Revised **May 9, 2023**
PK# 5217-22.027
Z223-114

TRAFFIC IMPACT ANALYSIS

Project:
2500 Cedar Springs
In Dallas, Texas

Prepared for:
City of Dallas

On behalf of:
Lincoln Property Company

Prepared by:

Steve E. Stoner

Steve E. Stoner, P.E., PTOE

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EXECUTIVE SUMMARY

The services of **Pacheco Koch** were retained by **Lincoln Property Company** to prepare a Traffic Impact Analysis (TIA) for the proposed mixed-use development known as *2500 Cedar Springs* (the "Project") located at on the east side of Cedar Springs Road between Fairmount and Routh streets Road in Dallas, Texas. The Project will replace several existing low- and mid-rise buildings and surface parking lots with a multifamily-and-office mixed-use development providing underground parking. Some retail space and a pedestrian plaza will be created on the ground level. Buildout of the Project is estimated to occur 2026. A TIA is required by the City of Dallas for review as part of the Owner's request to rezone the subject property to facilitate the proposed development.

The purpose of this report is to estimate the incremental impact on the background traffic operational conditions caused by the proposed development within a specific study area as determined by standardized engineering analyses. The study parameters used in this TIA are based upon the requirements of City and are consistent with the standard industry practices used in similar studies.

Based upon the analyses performed herein, Pacheco Koch developed the following findings and recommendations.

FINDING: The proposed development will consist of three towers with multifamily residential and office uses with some ground-floor retail. The project will replace multiple low-rise office and commercial buildings.

FINDING: The proposed development will increase traffic generated by the subject site that will by approximately 800 vehicles per hour during the traditional weekday AM and PM peak hour periods. Fortunately, surrounding roadway semi-grid network provides many alternative routes to access the site, which distributes the traffic. The site's underground parking structure is connected, so daily motorists can utilize either access point for entry and exit that provides the most efficient travel route.

Existing traffic-signal-controlled intersections of Cedar Springs at Fairmount Street and Cedar Springs at Routh Street operate efficiently during peak periods and provide very good Levels of Service. The addition of Project-related traffic does appreciably increase the traffic volume for certain turning maneuvers, which can increase overall delays. However, slight adjustments to signal timing (i.e., phase splits) can substantially mitigate those delay increases. The traffic-signal-controlled intersection of Cedar Springs Road and Fairmount Street also operates very efficiently at current conditions. The addition of Project-related traffic will again impact certain maneuvers; however, the intersection is projected to maintain an overall, acceptable Level of Service. If background traffic volumes do experience aggressive growth in the coming years, the intersection operation may eventually degrade to a poor Level of Service, which can also be mitigated by signal timing (splits) optimization.

For unsignalized intersections around the perimeter of the site, Routh-Howell and Fairmount-Howell are both all-way STOP-controlled, while Routh-Laclede is STOP-controlled on the minor street (Laclede approach and future driveway approach). These intersections operate very efficiently under existing conditions. The addition of future Project-related traffic is projected to result in a slight increase to overall traffic delays, although overall Levels of Service are not anticipated to appreciably change.

FINDING: Redevelopment of the subject property will remove several existing head-in parking spaces along Cedar Springs Road and some existing driveways, which will improve the current pedestrian environment.

- RECOMMENDATION: Once the site is occupied, review traffic signal phasing (splits) at the intersections of Cedar Springs Road at Routh Street and at Fairmount Street to provide a more balanced operation.

- RECOMMENDATION: At the intersection of Routh Street and Laclede Street:

    a. Install a crosswalk marking with appropriate warning signs on Routh Street at the intersection. Installation of an all-way STOP control may also be considered to further facilitate pedestrian crossings.

    b. Restrict on-street parking in proximity to the intersection to provide adequate pedestrian and motorist visibility.

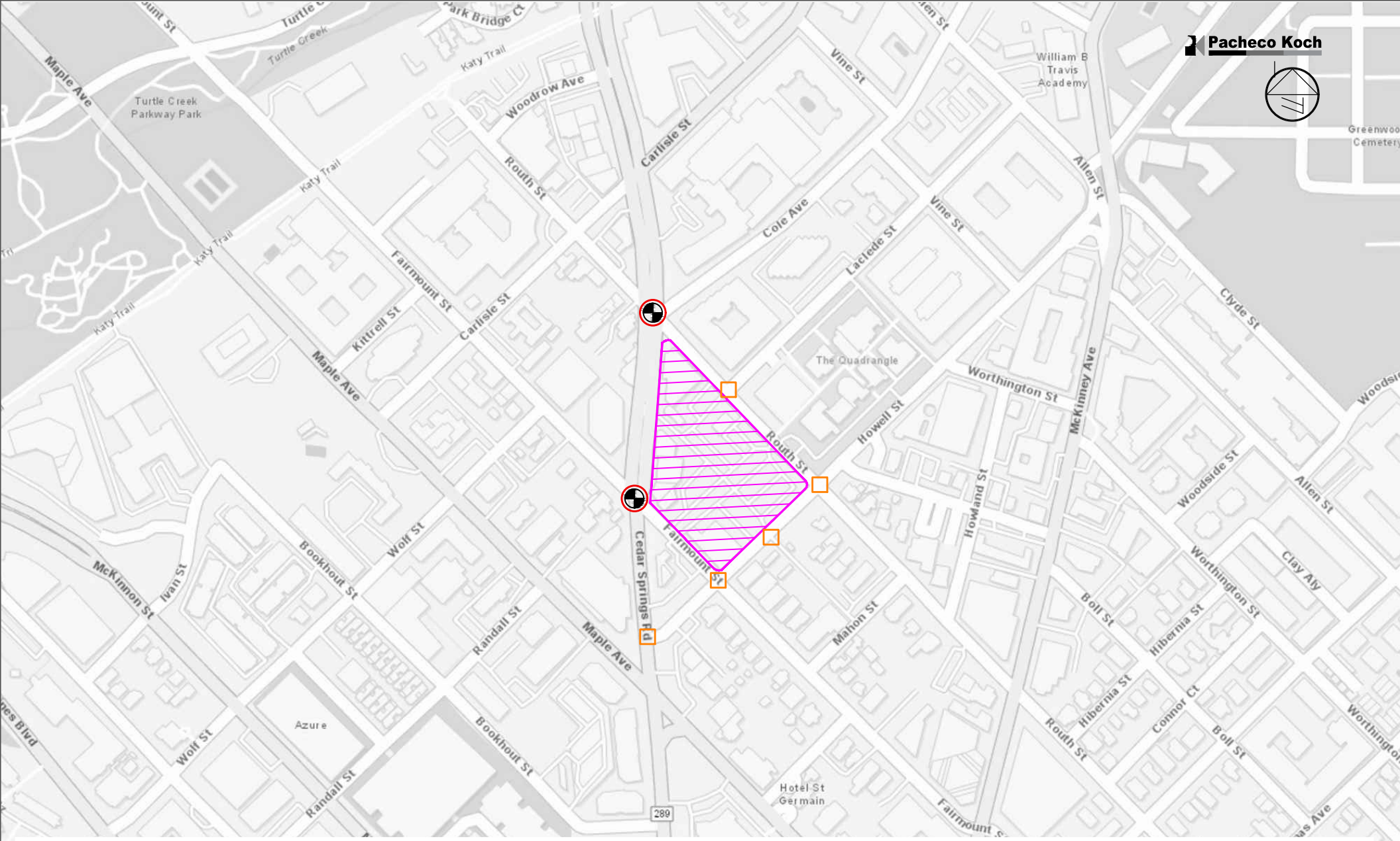
    c. Provide two exiting lanes from the site driveway/garage exit.

- RECOMMENDATION: Install a no U-turn sign for southbound traffic on Cedar Springs at the intersection of Fairmount Street (insufficient U-turn radius).

- RECOMMENDATION: Remove the existing southbound left-turn bay at the mid-block intersection on Cedar Springs Road between Routh and Fairmount streets (serving the proposed valet exit).

- RECOMMENDATION: Provide the necessary improvements to allow for traffic signal phasing optimization at the signalized intersections of Cedar Springs Road at Fairmount Street.

END

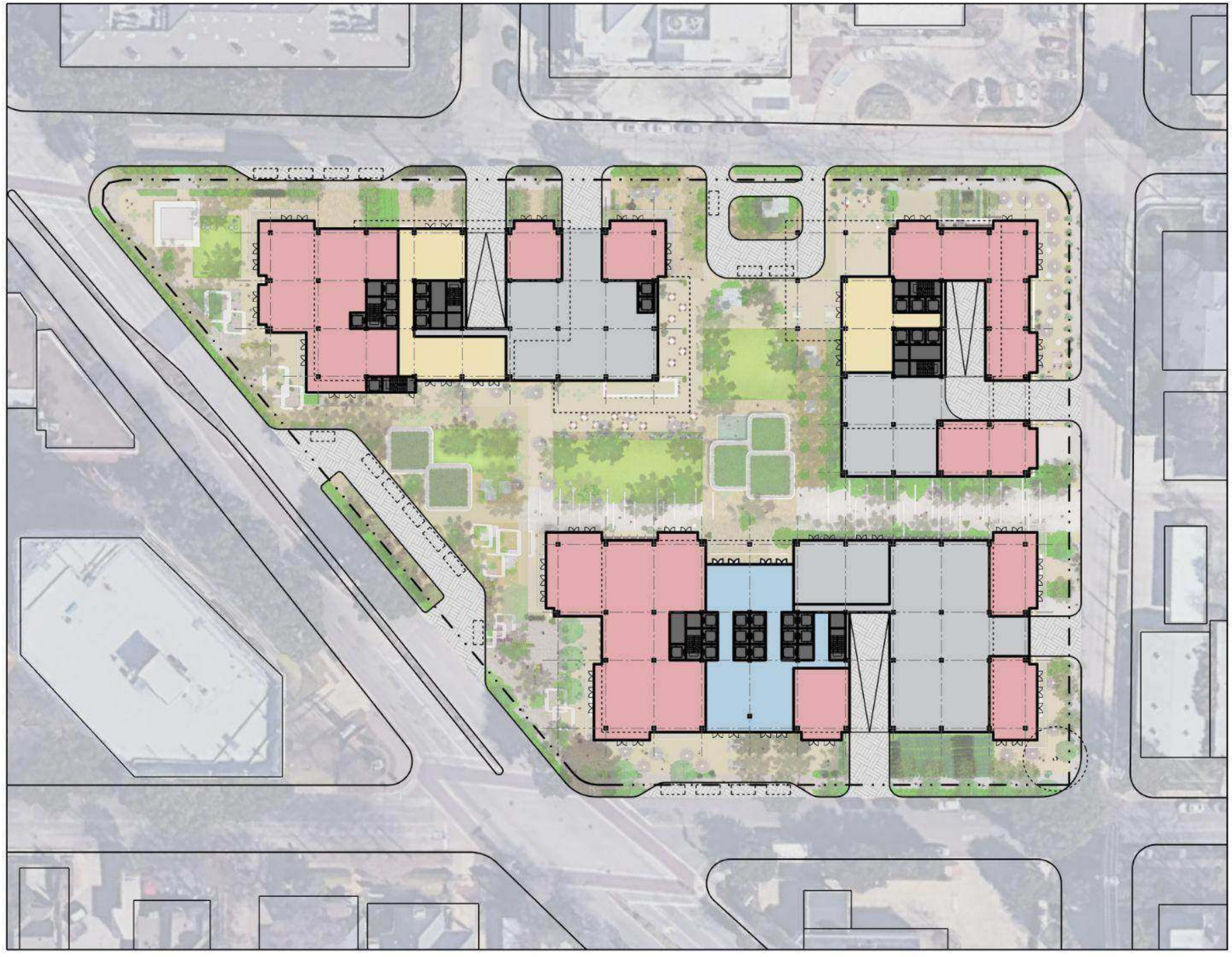


Site Location Map

2500 Cedar Springs ,Dallas, Texas

PK #5217-22.027 (SMN: 07/06/22)

EXHIBIT 1



TRAFFIC IMPACT ANALYSIS
2500 Cedar Springs
Dallas, Texas

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CHANGE LOG (2023-05-09)

1) (see attached Response To Comments Memo)

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MEMORANDUM

To: City of Dallas Development Services

From: Steve E. Stoner, P.E., PTOE

CC: Chase Prospere – Lincoln Property Company

Suzan Kedron, Luke Franz – Jackson Walker

Date: May 9, 2023

Subject: **Traffic Impact Analysis for 2500 Cedar Springs—Response to Staff Comments (Traffic) [Z223-114]**
PK #5217-22.027

The following text provides responses to the City Staff comments from the Engineering/Transportation Development Services division of the City of Dallas pertaining to the Traffic Impact Analysis referenced above. Where applicable, responses are provided below the respective comment.

Traffic Study

The applicant submitted a traffic impact analysis dated September 22, 2022 for the proposed mixed use development at 2500 Cedar Springs on behalf of Lincoln Property Company. Findings indicate that the proposed development can be successfully incorporated into the surrounding local roadway network. Engineering staff's recommendation for the proposed development is pending revisions of traffic study based on the following comments:

COMMENT #1: Revise study to show results without revised signal timings or detection. Assumed optimized settings are not plausible without upgrades or a corridor progression analysis for Cedar Springs.

RESPONSE: The existing traffic signal at Cedar Springs Road and Routh Street intersection is recently replace and equipped with fully detection devices. The existing traffic signal at the intersection of Cedar Springs Road and Fairmount Street is antiquated with no detection equipment and in need of replacement. The results provided in the study include both without optimization (i.e., existing) conditions and with optimization, which would require improvements

to the Fairmount traffic signal. These results show that the traffic impacts from the development can be fully mitigated with the optimization of traffic signal timing. A recommendation has been added to the report stating that the Fairmount traffic signal should be improved to allow for traffic signal timing optimization.

COMMENT #2: Confirm any existing u-turns at recommended u-turn traffic sign.

RESPONSE: According to the four-hour-turning movement counts collected for this study (datasheets available in Appendix B), there were no existing U-turns on southbound Cedar Springs Road at the intersection with Fairmount Street during peak hours. There were two U-turns that occurred outside of the peak hours.

COMMENT #3: Confirm traffic assignment matches parking garage access and distribution.

RESPONSE: Upon review of the traffic assignments exhibits in Appendix C, we did discover that some errors, which have been corrected. However, the traffic assignment used in the analysis were calculated correctly, so the errors were only graphical.

FYI, the underground parking garage serving the development spans the entire site and is accessible from all the ramp driveways.

COMMENT #4: Revise study to include pedestrian counts and/or any ped recalls

RESPONSE: The pedestrian volume datasheets have been added to Appendix B.

COMMENT #5: Confirm trip generation is reasonable based on maximum parking supply.

RESPONSE: The trip generation is based only on the building program and is not directly related to parking supply. It should also be noted that trip generation used in the analysis are for one-hour periods and are not representative of a totals.

COMMENT #6: Table 3 shows 1,430 trip ends instead of 2,860 for 630 MF DUs. Explain.

RESPONSE: The daily trip generation value in question was an error; 2,860 is the correct value, and this has been corrected in the report. Please note this error has no bearing on the study conclusions.

COMMENT #7: Revise Table 3 to show all calculation (from Appendix).

RESPONSE: Table 3 has been revised to provide mode split and internal trip capture reductions.

COMMENT #8: Confirm Appendix A6 correctly shows a total of 329 inbound and 185 outbound trips.

RESPONSE: Our calculated net trip generation from the project during the AM peak hour is 631 inbound and 186 outbound. We have double-checked the exhibits and believe the volumes add up to the correct totals. (NOTE: The recirculating valet traffic volumes were also removed per instruction in Comment #12.)

COMMENT #9: Confirm Appendix A7 correctly shows a total of 177 inbound and 607 outbound trips.

RESPONSE: Our calculated net trip generation from the project during the PM peak hour is 263 inbound and 608 outbound. We have double-checked the exhibits and believe the volumes add up to the correct totals. (NOTE: The recirculating valet traffic volumes were also removed per instruction in Comment #12.)

COMMENT #10: Table 7 is missing PROWAG compliance at both signalized intersections.

RESPONSE: A line item addressing this topic has been added to Table 7.

COMMENT #11: Table 7: Median opening. Opening cannot be removed since it serves 2501 Cedar Springs. Only SBLT can be decommissioned as part of this development.

RESPONSE: Understood. The text in Table 7 has been revised.

COMMENT #12: Revise to remove valet parking traffic assignment.

RESPONSE: Volumes pertaining to valet recirculation have been removed.

COMMENT #13: Revise to correct applicable PHF instead of default 0.92.

RESPONSE: The analysis has been revised to incorporate the current, actual peak hour factors, as instructed. Though it should be noted that where significant changes in traffic volume proportions occur, commensurate changes (i.e., increases) in peak hour factors are common. So, under-reported peak hour factors penalize the operational results.

COMMENT #14: Revise analysis to include possibility of a dedicated turn lane on NB Fairmount at Cedar Springs (pending ROW dedication.)

RESPONSE: This hypothetical scenario has been added to the study results.

COMMENT #15: Include parking control service rate analysis to justify recommended exit lane configuration.

RESPONSE: The parking control system (type and location of equipment, etc.) for the project will be designed/determined during a later, more detailed design phase. So, a meaningful service rate analysis cannot performed at this time. However, the Owner does intend to provide a high-level of service and efficiency.

END OF MEMO

INTRODUCTION

The services of **Pacheco Koch** (PK) were retained by **Lincoln Property Company** to prepare a Traffic Impact Analysis for a proposed mixed-use development located at on the east side of Cedar Springs Road between Fairmount and Routh streets in Dallas, Texas. The Project is referred to herein as 2500 Cedar Springs. A preliminary site plan for the Project, provided by **Lincoln Property Company**, and a site location map (**Exhibit *1***) are provided following the EXECUTIVE SUMMARY section of this report.

In order to facilitate development of the Project, Lincoln Property Company (the "Applicant") has made a request to the **City of Dallas** (the "Approving Agency") for rezoning of the subject property. The Applicant is being represented by **Jackson Walker** in the zoning process. As part of application process for this request, submittal of a TIA commissioned by the Applicant must be submitted to the Approving Agency for review.

This TIA was prepared by traffic engineers at Pacheco Koch (the "Engineer") in accordance with industry and local standards. Pacheco Koch is a licensed engineering firm, based in Texas, that provides professional engineering and related services.

Purpose

A Traffic Impact Analysis (TIA) is an engineering study used to provide information on the projected off-site impacts produced by a specific Project on the public roadway capacity. In some instances, those Project impacts can be sufficiently accommodated by the existing roadway network; while in other cases, Project impacts may require mitigation. Determination of mitigation requirements is subject to the standards and expectations of the Approving Agency.

Commissioning a TIA may be required by an Approving Agency when an Applicant is seeking approvals or entitlements for the Project. Using standardized analysis methodologies, the findings of the TIA are used to gage the direct impacts on the transportation system that are attributable to the Project. Under certain circumstances and within legal parameters, the Approving Agency may require the Applicant to fund the improvement(s) needed to mitigate the impacts.

A TIA should be prepared by a licensed Engineer skilled in the principles of traffic and transportation engineering and planning. The general methodologies, processes, and guidelines used in a TIA are established by industry standards—which are maintained by organizations such as the Institute of Transportation Engineers (ITE) and others—although, the project-specific parameters of the study (e.g., study locations, analysis scenarios, analytical assumptions, etc.) may be established by local ordinances or technical staff of the Approving Agency.

Generally, existing and background conditions of the transportation system are assumed to be the responsibility of the respective governing agency(-ies).

Although the explicit purpose of a TIA is not to evaluate those conditions and identify deficiencies, this information may be evident from the study's findings. The Engineer may suggest or recommend modifications to the transportation system that, in the Engineer's opinion, could improve overall traffic operations, safety, site access, circulation, etc. However, such proposals may be unrelated to the traffic impacts of the Project and are not considered to be the responsibility of the Developer. Implementation of such modifications are subject to the discretion and approval of the respective agency. In general all proposals from the Engineer should not be considered mandatory and are not intended to assign or imply funding responsibility.

A TIA is not a detailed site plan review nor a substitute for local or regional transportation planning.

Project Description

The proposed development will consist of one office tower and two multifamily residential towers with ground-floor commercial uses and underground parking. Buildout of the Project is estimated to occur 2026. A summary of the proposed development program, by phase, is provided in **Table 1.**

Table 1. Development Program Summary

USE	EXISTING AMOUNT	FUTURE AMOUNT
Residences	0	630 Dwelling Units
General Office	71,781 SF	525,000 SF
Commercial	33,948 SF	29,000 SF

NOTE: The development program provided above is based upon the most current and complete information available at the time of this study publication.

The subject site will frontage on four streets: Cedar Springs Road, Routh Street, Howell Street, and Fairmont Street. Site driveways will be provided on Routh, Howell, and Fairmont streets; several existing driveways will be eliminated

The 3.98-acre subject site currently contains several low- and mid-sized commercial and office buildings with surface parking lots. The property is currently zoned partially PD 193-GR (General Retail) and PD 9-Tract C.

Study Parameters

The study parameters used in this TIA are based upon industry standard practices and typical requirements of the City of Dallas. This TIA analyzed the day-to-day traffic operations on the public roadway system at time periods that have the greatest combined volume of the background traffic and site-related traffic. Due to the predominant influence of background traffic, the weekday AM and PM peak hours of adjacent street traffic are typically analyzed.

The analysis scenarios addressed in this study include the following:

- at existing conditions ("Existing" scenario)

- at site buildout year without site-generated traffic ("Background" scenario)
- at site buildout year with site-generated traffic ("Buildout" scenario)
- at five years after site buildout without site-generated traffic
- at five years after site buildout with site-generated traffic ("Horizon" scenario)

NOTE: Analyses of all future conditions scenarios utilize projected traffic volumes derived by Pacheco Koch using reasonable and customary assumptions that are based upon existing conditions where possible. ITE appropriately points out that, due to natural changes in traffic patterns that occur over time, the margin of error for projected traffic volumes increases as the length of time of the projection increases; and, any projection of hourly turning movement volumes beyond five years inherently contain significant assumptions.

The following technical assumptions were also made in this analysis.

- The existing office space and approximately half of the existing commercial space (referenced in **Table 1**) is currently occupied and generating vehicular traffic on the local roadway network. Therefore, trip generation for the office square footage was based off the net total; for the commercial component, only traffic for the two major restaurants (16,000 SF) was added.

- The adjacent mixed-use project located across Routh Street, known as The Quadrangle, is currently undergoing a partial redevelopment. A Traffic Impact Analysis was prepared for the project by Kimley Horn and Associates, Inc. Site-related traffic volumes for the project, as presented in the TIA, was added to the "No Build" (i.e., background) traffic volumes used for this analysis (excerpted exhibit provided in APPENDIX A).

Study Area

The study area for a TIA is typically defined to allow an assessment of the most relevant traffic impacts to the local area. The extent of the study area is discretionary but is generally commensurate with the scale of the proposed development. Special localized factors may also be considered. The specific locations included in the study area of this TIA are listed below and depicted in **Exhibit *1***.

Traffic-Signal-Controlled Intersections:

(a) Cedar Springs Road and Routh Street/Cole Avenue
(b) Cedar Springs Road and Fairmount Street

STOP-Sign-Controlled Intersections:

(c) Cedar Springs Road and Howell Street
(d) Fairmont Street and Howell Street
(e) Routh Street and Howell Street
(f) Routh Street and Laclede Street
(g) Major site driveways

** Proposed future traffic signal*

Roadway Links:

(A) Cedar Springs Road, adjacent to site
- Existing operation and cross-section: *four lanes, two-way operation, median-divided*
- City of Dallas Thoroughfare Plan Designation: *Minor Arterial/Existing*
- Current Daily Traffic Volume: *11,011 (Tuesday, January 25, 2022)*
- Posted Speed Limit: *30 MPH*

(B) Fairmount Street between Cedar Spring Road and Howell Street
- Existing operation and cross-section: *two lanes, two-way operation*
- City of Dallas Thoroughfare Plan Designation: *none (local street)*
- Current Daily Traffic Volume: *3,176 (Tuesday, January 25, 2022)*
- Posted Speed Limit: *none (30 MPH)*

(C) Routh Street, between Laclede Street and Howell Street
- Existing operation and cross-section: *two lanes, two-way operation*
- City of Dallas Thoroughfare Plan Designation: *none (local street)*
- Current Daily Traffic Volume: *2,635 (Tuesday, January 25, 2022)*
- Posted Speed Limit: *none (30 MPH)*

(D) Howell Street, between Laclede Street and Howell Street
- Existing operation and cross-section: *two lanes, two-way operation*
- City of Dallas Thoroughfare Plan Designation: *none (local street)*
- Current Daily Traffic Volume: *2,483 (Tuesday, January 25, 2022)*
- Posted Speed Limit: *none (30 MPH)*

TRAFFIC IMPACT ANALYSIS

The following is a description of the analyses performed as part of this Traffic Impact Analysis.

Approach

The TIA presented in this report analyzed the operational conditions of the study area intersections for the relevant peak hours using standardized analytical methodologies, where applicable. Actual traffic volumes represent background traffic conditions with no site-related traffic included. Then, traffic generated by the proposed development was calculated using the industry-standard four-step approach of trip generation, mode split, trip distribution, and traffic assignment. By adding the site-generated traffic to the background traffic, the resulting site-plus-

background operational conditions were re-analyzed in order to measure the "impact" created by the Project. For any scenario, where appropriate, the Engineer considered and may recommend measures to mitigate undue operational conditions. Recommendations may be unrelated to impact of the Project. However, any recommendations provided by the Engineer are for the consideration of the Approving Agency who may or may not accept the recommendations. Recommendations provided by the Engineer are not intended to assign or imply a mandate nor financial responsibility as such decisions are for the Approving Agency and Applicant to resolve.

Background Traffic Volume Data

Existing Volumes

Current traffic volumes were collected during the analysis periods at the study area intersections on Tuesday, January 25th, 2022. Traffic volumes are graphically summarized in APPENDIX A; detailed data sheets are provided in APPENDIX B.

Projected Background Traffic Volumes

Background traffic growth is defined as the normal growth of traffic that is not directly related to the subject development of this study. A review of historical traffic volume data can provide an indication of the local traffic growth patterns. **Table 2** provides a comparison of prior traffic volumes from institutional sources in the vicinity of the subject site, from which PK calculated an annual growth rate.

Table 2. Historical Daily Traffic Volume Data

ROADWAY SEGMENT	HISTORICAL DAILY VOLUME (DATE)	ANNUAL GROWTH RATE
Cedar Springs Road, from Cole Avenue to Carlisle Street	14,187 ('19)[A] 14,939 ('14)[A]	-1.03%

Data Source: A = TxDOT TCDS

According to these data, traffic volumes in the vicinity of the subject site are slightly decreasing. Although no positive growth is evident, Pacheco Koch assumed a very (analytically) conservative growth rate of five percent (5.0 %) per year to account for numerous proposed developments in the area. (As referenced previously, site-related traffic from the nearby Quadrangle redevelopment was also included in the background volumes.)

By applying the assumed growth rate(s) described previously, future background traffic volumes at the Project buildout year were calculated for the study area intersections. These volumes are graphically summarized in APPENDIX A.

Site-Related Traffic

Trip Generation and Mode Split

Trip generation is calculated in terms of "trip ends" – a trip end is a one-way vehicular trip entering or exiting a site driveway (i.e., a single vehicle entering and exiting a site represents two trip ends). Trip generation for this Project was

calculated using the Institute of Transportation Engineers (ITE) *Trip Generation* manual (11th Edition). ITE *Trip Generation* is a compilation of actual, vehicular traffic volume generation data and statistics by land use as collected over several decades by creditable sources across the country. Using the ITE equations and rates is an accepted methodology to calculate the projected site-generated traffic volumes for many land uses (though engineering judgment is strongly advised).

The base trip generation data from ITE generally reflect average conditions for a standalone use on a typical day. However, in some cases, the Engineer may judge that other factors may be of sufficient significance to warrant adjusting the base ITE calculations in order to more accurately reflect Project-specific conditions. For this analysis "internal trip capture" was considered to be of sufficient significance to justify adjustment of the base ITE data.

"Internal trip capture" refers to the phenomenon that some portion of the trips generated by a given use originates from within the same site and, therefore, do not impact the external roadway network. The methodology used to calculate internal trip capture is recognized by ITE. The most current research and data collection is presented in the Transportation Research Board's *NCHRP Report 684* (2011).

"Mode split" refers to the consideration of all modes of transportation. Typically, the majority of trips occur by passenger vehicles such as personal autos and ridesharing services. But, some alternative modes—such as travel by public transit, bicycle, and walking—do not generate additional vehicle trips. The default trip generation data from ITE is summarized in vehicular trip ends and incorporate "typical" mode split characteristics. However, when travel by alternative mode has the potential to be greater than normal, a reduction in the number of vehicular trip volume may be warranted. For this analysis a five percent (5.0%) trip reduction was applied to account for non-vehicular modes (walking, biking) of travel from nearby locations.

Table 3 provides a summary of the calculated net increase in trip ends generated by the project. Supplemental information used in the trip generation calculations is provided in APPENDIX C.

Table 3. Projected Trip Generation Summary

SCENARIO	DAILY TRIP ENDS (WEEKDAY)	AM PEAK HOUR TRIP ENDS (ADJACENT STREET PEAK)	PM PEAK HOUR TRIP ENDS (ADJACENT STREET PEAK)
		Total (In/Out)	**Total** (In/Out)
Multifamily	2,860	**170** (58/112)	**202** (113/89)
Office*	4,913	**689** (606/83)	**653** (111/542)
Commercial*	1,341	**12** (6/6)	**125** (84/41)
Gross Subtotal	9.114	**871** (670/201)	**980** (308/672)
Mode Split Reduction	-456	**-42** (-33/-9)	**-45** (-14/-31)
Internal Trip Capture Reduction	n/a	**-12** (-6/-6)	**-64** (-31/-33)
Net Increase**	8,658	**817** (631/186)	**871** (263/608)

* Net increase (considers square footage that is currently occupied on site).

** After deductions for Mode Split and Internal Trip Capture (NOTE: n/a = no formulas available to calculate daily internal trip capture).

Trip Distribution and Assignment

The distribution and assignment of site-generated trip ends to the surrounding roadway system is determined by proportionally estimating the orientation of travel via various travel routes. This is a subjective exercise based upon professional judgment considering such factors as directional characteristics of existing local traffic, trip attributes (e.g., trip purpose, trip length, travel time, etc.), roadway features (e.g., capacity, operational conditions, character of environment), regional demographics, etc.

Traffic for the proposed redevelopment was distributed and assigned to the study area roadway network based upon consideration of the factors listed above. Separate traffic assignments were developed for residential, office-commercial, and commercial (valet only) trips. Detailed trip distribution and traffic assignment calculations and results are summarized in APPENDIX C.

Site-Generated Traffic Volumes

Site-generated traffic is calculated by multiplying the trip generation value (from **Table 3**) by the corresponding traffic assignments (from APPENDIX C). The resulting cumulative (for all uses) peak period site-generated traffic volumes at buildout of the Project are graphically summarized in APPENDIX A.

Traffic Operational Analysis —Roadway Links

Description

A roadway link is a segment of roadway between two intersections. Roadway link capacity analysis is a comparison of actual or forecasted traffic volumes to the theoretically optimum roadway capacity. The capacity of the roadway link is predominantly a function of the roadway's cross-section (i.e., number of lanes,

lane widths, type of center divider, etc.). However, other more theoretical factors also apply, such as the character of environment and the functional classification of the roadway. Generally, roadway link capacity is less critical than intersection capacity; however, it can provide a gage of the utilization of given roadway.

A specific industry standard for roadway link capacity does not exist, but the typical concept is derived from a base saturation flow rate (i.e., the maximum theoretical rate of continuous flow under ideal, unobstructed conditions -- in the traffic engineering industry, this value is generally considered to range between 1,900-2,100 vehicles per lane per hour). A series of adjustment factors are then applied to the saturation flow rate to reflect the characteristics of a given location.

The North Central Texas Council of Governments (NCTCOG) – the metropolitan planning agency for the Dallas-Fort Worth region – has derived internal "hourly service volume" guidelines used for transportation modelling purposes. The NCTCOG values were based upon the principals presented in the *Highway Capacity Manual* with "regional calibration" factors applied. Though these per-lane capacities, or "Service Volumes" (summarized in the table below), are intended for modelling purposes, they do provide a reasonable gage of theoretical capacity.

Hourly Service Volumes By Roadway Function

Area Type	Activity Density Range (per acre)	Principal Arterial		Minor Arterial & Frontage Road		Collector & Local Street	
		Median-Divided or One-Way	Undivided Two-Way	Median-Divided or One-Way	Undivided Two-Way	Median-Divided or One-Way	Undivided Two-Way
CBD	>125	725	650	725	650	475	425
Outer Business	30-125	775	725	775	725	500	450
Urban Residential	7.5-30	850	775	825	750	525	475
Suburban Residential	1.8-7.5	900	875	900	825	575	525
Rural	<1.8	1,025	925	975	875	600	550

To determine the utilization of a roadway, the volume:capacty ratio can be calculated – a v/c ratio of less than 1.0 indicates that the roadway is operating under capacity. NCTCOG's Level of Service denominations are as follows:

Volume:Capacity Ratio $\leq$ 65% is LOS *A/B/C*,
Volume:Capacity Ratio > 65% and $\leq$ 100% is LOS *D/E*,
Volume:Capacity Ratio $\geq$ 100% is LOS *F*

Summary of Results

For roadways adjacent to or in the vicinity of the subject site, the volume/capacity ratio was calculated for existing and site buildout conditions. A summary of the link

capacity analysis is provided in **Table 4**. See specific recommendations in the *Recommendations* section of this report.

Table 4. Roadway Link Capacity Analysis Results Summary

ROADWAY/ SCENARIO	PEAK HOUR VOLUME (PM)	THEORETICAL HOURLY CAPACITY	V:C RATIO/ LEVEL OF SERVICE
Cedar Springs Road			
Existing Conditions	1,066	3,300	*0.32 – B*
Buildout Year-No Build	1,296	3,300	*0.39 – B*
Buildout Year-Build	1,496	3,300	*0.45 – C*
Fairmont Street			
Existing Conditions	308	950	*0.32 – B*
Buildout Year-No Build	374	950	*0.39 – B*
Buildout Year-Build	636	950	*0.67 – D*
Routh Street			
Existing Conditions	240	950	*0.25 – B*
Buildout Year-No Build	292	950	*0.31 – B*
Buildout Year-Build	509	950	*0.54 – C*
Howell Street			
Existing Conditions	268	950	*0.28 – B*
Buildout Year-No Build	326	950	*0.34 – B*
Buildout Year-Build	500	950	*0.53 – C*

Traffic Operational Analysis —Roadway Intersections

Description

The level of performance of civil infrastructure can often be measured through an analysis of volume and capacity that considers various physical and operational characteristics of the system. For vehicular traffic an operational analysis of roadway intersection capacity over a 60-minute period is the most detailed type of analysis. An industry-standardized methodology for this type of analysis was developed by the Transportation Research Board and is presented in the Highway Capacity Manual (HCM). HCM uses the term "Level of Service" (or, LOS) to qualitatively describe the efficiency using a letter grade of A through F. Generally, LOS can be described as follows:

LOS *A* = free, unobstructed flow
LOS *B* = reasonably free flow
LOS *C* = stable flow
LOS *D* = approaching unstable flow
LOS *E* = unstable flow, operating at design capacity
LOS *F* = operating over design capacity

Traffic operational analysis is typically measured in one-hour periods during day-to-day peak conditions. In most urban settings, LOS C, or better, is desirable, although

LOS D is considered to be acceptable in urban conditions; LOS E indicates a facility or maneuver is approaching capacity, while LOS F is theoretically an over-capacity condition. On highly-utilized transportation facilities, brief periods of LOS E or F conditions are not uncommon for during peak periods. In some cases measures to increase capacity, either through operational changes and/or physical improvements, can be identified to improve efficiency and sometimes raise Level of Service.

For traffic-signal-controlled ("signalized") intersections and STOP-controlled ("unsignalized") intersections, LOS is determined based upon the calculated average seconds of delay per vehicle. For signalized intersections the average delay per vehicle can be effectively calculated for the entire intersection; however, for unsignalized intersections the average delay per vehicle is calculated only by approach or by individual traffic maneuvers that must stop or yield right-of-way.

NOTE: The HCM unsignalized intersection analysis methodology was developed and calibrated for low-to-moderate volume intersections. When applied to intersections with one or more high-volume or high-capacity approaches, the analyses often reflect poor results (i.e., low Level of Service). However, the actual delay/operational conditions are typical of similar locations and do not necessarily represent unique conditions. Low-performing, high-volume, unsignalized intersections cannot be analytically mitigated unless a traffic signal is installed. (Traffic signal installation is subject to a detailed analysis of established criteria AND approval of the responsible agency. Neither Level of Service nor vehicle delay is a warrant for traffic signal installation.)

