.4	4.2	5.7
Approach LOS	-	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	0	13	237	461
Cap Entry Lane, veh/h	862	1084	1348	1380
Entry HV Adj Factor	1.000	1.000	0.980	0.981
Flow Entry, veh/h	0	13	232	452
Cap Entry, veh/h	862	1084	1321	1354
V/C Ratio	0.000	0.012	0.176	0.334
Control Delay, s/veh	4.2	3.4	4.2	5.7
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Timings
1: Powers Blvd & Bradley Rd.

Existing + WEC Fil No. 1
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	346	652	603	373	340	207
Future Volume (vph)	346	652	603	373	340	207
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	22.0		5.0	22.0
Minimum Split (s)	11.0	11.0	29.0		11.0	29.0
Total Split (s)	25.0	25.0	47.0		20.0	67.0
Total Split (%)	27.2%	27.2%	51.1%		21.7%	72.8%
Yellow Time (s)	3.0	3.0	5.0		3.0	5.0
All-Red Time (s)	3.0	3.0	2.0		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0		6.0	7.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effect Green (s)	19.0	19.0	23.0	73.7	42.6	41.6
Actuated g/C Ratio	0.26	0.26	0.31	1.00	0.58	0.56
v/c Ratio	0.41	0.98	0.63	0.27	0.78	0.11
Control Delay	24.8	45.0	24.9	0.4	22.2	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	45.0	24.9	0.4	22.2	7.5
LOS	C	D	C	A	C	A
Approach Delay	38.0		15.5			16.7
Approach LOS	D		B			B

Intersection Summary

Cycle Length: 92

Actuated Cycle Length: 73.7

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 24.3

Intersection LOS: C

Intersection Capacity Utilization 69.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Powers Blvd & Bradley Rd.



Intersection						
Int Delay, s/veh	51.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	644	179	65	793	220	94
Future Vol, veh/h	644	179	65	793	220	94
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	-	300	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	95	95	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	700	195	68	835	262	112

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	895
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	-	-	754
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	754
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	297.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	149	646	-	-	754	-
HCM Lane V/C Ratio	1.758	0.173	-	-	0.091	-
HCM Control Delay (s)	\$ 419.2	11.7	-	-	10.2	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	19.2	0.6	-	-	0.3	-

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

Timings
2: Legacy Hill Dr & Bradley Rd.

Existing + WEC Fil No. 1
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↗
Traffic Volume (vph)	644	179	65	793	220	94
Future Volume (vph)	644	179	65	793	220	94
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	23.0	23.0
Total Split (s)	53.0	53.0	12.0	65.0	25.0	25.0
Total Split (%)	58.9%	58.9%	13.3%	72.2%	27.8%	27.8%
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	Min	Min	None	Min	None	None
Act Effect Green (s)	19.9	19.9	25.9	25.9	13.2	13.2
Actuated g/C Ratio	0.40	0.40	0.52	0.52	0.26	0.26
v/c Ratio	0.50	0.26	0.16	0.45	0.56	0.22
Control Delay	14.5	3.6	7.1	8.4	22.8	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	3.6	7.1	8.4	22.8	5.7
LOS	B	A	A	A	C	A
Approach Delay	12.1			8.3	17.7	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 49.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 11.5
 Intersection LOS: B
 Intersection Capacity Utilization 46.7%
 ICU Level of Service A
 Analysis Period (min) 15

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



Intersection				
Intersection Delay, s/veh	4.2			
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	189	0	173	83
Demand Flow Rate, veh/h	193	0	176	85
Vehicles Circulating, veh/h	85	364	188	15
Vehicles Exiting, veh/h	15	0	90	349
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	0.0	4.6	3.2
Approach LOS	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	193	0	176	85
Cap Entry Lane, veh/h	1265	952	1139	1359
Entry HV Adj Factor	0.979	1.000	0.982	0.980
Flow Entry, veh/h	189	0	173	83
Cap Entry, veh/h	1239	952	1119	1332
V/C Ratio	0.153	0.000	0.155	0.063
Control Delay, s/veh	4.2	3.8	4.6	3.2
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	174	0	0	0	0	14
Future Vol, veh/h	174	0	0	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	200
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	189	0	0	0	0	15
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	0	0	15	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	-	-	1603	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	1603	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s		0		0		
HCM LOS	-					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1603	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	-	
HCM Lane LOS	A	-	-	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Timings
1: Powers Blvd & Bradley Rd.

Existing + WEC Fil No. 1
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	374	399	326	533	386	515
Future Volume (vph)	374	399	326	533	386	515
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	22.0		5.0	22.0
Minimum Split (s)	11.0	11.0	29.0		11.0	29.0
Total Split (s)	25.0	25.0	47.0		20.0	67.0
Total Split (%)	27.2%	27.2%	51.1%		21.7%	72.8%
Yellow Time (s)	3.0	3.0	5.0		3.0	5.0
All-Red Time (s)	3.0	3.0	2.0		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0		6.0	7.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effect Green (s)	13.7	13.7	22.1	67.5	41.7	40.7
Actuated g/C Ratio	0.20	0.20	0.33	1.00	0.62	0.60
v/c Ratio	0.58	0.65	0.31	0.37	0.63	0.26
Control Delay	27.8	7.8	18.9	0.7	11.7	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	7.8	18.9	0.7	11.7	7.1
LOS	C	A	B	A	B	A
Approach Delay	17.5		7.6			9.1
Approach LOS	B		A			A

Intersection Summary

Cycle Length: 92
 Actuated Cycle Length: 67.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 11.1
 Intersection LOS: B
 Intersection Capacity Utilization 66.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Powers Blvd & Bradley Rd.



Intersection						
Int Delay, s/veh	10.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	763	189	52	721	113	65
Future Vol, veh/h	763	189	52	721	113	65
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	-	300	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	93	93	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	779	193	56	775	145	83

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	972
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	-	-	705
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	705
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	88.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	146	609	-	-	705	-
HCM Lane V/C Ratio	0.992	0.137	-	-	0.079	-
HCM Control Delay (s)	132.9	11.8	-	-	10.5	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	7.3	0.5	-	-	0.3	-

Timings
2: Legacy Hill Dr & Bradley Rd.

Existing + WEC Fil No. 1
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↗
Traffic Volume (vph)	763	189	52	721	113	65
Future Volume (vph)	763	189	52	721	113	65
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	10.0	10.0
Total Split (s)	53.0	53.0	12.0	65.0	25.0	25.0
Total Split (%)	58.9%	58.9%	13.3%	72.2%	27.8%	27.8%
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	Min	Min	None	Min	None	None
Act Effect Green (s)	25.6	25.6	30.0	31.5	9.9	9.9
Actuated g/C Ratio	0.54	0.54	0.64	0.67	0.21	0.21
v/c Ratio	0.40	0.20	0.11	0.33	0.39	0.21
Control Delay	11.1	2.8	5.0	5.3	22.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	2.8	5.0	5.3	22.5	7.3
LOS	B	A	A	A	C	A
Approach Delay	9.4			5.3	16.9	
Approach LOS	A			A	B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 47

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 8.6

Intersection LOS: A

Intersection Capacity Utilization 44.0%

ICU Level of Service A

Analysis Period (min) 15

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



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	137	0	70	129
Demand Flow Rate, veh/h	140	0	71	132
Vehicles Circulating, veh/h	132	201	130	4
Vehicles Exiting, veh/h	4	0	142	197
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	0.0	3.5	3.4
Approach LOS	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	140	0	71	132
Cap Entry Lane, veh/h	1206	1124	1209	1374
Entry HV Adj Factor	0.979	1.000	0.981	0.980
Flow Entry, veh/h	137	0	70	129
Cap Entry, veh/h	1180	1124	1186	1347
V/C Ratio	0.116	0.000	0.059	0.096
Control Delay, s/veh	4.0	3.2	3.5	3.4
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	126	0	0	0	0	4
Future Vol, veh/h	126	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	200
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	137	0	0	0	0	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	0	0	4	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	-	-	1618	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	1618	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s		0		0		
HCM LOS	-					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1618	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	-	
HCM Lane LOS	A	-	-	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Timings
1: Powers Blvd & Bradley Rd.

Short-Term Total Traffic
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	674	1080	631	667	682	216
Future Volume (vph)	674	1080	631	667	682	216
Turn Type	Prot	Free	NA	pt+ov	Prot	NA
Protected Phases	8		2	2 8	1	6
Permitted Phases		Free				
Detector Phase	8		2	2 8	1	6
Switch Phase						
Minimum Initial (s)	5.0		22.0		5.0	22.0
Minimum Split (s)	11.0		29.0		11.0	29.0
Total Split (s)	28.0		34.0		28.0	62.0
Total Split (%)	31.1%		37.8%		31.1%	68.9%
Yellow Time (s)	3.0		5.0		3.0	5.0
All-Red Time (s)	3.0		2.0		3.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		7.0		6.0	7.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Min		None	Min
Act Effect Green (s)	21.2	88.0	26.5	53.7	21.2	53.8
Actuated g/C Ratio	0.24	1.00	0.30	0.61	0.24	0.61
v/c Ratio	0.85	0.71	0.68	0.79	0.89	0.11
Control Delay	43.5	2.7	31.1	20.2	47.5	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	2.7	31.1	20.2	47.5	7.4
LOS	D	A	C	C	D	A
Approach Delay	18.4		25.5			37.8
Approach LOS	B		C			D

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 88
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 25.3
 Intersection LOS: C
 Intersection Capacity Utilization 72.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Powers Blvd & Bradley Rd.



Timings 2: Legacy Hill Dr & Bradley Rd.

