# Power & Elliot Commercial

**SEC Power Road & Elliot Road**
**Mesa, Arizona**

REZONE, SITE PLAN, AND SUP
Case No. ZON22-01271

Initial Submittal: November 28, 2022
2nd Submittal: January 30, 2023

## Development Team

| | |
|---|---|
| **Developer:** | **Avalon Development, LLC**<br>7333 E. Doubletree Ranch Road<br>Suite 140<br>Scottsdale, AZ 85258<br>Contact: Will Whittington<br>Phone 480-376-8750<br>Email: will@avalondevelopment.com |
| **Architect / Land Planning:** | **RKAA, Inc.**<br>2233 E. Thomas Road<br>Phoenix, AZ 85016<br>Phone 602-955-3900<br>Contact: Rajesh Gore<br>Email: rgore@rkaa.com |
| **Civil Engineer:** | **BFH Group**<br>3707 E. Southern Avenue<br>Phoenix, AZ 85206<br>Contact: David Bohn<br>Phone: 480-734-1446<br>Email: davidb@thebfhgroup.com |
| **Applicant / Legal Representative:** | **Withey Morris PLC**<br>2525 East Arizona Biltmore Circle, A-212<br>Phoenix, Arizona 85016<br>Contact: Benjamin Tate<br>Phone. 602-230-0600<br>Email: ben@witheymorris.com |

## I. Project Overview

The subject property is approximately 14.46 gross acres located at the southeast corner of Power Road and Elliot Road in Mesa, AZ (the "Property"). See Aerial Map at **Tab 1**. The Property is vacant land historically used for agricultural purposes. The Property is currently zoned LC (Limited Commercial) with PAD (Planned Area Development) and BIZ Overlays as illustrated in the Zoning Map at **Tab 2**. The current zoning was established in zoning case number Z08-44.

Avalon Development is proposing the development of a community-scale commercial and retail development with approximately 76,100 square feet of total commercial floor area divided among two anchor pads (Aldi Grocery and EoS Fitness), four restaurant pads with drive-thrus, and a service station/convenience store. The original project approved in 2008, known as "The Commons", envisioned significantly more intense retail with four large blocks of small-suite retail and office and a hotel totaling over 151,000 SF of floor area.

The proposed project seeks to utilize the same underlying Limited Commercial zoning for a lower intensity commercial/retail center. The proposal matches the retail needs of the area and reflects the current demand in the retail market in terms of both intensity and composition of land uses.

The site has been designed to meet the high-quality design and development standards the City of Mesa strives for while providing an appropriate development capable of meeting the goals of the General Plan and the commercial needs of residents in the area.

## II. Relationship to Adjacent Properties

The Property is bounded by arterial roadways to the north (Elliot Road) and the west (Power Road) with undeveloped agricultural land at all four hard corners of the intersection. To the south of the Property is the recently constructed Hillcrest Academy private school and Evo Swim School. To the east of the Property is the Roosevelt Water Conservation District's (RWCD) administrative offices, which were also recently developed. To the east of the administrative offices is the RWCD canal itself.

## III. Requests

This application requests the following:

- Rezone the Property from Limited Commercial (LC) with PAD-BIZ Overlays to Limited Commercial (LC) to allow a new 14.46-acre community-scale commercial development with concurrent site plan review.

- Special Use Permit to reduce required parking for the proposed EoS Fitness center from 1 space/100 SF to 1 space per 180/SF.
- Special Use Permit for service station/convenience store.

## IV. General Plan

The Property is currently designated as "Mixed Use Activity / Employment" by the City of Mesa 2040 General Plan as illustrated by the General Plan Map at **Tab 3**. The Property is also within the Mesa Gateway Strategic Development Plan Area and the Bonus Intensity Zone, as well as being identified as Mixed-Use Activity District – Community Scale District (MUAD-CSD) on the Inner Loop Land Use Plan. See Overlay Map at **Tab 4**. Consistent with these designations, the proposed development will offer community-scale food and beverage, commercial, and retail land uses.

## V. Site Layout

The proposed development is organized in a typical commercial center configuration with smaller pads and a service station fronting the arterial street and larger anchor tenant buildings set back away from the roadway. In this instance the buildings are oriented to the west, facing Power Road.

The two anchor tenant buildings will be occupied by a 19,500 square-foot Aldi grocery store in the northeast corner of the center and a 42,000 square-foot EoS Fitness center in the southeast corner. Along Power Road there are four evenly spaced restaurant pads with drive-thru facilities, Pads B, C, D, and E as noted on the Conceptual Site Plan at **Tab 5**. The restaurant pads flank the primary driveway and entry on Power Road, with two pads on each side of the main entry. The restaurant pads are provided in a variety of sizes and building configurations to provide flexibility for future tenants/users and variety for future patrons.

At the hard corner of Power Road and Elliot Road, a gas station and convenience store is provided with convenient access from both arterial streets. The convenience store building is oriented toward Elliot Road, partially screening the pump station canopy, which is set to the east of the convenience store building. The orientation of the gas station/convenience store elements are intended to minimize their visual impact from adjacent public rights-of-way.

Although surface parking is distributed across the entire site, the main parking area is located between the restaurant pads and the anchor tenant buildings. The site is generously landscaped both internally and around the perimeter to create a comfortable, attractive environment for both customers and passersby.

<u>Circulation</u>

Access to the Property is provided by a total of five driveways, with two access points on Power Road and three on Elliot Road. The primary entrance to the Property is a full access driveway located toward the southern end of the Power Road frontage with a large landscaped median dividing the lanes of travel. A second driveway on Power Road just south of the service station is restricted to right-in/right-out turning movements.

On Elliot Road, a full-access driveway is provided just east of the midpoint of the Elliot Road frontage, aligned with the internal drive aisle that provides access to the Aldi and EoS storefronts. To the west and east of the full-access driveway are secondary right-in/right-out access points – one just east of the service station and one at the far eastern end of the Elliot Road frontage aligned with the "back of house" drive aisle for the Aldi and EoS buildings.

On-site circulation is provided by a network of drive aisles that circumnavigate the individual building pads and the main parking field in the middle of the site. The drive aisles and drive-thru lanes for the restaurant pads are adequate queueing storage so as not to interfere with or obstruct on-site circulation, and oriented to avoid conflicts between adjacent drive-thrus.

Parking & Screening

As described above, surface parking is distributed throughout the site to provide convenient parking for each of the individual building pads and supported by a large, shared parking field in the middle of the Property. Parking areas will be screened from adjacent rights-of-way by a split-face 3'4" masonry screen way.

The calculated overall parking requirement for all proposed uses per the City of Mesa's Zoning Ordinance is 580 parking spaces, largely driven by the 420-space requirement for the proposed EoS Fitness facility. A total of 526 spaces are provided throughout the Property, and an SUP is being requested to allow a parking requirement reduction as described in greater detail below in the "Special Use Permit Analysis" section.

Landscaping

Landscaping for the Property complies with Article 4, Chapter 33 of the Mesa Zoning Ordinance as illustrated in the Landscape Plan submitted with this application.

Refuse

Each building pad throughout the site will be served by a bollard protected double bin refuse container, provided adjacent to each pad in locations that allow for safe and convenient maneuvering by solid waste collection vehicles. The double bin refuse container will be screened from public view by a gated masonry screen wall enclosure per City of Mesa code requirements.

## VI. Quality Development Design Guidelines

This application has been prepared to be consistent with the goals and objectives of the City of Mesa Quality Development Design Guidelines pertaining to commercial developments:

The commercial parcel will include sidewalks along the building frontages and within the central parking area to provide shade and comfort for pedestrians. The Architectural Design Guidelines are intended to ensure an attractive, high-quality development with a consistent look and feel across the Site. Please refer to the submitted project reference imagery and material color board.

These standards will provide continuity throughout the development while incorporating a variety of architectural styles, color and materials. Styles may and should vary to create individual identities while maintaining common threads that establish compatibility with the industrial buildings.

Design vocabularies should be respectful of adjacent uses, allowing architectural expressions to flow from site to site, avoiding abrupt transitions in style or character. Variation in texture, contrast, color and materials should be utilized to create visual interest.

Colors and materials should create visual harmony within the development as further illustrated in the submitted project reference imagery and material color board.

Landscape design for the commercial portions of the site will reflect the overall theme of the area, creating a unifying aesthetic that provides for meaningful spaces that relate to the adjacent buildings.

1. **Site Design**

   **a. Building Placement & Orientation**

   The site is designed, and the buildings are placed to most efficiently use the site while providing a strong relationship to the street and visual interest in areas visible from public view. Site infrastructure includes a complementary landscape palette, hardscape paving, site screen walls and site lighting.

   Consistent with the guidelines, the smaller pad buildings are placed close to the street to create a strong presence with the public realm that encourages pedestrian engagement with the buildings. The larger anchor pads are set farther away from the street frontages to mitigate the massing and visual impact of large buildings. The drive-thru facilities for all four restaurant pads are perpendicular to Power Road, oriented away from the right-of-way to minimize visibility from public streets.

**b. Parking and Circulation**

As described throughout this narrative, parking for the proposed development is distributed throughout the site, with smaller individual parking areas for each building pad and a large parking area in the middle to support the anchor tenant buildings. The smaller parking areas are broken up by landscape islands and screen walls to break up the parking areas and define a series of small, interconnected lots. Parking aisles for the central parking area are oriented perpendicular to the building entrances to minimize pedestrian and vehicular conflicts in the parking areas.

**c. Landscaping & Shading**

Landscape design of streetscapes along Power Road to the west, Elliot Road to the north, and throughout the development consists of generous plantings with a lush, drought-tolerant landscape palette per City of Mesa standards. Distinct groupings of plantings and species are used to define parking areas, highlight and accent streetscapes, and screen trash enclosures and parking. See Landscape Plan at **Tab 6**.

**d. Lighting**

Exterior lighting consists of energy efficient LED lighting for parking areas and accent lighting on the building. Lighting has been harmoniously incorporated into the site layout and building design to be complementary to the overall project.

**e. Architectural Design**

The site plan and building architecture have been thoughtfully laid out to ensure a pleasant and inviting environment for visitors and a visually attractive development for passersby on adjacent rights-of-way. Individualized store detailing and design considerations for the proposed Aldi grocery store and EoS Fitness center ensure compatibility with the surrounding area and appropriate visual interest and detailing. Varied rooflines and massing, a bold color palette, and thoughtful use of materials provide a distinctive yet contextually appropriate design.

**f. Signage**

Building signage has been generally identified on building elevations for design intent only. Building and site/monumental signage is a separate permit/deferred process and will be submitted and reviewed per City of Mesa standards.

**g. Service Areas & Utilities**

As described above, each building pad will be served by a bollard protected double bin refuse container, which will be located adjacent to each building pad. The double bin refuse container will be screened from public view by a gated masonry screen wall enclosure per City of Mesa code requirements.

## VII. Grading and Drainage

The grading and drainage for the site will be designed to retain the 100-year, 2-hour storm event in accordance with the City of Mesa drainage design guidelines. Storm drainage will be conveyed via internal drain or downspouts and overland flow across the parking lots into either catch basins or curb openings which will outfall to underground retention tanks as shown in the preliminary grading and drainage plan submitted with this application. The required storage volume will dissipate within 36 hours via a combination of natural percolation and drywells. Any off-site drainage impacts to the site will be routed through the site to maintain its historical drainage pattern.

## VIII. Phasing

The anchor tenant Aldi and EoS Fitness buildings, submitted for concurrent design review, will be constructed in the first phase. The restaurant pad buildings and service station/convenience store will be constructed based upon market demand.

## IX. Special Use Permit Analysis

As noted above, the Zoning Ordinance requires approval of a Special Use Permit (SUP) for a parking reduction and for the operation of a service station/convenience store in the LC zoning district. Analysis for each request is addressed separately below.

**Parking Reduction**

### 1. Special Conditions

**Response:** Section 11-32-3 of the Mesa Zoning Ordinance requires a minimum 1 space per 100 square feet of floor area for "Health space and clubs, gyms, and tennis, handball, and racquetball courts and clubs". Following this ratio, the proposed 42,000 SF EoS Fitness facility is required to provide 420 parking spaces. Unlike some neighboring jurisdictions, the Mesa Zoning Ordinance makes no distinction between small fitness facilities with typically a high concentration of members per square foot (Orange Theory, F45, CrossFit, etc.) and large fitness facilities with a much lower concentration of members per square foot (EoS Fitness, LA Fitness, etc.)

Because of the building size, large facilities tend to offer amenities that occupy a significant percentage of floor area but only typically accommodate a limited number of users at a time (basketball courts, indoor swimming pools, spacious and well-appointed locker rooms, etc.) Many of these facilities (including the proposed EoS Fitness) also offer on-site childcare services. See Conceptual EoS Floor Plan at **Tab 7**.

Some jurisdictions, including the nearby City of Scottsdale, provide tiered parking schemes for fitness facilities in recognition of this reality. In Scottsdale, fitness facilities between 3,000 and 10,000 square feet have a parking requirement of 1 space per 150 square feet, whereas facilities greater than 20,000 square feet have a parking requirement of 1 space per 250 square feet. This tiered system acknowledges the operational realities of large, modern fitness facilities in which more space does not typically translate to more patrons.

2. **The use will be adequately served by the proposed parking.**

**Response:** Consequently, the applicant is seeking a reduction in the required parking ratio for the proposed EoS Fitness facility from 1 space per 100 square feet to 1 space per 180 square feet as described in the Parking Study submitted with this application. As noted in the Parking Study, a study for another EoS Fitness facility in the City of Mesa was approved in July 2018 with a parking ratio of 1 space per 180 square feet.

In practical terms, there is not a 1-to-1 ratio between square footage and parking demand for fitness facilities. Conversely, as the facility gets larger the parking demand per square foot steadily decreases. Floor area-consuming amenities like indoor pools and childcare facilities become a significant component of the building. A reduced parking ratio that acknowledges these realities does not run afoul of the purposes or intent of the LC zoning district, as demonstrated by the previously approved study for another EoS Fitness facility in the City of Mesa in July 2018 which follows this same line of logic related to parking demand.

3. **Parking demand generated by the project will not exceed the capacity of or have a detrimental impact on the supply of on-street parking in the surrounding area.**

**Response:** The requested parking ratio will not cause the proposed project to be underparked or become detrimental to surrounding properties. It is the applicant's intent to simply provide a parking ratio that aligns with the actual parking demand for the proposed EoS Fitness facility. Moreover, the surrounding area is largely undeveloped and does not have an established system of on-street parking.

**Service Station:**

Pursuant to MZO Section 11-7-2 Use Table, a SUP is required for a Service Station use. The site design complies with the criteria listed in section 11-31-25. Additionally, the plan complies with the criteria listed in subsection (I) as explained below:

1. **The use is found to be in compliance with the General Plan, applicable Sub Area Plans, and other recognized development plans or policies, and will be compatible with surrounding uses;**

**Response**: The use is consistent with the City's General Plan designation of Employment. Employment districts may include retail and commercial uses that support the employment uses.

2. **A finding that a plan of operation has been submitted, which includes, but is not limited to, acceptable evidence of compliance with all zoning, building, and fire safety regulations.**

**Response**: The use is consistent with the LI zoning district, building and safety standards.

3. **A finding that a "good neighbor policy" in narrative form has been submitted, which includes, but is not limited to, descriptions of acceptable measures to ensure ongoing compatibility with adjacent uses, including sound attenuation, lighting control measures, and vehicular access and traffic control. Such policies shall include, but are not limited to, the name and telephone number of the position, manager or person responsible for the operation of the facility; complaint response procedures, including investigation, remedial action, and follow-up; and litter control measures.**

**Response**: A good neighbor policy is included with this submittal.

4. **Evidence that acceptable documentation is present demonstrating that the building or site proposed for the use is in, or will be brought into, substantial conformance with all current City Development Standards, including, but not limited to, landscaping, parking, screen walls, signage, and design guidelines.**

**Response**: The use is consistent with the LI zoning district and applicable standards.

5. **Evidence that acceptable documentation is present demonstrating that the building or site proposed for the use shall adequately provide paved parking and on-site circulation in a manner that minimizes impacts on adjacent sites; and existing or proposed improvements to the site shall minimize dust, fugitive light, glare, noise, offensive smells and traffic impacts on neighboring residential sites.**

**Response**: The use is consistent with all applicable development and regulatory standards.

## X. Summary

The proposed zone change to Limited Commercial (LC) will allow the development of a modern commercial center that supports the goals and policies of the Mixed Use Activity General Plan designation. The proposed project is consistent with the City of Mesa's desire, via the General Plan, to see neighborhood-scale commercial development at the intersection of Power Road and Elliot Road to serve the adjacent residential areas. The proposed uses will complement the surrounding area and provide value to the surrounding community.

# TAB 1

# Aerial Map

SEC Power Road & Elliot Road - Mesa, AZ

N

# TAB 2

# Zoning Map

SEC Power Road & Elliot Road - Mesa, AZ

N

# TAB 3

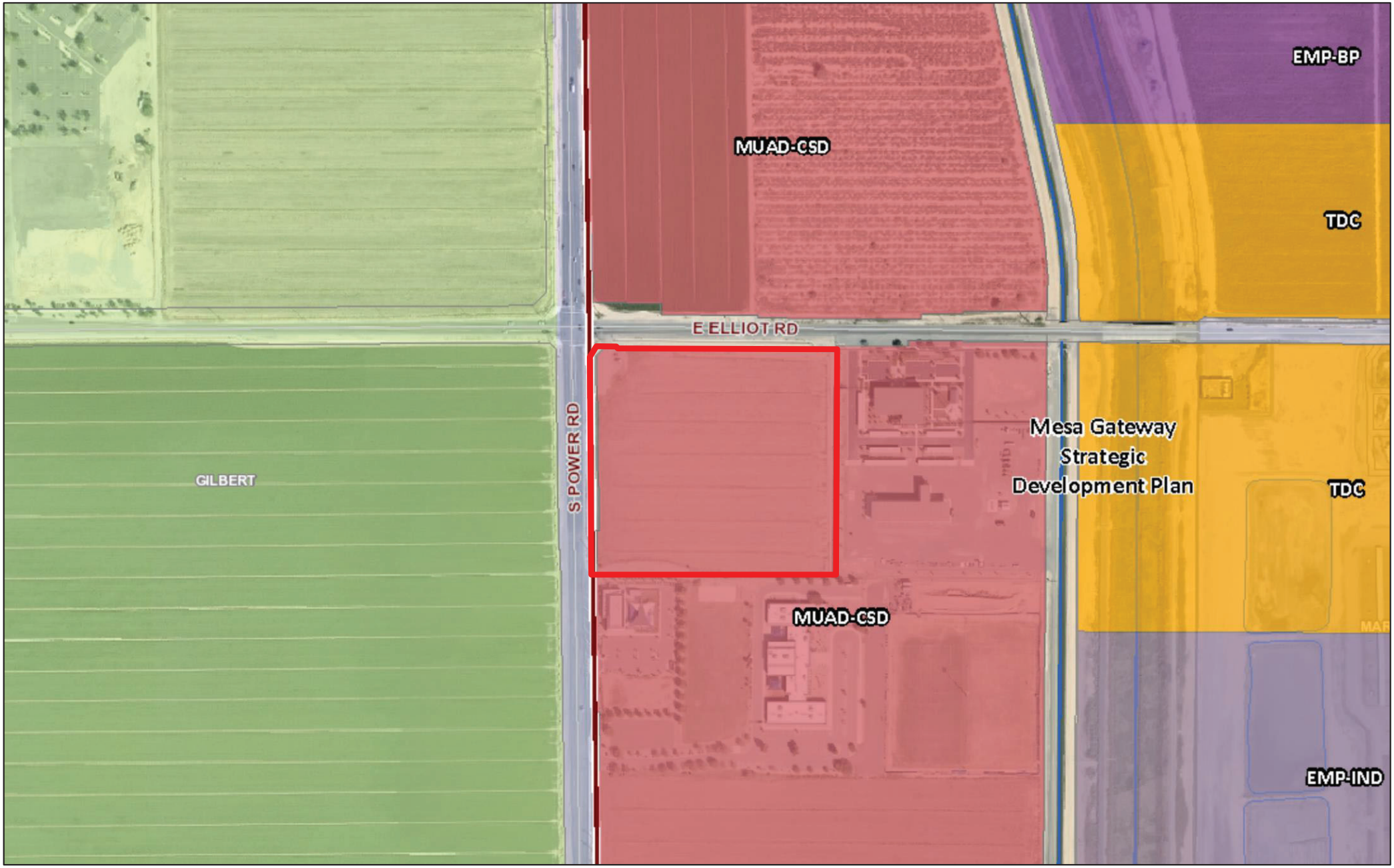
# General Plan Map

SEC Power Road & Elliot Road - Mesa, AZ

N

# TAB 4

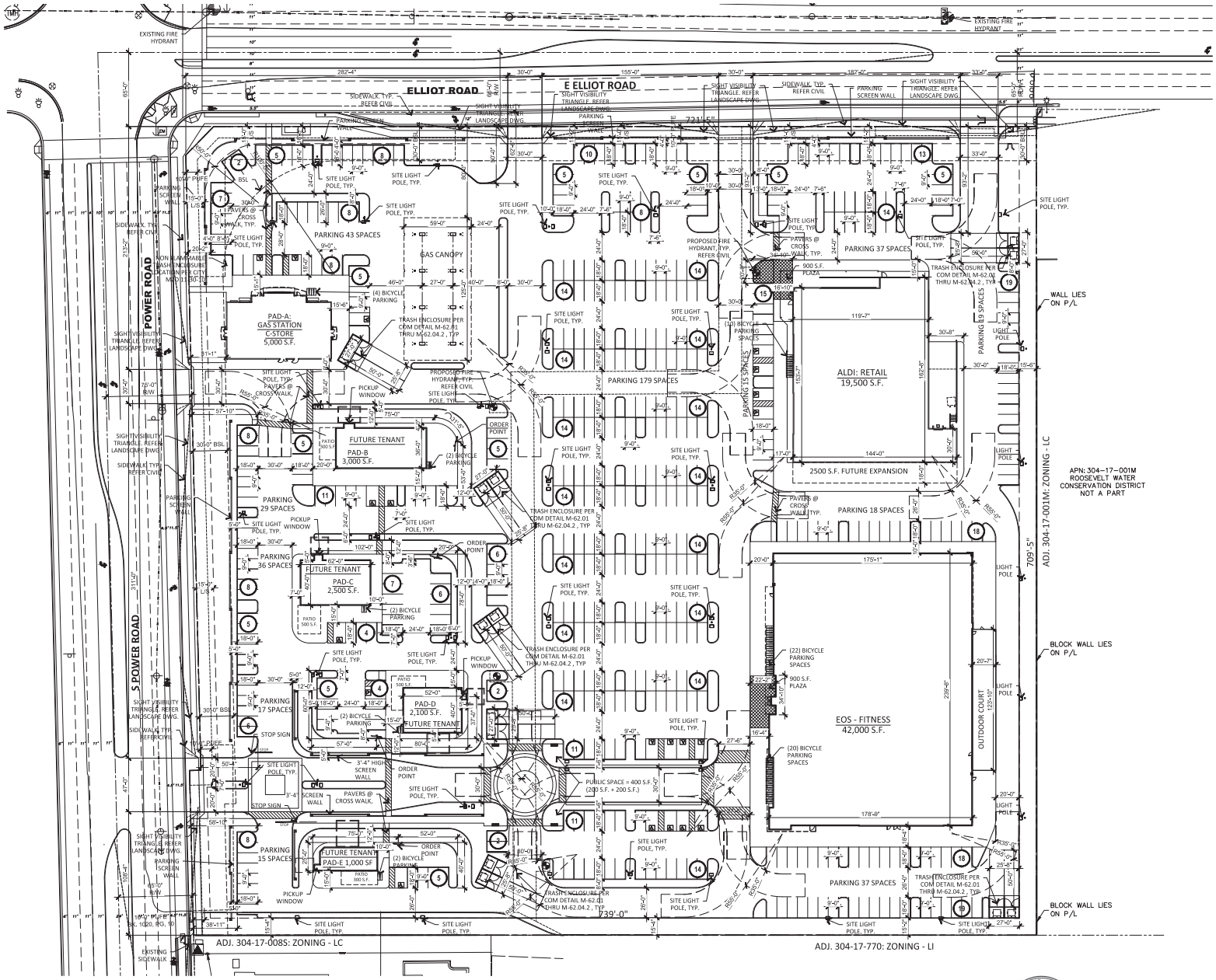
# Overlay Map




SEC Power Road & Elliot Road - Mesa, AZ

N

# TAB 5




## SITE PLAN

SCALE: 1" = 40'-0"

NORTH

0' 20' 40' 80'

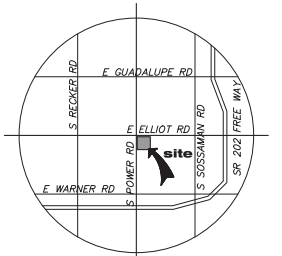
## PROJECT DIRECTORY


ARCHITECT:
RKAA ARCHITECTS, INC.
2233 EAST THOMAS ROAD
PHOENIX, ARIZONA 85016
CONTACT: NEIL FEASER
PHONE: (602) 955-3900
FAX: (602) 955-0496
E-MAIL: nfeaser@rkaa.com


## SITE DATA

| | |
|---|---|
| PARCEL NUMBER: | 304-17-211 THRU 304-17-219 |
| EXISTING ZONING: | LC -PAD-BIZ |
| NET SITE AREA: | 12.04 ACRES (524,473 S.F.) |
| GROSS SITE AREA: | 14.46 ACRES (630,003 S.F.) |
| MAX. LOT COVERAGE: | 80% |
| LOT COVERAGE PROPOSED: 76,700 S.F. | 14.62% |
| MAX. HEIGHT PER CODE: | 30'-0" |
| PUBLIC SPACE REQUIRED: | 5 SF / 1000 SF OF BUILD. AREA |
| PROPOSED USE: | RETAIL/RESTAURANT/FITNESS/GAS STATION |
| BUILDING AREA: | |
| PAD A: GAS STATION-CSTORE | 5,000 S.F. |
| PAD B: RESTAURANT - DT | 3,000 S.F. |
| PAD C: RESTAURANT - DT | 2,500 S.F. |
| PAD D: RESTAURANT - DT | 2,100 S.F. |
| PAD E: RESTAURANT - DT | 1,000 S.F. |
| ALDI- RETAIL: | 19,500 S.F. |
| EOS FITNESS | 42,000 S.F. |
| TOTAL BUILDING AREA: | 75,100 S.F. |
| TOTAL PATIO AREA | 1,600 S.F. |
| TOTAL GROSS AREA: | 76,700 S.F. |
| SITE COVERAGE: | 14.62 % |
| PUBLIC SPACE REQUIRED: | 384 S.F. |
| PUBLIC SPACE PROVIDED: | 400 S.F. |

| PARKING REQUIRED | |
|---|---|
| GAS STATION-CSTORE-5000 SF : 1 PER 375 | 14 SPACES |
| RESTAURANT-8600 SF - DT: 1 PER 100 | 86 SPACES |
| PATIO SEATING: 1 PER 200 | 08 SPACES |
| ALDI - RETAIL : 1 PER 375 | 52 SPACES |
| EOS FITNESS : 1 PER 100 | 420 SPACES |
| TOTAL PARKING REQUIRED: | 580 SPACES |
| TOTAL PARKING PROVIDED: | 526 SPACES |
| ( VARIANCE / PARKING REDUCTION APPROVAL REQUIRED) | |
| ACCESSIBLE SPACES REQUIRED: | 20 SPACES |
| ACCESSIBLE SPACES PROVIDED: | 20 SPACES |
| BICYCLE SPACE REQUIRED | 58 SPACES |
| BICYCLE SPACES PROVIDED: | 64 SPACES |




vicinity map
scale: n.t.s.

THIS SITE PLAN HAS BEEN PREPARED WITHOUT THE AID OF A SURVEY. ALL PROPERTY BOUNDARIES ARE ROUGH APPROXIMATIONS. THIS DRAWING IS TO BE USED FOR CONCEPTUAL PURPOSES ONLY AND IT IS NOT TO BE THE BASIS FOR ANY LEGALLY BINDING DOCUMENTATION.

# POWER & ELLIOT RETAIL

3663 E POWER ROAD MESA ARIZONA 85212
SEC OF S POWER ROAD AND E ELLIOT ROAD
DATE: 01-27-2023 (PRELIMINARY)

REGISTERED ARCHITECT
CERTIFICATE NO.
No. 9452
ROBERT W. KUBICEK
1/27/23
EXPIRES: 06/30/2024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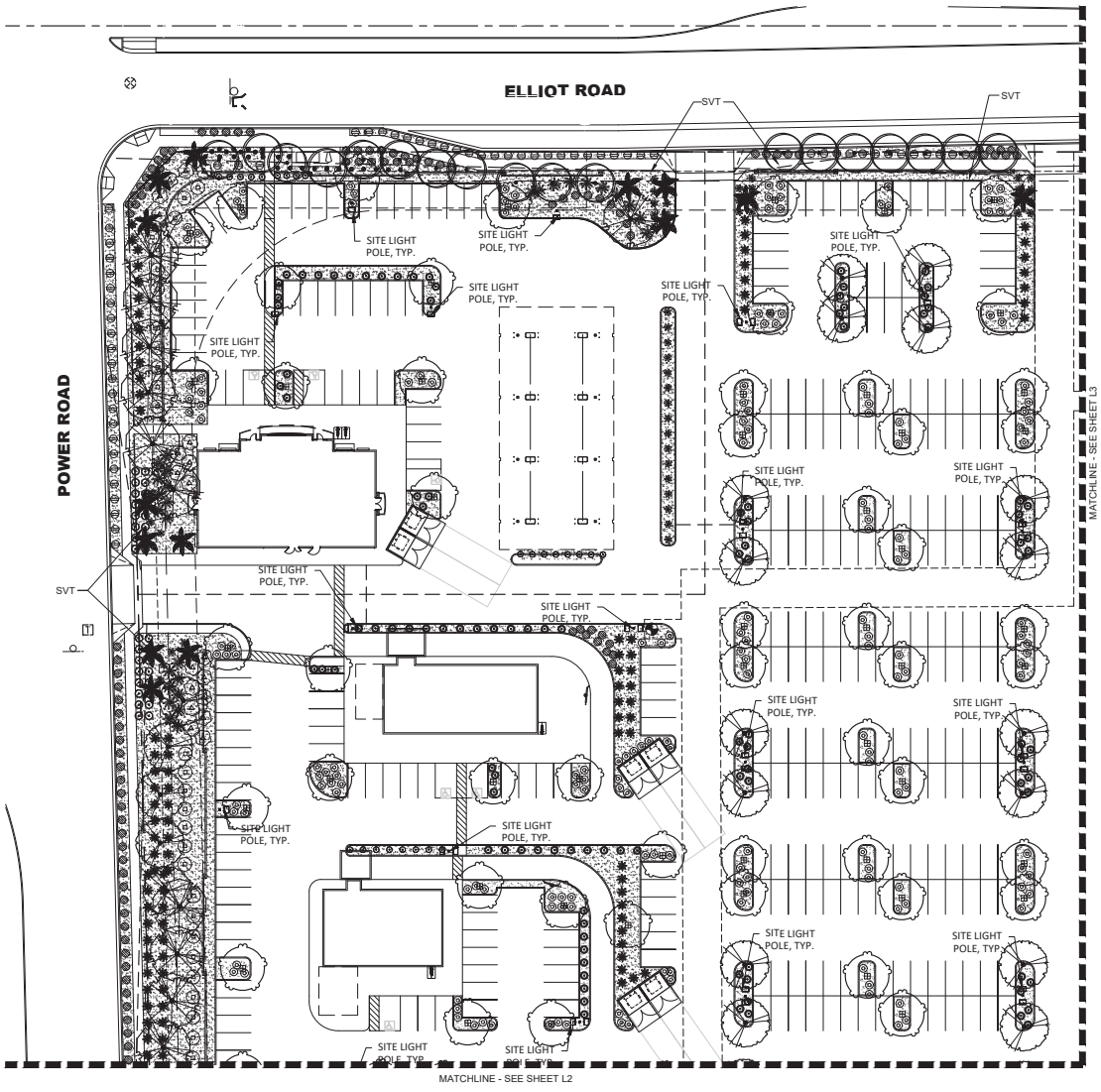
SP-1

RKAA# 22223.50

RKAA ARCHITECTS, INC

# TAB 6




## PLANT SCHEDULE

| TREES | BOTANICAL / COMMON NAME | SIZE | QTY |
|---|---|---|---|
| | Ebenopsis ebano<br>Texas Ebony | 24" Box | 3 |
| | Olea europaea `Fruitless`<br>Fruitless Olive | 36" Box | 34 |
| | Parkinsonia x `Desert Museum`<br>Desert Museum Palo Verde | 24"box | 20 |
| | Parkinsonia x `Desert Museum`<br>Desert Museum Palo Verde | 36" Box | 29 |
| | Phoenix dactylifera<br>Date Palm | 15` Ht. | 32 |
| | Pistacia x `Red Push`<br>Pistache | 24"box | 22 |
| | x Chitalpa tashkentensis `Pink Dawn`<br>Pink Dawn Chitalpa | 36" Box | 108 |

| SHRUBS | BOTANICAL / COMMON NAME | SIZE | QTY |
|---|---|---|---|
| | Agave desmettiana<br>Dwarf Century Plant | 5 gal. | 65 |
| | Agave geminiflora<br>Century Plant | 5 gal. | 52 |
| | Bougainvillea x `Barbara Karst`<br>Barbara Karst Bougainvillea | 5 gal. | 149 |
| | Caesalpinia pulcherrima<br>Red Bird Of Paradise | 5 gal. | 117 |
| | Carissa macrocarpa `Boxwood Beauty`<br>Beauty Natal Plum | 5 gal. | 82 |
| | Dasylirion longissimum<br>Toothless Desert Spoon | 5 gal. | 80 |
| | Dodonaea viscosa 'Green'<br>Green Hopseed Bush | 5 gal. | 69 |
| | Hesperaloe parviflora 'Perpa' TM<br>Brakelights Red Yucca | 5 gal. | 159 |
| | Lantana x 'New Gold'<br>New Gold Lantana | 1 gal. | 128 |
| | Muhlenbergia capillaris `Regal Mist` TM<br>Regal Mist Pink Muhly Grass | 5 gal. | 225 |
| | Rosmarinus officinalis 'Huntington Carpet'<br>Huntington Carpet Rosemary | 1 gal. | 94 |
| | Ruellia penninsularis<br>Wild Petunia | 5 gal | 387 |
| | Russelia equisetiformis<br>Firecracker Plant | 5 gal. | 101 |

## REFERENCE NOTES SCHEDULE

| SYMBOL | ROCK DESCRIPTION |
|---|---|
| K-101 | 1/2" screened decomposed granite. Express Carmel color at 2" Depth. |

NOTE:
LANDSCAPE TO BE IRRIGATED WITH PERMANENT, BELOW GRADE, AUTOMATIC SYSTEM

## LANDSCAPE CALCULATIONS

| | |
|---|---|
| Total Open Space Area | 93,936 Square Feet |
| Plant Material Coverage | 55,415 Square Feet (59%) |
| Total Parking lot trees | 114 |
| Foundation base length | 699' |

| | Required | Provided |
|---|---|---|
| Street Frontage Trees | 50 | 66 |
| 36" Street Frontage Trees | 13 | 35 |
| Ocotillo substitution | N/A | N/A |
| 24" Street Frontage Trees | 25 | 31 |
| Street Frontage Shrubs | 300 | 519 |
| 5 Gal. Street Frontage Shrubs | 150 | 318 |
| 36" box parking lot trees | 12 | 16 |
| Perimeter trees | 44 | 45 |
| Perimeter shrubs | 120 | 308 |
| Foundation base trees required | 11 | 24 |
| 36" box foundation base trees | 1 | 6 |
| Foundation base LF required | 191 (33%) | 542 (94%) |

| | |
|---|---|
| SERVICE STATION AREA TOTAL | 66,999 SF |
| SERVICE STATION MINIMUM REQUIRED LANDSCAPE AREA TOTAL | 6,700 SF |
| SERVICE STATION PROVIDED LANDSCAPE AREA | 13,697 SF |

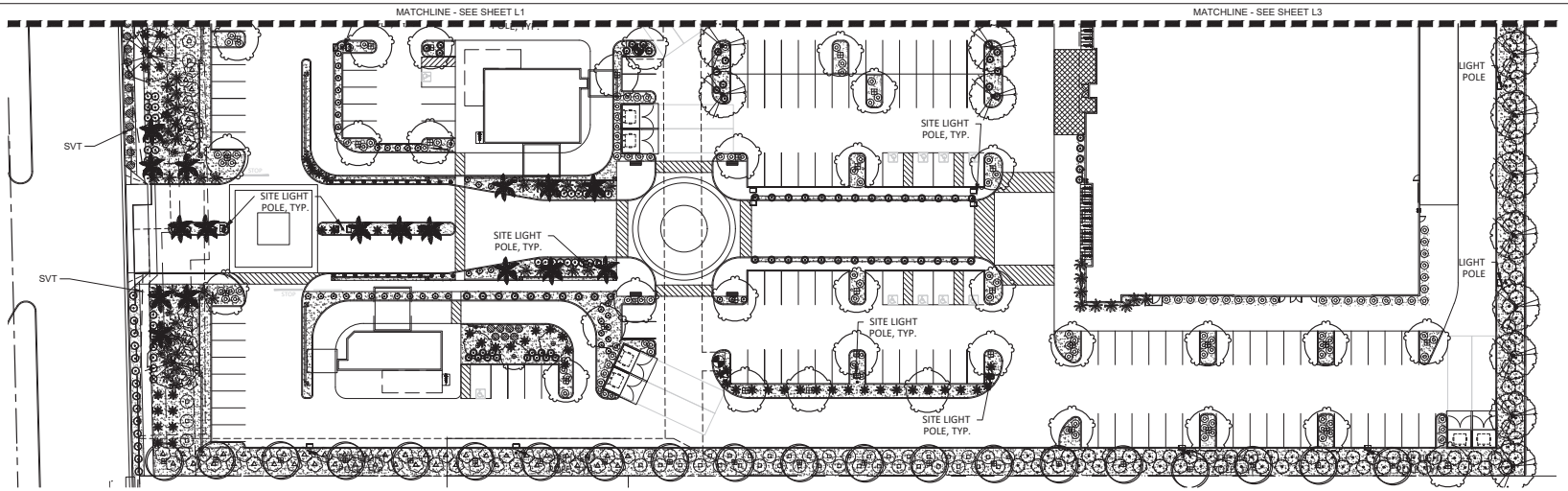
BFH Group
3707 EAST SOUTHERN AVENUE
MESA, ARIZONA, 85206
PHONE: 480.734.1446

REVISIONS:

PROJECT: POWER & ELLIOT RETAIL
3663 E. POWER ROAD MESA, ARIZONA 85212

Job No.:
Drawn By: PJ
Checked: DB

JOB NO. 22035
PRELIMINARY LANDSCAPE PLAN
SHEET NO. L1
1 OF 3




0 30 60 90 feet

SCALE: 1" = 30'

## PLANT SCHEDULE

| TREES | BOTANICAL / COMMON NAME | SIZE | QTY |
|---|---|---|---|
| | Ebenopsis ebano<br>Texas Ebony | 24" Box | 3 |
| | Olea europaea `Fruitless`<br>Fruitless Olive | 36" Box | 45 |
| | Parkinsonia x `Desert Museum`<br>Desert Museum Palo Verde | 24"box | 34 |
| | Parkinsonia x `Desert Museum`<br>Desert Museum Palo Verde | 36" Box | 26 |
| | Phoenix dactylifera<br>Date Palm | 15` Ht. | 38 |
| | Pistacia x `Red Push`<br>Pistache | 24"box | 24 |
| | x Chitalpa tashkentensis `Pink Dawn`<br>Pink Dawn Chitalpa | 36" Box | 100 |

| SHRUBS | BOTANICAL / COMMON NAME | SIZE | QTY |
|---|---|---|---|
| | Agave desmettiana<br>Dwarf Century Plant | 5 gal. | 74 |
| | Agave geminiflora<br>Century Plant | 5 gal. | 24 |
| | Bougainvillea x `Barbara Karst`<br>Barbara Karst Bougainvillea | 5 gal. | 113 |
| | Caesalpinia pulcherrima<br>Red Bird Of Paradise | 5 gal. | 58 |
| | Carissa macrocarpa `Boxwood Beauty`<br>Beauty Natal Plum | 5 gal. | 154 |
| | Dasylirion longissimum<br>Toothless Desert Spoon | 5 gal. | 58 |
| | Dodonaea viscosa 'Green'<br>Green Hopseed Bush | 5 gal. | 59 |
| | Hesperaloe parviflora 'Perpa' TM<br>Brakelights Red Yucca | 5 gal. | 173 |
| | Lantana x 'New Gold'<br>New Gold Lantana | 1 gal. | 112 |
| | Muhlenbergia capillaris `Regal Mist` TM<br>Regal Mist Pink Muhly Grass | 5 gal. | 245 |
| | Rosmarinus officinalis 'Huntington Carpet'<br>Huntington Carpet Rosemary | 1 gal. | 84 |
| | Ruellia penninsularis<br>Wild Petunia | 5 gal | 322 |
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## REFERENCE NOTES SCHEDULE

| SYMBOL | ROCK DESCRIPTION |
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## LANDSCAPE CALCULATIONS

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| Total Open Space Area | 93,936 Square Feet |
| Plant Material Coverage | 55,415 Square Feet (59%) |
| Total Parking lot trees | 114 |
| Foundation base length | 699' |

| | Required | Provided |
|---|---|---|
| Street Frontage Trees | 50 | 66 |
| 36" Street Frontage Trees | 13 | 35 |
| Ocotillo substitution | N/A | N/A |
| 24" Street Frontage Trees | 25 | 31 |
| Street Frontage Shrubs | 300 | 519 |
| 5 Gal. Street Frontage Shrubs | 150 | 318 |
| 36" box parking lot trees | 12 | 16 |
| Perimeter trees | 44 | 45 |
| Perimeter shrubs | 120 | 308 |
| Foundation base trees required | 11 | 24 |
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| Foundation base LF required | 191 (33%) | 542 (94%) |

SERVICE STATION AREA TOTAL 66,999 SF
SERVICE STATION MINIMUM REQUIRED
LANDSCAPE AREA TOTAL 6,700 SF
SERVICE STATION PROVIDED
LANDSCAPE AREA 13,697 SF

BFH
3707 EAST SOUTHERN AVENUE
MESA, ARIZONA, 85206
PHONE: 480.734.1446

REVISIONS:

PROJECT: POWER & ELLIOT RETAIL
3663 E. POWER ROAD MESA, ARIZONA 85212

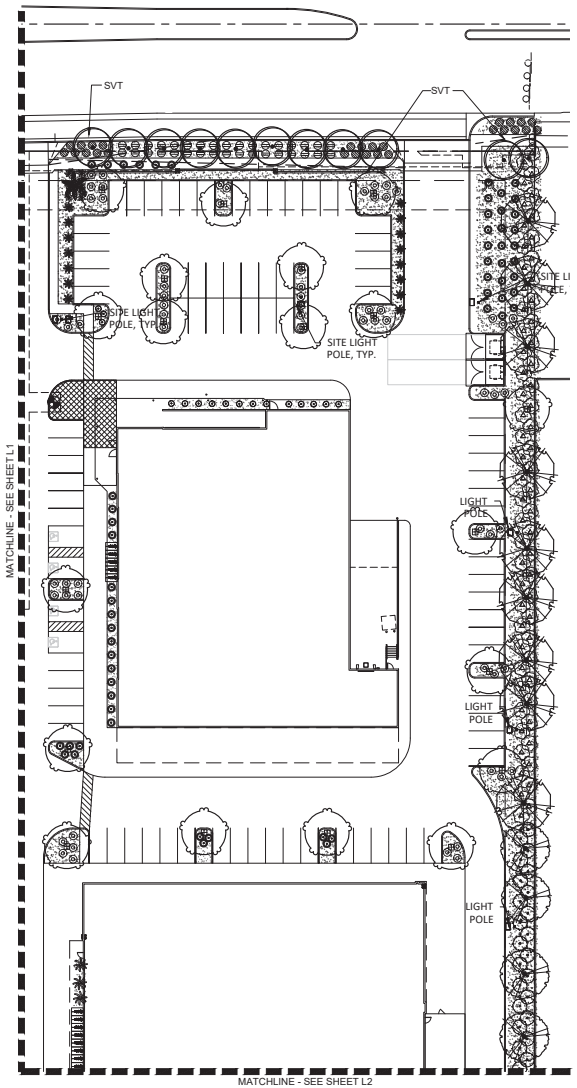
Job No.:
Drawn By: PJ
Checked: DB

JOB NO. 22035

PRELIMINARY LANDSCAPE PLAN

SHEET NO. L2

2 OF 3



SCALE: 1" = 30'

## PLANT SCHEDULE

| TREES | BOTANICAL / COMMON NAME | SIZE | QTY |
|---|---|---|---|
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| | Olea europaea `Fruitless`<br>Fruitless Olive | 36" Box | 45 |
| | Parkinsonia x `Desert Museum`<br>Desert Museum Palo Verde | 24"box | 34 |
| | Parkinsonia x `Desert Museum`<br>Desert Museum Palo Verde | 36" Box | 26 |
| | Phoenix dactylifera<br>Date Palm | 15` Ht. | 38 |
| | Pistacia x `Red Push`<br>Pistache | 24"box | 24 |
| | x Chitalpa tashkentensis `Pink Dawn`<br>Pink Dawn Chitalpa | 36" Box | 100 |

| SHRUBS | BOTANICAL / COMMON NAME | SIZE | QTY |
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| | Agave desmettiana<br>Dwarf Century Plant | 5 gal. | 74 |
| | Agave geminiflora<br>Century Plant | 5 gal. | 24 |
| | Bougainvillea x `Barbara Karst`<br>Barbara Karst Bougainvillea | 5 gal. | 113 |
| | Caesalpinia pulcherrima<br>Red Bird Of Paradise | 5 gal. | 58 |
| | Carissa macrocarpa `Boxwood Beauty`<br>Beauty Natal Plum | 5 gal. | 154 |
| | Dasylirion longissimum<br>Toothless Desert Spoon | 5 gal. | 58 |
| | Dodonaea viscosa 'Green'<br>Green Hopseed Bush | 5 gal. | 59 |
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BFH
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REVISIONS:

PROJECT: POWER & ELLIOT RETAIL
3663 E. POWER ROAD MESA, ARIZONA 85212

Job No.:
Drawn By: PJ
Checked: DB

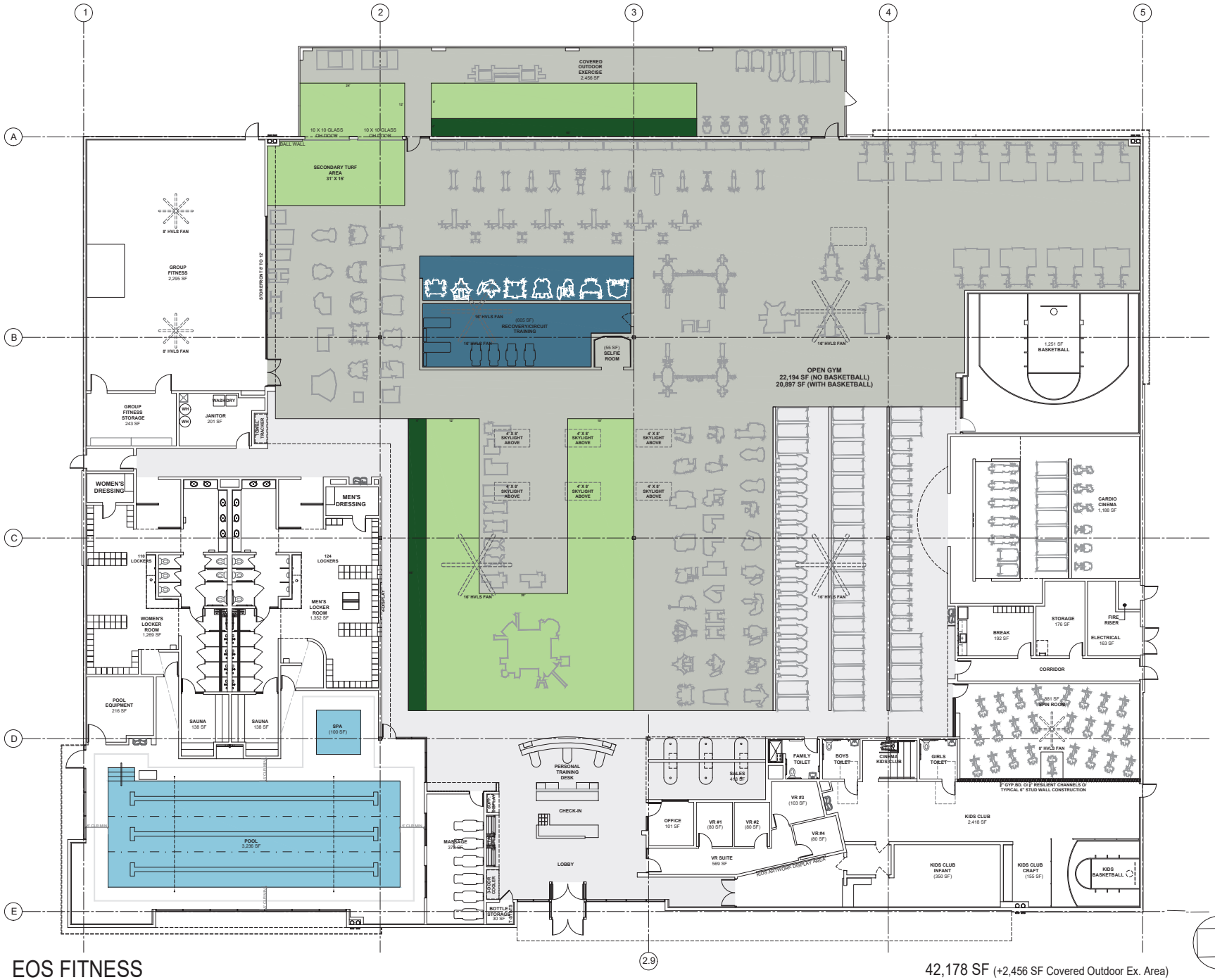
JOB NO. 22035

PRELIMINARY LANDSCAPE PLAN

SHEET NO. L3

3 OF 3

# TAB 7



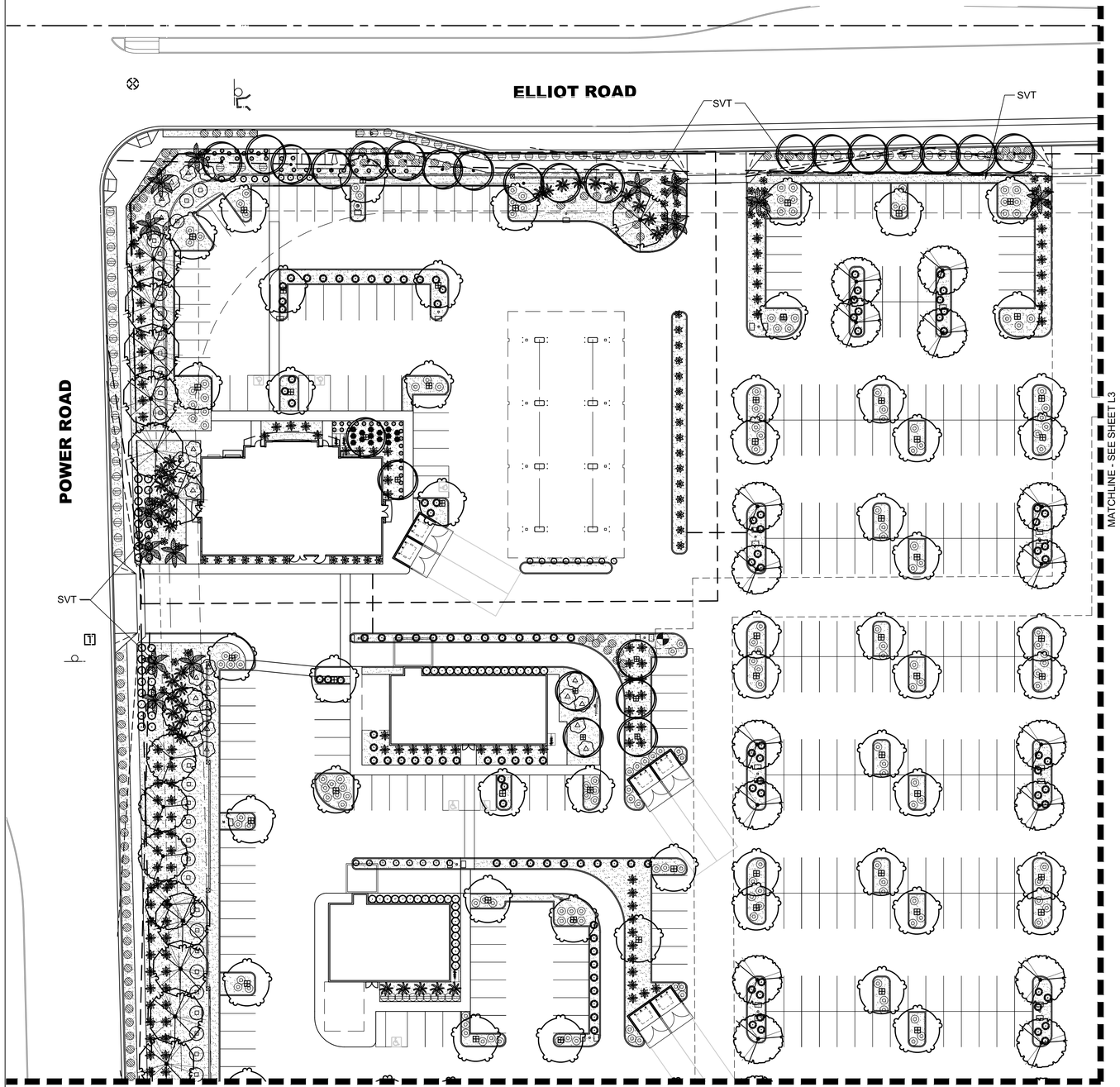

# EOS FITNESS

42,178 SF (+2,456 SF Covered Outdoor Ex. Area)

1/8" = 1'-0"

JSA ARCHITECTURE

© 2021 James E. Stroh, Architect, Inc., A Professional Corporation
The information in this drawing is preliminary and conceptual in nature.
It is based on information provided by others which the Architect has assumed to be substantially accurate. No representation is made by the Architect, express or implied, regarding the accuracy of this drawing, or the feasibility of this development approach.




0 30 60 90 feet

SCALE: 1" = 30'

## PLANT SCHEDULE

| TREES | BOTANICAL / COMMON NAME | SIZE | QTY |
|---|---|---|---|
| | Ebenopsis ebano<br>Texas Ebony | 24" Box | 3 |
| | Olea europaea `Fruitless`<br>Fruitless Olive | 36" Box | 34 |
| | Parkinsonia x `Desert Museum`<br>Desert Museum Palo Verde | 24"box | 20 |
| | Parkinsonia x `Desert Museum`<br>Desert Museum Palo Verde | 36" Box | 29 |
| | Phoenix dactylifera<br>Date Palm | 15` Ht. | 32 |
| | Pistacia x `Red Push`<br>Pistache | 24"box | 22 |
| | x Chitalpa tashkentensis `Pink Dawn`<br>Pink Dawn Chitalpa | 36" Box | 108 |

| SHRUBS | BOTANICAL / COMMON NAME | SIZE | QTY |
|---|---|---|---|
| | Agave desmettiana<br>Dwarf Century Plant | 5 gal. | 65 |
| | Agave geminiflora<br>Century Plant | 5 gal. | 52 |
| | Bougainvillea x `Barbara Karst`<br>Barbara Karst Bougainvillea | 5 gal. | 149 |
| | Caesalpinia pulcherrima<br>Red Bird Of Paradise | 5 gal. | 117 |
| | Carissa macrocarpa `Boxwood Beauty`<br>Beauty Natal Plum | 5 gal. | 82 |
| | Dasylirion longissimum<br>Toothless Desert Spoon | 5 gal. | 80 |
| | Dodonaea viscosa 'Green'<br>Green Hopseed Bush | 5 gal. | 69 |
| | Hesperaloe parviflora 'Perpa' TM<br>Brakelights Red Yucca | 5 gal. | 159 |
| | Lantana x 'New Gold'<br>New Gold Lantana | 1 gal. | 128 |
| | Muhlenbergia capillaris `Regal Mist` TM<br>Regal Mist Pink Muhly Grass | 5 gal. | 225 |
| | Rosmarinus officinalis 'Huntington Carpet'<br>Huntington Carpet Rosemary | 1 gal. | 94 |
| | Ruellia penninsularis<br>Wild Petunia | 5 gal | 387 |
| | Russelia equisetiformis<br>Firecracker Plant | 5 gal. | 101 |

## REFERENCE NOTES SCHEDULE

| SYMBOL | ROCK DESCRIPTION |
|---|---|
| K-101 | 1/2" screened decomposed granite. Express Carmel color at 2" Depth. |

NOTE:
LANDSCAPE TO BE IRRIGATED WITH PERMANENT, BELOW GRADE, AUTOMATIC SYSTEM

## LANDSCAPE CALCULATIONS

| | | |
|---|---|---|
| Total Open Space Area | 148,937 Square Feet | |
| Plant Material Coverage | 55,415 Square Feet (59%) | |
| Total Parking lot trees | 114 | |
| Foundation base length | 699' | |
| | Required | Provided |
| Street Frontage Trees | 50 | 66 |
| 36" Street Frontage Trees | 13 | 35 |
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## SITE FURNISHINGS SCHEDULE

| SYMBOL | DESCRIPTION | QTY |
|---|---|---|
| S-101 | Landscape Forms NLVN-59-E<br>Neoliviano Backless Bench 59in., Embedded, Wood<br>Frame: Finished Aluminum<br>Seat: Thermally Modified Ash Exterior Wood | 8 |
| S-102 | Landscape Forms STRETCH<br>Stretch sun shade. Cast and extruded aluminum construction. Available with solid or perforated panels. 86.50in. W x 89.5in. D x 83in. H.<br>Frame: Bronze Metallic<br>Shade Panels: Stone Metallic Perforated | 4 |
| S-103 | Landscape Forms SENTL-11<br>Sentinel Series Standard Bollard. Structural steel pipe with cast aluminum sleeve. 11in. D x 34in. H.<br>Bollard: Titanium Metallic | 24 |

BFH Group
3707 EAST SOUTHERN AVENUE
MESA, ARIZONA, 85206
PHONE: 480.734.1446

REVISIONS:

PROJECT: POWER & ELLIOT RETAIL
3663 E. POWER ROAD MESA, ARIZONA 85212

Job No.:
Drawn By: PJ
Checked: DB

LANDSCAPE ARCHITECT
STATE OF ARIZONA
No. 34507
JAMES CHRISTOPHER EVERETT
I HEREBY CERTIFY THAT THE SIGNED ABOVE IS A LICENSED LANDSCAPE ARCHITECT IN THE STATE OF ARIZONA, U.S.A.

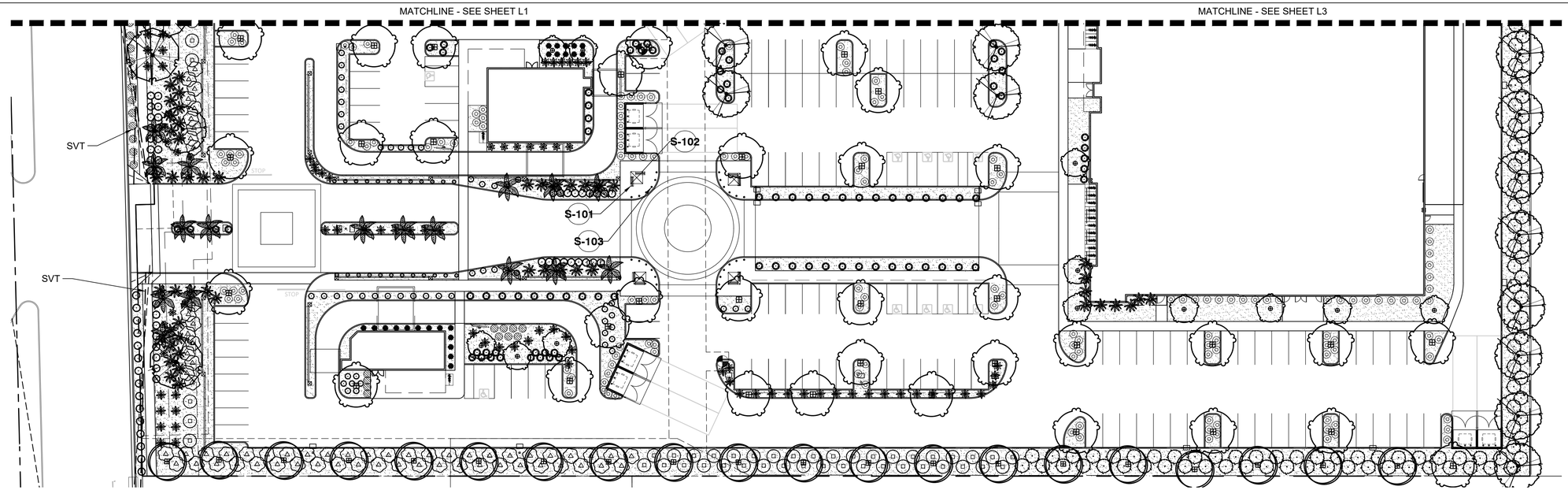
EXP. 06/30/2025

JOB NO.
22035

PRELIMINARY LANDSCAPE PLAN

SHEET NO.
L1

1 OF 3




0 30 60 90 feet

SCALE: 1" = 30'

## PLANT SCHEDULE

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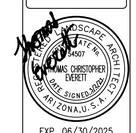
BFH Group
3707 EAST SOUTHERN AVENUE
MESA, ARIZONA, 85206
PHONE: 480.734.1446

REVISIONS:

PROJECT: POWER & ELLIOT RETAIL
3663 E. POWER ROAD MESA, ARIZONA 85212

Job No.:
Drawn By: PJ
Checked: DB

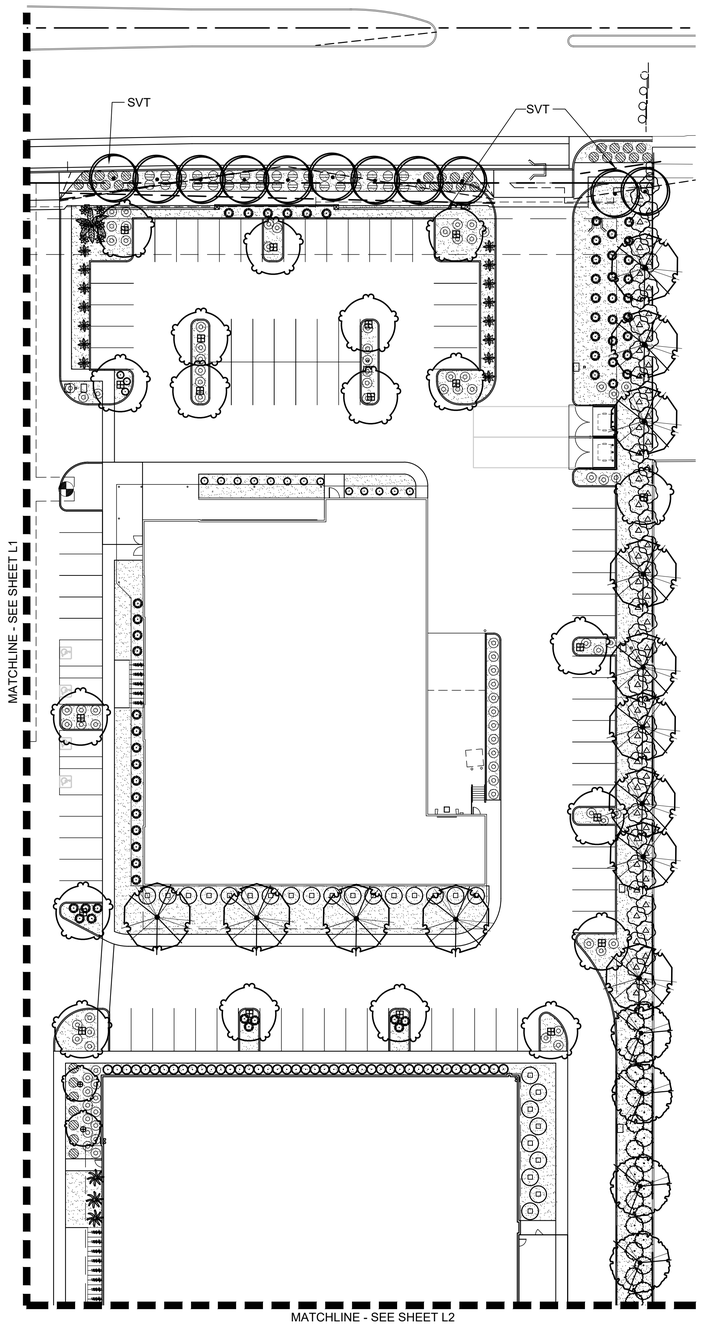



EXP. 06/30/2025

JOB NO. 22035

PRELIMINARY LANDSCAPE PLAN

SHEET NO. L2

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PHONE: 480.734.1446

REVISIONS:

PROJECT:
POWER & ELLIOT RETAIL
3663 E. POWER ROAD MESA, ARIZONA 85212

| | |
|---|---|
| Job No.: | |
| Drawn By: | PJ |
| Checked: | DB |

REGISTERED LANDSCAPE ARCHITECT
34507
THOMAS CHRISTOPHER DIERDITT
STATE OF ARIZONA U.S.A.