The following table summarizes the LOS criteria for signalized and unsignalized intersections as defined in the latest edition of the *Highway Capacity Manual*.

	Signalized Intersection (Average Delay per Vehicle)	**Unsignalized Intersection (Average Delay per Vehicle)**
LOS *A*	≤ 10	≤ 10
LOS *B*	> 10 - ≤ 20	> 10 - ≤ 15
LOS *C*	> 20 - ≤ 35	> 15 - ≤ 25
LOS *D*	> 35 - ≤ 55	> 25 - ≤ 35
LOS *E*	> 55 - ≤ 80	> 35 - ≤ 50
LOS *F*	> 80	> 50

Analysis Traffic Volumes

Determination of the traffic impact associated with the Project is measured by comparing the incremental change in operational conditions during peak periods with and without site-related traffic. APPENDIX A provides exhibits summarizing the following:

- Existing traffic volumes during study peak hours
- Projected Background traffic volumes at the Site Buildout Year during study peak hours
- Projected Site-Generated traffic volumes during study peak hours

- Projected Background-plus-Site-Generated traffic volumes at the Site Buildout Year during study peak hours
- Projected five years after site buildout traffic volumes, including Site-Generated traffic during study peak hours

A summary of the existing intersection/roadway geometry and traffic control devices is also graphically summarized in APPENDIX A.

Summary of Results

Intersection capacity analyses presented in this study were performed using the *Synchro* software package. **Table 5** and **Table 6** provide a summary of the peak period intersection operational conditions under the analysis conditions presented previously. Detailed software output is provided in APPENDIX D.

NOTE: Traffic signal operational parameters used in this analysis were based upon actual, existing traffic signal operational characteristics observed in the field at the time of traffic data collection.

SITE ACCESS EVALUATION

The City of Dallas *Street Design Manual* suggests various site access items should be evaluated for each project, where applicable. **Table 7** summarizes the findings and recommendations of these evaluations. Applicable supplemental information is provided in APPENDIX E.

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Table 5. Peak Hour Intersection Capacity Analysis Results Summary
(Signalized Intersections)

INTERSECTION		EXISTING CONDITIONS						NO BUILD CONDITIONS						BUILD CONDITIONS						HORIZON CONDITIONS					
		AM			PM			AM			PM			AM			PM			AM			PM		
		LOS	delay	queue	LOS	delay	queue	LOS	delay	queue	LOS	delay	queue	LOS	delay	queue	LOS	delay	queue	LOS	delay	queue	LOS	delay	queue
Cedar Springs Road	**Overall**	**A**	**(9.6)**		**B**	**(12.2)**		**A**	**(10.0)**		**B**	**(17.3)**		**C**	**(21.1)**		**F**	**(>100)**		**C**	**(24.2)**		**F**	**(>100)**	
@ Routh Street	NB	A	*(1.3)*	18 ft	A	*(1.4)*	28 ft	A	*(1.5)*	26 ft	A	*(1.8)*	33 ft	A	*(1.9)*	24 ft	A	*(1.8)*	34 ft	A	*(1.9)*	27 ft	A	*(1.9)*	42 ft
& Cole Avenue	EB	D	*(44.0)*	39 ft	D	*(42.4)*	54 ft	D	*(42.4)*	43 ft	D	*(39.9)*	60 ft	D	*(49.3)*	110 ft	F	*(90.9)*	135 ft	D	*(50.0)*	113 ft	F	*(>100)*	172 ft
	WB	D	*(49.4)*	51 ft	D	*(50.9)*	92 ft	D	*(50.4)*	65 ft	E	*(65.1)*	132 ft	F	*(86.1)*	162 ft	F	*(>100)*	357 ft	F	*(>100)*	187 ft	F	*(>100)*	401 ft
	SB	A	*(5.2)*	92 ft	A	*(8.9)*	68 ft	A	*(5.6)*	165 ft	B	*(10.2)*	110 ft	A	*(8.4)*	160 ft	B	*(10.9)*	110 ft	B	*(10.8)*	204 ft	B	*(13.4)*	150 ft
	Overall													**B**	**(18.7)**		**C**	**(22.1)**		**B**	**(19.6)**		**C**	**(31.1)**	
	NB													A	*(1.9)*	24 ft	A	*(4.1)*	45 ft	A	*(2.2)*	30 ft	A	*(4.4)*	55 ft
w/ optimized signal splits	EB													D	*(44.1)*	99 ft	C	*(21.2)*	65 ft	D	*(41.9)*	101 ft	C	*(21.3)*	74 ft
	WB													E	*(69.8)*	118 ft	D	*(43.9)*	210 ft	E	*(70.0)*	130 ft	D	*(46.6)*	235 ft
	SB													A	*(8.8)*	180 ft	C	*(21.8)*	155 ft	B	*(12.4)*	211 ft	E	*(56.4)*	266 ft
Cedar Springs Road	**Overall**	**B**	**(12.8)**		**B**	**(16.1)**		**B**	**(14.4)**		**C**	**(25.9)**		**B**	**(17.5)**		**E**	**(78.0)**		**C**	**(24.1)**		**F**	**(>100)**	
@ Fairmount Street	NB	A	*(5.5)*	35 ft	A	*(6.1)*	85 ft	A	*(5.7)*	48 ft	A	*(6.7)*	113 ft	A	*(5.9)*	61 ft	A	*(6.9)*	120 ft	A	*(6.2)*	73 ft	A	*(7.8)*	158 ft
	EB	D	*(35.5)*	151 ft	D	*(43.3)*	228 ft	D	*(40.8)*	204 ft	E	*(74.9)*	347 ft	D	*(50.8)*	268 ft	F	*(>100)*	406 ft	E	*(79.3)*	373 ft	F	*(>100)*	551 ft
	WB	C	*(33.0)*	118 ft	D	*(37.8)*	159 ft	D	*(35.2)*	146 ft	E	*(66.8)*	254 ft	D	*(39.8)*	175 ft	F	*(>100)*	466 ft	D	*(53.3)*	243 ft	F	*(>100)*	571 ft
	SB	A	*(5.0)*	64 ft	A	*(4.0)*	44 ft	A	*(5.7)*	85 ft	A	*(4.5)*	69 ft	A	*(5.4)*	86 ft	A	*(4.8)*	74 ft	A	*(5.9)*	113 ft	A	*(5.5)*	100 ft
	Overall													**B**	**(17.0)**		**F**	**(>100)**		**C**	**(22.5)**		**F**	**(>100)**	
Hypothetical	NB													A	*(5.9)*	61 ft	A	*(6.9)*	120 ft	A	*(6.2)*	73 ft	A	*(7.8)*	158 ft
Improvement: add w/	EB													D	*(50.6)*	268 ft	F	*(>100)*	510 ft	E	*(76.8)*	371 ft	F	*(>100)*	643 ft
WBRTL on Fairmount Street	WB													D	*(35.8)*	148 ft	F	*(>100)*	411 ft	D	*(42.6)*	187 ft	F	*(>100)*	503 ft
	SB													A	*(5.4)*	86 ft	A	*(4.8)*	74 ft	A	*(5.9)*	113 ft	A	*(5.5)*	100 ft
	Overall													**B**	**(16.0)**		**B**	**(19.0)**		**B**	**(17.4)**		**C**	**(23.3)**	
w/ optimized signal splits	NB													B	*(14.4)*	104 ft	C	*(22.0)*	211 ft	B	*(15.5)*	125 ft	C	*(27.7)*	385 ft
only	EB													C	*(21.2)*	191 ft	B	*(17.5)*	201 ft	C	*(23.3)*	234 ft	C	*(20.6)*	270 ft
	WB													B	*(18.5)*	121 ft	B	*(20.0)*	212 ft	B	*(19.6)*	149 ft	C	*(24.6)*	267 ft
	SB													B	*(14.1)*	132 ft	B	*(15.6)*	145 ft	B	*(15.7)*	168 ft	B	*(18.4)*	190 ft
	Overall													**B**	**(15.8)**		**B**	**(18.6)**		**B**	**(17.2)**		**C**	**(22.8)**	
w/ optimized signal splits &	NB													B	*(14.4)*	104 ft	C	*(22.0)*	211 ft	B	*(15.5)*	125 ft	C	*(27.7)*	385 ft
Hypothetical Improvement	EB													C	*(21.2)*	190 ft	B	*(17.4)*	200 ft	C	*(23.2)*	233 ft	C	*(21.8)*	279 ft
	WB													B	*(17.4)*	102 ft	B	*(17.8)*	183 ft	B	*(18.1)*	124 ft	C	*(20.6)*	225 ft
	SB													B	*(14.1)*	132 ft	B	*(15.6)*	145 ft	B	*(15.7)*	168 ft	B	*(18.4)*	190 ft

NOTE: Traffic signal operational parameters used in this analysis were based upon actual traffic signal operational characteristics observed in the field at the time of data collection.

Table 6. Peak Hour Intersection Capacity Analysis Results Summary
(Unsignalized Intersections)

INTERSECTION	TRAFFIC MANEUVER	EXISTING CONDITIONS						NO BUILD CONDITIONS						BUILD CONDITIONS					
		AM			PM			AM			PM			AM			PM		
		LOS	delay	queue	LOS	delay	queue	LOS	delay	queue	LOS	delay	queue	LOS	delay	queue	LOS	delay	queue
Cedar Springs Road	**WB**	**A**	***(9.4)***	**0 ft**	**B**	***(11.3)***	**2 ft**	**A**	***(9.8)***	**2 ft**	**B**	***(12.3)***	**2 ft**	**B**	***(10.4)***	**2 ft**	**B**	***(12.7)***	**2 ft**
@ Howell Street																			
Routh Street	NB	A	*(0.0)*	0 ft	A	*(0.0)*	0 ft	A	*(0.0)*	0 ft	A	*(0.0)*	0 ft	F	*(>100)*	181 ft	F	*(>100)*	686 ft
@ Laclede Street &	**EBL**	**A**	***(7.5)***	**2 ft**	**A**	***(7.6)***	**2 ft**	**A**	***(8.0)***	**9 ft**	**A**	***(7.7)***	**2 ft**	**A**	***(8.0)***	**9 ft**	**A**	***(7.7)***	**2 ft**
'Site Driveway 1	**WBL**	**A**	***(0.0)***	**0 ft**	**A**	***(0.0)***	**0 ft**	**A**	***(0.0)***	**0 ft**	**A**	***(0.0)***	**0 ft**	**A**	***(8.5)***	**7 ft**	**A**	***(8.1)***	**2 ft**
	SB	A	*(9.8)*	2 ft	B	*(10.4)*	7 ft	B	*(12.8)*	12 ft	B	*(11.7)*	12 ft	F	*(68.6)*	129 ft	C	*(23.6)*	59 ft
Routh Street	**NBLTR**	**A**	***(8.1)***	**9 ft**	**A**	***(9.7)***	**26 ft**	**A**	***(10.0)***	**28 ft**	**B**	***(12.7)***	**49 ft**	**B**	***(11.7)***	**40 ft**	**C**	***(16.3)***	**71 ft**
@ Howell Street	**EBLTR**	**A**	***(8.3)***	**12 ft**	**A**	***(9.6)***	**21 ft**	**A**	***(9.4)***	**16 ft**	**B**	***(13.2)***	**54 ft**	**B**	***(10.6)***	**24 ft**	**C**	***(21.3)***	**120 ft**
	WBLTR	**A**	***(8.3)***	**9 ft**	**A**	***(9.4)***	**19 ft**	**A**	***(9.7)***	**21 ft**	**B**	***(11.6)***	**31 ft**	**B**	***(11.9)***	**42 ft**	**B**	***(14.5)***	**49 ft**
	SBLTR	**A**	***(8.3)***	**14 ft**	**A**	***(9.3)***	**21 ft**	**A**	***(9.4)***	**21 ft**	**B**	***(12.3)***	**42 ft**	**B**	***(10.9)***	**33 ft**	**C**	***(15.5)***	**61 ft**
Howell Street	**NBLTR**	**A**	***(7.9)***	**7 ft**	**A**	***(9.0)***	**16 ft**	**A**	***(8.5)***	**12 ft**	**B**	***(10.3)***	**26 ft**	**A**	***(10.0)***	**24 ft**	**B**	***(12.6)***	**42 ft**
@ Fairmount Street	**EBLTR**	**A**	***(8.1)***	**12 ft**	**A**	***(9.6)***	**26 ft**	**A**	***(8.8)***	**16 ft**	**B**	***(11.6)***	**42 ft**	**A**	***(9.8)***	**21 ft**	**C**	***(15.4)***	**75 ft**
	WBLTR	**A**	***(7.8)***	**9 ft**	**A**	***(8.8)***	**14 ft**	**A**	***(8.5)***	**19 ft**	**B**	***(10.1)***	**24 ft**	**B**	***(10.1)***	**33 ft**	**B**	***(11.7)***	**33 ft**
	SBLTR	**A**	***(7.3)***	**5 ft**	**A**	***(8.5)***	**14 ft**	**A**	***(7.9)***	**9 ft**	**B**	***(10.5)***	**33 ft**	**A**	***(8.9)***	**14 ft**	**B**	***(12.3)***	**42 ft**
Howell Street	**NBLTR**													**A**	***(7.4)***	**0 ft**	**A**	***(7.6)***	**2 ft**
@ Site Driveway 2	EBLTR													A	*(9.7)*	5 ft	B	*(10.5)*	2 ft
Fairmount Street	**SB**													**B**	***(10.5)***	**2 ft**	**B**	***(12.5)***	**24 ft**
@ Site Driveway 3	EBL													A	*(7.9)*	5 ft	A	*(7.9)*	2 ft

[Note: Bold Font in the unsignalized intersection table refers to maneuvers within public right-of-way (others are within private property).]

KEY:

A, B, C, D, E, F = Level-of-Service
NB-, SB-, EB-, WB- = intersection approach
AM = AM Peak Hour of Adjacent Street
(##.#) = Average Seconds of Delay Per Vehicle
-L, -T, -R = Left, Through, Right turning movement
PM = PM Peak Hour of Adjacent Street

Table 7. Site Access Evaluation

EVALUATION	FINDING
Auxiliary (Deceleration) Lanes	Construction of deceleration lanes not recommended due to urban, low-speed conditions.
Signage and Pavement Markings on Public Rights-of-Way	Existing pavement markings around the perimeter of the subject site are in fair condition. Existing signage around the perimeter of the site is in good condition.
Historical Accident Analysis	According to the TxDOT Crash Records Information System (CRIS) database, a total of 37 reported crashes occurred around the perimeter of the site between 2019-2021. The following summarizes the number of severe crashes involving fatality (Type K) or serious injury (Type A). (See summary data in Appendix E.) Cedar Springs Road at Routh St: Total 4, Type K 1*, Type A 0 Cedar Springs Road at Fairmount St: Total 15, Type K 0, Type A 1 Routh Street at Laclede St: Total 3, Type K 0, Type A 0 Routh Street at Howell St: Total 5, Type K 0, Type A 0 Fairmount Street at Howell St: Total 2, Type K 0, Type A 0 * involved intoxicated motorist
Pedestrian Safety at Unsignalized Crossing(s)	The intersection of Howell Street at Routh Street and Howell Street at Fairmount Street are all-Way STOP controlled with brick-pavered crosswalks. Replacing stop bar markings is recommended.
	The intersection of Routh Street and Laclede Street is STOP-controlled on the Laclede approach only. No crosswalk markings provided. Installation of a crosswalk on the Laclede approach and at least one crosswalk with warning signs on Routh is recommended. Installation of all-way STOP control can be considered to further facilitate pedestrian crossings. Removal of on-street parking on Routh Street neat the intersection is recommended to provide adequate pedestrian and motorist visibility.
Driveway Sight Distances	All site driveways will be newly constructed and must comply with applicable sight distance requirements.
Number of Access Points and Driveway Spacing	The subject site currently has nine points of vehicular access on the perimeter roadways, including angled head-in parking on Cedar Springs Road. The proposed site plan will generally provide the same number of overall site driveways but remove the on-street head-in parking on Cedar Springs Road. Cedar Springs Road: Existing 1* with on-street parking; Proposed 2, no on-street parking; Change 1 Fairmount Street: Existing 2; Proposed 1 with prop. lay-by lane; Change -1 Howell Street: Existing 2*; Proposed 2; Change 0 Routh Street: Existing 4; Proposed 4 with prop. lay-by lane; Change 0 * includes existing alley
Corner Clearances	Anticipated to comply with City standards.
Median Openings	The only existing median opening adjacent to the subject site is on Cedar Springs Road between Fairmount Street and Routh Street. Per the site plan available at the time of this study, the southbound left turn will no longer be required and should be decommissioned.
Shared Access	N/A
Stopping Sight Distance	N/A
Traffic Signal or STOP Control Warrant Analysis	N/A
Driveway Improvements	All proposed driveways will be new or reconstructed and are anticipated to comply with applicable standards.
Curb Return Radius	All proposed curb returns will be new or reconstructed and are anticipated to comply with applicable standards.
Existing Traffic Signals Adjacent to Site	Cedar Springs Road at Fairmount Street: At permitting, the existing traffic signal shall be evaluated for compliance with City of Dallas PROWAG requirements.
	Cedar Springs Road at Routh Street: At permitting, the existing traffic signal shall be evaluated for compliance with City of Dallas PROWAG requirements.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

NOTE: Recommendations presented in this report reflect the opinion of Pacheco Koch based solely upon technical analysis and professional judgment but are not intended to infer mandates or funding responsibility. Any proposed improvements in the public right-of-way are subject to approval of the responsible agency(-ies). Should the approving agency determine that any off-site improvements are required for approval of the Project, legal precedents apply with regard to jurisdiction and funding allocation.

The following findings and, if applicable, recommendations were based upon an analysis of the anticipated traffic impact generated by the proposed development scenario outlined in the *Project Description* section of this report.

FINDING: The proposed development will consist of three towers with multifamily residential and office uses with some ground-floor retail. The project will replace multiple low-rise office and commercial buildings.

FINDING: The proposed development will increase traffic generated by the subject site that will by approximately 800 vehicles per hour during the traditional weekday AM and PM peak hour periods. Fortunately, surrounding roadway semi-grid network provides many alternative routes to access the site, which distributes the traffic. The site's underground parking structure is connected, so daily motorists can utilize either access point for entry and exit that provides the most efficient travel route.

Existing traffic-signal-controlled intersections of Cedar Springs at Fairmount Street and Cedar Springs at Routh Street operate efficiently during peak periods and provide very good Levels of Service. The addition of Project-related traffic does appreciably increase the traffic volume for certain turning maneuvers, which can increase overall delays. However, slight adjustments to signal timing (i.e., phase splits) can substantially mitigate those delay increases. The traffic-signal-controlled intersection of Cedar Springs Road and Fairmount Street also operates very efficiently at current conditions. The addition of Project-related traffic will again impact certain maneuvers; however, the intersection is projected to maintain an overall, acceptable Level of Service. If background traffic volumes do experience aggressive growth in the coming years, the intersection operation may eventually degrade to a poor Level of Service, which can also be mitigated by signal timing (splits) optimization.

For unsignalized intersections around the perimeter of the site, Routh-Howell and Fairmount-Howell are both all-way STOP-controlled, while Routh-Laclede is STOP-controlled on the minor street (Laclede approach and future driveway approach). These intersections operate very efficiently under existing conditions. The addition of future Project-related traffic is projected to result in a slight increase to overall traffic delays, although overall Levels of Service are not anticipated to appreciably change.

FINDING: Redevelopment of the subject property will remove several existing head-in parking spaces along Cedar Springs Road and some existing driveways, which will improve the current pedestrian environment.

- RECOMMENDATION: Once the site is occupied, review traffic signal phasing (splits) at the intersections of Cedar Springs Road at Routh Street and at Fairmount Street to provide a more balanced operation.

- RECOMMENDATION: At the intersection of Routh Street and Laclede Street:

    a. Install a crosswalk marking with appropriate warning signs on Routh Street at the intersection. Installation of an all-way STOP control may also be considered to further facilitate pedestrian crossings.

    b. Restrict on-street parking in proximity to the intersection to provide adequate pedestrian and motorist visibility.

    c. Provide two exiting lanes from the site driveway/garage exit.

- RECOMMENDATION: Install a no U-turn sign for southbound traffic on Cedar Springs at the intersection of Fairmount Street (insufficient U-turn radius).

- RECOMMENDATION: Remove the existing southbound left-turn bay at the mid-block intersection on Cedar Springs Road between Routh and Fairmount streets (serving the proposed valet exit).

- RECOMMENDATION: Provide the necessary improvements to allow for traffic signal phasing optimization at the signalized intersections of Cedar Springs Road at Fairmount Street.