Short-Term Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	1011	239	95	1170	36	455	3	167	71	1	128
Future Volume (vph)	99	1011	239	95	1170	36	455	3	167	71	1	128
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			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	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	12.0	36.0	36.0	12.0	36.0	36.0	17.0	30.0	30.0	12.0	25.0	25.0
Total Split (%)	13.3%	40.0%	40.0%	13.3%	40.0%	40.0%	18.9%	33.3%	33.3%	13.3%	27.8%	27.8%
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	Lag	Lag	Lead	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	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	36.6	31.2	31.2	36.6	31.2	31.2	12.1	14.6	14.6	13.5	6.8	6.8
Actuated g/C Ratio	0.49	0.42	0.42	0.49	0.42	0.42	0.16	0.20	0.20	0.18	0.09	0.09
v/c Ratio	0.42	0.74	0.32	0.41	0.87	0.05	0.89	0.01	0.40	0.27	0.01	0.51
Control Delay	14.1	23.0	3.5	13.8	28.9	0.1	52.3	27.0	7.8	22.2	31.0	12.8
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	14.1	23.0	3.5	13.8	28.9	0.1	52.3	27.0	7.8	22.2	31.0	12.8
LOS	B	C	A	B	C	A	D	C	A	C	C	B
Approach Delay		18.9			27.0			40.3			16.2	
Approach LOS		B			C			D			B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 74.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 25.6

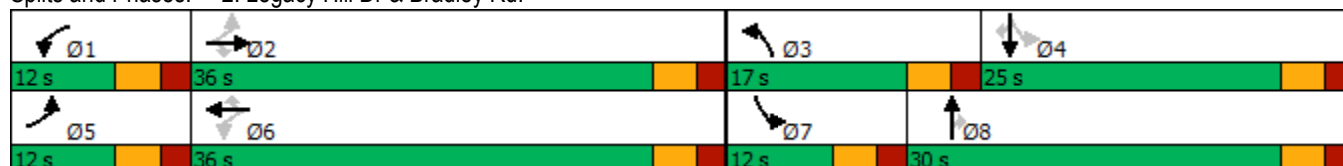
Intersection LOS: C

Intersection Capacity Utilization 70.0%

ICU Level of Service C

Analysis Period (min) 15

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



HCM 6th Roundabout
5: Legacy Hill Dr & Frontside Dr

Short-Term Total Traffic
AM Peak Hour

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	189	68	441	182
Demand Flow Rate, veh/h	193	69	450	185
Vehicles Circulating, veh/h	185	638	209	15
Vehicles Exiting, veh/h	15	21	169	692
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.7	6.1	7.5	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	193	69	450	185
Cap Entry Lane, veh/h	1143	720	1115	1359
Entry HV Adj Factor	0.979	0.986	0.981	0.983
Flow Entry, veh/h	189	68	441	182
Cap Entry, veh/h	1119	709	1094	1335
V/C Ratio	0.169	0.096	0.404	0.136
Control Delay, s/veh	4.7	6.1	7.5	3.8
LOS	A	A	A	A
95th %tile Queue, veh	1	0	2	0

HCM 6th TWSC
11: Frontside Dr & North Site Access

Short-Term Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	174	0	0	0	0	14
Future Vol, veh/h	174	0	0	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	200
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	189	0	0	0	0	15
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	0	0	15	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	-	-	1603	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	1603	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s		0		0		
HCM LOS	-					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1603	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	-	
HCM Lane LOS	A	-	-	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Timings
1: Powers Blvd & Bradley Rd.

Short-Term Total Traffic
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰	↰	↕↕	↰	↰↰	↕↕
Traffic Volume (vph)	731	843	341	936	899	538
Future Volume (vph)	731	843	341	936	899	538
Turn Type	Prot	Free	NA	custom	Prot	NA
Protected Phases	8		2	2 8	1	6
Permitted Phases		Free		1		
Detector Phase	8		2	2 8	1	6
Switch Phase						
Minimum Initial (s)	5.0		22.0		5.0	22.0
Minimum Split (s)	11.0		29.0		11.0	29.0
Total Split (s)	28.0		29.0		33.0	62.0
Total Split (%)	31.1%		32.2%		36.7%	68.9%
Yellow Time (s)	3.0		5.0		3.0	5.0
All-Red Time (s)	3.0		2.0		3.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		7.0		6.0	7.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Min		None	Min
Act Effect Green (s)	22.0	89.9	22.0	89.9	26.9	54.9
Actuated g/C Ratio	0.24	1.00	0.24	1.00	0.30	0.61
v/c Ratio	0.94	0.57	0.43	0.65	0.95	0.27
Control Delay	53.2	1.5	30.6	2.1	50.8	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	1.5	30.6	2.1	50.8	8.6
LOS	D	A	C	A	D	A
Approach Delay	25.5		9.7			35.0
Approach LOS	C		A			C

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 89.9

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 23.9

Intersection LOS: C

Intersection Capacity Utilization 94.4%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Powers Blvd & Bradley Rd.



Timings 2: Legacy Hill Dr & Bradley Rd.

Short-Term Total Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1306	400	155	1171	40	267	1	113	67	2	136
Future Volume (vph)	130	1306	400	155	1171	40	267	1	113	67	2	136
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	custom	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			3	4		4
Detector Phase	5	2	2	1	6	6	3	8	3	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	23.0	23.0	10.0	23.0	23.0	10.0	23.0	10.0	10.0	23.0	23.0
Total Split (s)	12.0	36.0	36.0	12.0	36.0	36.0	17.0	30.0	17.0	12.0	25.0	25.0
Total Split (%)	13.3%	40.0%	40.0%	13.3%	40.0%	40.0%	18.9%	33.3%	18.9%	13.3%	27.8%	27.8%
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	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	37.9	31.0	31.0	38.2	31.2	31.2	10.8	13.4	10.8	17.5	6.9	6.9
Actuated g/C Ratio	0.50	0.41	0.41	0.50	0.41	0.41	0.14	0.18	0.14	0.23	0.09	0.09
v/c Ratio	0.55	0.98	0.49	0.65	0.88	0.06	0.59	0.00	0.35	0.19	0.01	0.53
Control Delay	18.7	43.6	5.0	25.2	30.5	0.1	36.1	29.0	7.3	20.6	31.0	13.7
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	18.7	43.6	5.0	25.2	30.5	0.1	36.1	29.0	7.3	20.6	31.0	13.7
LOS	B	D	A	C	C	A	D	C	A	C	C	B
Approach Delay		33.5			29.0			27.5			16.1	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 30.3

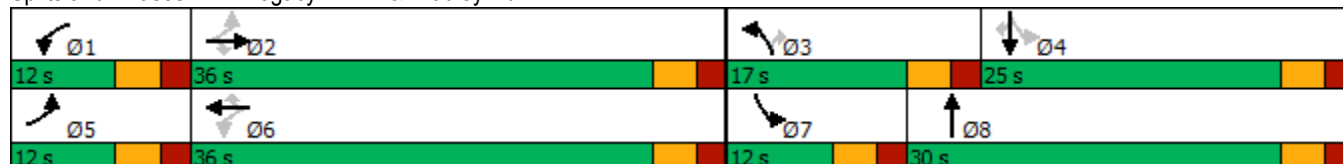
Intersection LOS: C

Intersection Capacity Utilization 71.5%

ICU Level of Service C

Analysis Period (min) 15

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



HCM 6th Roundabout
5: Legacy Hill Dr & Frontside Dr

Short-Term Total Traffic
PM Peak Hour

Intersection

Intersection Delay, s/veh 5.7

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	137	46	245	473
Demand Flow Rate, veh/h	140	47	250	482
Vehicles Circulating, veh/h	482	380	196	4
Vehicles Exiting, veh/h	4	66	426	423
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.1	4.4	5.3	5.9
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	140	47	250	482
Cap Entry Lane, veh/h	844	937	1130	1374
Entry HV Adj Factor	0.979	0.979	0.981	0.981
Flow Entry, veh/h	137	46	245	473
Cap Entry, veh/h	826	917	1108	1348
V/C Ratio	0.166	0.050	0.221	0.351
Control Delay, s/veh	6.1	4.4	5.3	5.9
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	2

HCM 6th TWSC
11: Frontside Dr & North Site Access

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	126	0	0	0	0	4
Future Vol, veh/h	126	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	200
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	137	0	0	0	0	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	0	0	4	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	-	-	1618	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	1618	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s		0		0		
HCM LOS	-					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1618	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	-	
HCM Lane LOS	A	-	-	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Timings
1: Powers & Bradley Rd

2046 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	290	75	745	340	787	100	699	696	593	238	25
Future Volume (vph)	25	290	75	745	340	787	100	699	696	593	238	25
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	pt+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases	4		Free			Free						6
Detector Phase	7	4		3	8		5	2	2 3	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)	19.0	24.0		36.0	41.0		15.0	40.0		30.0	55.0	55.0
Total Split (%)	14.6%	18.5%		27.7%	31.5%		11.5%	30.8%		23.1%	42.3%	42.3%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	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)	22.8	16.1	130.0	31.3	45.0	130.0	9.0	33.0	69.3	29.6	53.6	53.6
Actuated g/C Ratio	0.18	0.12	1.00	0.24	0.35	1.00	0.07	0.25	0.53	0.23	0.41	0.41
v/c Ratio	0.12	0.70	0.05	0.92	0.28	0.51	0.44	0.79	0.46	0.77	0.17	0.04
Control Delay	27.2	63.2	0.1	77.6	36.2	1.1	63.9	52.4	16.7	55.7	25.2	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	27.2	63.2	0.1	77.6	36.2	1.1	63.9	52.4	16.7	55.7	25.2	0.1
LOS	C	E	A	E	D	A	E	D	B	E	C	A
Approach Delay		48.8			37.9			36.6			45.6	
Approach LOS		D			D			D			D	

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: 0.92

Intersection Signal Delay: 39.9

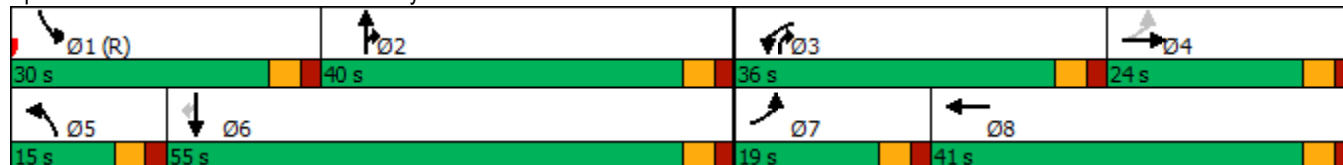
Intersection LOS: D

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

2046 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	1063	316	161	1223	161	423	18	243	132	12	226
Future Volume (vph)	201	1063	316	161	1223	161	423	18	243	132	12	226
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)	10.0	5.0	5.0	5.0	5.0	5.0	20.0	10.0	10.0	15.0	10.0	10.0
Minimum Split (s)	15.0	10.0	10.0	10.0	10.0	10.0	30.0	15.0	15.0	30.0	15.0	15.0
Total Split (s)	37.0	70.0	70.0	10.0	43.0	43.0	30.0	20.0	20.0	30.0	20.0	20.0
Total Split (%)	28.5%	53.8%	53.8%	7.7%	33.1%	33.1%	23.1%	15.4%	15.4%	23.1%	15.4%	15.4%
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	Lag	Lag	Lead	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)	13.5	67.4	67.4	72.7	63.3	63.3	22.2	18.2	18.2	15.0	11.0	11.0
Actuated g/C Ratio	0.10	0.52	0.52	0.56	0.49	0.49	0.17	0.14	0.14	0.12	0.08	0.08
v/c Ratio	0.60	0.61	0.34	0.60	0.75	0.20	0.76	0.07	0.63	0.35	0.08	0.68
Control Delay	54.6	32.1	10.4	25.6	31.4	5.8	60.2	47.0	17.6	55.8	55.0	16.9
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	54.6	32.1	10.4	25.6	31.4	5.8	60.2	47.0	17.6	55.8	55.0	16.9
LOS	D	C	B	C	C	A	E	D	B	E	D	B
Approach Delay		30.6			28.1			44.7			32.1	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 102 (78%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 32.1