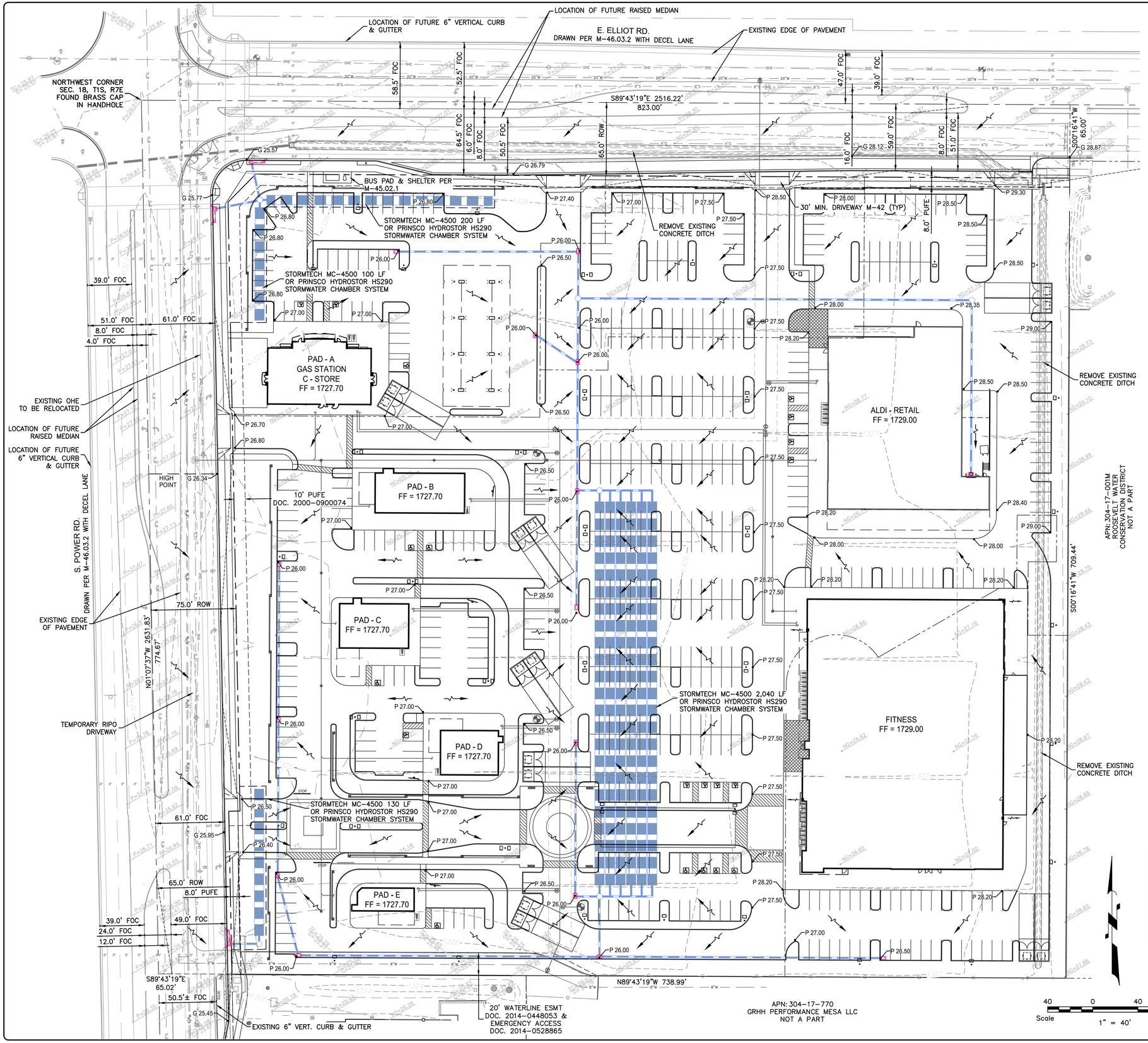
EXP. 06/30/2025

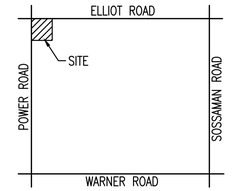
JOB NO.
22035

PRELIMINARY
LANDSCAPE PLAN

SHEET NO.
L3

3 OF 3




## VICINITY MAP

N.T.S

## OWNER/DEVELOPER

AVALON DEVELOPMENT
7333 E. DOUBLETREE RANCH ROAD
SUITE 140
SCOTTSDALE, AZ 85258
PHONE: 480.376.8750
ATTN: BRIAN LESTER

## ENGINEER

BFH GROUP
3707 E. SOUTHERN AVENUE
MESA, ARIZONA, 85206
PHONE: 480.734.1446
ATTN: DAVID M. BOHN

## PROJECT INFORMATION

LOCATION: SOUTHEAST CORNER OF POWER ROAD & ELLIOT ROAD, MESA, ARIZONA

ZONING: LC

PARCEL NUMBER: 304-17-211, 304-17-212, 304-17-213, 304-17-214, 304-17-215, 304-17-216, 304-17-217, 304-17-218, 304-17-219

SITE AREA: 524,476.34 S.F. – 12.03 A.C.

## LEGEND

- PROPOSED CURB
- PUE
- SVT
- RIGHT OF WAY (R/W)
- BOUNDARY LINE
- SIDEWALK LINE
- CENTER LINE
- LIGHTS
- WATER VALVE
- 8"S 8" SEWER LINE
- 8"W 8" WATER LINE
- SEWER MANHOLE
- EXISTING STREET LIGHT
- EXISTING ELECTRIC LINE
- EXISTING POWER POLE
- STORM DRAIN PIPE
- CATCH BASIN

## RETENTION CALCULATIONS

| DRAINAGE AREA DESCRIPTION | ACRES | P (IN.) | C VALUE | CALCULATED Vr | VOL PROVIDED AS SHOWN ON PLAN | VOL PROVIDED AS SHOWN ON PLAN |
|---|---|---|---|---|---|---|
| OFFSITE | 2.42 | 2.20 | 0.95 | 18,360 CF | UGST - O1 + O2 | 19,245 CF |
| OFFSITE | 12.03 | 2.20 | 0.90 | 86,464 CF | UGST - A | 89,124 CF |
| TOTAL | 14.45 | | | 104,824 CF | | 108,369 CF |

Vr = A (P/12) (C)
WHERE: Vr = CALCULATED VOLUME REQUIRED
A = DRAINAGE AREA
P = INCHES OF RAIN FOR A 100-YR, 2-HR STROM
= 2.20" COM ENGINEERING STANDARDS MANUAL; NOAA = 2.17"
C = RUNOFF COEFFICIENT = 0.90 ONSITE; 0.95 OFFSITE

NOT APPROVED FOR CONSTRUCTION

BFH Group
3707 EAST SOUTHERN AVENUE
MESA, ARIZONA, 85206
PHONE: 480.734.1446

REVISIONS:

PRELIMINARY GRADING & DRAINAGE PLAN

PROJECT: POWER & ELLIOT RETAIL
SOUTHEAST CORNER POWER & ELLIOT, MESA, AZ

| | |
|---|---|
| Job No.: | – |
| Drawn By: | PJ |
| Checked: | DB |

Blue Stake, Inc. 811
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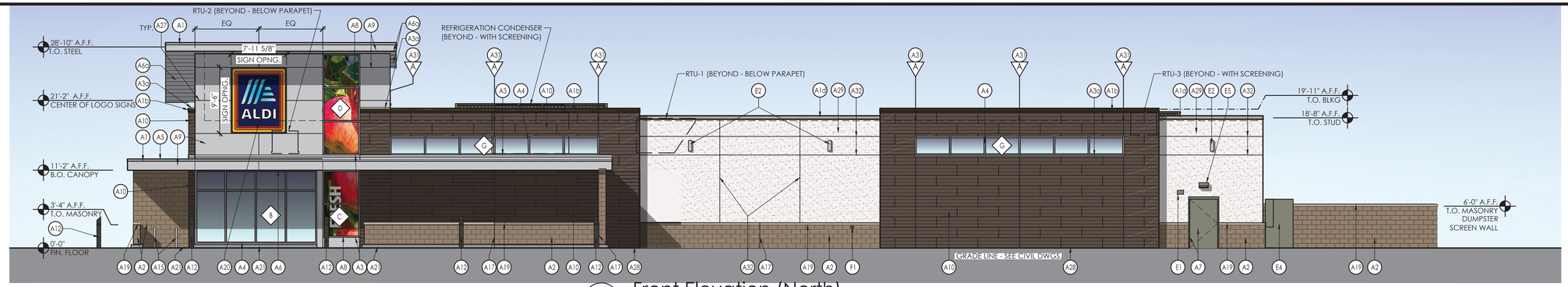
Call (811) or visit azblue.com

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
48533
DAVID M. BOHN
Date Signed 09-30-22
ARIZONA, U.S.A.
EXPIRES 09/30/2023

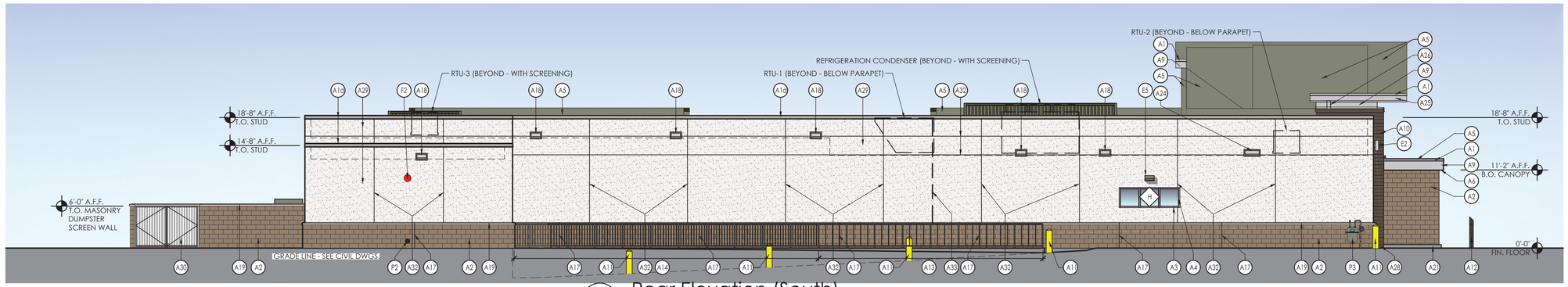
JOB NO.
-
-
SHEET NO.
PGD1
1 OF 2

PRS22-00908



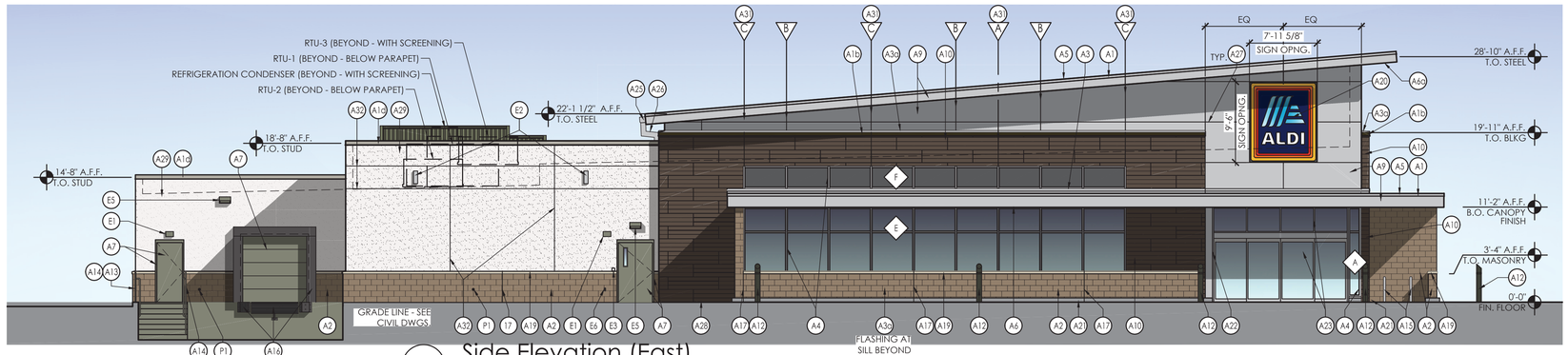

4 Front Elevation (North)

SCALE: 1/8" = 1'-0"



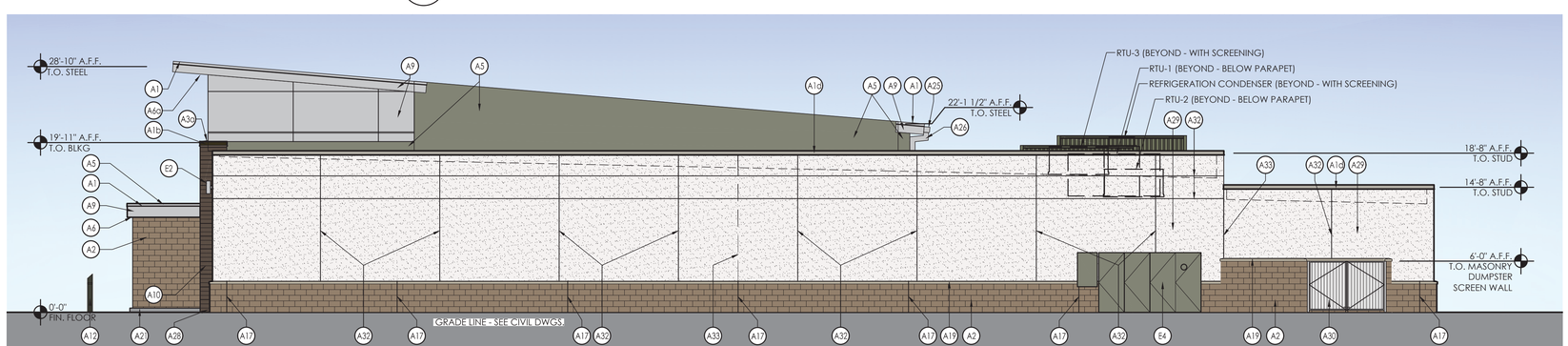

3 Rear Elevation (South)

SCALE: 1/8" = 1'-0"




2 Side Elevation (East)

SCALE: 1/8" = 1'-0"




1 Side Elevation (West)

SCALE: 1/8" = 1'-0"

| SIGNAGE | | | |
|---|---|---|---|
| DESCRIPTION | QUANTITY | SQ. FT. PER SIGN | TOTALS |
| TOWER SIGN | 2 | 74.9 | 149.8 |
| | | | |
| TOTAL SIGNAGE | | | 149.8 |
| SIGNAGE IS SHOWN FOR REFERENCE ONLY AND SHALL BE UNDER SEPARATE PERMIT SUBMITTAL | | | |

PLOTTED: 4/5/2021 12:38 PM

| Issued: | | Date: |
|---|---|---|
| A | Issued for Client Review | 04/05/2021 |
| B | | |
| C | | |
| D | | |
| E | | |

| Revisions: | | Date: |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |

Seal

Seal

PROJECT ARCHITECT/ENGINEER DATE

PROJECT LEAD DATE

PROJECT DESIGNER DATE

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APD Engineering & Architecture, PLLC
615 Fishers Run
Victor, NY 14564
www.apd.com

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APD ENGINEERING ARCHITECTURE
615 Fishers Run Victor, NY 14564
585.742.2222 - www.apd.com

ALDI Inc.
5080 N. 40th Street, Ste. 335
Phoenix, AZ 85018

Concept
Exterior Elevations
Drawing Name:

Date:

Project No.

Type: LHRDV7ER

Drawn By: DRW

CEE-1

Scale: As Noted

Drawing No.

North Elevation

West Elevation

# EOS FITNESS

JSA ARCHITECTURE

1/8" = 1'-0"

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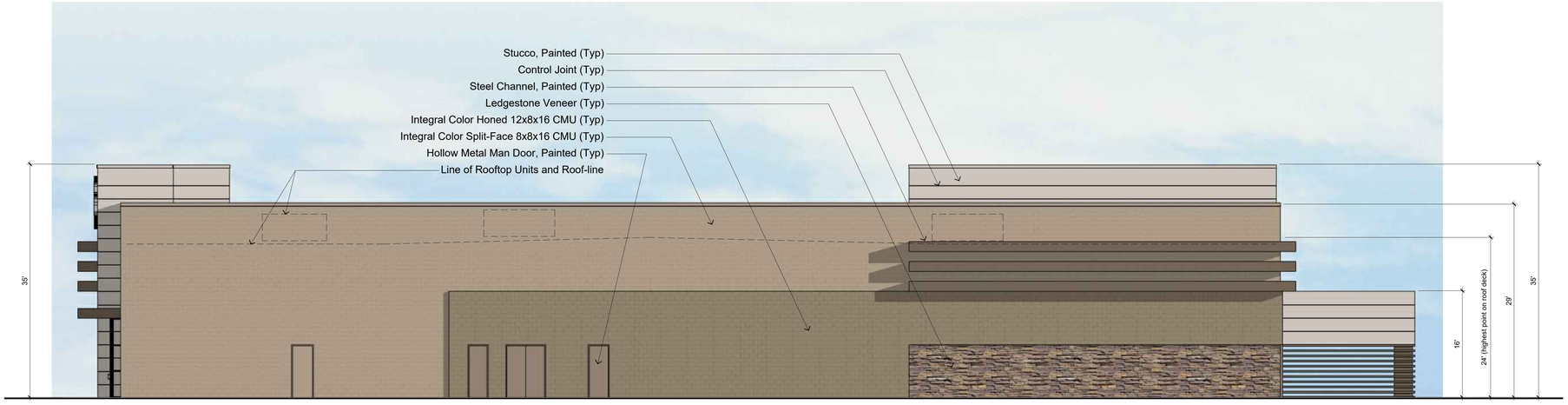
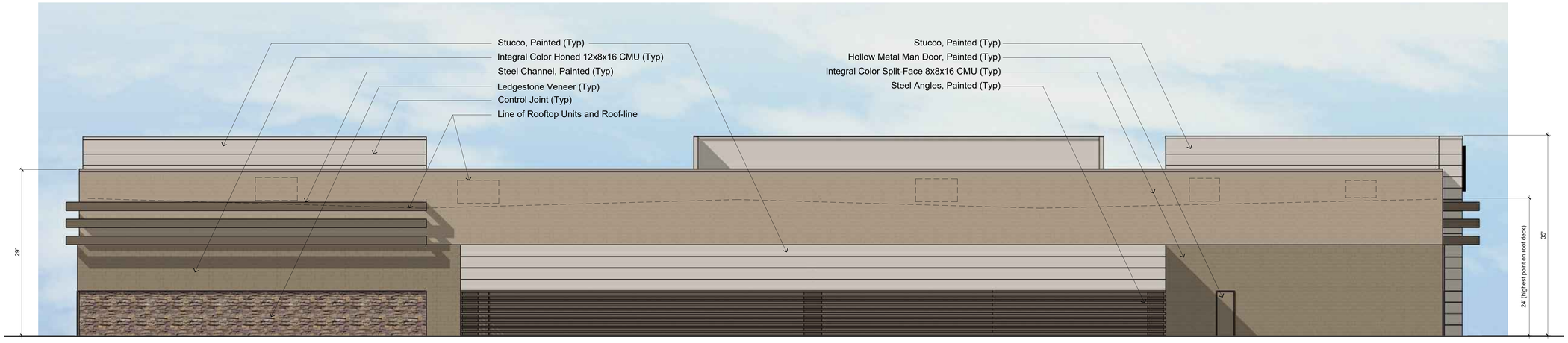



South Elevation




East Elevation

# EOS FITNESS

1/8" = 1'-0"

JSA ARCHITECTURE

PROJECT NUMBER: 20105

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The information in this drawing is preliminary and conceptual in nature.
It is based on information provided by others which the Architect has assumed to be substantially accurate. No representation is made by the Architect, express or implied, regarding the accuracy of this drawing, or the feasibility of this development approach.

# Power & Elliot Commercial

**SEC Power Road & Elliot Road**
**Mesa, Arizona**

REZONE, SITE PLAN, SUP, AND DESIGN REVIEW

Citizen Participation Plan

Initial Submittal: November 28, 2022

## I. Introduction

The purpose of this Citizen Participation Plan is to inform citizens, property owners, neighbor associations, agencies, schools and businesses in the vicinity of the site. The Applicant is requesting to rezone the subject property for the development of new commercial/retail development. The subject site is approximately 14.46 gross acres of vacant land located at the southeast corner of Power Road and Elliot Road (the "Property") as shown on the attached Aerial Map.

The project is consistent with the City's General Plan designation and compatible with the surrounding uses. This plan will ensure that those affected by this application will have an adequate opportunity to learn about and comment on the proposal.

## II. Contact

Benjamin Tate
Withey Morris, PLC
2525 East Arizona Biltmore Circle
Phoenix, Arizona 85016
602-230-0600
Email: ben@witheymorris.com

## III. Contact List

Parties affected by the applications may include properties owners within 1000-feet of the Property as identified by the Maricopa County Assessor's Map, residents, registered neighborhoods, homeowners' associations and other neighborhood entities identified by the City of Mesa and interested parties which may request to be placed on the Contact List. To provide additional outreach, the Applicant has decided to expand the notification to 1,000 feet. A copy of the contact list and map of the mailing area are attached.

## IV. Notification Technique / Notice of Meetings

Citizens, registered neighborhoods, homeowners' associations, and other interested parties affected by the rezone application will be notified of the application through an informational mailing to be sent in late March. The letter will introduce the Applicant, provide information on the project, provide contact information for the City and the Applicant and encourage the recipient to contact the City or the Applicant with any questions or comments. The letter will also invite neighbors to attend a future neighbor meeting to discuss the proposal.

Once hearings are scheduled, another mailing will be sent out with detailed information on the hearing and how to participate. The hearing notification letter will again encourage the recipient to contact the City or the Applicant with any questions or comments.

## V. Response Procedures

The Applicant will be available to discuss the project with any and all citizens expressing interest in the project. Phone conversations are typically the most efficient and appreciated means of discussing projects, but Individual meetings (virtual or otherwise) will

be conducted upon request. The City of Mesa is also available to answer questions regarding the review and public hearing process.

## VI. Status Procedures

The Applicant shall keep the City of Mesa informed of the status of its citizen participation efforts through a Citizen Participation Report or other correspondence with the assigned City Staff. Copies of the applications containing the complete details of the requests shall be kept on file with the City of Mesa.

## VII. Inquiries

Information regarding project inquiries will be documented in the Citizen Participation Report and/or provided to the assigned City Staff.

## VIII. Schedule for Implementation

| | |
|---|---|
| 1. Submittal | November 28, 2022 |
| 2. Notification Letter | December 2022 |
| 3. Virtual open house | December 2022 |
| 4. Planning & Zoning notifications | TBD |
| 5. Planning & Zoning Board hearing | TBD |
| 6. City Council hearing | TBD |

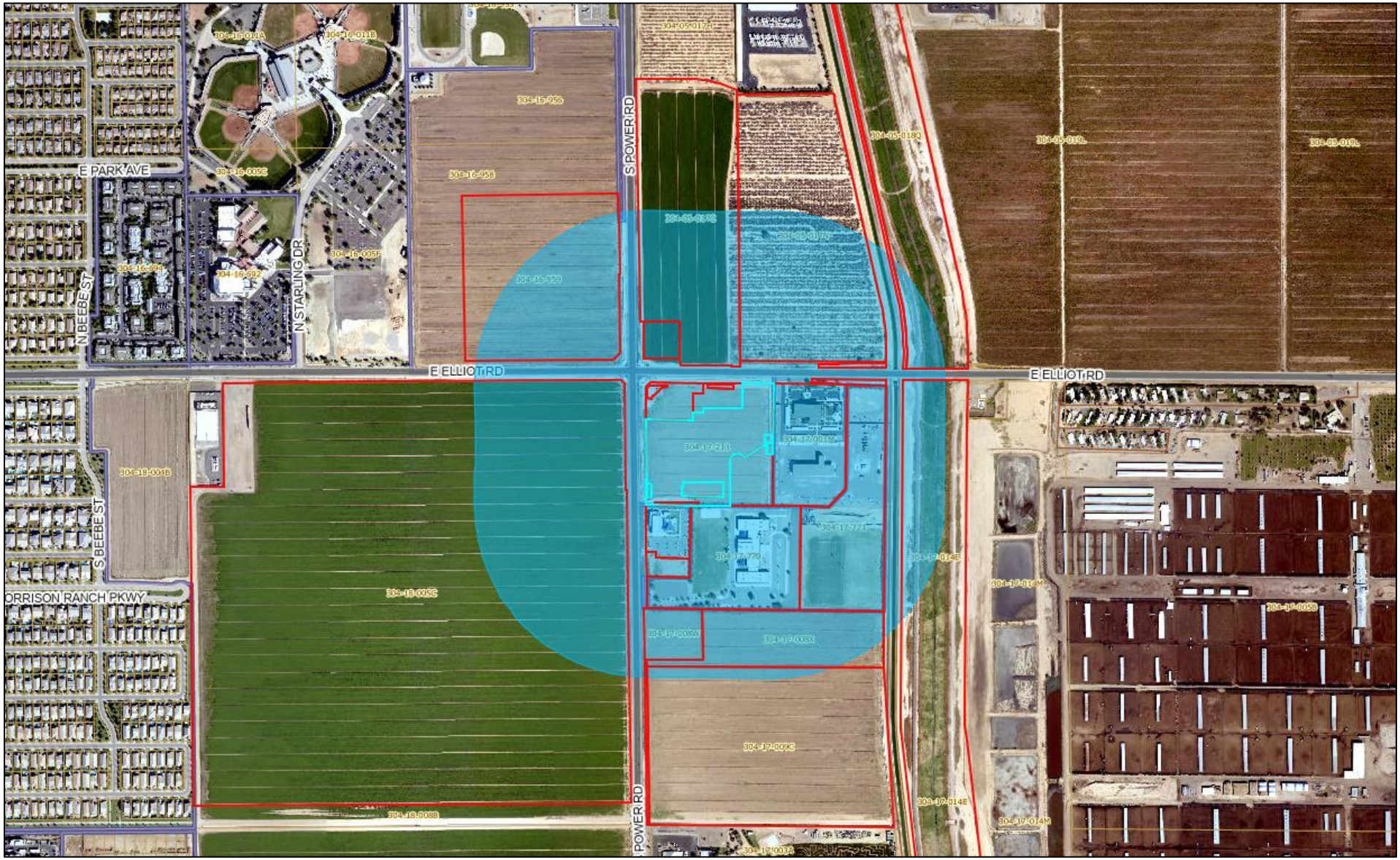
# Aerial Map

SEC Power Road & Elliot Road - Mesa, AZ

N

| Owner | Address | City | State | ZIP |
|---|---|---|---|---|
| SAIA FAMILY LP | 2120 E 6th ST 16 | TEMPE | AZ | 85288 |
| ELLIOT POWER OZB LLC | 5501 E ESTRID AVE | SCOTTSDALE | AZ | 85254 |
| LANGLEY PROPERTIES I LP | 2738 E GUADALUPE RD | GILBERT | AZ | 852345100 |
| EILLOT MESA COMMERCE CENTER LLC | 660 NEWPORT CENTER DR SUITE 1300 | NEWPORT BEACH | CA | 92260 |
| FLOOD CONTROL DISTRICT OF MARICOPA COUNTY | 2801 W DURANGO ST | PHOENIX | AZ | 85009 |
| FRED MEYER STORES INC | 1014 VINE ST | CINCINNATI | OH | 452021100 |
| ROOSEVELT WATER CONSERVATION DISTRICT | PO BOX 100 | HIGLEY | AZ | 85236 |
| ROOSEVELT WATER CONSERVATION DISTRICT | 2344 S HIGLEY RD | GILBERT | AZ | 85212 |
| EVO 2 LAND HOLDINGS LLC | 2161 E PECOS RD | GILBERT | AZ | 85295 |
| P&E REALTY HOLDINGS LLC | 4570 E WATERMAN ST | GILBERT | AZ | 85297 |
| ROCKALL POWER LLC | 14207 E COYOTE RD | SCOTTSDALE | AZ | 85259 |
| SOUTH POWER ROAD JOF AZ LLC | 100 DUNBAR ST STE 400 | SPARTANBURG | SC | 29306 |
| FLOOD CONTROL DISTRICT OF MARICOPA COUNTY | 2801 W DURANGO ST | PHOENIX | AZ | 85009 |
| LESUEUR INVEST VI LLC/ETAL | 1223 S CLEARVIEW AVE STE 103 | MESA | AZ | 85209 |
| LEMAN ACADEMY OF EXCELLENCE INC | 3300 E SUNRISE DR STE 150 | TUCSON | AZ | 85718 |
| ROOSEVELT WATER CONSERVATION DISTRICT | PO BOX 100 | HIGLEY | AZ | 85236 |
| PENDING | PENDING | PENDING | | |
| THE DALE C MORRISON TRUST | 1733 N GREENFIELD RD STE 101 | MESA | AZ | 85205 |

# Maling Map




SEC Power Road & Elliot Road – Mesa, AZ

N

# Power & Elliot Commercial

**SEC Power Road & Elliot Road**
**Mesa, Arizona**

REZONE, SITE PLAN, and SUP

Citizen Participation Report

Submitted March 2, 2023

## I. Introduction

The purpose of this Citizen Participation Report is to provide a summary of public outreach efforts associated with the request to rezone the subject property for the development of new commercial/retail development. The subject site is approximately 14.46 gross acres of vacant land located at the southeast corner of Power Road and Elliot Road (the "Property") as shown on the attached Aerial Map.

## II. Contact

Benjamin Tate
Withey Morris, PLC
2525 East Arizona Biltmore Circle
Phoenix, Arizona 85016
602-230-0600
Email: ben@witheymorris.com

## III. Notification

On February 7, 2023, the Applicant mailed notice letters to all property owners within a 1,000-foot radius of the Property as identified by the Maricopa County Assessor's Map, residents, registered neighborhoods, homeowners' associations and other neighborhood entities identified by the City of Mesa and interested parties which may request to be placed on the Contact List. A copy of the letter, mailing labels, and a map of the mailing area are attached to this report.

## IV. Response

As of the writing of this report, the applicant has received no communications in response to the February 7th notice letter.

**AVALON DEVELOPMENT**
7333 E. Doubletree Ranch Rd Suite 140
Scottsdale, AZ 85258
Ph. 480-376-8750
www.avalondevelopment.com

February 7, 2023
**Notice of Project**
SEC Power Road & Elliot Road
ZON22-01271/DR22-01273

Dear Property Owner or Resident:

We are writing in regard to approximately 14.46 gross acres of vacant land located at the southeast corner of Power Road & Elliot Road in Mesa (the "Property"), as shown on the enclosed aerial map. The site is currently zoned LC (Limited Commercial) with PAD (Planned Area Development) and BIZ Overlays.

Avalon Development recently filed Rezoning and Development Review applications with the City of Mesa for the Property. We are requesting to rezone the site to Limited Commercial (LC) for the development of a commercial and retail center. Avalon Development is proposing the development of a community-scale commercial and retail development with approximately 76,100 square feet of retail shops, restaurants, a grocer, fitness user and a service station/convenience store. As part of our proposal, we are requesting approval of Special Use Permits for the service station as well as a modified parking ratio for the fitness facility.

The proposed project seeks to utilize the same underlying Limited Commercial zoning that is already approved for the site, but with a lower intensity commercial/retail center than was previously considered. The proposal matches the retail needs of the area and reflects the current demand in the retail market in terms of intensity and composition of land uses. The site has been designed to meet the high-quality design and development standards the City of Mesa strives for while providing an appropriate development capable of meeting the goals of the General Plan and the commercial needs of residents in the area.

When hearing dates are scheduled, we will send out another mailing notifying you of those dates and times. If you have any questions or would like to meet with the applicant or the development team, please feel free to contact me at 602-230-0600 or ben@witheymorris.com.

Thank you for your courtesy and consideration.

Sincerely,

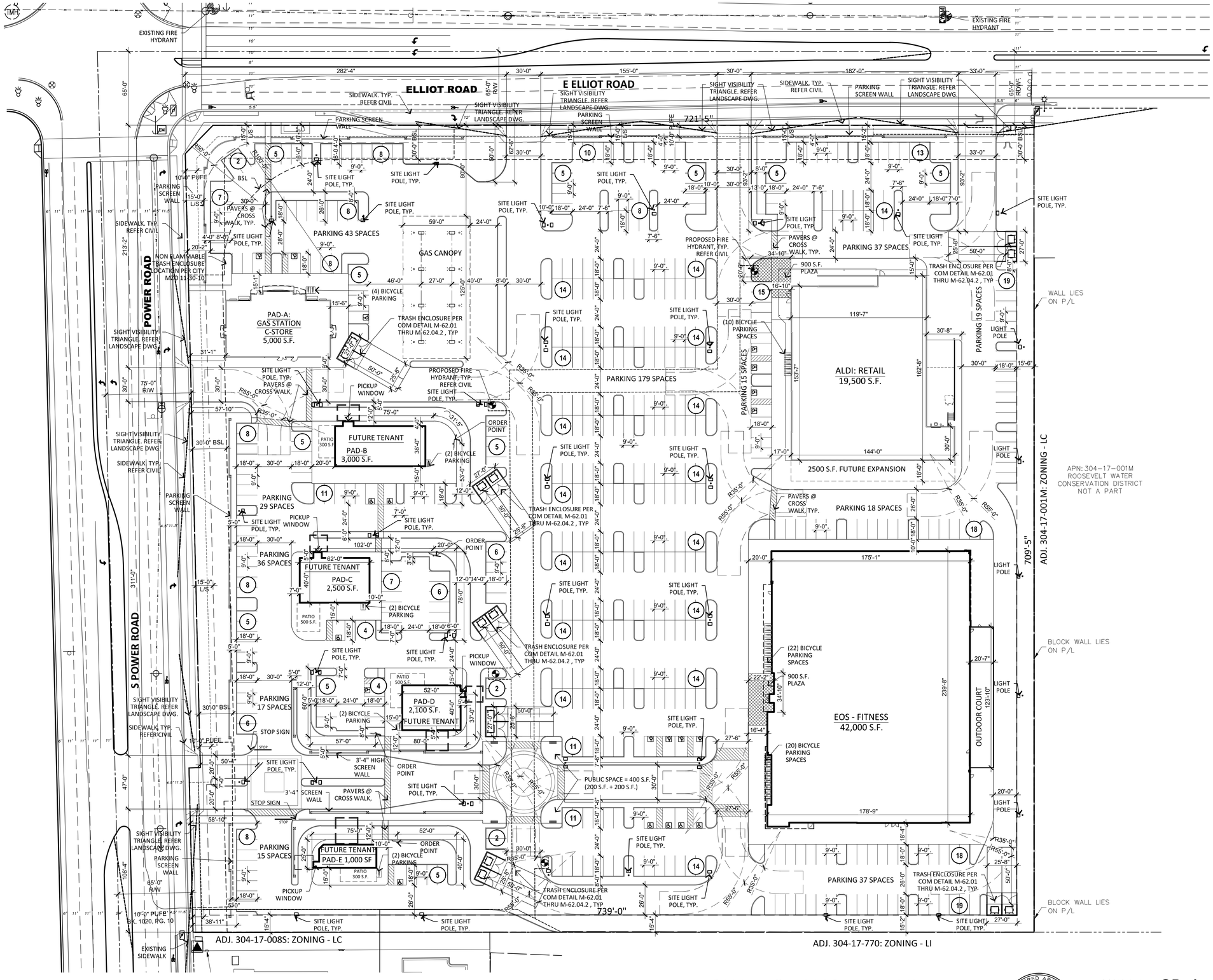
By
Benjamin L. Tate
Withey Morris, PLC
On behalf of Avalon Development

Enclosures

# Aerial Map

SEC Power Road & Elliot Road - Mesa, AZ

N




## SITE PLAN

SCALE: 1" = 40'-0"

NORTH

0' 20' 40' 80'

# POWER & ELLIOT RETAIL

3663 E POWER ROAD MESA ARIZONA 85212
SEC OF S POWER ROAD AND E ELLIOT ROAD
DATE: 01-27-2023 (PRELIMINARY)

## PROJECT DIRECTORY


ARCHITECT:
RKAA ARCHITECTS, INC.
2233 EAST THOMAS ROAD
PHOENIX, ARIZONA 85016
CONTACT: NEIL FEASER
PHONE: (602) 955-3900
FAX: (602) 955-0496
E-MAIL: nfeaser@rkaa.com


## SITE DATA

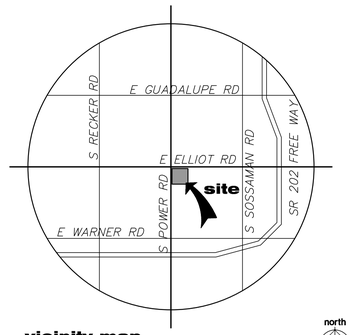
| | |
|---|---|
| PARCEL NUMBER: | 304-17-211 THRU 304-17-219 |
| EXISTING ZONING: | LC -PAD-BIZ |
| NET SITE AREA: | 12.04 ACRES (524,473 S.F.) |
| GROSS SITE AREA: | 14.46 ACRES (630,003 S.F.) |
| MAX. LOT COVERAGE: | 80% |
| LOT COVERAGE PROPOSED: 76,700 S.F. | 14.62% |
| MAX. HEIGHT PER CODE: | 30'-0" |
| PUBLIC SPACE REQUIRED: | 5 SF / 1000 SF OF BUILD. AREA |
| PROPOSED USE: | RETAIL/RESTAURANT/FITNESS/GAS STATION |

BUILDING AREA:

| | |
|---|---|
| PAD A: GAS STATION-CSTORE | 5,000 S.F. |
| PAD B: RESTAURANT - DT | 3,000 S.F. |
| PAD C: RESTAURANT - DT | 2,500 S.F. |
| PAD D: RESTAURANT - DT | 2,100 S.F. |
| PAD E: RESTAURANT - DT | 1,000 S.F. |
| ALDI- RETAIL: | 19,500 S.F. |
| EOS FITNESS | 42,000 S.F. |
| TOTAL BUILDING AREA: | 75,100 S.F. |
| TOTAL PATIO AREA | 1,600 S.F. |
| TOTAL GROSS AREA: | 76,700 S.F. |
| SITE COVERAGE: | 14.62 % |
| PUBLIC SPACE REQUIRED: | 384 S.F. |
| PUBLIC SPACE PROVIDED: | 400 S.F. |

PARKING REQUIRED

| | |
|---|---|
| GAS STATION-CSTORE-5000 SF : 1 PER 375 | 14 SPACES |
| RESTAURANT-8600 SF - DT: 1 PER 100 | 86 SPACES |
| PATIO SEATING: 1 PER 200 | 08 SPACES |
| ALDI - RETAIL : 1 PER 375 | 52 SPACES |
| EOS FITNESS : 1 PER 100 | 420 SPACES |
| TOTAL PARKING REQUIRED: | 580 SPACES |
| TOTAL PARKING PROVIDED: | 526 SPACES |
| ( VARIANCE / PARKING REDUCTION APPROVAL REQUIRED) | |
| ACCESSIBLE SPACES REQUIRED: | 20 SPACES |
| ACCESSIBLE SPACES PROVIDED: | 20 SPACES |
| BICYCLE SPACE REQUIRED | 58 SPACES |
| BICYCLE SPACES PROVIDED: | 64 SPACES |




vicinity map
scale: n.t.s.

north

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REGISTERED ARCHITECT
CERTIFICATE NO.
No. 9452
ROBERT W. KUBICEK
1/27/23
DATE SIGNED
ARIZONA U.S.A.
EXPIRES 06/30/2024


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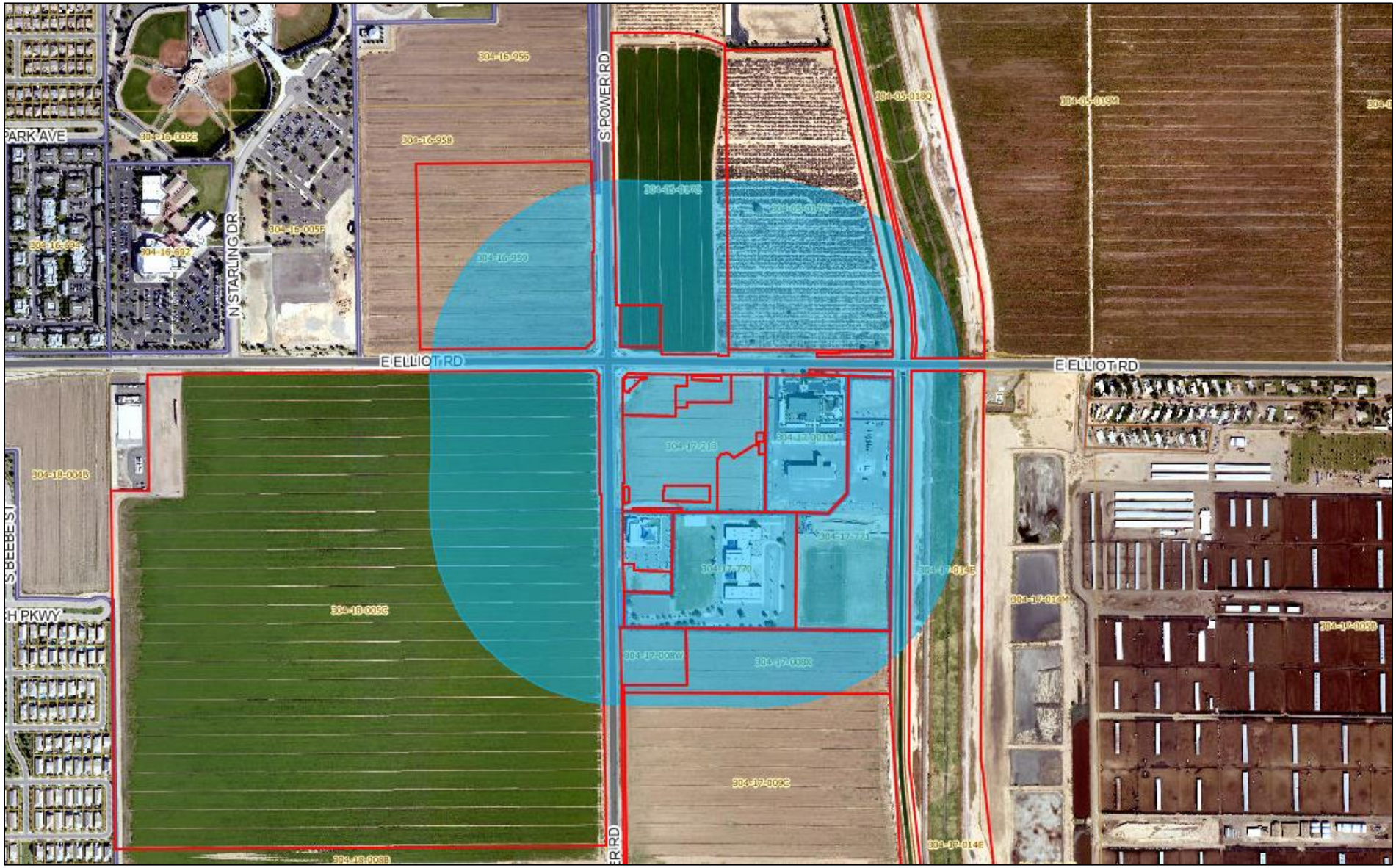
SP-1

RKAA# 22223.50

RKAA ARCHITECTS, INC

# Maling Map




SEC Power Road & Elliot Road – Mesa, AZ

N

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EILLOT MESA COMMERCE CENTER LLC
660 NEWPORT CENTER DR SUITE 1300
NEWPORT BEACH, CA 92260

ELLIOT POWER OZB LLC
5501 E ESTRID AVE
SCOTTSDALE, AZ 85254

EVO 2 LAND HOLDINGS LLC
2161 E PECOS RD
GILBERT, AZ 85295

FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY
2801 W DURANGO ST
PHOENIX, AZ 85009

FRED MEYER STORES INC
1014 VINE ST
CINCINNATI, OH 45202

LANGLEY PROPERTIES I LP
2738 E GUADALUPE RD
GILBERT, AZ 85234

LEMAN ACADEMY OF EXCELLENCE INC
3300 E SUNRISE DR STE 150
TUCSON, AZ 85718

LESUEUR INVEST VI LLC/ETAL
1223 S CLEARVIEW AVE STE 103
MESA, AZ 85209

P&E REALTY HOLDINGS LLC
4570 E WATERMAN ST
GILBERT, AZ 85297

ROCKALL POWER LLC
14207 E COYOTE RD
SCOTTSDALE, AZ 85259

ROOSEVELT WATER CONSERVATION
DISTRICT
2344 S HIGLEY RD
GILBERT, AZ 85212

ROOSEVELT WATER CONSERVATION
DISTRICT
PO BOX 100
HIGLEY, AZ 85236

SAIA FAMILY LP
2120 E 6th ST 16
TEMPE, AZ 85288

SOUTH POWER ROAD JOF AZ LLC
100 DUNBAR ST STE 400
SPARTANBURG, SC 29306

THE DALE C MORRISON TRUST
1733 N GREENFIELD RD STE 101
MESA, AZ 85205

Pat: avery.com/patents

Étiquettes d'adresse Easy Peel®
Repliez à la hachure afin de révéler le rebord Pop-up

Allez à avery.ca/gabarits
Utilisez le Gabarit Avery 5160

**AVALON DEVELOPMENT**
7333 E. Doubletree Ranch Rd Suite 140
Scottsdale, AZ 85258
Ph. 480-376-8750
www.avalondevelopment.com

March 7, 2023
**Notice of Public Hearings**
SEC Power Road & Elliot Road
ZON22-01271

Dear Property Owner or Resident:

This letter is a follow-up to our previous correspondence on February 7, 2023 regarding approximately 14.46 gross acres of vacant land located at the southeast corner of Power Road & Elliot Road in Mesa (the "Property"), as shown on the enclosed aerial map. The site is currently zoned LC (Limited Commercial) with PAD (Planned Area Development) and BIZ Overlays. As you may recall, we are requesting to rezone the site to Limited Commercial (LC) for the development of a commercial and retail center. Avalon Development is proposing the development of a community-scale commercial and retail development with approximately 76,100 square feet of retail shops, restaurants, a grocer, fitness user and a service station/convenience store. As part of our proposal, we are requesting approval of Special Use Permits for the service station as well as a modified parking ratio for the fitness facility.

The proposed project seeks to utilize the same underlying Limited Commercial zoning that is already approved for the site, but with a lower intensity commercial/retail center than was previously considered. The proposal matches the retail needs of the area and reflects the current demand in the retail market in terms of intensity and composition of land uses. The site has been designed to meet the high-quality design and development standards the City of Mesa strives for while providing an appropriate development capable of meeting the goals of the General Plan and the commercial needs of residents in the area.

This application is scheduled for consideration by the Mesa Planning and Zoning Board for their meeting held on March 22, 2023 in the City Council Chambers located at 57 East First Street. The meeting will begin at 4:00 p.m. You are invited to attend this meeting and provide any input you may have regarding this proposal.

The public can attend the meeting either in-person or electronically and telephonically. The live meeting may be watched on local cable Mesa channel 11, online at Mesa11.com/live or www.youtube.com/user/cityofmesa11/live, or listened to by calling 888-788-0099 or 877-853-5247 (toll free) using meeting ID 530 123 2921 and following the prompts. If you want to provide a written comment or speak telephonically at the meeting, please submit an online comment card at https://www.mesaaz.gov/government/advisory-boards-committees/planning-zoning-board/online-meeting-comment-card at least 1 hour prior to the start of the meeting. If you want to speak at the meeting, you will need to indicate on the comment card that you would like to speak during the meeting, and you will need to call 888-788-0099 or 877-853-5247 (toll free) using meeting ID 530 123 2921 and following the prompts, prior to the start of the meeting. You will be able to listen to the meeting; and when the item you have indicated that you want to speak on is before the Board, your line will be taken off mute and you will be given an opportunity to speak.

For help with the online comment card, or for any other technical difficulties, please call 480-644-2099. The City of Mesa has assigned this case to Cassidy Welch of their Planning Division staff. He can be reached at 480-644-2951 or Cassidy.Welch@MesaAz.gov, should you have any questions regarding

the public hearing process. If you have sold this property in the interim, please forward this correspondence to the new owner.

Thank you for your courtesy and consideration.

Sincerely,

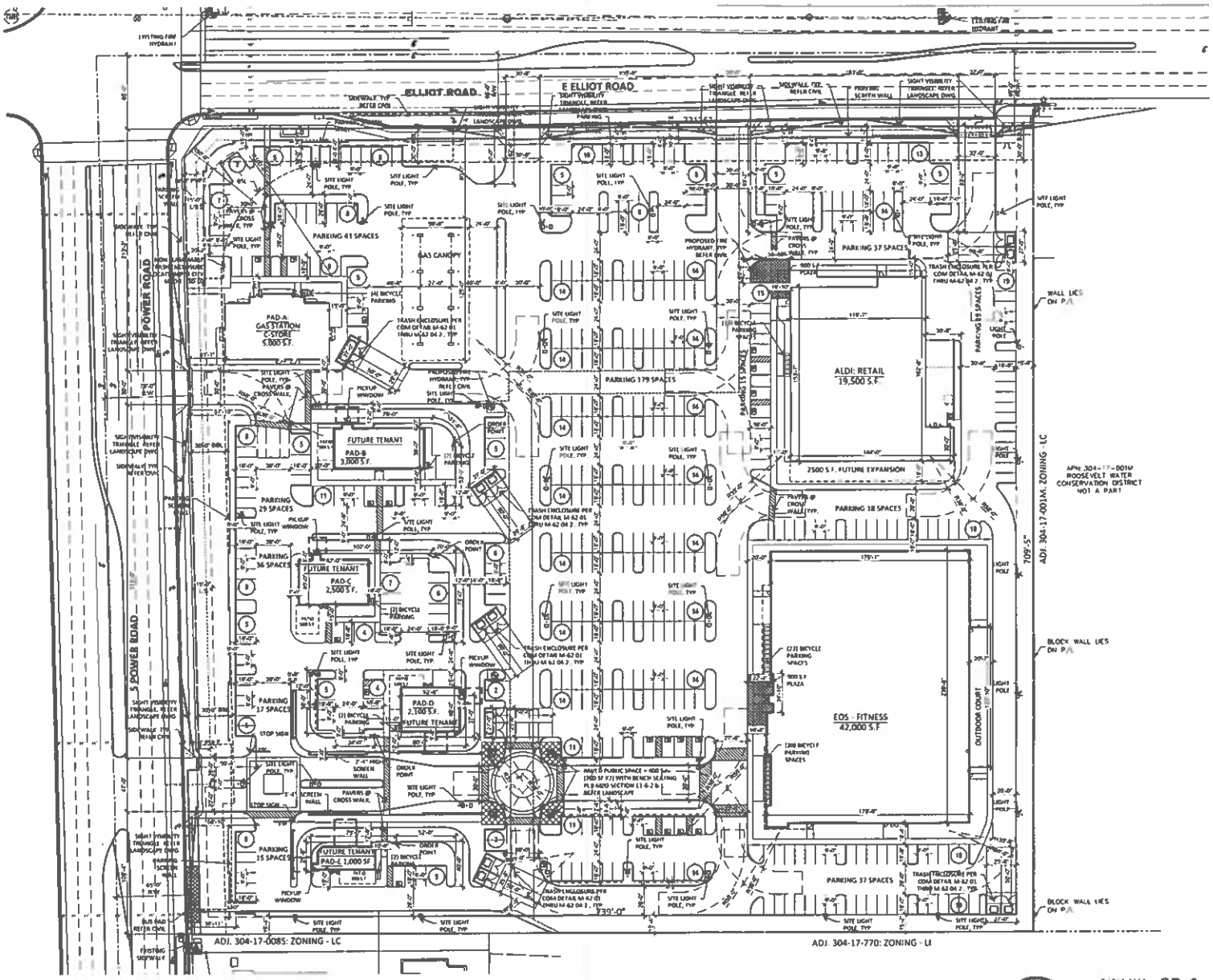
By
Benjamin L. Tate
Withey Morris, PLC
On behalf of Avalon Development

Enclosures

# Aerial Map

SEC Power Road & Elliot Road - Mesa, AZ

N




## SITE PLAN

SCALE: 1" = 40'-0"

NORTH

## PROJECT DIRECTORY

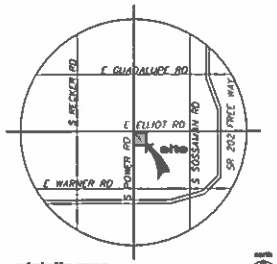

ARCHITECT:
RKAA ARCHITECTS, INC.
2233 EAST THOMAS ROAD
PHOENIX, ARIZONA 85016
CONTACT: NEIL FEASER
PHONE: (602) 955-3900
FAX: (602) 955-0496
E-MAIL: nfeaser@rkaa.com


## SITE DATA

| | |
|---|---|
| PARCEL NUMBER: | 304-17-211 THRU 304-17-219 |
| EXISTING ZONING: | LC -PAD BIZ |
| NET SITE AREA: | 12.04 ACRES (524,473 S.F.) |
| GROSS SITE AREA: | 14.46 ACRES (630,003 S.F.) |
| MAX. LOT COVERAGE PER CODE: | 80% |
| LOT COVERAGE PROPOSED: | 79.1% |
| MAX. HEIGHT PER CODE: | 30'-0" |
| PUBLIC SPACE REQUIRED: | 5 SF / 1000 SF OF BUILD. AREA |
| 5 X 76,700 SF / 1000 : | 383.5 S.F. |
| PUBLIC SPACE PROVIDED PER MZO 11-6-2.b.1: | 400 S.F. |
| PROPOSED USE: | RETAIL/RESTAURANT/FITNESS/GAS STATION |

| BUILDING AREA: | |
|---|---|
| PAD A: GAS STATION-CSTORE | 5,000 S.F. |
| PAD B: RESTAURANT - DT | 3,000 S.F. |
| PAD C: RESTAURANT - DT | 2,500 S.F. |
| PAD D: RESTAURANT - DT | 2,100 S.F. |
| PAD E: RESTAURANT - DT | 1,000 S.F. |
| ALDI - RETAIL: | 19,500 S.F. |
| EOS FITNESS | 42,000 S.F. |
| TOTAL BUILDING AREA: | 75,100 S.F. |
| TOTAL PATIO AREA | 1,600 S.F. |
| TOTAL GROSS AREA: | 76,700 S.F. |
| SITE COVERAGE: | 14.62 % |
| PUBLIC SPACE REQUIRED: | 384 S.F. |
| PUBLIC SPACE PROVIDED: | 400 S.F. |

| PARKING REQUIRED | |
|---|---|
| GAS STATION-CSTORE-5000 SF : 1 PER 375 | 14 SPACES |
| RESTAURANT-8600 SF - DT: 1 PER 100 | 86 SPACES |
| PATIO SEATING: 1 PER 200 | 08 SPACES |
| ALDI - RETAIL : 1 PER 375 | 52 SPACES |
| EOS FITNESS : 1 PER 100 | 420 SPACES |
| TOTAL PARKING REQUIRED: | 580 SPACES |
| TOTAL PARKING PROVIDED: | 526 SPACES |
| ( VARIANCE / PARKING REDUCTION APPROVAL REQUIRED) | |
| ACCESSIBLE SPACES REQUIRED: | 20 SPACES |
| ACCESSIBLE SPACES PROVIDED: | 20 SPACES |
| BICYCLE SPACE REQUIRED | 58 SPACES |
| BICYCLE SPACES PROVIDED: | 64 SPACES |




vicinity map

north

THIS SITE PLAN HAS BEEN PREPARED WITHOUT THE AID OF A SURVEY. ALL PROPERTY BOUNDARIES ARE ROUGH APPROXIMATIONS. THIS DRAWING IS TO BE USED FOR CONCEPTUAL PURPOSES ONLY AND IT IS NOT TO BE THE BASIS FOR ANY LEGALLY BINDING DOCUMENTATION

# POWER & ELLIOT RETAIL

3663 E POWER ROAD MESA ARIZONA 85212
SEC OF S POWER ROAD AND E ELLIOT ROAD
DATE: 03-02-2023 (PRELIMINARY)

SP-1

RKAA# 22223.50

RKAA ARCHITECTS, INC

# Good Neighbor Policy

**Purpose:**

The purpose of this Policy is to establish the Good Neighbor guidelines for a new service station proposed at the southeast corner of Power Road and Elliot Road.

**Operations:**

The Service Station will be open 24 hours a day, 7 days a week and a manager will be present during those hours. This store will employ dozens of individuals, and the number of employees present varies depending on demand. However, we expect that during the day there will be anywhere from 2-6 employees on site at any given time. Given the number of employees on site at all times, the site will be maintained per the City of Mesa code.

**Contact:**

Will Whittington, will@avalondevelopment.com, 480-376-8750

**Complaint Response Procedures:**

Upon receipt of a complaint either from the community or a City inspector, the complaint will be routed to the appropriate agent/employee within the company to address the complaint. Once the subject of the complaint has been addressed, follow-up contact will be initiated with the complainant if deemed appropriate by the operator to ensure that the issue has been resolved and appropriately addressed.

**Litter Control Measures:**

Maintaining a clean outside appearance not only provides a higher level of customer service, it also is an effective tool for employees to continuously monitor onsite activities. Per policy, Managers are to perform a shift walk upon arrival prior to relieving the previous Manager. This shift walk includes patrolling the property to pick up any trash or debris on site. Additionally, every hour, an Employee is to perform outside upkeeps to sweep the site and check landscape areas for debris.

January 30th, 2023

David Lack
Avalon Development
7333 E Doubletree Ranch Rd #140

Phone: (480) 376-8750
E-mail: dlack@avalondevelopment.com

Registered Professional Engineer (Civil)
CERTIFICATE NO.
74127
RAE
STEPHANI
Date Signed 1/30/2023
ARIZONA, U.S.A.

**RE: Power and Elliot Retail Parking Study – Mesa, Arizona**

Dear Mr. Lack:

Y2K Engineering has been retained to provide traffic engineering services for the above-referenced project, located on the southeast corner of Elliot Road and Power Road in Mesa, Arizona. The current area is comprised of undeveloped agricultural land, and it is adjacent to a water treatment facility and a school. The net site area spans 14.46 acres, where the site area will consist of 75,100 square feet of building space between seven different buildings. This report identifies parking demand of the future commercial development. Figure 1 shows the vicinity of the project and Figure 2 shows the project site.

*Figure 1: Vicinity Map*

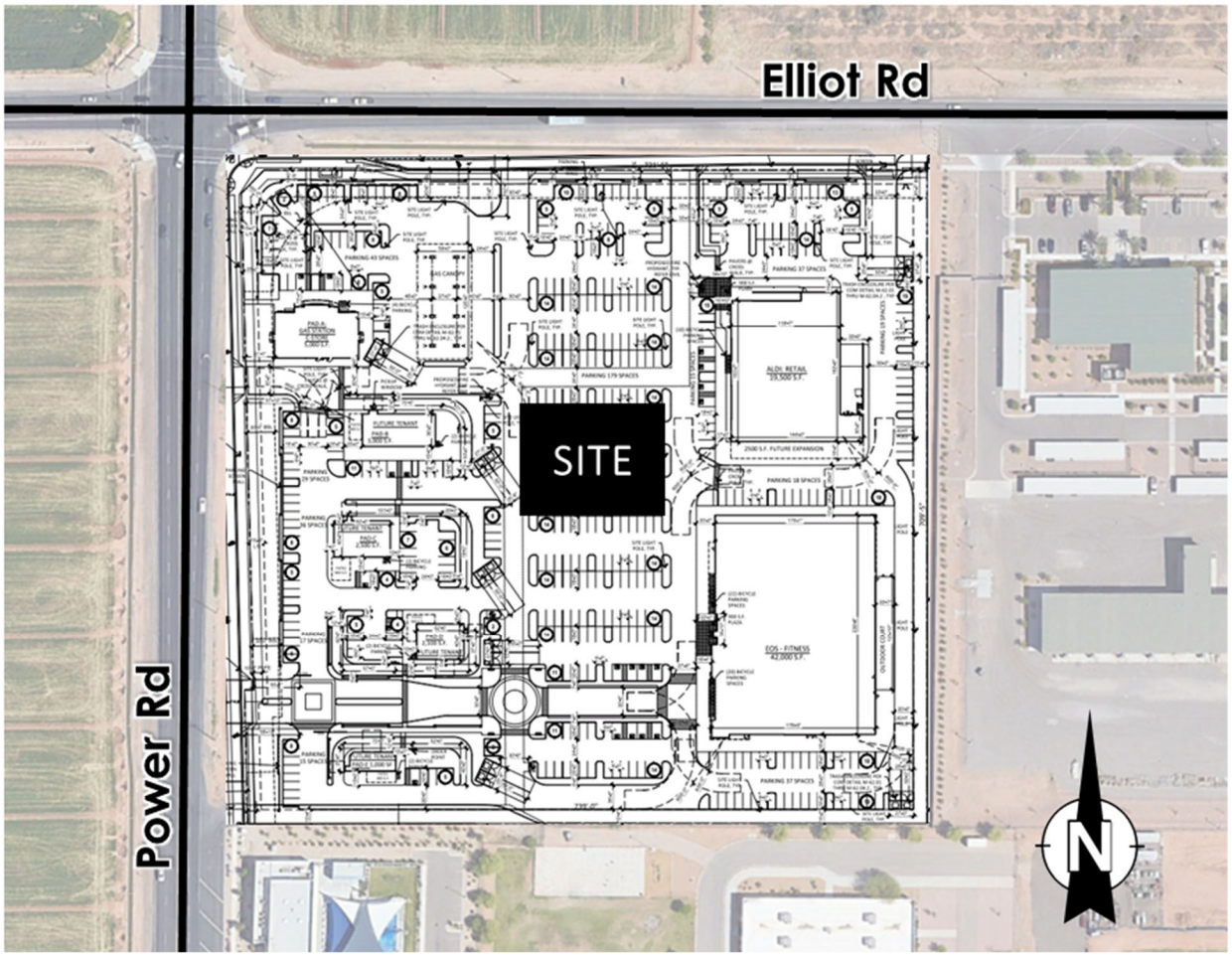



*Figure 2: Project Site*

## PROPOSED SITE

The Power and Elliot retail development consists of a variety of land uses including a gas station, restaurants, gym and retail establishment. Table 1 summarizes the land use of the seven proposed buildings and estimated hours of operation. The proposed site plan for the commercial development includes 526 parking spaces. Square footage and proposed parking are provided on the site plan shown in Attachment A.

*Table 1: Proposed Land Uses*

| Unit | Business Name | Size (SF) | Estimated Hours |
|---|---|---|---|
| PAD A | GAS STATION-CSTORE | 5,000 | 12 AM-12AM |
| PAD B | RESTAURANT - DT | 3,000 | 10 AM-10 PM |
| | | 300 (OUTDOOR) | |
| PAD C | RESTAURANT – DT | 2,500 | 10 AM-10 PM |
| | | 500 (OUTDOOR) | |
| PAD D | RESTAURANT – DT | 2,100 | 10 AM-10 PM |
| | | 500 (OUTDOOR) | |
| PAD E | RESTAURANT – DT | 1,000 | 6 AM- 1 PM |
| | | 300 (OUTDOOR) | |
| FITNESS | EOS FITNESS | 42,000 | 12 AM-12AM |
| RETAIL | ALDI – RETAIL | 19,500 | 9 AM – 9 PM |
| TOTAL | | 75,100 | |

# PARKING EVALUATION

## *CALCULATED PARKING REQUIREMENTS*

Parking requirements were calculated for the commercial space using the City of Mesa parking requirements from Table 11-32-3.A – Required Parking Spaces By Use. Parking requirements were calculated for each proposed land use and added to determine the overall parking requirements of the commercial site. Results of those calculations are shown in Table 2.

*Table 2: Summary of Calculated Parking Requirements per City of Mesa Code*

| Unit | Business Name | Size (SF) | Parking Land Use | Parking Ratio | Recommended Parking (Spaces) |
|---|---|---|---|---|---|
| PAD A | GAS STATION-CSTORE | 5,000 | Service | 1:375 | 14 |
| PAD B | RESTAURANT - DT | 3,000 | Restaurant w/ Drive-thru | 1:100 | 30 |
| | | PATIO 300 | | 1:200 | 1.5 |
| PAD C | RESTAURANT - DT | 2,500 | Restaurant w/ Drive-thru | 1:100 | 25 |
| | | PATIO 500 | | 1:200 | 2.5 |
| PAD D | RESTAURANT - DT | 2,100 | Restaurant w/ Drive-thru | 1:100 | 21 |
| | | PATIO 500 | | 1:200 | 2.5 |
| PAD E | RESTAURANT - DT | 1,000 | Restaurant w/ Drive-thru | 1:100 | 10 |
| | | PATIO 300 | | 1:200 | 1.5 |
| FITNESS | EOS FITNESS | 42,000 | Fitness Center | 1:100 | 420 |
| PAD F: RETAIL | ALDI | 19,500 | Retail | 1:375 | 52 |
| | | Future 2,500 | | | |
| TOTAL | | 75,100 | | TOTAL | 580 |

Based on City of Mesa parking requirements, 580 parking spaces (approximately 1 space per 129 square feet) are required for the development to obtain an efficient parking capacity for both customers and employees throughout the peak times of the day.

## CALCULATED PARKING DEMAND

City of Mesa Parking requirements indicate that for a gym use, such as the proposed EOS Fitness, a ratio of one parking space per 100 square feet is required. A parking study was prepared by ASJ Engineering in 2018 that evaluated other EOS Fitness facilities to determine an adjusted parking ratio of one space per 180 square feet. This study was approved by the City of Mesa on July 17, 2018. As such, a ratio of one parking space per 180 square feet was utilized to calculate the parking demand of the EOS fitness site. Parking demand calculations are shown in **Table 3.** This study and approval letter are provided in **Attachment B**.

*Table 3: Summary of Calculated Parking Requirements per City of Mesa Code + EOS Study*

| Unit | Business Name | Size (SF) | | Parking Land Use | Parking Ratio | Recommended Parking (Spaces) |
|---|---|---|---|---|---|---|
| PAD A | GAS STATION-CSTORE | 5,000 | | Service | 1:375 | 14 |
| PAD B | RESTAURANT - DT | 3,000 | | Restaurant w/ Drive-thru | 1:100 | 30 |
| | | PATIO | 300 | | 1:200 | 1.5 |
| PAD C | RESTAURANT - DT | 2,500 | | Restaurant w/ Drive-thru | 1:100 | 25 |
| | | PATIO | 500 | | 1:200 | 2.5 |
| PAD D | RESTAURANT - DT | 2,100 | | Restaurant w/ Drive-thru | 1:100 | 21 |
| | | PATIO | 500 | | 1:200 | 2.5 |
| PAD E | RESTAURANT - DT | 1,000 | | Restaurant w/ Drive-thru | 1:100 | 10 |
| | | PATIO | 300 | | 1:200 | 1.5 |
| FITNESS | EOS FITNESS | 42,000 | | Fitness Center | 1:180 | 233 |
| PAD F: RETAIL | ALDI | 19,500 | | Retail | 1:375 | 52 |
| | | Future | 2,500 | | | |
| TOTAL | | 75,100 | | | TOTAL | 393 |

Utilizing a 1:180 ratio to calculate the parking demand of the proposed EOS fitness indicates that the parking demand of the EOS Fitness is 233 parking spaces. Considering this ratio, the overall parking demand of the site is calculated to be 393 parking spaces.

## CONCLUSIONS

- The Power and Elliot retail development consists of a variety of land uses including a gas station, restaurants, gym and retail establishment.
- The proposed site plan for the commercial development includes 526 parking spaces.
- Based on City of Mesa parking requirements, 580 parking are required for the development to obtain an efficient parking capacity for both customers and employees throughout the peak times of the day.
- A previously approved parking study identified a parking ratio of one parking space per 180 square feet for a comparable EOS Fitness facility.
- Utilizing a 1:180 ratio to calculate the parking demand of the proposed EOS fitness indicates that the parking demand of the EOS Fitness is 233 parking spaces as opposed to the 420 spaces required considering the City of Mesa ratio.
- Considering the adjusted parking ratio for EOS Fitness, the overall parking demand of the site is calculated to be 393 parking spaces. The proposed site plan for the site exceeds the calculated parking demand by 133 parking spaces.