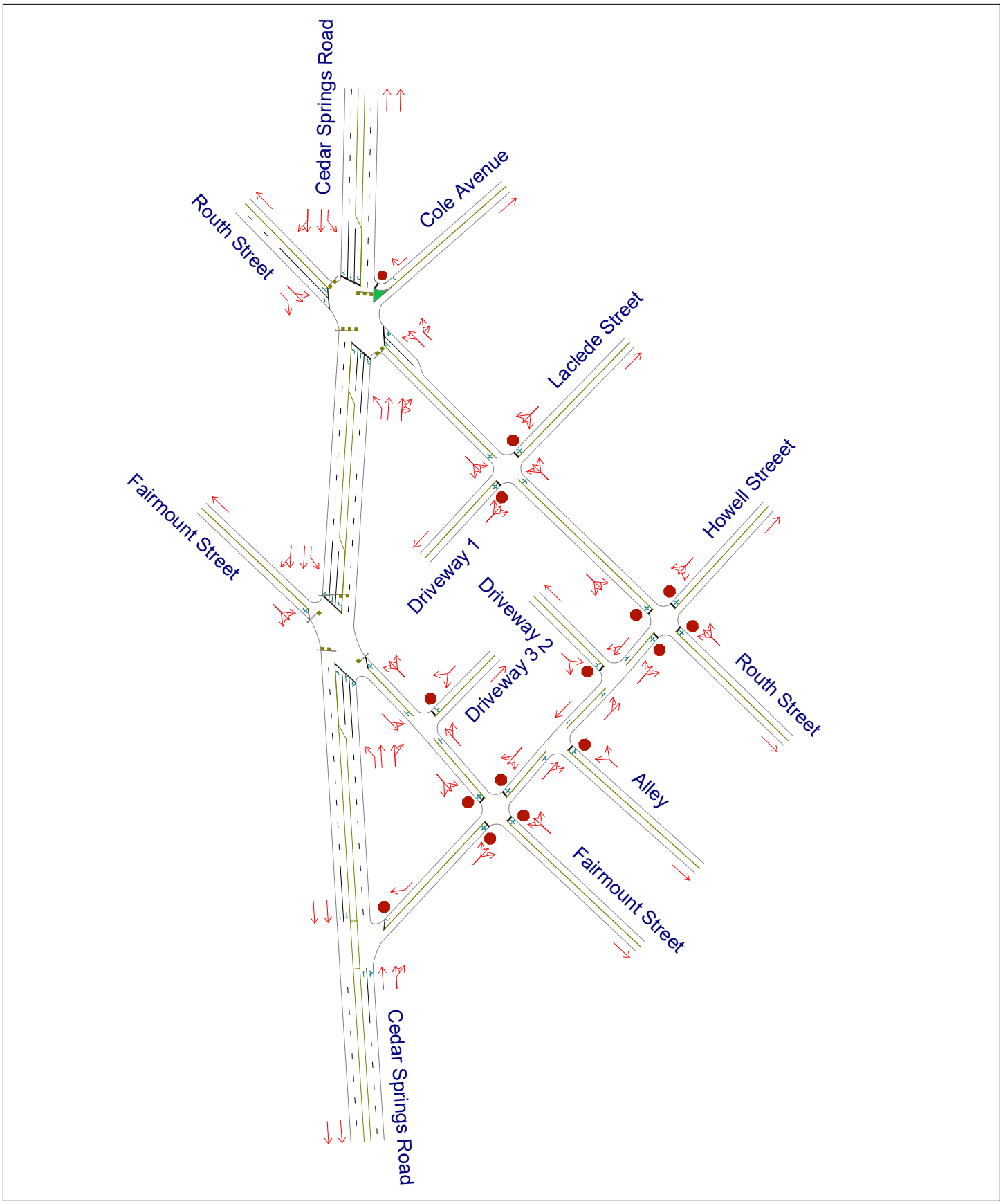
END OF MEMO

APPENDIX A. Traffic Volumes Exhibits

Appendix A1 - Proposed Roadway Geometry

North ^

Not to Scale



5217-22.027

SMN

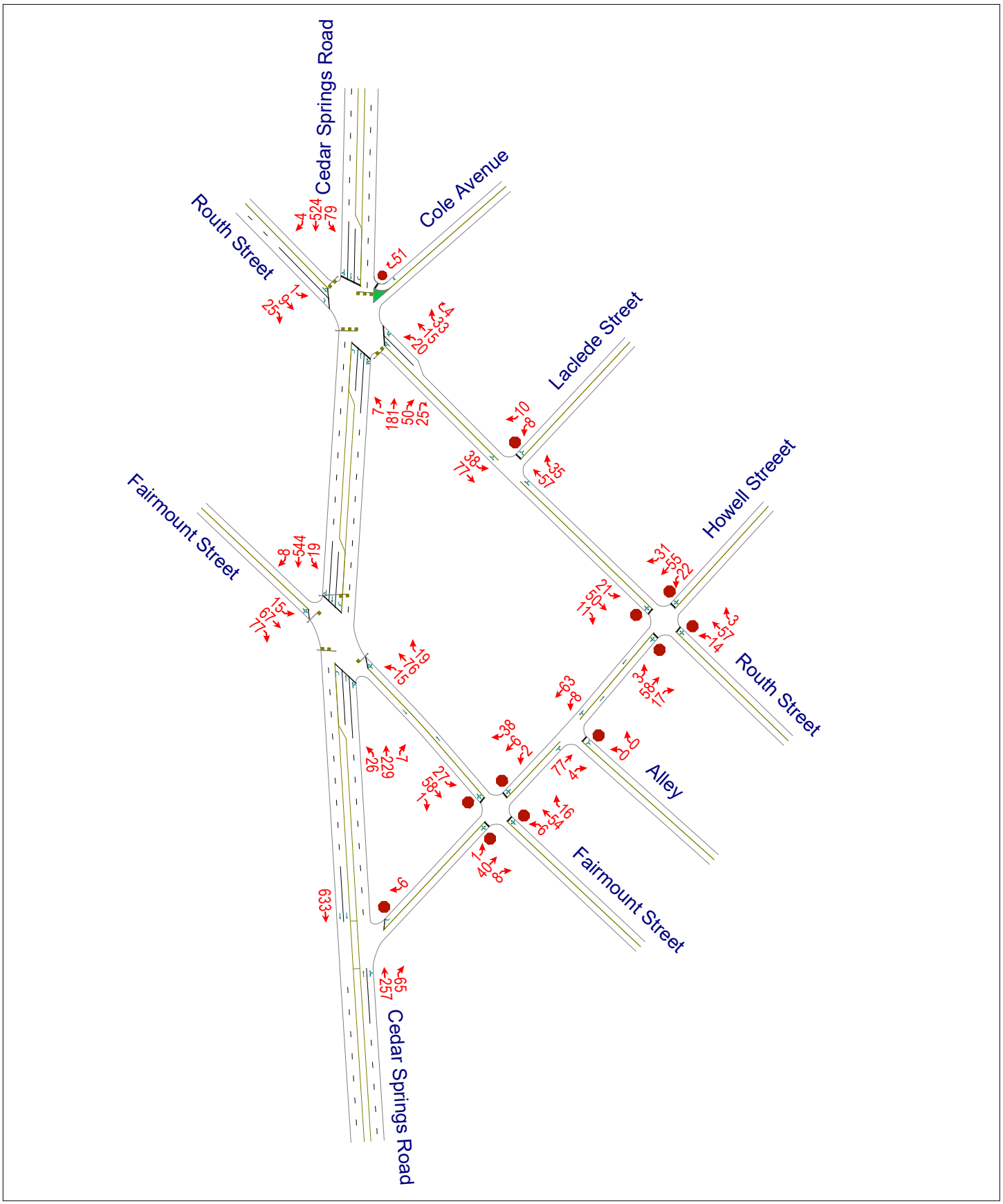
05/08/2023

Pacheco Koch

Appendix A2 - Existing AM

North ^

Not to Scale



5217-22.027

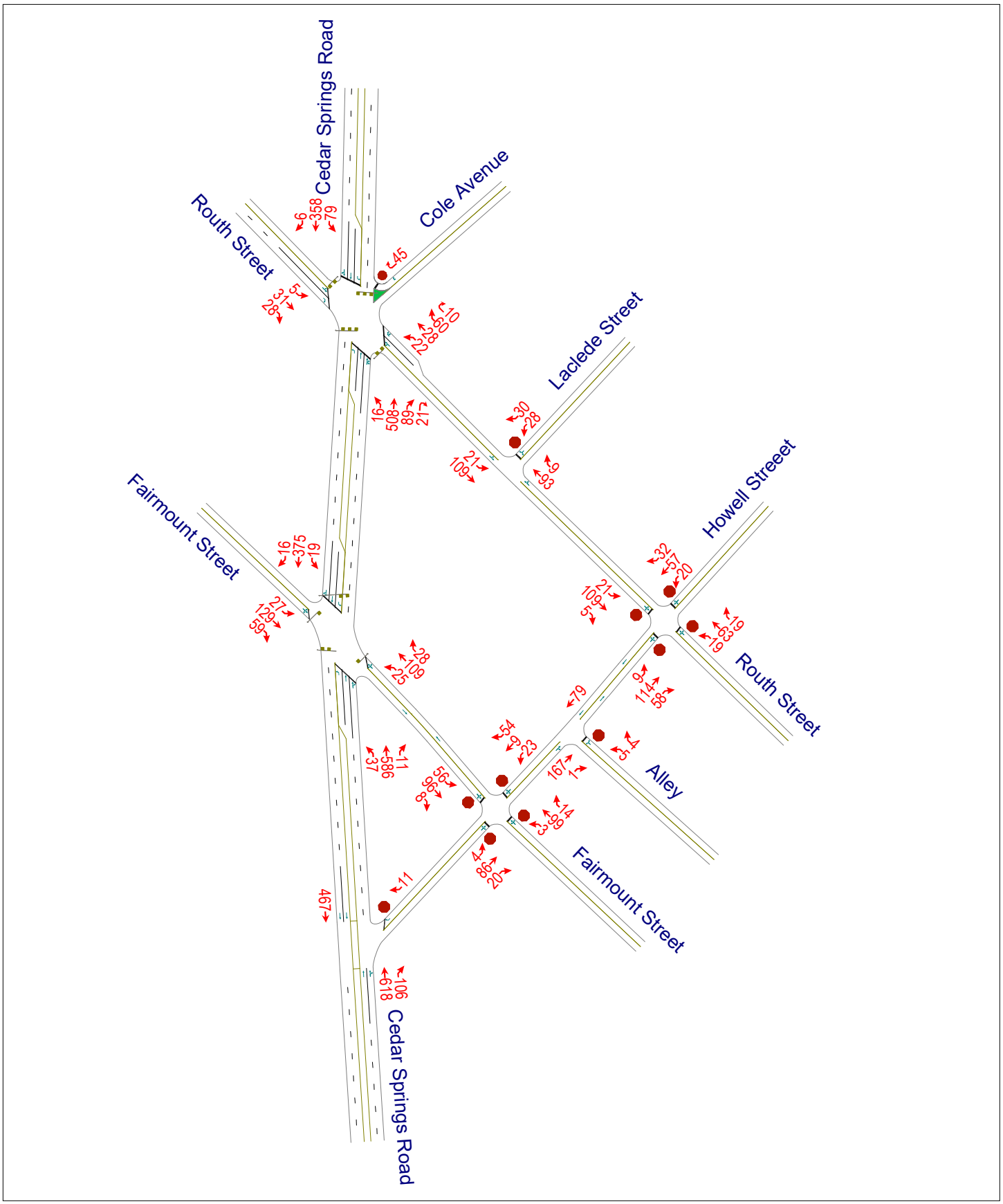
SMN

05/08/2023

Pacheco Koch

Appendix A3 - Existing PM

North ^
Not to Scale



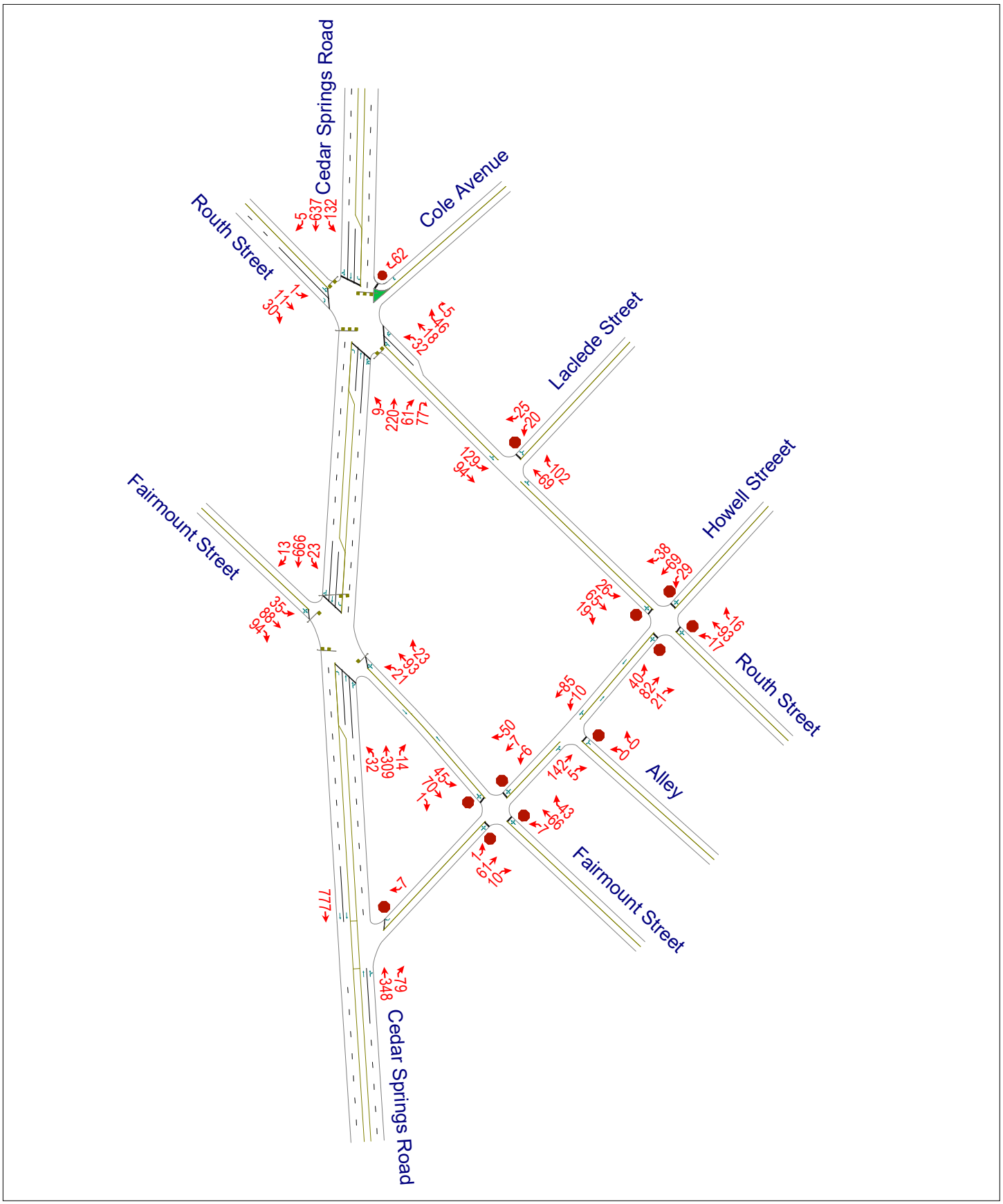
5217-22.027
SMN

05/08/2023
Pacheco Koch

Appendix A4 - No Build AM

North ^

Not to Scale



5217-22.027

SMN

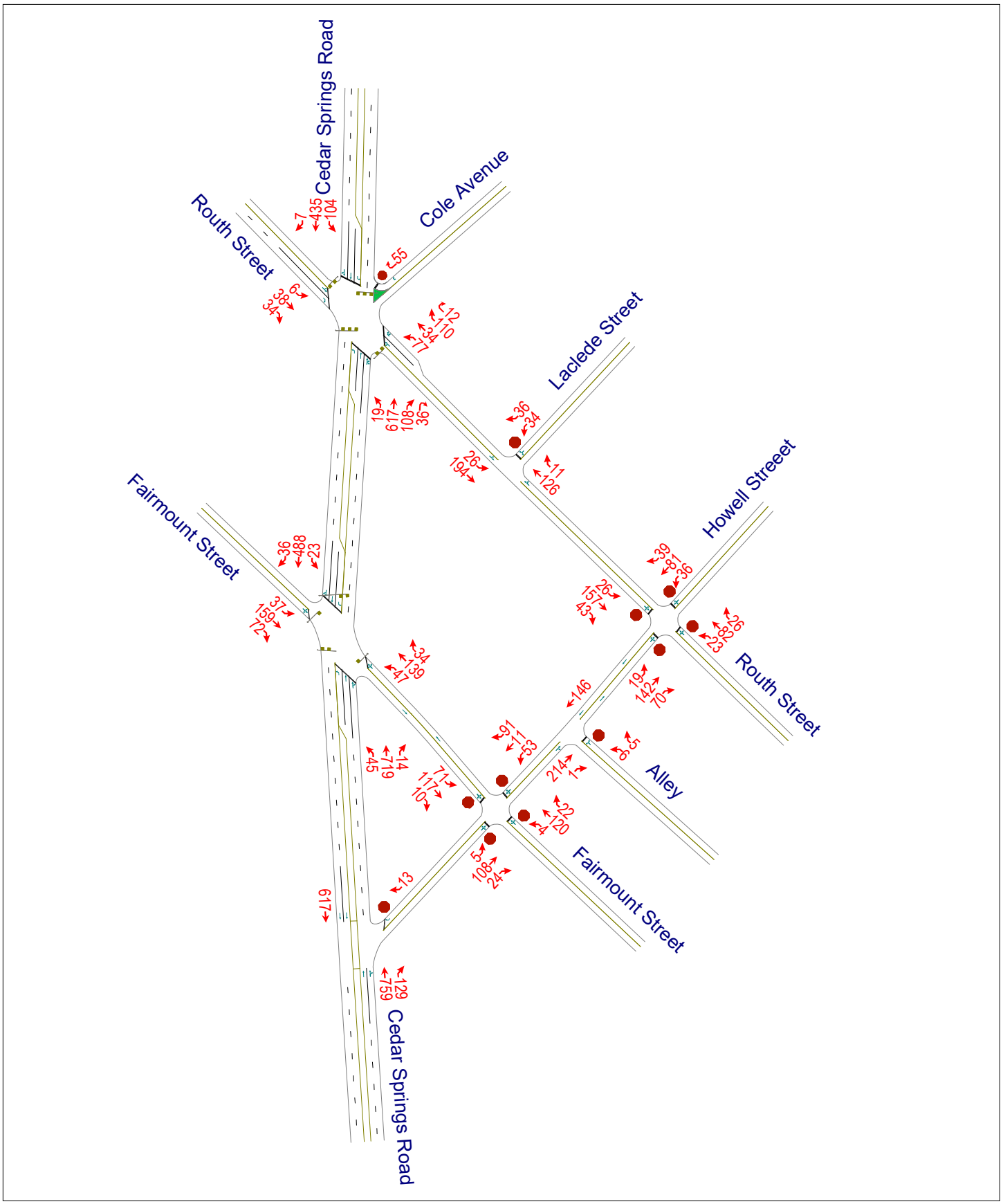
05/08/2023

Pacheco Koch

Appendix A5 - No Build PM

North ^

Not to Scale



5217-22.027

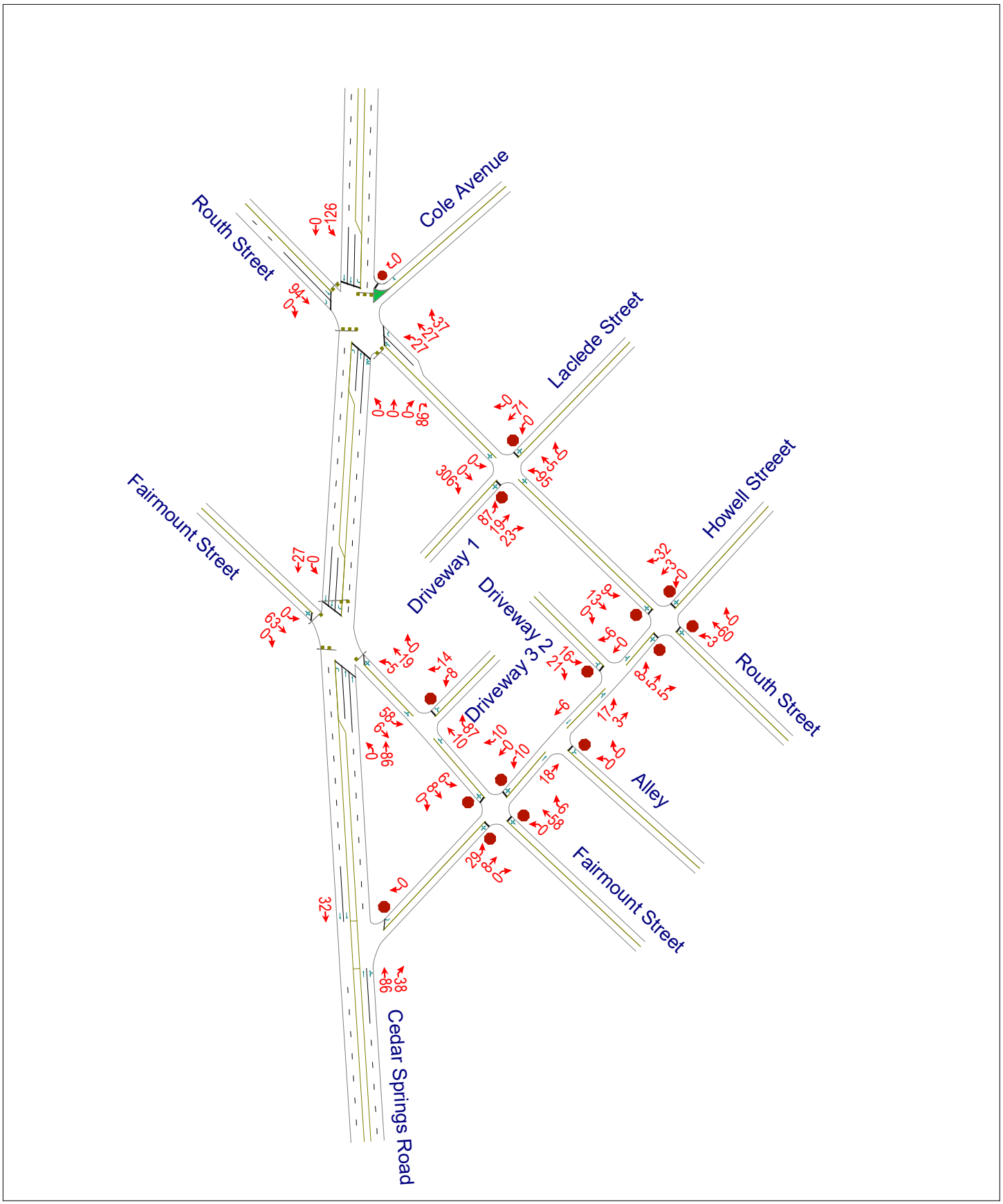
SMN

05/08/2023

Pacheco Koch

Appendix A6 - Site Generated AM

North ^
Not to Scale



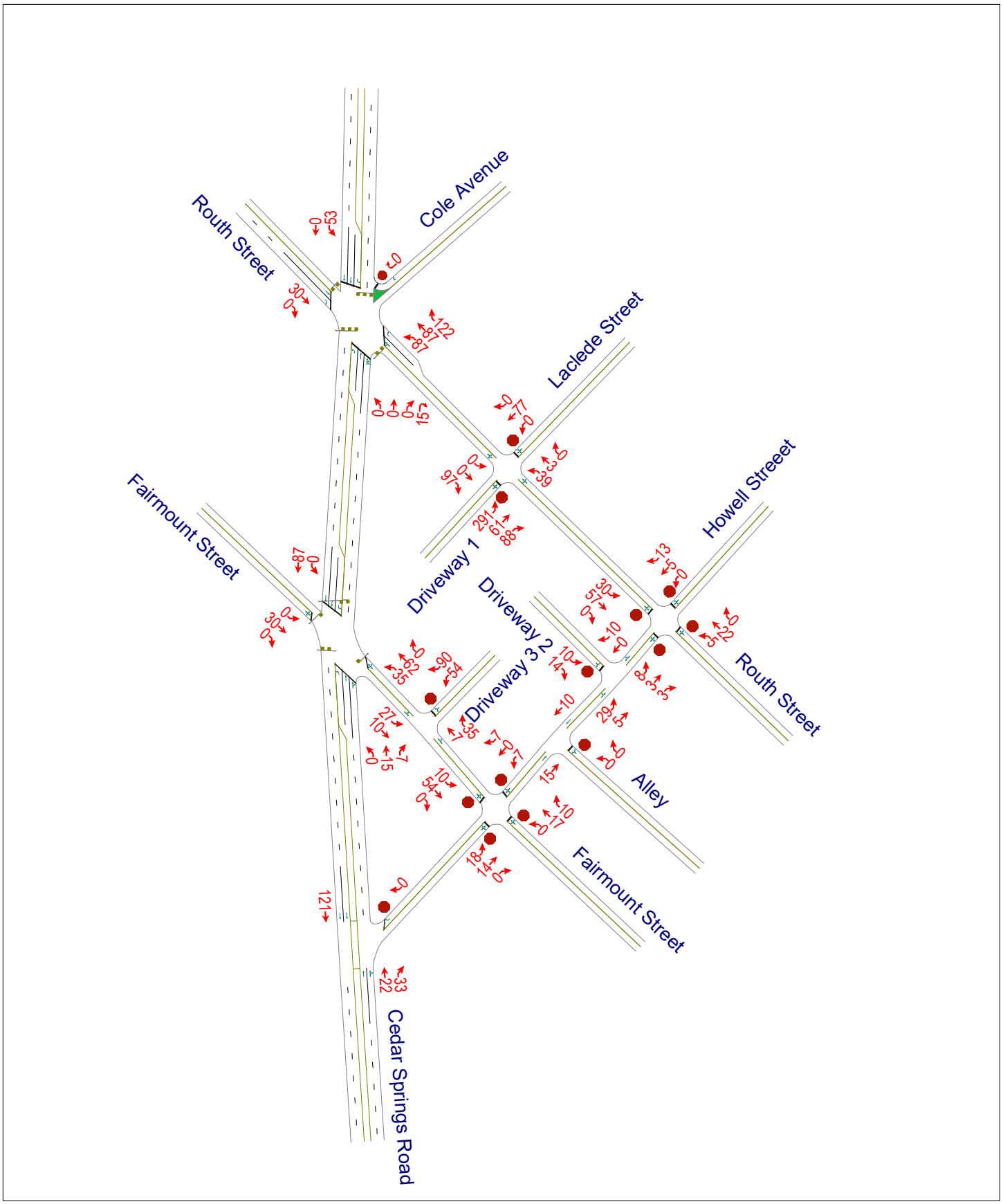
5217-22.027
SMN

05/08/2023
Pacheco Koch

Appendix A7 - Site Generated PM

North ^

Not to Scale



5217-22.027

SMN

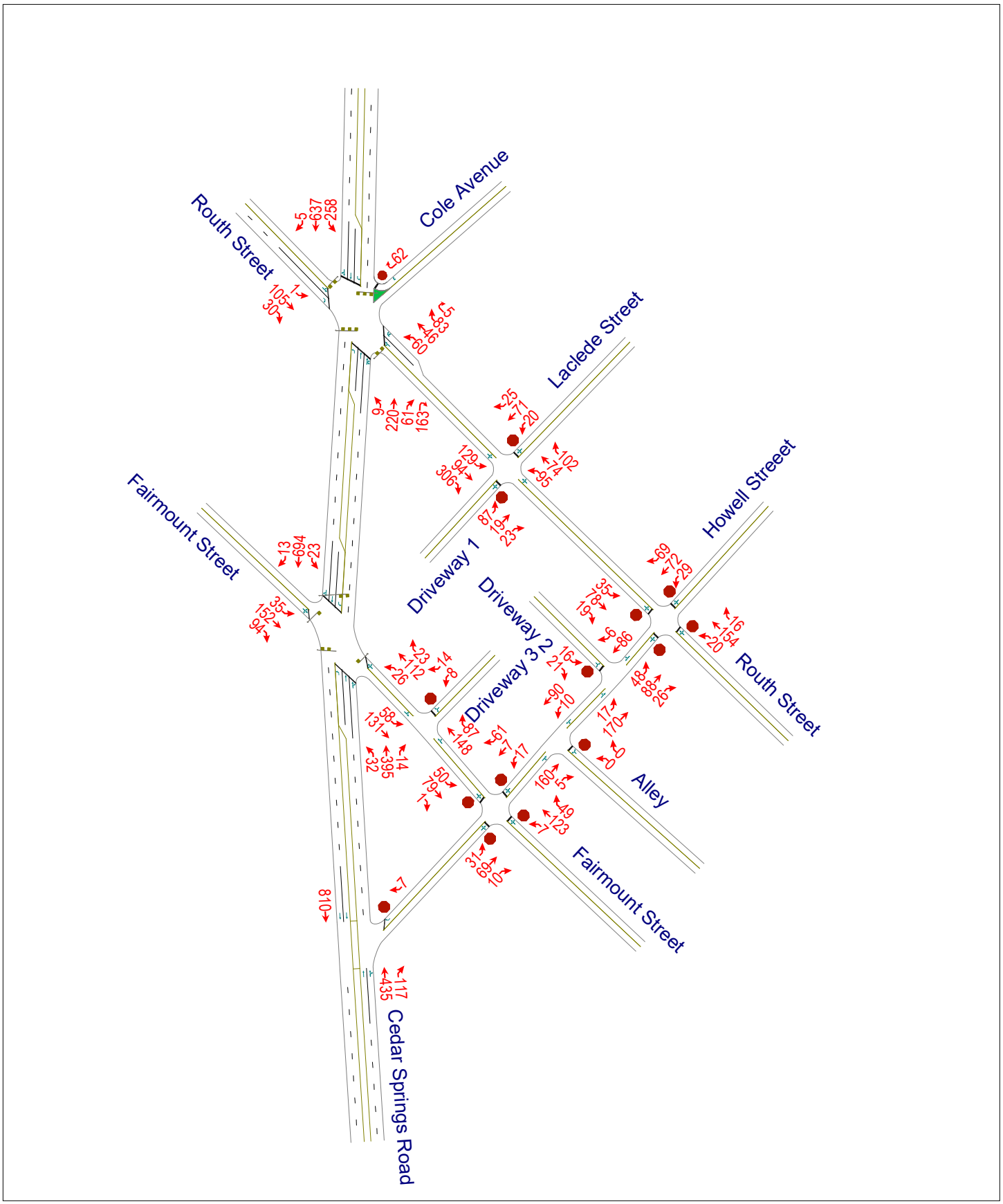
05/08/2023

Pacheco Koch

Appendix A8 - Build AM

North ^

Not to Scale



5217-22.027

SMN

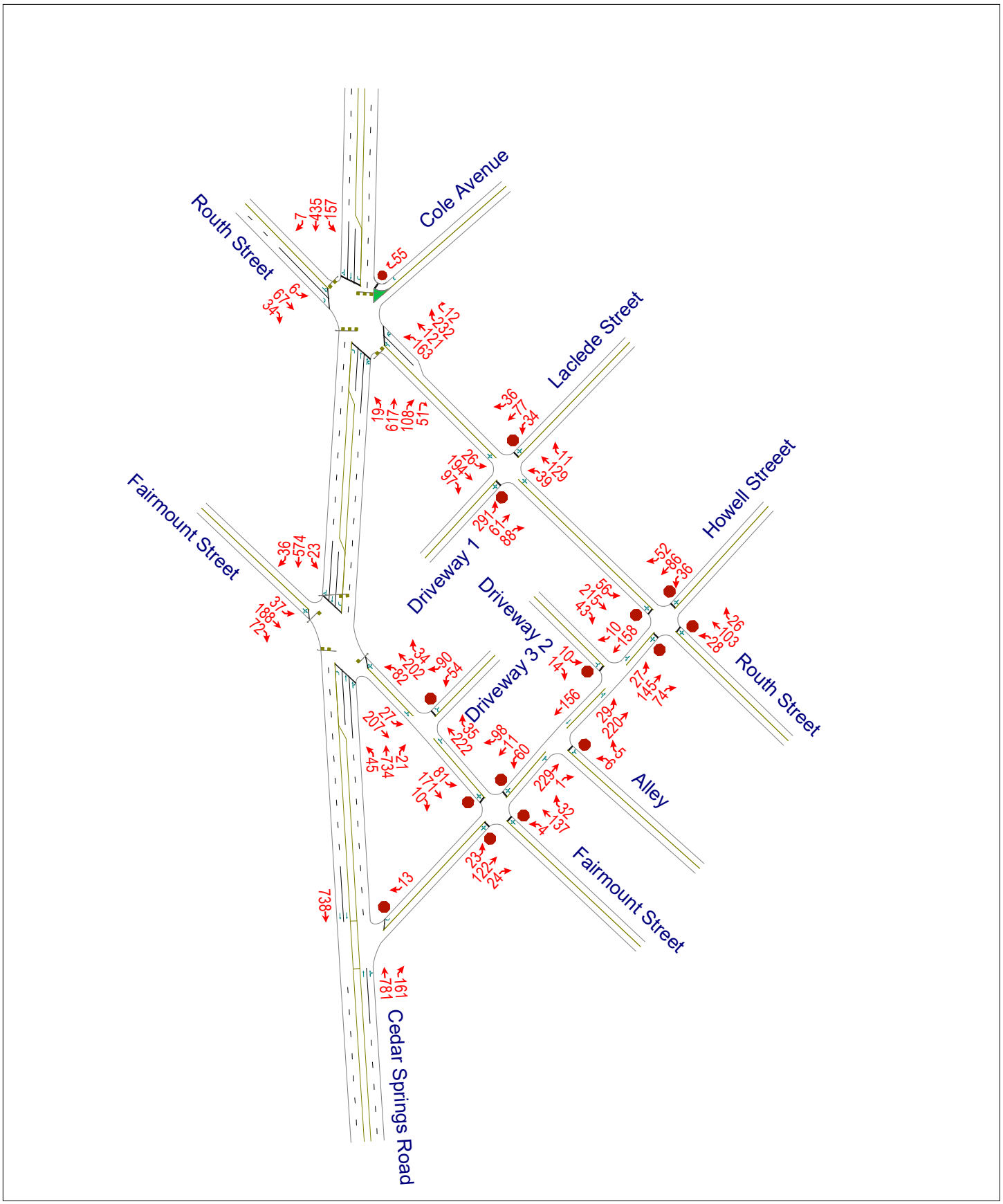
05/08/2023

Pacheco Koch

Appendix A9 - Build PM

North ^

Not to Scale



5217-22.027

SMN

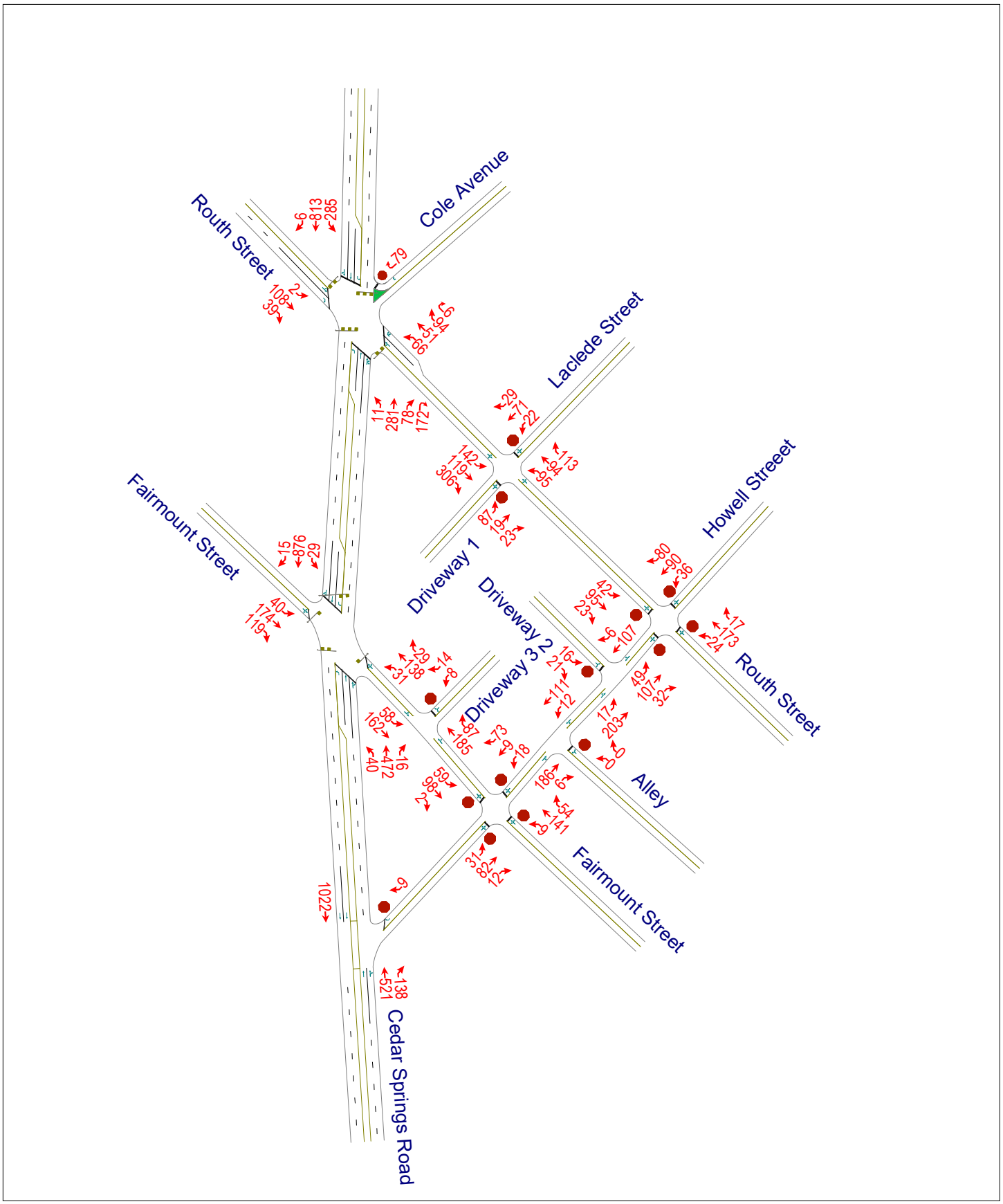
05/08/2023

Pacheco Koch

Appendix A10 - Horizon AM

North ^

Not to Scale



5217-22.027

SMN

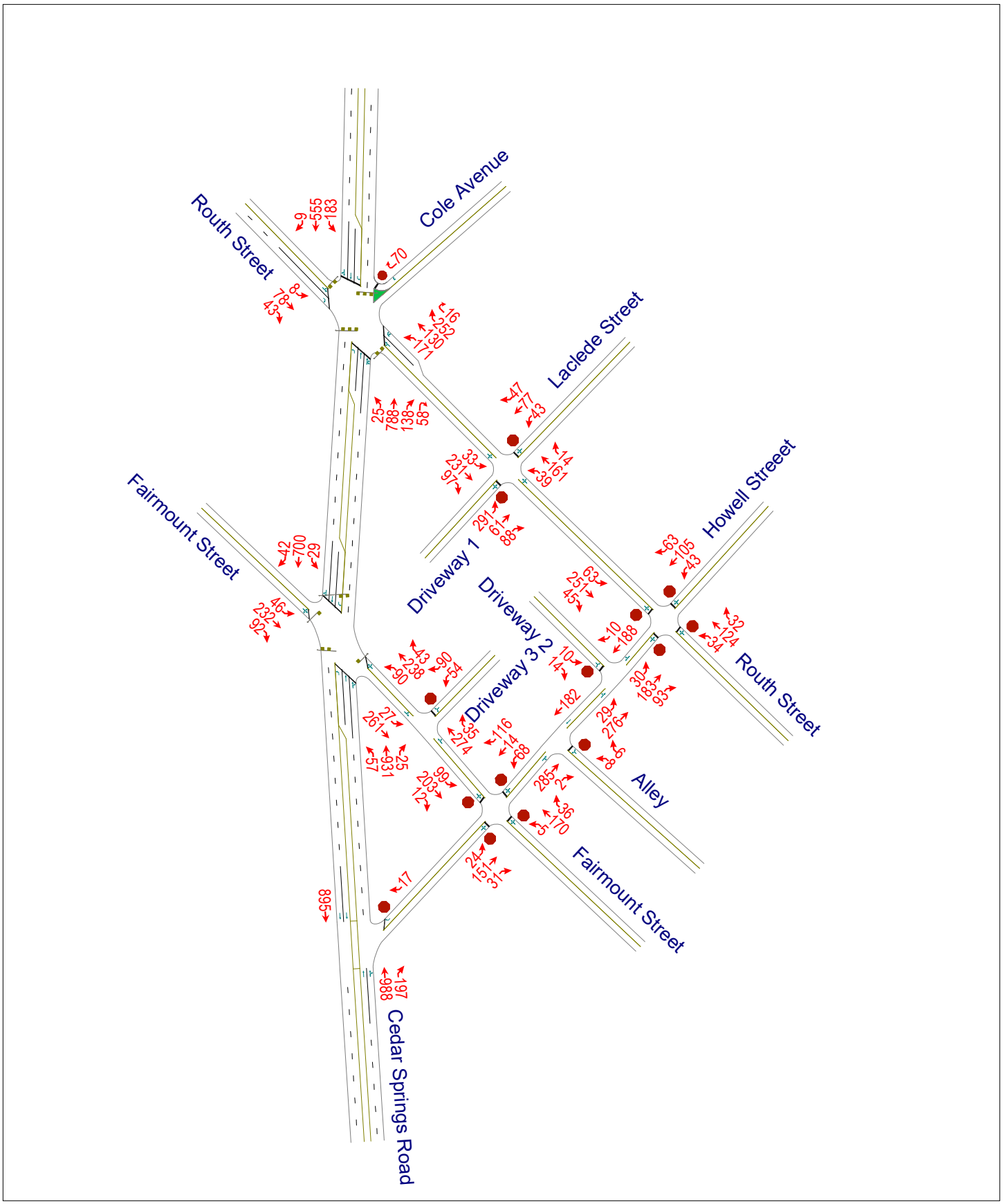
05/08/2023

Pacheco Koch

Appendix A11 - Horizon PM

North ^

Not to Scale



5217-22.027

SMN

05/08/2023

Pacheco Koch

APPENDIX B. Detailed Traffic Volume Data

ROADWAY: Cedar Springs Road
LOCATION: North of Routh Street
DAY: Tuesday
DATE: 25-Jan
YEAR: 2022
SOURCE: CJ Hensch

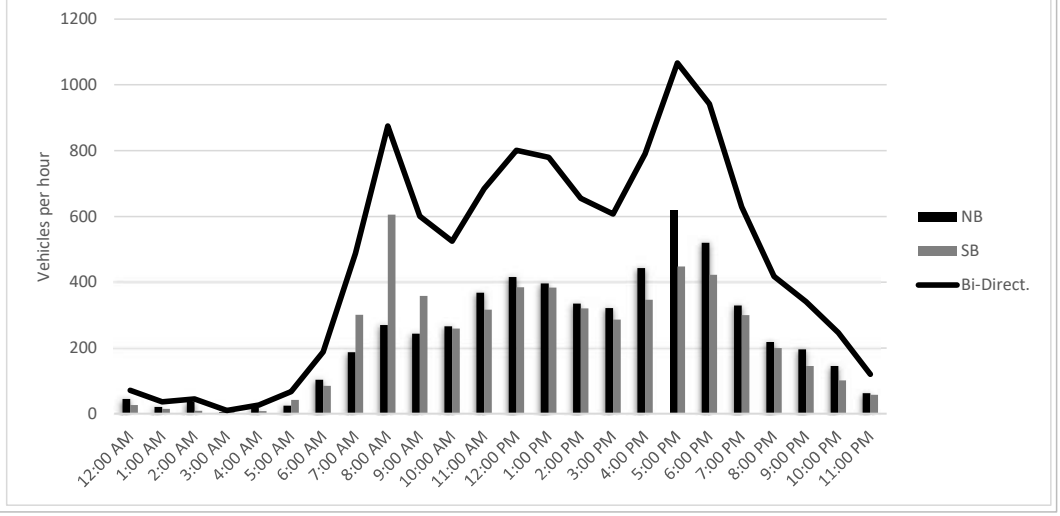
24-HOUR, BI-DIRECTIONAL VOLUME
11,011
(WEEKDAY)

Cedar Springs Road

	Northbound				Southbound				Totals		
START TIME	0:00	0:15	0:30	0:45	0:00	0:15	0:30	0:45	NB	SB	Bi-Direct.
12:00 AM	16	12	10	7	7	10	4	5	45	26	71
1:00 AM	5	4	4	8	2	9	2	2	21	15	36
2:00 AM	16	5	9	6	1	1	2	5	36	9	45
3:00 AM	2	2	0	1	2	1	1	1	5	5	10
4:00 AM	1	5	7	5	0	3	2	3	18	8	26
5:00 AM	7	8	2	8	1	17	9	15	25	42	67
6:00 AM	12	22	34	35	11	26	14	34	103	85	188
7:00 AM	29	46	52	60	48	68	76	109	187	301	488
8:00 AM	68	73	62	67	131	156	157	161	270	605	875
9:00 AM	65	59	54	65	114	89	79	76	243	358	601
10:00 AM	62	58	74	72	61	78	54	66	266	259	525
11:00 AM	80	64	100	124	64	76	86	90	368	316	684
12:00 PM	116	98	102	100	92	95	91	107	416	385	801
1:00 PM	110	101	93	92	105	103	88	88	396	384	780
2:00 PM	88	82	76	89	72	82	72	94	335	320	655
3:00 PM	66	72	85	98	70	66	62	88	321	286	607
4:00 PM	111	114	98	120	86	83	82	96	443	347	790
5:00 PM	166	158	150	144	103	120	116	109	618	448	1066
6:00 PM	149	152	122	97	110	108	116	88	520	422	942
7:00 PM	104	81	74	70	82	82	82	54	329	300	629
8:00 PM	60	54	59	45	52	55	47	46	218	200	418
9:00 PM	47	67	43	39	44	39	25	37	196	145	341
10:00 PM	48	40	35	22	40	22	17	22	145	101	246
11:00 PM	19	26	7	10	19	18	12	9	62	58	120

			NB	SB	Bi-Direct.
		24-Hour Total:	5,586	5,425	11,011
8:00 AM	9:00 AM	(Bi-Direct.) AM Peak Hour Total:	270	605	875
5:00 PM	6:00 PM	(Bi-Direct.) PM Peak Hour Total:	618	448	1,066
5:00 PM	6:00 PM	Highest By Direction (NB):	618		
8:00 AM	9:00 AM	Highest By Direction (SB):		605	

Graph



PK# 5217-22.027

Pacheco Koch

ROADWAY: Fairmount Street
LOCATION: Between Cedar Springs and Howell street
DAY: Tuesday
DATE: 25-Jan
YEAR: 2022
SOURCE: CJ Hensch

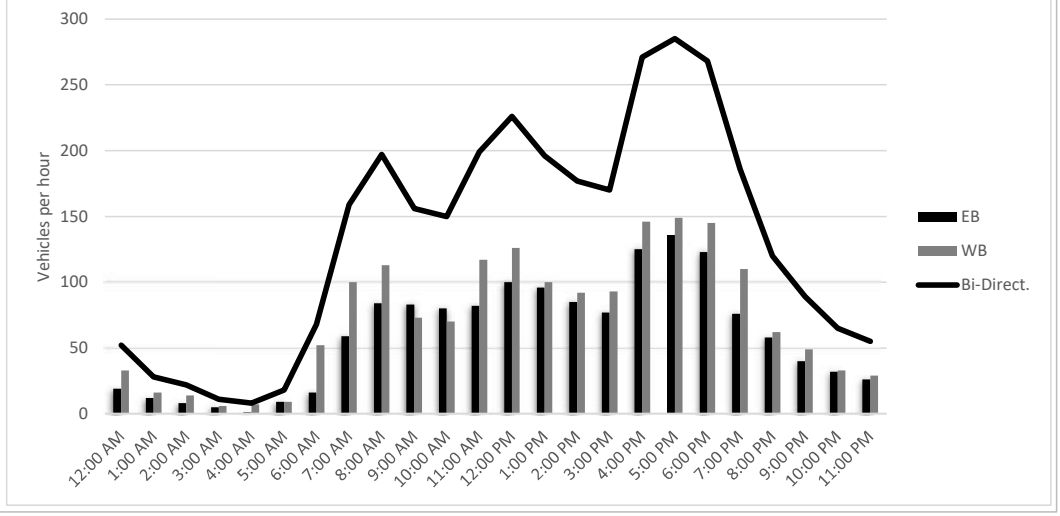
24-HOUR, BI-DIRECTIONAL VOLUME
3,176
(WEEKDAY)

Fairmount Street

	Eastbound				Westbound				Totals		
START TIME	0:00	0:15	0:30	0:45	0:00	0:15	0:30	0:45	EB	WB	Bi-Direct.
12:00 AM	5	6	2	6	11	5	8	9	19	33	52
1:00 AM	5	1	3	3	1	4	4	7	12	16	28
2:00 AM	3	4	1	0	6	3	3	2	8	14	22
3:00 AM	2	1	2	0	3	2	0	1	5	6	11
4:00 AM	0	0	0	1	3	1	1	2	1	7	8
5:00 AM	0	2	2	5	2	2	3	2	9	9	18
6:00 AM	2	4	7	3	11	8	19	14	16	52	68
7:00 AM	12	10	15	22	16	22	29	33	59	100	159
8:00 AM	25	17	24	18	26	31	23	33	84	113	197
9:00 AM	19	21	25	18	23	15	19	16	83	73	156
10:00 AM	16	22	22	20	24	18	15	13	80	70	150
11:00 AM	19	16	21	26	21	28	23	45	82	117	199
12:00 PM	30	32	19	19	31	23	42	30	100	126	226
1:00 PM	27	19	29	21	36	18	21	25	96	100	196
2:00 PM	18	23	22	22	26	14	25	27	85	92	177
3:00 PM	19	19	11	28	23	24	20	26	77	93	170
4:00 PM	30	33	31	31	38	26	41	41	125	146	271
5:00 PM	34	37	41	24	40	43	41	25	136	149	285
6:00 PM	36	30	32	25	39	42	28	36	123	145	268
7:00 PM	18	17	24	17	39	27	30	14	76	110	186
8:00 PM	19	7	16	16	13	18	18	13	58	62	120
9:00 PM	17	7	4	12	17	14	9	9	40	49	89
10:00 PM	8	9	6	9	11	8	8	6	32	33	65
11:00 PM	10	3	3	10	6	8	6	9	26	29	55

			EB	WB	Bi-Direct.
		24-Hour Total:	1,432	1,744	3,176
7:45 AM	8:45 AM	(Bi-Direct.) AM Peak Hour Total:	88	113	201
4:45 PM	5:45 PM	(Bi-Direct.) PM Peak Hour Total:	143	165	308
4:45 PM	5:45 PM	Highest By Direction (EB):	143		
4:30 PM	5:30 PM	Highest By Direction (WB):		165	

Graph



PK# 5217-22.027

Pacheco Koch

ROADWAY: Routh Street
LOCATION: Between Laclede Street and Howell Street
DAY: Tuesday
DATE: 25-Jan
YEAR: 2022
SOURCE: CJ Hensch

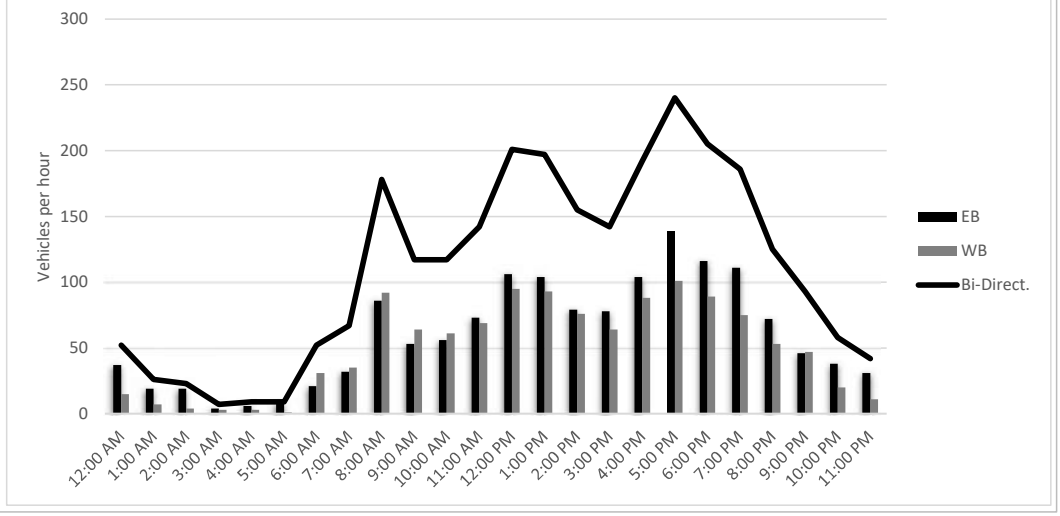
24-HOUR, BI-DIRECTIONAL VOLUME
2,635
(WEEKDAY)