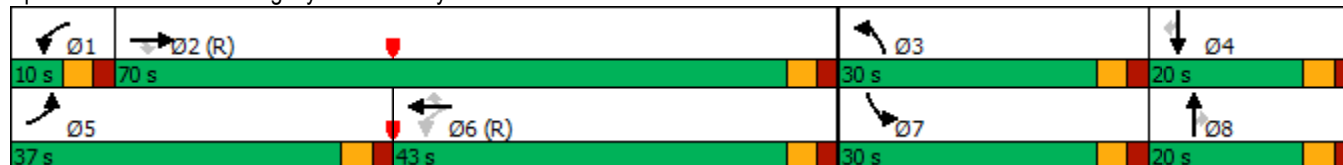
Intersection LOS: C

Intersection Capacity Utilization 73.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Legacy Dr & Bradley Rd



HCM 6th Roundabout
5: Legacy Hill Dr & Frontside Dr

2046 Total Traffic
AM Peak Hour

Intersection				
Intersection Delay, s/veh	6.5			
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	376	25	363	294
Demand Flow Rate, veh/h	383	25	370	300
Vehicles Circulating, veh/h	142	728	366	50
Vehicles Exiting, veh/h	208	8	159	703
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.1	5.9	8.3	4.8
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	383	25	370	300
Cap Entry Lane, veh/h	1194	657	950	1311
Entry HV Adj Factor	0.982	0.998	0.980	0.981
Flow Entry, veh/h	376	25	363	294
Cap Entry, veh/h	1172	656	931	1287
V/C Ratio	0.321	0.038	0.389	0.229
Control Delay, s/veh	6.1	5.9	8.3	4.8
LOS	A	A	A	A
95th %tile Queue, veh	1	0	2	1

HCM 6th Roundabout
10: Frontside Dr & South Access

2046 Total Traffic
AM Peak Hour

Intersection

Intersection Delay, s/veh 2.8

Intersection LOS A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	23	2	29
Demand Flow Rate, veh/h	23	2	30
Vehicles Circulating, veh/h	1	22	1
Vehicles Exiting, veh/h	30	2	23
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	2.7	2.7	2.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	23	2	30
Cap Entry Lane, veh/h	1378	1349	1378
Entry HV Adj Factor	1.000	0.990	0.966
Flow Entry, veh/h	23	2	29
Cap Entry, veh/h	1378	1336	1332
V/C Ratio	0.017	0.001	0.022
Control Delay, s/veh	2.7	2.7	2.9
LOS	A	A	A
95th %tile Queue, veh	0	0	0

HCM 6th TWSC
11: Frontside Dr & North Access

2046 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	7.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	326	1	1	20	26	161
Future Vol, veh/h	326	1	1	20	26	161
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	200
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	354	1	1	22	28	175
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	52	28	203	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	957	1047	1369	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	956	1047	1369	-	-	-
Mov Cap-2 Maneuver	891	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.7	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1369	-	891	-	-	
HCM Lane V/C Ratio	0.001	-	0.399	-	-	
HCM Control Delay (s)	7.6	-	11.7	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	1.9	-	-	

Timings
1: Powers & Bradley Rd

2046 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	396	210	816	349	754	175	362	964	882	577	110
Future Volume (vph)	70	396	210	816	349	754	175	362	964	882	577	110
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	pt+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases	4		Free			Free						6
Detector Phase	7	4		3	8		5	2	2 3	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)	11.0	24.0		37.0	50.0		15.0	28.0		41.0	54.0	54.0
Total Split (%)	8.5%	18.5%		28.5%	38.5%		11.5%	21.5%		31.5%	41.5%	41.5%
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)	24.3	18.3	130.0	32.0	46.5	130.0	9.8	23.0	60.0	36.7	49.9	49.9
Actuated g/C Ratio	0.19	0.14	1.00	0.25	0.36	1.00	0.08	0.18	0.46	0.28	0.38	0.38
v/c Ratio	0.33	0.84	0.14	1.00	0.28	0.49	0.69	0.60	0.74	0.94	0.44	0.16
Control Delay	30.4	69.8	0.2	71.9	24.3	0.9	73.3	53.7	29.6	63.4	31.2	2.4
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	30.4	69.8	0.2	71.9	24.3	0.9	73.3	53.7	29.6	63.4	31.2	2.4
LOS	C	E	A	E	C	A	E	D	C	E	C	A
Approach Delay		44.1			35.4			40.5			47.3	
Approach LOS		D			D			D			D	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 41.1

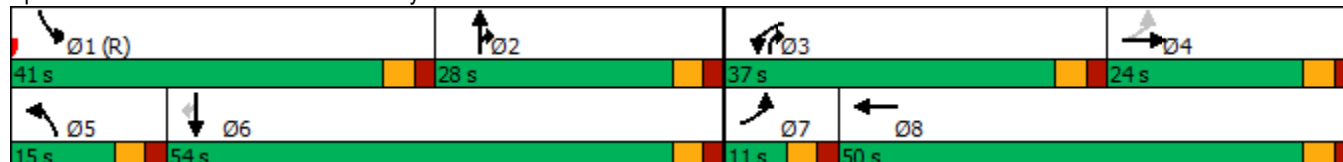
Intersection LOS: D

Intersection Capacity Utilization 86.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Powers & Bradley Rd



Timings 2: Legacy Dr & Bradley Rd

2046 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	349	1348	545	280	1190	160	368	21	253	260	26	361
Future Volume (vph)	349	1348	545	280	1190	160	368	21	253	260	26	361
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	20.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	25.0	15.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	30.0	55.0	55.0	30.0	55.0	55.0	23.0	22.0	22.0	23.0	22.0	22.0
Total Split (%)	23.1%	42.3%	42.3%	23.1%	42.3%	42.3%	17.7%	16.9%	16.9%	17.7%	16.9%	16.9%
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	Lag	Lag	Lead	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)	19.1	59.0	59.0	84.9	62.5	62.5	31.5	14.7	14.7	25.3	11.6	11.6
Actuated g/C Ratio	0.15	0.45	0.45	0.65	0.48	0.48	0.24	0.11	0.11	0.19	0.09	0.09
v/c Ratio	0.73	0.88	0.62	0.81	0.74	0.21	0.57	0.10	0.64	0.46	0.16	0.88
Control Delay	52.5	44.1	17.1	53.1	32.3	10.2	43.0	50.6	13.4	40.7	54.2	32.6
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	52.5	44.1	17.1	53.1	32.3	10.2	43.0	50.6	13.4	40.7	54.2	32.6
LOS	D	D	B	D	C	B	D	D	B	D	D	C
Approach Delay		38.8			33.7			31.6			36.7	
Approach LOS		D			C			C			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: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 36.1

Intersection LOS: D

Intersection Capacity Utilization 83.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Legacy Dr & Bradley Rd



HCM 6th Roundabout
5: Legacy Hill Dr & Frontside Dr

2046 Total Traffic
PM Peak Hour

Intersection				
Intersection Delay, s/veh	9.6			
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	491	16	260	674
Demand Flow Rate, veh/h	501	16	265	687
Vehicles Circulating, veh/h	440	712	473	40
Vehicles Exiting, veh/h	287	26	468	688
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.4	5.7	7.8	8.3
Approach LOS	B	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	501	16	265	687
Cap Entry Lane, veh/h	881	668	852	1325
Entry HV Adj Factor	0.980	0.996	0.979	0.981
Flow Entry, veh/h	491	16	260	674
Cap Entry, veh/h	863	665	834	1299
V/C Ratio	0.569	0.024	0.311	0.519
Control Delay, s/veh	12.4	5.7	7.8	8.3
LOS	B	A	A	A
95th %tile Queue, veh	4	0	1	3

HCM 6th Roundabout
10: Frontside Dr & South Access

2046 Total Traffic
PM Peak Hour

Intersection

Intersection Delay, s/veh 2.9

Intersection LOS A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	42	2	42
Demand Flow Rate, veh/h	43	2	43
Vehicles Circulating, veh/h	1	42	1
Vehicles Exiting, veh/h	43	2	43
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	2.9	2.8	2.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	43	2	43
Cap Entry Lane, veh/h	1378	1322	1378
Entry HV Adj Factor	0.977	0.990	0.976
Flow Entry, veh/h	42	2	42
Cap Entry, veh/h	1346	1309	1346
V/C Ratio	0.031	0.002	0.031
Control Delay, s/veh	2.9	2.8	2.9
LOS	A	A	A
95th %tile Queue, veh	0	0	0

HCM 6th TWSC
11: Frontside Dr & North Access

2046 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	7.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	413	1	1	38	38	221
Future Vol, veh/h	413	1	1	38	38	221
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	200
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	449	1	1	41	41	240
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	84	41	281	0	-	0
Stage 1	41	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	918	1030	1282	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	917	1030	1282	-	-	-
Mov Cap-2 Maneuver	866	-	-	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.6	0.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1282	-	866	-	-	
HCM Lane V/C Ratio	0.001	-	0.52	-	-	
HCM Control Delay (s)	7.8	-	13.6	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	3.1	-	-	

Queuing Reports

Queuing and Blocking Report

Intersection: 2: Legacy Dr & Bradley Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	L	T
Maximum Queue (ft)	202	316	377	380	371	468	554	582	225	242	300	70
Average Queue (ft)	106	103	259	269	145	126	295	339	138	142	173	18
95th Queue (ft)	175	253	335	350	346	289	441	502	299	226	267	52
Link Distance (ft)			926	926	926		1231	1231			432	432
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	450	450				450			200	220		
Storage Blk Time (%)						0	1	25	0	1	3	
Queuing Penalty (veh)						0	2	40	1	1	7	