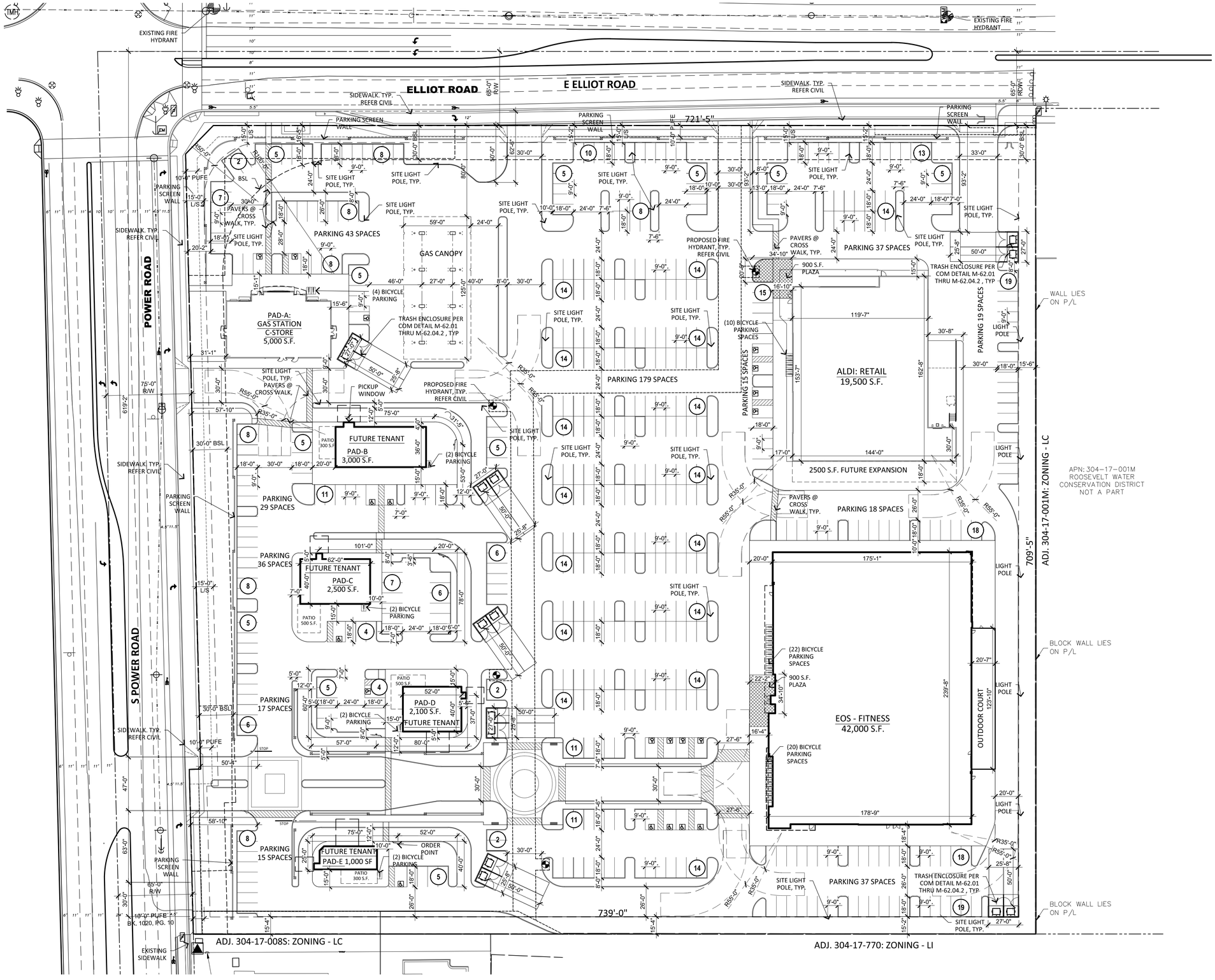
Thank you for your time and review of this study.

Sincerely,

Rae Stephani, PE, PTOE
Project Engineer

# ATTACHMENT A:

# SITE PLAN




## PROJECT DIRECTORY


ARCHITECT:
RKAA ARCHITECTS, INC.
2233 EAST THOMAS ROAD
PHOENIX, ARIZONA 85016
CONTACT: NEIL FEASER
PHONE: (602) 955-3900
FAX: (602) 955-0496
E-MAIL: nfeaser@rkaa.com


## SITE DATA

| | |
|---|---|
| PARCEL NUMBER: | 304-17-211 THRU 304-17-219 |
| EXISTING ZONING: | LC -PAD-BIZ |
| NET SITE AREA: | 12.04 ACRES (524,473 S.F.) |
| GROSS SITE AREA: | 14.46 ACRES (630,003 S.F.) |
| MAX. LOT COVERAGE: | 80% |
| LOT COVERAGE PROPOSED: 76,700 S.F. | 14.62% |
| MAX. HEIGHT PER CODE: | 30'-0" |
| PUBLIC SPACE REQUIRED: | 5 SF / 1000 SF OF BUILD. AREA |
| PROPOSED USE: | RETAIL/RESTAURANT/FITNESS/GAS STATION |

BUILDING AREA:

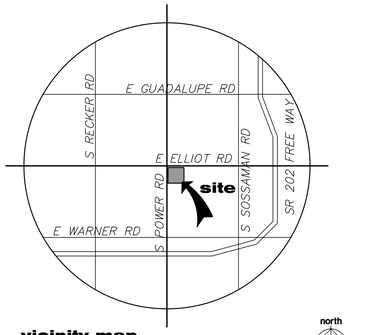
| | |
|---|---|
| PAD A: GAS STATION-CSTORE | 5,000 S.F. |
| PAD B: RESTAURANT - DT | 3,000 S.F. |
| PAD C: RESTAURANT - DT | 2,500 S.F. |
| PAD D: RESTAURANT - DT | 2,100 S.F. |
| PAD E: RESTAURANT - DT | 1,000 S.F. |
| ALDI- RETAIL: | 19,500 S.F. |
| EOS FITNESS | 42,000 S.F. |
| TOTAL BUILDING AREA: | 75,100 S.F. |
| TOTAL PATIO AREA | 1,600 S.F. |
| TOTAL GROSS AREA: | 76,700 S.F. |
| SITE COVERAGE: | 14.62 % |
| PUBLIC SPACE REQUIRED: | 384 S.F. |
| PUBLIC SPACE PROVIDED: | 400 S.F. |

PARKING REQUIRED

| | |
|---|---|
| GAS STATION-CSTORE-5000 SF : 1 PER 375 | 14 SPACES |
| RESTAURANT-8600 SF - DT: 1 PER 100 | 86 SPACES |
| PATIO SEATING: 1 PER 200 | 08 SPACES |
| ALDI - RETAIL : 1 PER 375 | 52 SPACES |
| EOS FITNESS : 1 PER 100 | 420 SPACES |
| TOTAL PARKING REQUIRED: | 580 SPACES |
| TOTAL PARKING PROVIDED: | 526 SPACES |

( VARIANCE / PARKING REDUCTION APPROVAL REQUIRED)

| | |
|---|---|
| ACCESSIBLE SPACES REQUIRED: | 20 SPACES |
| ACCESSIBLE SPACES PROVIDED: | 20 SPACES |
| BICYCLE SPACE REQUIRED | 58 SPACES |
| BICYCLE SPACES PROVIDED: | 64 SPACES |




vicinity map
scale: n.t.s.

north

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## SITE PLAN

SCALE: 1" = 40'-0"

0' 20' 40' 80'

NORTH

# POWER & ELLIOT RETAIL

3663 E POWER ROAD MESA ARIZONA 85212
SEC OF S POWER ROAD AND E ELLIOT ROAD
DATE: 01-19-2023 (PRELIMINARY)


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SP-1
OPT-2b

RKAA# 22223.50

RKAA ARCHITECTS, INC

# ATTACHMENT B:

# EOS FITNESS PARKING STUDY

mesa·az

July 17, 2018

Eric Gerster
Sustainable Engineering Group
8280 E. Gelding Dr., Suite 101
Scottsdale, AZ 85260

Board of Adjustment **Case BOA18-00426 1954 East McKellips Road**

Dear Mr. Gerster,

On Wednesday, July 11, 2018, the City of Mesa Board of Adjustment approved a request for 1) a Special Use Permit (SUP) to allow for the reduction in required parking; and 2) a Substantial Conformance Improvement Permit (SCIP) to allow modifications to development standards in the LC District with conditions:

1. *Compliance with the site plan (dated 6/13/18) and landscape plan (dated 6/11/18) submitted except as modified by the following conditions.*
2. *Compliance with all requirements of the Development Services Department in the issuance of building permits.*

The Board's decision is based upon the following Findings of Fact:

**FINDINGS for Request #1: SUP for Reduced Parking:**

1. A Parking Demand Study prepared by ASJ Engineering consultants, LLC, and sealed by Anita Shanker Johari, P.E., dated 6/20/18, concluded that only 207 parking spaces are needed to support the proposed use.
2. Special conditions are cited in the Parking Demand Study based on the parking usage at other EOS Fitness Centers, concluding that a ratio of 1 parking space/180 SF of adjusted floor area is sufficient.
3. By MZO standards, the parking demand for the building's 52,857 SF area at a ratio of 1 parking space/100 SF of GFA , plus 2 parking spaces/ court, which equates to 531 parking spaces.
4. The Parking Study's shared parking analysis of the group commercial center indicates there are 397 parking spaces and that the uses within the group commercial center, including the property fitness center, require 383 space, resulting in a surplus of 14 parking spaces.
5. The Parking Demand Study establishes that the highest demand for this group commercial center is 330 spaces and occurs between 7:00 pm and 8:00 pm. Consequently, the 397 provided spaces meet the parking demands of the center.

Minutes of your case will be available following approval at the next Board of Adjustment hearing.

Section 11-67-8: **Effective Dates**

A. Approvals Subject to Appeal. A final decision on an application for any discretionary approval subject to appeal shall become effective after the expiration of the appeal period following the date of action, unless an appeal is filed. No building permit or business license shall be issued until the day following the expiration of the appeal period, unless the applicant provides a letter signed by the owner explaining that they understand and accept the risk of proceeding before the appeal period ends.

If you have any questions, or need any further assistance, please contact the Planning Division at (480) 644-4273.

In addition, when applying for building permits, please submit a copy of the approval letter and a copy of the Board of Adjustment minutes with your application, as this will help facilitate the process.

Regards,

Mike Gildenstern, Planning Assistant

Specializing in Traffic Engineering and Transportation Planning

**ASJ Engineering Consultants, LLC**
**D/M/WBE, SBC**
1490 S. Price Road, Ste 214
Chandler, AZ 85286
480.678.8212

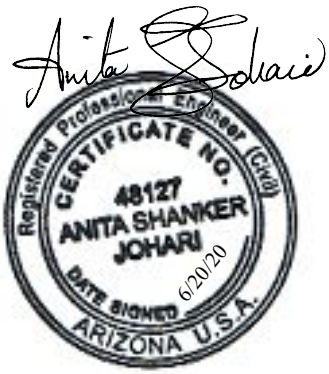
# Technical Memorandum – Parking Study

## Proposed EOS Fitness
## Northwest Corner of Gilbert Road at McKellips Road
## Mesa, AZ

---

**Prepared For:** Barclay Group
Mollie Zemer
Senior Development Associate
2390 E. Camelback Road, Ste 200
Phoenix, AZ 85016

**Prepared By:** ASJ Engineering Consultants, LLC
Anita S. Johari, PE, PTOE, EVN SP
1490 S Price Road, Ste 214
Chandler, AZ 85286
480.678.8212




Expire: 6/30/2020

**Project Number**: 2018020

**Date**: 6/13/18

---

**Reference:** Shared Parking Analysis for the Mixed-Use Development at Gilbert Road and McKellips, Mesa, AZ
**Date:** June 13, 2018

ASJ Engineering has performed this shared parking analysis for the mixed-use development located at the northwest corner of Gilbert Road and McKellips Road, in Mesa, Arizona. The developer is planning to use an existing building (previously a Basha's) and build a new EOS Fitness gymnasium. In addition, a McDonald's Fast food restaurant will be built between the existing Banner Urgent Care and Dutch Bros coffee shop. There is another vacant space within the shopping area and it is assumes it will be used for general retail as part of the shopping center. This parking analysis is prepared to identify the number of parking spaces required and verify if the existing number of parking spaces is sufficient after the construction of the assumed retail shop and the new EOS Fitness. Figure 1 shows the site location map and location of the existing and proposed land uses within this site.

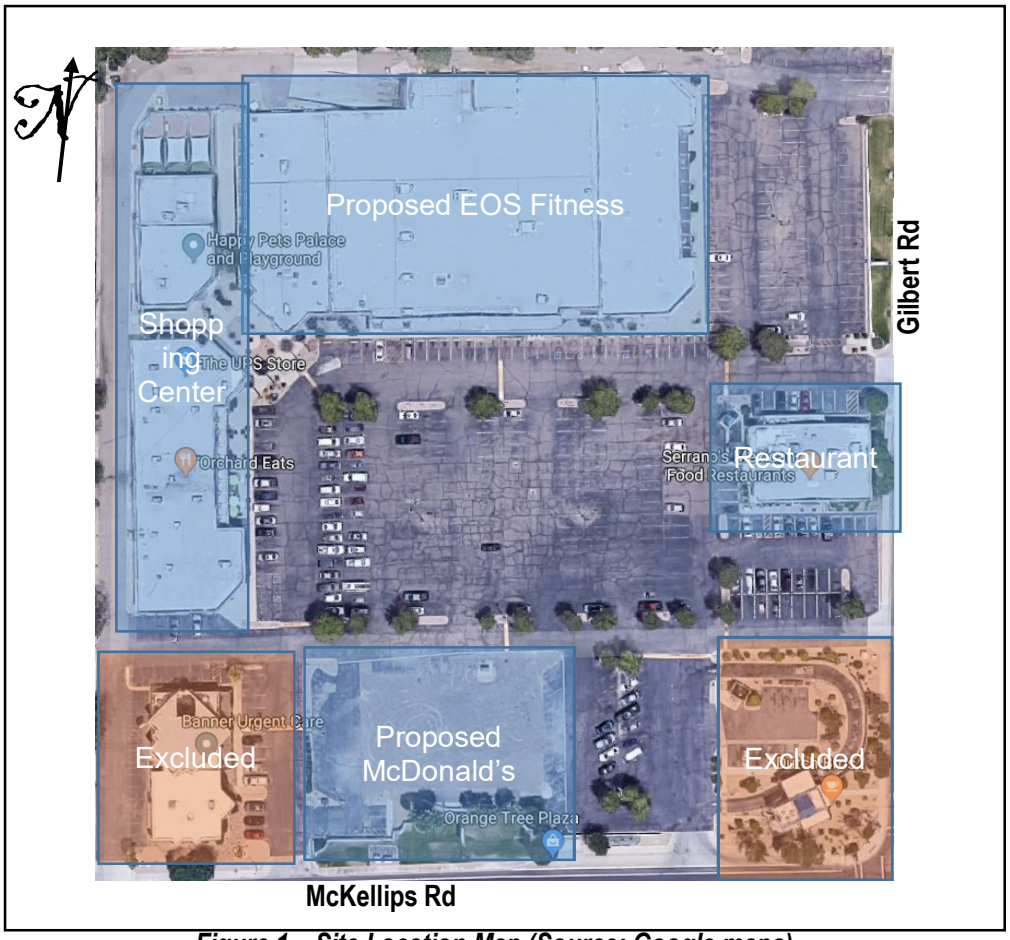



***Figure 1 – Site Location Map (Source: Google maps)***

At the site, there is Happy Pets Store, Got Roots Hair Salon, UPS Store, Nails, Cleaners, Orchard Eats, Serrano's Restaurant, two empty buildings and an empty lot. The empty lot will become a McDonald's fast food restaurant and one of the vacant spaces will become EOS Fitness center. The use for the other vacant space is not currently known and for the purpose of the parking analysis it is assumed as a retail land use. Currently there are 399 parking spaces of which 397 parking spaces will be shared between all these uses, two parking spaces are lost to accommodate the ADA parking spaces in front of the proposed fitness place

The 54,427 square feet EOS Fitness center will consist of an open EOS Fitness area, group training areas, a pool with hot tub, one basketball court, a spin room, and cardio room, locker rooms, reception and kids area. The other vacant space that is assumed retail will be 5,062 square feet, and the McDonald's will be 4,520 square feet of fast food with drive-thru restaurant.

To calculate the parking needs for each land use within the site, parking ratios were provided in the City of Mesa Zoning Ordinance – *Chapter 32 On-Site Parking, Loading and Circulation* are used.

From the site plan provided, the total square footage of the fitness center is 54,427 square feet. The square footage used to calculate the required parking consists of the open EOS Fitness, group area, cardio cinema, swimming pool and spin room. This reduces the square footage to 36,569 square feet. Parking required for the courts is different (2 spaces per racquet ball court) per the City of Mesa Zoning Ordinance. Since this summing pool provides only three lanes, the swimming pool is included as if it were a court.

In discussions with the representatives of the EOS Fitness, the fitness facility seldom operates at 100 percent occupancy and the parking usage at similar EOS facilities in the Phoenix metro area are different and lower than the ratio provided in the City of Mesa's ordinance. Attached is the letter from the representatives of the EOS Fitness discussing the parking usage at their facilities across the country. Per the information provided by the EOS Fitness representatives, based on the parking usage at other EOS Fitness centers, a ratio of 1 parking space per 180 square feet is sufficient. Upon discussion with the City of Mesa's planning staff, changes to the parking ratios should be supplemented with sufficient evidence from similar sites. The letter provided by the EOS representatives, provides parking usage at different sites across the country and should be used as the supporting document for changing the parking ratio requirement for the EOS Fitness at this location.

Table 1 summarizes the hours of operations and size for each of the existing and proposed land uses. Per the COM, for restaurant land uses located within a multi-tenant retail building, multi-use retail parking ratio shall be used instead of the restaurant parking ratio, so multi-use retail parking ratio of 1 space per 275 square feet has been used for Orchard Eats restaurant.

Table 1 also shows the parking spaces requirement for each of the land use calculated based on their effective service area (calculated as mentioned above), and using the parking ratios provided in the City of Mesa Zoning Ordinance – *Chapter 32 On-Site Parking, Loading and Circulation* and EOS Fitness provided parking ratio (for the EOS Fitness facility).

***Table 1: Existing and Proposed Land uses, Size, Operating hours, and Parking Ratios and Parking Spaces Requirements***

| Land Use (Type) | | Hours of operation | Total Area (Sq. Ft.) | Effective Area (Sq. Ft) | City of Mesa Parking Req. | Parking spaces |
|---|---|---|---|---|---|---|
| Existing | Happy Pets (Retail) | 6am-6:30pm | 5,000 | 5,000 | 1 space per 275 sq ft | 18 |
| | Got Roots (Retail) | 9am-8pm | 1,726 | 1,726 | 1 space per 275 sq ft | 6 |
| | UPS Store (Retail) | 8am-6pm | 1,906 | 1,906 | 1 space per 275 sq ft | 7 |
| | Nails (Service/Retail) | 9am-7pm | 894 | 894 | 1 space per 275 sq ft | 3 |
| | Cleaners Service/Retail) | 10am-5pm | 908 | 908 | 1 space per 275 sq ft | 11 |
| | Orchard Eats (Restaurant) | 9am-9pm | 3,025 | 3,025 | 1 space per 275 sq ft | 18 |
| | Serrano's Pad (Restaurant)** | 11am-9pm | 4,902 | 4,902 | 1 space/75 sq ft indoor | 65 |
| Proposed | Retail | 9am-9pm | 5,065 | 5,065 | 1 space per 275 sq ft | 18 |
| | EOS Fitness (Health Space)* | 24 hrs | 36,569 | 36,569 | 1 space / 180 sq. ft*. | 203 |
| | EOS Fitness Court (basketball court & Swimming Pool) | 24 hrs | 2 | 2 | 2 per Court | 4 |
| | McDonald's Pad ** | 5 am-1:am | 4,520 | 4,520 | 1 space per 100 indoor, 200 outdoor | 45 |

If City of Mesa's parking ratios are used for the EOS fitness center, a total of 546 parking spaces are required. With the use of the parking ratio provided by the EOS Fitness, the parking requirement reduces to 383. The number of parking spaces that will be available at the site is 397, resulting in a surplus of 14 parking spaces at the site.

A cursory field review was conducted by ASJ Engineering Staff on May 10th, 2018, at 11:30 am. During the field observation, approximately 15% of the parking spaces were used, leaving several vacant and unused parking spaces. This lack of parking space utilization is because the parking demand for each land use varies throughout the day. The mix of land uses within this mixed use site provides an opportunity to share the parking spaces between the land uses. Thus, a shared parking analysis is conducted to identify the ability to share the parking spaces between the various land uses within the site and meet the overall parking demand of the site.

Shared parking analysis has been performed for the site based on the data provided by the Institute of Transportation Engineers Parking Generation Manual (4th Edition). Table 2 and Figure 3 provide the hourly variation of the parking demand for each land use within this development, calculated using the provided EOS Fitness Parking ratio for the EOS Fitness and City of Mesa's parking ratios for the other land uses. From Table 2, the highest parking demand for this mixed-use development is 330 spaces and occurs between 7:00 and 8:00 pm. With this daily variation in the parking demand, the 397 provided spaces is sufficient to satisfy the parking demands of this mixed use site.

**Figure 2 - Time of Day Variation in Parking Demand – Based on ITE Parking Generation Manual**

The 397 parking spaces that will be provided at this mixed-use facility exceeds the required number of parking spaces by 67 spaces. Based on the ADA requirements for a site with approximately 400 parking spaces a minimum of eight (8) accessible parking spaces two of which must be van accessible, should be provided to meet the City's accessible parking space requirements criteria. The site provides more than eight (8) parking spaces and meets the City's ADA requirements.

Upon your review, please feel free to contact Anita S. Johari (anita@asjengineering.com) with your questions or comments.

**Table 2: Time of Day Variation in Parking Demand – Based on ITE Parking Generation Manual**

| Land uses | | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Existing | Happy Pets | 0% | 5% | 10% | 18% | 38% | 68% | 91% | 100% | 97% | 95% | 88% | 78% | 62% | 64% | 0% | 0% | 0% | 0% | 0% | 0% |
| | Got Roots | 0% | 0% | 0% | 0% | 38% | 68% | 91% | 100% | 97% | 95% | 88% | 78% | 62% | 64% | 77% | 70% | 0% | 0% | 0% | 0% |
| | UPS Store | 0% | 0% | 0% | 18% | 38% | 68% | 91% | 100% | 97% | 95% | 88% | 78% | 62% | 64% | 0% | 0% | 0% | 0% | 0% | 0% |
| | Nails | 0% | 0% | 0% | 0% | 38% | 68% | 91% | 100% | 97% | 95% | 88% | 78% | 62% | 64% | 50% | 0% | 0% | 0% | 0% | 0% |
| | Cleaners | 0% | 0% | 0% | 0% | 0% | 68% | 91% | 100% | 97% | 95% | 88% | 78% | 62% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| | Orchard Eats | 0% | 0% | 0% | 0% | 5% | 10% | 20% | 51% | 56% | 40% | 27% | 27% | 39% | 71% | 100% | 97% | 10% | 0% | 0% | 0% |
| | Serrano's Pad | 0% | 0% | 0% | 0% | 0% | 0% | 20% | 51% | 56% | 40% | 27% | 27% | 39% | 71% | 100% | 97% | 10% | 0% | 0% | 0% |
| Proposed | Vacant 1 (Retail/Restaurant) | 0% | 0% | 0% | 0% | 5% | 10% | 20% | 51% | 56% | 40% | 27% | 27% | 39% | 71% | 100% | 97% | 10% | 0% | 0% | 0% |
| | Vacant 2 (Fitness) | 20% | 20% | 20% | 20% | 26% | 51% | 48% | 42% | 47% | 38% | 41% | 61% | 84% | 91% | 100% | 50% | 30% | 20% | 20% | 0% |
| | Basket ball Court | 20% | 20% | 20% | 20% | 26% | 51% | 48% | 42% | 47% | 38% | 41% | 61% | 84% | 91% | 100% | 50% | 30% | 20% | 20% | 0% |
| | McDonald's Pad (Assumed for later) | 0% | 20% | 30% | 40% | 40% | 41% | 63% | 100% | 92% | 61% | 45% | 55% | 89% | 95% | 48% | 40% | 40% | 30% | 20% | 10% |
| **Parking Requirement** | | | | | | | | | | | | | | | | | | | | | |
| Existing | Happy Pets | 0 | 1 | 2 | 3 | 7 | 12 | 16 | 18 | 17 | 17 | 16 | 14 | 11 | 12 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Got Roots | 0 | 0 | 0 | 0 | 2 | 4 | 5 | 6 | 6 | 6 | 5 | 5 | 4 | 4 | 5 | 4 | 0 | 0 | 0 | 0 |
| | UPS Store | 0 | 0 | 0 | 1 | 3 | 5 | 6 | 7 | 7 | 7 | 6 | 5 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Nails | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| | Cleaners | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Orchard Eats | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 6 | 6 | 4 | 3 | 3 | 4 | 8 | 11 | 11 | 1 | 0 | 0 | 0 |
| | Serrano's Pad | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 33 | 36 | 26 | 18 | 18 | 25 | 46 | 65 | 63 | 7 | 0 | 0 | 0 |
| Proposed | Vacant 1 (Retail/Restaurant) | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 9 | 10 | 7 | 5 | 5 | 7 | 13 | 18 | 17 | 2 | 0 | 0 | 0 |
| | Vacant 2 (Fitness) | 41 | 41 | 41 | 41 | 53 | 104 | 97 | 85 | 95 | 77 | 83 | 124 | 171 | 185 | 203 | 102 | 61 | 41 | 41 | 0 |
| | Vacant 2 Courts/Pool | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 2 | 1 | 1 | 1 | 0 |
| | McDonald's Pad (Assumed for later) | 0 | 9 | 14 | 18 | 18 | 18 | 28 | 45 | 41 | 27 | 20 | 25 | 40 | 43 | 22 | 18 | 18 | 14 | 9 | 5 |
| **Total Parking Requirement** | | **42** | **52** | **58** | **64** | **87** | **152** | **179** | **217** | **226** | **179** | **164** | **205** | **273** | **321** | **330** | **217** | **90** | **56** | **51** | **5** |

# TRAFFIC IMPACT STUDY

Mixed-Use Commercial Development

SEC of Power Road and Elliot Road

Mesa, Arizona

January 27, 2023

**PREPARED FOR**

Avalon Development

7333 East Doubletree Ranch Road, Suite 140

Scottsdale, Arizona 85258

**PREPARED BY**

UCG

United Civil Group

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2803 N. 7th Avenue
Phoenix, Arizona 85007


UCG Project Number: TR23005

Conducted by: Sarah Simpson, PhD, PE
President

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# I. Executive Summary

## A. Project Summary

Avalon Development retained United Civil Group (UCG) to perform this Traffic Impact Analysis (TIA) for the planned Mixed-Use Commercial Development located on the southeast corner of Power Road and Elliot Road in Mesa, Arizona. The site consists of approximately 14.5 acres of vacant agricultural land and is planned to be developed as a convenience store with gas of 5,000 square feet with 16 fueling positions (PAD A), a fast-food restaurant with a drive through of 3,000 square feet (PAD B), a fast-food restaurant with a drive through of 2,500 square feet (PAD C), a fast-food restaurant with a drive through of 2,100 square feet (PAD D), a coffee shop with a drive through of 1,000 square feet (PAD E), a grocery store of 19,500 square feet with 2,500 square feet for expansion and a fitness center of 42,000 square feet. For the purposes of this TIA, it is assumed that the convenience store, grocery store and the fitness center will we constructed by 2025, and the site will be fully built out by 2027.

Five site driveways are planned for this Mixed-Use Commercial Development, two on Power Road and three on Elliot Road. The Southern access on Power Road (Access A) is planned to provide full turning movements. Access A is located approximately 605 feet south of Elliot Road. Access B is located on Power Road approximately 275 feet south of Elliot Road and approximately 330 feet north of Access A. Raised medians on Power Road will limit access B to right in/right out only. Access C is planned to be constructed on Elliot Road approximately 350 feet east of Power Road and will be limited to right in/right out only with the completion of the raised median on Elliot Road. Access D will be located 520 feet east of Power Road and is proposed as a full movement driveway. Access E is proposed as a right in/right out access on Elliot Road approximately 205 feet east of Access D. As shown, the five site driveways will provide adequate site circulation and access to the development.

This TIA has been performed under both City of Mesa and Maricopa County Department of Transportation (MCDOT) traffic impact analysis guidelines. Because Power Road is under the jurisdiction of MCDOT, their Traffic Impact Study Manual, dated May 2017, was used as the guiding document for standards on all recommendations for Power Road. Because Elliot Road is under the jurisdiction of the City of Mesa, the City of Mesa Engineering and Design Standards dated 2021, were used for all standards and recommendations that apply to Elliot Road. In addition, this TIS has also been performed in general conformance based on preliminary discussions with MCDOT and City of Mesa Staff, scoping information provided by City of Mesa Planning Division, locally accepted standards, and industry practice.

Per the MCDOT Guidelines and the Mesa Engineering and Design Standards Section 204.4, this TIS for the Mixed-Use Commercial Development is required as part of the site development documents. As such, based on the design standards, this TIS is completed as a Category II TIS because the development is anticipated to generate

greater than 500 but fewer than 999 vehicle trips during any peak hour. The study horizon years for this development are the opening year of Phase I, 2025, the opening of full site buildout, 2027, and 5 years after opening, 2032.

Within these parameters, MCDOT requires the minimum study area of all site access driveways plus all signal-controlled intersections within ½ mile and or major street intersections without signal control and driveways within ½ mile of the site. However, based on discussions with MCDOT traffic engineering staff, the study area was expanded to include the following signalized intersections for analysis within this TIS.

- Power Road/Elliot Road
- Power Road/Guadalupe Road
- Power Road/Warner Road
- Sossaman Road/Elliot Road

## B. Study Objectives

This study is intended to investigate the existing and future traffic conditions and identify any potential roadway improvements necessary to serve the proposed development. Major study objectives of this traffic report are as follows:

1. Analyze the existing study area intersections and site accessibility for the development.

2. Determine the site traffic volumes generated by the proposed development and their impacts on the surrounding study area and roadway network.

3. Where applicable, recommend safety, intersection and/or roadway improvements, sufficient to meet the needs of the development and adjacent roadway network due to the forecasted site generated traffic volumes.

## C. Conclusions and Recommendations

The plan for the approximate 14.5-acre development consists of a mix of commercial uses. The first phase of development is planned as a convenience store with gas of 5,000 square feet with 16 fueling positions (PAD A), a grocery store of 19,500 square feet with 2,500 square feet for expansion and a fitness center of 42,000 square feet. The second phase will consist of the development of a fast-food restaurant with a drive through of 3,000 square feet (PAD B), a fast-food restaurant with a drive through of 2,500 square feet (PAD C), a fast-food restaurant with a drive through of 2,100 square feet (PAD D), and a coffee shop with a drive through of 1,000 square feet (PAD E).

The horizon years for the study were determined from the MCDOT TIS Manual and include Phase I (2025), Phase II (2027) and five years after full buildout (2032).

Five site driveways are planned for this Mixed-Use Commercial Development, two on Power Road (Accesses A and B) and three on Elliot Road (Accesses C, D and E). Accesses A through D will primarily serve customers of the proposed development. Access E will primarily serve customers along with the few heavy vehicles that provide goods to the grocery store. Raised medians are planned to be constructed on both Power Road and Elliot Road that will limit access to right in/right out at Accesses B, C, and E. Accesses A and D are all planned as full movement accesses.

The forecasted trip generation was calculated based on data provided within the 11th Edition of the ITE Trip Generation Manual. On a weekday, after full build-out of the Mixed-Use Commercial Development on the southeast corner of Power Road and Elliot Road is estimated to generate a total of 879 trips in the morning peak hour, 923 trips in the evening peak hour, and 10,418 daily trips.

Using the forecasted total traffic volumes for years 2025, 2027 and 2032, the signalized study area intersections of Power Road/Elliot Road, Power Road/Guadalupe Road, and Sossaman Road/Elliot Road are projected to operate at acceptable LOS D or better through the study horizon years. During the evening peak hour, the intersection of Power Road/Warner Road may experience some delay as indicated by LOS E. However, this study did not assume major improvements on Warner Road at the Power Road intersection. In addition, as the area south of this Mixed-Use Commercial Development continues to develop, roadway infrastructure projects are likely that will improve the intersection geometrics and create additional capacity. Other recommendations include future signal coordination along the Power Road corridor once development is realized that assists in mitigating delay along the corridor in the peak hours.

By 2032 total traffic conditions, delay will be anticipated for some left and right turning movements into and out of the Mixed-Use Commercial Development, while Power Road and Elliot Road will experience free flowing conditions. Exiting movements on stop-controlled minor roads and driveways that intersect with major streets typically experience greater delay for short periods of time in the peak hours due to the wait for acceptable gaps on the major street, while the free-flowing major streets experience minimal delay. The existing and planned signalized intersections along Power Road and Elliot Road will provide gaps for minor turning movements, which may not be apparent within the LOS analyses. Sufficient throat/exiting queue storage length should be provided to accommodate potential queues experienced while waiting to turn from the Development to help avoid any on-site blockages that may cause issues on the adjacent streets.

Based on this Traffic Impact Study, the following recommendations apply:

- Provide right of way dedication and the construction of the required Power Road improvements on the western boundary of the Mixed-Use Commercial Development per input and coordination with MCDOT, as required.
- Provide right of way dedication and the construction of required Elliot Road improvements on the northern boundary of the Mixed-Use Commercial Development per input and coordination with City of Mesa, as required.
- Remove the utility easement access on the southern boundary of the site.
- Provide auxiliary right and left turn lanes at the site accesses per recommendations in Tables 10 and 11 and on Figure 14.
- In the interim conditions prior to the raised medians being installed on the adjacent roadways, mitigation/restriction of the accesses as appropriate should be provided by raised "pork chop" islands within the driveways per MCDOT *Roadway Design Manual* Section 7.7.2 and/or City of Mesa requirements as applicable. Consideration should be given to limiting future reconstruction (i.e., the raised islands should not extend to the Power Road face of curb alignment).
- The development should be responsible for an appropriate contribution to the cost of the signal modification at the intersection of Power Road/Elliot Road.

The following recommendations are for consideration by the City of Mesa and MCDOT:

- Continually update and optimize signal timings at the study area signalized intersections along Power Road based on actual traffic volumes once additional development occurs and ambient growth in the area is realized. Consideration should be given to coordination of the Power Road corridor, including by methods such as an Adaptive Traffic Control System.
- If the projected volumes due to private development and ambient growth at the existing study area intersections are to be realized in future years, consideration should be given to dual lefts and extended turn lanes as part of planned roadway improvement projects, as appropriate.

# II. PROPOSED DEVELOPMENT

## A. Site Location

The proposed Mixed-Use Commercial Development is planned on an approximate 14.5-acre site located on the southeast corner of Power Road and Elliot Road in Mesa, Arizona. Figures 1 and 2 present the location of the proposed development within the context of the immediate area and its location within the City of Mesa and the Town of Gilbert. Within this area, Power Road is the north-south dividing boundary between the two agencies.

## B. Land Use

The plan for the 14.5-acre site consists of a convenience store with gas of 5,000 square feet with 16 fueling positions (PAD A), a fast-food restaurant with a drive through of 3,000 square feet (PAD B), a fast-food restaurant with a drive through of 2,500 square feet (PAD C), a fast-food restaurant with a drive through of 2,100 square feet (PAD D), a coffee shop with a drive through of 1,000 square feet (PAD E), a grocery store of 19,500 square feet with 2,500 square feet for expansion and a fitness center of 42,000 square feet. The Mixed-Use Commercial Development site plan is illustrated in Figure 3.

## C. Phasing and Timing

This project will be developed in two phases. Phase I consists of the convenience store with gas, grocery store and fitness center to be constructed and occupied by 2025. The remaining portions of the development, fast food restaurants with drive throughs and the coffee with a drive through are included in Phase II that will be constructed by 2027, full build-out of the site.

Per the MCDOT Traffic Impact Study Manual, year 2032 traffic conditions were analyzed (5 years after site buildout) based on the criteria of a Category II TIA.

Therefore, the horizon years for this Traffic Impact Study are as follows:

*Year 2025 - Phase I*

Convenience Store with 16 Fueling Stations
Aldi Grocery Store with expansion
EOS Fitness Center

*Year 2027 – Phase II*

Donut Coffee Shop with a drive through window
Three (3) Fast Food Restaurants each with a drive through window

*Year 2032 - 5 years after full site buildout*

## D. Site Accessibility

Five site driveways are planned for this Mixed-Use Commercial Development, two on Power Road and three on Elliot Road. The Southern access on Power Road (Access A) is planned to provide full turning movements. Access A is located approximately 605 feet south of Elliot Road. Access B is located on Power Road approximately 275 feet south of Elliot Road and approximately 330 feet north of Access A. Raised medians on Power Road will limit access B to right in/right out only. Access C is planned to be constructed on Elliot Road approximately 350 feet east of Power Road and will be limited to right in/right out only with the completion of the raised median on Elliot Road. Access D will be located 520 feet east of Power Road and is proposed as a full movement driveway. Access E is proposed as a right in/right out access on Elliot Road approximately 205 feet east of Access D. As shown, the five site driveways will provide adequate site circulation and access to the development. In summary, the access movements are shown below:

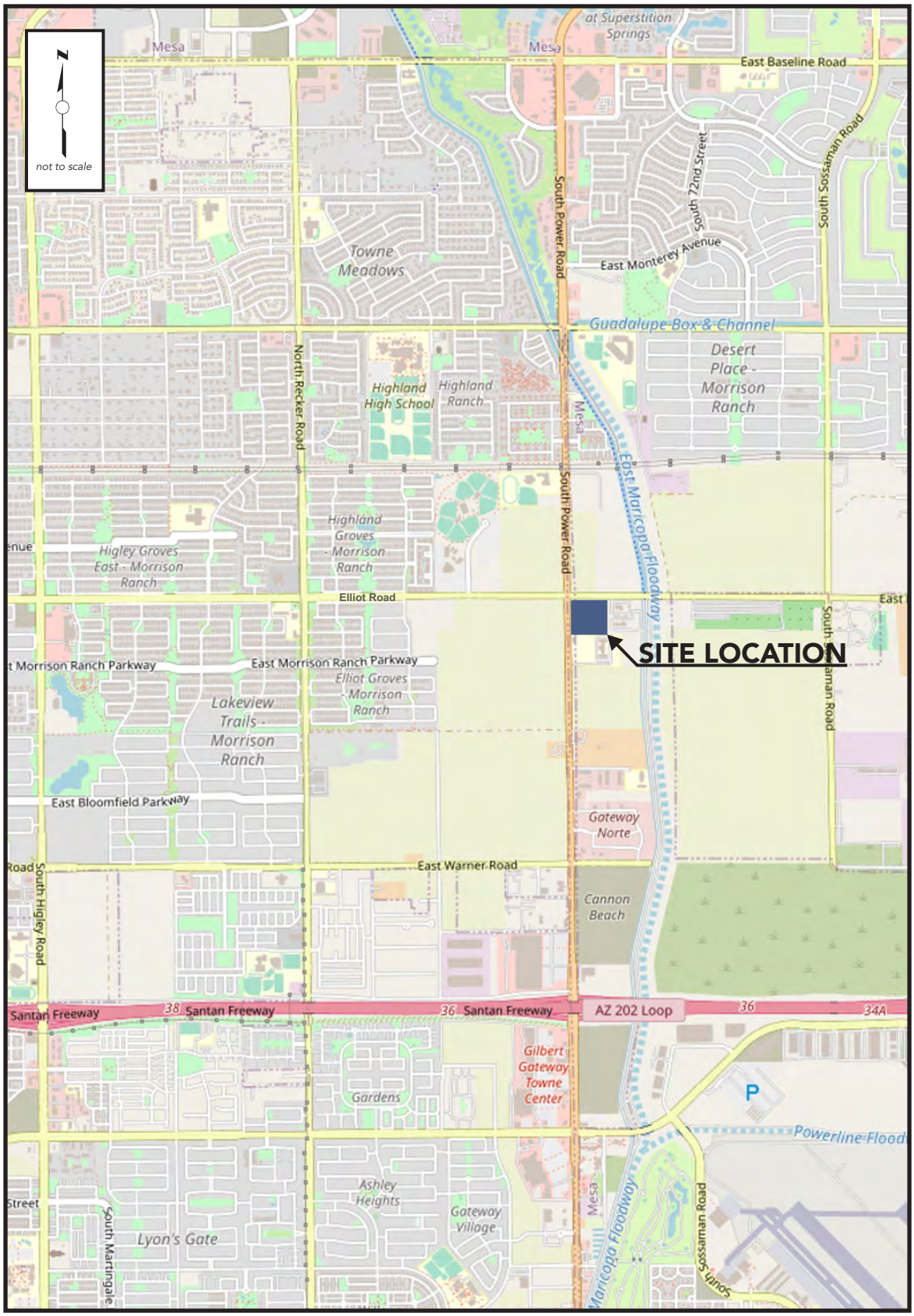
*Power Road:*

Access A – Full Movement Driveway
Access B – Right in/Right out Driveway

*Elliot Road:*

Access C – Right in/Right out Driveway
Access D – Full Movement Driveway
Access E – Right in/Right Out Driveway

The site accesses, driveway spacing and proposed future development accesses are discussed in more detail in this TIA within the Traffic and Improvement Analysis section of the report.




*ArcGIS - 2023*

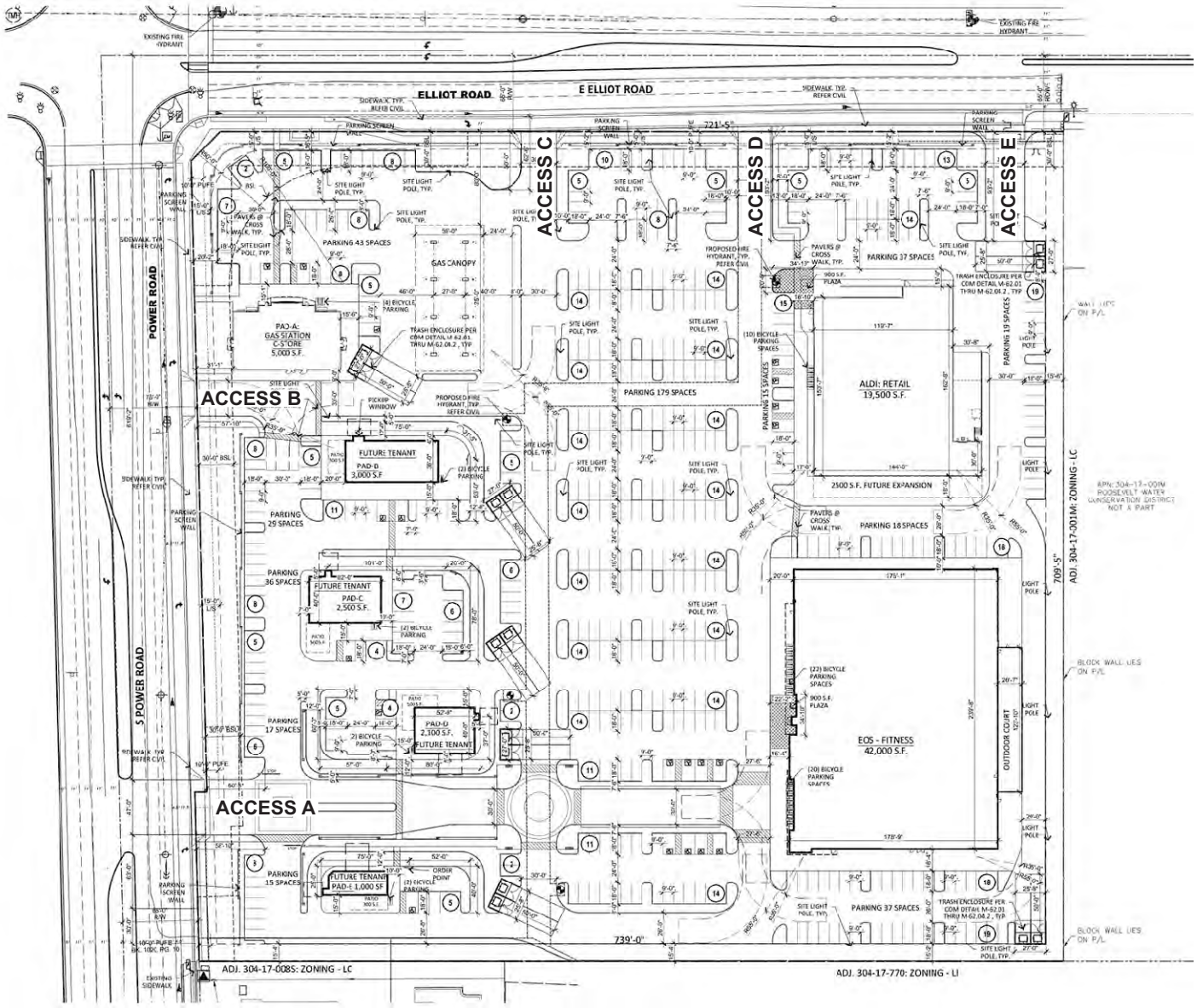
**Figure 1:** Vicinity Map

United Civil Group

*Permission for commercial use granted by Google Earth*

**Figure 2:** Aerial View

UCG
United Civil Group




not to scale

United Civil Group

**Figure 3:** Site Plan

# III. STUDY AREA CONDITIONS

## A. Study Area

Based on the forecasted trip generation of the proposed Mixed-Use Commercial Development, the minimum study area as defined by City of Mesa and MCDOT criteria for a Category II TIA includes all site access driveways and all signal-controlled intersections ½ mile around the development and/or major street intersections without signal control and driveways. However, based on discussions with MCDOT, the study area was expanded to include the study area intersections of Power Road/Elliot Road, Power Road/Guadalupe Road, Power Road/Warner Road, Sossaman Road/Elliot Road and the development driveways.

## B. Study Area Land Use

The following describes the existing land uses of the subject site and surrounding area:

SUBJECT SITE: Vacant, agricultural land

NORTH: Elliot Road followed by vacant land and a proposed industrial warehouse development

SOUTH: EVO Swim School and Leman Academy of Excellence

EAST: Roosevelt Water Conservation District

WEST: Power Road followed by a proposed commercial and industrial development

## C. Anticipated Future Development and Planned Improvements

### C.1. Capital Improvement Projects

One project is listed within the City of Mesa 5-Year FY 23/FY27 CIP within the study area on Power Road. CP0104 – Power Road Improvements: East Maricopa Floodway to Loop 202 will improve the mobility and access in the area of Power Road completing any sections that have not been completed by adjacent development. This is a joint project with the Town of Gilbert and Maricopa County. Funds for this project are allocated for FY 24/25.

Just east of the study area, the City of Mesa 5-Year FY 23/FY27 CIP lists a streets project, CP0982 on Elliot Road from Ellsworth Road to Sossaman Road. This project entails the construction of 2.5 miles for a new 6-lane roadway. Elliot Road from Sossaman to Power Road is not identified as a part of this project; however, per discussions with City of Mesa Transportation Department, private developments are planned along this segment and will provide lane improvements.

There is one Town of Gilbert CIP project within the study area identified within the FY 2022-2031 Capital Improvement Plan. ST1200 – Power Road, Guadalupe Rd to Santan Freeway will improve Power Road to a major arterial section in accordance with the MAG Regional Transportation Plan and will include six lanes, a raised and landscaped median, bicycle lanes, street lights, and ITS conduit/cabling improvements. This project will be a part of an IGA with MCDOT and the City of Mesa. Per the Town's CIP, this project is to be completed in FY26 and is assumed to be completed by the full build out horizon year 2027 for the purposes of this study.

No MCDOT projects are officially programmed within the study area per the County's *Transportation Improvement Program.* However, per discussions with the MCDOT Traffic Branch Manager, MCDOT is in the initial planning stages of the Power Road improvement project between Guadalupe Road and the Santan Freeway (see Town of Gilbert CIP No. ST1200 and City of Mesa CP0104 above). Although not yet officially programmed by MCDOT as of now, this project will ultimately be a part of an IGA between MCDOT, the Town of Gilbert, and the City of Mesa; and for the purposes of this study and discussed with the MCDOT Traffic Branch Manager, the improvement project is assumed to be completed by horizon year 2027.

### C.2. Adjacent Private Development Projects

Several private development projects have been identified within or adjacent to the study area for which construction is imminent or occurring within the study area. The Town of Gilbert Traffic Engineering staff and the City of Mesa Transportation Department staff provided UCG with relevant excerpts from each respective project's traffic impact studies and appropriate direction to account for the planned projects' new site trips on the study area roadway network in the background and overall total traffic conditions analyses for this study. The adjacent development projects are as follows:

1. Hopewell Swan - located on the northeast and northwest corners of Swan Drive/Nunneley Road. Includes a total of 469,957 square feet of general light industrial uses; Phase 1 (266,118 square feet) has an opening year of 2022 with full build out expected by 2027.
2. Fry's Commercial Center – located on the northwest corner of Power Road/Elliot Road. Includes a grocery anchor and ancillary pads totaling 158,100 square feet of commercial uses and a gas station with 20 fueling positions. Full build out is expected by the year 2024.
3. Power Commerce Park Phase II – located north and west of the northwest corner of Power Road/Elliot Road. Includes a total of 469,957 square feet of general light industrial uses. Full build out is assumed to be complete by the year 2025.
4. Power 42 – located on the east side of Power Road approximately 1/4 mile south of Elliot Road. Includes a total of 543,458 square feet of warehousing buildings. Full build out is assumed to be complete by the year 2023.

5. Cannon Beach/Power 202 Business Park – located on the southeast corner of Power Road/Warner Road. The Cannon Beach component is planned to incorporate warehouse, office, restaurant, retail, and fitness uses totaling 374,370 square feet plus a 150-room hotel. The Power 202 Business Park component is planned to contain 330,450 square feet of industrial use. Full build out of the entire site is assumed to be complete by year 2025.
6. The Ranch – located west of Power Road between Warner Road and Elliot Road. The Ranch development is planned to include an industrial and business park with commercial components on approximately 302 gross acres in Gilbert, Arizona. Full build out of the entire site is assumed to be complete by year 2027.
7. Warehouse/Manufacturing Facility – located on Elliot Road east of Power Road. The overall plan for this development on approximately 26.6 acres consists of four warehouse/manufacturing buildings totaling 456,900 square feet. The project will be constructed in one phase by 2023.

# IV. LEVEL OF SERVICE METHODOLOGY

The roadway system's ability to accommodate traffic demand is typically limited by the capacity. The level of service (LOS) concept is used in traffic engineering to describe the degree of delay a driver can expect. The concept defines a near-capacity condition as LOS E while a free flow condition under which a driver would experience minimal delay is defined as LOS A.

Intersection capacity analysis is a principal tool used in traffic engineering. Operation is characterized according to the amount of delay at an intersection approach and quantified into a level of service ("LOS"). The intersection LOS was determined using the methodologies presented in the Transportation Research Board's Highway Capacity Manual ("HCM"). The LOS grades quantify and categorize a driver's discomfort, frustration, fuel consumption, and travel times experienced because of intersection control and the resulting traffic queuing. Per the HCM, the signalized and unsignalized (all-way stop controlled or two-way stop-controlled intersection) delay and associated LOS is presented in **Table 1**. City of Surprise guidelines strive to obtain a level of service D or better for both signalized and unsignalized intersection overall operations. Intersections having a LOS E or LOS F may warrant improvements or traffic reductions.

**Table 1: Intersection Levels of Service and Delay**

| Level of Service | Description | Signalized Delay (Sec/Veh) | Unsignalized Delay (Sec/Veh) |
|---|---|---|---|
| A | Minimal control delay, traffic operates at primary free flow conditions, unimpeded movement within traffic stream | ≤ 10 | ≤ 10 |
| B | Minor control delay at signalized intersections, traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream | > 10 and ≤ 20 | > 10 and ≤ 15 |
| C | Moderate control delay, movement within traffic stream more restricted than LOS B, formation of queues contributes to lower average travel speeds | > 20 and ≤ 35 | > 15 and ≤ 25 |
| D | Considerable control delay that may be substantially increased by small increases in flow, average travel speeds continue to decrease. | > 35 and ≤ 55 | > 25 and ≤ 35 |
| E | High control delay, average travel speed no more than 22 percent of free flow speed | > 55 and ≤ 80 | > 35 and ≤ 50 |
| F | Extremely high control | > 80 | > 50 |

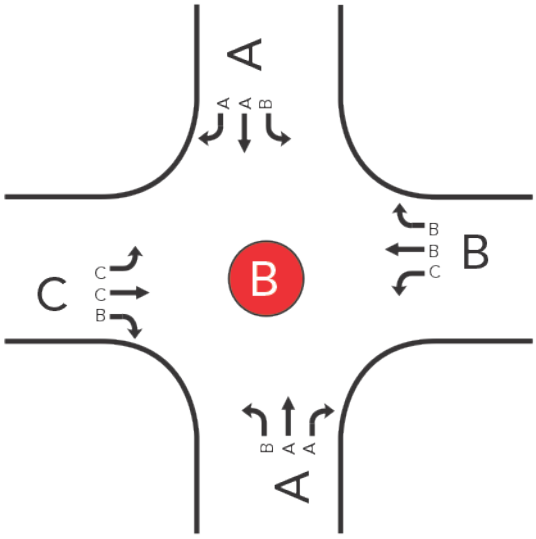
*Source: Highway Capacity Manual 2010*

For signalized and all-way stop controlled intersections, LOS is calculated for a movement (e.g., left, through, right), for the approach (e.g., northbound, southbound, eastbound, westbound) and for the overall intersection.

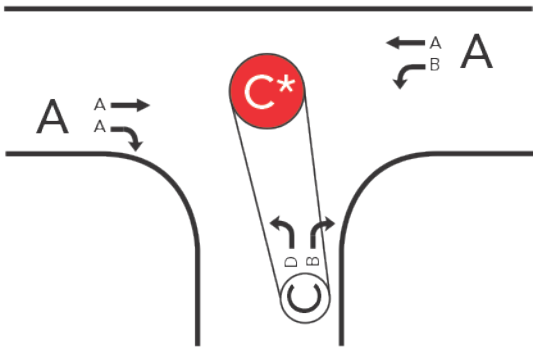
For two-way stop-controlled intersections, LOS is calculated for a movement and for the approach. However, for the overall intersection, LOS is reported as the lowest APPROACH within the intersection. This is because most drivers are on the major roadway and do not experience delay traversing through the intersection. The example below illustrates the various LOS calculations completed for intersections.

**EXAMPLE:**

**Signalized & All-Way Stop Controlled**




**Two-Way Stop Controlled**



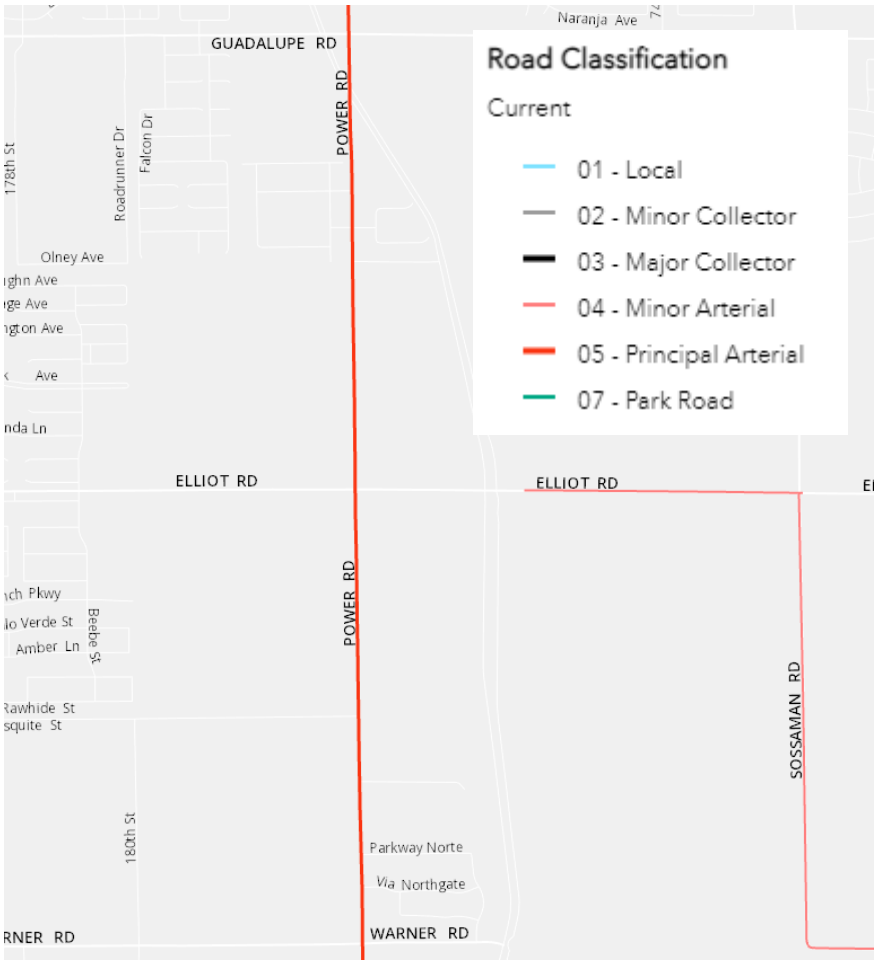

*Reported as approach LOS

Source: United Civil Group, 2021

# V. EXISTING ROADWAY CONDITIONS

## A. Physical Characteristics

**Power Road** is a north/south roadway classified as a Principal Arterial roadway per the Maricopa County Road Information GIS Mapping Website accessed January 27, 2023. Power Road is a regionally significant roadway in the East Valley providing connectivity from the Bush Highway to the north to Hunt Highway to the south. Currently, Power Road consists of two lanes in each direction separated by the exclusive northbound left-turn lane at Elliot Road. Within the vicinity of the site, there are no curb, gutter, or sidewalks. The posted speed limit on Power Road is 45 mph. According to the ADOT HPMS website, the average daily traffic on Power Road south of Elliot Road is 29,961 vehicles per day collected in 2021. MCDOT owns, operates, and maintains Power Road adjacent to the site. At full buildout, Power Road will be constructed as a 6 lane divided roadway adjacent to the site per MCDOT Urban Principal Arterial Cross Section as provided in the MCDOT Roadway Design Manual.




**Elliot Road** is an east/west roadway classified as an arterial roadway per the City of Mesa's 2040 Transportation Plan. Currently, Elliot Road consists of one travel lane in both the east- and westbound directions. Elliot Road widens with ½ street improvements in front of the industrial development on the south side of the roadway (east of this proposed development). Elliot Road is posted at 45mph within the vicinity of the site. The City of Mesa owns, operates, and maintains Elliot Road adjacent to the site. At full buildout, Elliot Road will be constructed as a 6-lane arterial adjacent to the site per Mesa detail M-46.03.2. According to the ADOT HPMS website, the average daily traffic on Elliot Road east of Power Road is 14,077 vehicles per day collected in 2021.

The intersection of **Power Road/Elliot Road** operates as a signalized intersection with protective/permissive left turn phasing on all approaches. The north- and southbound approaches consist of an exclusive left turn lane, a through lane, and a shared through right turn lane. The east- and westbound approaches consist of an exclusive left turn lane and a shared through-right turn lane. MCDOT has jurisdictional responsibility for this signalized intersection.

The intersection of **Power Road/Guadalupe Road** operates as a signalized intersection with protective/permissive left turn phasing on all approaches. The north- and southbound approaches consist of an exclusive left turn lane, three through lanes, a bike lane, and a dedicated right turn lane. The eastbound approach consists of an exclusive left turn lane, two through lanes, a shared through-right turn lane and a bike lane. The westbound approach consists of an exclusive left turn lane, two through lanes, a bike lane and a dedicated right turn lane. The City of Mesa has jurisdictional responsibility for this signalized intersection.

The intersection of **Power Road/Warner Road** operates as a signalized intersection with permissive left turn phasing on all approaches. The north- and southbound approaches consist of an exclusive left turn lane, a through lane, and a shared through right turn lane. The eastbound approach consists of an exclusive left turn lane and a shared through right turn lane. The westbound approach consists of an exclusive left turn lane, a through lane and a dedicated right turn lane. MCDOT has jurisdictional responsibility for this signalized intersection.

The intersection of **Elliot Road/Sossaman Road** operates as a signalized intersection with permissive left turn phasing on all approaches. All approaches to the intersection consist of an exclusive left turn lane and a shared through-right turn lane. MCDOT has jurisdictional responsibility for this signalized intersection.

## B. Existing Traffic Volumes

Existing turning movement counts (TMC) in 15-minute intervals were collected at the study area intersections of Power Road/Elliot Road, Power Road/Guadalupe Road, Power Road/Warner Road and Sossaman Road/Elliot Road on Wednesday, March 30, 2022, during the morning (7:00AM – 9:00AM) and evening (4:00PM – 6:00PM) peak periods. Complete traffic count data can be found in **Appendix A**.

**Figure 4** graphically depicts the existing roadway and intersection geometry within the study area along with the existing adjusted turning movement counts at the study intersections.

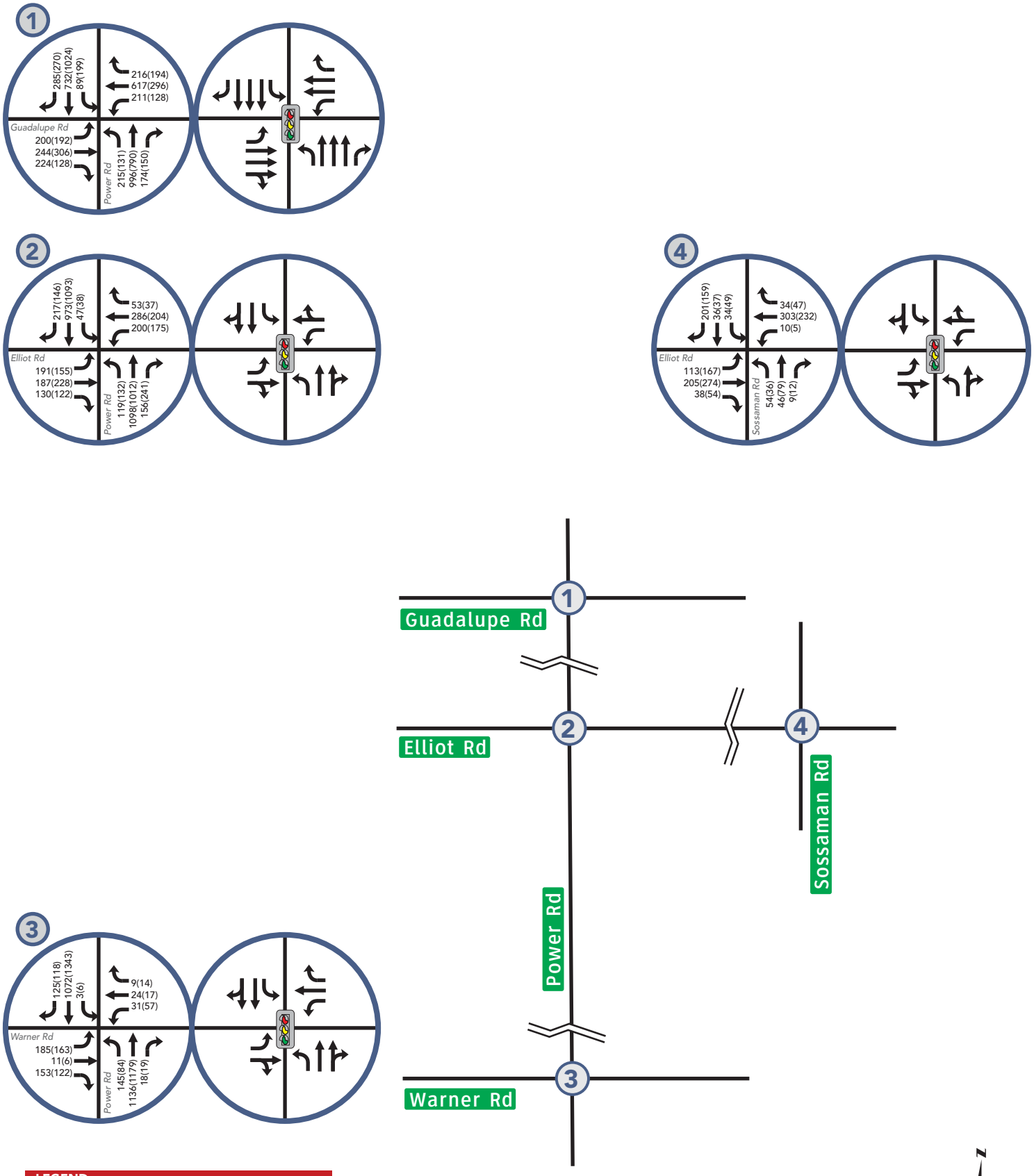



**Figure 4:** Existing Conditions

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## C. Existing Traffic Observations

Traffic conditions and operations were observed during the study's weekday morning and evening peak periods. No major traffic issues were noted.

## D. Crash Data

Three years of the most recently provided crash data (2019 – 2021) were obtained from the Arizona Department of Transportation (ADOT) Arizona Crash Information System (ACIS). The data was queried for the intersections of Power Road/Elliot Road, Power Road/Guadalupe Road, Power Road/Warner Road, and Sossaman Road/Elliot Road with an offset of 250 feet on all legs of the intersection.

The crash data summarized in **Tables 2 and 3** for the study intersections are crashes that were reported to law enforcement. Table 2 summarizes the total number of crashes at the intersection by severity. Crash severity is determined by the reporting officer at the time of the crash or soon thereafter based on the most severe injury sustained by an involved party. Crashes are shown from most severe (Fatal) to least severe (No Injury). Table 3 summarizes the total number of crashes at the intersection by collision type. Crash type is designated by the reporting officer as the first injury or damage producing event that characterizes the crash type and identifies the nature of the crash. The categories within this report include Single Vehicle, Rear End, Left Turn, Angle (front to side, other than left turn), and Other/unknown.