Routh Street

	Eastbound				Westbound				Totals		
START TIME	0:00	0:15	0:30	0:45	0:00	0:15	0:30	0:45	EB	WB	Bi-Direct.
12:00 AM	10	7	10	10	3	2	4	6	37	15	52
1:00 AM	4	2	8	5	1	2	1	3	19	7	26
2:00 AM	7	10	2	0	3	1	0	0	19	4	23
3:00 AM	3	0	1	0	1	1	1	0	4	3	7
4:00 AM	0	4	1	1	0	2	1	0	6	3	9
5:00 AM	1	2	2	3	0	1	0	0	8	1	9
6:00 AM	3	2	7	9	0	7	9	15	21	31	52
7:00 AM	6	10	6	10	8	6	11	10	32	35	67
8:00 AM	25	18	24	19	27	26	26	13	86	92	178
9:00 AM	15	13	11	14	22	16	10	16	53	64	117
10:00 AM	6	18	19	13	13	17	17	14	56	61	117
11:00 AM	13	18	21	21	10	17	20	22	73	69	142
12:00 PM	16	32	30	28	17	23	27	28	106	95	201
1:00 PM	39	17	20	28	22	24	20	27	104	93	197
2:00 PM	13	21	24	21	17	18	20	21	79	76	155
3:00 PM	21	18	17	22	10	18	16	20	78	64	142
4:00 PM	27	28	27	22	27	21	23	17	104	88	192
5:00 PM	32	38	28	41	36	30	18	17	139	101	240
6:00 PM	25	39	28	24	17	29	21	22	116	89	205
7:00 PM	36	28	28	19	25	22	12	16	111	75	186
8:00 PM	14	21	22	15	12	17	14	10	72	53	125
9:00 PM	15	13	6	12	13	18	11	5	46	47	93
10:00 PM	18	7	8	5	6	9	1	4	38	20	58
11:00 PM	8	10	6	7	9	1	1	0	31	11	42

			EB	WB	Bi-Direct.
		24-Hour Total:	1,438	1,197	2,635
8:00 AM	9:00 AM	(Bi-Direct.) AM Peak Hour Total:	86	92	178
5:00 PM	6:00 PM	(Bi-Direct.) PM Peak Hour Total:	139	101	240
5:00 PM	6:00 PM	Highest By Direction (EB):	139		
4:30 PM	5:30 PM	Highest By Direction (WB):		106	

Graph



PK# 5217-22.027

Pacheco Koch

ROADWAY: Howell Street
LOCATION: between Fairmont Street and Routh Street
DAY: Tuesday
DATE: 25-Jan
YEAR: 2022
SOURCE: CJ Hensch

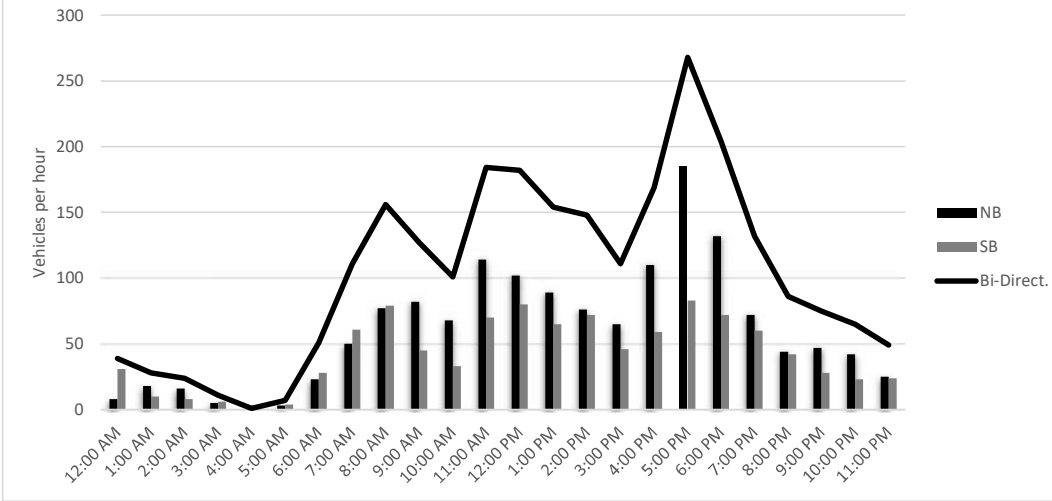
24-HOUR, BI-DIRECTIONAL VOLUME
2,483
(WEEKDAY)

Howell Street

	Northbound				Southbound				Totals		
START TIME	0:00	0:15	0:30	0:45	0:00	0:15	0:30	0:45	NB	SB	Bi-Direct.
12:00 AM	2	3	1	2	11	5	9	6	8	31	39
1:00 AM	2	7	6	3	3	2	3	2	18	10	28
2:00 AM	8	5	0	3	4	2	2	0	16	8	24
3:00 AM	2	0	2	1	3	2	1	0	5	6	11
4:00 AM	0	0	0	0	0	0	0	1	0	1	1
5:00 AM	0	1	1	1	0	1	1	2	3	4	7
6:00 AM	4	2	8	9	6	3	7	12	23	28	51
7:00 AM	5	13	18	14	7	14	20	20	50	61	111
8:00 AM	17	22	20	18	24	20	18	17	77	79	156
9:00 AM	26	15	24	17	17	10	8	10	82	45	127
10:00 AM	12	19	19	18	14	8	8	3	68	33	101
11:00 AM	27	26	25	36	14	19	17	20	114	70	184
12:00 PM	36	30	17	19	12	14	26	28	102	80	182
1:00 PM	23	24	20	22	23	12	15	15	89	65	154
2:00 PM	20	22	10	24	19	15	21	17	76	72	148
3:00 PM	11	15	15	24	16	8	11	11	65	46	111
4:00 PM	36	19	27	28	15	15	12	17	110	59	169
5:00 PM	45	54	42	44	21	31	17	14	185	83	268
6:00 PM	30	49	31	22	25	19	15	13	132	72	204
7:00 PM	20	19	15	18	21	14	18	7	72	60	132
8:00 PM	19	3	14	8	10	10	14	8	44	42	86
9:00 PM	12	13	10	12	6	13	4	5	47	28	75
10:00 PM	10	9	11	12	12	3	6	2	42	23	65
11:00 PM	6	5	6	8	6	11	3	4	25	24	49

			NB	SB	Bi-Direct.
		24-Hour Total:	1,453	1,030	2,483
11:00 AM	12:00 PM	(Bi-Direct.) AM Peak Hour Total:	114	70	184
5:00 PM	6:00 PM	(Bi-Direct.) PM Peak Hour Total:	185	83	268
5:00 PM	6:00 PM	Highest By Direction (NB):	185		
12:15 PM	1:15 PM	Highest By Direction (SB):		91	

Graph



PK# ####-17.###

Pacheco Koch

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on Cedar Springs Road						Westbound Approach on Routh Street						Northbound Approach on Cedar Springs Road						Eastbound Approach on Routh Street					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	***Dallas***	7:00 AM	7:15 AM	0	1	45	0				0	0	2			0	0	16	2				0	2	4		
State:	***Texas***	7:15 AM	7:30 AM	0	9	54	0				0	1	2			0	0	28	3				0	0	5		
Day:	***Tuesday***	7:30 AM	7:45 AM	0	6	74	0				1	1	4			0	0	34	6				0	0	6		
Date:	***25-Jan***	7:45 AM	8:00 AM	0	7	97	0				1	2	4			0	1	43	2				0	3	4		
Year:	***2022***	***8:00 AM***	***8:15 AM***	***1***	***19***	***114***	***0***				***6***	***5***	***7***			***0***	***2***	***45***	***7***				***0***	***2***	***6***		
Data Collector:	***Camera***	***8:15 AM***	***8:30 AM***	***0***	***13***	***144***	***0***				***5***	***4***	***13***			***0***	***2***	***44***	***7***				***1***	***4***	***9***		
Data Source:	***CJ Hensch & Associates, Inc.***	***8:30 AM***	***8:45 AM***	***0***	***25***	***132***	***0***				***5***	***4***	***9***			***0***	***2***	***42***	***6***				***0***	***2***	***4***		
Traffic Control:	***Traffic Signal***	***8:45 AM***	***9:00 AM***	***1***	***22***	***134***	***0***				***3***	***2***	***4***			***0***	***0***	***50***	***5***				***0***	***1***	***6***		
Observations:																											
		4:30 PM	4:45 PM	0	14	60	1				5	3	17			1	7	74	8				0	4	7		
		4:45 PM	5:00 PM	1	14	84	2				4	4	10			0	7	97	4				4	2	5		
		5:00 PM	***5:15 PM***	***0***	***20***	***78***	***2***				***7***	***13***	***19***			***0***	***3***	***135***	***2***				***2***	***9***	***11***		
		5:15 PM	***5:30 PM***	***0***	***23***	***94***	***2***				***8***	***9***	***16***			***0***	***7***	***132***	***5***				***1***	***7***	***8***		
		5:30 PM	***5:45 PM***	***1***	***16***	***96***	***2***				***3***	***4***	***13***			***0***	***3***	***121***	***9***				***1***	***5***	***7***		
		5:45 PM	***6:00 PM***	***2***	***20***	***90***	***0***				***4***	***2***	***12***			***1***	***3***	***120***	***5***				***1***	***10***	***2***		
		6:00 PM	6:15 PM	0	23	81	2				7	4	12			0	7	113	2				1	3	5		
		6:15 PM	6:30 PM	1	26	76	0				8	3	18			0	4	110	3				2	8	8		
AM Peak Hour	*Intersection PHF:*	*0.93*	*Intersection PHV:*	*2*	*79*	*524*	*0*			*0*	*19*	*15*	*33*			*0*	*6*	*181*	*25*			*0*	*1*	*9*	*25*		
	Peak Hour	*8:00 AM - 9:00 AM*	*PHF:*		*0.79*	*0.91*	*0.00*				*0.79*	*0.75*	*0.63*				*0.75*	*0.91*	*0.89*				*0.25*	*0.56*	*0.69*		
	Study Area PHF:	**0.93**	**Study Area PHV:**	**0**	**79**	**524**	**4**			**0**	**20**	**15**	**33**			**0**	**7**	**181**	**25**			**0**	**1**	**9**	**25**		
	Peak Hour:	**8:00 AM - 9:00 AM**	**PHF:**		**0.79**	**0.91**	**0.50**				**0.71**	**0.75**	**0.63**				**0.58**	**0.91**	**0.89**				**0.25**	**0.56**	**0.69**		
PM Peak Hour	*Intersection PHF:*	*0.93*	*Intersection PHV:*	*3*	*79*	*358*	*6*			*0*	*22*	*28*	*60*			*1*	*16*	*508*	*21*			*0*	*5*	*31*	*28*		
	Peak Hour	*5:00 PM - 6:00 PM*	*PHF:*		*0.86*	*0.93*	*0.75*				*0.69*	*0.54*	*0.79*				*0.57*	*0.94*	*0.58*				*0.63*	*0.78*	*0.64*		
	Study Area PHF:	**0.93**	**Study Area PHV:**	**0**	**79**	**358**	**6**			**0**	**22**	**28**	**60**			**0**	**16**	**508**	**21**			**0**	**5**	**31**	**28**		
	Peak Hour:	**5:00 PM - 6:00 PM**	**PHF:**		**0.86**	**0.93**	**0.75**				**0.69**	**0.54**	**0.79**				**0.57**	**0.94**	**0.58**				**0.63**	**0.78**	**0.64**		

Pacheco Koch

PK# 5217-22.027

Cedar Springs Road at Routh Street

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on CEDAR SPRINGS ROAD						Westbound Approach on FAIRMOUNT STREET						Northbound Approach on CEDAR SPRINGS ROAD						Eastbound Approach on FAIRMOUNT STREET					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	*Dallas*	7:00 AM	7:15 AM	0	0	43	3				3	8	4			0	4	12	2				2	11	16		
State:	*Texas*	7:15 AM	7:30 AM	0	0	61	2				5	15	3			0	6	33	1				4	7	13		
Day:	*Tuesday*	7:30 AM	7:45 AM	0	3	70	1				2	26	0			0	4	45	0				3	13	14		
Date:	*25-Jan*	7:45 AM	8:00 AM	0	3	98	0				2	25	5			0	8	54	2				2	17	19		
Year:	*2022*	***8:00 AM***	***8:15 AM***	***0***	***2***	***124***	***3***				***6***	***23***	***0***			***0***	***6***	***61***	***2***				***3***	***21***	***15***		
Data Collector:	*Camera*	***8:15 AM***	***8:30 AM***	***0***	***4***	***152***	***2***				***6***	***17***	***6***			***0***	***5***	***54***	***1***				***4***	***15***	***19***		
Data Source:	*CJ Hensch & Associates, Inc.*	***8:30 AM***	***8:45 AM***	***0***	***7***	***131***	***1***				***2***	***15***	***6***			***0***	***9***	***49***	***4***				***4***	***13***	***24***		
Traffic Control:	*Traffic Signal*	***8:45 AM***	***9:00 AM***	***0***	***6***	***137***	***2***				***1***	***21***	***7***			***0***	***6***	***65***	***0***				***4***	***18***	***19***		
Observations:																											
		4:30 PM	4:45 PM	0	4	68	4				4	24	11			0	8	76	2				3	28	12		
		4:45 PM	5:00 PM	0	5	90	2				7	25	12			0	8	100	4				10	28	21		
		5:00 PM	***5:15 PM***	***0***	***5***	***85***	***2***				***8***	***27***	***6***			***1***	***7***	***147***	***4***				***5***	***31***	***14***		
		5:15 PM	***5:30 PM***	***0***	***4***	***102***	***5***				***9***	***36***	***5***			***1***	***10***	***156***	***5***				***4***	***39***	***19***		
		5:30 PM	***5:45 PM***	***0***	***6***	***98***	***6***				***5***	***28***	***10***			***0***	***9***	***146***	***0***				***6***	***32***	***10***		
		5:45 PM	***6:00 PM***	***0***	***4***	***90***	***3***				***3***	***18***	***7***			***0***	***11***	***137***	***2***				***12***	***27***	***16***		
		6:00 PM	6:15 PM	1	4	84	3				3	32	7			0	11	123	2				6	41	17		
		6:15 PM	6:30 PM	1	5	93	3				3	32	10			1	7	123	5				6	19	23		
AM Peak Hour	*Intersection PHF:*	*0.96*	*Intersection PHV:*	*0*	*19*	*544*	*8*			*0*	*15*	*76*	*19*			*0*	*26*	*229*	*7*			*0*	*15*	*67*	*77*		
	Peak Hour	*8:00 AM - 9:00 AM*	*PHF:*		*0.68*	*0.89*	*0.67*				*0.63*	*0.83*	*0.68*				*0.72*	*0.88*	*0.44*				*0.94*	*0.80*	*0.80*		
	Study Area PHF:	**0.96**	**Study Area PHV:**	**0**	**19**	**544**	**8**			**0**	**15**	**76**	**19**			**0**	**26**	**229**	**7**			**0**	**15**	**67**	**77**		
	Peak Hour:	**8:00 AM - 9:00 AM**	**PHF:**		**0.68**	**0.89**	**0.67**				**0.63**	**0.83**	**0.68**				**0.72**	**0.88**	**0.44**				**0.94**	**0.80**	**0.80**		
PM Peak Hour	*Intersection PHF:*	*0.90*	*Intersection PHV:*	*0*	*19*	*375*	*16*			*0*	*25*	*109*	*28*			*2*	*37*	*586*	*11*			*0*	*27*	*129*	*59*		
	Peak Hour	*5:00 PM - 6:00 PM*	*PHF:*		*0.79*	*0.92*	*0.67*				*0.69*	*0.76*	*0.70*				*0.84*	*0.94*	*0.55*				*0.56*	*0.83*	*0.78*		
	Study Area PHF:	**0.90**	**Study Area PHV:**	**0**	**19**	**375**	**16**			**0**	**25**	**109**	**28**			**0**	**37**	**586**	**11**			**0**	**27**	**129**	**59**		
	Peak Hour:	**5:00 PM - 6:00 PM**	**PHF:**		**0.79**	**0.92**	**0.67**				**0.69**	**0.76**	**0.70**				**0.84**	**0.94**	**0.55**				**0.56**	**0.83**	**0.78**		

Pacheco Koch

PK# 5217-22.027

CEDAR SPRINGS ROAD at FAIRMOUNT STREET

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on CEDAR SPRINGS ROAD						Westbound Approach on HOWELL STREET						Northbound Approach on CEDAR SPRINGS ROAD						Eastbound Approach on HOWELL STREET					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	***Dallas***	7:00 AM	7:15 AM		0	61	0				0	0	1				0	21	2				0	0	0		
State:	***Texas***	7:15 AM	7:30 AM		0	81	0				0	0	1				0	36	11				0	0	0		
Day:	***Tuesday***	7:30 AM	7:45 AM		0	83	0				0	0	1				0	51	8				0	0	0		
Date:	***25-Jan***	7:45 AM	8:00 AM		0	123	0				0	0	1				0	64	8				0	0	0		
Year:	***2022***	***8:00 AM***	***8:15 AM***		***0***	***139***	***0***				***0***	***0***	***0***				***0***	***70***	***8***				***0***	***0***	***0***		
Data Collector:	***Camera***	***8:15 AM***	***8:30 AM***		***0***	***180***	***0***				***0***	***0***	***0***				***0***	***58***	***21***				***0***	***0***	***0***		
Data Source:	***CJ Hensch & Associates, Inc.***	***8:30 AM***	***8:45 AM***		***0***	***152***	***0***				***0***	***0***	***4***				***0***	***61***	***21***				***0***	***0***	***0***		
Traffic Control:	***Minor Approach Stop***	***8:45 AM***	***9:00 AM***		***0***	***162***	***0***				***0***	***0***	***2***				***0***	***68***	***15***				***0***	***0***	***0***		
Observations:		4:30 PM	4:45 PM		0	87	0				0	0	0				0	91	17				0	0	0		
		4:45 PM	5:00 PM		0	118	0				0	0	3				0	119	17				0	0	0		
		5:00 PM	***5:15 PM***		***0***	***118***	***0***				***0***	***0***	***0***				***0***	***155***	***31***				***0***	***0***	***0***		
		5:15 PM	***5:30 PM***		***0***	***127***	***0***				***0***	***0***	***4***				***0***	***171***	***24***				***0***	***0***	***0***		
		5:30 PM	***5:45 PM***		***0***	***113***	***0***				***0***	***0***	***2***				***0***	***145***	***25***				***0***	***0***	***0***		
		5:45 PM	***6:00 PM***		***0***	***109***	***0***				***0***	***0***	***5***				***0***	***147***	***26***				***0***	***0***	***0***		
		6:00 PM	6:15 PM		0	99	0				0	0	2				0	132	22				0	0	0		
		6:15 PM	6:30 PM		0	123	0				0	0	3				0	131	32				0	0	0		
AM Peak Hour	*Intersection PHF:*	*0.93*	*Intersection PHV:*	*0*	*0*	*633*	*0*			*0*	*0*	*0*	*6*			*0*	*0*	*257*	*65*			*0*	*0*	*0*	*0*		
	Peak Hour	*8:00 AM - 9:00 AM*	*PHF:*		*0.00*	*0.88*	*0.00*				*0.00*	*0.00*	*0.38*				*0.00*	*0.92*	*0.77*				*0.00*	*0.00*	*0.00*		
	Study Area PHF:	**0.93**	**Study Area PHV:**	**0**	**0**	**633**	**0**			**0**	**0**	**0**	**6**			**0**	**0**	**257**	**65**			**0**	**0**	**0**	**0**		
	Peak Hour:	**8:00 AM - 9:00 AM**	**PHF:**		**0.00**	**0.88**	**0.00**				**0.00**	**0.00**	**0.38**				**0.00**	**0.92**	**0.77**				**0.00**	**0.00**	**0.00**		
PM Peak Hour	*Intersection PHF:*	*0.92*	*Intersection PHV:*	*0*	*0*	*467*	*0*			*0*	*0*	*0*	*11*			*0*	*0*	*618*	*106*			*0*	*0*	*0*	*0*		
	Peak Hour	*5:00 PM - 6:00 PM*	*PHF:*		*0.00*	*0.92*	*0.00*				*0.00*	*0.00*	*0.55*				*0.00*	*0.90*	*0.85*				*0.00*	*0.00*	*0.00*		
	Study Area PHF:	**0.92**	**Study Area PHV:**	**0**	**0**	**467**	**0**			**0**	**0**	**0**	**11**			**0**	**0**	**618**	**106**			**0**	**0**	**0**	**0**		
	Peak Hour:	**5:00 PM - 6:00 PM**	**PHF:**		**0.00**	**0.92**	**0.00**				**0.00**	**0.00**	**0.55**				**0.00**	**0.90**	**0.85**				**0.00**	**0.00**	**0.00**		

CEDAR SPRINGS ROAD at HOWELL STREET

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on LACLEDE STREET						Westbound Approach on ROUTH STREET						Northbound Approach on LACLEDE STREET						Eastbound Approach on ROUTH STREET					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	*Dallas*	7:00 AM	7:15 AM		2	0	0				0	2	6				0	0	0				1	4	0		
State:	*Texas*	7:15 AM	7:30 AM		2	0	1				0	2	3				0	0	0				4	8	0		
Day:	*Tuesday*	7:30 AM	7:45 AM		1	0	2				0	5	5				0	0	0				7	5	0		
Date:	*25-Jan*	7:45 AM	8:00 AM		3	0	1				0	8	4				0	0	0				4	9	0		
Year:	*2022*	***8:00 AM***	***8:15 AM***		***4***	***0***	***2***				***0***	***17***	***10***				***0***	***0***	***0***				***10***	***22***	***0***		
Data Collector:	*Camera*	***8:15 AM***	***8:30 AM***		***1***	***0***	***4***				***0***	***17***	***9***				***0***	***0***	***0***				***6***	***17***	***0***		
Data Source:	*CJ Hensch & Associates, Inc.*	***8:30 AM***	***8:45 AM***		***0***	***0***	***2***				***0***	***15***	***10***				***0***	***0***	***0***				***10***	***22***	***0***		
Traffic Control:	*Minor Approach Stop*	***8:45 AM***	***9:00 AM***		***3***	***0***	***2***				***0***	***8***	***6***				***0***	***0***	***0***				***12***	***16***	***0***		
Observations:																											
		4:30 PM	4:45 PM		4	0	6				0	20	3				0	0	0				3	23	0		
		4:45 PM	5:00 PM		3	0	1				0	15	4				0	0	0				2	18	0		
		5:00 PM	***5:15 PM***		***8***	***0***	***11***				***0***	***32***	***4***				***0***	***0***	***0***				***4***	***24***	***0***		
		5:15 PM	***5:30 PM***		***7***	***0***	***11***				***0***	***28***	***2***				***0***	***0***	***0***				***5***	***28***	***0***		
		5:30 PM	***5:45 PM***		***8***	***0***	***5***				***0***	***16***	***0***				***0***	***0***	***0***				***9***	***23***	***0***		
		5:45 PM	***6:00 PM***		***5***	***0***	***3***				***0***	***17***	***3***				***0***	***0***	***0***				***3***	***34***	***0***		
		6:00 PM	6:15 PM		3	0	8				0	16	1				0	0	0				6	20	0		
		6:15 PM	6:30 PM		4	0	7				0	27	2				0	0	0				6	35	0		
AM Peak Hour	*Intersection PHF:*	*0.87*	*Intersection PHV:*	*0*	*8*	*0*	*10*			*0*	*0*	*57*	*35*			*0*	*0*	*0*	*0*			*0*	*38*	*77*	*0*		
	Peak Hour	*8:00 AM - 9:00 AM*	*PHF:*		*0.50*	*0.00*	*0.63*				*0.00*	*0.84*	*0.88*				*0.00*	*0.00*	*0.00*				*0.79*	*0.88*	*0.00*		
	Study Area PHF:	**0.87**	**Study Area PHV:**	**0**	**8**	**0**	**10**			**0**	**0**	**57**	**35**			**0**	**0**	**0**	**0**			**0**	**38**	**77**	**0**		
	Peak Hour:	**8:00 AM - 9:00 AM**	**PHF:**		**0.50**	**0.00**	**0.63**				**0.00**	**0.84**	**0.88**				**0.00**	**0.00**	**0.00**				**0.79**	**0.88**	**0.00**		
PM Peak Hour	*Intersection PHF:*	*0.87*	*Intersection PHV:*	*0*	*28*	*0*	*30*			*0*	*0*	*93*	*9*			*0*	*0*	*0*	*0*			*0*	*21*	*109*	*0*		
	Peak Hour	*5:00 PM - 6:00 PM*	*PHF:*		*0.88*	*0.00*	*0.68*				*0.00*	*0.73*	*0.56*				*0.00*	*0.00*	*0.00*				*0.58*	*0.80*	*0.00*		
	Study Area PHF:	**0.87**	**Study Area PHV:**	**0**	**28**	**0**	**30**			**0**	**0**	**93**	**9**			**0**	**0**	**0**	**0**			**0**	**21**	**109**	**0**		
	Peak Hour:	**5:00 PM - 6:00 PM**	**PHF:**		**0.88**	**0.00**	**0.68**				**0.00**	**0.73**	**0.56**				**0.00**	**0.00**	**0.00**				**0.58**	**0.80**	**0.00**		

Pacheco Koch

PK# 5217-22.027

LACLEDE STREET at ROUTH STREET

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on HOWELL STREET						Westbound Approach on ROUTH STREET						Northbound Approach on HOWELL STREET						Eastbound Approach on ROUTH STREET					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	***Dallas***	7:00 AM	7:15 AM		1	6	3				0	5	1				0	2	3				2	4	0		
State:	***Texas***	7:15 AM	7:30 AM		1	10	0				3	4	0				1	8	1				3	5	1		
Day:	***Tuesday***	7:30 AM	7:45 AM		3	18	2				3	7	1				1	15	4				0	6	0		
Date:	***25-Jan***	7:45 AM	8:00 AM		3	13	4				2	7	0				0	11	3				3	6	2		
Year:	***2022***	***8:00 AM***	***8:15 AM***		***4***	***17***	***10***				***3***	***15***	***0***				***2***	***13***	***2***				***8***	***13***	***4***		
Data Collector:	***Camera***	***8:15 AM***	***8:30 AM***		***6***	***13***	***7***				***5***	***18***	***2***				***0***	***18***	***3***				***4***	***11***	***3***		
Data Source:	***CJ Hensch & Associates, Inc.***	***8:30 AM***	***8:45 AM***		***7***	***14***	***9***				***2***	***18***	***0***				***0***	***14***	***5***				***6***	***14***	***2***		
Traffic Control:	***All-Way Stop***	***8:45 AM***	***9:00 AM***		***5***	***11***	***5***				***4***	***6***	***1***				***1***	***13***	***7***				***3***	***12***	***2***		
Observations:																											
		4:30 PM	4:45 PM		6	8	9				4	10	4				2	16	9				5	17	0		
		4:45 PM	5:00 PM		1	13	6				4	12	2				1	14	11				5	16	1		
		5:00 PM	***5:15 PM***		***6***	***14***	***11***				***3***	***23***	***4***				***3***	***27***	***15***				***7***	***25***	***1***		
		5:15 PM	***5:30 PM***		***4***	***24***	***10***				***6***	***17***	***4***				***3***	***32***	***17***				***6***	***25***	***1***		
		5:30 PM	***5:45 PM***		***7***	***11***	***5***				***5***	***10***	***8***				***2***	***22***	***17***				***2***	***28***	***2***		
		5:45 PM	***6:00 PM***		***3***	***8***	***6***				***5***	***13***	***3***				***1***	***33***	***9***				***6***	***31***	***1***		
		6:00 PM	6:15 PM		4	18	9				6	6	9				1	17	9				4	20	1		
		6:15 PM	6:30 PM		5	10	14				5	16	6				1	39	14				8	25	3		

AM Peak Hour	*Intersection PHF:*	*0.94*	*Intersection PHV:*	*0*	*22*	*55*	*31*			*0*	*14*	*57*	*3*			*0*	*3*	*58*	*17*			*0*	*21*	*50*	*11*		
	Peak Hour	*8:00 AM - 9:00 AM*	*PHF:*		*0.79*	*0.81*	*0.78*				*0.70*	*0.79*	*0.38*				*0.38*	*0.81*	*0.61*				*0.66*	*0.89*	*0.69*		
	Study Area PHF:	**0.94**	**Study Area PHV:**	**0**	**22**	**55**	**31**			**0**	**14**	**57**	**3**			**0**	**3**	**58**	**17**			**0**	**21**	**50**	**11**		
	Peak Hour:	**8:00 AM - 9:00 AM**	**PHF:**		**0.79**	**0.81**	**0.78**				**0.70**	**0.79**	**0.38**				**0.38**	**0.81**	**0.61**				**0.66**	**0.89**	**0.69**		
PM Peak Hour	*Intersection PHF:*	*0.88*	*Intersection PHV:*	*0*	*20*	*57*	*32*			*0*	*19*	*63*	*19*			*0*	*9*	*114*	*58*			*0*	*21*	*109*	*5*		
	Peak Hour	*5:00 PM - 6:00 PM*	*PHF:*		*0.71*	*0.59*	*0.73*				*0.79*	*0.68*	*0.59*				*0.75*	*0.86*	*0.85*				*0.75*	*0.88*	*0.63*		
	Study Area PHF:	**0.88**	**Study Area PHV:**	**0**	**20**	**57**	**32**			**0**	**19**	**63**	**19**			**0**	**9**	**114**	**58**			**0**	**21**	**109**	**5**		
	Peak Hour:	**5:00 PM - 6:00 PM**	**PHF:**		**0.71**	**0.59**	**0.73**				**0.79**	**0.68**	**0.59**				**0.75**	**0.86**	**0.85**				**0.75**	**0.88**	**0.63**		

Pacheco Koch

PK# 5217-22.027

HOWELL STREET at ROUTH STREET

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on HOWELL STREET						Westbound Approach on FAIRMOUNT STREET						Northbound Approach on HOWELL STREET						Eastbound Approach on FAIRMOUNT STREET					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	*Dallas*	7:00 AM	7:15 AM		3	0	5				0	11	2				0	3	1				2	6	0		
State:	*Texas*	7:15 AM	7:30 AM		0	0	8				0	4	1				1	2	2				3	6	1		
Day:	*Tuesday*	7:30 AM	7:45 AM		0	0	11				0	19	2				0	11	2				5	6	0		
Date:	*25-Jan*	*7:45 AM*	*8:00 AM*		*0*	*0*	*17*				*0*	*17*	*4*				*0*	*12*	*2*				*10*	*10*	*0*		
Year:	*2022*	***8:00 AM***	***8:15 AM***		***0***	***1***	***9***				***1***	***15***	***4***				***0***	***5***	***0***				***5***	***12***	***0***		
Data Collector:	*Camera*	***8:15 AM***	***8:30 AM***		***0***	***1***	***9***				***1***	***15***	***1***				***0***	***10***	***4***				***2***	***16***	***1***		
Data Source:	*CJ Hensch & Associates, Inc.*	***8:30 AM***	***8:45 AM***		***1***	***1***	***12***				***2***	***11***	***8***				***0***	***15***	***2***				***10***	***13***	***0***		
Traffic Control:	*All-Way Stop*	**8:45 AM**	**9:00 AM**		**1**	**3**	**8**				**2**	**13**	**3**				**1**	**10**	**2**				**10**	**17**	**0**		
Observations:																											
		4:30 PM	4:45 PM		6	4	5				1	17	1				0	19	4				6	18	0		
		4:45 PM	5:00 PM		5	2	11				0	22	4				0	10	4				15	29	1		
		5:00 PM	**5:15 PM**		**3**	**0**	**11**				**0**	**24**	**2**				**1**	**19**	**3**				**9**	**23**	**2**		
		5:15 PM	***5:30 PM***		***4***	***7***	***15***				***2***	***23***	***2***				***0***	***19***	***9***				***18***	***31***	***3***		
		5:30 PM	***5:45 PM***		***9***	***1***	***18***				***1***	***26***	***5***				***3***	***25***	***3***				***13***	***17***	***0***		
		5:45 PM	***6:00 PM***		***7***	***1***	***10***				***0***	***26***	***5***				***0***	***23***	***5***				***16***	***25***	***3***		
		6:00 PM	*6:15 PM*		*7*	*3*	*18*				*0*	*25*	*2*				*1*	*24*	*5*				*7*	*19*	*0*		
		6:15 PM	6:30 PM		5	1	16				1	19	4				1	18	5				11	26	1		
AM Peak Hour	*Intersection PHF:*	*0.86*	*Intersection PHV:*	*0*	*1*	*3*	*47*			*0*	*4*	*58*	*17*			*0*	*0*	*42*	*8*			*0*	*27*	*51*	*1*		
	Peak Hour	*7:45 AM - 8:45 AM*	*PHF:*		*0.25*	*0.75*	*0.69*				*0.50*	*0.85*	*0.53*				*0.00*	*0.70*	*0.50*				*0.68*	*0.80*	*0.25*		
	Study Area PHF:	**0.86**	**Study Area PHV:**	**0**	**2**	**6**	**38**			**0**	**6**	**54**	**16**			**0**	**1**	**40**	**8**			**0**	**27**	**58**	**1**		
	Peak Hour:	**8:00 AM - 9:00 AM**	**PHF:**		**0.50**	**0.50**	**0.79**				**0.75**	**0.90**	**0.50**				**0.25**	**0.67**	**0.50**				**0.68**	**0.85**	**0.25**		
PM Peak Hour	*Intersection PHF:*	*0.91*	*Intersection PHV:*	*0*	*27*	*12*	*61*			*0*	*3*	*100*	*14*			*0*	*4*	*91*	*22*			*0*	*54*	*92*	*6*		
	Peak Hour	*5:15 PM - 6:15 PM*	*PHF:*		*0.75*	*0.43*	*0.85*				*0.38*	*0.96*	*0.70*				*0.33*	*0.91*	*0.61*				*0.75*	*0.74*	*0.50*		
	Study Area PHF:	**0.89**	**Study Area PHV:**	**0**	**23**	**9**	**54**			**0**	**3**	**99**	**14**			**0**	**4**	**86**	**20**			**0**	**56**	**96**	**8**		
	Peak Hour:	**5:00 PM - 6:00 PM**	**PHF:**		**0.64**	**0.32**	**0.75**				**0.38**	**0.95**	**0.70**				**0.33**	**0.86**	**0.56**				**0.78**	**0.77**	**0.67**		