Intersection: 2: Legacy Dr & Bradley Rd

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	L	T	R
Maximum Queue (ft)	152	95	123	50	183
Average Queue (ft)	53	33	59	14	106
95th Queue (ft)	124	82	104	41	177
Link Distance (ft)				601	601
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	220	300	300		
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

Queuing and Blocking Report

Intersection: 2: Legacy Dr & Bradley Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	L	T
Maximum Queue (ft)	383	475	948	1038	1036	474	654	650	225	240	287	65
Average Queue (ft)	157	381	760	856	842	196	330	371	128	121	148	18
95th Queue (ft)	285	616	1017	1218	1223	361	530	606	287	205	241	50
Link Distance (ft)			926	926	926		1231	1231			432	432
Upstream Blk Time (%)			2	54	48							
Queuing Penalty (veh)			14	401	361							
Storage Bay Dist (ft)	450	450				450			200	220		
Storage Blk Time (%)	0	0	43			0	2	27	0	0	3	
Queuing Penalty (veh)	0	3	151			0	6	44	0	0	5	

Intersection: 2: Legacy Dr & Bradley Rd

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	L	T	R
Maximum Queue (ft)	178	155	227	189	510
Average Queue (ft)	62	75	102	27	248
95th Queue (ft)	149	134	167	101	437
Link Distance (ft)				601	601
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	220	300	300		
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

Appendix Table 1

Appendix Table 1: Area Traffic Impact Studies

Study	PCD File No ⁽¹⁾	Consultant	Date
Trails at Aspen Ridge Planned Unit Development and Site Plan Major Amendment Traffic Impact Study	PUDSP213	Matrix Design Group	April 16, 2021
Trails at Aspen Ridge Filing 3 Trip Generation Comparison Letter	SF2122	Matrix Design Group	June 20, 2022
Bradley Heights Filing #1 Traffic Impact Analysis	OAR	LSC Transportation Consultants	April 5, 2021
Bradley Heights Filings 3 and 4 Traffic Impact Analysis	OAR	Matrix Design Group	February 22, 2022
Meadowworks Filings 1-4 Development Plan Traffic Impact Analysis	OAR	SM Rocha, LLC	March 2022
Foreign Trade Zone Traffic Impact Analysis	OAR	Kimley-Horn and Associates	July 2023
Villages at Waterview North Preliminary Plan Traffic Impact and Access Analysis	OAR	LSC Transportation Consultants	July 5, 2023
Veterans Villa Filing No. 1 Lots 1 and 2 Trip Generation and CDOT Access Permit Memo	OAR	LSC Transportation Consultants	December 5, 2024
Villages at Waterview North Phases 1-3 TIS Addendum for CDOT Access Permitting	OAR	LSC Transportation Consultants	March 4, 2026
Villa at Aspen Trails Traffic Impact and Access Analysis	SP234	LSC Transportation Consultants	September 5, 2024
Notes:			
(1) Follow the links listed below to obtain the most recent version of each listed study. To obtain a copy of the version of each study used in preparing this report please contact LSC Transportation Consultants, Inc.			
Source: LSC Transportation Consultants, Inc.			Mar-26

MTCP Maps

Figure 22. 2045 Roadway Functional Classifications

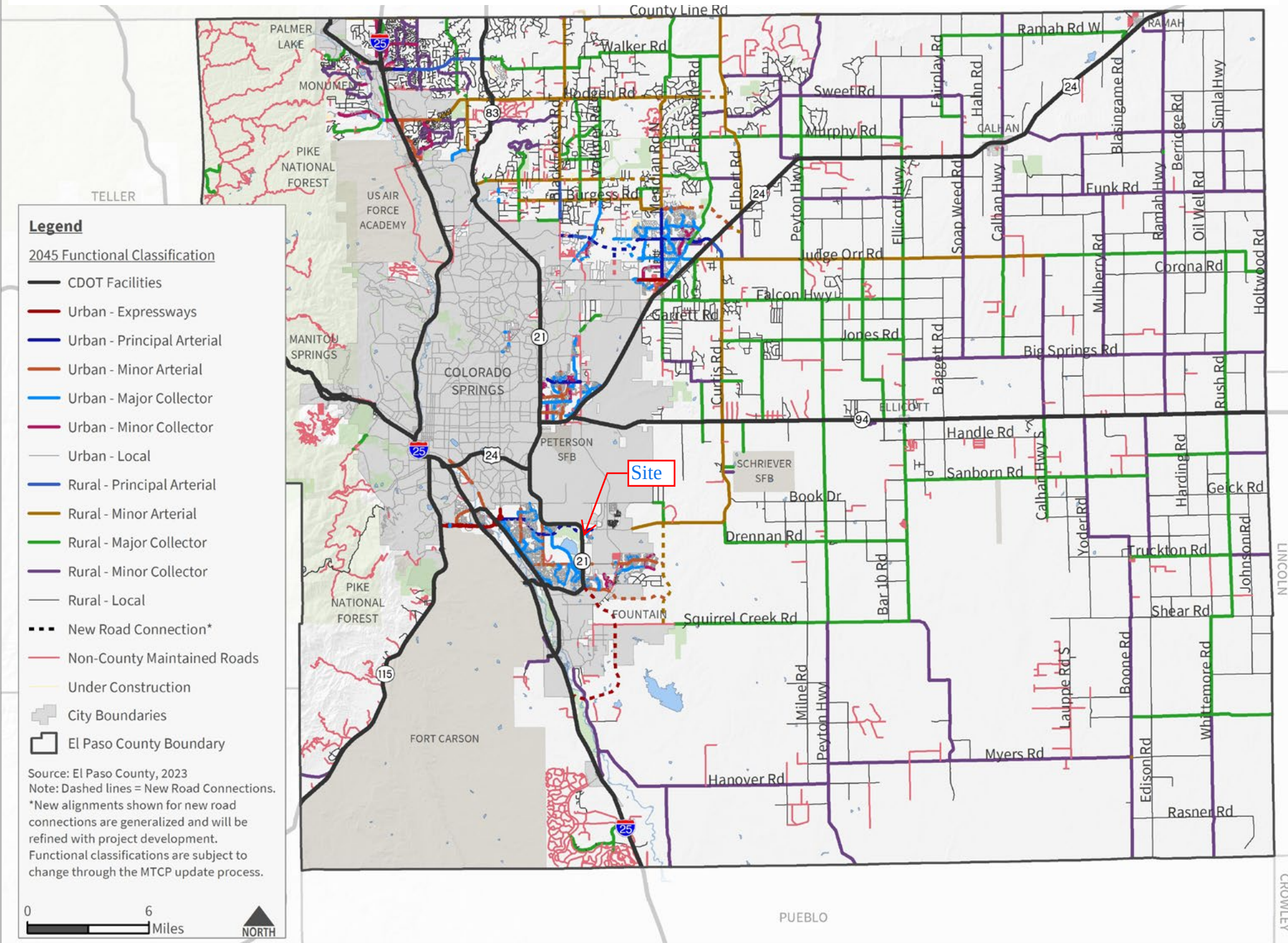
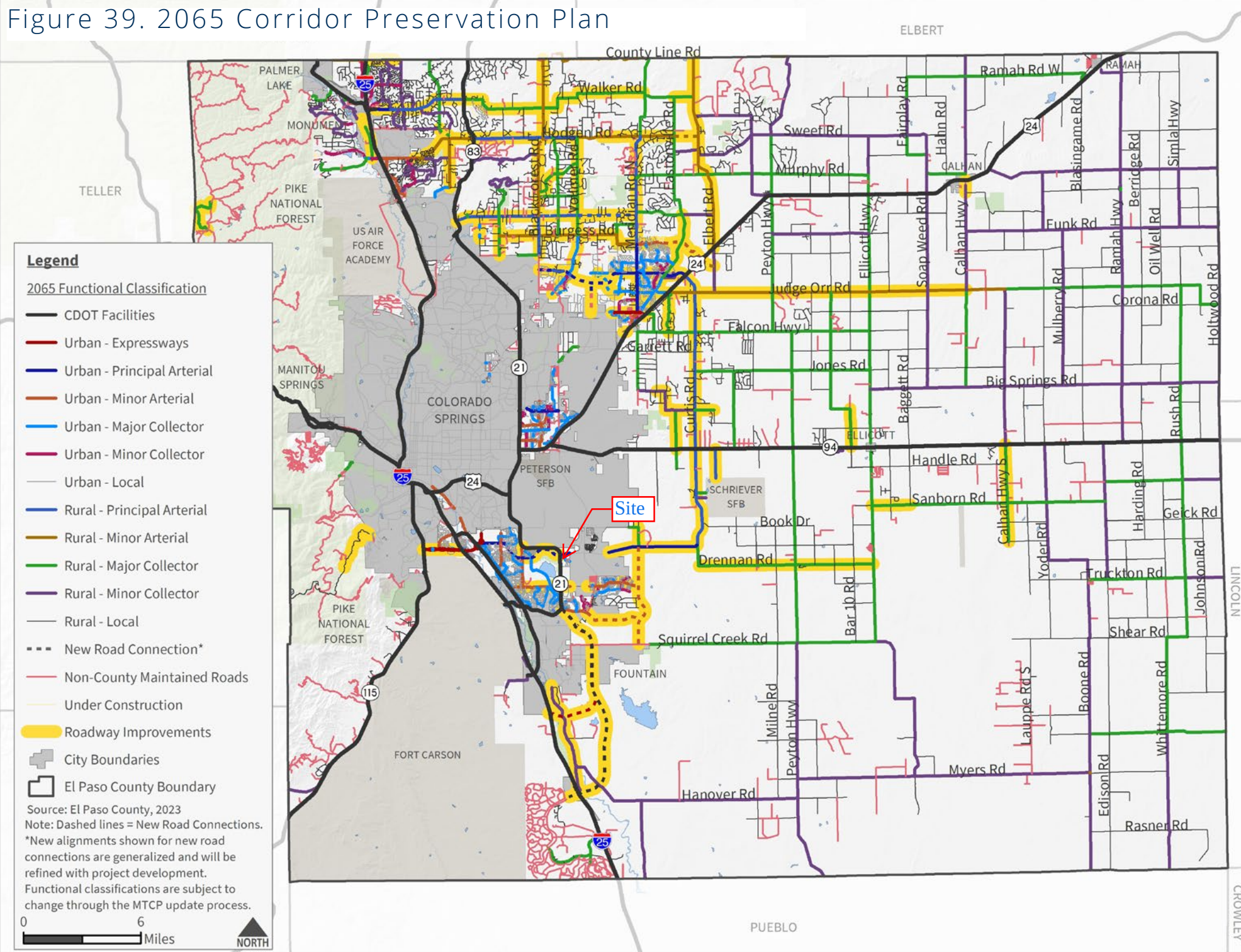