### Table 2: Injury Severity 2019-2021

| Year | Fatal | Suspected Serious Injury | Suspected Minor Injury | Possible Injury | No Injury | Total |
|---|---|---|---|---|---|---|
| Power Road/Elliot Road | | | | | | |
| 2019 | 0 | 0 | 2 | 2 | 13 | 17 |
| 2020 | 0 | 0 | 2 | 2 | 10 | 14 |
| 2021 | 2 | 0 | 1 | 1 | 16 | 20 |
| Total | 2 | 0 | 5 | 5 | 39 | 51 |
| Power Road/Guadalupe Road | | | | | | |
| 2019 | 0 | 1 | 4 | 5 | 7 | 17 |
| 2020 | 0 | 0 | 2 | 4 | 11 | 17 |
| 2021 | 0 | 0 | 6 | 3 | 14 | 23 |
| Total | 0 | 1 | 12 | 12 | 32 | 57 |
| Power Road/Warner Road | | | | | | |
| 2019 | 0 | 0 | 1 | 3 | 5 | 9 |
| 2020 | 0 | 1 | 1 | 0 | 9 | 11 |
| 2021 | 0 | 0 | 0 | 0 | 7 | 7 |
| Total | 0 | 1 | 2 | 3 | 21 | 27 |
| Sossaman Road/Elliot Road | | | | | | |
| 2019 | 0 | 0 | 1 | 0 | 0 | 1 |
| 2020 | 0 | 0 | 1 | 0 | 1 | 2 |
| 2021 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 0 | 2 | 0 | 2 | 4 |

Table 3: Collision Manner 2019-2021

| Year | Single Vehicle | Angle | Left Turn | Rear End | Head On | Sideswipe Same Direction | Sideswipe Opposite Direction | Rear to Side | Other/ Unknown | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Power Road/Elliot Road | | | | | | | | | | |
| 2019 | 0 | 2 | 4 | 9 | 0 | 1 | 0 | 0 | 1 | 17 |
| 2020 | 2 | 0 | 5 | 6 | 0 | 1 | 0 | 0 | 0 | 14 |
| *2021* | 1 | 0 | 4 | 11 | 1 | 1 | 0 | 0 | *2* | 20 |
| Total | 3 | 2 | 13 | 26 | 1 | 3 | 0 | 0 | 3 | 51 |
| Power Road/Guadalupe Road | | | | | | | | | | |
| 2019 | 0 | 3 | 6 | 5 | 0 | 2 | 0 | 0 | 1 | 17 |
| 2020 | 1 | 4 | 7 | 1 | 2 | 2 | 0 | 0 | 0 | 17 |
| 2021 | 1 | 2 | 7 | 7 | 4 | 1 | 1 | 0 | 0 | 23 |
| Total | 2 | 9 | 20 | 13 | 6 | 5 | 1 | 0 | 1 | 57 |
| Power Road/Warner Road | | | | | | | | | | |
| 2019 | 1 | 1 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 9 |
| 2020 | 1 | 1 | 2 | 5 | 0 | 2 | 0 | 0 | 0 | 11 |
| 2021 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 7 |
| Total | 2 | 2 | 4 | 15 | 1 | 3 | 0 | 0 | 0 | 27 |
| Sossaman Road/Elliot Road | | | | | | | | | | |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2020 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 4 |

Tables 2 and 3 show that within the study area, a total of 139 reportable crashes occurred over the three-year study period. Of the 139 crashes, 51 were reported at the intersection of Power Road and Elliot Road, 57 were reported at the intersection of Power Road/Guadalupe Road, 27 were reported at the intersection of Power Road/Warner Road and 4 were reported at the intersection of Sossaman Road/Elliot Road.

Most crashes, 68% were reported as no injury. However, there were two crashes reported as suspected serious injury and two crashes reported as fatal. Both of the fatal crashes occurred at the intersection of Power Road/Elliot Road and were reported in 2021. One of the fatal crashes was reported as a bicycle, while the other fatal crash was reported as a left turn crash.

Based on the data provided in ACIS, it is difficult to determine if crash patterns exist at the study area intersections due to the variability in the data. To determine if crash patterns exist, an extensive review of individual crash records would be required.

## E. Existing Intersection Level of Service Analyses

The level of service (LOS) and average delay at the existing study area intersections were evaluated using the 2022 intersection volumes, existing lane geometry and existing traffic control as presented in Figure 4. PTV Vistro traffic modeling software, employing the methodologies as presented in the *Highway Capacity Manual* (HCM), was utilized for the capacity analyses to obtain the existing conditions levels of service. Summaries of the Vistro output calculations are included in **Appendix B**. The results of the existing levels of service analysis are presented in **Table 4**.

Table 4: Existing Conditions Intersection Levels of Service

| Intersection Location | NB LOS | | | | SB LOS | | | | EB LOS | | | | WB LOS | | | | Overall Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | AvgDelay/ LOS* |
| Power Road/Guadalupe Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | B | C | C | C | B | C | C | C | D | D | D | D | C | D | D | D | 31.09 C |
| PM Peak Hour | B | B | B | B | B | B | B | B | D | D | D | D | D | D | D | D | 26.25 C |
| Power Road/Elliot Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | B | C | C | C | B | C | C | C | B | C | C | C | B | C | C | C | 30.82 C |
| PM Peak Hour | C | C | C | C | B | D | D | D | B | C | C | C | C | C | C | C | 30.59 C |
| Power Road/Warner Road – Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | B | B | B | B | A | B | B | B | B | C | C | C | B | C | C | C | 17.27 B |
| PM Peak Hour | B | B | B | B | A | B | B | B | C | C | C | C | C | C | C | C | 16.85 B |
| Elliot Road/Sossaman Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | B | B | B | B | B | B | B | B | B | A | A | A | A | A | A | A | 9.55 A |
| PM Peak Hour | B | B | B | B | B | B | B | B | B | A | A | A | A | A | A | A | 9.43 A |

The study area intersections currently operate at acceptable levels of service, LOS C or better, during the existing conditions morning and evening peak hours.

# V. BACKGROUND CONDITIONS

## A. Projected Background Volumes

Non-site, no build, or background traffic volumes representing the amount of traffic estimated to be on the area roadway network without the proposed development within the study area are projected for the horizon years of the development: year 2025, year 2027, and year 2032 (5 years after full site buildout). The yearly compounded annual growth rate coupled with the site generated traffic of other known proposed developments in the study area are used to forecast the background traffic.

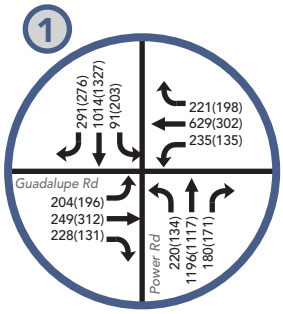
A growth rate of 2% was used to estimate background trips for each horizon year. The growth rate was confirmed through Maricopa Association of Government's most recent modeling efforts, the updated 2021 and 2022 Fall and Spring Conformity Runs. These runs were used to determine annual growth rate for Power Road between Elliot Road and Warner Road:

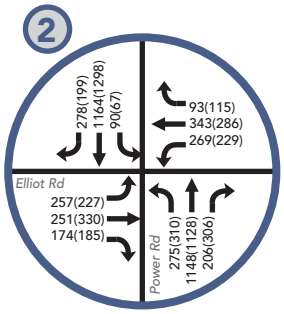
- 2022 – 2030: 2.78% growth rate
- 2030 – 2040: 0.63% growth rate

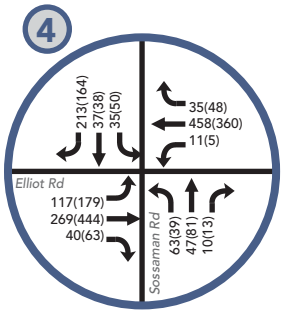
The MAG travel demand model considers existing and forecasted population and employment data (and associated travel demand volumes) among other factors for defined analysis zones. From these models the growth rates are determined. The MAG models account for potential planned developments at currently vacant lots, which would include the subject site and other adjacent development sites that are forecasted to contribute future traffic volumes to Power Road.

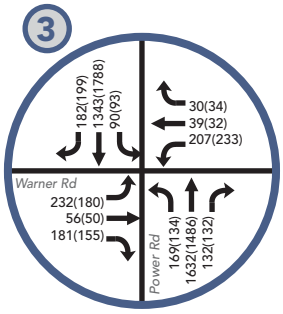
In addition to the 2% annual increase from the existing traffic data, the site generated traffic volumes from the planned adjacent private development projects (as described in Section III.C above) are added to determine the overall background traffic volumes as part of this study. Each of the adjacent projects is assumed to be fully built out by the horizon year 2025 for the purposes of this study. Considering the MAG-provided annual growth rates data accounts for the subject site and adjacent developments (rather than extracting them since these site volumes are being added to the background volumes as part of this study); for or the purposes of this study, the 2% annual growth rate through year 2032 will be utilized and represents a conservative approach to developing background traffic.

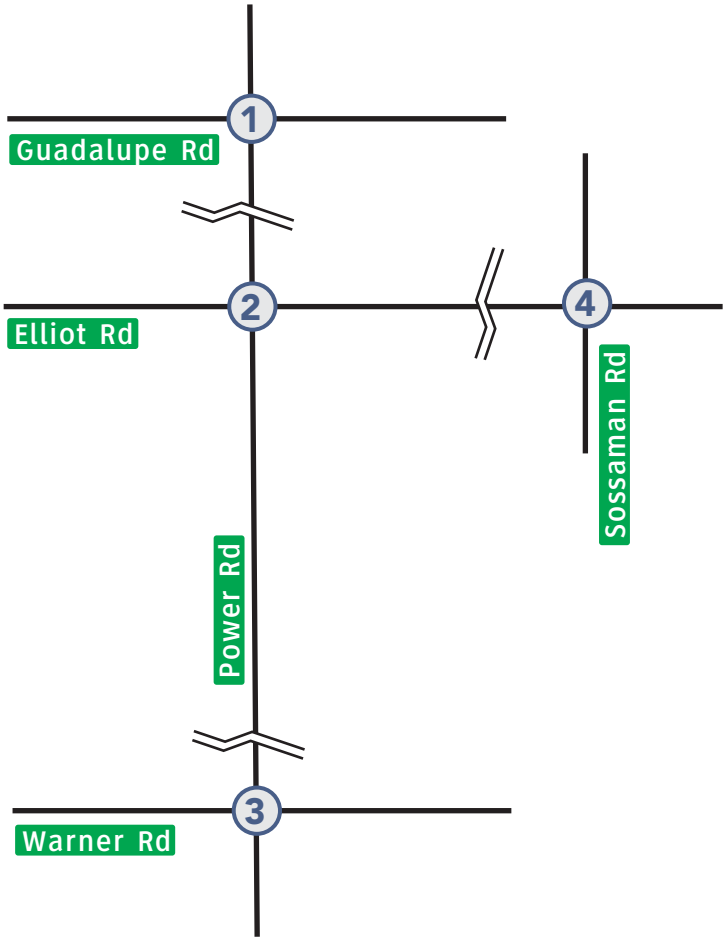
Known roadway improvements planned as part of the adjacent private developments and CIP projects is utilized for analysis purposes of the background and total conditions of this study beginning in horizon year 2025. Roadway improvements planned by the Town of Gilbert, City of Mesa, or MCDOT CIP projects (as described in Section III.C) are utilized for analysis purposes of the background and total traffic conditions; this includes the Power Road, Elliot Road and Warner Road improvements by 2025. Figures 5 through 7 present the background traffic volumes for this study for the horizon years 2025, 2027 and 2032.




**LEGEND**

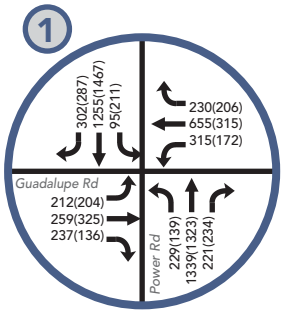
XX(XX) AM(PM) Peak Hour Traffic Volume

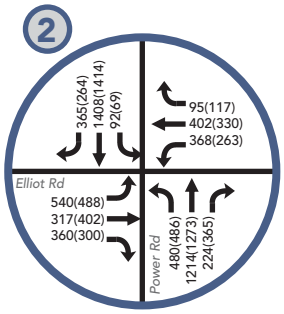
N

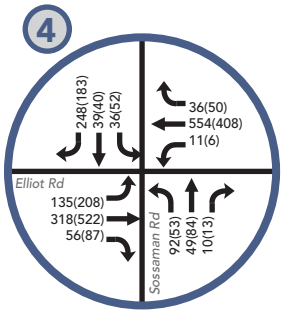
not to scale

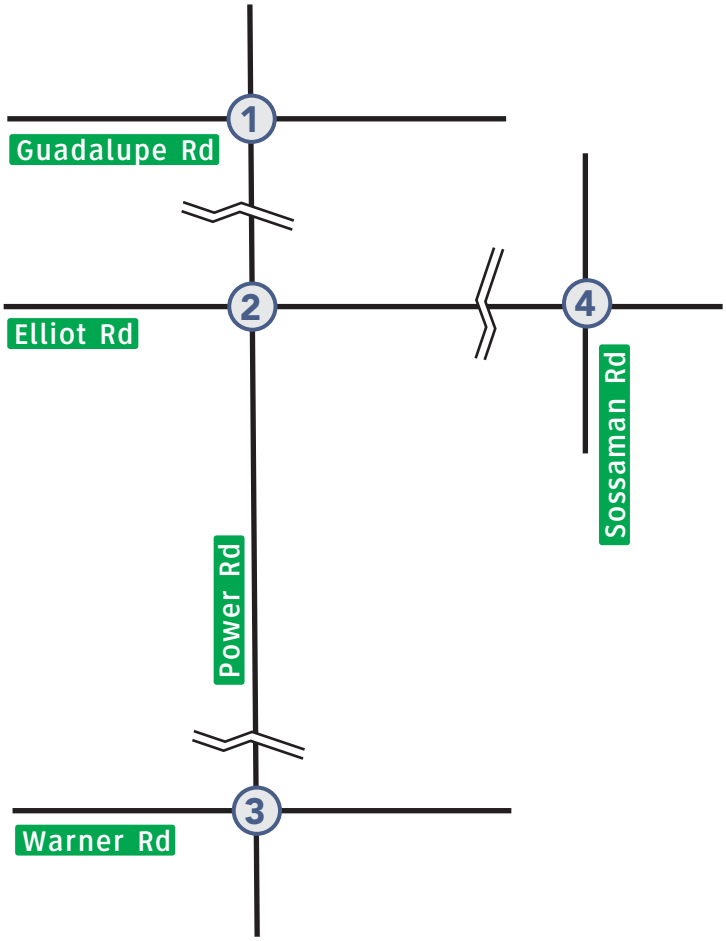
UCG
United Civil Group

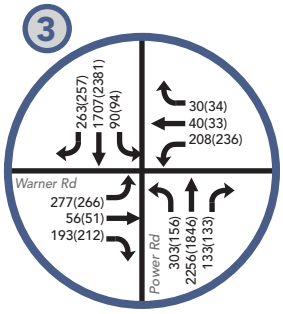
**Figure 5:** Background Traffic - Year 2025




**LEGEND**

XX(XX) AM(PM) Peak Hour Traffic Volume

N

*not to scale*

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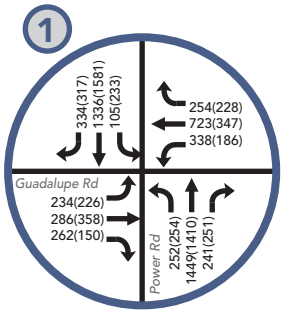
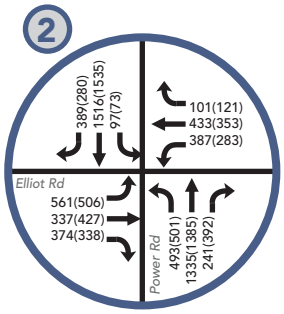
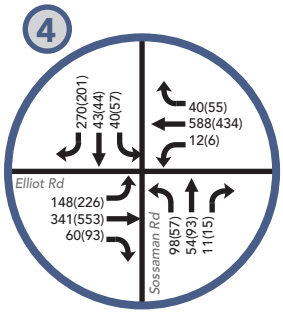
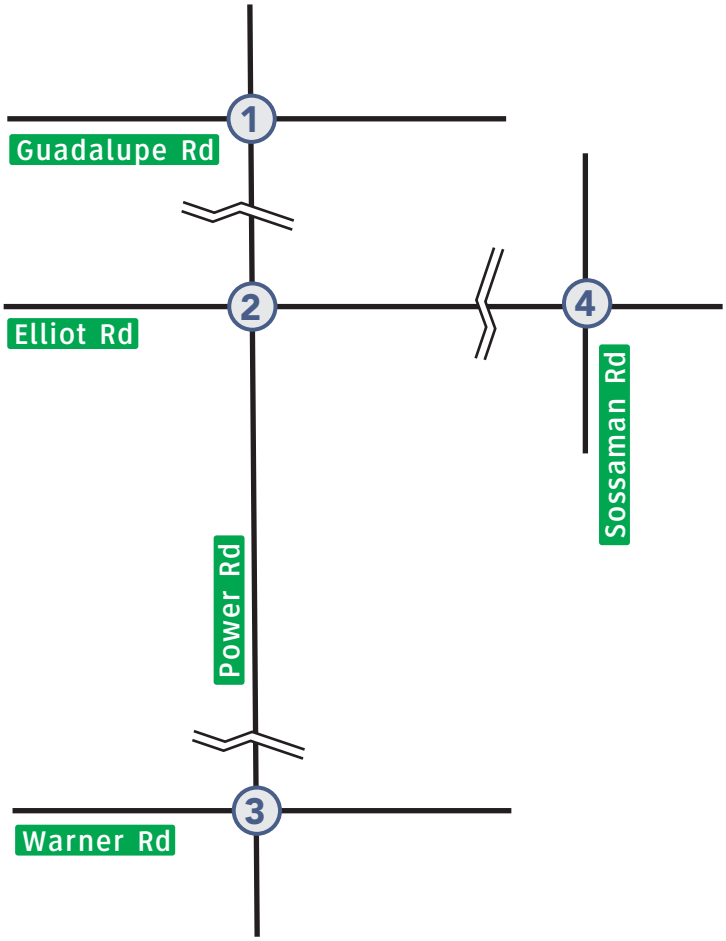
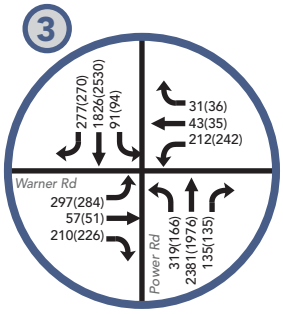
**Figure 6:** Background Traffic - Year 2027




**LEGEND**

XX(XX) AM(PM) Peak Hour Traffic Volume

N

*not to scale*

United Civil Group

**Figure 7:** Background Traffic - Year 2032

## B. Intersection Level of Service Analyses

Capacity analyses at the existing study area intersections were performed for the forecasted background traffic (without the Mixed-Use Commercial Development) utilizing the roadway geometries for the horizon year of the study as presented. **Tables 5 through 7** present the background levels of service at the study area intersections without the proposed development but with known roadway improvements within the study area, including the ambient growth.

### Table 5: 2025 Background Traffic Intersection Levels of Service

| Intersection Location | NB LOS | | | | SB LOS | | | | EB LOS | | | | WB LOS | | | | Overall Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | AvgDelay/ LOS* |
| Power Road/Guadalupe Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | C | C | C | B | C | C | C | D | D | D | D | C | D | D | D | 32.14 C |
| PM Peak Hour | B | B | B | B | B | C | B | B | D | D | D | D | D | D | D | D | 26.77 C |
| Power Road/Elliot Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | D | C | C | C | C | F | C | F | D | D | D | D | C | E | E | D | 60.94 E |
| PM Peak Hour | D | D | D | D | C | F | F | F | C | D | D | D | C | E | E | D | 100.08 F |
| Power Road/Warner Road – Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | D | D | D | C | C | C | C | D | D | E | D | D | D | D | D | 33.71 C |
| PM Peak Hour | D | C | C | C | C | E | E | E | D | D | E | D | D | D | D | D | 50.39 D |
| Elliot Road/Sossaman Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | B | B | B | B | B | B | B | B | B | A | A | A | A | A | A | A | 10.10 B |
| PM Peak Hour | B | B | B | B | B | B | B | B | B | A | A | A | B | A | A | A | 9.89 A |

### Table 6: 2027 Background Traffic Intersection Levels of Service

| Intersection Location | NB LOS | | | | SB LOS | | | | EB LOS | | | | WB LOS | | | | Overall Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | AvgDelay/ LOS* |
| Power Road/Guadalupe Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | C | C | C | C | C | C | C | D | D | D | D | D | D | D | D | 34.20 D |
| PM Peak Hour | C | C | B | C | C | C | B | C | D | D | D | D | D | D | D | D | 27.65 C |
| Power Road/Elliot Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | F | C | C | F | C | F | D | F | F | D | D | F | D | F | F | F | 92.93 F |
| PM Peak Hour | F | C | C | E | C | F | D | F | F | D | D | F | D | F | F | F | 83.43 F |
| Power Road/Warner Road – Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | D | C | B | C | C | C | C | C | D | D | E | D | D | D | E | D | 30.62 C |
| PM Peak Hour | D | C | B | C | C | F | B | D | D | D | E | D | D | D | D | D | 34.43 C |
| Elliot Road/Sossaman Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | B | B | C | B | B | B | B | B | A | A | B | B | A | A | A | 12.64 B |
| PM Peak Hour | C | B | B | B | B | B | B | B | B | A | A | B | B | A | A | A | 10.75 B |

Table 7: 2032 Background Traffic Intersection Levels of Service

| Intersection Location | NB LOS | | | | SB LOS | | | | EB LOS | | | | WB LOS | | | | Overall Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | AvgDelay/ LOS* |
| Power Road/Guadalupe Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | D | C | C | C | C | D | C | D | D | D | D | D | C | D | D | D | 38.44 D |
| PM Peak Hour | D | C | B | C | C | C | B | C | D | D | D | D | D | D | D | D | 31.43 C |
| Power Road/Elliot Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | F | D | C | F | C | F | D | F | F | E | D | F | D | F | F | F | 109.70 F |
| PM Peak Hour | F | D | C | F | C | F | D | F | F | E | D | F | D | F | F | F | 100.14 F |
| Power Road/Warner Road – Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | E | C | B | C | D | C | C | C | D | D | E | E | D | E | E | D | 34.56 C |
| PM Peak Hour | D | C | B | C | C | F | B | E | D | D | E | D | D | D | D | D | 49.60 D |
| Elliot Road/Sossaman Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | B | B | C | C | C | C | C | C | A | A | B | B | B | B | B | 15.06 B |
| PM Peak Hour | C | B | B | B | C | B | B | B | B | A | A | B | B | A | A | A | 11.81 B |

As shown in the background levels of service tables, the study area intersections of Power Road/Guadalupe Road, Power Road/Warner Road and Elliot Road/Sossaman Road are anticipated to operate at acceptable LOS D or better during the morning and evening peak hours.

The intersection of Power Road/Elliot Road is anticipated to operate with delay, as shown by the LOS F during the background conditions. For this analysis, it was assumed that Elliot Road would not be widened at the intersection, but that Power Road would be widened to a 6-lane roadway cross section based on the CIP joint effort Power Road geometric improvements between the local municipalities and the County.

# VI. PROJECTED TRAFFIC

## A. Trip Generation

Estimates of the traffic volumes that will be generated by the Mixed-Use Commercial Development were determined from transportation planning data taken from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition, 2021*. The ITE rates are based on studies that measure trip generation characteristics for various types of land uses. The rates are expressed in terms of trips per unit of land use type.

The ITE land use codes (LUC) with definitions utilized for the development are as follows.

*Convenience Store/Gas Station (LUC 945)* – A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells groceries and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel.

*Supermarket (LUC 850)* - A supermarket is a free-standing retail store that sells a complete assortment of food, beverage, food preparation materials, and household products. A supermarket may also provide additional products and services such as a bakery, dry cleaning, floral arrangements, greeting cards, a limited-service bank, and a pharmacy.

*Health/Fitness Club (LUC 492)* - A health/fitness club is a privately-owned facility that primarily focuses on individual fitness or training. It typically provides exercise classes, fitness equipment, a weight room, spa, lockers rooms, and a small restaurant or snack bar. This land use may also include ancillary facilities, such as a swimming pool, whirlpool, sauna, limited retail, and tennis, pickle ball, racquetball, or handball courts. These facilities are membership clubs that may allow access to the general public for a fee.

*Fast-Food Restaurant with a Drive-Through Window (LUC 934)* – This type of restaurant is characterized by a large drive-through clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours a day) and high turnover rates for eat-in customers. The restaurant does not provide table service. A patron orders from a menu board and pays before receiving the meal.

*Coffee/Donut Shop with Drive Through Window (LUC 937)* - This land use includes any coffee and donut restaurant that has a drive-through window as well as a walk-in entrance area at which a patron can purchase and consume items. The restaurant sells freshly brewed coffee (along with coffee-related accessories) and a variety of food/drink products such as donuts, bagels, breads, muffins, cakes, sandwiches, wraps, salads, and other hot and cold beverages. The restaurant marketing and sales

may emphasize coffee beverages over food (or vice versa). A coffee/donut shop typically holds long store hours (more than 15 hours) with an early morning opening. Limited indoor seating is generally provided for patrons, but table service is not provided.

The overall internal capture of the development was assumed to be 10%. Based on NCHRP Report 684, Enhancing Internal Capture Estimation for Mixed-Use Developments, this Mixed-Use Commercial Development would have an internal capture of almost 30%. However, that estimation was reduced because of the suburban nature of the area, the proximity to residential and commercial land uses and the higher volume of fast food restaurants proposed on the property.

Table 8 presents the forecasted daily and peak hour vehicle trips generated for the Mixed-Use Commercial Development for a typical weekday upon full build out.

Table 8: Trip Generation

| Land Use | ITE Code | Units | Total Size | Daily | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | In | Out | Total | In | Out | Total |
| PHASE I | | | | | | | | | | |
| Convenience Store/Gast Station | 945 | Fueling Positions | 16 | 4,114 | 433 | 216 | 217 | 364 | 182 | 182 |
| Supermarket | 850 | 1,000 sqft | 22.0 | 2,374 | 63 | 37 | 26 | 227 | 113 | 114 |
| Health/Fitness Club | 492 | 1,000 sqft | 42 | 1,000 | 55 | 28 | 27 | 145 | 83 | 62 |
| *Phase I Sub Total* | | | | 7,488 | 551 | 281 | 270 | 736 | 378 | 358 |
| PHASE II | | | | | | | | | | |
| Fast Food with Drive Thru | 934 | 1,000 sqft | 3 | 1,402 | 134 | 68 | 66 | 99 | 52 | 47 |
| Fast Food with Drive Thru | 934 | 1,000 sqft | 2.1 | 982 | 94 | 48 | 46 | 69 | 36 | 33 |
| Fast Food with Drive Thru | 934 | 1,000 sqft | 2.5 | 1,169 | 112 | 57 | 55 | 83 | 43 | 40 |
| Coffee with Drive Thru | 937 | 1,000 sqft | 1.0 | 534 | 86 | 44 | 42 | 39 | 19 | 20 |
| *Phase II Subtotal* | | | | *4,087* | *426* | *217* | *209* | *290* | *150* | *140* |
| Internal Capture of 10% | | | | *-1,158* | *-98* | *-50* | *-48* | *-103* | *-53* | *-50* |
| TOTAL | | | | **10,418** | **879** | **448** | **431** | **923** | **475** | **448** |

The formulas used to calculate the trip generation for this development are presented in Appendix C.

The forecasted trip generation was calculated based on values presented within the ITE Trip Generation Manual. On a weekday, after full build-out of the Mixed-Use Commercial Development, the site is estimated to generate a total of 879 trips in the morning peak hour, 923 trips in the evening peak hour, and 10,418 daily trips.

## B. Trip Distribution

The trip distribution procedure determines the general pattern of travel for vehicles entering and leaving the study area. These percentages are based on the location of the site, the connectivity of the site to the region, the recently collected existing traffic volumes, and consider the character of the types of land uses of the development. For this commercial development, the surrounding residential areas as well as the connectivity to Grand Avenue are factors in the projected trip distribution. Table 9 shows the trip distribution percentages of vehicles that will arrive and depart the site based on land use and roadway network connectivity.

### Table 9: Trip Distribution Percentages

| Direction | Trip Distribution Percentage Arriving to and Departing from the Site at Full Build-out |
|---|---|
| Power Road north of Guadalupe Road | 10% |
| Power Road south of Warner Road | 15% |
| Guadalupe Road west of Power Road | 10% |
| Guadalupe Road east of Power Road | 10% |
| Elliot Road west of Power Road | 30% |
| Elliot Road east of Sossaman Road | 10% |
| Sossaman Road north of Elliot Road | 5% |
| Warner Road west of Power Road | 10% |

Figures 8 and 9 present the assigned site generated traffic to and from the development.

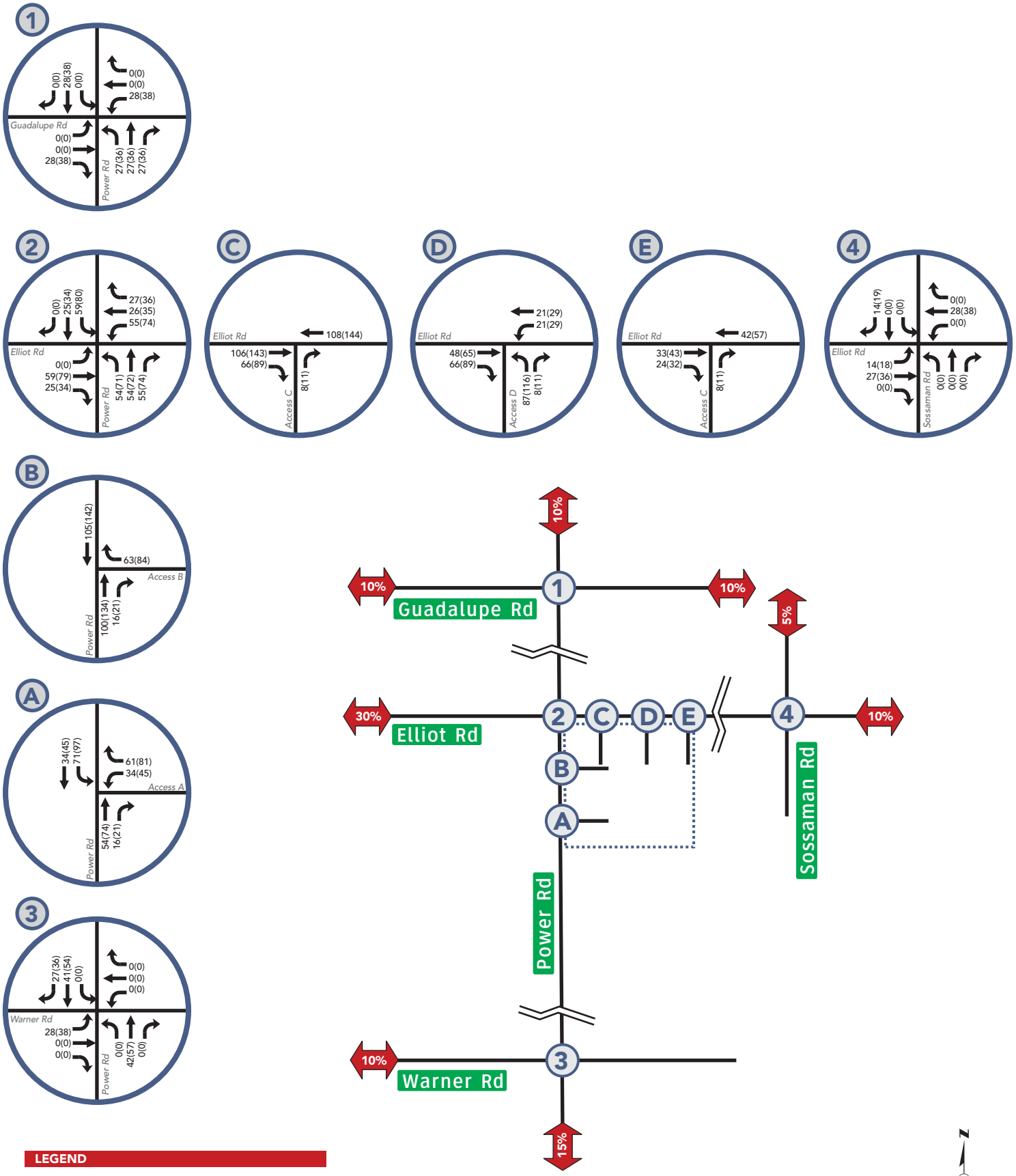



**Figure 8:** Site Generated Traffic and Trip Distribution - Phase 1

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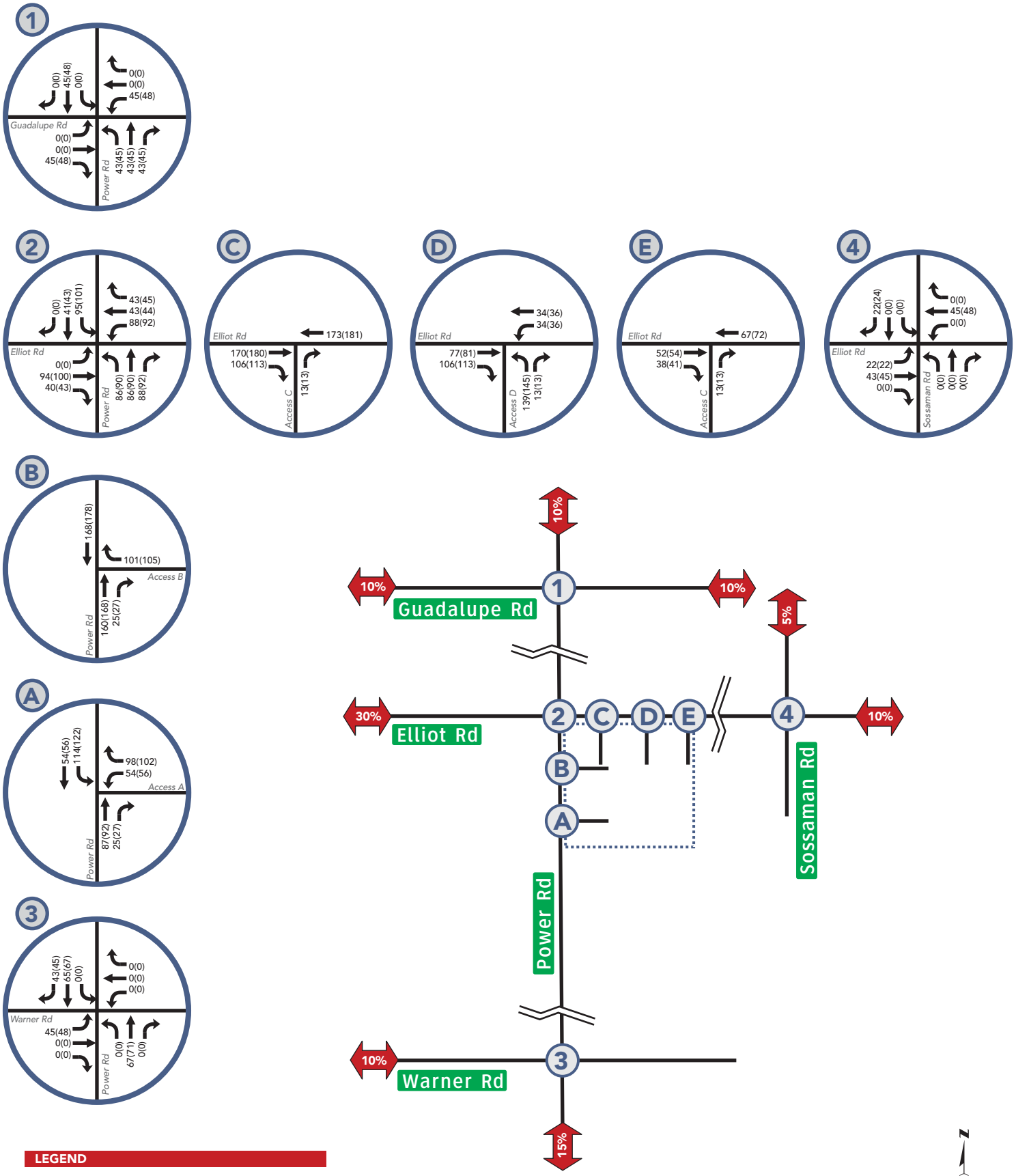


**Figure 9:** Site Generated Traffic and Trip Distribution - Full Buildout

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# VI. TRAFFIC AND IMPROVEMENT ANALYSIS

The purpose of this section is to show the relations between traffic operations and roadway geometrics; identify needs pertaining to progressive traffic flow and safety; and identify alternatives for further consideration, where applicable. Based on the analyses within this section of the TIA, **Figure 14** illustrates the off-site recommendations that should be implemented to mitigate traffic impacts within the study area.

## A. Roadway Geometry

Power Road will be constructed to the MCDOT Urban Principal Arterial Roadway as defined in the MCDOT Roadway Design Manual, 2021 Update Figure 5.8. Power Road's ultimate cross section includes 3 travel lanes in each direction separated by a raised median. As such, 65 feet of right of way measured centerline to right of way line should be reserved along the site's western boundary.

Elliot Road is planned as a 6-lane section with a raised median. Along the site's northern boundary, 65 feet of right of way will be required. Measured centerline to right of way line, per the Mesa Transportation Plan. Elliot Road will be designed and constructed in accordance with the City of Mesa Standard Detail M46-03.2.

Per the 2040 Transportation Master Plan Map 2.2.13, raised medians are proposed for Elliot Road adjacent to the site, when the roadway is fully built out. Therefore, Section 212 Raised Medians of the Engineering and Design Standards 2021 apply. Careful consideration is given to requests for median cuts to ensure that the purpose of the median is not compromised. In general, full access median openings may be provided at 880-foot points along an arterial street. Additional median openings will be considered, but should be designed as partial movements, right in/right out/left in only.

With the widening required for the east side of Power Road and south side of Elliot Road, the signal poles on the southeast corner of the intersection will need to be relocated. In addition, signal head placement will need to be adjusted/realigned on the remaining signal poles and mast arms may need to be extended, in the interim condition.

## B. Site Accessibility

The proposed Mixed-Use Commercial Development is planned to have five site access driveways, two located on Power Road and three located on Elliot Road. The site driveways located on Power Road fall under MCDOT jurisdiction. The driveways located on Elliot Road fall under City of Mesa Jurisdiction. A further description of the proposed driveways and their spacing is provided below.

### B.1. Power Road – MCDOT Roadway Design Guidelines

**Access A**, the southernmost access on Power Road, is located approximately 605 feet south of Elliot Road, measured centerline to centerline. Access A is proposed as a full

turning movement access. Because a raised median is anticipated for Power Road, a median break is requested for this location.

Along the site's southern boundary, an existing utility easement exists. With the construction of Access A, it is proposed that the existing utility easement access will be removed and that accessibility to the utility corridor will be provided through the proposed Access A.

A proposed access for The Ranch commercial development has been proposed on the west side of Power Road approximately 764 feet south of Elliot Road, measured centerline to centerline. Because this access has been limited to left in/right in/right out and the south- and northbound left turns are not interlocking, Access A's location, as shown, with full turning movements should be granted.

Access B is located on Power Road approximately 275 feet south of Elliot Road and approximately 330 feet north of Access A, measured centerline to centerline. The proposed raised median on Power Road will limit Access B to right in/right out only.

Per the MCDOT Roadway Design Manual Sections 7.8 and 7.9, each parcel is limited to one two-way driveway or a pair of one-way driveways. Additional driveways may be needed and provided under the following conditions:

a. If the daily volume using one driveway would exceed 1,500 vehicles in both directions
b. If traffic using one driveway would exceed the capacity of a stop sign during one peak street traffic hour
c. If a traffic analysis shows that the traffic conditions warrant two or more driveways, such driveways will not negatively impact traffic flow.

Based on the above criteria, the two driveways on Power Road should be provided to allow adequate site circulation and reduce delay at the site accesses.

Per the MCDOT Roadway Design Manual, the driveway spacing along arterial roadways shall be at least 360 feet along arterial roadways, measured centerline to centerline.

For driveway corner clearance, driveways should be spaced per the criteria designated in Figure 7.6 and on Table 7.4 of MCDOT's Roadway Design Manual. For this site, 360 feet is required on Power Road. The measurement for corner clearance is taken from the edge of driveway to the edge of the roadway.

Due to the layout of the site, proposed land use, and the site frontage on Power Road, Driveway B should be permitted to allow circulation of traffic of the convenience store with gas.

### B.2. Elliot Road – City of Mesa Engineering Design Standards 2019

Access C is planned to be constructed on Elliot Road approximately 350 feet east of Power Road and will be limited to right in/right out only with the completion of the raised median on Elliot Road.

Access D will be located 520 feet east of Power Road and 205 feet west of Access E and is proposed as a full movement driveway.

Access E is proposed as a right in/right out access on Elliot Road approximately 205 feet east of Access D and 145 feet west of the Roosevelt Water Conservation District's western access.

This access has been approved by the City of Mesa as a full median break in the future. However, it is anticipated that turning movements at this location will be low based on the proposed industrial land use north of Elliot Road and the existing office use south of Elliot Road.

As shown, the five site driveways, with turning movements as requested, should be granted. These site accesses will provide adequate site circulation and access to the proposed Mixed-Use Commercial Development.

Figure 13 illustrates the driveway spacing for the proposed site driveways as well as the future driveways of the neighboring properties, and proposed median configurations.

The mitigation/restriction of the movements of the accesses to the above allowed movements (e.g., right-in/right-out or 3/4 movement) will ultimately be provided by the raised medians planned within the adjacent roadways. In the interim conditions prior to the raised medians being installed, mitigation/restriction of the accesses as appropriate should be provided by raised "pork chop" islands within the driveways per the MCDOT *Roadway Design Manual* Section 7.7.2 and/or City of Mesa requirements, as applicable. Consideration should be given to limiting future reconstruction (i.e., the raised islands should not extend past the Power Road face of curb alignment).

## C. Turn Lane Analysis

### C.1. Right Turn Deceleration Lanes

Right turn lanes are often recommended on roadways where right turning vehicles create delays or safety concerns for other traffic movements. The need for a right turn lane depends on the speed of traffic on the road, the volume of traffic making a right turn and the through traffic volume in the same direction as the right turning traffic.

For the site access driveways on Power Road; per MCDOT's *Roadway Design Manual*, Section 7.15.1, right-turn deceleration lanes are warranted at driveways when at least

three of four separate factors are met, including: (a) total daily vehicles using the adjacent street (min. 5,000 vpd), (b) the posted roadway speed (min. 35 mph), (c) the number of vehicles expected to be using the driveway (min. 1,000 vpd), and (d) the number of right-turning vehicles at the driveway within a one-hour period (min. 30 vph).

Greater than 30 right turns are forecasted or have the potential at each of the Power Road site accesses, additionally, Power Road has well over 5,000 vpd in the existing condition and has a posted speed limit of 45 mph. Therefore, northbound right-turn deceleration lanes are required at both site accesses on Power Road. Per the MCDOT Roadway Design Manual, a minimum of 160 feet of storage with a 125 foot taper.

Dedicated right turn lanes are warranted at site accesses per Section 208.4.1 of the Mesa Engineering and Design Standards. Per the Standards, dedicated right turn lanes should be provided at retail sites with 40,000 gross square feet or more of building area. Because the site is greater than 40,000 square feet of retail use and also includes additional fast food out parcels, dedicated right turn lanes should be provided at all site accesses on Elliot Road, per Mesa's Design Standards. Per the City of Mesa Engineering Design Standards, a typical deceleration lane should provide at least 150 feet of storage with a 100-foot taper and a 12-foot wide lane. Longer storage and tapers may be necessary depending upon the site.

For unsignalized intersections the storage length is calculated as the average number of peak hour vehicles arriving per 2-minute period times 25 feet. Because right turns into the unsignalized site access driveways will be free-flow in nature; the minimum right turn deceleration lane lengths and tapers should be used. Table 10 provides the calculated storage lengths for the deceleration lanes based on 2032 projected total traffic.

Table 10: Right Turn Lane Storage Calculations

| Location | | Average Peak Turn Volume 2032 | Calculated Storage (feet) | Recommended Storage (feet) | Recommended Taper (feet) |
|---|---|---|---|---|---|
| On | At | | | | |
| Power Road | Access A | Northbound Right (26) | 22 | 160 | 125 |
| Power Road | Access B | Northbound Right (26) | 22 | Continuous | |
| Elliot Road | Access C | Eastbound Right (110) | 92 | 150 | 100 |
| Elliot Road | Access D | Eastbound Right (110) | 92 | Continuous | |
| Elliot Road | Access E | Eastbound Right (40) | 33 | Continuous | |

### C.2. Left Turn Deceleration Lane Warrants

At Access A on Power Road and Access D on Elliot Road, left turn storage lanes should be provided.

Table 11 provides storage calculations for the left turn lanes discussed above utilizing 2032 total traffic volumes. To determine if the MCDOT and City of Mesa minimum storage lengths are sufficient for the required auxiliary left-turn lanes at the respective unsignalized site accesses, methodologies for determining queue lengths at unsignalized left-turns from the MCDOT *Traffic Impact Study Manual (Section 2.11.2)* are utilized on Power Road and Elliot Road (number of vehicles per 2 minute period with a factor of 1.5 increase in turning movements)

Table 11: Left Turn Lane Storage Calculations

| Location | | Average Turn Volumes 2032 | Calculated Storage (feet) | Recommended Storage (feet) | S-Curve Opening (feet) |
|---|---|---|---|---|---|
| On | At | | | | |
| Power Road | Access A | Southbound Left (118) | 147 | 160 | 90 |
| Elliot Road | Access D | Eastbound Left (35) | 44 | 100 | 90 |

## D. Existing Intersection Queue Analysis

### D.1. Dual Left Turn Lanes

Per the MCDOT *Roadway Design Manual*, Section 6.1.6, dual left-turn lanes are to be provided when the peak hour left-turn volume exceeds 300 vehicles per hour. The forecasted year 2032 left turns exceed this threshold at the following approaches to the intersection of Power Road and Elliot Road:
NB Lefts: 591 vph
SB Lefts: 192 vph
EB Lefts: 561 vph
WB Lefts: 475 vph

Dual left-turn lanes should be provided on all legs of the intersection at Power Road/Elliot Road as part of the improvements being planned on Power Road and/or the required half-street improvements of the Mixed-Use Commercial Development.

### D.2. Left Turn Storage

A queue analysis was conducted for the projected year 2032 total traffic right-and left-turn volumes at the existing signalized study area intersection of Power Road/Elliot Road per MCDOT *Roadway Design Manual* guidelines Table 12 presents the queue analysis results as compared to the existing turn lane storage lengths.

Table 12: Existing Intersection Queue Analysis

| Direction | Approximate Existing Storage Length | Peak Hour Turning Volume (max of AM or PM) | Calculated Queue Length (MCDOT RDM) | Recommended Storage |
|---|---|---|---|---|
| Power Road/Elliot Road | | | | |
| NB Left | 150 ft | 591 | 323 ft* | 300-foot dual left turn lanes |
| SB Left | 160 ft | 192 | 41 ft* | 200-foot dual left turn lanes |
| EB Left | 160 ft | 561 | 366 ft* | 300-foot dual left turn lanes |
| WB Left | 105 ft | 475 | 252 ft* | 300-foot dual left turn lanes |
| NB Right | - | 484 | 619 ft | 600-foot continuous right turn lane |
| SB Right | - | 389 | 519 ft | 600-foot continuous right turn lane |
| EB Right | - | 414 | 596 ft | 600-foot continuous right turn lane |
| WB Right | - | 166 | 121 ft | 200-foot right turn lane |

* Proposed dual turn lanes

As shown in Table 12, the intersection of Power Road/Elliot Road should be designed as appropriate, with maximized storage lengths dependent on conflicting adjacent accesses or other geometric constraints.

## E. Total Traffic Level of Service Analyses

Capacity analyses at the existing study area intersections and at the site accesses assumed as part of this TIA per initial conceptual planning were performed for the forecasted total traffic and recommended roadway geometries for the horizon years of the study, 2025, 2027 and 2032.

Total traffic projections for the horizon years of the development were determined by adding the proposed development's site generated traffic to the forecasted horizon background traffic volumes for the full build-out horizon year. The total traffic volumes are illustrated in **Figures 10 through 12** for the same horizon years, 2025, 2027 and 2032.

**Tables 13 through 15** present the total traffic levels of service at the study area intersections with the proposed development and with all recommended roadway improvements.

For this analysis, it was assumed that by 2025, Power Road will be widened to its ultimate geometric configuration within the study area and that the intersection of Power Road/Elliot Road will be constructed with dual left turn lanes on all approaches.

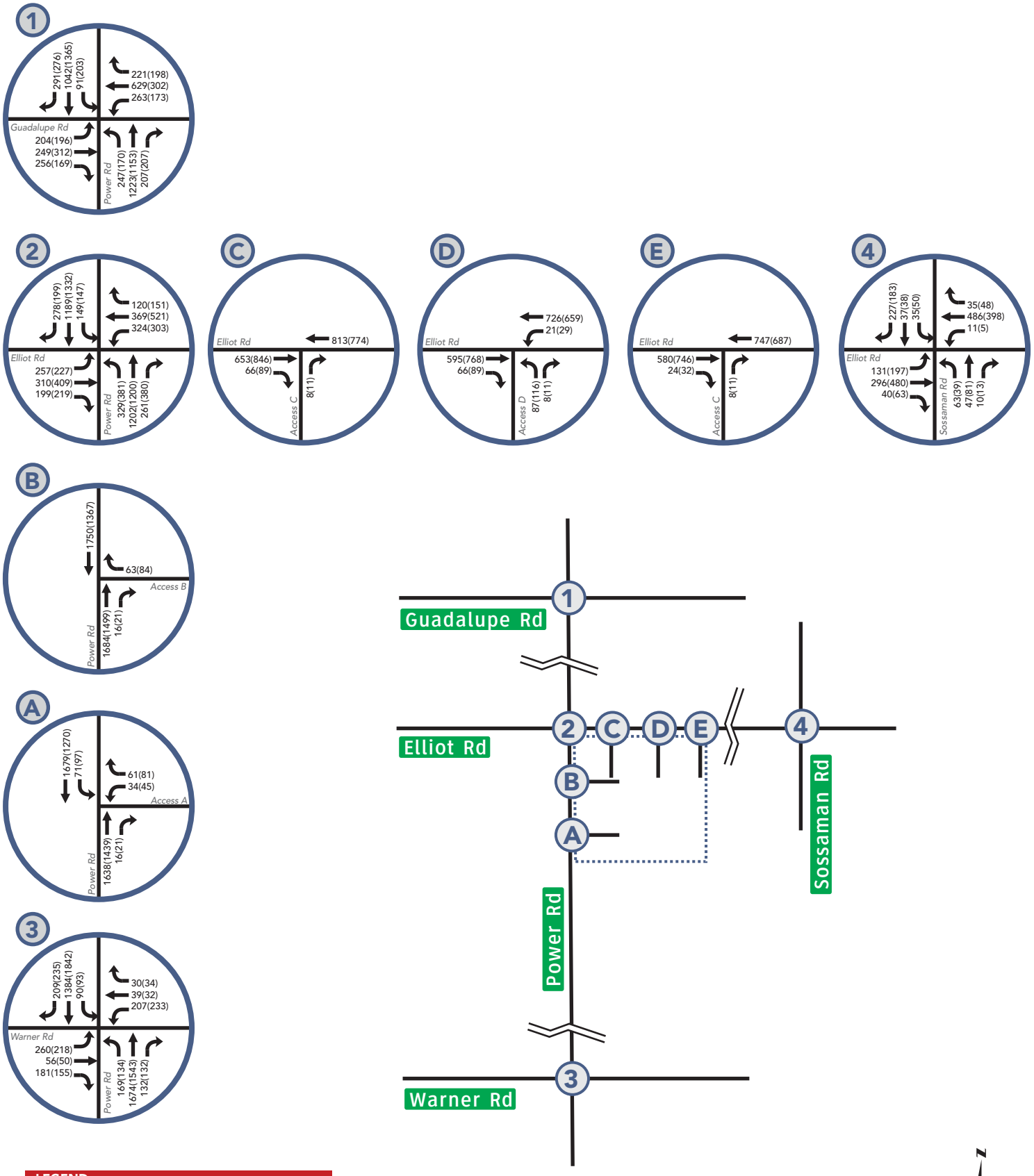


**Figure 10:** Total Traffic - Year 2025

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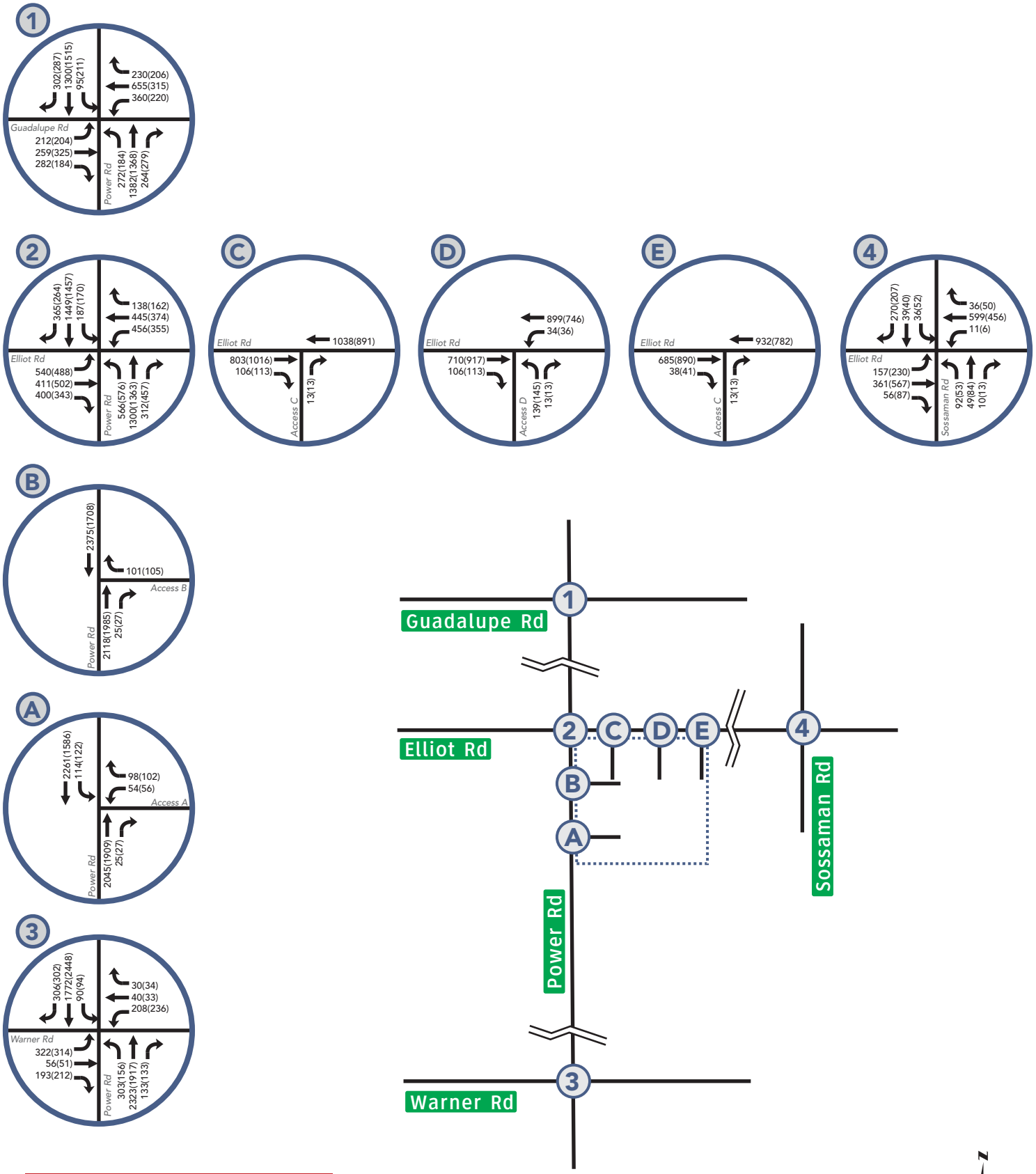


**Figure 11:** Total Traffic - Year 2027

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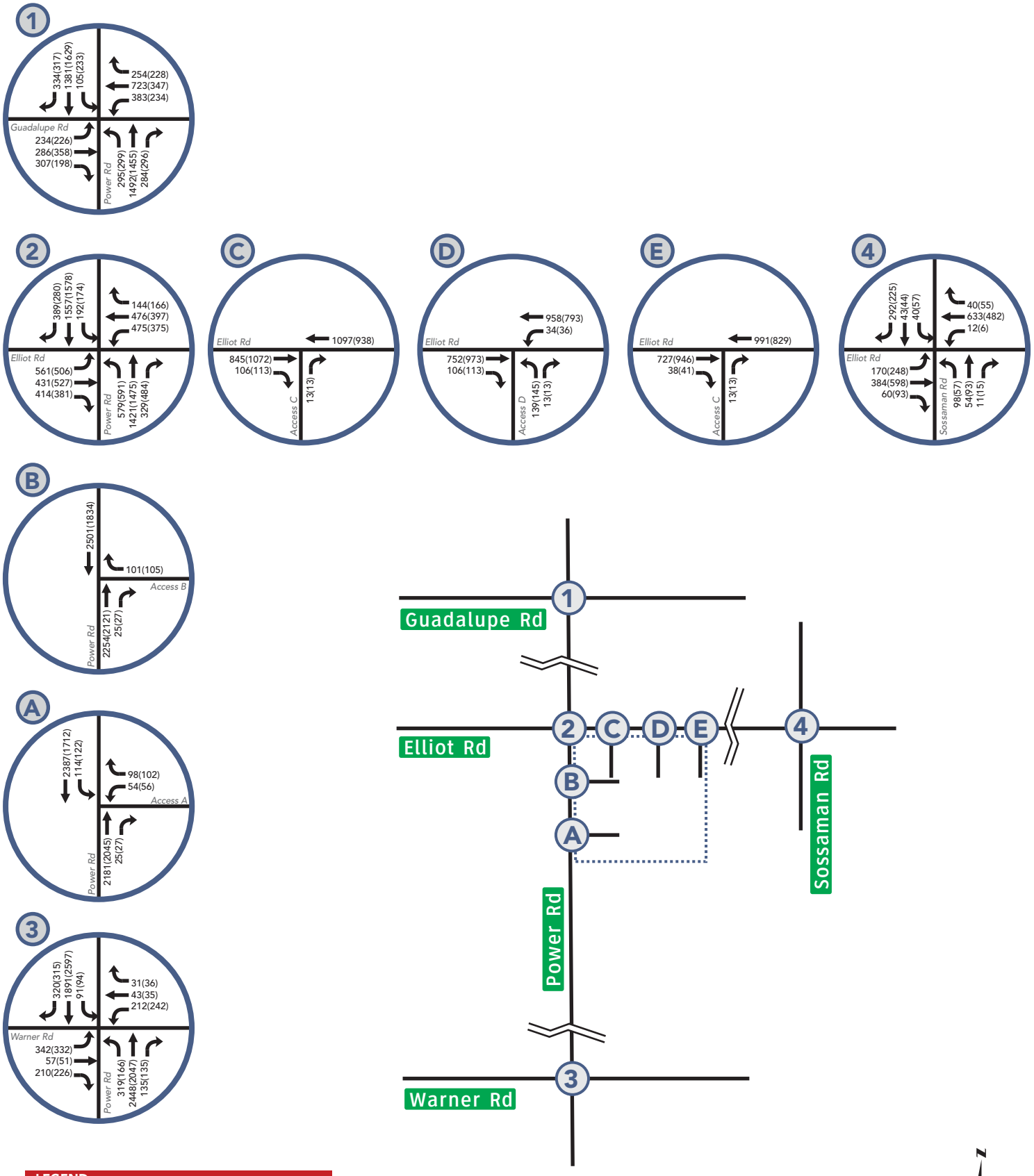


**Figure 12:** Total Traffic - Year 2032

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Table 13: 2025 Total Traffic Intersection Levels of Service

| Intersection Location | NB LOS | | | | SB LOS | | | | EB LOS | | | | WB LOS | | | | Overall Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | AvgDelay/ LOS* |
| Power Road/Guadalupe Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | C | C | C | B | C | C | C | D | D | D | D | C | D | D | D | 32.92 C |
| PM Peak Hour | C | B | B | B | B | C | B | C | D | D | D | D | D | D | D | D | 27.13 C |
| Power Road/Elliot Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | B | B | B | C | C | B | C | C | C | C | C | C | C | C | C | 23.21 C |
| PM Peak Hour | C | B | B | C | C | C | B | C | C | C | C | C | C | C | C | C | 22.24 C |
| Power Road/Warner Road – Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | B | B | B | B | B | B | B | C | D | D | D | C | D | D | C | 21.46 C |
| PM Peak Hour | C | B | B | B | B | C | B | C | D | D | E | D | D | D | D | D | 32.93 C |
| Elliot Road/Sossaman Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | B | B | B | B | B | B | B | B | B | A | A | A | A | A | A | A | 10.30 B |
| PM Peak Hour | C | B | B | B | B | B | B | B | B | A | A | A | B | A | A | A | 10.18 B |
| Power Road/Access A | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | A | A | A | E | A | - | A | - | - | - | - | F | - | C | F | *** F |
| PM Peak Hour | - | A | A | A | E | A | - | A | - | - | - | - | F | - | C | F | *** F |
| Power Road/Access B | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | A | A | A | - | A | - | A | - | - | - | - | - | - | D | D | 26.2 D |
| PM Peak Hour | - | A | A | A | - | A | - | A | - | - | - | - | - | - | C | C | 24.4 C |
| Elliot Road/Access C | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 11.7 B |
| PM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 12.9 B |
| Elliot Road/Access D | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | - | B | C | - | - | - | - | - | A | A | A | B | A | - | A | 23.0 C |
| PM Peak Hour | E | - | B | E | - | - | - | - | - | A | A | A | B | A | - | A | 37.8 E |
| Elliot Road/Access E | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 11.3 B |
| PM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 12.3 B |

*The overall LOS letter grade for two-way stop-controlled intersections is shown as the worst approach.

For total traffic conditions in the year 2025 with the opening of the first phase of development, the study area intersections are forecasted to operate at acceptable levels of service, LOS D or better, during the morning and evening peak hours. The exceptions are the site accesses of Power Road/Access A and Elliot Road/Access D. During the peak hours, the left turn movements into and out of the site may experience delay.

For the unsignalized intersections, stop-control on the minor roads and driveways that intersect with major streets typically experience greater delay for short periods of time

in the peak hours due to the wait time experienced for acceptable gaps on the major street, while the free-flowing major streets experience minimal to no delay.

It is important to note that the overall intersection delay shown in the tables for unsignalized intersection and accesses is the delay for the worst movement and does not reflect overall traffic operations.

Table 14: 2027 Total Traffic Intersection Levels of Service

| Intersection Location | NB LOS | | | | SB LOS | | | | EB LOS | | | | WB LOS | | | | Overall Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | AvgDelay/ LOS* |
| Power Road/Guadalupe Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | D | C | C | C | C | C | C | C | D | D | D | D | D | D | D | D | 35.21 D |
| PM Peak Hour | C | C | B | C | C | C | B | C | D | D | D | D | D | D | D | D | 28.40 C |
| Power Road/Elliot Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | F | C | C | D | D | F | D | E | D | D | E | D | D | D | D | D | 48.92 D |
| PM Peak Hour | C | C | B | C | B | C | C | C | C | C | D | C | C | D | D | C | 27.33 C |
| Power Road/Warner Road – Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | E | C | B | C | D | C | C | C | D | D | E | E | D | E | E | D | 32.50 C |
| PM Peak Hour | D | C | B | C | C | F | B | D | D | D | E | D | D | D | D | D | 38.89 C |
| Elliot Road/Sossaman Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | B | B | C | C | C | C | C | C | A | A | B | B | B | A | B | 14.36 B |
| PM Peak Hour | C | B | B | B | C | B | B | B | B | A | A | B | B | A | A | A | 11.74 B |
| Power Road/Access A | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | A | A | A | F | A | - | B | - | - | - | - | F | - | F | F | *** F |
| PM Peak Hour | - | A | A | A | F | A | - | C | - | - | - | - | F | - | F | F | *** F |
| Power Road/Access B | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | A | A | A | - | A | - | A | - | - | - | - | - | - | F | F | 62.7 F |
| PM Peak Hour | - | A | A | A | - | A | - | A | - | - | - | - | - | - | F | F | 52.2 F |
| Elliot Road/Access C | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 12.6 B |
| PM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 14.1 B |
| Elliot Road/Access D | | | | | | | | | | | | | | | | | |
| AM Peak Hour | F | - | B | E | - | - | - | - | - | A | A | A | B | A | - | A | 53.2 F |
| PM Peak Hour | F | - | B | F | - | - | - | - | - | A | A | A | C | A | - | A | 102.2 F |
| Elliot Road/Access E | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 11.9 B |
| PM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 13.2 B |

*The overall LOS letter grade for two-way stop-controlled intersections is shown as the worst approach.

By the year 2027 with full buildout of the site, Access B begins to produce delay for the westbound right turn movement. This is due to convenience store use and the volume of vehicles anticipated to travel on Power Road within the area.

As traffic volumes increase and new roadways are constructed to their ultimate cross section within the area, it is assumed that traffic will balance over the roadway network.

Table 15: 2032 Total Traffic Intersection Levels of Service

| Intersection Location | NB LOS | | | | SB LOS | | | | EB LOS | | | | WB LOS | | | | Overall Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | L | T | R | Tot | AvgDelay/ LOS* |
| Power Road/Guadalupe Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | D | D | C | D | C | D | D | D | D | D | D | D | D | D | D | D | 42.80 D |
| PM Peak Hour | D | C | B | C | C | C | C | C | D | D | D | D | D | D | D | D | 33.95 C |
| Power Road/Elliot Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | F | C | C | D | E | F | D | F | D | D | E | D | D | D | D | D | 61.34 D |
| PM Peak Hour | D | C | C | C | B | F | C | D | C | D | D | C | C | D | D | C | 32.85 C |
| Power Road/Warner Road – Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | E | C | B | C | D | C | C | C | E | E | E | E | D | E | E | D | 36.05 D |
| PM Peak Hour | D | C | B | C | C | F | B | E | D | D | E | D | D | D | D | D | 55.52 E |
| Elliot Road/Sossaman Road - Signalized | | | | | | | | | | | | | | | | | |
| AM Peak Hour | C | C | C | C | C | C | C | C | C | B | B | B | B | B | A | B | 17.00 B |
| PM Peak Hour | C | B | B | C | C | C | C | C | B | A | A | B | B | A | A | A | 13.13 B |
| Power Road/Access A | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | A | A | A | F | A | - | C | - | - | - | - | F | - | F | F | *** F |
| PM Peak Hour | - | A | A | A | F | A | - | C | - | - | - | - | F | - | F | F | *** F |
| Power Road/Access B | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | A | A | A | - | A | - | A | - | - | - | - | - | - | F | F | 80.5 F |
| PM Peak Hour | - | A | A | A | - | A | - | A | - | - | - | - | - | - | F | F | 66.0 F |
| Elliot Road/Access C | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 12.9 B |
| PM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 14.6 B |
| Elliot Road/Access D | | | | | | | | | | | | | | | | | |
| AM Peak Hour | F | - | B | F | - | - | - | - | - | A | A | A | B | A | - | A | 65.4 F |
| PM Peak Hour | F | - | B | F | - | - | - | - | - | A | A | A | C | A | - | A | 136.4 F |
| Elliot Road/Access E | | | | | | | | | | | | | | | | | |
| AM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 12.2 B |
| PM Peak Hour | - | - | B | B | - | - | - | - | - | A | A | A | - | A | - | A | 13.6 B |

*The overall LOS letter grade for two-way stop-controlled intersections is shown as the worst approach.

As traffic continues to increase through the horizon years, the study area intersections continue to operate at acceptable levels of service except Power Road/Warner Road in the evening peak hour. This study did not assume major improvements on Warner Road at the Power Road intersection. However, as the area south of this Mixed-Use Commercial Development continues to develop, roadway infrastructure projects are likely that will improve the intersection geometrics and create additional capacity.

In addition, signal timing should be reviewed and continually updated to optimize signal timings at the study area's signalized intersections along Power Road based on actual traffic volumes once additional development occurs and ambient growth in the area is realized. Consideration should be given to coordination of the Power Road corridor, including by methods such as an Adaptive Traffic Control System.

Additionally, once ultimate improvements and connectivity along other major corridors adjacent to the study area are made (e.g. Recker Road, Sossaman Road, and Hawes Road), they may generally serve to relieve future forecasted traffic demand on Power Road and improve levels of service.