Pacheco Koch

PK# 5217-22.027

HOWELL STREET at FAIRMOUNT STREET

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on HOWELL STREET						Westbound Approach on ALLEY						Northbound Approach on HOWELL STREET						Eastbound Approach on PARKING LOT					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	*Dallas*	7:00 AM	7:15 AM		0	7	0				0	0	0				0	5	0				0	0	0		
State:	*Texas*	7:15 AM	7:30 AM		0	12	2				0	0	0				6	13	1				0	0	0		
Day:	*Tuesday*	7:30 AM	7:45 AM		1	13	6				0	0	0				1	18	0				0	0	0		
Date:	*25-Jan*	7:45 AM	8:00 AM		0	16	4				0	0	0				4	14	1				0	0	0		
Year:	*2022*	***8:00 AM***	***8:15 AM***		***2***	***18***	***4***				***0***	***0***	***0***				***3***	***16***	***1***				***1***	***0***	***0***		
Data Collector:	*Camera*	***8:15 AM***	***8:30 AM***		***3***	***18***	***0***				***0***	***0***	***0***				***5***	***22***	***2***				***0***	***0***	***1***		
Data Source:	*CJ Hensch & Associates, Inc.*	***8:30 AM***	***8:45 AM***		***1***	***13***	***4***				***0***	***0***	***0***				***6***	***21***	***1***				***0***	***0***	***0***		
Traffic Control:	*Minor Approach Stop*	***8:45 AM***	***9:00 AM***		***2***	***14***	***1***				***0***	***1***	***0***				***3***	***18***	***0***				***1***	***1***	***0***		
Observations:																											
		4:30 PM	4:45 PM		0	12	0				3	0	0				1	26	0				0	0	0		
		4:45 PM	5:00 PM		1	16	0				1	0	1				2	24	1				2	0	1		
		5:00 PM	***5:15 PM***		***0***	***20***	***0***				***1***	***1***	***1***				***0***	***42***	***0***				***2***	***0***	***3***		
		5:15 PM	***5:30 PM***		***0***	***29***	***1***				***3***	***0***	***2***				***0***	***45***	***0***				***5***	***1***	***0***		
		5:30 PM	***5:45 PM***		***0***	***17***	***0***				***0***	***1***	***1***				***0***	***38***	***1***				***2***	***0***	***1***		
		5:45 PM	***6:00 PM***		***0***	***13***	***1***				***1***	***1***	***0***				***0***	***42***	***0***				***2***	***0***	***1***		
		6:00 PM	6:15 PM		0	25	0				1	1	0				0	25	0				3	0	5		
		6:15 PM	6:30 PM		0	20	0				0	0	0				0	48	0				1	0	3		
AM Peak Hour	*Intersection PHF:*	*0.90*	*Intersection PHV:*	*0*	*8*	*63*	*9*			*0*	*0*	*1*	*0*			*0*	*17*	*77*	*4*			*0*	*2*	*1*	*1*		
	Peak Hour	*8:00 AM - 9:00 AM*	*PHF:*		*0.67*	*0.88*	*0.56*				*0.00*	*0.25*	*0.00*				*0.71*	*0.88*	*0.50*				*0.50*	*0.25*	*0.25*		
	Study Area PHF:	**0.90**	**Study Area PHV:**	**0**	**8**	**63**	**9**			**0**	**0**	**1**	**0**			**0**	**17**	**77**	**4**			**0**	**2**	**1**	**1**		
	Peak Hour:	**8:00 AM - 9:00 AM**	**PHF:**		**0.67**	**0.88**	**0.56**				**0.00**	**0.25**	**0.00**				**0.71**	**0.88**	**0.50**				**0.50**	**0.25**	**0.25**		
PM Peak Hour	*Intersection PHF:*	*0.81*	*Intersection PHV:*	*0*	*0*	*79*	*2*			*0*	*5*	*3*	*4*			*0*	*0*	*167*	*1*			*0*	*11*	*1*	*5*		
	Peak Hour	*5:00 PM - 6:00 PM*	*PHF:*		*0.00*	*0.68*	*0.50*				*0.42*	*0.75*	*0.50*				*0.00*	*0.93*	*0.25*				*0.55*	*0.25*	*0.42*		
	Study Area PHF:	**0.81**	**Study Area PHV:**	**0**	**0**	**79**	**2**			**0**	**5**	**3**	**4**			**0**	**0**	**167**	**1**			**0**	**11**	**1**	**5**		
	Peak Hour:	**5:00 PM - 6:00 PM**	**PHF:**		**0.00**	**0.68**	**0.50**				**0.42**	**0.75**	**0.50**				**0.00**	**0.93**	**0.25**				**0.55**	**0.25**	**0.42**		

Pacheco Koch

PK# 5217-22.027

HOWELL STREET at ALLEY

Leg		Cedar Springs Road		Cole Avenue		Routh Street		Cedar Springs Road		Driveway		Routh Street	
Direction		Southbound		Southwestbound		Westbound		Northbound		Northeastbound		Eastbound	
Start Time		Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW
	2022-01-25 07:00:00	1	1	3	2	1	0	0	3	0	1	0	0
	2022-01-25 07:15:00	1	3	2	4	0	0	3	0	2	0	0	1
	2022-01-25 07:30:00	0	0	3	1	1	1	1	2	2	0	0	0
	2022-01-25 07:45:00	3	1	4	2	0	1	2	1	1	0	1	0
	2022-01-25 08:00:00	1	1	3	2	1	0	0	3	1	1	0	0
	2022-01-25 08:15:00	4	1	4	2	1	0	1	1	0	1	1	0
	2022-01-25 08:30:00	0	0	3	1	5	3	1	3	0	0	0	0
	2022-01-25 08:45:00	0	2	4	3	2	2	0	3	0	0	0	0
	2022-01-25 16:30:00	2	5	6	10	0	0	4	2	2	2	1	1
	2022-01-25 16:45:00	4	4	5	10	6	2	8	2	3	2	1	0
	2022-01-25 17:00:00	2	4	5	10	1	5	2	5	3	4	0	0
	2022-01-25 17:15:00	0	1	11	7	0	0	6	11	4	5	1	2
	2022-01-25 17:30:00	3	4	15	8	5	3	2	6	1	4	0	1
	2022-01-25 17:45:00	3	4	8	10	1	3	2	5	0	0	0	0
	2022-01-25 18:00:00	4	1	7	6	1	0	1	4	1	0	0	1
	2022-01-25 18:15:00	2	3	7	3	0	2	5	1	4	0	1	0

Leg		Cedar Springs Road		Fairmount Street		Cedar Springs Road		Fairmount Street	
Direction		Southbound		Westbound		Northbound		Eastbound	
Start Time		Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW
	2022-01-25 07:00:00	1	0	2	0	1	1	0	0
	2022-01-25 07:15:00	0	0	0	0	0	0	1	0
	2022-01-25 07:30:00	0	0	1	1	0	0	1	0
	2022-01-25 07:45:00	0	0	1	1	1	0	0	0
	2022-01-25 08:00:00	0	0	2	0	2	1	1	1
	2022-01-25 08:15:00	1	0	1	0	1	0	0	0
	2022-01-25 08:30:00	1	1	3	2	1	0	0	1
	2022-01-25 08:45:00	0	0	2	1	0	0	0	0
	2022-01-25 09:00:00	0	0	0	0	0	0	0	0
	2022-01-25 16:30:00	1	2	1	1	0	1	0	1
	2022-01-25 16:45:00	6	1	1	2	0	10	6	0
	2022-01-25 17:00:00	1	1	0	2	1	1	2	3
	2022-01-25 17:15:00	1	2	0	1	0	1	0	1
	2022-01-25 17:30:00	1	2	3	2	0	2	2	3
	2022-01-25 17:45:00	0	1	1	1	1	0	1	1
	2022-01-25 18:00:00	0	0	1	1	0	2	0	1
	2022-01-25 18:15:00	0	2	0	2	1	8	5	3

Leg		Cedar Springs Road		Howell Street		Cedar Springs Road	
Direction		Southbound		Westbound		Northbound	
Start Time		Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW
	2022-01-25 07:00:00	0	0	3	0	0	0
	2022-01-25 07:15:00	0	0	1	0	0	0
	2022-01-25 07:30:00	0	0	1	1	0	0
	2022-01-25 07:45:00	0	0	2	1	0	0
	2022-01-25 08:00:00	0	0	1	1	0	0
	2022-01-25 08:15:00	0	0	1	0	0	0
	2022-01-25 08:30:00	0	0	4	4	0	0
	2022-01-25 08:45:00	0	0	2	1	0	0
	2022-01-25 09:00:00	0	0	0	0	0	0
	2022-01-25 16:30:00	0	0	2	1	0	0
	2022-01-25 16:45:00	0	0	3	3	0	0
	2022-01-25 17:00:00	0	0	0	1	0	1
	2022-01-25 17:15:00	1	0	3	2	1	0
	2022-01-25 17:30:00	0	0	3	1	1	0
	2022-01-25 17:45:00	0	0	6	1	0	1
	2022-01-25 18:00:00	0	0	1	2	0	0
	2022-01-25 18:15:00	0	0	0	3	0	2

Leg		Laciede Street		Routh Street		Routh Street	
Direction		Southbound		Westbound		Eastbound	
Start Time		Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW
	2022-01-25 07:00:00	2	2	0	0	0	0
	2022-01-25 07:15:00	4	4	0	0	0	0
	2022-01-25 07:30:00	3	2	2	0	0	0
	2022-01-25 07:45:00	0	0	0	0	0	0
	2022-01-25 08:00:00	3	0	0	0	0	0
	2022-01-25 08:15:00	2	2	0	0	0	0
	2022-01-25 08:30:00	1	3	2	0	1	0
	2022-01-25 08:45:00	1	0	1	2	3	1
	2022-01-25 09:00:00	0	0	0	0	0	0
	2022-01-25 16:30:00	5	11	1	0	0	1
	2022-01-25 16:45:00	5	13	1	0	0	0
	2022-01-25 17:00:00	6	10	0	0	0	0
	2022-01-25 17:15:00	10	2	0	1	0	0
	2022-01-25 17:30:00	9	10	1	0	0	0
	2022-01-25 17:45:00	13	11	0	0	1	0
	2022-01-25 18:00:00	6	4	0	0	0	0
	2022-01-25 18:15:00	5	3	0	0	0	0
	2022-01-25 18:30:00	0	0	0	0	0	0

Leg		Howell Street		Routh Street		Howell Street		Routh Street	
Direction		Southbound		Westbound		Northbound		Eastbound	
Start Time		Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW
	2022-01-25 07:00:00	2	2	0	0	1	1	1	1
	2022-01-25 07:15:00	1	1	0	0	1	0	0	1
	2022-01-25 07:30:00	1	2	0	2	0	1	0	1
	2022-01-25 07:45:00	0	1	2	0	1	2	0	1
	2022-01-25 08:00:00	3	0	1	1	0	1	1	0
	2022-01-25 08:15:00	2	2	0	0	1	0	1	2
	2022-01-25 08:30:00	1	0	1	2	0	4	0	1
	2022-01-25 08:45:00	0	1	0	0	0	0	0	2
	2022-01-25 16:30:00	6	5	0	2	2	5	1	2
	2022-01-25 16:45:00	5	10	0	1	1	2	1	3
	2022-01-25 17:00:00	4	8	0	4	0	2	1	0
	2022-01-25 17:15:00	11	1	1	2	4	4	1	1
	2022-01-25 17:30:00	12	10	7	4	2	3	7	5
	2022-01-25 17:45:00	13	10	3	5	2	2	4	5
	2022-01-25 18:00:00	4	3	2	2	1	2	3	1
	2022-01-25 18:15:00	11	4	1	3	4	1	1	2
	2022-01-25 18:30:00	0	1	0	0	0	0	0	0

Leg		Howell Street		Fairmount Street		Howell Street		Fairmount Street	
Direction		Southbound		Westbound		Northbound		Eastbound	
Start Time		Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW
	2022-01-27 07:00:00	0	0	0	0	0	2	0	0
	2022-01-27 07:15:00	0	0	0	0	0	2	1	4
	2022-01-27 07:30:00	0	0	0	0	1	0	0	1
	2022-01-27 07:45:00	0	0	0	0	0	0	0	0
	2022-01-27 08:00:00	1	2	0	1	0	1	1	2
	2022-01-27 08:15:00	0	0	0	0	2	0	3	1
	2022-01-27 08:30:00	1	0	3	0	0	1	0	1
	2022-01-27 08:45:00	0	2	1	0	0	1	1	1
	2022-01-27 16:30:00	0	0	1	0	2	0	0	2
	2022-01-27 16:45:00	0	0	0	0	1	2	0	2
	2022-01-27 17:00:00	1	0	1	0	0	0	1	1
	2022-01-27 17:15:00	0	1	0	2	1	1	1	1
	2022-01-27 17:30:00	0	2	1	2	0	0	3	0
	2022-01-27 17:45:00	1	1	1	0	0	1	0	0
	2022-01-27 18:00:00	0	2	2	1	3	1	0	1
	2022-01-27 18:15:00	0	1	2	0	0	0	0	0

Leg		Howell Street		Alley		Howell Street		Parking Lot	
Direction		Southbound		Westbound		Northbound		Eastbound	
Start Time		Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW
	2022-01-25 07:00:00	0	0	0	0	0	0	0	1
	2022-01-25 07:15:00	0	0	0	0	0	0	0	1
	2022-01-25 07:30:00	0	0	0	2	0	0	0	2
	2022-01-25 07:45:00	0	0	2	0	0	0	0	1
	2022-01-25 08:00:00	0	0	0	2	0	0	0	0
	2022-01-25 08:15:00	0	0	0	0	0	0	2	1
	2022-01-25 08:30:00	0	0	0	0	0	0	1	0
	2022-01-25 08:45:00	0	0	0	0	0	0	0	1
	2022-01-25 09:00:00	0	0	0	0	0	0	0	0
	2022-01-25 16:30:00	0	0	0	0	0	0	2	2
	2022-01-25 16:45:00	0	0	0	0	0	0	1	3
	2022-01-25 17:00:00	0	0	0	1	0	0	0	0
	2022-01-25 17:15:00	0	0	1	2	0	0	2	1
	2022-01-25 17:30:00	0	0	6	3	0	1	3	3
	2022-01-25 17:45:00	0	0	2	2	0	0	2	3
	2022-01-25 18:00:00	0	0	2	1	0	0	2	0
	2022-01-25 18:15:00	0	1	1	3	0	0	1	2
	2022-01-25 18:30:00	0	0	0	0	0	0	0	0

APPENDIX C. Site-Generated Traffic Supplement

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	2500 Cedar Springs	**Organization:**	Pacheco Koch
Project Location:	Dallas	**Performed By:**	SMN
Scenario Description:		**Date:**	9/21/2022
Analysis Year:		**Checked By:**	SES
Analysis Period:	**AM Street Peak Hour**	**Date:**	9/21/2022

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	453,219	SF	689	606	83
Retail				0		
Restaurant	931	16,000	SF	12	6	6
Cinema/Entertainment				0		
Residential	222	630	DU	170	58	112
Hotel				0		
All Other Land Uses[2]				0		
				871	670	201

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.00		5%	1.00		5%
Retail	1.00		5%	1.00		5%
Restaurant	1.00		5%	1.00		5%
Cinema/Entertainment	1.00			1.00		
Residential	1.00		5%	1.00		5%
Hotel	1.00			1.00		
All Other Land Uses[2]	1.00			1.00		

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	1	0	0	0
Retail	0		0	0	0	0
Restaurant	2	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	0	1	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	871	670	201
Internal Capture Percentage	1%	1%	3%
External Vehicle-Trips[5]	817	631	186
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	42	33	9

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	1%	1%
Retail	N/A	N/A
Restaurant	33%	33%
Cinema/Entertainment	N/A	N/A
Residential	0%	3%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	2500 Cedar Springs
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	606	606	1.00	83	83
Retail	1.00	0	0	1.00	0	0
Restaurant	1.00	6	6	1.00	6	6
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	58	58	1.00	112	112
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		23	52	0	1	0
Retail	0		0	0	0	0
Restaurant	2	1		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	22	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	1	0	0	0
Retail	24		3	0	1	0
Restaurant	85	0		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	18	0	1	0		0
Hotel	18	0	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	4	602	606	572	0	30
Retail	0	0	0	0	0	0
Restaurant	2	4	6	4	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	58	58	55	0	3
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	82	83	78	0	4
Retail	0	0	0	0	0	0
Restaurant	2	4	6	4	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	109	112	104	0	5
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	2500 Cedar Springs	**Organization:**	Pacheco Koch
Project Location:	Dallas	**Performed By:**	SMN
Scenario Description:		**Date:**	9/21/2022
Analysis Year:		**Checked By:**	SES
Analysis Period:	**PM Street Peak Hour**	**Date:**	9/21/2022

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	453,219	SF	653	111	542
Retail				0		
Restaurant	931	16,000	SF	125	84	41
Cinema/Entertainment				0		
Residential	222	630	DU	202	113	89
Hotel				0		
All Other Land Uses[2]				0		
				980	308	672

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.00		5%	1.00		5%
Retail	1.00		5%	1.00		5%
Restaurant	1.00		5%	1.00		5%
Cinema/Entertainment	1.00			1.00		
Residential	1.00		5%	1.00		5%
Hotel	1.00			1.00		
All Other Land Uses[2]	1.00			1.00		

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	2	0	5	0
Retail	0		0	0	0	0
Restaurant	1	0		0	7	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	0	12	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	980	308	672
Internal Capture Percentage	6%	10%	5%
External Vehicle-Trips[5]	871	263	608
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	47	14	33

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	5%	1%
Retail	N/A	N/A
Restaurant	17%	20%
Cinema/Entertainment	N/A	N/A
Residential	11%	18%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	2500 Cedar Springs
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	111	111	1.00	542	542
Retail	1.00	0	0	1.00	0	0
Restaurant	1.00	84	84	1.00	41	41
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	113	113	1.00	89	89
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		108	22	0	11	0
Retail	0		0	0	0	0
Restaurant	1	17		3	7	3
Cinema/Entertainment	0	0	0		0	0
Residential	4	37	19	0		3
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	2	0	5	0
Retail	34		24	0	52	0
Restaurant	33	0		0	18	0
Cinema/Entertainment	7	0	3		5	0
Residential	63	0	12	0		0
Hotel	0	0	4	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	5	106	111	101	0	5
Retail	0	0	0	0	0	0
Restaurant	14	70	84	66	0	4
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	101	113	96	0	5
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

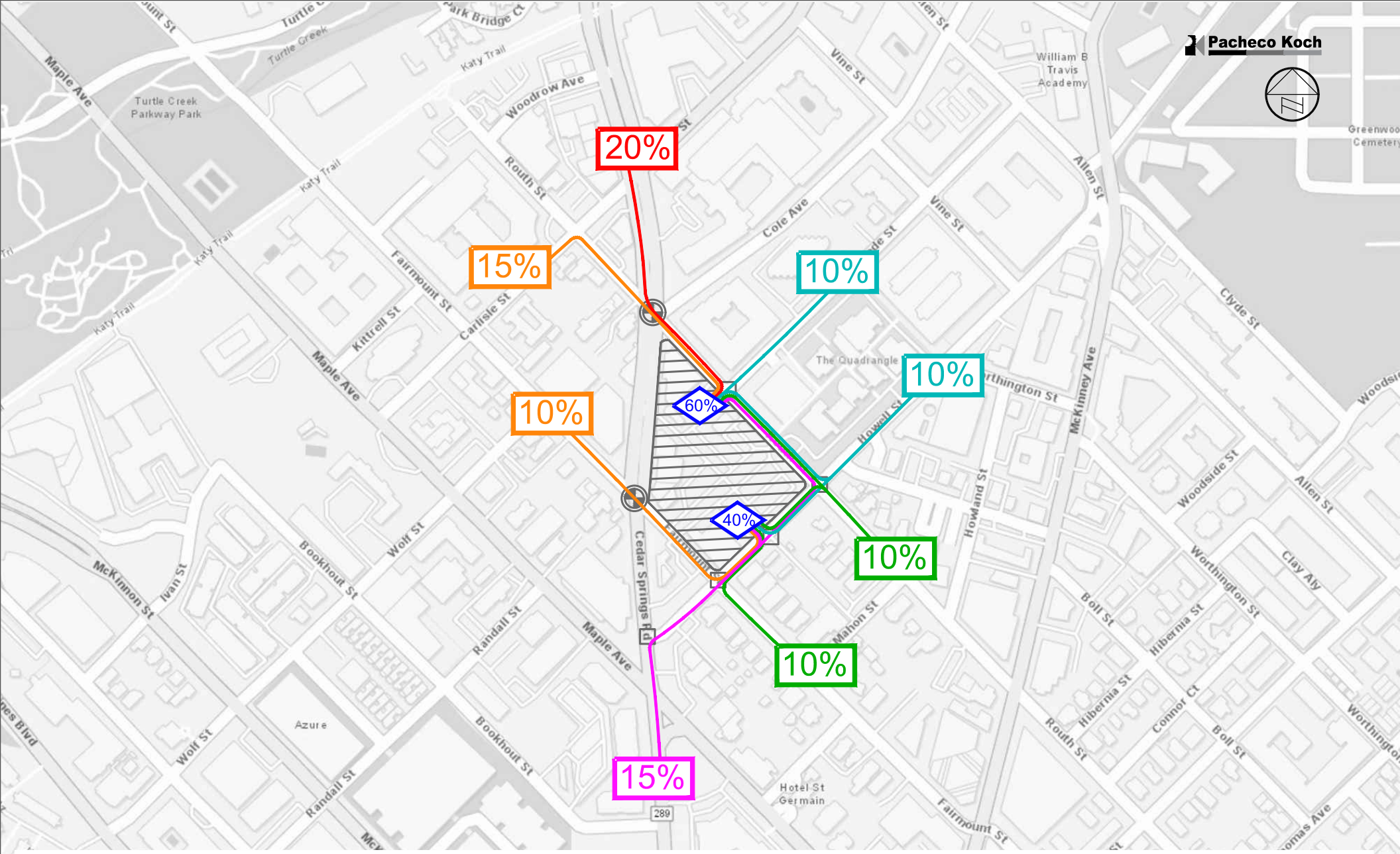
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	7	535	542	508	0	27
Retail	0	0	0	0	0	0
Restaurant	8	33	41	31	0	2
Cinema/Entertainment	0	0	0	0	0	0
Residential	16	73	89	69	0	4
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

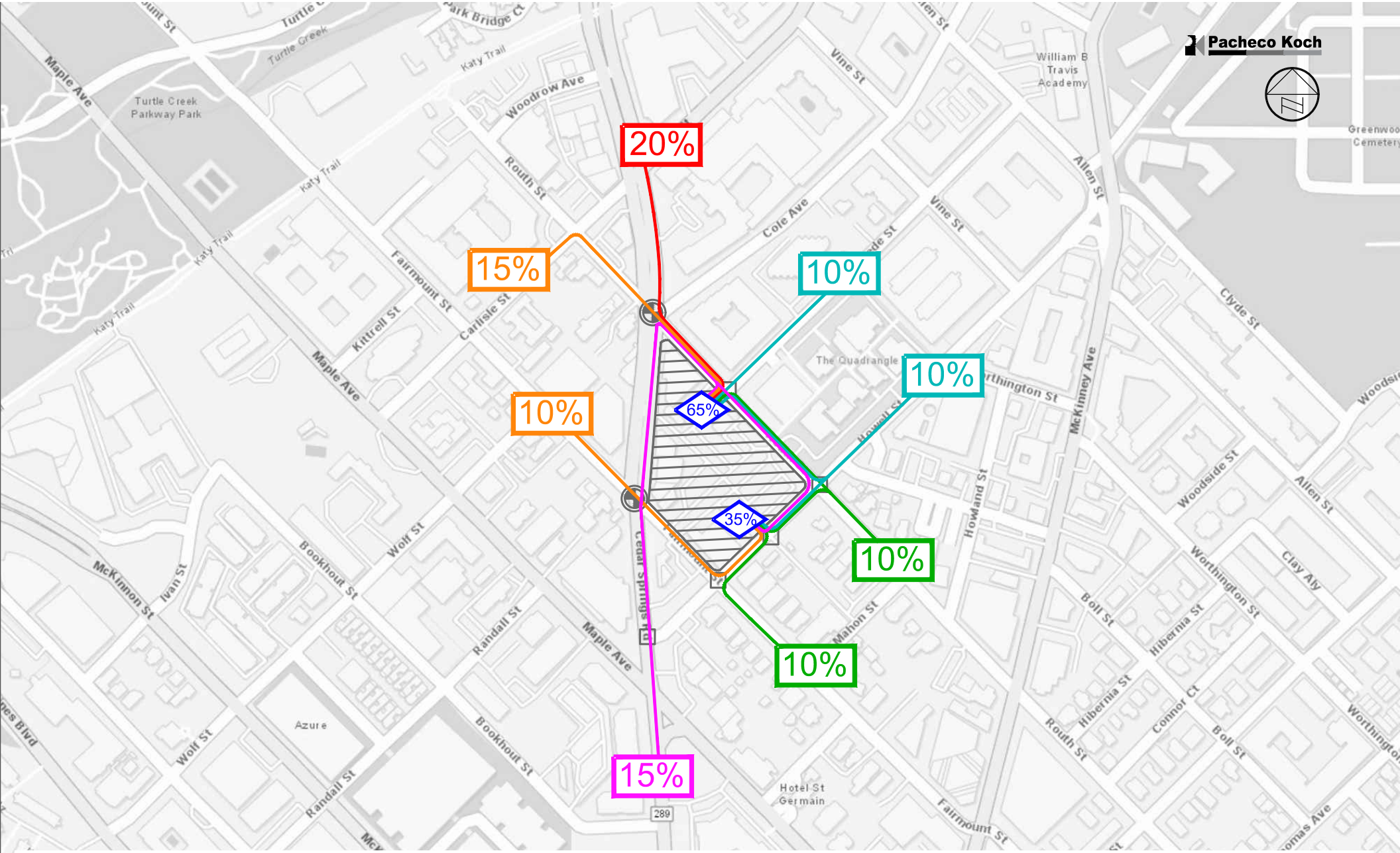


Site Generated Trip Distribution - Multifamily - Inbound

2500 Cedar Springs ,Dallas, Texas

PK #5217-22.027 (SMN: 05/08/23)

APPENDIX **C1**

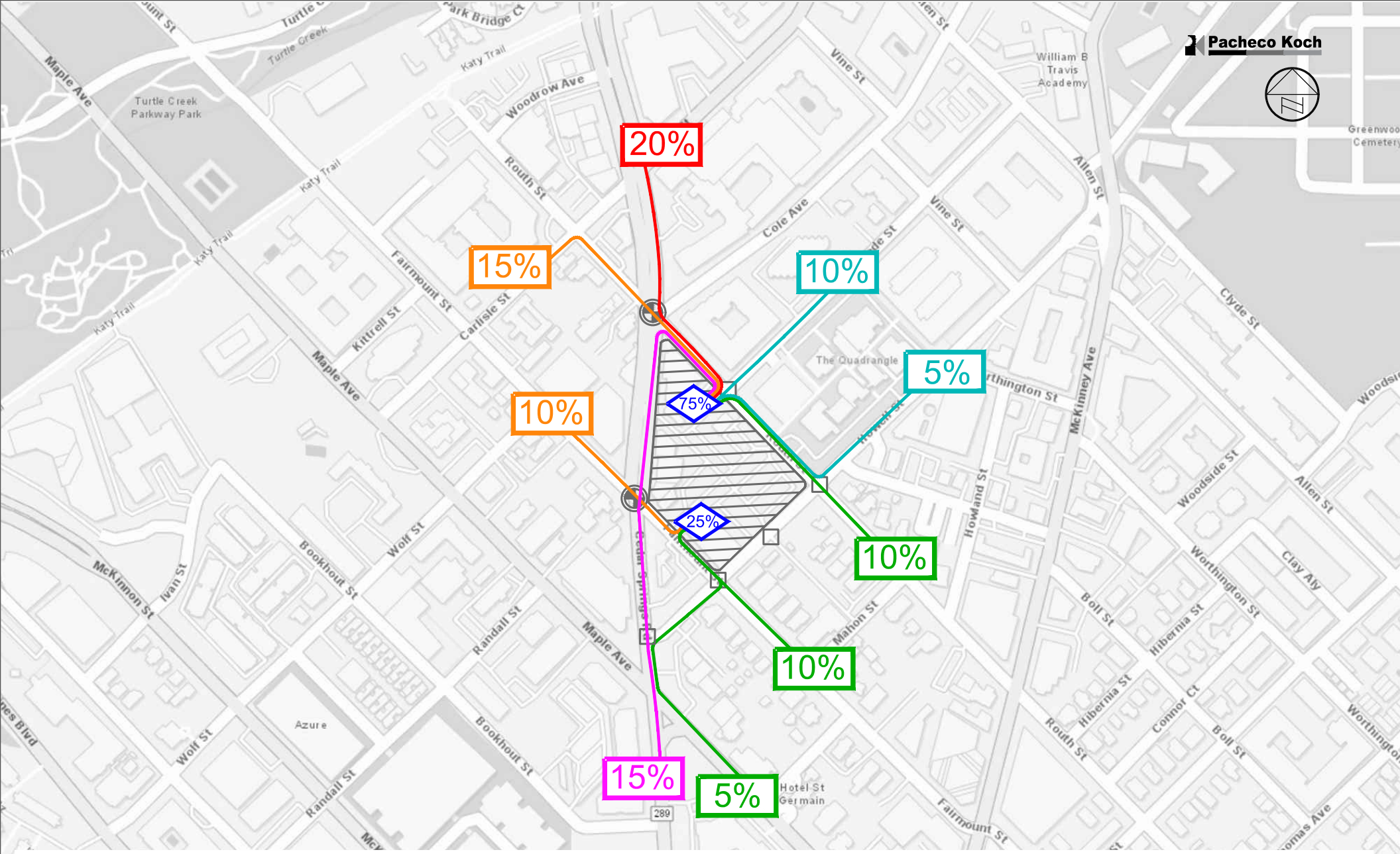


Site Generated Trip Distribution - Multifamily - Outbound

2500 Cedar Springs ,Dallas, Texas

PK #5217-22.027 (SMN: 05/08/23)

APPENDIX **C2**

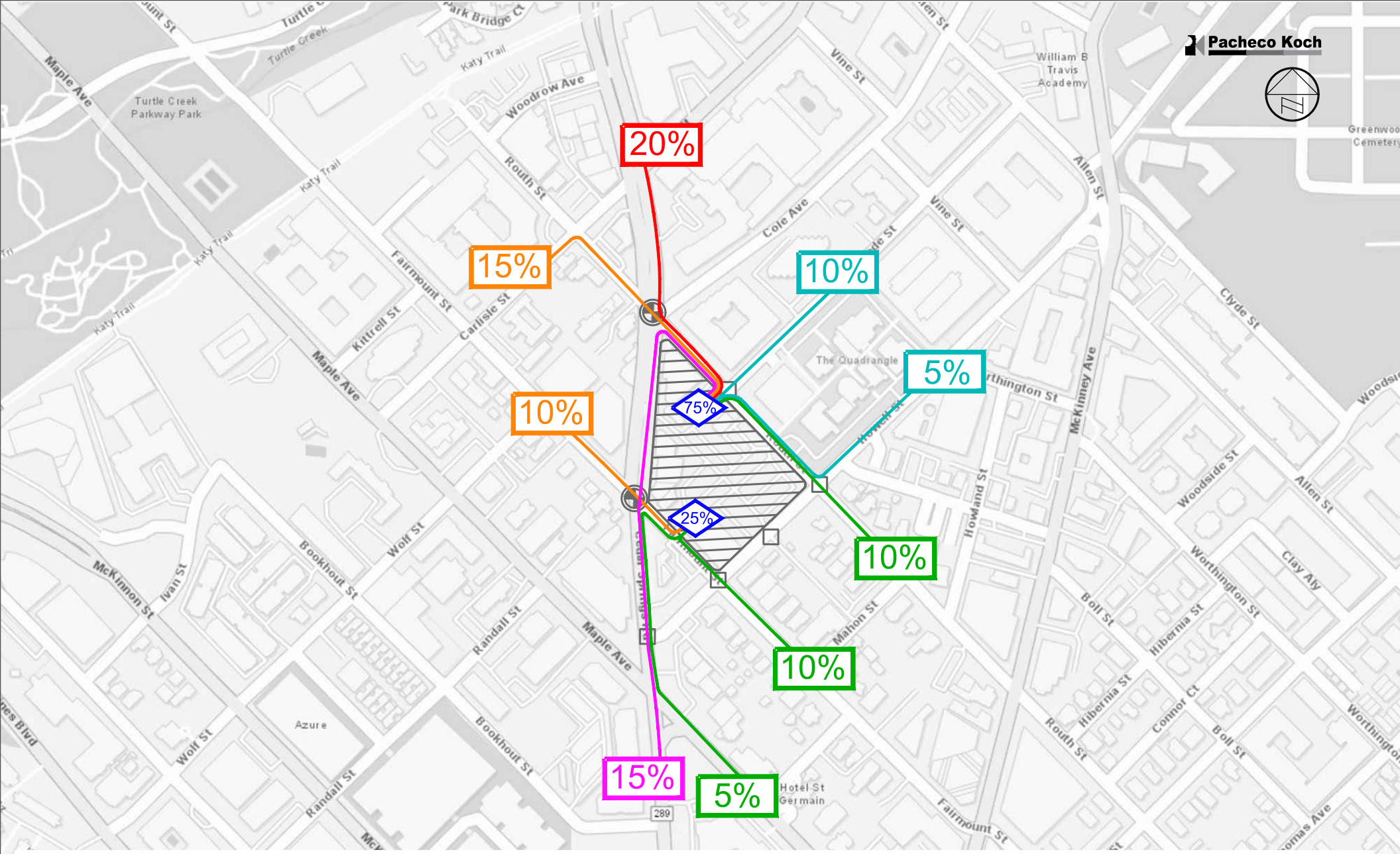


Site Generated Trip Distribution - Office - Inbound

2500 Cedar Springs ,Dallas, Texas

PK #5217-22.027 (SMN: 05/08/23)

APPENDIX **C3**

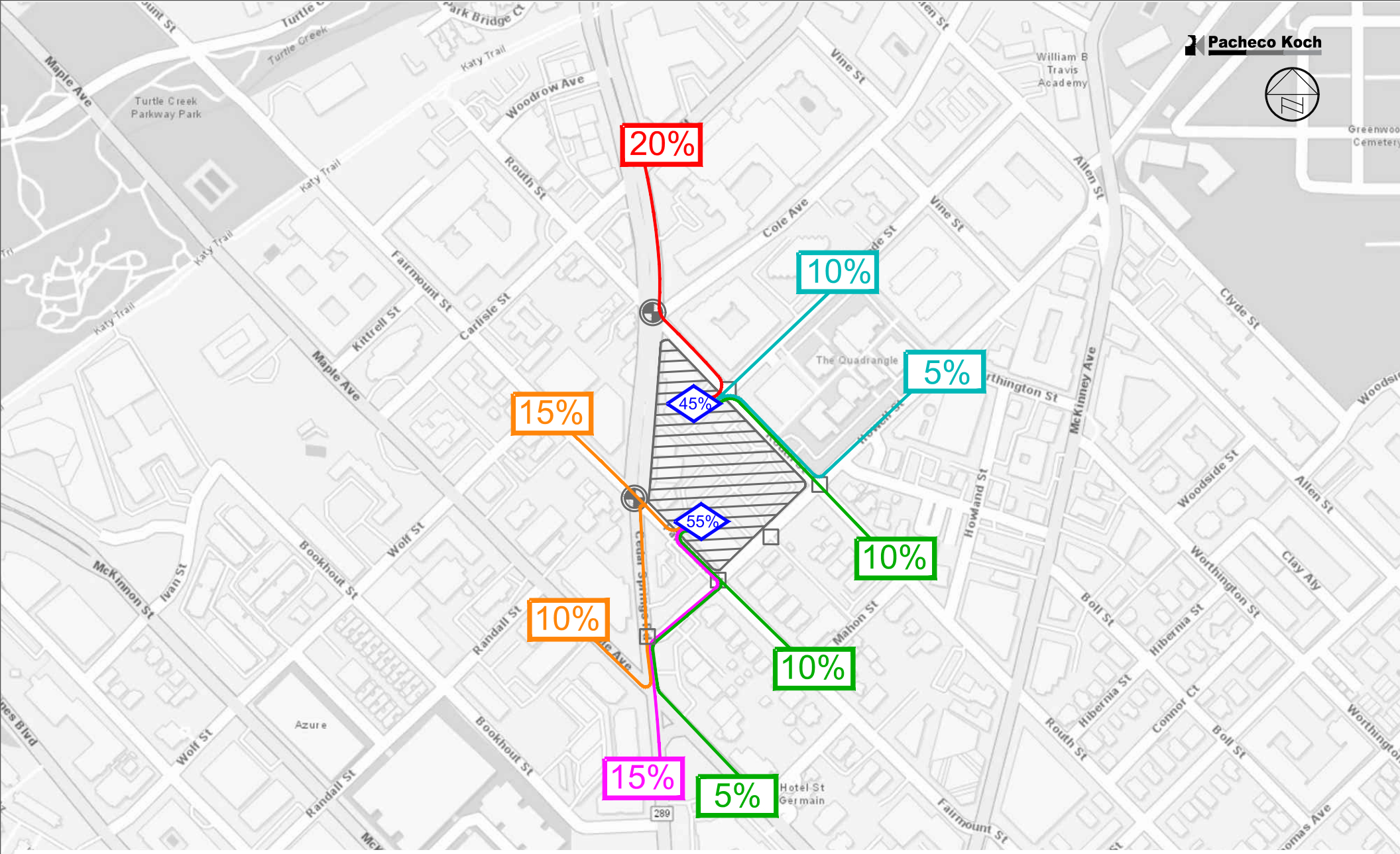


Site Generated Trip Distribution - Office - Outbound

2500 Cedar Springs ,Dallas, Texas

PK #5217-22.027 (SMN: 05/08/23)