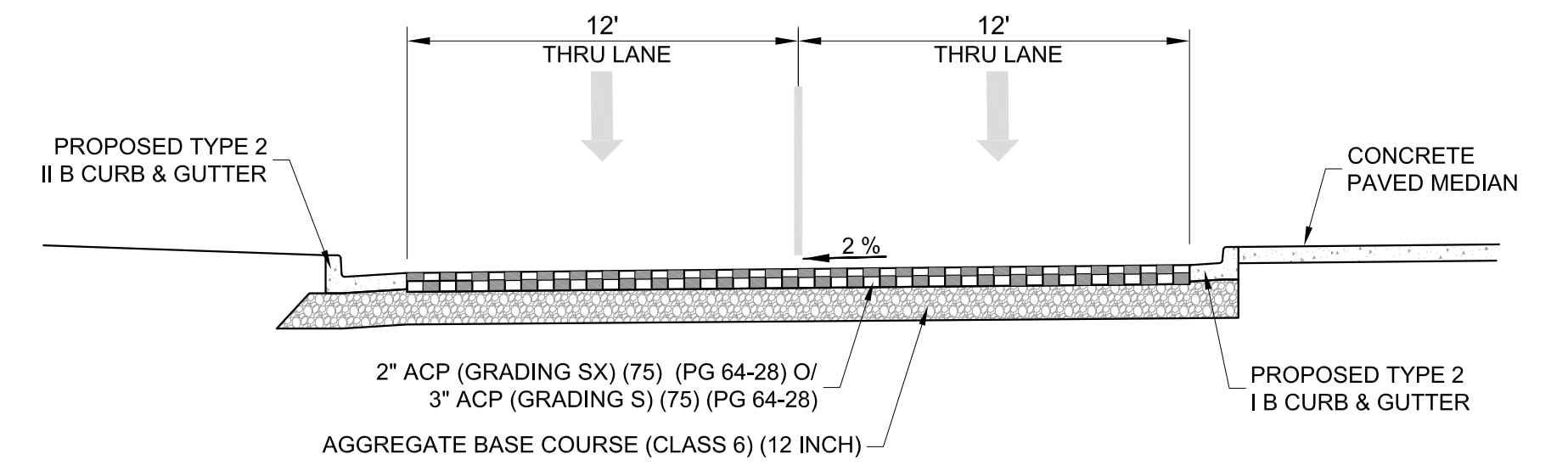
Figure 39. 2065 Corridor Preservation Plan



Matrix Exhibit and Cost Estimate

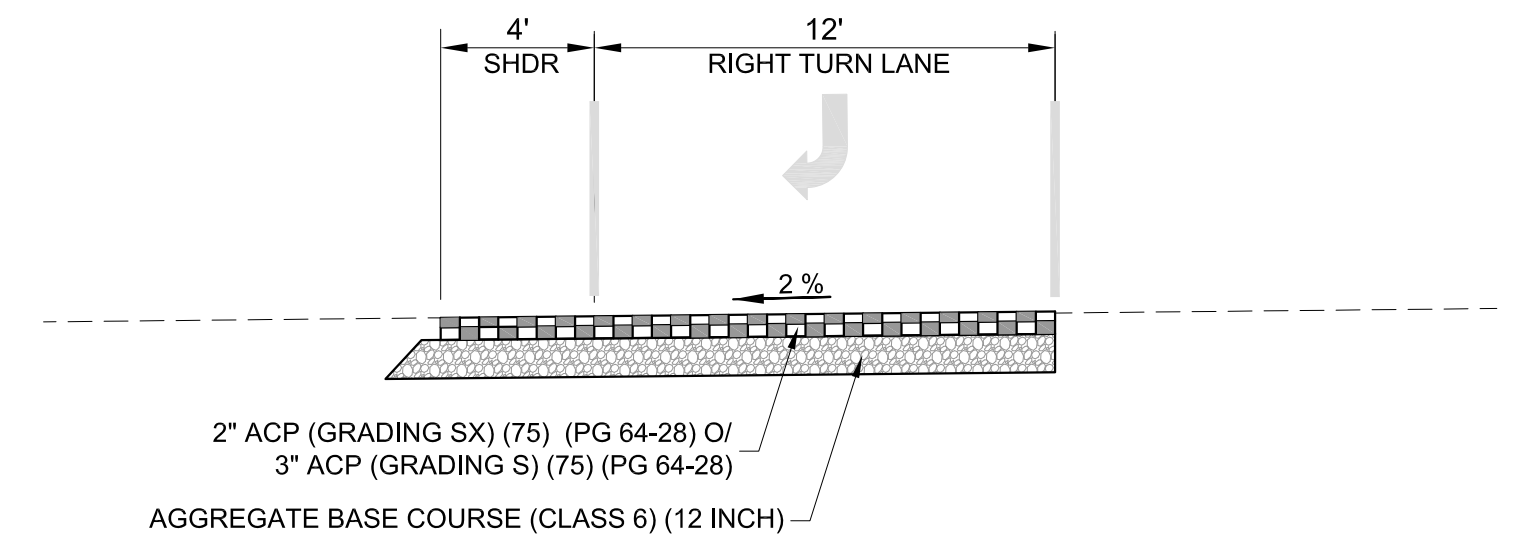


Feb 14, 2022 - 3:45pm \\S:\Projects\22.886.056 (Powers-Bradley Intersection Improvements)\100 Dwg\105 Exhibit\20220210 CDOT Access\Permit Exhibit\20220214 CDOT Access\Permit Exhibit.dwg



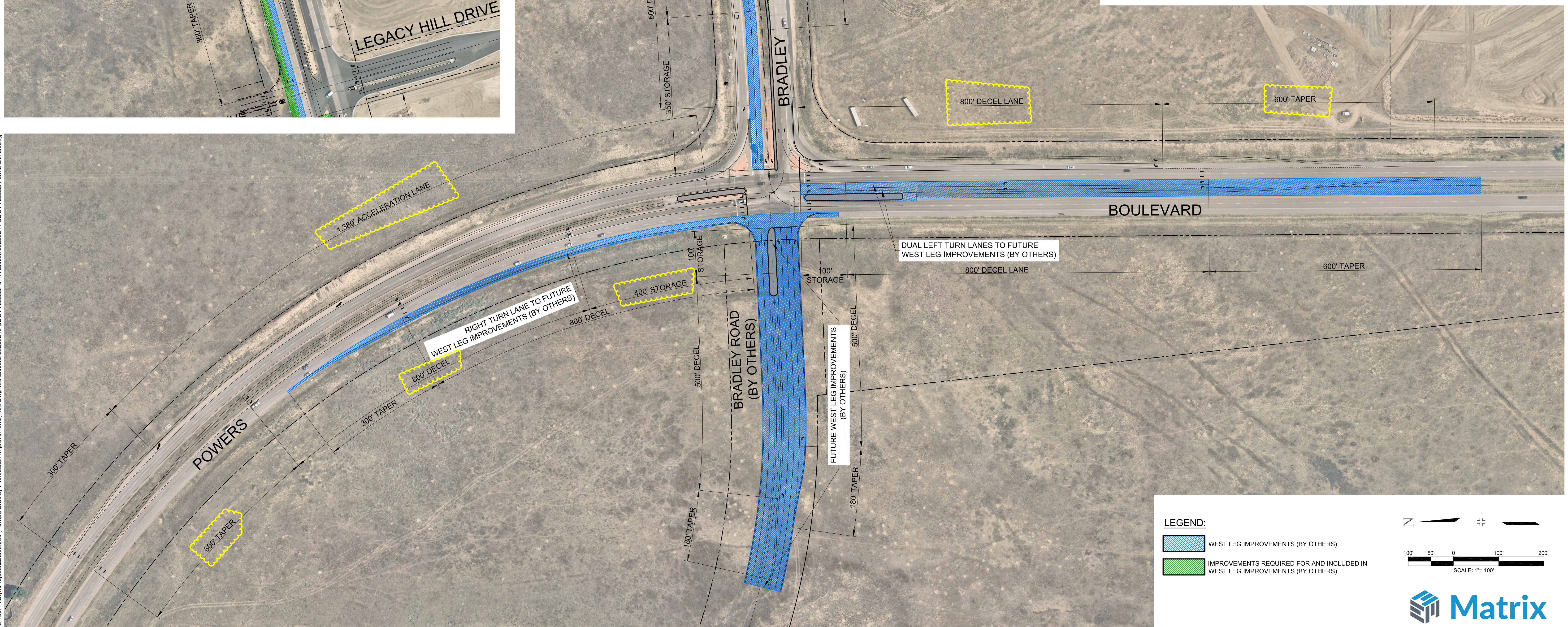
STRUCTURE SECTION

NOT TO SCALE



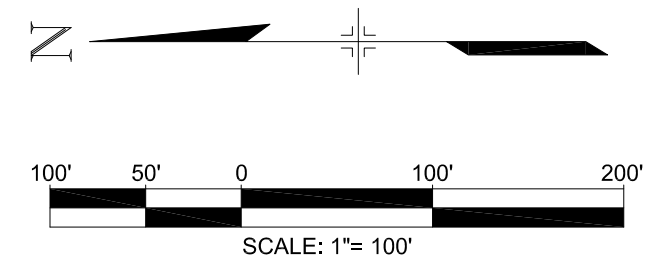
STRUCTURE SECTION

NOT TO SCALE



LEGEND:

- WEST LEG IMPROVEMENTS (BY OTHERS)
- IMPROVEMENTS REQUIRED FOR AND INCLUDED IN WEST LEG IMPROVEMENTS (BY OTHERS)



POWERS BOULEVARD @ BRADLEY ROAD

SCALE: 1" = 100'