The site Accesses A, B and D produce delay for left turning vehicles into and out of the site during the peak periods of the day. For the unsignalized intersections, stop-control on the minor roads and driveways that intersect with major streets typically experience greater delay for short periods of time in the peak hours due to the wait time experienced for acceptable gaps on the major street, while the free-flowing major streets experience minimal to no delay.

Exiting right turn movements from the site accesses onto free-flowing Power Road may experience delay as shown by the LOS E and F in the tables above. The existing and planned signalized intersections along Power Road will provide gaps for the minor turning movements, which may not be apparent within the LOS analyses. Sufficient throat/exiting queue storage length should be provided to accommodate potential queues experienced while waiting to turn from the Development to help avoid any on-site blockages that may cause issues on the adjacent streets.

## F. Intersection Sight Distance

Proper intersection sight distance and sight triangles shall be provided and maintained at the site accesses and intersections of the proposed development to give drivers exiting the accesses a clear view of oncoming traffic. The landscape and hardscape within the sight triangles must not obstruct the driver's view of the adjacent travel lanes. To ensure adequate sight distances and sight distance triangles, AASHTO's *A Policy on Geometric Design of Highways and Streets* Section 9.5 and City of Surprise Standard Details 4-01 and 4-02 should be followed as appropriate when designing the accesses and landscaping.

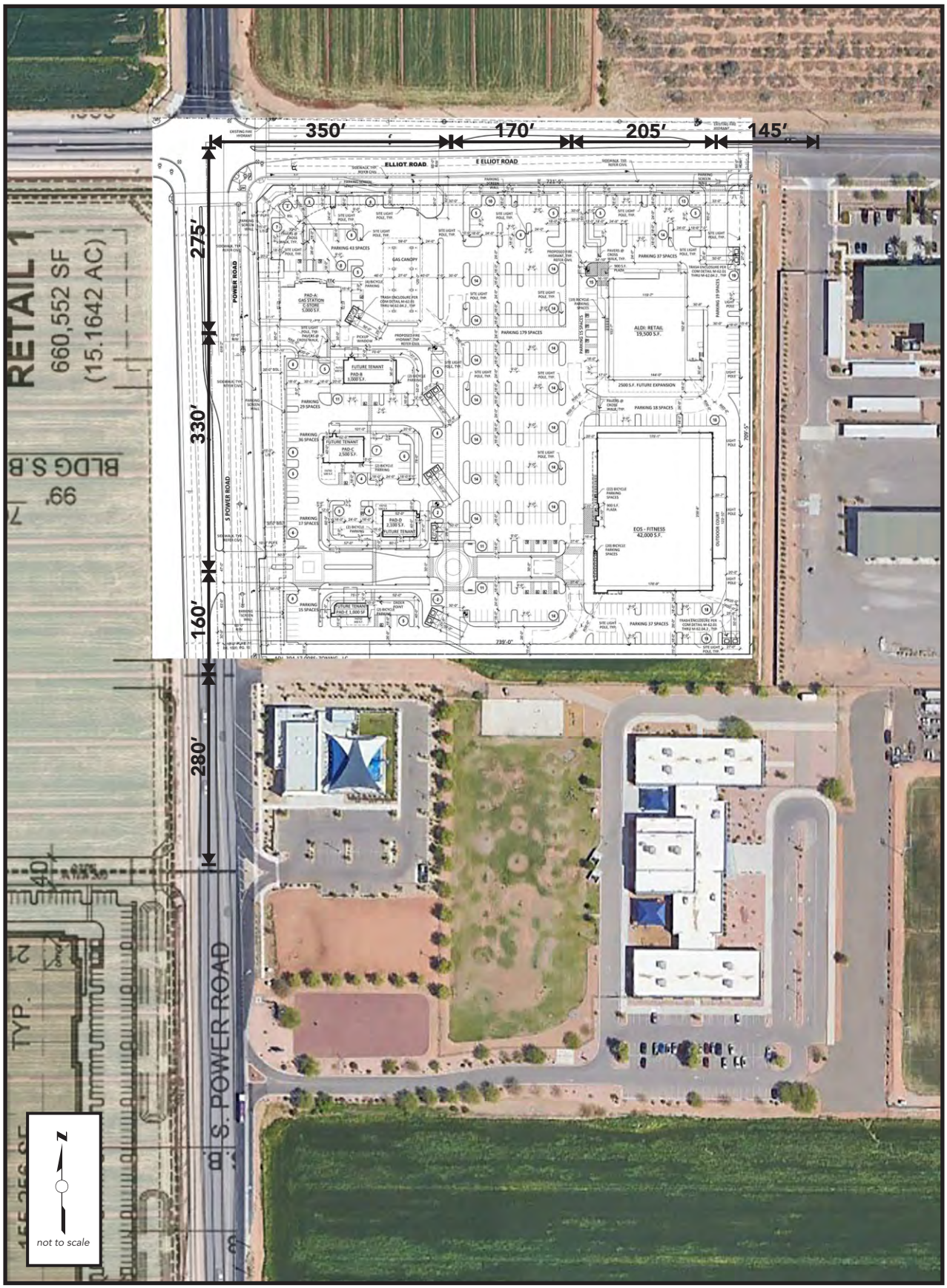


**Figure 13:** Driveway Spacing

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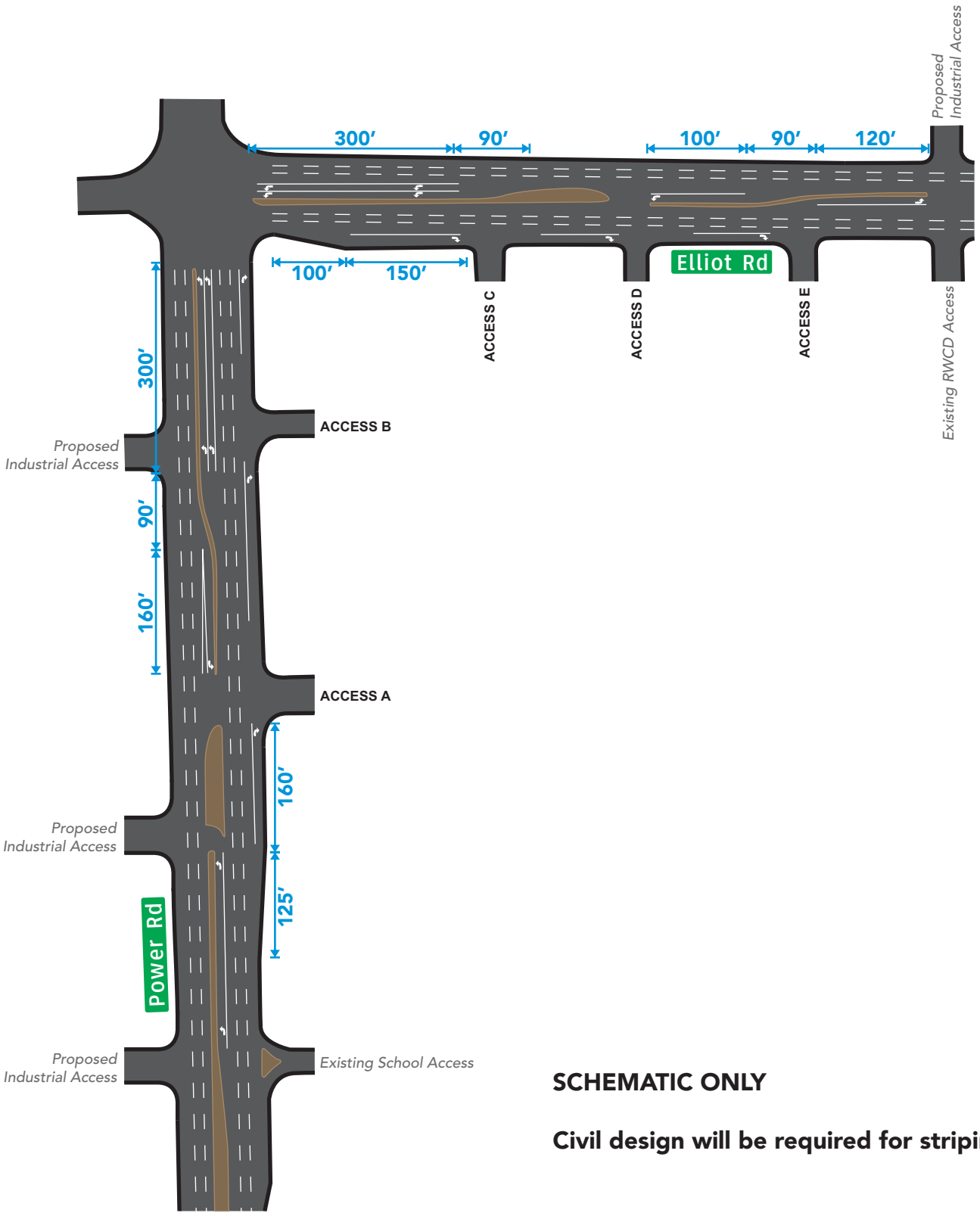


**SCHEMATIC ONLY**

**Civil design will be required for striping plan**

not to scale

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**Figure 14:** Recommendations

# VII. CONCLUSIONS AND RECOMMENDATIONS

The plan for the approximate 14.5-acre development consists of a mix of commercial uses. The first phase of development is planned as a convenience store with gas of 5,000 square feet with 16 fueling positions (PAD A), a grocery store of 19,500 square feet with 2,500 square feet for expansion and a fitness center of 42,000 square feet. The second phase will consist of the development of a fast-food restaurant with a drive through of 3,000 square feet (PAD B), a fast-food restaurant with a drive through of 2,500 square feet (PAD C), a fast-food restaurant with a drive through of 2,100 square feet (PAD D), and a coffee shop with a drive through of 1,000 square feet (PAD E).

The horizon years for the study were determined from the MCDOT TIS Manual and include Phase I (2025), Phase II (2027) and five years after full buildout (2032).

Five site driveways are planned for this mixed-use development, two on Power Road (Accesses A and B) and three on Elliot Road (Accesses C, D and E). Accesses A through D will primarily serve customers of the proposed development. Access E will primarily serve customers along with the few heavy vehicles that provide goods to the grocery store. Raised medians are planned to be constructed on both Power Road and Elliot Road that will limit access to right in/right out at Accesses B, C, and E. Accesses A and D are all planned as full movement accesses.

The forecasted trip generation was calculated based on data provided within the 11th Edition of the ITE Trip Generation Manual. On a weekday, after full build-out of the mixed-use development on the southeast corner of Power Road and Elliot Road is estimated to generate a total of 879 trips in the morning peak hour, 923 trips in the evening peak hour, and 10,418 daily trips.

Using the forecasted total traffic volumes for years 2025, 2027 and 2032, the signalized study area intersections of Power Road/Elliot Road, Power Road/Guadalupe Road, and Sossaman Road/Elliot Road are projected to operate at acceptable LOS D or better through the study horizon years. During the evening peak hour, the intersection of Power Road/Warner Road may experience some delay as indicated by LOS E. However, this study did not assume major improvements on Warner Road at the Power Road intersection. In addition, as the area south of this Mixed-Use Commercial Development continues to develop, roadway infrastructure projects are likely that will improve the intersection geometrics and create additional capacity. Other recommendations include future signal coordination along the Power Road corridor once development is realized that assists in mitigating delay along the corridor in the peak hours.

By 2032 total traffic conditions, delay will be anticipated for some left and right turning movements into and out of the Mixed-Use Commercial Development, while Power Road and Elliot Road will experience free flowing conditions. Exiting movements on stop-controlled minor roads and driveways that intersect with major

streets typically experience greater delay for short periods of time in the peak hours due to the wait for acceptable gaps on the major street, while the free-flowing major streets experience minimal delay. The existing and planned signalized intersections along Power Road and Elliot Road will provide gaps for minor turning movements, which may not be apparent within the LOS analyses. Sufficient throat/exiting queue storage length should be provided to accommodate potential queues experienced while waiting to turn from the Development to help avoid any on-site blockages that may cause issues on the adjacent streets.

Based on this Traffic Impact Study, the following recommendations apply:

- Provide right of way dedication and the construction of the required Power Road improvements on the western boundary of the Mixed-Use Commercial Development per input and coordination with MCDOT, as required.
- Provide right of way dedication and the construction of required Elliot Road improvements on the northern boundary of the Mixed-Use Commercial Development per input and coordination with City of Mesa, as required.
- Remove the utility easement access on the southern boundary of the site.
- Provide auxiliary right and left turn lanes at the site accesses per recommendations in Tables 10 and 11 and on Figure 14.
- In the interim conditions prior to the raised medians being installed on the adjacent roadways, mitigation/restriction of the accesses as appropriate should be provided by raised "pork chop" islands within the driveways per MCDOT *Roadway Design Manual* Section 7.7.2 and/or City of Mesa requirements as applicable. Consideration should be given to limiting future reconstruction (i.e., the raised islands should not extend to the Power Road face of curb alignment).
- The development should be responsible for an appropriate contribution to the cost of the signal modification at the intersection of Power Road/Elliot Road.

The following recommendations are for consideration by the City of Mesa and MCDOT:

- Continually update and optimize signal timings at the study area signalized intersections along Power Road based on actual traffic volumes once additional development occurs and ambient growth in the area is realized. Consideration should be given to the coordination of the Power Road corridor, including by methods such as an Adaptive Traffic Control System.
- If the projected volumes due to private development and ambient growth at the existing study area intersections are to be realized in future years, consideration should be given to dual lefts and extended turn lanes as part of planned roadway improvement projects, as appropriate.

# VIII. LIMITATIONS

Our professional services have been performed using the degree of skill ordinarily exercised, under similar circumstances, by reputable transportation engineering firms practicing in this locality. No other warranty, expressed or implied, is made.

The contents of this report are intended for the sole use of the addressee and his/her designees. In completing this report, data was obtained from a variety of sources (i.e., City, County, State and Federal sources); United Civil Group has assumed these sources to be reliable and accurate. Should deviations from this report be noted, this firm shall be contacted for review of the area of concern.

A reasonable attempt was made to acquire recent traffic impact studies, traffic projections and/or data that may be helpful in more accurately projecting traffic volumes. United Civil Group is not responsible for incorporating data made available after this document has been finalized.

This report is issued with the understanding that it is the responsibility of the owner to see that its provisions are carried out or brought to the attention of those concerned. If any changes to the proposed project are planned, the conclusions and recommendations contained in this report shall be reviewed and the report shall be modified or supplemented, as necessary.

# IX. SOURCES

*A Policy on Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials, 7th Edition, 2019.

*City of Mesa Engineering Procedure Manual, 2019.*

*City of Mesa 2040 Transportation Plan, adopted 2014.*

*Highway Capacity Manual, HCM,* Transportation Research Board.

*Manual on Uniform Traffic Control Devices*, Federal Highway Administration, MUTCD 2009.

*Roadway Design Manual,* Maricopa County Department of Transportation, Updated August 2021.

Traffic Impact Study Manual, Maricopa County Department of Transportation, 2017.

*Trip Generation*, 11th Edition, Institute of Transportation Engineers, 2021.

# Appendix A

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# Turning Movement Count

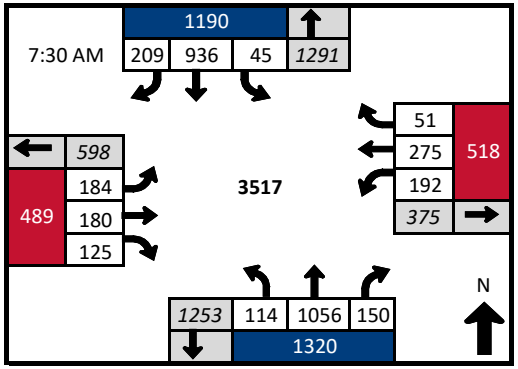
| | Speed Limit | Lt | Lt\T | T | T/Rt | Rt | Lt/T/Rt | Lt/Rt |
|---|---|---|---|---|---|---|---|---|
| Northbound | 45 | 1 | | 1 | 1 | | | |
| Southbound | 45 | 1 | | 1 | 1 | | | |
| Eastbound | 45 | 1 | | | 1 | | | |
| Westbound | 45 | 1 | | | 1 | | | |

**Project No:** TR22024

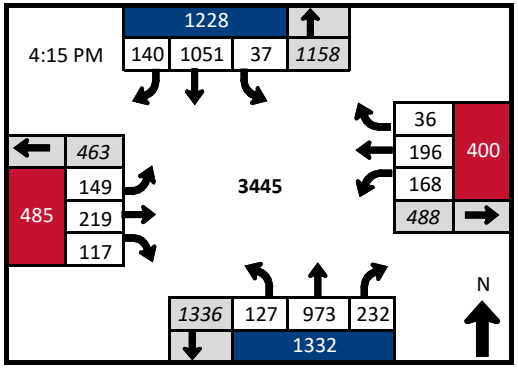
Mar-30-2022 (Wednesday)

**Location:** Power Road and Elliot Road

**Intersection Configuration:** Signalized




| | Power Road Northbound | | | | Power Road Southbound | | | | Elliot Road Eastbound | | | | Elliot Road Westbound | | | | Total | Peak Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | |
| 7:00 AM | 23 | 213 | 19 | 0 | 5 | 179 | 39 | 0 | 73 | 43 | 16 | 0 | 42 | 52 | 7 | 0 | 711 | |
| 7:15 AM | 23 | 220 | 30 | 0 | 6 | 252 | 55 | 0 | 55 | 43 | 22 | 0 | 48 | 63 | 5 | 0 | 822 | |
| 7:30 AM | 34 | 274 | 34 | 0 | 4 | 276 | 41 | 0 | 30 | 32 | 38 | 0 | 74 | 76 | 13 | 0 | 926 | |
| 7:45 AM | 32 | 286 | 47 | 0 | 12 | 234 | 45 | 0 | 43 | 39 | 32 | 0 | 41 | 80 | 11 | 0 | 902 | 3361 |
| 8:00 AM | 26 | 237 | 30 | 0 | 21 | 210 | 66 | 0 | 59 | 55 | 29 | 0 | 45 | 69 | 19 | 0 | 866 | 3516 |
| 8:15 AM | 22 | 259 | 39 | 0 | 8 | 216 | 57 | 0 | 52 | 54 | 26 | 0 | 32 | 50 | 8 | 0 | 823 | 3517 |
| 8:30 AM | 19 | 209 | 26 | 1 | 4 | 198 | 31 | 0 | 31 | 33 | 18 | 0 | 40 | 40 | 8 | 0 | 657 | 3248 |
| 8:45 AM | 15 | 180 | 28 | 0 | 4 | 194 | 28 | 0 | 18 | 33 | 23 | 0 | 36 | 49 | 8 | 0 | 616 | 2962 |
| **Peak Hour Total** | **114** | **1056** | **150** | **0** | **45** | **936** | **209** | **0** | **184** | **180** | **125** | **0** | **192** | **275** | **51** | **0** | **3517** | |




| | Power Road Northbound | | | | Power Road Southbound | | | | Elliot Road Eastbound | | | | Elliot Road Westbound | | | | Total | Peak Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | |
| 4:00 PM | 27 | 196 | 42 | 0 | 10 | 227 | 21 | 0 | 25 | 70 | 29 | 0 | 46 | 54 | 10 | 0 | 757 | |
| 4:15 PM | 32 | 258 | 62 | 0 | 7 | 274 | 31 | 0 | 25 | 59 | 24 | 0 | 34 | 46 | 7 | 0 | 859 | |
| 4:30 PM | 18 | 241 | 59 | 0 | 11 | 249 | 33 | 0 | 47 | 55 | 22 | 0 | 42 | 48 | 6 | 0 | 831 | |
| 4:45 PM | 38 | 235 | 56 | 0 | 9 | 244 | 35 | 0 | 48 | 59 | 37 | 0 | 41 | 48 | 12 | 0 | 862 | 3309 |
| 5:00 PM | 39 | 239 | 55 | 0 | 10 | 284 | 41 | 0 | 29 | 46 | 34 | 0 | 51 | 54 | 11 | 0 | 893 | 3445 |
| 5:15 PM | 46 | 207 | 56 | 0 | 9 | 252 | 12 | 0 | 29 | 58 | 39 | 0 | 45 | 59 | 10 | 1 | 822 | 3408 |
| 5:30 PM | 26 | 249 | 67 | 0 | 9 | 258 | 37 | 0 | 19 | 46 | 30 | 0 | 40 | 40 | 8 | 0 | 829 | 3406 |
| 5:45 PM | 30 | 185 | 41 | 0 | 7 | 254 | 40 | 0 | 28 | 48 | 29 | 0 | 46 | 37 | 3 | 1 | 748 | 3292 |
| **Peak Hour Total** | **127** | **973** | **232** | **0** | **37** | **1051** | **140** | **0** | **149** | **219** | **117** | **0** | **168** | **196** | **36** | **1** | **3445** | |

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# Turning Movement Count

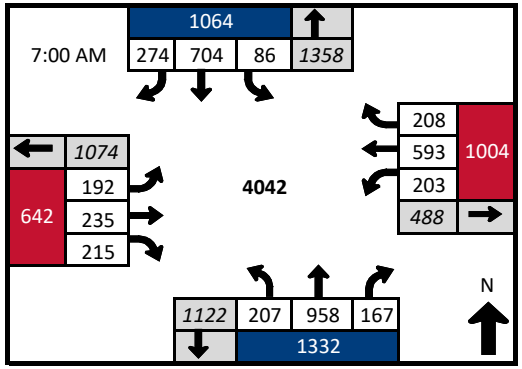
**Project No:** TR22024

**Location:** Power Road and Guadalupe Road

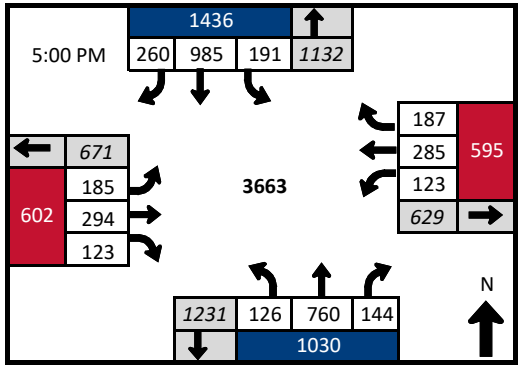
**Intersection Configuration:** Signalized

Mar-30-2022 (Wednesday)

| | Speed Limit | Lt | Lt\T | T | T/Rt | Rt | Lt/T/Rt | Lt/Rt |
|---|---|---|---|---|---|---|---|---|
| Northbound | 45 | 1 | | 3 | | 1 | | |
| Southbound | 45 | 1 | | 3 | | 1 | | |
| Eastbound | 45 | 1 | | 2 | 1 | | | |
| Westbound | 45 | 1 | | 2 | | 1 | | |




| | Power Road Northbound | | | | Power Road Southbound | | | | Guadalupe Road Eastbound | | | | Guadalupe Road Westbound | | | | Total | Peak Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | |
| 7:00 AM | 90 | 192 | 39 | 0 | 30 | 159 | 103 | 0 | 40 | 59 | 55 | 3 | 39 | 180 | 24 | 2 | 1010 | |
| 7:15 AM | 56 | 215 | 61 | 0 | 22 | 174 | 87 | 1 | 44 | 75 | 69 | 0 | 59 | 179 | 61 | 0 | 1102 | |
| 7:30 AM | 30 | 259 | 32 | 1 | 18 | 191 | 44 | 1 | 51 | 50 | 45 | 0 | 55 | 107 | 56 | 5 | 938 | |
| 7:45 AM | 31 | 292 | 35 | 4 | 16 | 180 | 40 | 5 | 57 | 51 | 46 | 1 | 50 | 127 | 67 | 4 | 992 | 4042 |
| 8:00 AM | 24 | 263 | 37 | 3 | 37 | 187 | 48 | 5 | 48 | 87 | 52 | 0 | 64 | 89 | 57 | 12 | 993 | 4025 |
| 8:15 AM | 34 | 295 | 66 | 14 | 42 | 162 | 26 | 3 | 32 | 89 | 21 | 0 | 49 | 126 | 71 | 14 | 1013 | 3936 |
| 8:30 AM | 24 | 249 | 34 | 1 | 49 | 173 | 25 | 3 | 37 | 66 | 27 | 0 | 51 | 94 | 57 | 6 | 886 | 3884 |
| 8:45 AM | 23 | 208 | 16 | 0 | 20 | 147 | 39 | 0 | 36 | 40 | 21 | 0 | 21 | 62 | 45 | 0 | 678 | 3570 |
| **Peak Hour Total** | **207** | **958** | **167** | **5** | **86** | **704** | **274** | **7** | **192** | **235** | **215** | **4** | **203** | **593** | **208** | **11** | **4042** | |




| | Power Road Northbound | | | | Power Road Southbound | | | | Guadalupe Road Eastbound | | | | Guadalupe Road Westbound | | | | Total | Peak Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | |
| 4:00 PM | 10 | 208 | 22 | 3 | 42 | 235 | 36 | 0 | 45 | 61 | 28 | 1 | 39 | 74 | 48 | 0 | 848 | |
| 4:15 PM | 43 | 235 | 30 | 0 | 30 | 231 | 42 | 0 | 47 | 93 | 51 | 0 | 30 | 51 | 41 | 0 | 924 | |
| 4:30 PM | 29 | 217 | 30 | 0 | 31 | 262 | 54 | 0 | 47 | 68 | 30 | 1 | 23 | 63 | 38 | 1 | 892 | |
| 4:45 PM | 30 | 183 | 26 | 1 | 25 | 247 | 53 | 1 | 39 | 61 | 24 | 1 | 29 | 66 | 37 | 1 | 820 | 3484 |
| 5:00 PM | 30 | 187 | 33 | 4 | 49 | 262 | 49 | 0 | 52 | 78 | 28 | 0 | 33 | 65 | 48 | 5 | 914 | 3550 |
| 5:15 PM | 35 | 210 | 42 | 1 | 47 | 286 | 74 | 1 | 38 | 76 | 27 | 1 | 21 | 64 | 35 | 0 | 955 | 3581 |
| 5:30 PM | 27 | 185 | 34 | 2 | 44 | 189 | 68 | 3 | 56 | 81 | 42 | 1 | 45 | 95 | 62 | 0 | 928 | 3617 |
| 5:45 PM | 34 | 178 | 35 | 0 | 51 | 248 | 69 | 0 | 39 | 59 | 26 | 1 | 24 | 61 | 42 | 0 | 866 | 3663 |
| **Peak Hour Total** | **126** | **760** | **144** | **7** | **191** | **985** | **260** | **4** | **185** | **294** | **123** | **3** | **123** | **285** | **187** | **5** | **3663** | |

United Civil Group

# Turning Movement Count

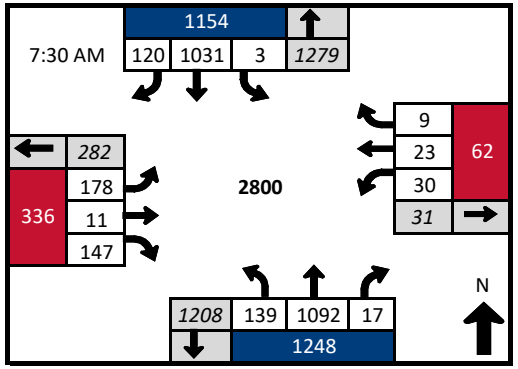
| | Speed Limit | Lt | Lt\T | T | T/Rt | Rt | Lt/T/Rt | Lt/Rt |
|---|---|---|---|---|---|---|---|---|
| Northbound | 45 | 1 | | 1 | 1 | | | |
| Southbound | 45 | 1 | | 1 | 1 | | | |
| Eastbound | 45 | 1 | | | 1 | | | |
| Westbound | 35 | 1 | | 1 | | 1 | | |

**Project No:** TR22024

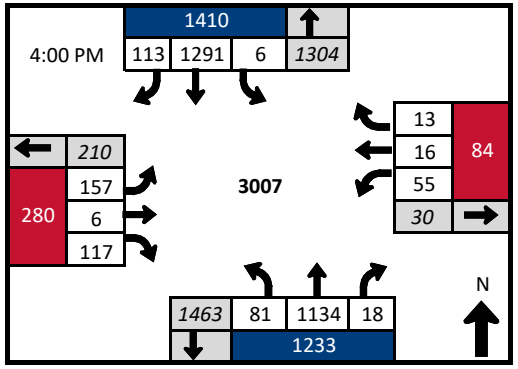
Mar-30-2022 (Wednesday)

**Location:** Power Road and Warner Road

**Intersection Configuration:** Signalized




| | Power Road Northbound | | | | Power Road Southbound | | | | Warner Road Eastbound | | | | Warner Road Westbound | | | | Total | Peak Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | |
| 7:00 AM | 20 | 230 | 5 | 0 | 0 | 206 | 16 | 1 | 40 | 3 | 26 | 0 | 4 | 4 | 1 | 0 | 555 | |
| 7:15 AM | 28 | 254 | 5 | 0 | 0 | 238 | 30 | 0 | 43 | 0 | 32 | 0 | 5 | 2 | 1 | 0 | 638 | |
| 7:30 AM | 22 | 284 | 4 | 1 | 2 | 299 | 41 | 0 | 40 | 0 | 33 | 0 | 7 | 4 | 1 | 1 | 737 | |
| 7:45 AM | 45 | 291 | 2 | 0 | 0 | 258 | 26 | 0 | 54 | 3 | 44 | 0 | 4 | 6 | 3 | 0 | 736 | 2666 |
| 8:00 AM | 44 | 241 | 7 | 0 | 1 | 243 | 34 | 1 | 44 | 3 | 30 | 1 | 8 | 7 | 1 | 0 | 663 | 2774 |
| 8:15 AM | 28 | 276 | 4 | 0 | 0 | 231 | 19 | 0 | 40 | 5 | 40 | 0 | 11 | 6 | 4 | 0 | 664 | 2800 |
| 8:30 AM | 18 | 277 | 5 | 0 | 0 | 246 | 24 | 0 | 24 | 5 | 30 | 0 | 7 | 4 | 2 | 0 | 642 | 2705 |
| 8:45 AM | 13 | 200 | 3 | 0 | 1 | 204 | 13 | 0 | 25 | 0 | 27 | 0 | 3 | 1 | 1 | 0 | 491 | 2460 |
| **Peak Hour Total** | **139** | **1092** | **17** | **1** | **3** | **1031** | **120** | **1** | **178** | **11** | **147** | **1** | **30** | **23** | **9** | **1** | **2800** | |




| | Power Road Northbound | | | | Power Road Southbound | | | | Warner Road Eastbound | | | | Warner Road Westbound | | | | Total | Peak Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | |
| 4:00 PM | 18 | 291 | 3 | 0 | 2 | 327 | 24 | 0 | 35 | 4 | 28 | 0 | 8 | 2 | 4 | 0 | 746 | |
| 4:15 PM | 24 | 269 | 5 | 0 | 0 | 334 | 25 | 0 | 41 | 0 | 36 | 0 | 13 | 4 | 3 | 0 | 754 | |
| 4:30 PM | 18 | 271 | 4 | 0 | 2 | 298 | 35 | 0 | 34 | 2 | 34 | 0 | 21 | 7 | 4 | 0 | 730 | |
| 4:45 PM | 21 | 303 | 6 | 0 | 2 | 332 | 29 | 0 | 47 | 0 | 19 | 0 | 13 | 3 | 2 | 0 | 777 | 3007 |
| 5:00 PM | 26 | 243 | 6 | 0 | 3 | 308 | 24 | 0 | 35 | 1 | 29 | 0 | 13 | 6 | 3 | 0 | 697 | 2958 |
| 5:15 PM | 25 | 271 | 2 | 0 | 0 | 333 | 28 | 0 | 35 | 1 | 31 | 0 | 10 | 6 | 2 | 0 | 744 | 2948 |
| 5:30 PM | 21 | 283 | 1 | 0 | 3 | 327 | 20 | 0 | 29 | 1 | 31 | 0 | 8 | 5 | 2 | 0 | 731 | 2949 |
| 5:45 PM | 33 | 254 | 1 | 0 | 0 | 281 | 30 | 0 | 31 | 2 | 28 | 0 | 14 | 3 | 2 | 0 | 679 | 2851 |
| **Peak Hour Total** | **81** | **1134** | **18** | **0** | **6** | **1291** | **113** | **0** | **157** | **6** | **117** | **0** | **55** | **16** | **13** | **0** | **3007** | |

United Civil Group

# Turning Movement Count

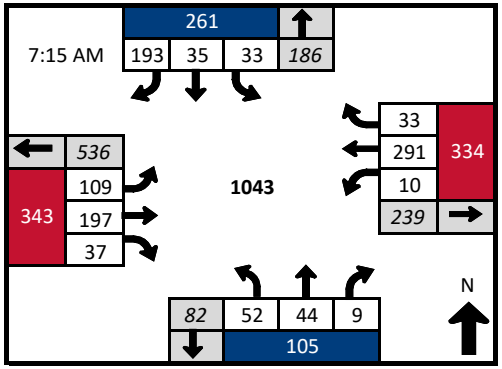
**Project No:** TR22024

**Location:** Sossaman Road and Elliot Road

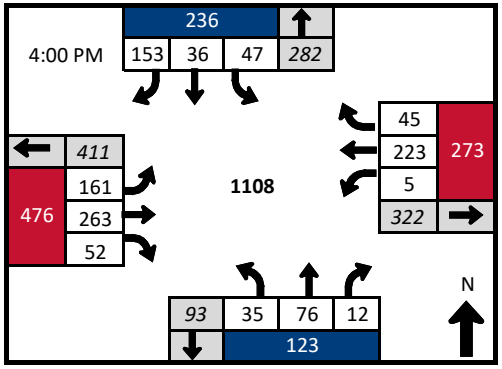
**Intersection Configuration:** Signalized

Mar-30-2022 (Wednesday)

| | Speed Limit | Lt | Lt\T | T | T/Rt | Rt | Lt/T/Rt | Lt/Rt |
|---|---|---|---|---|---|---|---|---|
| Northbound | 45 | 1 | | | 1 | | | |
| Southbound | 45 | 1 | | | 1 | | | |
| Eastbound | 45 | 1 | | | 1 | | | |
| Westbound | 45 | 1 | | | 1 | | | |




| | Sossaman Road | | | | Sossaman Road | | | | Elliot Road | | | | Elliot Road | | | | Total | Peak Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | | |
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | |
| 7:00 AM | 12 | 11 | 1 | 0 | 7 | 9 | 56 | 0 | 16 | 39 | 9 | 0 | 0 | 41 | 17 | 0 | 218 | |
| 7:15 AM | 10 | 12 | 2 | 0 | 5 | 12 | 46 | 0 | 21 | 44 | 12 | 0 | 2 | 58 | 11 | 0 | 235 | |
| 7:30 AM | 19 | 14 | 1 | 0 | 15 | 5 | 68 | 0 | 19 | 47 | 5 | 0 | 4 | 76 | 6 | 0 | 279 | |
| 7:45 AM | 12 | 9 | 3 | 0 | 8 | 12 | 41 | 0 | 37 | 46 | 9 | 0 | 2 | 84 | 6 | 0 | 269 | 1001 |
| 8:00 AM | 11 | 9 | 3 | 0 | 5 | 6 | 38 | 0 | 32 | 60 | 11 | 0 | 2 | 73 | 10 | 0 | 260 | 1043 |
| 8:15 AM | 6 | 11 | 1 | 0 | 3 | 8 | 32 | 0 | 26 | 64 | 10 | 0 | 3 | 48 | 13 | 0 | 225 | 1033 |
| 8:30 AM | 7 | 3 | 3 | 0 | 11 | 7 | 37 | 0 | 23 | 37 | 9 | 0 | 4 | 35 | 7 | 0 | 183 | 937 |
| 8:45 AM | 11 | 5 | 2 | 0 | 7 | 10 | 26 | 0 | 28 | 26 | 11 | 0 | 5 | 53 | 10 | 0 | 194 | 862 |
| **Peak Hour Total** | **52** | **44** | **9** | **0** | **33** | **35** | **193** | **0** | **109** | **197** | **37** | **0** | **10** | **291** | **33** | **0** | **1043** | |




| | Sossaman Road | | | | Sossaman Road | | | | Elliot Road | | | | Elliot Road | | | | Total | Peak Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | | |
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | |
| 4:00 PM | 9 | 18 | 2 | 0 | 12 | 10 | 46 | 0 | 30 | 65 | 12 | 0 | 1 | 58 | 13 | 0 | 276 | |
| 4:15 PM | 11 | 22 | 3 | 0 | 11 | 12 | 36 | 0 | 44 | 68 | 12 | 0 | 2 | 59 | 6 | 0 | 286 | |
| 4:30 PM | 4 | 22 | 5 | 0 | 10 | 8 | 39 | 0 | 41 | 66 | 21 | 0 | 0 | 54 | 12 | 0 | 282 | |
| 4:45 PM | 11 | 14 | 2 | 0 | 14 | 6 | 32 | 0 | 46 | 64 | 7 | 0 | 2 | 52 | 14 | 0 | 264 | 1108 |
| 5:00 PM | 5 | 4 | 0 | 0 | 8 | 13 | 39 | 0 | 31 | 75 | 8 | 0 | 0 | 49 | 10 | 0 | 242 | 1074 |
| 5:15 PM | 14 | 11 | 4 | 0 | 19 | 13 | 30 | 0 | 30 | 72 | 19 | 0 | 6 | 63 | 11 | 0 | 292 | 1080 |
| 5:30 PM | 12 | 16 | 3 | 0 | 12 | 15 | 31 | 0 | 33 | 67 | 9 | 0 | 4 | 40 | 10 | 0 | 252 | 1050 |
| 5:45 PM | 6 | 6 | 0 | 0 | 7 | 15 | 51 | 0 | 38 | 56 | 12 | 0 | 4 | 46 | 4 | 0 | 245 | 1031 |
| **Peak Hour Total** | **35** | **76** | **12** | **0** | **47** | **36** | **153** | **0** | **161** | **263** | **52** | **0** | **5** | **223** | **45** | **0** | **1108** | |

# Appendix B

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 31.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.525 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 207 | 958 | 167 | 86 | 704 | 274 | 192 | 235 | 215 | 203 | 593 | 208 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 57 | 0 | 0 | 94 | 0 | 0 | 74 | 0 | 0 | 71 |
| Total Hourly Volume [veh/h] | 215 | 996 | 117 | 89 | 732 | 191 | 200 | 244 | 150 | 211 | 617 | 145 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 58 | 271 | 32 | 24 | 199 | 52 | 54 | 66 | 41 | 57 | 168 | 39 |
| Total Analysis Volume [veh/h] | 234 | 1083 | 127 | 97 | 796 | 208 | 217 | 265 | 163 | 229 | 671 | 158 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 18 | 44 | 0 | 13 | 39 | 0 | 25 | 38 | 0 | 25 | 38 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 65 | 53 | 53 | 65 | 50 | 50 | 42 | 24 | 24 | 42 | 25 | 25 |
| g / C, Green / Cycle | 0.54 | 0.44 | 0.44 | 0.54 | 0.42 | 0.42 | 0.35 | 0.20 | 0.20 | 0.35 | 0.21 | 0.21 |
| (v / s)_i Volume / Saturation Flow Rate | 0.29 | 0.21 | 0.08 | 0.15 | 0.16 | 0.13 | 0.20 | 0.07 | 0.10 | 0.18 | 0.19 | 0.10 |
| s, saturation flow rate [veh/h] | 799 | 5094 | 1589 | 659 | 5094 | 1589 | 1060 | 3560 | 1589 | 1265 | 3560 | 1589 |
| c, Capacity [veh/h] | 459 | 2259 | 705 | 375 | 2134 | 666 | 341 | 724 | 323 | 449 | 745 | 333 |
| d1, Uniform Delay [s] | 15.85 | 23.63 | 20.22 | 15.19 | 24.04 | 23.34 | 31.55 | 41.18 | 42.48 | 29.69 | 46.30 | 41.72 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.42 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 4.00 | 0.73 | 0.56 | 1.67 | 0.50 | 1.22 | 7.37 | 0.11 | 0.45 | 0.34 | 1.70 | 0.39 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.51 | 0.48 | 0.18 | 0.26 | 0.37 | 0.31 | 0.64 | 0.37 | 0.50 | 0.51 | 0.90 | 0.48 |
| d, Delay for Lane Group [s/veh] | 19.85 | 24.36 | 20.78 | 16.86 | 24.54 | 24.56 | 38.92 | 41.30 | 42.93 | 30.02 | 47.99 | 42.11 |
| Lane Group LOS | B | C | C | B | C | C | D | D | D | C | D | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 3.67 | 7.02 | 2.18 | 1.38 | 5.06 | 4.00 | 5.17 | 3.31 | 4.22 | 4.80 | 9.61 | 4.04 |
| 50th-Percentile Queue Length [ft/ln] | 91.71 | 175.48 | 54.42 | 34.41 | 126.55 | 100.08 | 129.37 | 82.67 | 105.54 | 120.04 | 240.32 | 101.03 |
| 95th-Percentile Queue Length [veh/ln] | 6.60 | 11.36 | 3.92 | 2.48 | 8.75 | 7.21 | 8.91 | 5.95 | 7.59 | 8.40 | 14.70 | 7.27 |
| 95th-Percentile Queue Length [ft/ln] | 165.08 | 284.10 | 97.96 | 61.94 | 218.80 | 180.14 | 222.63 | 148.81 | 189.78 | 209.88 | 367.44 | 181.85 |

**Movement, Approach, & Intersection Results**

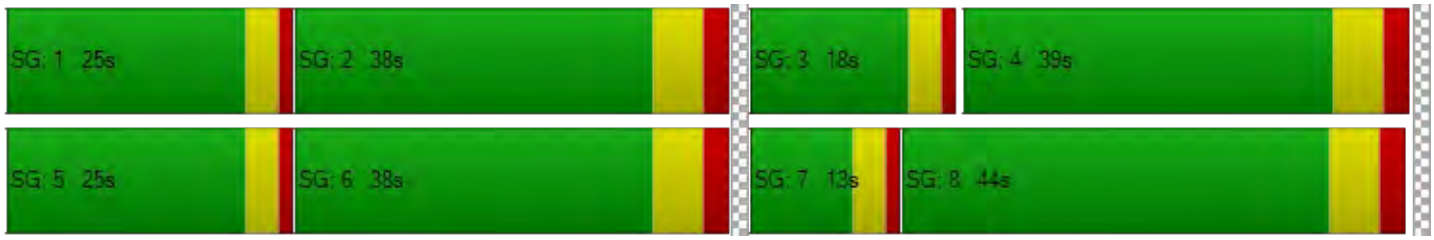
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 19.85 | 24.36 | 20.78 | 16.86 | 24.54 | 24.56 | 38.92 | 41.30 | 42.93 | 30.02 | 47.99 | 42.11 |
| Movement LOS | B | C | C | B | C | C | D | D | D | C | D | D |
| d_A, Approach Delay [s/veh] | 23.31 | | | 23.87 | | | 40.91 | | | 43.23 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 31.09 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.525 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 625 | 541 | 525 | 525 |
| d_b, Bicycle Delay [s] | 28.40 | 31.94 | 32.67 | 32.67 |
| l_b,int, Bicycle LOS Score for Intersection | 2.385 | 2.217 | 1.955 | 2.491 |
| Bicycle LOS | B | B | A | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 30.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.657 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 114 | 1056 | 150 | 45 | 936 | 209 | 184 | 180 | 125 | 192 | 275 | 51 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 51 | 0 | 0 | 72 | 0 | 0 | 43 | 0 | 0 | 17 |
| Total Hourly Volume [veh/h] | 119 | 1098 | 105 | 47 | 973 | 145 | 191 | 187 | 87 | 200 | 286 | 36 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 32 | 298 | 29 | 13 | 264 | 39 | 52 | 51 | 24 | 54 | 78 | 10 |
| Total Analysis Volume [veh/h] | 129 | 1193 | 114 | 51 | 1058 | 158 | 208 | 203 | 95 | 217 | 311 | 39 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 31 | 30 | 0 | 30 | 29 | 0 | 31 | 30 | 0 | 30 | 29 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | L | C |
|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 0.00 | 3.40 |
| g_i, Effective Green Time [s] | 38 | 31 | 31 | 38 | 29 | 29 | 30 | 17 | 30 | 17 |
| g / C, Green / Cycle | 0.47 | 0.39 | 0.39 | 0.47 | 0.36 | 0.36 | 0.38 | 0.21 | 0.38 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.18 | 0.35 | 0.36 | 0.09 | 0.33 | 0.33 | 0.16 | 0.17 | 0.16 | 0.19 |
| s, saturation flow rate [veh/h] | 707 | 1870 | 1813 | 591 | 1870 | 1786 | 1298 | 1770 | 1339 | 1834 |
| c, Capacity [veh/h] | 324 | 729 | 707 | 274 | 674 | 644 | 434 | 377 | 468 | 398 |
| d1, Uniform Delay [s] | 17.11 | 22.85 | 22.94 | 16.42 | 24.31 | 24.36 | 19.16 | 29.58 | 18.82 | 30.07 |
| k, delay calibration | 0.19 | 0.24 | 0.24 | 0.04 | 0.20 | 0.20 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.36 | 9.25 | 10.17 | 0.12 | 9.57 | 10.39 | 0.31 | 1.43 | 0.27 | 2.52 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.40 | 0.91 | 0.91 | 0.19 | 0.92 | 0.92 | 0.48 | 0.79 | 0.46 | 0.88 |
|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 18.47 | 32.10 | 33.10 | 16.54 | 33.88 | 34.75 | 19.46 | 31.01 | 19.09 | 32.58 |
| Lane Group LOS | B | C | C | B | C | C | B | C | B | C |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.24 | 11.97 | 11.89 | 0.43 | 11.56 | 11.25 | 2.43 | 5.08 | 2.54 | 6.19 |
| 50th-Percentile Queue Length [ft/ln] | 30.88 | 299.17 | 297.24 | 10.73 | 289.01 | 281.19 | 60.70 | 127.03 | 63.60 | 154.75 |
| 95th-Percentile Queue Length [veh/ln] | 2.22 | 17.64 | 17.54 | 0.77 | 17.14 | 16.75 | 4.37 | 8.78 | 4.58 | 10.27 |
| 95th-Percentile Queue Length [ft/ln] | 55.58 | 441.00 | 438.61 | 19.32 | 428.42 | 418.69 | 109.27 | 219.45 | 114.47 | 256.76 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 18.47 | 32.55 | 33.10 | 16.54 | 34.24 | 34.75 | 19.46 | 31.01 | 31.01 | 19.09 | 32.58 | 32.58 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | B | C | C | B | C | C | B | C | C | B | C | C |
| d_A, Approach Delay [s/veh] | 31.33 | | | 33.59 | | | 26.26 | | | 27.42 | | |
| Approach LOS | C | | | C | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 30.82 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.657 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 596 | 571 | 621 | 596 |
| d_b, Bicycle Delay [s] | 19.53 | 20.24 | 18.83 | 19.53 |
| l_b,int, Bicycle LOS Score for Intersection | 2.786 | 2.664 | 2.465 | 2.523 |
| Bicycle LOS | C | B | B | B |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 17.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.509 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 139 | 1092 | 17 | 3 | 1031 | 120 | 178 | 11 | 147 | 30 | 23 | 9 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 6 | 0 | 0 | 41 | 0 | 0 | 50 | 0 | 0 | 3 |
| Total Hourly Volume [veh/h] | 145 | 1136 | 12 | 3 | 1072 | 84 | 185 | 11 | 103 | 31 | 24 | 6 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 39 | 309 | 3 | 1 | 291 | 23 | 50 | 3 | 28 | 8 | 7 | 2 |
| Total Analysis Volume [veh/h] | 158 | 1235 | 13 | 3 | 1165 | 91 | 201 | 12 | 112 | 34 | 26 | 7 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 29 | 29 | 0 | 29 | 29 | 0 | 35 | 27 | 0 | 35 | 27 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 33 | 29 | 29 | 33 | 25 | 25 | 15 | 10 | 15 | 3 | 3 |
| g / C, Green / Cycle | 0.54 | 0.47 | 0.47 | 0.54 | 0.40 | 0.40 | 0.25 | 0.16 | 0.25 | 0.06 | 0.06 |
| (v / s)_i Volume / Saturation Flow Rate | 0.22 | 0.33 | 0.33 | 0.01 | 0.34 | 0.34 | 0.12 | 0.08 | 0.02 | 0.01 | 0.00 |
| s, saturation flow rate [veh/h] | 711 | 1870 | 1863 | 533 | 1870 | 1823 | 1638 | 1613 | 1392 | 1870 | 1589 |
| c, Capacity [veh/h] | 423 | 885 | 882 | 346 | 748 | 729 | 568 | 254 | 436 | 106 | 90 |
| d1, Uniform Delay [s] | 11.59 | 12.86 | 12.87 | 8.65 | 16.83 | 16.84 | 19.52 | 23.74 | 17.80 | 27.87 | 27.61 |
| k, delay calibration | 0.20 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.04 | 1.05 | 1.05 | 0.01 | 2.81 | 2.92 | 0.37 | 1.45 | 0.08 | 1.20 | 0.37 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.37 | 0.71 | 0.71 | 0.01 | 0.85 | 0.85 | 0.35 | 0.49 | 0.08 | 0.25 | 0.08 |
| d, Delay for Lane Group [s/veh] | 12.62 | 13.91 | 13.92 | 8.66 | 19.63 | 19.76 | 19.89 | 25.18 | 17.87 | 29.07 | 27.97 |
| Lane Group LOS | B | B | B | A | B | B | B | C | B | C | C |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.87 | 5.38 | 5.36 | 0.01 | 7.04 | 6.90 | 2.26 | 1.62 | 0.35 | 0.38 | 0.10 |
| 50th-Percentile Queue Length [ft/ln] | 21.63 | 134.41 | 134.09 | 0.35 | 175.89 | 172.53 | 56.44 | 40.53 | 8.64 | 9.47 | 2.52 |
| 95th-Percentile Queue Length [veh/ln] | 1.56 | 9.18 | 9.16 | 0.02 | 11.39 | 11.21 | 4.06 | 2.92 | 0.62 | 0.68 | 0.18 |
| 95th-Percentile Queue Length [ft/ln] | 38.93 | 229.47 | 229.04 | 0.62 | 284.64 | 280.23 | 101.60 | 72.96 | 15.55 | 17.05 | 4.53 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 12.62 | 13.91 | 13.92 | 8.66 | 19.69 | 19.76 | 19.89 | 25.18 | 25.18 | 17.87 | 29.07 | 27.97 |
| Movement LOS | B | B | B | A | B | B | B | C | C | B | C | C |
| d_A, Approach Delay [s/veh] | 13.77 | | | 19.67 | | | 21.91 | | | 23.27 | | |
| Approach LOS | B | | | B | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 17.27 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.509 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| I_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 734 | 734 | 669 | 669 |
| d_b, Bicycle Delay [s] | 12.35 | 12.35 | 13.64 | 13.64 |
| I_b,int, Bicycle LOS Score for Intersection | 2.725 | 2.632 | 2.178 | 1.675 |
| Bicycle LOS | B | B | B | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 9.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.305 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 52 | 44 | 9 | 33 | 35 | 193 | 109 | 197 | 37 | 10 | 291 | 33 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 3 | 0 | 0 | 66 | 0 | 0 | 13 | 0 | 0 | 11 |
| Total Hourly Volume [veh/h] | 54 | 46 | 6 | 34 | 36 | 135 | 113 | 205 | 25 | 10 | 303 | 23 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 13 | 2 | 9 | 10 | 37 | 31 | 56 | 7 | 3 | 82 | 6 |
| Total Analysis Volume [veh/h] | 59 | 50 | 7 | 37 | 39 | 147 | 123 | 223 | 27 | 11 | 329 | 25 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 42 | 0 | 0 | 42 | 0 | 0 | 78 | 0 | 0 | 78 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C |
|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 7 | 7 | 7 | 7 | 15 | 15 | 15 | 15 |
| g / C, Green / Cycle | 0.21 | 0.21 | 0.21 | 0.21 | 0.42 | 0.42 | 0.42 | 0.42 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.03 | 0.03 | 0.11 | 0.12 | 0.14 | 0.01 | 0.19 |
| s, saturation flow rate [veh/h] | 1197 | 1830 | 1346 | 1641 | 1027 | 1835 | 1129 | 1847 |
| c, Capacity [veh/h] | 274 | 380 | 387 | 340 | 451 | 778 | 528 | 783 |
| d1, Uniform Delay [s] | 16.27 | 11.25 | 13.41 | 12.30 | 11.48 | 6.67 | 8.99 | 7.13 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.14 | 0.07 | 0.04 | 0.51 | 0.12 | 0.09 | 0.01 | 0.15 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.22 | 0.15 | 0.10 | 0.55 | 0.27 | 0.32 | 0.02 | 0.45 |
| d, Delay for Lane Group [s/veh] | 16.42 | 11.32 | 13.45 | 12.81 | 11.60 | 6.76 | 9.00 | 7.28 |
| Lane Group LOS | B | B | B | B | B | A | A | A |
| Critical Lane Group | No | No | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 0.35 | 0.25 | 0.19 | 0.90 | 0.54 | 0.59 | 0.04 | 0.90 |
| 50th-Percentile Queue Length [ft/ln] | 8.84 | 6.15 | 4.65 | 22.50 | 13.56 | 14.75 | 0.94 | 22.42 |
| 95th-Percentile Queue Length [veh/ln] | 0.64 | 0.44 | 0.33 | 1.62 | 0.98 | 1.06 | 0.07 | 1.61 |
| 95th-Percentile Queue Length [ft/ln] | 15.91 | 11.07 | 8.37 | 40.50 | 24.40 | 26.55 | 1.70 | 40.36 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 16.42 | 11.32 | 11.32 | 13.45 | 12.81 | 12.81 | 11.60 | 6.76 | 6.76 | 9.00 | 7.28 | 7.28 |
| Movement LOS | B | B | B | B | B | B | B | A | A | A | A | A |
| d_A, Approach Delay [s/veh] | 13.91 | | | 12.91 | | | 8.35 | | | 7.33 | | |
| Approach LOS | B | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 9.55 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.305 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 2059 | 2059 | 4140 | 4140 |
| d_b, Bicycle Delay [s] | 0.01 | 0.01 | 19.80 | 19.80 |
| l_b,int, Bicycle LOS Score for Intersection | 1.756 | 2.036 | 2.197 | 2.180 |
| Bicycle LOS | A | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 26.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.447 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 126 | 760 | 144 | 191 | 985 | 260 | 185 | 294 | 123 | 123 | 285 | 187 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 50 | 0 | 0 | 89 | 0 | 0 | 42 | 0 | 0 | 64 |
| Total Hourly Volume [veh/h] | 131 | 790 | 100 | 199 | 1024 | 181 | 192 | 306 | 86 | 128 | 296 | 130 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 36 | 215 | 27 | 54 | 278 | 49 | 52 | 83 | 23 | 35 | 80 | 35 |
| Total Analysis Volume [veh/h] | 142 | 859 | 109 | 216 | 1113 | 197 | 209 | 333 | 93 | 139 | 322 | 141 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 30 | 37 | 0 | 30 | 37 | 0 | 31 | 23 | 0 | 30 | 22 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 74 | 62 | 62 | 74 | 62 | 62 | 33 | 19 | 19 | 33 | 15 | 15 |
| g / C, Green / Cycle | 0.62 | 0.51 | 0.51 | 0.62 | 0.52 | 0.52 | 0.27 | 0.16 | 0.16 | 0.27 | 0.13 | 0.13 |
| (v / s)_i Volume / Saturation Flow Rate | 0.24 | 0.17 | 0.07 | 0.29 | 0.22 | 0.12 | 0.16 | 0.08 | 0.08 | 0.11 | 0.09 | 0.09 |
| s, saturation flow rate [veh/h] | 602 | 5094 | 1589 | 753 | 5094 | 1589 | 1338 | 3560 | 1673 | 1247 | 3560 | 1589 |
| c, Capacity [veh/h] | 403 | 2610 | 814 | 494 | 2640 | 824 | 378 | 576 | 271 | 360 | 448 | 200 |
| d1, Uniform Delay [s] | 11.30 | 17.18 | 15.34 | 11.03 | 17.83 | 15.91 | 36.44 | 45.90 | 46.04 | 34.75 | 50.48 | 50.38 |
| k, delay calibration | 0.21 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.18 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.01 | 0.34 | 0.34 | 2.80 | 0.50 | 0.69 | 2.05 | 0.25 | 0.56 | 0.25 | 0.82 | 1.71 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.35 | 0.33 | 0.13 | 0.44 | 0.42 | 0.24 | 0.55 | 0.50 | 0.51 | 0.39 | 0.72 | 0.71 |
| d, Delay for Lane Group [s/veh] | 12.31 | 17.52 | 15.68 | 13.82 | 18.33 | 16.59 | 38.49 | 46.15 | 46.61 | 35.00 | 51.30 | 52.09 |
| Lane Group LOS | B | B | B | B | B | B | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.53 | 4.44 | 1.56 | 2.64 | 6.05 | 2.96 | 5.11 | 3.82 | 3.75 | 3.14 | 4.58 | 4.06 |
| 50th-Percentile Queue Length [ft/ln] | 38.18 | 111.10 | 38.98 | 65.91 | 151.19 | 74.10 | 127.76 | 95.58 | 93.81 | 78.55 | 114.59 | 101.42 |
| 95th-Percentile Queue Length [veh/ln] | 2.75 | 7.90 | 2.81 | 4.75 | 10.08 | 5.34 | 8.82 | 6.88 | 6.75 | 5.66 | 8.09 | 7.30 |
| 95th-Percentile Queue Length [ft/ln] | 68.73 | 197.53 | 70.17 | 118.65 | 252.01 | 133.38 | 220.44 | 172.05 | 168.86 | 141.39 | 202.37 | 182.56 |