APPENDIX **C4**

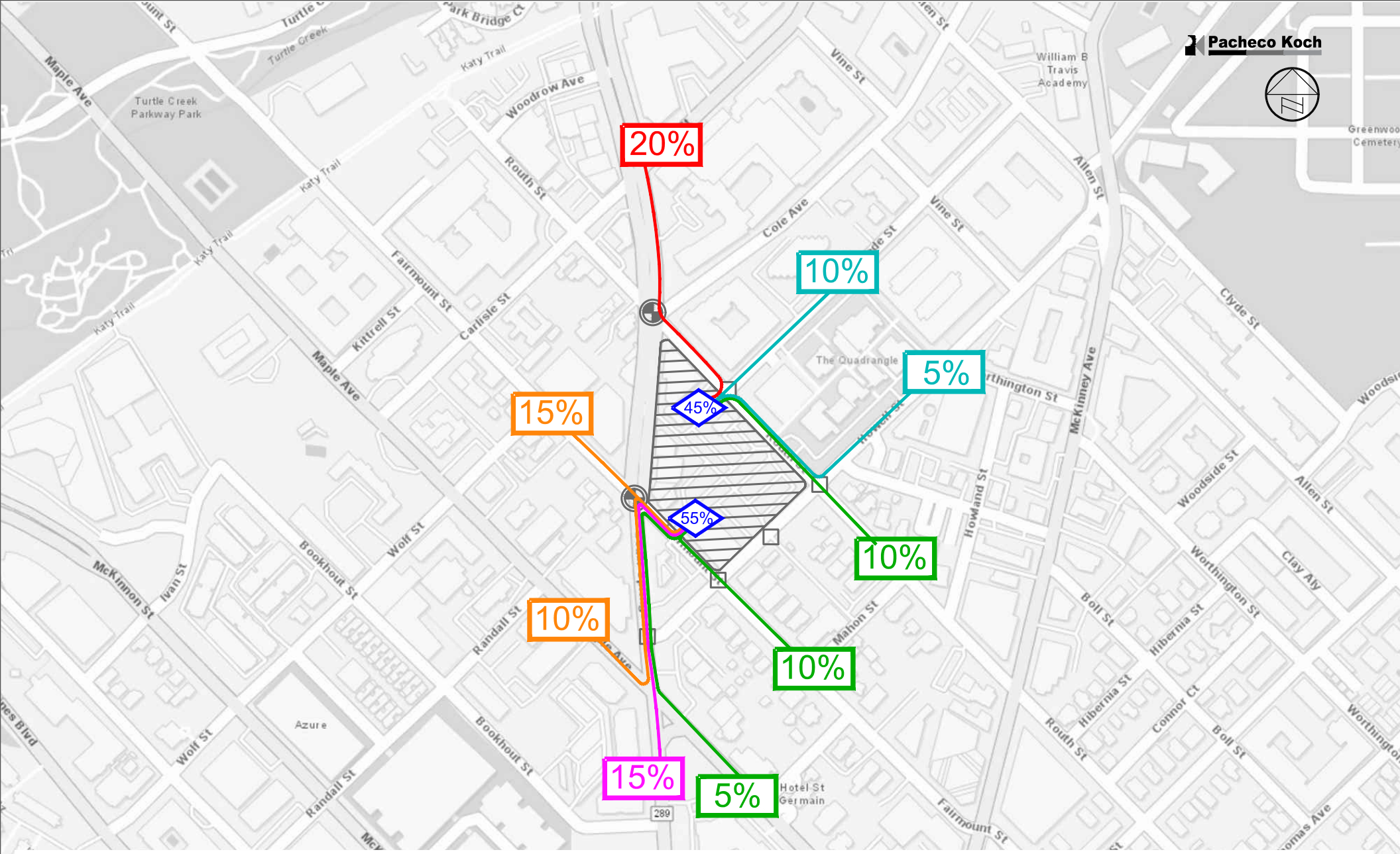


Site Generated Trip Distribution - Self-Park Restaurant - Inbound

2500 Cedar Springs ,Dallas, Texas

PK #5217-22.027 (SMN: 05/08/23)

APPENDIX **C5**



Site Generated Trip Distribution - Self-Park Restaurant - Outbound

2500 Cedar Springs ,Dallas, Texas

PK #5217-22.027 (SMN: 05/08/23)

APPENDIX **C6**

APPENDIX D. Detailed Intersection Capacity Analysis Results

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	1	9	25	20	15	33	4	7	181	50	25	79
Future Volume (vph)	1	9	25	20	15	33	4	7	181	50	25	79
Peak Hour Factor	0.92	0.56	0.69	0.79	0.75	0.63	0.50	0.75	0.91	0.63	0.89	0.79
Adj. Flow (vph)	1	16	36	25	20	52	8	9	199	79	28	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	36	0	45	60	0	9	306	0	0	100
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0		13.0	80.0			80.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%		13.0%	80.0%			80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		9.1	9.1		9.1	9.1		83.9	84.8			84.8
Actuated g/C Ratio		0.09	0.09		0.09	0.09		0.84	0.85			0.85
v/c Ratio		0.10	0.25		0.32	0.42		0.01	0.11			0.11
Control Delay		41.3	45.2		47.7	50.7		1.4	1.3			4.3
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		41.3	45.2		47.7	50.7		1.4	1.3			4.3
LOS		D	D		D	D		A	A			A
Approach Delay		44.0			49.4				1.3			
Approach LOS		D			D				A			
Queue Length 50th (ft)		10	22		27	37		1	12			20
Queue Length 95th (ft)		18	39		50	51		m2	18			m32
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		284	245		236	245		724	2843			891
Starvation Cap Reductn		0	0		0	0		0	0			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.06	0.15		0.19	0.24		0.01	0.11			0.11

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.42

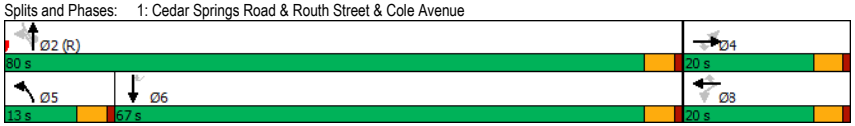
Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	524	4	51
Future Volume (vph)	524	4	51
Peak Hour Factor	0.91	0.92	0.80
Adj. Flow (vph)	576	4	64
Shared Lane Traffic (%)			
Lane Group Flow (vph)	580	0	64
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	67.0		67.0
Total Split (%)	67.0%		67.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	82.7		82.7
Actuated g/C Ratio	0.83		0.83
v/c Ratio	0.20		0.05
Control Delay	5.4		3.4
Queue Delay	0.0		0.0
Total Delay	5.4		3.4
LOS	A		A
Approach Delay	5.2		
Approach LOS	A		
Queue Length 50th (ft)	69		6
Queue Length 95th (ft)	m92		22
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2923		1332
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.20		0.05

Intersection Summary

Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 38.6%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	67	77	15	76	19	26	229	7	19	544	8
Future Volume (vph)	15	67	77	15	76	19	26	229	7	19	544	8
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	16	84	96	24	92	28	36	260	14	28	611	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	196	0	0	144	0	36	274	0	28	623	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26		0.66	0.66		0.66	0.66	
v/c Ratio		0.45			0.33		0.07	0.12		0.04	0.27	
Control Delay		35.5			33.0		5.5	5.5		4.1	5.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		35.5			33.0		5.5	5.5		4.1	5.0	
LOS		D			C		A	A		A	A	
Approach Delay		35.5			33.0			5.5			5.0	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)		105			75		8	30		4	52	
Queue Length 95th (ft)		151			118		12	35		7	64	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		431			431		482	2299		711	2311	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.45			0.33		0.07	0.12		0.04	0.27	

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 40.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	50	11	14	57	3	3	58	17	22	55	31
Future Vol, veh/h	21	50	11	14	57	3	3	58	17	22	55	31
Peak Hour Factor	0.66	0.89	0.69	0.70	0.79	0.50	0.50	0.81	0.61	0.79	0.81	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	56	16	20	72	6	6	72	28	28	68	40
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	8.3	8.1	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	26%	19%	20%
Vol Thru, %	74%	61%	77%	51%
Vol Right, %	22%	13%	4%	29%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	78	82	74	108
LT Vol	3	21	14	22
Through Vol	58	50	57	55
RT Vol	17	11	3	31
Lane Flow Rate	105	104	98	135
Geometry Grp	1	1	1	1
Degree of Util (X)	0.13	0.132	0.126	0.165
Departure Headway (Hd)	4.438	4.566	4.615	4.397
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	808	786	777	816
Service Time	2.463	2.592	2.641	2.421
HCM Lane V/C Ratio	0.13	0.132	0.126	0.165
HCM Control Delay	8.1	8.3	8.3	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.5	0.4	0.6

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	58	1	6	54	16	1	40	8	2	6	38
Future Vol, veh/h	27	58	1	6	54	16	1	40	8	2	6	38
Peak Hour Factor	0.68	0.85	0.50	0.75	0.90	0.50	0.50	0.67	0.50	0.50	0.50	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	68	2	8	60	32	2	60	16	4	12	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	7.8	7.9	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	31%	8%	4%
Vol Thru, %	82%	67%	71%	13%
Vol Right, %	16%	1%	21%	83%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	86	76	46
LT Vol	1	27	6	2
Through Vol	40	58	54	6
RT Vol	8	1	16	38
Lane Flow Rate	78	110	100	64
Geometry Grp	1	1	1	1
Degree of Util (X)	0.095	0.135	0.118	0.071
Departure Headway (Hd)	4.379	4.416	4.264	4.006
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	821	817	845	896
Service Time	2.393	2.418	2.267	2.021
HCM Lane V/C Ratio	0.095	0.135	0.118	0.071
HCM Control Delay	7.9	8.1	7.8	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.4	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	6	257	65	0	633
Future Vol, veh/h	0	6	257	65	0	633
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	50	92	77	92	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	279	84	0	719

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	182	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	829	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	829	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	829	-
HCM Lane V/C Ratio	-	-	0.014	-
HCM Control Delay (s)	-	-	9.4	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	38	77	0	0	57	35	0	0	0	8	0	10
Future Vol, veh/h	38	77	0	0	57	35	0	0	0	8	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	88	92	92	84	88	92	92	92	50	92	63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	88	0	0	68	40	0	0	0	16	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	88	0	0	280	292	88	272	272	88
Stage 1	-	-	-	-	-	-	184	184	-	88	88	-
Stage 2	-	-	-	-	-	-	96	108	-	184	184	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1483	-	-	1508	-	-	672	619	970	680	635	970
Stage 1	-	-	-	-	-	-	818	747	-	920	822	-
Stage 2	-	-	-	-	-	-	911	806	-	818	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1483	-	-	1508	-	-	644	598	970	662	613	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	644	598	-	662	613	-
Stage 1	-	-	-	-	-	-	790	722	-	889	822	-
Stage 2	-	-	-	-	-	-	896	806	-	790	722	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	0	0	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1483	-	-	1508	-	-	786
HCM Lane V/C Ratio	-	0.032	-	-	-	-	-	0.041
HCM Control Delay (s)	0	7.5	0	-	0	-	-	9.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	5	31	28	22	28	60	10	16	508	89	21	79
Future Volume (vph)	5	31	28	22	28	60	10	16	508	89	21	79
Peak Hour Factor	0.50	0.78	0.64	0.69	0.54	0.79	0.50	0.57	0.94	0.82	0.58	0.86
Adj. Flow (vph)	10	40	44	32	52	76	20	28	540	109	36	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	44	0	84	96	0	28	685	0	0	92
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0		13.0	80.0			80.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%		13.0%	80.0%			80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		11.3	11.3		11.3	11.3		79.7	79.7			79.7
Actuated g/C Ratio		0.11	0.11		0.11	0.11		0.80	0.80			0.80
v/c Ratio		0.26	0.25		0.47	0.54		0.04	0.25			0.16
Control Delay		42.3	42.4		49.1	52.4		1.2	1.4			6.8
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		42.3	42.4		49.1	52.4		1.2	1.4			6.8
LOS		D	D		D	D		A	A			A
Approach Delay		42.4			50.9				1.4			
Approach LOS		D			D				A			
Queue Length 50th (ft)		30	26		51	59		2	23			24
Queue Length 95th (ft)		54	40		54	92		m3	28			m35
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		269	245		248	245		799	2732			576
Starvation Cap Reductn		0	0		0	0		0	0			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.19	0.18		0.34	0.39		0.04	0.25			0.16

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	358	6	45
Future Volume (vph)	358	6	45
Peak Hour Factor	0.93	0.75	0.70
Adj. Flow (vph)	385	8	64
Shared Lane Traffic (%)			
Lane Group Flow (vph)	393	0	64
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	67.0		67.0
Total Split (%)	67.0%		67.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	73.4		73.4
Actuated g/C Ratio	0.73		0.73
v/c Ratio	0.15		0.05
Control Delay	9.4		5.5
Queue Delay	0.0		0.0
Total Delay	9.4		5.5
LOS	A		A
Approach Delay	8.9		
Approach LOS	A		
Queue Length 50th (ft)	54		11
Queue Length 95th (ft)	m68		22
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2590		1182
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.15		0.05

Intersection Summary

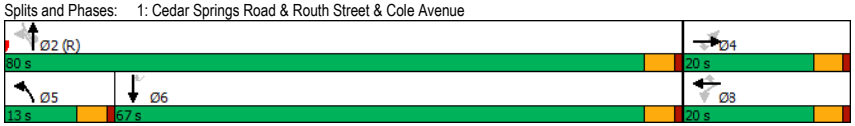
1: Cedar Springs Road & Routh Street & Cole Avenue

Existing
5217-22.027
Timing Plan: PM

Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 42.5%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



2: Cedar Springs Road & Fairmount Street

Existing
5217-22.027
Timing Plan: PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	129	59	25	109	28	37	586	11	19	375	16
Future Volume (vph)	27	129	59	25	109	28	37	586	11	19	375	16
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	48	155	76	36	143	40	44	623	20	24	408	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	279	0	0	219	0	44	643	0	24	432	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26		0.66	0.66		0.66	0.66	
v/c Ratio		0.68			0.54		0.07	0.28		0.05	0.19	
Control Delay		43.3			37.8		5.3	6.2		3.7	4.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		43.3			37.8		5.3	6.2		3.7	4.0	
LOS		D			D		A	A		A	A	
Approach Delay		43.3			37.8			6.1			4.0	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		161			121		9	73		3	39	
Queue Length 95th (ft)		228			159		m15	85		7	44	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		409			409		606	2306		470	2299	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.68			0.54		0.07	0.28		0.05	0.19	

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	109	5	19	63	19	9	114	58	20	57	32
Future Vol, veh/h	21	109	5	19	63	19	9	114	58	20	57	32
Peak Hour Factor	0.75	0.88	0.63	0.79	0.68	0.59	0.75	0.86	0.85	0.71	0.59	0.73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	124	8	24	93	32	12	133	68	28	97	44
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	9.4	9.7	9.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	16%	19%	18%
Vol Thru, %	63%	81%	62%	52%
Vol Right, %	32%	4%	19%	29%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	181	135	101	109
LT Vol	9	21	19	20
Through Vol	114	109	63	57
RT Vol	58	5	19	32
Lane Flow Rate	213	160	149	169
Geometry Grp	1	1	1	1
Degree of Util (X)	0.28	0.224	0.206	0.226
Departure Headway (Hd)	4.731	5.04	4.975	4.827
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	753	705	715	737
Service Time	2.802	3.121	3.056	2.902
HCM Lane V/C Ratio	0.283	0.227	0.208	0.229
HCM Control Delay	9.7	9.6	9.4	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.9	0.8	0.9

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	96	8	3	99	14	4	86	20	23	9	54
Future Vol, veh/h	56	96	8	3	99	14	4	86	20	23	9	54
Peak Hour Factor	0.78	0.77	0.67	0.50	0.95	0.70	0.50	0.86	0.56	0.64	0.50	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	125	12	6	104	20	8	100	36	36	18	72
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	8.8	9	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	35%	3%	27%
Vol Thru, %	78%	60%	85%	10%
Vol Right, %	18%	5%	12%	63%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	110	160	116	86
LT Vol	4	56	3	23
Through Vol	86	96	99	9
RT Vol	20	8	14	54
Lane Flow Rate	144	208	130	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.191	0.276	0.172	0.161
Departure Headway (Hd)	4.797	4.768	4.76	4.604
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	744	750	750	775
Service Time	2.85	2.818	2.815	2.658
HCM Lane V/C Ratio	0.194	0.277	0.173	0.163
HCM Control Delay	9	9.6	8.8	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	1.1	0.6	0.6

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	11	618	106	0	467
Future Vol, veh/h	0	11	618	106	0	467
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	55	90	85	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	20	687	125	0	508

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	406	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	594	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	594	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	594	-
HCM Lane V/C Ratio	-	-	0.034	-
HCM Control Delay (s)	-	-	11.3	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	109	0	0	93	9	0	0	0	28	0	30
Future Vol, veh/h	21	109	0	0	93	9	0	0	0	28	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	58	80	92	92	73	56	92	92	92	88	92	68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	136	0	0	127	16	0	0	0	32	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	143	0	0	136	0	0	365	351	136	343	343	135
Stage 1	-	-	-	-	-	-	208	208	-	135	135	-
Stage 2	-	-	-	-	-	-	157	143	-	208	208	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1440	-	-	1448	-	-	591	573	913	611	579	914
Stage 1	-	-	-	-	-	-	794	730	-	868	785	-
Stage 2	-	-	-	-	-	-	845	779	-	794	730	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1440	-	-	1448	-	-	551	558	913	598	563	914
Mov Cap-2 Maneuver	-	-	-	-	-	-	551	558	-	598	563	-
Stage 1	-	-	-	-	-	-	773	710	-	845	785	-
Stage 2	-	-	-	-	-	-	804	779	-	773	710	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0	0	10.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1440	-	-	1448	-	-	748
HCM Lane V/C Ratio	-	0.025	-	-	-	-	-	0.102
HCM Control Delay (s)	0	7.6	0	-	0	-	-	10.4
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	1	11	30	32	18	46	5	9	220	61	77	132
Future Volume (vph)	1	11	30	32	18	46	5	9	220	61	77	132
Peak Hour Factor	0.92	0.56	0.69	0.79	0.75	0.63	0.50	0.75	0.91	0.63	0.89	0.79
Adj. Flow (vph)	1	20	43	41	24	73	10	12	242	97	87	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	43	0	65	83	0	12	426	0	0	167
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0		13.0	80.0			80.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%		13.0%	80.0%			80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		10.4	10.4		10.5	10.5		82.6	83.5			83.5
Actuated g/C Ratio		0.10	0.10		0.10	0.10		0.83	0.84			0.84
v/c Ratio		0.11	0.26		0.42	0.50		0.02	0.15			0.21
Control Delay		39.9	43.7		48.9	51.7		1.6	1.5			5.1
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		39.9	43.7		48.9	51.7		1.6	1.5			5.1
LOS		D	D		D	D		A	A			A
Approach Delay		42.4			50.4				1.5			
Approach LOS		D			D				A			
Queue Length 50th (ft)		12	26		39	51		1	18			35
Queue Length 95th (ft)		21	43		65	64		m3	26			m49
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		285	245		229	245		638	2763			783
Starvation Cap Reductn		0	0		0	0		0	0			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.07	0.18		0.28	0.34		0.02	0.15			0.21

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	637	5	62
Future Volume (vph)	637	5	62
Peak Hour Factor	0.91	0.92	0.80
Adj. Flow (vph)	700	5	78
Shared Lane Traffic (%)			
Lane Group Flow (vph)	705	0	78
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	67.0		67.0
Total Split (%)	67.0%		67.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	81.4		81.4
Actuated g/C Ratio	0.81		0.81
v/c Ratio	0.24		0.06
Control Delay	5.8		3.8
Queue Delay	0.0		0.0
Total Delay	5.8		3.8
LOS	A		A
Approach Delay	5.6		
Approach LOS	A		
Queue Length 50th (ft)	77		8
Queue Length 95th (ft)	m165		28
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2878		1311
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.24		0.06

Intersection Summary

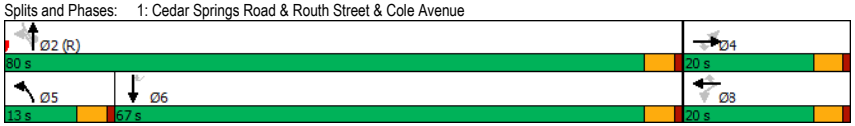
1: Cedar Springs Road & Routh Street & Cole Avenue

No Build
5217-22.027
Timing Plan: AM

Intersection Signal Delay: 10.0	Intersection LOS: B
Intersection Capacity Utilization 42.6%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



2: Cedar Springs Road & Fairmount Street

No Build
5217-22.027
Timing Plan: AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	88	94	21	93	23	32	309	14	23	666	13
Future Volume (vph)	35	88	94	21	93	23	32	309	14	23	666	13
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	37	110	118	33	112	34	44	351	28	34	748	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	265	0	0	179	0	44	379	0	34	767	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26		0.66	0.66		0.66	0.66	
v/c Ratio		0.63			0.44		0.11	0.17		0.05	0.33	
Control Delay		40.8			35.2		5.9	5.7		4.4	5.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		40.8			35.2		5.9	5.7		4.4	5.7	
LOS		D			D		A	A		A	A	
Approach Delay		40.8			35.2			5.7			5.7	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		150			96		9	42		5	71	
Queue Length 95th (ft)		204			146		14	48		8	85	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		421			411		404	2292		643	2308	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.63			0.44		0.11	0.17		0.05	0.33	

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	65	19	17	93	16	40	82	21	29	69	38
Future Vol, veh/h	26	65	19	17	93	16	40	82	21	29	69	38
Peak Hour Factor	0.66	0.89	0.69	0.70	0.79	0.50	0.50	0.81	0.61	0.79	0.81	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	73	28	24	118	32	80	101	34	37	85	49
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.4	9.7	10	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	24%	13%	21%
Vol Thru, %	57%	59%	74%	51%
Vol Right, %	15%	17%	13%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	110	126	136
LT Vol	40	26	17	29
Through Vol	82	65	93	69
RT Vol	21	19	16	38
Lane Flow Rate	216	140	174	171
Geometry Grp	1	1	1	1
Degree of Util (X)	0.293	0.196	0.242	0.231
Departure Headway (Hd)	4.897	5.045	5.005	4.866
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	727	704	710	730
Service Time	2.975	3.13	3.086	2.947
HCM Lane V/C Ratio	0.297	0.199	0.245	0.234
HCM Control Delay	10	9.4	9.7	9.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.7	0.9	0.9

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	70	1	7	66	43	1	61	10	6	7	50
Future Vol, veh/h	45	70	1	7	66	43	1	61	10	6	7	50
Peak Hour Factor	0.68	0.85	0.50	0.75	0.90	0.50	0.50	0.67	0.50	0.50	0.50	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	82	2	9	73	86	2	91	20	12	14	63
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.8	8.5	8.5	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	39%	6%	10%
Vol Thru, %	85%	60%	57%	11%
Vol Right, %	14%	1%	37%	79%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	116	116	63
LT Vol	1	45	7	6
Through Vol	61	70	66	7
RT Vol	10	1	43	50
Lane Flow Rate	113	151	169	89
Geometry Grp	1	1	1	1
Degree of Util (X)	0.147	0.195	0.205	0.108
Departure Headway (Hd)	4.686	4.658	4.366	4.346
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	764	769	821	822
Service Time	2.722	2.693	2.398	2.383
HCM Lane V/C Ratio	0.148	0.196	0.206	0.108
HCM Control Delay	8.5	8.8	8.5	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.7	0.8	0.4

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	348	79	0	777
Future Vol, veh/h	0	7	348	79	0	777
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	50	92	77	92	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	378	103	0	883

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	241	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	760	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	760	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	760	-
HCM Lane V/C Ratio	-	-	0.018	-
HCM Control Delay (s)	-	-	9.8	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	129	94	0	0	69	102	0	0	0	20	0	25
Future Vol, veh/h	129	94	0	0	69	102	0	0	0	20	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	88	92	92	84	88	92	92	92	50	92	63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	163	107	0	0	82	116	0	0	0	40	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	198	0	0	107	0	0	593	631	107	573	573	140
Stage 1	-	-	-	-	-	-	433	433	-	140	140	-
Stage 2	-	-	-	-	-	-	160	198	-	433	433	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1375	-	-	1484	-	-	417	398	947	430	430	908
Stage 1	-	-	-	-	-	-	601	582	-	863	781	-
Stage 2	-	-	-	-	-	-	842	737	-	601	582	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1375	-	-	1484	-	-	360	348	947	388	376	908
Mov Cap-2 Maneuver	-	-	-	-	-	-	360	348	-	388	376	-
Stage 1	-	-	-	-	-	-	525	509	-	754	781	-
Stage 2	-	-	-	-	-	-	805	737	-	525	509	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.8	0	0	12.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1375	-	-	1484	-	-	543
HCM Lane V/C Ratio	-	0.119	-	-	-	-	-	0.147
HCM Control Delay (s)	0	8	0	-	0	-	-	12.8
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.4	-	-	0	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	6	38	34	77	34	110	12	19	617	108	36	104
Future Volume (vph)	6	38	34	77	34	110	12	19	617	108	36	104
Peak Hour Factor	0.50	0.78	0.64	0.69	0.54	0.79	0.50	0.57	0.94	0.82	0.58	0.86
Adj. Flow (vph)	12	49	53	112	63	139	24	33	656	132	62	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	53	0	175	163	0	33	850	0	0	121
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0		13.0	80.0			80.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%		13.0%	80.0%			80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		14.7	14.7		14.7	14.7		76.3	76.3			76.3
Actuated g/C Ratio		0.15	0.15		0.15	0.15		0.76	0.76			0.76
v/c Ratio		0.24	0.23		0.83	0.70		0.05	0.33			0.27
Control Delay		39.9	39.9		72.4	57.3		1.4	1.8			9.0
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		39.9	39.9		72.4	57.3		1.4	1.8			9.0
LOS		D	D		E	E		A	A			A
Approach Delay		39.9			65.1				1.8			
Approach LOS		D			E				A			
Queue Length 50th (ft)		35	30		109	99		2	30			31
Queue Length 95th (ft)		63	46		102	145		m3	m33			m44
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		267	245		222	245		712	2608			451
Starvation Cap Reductn		0	0		0	0		0	0			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.23	0.22		0.79	0.67		0.05	0.33			0.27

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	435	7	55
Future Volume (vph)	435	7	55
Peak Hour Factor	0.93	0.75	0.70
Adj. Flow (vph)	468	9	79
Shared Lane Traffic (%)			
Lane Group Flow (vph)	477	0	79
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	67.0		67.0
Total Split (%)	67.0%		67.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	69.8		69.8
Actuated g/C Ratio	0.70		0.70
v/c Ratio	0.19		0.07
Control Delay	10.5		6.2
Queue Delay	0.0		0.0
Total Delay	10.5		6.2
LOS	B		A
Approach Delay	10.2		
Approach LOS	B		
Queue Length 50th (ft)	65		17
Queue Length 95th (ft)	m118		26
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2464		1125
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.19		0.07

Intersection Summary

1: Cedar Springs Road & Routh Street & Cole Avenue

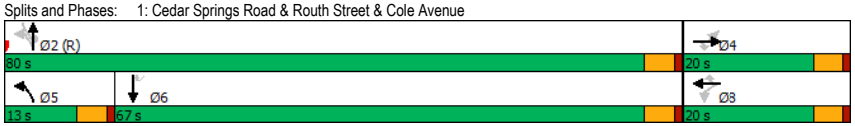
No Build
Timing Plan: PM

5217-22.027

Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 51.4%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



2: Cedar Springs Road & Fairmount Street

No Build
Timing Plan: PM

5217-22.027

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	159	72	47	139	34	45	719	14	23	488	36
Future Volume (vph)	37	159	72	47	139	34	45	719	14	23	488	36
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	66	192	92	68	183	49	54	765	25	29	530	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	350	0	0	300	0	54	790	0	29	584	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26		0.66	0.66		0.66	0.66	
v/c Ratio		0.95			0.90		0.11	0.34		0.07	0.26	
Control Delay		74.9			66.8		5.9	6.8		4.0	4.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		74.9			66.8		5.9	6.8		4.0	4.5	
LOS		E			E		A	A		A	A	
Approach Delay		74.9			66.8			6.7			4.5	
Approach LOS		E			E			A			A	
Queue Length 50th (ft)		220			185		11	93		4	55	
Queue Length 95th (ft)		#347			#254		m20	113		m7	69	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		367			334		506	2306		391	2285	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.95			0.90		0.11	0.34		0.07	0.26	

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 25.9		Intersection LOS: C	
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	157	43	23	82	26	19	142	70	36	81	39
Future Vol, veh/h	26	157	43	23	82	26	19	142	70	36	81	39
Peak Hour Factor	0.75	0.88	0.63	0.79	0.68	0.59	0.75	0.86	0.85	0.71	0.59	0.73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	178	68	29	121	44	25	165	82	51	137	53
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.2	11.6	12.7	12.3
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	12%	18%	23%
Vol Thru, %	61%	69%	63%	52%
Vol Right, %	30%	19%	20%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	231	226	131	156
LT Vol	19	26	23	36
Through Vol	142	157	82	81
RT Vol	70	43	26	39
Lane Flow Rate	273	281	194	241
Geometry Grp	1	1	1	1
Degree of Util (X)	0.422	0.442	0.313	0.381
Departure Headway (Hd)	5.57	5.651	5.823	5.683
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	641	633	612	628
Service Time	3.644	3.723	3.903	3.76
HCM Lane V/C Ratio	0.426	0.444	0.317	0.384
HCM Control Delay	12.7	13.2	11.6	12.3
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.1	2.3	1.3	1.8

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	117	10	4	120	22	5	108	24	53	11	91
Future Vol, veh/h	71	117	10	4	120	22	5	108	24	53	11	91
Peak Hour Factor	0.78	0.77	0.67	0.50	0.95	0.70	0.50	0.86	0.56	0.64	0.50	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	91	152	15	8	126	31	10	126	43	83	22	121
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.6	10.1	10.3	10.5
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	36%	3%	34%
Vol Thru, %	79%	59%	82%	7%
Vol Right, %	18%	5%	15%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	198	146	155
LT Vol	5	71	4	53
Through Vol	108	117	120	11
RT Vol	24	10	22	91
Lane Flow Rate	178	258	166	226
Geometry Grp	1	1	1	1
Degree of Util (X)	0.265	0.381	0.246	0.32
Departure Headway (Hd)	5.343	5.318	5.343	5.092
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	671	676	671	706
Service Time	3.382	3.352	3.382	3.128
HCM Lane V/C Ratio	0.265	0.382	0.247	0.32
HCM Control Delay	10.3	11.6	10.1	10.5
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.1	1.8	1	1.4

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	759	129	0	617
Future Vol, veh/h	0	13	759	129	0	617
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	55	90	85	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	24	843	152	0	671

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	498	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	518	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	518	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	518	-
HCM Lane V/C Ratio	-	-	0.046	-
HCM Control Delay (s)	-	-	12.3	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	194	0	0	126	11	0	0	0	34	0	36
Future Vol, veh/h	26	194	0	0	126	11	0	0	0	34	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	58	80	92	92	73	56	92	92	92	88	92	68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	243	0	0	173	20	0	0	0	39	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	193	0	0	243	0	0	543	526	243	516	516	183
Stage 1	-	-	-	-	-	-	333	333	-	183	183	-
Stage 2	-	-	-	-	-	-	210	193	-	333	333	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1380	-	-	1323	-	-	451	457	796	470	463	859
Stage 1	-	-	-	-	-	-	681	644	-	819	748	-
Stage 2	-	-	-	-	-	-	792	741	-	681	644	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1380	-	-	1323	-	-	411	440	796	456	445	859
Mov Cap-2 Maneuver	-	-	-	-	-	-	411	440	-	456	445	-
Stage 1	-	-	-	-	-	-	655	620	-	788	748	-
Stage 2	-	-	-	-	-	-	743	741	-	655	620	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	0	11.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1380	-	-	1323	-	-	626
HCM Lane V/C Ratio	-	0.032	-	-	-	-	-	0.146
HCM Control Delay (s)	0	7.7	0	-	0	-	-	11.7
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	1	105	30	60	46	83	5	9	220	61	163	258
Future Volume (vph)	1	105	30	60	46	83	5	9	220	61	163	258
Peak Hour Factor	0.92	0.56	0.69	0.79	0.75	0.63	0.50	0.75	0.91	0.63	0.89	0.79
Adj. Flow (vph)	1	188	43	76	61	132	10	12	242	97	183	327
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	189	43	0	137	142	0	12	522	0	0	327
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0		13.0	80.0			80.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%		13.0%	80.0%			80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		15.5	15.5		15.5	15.5		75.5	75.5			75.5
Actuated g/C Ratio		0.16	0.16		0.16	0.16		0.76	0.76			0.76
v/c Ratio		0.66	0.18		1.01	0.58		0.02	0.21			0.51
Control Delay		51.7	38.8		123.8	49.7		1.6	2.0			11.0
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		51.7	38.8		123.8	49.7		1.6	2.0			11.0
LOS		D	D		F	D		A	A			B
Approach Delay		49.3			86.1				1.9			
Approach LOS		D			F				A			
Queue Length 50th (ft)		115	24		~89	85		1	23			78
Queue Length 95th (ft)		110	43		#162	100		m2	m24			m142
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		288	245		136	245		578	2458			645
Starvation Cap Reductn		0	0		0	0		0	0			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.66	0.18		1.01	0.58		0.02	0.21			0.51

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	637	5	62
Future Volume (vph)	637	5	62
Peak Hour Factor	0.91	0.92	0.80
Adj. Flow (vph)	700	5	78
Shared Lane Traffic (%)			
Lane Group Flow (vph)	705	0	78
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	67.0		67.0
Total Split (%)	67.0%		67.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	73.4		73.4
Actuated g/C Ratio	0.73		0.73
v/c Ratio	0.27		0.07
Control Delay	7.2		4.6
Queue Delay	0.0		0.0
Total Delay	7.2		4.6
LOS	A		A
Approach Delay	8.4		
Approach LOS	A		
Queue Length 50th (ft)	78		11
Queue Length 95th (ft)	m160		29
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2595		1182
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.27		0.07

Intersection Summary

1: Cedar Springs Road & Routh Street & Cole Avenue

Build
5217-22.027
Timing Plan: AM

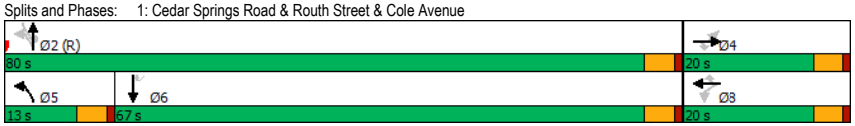
Intersection Signal Delay: 21.1	Intersection LOS: C
Intersection Capacity Utilization 51.2%	ICU Level of Service A
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



2: Cedar Springs Road & Fairmount Street

Build
5217-22.027
Timing Plan: AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	152	94	26	112	23	32	395	14	23	694	13
Future Volume (vph)	35	152	94	26	112	23	32	395	14	23	694	13
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	37	190	118	41	135	34	44	449	28	34	780	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	345	0	0	210	0	44	477	0	34	799	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26		0.66	0.66		0.66	0.66	
v/c Ratio		0.80			0.57		0.11	0.21		0.06	0.35	
Control Delay		50.8			39.8		6.0	5.9		4.5	5.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		50.8			39.8		6.0	5.9		4.5	5.4	
LOS		D			D		A	A		A	A	
Approach Delay		50.8			39.8			5.9			5.4	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		206			117		9	53		5	71	
Queue Length 95th (ft)		268			175		14	61		m8	m86	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		429			366		387	2297		574	2308	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.80			0.57		0.11	0.21		0.06	0.35	

Intersection Summary

Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	78	19	20	154	16	48	88	26	29	72	69
Future Vol, veh/h	35	78	19	20	154	16	48	88	26	29	72	69
Peak Hour Factor	0.66	0.89	0.69	0.70	0.79	0.50	0.50	0.81	0.61	0.79	0.81	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	88	28	29	195	32	96	109	43	37	89	88
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	11.9	11.7	10.9
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	27%	11%	17%
Vol Thru, %	54%	59%	81%	42%
Vol Right, %	16%	14%	8%	41%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	132	190	170
LT Vol	48	35	20	29
Through Vol	88	78	154	72
RT Vol	26	19	16	69
Lane Flow Rate	247	168	256	214
Geometry Grp	1	1	1	1
Degree of Util (X)	0.373	0.262	0.387	0.317
Departure Headway (Hd)	5.435	5.602	5.456	5.326
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	660	639	659	672
Service Time	3.484	3.654	3.502	3.376
HCM Lane V/C Ratio	0.374	0.263	0.388	0.318
HCM Control Delay	11.7	10.6	11.9	10.9
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.7	1	1.8	1.4