2435 Research Parkway, Suite 300
Colorado Springs, CO 80920
Phone 719-575-0100 Fax
719-575-0208

POWERS/BRADLEY INTERSECTION IMPROVEMENTS					Prepared Date:	02/14/22
					Updates:	2/17/2022
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	PRICE	
201-00000	CLEARING AND GRUBBING	AC	1	\$ 10,000.00	\$ 10,000.00	
202-00190	REMOVAL OF CONCRETE MEDIAN MATERIAL	SY	699	\$ 45.00	\$ 31,436.10	
202-00203	REMOVAL OF CURB AND GUTTER	LF	773	\$ 14.00	\$ 10,815.14	
202-00220	REMOVAL OF ASPHALT MAT	SY	11,713	\$ 8.15	\$ 95,463.23	
202-00250	REMOVAL OF PAVEMENT MARKING	SF	4,773	\$ 0.66	\$ 3,150.47	
202-00810	REMOVAL OF SIGN POST	EA	5	\$ 147.47	\$ 737.35	
202-00828	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 25,000.00	\$ 25,000.00	
202-00858	REMOVAL PEDESTAL POLE	EA	3	\$ 479.75	\$ 1,439.25	
202-05026	SAWCUT ASPHALT MAT (6 INCHES)	LF	6,802	\$ 5.00	\$ 34,007.80	
203-00000	UNCLASSIFIED EXCAVATION	CY	5,185	\$ 15.00	\$ 77,781.45	
208-00200	EROSION CONTROL MANAGEMENT	LS	1	\$ 34,000.00	\$ 34,000.00	
210-00810	RESET GROUND SIGN	EA	15	\$ 377.06	\$ 5,655.90	
210-00825	RESET FLASHING BEACON	EA	3	\$ 2,700.00	\$ 8,100.00	
210-00827	RESET PULL BOX	EA	3	\$ 943.75	\$ 2,831.25	
210-00840	RESET TRAFFIC SIGNAL POLE	EA	1	\$ 5,200.00	\$ 5,200.00	
212-00006	SEEDING (NATIVE)	AC	1	\$ 880.44	\$ 845.22	
213-00002	MULCHING (WEED FREE HAY)	AC	1	\$ 845.18	\$ 811.37	
304-06007	AGGREGATE BASE COURSE (CLASS 6) (12 INCH)	CY	2,058	\$ 55.36	\$ 113,929.77	
403-33845	ASPHALT CONCRETE PAVEMENT (GRADING S) (100) (PG 64-28) (3 INCH)	SY	6,174	\$ 12.74	\$ 78,656.12	
403-34855	ASPHALTCONCRETE PAVEMENT (GRADING SX) (100) (PG 64-28) (2 INCH)	SY	6,174	\$ 19.11	\$ 117,986.10	
609-21010	CURB AND GUTTER TYPE 2 (SECTION IB)	LF	4,944	\$ 20.00	\$ 98,871.00	
609-21020	CURB AND GUTTER TYPE 2 (SECTION IIB)	LF	517	\$ 20.00	\$ 10,344.00	
610-00020	MEDIAN COVER (PATTERN CONCRETE)	SF	5,172	\$ 12.69	\$ 65,628.37	
613-11000	WIRING (TRAFFIC)	LS	1	\$ 22,500.00	\$ 22,500.00	
614-01000	INSTALL TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 175,000.00	\$ 175,000.00	
625-00000	CONSTRUCTION SURVEYING	LS	1	\$ 34,000.00	\$ 34,000.00	
626-00000	MOBILIZATION	LS	1	\$ 22,500.00	\$ 22,500.00	
627-00004	EPOXY PAVEMENT MARKING	SF	11,288	\$ 1.01	\$ 11,401.27	
627-00070	PREFORMED THERMOPLASTIC PAVEMENT MARKING	SF	695	\$ 17.00	\$ 11,819.05	
830-10000	TRAFFIC CONTROL	LS	1	\$ 34,000.00	\$ 34,000.00	

Notes:

1). This Cost Opinion is based upon 20% Plans as of February 2022.
2). Since ENGINEER has no control over the cost of labor, materials, equipment or services furnished by others, or over the Contractor(s)' method of determining prices, or over the competitive bidding or market conditions, its opinions of probable

cost provided herein are made on the basis of its experience and qualifications and represents its best judgment as an experienced and qualified professional engineer, familiar with the construction industry, but ENGINEER cannot and does not guarantee that proposals, bids or actual Projects or Construction Cost will not vary from its opinion of probable cost.

3). All costs are 4Q 2020 dollars.
4). Basis of Lump Sum Items are as follows:

- Mobilization:2% of Construction Cost
- Erosion Control2% of Construction Cost
- EC Supervisor1% of Construction Cost
- Construction Surveying:3% of Construction Cost
- Wiring (Traffic)2% of Construction Cost
- Traffic Control3% of Construction Cost

TOTAL	\$	1,133,910.21
20% CONTINGENCY		\$226,782.04
GRAND TOTAL		\$1,360,692.26

Approved Deviation



Planning and Community
Development Department
2880 International Circle
Colorado Springs, Colorado 80910
Phone: 719.520.6300
Fax: 719.520.6695
Website www.elpasoco.com

DEVIATION REQUEST AND DECISION FORM

Updated: 6/26/2019

PROJECT INFORMATION

Project Name : Waterview East Commercial

Schedule No.(s) : 509200002

Legal Description : TR IN SEC 9-15-65 DESC AS FOLS: COM AT THE N4 COR OF SD SEC 9, TH S00-19-23E ALG THE N/S CEN LN OF SD SEC 1613.76 FT TO A PT ON THE SLY ROW LN OF BRADLEY RD, TH S89-30-29W 3.77 FT, TH ALG THE ARC OF A CUR TO THE L HAVING A RAD OF 2759.79 FT, A C/A OF 15-09-41, ARC DIST OF 730.29 FT, WHICH CHORD BEARS S81-55-38W, DIST OF 728.16 FT, TH S74-20-48W 930.15 FT TO THE POB; TH S15-39-12W 394.68 FT, TH ALG THE ARC OF A NON TANG CUR TO THE R, HAVING A RAD OF 75.00 FT, A C/A OF 43-29-55, ARC DIST OF 56.94 FT, WHICH CHORD BEARS S36-01-21W, DIST OF 55.58 FT, TH S57-46-18W 68.47 FT, TH ALG THE ARC OF A CUR TO THE L, HAVING A RAD OF 450.00 FT, A C/A OF 35-44-30, ARC DIST OF 280.72 FT, WHICH CHORD BEARS S39-54-03W, DIST OF 267.19 FT, TH S67-58-24E 40.00 FT, TH S22-01-36W 538.15 FT, TH ALG THE ARC OF A CUR TO THE R, HAVING A RAD OF 260.00 FT, A C/A OF 13-32-35, ARC DIST OF 61.46 FT, WHICH CHORD BEARS S28-47-53W, DIST OF 61.31 FT, TH S00-00-00W 148.75 FT, TH N90-00-00W 515.00 FT, TH N00-29-10W 1123.38 FT, TH ALG THE ARC OF A CUR TO THE R HAVING A RAD OF 150.00 FT, A C/A OF 87-49-03, ARC DIST OF 229.91 FT, WHICH CHORD BEARS N43-25-21E, DIST OF 208.05 FT, TH N87-19-53E 53.06 FT, TH ALG THE ARC OF A CUR TO THE L HAVING A RAD OF 2967.79 FT, A C/A OF 12-59-05, ARC DIST OF 673.03, WHICH CHORD BEARS N80-50-20E, DIST OF 671.59 FT, TH N47-20-48E 21.87 FT

APPLICANT INFORMATION

Company : Waterview Commercial Investors, LLC

Name : Mr. Heath Herber

☒ Owner ☐ Consultant ☐ Contractor

Mailing Address : 2727 Glen Arbor Drive
Colorado Springs, CO 80920

Phone Number : 719-331-0083

FAX Number :

Email Address : HHerber@wheatlandscapital.com

ENGINEER INFORMATION

Company : LSC Transportation Consultants, Inc

Name : Jeffery C. Hodsdon

Colorado P.E. Number : 31684

Mailing Address : 2504 East Pikes Peak Avenue, Suite 304
Colorado Springs, CO 80909

Phone Number : (719) 633-2868

FAX Number : (719) 633-5430

Email Address : jeff@lsctrans.com

OWNER, APPLICANT, AND ENGINEER DECLARATION

To the best of my knowledge, the information on this application and all additional or supplemental documentation is true, factual and complete. I am fully aware that any misrepresentation of any information on this application may be grounds for denial. I have familiarized myself with the rules, regulations and procedures with respect to preparing and filing this application. I also understand that an incorrect submittal will be cause to have the project removed from the agenda of the Planning Commission, Board of County Commissioners and/or Board of Adjustment or delay review until corrections are made, and that any approval of this application is based on the representations made in the application and may be revoked on any breach of representation or condition(s) of approval.

Waterview Commercial Investors, LLC
Heath A. Herber, MGR 9/10/2023
Signature of owner (or authorized representative) Date

Engineer's Seal, Signature
And Date of Signature



DEVIATION REQUEST (Attach diagrams, figures, and other documentation to clarify request)

A deviation from the standards of or in Section 2.2.5.D (and 2.3.2) of the *Engineering Criteria Manual (ECM)* is requested. The request is for a right-in-only access to Legacy Hill Drive approximately 350 feet south of Bradley Road (and 250 feet north of the roundabout intersection (Frontside Drive)- centerline spacing). A one-way, internal access drive would extend southwest from this access point and connect to the two-way internal access between the convenience store/gas station and the remainder of the commercial center. Please refer to the attached exhibits. Also, please refer to the TIS report prepared for this project for additional information.

Identify the specific ECM standard which a deviation is requested:

2.2.5.D Roadway Access Criteria - Collector Access Criteria

2.3.2 Design Standards by Classification Table 2-7 Urban Non-Residential Collector – NO Access Permitted (Note: This is a deviation to this "no access allowed" criteria)

2.4.1.C.1. Access Design Criteria -Horizontal Alignment.

2.3.7.E.1.2 Turn Lane Design

Note: The following proposed geometric elements will be considered as part of this request for the access point:

- Abbreviated right-turn bay and taper lengths;
- Skewed angle of the access drive with respect to Legacy Hill Road.

State the reason for the requested deviation:

Exhibit 1 shows the location of the Waterview East Commercial development and Exhibit 2 shows the location of the proposed right-in-only access for which this deviation to the *ECM* criteria is requested. The applicant is requesting this access to improve access to the site as no access will be allowed to the west to Powers Boulevard (classified FW Freeway) or to the north to Bradley Road (an Urban Minor Arterial). Without this deviation, there would only be access to/from one side (the south side) of the development. This would hamper the marketing of the development, especially the proposed gas station/convenience store site on the "hard corner" of Bradley Road/Legacy Hill Drive. It would also be detrimental to the viability of the site and competitiveness in the market.