**Movement, Approach, & Intersection Results**

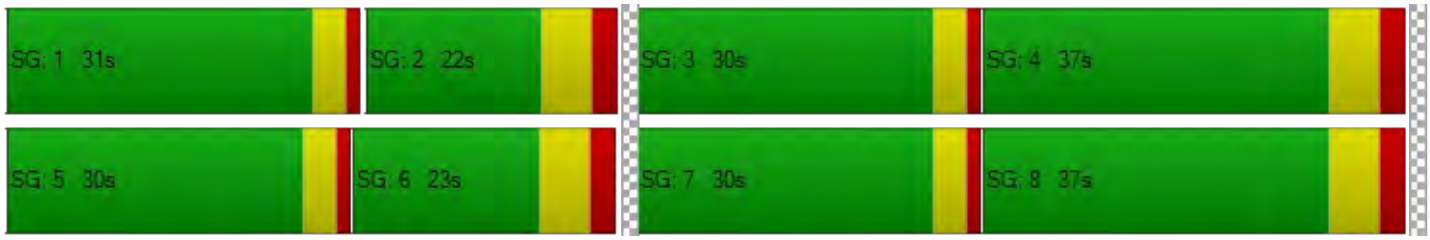
| d_M, Delay for Movement [s/veh] | 12.31 | 17.52 | 15.68 | 13.82 | 18.33 | 16.59 | 38.49 | 46.21 | 46.61 | 35.00 | 51.30 | 52.09 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | B | B | B | B | B | B | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 16.67 | | | 17.47 | | | 43.73 | | | 47.72 | | |
| Approach LOS | B | | | B | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 26.25 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.447 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 508 | 508 | 275 | 258 |
| d_b, Bicycle Delay [s] | 33.41 | 33.41 | 44.67 | 45.54 |
| l_b,int, Bicycle LOS Score for Intersection | 2.198 | 2.448 | 1.932 | 2.109 |
| Bicycle LOS | B | B | A | B |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 30.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.670 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 127 | 973 | 232 | 37 | 1051 | 140 | 149 | 219 | 117 | 168 | 196 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 80 | 0 | 0 | 48 | 0 | 0 | 40 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 132 | 1012 | 161 | 38 | 1093 | 98 | 155 | 228 | 82 | 175 | 204 | 25 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 36 | 275 | 44 | 10 | 297 | 27 | 42 | 62 | 22 | 48 | 55 | 7 |
| Total Analysis Volume [veh/h] | 143 | 1100 | 175 | 41 | 1188 | 107 | 168 | 248 | 89 | 190 | 222 | 27 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 31 | 30 | 0 | 30 | 29 | 0 | 31 | 30 | 0 | 30 | 29 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | L | C |
|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 0.00 | 3.40 |
| g_i, Effective Green Time [s] | 40 | 34 | 34 | 40 | 31 | 31 | 30 | 18 | 30 | 18 |
| g / C, Green / Cycle | 0.49 | 0.41 | 0.41 | 0.49 | 0.38 | 0.38 | 0.36 | 0.21 | 0.36 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.21 | 0.35 | 0.35 | 0.07 | 0.35 | 0.35 | 0.13 | 0.19 | 0.15 | 0.14 |
| s, saturation flow rate [veh/h] | 678 | 1870 | 1782 | 582 | 1870 | 1816 | 1336 | 1787 | 1298 | 1835 |
| c, Capacity [veh/h] | 321 | 775 | 739 | 280 | 705 | 684 | 480 | 382 | 412 | 412 |
| d1, Uniform Delay [s] | 17.65 | 21.61 | 21.72 | 15.38 | 24.61 | 24.66 | 19.11 | 31.35 | 20.33 | 28.64 |
| k, delay calibration | 0.31 | 0.25 | 0.25 | 0.04 | 0.25 | 0.26 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 2.73 | 5.53 | 6.26 | 0.09 | 12.43 | 13.25 | 0.16 | 2.71 | 0.30 | 0.54 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.45 | 0.84 | 0.85 | 0.15 | 0.93 | 0.93 | 0.35 | 0.88 | 0.46 | 0.60 |
|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 20.38 | 27.14 | 27.99 | 15.47 | 37.04 | 37.91 | 19.27 | 34.06 | 20.63 | 29.18 |
| Lane Group LOS | C | C | C | B | D | D | B | C | C | C |
| Critical Lane Group | Yes | No | No | No | No | Yes | No | Yes | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.49 | 10.94 | 10.72 | 0.34 | 13.19 | 13.03 | 2.05 | 6.26 | 2.36 | 4.13 |
| 50th-Percentile Queue Length [ft/ln] | 37.19 | 273.53 | 267.96 | 8.57 | 329.73 | 325.77 | 51.32 | 156.42 | 59.08 | 103.30 |
| 95th-Percentile Queue Length [veh/ln] | 2.68 | 16.37 | 16.09 | 0.62 | 19.15 | 18.95 | 3.70 | 10.36 | 4.25 | 7.44 |
| 95th-Percentile Queue Length [ft/ln] | 66.94 | 409.15 | 402.19 | 15.42 | 478.63 | 473.78 | 92.38 | 258.98 | 106.35 | 185.94 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 20.38 | 27.49 | 27.99 | 15.47 | 37.43 | 37.91 | 19.27 | 34.06 | 34.06 | 20.63 | 29.18 | 29.18 |
| Movement LOS | C | C | C | B | D | D | B | C | C | C | C | C |
| d_A, Approach Delay [s/veh] | 26.83 | | | 36.80 | | | 29.14 | | | 25.48 | | |
| Approach LOS | C | | | D | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 30.59 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.670 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 575 | 551 | 599 | 575 |
| d_b, Bicycle Delay [s] | 20.84 | 21.56 | 20.14 | 20.84 |
| l_b,int, Bicycle LOS Score for Intersection | 2.795 | 2.701 | 2.459 | 2.304 |
| Bicycle LOS | C | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 16.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.565 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 81 | 1134 | 18 | 6 | 1291 | 113 | 157 | 6 | 117 | 55 | 16 | 13 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 6 | 0 | 0 | 39 | 0 | 0 | 40 | 0 | 0 | 5 |
| Total Hourly Volume [veh/h] | 84 | 1179 | 13 | 6 | 1343 | 79 | 163 | 6 | 82 | 57 | 17 | 9 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 23 | 320 | 4 | 2 | 365 | 21 | 44 | 2 | 22 | 15 | 5 | 2 |
| Total Analysis Volume [veh/h] | 91 | 1282 | 14 | 7 | 1460 | 86 | 177 | 7 | 89 | 62 | 18 | 10 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 29 | 29 | 0 | 29 | 29 | 0 | 35 | 27 | 0 | 35 | 27 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 39 | 35 | 35 | 39 | 32 | 32 | 15 | 8 | 15 | 3 | 3 |
| g / C, Green / Cycle | 0.59 | 0.52 | 0.52 | 0.59 | 0.48 | 0.48 | 0.22 | 0.12 | 0.22 | 0.05 | 0.05 |
| (v / s)_i Volume / Saturation Flow Rate | 0.17 | 0.35 | 0.35 | 0.01 | 0.42 | 0.42 | 0.11 | 0.06 | 0.04 | 0.01 | 0.01 |
| s, saturation flow rate [veh/h] | 528 | 1870 | 1863 | 511 | 1870 | 1834 | 1641 | 1607 | 1451 | 1870 | 1589 |
| c, Capacity [veh/h] | 343 | 972 | 968 | 351 | 894 | 877 | 515 | 199 | 413 | 91 | 78 |
| d1, Uniform Delay [s] | 12.62 | 11.93 | 11.93 | 8.02 | 15.73 | 15.81 | 22.57 | 27.56 | 21.16 | 30.84 | 30.74 |
| k, delay calibration | 0.13 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.49 | 0.80 | 0.81 | 0.02 | 2.77 | 2.97 | 0.39 | 1.81 | 0.17 | 1.04 | 0.74 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.27 | 0.67 | 0.67 | 0.02 | 0.87 | 0.88 | 0.34 | 0.48 | 0.15 | 0.20 | 0.13 |
| d, Delay for Lane Group [s/veh] | 13.11 | 12.73 | 12.74 | 8.04 | 18.50 | 18.77 | 22.96 | 29.36 | 21.33 | 31.88 | 31.48 |
| Lane Group LOS | B | B | B | A | B | B | C | C | C | C | C |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.45 | 5.61 | 5.60 | 0.03 | 8.95 | 8.92 | 2.30 | 1.46 | 0.75 | 0.29 | 0.16 |
| 50th-Percentile Queue Length [ft/ln] | 11.20 | 140.33 | 139.97 | 0.79 | 223.78 | 223.06 | 57.48 | 36.42 | 18.80 | 7.34 | 4.10 |
| 95th-Percentile Queue Length [veh/ln] | 0.81 | 9.50 | 9.48 | 0.06 | 13.86 | 13.82 | 4.14 | 2.62 | 1.35 | 0.53 | 0.29 |
| 95th-Percentile Queue Length [ft/ln] | 20.16 | 237.47 | 236.99 | 1.42 | 346.45 | 345.53 | 103.47 | 65.55 | 33.85 | 13.21 | 7.37 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 13.11 | 12.73 | 12.74 | 8.04 | 18.63 | 18.77 | 22.96 | 29.36 | 29.36 | 21.33 | 31.88 | 31.48 |
| Movement LOS | B | B | B | A | B | B | C | C | C | C | C | C |
| d_A, Approach Delay [s/veh] | 12.76 | | | 18.59 | | | 25.21 | | | 24.57 | | |
| Approach LOS | B | | | B | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 16.85 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.565 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 671 | 671 | 612 | 612 |
| d_b, Bicycle Delay [s] | 14.88 | 14.88 | 16.23 | 16.23 |
| l_b,int, Bicycle LOS Score for Intersection | 2.709 | 2.873 | 2.076 | 1.716 |
| Bicycle LOS | B | C | B | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 9.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.278 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 35 | 76 | 12 | 47 | 36 | 153 | 161 | 263 | 52 | 5 | 223 | 45 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 | 1.0400 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 4 | 0 | 0 | 52 | 0 | 0 | 18 | 0 | 0 | 16 |
| Total Hourly Volume [veh/h] | 36 | 79 | 8 | 49 | 37 | 107 | 167 | 274 | 36 | 5 | 232 | 31 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 21 | 2 | 13 | 10 | 29 | 45 | 74 | 10 | 1 | 63 | 8 |
| Total Analysis Volume [veh/h] | 39 | 86 | 9 | 53 | 40 | 116 | 182 | 298 | 39 | 5 | 252 | 34 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 42 | 0 | 0 | 42 | 0 | 0 | 78 | 0 | 0 | 78 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C |
|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 7 | 7 | 7 | 7 | 15 | 15 | 15 | 15 |
| g / C, Green / Cycle | 0.20 | 0.20 | 0.20 | 0.20 | 0.43 | 0.43 | 0.43 | 0.43 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.05 | 0.04 | 0.09 | 0.17 | 0.18 | 0.00 | 0.16 |
| s, saturation flow rate [veh/h] | 1230 | 1839 | 1301 | 1653 | 1093 | 1833 | 1043 | 1832 |
| c, Capacity [veh/h] | 291 | 372 | 349 | 335 | 507 | 789 | 469 | 788 |
| d1, Uniform Delay [s] | 15.60 | 11.69 | 14.41 | 12.24 | 10.98 | 6.93 | 9.80 | 6.70 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.08 | 0.13 | 0.07 | 0.38 | 0.16 | 0.14 | 0.00 | 0.10 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.13 | 0.26 | 0.15 | 0.47 | 0.36 | 0.43 | 0.01 | 0.36 |
| d, Delay for Lane Group [s/veh] | 15.68 | 11.82 | 14.49 | 12.62 | 11.14 | 7.07 | 9.80 | 6.81 |
| Lane Group LOS | B | B | B | B | B | A | A | A |
| Critical Lane Group | No | No | No | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.23 | 0.43 | 0.29 | 0.75 | 0.77 | 0.83 | 0.02 | 0.68 |
| 50th-Percentile Queue Length [ft/ln] | 5.63 | 10.72 | 7.15 | 18.72 | 19.32 | 20.73 | 0.47 | 16.97 |
| 95th-Percentile Queue Length [veh/ln] | 0.41 | 0.77 | 0.51 | 1.35 | 1.39 | 1.49 | 0.03 | 1.22 |
| 95th-Percentile Queue Length [ft/ln] | 10.13 | 19.30 | 12.87 | 33.69 | 34.78 | 37.31 | 0.85 | 30.54 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 15.68 | 11.82 | 11.82 | 14.49 | 12.62 | 12.62 | 11.14 | 7.07 | 7.07 | 9.80 | 6.81 | 6.81 |
| Movement LOS | B | B | B | B | B | B | B | A | A | A | A | A |
| d_A, Approach Delay [s/veh] | 12.94 | | | 13.09 | | | 8.50 | | | 6.86 | | |
| Approach LOS | B | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 9.43 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.278 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 2049 | 2049 | 4121 | 4121 |
| d_b, Bicycle Delay [s] | 0.01 | 0.01 | 19.53 | 19.53 |
| l_b,int, Bicycle LOS Score for Intersection | 1.787 | 1.990 | 2.446 | 2.066 |
| Bicycle LOS | A | A | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 32.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.581 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 220 | 1185 | 180 | 91 | 976 | 291 | 204 | 249 | 228 | 235 | 629 | 221 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 11 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 59 | 0 | 0 | 96 | 0 | 0 | 75 | 0 | 0 | 73 |
| Total Hourly Volume [veh/h] | 220 | 1196 | 121 | 91 | 1014 | 195 | 204 | 249 | 153 | 235 | 629 | 148 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 60 | 325 | 33 | 25 | 276 | 53 | 55 | 68 | 42 | 64 | 171 | 40 |
| Total Analysis Volume [veh/h] | 239 | 1300 | 132 | 99 | 1102 | 212 | 222 | 271 | 166 | 255 | 684 | 161 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 15 | 43 | 0 | 12 | 40 | 0 | 22 | 39 | 0 | 26 | 43 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 64 | 53 | 53 | 64 | 49 | 49 | 43 | 24 | 24 | 43 | 26 | 26 |
| g / C, Green / Cycle | 0.54 | 0.44 | 0.44 | 0.54 | 0.41 | 0.41 | 0.36 | 0.20 | 0.20 | 0.36 | 0.21 | 0.21 |
| (v / s)_i Volume / Saturation Flow Rate | 0.34 | 0.26 | 0.08 | 0.17 | 0.22 | 0.13 | 0.21 | 0.08 | 0.10 | 0.20 | 0.19 | 0.10 |
| s, saturation flow rate [veh/h] | 693 | 5094 | 1589 | 587 | 5094 | 1589 | 1052 | 3560 | 1589 | 1284 | 3560 | 1589 |
| c, Capacity [veh/h] | 391 | 2232 | 696 | 330 | 2094 | 654 | 344 | 701 | 313 | 460 | 759 | 339 |
| d1, Uniform Delay [s] | 18.88 | 25.47 | 20.69 | 16.89 | 26.58 | 24.04 | 31.29 | 41.96 | 43.28 | 29.77 | 46.05 | 41.40 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.44 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 6.97 | 1.12 | 0.60 | 2.32 | 0.95 | 1.32 | 8.08 | 0.13 | 0.52 | 0.39 | 1.68 | 0.39 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.61 | 0.58 | 0.19 | 0.30 | 0.53 | 0.32 | 0.65 | 0.39 | 0.53 | 0.55 | 0.90 | 0.48 |
| d, Delay for Lane Group [s/veh] | 25.85 | 26.59 | 21.29 | 19.21 | 27.53 | 25.35 | 39.37 | 42.09 | 43.80 | 30.16 | 47.73 | 41.78 |
| Lane Group LOS | C | C | C | B | C | C | D | D | D | C | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 4.04 | 9.05 | 2.30 | 1.46 | 7.70 | 4.16 | 5.32 | 3.42 | 4.35 | 5.39 | 9.79 | 4.10 |
| 50th-Percentile Queue Length [ft/ln] | 101.03 | 226.25 | 57.47 | 36.50 | 192.59 | 104.08 | 133.01 | 85.54 | 108.84 | 134.70 | 244.64 | 102.56 |
| 95th-Percentile Queue Length [veh/ln] | 7.27 | 13.98 | 4.14 | 2.63 | 12.26 | 7.49 | 9.10 | 6.16 | 7.78 | 9.20 | 14.92 | 7.38 |
| 95th-Percentile Queue Length [ft/ln] | 181.86 | 349.59 | 103.44 | 65.70 | 306.39 | 187.35 | 227.58 | 153.97 | 194.39 | 229.88 | 372.89 | 184.61 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 25.85 | 26.59 | 21.29 | 19.21 | 27.53 | 25.35 | 39.37 | 42.09 | 43.80 | 30.16 | 47.73 | 41.78 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | C | C | B | C | C | D | D | D | C | D | D |
| d_A, Approach Delay [s/veh] | 26.06 | | | 26.62 | | | 41.60 | | | 42.78 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 32.14 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.581 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 608 | 558 | 541 | 608 |
| d_b, Bicycle Delay [s] | 29.09 | 31.21 | 31.94 | 29.09 |
| l_b,int, Bicycle LOS Score for Intersection | 2.511 | 2.390 | 1.963 | 2.527 |
| Bicycle LOS | B | B | A | B |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 60.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.825 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 275 | 1148 | 168 | 52 | 1164 | 278 | 257 | 228 | 174 | 258 | 336 | 82 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 38 | 38 | 0 | 0 | 0 | 23 | 0 | 11 | 7 | 11 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 68 | 0 | 0 | 92 | 0 | 0 | 57 | 0 | 0 | 31 |
| Total Hourly Volume [veh/h] | 275 | 1148 | 138 | 90 | 1164 | 186 | 257 | 251 | 117 | 269 | 343 | 62 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 75 | 312 | 38 | 24 | 316 | 51 | 70 | 68 | 32 | 73 | 93 | 17 |
| Total Analysis Volume [veh/h] | 299 | 1248 | 150 | 98 | 1265 | 202 | 279 | 273 | 127 | 292 | 373 | 67 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 22 | 56 | 0 | 9 | 43 | 0 | 26 | 33 | 0 | 22 | 29 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 116 | 116 | 116 | 116 | 116 | 116 | 116 | 116 | 116 | 116 | 116 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 3.40 | 0.00 | 3.40 |
| g_i, Effective Green Time [s] | 56 | 46 | 46 | 56 | 35 | 35 | 48 | 29 | 29 | 48 | 30 |
| g / C, Green / Cycle | 0.48 | 0.40 | 0.40 | 0.48 | 0.30 | 0.30 | 0.42 | 0.25 | 0.25 | 0.42 | 0.26 |
| (v / s)_i Volume / Saturation Flow Rate | 0.36 | 0.35 | 0.09 | 0.17 | 0.36 | 0.13 | 0.23 | 0.15 | 0.08 | 0.23 | 0.24 |
| s, saturation flow rate [veh/h] | 836 | 3560 | 1589 | 574 | 3560 | 1589 | 1238 | 1870 | 1589 | 1273 | 1821 |
| c, Capacity [veh/h] | 385 | 1415 | 632 | 240 | 1074 | 480 | 385 | 468 | 398 | 498 | 466 |
| d1, Uniform Delay [s] | 31.46 | 32.41 | 23.24 | 25.01 | 40.50 | 32.40 | 27.32 | 38.19 | 35.45 | 24.81 | 42.31 |
| k, delay calibration | 0.50 | 0.05 | 0.04 | 0.04 | 0.06 | 0.04 | 0.47 | 0.05 | 0.04 | 0.31 | 0.35 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.31 | 1.02 | 0.07 | 0.44 | 81.22 | 0.22 | 10.72 | 0.50 | 0.17 | 3.15 | 23.51 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.78 | 0.88 | 0.24 | 0.41 | 1.18 | 0.42 | 0.73 | 0.58 | 0.32 | 0.59 | 0.94 |
| d, Delay for Lane Group [s/veh] | 45.77 | 33.43 | 23.31 | 25.45 | 121.72 | 32.61 | 38.04 | 38.69 | 35.62 | 27.95 | 65.82 |
| Lane Group LOS | D | C | C | C | F | C | D | D | D | C | E |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 6.26 | 15.37 | 2.63 | 1.40 | 26.63 | 4.40 | 6.15 | 6.64 | 2.86 | 5.72 | 14.86 |
| 50th-Percentile Queue Length [ft/ln] | 156.52 | 384.14 | 65.67 | 34.88 | 665.85 | 109.89 | 153.80 | 165.89 | 71.40 | 143.04 | 371.44 |
| 95th-Percentile Queue Length [veh/ln] | 10.36 | 21.79 | 4.73 | 2.51 | 38.72 | 7.83 | 10.22 | 10.86 | 5.14 | 9.64 | 21.18 |
| 95th-Percentile Queue Length [ft/ln] | 259.10 | 544.86 | 118.21 | 62.78 | 968.03 | 195.85 | 255.50 | 271.50 | 128.51 | 241.12 | 529.48 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 45.77 | 33.43 | 23.31 | 25.45 | 121.72 | 32.61 | 38.04 | 38.69 | 35.62 | 27.95 | 65.82 | 65.82 |
| Movement LOS | D | C | C | C | F | C | D | D | D | C | E | E |
| d_A, Approach Delay [s/veh] | 34.71 | | | 104.19 | | | 37.85 | | | 50.72 | | |
| Approach LOS | C | | | F | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 60.94 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.825 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 857 | 632 | 477 | 408 |
| d_b, Bicycle Delay [s] | 18.91 | 27.07 | 33.57 | 36.69 |
| l_b,int, Bicycle LOS Score for Intersection | 3.016 | 2.927 | 2.774 | 2.819 |
| Bicycle LOS | C | C | C | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 33.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.770 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 169 | 1594 | 132 | 90 | 1332 | 182 | 232 | 56 | 181 | 207 | 39 | 30 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 38 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 44 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 169 | 1632 | 88 | 90 | 1343 | 122 | 232 | 56 | 121 | 207 | 39 | 20 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 46 | 443 | 24 | 24 | 365 | 33 | 63 | 15 | 33 | 56 | 11 | 5 |
| Total Analysis Volume [veh/h] | 184 | 1774 | 96 | 98 | 1460 | 133 | 252 | 61 | 132 | 225 | 42 | 22 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 8 | 27 | 0 | 36 | 55 | 0 | 30 | 46 | 0 | 11 | 27 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 68 | 60 | 60 | 68 | 57 | 57 | 30 | 12 | 12 | 30 | 10 | 10 |
| g / C, Green / Cycle | 0.62 | 0.54 | 0.54 | 0.62 | 0.51 | 0.51 | 0.27 | 0.11 | 0.11 | 0.27 | 0.09 | 0.09 |
| (v / s)_i Volume / Saturation Flow Rate | 0.36 | 0.50 | 0.51 | 0.25 | 0.43 | 0.44 | 0.16 | 0.02 | 0.08 | 0.15 | 0.01 | 0.01 |
| s, saturation flow rate [veh/h] | 517 | 1870 | 1837 | 389 | 1870 | 1816 | 1600 | 3560 | 1589 | 1508 | 3560 | 1589 |
| c, Capacity [veh/h] | 295 | 1010 | 992 | 220 | 963 | 935 | 513 | 378 | 169 | 484 | 325 | 145 |
| d1, Uniform Delay [s] | 22.48 | 23.47 | 23.90 | 25.05 | 22.86 | 23.14 | 34.58 | 45.11 | 48.36 | 33.99 | 46.36 | 46.46 |
| k, delay calibration | 0.50 | 0.34 | 0.35 | 0.11 | 0.25 | 0.26 | 0.34 | 0.11 | 0.11 | 0.25 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 9.53 | 11.36 | 13.75 | 1.42 | 4.46 | 5.16 | 2.27 | 0.20 | 7.69 | 1.59 | 0.18 | 0.48 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.62 | 0.93 | 0.94 | 0.45 | 0.83 | 0.85 | 0.49 | 0.16 | 0.78 | 0.46 | 0.13 | 0.15 |
| d, Delay for Lane Group [s/veh] | 32.00 | 34.83 | 37.65 | 26.47 | 27.31 | 28.30 | 36.85 | 45.31 | 56.04 | 35.58 | 46.54 | 46.94 |
| Lane Group LOS | C | C | D | C | C | C | D | D | E | D | D | D |
| Critical Lane Group | No | No | Yes | Yes | No | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 2.48 | 23.00 | 23.97 | 0.94 | 17.16 | 17.28 | 6.02 | 0.77 | 3.87 | 5.21 | 0.54 | 0.57 |
| 50th-Percentile Queue Length [ft/ln] | 61.92 | 575.07 | 599.24 | 23.58 | 428.92 | 432.09 | 150.54 | 19.20 | 96.87 | 130.33 | 13.41 | 14.35 |
| 95th-Percentile Queue Length [veh/ln] | 4.46 | 30.87 | 32.00 | 1.70 | 23.95 | 24.10 | 10.05 | 1.38 | 6.97 | 8.96 | 0.97 | 1.03 |
| 95th-Percentile Queue Length [ft/ln] | 111.46 | 771.71 | 799.98 | 42.45 | 598.75 | 602.54 | 251.15 | 34.56 | 174.37 | 223.94 | 24.14 | 25.83 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 32.00 | 36.16 | 37.65 | 26.47 | 27.76 | 28.30 | 36.85 | 45.31 | 56.04 | 35.58 | 46.54 | 46.94 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | D | D | C | C | C | D | D | E | D | D | D |
| d_A, Approach Delay [s/veh] | 35.86 | | | 27.72 | | | 43.71 | | | 38.04 | | |
| Approach LOS | D | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 33.71 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.770 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 372 | 877 | 714 | 372 |
| d_b, Bicycle Delay [s] | 36.74 | 17.48 | 22.90 | 36.74 |
| l_b,int, Bicycle LOS Score for Intersection | 3.290 | 3.004 | 1.976 | 1.806 |
| Bicycle LOS | C | C | A | A |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 10.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.401 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 63 | 47 | 10 | 35 | 37 | 213 | 117 | 253 | 40 | 11 | 405 | 35 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 53 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 3 | 0 | 0 | 70 | 0 | 0 | 13 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 63 | 47 | 7 | 35 | 37 | 143 | 117 | 269 | 27 | 11 | 458 | 23 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 13 | 2 | 10 | 10 | 39 | 32 | 73 | 7 | 3 | 124 | 6 |
| Total Analysis Volume [veh/h] | 68 | 51 | 8 | 38 | 40 | 155 | 127 | 292 | 29 | 12 | 498 | 25 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 42 | 0 | 0 | 42 | 0 | 0 | 78 | 0 | 0 | 78 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C |
|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 7 | 7 | 7 | 7 | 18 | 18 | 18 | 18 |
| g / C, Green / Cycle | 0.19 | 0.19 | 0.19 | 0.19 | 0.47 | 0.47 | 0.47 | 0.47 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06 | 0.03 | 0.03 | 0.12 | 0.14 | 0.17 | 0.01 | 0.28 |
| s, saturation flow rate [veh/h] | 1188 | 1826 | 1344 | 1640 | 879 | 1841 | 1059 | 1854 |
| c, Capacity [veh/h] | 238 | 355 | 353 | 319 | 363 | 858 | 503 | 865 |
| d1, Uniform Delay [s] | 18.35 | 12.65 | 15.02 | 13.90 | 14.27 | 6.51 | 9.50 | 7.49 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.24 | 0.08 | 0.05 | 0.71 | 0.21 | 0.10 | 0.01 | 0.26 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.29 | 0.17 | 0.11 | 0.61 | 0.35 | 0.37 | 0.02 | 0.60 |
| d, Delay for Lane Group [s/veh] | 18.59 | 12.73 | 15.07 | 14.60 | 14.48 | 6.61 | 9.51 | 7.74 |
| Lane Group LOS | B | B | B | B | B | A | A | A |
| Critical Lane Group | No | No | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 0.49 | 0.31 | 0.23 | 1.15 | 0.74 | 0.81 | 0.05 | 1.54 |
| 50th-Percentile Queue Length [ft/ln] | 12.17 | 7.68 | 5.68 | 28.71 | 18.58 | 20.29 | 1.19 | 38.42 |
| 95th-Percentile Queue Length [veh/ln] | 0.88 | 0.55 | 0.41 | 2.07 | 1.34 | 1.46 | 0.09 | 2.77 |
| 95th-Percentile Queue Length [ft/ln] | 21.91 | 13.82 | 10.22 | 51.68 | 33.45 | 36.52 | 2.13 | 69.15 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 18.59 | 12.73 | 12.73 | 15.07 | 14.60 | 14.60 | 14.48 | 6.61 | 6.61 | 9.51 | 7.74 | 7.74 |
| Movement LOS | B | B | B | B | B | B | B | A | A | A | A | A |
| d_A, Approach Delay [s/veh] | 15.87 | | | 14.68 | | | 8.84 | | | 7.78 | | |
| Approach LOS | B | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 10.10 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.401 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1883 | 1883 | 3786 | 3786 |
| d_b, Bicycle Delay [s] | 0.07 | 0.07 | 15.09 | 15.09 |
| l_b,int, Bicycle LOS Score for Intersection | 1.774 | 2.060 | 2.320 | 2.462 |
| Bicycle LOS | A | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 26.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.516 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 134 | 1080 | 171 | 203 | 1311 | 276 | 196 | 312 | 131 | 135 | 302 | 198 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 37 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 56 | 0 | 0 | 91 | 0 | 0 | 43 | 0 | 0 | 65 |
| Total Hourly Volume [veh/h] | 134 | 1117 | 115 | 203 | 1327 | 185 | 196 | 312 | 88 | 135 | 302 | 133 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 36 | 304 | 31 | 55 | 361 | 50 | 53 | 85 | 24 | 37 | 82 | 36 |
| Total Analysis Volume [veh/h] | 146 | 1214 | 125 | 221 | 1442 | 201 | 213 | 339 | 96 | 147 | 328 | 145 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 17 | 45 | 0 | 24 | 52 | 0 | 23 | 32 | 0 | 19 | 28 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 74 | 61 | 61 | 74 | 62 | 62 | 33 | 19 | 19 | 33 | 15 | 15 |
| g / C, Green / Cycle | 0.62 | 0.51 | 0.51 | 0.62 | 0.52 | 0.52 | 0.27 | 0.16 | 0.16 | 0.27 | 0.13 | 0.13 |
| (v / s)_i Volume / Saturation Flow Rate | 0.29 | 0.24 | 0.08 | 0.36 | 0.28 | 0.13 | 0.16 | 0.08 | 0.09 | 0.12 | 0.09 | 0.09 |
| s, saturation flow rate [veh/h] | 503 | 5094 | 1589 | 610 | 5094 | 1589 | 1336 | 3560 | 1671 | 1251 | 3560 | 1589 |
| c, Capacity [veh/h] | 340 | 2595 | 810 | 400 | 2634 | 822 | 378 | 569 | 267 | 362 | 448 | 200 |
| d1, Uniform Delay [s] | 14.02 | 18.99 | 15.69 | 13.45 | 19.54 | 16.04 | 36.42 | 46.22 | 46.36 | 34.80 | 50.57 | 50.52 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.23 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 3.92 | 0.61 | 0.41 | 5.41 | 0.82 | 0.71 | 2.82 | 0.27 | 0.61 | 0.27 | 0.88 | 1.88 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.43 | 0.47 | 0.15 | 0.55 | 0.55 | 0.24 | 0.56 | 0.51 | 0.53 | 0.41 | 0.73 | 0.73 |
| d, Delay for Lane Group [s/veh] | 17.94 | 19.59 | 16.10 | 18.85 | 20.37 | 16.75 | 39.24 | 46.49 | 46.97 | 35.08 | 51.45 | 52.40 |
| Lane Group LOS | B | B | B | B | C | B | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.84 | 6.93 | 1.82 | 2.93 | 8.60 | 3.04 | 5.29 | 3.93 | 3.85 | 3.33 | 4.68 | 4.19 |
| 50th-Percentile Queue Length [ft/ln] | 45.88 | 173.21 | 45.58 | 73.13 | 215.04 | 76.11 | 132.15 | 98.15 | 96.17 | 83.30 | 117.01 | 104.75 |
| 95th-Percentile Queue Length [veh/ln] | 3.30 | 11.25 | 3.28 | 5.27 | 13.41 | 5.48 | 9.06 | 7.07 | 6.92 | 6.00 | 8.23 | 7.54 |
| 95th-Percentile Queue Length [ft/ln] | 82.58 | 281.13 | 82.04 | 131.63 | 335.29 | 137.01 | 226.41 | 176.68 | 173.11 | 149.94 | 205.71 | 188.55 |

**Movement, Approach, & Intersection Results**

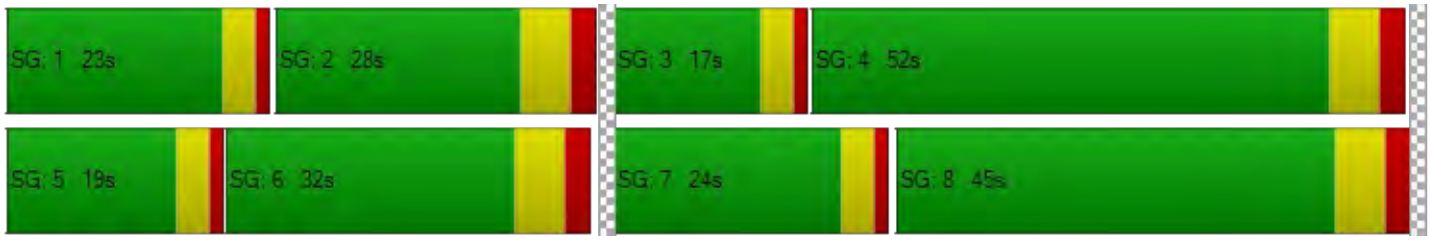
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 17.94 | 19.59 | 16.10 | 18.85 | 20.37 | 16.75 | 39.24 | 46.55 | 46.97 | 35.08 | 51.45 | 52.40 |
| Movement LOS | B | B | B | B | C | B | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 19.14 | | | 19.80 | | | 44.21 | | | 47.79 | | |
| Approach LOS | B | | | B | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 26.77 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.516 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 641 | 758 | 425 | 358 |
| d_b, Bicycle Delay [s] | 27.71 | 23.16 | 37.25 | 40.46 |
| l_b,int, Bicycle LOS Score for Intersection | 2.407 | 2.635 | 1.940 | 2.125 |
| Bicycle LOS | B | B | A | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 100.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.876 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 310 | 1128 | 290 | 51 | 1298 | 199 | 227 | 321 | 185 | 192 | 264 | 78 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 9 | 0 | 37 | 22 | 37 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 101 | 0 | 0 | 66 | 0 | 0 | 61 | 0 | 0 | 38 |
| Total Hourly Volume [veh/h] | 310 | 1128 | 205 | 67 | 1298 | 133 | 227 | 330 | 124 | 229 | 286 | 77 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 84 | 307 | 56 | 18 | 353 | 36 | 62 | 90 | 34 | 62 | 78 | 21 |
| Total Analysis Volume [veh/h] | 337 | 1226 | 223 | 73 | 1411 | 145 | 247 | 359 | 135 | 249 | 311 | 84 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 8 | 63 | 0 | 9 | 64 | 0 | 25 | 32 | 0 | 16 | 23 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 3.40 | 0.00 | 3.40 |
| g_i, Effective Green Time [s] | 57 | 49 | 49 | 57 | 35 | 35 | 44 | 26 | 26 | 44 | 27 |
| g / C, Green / Cycle | 0.51 | 0.44 | 0.44 | 0.51 | 0.31 | 0.31 | 0.39 | 0.23 | 0.23 | 0.39 | 0.24 |
| (v / s)_i Volume / Saturation Flow Rate | 0.40 | 0.39 | 0.41 | 0.14 | 0.42 | 0.43 | 0.20 | 0.19 | 0.08 | 0.21 | 0.22 |
| s, saturation flow rate [veh/h] | 844 | 1870 | 1773 | 517 | 1870 | 1810 | 1265 | 1870 | 1589 | 1211 | 1802 |
| c, Capacity [veh/h] | 420 | 814 | 772 | 214 | 579 | 561 | 375 | 439 | 373 | 402 | 424 |
| d1, Uniform Delay [s] | 31.47 | 29.54 | 30.27 | 24.77 | 38.98 | 38.98 | 27.77 | 40.95 | 36.16 | 27.10 | 42.28 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 | 0.33 | 0.18 | 0.04 | 0.22 | 0.26 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.84 | 14.64 | 19.35 | 0.35 | 170.77 | 179.76 | 5.89 | 6.11 | 0.22 | 3.14 | 18.65 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.80 | 0.90 | 0.93 | 0.34 | 1.35 | 1.37 | 0.66 | 0.82 | 0.36 | 0.62 | 0.93 |
| d, Delay for Lane Group [s/veh] | 46.31 | 44.19 | 49.63 | 25.12 | 209.76 | 218.75 | 33.66 | 47.06 | 36.38 | 30.24 | 60.92 |
| Lane Group LOS | D | D | D | C | F | F | C | D | D | C | E |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 6.68 | 20.25 | 21.23 | 0.93 | 42.67 | 42.70 | 5.09 | 9.83 | 3.04 | 4.87 | 12.53 |
| 50th-Percentile Queue Length [ft/ln] | 167.07 | 506.35 | 530.71 | 23.18 | 1066.76 | 1067.51 | 127.32 | 245.79 | 76.01 | 121.78 | 313.27 |
| 95th-Percentile Queue Length [veh/ln] | 10.92 | 27.63 | 28.78 | 1.67 | 63.34 | 63.76 | 8.79 | 14.97 | 5.47 | 8.49 | 18.34 |
| 95th-Percentile Queue Length [ft/ln] | 273.06 | 690.87 | 719.61 | 41.72 | 1583.41 | 1593.92 | 219.84 | 374.35 | 136.82 | 212.27 | 458.41 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 46.31 | 46.39 | 49.63 | 25.12 | 213.74 | 218.75 | 33.66 | 47.06 | 36.38 | 30.24 | 60.92 | 60.92 |
| Movement LOS | D | D | D | C | F | F | C | D | D | C | E | E |
| d_A, Approach Delay [s/veh] | 46.78 | | | 205.74 | | | 40.65 | | | 49.06 | | |
| Approach LOS | D | | | F | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 100.08 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 0.876 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1002 | 1020 | 471 | 312 |
| d_b, Bicycle Delay [s] | 14.06 | 13.56 | 33.01 | 40.25 |
| l_b,int, Bicycle LOS Score for Intersection | 3.116 | 2.958 | 2.883 | 2.685 |
| Bicycle LOS | C | C | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 50.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.830 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 134 | 1470 | 132 | 93 | 1751 | 199 | 180 | 50 | 155 | 233 | 32 | 34 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 16 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 44 | 0 | 0 | 66 | 0 | 0 | 51 | 0 | 0 | 11 |
| Total Hourly Volume [veh/h] | 134 | 1486 | 88 | 93 | 1788 | 133 | 180 | 50 | 104 | 233 | 32 | 23 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 36 | 404 | 24 | 25 | 486 | 36 | 49 | 14 | 28 | 63 | 9 | 6 |
| Total Analysis Volume [veh/h] | 146 | 1615 | 96 | 101 | 1943 | 145 | 196 | 54 | 113 | 253 | 35 | 25 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 21 | 63 | 0 | 9 | 51 | 0 | 21 | 36 | 0 | 12 | 27 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 76 | 68 | 68 | 76 | 65 | 65 | 32 | 11 | 11 | 32 | 15 | 15 |
| g / C, Green / Cycle | 0.63 | 0.56 | 0.56 | 0.63 | 0.54 | 0.54 | 0.26 | 0.09 | 0.09 | 0.26 | 0.12 | 0.12 |
| (v / s)_i Volume / Saturation Flow Rate | 0.37 | 0.46 | 0.47 | 0.24 | 0.56 | 0.57 | 0.13 | 0.02 | 0.07 | 0.16 | 0.01 | 0.02 |
| s, saturation flow rate [veh/h] | 394 | 1870 | 1834 | 419 | 1870 | 1825 | 1552 | 3560 | 1589 | 1551 | 3560 | 1589 |
| c, Capacity [veh/h] | 232 | 1042 | 1022 | 240 | 1001 | 978 | 488 | 325 | 145 | 484 | 433 | 193 |
| d1, Uniform Delay [s] | 33.43 | 21.93 | 22.23 | 23.38 | 28.16 | 28.16 | 36.89 | 50.83 | 53.89 | 38.27 | 47.25 | 47.54 |
| k, delay calibration | 0.50 | 0.34 | 0.35 | 0.11 | 0.48 | 0.50 | 0.26 | 0.11 | 0.11 | 0.35 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 12.34 | 5.16 | 5.87 | 1.18 | 39.59 | 48.74 | 1.29 | 0.24 | 8.62 | 2.83 | 0.08 | 0.30 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.63 | 0.82 | 0.84 | 0.42 | 1.04 | 1.07 | 0.40 | 0.17 | 0.78 | 0.52 | 0.08 | 0.13 |
| d, Delay for Lane Group [s/veh] | 45.78 | 27.09 | 28.11 | 24.56 | 67.75 | 76.91 | 38.18 | 51.07 | 62.51 | 41.10 | 47.33 | 47.84 |
| Lane Group LOS | D | C | C | C | F | F | D | D | E | D | D | D |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 2.21 | 19.39 | 19.76 | 1.03 | 37.04 | 38.64 | 4.95 | 0.76 | 3.69 | 6.77 | 0.47 | 0.69 |
| 50th-Percentile Queue Length [ft/ln] | 55.17 | 484.86 | 493.91 | 25.74 | 926.05 | 966.05 | 123.75 | 19.12 | 92.34 | 169.35 | 11.82 | 17.22 |
| 95th-Percentile Queue Length [veh/ln] | 3.97 | 26.62 | 27.05 | 1.85 | 48.68 | 51.54 | 8.60 | 1.38 | 6.65 | 11.04 | 0.85 | 1.24 |
| 95th-Percentile Queue Length [ft/ln] | 99.31 | 665.43 | 676.15 | 46.33 | 1217.04 | 1288.48 | 214.98 | 34.41 | 166.21 | 276.06 | 21.27 | 30.99 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 45.78 | 27.57 | 28.11 | 24.56 | 71.99 | 76.91 | 38.18 | 51.07 | 62.51 | 41.10 | 47.33 | 47.84 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | D | C | C | C | E | E | D | D | E | D | D | D |
| d_A, Approach Delay [s/veh] | 29.03 | | | 70.13 | | | 47.67 | | | 42.34 | | |
| Approach LOS | C | | | E | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 50.39 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.830 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| I_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 933 | 736 | 488 | 340 |
| d_b, Bicycle Delay [s] | 17.24 | 24.23 | 34.65 | 41.78 |
| I_b,int, Bicycle LOS Score for Intersection | 3.128 | 3.420 | 1.901 | 1.827 |
| Bicycle LOS | C | C | A | A |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 9.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.385 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 39 | 81 | 13 | 50 | 38 | 164 | 179 | 394 | 63 | 5 | 338 | 48 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 22 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 4 | 0 | 0 | 54 | 0 | 0 | 21 | 0 | 0 | 16 |
| Total Hourly Volume [veh/h] | 39 | 81 | 9 | 50 | 38 | 110 | 179 | 444 | 42 | 5 | 360 | 32 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 11 | 22 | 2 | 14 | 10 | 30 | 49 | 121 | 11 | 1 | 98 | 9 |
| Total Analysis Volume [veh/h] | 42 | 88 | 10 | 54 | 41 | 120 | 195 | 483 | 46 | 5 | 391 | 35 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 87 | 0 | 0 | 87 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C |
|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 7 | 7 | 7 | 7 | 18 | 18 | 18 | 18 |
| g / C, Green / Cycle | 0.19 | 0.19 | 0.19 | 0.19 | 0.48 | 0.48 | 0.48 | 0.48 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.05 | 0.04 | 0.10 | 0.20 | 0.29 | 0.01 | 0.23 |
| s, saturation flow rate [veh/h] | 1225 | 1837 | 1297 | 1653 | 961 | 1842 | 874 | 1843 |
| c, Capacity [veh/h] | 251 | 344 | 308 | 310 | 440 | 883 | 370 | 884 |
| d1, Uniform Delay [s] | 17.88 | 13.40 | 16.49 | 14.05 | 13.09 | 7.30 | 12.08 | 6.77 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.12 | 0.17 | 0.10 | 0.50 | 0.26 | 0.24 | 0.01 | 0.15 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.17 | 0.28 | 0.18 | 0.52 | 0.44 | 0.60 | 0.01 | 0.48 |
| d, Delay for Lane Group [s/veh] | 18.00 | 13.57 | 16.59 | 14.56 | 13.35 | 7.55 | 12.09 | 6.92 |
| Lane Group LOS | B | B | B | B | B | A | B | A |
| Critical Lane Group | No | No | No | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.29 | 0.54 | 0.35 | 0.95 | 1.08 | 1.54 | 0.03 | 1.14 |
| 50th-Percentile Queue Length [ft/ln] | 7.33 | 13.62 | 8.83 | 23.87 | 27.09 | 38.40 | 0.63 | 28.48 |
| 95th-Percentile Queue Length [veh/ln] | 0.53 | 0.98 | 0.64 | 1.72 | 1.95 | 2.77 | 0.05 | 2.05 |
| 95th-Percentile Queue Length [ft/ln] | 13.20 | 24.52 | 15.89 | 42.97 | 48.76 | 69.13 | 1.13 | 51.27 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 18.00 | 13.57 | 13.57 | 16.59 | 14.56 | 14.56 | 13.35 | 7.55 | 7.55 | 12.09 | 6.92 | 6.92 |
| Movement LOS | B | B | B | B | B | B | B | A | A | B | A | A |
| d_A, Approach Delay [s/veh] | 14.90 | | | 15.07 | | | 9.11 | | | 6.98 | | |
| Approach LOS | B | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 9.89 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.385 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1385 | 1385 | 4195 | 4195 |
| d_b, Bicycle Delay [s] | 1.82 | 1.82 | 23.15 | 23.15 |
| l_b,int, Bicycle LOS Score for Intersection | 1.797 | 2.003 | 2.789 | 2.297 |
| Bicycle LOS | A | B | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 34.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.648 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 229 | 1328 | 221 | 95 | 1217 | 302 | 212 | 259 | 237 | 315 | 655 | 230 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 11 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 73 | 0 | 0 | 100 | 0 | 0 | 78 | 0 | 0 | 76 |
| Total Hourly Volume [veh/h] | 229 | 1339 | 148 | 95 | 1255 | 202 | 212 | 259 | 159 | 315 | 655 | 154 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 62 | 364 | 40 | 26 | 341 | 55 | 58 | 70 | 43 | 86 | 178 | 42 |
| Total Analysis Volume [veh/h] | 249 | 1455 | 161 | 103 | 1364 | 220 | 230 | 282 | 173 | 342 | 712 | 167 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 17 | 45 | 0 | 24 | 52 | 0 | 23 | 32 | 0 | 19 | 28 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 64 | 52 | 52 | 64 | 48 | 48 | 43 | 24 | 24 | 43 | 26 | 26 |
| g / C, Green / Cycle | 0.53 | 0.43 | 0.43 | 0.53 | 0.40 | 0.40 | 0.36 | 0.20 | 0.20 | 0.36 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.40 | 0.29 | 0.10 | 0.19 | 0.27 | 0.14 | 0.22 | 0.08 | 0.11 | 0.27 | 0.20 | 0.11 |
| s, saturation flow rate [veh/h] | 625 | 5094 | 1589 | 538 | 5094 | 1589 | 1044 | 3560 | 1589 | 1267 | 3560 | 1589 |
| c, Capacity [veh/h] | 352 | 2200 | 686 | 304 | 2055 | 641 | 342 | 724 | 323 | 456 | 766 | 342 |
| d1, Uniform Delay [s] | 22.73 | 27.15 | 21.58 | 18.73 | 29.21 | 24.82 | 31.15 | 41.40 | 42.78 | 32.00 | 46.26 | 41.35 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.48 | 0.04 | 0.04 | 0.18 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 11.41 | 1.58 | 0.80 | 3.01 | 1.71 | 1.46 | 9.82 | 0.13 | 0.51 | 4.16 | 2.31 | 0.40 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.71 | 0.66 | 0.23 | 0.34 | 0.66 | 0.34 | 0.67 | 0.39 | 0.54 | 0.75 | 0.93 | 0.49 |
| d, Delay for Lane Group [s/veh] | 34.14 | 28.73 | 22.38 | 21.74 | 30.92 | 26.28 | 40.97 | 41.53 | 43.29 | 36.16 | 48.57 | 41.76 |
| Lane Group LOS | C | C | C | C | C | C | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 4.62 | 10.76 | 2.91 | 1.58 | 10.47 | 4.43 | 5.61 | 3.54 | 4.51 | 8.03 | 10.30 | 4.26 |
| 50th-Percentile Queue Length [ft/ln] | 115.51 | 269.08 | 72.70 | 39.45 | 261.81 | 110.81 | 140.32 | 88.40 | 112.82 | 200.77 | 257.60 | 106.40 |
| 95th-Percentile Queue Length [veh/ln] | 8.15 | 16.14 | 5.23 | 2.84 | 15.78 | 7.89 | 9.50 | 6.37 | 8.00 | 12.68 | 15.57 | 7.64 |
| 95th-Percentile Queue Length [ft/ln] | 203.64 | 403.59 | 130.85 | 71.01 | 394.49 | 197.13 | 237.46 | 159.13 | 199.92 | 316.96 | 389.21 | 190.98 |

**Movement, Approach, & Intersection Results**

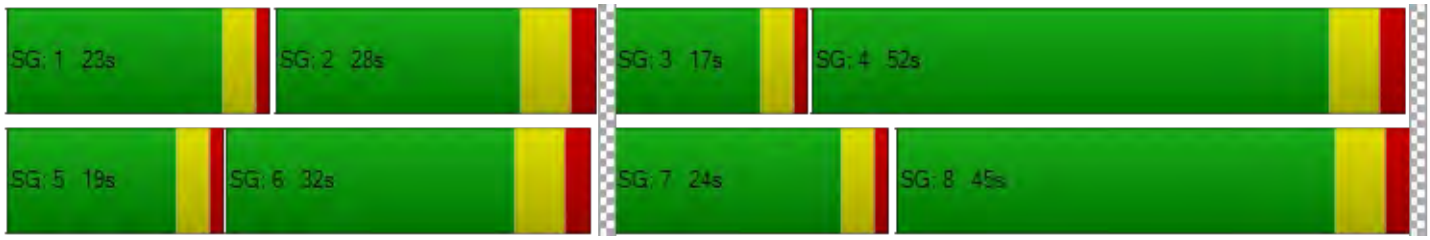
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 34.14 | 28.73 | 22.38 | 21.74 | 30.92 | 26.28 | 40.97 | 41.53 | 43.29 | 36.16 | 48.57 | 41.76 |
| Movement LOS | C | C | C | C | C | C | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 28.90 | | | 29.75 | | | 41.79 | | | 44.16 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 34.20 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.648 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 641 | 758 | 425 | 358 |
| d_b, Bicycle Delay [s] | 27.71 | 23.16 | 37.25 | 40.46 |
| l_b,int, Bicycle LOS Score for Intersection | 2.626 | 2.542 | 1.979 | 2.630 |
| Bicycle LOS | B | B | A | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 92.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.987 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 480 | 1214 | 186 | 54 | 1408 | 365 | 540 | 294 | 360 | 357 | 395 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 38 | 38 | 0 | 0 | 0 | 23 | 0 | 11 | 7 | 11 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 74 | 0 | 0 | 120 | 0 | 0 | 119 | 0 | 0 | 31 |
| Total Hourly Volume [veh/h] | 480 | 1214 | 150 | 92 | 1408 | 245 | 540 | 317 | 241 | 368 | 402 | 64 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 130 | 330 | 41 | 25 | 383 | 67 | 147 | 86 | 65 | 100 | 109 | 17 |
| Total Analysis Volume [veh/h] | 522 | 1320 | 163 | 100 | 1530 | 266 | 587 | 345 | 262 | 400 | 437 | 70 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 31 | 57 | 0 | 8 | 34 | 0 | 25 | 31 | 0 | 24 | 30 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 3.40 | 0.00 | 3.40 |
| g_i, Effective Green Time [s] | 59 | 49 | 49 | 59 | 35 | 35 | 59 | 32 | 32 | 59 | 30 |
| g / C, Green / Cycle | 0.45 | 0.38 | 0.38 | 0.45 | 0.27 | 0.27 | 0.45 | 0.25 | 0.25 | 0.45 | 0.23 |
| (v / s)_i Volume / Saturation Flow Rate | 0.63 | 0.26 | 0.10 | 0.18 | 0.30 | 0.17 | 0.45 | 0.18 | 0.16 | 0.33 | 0.28 |
| s, saturation flow rate [veh/h] | 829 | 5094 | 1589 | 554 | 5094 | 1589 | 1299 | 1870 | 1589 | 1217 | 1826 |
| c, Capacity [veh/h] | 389 | 1915 | 598 | 256 | 1373 | 428 | 468 | 466 | 396 | 498 | 422 |
| d1, Uniform Delay [s] | 44.69 | 34.10 | 28.15 | 24.87 | 47.39 | 41.57 | 41.44 | 44.83 | 43.77 | 28.27 | 49.89 |
| k, delay calibration | 0.50 | 0.04 | 0.04 | 0.13 | 0.04 | 0.09 | 0.50 | 0.24 | 0.17 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 170.01 | 0.17 | 0.09 | 1.14 | 52.45 | 1.19 | 131.15 | 5.04 | 2.94 | 12.93 | 111.63 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.34 | 0.69 | 0.27 | 0.39 | 1.11 | 0.62 | 1.25 | 0.74 | 0.66 | 0.80 | 1.20 |
| d, Delay for Lane Group [s/veh] | 214.70 | 34.27 | 28.24 | 26.01 | 99.84 | 42.76 | 172.59 | 49.87 | 46.71 | 41.20 | 161.52 |
| Lane Group LOS | F | C | C | C | F | D | F | D | D | D | F |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 26.40 | 11.26 | 3.45 | 1.79 | 20.93 | 7.41 | 27.26 | 10.59 | 7.69 | 10.09 | 26.33 |
| 50th-Percentile Queue Length [ft/ln] | 659.89 | 281.62 | 86.27 | 44.67 | 523.30 | 185.36 | 681.50 | 264.83 | 192.37 | 252.29 | 658.15 |
| 95th-Percentile Queue Length [veh/ln] | 41.62 | 16.77 | 6.21 | 3.22 | 30.31 | 11.88 | 41.49 | 15.93 | 12.24 | 15.30 | 38.39 |
| 95th-Percentile Queue Length [ft/ln] | 1040.56 | 419.23 | 155.29 | 80.41 | 757.77 | 297.00 | 1037.23 | 398.28 | 306.10 | 382.54 | 959.69 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 214.70 | 34.27 | 28.24 | 26.01 | 99.84 | 42.76 | 172.59 | 49.87 | 46.71 | 41.20 | 161.52 | 161.52 |
| Movement LOS | F | C | C | C | F | D | F | D | D | D | F | F |
| d_A, Approach Delay [s/veh] | 80.76 | | | 87.94 | | | 109.51 | | | 108.46 | | |
| Approach LOS | F | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 92.93 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 0.987 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 780 | 425 | 395 | 379 |
| d_b, Bicycle Delay [s] | 24.15 | 40.22 | 41.81 | 42.62 |
| l_b,int, Bicycle LOS Score for Intersection | 2.703 | 2.668 | 3.726 | 3.107 |
| Bicycle LOS | B | B | D | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 30.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.769 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 303 | 2218 | 133 | 90 | 1696 | 263 | 277 | 56 | 193 | 208 | 40 | 30 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 38 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 44 | 0 | 0 | 87 | 0 | 0 | 64 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 303 | 2256 | 89 | 90 | 1707 | 176 | 277 | 56 | 129 | 208 | 40 | 20 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 82 | 613 | 24 | 24 | 464 | 48 | 75 | 15 | 35 | 57 | 11 | 5 |
| Total Analysis Volume [veh/h] | 329 | 2452 | 97 | 98 | 1855 | 191 | 301 | 61 | 140 | 226 | 43 | 22 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 23 | 62 | 0 | 10 | 49 | 0 | 21 | 27 | 0 | 21 | 27 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 126 | 126 | 126 | 126 | 126 | 126 | 126 | 126 | 126 | 126 | 126 | 126 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 79 | 71 | 71 | 79 | 57 | 57 | 33 | 14 | 14 | 33 | 9 | 9 |
| g / C, Green / Cycle | 0.63 | 0.56 | 0.56 | 0.63 | 0.46 | 0.46 | 0.27 | 0.11 | 0.11 | 0.27 | 0.07 | 0.07 |
| (v / s)_i Volume / Saturation Flow Rate | 0.54 | 0.48 | 0.06 | 0.37 | 0.36 | 0.12 | 0.18 | 0.02 | 0.09 | 0.15 | 0.01 | 0.01 |
| s, saturation flow rate [veh/h] | 609 | 5094 | 1589 | 264 | 5094 | 1589 | 1630 | 3560 | 1589 | 1499 | 3560 | 1589 |
| c, Capacity [veh/h] | 406 | 2872 | 896 | 202 | 2319 | 724 | 503 | 387 | 173 | 465 | 264 | 118 |
| d1, Uniform Delay [s] | 35.11 | 23.05 | 12.73 | 27.65 | 29.34 | 21.20 | 40.85 | 50.81 | 54.76 | 38.89 | 54.52 | 54.62 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.24 | 0.11 | 0.11 | 0.50 | 0.11 | 0.11 | 0.32 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 15.87 | 0.78 | 0.05 | 4.00 | 0.67 | 0.19 | 5.17 | 0.19 | 8.75 | 2.35 | 0.29 | 0.75 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.81 | 0.85 | 0.11 | 0.48 | 0.80 | 0.26 | 0.60 | 0.16 | 0.81 | 0.49 | 0.16 | 0.19 |
| d, Delay for Lane Group [s/veh] | 50.98 | 23.83 | 12.78 | 31.65 | 30.00 | 21.39 | 46.02 | 51.00 | 63.51 | 41.24 | 54.81 | 55.37 |
| Lane Group LOS | D | C | B | C | C | C | D | D | E | D | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 5.52 | 18.57 | 1.22 | 1.18 | 15.15 | 3.39 | 8.88 | 0.88 | 4.72 | 6.13 | 0.65 | 0.68 |
| 50th-Percentile Queue Length [ft/ln] | 138.00 | 464.14 | 30.41 | 29.57 | 378.82 | 84.73 | 222.03 | 21.96 | 117.89 | 153.36 | 16.14 | 16.90 |
| 95th-Percentile Queue Length [veh/ln] | 9.37 | 25.63 | 2.19 | 2.13 | 21.54 | 6.10 | 13.77 | 1.58 | 8.28 | 10.20 | 1.16 | 1.22 |
| 95th-Percentile Queue Length [ft/ln] | 234.33 | 640.80 | 54.74 | 53.23 | 538.42 | 152.52 | 344.22 | 39.53 | 206.93 | 254.90 | 29.06 | 30.42 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 50.98 | 23.83 | 12.78 | 31.65 | 30.00 | 21.39 | 46.02 | 51.00 | 63.51 | 41.24 | 54.81 | 55.37 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | D | C | B | C | C | C | D | D | E | D | D | E |
| d_A, Approach Delay [s/veh] | 26.56 | | | 29.31 | | | 51.50 | | | 44.32 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 30.62 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.769 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 886 | 678 | 328 | 328 |
| d_b, Bicycle Delay [s] | 19.50 | 27.41 | 43.88 | 43.88 |
| l_b,int, Bicycle LOS Score for Intersection | 3.167 | 2.787 | 2.027 | 1.808 |
| Bicycle LOS | C | C | B | A |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 12.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.458 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 92 | 49 | 10 | 36 | 39 | 248 | 135 | 302 | 56 | 11 | 501 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 53 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 3 | 0 | 0 | 82 | 0 | 0 | 18 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 92 | 49 | 7 | 36 | 39 | 166 | 135 | 318 | 38 | 11 | 554 | 24 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 25 | 13 | 2 | 10 | 11 | 45 | 37 | 86 | 10 | 3 | 151 | 7 |
| Total Analysis Volume [veh/h] | 100 | 53 | 8 | 39 | 42 | 180 | 147 | 346 | 41 | 12 | 602 | 26 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 36 | 0 | 0 | 36 | 0 | 0 | 84 | 0 | 0 | 84 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 13 | 13 | 13 | 13 | 26 | 26 | 26 | 26 | 26 |
| g / C, Green / Cycle | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.03 | 0.03 | 0.14 | 0.18 | 0.21 | 0.01 | 0.32 | 0.02 |
| s, saturation flow rate [veh/h] | 1159 | 1828 | 1341 | 1636 | 798 | 1836 | 996 | 1870 | 1589 |
| c, Capacity [veh/h] | 251 | 462 | 391 | 414 | 318 | 924 | 466 | 941 | 800 |
| d1, Uniform Delay [s] | 23.36 | 15.16 | 17.78 | 16.95 | 19.24 | 8.20 | 11.93 | 9.55 | 6.58 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.38 | 0.05 | 0.04 | 0.40 | 0.39 | 0.11 | 0.01 | 0.27 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.40 | 0.13 | 0.10 | 0.54 | 0.46 | 0.42 | 0.03 | 0.64 | 0.03 |
| d, Delay for Lane Group [s/veh] | 23.74 | 15.21 | 17.82 | 17.36 | 19.62 | 8.32 | 11.94 | 9.82 | 6.59 |
| Lane Group LOS | C | B | B | B | B | A | B | A | A |
| Critical Lane Group | No | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.08 | 0.47 | 0.34 | 1.93 | 1.43 | 1.84 | 0.08 | 3.34 | 0.10 |
| 50th-Percentile Queue Length [ft/ln] | 26.91 | 11.73 | 8.41 | 48.28 | 35.63 | 45.91 | 1.91 | 83.59 | 2.47 |
| 95th-Percentile Queue Length [veh/ln] | 1.94 | 0.84 | 0.61 | 3.48 | 2.57 | 3.31 | 0.14 | 6.02 | 0.18 |
| 95th-Percentile Queue Length [ft/ln] | 48.44 | 21.11 | 15.14 | 86.90 | 64.14 | 82.64 | 3.44 | 150.47 | 4.45 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 23.74 | 15.21 | 15.21 | 17.82 | 17.36 | 17.36 | 19.62 | 8.32 | 8.32 | 11.94 | 9.82 | 6.59 |
| Movement LOS | C | B | B | B | B | B | B | A | A | B | A | A |
| d_A, Approach Delay [s/veh] | 20.51 | | | 17.43 | | | 11.43 | | | 9.73 | | |
| Approach LOS | C | | | B | | | B | | | A | | |
| d_I, Intersection Delay [s/veh] | 12.64 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.458 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1126 | 1126 | 2953 | 2953 |
| d_b, Bicycle Delay [s] | 5.01 | 5.01 | 5.97 | 5.97 |
| l_b,int, Bicycle LOS Score for Intersection | 1.830 | 2.126 | 2.470 | 2.635 |
| Bicycle LOS | A | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 27.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.551 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 139 | 1286 | 234 | 211 | 1451 | 287 | 204 | 325 | 136 | 172 | 315 | 206 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 37 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 77 | 0 | 0 | 95 | 0 | 0 | 45 | 0 | 0 | 68 |
| Total Hourly Volume [veh/h] | 139 | 1323 | 157 | 211 | 1467 | 192 | 204 | 325 | 91 | 172 | 315 | 138 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 38 | 360 | 43 | 57 | 399 | 52 | 55 | 88 | 25 | 47 | 86 | 38 |
| Total Analysis Volume [veh/h] | 151 | 1438 | 171 | 229 | 1595 | 209 | 222 | 353 | 99 | 187 | 342 | 150 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 18 | 60 | 0 | 20 | 62 | 0 | 14 | 24 | 0 | 16 | 26 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 74 | 61 | 61 | 74 | 62 | 62 | 33 | 17 | 17 | 33 | 19 | 19 |
| g / C, Green / Cycle | 0.61 | 0.51 | 0.51 | 0.61 | 0.51 | 0.51 | 0.28 | 0.14 | 0.14 | 0.28 | 0.16 | 0.16 |
| (v / s)_i Volume / Saturation Flow Rate | 0.32 | 0.28 | 0.11 | 0.43 | 0.31 | 0.13 | 0.18 | 0.09 | 0.09 | 0.14 | 0.10 | 0.09 |
| s, saturation flow rate [veh/h] | 466 | 5094 | 1589 | 532 | 5094 | 1589 | 1220 | 3560 | 1672 | 1292 | 3560 | 1589 |
| c, Capacity [veh/h] | 319 | 2578 | 804 | 356 | 2619 | 817 | 346 | 515 | 242 | 369 | 574 | 256 |
| d1, Uniform Delay [s] | 16.55 | 20.41 | 16.41 | 17.56 | 20.62 | 16.31 | 36.69 | 48.02 | 48.16 | 35.50 | 46.71 | 46.62 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.32 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 4.98 | 0.88 | 0.60 | 8.62 | 1.06 | 0.75 | 5.82 | 0.40 | 0.93 | 0.40 | 0.37 | 0.79 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.47 | 0.56 | 0.21 | 0.64 | 0.61 | 0.26 | 0.64 | 0.59 | 0.61 | 0.51 | 0.60 | 0.59 |
| d, Delay for Lane Group [s/veh] | 21.52 | 21.28 | 17.02 | 26.18 | 21.69 | 17.06 | 42.51 | 48.43 | 49.09 | 35.90 | 47.08 | 47.41 |
| Lane Group LOS | C | C | B | C | C | B | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.98 | 8.83 | 2.61 | 3.30 | 10.03 | 3.21 | 5.76 | 4.18 | 4.10 | 4.33 | 4.65 | 4.10 |
| 50th-Percentile Queue Length [ft/ln] | 49.41 | 220.72 | 65.19 | 82.49 | 250.79 | 80.25 | 144.04 | 104.60 | 102.50 | 108.17 | 116.14 | 102.45 |
| 95th-Percentile Queue Length [veh/ln] | 3.56 | 13.70 | 4.69 | 5.94 | 15.23 | 5.78 | 9.70 | 7.53 | 7.38 | 7.74 | 8.18 | 7.38 |
| 95th-Percentile Queue Length [ft/ln] | 88.94 | 342.55 | 117.35 | 148.47 | 380.65 | 144.45 | 242.45 | 188.27 | 184.50 | 193.45 | 204.51 | 184.41 |