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	79	1	7	123	49	31	69	10	17	7	61
Future Vol, veh/h	50	79	1	7	123	49	31	69	10	17	7	61
Peak Hour Factor	0.68	0.85	0.50	0.75	0.90	0.50	0.50	0.67	0.50	0.50	0.50	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	93	2	9	137	98	62	103	20	34	14	77
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.8	10.1	10	8.9
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	38%	4%	20%
Vol Thru, %	63%	61%	69%	8%
Vol Right, %	9%	1%	27%	72%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	110	130	179	85
LT Vol	31	50	7	17
Through Vol	69	79	123	7
RT Vol	10	1	49	61
Lane Flow Rate	185	168	244	125
Geometry Grp	1	1	1	1
Degree of Util (X)	0.261	0.237	0.323	0.167
Departure Headway (Hd)	5.089	5.074	4.76	4.795
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	699	701	749	739
Service Time	3.173	3.159	2.837	2.884
HCM Lane V/C Ratio	0.265	0.24	0.326	0.169
HCM Control Delay	10	9.8	10.1	8.9
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	1	0.9	1.4	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	435	117	0	810
Future Vol, veh/h	0	7	435	117	0	810
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	50	92	77	92	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	473	152	0	920

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	313	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	683	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	683	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	683	-
HCM Lane V/C Ratio	-	-	0.02	-
HCM Control Delay (s)	-	-	10.4	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	29.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	129	94	306	95	74	102	87	19	23	20	71	25
Future Vol, veh/h	129	94	306	95	74	102	87	19	23	20	71	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	88	92	92	84	88	92	92	92	50	92	63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	163	107	333	103	88	116	95	21	25	40	77	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	204	0	0	440	0	0	1011	1010	274	975	1118	146
Stage 1	-	-	-	-	-	-	600	600	-	352	352	-
Stage 2	-	-	-	-	-	-	411	410	-	623	766	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1368	-	-	1120	-	-	218	240	765	231	207	901
Stage 1	-	-	-	-	-	-	488	490	-	665	632	-
Stage 2	-	-	-	-	-	-	618	595	-	474	412	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1368	-	-	1120	-	-	104	179	765	164	154	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	179	-	164	154	-
Stage 1	-	-	-	-	-	-	407	409	-	555	566	-
Stage 2	-	-	-	-	-	-	457	533	-	363	344	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	2.9	158.3	68.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	133	1368	-	-	1120	-	-	199
HCM Lane V/C Ratio	1.054	0.119	-	-	0.092	-	-	0.788
HCM Control Delay (s)	158.3	8	0	-	8.5	0	-	68.6
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	7.7	0.4	-	-	0.3	-	-	5.5

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	21	17	170	86	6
Future Vol, veh/h	16	21	17	170	86	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	23	18	185	93	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	318	97	100	0	-	0
Stage 1	97	-	-	-	-	-
Stage 2	221	-	-	-	-	-
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	675	959	1493	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	816	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	666	959	1493	-	-	-
Mov Cap-2 Maneuver	666	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	816	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1493	-	806	-	-
HCM Lane V/C Ratio	0.012	-	0.05	-	-
HCM Control Delay (s)	7.4	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	58	131	148	87	8	14
Future Vol, veh/h	58	131	148	87	8	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	-
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	63	142	161	95	9	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	256	0	-	0	477	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	268	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1309	-	-	-	547	831
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	777	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1309	-	-	-	519	831
Mov Cap-2 Maneuver	-	-	-	-	519	-
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	777	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1309	-	-	-	682
HCM Lane V/C Ratio	0.048	-	-	-	0.035
HCM Control Delay (s)	7.9	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	6	67	34	163	121	232	12	19	617	108	51	157
Future Volume (vph)	6	67	34	163	121	232	12	19	617	108	51	157
Peak Hour Factor	0.50	0.78	0.64	0.69	0.54	0.79	0.50	0.57	0.94	0.82	0.58	0.86
Adj. Flow (vph)	12	86	53	236	224	294	24	33	656	132	88	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	53	0	460	318	0	33	876	0	0	183
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0		13.0	80.0			80.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%		13.0%	80.0%			80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		15.5	15.5		15.5	15.5		75.5	75.5			75.5
Actuated g/C Ratio		0.16	0.16		0.16	0.16		0.76	0.76			0.76
v/c Ratio		0.94	0.22		2.08	1.30		0.05	0.34			0.42
Control Delay		118.6	39.6		526.6	196.8		1.4	1.8			12.4
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		118.6	39.6		526.6	196.8		1.4	1.8			12.4
LOS		F	D		F	F		A	A			B
Approach Delay		90.9			391.8				1.8			
Approach LOS		F			F				A			
Queue Length 50th (ft)		63	30		~466	~261		2	28			46
Queue Length 95th (ft)		#135	46		#336	#357		m3	m34			m105
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		104	245		221	245		704	2570			431
Starvation Cap Reductn		0	0		0	0		0	0			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.94	0.22		2.08	1.30		0.05	0.34			0.42

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.08

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	435	7	55
Future Volume (vph)	435	7	55
Peak Hour Factor	0.93	0.75	0.70
Adj. Flow (vph)	468	9	79
Shared Lane Traffic (%)			
Lane Group Flow (vph)	477	0	79
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	67.0		67.0
Total Split (%)	67.0%		67.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	69.1		69.1
Actuated g/C Ratio	0.69		0.69
v/c Ratio	0.20		0.07
Control Delay	10.3		6.3
Queue Delay	0.0		0.0
Total Delay	10.3		6.3
LOS	B		A
Approach Delay	10.9		
Approach LOS	B		
Queue Length 50th (ft)	64		17
Queue Length 95th (ft)	m110		26
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2437		1112
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.20		0.07

Intersection Summary

1: Cedar Springs Road & Routh Street & Cole Avenue

Build
5217-22.027
Timing Plan: PM

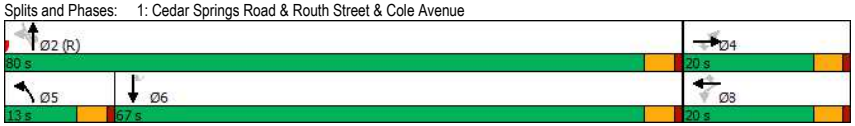
Intersection Signal Delay: 127.2	Intersection LOS: F
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



2: Cedar Springs Road & Fairmount Street

Build
5217-22.027
Timing Plan: PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	188	72	82	202	34	45	734	21	23	574	36
Future Volume (vph)	37	188	72	82	202	34	45	734	21	23	574	36
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	66	227	92	119	266	49	54	781	38	29	624	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	385	0	0	434	0	54	819	0	29	678	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26		0.66	0.66		0.66	0.66	
v/c Ratio		1.09			1.59		0.12	0.36		0.08	0.30	
Control Delay		111.3			310.8		6.1	6.9		3.8	4.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		111.3			310.8		6.1	6.9		3.8	4.8	
LOS		F			F		A	A		A	A	
Approach Delay		111.3			310.8			6.9			4.8	
Approach LOS		F			F			A			A	
Queue Length 50th (ft)		~278			~397		11	97		4	74	
Queue Length 95th (ft)		#406			#466		m20	120		m6	m74	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		353			273		451	2301		377	2290	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.09			1.59		0.12	0.36		0.08	0.30	

Intersection Summary

Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 1.59	
Intersection Signal Delay: 78.0	Intersection LOS: E
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	215	43	28	103	26	27	145	74	36	86	52
Future Vol, veh/h	56	215	43	28	103	26	27	145	74	36	86	52
Peak Hour Factor	0.75	0.88	0.63	0.79	0.68	0.59	0.75	0.86	0.85	0.71	0.59	0.73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	244	68	35	151	44	36	169	87	51	146	71
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	21.3	14.5	16.3	15.5
HCM LOS	C	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	18%	18%	21%
Vol Thru, %	59%	68%	66%	49%
Vol Right, %	30%	14%	17%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	246	314	157	174
LT Vol	27	56	28	36
Through Vol	145	215	103	86
RT Vol	74	43	26	52
Lane Flow Rate	292	387	231	268
Geometry Grp	1	1	1	1
Degree of Util (X)	0.519	0.672	0.423	0.482
Departure Headway (Hd)	6.411	6.248	6.593	6.488
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	560	577	543	551
Service Time	4.485	4.315	4.673	4.565
HCM Lane V/C Ratio	0.521	0.671	0.425	0.486
HCM Control Delay	16.3	21.3	14.5	15.5
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	3	5.1	2.1	2.6

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	81	171	10	4	137	32	23	122	24	60	11	98
Future Vol, veh/h	81	171	10	4	137	32	23	122	24	60	11	98
Peak Hour Factor	0.78	0.77	0.67	0.50	0.95	0.70	0.50	0.86	0.56	0.64	0.50	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	222	15	8	144	46	46	142	43	94	22	131
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.4	11.7	12.6	12.3
HCM LOS	C	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	31%	2%	36%
Vol Thru, %	72%	65%	79%	7%
Vol Right, %	14%	4%	18%	58%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	262	173	169
LT Vol	23	81	4	60
Through Vol	122	171	137	11
RT Vol	24	10	32	98
Lane Flow Rate	231	341	198	246
Geometry Grp	1	1	1	1
Degree of Util (X)	0.378	0.541	0.321	0.387
Departure Headway (Hd)	5.891	5.717	5.842	5.656
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	607	627	610	631
Service Time	3.977	3.792	3.932	3.742
HCM Lane V/C Ratio	0.381	0.544	0.325	0.39
HCM Control Delay	12.6	15.4	11.7	12.3
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	1.8	3.2	1.4	1.8

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	781	161	0	738
Future Vol, veh/h	0	13	781	161	0	738
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	55	90	85	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	24	868	189	0	802

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	529	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	494	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	494	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	494	-
HCM Lane V/C Ratio	-	-	0.048	-
HCM Control Delay (s)	-	-	12.7	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	125.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	194	97	39	129	11	291	61	88	34	77	36
Future Vol, veh/h	26	194	97	39	129	11	291	61	88	34	77	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	58	80	92	92	73	56	92	92	92	88	92	68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	243	105	42	177	20	316	66	96	39	84	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	197	0	0	348	0	0	726	667	296	738	709	187
Stage 1	-	-	-	-	-	-	386	386	-	271	271	-
Stage 2	-	-	-	-	-	-	340	281	-	467	438	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1376	-	-	1211	-	-	340	380	743	334	359	855
Stage 1	-	-	-	-	-	-	637	610	-	735	685	-
Stage 2	-	-	-	-	-	-	675	678	-	576	579	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1376	-	-	1211	-	-	~ 242	350	743	234	331	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 242	350	-	234	331	-
Stage 1	-	-	-	-	-	-	611	585	-	705	658	-
Stage 2	-	-	-	-	-	-	531	652	-	427	555	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	1.4	$ 328.1	23.6
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	294	1376	-	-	1211	-	-	365
HCM Lane V/C Ratio	1.627	0.033	-	-	0.035	-	-	0.48
HCM Control Delay (s)	$ 328.1	7.7	0	-	8.1	0	-	23.6
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	29.2	0.1	-	-	0.1	-	-	2.5

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

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	14	29	220	158	10
Future Vol, veh/h	10	14	29	220	158	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	15	32	239	172	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	481	178	183	0	-	0
Stage 1	178	-	-	-	-	-
Stage 2	303	-	-	-	-	-
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	544	865	1392	-	-	-
Stage 1	853	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	529	865	1392	-	-	-
Mov Cap-2 Maneuver	529	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	749	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1392	-	684	-	-
HCM Lane V/C Ratio	0.023	-	0.038	-	-
HCM Control Delay (s)	7.6	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	207	222	35	54	90
Future Vol, veh/h	27	207	222	35	54	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	225	241	38	59	98

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	279	0	-	0	543	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	283	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1284	-	-	-	501	779
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1284	-	-	-	488	779
Mov Cap-2 Maneuver	-	-	-	-	488	-
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	765	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1284	-	-	-	637
HCM Lane V/C Ratio	0.023	-	-	-	0.246
HCM Control Delay (s)	7.9	0	-	-	12.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	2	108	39	66	51	94	6	11	281	78	172	285
Future Volume (vph)	2	108	39	66	51	94	6	11	281	78	172	285
Peak Hour Factor	0.92	0.56	0.69	0.79	0.75	0.63	0.50	0.75	0.91	0.63	0.89	0.79
Adj. Flow (vph)	2	193	57	84	68	149	12	15	309	124	193	361
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	195	57	0	152	161	0	15	626	0	0	361
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0		13.0	80.0			80.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%		13.0%	80.0%			80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		15.5	15.5		15.5	15.5		75.5	75.5			75.5
Actuated g/C Ratio		0.16	0.16		0.16	0.16		0.76	0.76			0.76
v/c Ratio		0.68	0.23		1.16	0.66		0.03	0.25			0.63
Control Delay		53.0	39.9		168.1	53.7		1.5	1.9			14.7
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.4
Total Delay		53.0	39.9		168.1	53.7		1.5	1.9			15.1
LOS		D	D		F	D		A	A			B
Approach Delay		50.0			109.3				1.9			
Approach LOS		D			F				A			
Queue Length 50th (ft)		119	32		~115	98		1	24			131
Queue Length 95th (ft)		113	53		#187	111		m2	m27			m172
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		287	245		131	245		484	2468			575
Starvation Cap Reductn		0	0		0	0		0	0			30
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.68	0.23		1.16	0.66		0.03	0.25			0.66

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	813	6	79
Future Volume (vph)	813	6	79
Peak Hour Factor	0.91	0.92	0.80
Adj. Flow (vph)	893	7	99
Shared Lane Traffic (%)			
Lane Group Flow (vph)	900	0	99
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	67.0		67.0
Total Split (%)	67.0%		67.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	71.3		71.3
Actuated g/C Ratio	0.71		0.71
v/c Ratio	0.36		0.09
Control Delay	8.7		5.5
Queue Delay	0.4		0.0
Total Delay	9.1		5.5
LOS	A		A
Approach Delay	10.8		
Approach LOS	B		
Queue Length 50th (ft)	100		14
Queue Length 95th (ft)	m204		36
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2521		1149
Starvation Cap Reductn	1007		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.59		0.09

Intersection Summary

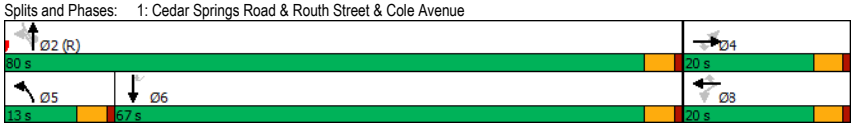
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	174	119	31	138	29	40	472	16	29	876	15
Future Volume (vph)	40	174	119	31	138	29	40	472	16	29	876	15
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	43	218	149	49	166	43	56	536	32	43	984	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	410	0	0	258	0	56	568	0	43	1006	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26		0.66	0.66		0.66	0.66	
v/c Ratio		0.99			0.79		0.19	0.25		0.08	0.44	
Control Delay		79.3			53.3		7.2	6.1		4.9	6.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		79.3			53.3		7.2	6.1		4.9	6.0	
LOS		E			D		A	A		A	A	
Approach Delay		79.3			53.3			6.2			5.9	
Approach LOS		E			D			A			A	
Queue Length 50th (ft)		260			153		12	64		6	95	
Queue Length 95th (ft)		#373			#243		19	73		m10	m113	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		416			328		295	2299		516	2311	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.99			0.79		0.19	0.25		0.08	0.44	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 50		
Control Type: Pretimed		
Maximum v/c Ratio: 0.99		
Intersection Signal Delay: 24.1	Intersection LOS: C	
Intersection Capacity Utilization 63.3%	ICU Level of Service B	
Analysis Period (min) 15		

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	8	78	43	171	130	252	16	25	788	138	58	183
Future Volume (vph)	8	78	43	171	130	252	16	25	788	138	58	183
Peak Hour Factor	0.50	0.78	0.64	0.69	0.54	0.79	0.50	0.57	0.94	0.82	0.58	0.86
Adj. Flow (vph)	16	100	67	248	241	319	32	44	838	168	100	213
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	116	67	0	489	351	0	44	1106	0	0	213
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0		13.0	80.0			80.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%		13.0%	80.0%			80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		15.5	15.5		15.5	15.5		75.5	75.5			75.5
Actuated g/C Ratio		0.16	0.16		0.16	0.16		0.76	0.76			0.76
v/c Ratio		1.32	0.27		2.37	1.43		0.07	0.43			0.65
Control Delay		239.4	40.7		655.1	250.0		1.5	1.9			22.9
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		239.4	40.7		655.1	250.0		1.5	1.9			22.9
LOS		F	D		F	F		A	A			C
Approach Delay		166.7			485.8				1.9			
Approach LOS		F			F				A			
Queue Length 50th (ft)		~96	38		~515	~305		2	37			91
Queue Length 95th (ft)		#172	55		#372	#401		m3	m42			m150
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		88	245		206	245		623	2576			327
Starvation Cap Reductn		0	0		0	0		0	173			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		1.32	0.27		2.37	1.43		0.07	0.46			0.65

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.37

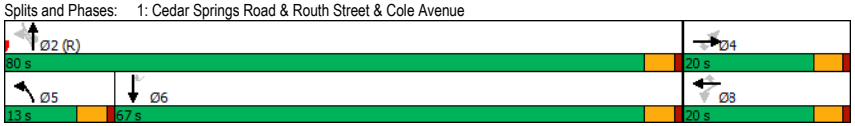
Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	555	9	70
Future Volume (vph)	555	9	70
Peak Hour Factor	0.93	0.75	0.70
Adj. Flow (vph)	597	12	100
Shared Lane Traffic (%)			
Lane Group Flow (vph)	609	0	100
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	67.0		67.0
Total Split (%)	67.0%		67.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	68.9		68.9
Actuated g/C Ratio	0.69		0.69
v/c Ratio	0.25		0.09
Control Delay	10.1		6.4
Queue Delay	0.0		0.0
Total Delay	10.1		6.4
LOS	B		A
Approach Delay	13.4		
Approach LOS	B		
Queue Length 50th (ft)	120		22
Queue Length 95th (ft)	m147		32
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2432		1110
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.25		0.09

Intersection Summary

Intersection Signal Delay: 146.2	Intersection LOS: F
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	232	92	90	238	43	57	931	25	29	700	42
Future Volume (vph)	46	232	92	90	238	43	57	931	25	29	700	42
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	82	280	118	130	313	61	68	990	45	37	761	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	480	0	0	504	0	68	1035	0	37	824	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26		0.66	0.66		0.66	0.66	
v/c Ratio		1.46			2.04		0.18	0.45		0.13	0.36	
Control Delay		253.1			506.0		7.3	7.8		4.8	5.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		253.1			506.0		7.3	7.8		4.8	5.5	
LOS		F			F		A	A		A	A	
Approach Delay		253.1			506.0			7.8			5.5	
Approach LOS		F			F			A			A	
Queue Length 50th (ft)		~420			~507		15	131		6	102	
Queue Length 95th (ft)		#551			#571		27	158		m9	m100	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		329			247		375	2301		284	2292	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.46			2.04		0.18	0.45		0.13	0.36	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 45		
Control Type: Pretimed		
Maximum v/c Ratio: 2.04		
Intersection Signal Delay: 132.2	Intersection LOS: F	
Intersection Capacity Utilization 77.1%	ICU Level of Service D	
Analysis Period (min) 15		

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	152	94	26	112	23	32	395	14	23	694	13
Future Volume (vph)	35	152	94	26	112	23	32	395	14	23	694	13
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	37	190	118	41	135	34	44	449	28	34	780	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	345	0	0	176	34	44	477	0	34	799	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5	25.5	65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26	0.26	0.66	0.66		0.66	0.66	
v/c Ratio		0.80			0.49	0.08	0.11	0.21		0.06	0.35	
Control Delay		50.6			37.1	29.2	6.0	5.9		4.5	5.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		50.6			37.1	29.2	6.0	5.9		4.5	5.4	
LOS		D			D	C	A	A		A	A	
Approach Delay		50.6			35.8			5.9			5.4	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		206			96	17	9	53		5	71	
Queue Length 95th (ft)		268			148	31	14	61		m8	m86	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)						50	75			81		
Base Capacity (vph)		430			361	403	387	2297		574	2308	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.80			0.49	0.08	0.11	0.21		0.06	0.35	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 45		
Control Type: Pretimed		
Maximum v/c Ratio: 0.80		
Intersection Signal Delay: 17.0	Intersection LOS: B	
Intersection Capacity Utilization 56.4%	ICU Level of Service B	
Analysis Period (min) 15		
m Volume for 95th percentile queue is metered by upstream signal.		

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	1	105	30	60	46	83	5	9	220	61	163	258
Future Volume (vph)	1	105	30	60	46	83	5	9	220	61	163	258
Confl. Peds. (#/hr)	20		20	20		20	20	20		20	20	20
Peak Hour Factor	0.92	0.56	0.69	0.79	0.75	0.63	0.50	0.75	0.91	0.63	0.89	0.79
Adj. Flow (vph)	1	188	43	76	61	132	10	12	242	97	183	327
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	189	43	0	137	142	0	12	522	0	0	327
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0		10.0	72.0			72.0
Total Split (%)	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%		10.0%	72.0%			72.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		16.7	16.7		16.7	16.7		74.3	74.3			74.3
Actuated g/C Ratio		0.17	0.17		0.17	0.17		0.74	0.74			0.74
v/c Ratio		0.61	0.17		0.90	0.62		0.02	0.23			0.53
Control Delay		46.3	34.9		90.9	49.5		2.0	1.9			12.1
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		46.3	34.9		90.9	49.5		2.0	1.9			12.1
LOS		D	C		F	D		A	A			B
Approach Delay		44.1			69.8				1.9			
Approach LOS		D			E				A			
Queue Length 50th (ft)		113	24		87	85		1	14			84
Queue Length 95th (ft)		99	39		118	91		m2	24			m169
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		437	355		214	324		529	2252			617
Starvation Cap Reductn		0	0		0	0		0	0			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.43	0.12		0.64	0.44		0.02	0.23			0.53

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	637	5	62
Future Volume (vph)	637	5	62
Confl. Peds. (#/hr)		20	20
Peak Hour Factor	0.91	0.92	0.80
Adj. Flow (vph)	700	5	78
Shared Lane Traffic (%)			
Lane Group Flow (vph)	705	0	78
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	62.0		62.0
Total Split (%)	62.0%		62.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	72.3		72.3
Actuated g/C Ratio	0.72		0.72
v/c Ratio	0.28		0.07
Control Delay	7.3		6.1
Queue Delay	0.0		0.0
Total Delay	7.3		6.1
LOS	A		A
Approach Delay	8.8		
Approach LOS	A		
Queue Length 50th (ft)	84		11
Queue Length 95th (ft)	m180		37
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2555		1112
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.28		0.07

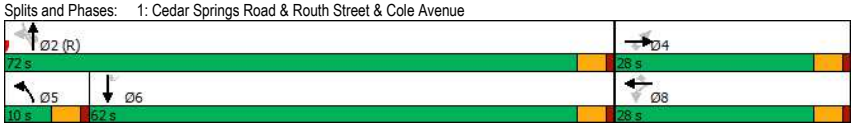
Intersection Summary

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 65.7%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	152	94	26	112	23	32	395	14	23	694	13
Future Volume (vph)	35	152	94	26	112	23	32	395	14	23	694	13
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	37	190	118	41	135	34	44	449	28	34	780	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	345	0	0	210	0	44	477	0	34	799	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		45.5			45.5		45.5	45.5		45.5	45.5	
Actuated g/C Ratio		0.46			0.46		0.46	0.46		0.46	0.46	
v/c Ratio		0.46			0.29		0.20	0.30		0.09	0.50	
Control Delay		21.2			18.5		15.8	14.2		11.6	14.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		21.2			18.5		15.8	14.2		11.6	14.2	
LOS		C			B		B	B		B	B	
Approach Delay		21.2			18.5			14.4			14.1	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		147			82		14	83		9	115	
Queue Length 95th (ft)		191			121		25	104		m15	132	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		755			728		215	1588		358	1601	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.46			0.29		0.20	0.30		0.09	0.50	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 16.0	Intersection LOS: B
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	152	94	26	112	23	32	395	14	23	694	13
Future Volume (vph)	35	152	94	26	112	23	32	395	14	23	694	13
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	37	190	118	41	135	34	44	449	28	34	780	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	345	0	0	176	34	44	477	0	34	799	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	50.0	50.0		50.0	50.0	50.0	50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		45.5			45.5	45.5	45.5	45.5		45.5	45.5	
Actuated g/C Ratio		0.46			0.46	0.46	0.46	0.46		0.46	0.46	
v/c Ratio		0.46			0.24	0.05	0.20	0.30		0.09	0.50	
Control Delay		21.2			17.8	15.6	15.8	14.2		11.6	14.2	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		21.2			17.8	15.6	15.8	14.2		11.6	14.2	
LOS		C			B	B	B	B		B	B	
Approach Delay		21.2			17.4			14.4			14.1	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		147			67	12	14	83		9	115	
Queue Length 95th (ft)		190			102	22	25	104		m15	132	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)						50	75			81		
Base Capacity (vph)		758			734	688	215	1588		358	1601	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.46			0.24	0.05	0.20	0.30		0.09	0.50	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	188	72	82	202	34	45	734	21	23	574	36
Future Volume (vph)	37	188	72	82	202	34	45	734	21	23	574	36
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	66	227	92	119	266	49	54	781	38	29	624	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	385	0	0	385	49	54	819	0	29	678	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5	25.5	65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26	0.26	0.66	0.66		0.66	0.66	
v/c Ratio		1.94			1.46	0.12	0.12	0.36		0.08	0.30	
Control Delay		467.8			256.6	29.7	6.1	6.9		3.8	4.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		467.8			256.6	29.7	6.1	6.9		3.8	4.8	
LOS		F			F	C	A	A		A	A	
Approach Delay		467.8			231.0			6.9			4.8	
Approach LOS		F			F			A			A	
Queue Length 50th (ft)		~382			~337	24	11	97		4	74	
Queue Length 95th (ft)		#510			#411	42	m20	120		m6	m74	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		198			264	403	451	2301		377	2290	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		1.94			1.46	0.12	0.12	0.36		0.08	0.30	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 45		
Control Type: Pretimed		
Maximum v/c Ratio: 1.94		
Intersection Signal Delay: 120.8	Intersection LOS: F	
Intersection Capacity Utilization 71.6%	ICU Level of Service C	
Analysis Period (min) 15		

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	6	67	34	163	121	232	12	19	617	108	51	157
Future Volume (vph)	6	67	34	163	121	232	12	19	617	108	51	157
Confl. Peds. (#/hr)	20		20	20		20	20	20		20	20	20
Peak Hour Factor	0.50	0.78	0.64	0.69	0.54	0.79	0.50	0.57	0.94	0.82	0.58	0.86
Adj. Flow (vph)	12	86	53	236	224	294	24	33	656	132	88	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	53	0	460	318	0	33	876	0	0	183
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0		9.5	57.0			57.0
Total Split (%)	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%		9.5%	57.0%			57.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		35.7	35.7		35.7	35.7		55.3	55.3			55.3
Actuated g/C Ratio		0.36	0.36		0.36	0.36		0.55	0.55			0.55
v/c Ratio		0.16	0.10		0.89	0.65		0.07	0.48			0.69
Control Delay		21.5	20.6		51.3	33.2		3.6	4.2			34.8
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		21.5	20.6		51.3	33.2		3.6	4.2			34.8
LOS		C	C		D	C		A	A			C
Approach Delay		21.2			43.9				4.1			
Approach LOS		C			D				A			
Queue Length 50th (ft)		40	21		260	159		3	38			102
Queue Length 95th (ft)		65	33		187	210		4	45			m155
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		672	582		555	530		459	1821			264
Starvation Cap Reductn		0	0		0	0		0	0			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.15	0.09		0.83	0.60		0.07	0.48			0.69

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	435	7	55
Future Volume (vph)	435	7	55
Confl. Peds. (#/hr)		20	20
Peak Hour Factor	0.93	0.75	0.70
Adj. Flow (vph)	468	9	79
Shared Lane Traffic (%)			
Lane Group Flow (vph)	477	0	79
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	47.5		47.5
Total Split (%)	47.5%		47.5%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	49.6		49.6
Actuated g/C Ratio	0.50		0.50
v/c Ratio	0.27		0.10
Control Delay	16.9		16.6
Queue Delay	0.0		0.0
Total Delay	16.9		16.6
LOS	B		B
Approach Delay	21.8		
Approach LOS	C		
Queue Length 50th (ft)	125		30
Queue Length 95th (ft)	m153		45
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	1748		763
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.27		0.10

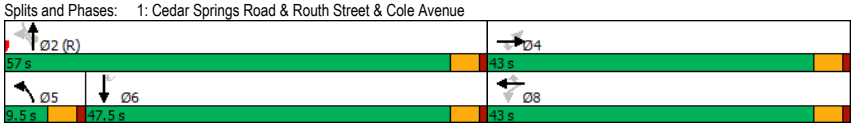
Intersection Summary

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue

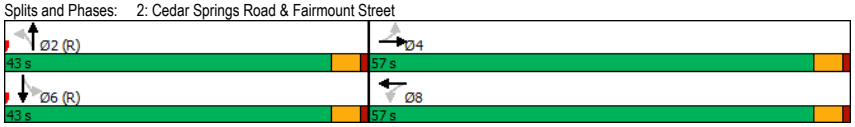


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	188	72	82	202	34	45	734	21	23	574	36
Future Volume (vph)	37	188	72	82	202	34	45	734	21	23	574	36
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	66	227	92	119	266	49	54	781	38	29	624	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	385	0	0	434	0	54	819	0	29	678	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	57.0	57.0		57.0	57.0		43.0	43.0		43.0	43.0	
Total Split (%)	57.0%	57.0%		57.0%	57.0%		43.0%	43.0%		43.0%	43.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		52.5			52.5		38.5	38.5		38.5	38.5	
Actuated g/C Ratio		0.52			0.52		0.38	0.38		0.38	0.38	
v/c Ratio		0.47			0.58		0.27	0.61		0.20	0.51	
Control Delay		17.5			20.0		21.4	22.0		15.5	15.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		17.5			20.0		21.4	22.0		15.5	15.6	
LOS		B			C		C	C		B	B	
Approach Delay		17.5			20.0			22.0			15.6	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)		148			179		20	171		9	119	
Queue Length 95th (ft)		201			212		m42	211		m17	m145	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		811			753		200	1348		148	1338	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.47			0.58		0.27	0.61		0.20	0.51	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 19.0	Intersection LOS: B
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	188	72	82	202	34	45	734	21	23	574	36
Future Volume (vph)	37	188	72	82	202	34	45	734	21	23	574	36
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	66	227	92	119	266	49	54	781	38	29	624	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	385	0	0	385	49	54	819	0	29	678	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	43.0	43.0		43.0	43.0	
Total Split (%)	57.0%	57.0%		57.0%	57.0%	57.0%	43.0%	43.0%		43.0%	43.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		52.5			52.5	52.5	38.5	38.5		38.5	38.5	
Actuated g/C Ratio		0.52			0.52	0.52	0.38	0.38		0.38	0.38	
v/c Ratio		0.47			0.51	0.06	0.27	0.61		0.20	0.51	
Control Delay		17.4			18.5	12.0	21.4	22.0		15.5	15.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		17.4			18.5	12.0	21.4	22.0		15.5	15.6	
LOS		B			B	B	C	C		B	B	
Approach Delay		17.4			17.8			22.0			15.6	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)		147			152	15	20	171		9	119	
Queue Length 95th (ft)		200			183	25	m42	211		m17	m145	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)						50	75			81		
Base Capacity (vph)		820			749	794	200	1348		148	1338	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.47			0.51	0.06	0.27	0.61		0.20	0.51	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 18.6	Intersection LOS: B
Intersection Capacity Utilization 72.1%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	174	119	31	138	29	40	472	16	29	876	15
Future Volume (vph)	40	174	119	31	138	29	40	472	16	29	876	15
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	43	218	149	49	166	43	56	536	32	43	984	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	410	0	0	215	43	56	568	0	43	1006	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5	25.5	65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26	0.26	0.66	0.66		0.66	0.66	
v/c Ratio		0.98			0.67	0.11	0.19	0.25		0.08	0.44	
Control Delay		76.8			45.2	29.5	7.2	6.1		4.9	6.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		76.8			45.2	29.5	7.2	6.1		4.9	6.0	
LOS		E			D	C	A	A		A	A	
Approach Delay		76.8			42.6			6.2			5.9	
Approach LOS		E			D			A			A	
Queue Length 50th (ft)		260			123	21	12	64		6	95	
Queue Length 95th (ft)		#371			187	36	19	73		m10	m113	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)						50	75			81		
Base Capacity (vph)		420			321	403	295	2299		516	2311	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.98			0.67	0.11	0.19	0.25		0.08	0.44	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 50		
Control Type: Pretimed		
Maximum v/c Ratio: 0.98		
Intersection Signal Delay: 22.5	Intersection LOS: C	
Intersection Capacity Utilization 71.5%	ICU Level of Service C	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	2	108	39	66	51	94	6	11	281	78	172	285
Future Volume (vph)	2	108	39	66	51	94	6	11	281	78	172	285
Confl. Peds. (#/hr)	20		20	20		20	20	20		20	20	20
Peak Hour Factor	0.92	0.56	0.69	0.79	0.75	0.63	0.50	0.75	0.91	0.63	0.89	0.79
Adj. Flow (vph)	2	193	57	84	68	149	12	15	309	124	193	361
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	195	57	0	152	161	0	15	626	0	0	361
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0		10.0	72.0			72.0
Total Split (%)	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%		10.0%	72.0%			72.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		17.9	17.9		17.9	17.9		73.1	73.1			73.1
Actuated g/C Ratio		0.18	0.18		0.18	0.18		0.73	0.73			0.73
v/c Ratio		0.59	0.21		0.92	0.65		0.04	0.28			0.67
Control Delay		44.0	34.7		91.4	49.9		2.2	2.2			18.3
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.1
Total Delay		44.0	34.7		91.4	49.9		2.2	2.2			18.4
LOS		D	C		F	D		A	A			B
Approach Delay		41.9			70.0				2.2			
Approach LOS		D			E				A			
Queue Length 50th (ft)		114	31		95	95		1	19			142
Queue Length 95th (ft)		101	47		130	101		m3	30			m211
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		436	355		217	324		426	2234			540
Starvation Cap Reductn		0	0		0	0		0	0			6
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.45	0.16		0.70	0.50		0.04	0.28			0.68

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	813	6	79
Future Volume (vph)	813	6	79
Confl. Peds. (#/hr)		20	20
Peak Hour Factor	0.91	0.92	0.80
Adj. Flow (vph)	893	7	99
Shared Lane Traffic (%)			
Lane Group Flow (vph)	900	0	99
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	62.0		62.0
Total Split (%)	62.0%		62.0%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	69.0		69.0
Actuated g/C Ratio	0.69		0.69
v/c Ratio	0.37		0.09
Control Delay	9.6		7.6
Queue Delay	0.3		0.0
Total Delay	10.0		7.6
LOS	A		A
Approach Delay	12.4		
Approach LOS	B		
Queue Length 50th (ft)	112		16
Queue Length 95th (ft)	m232		45
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	2438		1061
Starvation Cap Reductn	883		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.58		0.09