Due to the topographic and grading conditions of the main parcel, the south access points are separated by a grade barrier. This means these retail uses are separated from the proposed self-storage use. The right-in-only access will reduce pressure off the main central access to the south that is not signalized. It is believed that the introduction of the right-in-only will create a necessary, additional access option thereby reducing the resulting traffic at any one access point. The access would allow for significantly better emergency-vehicle access to the site, which would enhance safety for the general public for the entire site. The site would only have one access for the retail portion of the site without this requested access point.

Explain the proposed alternative and compare to the ECM standards (May provide applicable regional or national standards used as basis):

The deviation is a request for a right-in-only, restricted turn-movement access to the west side of Legacy Hill Drive about 345 feet south of Bradley Road (Centerline spacing). The ECM standard is NO private access to a Collector street. A private, one-way, internal commercial street would extend southwest from this access into the site.

The access would meet this criterion:

2.4.1.F.2 Access Design Criteria- Clearance From intersections

Access to commercial or industrial parcels fronting Nonresidential Collector roadways shall be located a minimum of 115 - 480 feet from the point of curvature or point of tangency of the curb line at the intersection depending on the sight distance and location with respect to the intersection, intersection control, and posted speed. Please refer to Deviation Exhibit No. 2 for spacing dimensions.

2.4.1.C.1. Access Design Criteria - Horizontal Alignment. Access points shall be aligned at 90 degrees to the adjacent road centerline or along a radial line in a cul-de-sac.

The proposed access is at an obtuse angle, but in this situation, this will be beneficial as described in the operations section below.

2.3.7.E.1,2 Turn Lane Design

The proposed right-turn lane would have abbreviated lane and taper lengths. The ECM standard is 155-foot lane plus 160-foot taper, plus storage. Deviation Exhibit 3 shows the proposed lengths. The abbreviated lengths will be mitigated by the proposed 60' corner radius and skewed (obtuse) angle. This is described in the operations section below.

LIMITS OF CONSIDERATION

(At least one of the conditions listed below must be met for this deviation request to be considered.)

- ☐ The ECM standard is inapplicable to the particular situation.
- ☒ Topography, right-of-way, or other geographical conditions or impediments impose an undue hardship and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.
- ☐ A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

Provide justification:

The site has no access to the west to Powers Boulevard (classified FW Freeway) or to the north to Bradley Road (an Urban Minor Arterial). Without this deviation, there would only be access to/from one side (the south side) of the development. This would hamper the marketing of the development and place undue staking and pressure on a single access point. The additional access would separate and provide a secondary access for the proposed gas station/convenience store use site on the "hard corner" of Bradley Road/Legacy Hill Drive. It would also be detrimental to the viability of the site and competitiveness with already limited access to the surrounding major corridors if the retail portion of the site were to be left with one access point only.

CRITERIA FOR APPROVAL

Per ECM section 5.8.7 the request for a deviation may be considered if the request is **not based exclusively on financial considerations**. The deviation must not be detrimental to public safety or surrounding property. The applicant must include supporting information demonstrating compliance with **all of the following criteria**:

The deviation will achieve the intended result with a comparable or superior design and quality of improvement.

The deviation for a turn-restricted, right-in-only access to Legacy Hill would provide significantly better accessibility to the site) especially to the corner gas station/convenience store lot, which will help to make up for no allowable direct access to Powers Boulevard or Bradley Road. The proposed 345' spacing south of Bradley Road would be able to accommodate an abbreviated right-turn bay to separate right-turning traffic from through traffic on this section of Legacy Hill Drive.

The deviation will not adversely affect safety or operations.

The existing raised center median on Legacy Hill Drive will physically prevent left-turning movements into of the access. Left turns out (or right turns out) will not occur as the access drive will be one-way-in only.

The right-in-only access connection would be designed with a planned controlled southbound right-turn bay on Legacy Hill Drive to separate right-turning traffic from southbound through traffic on this section of Legacy Hill Drive "upstream" of the approach to the roundabout intersection.

The deviation will not adversely affect safety or operations.

The obtuse angle of the access, combined with the larger-than-standard 60-foot corner radius, would allow for right turns from Legacy Hill onto the access drive at a higher turning speed, which would result in a reduced speed differential between southbound through traffic and right-turning traffic. This will mitigate the shorter length of the right-turn bay and provide a much easier right-turn movement. Right-turn-lane **stacking distance** is not needed, as the turn off Legacy Hill will be a "free" movement (except for the infrequent need to yield to crossing pedestrians). A pedestrian crossing of this access is shown. However, low pedestrian volumes are anticipated. Exhibit 3 shows the recommended configuration.

Exhibit 4 shows a sight-distance analysis for the proposed right-in-only access. As shown in this exhibit, this intersection meets the criteria for stopping sight distance when considering the anticipated design speed of traffic turning from Bradley Road (or traveling straight across Bradley Road from the north side of the intersection). Entering (Intersection) sight distance would not apply as this is proposed as a right-in-only access.

Exhibits 5 and 6 show the truck-turning templates for a WB-50 and a WB62, respectively.

The deviation will not adversely affect maintenance and its associated cost.

The deviation will not impact maintenance costs. The access opening, curbs, and raised channelizing island would be maintained by the Metro District.

The deviation will not adversely affect aesthetic appearance.

The deviation will not impact aesthetic appearance as this area is being developed as an urban development and the access and design features will look similar to the nearby roundabout design elements. The shopping center management will maintain landscaping.

The deviation meets the design intent and purpose of the ECM standards.

Although the ECM criteria specifies "no access" to a Non-Residential Collector Street (Legacy Hill), the criteria does indicate that *"Where no local public or private roadway can provide access, temporary or partial turn movement parcel access may be permitted."* Although local public roadway access is provided on the south side of the site to Frontside Drive, given no ability to access Powers Boulevard or Bradley Road site frontage and given the size and type of development (shopping center/convenience commercial), the access would not be **"reasonable access"** (especially for the proposed gas station/convenience store lot on the key "hard corner" of Bradley Road/Legacy Hill Drive). A partial turn, right-in-only access is requested and left turns would be physically prevented. There would be no vehicles turning onto Legacy Hill Drive, as the access would be an entrance only. The section above details the safety and operational considerations.

The deviation meets the control measure requirements of Part I.E.3 and Part I.E.4 of the County's MS4 permit, as applicable.

The requirements of the MS4 permit will be met.

Review and Recommendation:

2.2.5

2.3.2

2.4.1

Approved by the ECM Administrator

This request has been determined to have met the criteria for approval. A deviation from Section 2.3.7 of the ECM is hereby granted based on the justification provided.

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APPROVED

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Engineering Department

03/27/2024 8:23:24 AM

dotnijkamp

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**EPC Department of Public
Works**

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Denied by the ECM Administrator

This request has been determined not to have met criteria for approval. A deviation from Section _____ of the ECM is hereby denied.