**Movement, Approach, & Intersection Results**

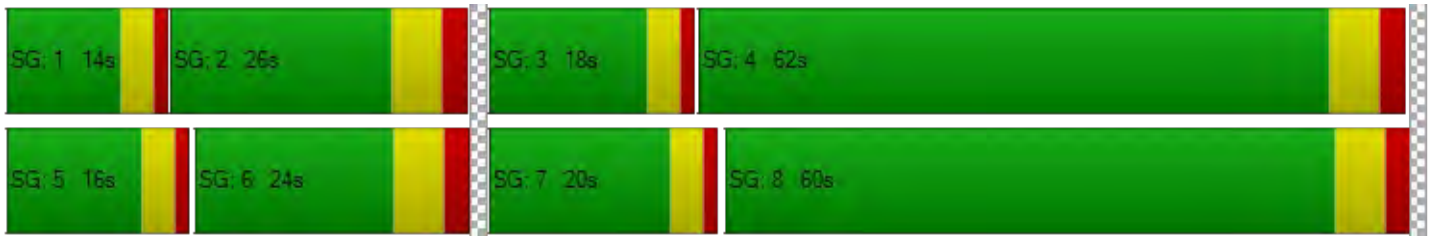
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 21.52 | 21.28 | 17.02 | 26.18 | 21.69 | 17.06 | 42.51 | 48.52 | 49.09 | 35.90 | 47.08 | 47.41 |
| Movement LOS | C | C | B | C | C | B | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 20.89 | | | 21.72 | | | 46.62 | | | 44.07 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 27.65 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.551 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 892 | 925 | 292 | 325 |
| d_b, Bicycle Delay [s] | 18.43 | 17.34 | 43.79 | 42.09 |
| l_b,int, Bicycle LOS Score for Intersection | 2.570 | 2.730 | 1.955 | 2.176 |
| Bicycle LOS | B | B | A | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 83.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.955 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 486 | 1273 | 349 | 53 | 1414 | 264 | 488 | 393 | 300 | 226 | 308 | 80 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 9 | 0 | 37 | 22 | 37 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 120 | 0 | 0 | 87 | 0 | 0 | 99 | 0 | 0 | 39 |
| Total Hourly Volume [veh/h] | 486 | 1273 | 245 | 69 | 1414 | 177 | 488 | 402 | 201 | 263 | 330 | 78 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 132 | 346 | 67 | 19 | 384 | 48 | 133 | 109 | 55 | 71 | 90 | 21 |
| Total Analysis Volume [veh/h] | 528 | 1384 | 266 | 75 | 1537 | 192 | 530 | 437 | 218 | 286 | 359 | 85 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 12 | 51 | 0 | 9 | 48 | 0 | 21 | 36 | 0 | 24 | 39 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 3.40 | 0.00 | 3.40 |
| g_i, Effective Green Time [s] | 59 | 50 | 50 | 59 | 35 | 35 | 59 | 39 | 39 | 59 | 30 |
| g / C, Green / Cycle | 0.45 | 0.39 | 0.39 | 0.45 | 0.27 | 0.27 | 0.45 | 0.30 | 0.30 | 0.45 | 0.23 |
| (v / s)_i Volume / Saturation Flow Rate | 0.63 | 0.27 | 0.17 | 0.16 | 0.30 | 0.12 | 0.40 | 0.23 | 0.14 | 0.26 | 0.25 |
| s, saturation flow rate [veh/h] | 839 | 5094 | 1589 | 476 | 5094 | 1589 | 1328 | 1870 | 1589 | 1080 | 1809 |
| c, Capacity [veh/h] | 389 | 1964 | 613 | 229 | 1374 | 429 | 468 | 565 | 481 | 407 | 418 |
| d1, Uniform Delay [s] | 44.64 | 33.61 | 29.40 | 24.87 | 47.36 | 39.33 | 41.29 | 41.19 | 36.58 | 27.65 | 49.86 |
| k, delay calibration | 0.50 | 0.04 | 0.09 | 0.06 | 0.04 | 0.04 | 0.50 | 0.41 | 0.07 | 0.50 | 0.46 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 177.21 | 0.18 | 0.39 | 0.44 | 54.19 | 0.27 | 82.72 | 8.31 | 0.44 | 9.74 | 59.27 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.36 | 0.70 | 0.43 | 0.33 | 1.12 | 0.45 | 1.13 | 0.77 | 0.45 | 0.70 | 1.06 |
| d, Delay for Lane Group [s/veh] | 221.85 | 33.78 | 29.79 | 25.31 | 101.55 | 39.60 | 124.01 | 49.50 | 37.02 | 37.39 | 109.12 |
| Lane Group LOS | F | C | C | C | F | D | F | D | D | D | F |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 27.14 | 11.79 | 6.00 | 1.29 | 21.18 | 5.00 | 21.00 | 13.61 | 5.51 | 6.58 | 20.03 |
| 50th-Percentile Queue Length [ft/ln] | 678.48 | 294.70 | 149.89 | 32.21 | 529.38 | 125.05 | 524.91 | 340.27 | 137.74 | 164.61 | 500.70 |
| 95th-Percentile Queue Length [veh/ln] | 42.91 | 17.42 | 10.01 | 2.32 | 30.68 | 8.67 | 31.04 | 19.66 | 9.36 | 10.79 | 28.33 |
| 95th-Percentile Queue Length [ft/ln] | 1072.84 | 435.47 | 250.28 | 57.97 | 766.93 | 216.74 | 775.92 | 491.52 | 233.98 | 269.82 | 708.26 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 221.85 | 33.78 | 29.79 | 25.31 | 101.55 | 39.60 | 124.01 | 49.50 | 37.02 | 37.39 | 109.12 | 109.12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | F | C | C | C | F | D | F | D | D | D | F | F |
| d_A, Approach Delay [s/veh] | 78.89 | | | 91.78 | | | 80.53 | | | 81.02 | | |
| Approach LOS | E | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 83.43 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 0.955 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 687 | 641 | 472 | 518 |
| d_b, Bicycle Delay [s] | 27.94 | 29.95 | 37.89 | 35.63 |
| l_b,int, Bicycle LOS Score for Intersection | 2.824 | 2.600 | 3.678 | 2.828 |
| Bicycle LOS | C | B | D | C |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 34.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.823 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 156 | 1830 | 133 | 94 | 2344 | 257 | 266 | 51 | 212 | 236 | 33 | 34 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 16 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 44 | 0 | 0 | 85 | 0 | 0 | 70 | 0 | 0 | 11 |
| Total Hourly Volume [veh/h] | 156 | 1846 | 89 | 94 | 2381 | 172 | 266 | 51 | 142 | 236 | 33 | 23 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 42 | 502 | 24 | 26 | 647 | 47 | 72 | 14 | 39 | 64 | 9 | 6 |
| Total Analysis Volume [veh/h] | 170 | 2007 | 97 | 102 | 2588 | 187 | 289 | 55 | 154 | 257 | 36 | 25 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 8 | 60 | 0 | 11 | 63 | 0 | 21 | 27 | 0 | 22 | 28 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 79 | 70 | 70 | 79 | 65 | 65 | 37 | 15 | 15 | 37 | 13 | 13 |
| g / C, Green / Cycle | 0.62 | 0.54 | 0.54 | 0.62 | 0.51 | 0.51 | 0.28 | 0.12 | 0.12 | 0.28 | 0.10 | 0.10 |
| (v / s)_i Volume / Saturation Flow Rate | 0.48 | 0.39 | 0.06 | 0.30 | 0.51 | 0.12 | 0.18 | 0.02 | 0.10 | 0.17 | 0.01 | 0.02 |
| s, saturation flow rate [veh/h] | 354 | 5094 | 1589 | 338 | 5094 | 1589 | 1603 | 3560 | 1589 | 1499 | 3560 | 1589 |
| c, Capacity [veh/h] | 251 | 2770 | 864 | 233 | 2580 | 805 | 531 | 414 | 185 | 496 | 355 | 158 |
| d1, Uniform Delay [s] | 38.14 | 22.03 | 14.22 | 22.19 | 31.66 | 17.71 | 39.15 | 50.88 | 55.47 | 38.33 | 52.54 | 52.84 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.15 | 0.11 | 0.11 | 0.50 | 0.11 | 0.12 | 0.42 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 13.66 | 0.37 | 0.06 | 1.84 | 9.02 | 0.15 | 3.98 | 0.14 | 9.91 | 3.24 | 0.12 | 0.46 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.68 | 0.72 | 0.11 | 0.44 | 1.00 | 0.23 | 0.54 | 0.13 | 0.83 | 0.52 | 0.10 | 0.16 |
| d, Delay for Lane Group [s/veh] | 51.81 | 22.39 | 14.27 | 24.03 | 40.68 | 17.86 | 43.13 | 51.03 | 65.39 | 41.58 | 52.66 | 53.30 |
| Lane Group LOS | D | C | B | C | F | B | D | D | E | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 2.86 | 14.07 | 1.32 | 1.22 | 26.55 | 3.00 | 8.30 | 0.80 | 5.35 | 7.16 | 0.53 | 0.76 |
| 50th-Percentile Queue Length [ft/ln] | 71.50 | 351.81 | 33.04 | 30.40 | 663.86 | 75.03 | 207.56 | 20.02 | 133.69 | 179.11 | 13.32 | 18.90 |
| 95th-Percentile Queue Length [veh/ln] | 5.15 | 20.22 | 2.38 | 2.19 | 35.10 | 5.40 | 13.03 | 1.44 | 9.14 | 11.55 | 0.96 | 1.36 |
| 95th-Percentile Queue Length [ft/ln] | 128.69 | 505.61 | 59.47 | 54.71 | 877.47 | 135.05 | 325.69 | 36.04 | 228.51 | 288.85 | 23.98 | 34.03 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 51.81 | 22.39 | 14.27 | 24.03 | 40.68 | 17.86 | 43.13 | 51.03 | 65.39 | 41.58 | 52.66 | 53.30 |
| Movement LOS | D | C | B | C | F | B | D | D | E | D | D | D |
| d_A, Approach Delay [s/veh] | 24.25 | | | 38.61 | | | 50.88 | | | 43.75 | | |
| Approach LOS | C | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 34.43 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.823 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 836 | 883 | 321 | 337 |
| d_b, Bicycle Delay [s] | 21.72 | 20.01 | 45.18 | 44.34 |
| l_b,int, Bicycle LOS Score for Intersection | 2.835 | 3.189 | 2.028 | 1.831 |
| Bicycle LOS | C | C | B | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 10.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.450 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 53 | 84 | 13 | 52 | 40 | 183 | 208 | 472 | 87 | 6 | 386 | 50 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 22 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 4 | 0 | 0 | 60 | 0 | 0 | 29 | 0 | 0 | 17 |
| Total Hourly Volume [veh/h] | 53 | 84 | 9 | 52 | 40 | 123 | 208 | 522 | 58 | 6 | 408 | 33 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 14 | 23 | 2 | 14 | 11 | 33 | 57 | 142 | 16 | 2 | 111 | 9 |
| Total Analysis Volume [veh/h] | 58 | 91 | 10 | 57 | 43 | 134 | 226 | 567 | 63 | 7 | 443 | 36 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 32 | 0 | 0 | 32 | 0 | 0 | 88 | 0 | 0 | 88 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 9 | 9 | 9 | 9 | 22 | 22 | 22 | 22 | 22 |
| g / C, Green / Cycle | 0.20 | 0.20 | 0.20 | 0.20 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.05 | 0.04 | 0.11 | 0.25 | 0.34 | 0.01 | 0.24 | 0.02 |
| s, saturation flow rate [veh/h] | 1207 | 1838 | 1293 | 1650 | 915 | 1838 | 796 | 1870 | 1589 |
| c, Capacity [veh/h] | 239 | 375 | 308 | 336 | 440 | 920 | 321 | 937 | 796 |
| d1, Uniform Delay [s] | 20.10 | 14.54 | 17.97 | 15.39 | 14.15 | 8.22 | 14.20 | 7.07 | 5.52 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.19 | 0.14 | 0.11 | 0.48 | 0.35 | 0.34 | 0.01 | 0.14 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.24 | 0.27 | 0.19 | 0.53 | 0.51 | 0.68 | 0.02 | 0.47 | 0.05 |
| d, Delay for Lane Group [s/veh] | 20.29 | 14.68 | 18.08 | 15.87 | 14.50 | 8.56 | 14.21 | 7.21 | 5.53 |
| Lane Group LOS | C | B | B | B | B | A | B | A | A |
| Critical Lane Group | No | No | No | Yes | No | Yes | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.49 | 0.66 | 0.44 | 1.24 | 1.51 | 2.44 | 0.04 | 1.46 | 0.09 |
| 50th-Percentile Queue Length [ft/ln] | 12.16 | 16.53 | 10.93 | 31.09 | 37.69 | 60.88 | 1.11 | 36.45 | 2.30 |
| 95th-Percentile Queue Length [veh/ln] | 0.88 | 1.19 | 0.79 | 2.24 | 2.71 | 4.38 | 0.08 | 2.62 | 0.17 |
| 95th-Percentile Queue Length [ft/ln] | 21.89 | 29.75 | 19.68 | 55.96 | 67.85 | 109.59 | 1.99 | 65.62 | 4.15 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 20.29 | 14.68 | 14.68 | 18.08 | 15.87 | 15.87 | 14.50 | 8.56 | 8.56 | 14.21 | 7.21 | 5.53 |
| Movement LOS | C | B | B | B | B | B | B | A | A | B | A | A |
| d_A, Approach Delay [s/veh] | 16.73 | | | 16.41 | | | 10.12 | | | 7.19 | | |
| Approach LOS | B | | | B | | | B | | | A | | |
| d_I, Intersection Delay [s/veh] | 10.75 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.450 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1178 | 1178 | 3755 | 3755 |
| d_b, Bicycle Delay [s] | 3.67 | 3.67 | 16.74 | 16.74 |
| l_b,int, Bicycle LOS Score for Intersection | 1.829 | 2.045 | 3.020 | 2.390 |
| Bicycle LOS | A | B | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 38.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.709 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 252 | 1438 | 241 | 105 | 1298 | 334 | 234 | 286 | 262 | 338 | 723 | 254 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 11 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 80 | 0 | 0 | 110 | 0 | 0 | 86 | 0 | 0 | 84 |
| Total Hourly Volume [veh/h] | 252 | 1449 | 161 | 105 | 1336 | 224 | 234 | 286 | 176 | 338 | 723 | 170 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 68 | 394 | 44 | 29 | 363 | 61 | 64 | 78 | 48 | 92 | 196 | 46 |
| Total Analysis Volume [veh/h] | 274 | 1575 | 175 | 114 | 1452 | 243 | 254 | 311 | 191 | 367 | 786 | 185 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 16 | 43 | 0 | 12 | 39 | 0 | 21 | 37 | 0 | 28 | 44 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 60 | 48 | 48 | 60 | 42 | 42 | 47 | 22 | 22 | 47 | 29 | 29 |
| g / C, Green / Cycle | 0.50 | 0.40 | 0.40 | 0.50 | 0.35 | 0.35 | 0.39 | 0.18 | 0.18 | 0.39 | 0.24 | 0.24 |
| (v / s)_i Volume / Saturation Flow Rate | 0.40 | 0.31 | 0.11 | 0.22 | 0.29 | 0.15 | 0.26 | 0.09 | 0.12 | 0.28 | 0.22 | 0.12 |
| s, saturation flow rate [veh/h] | 692 | 5094 | 1589 | 523 | 5094 | 1589 | 991 | 3560 | 1589 | 1328 | 3560 | 1589 |
| c, Capacity [veh/h] | 358 | 2034 | 635 | 275 | 1767 | 551 | 356 | 659 | 294 | 514 | 862 | 385 |
| d1, Uniform Delay [s] | 27.96 | 31.36 | 24.34 | 23.56 | 35.82 | 30.23 | 29.47 | 43.68 | 45.31 | 29.01 | 44.25 | 39.03 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.04 | 0.04 | 0.20 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.42 | 2.95 | 1.08 | 4.55 | 4.45 | 2.55 | 11.51 | 0.20 | 0.90 | 3.35 | 1.66 | 0.35 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.77 | 0.77 | 0.28 | 0.41 | 0.82 | 0.44 | 0.71 | 0.47 | 0.65 | 0.71 | 0.91 | 0.48 |
| d, Delay for Lane Group [s/veh] | 42.38 | 34.31 | 25.42 | 28.12 | 40.27 | 32.78 | 40.99 | 43.88 | 46.21 | 32.36 | 45.92 | 39.37 |
| Lane Group LOS | D | C | C | C | D | C | D | D | D | C | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 5.70 | 13.06 | 3.43 | 1.95 | 13.04 | 5.61 | 6.07 | 4.04 | 5.20 | 8.18 | 11.15 | 4.58 |
| 50th-Percentile Queue Length [ft/ln] | 142.45 | 326.51 | 85.63 | 48.79 | 325.99 | 140.17 | 151.87 | 101.04 | 130.01 | 204.47 | 278.74 | 114.58 |
| 95th-Percentile Queue Length [veh/ln] | 9.61 | 18.99 | 6.17 | 3.51 | 18.96 | 9.49 | 10.12 | 7.27 | 8.94 | 12.87 | 16.63 | 8.09 |
| 95th-Percentile Queue Length [ft/ln] | 240.32 | 474.68 | 154.14 | 87.82 | 474.04 | 237.26 | 252.92 | 181.87 | 223.51 | 321.72 | 415.65 | 202.35 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 42.38 | 34.31 | 25.42 | 28.12 | 40.27 | 32.78 | 40.99 | 43.88 | 46.21 | 32.36 | 45.92 | 39.37 |
| Movement LOS | D | C | C | C | D | C | D | D | D | C | D | D |
| d_A, Approach Delay [s/veh] | 34.63 | | | 38.50 | | | 43.50 | | | 41.29 | | |
| Approach LOS | C | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 38.44 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.709 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 608 | 541 | 508 | 625 |
| d_b, Bicycle Delay [s] | 29.07 | 31.92 | 33.39 | 28.38 |
| l_b,int, Bicycle LOS Score for Intersection | 2.717 | 2.615 | 2.023 | 2.733 |
| Bicycle LOS | B | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 109.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.030 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 493 | 1335 | 203 | 59 | 1516 | 389 | 561 | 314 | 374 | 376 | 426 | 90 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 38 | 38 | 0 | 0 | 0 | 23 | 0 | 11 | 7 | 11 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 80 | 0 | 0 | 128 | 0 | 0 | 123 | 0 | 0 | 33 |
| Total Hourly Volume [veh/h] | 493 | 1335 | 161 | 97 | 1516 | 261 | 561 | 337 | 251 | 387 | 433 | 68 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 134 | 363 | 44 | 26 | 412 | 71 | 152 | 92 | 68 | 105 | 118 | 18 |
| Total Analysis Volume [veh/h] | 536 | 1451 | 175 | 105 | 1648 | 284 | 610 | 366 | 273 | 421 | 471 | 74 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 31 | 57 | 0 | 8 | 34 | 0 | 26 | 31 | 0 | 24 | 29 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 3.40 | 0.00 | 3.40 |
| g_i, Effective Green Time [s] | 59 | 49 | 49 | 59 | 35 | 35 | 59 | 31 | 31 | 59 | 30 |
| g / C, Green / Cycle | 0.45 | 0.37 | 0.37 | 0.45 | 0.27 | 0.27 | 0.45 | 0.24 | 0.24 | 0.45 | 0.23 |
| (v / s)_i Volume / Saturation Flow Rate | 0.66 | 0.28 | 0.11 | 0.20 | 0.32 | 0.18 | 0.48 | 0.20 | 0.17 | 0.34 | 0.30 |
| s, saturation flow rate [veh/h] | 809 | 5094 | 1589 | 521 | 5094 | 1589 | 1282 | 1870 | 1589 | 1226 | 1826 |
| c, Capacity [veh/h] | 389 | 1905 | 594 | 241 | 1373 | 428 | 467 | 447 | 380 | 494 | 422 |
| d1, Uniform Delay [s] | 44.80 | 35.57 | 28.58 | 26.78 | 47.40 | 42.16 | 41.58 | 46.72 | 45.37 | 28.90 | 49.89 |
| k, delay calibration | 0.50 | 0.04 | 0.04 | 0.19 | 0.04 | 0.12 | 0.50 | 0.28 | 0.19 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 186.19 | 0.24 | 0.10 | 2.18 | 90.80 | 1.98 | 152.64 | 9.15 | 4.53 | 16.80 | 147.74 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.38 | 0.76 | 0.29 | 0.44 | 1.20 | 0.66 | 1.31 | 0.82 | 0.72 | 0.85 | 1.29 |
| d, Delay for Lane Group [s/veh] | 230.99 | 35.81 | 28.68 | 28.96 | 138.20 | 44.14 | 194.21 | 55.87 | 49.90 | 45.69 | 197.63 |
| Lane Group LOS | F | D | C | C | F | D | F | E | D | D | F |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 28.10 | 12.89 | 3.75 | 1.94 | 25.81 | 8.11 | 29.99 | 12.00 | 8.35 | 11.18 | 30.59 |
| 50th-Percentile Queue Length [ft/ln] | 702.47 | 322.17 | 93.78 | 48.56 | 645.16 | 202.72 | 749.76 | 299.99 | 208.66 | 279.50 | 764.65 |
| 95th-Percentile Queue Length [veh/ln] | 44.57 | 18.77 | 6.75 | 3.50 | 37.87 | 12.78 | 46.13 | 17.68 | 13.08 | 16.66 | 45.28 |
| 95th-Percentile Queue Length [ft/ln] | 1114.37 | 469.35 | 168.81 | 87.41 | 946.82 | 319.47 | 1153.13 | 442.01 | 327.11 | 416.59 | 1131.99 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 230.99 | 35.81 | 28.68 | 28.96 | 138.20 | 44.14 | 194.21 | 55.87 | 49.90 | 45.69 | 197.63 | 197.63 |
| Movement LOS | F | D | C | C | F | D | F | E | D | D | F | F |
| d_A, Approach Delay [s/veh] | 83.62 | | | 119.46 | | | 122.13 | | | 131.41 | | |
| Approach LOS | F | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 109.70 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.030 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 780 | 425 | 394 | 364 |
| d_b, Bicycle Delay [s] | 24.16 | 40.23 | 41.82 | 43.44 |
| l_b,int, Bicycle LOS Score for Intersection | 2.793 | 2.750 | 3.823 | 3.208 |
| Bicycle LOS | C | C | D | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 34.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.806 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 319 | 2343 | 135 | 91 | 1815 | 277 | 297 | 57 | 210 | 212 | 43 | 31 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 38 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 45 | 0 | 0 | 91 | 0 | 0 | 69 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 319 | 2381 | 90 | 91 | 1826 | 186 | 297 | 57 | 141 | 212 | 43 | 21 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 87 | 647 | 24 | 25 | 496 | 51 | 81 | 15 | 38 | 58 | 12 | 6 |
| Total Analysis Volume [veh/h] | 347 | 2588 | 98 | 99 | 1985 | 202 | 323 | 62 | 153 | 230 | 47 | 23 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 24 | 55 | 0 | 14 | 45 | 0 | 24 | 33 | 0 | 18 | 27 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 87 | 78 | 78 | 87 | 63 | 63 | 37 | 16 | 16 | 37 | 13 | 13 |
| g / C, Green / Cycle | 0.64 | 0.57 | 0.57 | 0.64 | 0.46 | 0.46 | 0.27 | 0.11 | 0.11 | 0.27 | 0.09 | 0.09 |
| (v / s)_i Volume / Saturation Flow Rate | 0.59 | 0.51 | 0.06 | 0.40 | 0.39 | 0.13 | 0.20 | 0.02 | 0.10 | 0.15 | 0.01 | 0.01 |
| s, saturation flow rate [veh/h] | 585 | 5094 | 1589 | 245 | 5094 | 1589 | 1602 | 3560 | 1589 | 1485 | 3560 | 1589 |
| c, Capacity [veh/h] | 390 | 2911 | 908 | 186 | 2352 | 734 | 493 | 407 | 182 | 460 | 327 | 146 |
| d1, Uniform Delay [s] | 42.69 | 25.43 | 13.33 | 31.46 | 32.34 | 22.61 | 44.57 | 54.35 | 59.10 | 41.90 | 56.89 | 56.97 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.34 | 0.11 | 0.11 | 0.50 | 0.11 | 0.14 | 0.39 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 24.71 | 1.05 | 0.05 | 7.21 | 0.88 | 0.20 | 6.64 | 0.17 | 12.31 | 3.05 | 0.20 | 0.50 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.89 | 0.89 | 0.11 | 0.53 | 0.84 | 0.28 | 0.65 | 0.15 | 0.84 | 0.50 | 0.14 | 0.16 |
| d, Delay for Lane Group [s/veh] | 67.40 | 26.48 | 13.38 | 38.67 | 33.22 | 22.81 | 51.21 | 54.52 | 71.40 | 44.95 | 57.09 | 57.46 |
| Lane Group LOS | E | C | B | D | C | C | D | D | E | D | E | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 7.05 | 22.43 | 1.33 | 1.43 | 18.41 | 3.93 | 10.61 | 0.97 | 5.77 | 6.88 | 0.75 | 0.75 |
| 50th-Percentile Queue Length [ft/ln] | 176.15 | 560.76 | 33.30 | 35.87 | 460.14 | 98.21 | 265.15 | 24.21 | 144.17 | 171.99 | 18.82 | 18.73 |
| 95th-Percentile Queue Length [veh/ln] | 11.40 | 30.20 | 2.40 | 2.58 | 25.44 | 7.07 | 15.95 | 1.74 | 9.70 | 11.18 | 1.36 | 1.35 |
| 95th-Percentile Queue Length [ft/ln] | 284.98 | 754.94 | 59.94 | 64.56 | 636.03 | 176.78 | 398.68 | 43.58 | 242.62 | 279.53 | 33.88 | 33.71 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 67.40 | 26.48 | 13.38 | 38.67 | 33.22 | 22.81 | 51.21 | 54.52 | 71.40 | 44.95 | 57.09 | 57.46 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | E | C | B | D | C | C | D | D | E | D | E | E |
| d_A, Approach Delay [s/veh] | 30.73 | | | 32.54 | | | 57.34 | | | 47.81 | | |
| Approach LOS | C | | | C | | | E | | | D | | |
| d_I, Intersection Delay [s/veh] | 34.56 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.806 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| I_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 714 | 567 | 391 | 303 |
| d_b, Bicycle Delay [s] | 28.16 | 34.96 | 44.09 | 49.05 |
| I_b,int, Bicycle LOS Score for Intersection | 3.253 | 2.867 | 2.060 | 1.815 |
| Bicycle LOS | C | C | B | A |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 15.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.509 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 98 | 54 | 11 | 40 | 43 | 270 | 148 | 325 | 60 | 12 | 535 | 40 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 53 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 4 | 0 | 0 | 89 | 0 | 0 | 20 | 0 | 0 | 13 |
| Total Hourly Volume [veh/h] | 98 | 54 | 7 | 40 | 43 | 181 | 148 | 341 | 40 | 12 | 588 | 27 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 27 | 15 | 2 | 11 | 12 | 49 | 40 | 93 | 11 | 3 | 160 | 7 |
| Total Analysis Volume [veh/h] | 107 | 59 | 8 | 43 | 47 | 197 | 161 | 371 | 43 | 13 | 639 | 29 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 42 | 0 | 0 | 42 | 0 | 0 | 78 | 0 | 0 | 78 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C |
|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 18 | 18 | 18 | 18 | 35 | 35 | 35 | 35 |
| g / C, Green / Cycle | 0.27 | 0.27 | 0.27 | 0.27 | 0.53 | 0.53 | 0.53 | 0.53 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.04 | 0.03 | 0.15 | 0.21 | 0.23 | 0.01 | 0.36 |
| s, saturation flow rate [veh/h] | 1136 | 1831 | 1334 | 1637 | 769 | 1836 | 972 | 1856 |
| c, Capacity [veh/h] | 236 | 496 | 394 | 443 | 299 | 980 | 472 | 990 |
| d1, Uniform Delay [s] | 28.55 | 18.07 | 20.97 | 20.46 | 23.57 | 9.20 | 13.07 | 11.13 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.50 | 0.05 | 0.04 | 0.40 | 0.56 | 0.11 | 0.01 | 0.30 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.45 | 0.14 | 0.11 | 0.55 | 0.54 | 0.42 | 0.03 | 0.67 |
| d, Delay for Lane Group [s/veh] | 29.06 | 18.12 | 21.01 | 20.86 | 24.14 | 9.30 | 13.08 | 11.43 |
| Lane Group LOS | C | B | C | C | C | A | B | B |
| Critical Lane Group | No | No | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.52 | 0.68 | 0.48 | 2.83 | 2.12 | 2.67 | 0.10 | 5.24 |
| 50th-Percentile Queue Length [ft/ln] | 38.00 | 16.99 | 12.05 | 70.65 | 52.99 | 66.73 | 2.62 | 130.94 |
| 95th-Percentile Queue Length [veh/ln] | 2.74 | 1.22 | 0.87 | 5.09 | 3.82 | 4.80 | 0.19 | 8.99 |
| 95th-Percentile Queue Length [ft/ln] | 68.40 | 30.59 | 21.69 | 127.16 | 95.39 | 120.12 | 4.72 | 224.77 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 29.06 | 18.12 | 18.12 | 21.01 | 20.86 | 20.86 | 24.14 | 9.30 | 9.30 | 13.08 | 11.43 | 11.43 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | B | B | C | C | C | C | A | A | B | B | B |
| d_A, Approach Delay [s/veh] | 24.84 | | | 20.88 | | | 13.46 | | | 11.46 | | |
| Approach LOS | C | | | C | | | B | | | B | | |
| d_I, Intersection Delay [s/veh] | 15.06 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.509 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| I_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1087 | 1087 | 2186 | 2186 |
| d_b, Bicycle Delay [s] | 6.83 | 6.83 | 0.28 | 0.28 |
| I_b,int, Bicycle LOS Score for Intersection | 1.853 | 2.180 | 2.541 | 2.705 |
| Bicycle LOS | A | B | B | B |

## Sequence

| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 31.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.638 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 254 | 1373 | 251 | 233 | 1565 | 317 | 226 | 358 | 150 | 186 | 347 | 228 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 37 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 83 | 0 | 0 | 105 | 0 | 0 | 50 | 0 | 0 | 75 |
| Total Hourly Volume [veh/h] | 254 | 1410 | 168 | 233 | 1581 | 212 | 226 | 358 | 100 | 186 | 347 | 153 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 69 | 383 | 46 | 63 | 430 | 58 | 61 | 97 | 27 | 51 | 94 | 42 |
| Total Analysis Volume [veh/h] | 276 | 1533 | 183 | 253 | 1718 | 230 | 246 | 389 | 109 | 202 | 377 | 166 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 15 | 47 | 0 | 21 | 53 | 0 | 16 | 35 | 0 | 17 | 36 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 73 | 59 | 59 | 73 | 56 | 56 | 34 | 17 | 17 | 34 | 18 | 18 |
| g / C, Green / Cycle | 0.61 | 0.49 | 0.49 | 0.61 | 0.47 | 0.47 | 0.29 | 0.14 | 0.14 | 0.29 | 0.15 | 0.15 |
| (v / s)_i Volume / Saturation Flow Rate | 0.52 | 0.30 | 0.12 | 0.48 | 0.34 | 0.14 | 0.20 | 0.09 | 0.10 | 0.15 | 0.11 | 0.10 |
| s, saturation flow rate [veh/h] | 533 | 5094 | 1589 | 523 | 5094 | 1589 | 1258 | 3560 | 1671 | 1305 | 3560 | 1589 |
| c, Capacity [veh/h] | 359 | 2570 | 802 | 352 | 2451 | 765 | 346 | 462 | 217 | 364 | 491 | 219 |
| d1, Uniform Delay [s] | 27.74 | 21.07 | 16.65 | 20.26 | 24.37 | 18.89 | 37.78 | 50.17 | 50.31 | 36.55 | 49.86 | 49.78 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.38 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.57 | 1.03 | 0.66 | 11.96 | 1.70 | 1.01 | 9.03 | 0.83 | 1.92 | 0.50 | 0.96 | 2.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.77 | 0.60 | 0.23 | 0.72 | 0.70 | 0.30 | 0.71 | 0.73 | 0.75 | 0.56 | 0.77 | 0.76 |
| d, Delay for Lane Group [s/veh] | 42.31 | 22.10 | 17.31 | 32.22 | 26.07 | 19.90 | 46.81 | 51.00 | 52.23 | 37.04 | 50.82 | 51.79 |
| Lane Group LOS | D | C | B | C | C | B | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 4.58 | 10.05 | 2.92 | 3.99 | 12.66 | 4.03 | 6.65 | 4.68 | 4.59 | 4.66 | 5.27 | 4.70 |
| 50th-Percentile Queue Length [ft/ln] | 114.53 | 251.31 | 73.06 | 99.81 | 316.51 | 100.86 | 166.16 | 117.12 | 114.77 | 116.54 | 131.74 | 117.45 |
| 95th-Percentile Queue Length [veh/ln] | 8.09 | 15.25 | 5.26 | 7.19 | 18.50 | 7.26 | 10.87 | 8.23 | 8.10 | 8.20 | 9.03 | 8.25 |
| 95th-Percentile Queue Length [ft/ln] | 202.29 | 381.30 | 131.50 | 179.66 | 462.40 | 181.54 | 271.87 | 205.86 | 202.61 | 205.06 | 225.85 | 206.31 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 42.31 | 22.10 | 17.31 | 32.22 | 26.07 | 19.90 | 46.81 | 51.16 | 52.23 | 37.04 | 50.82 | 51.79 |
| Movement LOS | D | C | B | C | C | B | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 24.46 | | | 26.13 | | | 49.88 | | | 47.30 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 31.43 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.638 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 675 | 775 | 475 | 492 |
| d_b, Bicycle Delay [s] | 26.33 | 22.51 | 34.88 | 34.13 |
| l_b,int, Bicycle LOS Score for Intersection | 2.701 | 2.828 | 1.996 | 2.236 |
| Bicycle LOS | B | C | A | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 100.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.997 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 501 | 1385 | 376 | 57 | 1535 | 280 | 506 | 418 | 338 | 246 | 331 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 9 | 0 | 37 | 22 | 37 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 129 | 0 | 0 | 92 | 0 | 0 | 112 | 0 | 0 | 40 |
| Total Hourly Volume [veh/h] | 501 | 1385 | 263 | 73 | 1535 | 188 | 506 | 427 | 226 | 283 | 353 | 81 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 136 | 376 | 71 | 20 | 417 | 51 | 138 | 116 | 61 | 77 | 96 | 22 |
| Total Analysis Volume [veh/h] | 545 | 1505 | 286 | 79 | 1668 | 204 | 550 | 464 | 246 | 308 | 384 | 88 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 26 | 57 | 0 | 9 | 40 | 0 | 28 | 35 | 0 | 19 | 26 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 3.40 | 0.00 | 3.40 |
| g_i, Effective Green Time [s] | 59 | 50 | 50 | 59 | 35 | 35 | 59 | 38 | 38 | 59 | 30 |
| g / C, Green / Cycle | 0.45 | 0.38 | 0.38 | 0.45 | 0.27 | 0.27 | 0.45 | 0.29 | 0.29 | 0.45 | 0.23 |
| (v / s)_i Volume / Saturation Flow Rate | 0.67 | 0.30 | 0.18 | 0.18 | 0.33 | 0.13 | 0.42 | 0.25 | 0.15 | 0.29 | 0.26 |
| s, saturation flow rate [veh/h] | 817 | 5094 | 1589 | 446 | 5094 | 1589 | 1315 | 1870 | 1589 | 1076 | 1810 |
| c, Capacity [veh/h] | 389 | 1960 | 612 | 217 | 1374 | 429 | 469 | 546 | 464 | 397 | 418 |
| d1, Uniform Delay [s] | 44.80 | 34.85 | 29.94 | 26.41 | 47.38 | 39.70 | 41.30 | 43.27 | 38.49 | 28.71 | 49.90 |
| k, delay calibration | 0.50 | 0.04 | 0.13 | 0.12 | 0.04 | 0.04 | 0.50 | 0.47 | 0.13 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 195.97 | 0.24 | 0.65 | 1.11 | 96.90 | 0.31 | 98.63 | 14.40 | 1.16 | 13.80 | 84.13 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.40 | 0.77 | 0.47 | 0.36 | 1.21 | 0.48 | 1.17 | 0.85 | 0.53 | 0.78 | 1.13 |
| d, Delay for Lane Group [s/veh] | 240.76 | 35.09 | 30.59 | 27.51 | 144.28 | 40.00 | 139.92 | 57.67 | 39.65 | 42.51 | 134.03 |
| Lane Group LOS | F | D | C | C | F | D | F | E | D | D | F |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 29.16 | 13.29 | 6.60 | 1.40 | 26.60 | 5.36 | 23.08 | 15.73 | 6.54 | 7.52 | 22.90 |
| 50th-Percentile Queue Length [ft/ln] | 728.93 | 332.35 | 164.99 | 34.93 | 665.08 | 134.09 | 577.06 | 393.21 | 163.45 | 187.96 | 572.45 |
| 95th-Percentile Queue Length [veh/ln] | 46.41 | 19.27 | 10.81 | 2.52 | 39.12 | 9.16 | 34.49 | 22.23 | 10.73 | 12.02 | 32.92 |
| 95th-Percentile Queue Length [ft/ln] | 1160.19 | 481.84 | 270.31 | 62.88 | 978.08 | 229.05 | 862.16 | 555.81 | 268.28 | 300.38 | 822.94 |

**Movement, Approach, & Intersection Results**

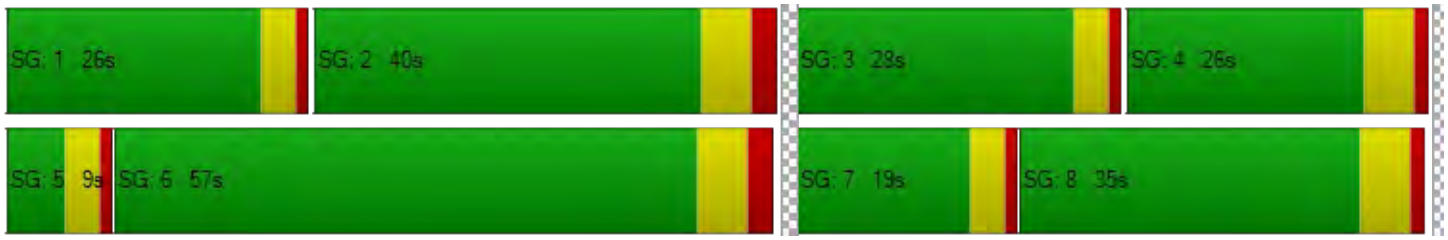
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 240.76 | 35.09 | 30.59 | 27.51 | 144.28 | 40.00 | 139.92 | 57.67 | 39.65 | 42.51 | 134.03 | 134.03 |
| Movement LOS | F | D | C | C | F | D | F | E | D | D | F | F |
| d_A, Approach Delay [s/veh] | 82.53 | | | 128.65 | | | 90.06 | | | 97.89 | | |
| Approach LOS | F | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 100.14 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 0.997 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| I_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 780 | 518 | 456 | 317 |
| d_b, Bicycle Delay [s] | 24.15 | 35.64 | 38.67 | 45.93 |
| I_b,int, Bicycle LOS Score for Intersection | 2.915 | 2.683 | 3.823 | 2.913 |
| Bicycle LOS | C | B | D | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 49.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.869 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 166 | 1960 | 135 | 94 | 2493 | 270 | 284 | 51 | 226 | 242 | 35 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 16 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 45 | 0 | 0 | 89 | 0 | 0 | 75 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 166 | 1976 | 90 | 94 | 2530 | 181 | 284 | 51 | 151 | 242 | 35 | 24 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 45 | 537 | 24 | 26 | 688 | 49 | 77 | 14 | 41 | 66 | 10 | 7 |
| Total Analysis Volume [veh/h] | 180 | 2148 | 98 | 102 | 2750 | 197 | 309 | 55 | 164 | 263 | 38 | 26 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 13 | 62 | 0 | 8 | 57 | 0 | 16 | 38 | 0 | 12 | 34 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 80 | 71 | 71 | 80 | 65 | 65 | 38 | 16 | 16 | 38 | 14 | 14 |
| g / C, Green / Cycle | 0.61 | 0.54 | 0.54 | 0.61 | 0.50 | 0.50 | 0.29 | 0.12 | 0.12 | 0.29 | 0.11 | 0.11 |
| (v / s)_i Volume / Saturation Flow Rate | 0.50 | 0.42 | 0.06 | 0.32 | 0.54 | 0.12 | 0.19 | 0.02 | 0.10 | 0.18 | 0.01 | 0.02 |
| s, saturation flow rate [veh/h] | 357 | 5094 | 1589 | 315 | 5094 | 1589 | 1594 | 3560 | 1589 | 1490 | 3560 | 1589 |
| c, Capacity [veh/h] | 259 | 2753 | 859 | 217 | 2533 | 790 | 534 | 433 | 193 | 500 | 383 | 171 |
| d1, Uniform Delay [s] | 39.65 | 23.85 | 14.70 | 25.68 | 32.84 | 18.85 | 39.73 | 51.20 | 56.21 | 38.54 | 52.59 | 52.89 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.19 | 0.11 | 0.11 | 0.50 | 0.11 | 0.15 | 0.46 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.31 | 0.50 | 0.06 | 2.82 | 40.43 | 0.16 | 4.53 | 0.13 | 13.12 | 3.58 | 0.11 | 0.41 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.69 | 0.78 | 0.11 | 0.47 | 1.09 | 0.25 | 0.58 | 0.13 | 0.85 | 0.53 | 0.10 | 0.15 |
| d, Delay for Lane Group [s/veh] | 53.96 | 24.35 | 14.76 | 28.50 | 73.27 | 19.01 | 44.26 | 51.33 | 69.33 | 42.12 | 52.70 | 53.30 |
| Lane Group LOS | D | C | B | C | F | B | D | D | E | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 3.14 | 16.35 | 1.38 | 1.31 | 34.14 | 3.34 | 9.13 | 0.81 | 5.97 | 7.48 | 0.57 | 0.79 |
| 50th-Percentile Queue Length [ft/ln] | 78.59 | 408.65 | 34.55 | 32.81 | 853.48 | 83.44 | 228.22 | 20.29 | 149.16 | 186.95 | 14.21 | 19.84 |
| 95th-Percentile Queue Length [veh/ln] | 5.66 | 22.98 | 2.49 | 2.36 | 46.61 | 6.01 | 14.08 | 1.46 | 9.97 | 11.96 | 1.02 | 1.43 |
| 95th-Percentile Queue Length [ft/ln] | 141.46 | 574.42 | 62.19 | 59.05 | 1165.19 | 150.19 | 352.09 | 36.52 | 249.31 | 299.07 | 25.58 | 35.70 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 53.96 | 24.35 | 14.76 | 28.50 | 73.27 | 19.01 | 44.26 | 51.33 | 69.33 | 42.12 | 52.70 | 53.30 |
| Movement LOS | D | C | B | C | F | B | D | D | E | D | D | D |
| d_A, Approach Delay [s/veh] | 26.16 | | | 68.27 | | | 52.78 | | | 44.23 | | |
| Approach LOS | C | | | E | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 49.60 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.869 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 851 | 774 | 484 | 422 |
| d_b, Bicycle Delay [s] | 21.56 | 24.53 | 37.56 | 40.65 |
| l_b,int, Bicycle LOS Score for Intersection | 2.919 | 3.286 | 2.057 | 1.839 |
| Bicycle LOS | C | C | B | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 11.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.482 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 57 | 93 | 15 | 57 | 44 | 201 | 226 | 503 | 93 | 6 | 412 | 55 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 22 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 5 | 0 | 0 | 66 | 0 | 0 | 31 | 0 | 0 | 18 |
| Total Hourly Volume [veh/h] | 57 | 93 | 10 | 57 | 44 | 135 | 226 | 553 | 62 | 6 | 434 | 37 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 25 | 3 | 15 | 12 | 37 | 61 | 150 | 17 | 2 | 118 | 10 |
| Total Analysis Volume [veh/h] | 62 | 101 | 11 | 62 | 48 | 147 | 246 | 601 | 67 | 7 | 472 | 40 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 87 | 0 | 0 | 87 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 11 | 11 | 11 | 11 | 26 | 26 | 26 | 26 | 26 |
| g / C, Green / Cycle | 0.22 | 0.22 | 0.22 | 0.22 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.06 | 0.05 | 0.12 | 0.28 | 0.36 | 0.01 | 0.25 | 0.03 |
| s, saturation flow rate [veh/h] | 1188 | 1838 | 1281 | 1650 | 888 | 1837 | 769 | 1870 | 1589 |
| c, Capacity [veh/h] | 230 | 400 | 306 | 359 | 431 | 966 | 308 | 983 | 835 |
| d1, Uniform Delay [s] | 22.61 | 16.24 | 20.00 | 17.30 | 15.81 | 8.81 | 15.60 | 7.50 | 5.75 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.23 | 0.14 | 0.12 | 0.48 | 0.44 | 0.33 | 0.01 | 0.14 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.27 | 0.28 | 0.20 | 0.54 | 0.57 | 0.69 | 0.02 | 0.48 | 0.05 |
| d, Delay for Lane Group [s/veh] | 22.84 | 16.38 | 20.12 | 17.78 | 16.25 | 9.14 | 15.61 | 7.63 | 5.76 |
| Lane Group LOS | C | B | C | B | B | A | B | A | A |
| Critical Lane Group | No | No | No | Yes | No | Yes | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.62 | 0.88 | 0.57 | 1.66 | 2.03 | 3.24 | 0.05 | 1.93 | 0.13 |
| 50th-Percentile Queue Length [ft/ln] | 15.57 | 22.12 | 14.19 | 41.49 | 50.77 | 81.03 | 1.32 | 48.32 | 3.13 |
| 95th-Percentile Queue Length [veh/ln] | 1.12 | 1.59 | 1.02 | 2.99 | 3.66 | 5.83 | 0.10 | 3.48 | 0.23 |
| 95th-Percentile Queue Length [ft/ln] | 28.03 | 39.82 | 25.54 | 74.68 | 91.38 | 145.86 | 2.38 | 86.98 | 5.64 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 22.84 | 16.38 | 16.38 | 20.12 | 17.78 | 17.78 | 16.25 | 9.14 | 9.14 | 15.61 | 7.63 | 5.76 |
| Movement LOS | C | B | B | C | B | B | B | A | A | B | A | A |
| d_A, Approach Delay [s/veh] | 18.69 | | | 18.34 | | | 11.06 | | | 7.60 | | |
| Approach LOS | B | | | B | | | B | | | A | | |
| d_I, Intersection Delay [s/veh] | 11.81 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.482 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1066 | 1066 | 3229 | 3229 |
| d_b, Bicycle Delay [s] | 5.45 | 5.45 | 9.43 | 9.43 |
| l_b,int, Bicycle LOS Score for Intersection | 1.855 | 2.093 | 3.119 | 2.446 |
| Bicycle LOS | A | B | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 32.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.598 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 220 | 1185 | 180 | 91 | 976 | 291 | 204 | 249 | 228 | 235 | 629 | 221 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 27 | 27 | 27 | 0 | 28 | 0 | 0 | 0 | 28 | 28 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 11 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 68 | 0 | 0 | 96 | 0 | 0 | 84 | 0 | 0 | 73 |
| Total Hourly Volume [veh/h] | 247 | 1223 | 139 | 91 | 1042 | 195 | 204 | 249 | 172 | 263 | 629 | 148 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 67 | 332 | 38 | 25 | 283 | 53 | 55 | 68 | 47 | 71 | 171 | 40 |
| Total Analysis Volume [veh/h] | 268 | 1329 | 151 | 99 | 1133 | 212 | 222 | 271 | 187 | 286 | 684 | 161 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 20 | 45 | 0 | 13 | 38 | 0 | 24 | 38 | 0 | 24 | 38 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 64 | 53 | 53 | 64 | 48 | 48 | 43 | 22 | 22 | 43 | 26 | 26 |
| g / C, Green / Cycle | 0.54 | 0.44 | 0.44 | 0.54 | 0.40 | 0.40 | 0.36 | 0.18 | 0.18 | 0.36 | 0.21 | 0.21 |
| (v / s)_i Volume / Saturation Flow Rate | 0.38 | 0.26 | 0.09 | 0.17 | 0.22 | 0.13 | 0.21 | 0.08 | 0.12 | 0.22 | 0.19 | 0.10 |
| s, saturation flow rate [veh/h] | 711 | 5094 | 1589 | 572 | 5094 | 1589 | 1052 | 3560 | 1589 | 1308 | 3560 | 1589 |
| c, Capacity [veh/h] | 399 | 2230 | 696 | 324 | 2039 | 636 | 344 | 648 | 289 | 457 | 759 | 339 |
| d1, Uniform Delay [s] | 20.44 | 25.69 | 20.98 | 17.16 | 27.80 | 24.94 | 31.27 | 43.52 | 45.56 | 30.64 | 46.04 | 41.38 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.44 | 0.04 | 0.04 | 0.07 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 8.75 | 1.18 | 0.72 | 2.43 | 1.10 | 1.41 | 8.06 | 0.16 | 0.91 | 0.90 | 1.67 | 0.39 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.67 | 0.60 | 0.22 | 0.31 | 0.56 | 0.33 | 0.65 | 0.42 | 0.65 | 0.63 | 0.90 | 0.48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 29.19 | 26.87 | 21.70 | 19.59 | 28.90 | 26.35 | 39.32 | 43.68 | 46.47 | 31.54 | 47.70 | 41.77 |
| Lane Group LOS | C | C | C | B | C | C | D | D | D | C | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 4.73 | 9.33 | 2.67 | 1.47 | 8.18 | 4.26 | 5.32 | 3.50 | 5.10 | 6.22 | 9.78 | 4.10 |
| 50th-Percentile Queue Length [ft/ln] | 118.13 | 233.37 | 66.72 | 36.68 | 204.40 | 106.56 | 132.91 | 87.40 | 127.60 | 155.55 | 244.57 | 102.54 |
| 95th-Percentile Queue Length [veh/ln] | 8.29 | 14.35 | 4.80 | 2.64 | 12.87 | 7.65 | 9.10 | 6.29 | 8.81 | 10.31 | 14.91 | 7.38 |
| 95th-Percentile Queue Length [ft/ln] | 207.26 | 358.64 | 120.10 | 66.02 | 321.64 | 191.20 | 227.44 | 157.32 | 220.23 | 257.82 | 372.81 | 184.58 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 29.19 | 26.87 | 21.70 | 19.59 | 28.90 | 26.35 | 39.32 | 43.68 | 46.47 | 31.54 | 47.70 | 41.77 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | C | C | B | C | C | D | D | D | C | D | D |
| d_A, Approach Delay [s/veh] | 26.78 | | | 27.88 | | | 43.02 | | | 42.77 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 32.92 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.598 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 641 | 525 | 525 | 525 |
| d_b, Bicycle Delay [s] | 27.71 | 32.67 | 32.67 | 32.67 |
| l_b,int, Bicycle LOS Score for Intersection | 2.558 | 2.407 | 1.980 | 2.553 |
| Bicycle LOS | B | B | A | B |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 23.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.550 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 275 | 1148 | 168 | 52 | 1164 | 278 | 257 | 228 | 174 | 258 | 336 | 82 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 54 | 54 | 55 | 59 | 25 | 0 | 0 | 59 | 25 | 55 | 26 | 27 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 38 | 38 | 0 | 0 | 0 | 23 | 0 | 11 | 7 | 11 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 86 | 0 | 0 | 92 | 0 | 0 | 66 | 0 | 0 | 40 |
| Total Hourly Volume [veh/h] | 329 | 1202 | 175 | 149 | 1189 | 186 | 257 | 310 | 133 | 324 | 369 | 80 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 89 | 327 | 48 | 40 | 323 | 51 | 70 | 84 | 36 | 88 | 100 | 22 |
| Total Analysis Volume [veh/h] | 358 | 1307 | 190 | 162 | 1292 | 202 | 279 | 337 | 145 | 352 | 401 | 87 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 27 | 64 | 0 | 10 | 47 | 0 | 32 | 29 | 0 | 17 | 14 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 |
| L, Total Lost Time per Cycle [s] | 4.00 | 6.40 | 6.40 | 4.00 | 6.40 | 6.40 | 4.00 | 5.40 | 5.40 | 4.00 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 4.40 | 4.40 | 2.00 | 4.40 | 4.40 | 2.00 | 3.40 | 3.40 | 2.00 | 3.40 | 3.40 |
| g_i, Effective Green Time [s] | 9 | 24 | 24 | 5 | 20 | 20 | 7 | 8 | 8 | 9 | 10 | 10 |
| g / C, Green / Cycle | 0.14 | 0.36 | 0.36 | 0.07 | 0.30 | 0.30 | 0.11 | 0.13 | 0.13 | 0.14 | 0.15 | 0.15 |
| (v / s)_i Volume / Saturation Flow Rate | 0.10 | 0.26 | 0.12 | 0.05 | 0.25 | 0.13 | 0.08 | 0.07 | 0.09 | 0.10 | 0.08 | 0.05 |
| s, saturation flow rate [veh/h] | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 |
| c, Capacity [veh/h] | 472 | 1857 | 579 | 258 | 1542 | 481 | 391 | 646 | 202 | 468 | 759 | 237 |
| d1, Uniform Delay [s] | 27.57 | 18.01 | 15.21 | 29.78 | 21.60 | 18.47 | 28.37 | 27.07 | 27.82 | 27.60 | 26.06 | 25.40 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.95 | 0.18 | 0.12 | 0.93 | 0.48 | 0.22 | 0.91 | 0.24 | 1.81 | 0.93 | 0.21 | 0.35 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.76 | 0.70 | 0.33 | 0.63 | 0.84 | 0.42 | 0.71 | 0.52 | 0.72 | 0.75 | 0.53 | 0.37 |
| d, Delay for Lane Group [s/veh] | 28.52 | 18.19 | 15.33 | 30.72 | 22.08 | 18.69 | 29.28 | 27.32 | 29.63 | 28.53 | 26.28 | 25.76 |
| Lane Group LOS | C | B | B | C | C | B | C | C | C | C | C | C |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 2.52 | 4.79 | 1.77 | 1.18 | 5.41 | 2.17 | 1.98 | 1.52 | 2.09 | 2.48 | 1.77 | 1.13 |
| 50th-Percentile Queue Length [ft/ln] | 62.99 | 119.75 | 44.29 | 29.40 | 135.24 | 54.27 | 49.56 | 37.91 | 52.34 | 61.90 | 44.18 | 28.37 |
| 95th-Percentile Queue Length [veh/ln] | 4.54 | 8.38 | 3.19 | 2.12 | 9.22 | 3.91 | 3.57 | 2.73 | 3.77 | 4.46 | 3.18 | 2.04 |
| 95th-Percentile Queue Length [ft/ln] | 113.38 | 209.49 | 79.73 | 52.92 | 230.60 | 97.69 | 89.20 | 68.24 | 94.21 | 111.43 | 79.53 | 51.07 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 28.52 | 18.19 | 15.33 | 30.72 | 22.08 | 18.69 | 29.28 | 27.32 | 29.63 | 28.53 | 26.28 | 25.76 |
| Movement LOS | C | B | B | C | C | B | C | C | C | C | C | C |
| d_A, Approach Delay [s/veh] | 19.89 | | | 22.51 | | | 28.48 | | | 27.17 | | |
| Approach LOS | B | | | C | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 23.21 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.550 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1741 | 1227 | 713 | 260 |
| d_b, Bicycle Delay [s] | 0.55 | 4.94 | 13.69 | 25.04 |
| l_b,int, Bicycle LOS Score for Intersection | 2.627 | 2.521 | 2.014 | 2.044 |
| Bicycle LOS | B | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 21.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.636 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 169 | 1594 | 132 | 90 | 1332 | 182 | 232 | 56 | 181 | 207 | 39 | 30 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 42 | 0 | 0 | 41 | 27 | 28 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 38 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 44 | 0 | 0 | 69 | 0 | 0 | 60 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 169 | 1674 | 88 | 90 | 1384 | 140 | 260 | 56 | 121 | 207 | 39 | 20 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 46 | 455 | 24 | 24 | 376 | 38 | 71 | 15 | 33 | 56 | 11 | 5 |
| Total Analysis Volume [veh/h] | 184 | 1820 | 96 | 98 | 1504 | 152 | 283 | 61 | 132 | 225 | 42 | 22 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 17 | 61 | 0 | 11 | 55 | 0 | 20 | 27 | 0 | 21 | 28 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 56 | 48 | 48 | 56 | 45 | 45 | 27 | 11 | 11 | 27 | 8 | 8 |
| g / C, Green / Cycle | 0.59 | 0.50 | 0.50 | 0.59 | 0.47 | 0.47 | 0.28 | 0.11 | 0.11 | 0.28 | 0.08 | 0.08 |
| (v / s)_i Volume / Saturation Flow Rate | 0.34 | 0.36 | 0.06 | 0.24 | 0.30 | 0.10 | 0.17 | 0.02 | 0.08 | 0.15 | 0.01 | 0.01 |
| s, saturation flow rate [veh/h] | 536 | 5094 | 1589 | 404 | 5094 | 1589 | 1624 | 3560 | 1589 | 1504 | 3560 | 1589 |
| c, Capacity [veh/h] | 359 | 2546 | 794 | 284 | 2401 | 749 | 555 | 395 | 176 | 518 | 280 | 125 |
| d1, Uniform Delay [s] | 15.05 | 18.63 | 12.75 | 15.11 | 18.98 | 14.79 | 29.41 | 38.50 | 41.27 | 28.32 | 41.13 | 41.21 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.31 | 0.11 | 0.11 | 0.18 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 5.15 | 0.38 | 0.07 | 0.72 | 0.27 | 0.13 | 2.07 | 0.18 | 6.24 | 0.94 | 0.25 | 0.66 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.51 | 0.71 | 0.12 | 0.35 | 0.63 | 0.20 | 0.51 | 0.15 | 0.75 | 0.43 | 0.15 | 0.18 |
| d, Delay for Lane Group [s/veh] | 20.19 | 19.02 | 12.81 | 15.83 | 19.25 | 14.92 | 31.48 | 38.68 | 47.51 | 29.26 | 41.37 | 41.88 |
| Lane Group LOS | C | B | B | B | B | B | C | D | D | C | D | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 2.04 | 9.26 | 1.01 | 0.83 | 7.51 | 1.79 | 5.69 | 0.65 | 3.26 | 4.25 | 0.46 | 0.50 |
| 50th-Percentile Queue Length [ft/ln] | 51.05 | 231.45 | 25.18 | 20.74 | 187.64 | 44.66 | 142.37 | 16.15 | 81.39 | 106.23 | 11.58 | 12.48 |
| 95th-Percentile Queue Length [veh/ln] | 3.68 | 14.25 | 1.81 | 1.49 | 12.00 | 3.22 | 9.61 | 1.16 | 5.86 | 7.63 | 0.83 | 0.90 |
| 95th-Percentile Queue Length [ft/ln] | 91.90 | 356.20 | 45.32 | 37.33 | 299.97 | 80.40 | 240.22 | 29.06 | 146.51 | 190.74 | 20.85 | 22.47 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 20.19 | 19.02 | 12.81 | 15.83 | 19.25 | 14.92 | 31.48 | 38.68 | 47.51 | 29.26 | 41.37 | 41.88 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | B | B | B | B | B | C | D | D | C | D | D |
| d_A, Approach Delay [s/veh] | 18.84 | | | 18.68 | | | 36.85 | | | 31.98 | | |
| Approach LOS | B | | | B | | | D | | | C | | |
| d_I, Intersection Delay [s/veh] | 21.46 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.636 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1143 | 1017 | 431 | 452 |
| d_b, Bicycle Delay [s] | 8.78 | 11.54 | 29.40 | 28.62 |
| l_b,int, Bicycle LOS Score for Intersection | 2.739 | 2.562 | 2.002 | 1.806 |
| Bicycle LOS | B | B | B | A |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 10.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.423 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 63 | 47 | 10 | 35 | 37 | 213 | 117 | 253 | 40 | 11 | 405 | 35 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 14 | 14 | 27 | 0 | 0 | 28 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 53 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 3 | 0 | 0 | 75 | 0 | 0 | 13 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 63 | 47 | 7 | 35 | 37 | 152 | 131 | 296 | 27 | 11 | 486 | 23 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 13 | 2 | 10 | 10 | 41 | 36 | 80 | 7 | 3 | 132 | 6 |
| Total Analysis Volume [veh/h] | 68 | 51 | 8 | 38 | 40 | 165 | 142 | 322 | 29 | 12 | 528 | 25 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 34 | 0 | 0 | 34 | 0 | 0 | 86 | 0 | 0 | 86 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C |
|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 7 | 7 | 7 | 7 | 19 | 19 | 19 | 19 |
| g / C, Green / Cycle | 0.19 | 0.19 | 0.19 | 0.19 | 0.49 | 0.49 | 0.49 | 0.49 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06 | 0.03 | 0.03 | 0.13 | 0.17 | 0.19 | 0.01 | 0.30 |
| s, saturation flow rate [veh/h] | 1177 | 1826 | 1344 | 1637 | 855 | 1843 | 1030 | 1855 |
| c, Capacity [veh/h] | 208 | 345 | 333 | 309 | 373 | 899 | 512 | 905 |
| d1, Uniform Delay [s] | 19.63 | 13.46 | 16.05 | 14.89 | 14.32 | 6.41 | 9.24 | 7.40 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.34 | 0.09 | 0.06 | 0.91 | 0.24 | 0.10 | 0.01 | 0.25 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.33 | 0.17 | 0.11 | 0.66 | 0.38 | 0.39 | 0.02 | 0.61 |
| d, Delay for Lane Group [s/veh] | 19.97 | 13.55 | 16.11 | 15.81 | 14.56 | 6.52 | 9.24 | 7.65 |
| Lane Group LOS | B | B | B | B | B | A | A | A |
| Critical Lane Group | No | No | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 0.54 | 0.33 | 0.25 | 1.33 | 0.87 | 0.92 | 0.05 | 1.69 |
| 50th-Percentile Queue Length [ft/ln] | 13.43 | 8.35 | 6.17 | 33.26 | 21.79 | 23.01 | 1.21 | 42.22 |
| 95th-Percentile Queue Length [veh/ln] | 0.97 | 0.60 | 0.44 | 2.40 | 1.57 | 1.66 | 0.09 | 3.04 |
| 95th-Percentile Queue Length [ft/ln] | 24.17 | 15.03 | 11.11 | 59.88 | 39.22 | 41.42 | 2.17 | 76.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 19.97 | 13.55 | 13.55 | 16.11 | 15.81 | 15.81 | 14.56 | 6.52 | 6.52 | 9.24 | 7.65 | 7.65 |
| Movement LOS | B | B | B | B | B | B | B | A | A | A | A | A |
| d_A, Approach Delay [s/veh] | 16.99 | | | 15.85 | | | 8.83 | | | 7.68 | | |
| Approach LOS | B | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 10.30 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.423 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1396 | 1396 | 4027 | 4027 |
| d_b, Bicycle Delay [s] | 1.80 | 1.80 | 20.30 | 20.30 |
| l_b,int, Bicycle LOS Score for Intersection | 1.774 | 2.084 | 2.395 | 2.512 |
| Bicycle LOS | A | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 5: Power Road & Access A**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 764.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.779 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 1 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 1 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 100.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1546 | 0 | 0 | 1634 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 54 | 16 | 71 | 34 | 34 | 61 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 38 | 0 | 0 | 11 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1638 | 16 | 71 | 1679 | 34 | 61 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 445 | 4 | 19 | 456 | 9 | 17 |
| Total Analysis Volume [veh/h] | 1780 | 17 | 77 | 1825 | 37 | 66 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.49 | 0.02 | 1.78 | 0.27 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 47.55 | 0.00 | 764.60 | 24.97 |
| Movement LOS | A | A | E | A | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 2.31 | 0.00 | 4.87 | 1.05 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 57.82 | 0.00 | 121.81 | 26.34 |
| d_A, Approach Delay [s/veh] | 0.00 | | 1.92 | | 290.67 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 8.84 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Power Road & Access B**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 26.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.288 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 2 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1546 | 0 | 0 | 1634 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 100 | 16 | 0 | 105 | 0 | 63 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 38 | 0 | 0 | 11 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1684 | 16 | 0 | 1750 | 0 | 63 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 458 | 4 | 0 | 476 | 0 | 17 |
| Total Analysis Volume [veh/h] | 1830 | 17 | 0 | 1902 | 0 | 68 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.00 | 0.02 | 0.00 | 0.29 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.28 |
| Movement LOS | A | A | | A | | D |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.15 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 28.74 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.00 | | 26.28 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 0.47 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Access C & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.016 |

**Intersection Setup**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 448 | 0 | 0 | 676 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 8 | 106 | 66 | 0 | 108 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 99 | 0 | 0 | 29 |
| Total Hourly Volume [veh/h] | 0 | 8 | 653 | 66 | 0 | 813 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 2 | 177 | 18 | 0 | 221 |
| Total Analysis Volume [veh/h] | 0 | 9 | 710 | 72 | 0 | 884 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 11.68 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 1.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 11.68 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Access D & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 23.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.323 |

**Intersection Setup**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 1 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 448 | 0 | 0 | 676 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 87 | 8 | 48 | 66 | 21 | 21 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 99 | 0 | 0 | 29 |
| Total Hourly Volume [veh/h] | 87 | 8 | 595 | 66 | 21 | 726 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 24 | 2 | 162 | 18 | 6 | 197 |
| Total Analysis Volume [veh/h] | 95 | 9 | 647 | 72 | 23 | 789 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.32 | 0.02 | 0.01 | 0.00 | 0.04 | 0.01 |
| d_M, Delay for Movement [s/veh] | 22.97 | 11.38 | 0.00 | 0.00 | 12.05 | 0.00 |
| Movement LOS | C | B | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 1.36 | 0.05 | 0.00 | 0.00 | 0.13 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 33.93 | 1.19 | 0.00 | 0.00 | 3.37 | 0.00 |
| d_A, Approach Delay [s/veh] | 21.97 | | 0.00 | | 0.34 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 1.57 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Access E & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.015 |

**Intersection Setup**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 448 | 0 | 0 | 676 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 8 | 33 | 24 | 0 | 42 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 99 | 0 | 0 | 29 |
| Total Hourly Volume [veh/h] | 0 | 8 | 580 | 24 | 0 | 747 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 2 | 158 | 7 | 0 | 203 |
| Total Analysis Volume [veh/h] | 0 | 9 | 630 | 26 | 0 | 812 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 11.30 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 1.18 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 11.30 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.07 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 27.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.535 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 134 | 1080 | 171 | 203 | 1311 | 276 | 196 | 312 | 131 | 135 | 302 | 198 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 36 | 36 | 36 | 0 | 38 | 0 | 0 | 0 | 38 | 38 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 37 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 68 | 0 | 0 | 91 | 0 | 0 | 56 | 0 | 0 | 65 |
| Total Hourly Volume [veh/h] | 170 | 1153 | 139 | 203 | 1365 | 185 | 196 | 312 | 113 | 173 | 302 | 133 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 46 | 313 | 38 | 55 | 371 | 50 | 53 | 85 | 31 | 47 | 82 | 36 |
| Total Analysis Volume [veh/h] | 185 | 1253 | 151 | 221 | 1484 | 201 | 213 | 339 | 123 | 188 | 328 | 145 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 13 | 48 | 0 | 18 | 53 | 0 | 25 | 41 | 0 | 13 | 29 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 74 | 61 | 61 | 74 | 62 | 62 | 33 | 20 | 20 | 33 | 15 | 15 |
| g / C, Green / Cycle | 0.62 | 0.51 | 0.51 | 0.62 | 0.52 | 0.52 | 0.27 | 0.17 | 0.17 | 0.27 | 0.13 | 0.13 |
| (v / s)_i Volume / Saturation Flow Rate | 0.37 | 0.25 | 0.09 | 0.38 | 0.29 | 0.13 | 0.16 | 0.09 | 0.09 | 0.15 | 0.09 | 0.09 |
| s, saturation flow rate [veh/h] | 494 | 5094 | 1589 | 588 | 5094 | 1589 | 1336 | 3560 | 1632 | 1214 | 3560 | 1589 |
| c, Capacity [veh/h] | 334 | 2595 | 810 | 389 | 2631 | 821 | 379 | 594 | 272 | 349 | 448 | 200 |
| d1, Uniform Delay [s] | 16.61 | 19.18 | 15.98 | 14.00 | 19.82 | 16.08 | 36.40 | 45.74 | 45.91 | 35.76 | 50.57 | 50.52 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.23 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 6.47 | 0.65 | 0.51 | 5.93 | 0.88 | 0.71 | 2.81 | 0.27 | 0.64 | 0.48 | 0.88 | 1.88 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.55 | 0.48 | 0.19 | 0.57 | 0.56 | 0.24 | 0.56 | 0.53 | 0.55 | 0.54 | 0.73 | 0.73 |
| d, Delay for Lane Group [s/veh] | 23.08 | 19.82 | 16.49 | 19.93 | 20.70 | 16.78 | 39.21 | 46.01 | 46.55 | 36.25 | 51.45 | 52.40 |
| Lane Group LOS | C | B | B | B | C | B | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 2.50 | 7.23 | 2.24 | 2.97 | 8.97 | 3.05 | 5.28 | 4.18 | 4.02 | 4.38 | 4.68 | 4.19 |
| 50th-Percentile Queue Length [ft/ln] | 62.58 | 180.69 | 56.12 | 74.14 | 224.33 | 76.22 | 132.10 | 104.55 | 100.55 | 109.52 | 117.01 | 104.75 |
| 95th-Percentile Queue Length [veh/ln] | 4.51 | 11.64 | 4.04 | 5.34 | 13.89 | 5.49 | 9.05 | 7.53 | 7.24 | 7.81 | 8.23 | 7.54 |
| 95th-Percentile Queue Length [ft/ln] | 112.65 | 290.92 | 101.02 | 133.45 | 347.15 | 137.20 | 226.34 | 188.18 | 180.99 | 195.34 | 205.71 | 188.55 |