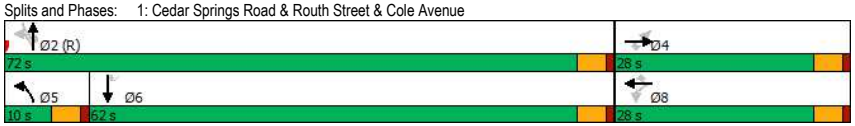
Intersection Summary

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 19.6	Intersection LOS: B
Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	174	119	31	138	29	40	472	16	29	876	15
Future Volume (vph)	40	174	119	31	138	29	40	472	16	29	876	15
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	43	218	149	49	166	43	56	536	32	43	984	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	410	0	0	258	0	56	568	0	43	1006	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		45.5			45.5		45.5	45.5		45.5	45.5	
Actuated g/C Ratio		0.46			0.46		0.46	0.46		0.46	0.46	
v/c Ratio		0.55			0.36		0.39	0.36		0.14	0.63	
Control Delay		23.3			19.6		23.5	14.7		12.4	15.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		23.3			19.6		23.5	14.7		12.4	15.8	
LOS		C			B		C	B		B	B	
Approach Delay		23.3			19.6			15.5			15.7	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		184			104		19	99		11	146	
Queue Length 95th (ft)		234			149		33	125		m18	168	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		746			717		143	1590		313	1602	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.55			0.36		0.39	0.36		0.14	0.63	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	174	119	31	138	29	40	472	16	29	876	15
Future Volume (vph)	40	174	119	31	138	29	40	472	16	29	876	15
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Peak Hour Factor	0.94	0.80	0.80	0.63	0.83	0.68	0.72	0.88	0.50	0.68	0.89	0.67
Adj. Flow (vph)	43	218	149	49	166	43	56	536	32	43	984	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	410	0	0	215	43	56	568	0	43	1006	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	50.0	50.0		50.0	50.0	50.0	50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		45.5			45.5	45.5	45.5	45.5		45.5	45.5	
Actuated g/C Ratio		0.46			0.46	0.46	0.46	0.46		0.46	0.46	
v/c Ratio		0.55			0.30	0.06	0.39	0.36		0.14	0.63	
Control Delay		23.2			18.6	15.7	23.1	14.7		12.4	15.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		23.2			18.6	15.7	23.1	14.7		12.4	15.8	
LOS		C			B	B	C	B		B	B	
Approach Delay		23.2			18.1			15.5			15.7	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		184			84	15	19	99		11	146	
Queue Length 95th (ft)		233			124	26	33	125		m18	168	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)						50	75			81		
Base Capacity (vph)		750			722	688	145	1590		313	1602	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.55			0.30	0.06	0.39	0.36		0.14	0.63	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 17.2	Intersection LOS: B
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	232	92	90	238	43	57	931	25	29	700	42
Future Volume (vph)	46	232	92	90	238	43	57	931	25	29	700	42
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	82	280	118	130	313	61	68	990	45	37	761	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	480	0	0	443	61	68	1035	0	37	824	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		25.5			25.5	25.5	65.5	65.5		65.5	65.5	
Actuated g/C Ratio		0.26			0.26	0.26	0.66	0.66		0.66	0.66	
v/c Ratio		4.29			1.88	0.15	0.18	0.45		0.13	0.36	
Control Delay		1512.0			435.9	30.2	7.3	7.8		4.8	5.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		1512.0			435.9	30.2	7.3	7.8		4.8	5.5	
LOS		F			F	C	A	A		A	A	
Approach Delay		1512.0			386.8			7.8			5.5	
Approach LOS		F			F			A			A	
Queue Length 50th (ft)		~509			~433	30	15	131		6	102	
Queue Length 95th (ft)		#643			#503	49	27	158		m9	m100	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)						50	75			81		
Base Capacity (vph)		112			236	403	375	2301		284	2292	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		4.29			1.88	0.15	0.18	0.45		0.13	0.36	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 4.29	
Intersection Signal Delay: 316.8	Intersection LOS: F
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL
Lane Configurations												
Traffic Volume (vph)	8	78	43	171	130	252	16	25	788	138	58	183
Future Volume (vph)	8	78	43	171	130	252	16	25	788	138	58	183
Confl. Peds. (#/hr)	20		20	20		20	20	20		20	20	20
Peak Hour Factor	0.50	0.78	0.64	0.69	0.54	0.79	0.50	0.57	0.94	0.82	0.58	0.86
Adj. Flow (vph)	16	100	67	248	241	319	32	44	838	168	100	213
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	116	67	0	489	351	0	44	1106	0	0	213
Turn Type	Perm	NA	Perm	Perm	NA	Perm		pm+pt	NA			D.Pm
Protected Phases		4			8			5	2			
Permitted Phases	4		4	8		8		2				2
Detector Phase	4	4	4	8	8	8		5	2			2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5		9.5	22.5			22.5
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0		9.5	57.0			57.0
Total Split (%)	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%		9.5%	57.0%			57.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5			3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0			1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5		4.5	4.5			4.5
Lead/Lag								Lead				
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None		None	C-Max			C-Max
Act Effct Green (s)		37.0	37.0		37.0	37.0		54.0	54.0			54.0
Actuated g/C Ratio		0.37	0.37		0.37	0.37		0.54	0.54			0.54
v/c Ratio		0.19	0.12		0.92	0.69		0.11	0.62			1.22
Control Delay		21.7	20.7		55.4	34.5		3.5	4.4			165.1
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay		21.7	20.7		55.4	34.5		3.5	4.4			165.1
LOS		C	C		E	C		A	A			F
Approach Delay		21.3			46.6				4.4			
Approach LOS		C			D				A			
Queue Length 50th (ft)		48	27		286	181		4	47			~173
Queue Length 95th (ft)		74	39		201	235		m4	55			m#266
Internal Link Dist (ft)		208			246				484			
Turn Bay Length (ft)						50		60				87
Base Capacity (vph)		637	582		551	530		383	1786			175
Starvation Cap Reductn		0	0		0	0		0	46			0
Spillback Cap Reductn		0	0		0	0		0	0			0
Storage Cap Reductn		0	0		0	0		0	0			0
Reduced v/c Ratio		0.18	0.12		0.89	0.66		0.11	0.64			1.22

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Lane Group	SBT	SBR	SWR2
Lane Configurations			
Traffic Volume (vph)	555	9	70
Future Volume (vph)	555	9	70
Confl. Peds. (#/hr)		20	20
Peak Hour Factor	0.93	0.75	0.70
Adj. Flow (vph)	597	12	100
Shared Lane Traffic (%)			
Lane Group Flow (vph)	609	0	100
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Detector Phase	6		6
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	22.5		22.5
Total Split (s)	47.5		47.5
Total Split (%)	47.5%		47.5%
Yellow Time (s)	3.5		3.5
All-Red Time (s)	1.0		1.0
Lost Time Adjust (s)	0.0		0.0
Total Lost Time (s)	4.5		4.5
Lead/Lag	Lag		Lag
Lead-Lag Optimize?			
Recall Mode	None		None
Act Effct Green (s)	48.3		48.3
Actuated g/C Ratio	0.48		0.48
v/c Ratio	0.36		0.13
Control Delay	18.4		17.0
Queue Delay	0.0		0.0
Total Delay	18.4		17.0
LOS	B		B
Approach Delay	56.4		
Approach LOS	E		
Queue Length 50th (ft)	160		38
Queue Length 95th (ft)	m195		54
Internal Link Dist (ft)	352		
Turn Bay Length (ft)			
Base Capacity (vph)	1702		743
Starvation Cap Reductn	0		0
Spillback Cap Reductn	0		0
Storage Cap Reductn	0		0
Reduced v/c Ratio	0.36		0.13

Intersection Summary

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 31.1	Intersection LOS: C
Intersection Capacity Utilization 84.3%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Cedar Springs Road & Routh Street & Cole Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	232	92	90	238	43	57	931	25	29	700	42
Future Volume (vph)	46	232	92	90	238	43	57	931	25	29	700	42
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	82	280	118	130	313	61	68	990	45	37	761	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	480	0	0	504	0	68	1035	0	37	824	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	57.0	57.0		57.0	57.0		43.0	43.0		43.0	43.0	
Total Split (%)	57.0%	57.0%		57.0%	57.0%		43.0%	43.0%		43.0%	43.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		52.5			52.5		38.5	38.5		38.5	38.5	
Actuated g/C Ratio		0.52			0.52		0.38	0.38		0.38	0.38	
v/c Ratio		0.61			0.70		0.46	0.77		0.45	0.62	
Control Delay		20.6			24.6		31.8	27.4		33.0	17.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		20.6			24.6		31.8	27.4		33.0	17.7	
LOS		C			C		C	C		C	B	
Approach Delay		20.6			24.6			27.7			18.4	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		203			230		27	233		12	141	
Queue Length 95th (ft)		270			267		58	385		m25	m190	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)							75			81		
Base Capacity (vph)		792			716		147	1348		83	1339	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.61			0.70		0.46	0.77		0.45	0.62	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 23.3	Intersection LOS: C
Intersection Capacity Utilization 77.4%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	232	92	90	238	43	57	931	25	29	700	42
Future Volume (vph)	46	232	92	90	238	43	57	931	25	29	700	42
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Peak Hour Factor	0.56	0.83	0.78	0.69	0.76	0.70	0.84	0.94	0.55	0.79	0.92	0.67
Adj. Flow (vph)	82	280	118	130	313	61	68	990	45	37	761	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	480	0	0	443	61	68	1035	0	37	824	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	43.0	43.0		43.0	43.0	
Total Split (%)	57.0%	57.0%		57.0%	57.0%	57.0%	43.0%	43.0%		43.0%	43.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		52.5			52.5	52.5	38.5	38.5		38.5	38.5	
Actuated g/C Ratio		0.52			0.52	0.52	0.38	0.38		0.38	0.38	
v/c Ratio		0.64			0.63	0.08	0.46	0.77		0.45	0.62	
Control Delay		21.8			21.7	12.2	31.8	27.4		33.0	17.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		21.8			21.7	12.2	31.8	27.4		33.0	17.7	
LOS		C			C	B	C	C		C	B	
Approach Delay		21.8			20.6			27.7			18.4	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		208			190	18	27	233		12	141	
Queue Length 95th (ft)		279			225	30	58	385		m25	m190	
Internal Link Dist (ft)		511			117			360			484	
Turn Bay Length (ft)						50	75			81		
Base Capacity (vph)		754			708	794	147	1348		83	1339	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.64			0.63	0.08	0.46	0.77		0.45	0.62	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 22.8	Intersection LOS: C
Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	

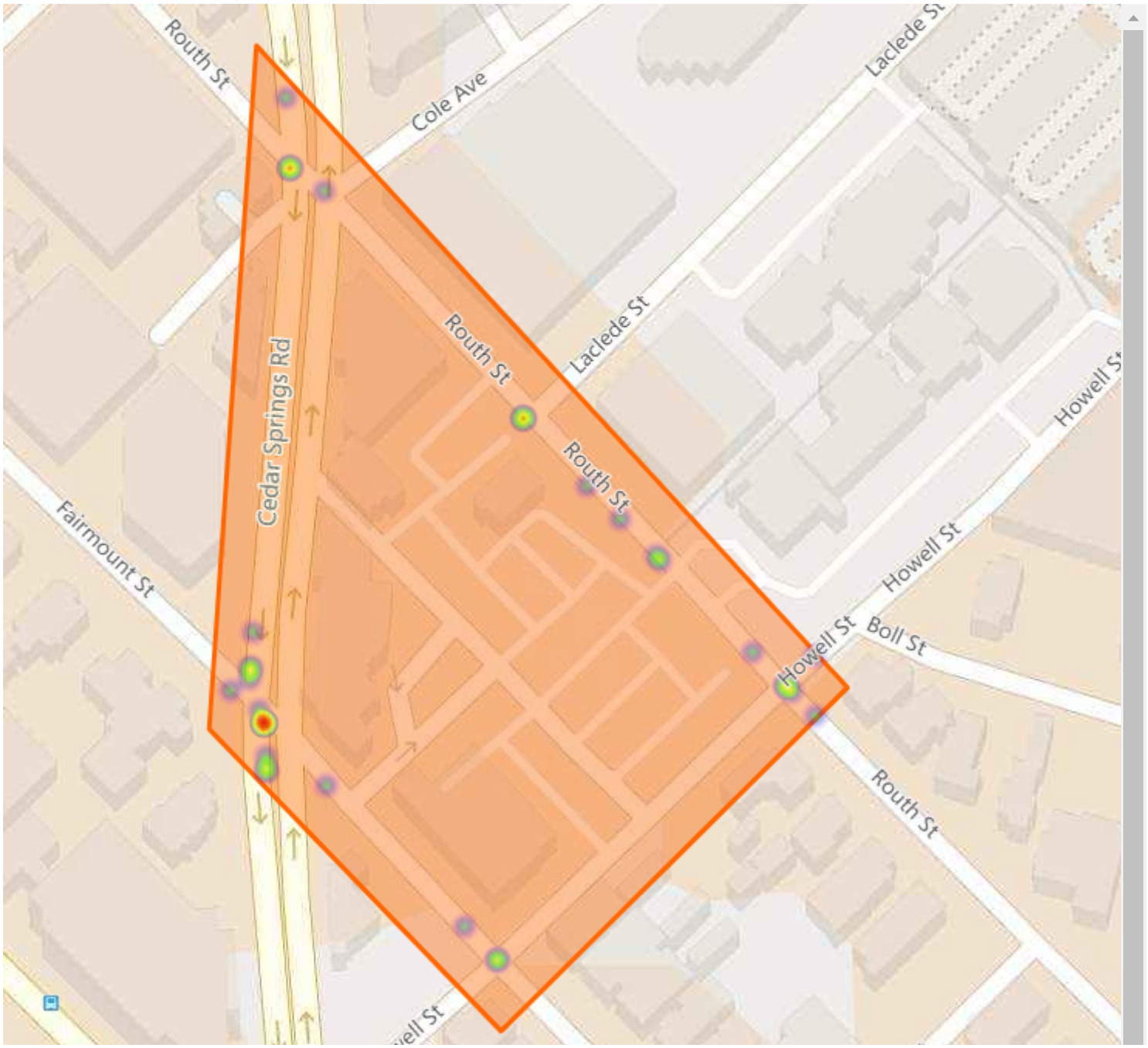
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Cedar Springs Road & Fairmount Street

APPENDIX E. Site Access Evaluation Supplement

C.R.I.S. QUERY
Crash Records Information System

All crash data available using this tool represents reportable data collected from Texas Peace Officer's Crash Reports (CR-3) received and processed by the Texas Department of Transportation (Department) as of 07/05/2022. The Department makes no warranty, representation or guaranty as to the content, accuracy, timeliness or completeness of any of the information provided as a result of your query. Any opinions and conclusions resulting from analysis performed on the crash data must be represented as your own and not those of the State of Texas or the Department.



Query Result Counts:
Your query returned a total of 37 Crashes containing 81 Units and 87 Persons

Filters Applied to current Query:
Crash Date Is Between 2019-01-01 00:00 and 2021-12-31 23:59

Crash ID	At Intersec	Case ID	Crash Date	Crash Deat	Crash Severity	Crash Susp	Crash Time	Day of Week	First Harmful Event	Street Name	Intersecting Street Name	Manner of Collision	Object Struck	Other Factor	Physical Feature 1	Light Condition	Surface Condition	Weather Condition	Contributing Factor 1	Contributing Factor 2	Driver Alcohol Result	Charge	Citation
16880893	FALSE	022208-2019	2/2/2019	0	C - POSSIBLE INJURY	0	209	SATURDAY	FIXED OBJECT	CEDAR SPRINGS RD	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	HIT TREE, SHRUB, LANDSCAPING	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	23 - FAILED TO DRIVE IN SINGLE LANE	No Data	No Data	NO CHARGES	No Data
16892918	TRUE	026548-2019	2/8/2019	0	N - NOT INJURED	0	1020	FRIDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	FAIRMOUNT ST	OPPOSITE DIRECTION - ONE STRAIGHT-ONE LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	37 - FAILED TO YIELD RIGHT OF WAY - TURNING LEFT	No Data	No Data	NO CHARGES	No Data
16892918	TRUE	026548-2019	2/8/2019	0	N - NOT INJURED	0	1020	FRIDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	FAIRMOUNT ST	OPPOSITE DIRECTION - ONE STRAIGHT-ONE LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
16927771	FALSE	42717-2019	3/1/2019	0	N - NOT INJURED	0	2308	FRIDAY	FIXED OBJECT	CEDAR SPRINGS RD	FAIRMOUNT ST	ONE MOTOR VEHICLE - TURNING LEFT	HIT TREE, SHRUB, LANDSCAPING	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	2 - WET	3 - RAIN	66 - TURNED WHEN UNSAFE	No Data	No Data	NO CHARGES	No Data
16927771	FALSE	42717-2019	3/1/2019	0	N - NOT INJURED	0	2308	FRIDAY	FIXED OBJECT	CEDAR SPRINGS RD	FAIRMOUNT ST	ONE MOTOR VEHICLE - TURNING LEFT	HIT TREE, SHRUB, LANDSCAPING	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	2 - WET	3 - RAIN	66 - TURNED WHEN UNSAFE	No Data	No Data	NO CHARGES	No Data
16927771	FALSE	42717-2019	3/1/2019	0	N - NOT INJURED	0	2308	FRIDAY	FIXED OBJECT	CEDAR SPRINGS RD	FAIRMOUNT ST	ONE MOTOR VEHICLE - TURNING LEFT	HIT TREE, SHRUB, LANDSCAPING	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	2 - WET	3 - RAIN	66 - TURNED WHEN UNSAFE	No Data	No Data	NO CHARGES	No Data
17015639	TRUE	068384-2019	4/7/2019	0	N - NOT INJURED	0	200	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	CEDAR SPRINGS RD	ANGLE - BOTH LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	2 - CLOUDY	No Data	No Data	No Data	NO CHARGES	No Data
17015639	TRUE	068384-2019	4/7/2019	0	N - NOT INJURED	0	200	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	CEDAR SPRINGS RD	ANGLE - BOTH LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	2 - CLOUDY	15 - DISREGARD STOP AND GO SIGNAL	No Data	No Data	NO CHARGES	No Data
17025790	FALSE	74625-2019	4/14/2019	0	99 - UNKNOWN	0	1400	SUNDAY	PARKED CAR	ROUTH ST	N/A	ONE MOTOR VEHICLE - OTHER	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	3 - BACKED WITHOUT SAFETY	No Data	No Data	NO CHARGES	No Data
17078118	FALSE	96489-2019	5/15/2019	0	N - NOT INJURED	0	1100	WEDNESDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-REAR END	NOT APPLICABLE	SLOWING/STOPPING-TO MAKE RIGHT TURN	PARKING AREA WITHIN RIGHT OF WAY	1 - DAYLIGHT	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17078118	FALSE	96489-2019	5/15/2019	0	N - NOT INJURED	0	1100	WEDNESDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-REAR END	NOT APPLICABLE	SLOWING/STOPPING-TO MAKE RIGHT TURN	PARKING AREA WITHIN RIGHT OF WAY	1 - DAYLIGHT	1 - DRY	1 - CLEAR	44 - FOLLOWED TOO CLOSELY	No Data	No Data	NO CHARGES	No Data
17179701	FALSE	135864-2019	7/6/2019	0	N - NOT INJURED	0	233	SATURDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	ANGLE - ONE STRAIGHT-ONE BACKING	NOT APPLICABLE	ONE VEHICLE BACKWARD FROM PARKING	PARKING AREA WITHIN RIGHT OF WAY	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	3 - BACKED WITHOUT SAFETY	No Data	No Data	NO CHARGES	No Data
17179701	FALSE	135864-2019	7/6/2019	0	N - NOT INJURED	0	233	SATURDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	ANGLE - ONE STRAIGHT-ONE BACKING	NOT APPLICABLE	ONE VEHICLE BACKWARD FROM PARKING	PARKING AREA WITHIN RIGHT OF WAY	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17196974	FALSE	146308-2019	7/20/2019	0	N - NOT INJURED	0	250	SATURDAY	PARKED CAR	FAIRMOUNT ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	22 - FAILED TO CONTROL SPEED	23 - FAILED TO DRIVE IN SINGLE LANE	No Data	NO CHARGES	No Data
17196974	FALSE	146308-2019	7/20/2019	0	N - NOT INJURED	0	250	SATURDAY	PARKED CAR	FAIRMOUNT ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	22 - FAILED TO CONTROL SPEED	23 - FAILED TO DRIVE IN SINGLE LANE	No Data	NO CHARGES	No Data
17196974	FALSE	146308-2019	7/20/2019	0	N - NOT INJURED	0	250	SATURDAY	PARKED CAR	FAIRMOUNT ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	22 - FAILED TO CONTROL SPEED	23 - FAILED TO DRIVE IN SINGLE LANE	No Data	NO CHARGES	No Data
17196974	FALSE	146308-2019	7/20/2019	0	N - NOT INJURED	0	250	SATURDAY	PARKED CAR	FAIRMOUNT ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17196974	FALSE	146308-2019	7/20/2019	0	N - NOT INJURED	0	250	SATURDAY	PARKED CAR	FAIRMOUNT ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17199161	TRUE	147260-2019	7/21/2019	0	N - NOT INJURED	0	1345	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	HOWELL ST	ANGLE - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	16 - DISREGARD STOP SIGN OR LIGHT	No Data	No Data	NO DRIVER'S LICENSE	C21-828486
17199161	TRUE	147260-2019	7/21/2019	0	N - NOT INJURED	0	1345	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	HOWELL ST	ANGLE - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17215028	FALSE	151816-2019	7/27/2019	0	C - POSSIBLE INJURY	0	2118	SATURDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	22 - FAILED TO CONTROL SPEED	70 - WRONG SIDE - NOT PASSING	No Data	NO CHARGES	No Data
17215028	FALSE	151816-2019	7/27/2019	0	C - POSSIBLE INJURY	0	2118	SATURDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17215028	FALSE	151816-2019	7/27/2019	0	C - POSSIBLE INJURY	0	2118	SATURDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	4 - CHANGED LANE WHEN UNSAFE	No Data	2 - NEGATIVE	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	4 - CHANGED LANE WHEN UNSAFE	No Data	2 - NEGATIVE	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17233828	FALSE	152509-2019	7/28/2019	0	N - NOT INJURED	0	2148	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	N/A	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17214037	FALSE	155740-2019	8/5/2019	0	C - POSSIBLE INJURY	0	323	MONDAY	FIXED OBJECT	FAIRMOUNT ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	HIT TREE, SHRUB, LANDSCAPING	SWERVED OR VEERED-REASON NOT SPECIFIED	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	66 - TURNED WHEN UNSAFE	67 - UNDER INFLUENCE - ALCOHOL	1 - POSITIVE	NO CHARGES	No Data
17237654	TRUE	165148-2019	8/15/2019	0	N - NOT INJURED	0	825	THURSDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	HOWELL ST	ANGLE - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	16 - DISREGARD STOP SIGN OR LIGHT	No Data	No Data	NO CHARGES	No Data
17237654	TRUE	165148-2019	8/15/2019	0	N - NOT INJURED	0	825	THURSDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	HOWELL ST	ANGLE - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17237654	TRUE	165148-2019	8/15/2019	0	N - NOT INJURED	0	825	THURSDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	HOWELL ST	ANGLE - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17237654	TRUE	165148-2019	8/15/2019	0	N - NOT INJURED	0	825	THURSDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	HOWELL ST	ANGLE - BOTH GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17403595	FALSE	226852-2019	11/9/2019	0	N - NOT INJURED	0	1827	SATURDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	ATTENTION DIVERTED FROM DRIVING	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	23 - FAILED TO DRIVE IN SINGLE LANE	No Data	No Data	NO VALID TEXAS DRIVER LICENSE	C21-924221
17403595	FALSE	226852-2019	11/9/2019	0	N - NOT INJURED	0	1827	SATURDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	ATTENTION DIVERTED FROM DRIVING	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17467312	TRUE	251176-2019	#########	0	N - NOT INJURED	0	249	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	CEDAR SPRINGS RD	ANGLE - ONE STRAIGHT-ONE LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	37 - FAILED TO YIELD RIGHT OF WAY - TURNING LEFT	No Data	No Data	NO CHARGES	No Data
17467312	TRUE	251176-2019	#########	0	N - NOT INJURED	0	249	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	CEDAR SPRINGS RD	ANGLE - ONE STRAIGHT-ONE LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	37 - FAILED TO YIELD RIGHT OF WAY - TURNING LEFT	No Data	No Data	NO CHARGES	No Data
17467312	TRUE	251176-2019	#########	0	N - NOT INJURED	0	249	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	CEDAR SPRINGS RD	ANGLE - ONE STRAIGHT-ONE LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	37 - FAILED TO YIELD RIGHT OF WAY - TURNING LEFT	No Data	No Data	NO CHARGES	No Data
17467312	TRUE	251176-2019	#########	0	N - NOT INJURED	0	249	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	CEDAR SPRINGS RD	ANGLE - ONE STRAIGHT-ONE LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17515986	TRUE	2849-2020	1/5/2020	0	N - NOT INJURED	0	100	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	CEDAR SPRINGS RD	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	VEHICLE PASSING OR ATTEMPTING TO PASS ON LEFT	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	26 - FAILED TO PASS TO LEFT SAFELY	No Data	No Data	NO CHARGES	No Data
17515986	TRUE	2849-2020	1/5/2020	0	N - NOT INJURED	0	100	SUNDAY	MOTOR VEHICLE IN TRANSPORT	FAIRMOUNT ST	CEDAR SPRINGS RD	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	VEHICLE PASSING OR ATTEMPTING TO PASS ON LEFT	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17517141	TRUE	10415-2020	1/16/2020	0	N - NOT INJURED	0	1210	THURSDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	ROUTH ST	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	SLOWING/STOPPING-TO MAKE RIGHT TURN	NOT APPLICABLE	1 - DAYLIGHT	2 - WET	3 - RAIN	65 - TURNED IMPROPERLY - WRONG LANE	No Data	No Data	NO CHARGES	No Data
17517141	TRUE	10415-2020	1/16/2020	0	N - NOT INJURED	0	1210	THURSDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	ROUTH ST	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	SLOWING/STOPPING-TO MAKE RIGHT TURN	NOT APPLICABLE	1 - DAYLIGHT	2 - WET	3 - RAIN	No Data	No Data	No Data	NO CHARGES	No Data
17522847	FALSE	12356-2020	1/19/2020	0	99 - UNKNOWN	0	230	SUNDAY	PARKED CAR	FAIRMOUNT ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	98 - OTHER (EXPLAIN IN NARRATIVE)	No Data	No Data	NO CHARGES	No Data
17537526	FALSE	17919-2020	1/26/2020	0	99 - UNKNOWN	0	2130	SUNDAY	PARKED CAR	ROUTH ST	N/A	ONE MOTOR VEHICLE - OTHER	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17598107	FALSE	31574-2020	2/16/2020	1	K - FATAL INJURY	0	1656	SUNDAY	PEDESTRIAN	CEDAR SPRINGS RD	UNKNOWN	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	61 - SPEEDING - (OVERLIMIT)	67 - UNDER INFLUENCE - ALCOHOL	1 - POSITIVE	NO CHARGES	No Data
17598107	FALSE	31574-2020	2/16/2020	1	K - FATAL INJURY	0	1656	SUNDAY	PEDESTRIAN	CEDAR SPRINGS RD	UNKNOWN	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17615357	TRUE	41137-2020	3/1/2020	0	N - NOT INJURED	0	1720	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	HOWELL ST	SAME DIRECTION - ONE STRAIGHT-ONE STOPPED	NOT APPLICABLE	SLOWING/STOPPING - FOR OFFICER, FLAGMAN, OR TRAFFIC CONTROL	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	2 - CLOUDY	22 - FAILED TO CONTROL SPEED	No Data	No Data	NO CHARGES	No Data
17615357	TRUE	41137-2020	3/1/2020	0	N - NOT INJURED	0	1720	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	HOWELL ST	SAME DIRECTION - ONE STRAIGHT-ONE STOPPED	NOT APPLICABLE	SLOWING/STOPPING - FOR OFFICER, FLAGMAN, OR TRAFFIC CONTROL	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	2 - CLOUDY	No Data	No Data	No Data	NO CHARGES	No Data
17615357	TRUE	41137-2020	3/1/2020	0	N - NOT INJURED	0	1720	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	HOWELL ST	SAME DIRECTION - ONE STRAIGHT-ONE STOPPED	NOT APPLICABLE	SLOWING/STOPPING - FOR OFFICER, FLAGMAN, OR TRAFFIC CONTROL	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	2 - CLOUDY	No Data	No Data	No Data	NO CHARGES	No Data
17615357	TRUE	41137-2020	3/1/2020	0	N - NOT INJURED	0	1720	SUNDAY	MOTOR VEHICLE IN TRANSPORT	ROUTH ST	HOWELL ST	SAME DIRECTION - ONE STRAIGHT-ONE STOPPED	NOT APPLICABLE	SLOWING/STOPPING - FOR OFFICER, FLAGMAN, OR TRAFFIC CONTROL	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	2 - CLOUDY	No Data	No Data	No Data	NO CHARGES	No Data
17608323	FALSE	44557-2020	3/6/2020	0	N - NOT INJURED	0	1015	FRIDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	VEHICLE CHANGING LANES	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	4 - CHANGED LANE WHEN UNSAFE	No Data	No Data	NO CHARGES	No Data
17608323	FALSE	44557-2020	3/6/2020	0	N - NOT INJURED	0	1015	FRIDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	VEHICLE CHANGING LANES	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17724418	FALSE	104001-2020	6/12/2020	0	N - NOT INJURED	0	2310	FRIDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-REAR END	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	4 - DARK, UNKNOWN LIGHTING	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17724418	FALSE	104001-2020	6/12/2020	0	N - NOT INJURED	0	2310	FRIDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-REAR END	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	4 - DARK, UNKNOWN LIGHTING	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17724418	FALSE	104001-2020	6/12/2020	0	N - NOT INJURED	0	2310	FRIDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-REAR END	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	4 - DARK, UNKNOWN LIGHTING	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17740204	FALSE	104829-2020	6/14/2020	0	N - NOT INJURED	0	1745	SUNDAY	PARKED CAR	ROUTH ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	4 - DARK, UNKNOWN LIGHTING	1 - DRY	1 - CLEAR	23 - FAILED TO DRIVE IN SINGLE LANE	No Data	No Data	NO CHARGES	No Data
17740204	FALSE	104829-2020	6/14/2020	0	N - NOT INJURED	0	1745	SUNDAY	PARKED CAR	ROUTH ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	4 - DARK, UNKNOWN LIGHTING	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17752016	FALSE	110129-2020	6/23/2020	0	B - SUSPECTED MINOR INJURY	0	1300	TUESDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - ONE STRAIGHT-ONE RIGHT TURN	OVERTURNED	VEHICLE CHANGING LANES	PARKING AREA WITHIN RIGHT OF WAY	1 - DAYLIGHT	1 - DRY	2 - CLOUDY	4 - CHANGED LANE WHEN UNSAFE	No Data	No Data	NO CHARGES	No Data
17752016	FALSE	110129-2020	6/23/2020	0	B - SUSPECTED MINOR INJURY	0	1300	TUESDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - ONE STRAIGHT-ONE RIGHT TURN	OVERTURNED	VEHICLE CHANGING LANES	PARKING AREA WITHIN RIGHT OF WAY	1 - DAYLIGHT	1 - DRY	2 - CLOUDY	No Data	No Data	No Data	NO CHARGES	No Data
17752016	FALSE	110129-2020	6/23/2020	0	B - SUSPECTED MINOR INJURY	0	1300	TUESDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - ONE STRAIGHT-ONE RIGHT TURN	OVERTURNED	VEHICLE CHANGING LANES	PARKING AREA WITHIN RIGHT OF WAY	1 - DAYLIGHT	1 - DRY	2 - CLOUDY	No Data	No Data	No Data	NO CHARGES	No Data
17811344	TRUE	132971-2020	7/29/2020	0	B - SUSPECTED MINOR INJURY	0	1845	WEDNESDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	ROUTH ST	OPPOSITE DIRECTION - ONE STRAIGHT-ONE LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	98 - OTHER (EXPLAIN IN NARRATIVE)	No Data	No Data	NO CHARGES	No Data
17811344	TRUE	132971-2020	7/29/2020	0	B - SUSPECTED MINOR INJURY	0	1845	WEDNESDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	ROUTH ST	OPPOSITE DIRECTION - ONE STRAIGHT-ONE LEFT TURN	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
17981525	TRUE	199705-2020	11/7/2020	0	B - SUSPECTED MINOR INJURY	0	125	SATURDAY	PEDESTRIAN	ROUTH ST	CEDAR SPRINGS RD	ONE MOTOR VEHICLE - TURNING RIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	22 - FAILED TO CONTROL SPEED	No Data	No Data	NO CHARGES	No Data
17981525	TRUE	199705-2020	11/7/2020	0	B - SUSPECTED MINOR INJURY	0	125	SATURDAY	PEDESTRIAN	ROUTH ST	CEDAR SPRINGS RD	ONE MOTOR VEHICLE - TURNING RIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
18082246	FALSE	12453-2021	1/16/2021	0	99 - UNKNOWN	0	2230	SATURDAY	PARKED CAR	ROUTH ST	N/A	ONE MOTOR VEHICLE - BACKING	NOT APPLICABLE	ONE VEHICLE BACKWARD FROM PARKING	NOT APPLICABLE	4 - DARK, UNKNOWN LIGHTING	99 - UNKNOWN	1 - CLEAR	3 - BACKED WITHOUT SAFETY	No Data	No Data	NO CHARGES	No Data
18094307	FALSE	10250-2021	1/17/2021	0	N - NOT INJURED	0	1830	SUNDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-REAR END	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
18094307	FALSE	10250-2021	1/17/2021	0	N - NOT INJURED	0	1830	SUNDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-REAR END	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	22 - FAILED TO CONTROL SPEED	No Data	No Data	FLID	010251-2021
18231551	FALSE	74977-2021	4/30/2021	0	N - NOT INJURED	0	1625	FRIDAY	PARKED CAR	ROUTH ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	ATTENTION DIVERTED FROM DRIVING	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	2 - CLOUDY	20 - DRIVER INATTENTION	98 - OTHER (EXPLAIN IN NARRATIVE)	No Data	NO VALID TEXAS DRIVER LICENSE	C22018698
18261240	FALSE	79536-2021	5/5/2021	0	99 - UNKNOWN	0	2300	WEDNESDAY	PARKED CAR	ROUTH ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	4 - DARK, UNKNOWN LIGHTING	99 - UNKNOWN	99 - UNKNOWN	98 - OTHER (EXPLAIN IN NARRATIVE)	No Data	No Data	NO CHARGES	No Data
18289903	TRUE	90419-2021	5/23/2021	0	N - NOT INJURED	0	2014	SUNDAY	MOTOR VEHICLE IN TRANSPORT	HOWELL ST	ROUTH ST	ANGLE - BOTH GOING STRAIGHT	HIT LUMINAIRE POLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	16 - DISREGARD STOP SIGN OR LIGHT	No Data	No Data	NO CHARGES	No Data
18289903	TRUE	90419-2021	5/23/2021	0	N - NOT INJURED	0	2014	SUNDAY	MOTOR VEHICLE IN TRANSPORT	HOWELL ST	ROUTH ST	ANGLE - BOTH GOING STRAIGHT	HIT LUMINAIRE POLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
18304087	FALSE	90498-2021	5/23/2021	0	A - SUSPECTED SERIOUS INJURY	2	2230	SUNDAY	PEDESTRIAN	CEDAR SPRINGS RD	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	98 - OTHER (EXPLAIN IN NARRATIVE)	No Data	No Data	NO CHARGES	No Data
18304087	FALSE	90498-2021	5/23/2021	0	A - SUSPECTED SERIOUS INJURY	2	2230	SUNDAY	PEDESTRIAN	CEDAR SPRINGS RD	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
18304087	FALSE	90498-2021	5/23/2021	0	A - SUSPECTED SERIOUS INJURY	2	2230	SUNDAY	PEDESTRIAN	CEDAR SPRINGS RD	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
18317685	FALSE	100187-2021	6/5/2021	0	99 - UNKNOWN	0	2330	SATURDAY	PARKED CAR	LACLEDE AVE	N/A	ONE MOTOR VEHICLE - BACKING	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	2 - DARK, NOT LIGHTED	1 - DRY	1 - CLEAR	3 - BACKED WITHOUT SAFETY	No Data	No Data	NO CHARGES	No Data
18634645	FALSE	217495-2021	#########	0	99 - UNKNOWN	0	1530	SATURDAY	PARKED CAR	LACLEDE ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	ATTENTION DIVERTED FROM DRIVING	NOT APPLICABLE	99 - UNKNOWN	1 - DRY	1 - CLEAR	20 - DRIVER INATTENTION	No Data	No Data	NO CHARGES	No Data
18657163	TRUE	215288-2021	#########	0	N - NOT INJURED	0	2038	SUNDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	VEHICLE CHANGING LANES	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	4 - CHANGED LANE WHEN UNSAFE	No Data	No Data	NO CHARGES	No Data
18657163	TRUE	215288-2021	#########	0	N - NOT INJURED	0	2038	SUNDAY	MOTOR VEHICLE IN TRANSPORT	CEDAR SPRINGS RD	N/A	SAME DIRECTION - BOTH GOING STRAIGHT-SIDESWIPE	NOT APPLICABLE	VEHICLE CHANGING LANES	NOT APPLICABLE	3 - DARK, LIGHTED	1 - DRY	1 - CLEAR	No Data	No Data	No Data	NO CHARGES	No Data
18675174	FALSE	229676-2021	#########	0	N - NOT INJURED	0	1629	TUESDAY	PARKED CAR	HOWELL ST	N/A	ONE MOTOR VEHICLE - GOING STRAIGHT	NOT APPLICABLE	VEHICLE CHANGING LANES	NOT APPLICABLE	1 - DAYLIGHT	1 - DRY	1 - CLEAR	4 - CHANGED LANE WHEN UNSAFE	67 - UNDER INFLUENCE - ALCOHOL	No Data	NO CHARGES	No Data