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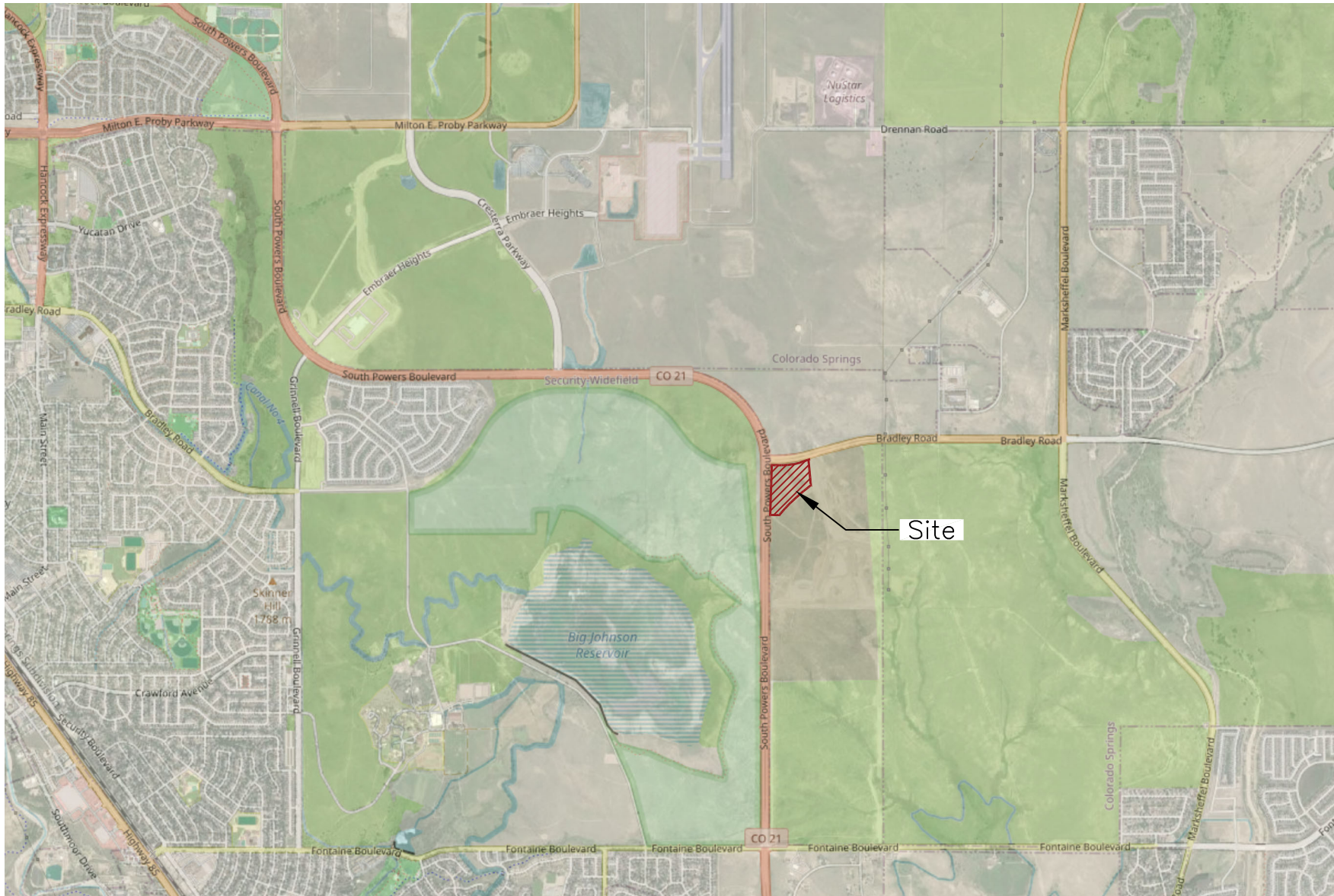
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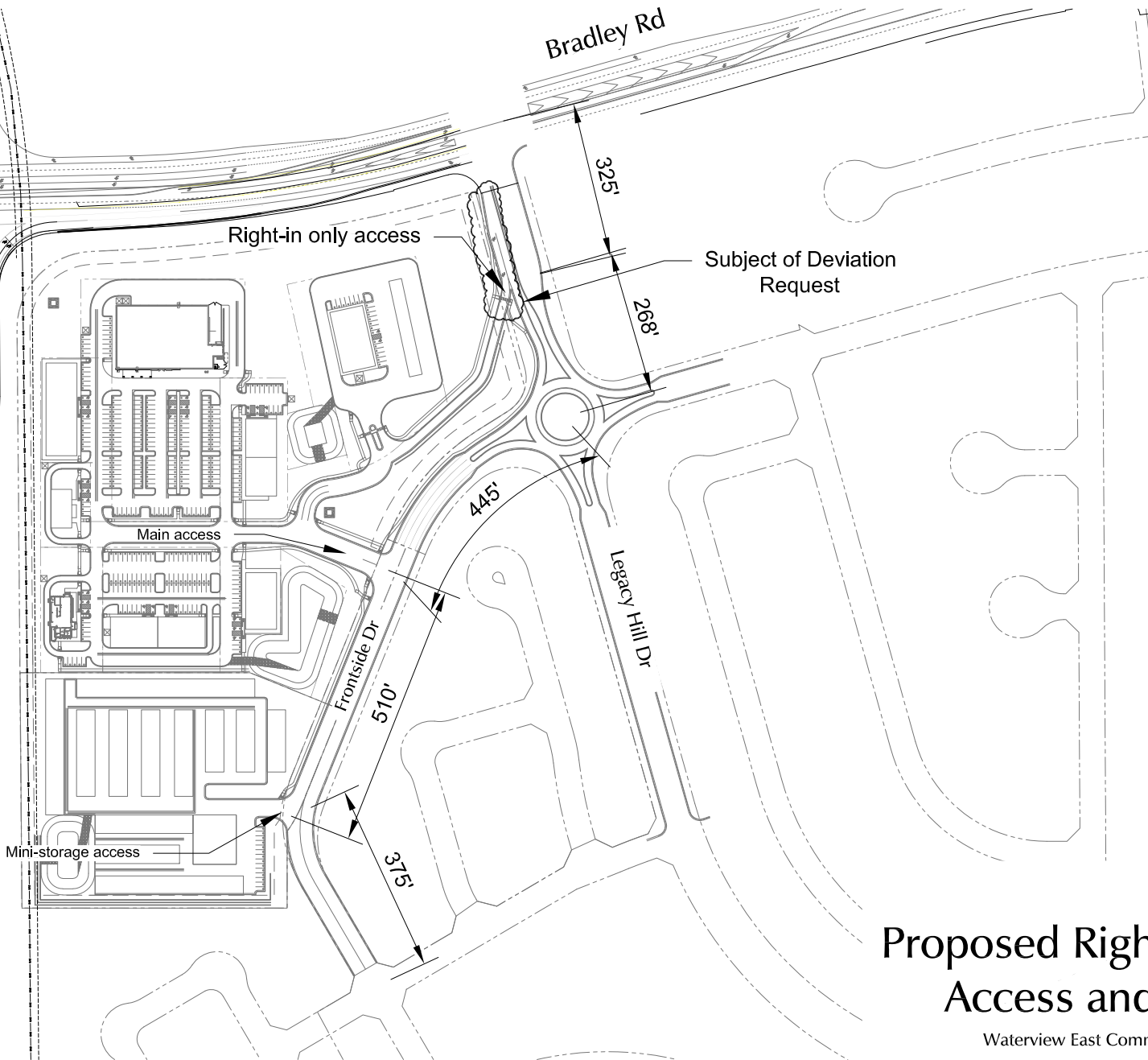
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ECM ADMINISTRATOR COMMENTS/CONDITIONS:

With the approval of this deviation, a plat note waiver will need to be applied to Note #12 for Aspen Hills Filing No. 1 (Plat No. 14541) recorded at reception no. 220714541. The plat note currently states that no access is allowed to Legacy Hills Drive. The plat note waiver will remove this condition and reference to the Final Plat for Waterview East Commercial site. The subsequent final plat for Waterview East Commercial shall include a note stating access to Legacy Hills Drive is limited to the right-in only access shown on the preliminary plan and supersedes Trails at Aspen Ridge Filing No. 1 final plat note no. 12.



Powers Blvd
BOOK 5307, PAGE 1472



Approximate
Scale
1" = 300'

Deviation Exhibit 2
**Proposed Right-in-Only
Access and Site Plan**

Waterview East Commercial (LSC# S214970)

Bradley Road



Approximate
Scale
1" = 30'

2' max width & 8'
minimum length on
crosswalk bars

6.25% upgrade

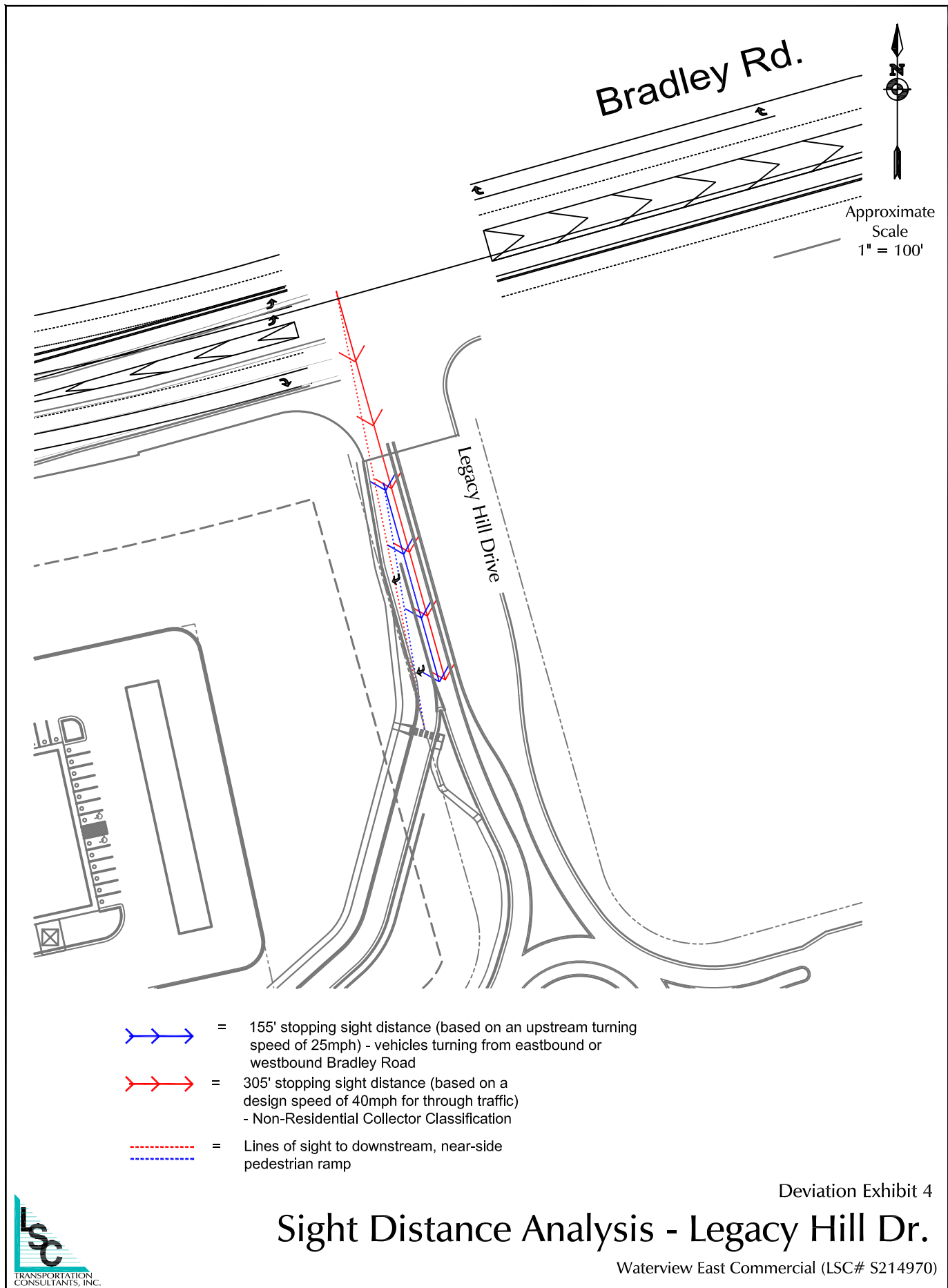
R60.00

Legacy Hill Drive

Deviation Exhibit 3

Right-in Only Access Design

Waterview East Commercial (LSC# S214970)



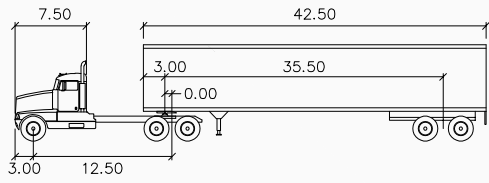
Deviation Exhibit 4

Sight Distance Analysis - Legacy Hill Dr.

Waterview East Commercial (LSC# S214970)

LEGEND:

- = Vehicle Body Clearance (1 foot) (Dot)
- ===== = Vehicle Body
- ===== = Front Tires
- ===== = Rear Tires



WB-50

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 17.7
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		



Approximate Scale
Scale: 1" = 60'



Deviation Exhibit 5

WB-50

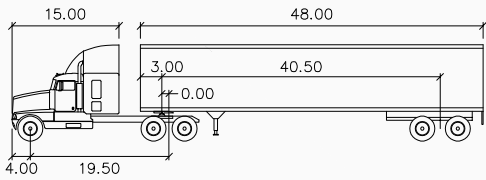
AutoTurn Movements

Waterview East Commercial (LSC #214970)



LEGEND:

- = Vehicle Body Clearance (1 foot) (Dot)
- = Vehicle Body
- = Front Tires
- = Rear Tires



WB-62

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		



Approximate Scale
Scale: 1" = 60'

Deviation Exhibit 6

WB-62

AutoTurn Movements

Waterview East Commercial (LSC #214970)