**Movement, Approach, & Intersection Results**

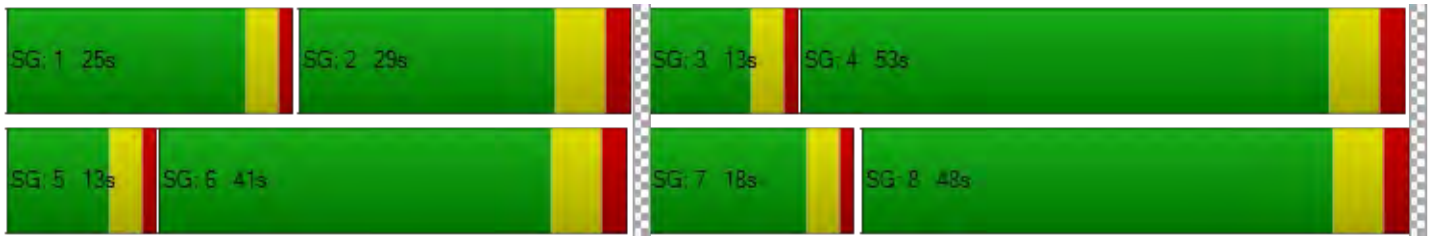
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 23.08 | 19.82 | 16.49 | 19.93 | 20.70 | 16.78 | 39.21 | 46.05 | 46.55 | 36.25 | 51.45 | 52.40 |
| Movement LOS | C | B | B | B | C | B | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 19.88 | | | 20.20 | | | 43.98 | | | 47.33 | | |
| Approach LOS | B | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 27.13 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.535 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 691 | 774 | 575 | 375 |
| d_b, Bicycle Delay [s] | 25.71 | 22.54 | 30.50 | 39.65 |
| l_b,int, Bicycle LOS Score for Intersection | 2.471 | 2.658 | 1.962 | 2.159 |
| Bicycle LOS | B | B | A | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 25.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.600 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 310 | 1128 | 290 | 51 | 1298 | 199 | 227 | 321 | 185 | 192 | 264 | 78 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 71 | 72 | 74 | 80 | 34 | 0 | 0 | 79 | 34 | 74 | 35 | 36 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 9 | 0 | 37 | 22 | 37 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 125 | 0 | 0 | 66 | 0 | 0 | 72 | 0 | 0 | 50 |
| Total Hourly Volume [veh/h] | 381 | 1200 | 255 | 147 | 1332 | 133 | 227 | 409 | 147 | 303 | 321 | 101 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 104 | 326 | 69 | 40 | 362 | 36 | 62 | 111 | 40 | 82 | 87 | 27 |
| Total Analysis Volume [veh/h] | 414 | 1304 | 277 | 160 | 1448 | 145 | 247 | 445 | 160 | 329 | 349 | 110 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 27 | 67 | 0 | 11 | 51 | 0 | 23 | 24 | 0 | 18 | 19 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| L, Total Lost Time per Cycle [s] | 4.00 | 6.40 | 6.40 | 4.00 | 6.40 | 6.40 | 4.00 | 5.40 | 5.40 | 4.00 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 4.40 | 4.40 | 2.00 | 4.40 | 4.40 | 2.00 | 3.40 | 3.40 | 2.00 | 3.40 | 3.40 |
| g_i, Effective Green Time [s] | 11 | 30 | 30 | 5 | 25 | 25 | 7 | 10 | 10 | 9 | 12 | 12 |
| g / C, Green / Cycle | 0.15 | 0.41 | 0.41 | 0.07 | 0.33 | 0.33 | 0.10 | 0.13 | 0.13 | 0.12 | 0.16 | 0.16 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.26 | 0.17 | 0.05 | 0.28 | 0.09 | 0.07 | 0.09 | 0.10 | 0.10 | 0.07 | 0.07 |
| s, saturation flow rate [veh/h] | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 |
| c, Capacity [veh/h] | 516 | 2070 | 646 | 248 | 1675 | 523 | 345 | 681 | 212 | 431 | 807 | 252 |
| d1, Uniform Delay [s] | 30.87 | 17.79 | 16.03 | 33.92 | 23.63 | 18.61 | 32.76 | 30.87 | 31.33 | 31.79 | 28.54 | 28.56 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.12 | 0.12 | 0.17 | 1.05 | 0.55 | 0.11 | 1.04 | 0.40 | 2.03 | 1.07 | 0.14 | 0.44 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.80 | 0.63 | 0.43 | 0.65 | 0.86 | 0.28 | 0.72 | 0.65 | 0.75 | 0.76 | 0.43 | 0.44 |
| d, Delay for Lane Group [s/veh] | 31.99 | 17.90 | 16.19 | 34.97 | 24.18 | 18.72 | 33.80 | 31.27 | 33.36 | 32.86 | 28.67 | 29.00 |
| Lane Group LOS | C | B | B | C | C | B | C | C | C | C | C | C |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 3.41 | 5.16 | 2.98 | 1.36 | 7.10 | 1.68 | 2.07 | 2.38 | 2.69 | 2.73 | 1.75 | 1.68 |
| 50th-Percentile Queue Length [ft/ln] | 85.14 | 129.02 | 74.51 | 33.94 | 177.55 | 41.89 | 51.68 | 59.39 | 67.33 | 68.18 | 43.80 | 41.98 |
| 95th-Percentile Queue Length [veh/ln] | 6.13 | 8.89 | 5.36 | 2.44 | 11.47 | 3.02 | 3.72 | 4.28 | 4.85 | 4.91 | 3.15 | 3.02 |
| 95th-Percentile Queue Length [ft/ln] | 153.25 | 222.17 | 134.12 | 61.09 | 286.81 | 75.41 | 93.02 | 106.91 | 121.19 | 122.73 | 78.84 | 75.57 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 31.99 | 17.90 | 16.19 | 34.97 | 24.18 | 18.72 | 33.80 | 31.27 | 33.36 | 32.86 | 28.67 | 29.00 |
| Movement LOS | C | B | B | C | C | B | C | C | C | C | C | C |
| d_A, Approach Delay [s/veh] | 20.59 | | | 24.71 | | | 32.40 | | | 30.47 | | |
| Approach LOS | C | | | C | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 25.24 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.600 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1618 | 1191 | 497 | 363 |
| d_b, Bicycle Delay [s] | 1.37 | 6.13 | 21.16 | 25.09 |
| l_b,int, Bicycle LOS Score for Intersection | 2.726 | 2.560 | 2.068 | 2.021 |
| Bicycle LOS | B | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 22.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.674 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 134 | 1470 | 132 | 93 | 1751 | 199 | 180 | 50 | 155 | 233 | 32 | 34 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 57 | 0 | 0 | 54 | 36 | 38 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 16 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 44 | 0 | 0 | 78 | 0 | 0 | 51 | 0 | 0 | 11 |
| Total Hourly Volume [veh/h] | 134 | 1543 | 88 | 93 | 1842 | 157 | 218 | 50 | 104 | 233 | 32 | 23 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 36 | 419 | 24 | 25 | 501 | 43 | 59 | 14 | 28 | 63 | 9 | 6 |
| Total Analysis Volume [veh/h] | 146 | 1677 | 96 | 101 | 2002 | 171 | 237 | 54 | 113 | 253 | 35 | 25 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 11 | 67 | 0 | 9 | 65 | 0 | 16 | 27 | 0 | 17 | 28 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 70 | 62 | 62 | 70 | 60 | 60 | 31 | 11 | 11 | 31 | 12 | 12 |
| g / C, Green / Cycle | 0.62 | 0.54 | 0.54 | 0.62 | 0.53 | 0.53 | 0.27 | 0.09 | 0.09 | 0.27 | 0.10 | 0.10 |
| (v / s)_i Volume / Saturation Flow Rate | 0.40 | 0.33 | 0.06 | 0.25 | 0.39 | 0.11 | 0.15 | 0.02 | 0.07 | 0.16 | 0.01 | 0.02 |
| s, saturation flow rate [veh/h] | 367 | 5094 | 1589 | 411 | 5094 | 1589 | 1586 | 3560 | 1589 | 1549 | 3560 | 1589 |
| c, Capacity [veh/h] | 265 | 2758 | 861 | 288 | 2691 | 840 | 513 | 333 | 149 | 497 | 365 | 163 |
| d1, Uniform Delay [s] | 22.04 | 17.84 | 12.74 | 13.53 | 20.86 | 14.19 | 34.97 | 47.47 | 50.33 | 35.34 | 46.31 | 46.59 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.32 | 0.11 | 0.11 | 0.31 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 8.02 | 0.22 | 0.06 | 0.73 | 0.42 | 0.12 | 1.93 | 0.23 | 7.68 | 2.32 | 0.11 | 0.43 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.55 | 0.61 | 0.11 | 0.35 | 0.74 | 0.20 | 0.46 | 0.16 | 0.76 | 0.51 | 0.10 | 0.15 |
| d, Delay for Lane Group [s/veh] | 30.06 | 18.06 | 12.79 | 14.26 | 21.28 | 14.31 | 36.90 | 47.70 | 58.02 | 37.67 | 46.42 | 47.02 |
| Lane Group LOS | C | B | B | B | C | B | D | D | E | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.94 | 9.14 | 1.13 | 0.97 | 12.54 | 2.20 | 5.72 | 0.71 | 3.42 | 6.20 | 0.45 | 0.66 |
| 50th-Percentile Queue Length [ft/ln] | 48.58 | 228.42 | 28.17 | 24.23 | 313.54 | 54.88 | 143.10 | 17.74 | 85.49 | 154.97 | 11.29 | 16.51 |
| 95th-Percentile Queue Length [veh/ln] | 3.50 | 14.09 | 2.03 | 1.74 | 18.35 | 3.95 | 9.65 | 1.28 | 6.16 | 10.28 | 0.81 | 1.19 |
| 95th-Percentile Queue Length [ft/ln] | 87.44 | 352.36 | 50.71 | 43.61 | 458.73 | 98.79 | 241.19 | 31.93 | 153.89 | 257.05 | 20.32 | 29.71 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 30.06 | 18.06 | 12.79 | 14.26 | 21.28 | 14.31 | 36.90 | 47.70 | 58.02 | 37.67 | 46.42 | 47.02 |
| Movement LOS | C | B | B | B | C | B | D | D | E | D | D | D |
| d_A, Approach Delay [s/veh] | 18.71 | | | 20.45 | | | 44.25 | | | 39.39 | | |
| Approach LOS | B | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 22.93 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.674 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1067 | 1032 | 363 | 380 |
| d_b, Bicycle Delay [s] | 12.37 | 13.32 | 38.07 | 37.26 |
| l_b,int, Bicycle LOS Score for Intersection | 2.639 | 2.853 | 1.935 | 1.827 |
| Bicycle LOS | B | C | A | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 10.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.414 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 39 | 81 | 13 | 50 | 38 | 164 | 179 | 394 | 63 | 5 | 338 | 48 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 19 | 18 | 36 | 0 | 0 | 38 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 22 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 4 | 0 | 0 | 60 | 0 | 0 | 21 | 0 | 0 | 16 |
| Total Hourly Volume [veh/h] | 39 | 81 | 9 | 50 | 38 | 123 | 197 | 480 | 42 | 5 | 398 | 32 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 11 | 22 | 2 | 14 | 10 | 33 | 54 | 130 | 11 | 1 | 108 | 9 |
| Total Analysis Volume [veh/h] | 42 | 88 | 10 | 54 | 41 | 134 | 214 | 522 | 46 | 5 | 433 | 35 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 37 | 0 | 0 | 37 | 0 | 0 | 83 | 0 | 0 | 83 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C |
|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 8 | 8 | 8 | 8 | 21 | 21 | 21 | 21 |
| g / C, Green / Cycle | 0.18 | 0.18 | 0.18 | 0.18 | 0.51 | 0.51 | 0.51 | 0.51 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.05 | 0.04 | 0.11 | 0.23 | 0.31 | 0.01 | 0.25 |
| s, saturation flow rate [veh/h] | 1209 | 1837 | 1297 | 1647 | 925 | 1844 | 843 | 1846 |
| c, Capacity [veh/h] | 218 | 328 | 287 | 294 | 442 | 947 | 374 | 948 |
| d1, Uniform Delay [s] | 19.97 | 14.82 | 18.07 | 15.69 | 13.62 | 7.11 | 12.12 | 6.59 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.16 | 0.19 | 0.12 | 0.72 | 0.31 | 0.23 | 0.01 | 0.15 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.19 | 0.30 | 0.19 | 0.59 | 0.48 | 0.60 | 0.01 | 0.49 |
| d, Delay for Lane Group [s/veh] | 20.13 | 15.00 | 18.19 | 16.41 | 13.92 | 7.34 | 12.13 | 6.74 |
| Lane Group LOS | C | B | B | B | B | A | B | A |
| Critical Lane Group | No | No | No | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.34 | 0.63 | 0.40 | 1.21 | 1.33 | 1.76 | 0.03 | 1.34 |
| 50th-Percentile Queue Length [ft/ln] | 8.44 | 15.70 | 10.03 | 30.36 | 33.31 | 44.07 | 0.67 | 33.49 |
| 95th-Percentile Queue Length [veh/ln] | 0.61 | 1.13 | 0.72 | 2.19 | 2.40 | 3.17 | 0.05 | 2.41 |
| 95th-Percentile Queue Length [ft/ln] | 15.19 | 28.27 | 18.06 | 54.64 | 59.95 | 79.32 | 1.21 | 60.28 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 20.13 | 15.00 | 15.00 | 18.19 | 16.41 | 16.41 | 13.92 | 7.34 | 7.34 | 12.13 | 6.74 | 6.74 |
| Movement LOS | C | B | B | B | B | B | B | A | A | B | A | A |
| d_A, Approach Delay [s/veh] | 16.54 | | | 16.83 | | | 9.14 | | | 6.80 | | |
| Approach LOS | B | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 10.18 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.414 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1472 | 1472 | 3684 | 3684 |
| d_b, Bicycle Delay [s] | 1.45 | 1.45 | 14.74 | 14.74 |
| l_b,int, Bicycle LOS Score for Intersection | 1.797 | 2.036 | 2.885 | 2.366 |
| Bicycle LOS | A | B | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 5: Power Road & Access A**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 601.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.641 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 1 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 1 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 100.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1349 | 0 | 0 | 1188 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 74 | 21 | 97 | 45 | 45 | 81 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 16 | 0 | 0 | 37 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1439 | 21 | 97 | 1270 | 45 | 81 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 391 | 6 | 26 | 345 | 12 | 22 |
| Total Analysis Volume [veh/h] | 1564 | 23 | 105 | 1380 | 49 | 88 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.52 | 0.01 | 1.64 | 0.30 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 40.74 | 0.00 | 601.00 | 22.80 |
| Movement LOS | A | A | E | A | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 2.67 | 0.00 | 5.65 | 1.25 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 66.70 | 0.00 | 141.15 | 31.24 |
| d_A, Approach Delay [s/veh] | 0.00 | | 2.88 | | 229.60 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 11.14 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Power Road & Access B**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 24.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.330 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1349 | 0 | 0 | 1188 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 134 | 21 | 0 | 142 | 0 | 84 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 16 | 0 | 0 | 37 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1499 | 21 | 0 | 1367 | 0 | 84 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 407 | 6 | 0 | 371 | 0 | 23 |
| Total Analysis Volume [veh/h] | 1629 | 23 | 0 | 1486 | 0 | 91 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 0.33 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 24.39 |
| Movement LOS | A | A | | A | | C |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.40 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 34.91 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.00 | | 24.39 | |
| Approach LOS | A | | A | | C | |
| d_I, Intersection Delay [s/veh] | 0.69 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Access C & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 12.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.026 |

**Intersection Setup**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 662 | 0 | 0 | 534 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 11 | 143 | 89 | 0 | 144 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 41 | 0 | 0 | 96 |
| Total Hourly Volume [veh/h] | 0 | 11 | 846 | 89 | 0 | 774 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 3 | 230 | 24 | 0 | 210 |
| Total Analysis Volume [veh/h] | 0 | 12 | 920 | 97 | 0 | 841 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 12.88 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 1.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 12.88 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.08 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Access D & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 37.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.545 |

**Intersection Setup**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 1 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 662 | 0 | 0 | 534 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 116 | 11 | 65 | 89 | 29 | 29 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 41 | 0 | 0 | 96 |
| Total Hourly Volume [veh/h] | 116 | 11 | 768 | 89 | 29 | 659 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 32 | 3 | 209 | 24 | 8 | 179 |
| Total Analysis Volume [veh/h] | 126 | 12 | 835 | 97 | 32 | 716 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.54 | 0.02 | 0.01 | 0.00 | 0.08 | 0.01 |
| d_M, Delay for Movement [s/veh] | 37.77 | 12.39 | 0.00 | 0.00 | 14.23 | 0.00 |
| Movement LOS | E | B | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 2.94 | 0.07 | 0.00 | 0.00 | 0.24 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 73.42 | 1.84 | 0.00 | 0.00 | 6.12 | 0.00 |
| d_A, Approach Delay [s/veh] | 35.56 | | 0.00 | | 0.61 | |
| Approach LOS | E | | A | | A | |
| d_I, Intersection Delay [s/veh] | 2.95 | | | | | |
| Intersection LOS | E | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Access E & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 12.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.024 |

**Intersection Setup**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 662 | 0 | 0 | 534 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 11 | 43 | 32 | 0 | 57 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 41 | 0 | 0 | 96 |
| Total Hourly Volume [veh/h] | 0 | 11 | 746 | 32 | 0 | 687 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 3 | 203 | 9 | 0 | 187 |
| Total Analysis Volume [veh/h] | 0 | 12 | 811 | 35 | 0 | 747 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 12.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 1.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 12.25 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.09 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 35.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.686 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 229 | 1328 | 221 | 95 | 1217 | 302 | 212 | 259 | 237 | 315 | 655 | 230 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 43 | 43 | 43 | 0 | 45 | 0 | 0 | 0 | 45 | 45 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 11 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 87 | 0 | 0 | 100 | 0 | 0 | 93 | 0 | 0 | 76 |
| Total Hourly Volume [veh/h] | 272 | 1382 | 177 | 95 | 1300 | 202 | 212 | 259 | 189 | 360 | 655 | 154 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 74 | 376 | 48 | 26 | 353 | 55 | 58 | 70 | 51 | 98 | 178 | 42 |
| Total Analysis Volume [veh/h] | 296 | 1502 | 192 | 103 | 1413 | 220 | 230 | 282 | 205 | 391 | 712 | 167 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 14 | 34 | 0 | 12 | 32 | 0 | 14 | 51 | 0 | 23 | 60 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 66 | 54 | 54 | 66 | 49 | 49 | 41 | 18 | 18 | 41 | 27 | 27 |
| g / C, Green / Cycle | 0.55 | 0.45 | 0.45 | 0.55 | 0.41 | 0.41 | 0.34 | 0.15 | 0.15 | 0.34 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.45 | 0.29 | 0.12 | 0.20 | 0.28 | 0.14 | 0.24 | 0.08 | 0.13 | 0.29 | 0.20 | 0.11 |
| s, saturation flow rate [veh/h] | 656 | 5094 | 1589 | 510 | 5094 | 1589 | 969 | 3560 | 1589 | 1358 | 3560 | 1589 |
| c, Capacity [veh/h] | 380 | 2312 | 721 | 304 | 2061 | 643 | 297 | 528 | 236 | 437 | 795 | 355 |
| d1, Uniform Delay [s] | 24.25 | 25.39 | 20.36 | 17.70 | 29.45 | 24.70 | 33.12 | 47.27 | 49.97 | 35.64 | 45.25 | 40.45 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.04 | 0.04 | 0.13 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.49 | 1.43 | 0.90 | 3.00 | 1.88 | 1.45 | 17.71 | 0.31 | 3.83 | 7.69 | 1.51 | 0.36 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.78 | 0.65 | 0.27 | 0.34 | 0.69 | 0.34 | 0.77 | 0.53 | 0.87 | 0.89 | 0.90 | 0.47 |
| d, Delay for Lane Group [s/veh] | 38.74 | 26.82 | 21.26 | 20.70 | 31.33 | 26.14 | 50.83 | 47.58 | 53.80 | 43.32 | 46.76 | 40.82 |
| Lane Group LOS | D | C | C | C | C | C | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 5.57 | 10.70 | 3.38 | 1.50 | 10.96 | 4.41 | 6.33 | 3.82 | 6.09 | 10.17 | 10.10 | 4.20 |
| 50th-Percentile Queue Length [ft/ln] | 139.25 | 267.54 | 84.45 | 37.43 | 273.97 | 110.28 | 158.27 | 95.62 | 152.36 | 254.29 | 252.57 | 105.06 |
| 95th-Percentile Queue Length [veh/ln] | 9.44 | 16.07 | 6.08 | 2.70 | 16.39 | 7.86 | 10.46 | 6.88 | 10.14 | 15.40 | 15.32 | 7.56 |
| 95th-Percentile Queue Length [ft/ln] | 236.02 | 401.66 | 152.01 | 67.38 | 409.69 | 196.39 | 261.44 | 172.12 | 253.58 | 385.06 | 382.89 | 189.11 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 38.74 | 26.82 | 21.26 | 20.70 | 31.33 | 26.14 | 50.83 | 47.58 | 53.80 | 43.32 | 46.76 | 40.82 |
| Movement LOS | D | C | C | C | C | C | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 28.06 | | | 30.04 | | | 50.40 | | | 44.92 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 35.21 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.686 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 458 | 425 | 742 | 892 |
| d_b, Bicycle Delay [s] | 35.66 | 37.21 | 23.76 | 18.43 |
| l_b,int, Bicycle LOS Score for Intersection | 2.702 | 2.569 | 2.005 | 2.670 |
| Bicycle LOS | B | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 48.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.814 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 480 | 1214 | 186 | 54 | 1408 | 365 | 540 | 294 | 360 | 357 | 395 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 86 | 86 | 88 | 95 | 41 | 0 | 0 | 94 | 40 | 88 | 43 | 43 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 38 | 38 | 0 | 0 | 0 | 23 | 0 | 11 | 7 | 11 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 103 | 0 | 0 | 120 | 0 | 0 | 132 | 0 | 0 | 46 |
| Total Hourly Volume [veh/h] | 566 | 1300 | 209 | 187 | 1449 | 245 | 540 | 411 | 268 | 456 | 445 | 92 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 154 | 353 | 57 | 51 | 394 | 67 | 147 | 112 | 73 | 124 | 121 | 25 |
| Total Analysis Volume [veh/h] | 615 | 1413 | 227 | 203 | 1575 | 266 | 587 | 447 | 291 | 496 | 484 | 100 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 27 | 64 | 0 | 10 | 47 | 0 | 32 | 29 | 0 | 17 | 14 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 118 | 118 | 118 | 118 | 118 | 118 | 118 | 118 | 118 | 118 | 118 | 118 |
| L, Total Lost Time per Cycle [s] | 4.00 | 6.40 | 6.40 | 4.00 | 6.40 | 6.40 | 4.00 | 5.40 | 5.40 | 4.00 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 4.40 | 4.40 | 2.00 | 4.40 | 4.40 | 2.00 | 3.40 | 3.40 | 2.00 | 3.40 | 3.40 |
| g_i, Effective Green Time [s] | 20 | 46 | 46 | 9 | 35 | 35 | 22 | 24 | 24 | 19 | 21 | 21 |
| g / C, Green / Cycle | 0.17 | 0.39 | 0.39 | 0.08 | 0.30 | 0.30 | 0.19 | 0.20 | 0.20 | 0.16 | 0.18 | 0.18 |
| (v / s)_i Volume / Saturation Flow Rate | 0.18 | 0.28 | 0.14 | 0.06 | 0.31 | 0.17 | 0.17 | 0.09 | 0.18 | 0.14 | 0.10 | 0.06 |
| s, saturation flow rate [veh/h] | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 |
| c, Capacity [veh/h] | 587 | 1984 | 619 | 268 | 1513 | 472 | 648 | 1033 | 322 | 561 | 904 | 282 |
| d1, Uniform Delay [s] | 48.90 | 30.39 | 25.62 | 53.25 | 41.40 | 34.95 | 46.83 | 41.03 | 45.82 | 48.26 | 44.02 | 42.52 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.17 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 25.80 | 0.18 | 0.14 | 1.66 | 20.48 | 0.40 | 2.03 | 0.11 | 13.73 | 1.90 | 0.18 | 0.28 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.05 | 0.71 | 0.37 | 0.76 | 1.04 | 0.56 | 0.91 | 0.43 | 0.90 | 0.88 | 0.54 | 0.35 |
| d, Delay for Lane Group [s/veh] | 74.70 | 30.57 | 25.75 | 54.91 | 61.88 | 35.34 | 48.87 | 41.14 | 59.55 | 50.16 | 44.21 | 42.80 |
| Lane Group LOS | F | C | C | D | F | D | D | D | E | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 10.44 | 10.69 | 4.35 | 2.93 | 16.79 | 6.25 | 8.31 | 3.69 | 9.25 | 7.05 | 4.17 | 2.51 |
| 50th-Percentile Queue Length [ft/ln] | 260.92 | 267.29 | 108.84 | 73.27 | 419.78 | 156.21 | 207.85 | 92.15 | 231.15 | 176.15 | 104.36 | 62.79 |
| 95th-Percentile Queue Length [veh/ln] | 16.09 | 16.05 | 7.78 | 5.28 | 24.11 | 10.35 | 13.04 | 6.63 | 14.23 | 11.40 | 7.51 | 4.52 |
| 95th-Percentile Queue Length [ft/ln] | 402.25 | 401.35 | 194.39 | 131.88 | 602.63 | 258.69 | 326.06 | 165.86 | 355.83 | 284.98 | 187.85 | 113.02 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 74.70 | 30.57 | 25.75 | 54.91 | 61.88 | 35.34 | 48.87 | 41.14 | 59.55 | 50.16 | 44.21 | 42.80 |
| Movement LOS | F | C | C | D | F | D | D | D | E | D | D | D |
| d_A, Approach Delay [s/veh] | 42.12 | | | 57.73 | | | 48.61 | | | 46.81 | | |
| Approach LOS | D | | | E | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 48.92 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.814 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 979 | 690 | 401 | 146 |
| d_b, Bicycle Delay [s] | 15.33 | 25.23 | 37.60 | 50.54 |
| l_b,int, Bicycle LOS Score for Intersection | 2.857 | 2.750 | 2.361 | 2.179 |
| Bicycle LOS | C | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 32.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.807 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 303 | 2218 | 133 | 90 | 1696 | 263 | 277 | 56 | 193 | 208 | 40 | 30 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 67 | 0 | 0 | 65 | 43 | 45 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 38 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 44 | 0 | 0 | 101 | 0 | 0 | 64 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 303 | 2323 | 89 | 90 | 1772 | 205 | 322 | 56 | 129 | 208 | 40 | 20 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 82 | 631 | 24 | 24 | 482 | 56 | 88 | 15 | 35 | 57 | 11 | 5 |
| Total Analysis Volume [veh/h] | 329 | 2525 | 97 | 98 | 1926 | 223 | 350 | 61 | 140 | 226 | 43 | 22 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 23 | 62 | 0 | 10 | 49 | 0 | 21 | 27 | 0 | 21 | 27 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 132 | 132 | 132 | 132 | 132 | 132 | 132 | 132 | 132 | 132 | 132 | 132 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 85 | 76 | 76 | 85 | 61 | 61 | 35 | 14 | 14 | 35 | 11 | 11 |
| g / C, Green / Cycle | 0.64 | 0.57 | 0.57 | 0.64 | 0.46 | 0.46 | 0.26 | 0.11 | 0.11 | 0.26 | 0.08 | 0.08 |
| (v / s)_i Volume / Saturation Flow Rate | 0.55 | 0.50 | 0.06 | 0.39 | 0.38 | 0.14 | 0.22 | 0.02 | 0.09 | 0.15 | 0.01 | 0.01 |
| s, saturation flow rate [veh/h] | 596 | 5094 | 1589 | 252 | 5094 | 1589 | 1618 | 3560 | 1589 | 1499 | 3560 | 1589 |
| c, Capacity [veh/h] | 402 | 2919 | 911 | 193 | 2347 | 732 | 493 | 386 | 172 | 458 | 289 | 129 |
| d1, Uniform Delay [s] | 38.72 | 23.89 | 12.83 | 29.93 | 30.92 | 22.36 | 44.88 | 53.49 | 57.65 | 41.19 | 56.51 | 56.61 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.30 | 0.11 | 0.11 | 0.50 | 0.11 | 0.11 | 0.36 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 16.79 | 0.84 | 0.05 | 5.57 | 0.75 | 0.23 | 8.38 | 0.19 | 8.89 | 2.70 | 0.23 | 0.62 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.82 | 0.86 | 0.11 | 0.51 | 0.82 | 0.30 | 0.71 | 0.16 | 0.81 | 0.49 | 0.15 | 0.17 |
| d, Delay for Lane Group [s/veh] | 55.52 | 24.73 | 12.88 | 35.50 | 31.67 | 22.60 | 53.25 | 53.68 | 66.54 | 43.89 | 56.74 | 57.23 |
| Lane Group LOS | E | C | B | D | C | C | D | D | E | D | E | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 5.76 | 20.39 | 1.26 | 1.30 | 16.89 | 4.25 | 11.58 | 0.93 | 4.97 | 6.54 | 0.68 | 0.70 |
| 50th-Percentile Queue Length [ft/ln] | 143.92 | 509.64 | 31.52 | 32.41 | 422.34 | 106.28 | 289.41 | 23.22 | 124.24 | 163.50 | 16.89 | 17.62 |
| 95th-Percentile Queue Length [veh/ln] | 9.69 | 27.79 | 2.27 | 2.33 | 23.63 | 7.63 | 17.16 | 1.67 | 8.63 | 10.73 | 1.22 | 1.27 |
| 95th-Percentile Queue Length [ft/ln] | 242.29 | 694.76 | 56.73 | 58.33 | 590.86 | 190.81 | 428.91 | 41.79 | 215.64 | 268.36 | 30.40 | 31.72 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 55.52 | 24.73 | 12.88 | 35.50 | 31.67 | 22.60 | 53.25 | 53.68 | 66.54 | 43.89 | 56.74 | 57.23 |
| Movement LOS | E | C | B | D | C | C | D | D | E | D | E | E |
| d_A, Approach Delay [s/veh] | 27.78 | | | 30.93 | | | 56.68 | | | 46.80 | | |
| Approach LOS | C | | | C | | | E | | | D | | |
| d_I, Intersection Delay [s/veh] | 32.50 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.807 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 842 | 645 | 312 | 312 |
| d_b, Bicycle Delay [s] | 22.13 | 30.30 | 47.03 | 47.03 |
| l_b,int, Bicycle LOS Score for Intersection | 3.207 | 2.851 | 2.067 | 1.808 |
| Bicycle LOS | C | C | B | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 14.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.495 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 92 | 49 | 10 | 36 | 39 | 248 | 135 | 302 | 56 | 11 | 501 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 22 | 22 | 43 | 0 | 0 | 45 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 53 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 3 | 0 | 0 | 89 | 0 | 0 | 18 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 92 | 49 | 7 | 36 | 39 | 181 | 157 | 361 | 38 | 11 | 599 | 24 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 25 | 13 | 2 | 10 | 11 | 49 | 43 | 98 | 10 | 3 | 163 | 7 |
| Total Analysis Volume [veh/h] | 100 | 53 | 8 | 39 | 42 | 197 | 171 | 392 | 41 | 12 | 651 | 26 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 36 | 0 | 0 | 36 | 0 | 0 | 84 | 0 | 0 | 84 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 17 | 17 | 17 | 17 | 34 | 34 | 34 | 34 | 34 |
| g / C, Green / Cycle | 0.27 | 0.27 | 0.27 | 0.27 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.03 | 0.03 | 0.15 | 0.22 | 0.24 | 0.01 | 0.35 | 0.02 |
| s, saturation flow rate [veh/h] | 1141 | 1828 | 1341 | 1633 | 762 | 1839 | 955 | 1870 | 1589 |
| c, Capacity [veh/h] | 230 | 485 | 389 | 433 | 314 | 979 | 465 | 995 | 846 |
| d1, Uniform Delay [s] | 27.95 | 17.64 | 20.58 | 19.98 | 22.14 | 9.05 | 12.81 | 10.61 | 7.03 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.48 | 0.04 | 0.04 | 0.41 | 0.55 | 0.12 | 0.01 | 0.27 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.43 | 0.13 | 0.10 | 0.55 | 0.54 | 0.44 | 0.03 | 0.65 | 0.03 |
| d, Delay for Lane Group [s/veh] | 28.43 | 17.69 | 20.62 | 20.39 | 22.69 | 9.17 | 12.82 | 10.89 | 7.04 |
| Lane Group LOS | C | B | C | C | C | A | B | B | A |
| Critical Lane Group | No | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.37 | 0.59 | 0.42 | 2.66 | 2.12 | 2.67 | 0.09 | 4.73 | 0.12 |
| 50th-Percentile Queue Length [ft/ln] | 34.15 | 14.83 | 10.53 | 66.38 | 52.96 | 66.85 | 2.32 | 118.37 | 3.11 |
| 95th-Percentile Queue Length [veh/ln] | 2.46 | 1.07 | 0.76 | 4.78 | 3.81 | 4.81 | 0.17 | 8.30 | 0.22 |
| 95th-Percentile Queue Length [ft/ln] | 61.47 | 26.69 | 18.95 | 119.48 | 95.33 | 120.32 | 4.18 | 207.59 | 5.61 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 28.43 | 17.69 | 17.69 | 20.62 | 20.39 | 20.39 | 22.69 | 9.17 | 9.17 | 12.82 | 10.89 | 7.04 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | B | B | C | C | C | C | A | A | B | B | A |
| d_A, Approach Delay [s/veh] | 24.36 | | | 20.42 | | | 12.99 | | | 10.78 | | |
| Approach LOS | C | | | C | | | B | | | B | | |
| d_I, Intersection Delay [s/veh] | 14.36 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.495 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| I_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 937 | 937 | 2457 | 2457 |
| d_b, Bicycle Delay [s] | 8.92 | 8.92 | 1.65 | 1.65 |
| I_b,int, Bicycle LOS Score for Intersection | 1.830 | 2.165 | 2.586 | 2.716 |
| Bicycle LOS | A | B | B | B |

## Sequence

| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 5: Power Road & Access A**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.000 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 1 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1920 | 0 | 0 | 2196 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 87 | 25 | 114 | 54 | 54 | 98 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 38 | 0 | 0 | 11 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2045 | 25 | 114 | 2261 | 54 | 98 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 556 | 7 | 31 | 614 | 15 | 27 |
| Total Analysis Volume [veh/h] | 2223 | 27 | 124 | 2458 | 59 | 107 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 1.33 | 0.02 | 0.00 | 0.61 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 287.32 | 0.00 | 10000.00 | 53.67 |
| Movement LOS | A | A | F | A | F | F |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 9.01 | 0.00 | 9.66 | 3.39 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 225.28 | 0.00 | 241.61 | 84.67 |
| d_A, Approach Delay [s/veh] | 0.00 | | 13.80 | | 3588.81 | |
| Approach LOS | A | | B | | F | |
| d_I, Intersection Delay [s/veh] | 126.32 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Power Road & Access B**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 62.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.669 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1920 | 0 | 0 | 2196 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 160 | 25 | 0 | 168 | 0 | 101 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 38 | 0 | 0 | 11 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2118 | 25 | 0 | 2375 | 0 | 101 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 576 | 7 | 0 | 645 | 0 | 27 |
| Total Analysis Volume [veh/h] | 2302 | 27 | 0 | 2582 | 0 | 110 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.00 | 0.03 | 0.00 | 0.67 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 62.67 |
| Movement LOS | A | A | | A | | F |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.87 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 96.74 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.00 | | 62.67 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 1.37 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Access C & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 12.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.029 |

**Intersection Setup**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 534 | 0 | 0 | 836 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 13 | 170 | 106 | 0 | 173 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 99 | 0 | 0 | 29 |
| Total Hourly Volume [veh/h] | 0 | 13 | 803 | 106 | 0 | 1038 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 4 | 218 | 29 | 0 | 282 |
| Total Analysis Volume [veh/h] | 0 | 14 | 873 | 115 | 0 | 1128 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | No | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 12.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 2.22 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 12.64 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.08 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Access D & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 53.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.699 |

**Intersection Setup**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 1 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 534 | 0 | 0 | 836 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 139 | 13 | 77 | 106 | 34 | 34 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 99 | 0 | 0 | 29 |
| Total Hourly Volume [veh/h] | 139 | 13 | 710 | 106 | 34 | 899 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 38 | 4 | 193 | 29 | 9 | 244 |
| Total Analysis Volume [veh/h] | 151 | 14 | 772 | 115 | 37 | 977 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.70 | 0.03 | 0.01 | 0.00 | 0.08 | 0.01 |
| d_M, Delay for Movement [s/veh] | 53.15 | 12.07 | 0.00 | 0.00 | 13.85 | 0.00 |
| Movement LOS | F | B | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 4.49 | 0.08 | 0.00 | 0.00 | 0.27 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 112.32 | 2.06 | 0.00 | 0.00 | 6.79 | 0.00 |
| d_A, Approach Delay [s/veh] | 49.67 | | 0.00 | | 0.51 | |
| Approach LOS | E | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.21 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Access E & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.026 |

**Intersection Setup**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 534 | 0 | 0 | 836 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 13 | 52 | 38 | 0 | 67 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 99 | 0 | 0 | 29 |
| Total Hourly Volume [veh/h] | 0 | 13 | 685 | 38 | 0 | 932 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 4 | 186 | 10 | 0 | 253 |
| Total Analysis Volume [veh/h] | 0 | 14 | 745 | 41 | 0 | 1013 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | No | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 11.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 2.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 11.93 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.09 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 28.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.591 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 139 | 1286 | 234 | 211 | 1451 | 287 | 204 | 325 | 136 | 172 | 315 | 206 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 45 | 45 | 45 | 0 | 48 | 0 | 0 | 0 | 48 | 48 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 37 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 92 | 0 | 0 | 95 | 0 | 0 | 61 | 0 | 0 | 68 |
| Total Hourly Volume [veh/h] | 184 | 1368 | 187 | 211 | 1515 | 192 | 204 | 325 | 123 | 220 | 315 | 138 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 50 | 372 | 51 | 57 | 412 | 52 | 55 | 88 | 33 | 60 | 86 | 38 |
| Total Analysis Volume [veh/h] | 200 | 1487 | 203 | 229 | 1647 | 209 | 222 | 353 | 134 | 239 | 342 | 150 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 18 | 60 | 0 | 20 | 62 | 0 | 14 | 24 | 0 | 16 | 26 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 74 | 61 | 61 | 74 | 62 | 62 | 33 | 17 | 17 | 33 | 19 | 19 |
| g / C, Green / Cycle | 0.61 | 0.51 | 0.51 | 0.61 | 0.51 | 0.51 | 0.28 | 0.14 | 0.14 | 0.28 | 0.16 | 0.16 |
| (v / s)_i Volume / Saturation Flow Rate | 0.44 | 0.29 | 0.13 | 0.45 | 0.32 | 0.13 | 0.18 | 0.09 | 0.10 | 0.19 | 0.10 | 0.09 |
| s, saturation flow rate [veh/h] | 456 | 5094 | 1589 | 512 | 5094 | 1589 | 1220 | 3560 | 1624 | 1275 | 3560 | 1589 |
| c, Capacity [veh/h] | 313 | 2578 | 804 | 346 | 2617 | 817 | 346 | 515 | 235 | 359 | 574 | 256 |
| d1, Uniform Delay [s] | 20.20 | 20.68 | 16.79 | 18.71 | 20.96 | 16.33 | 36.69 | 48.41 | 48.59 | 36.84 | 46.71 | 46.62 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.32 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 9.65 | 0.95 | 0.75 | 9.60 | 1.16 | 0.76 | 5.82 | 0.50 | 1.21 | 0.79 | 0.37 | 0.79 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.64 | 0.58 | 0.25 | 0.66 | 0.63 | 0.26 | 0.64 | 0.64 | 0.67 | 0.67 | 0.60 | 0.59 |
| d, Delay for Lane Group [s/veh] | 29.85 | 21.63 | 17.54 | 28.31 | 22.12 | 17.09 | 42.51 | 48.91 | 49.80 | 37.64 | 47.08 | 47.41 |
| Lane Group LOS | C | C | B | C | C | B | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 2.94 | 9.26 | 3.17 | 3.37 | 10.54 | 3.21 | 5.76 | 4.59 | 4.40 | 5.74 | 4.65 | 4.10 |
| 50th-Percentile Queue Length [ft/ln] | 73.38 | 231.51 | 79.30 | 84.21 | 263.38 | 80.33 | 144.04 | 114.63 | 109.88 | 143.53 | 116.14 | 102.45 |
| 95th-Percentile Queue Length [veh/ln] | 5.28 | 14.25 | 5.71 | 6.06 | 15.86 | 5.78 | 9.70 | 8.10 | 7.83 | 9.67 | 8.18 | 7.38 |
| 95th-Percentile Queue Length [ft/ln] | 132.09 | 356.28 | 142.74 | 151.58 | 396.46 | 144.59 | 242.45 | 202.42 | 195.83 | 241.77 | 204.51 | 184.41 |

**Movement, Approach, & Intersection Results**

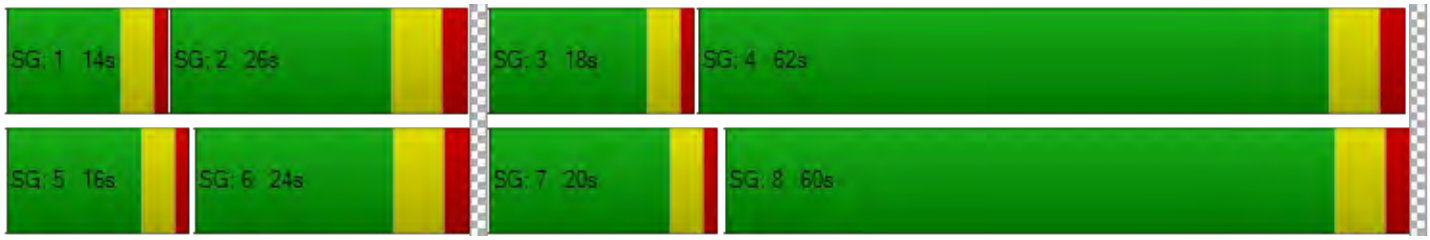
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 29.85 | 21.63 | 17.54 | 28.31 | 22.12 | 17.09 | 42.51 | 48.97 | 49.80 | 37.64 | 47.08 | 47.41 |
| Movement LOS | C | C | B | C | C | B | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 22.06 | | | 22.30 | | | 47.10 | | | 44.06 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 28.40 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.591 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 892 | 925 | 292 | 325 |
| d_b, Bicycle Delay [s] | 18.43 | 17.34 | 43.79 | 42.09 |
| l_b,int, Bicycle LOS Score for Intersection | 2.650 | 2.759 | 1.983 | 2.219 |
| Bicycle LOS | B | C | A | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 27.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.671 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 486 | 1273 | 349 | 53 | 1414 | 264 | 488 | 393 | 300 | 226 | 308 | 80 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 90 | 90 | 92 | 101 | 43 | 0 | 0 | 100 | 43 | 92 | 44 | 45 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 9 | 0 | 37 | 22 | 37 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 151 | 0 | 0 | 87 | 0 | 0 | 113 | 0 | 0 | 53 |
| Total Hourly Volume [veh/h] | 576 | 1363 | 306 | 170 | 1457 | 177 | 488 | 502 | 230 | 355 | 374 | 109 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 157 | 370 | 83 | 46 | 396 | 48 | 133 | 136 | 63 | 96 | 102 | 30 |
| Total Analysis Volume [veh/h] | 626 | 1482 | 333 | 185 | 1584 | 192 | 530 | 546 | 250 | 386 | 407 | 118 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 27 | 67 | 0 | 11 | 51 | 0 | 23 | 24 | 0 | 18 | 19 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 3.40 | 0.00 | 3.40 | 3.40 |
| g_i, Effective Green Time [s] | 50 | 41 | 41 | 50 | 32 | 32 | 32 | 18 | 18 | 32 | 14 | 14 |
| g / C, Green / Cycle | 0.53 | 0.44 | 0.44 | 0.53 | 0.34 | 0.34 | 0.34 | 0.19 | 0.19 | 0.34 | 0.15 | 0.15 |
| (v / s)_i Volume / Saturation Flow Rate | 0.43 | 0.29 | 0.21 | 0.21 | 0.31 | 0.12 | 0.21 | 0.11 | 0.16 | 0.18 | 0.08 | 0.07 |
| s, saturation flow rate [veh/h] | 1448 | 5094 | 1589 | 895 | 5094 | 1589 | 2569 | 5094 | 1589 | 2138 | 5094 | 1589 |
| c, Capacity [veh/h] | 766 | 2239 | 699 | 512 | 1745 | 544 | 905 | 971 | 303 | 754 | 776 | 242 |
| d1, Uniform Delay [s] | 22.06 | 20.80 | 18.66 | 14.79 | 29.45 | 23.08 | 24.33 | 34.44 | 36.48 | 23.46 | 36.66 | 36.44 |
| k, delay calibration | 0.43 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 8.22 | 0.13 | 0.19 | 0.16 | 0.80 | 0.14 | 0.22 | 0.19 | 2.18 | 0.20 | 0.21 | 0.57 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.82 | 0.66 | 0.48 | 0.36 | 0.91 | 0.35 | 0.59 | 0.56 | 0.82 | 0.51 | 0.52 | 0.49 |
| d, Delay for Lane Group [s/veh] | 30.28 | 20.92 | 18.84 | 14.95 | 30.25 | 23.22 | 24.55 | 34.63 | 38.67 | 23.66 | 36.87 | 37.00 |
| Lane Group LOS | C | C | B | B | C | C | C | C | D | C | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 4.17 | 7.71 | 4.69 | 0.86 | 10.52 | 2.98 | 4.27 | 3.59 | 5.38 | 2.97 | 2.74 | 2.40 |
| 50th-Percentile Queue Length [ft/ln] | 104.33 | 192.87 | 117.13 | 21.38 | 262.91 | 74.55 | 106.75 | 89.67 | 134.46 | 74.14 | 68.60 | 59.93 |
| 95th-Percentile Queue Length [veh/ln] | 7.51 | 12.27 | 8.24 | 1.54 | 15.83 | 5.37 | 7.66 | 6.46 | 9.18 | 5.34 | 4.94 | 4.32 |
| 95th-Percentile Queue Length [ft/ln] | 187.79 | 306.75 | 205.88 | 38.48 | 395.87 | 134.19 | 191.47 | 161.40 | 229.55 | 133.45 | 123.47 | 107.88 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 30.28 | 20.92 | 18.84 | 14.95 | 30.25 | 23.22 | 24.55 | 34.63 | 38.67 | 23.66 | 36.87 | 37.00 |
| Movement LOS | C | C | B | B | C | C | C | C | D | C | D | D |
| d_A, Approach Delay [s/veh] | 23.04 | | | 28.12 | | | 31.36 | | | 31.29 | | |
| Approach LOS | C | | | C | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 27.33 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.671 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1293 | 952 | 397 | 290 |
| d_b, Bicycle Delay [s] | 5.86 | 12.88 | 30.11 | 34.26 |
| l_b,int, Bicycle LOS Score for Intersection | 2.985 | 2.686 | 2.351 | 2.090 |
| Bicycle LOS | C | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 38.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.863 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 156 | 1830 | 133 | 94 | 2344 | 257 | 266 | 51 | 212 | 236 | 33 | 34 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 71 | 0 | 0 | 67 | 45 | 48 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 16 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 44 | 0 | 0 | 100 | 0 | 0 | 70 | 0 | 0 | 11 |
| Total Hourly Volume [veh/h] | 156 | 1917 | 89 | 94 | 2448 | 202 | 314 | 51 | 142 | 236 | 33 | 23 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 42 | 521 | 24 | 26 | 665 | 55 | 85 | 14 | 39 | 64 | 9 | 6 |
| Total Analysis Volume [veh/h] | 170 | 2084 | 97 | 102 | 2661 | 220 | 341 | 55 | 154 | 257 | 36 | 25 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 8 | 60 | 0 | 11 | 63 | 0 | 21 | 27 | 0 | 22 | 28 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 79 | 70 | 70 | 79 | 65 | 65 | 37 | 15 | 15 | 37 | 13 | 13 |
| g / C, Green / Cycle | 0.61 | 0.54 | 0.54 | 0.61 | 0.51 | 0.51 | 0.29 | 0.12 | 0.12 | 0.29 | 0.10 | 0.10 |
| (v / s)_i Volume / Saturation Flow Rate | 0.49 | 0.41 | 0.06 | 0.31 | 0.52 | 0.14 | 0.21 | 0.02 | 0.10 | 0.17 | 0.01 | 0.02 |
| s, saturation flow rate [veh/h] | 346 | 5094 | 1589 | 325 | 5094 | 1589 | 1605 | 3560 | 1589 | 1499 | 3560 | 1589 |
| c, Capacity [veh/h] | 251 | 2768 | 864 | 225 | 2577 | 804 | 531 | 416 | 186 | 497 | 352 | 157 |
| d1, Uniform Delay [s] | 38.23 | 22.65 | 14.25 | 23.91 | 31.73 | 18.20 | 40.54 | 50.86 | 55.45 | 38.32 | 52.70 | 53.00 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.17 | 0.11 | 0.11 | 0.50 | 0.11 | 0.12 | 0.42 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 13.67 | 0.43 | 0.06 | 2.24 | 18.48 | 0.18 | 5.85 | 0.14 | 9.64 | 3.24 | 0.13 | 0.47 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.68 | 0.75 | 0.11 | 0.45 | 1.03 | 0.27 | 0.64 | 0.13 | 0.83 | 0.52 | 0.10 | 0.16 |
| d, Delay for Lane Group [s/veh] | 51.90 | 23.08 | 14.31 | 26.15 | 50.21 | 18.38 | 46.40 | 51.01 | 65.09 | 41.56 | 52.82 | 53.47 |
| Lane Group LOS | D | C | B | C | F | B | D | D | E | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 2.87 | 15.03 | 1.32 | 1.24 | 28.82 | 3.63 | 10.30 | 0.80 | 5.34 | 7.17 | 0.53 | 0.76 |
| 50th-Percentile Queue Length [ft/ln] | 71.64 | 375.77 | 33.12 | 31.01 | 720.57 | 90.66 | 257.50 | 20.03 | 133.45 | 179.18 | 13.36 | 18.95 |
| 95th-Percentile Queue Length [veh/ln] | 5.16 | 21.39 | 2.38 | 2.23 | 38.61 | 6.53 | 15.56 | 1.44 | 9.13 | 11.56 | 0.96 | 1.36 |
| 95th-Percentile Queue Length [ft/ln] | 128.95 | 534.72 | 59.62 | 55.82 | 965.27 | 163.19 | 389.08 | 36.05 | 228.18 | 288.94 | 24.04 | 34.11 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 51.90 | 23.08 | 14.31 | 26.15 | 50.21 | 18.38 | 46.40 | 51.01 | 65.09 | 41.56 | 52.82 | 53.47 |
| Movement LOS | D | C | B | C | F | B | D | D | E | D | D | D |
| d_A, Approach Delay [s/veh] | 24.80 | | | 47.04 | | | 52.09 | | | 43.77 | | |
| Approach LOS | C | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 38.89 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.863 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 835 | 882 | 321 | 337 |
| d_b, Bicycle Delay [s] | 21.78 | 20.07 | 45.24 | 44.41 |
| l_b,int, Bicycle LOS Score for Intersection | 2.877 | 3.255 | 2.071 | 1.831 |
| Bicycle LOS | C | C | B | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 11.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.487 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 53 | 84 | 13 | 52 | 40 | 183 | 208 | 472 | 87 | 6 | 386 | 50 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 24 | 22 | 45 | 0 | 0 | 48 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 22 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 4 | 0 | 0 | 68 | 0 | 0 | 29 | 0 | 0 | 17 |
| Total Hourly Volume [veh/h] | 53 | 84 | 9 | 52 | 40 | 139 | 230 | 567 | 58 | 6 | 456 | 33 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 14 | 23 | 2 | 14 | 11 | 38 | 63 | 154 | 16 | 2 | 124 | 9 |
| Total Analysis Volume [veh/h] | 58 | 91 | 10 | 57 | 43 | 151 | 250 | 616 | 63 | 7 | 496 | 36 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 32 | 0 | 0 | 32 | 0 | 0 | 88 | 0 | 0 | 88 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 11 | 11 | 11 | 11 | 28 | 28 | 28 | 28 | 28 |
| g / C, Green / Cycle | 0.21 | 0.21 | 0.21 | 0.21 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.05 | 0.04 | 0.12 | 0.29 | 0.37 | 0.01 | 0.27 | 0.02 |
| s, saturation flow rate [veh/h] | 1189 | 1838 | 1293 | 1644 | 872 | 1840 | 761 | 1870 | 1589 |
| c, Capacity [veh/h] | 218 | 385 | 301 | 344 | 431 | 994 | 316 | 1010 | 859 |
| d1, Uniform Delay [s] | 23.51 | 16.91 | 20.52 | 18.12 | 15.95 | 8.56 | 15.29 | 7.35 | 5.53 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.24 | 0.13 | 0.11 | 0.54 | 0.46 | 0.31 | 0.01 | 0.14 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.27 | 0.26 | 0.19 | 0.56 | 0.58 | 0.68 | 0.02 | 0.49 | 0.04 |
| d, Delay for Lane Group [s/veh] | 23.75 | 17.04 | 20.63 | 18.66 | 16.41 | 8.87 | 15.30 | 7.49 | 5.53 |
| Lane Group LOS | C | B | C | B | B | A | B | A | A |
| Critical Lane Group | No | No | No | Yes | No | Yes | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.61 | 0.83 | 0.54 | 1.74 | 2.13 | 3.28 | 0.05 | 2.04 | 0.11 |
| 50th-Percentile Queue Length [ft/ln] | 15.19 | 20.86 | 13.48 | 43.48 | 53.20 | 81.98 | 1.32 | 51.04 | 2.78 |
| 95th-Percentile Queue Length [veh/ln] | 1.09 | 1.50 | 0.97 | 3.13 | 3.83 | 5.90 | 0.10 | 3.67 | 0.20 |
| 95th-Percentile Queue Length [ft/ln] | 27.34 | 37.54 | 24.26 | 78.26 | 95.75 | 147.56 | 2.38 | 91.87 | 5.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 23.75 | 17.04 | 17.04 | 20.63 | 18.66 | 18.66 | 16.41 | 8.87 | 8.87 | 15.30 | 7.49 | 5.53 |
| Movement LOS | C | B | B | C | B | B | B | A | A | B | A | A |
| d_A, Approach Delay [s/veh] | 19.49 | | | 19.11 | | | 10.90 | | | 7.46 | | |
| Approach LOS | B | | | B | | | B | | | A | | |
| d_I, Intersection Delay [s/veh] | 11.74 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.487 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1001 | 1001 | 3189 | 3189 |
| d_b, Bicycle Delay [s] | 6.39 | 6.39 | 9.05 | 9.05 |
| l_b,int, Bicycle LOS Score for Intersection | 1.829 | 2.086 | 3.140 | 2.477 |
| Bicycle LOS | A | B | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 5: Power Road & Access A**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.000 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 1 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1801 | 0 | 0 | 1493 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 92 | 27 | 122 | 56 | 56 | 102 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 16 | 0 | 0 | 37 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1909 | 27 | 122 | 1586 | 56 | 102 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 519 | 7 | 33 | 431 | 15 | 28 |
| Total Analysis Volume [veh/h] | 2075 | 29 | 133 | 1724 | 61 | 111 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.02 | 0.00 | 1.20 | 0.02 | 0.00 | 0.57 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 223.01 | 0.00 | 10000.00 | 45.04 |
| Movement LOS | A | A | F | A | F | E |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 8.59 | 0.00 | 9.93 | 3.05 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 214.82 | 0.00 | 248.22 | 76.24 |
| d_A, Approach Delay [s/veh] | 0.00 | | 15.97 | | 3575.58 | |
| Approach LOS | A | | C | | F | |
| d_I, Intersection Delay [s/veh] | 155.98 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Power Road & Access B**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 52.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.621 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1801 | 0 | 0 | 1493 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 168 | 27 | 0 | 178 | 0 | 105 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 16 | 0 | 0 | 37 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1985 | 27 | 0 | 1708 | 0 | 105 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 539 | 7 | 0 | 464 | 0 | 29 |
| Total Analysis Volume [veh/h] | 2158 | 29 | 0 | 1857 | 0 | 114 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.00 | 0.02 | 0.00 | 0.62 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 52.20 |
| Movement LOS | A | A | | A | | F |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.50 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 87.53 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.00 | | 52.20 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 1.43 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Access C & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 14.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.034 |

**Intersection Setup**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 795 | 0 | 0 | 614 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 13 | 180 | 113 | 0 | 181 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 41 | 0 | 0 | 96 |
| Total Hourly Volume [veh/h] | 0 | 13 | 1016 | 113 | 0 | 891 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 4 | 276 | 31 | 0 | 242 |
| Total Analysis Volume [veh/h] | 0 | 14 | 1104 | 123 | 0 | 968 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 14.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 2.65 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 14.12 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.09 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Access D & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 102.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.918 |

**Intersection Setup**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 1 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 795 | 0 | 0 | 614 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 145 | 13 | 81 | 113 | 36 | 36 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 41 | 0 | 0 | 96 |
| Total Hourly Volume [veh/h] | 145 | 13 | 917 | 113 | 36 | 746 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 39 | 4 | 249 | 31 | 10 | 203 |
| Total Analysis Volume [veh/h] | 158 | 14 | 997 | 123 | 39 | 811 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.92 | 0.03 | 0.01 | 0.00 | 0.11 | 0.01 |
| d_M, Delay for Movement [s/veh] | 102.15 | 13.40 | 0.00 | 0.00 | 16.86 | 0.00 |
| Movement LOS | F | B | A | A | C | A |
| 95th-Percentile Queue Length [veh/ln] | 6.86 | 0.10 | 0.00 | 0.00 | 0.38 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 171.57 | 2.44 | 0.00 | 0.00 | 9.55 | 0.00 |
| d_A, Approach Delay [s/veh] | 94.93 | | 0.00 | | 0.77 | |
| Approach LOS | F | | A | | A | |
| d_I, Intersection Delay [s/veh] | 7.93 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Access E & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 13.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.031 |

**Intersection Setup**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 795 | 0 | 0 | 614 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 13 | 54 | 41 | 0 | 72 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 41 | 0 | 0 | 96 |
| Total Hourly Volume [veh/h] | 0 | 13 | 890 | 41 | 0 | 782 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 4 | 242 | 11 | 0 | 213 |
| Total Analysis Volume [veh/h] | 0 | 14 | 967 | 45 | 0 | 850 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 13.20 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 2.39 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 13.20 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.10 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 42.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.748 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 252 | 1438 | 241 | 105 | 1298 | 334 | 234 | 286 | 262 | 338 | 723 | 254 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 43 | 43 | 43 | 0 | 45 | 0 | 0 | 0 | 45 | 45 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 11 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 94 | 0 | 0 | 110 | 0 | 0 | 101 | 0 | 0 | 84 |
| Total Hourly Volume [veh/h] | 295 | 1492 | 190 | 105 | 1381 | 224 | 234 | 286 | 206 | 383 | 723 | 170 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 80 | 405 | 52 | 29 | 375 | 61 | 64 | 78 | 56 | 104 | 196 | 46 |
| Total Analysis Volume [veh/h] | 321 | 1622 | 207 | 114 | 1501 | 243 | 254 | 311 | 224 | 416 | 786 | 185 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 16 | 43 | 0 | 12 | 39 | 0 | 21 | 37 | 0 | 28 | 44 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 60 | 48 | 48 | 60 | 38 | 38 | 47 | 19 | 19 | 47 | 29 | 29 |
| g / C, Green / Cycle | 0.50 | 0.40 | 0.40 | 0.50 | 0.31 | 0.31 | 0.39 | 0.16 | 0.16 | 0.39 | 0.24 | 0.24 |
| (v / s)_i Volume / Saturation Flow Rate | 0.41 | 0.32 | 0.13 | 0.23 | 0.29 | 0.15 | 0.26 | 0.09 | 0.14 | 0.30 | 0.22 | 0.12 |
| s, saturation flow rate [veh/h] | 782 | 5094 | 1589 | 506 | 5094 | 1589 | 990 | 3560 | 1589 | 1369 | 3560 | 1589 |
| c, Capacity [veh/h] | 400 | 2030 | 633 | 268 | 1596 | 498 | 357 | 576 | 257 | 514 | 865 | 386 |
| d1, Uniform Delay [s] | 32.79 | 31.89 | 24.99 | 24.37 | 40.16 | 33.44 | 29.43 | 46.27 | 49.15 | 30.38 | 44.19 | 38.97 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.04 | 0.04 | 0.26 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 15.58 | 3.40 | 1.37 | 4.86 | 12.22 | 3.39 | 11.38 | 0.29 | 3.60 | 7.09 | 1.60 | 0.34 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.80 | 0.80 | 0.33 | 0.42 | 0.94 | 0.49 | 0.71 | 0.54 | 0.87 | 0.81 | 0.91 | 0.48 |
| d, Delay for Lane Group [s/veh] | 48.37 | 35.29 | 26.37 | 29.23 | 52.38 | 36.83 | 40.81 | 46.56 | 52.75 | 37.48 | 45.79 | 39.32 |
| Lane Group LOS | D | D | C | C | D | D | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 6.90 | 13.71 | 4.16 | 1.97 | 15.53 | 6.02 | 6.06 | 4.18 | 6.63 | 10.05 | 11.14 | 4.58 |
| 50th-Percentile Queue Length [ft/ln] | 172.39 | 342.80 | 104.10 | 49.22 | 388.20 | 150.46 | 151.53 | 104.62 | 165.63 | 251.21 | 278.44 | 114.52 |
| 95th-Percentile Queue Length [veh/ln] | 11.20 | 19.78 | 7.49 | 3.54 | 21.99 | 10.04 | 10.10 | 7.53 | 10.85 | 15.25 | 16.61 | 8.09 |
| 95th-Percentile Queue Length [ft/ln] | 280.05 | 494.62 | 187.37 | 88.60 | 549.76 | 251.04 | 252.47 | 188.31 | 271.16 | 381.17 | 415.27 | 202.27 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 48.37 | 35.29 | 26.37 | 29.23 | 52.38 | 36.83 | 40.81 | 46.56 | 52.75 | 37.48 | 45.79 | 39.32 |
| Movement LOS | D | D | C | C | D | D | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 36.39 | | | 48.93 | | | 46.47 | | | 42.44 | | |
| Approach LOS | D | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 42.80 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.748 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 608 | 541 | 508 | 625 |
| d_b, Bicycle Delay [s] | 29.09 | 31.94 | 33.41 | 28.40 |
| l_b,int, Bicycle LOS Score for Intersection | 2.794 | 2.642 | 2.049 | 2.773 |
| Bicycle LOS | C | B | B | C |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 61.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.853 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 493 | 1335 | 203 | 59 | 1516 | 389 | 561 | 314 | 374 | 376 | 426 | 90 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 86 | 86 | 88 | 95 | 41 | 0 | 0 | 94 | 40 | 88 | 43 | 43 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 38 | 38 | 0 | 0 | 0 | 23 | 0 | 11 | 7 | 11 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 109 | 0 | 0 | 128 | 0 | 0 | 137 | 0 | 0 | 48 |
| Total Hourly Volume [veh/h] | 579 | 1421 | 220 | 192 | 1557 | 261 | 561 | 431 | 277 | 475 | 476 | 96 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 157 | 386 | 60 | 52 | 423 | 71 | 152 | 117 | 75 | 129 | 129 | 26 |
| Total Analysis Volume [veh/h] | 629 | 1545 | 239 | 209 | 1692 | 284 | 610 | 468 | 301 | 516 | 517 | 104 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 27 | 64 | 0 | 10 | 47 | 0 | 32 | 29 | 0 | 17 | 14 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 4.00 | 6.40 | 6.40 | 4.00 | 6.40 | 6.40 | 4.00 | 5.40 | 5.40 | 4.00 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 4.40 | 4.40 | 2.00 | 4.40 | 4.40 | 2.00 | 3.40 | 3.40 | 2.00 | 3.40 | 3.40 |
| g_i, Effective Green Time [s] | 20 | 46 | 46 | 9 | 35 | 35 | 23 | 25 | 25 | 20 | 22 | 22 |
| g / C, Green / Cycle | 0.17 | 0.38 | 0.38 | 0.08 | 0.29 | 0.29 | 0.19 | 0.21 | 0.21 | 0.17 | 0.18 | 0.18 |
| (v / s)_i Volume / Saturation Flow Rate | 0.18 | 0.30 | 0.15 | 0.06 | 0.33 | 0.18 | 0.18 | 0.09 | 0.19 | 0.15 | 0.10 | 0.07 |
| s, saturation flow rate [veh/h] | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 | 3459 | 5094 | 1589 |
| c, Capacity [veh/h] | 578 | 1939 | 605 | 272 | 1489 | 465 | 667 | 1060 | 331 | 578 | 930 | 290 |
| d1, Uniform Delay [s] | 49.87 | 32.97 | 27.03 | 54.08 | 42.37 | 36.51 | 47.36 | 41.33 | 46.31 | 48.81 | 44.53 | 42.81 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.08 | 0.04 | 0.04 | 0.20 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 42.82 | 0.29 | 0.16 | 1.72 | 62.16 | 0.97 | 2.20 | 0.11 | 16.07 | 2.00 | 0.19 | 0.28 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.09 | 0.80 | 0.40 | 0.77 | 1.14 | 0.61 | 0.91 | 0.44 | 0.91 | 0.89 | 0.56 | 0.36 |
| d, Delay for Lane Group [s/veh] | 92.69 | 33.26 | 27.19 | 55.80 | 104.53 | 37.47 | 49.56 | 41.44 | 62.37 | 50.81 | 44.72 | 43.09 |
| Lane Group LOS | F | C | C | E | F | D | D | D | E | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 11.80 | 12.61 | 4.81 | 3.08 | 22.56 | 7.02 | 8.82 | 3.92 | 9.93 | 7.47 | 4.55 | 2.65 |
| 50th-Percentile Queue Length [ft/ln] | 294.95 | 315.30 | 120.14 | 76.90 | 563.98 | 175.55 | 220.50 | 98.01 | 248.21 | 186.87 | 113.65 | 66.25 |
| 95th-Percentile Queue Length [veh/ln] | 18.15 | 18.44 | 8.40 | 5.54 | 32.77 | 11.37 | 13.69 | 7.06 | 15.10 | 11.96 | 8.04 | 4.77 |
| 95th-Percentile Queue Length [ft/ln] | 453.74 | 460.91 | 210.02 | 138.41 | 819.33 | 284.19 | 342.27 | 176.42 | 377.40 | 298.96 | 201.06 | 119.26 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 92.69 | 33.26 | 27.19 | 55.80 | 104.53 | 37.47 | 49.56 | 41.44 | 62.37 | 50.81 | 44.72 | 43.09 |
| Movement LOS | F | C | C | E | F | D | D | D | E | D | D | D |
| d_A, Approach Delay [s/veh] | 48.15 | | | 91.15 | | | 49.60 | | | 47.34 | | |
| Approach LOS | D | | | F | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 61.51 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.853 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 963 | 679 | 395 | 144 |
| d_b, Bicycle Delay [s] | 16.09 | 26.11 | 38.55 | 51.53 |
| l_b,int, Bicycle LOS Score for Intersection | 2.947 | 2.832 | 2.393 | 2.211 |
| Bicycle LOS | C | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 36.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.832 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 319 | 2343 | 135 | 91 | 1815 | 277 | 297 | 57 | 210 | 212 | 43 | 31 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 67 | 0 | 0 | 65 | 43 | 45 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 38 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 45 | 0 | 0 | 106 | 0 | 0 | 69 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 319 | 2448 | 90 | 91 | 1891 | 214 | 342 | 57 | 141 | 212 | 43 | 21 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 87 | 665 | 24 | 25 | 514 | 58 | 93 | 15 | 38 | 58 | 12 | 6 |
| Total Analysis Volume [veh/h] | 347 | 2661 | 98 | 99 | 2055 | 233 | 372 | 62 | 153 | 230 | 47 | 23 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 24 | 55 | 0 | 14 | 45 | 0 | 24 | 33 | 0 | 18 | 27 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 138 | 138 | 138 | 138 | 138 | 138 | 138 | 138 | 138 | 138 | 138 | 138 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 88 | 79 | 79 | 88 | 64 | 64 | 37 | 16 | 16 | 37 | 13 | 13 |
| g / C, Green / Cycle | 0.64 | 0.57 | 0.57 | 0.64 | 0.47 | 0.47 | 0.27 | 0.11 | 0.11 | 0.27 | 0.09 | 0.09 |
| (v / s)_i Volume / Saturation Flow Rate | 0.61 | 0.52 | 0.06 | 0.42 | 0.40 | 0.15 | 0.23 | 0.02 | 0.10 | 0.15 | 0.01 | 0.01 |
| s, saturation flow rate [veh/h] | 566 | 5094 | 1589 | 236 | 5094 | 1589 | 1599 | 3560 | 1589 | 1485 | 3560 | 1589 |
| c, Capacity [veh/h] | 381 | 2922 | 912 | 181 | 2371 | 740 | 490 | 408 | 182 | 458 | 334 | 149 |
| d1, Uniform Delay [s] | 44.77 | 26.25 | 13.36 | 32.42 | 33.03 | 23.09 | 47.18 | 55.02 | 59.82 | 42.48 | 57.40 | 57.47 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.37 | 0.11 | 0.11 | 0.50 | 0.11 | 0.14 | 0.40 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 28.19 | 1.31 | 0.05 | 8.51 | 1.05 | 0.24 | 10.51 | 0.17 | 12.60 | 3.15 | 0.19 | 0.48 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.91 | 0.91 | 0.11 | 0.55 | 0.87 | 0.31 | 0.76 | 0.15 | 0.84 | 0.50 | 0.14 | 0.15 |
| d, Delay for Lane Group [s/veh] | 72.97 | 27.56 | 13.41 | 40.93 | 34.08 | 23.33 | 57.69 | 55.19 | 72.42 | 45.63 | 57.59 | 57.95 |
| Lane Group LOS | E | C | B | D | C | C | E | E | E | D | E | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 7.40 | 24.04 | 1.34 | 1.50 | 19.65 | 4.67 | 13.16 | 0.98 | 5.85 | 6.99 | 0.76 | 0.76 |
| 50th-Percentile Queue Length [ft/ln] | 185.04 | 600.93 | 33.62 | 37.56 | 491.27 | 116.68 | 329.02 | 24.54 | 146.34 | 174.71 | 19.04 | 18.94 |
| 95th-Percentile Queue Length [veh/ln] | 11.86 | 32.08 | 2.42 | 2.70 | 26.92 | 8.21 | 19.11 | 1.77 | 9.82 | 11.32 | 1.37 | 1.36 |
| 95th-Percentile Queue Length [ft/ln] | 296.58 | 801.95 | 60.51 | 67.60 | 673.02 | 205.26 | 477.76 | 44.18 | 245.54 | 283.10 | 34.27 | 34.08 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 72.97 | 27.56 | 13.41 | 40.93 | 34.08 | 23.33 | 57.69 | 55.19 | 72.42 | 45.63 | 57.59 | 57.95 |
| Movement LOS | E | C | B | D | C | C | E | E | E | D | E | E |
| d_A, Approach Delay [s/veh] | 32.19 | | | 33.31 | | | 61.27 | | | 48.45 | | |
| Approach LOS | C | | | C | | | E | | | D | | |
| d_I, Intersection Delay [s/veh] | 36.05 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.832 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 705 | 560 | 386 | 299 |
| d_b, Bicycle Delay [s] | 28.92 | 35.76 | 44.92 | 49.90 |
| l_b,int, Bicycle LOS Score for Intersection | 3.293 | 2.931 | 2.101 | 1.815 |
| Bicycle LOS | C | C | B | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 17.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.527 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 98 | 54 | 11 | 40 | 43 | 270 | 148 | 325 | 60 | 12 | 535 | 40 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 22 | 22 | 43 | 0 | 0 | 45 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 53 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 4 | 0 | 0 | 96 | 0 | 0 | 20 | 0 | 0 | 13 |
| Total Hourly Volume [veh/h] | 98 | 54 | 7 | 40 | 43 | 196 | 170 | 384 | 40 | 12 | 633 | 27 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 27 | 15 | 2 | 11 | 12 | 53 | 46 | 104 | 11 | 3 | 172 | 7 |
| Total Analysis Volume [veh/h] | 107 | 59 | 8 | 43 | 47 | 213 | 185 | 417 | 43 | 13 | 688 | 29 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 38 | 0 | 0 | 38 | 0 | 0 | 82 | 0 | 0 | 82 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 22 | 22 | 22 | 22 | 43 | 43 | 43 | 43 | 43 |
| g / C, Green / Cycle | 0.28 | 0.28 | 0.28 | 0.28 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| (v / s)_i Volume / Saturation Flow Rate | 0.10 | 0.04 | 0.03 | 0.16 | 0.25 | 0.25 | 0.01 | 0.37 | 0.02 |
| s, saturation flow rate [veh/h] | 1119 | 1831 | 1334 | 1634 | 734 | 1840 | 932 | 1870 | 1589 |
| c, Capacity [veh/h] | 220 | 513 | 392 | 458 | 297 | 1021 | 454 | 1038 | 883 |
| d1, Uniform Delay [s] | 33.74 | 20.91 | 24.17 | 23.96 | 27.11 | 10.26 | 14.80 | 12.17 | 7.84 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.06 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.62 | 0.04 | 0.05 | 0.41 | 0.80 | 0.12 | 0.01 | 0.44 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.49 | 0.13 | 0.11 | 0.57 | 0.62 | 0.45 | 0.03 | 0.66 | 0.03 |
| d, Delay for Lane Group [s/veh] | 34.36 | 20.96 | 24.21 | 24.38 | 27.91 | 10.38 | 14.81 | 12.61 | 7.84 |
| Lane Group LOS | C | C | C | C | C | B | B | B | A |
| Critical Lane Group | No | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.88 | 0.84 | 0.59 | 3.77 | 3.04 | 3.74 | 0.13 | 6.71 | 0.18 |
| 50th-Percentile Queue Length [ft/ln] | 47.06 | 21.02 | 14.80 | 94.13 | 76.08 | 93.54 | 3.22 | 167.68 | 4.50 |
| 95th-Percentile Queue Length [veh/ln] | 3.39 | 1.51 | 1.07 | 6.78 | 5.48 | 6.74 | 0.23 | 10.95 | 0.32 |
| 95th-Percentile Queue Length [ft/ln] | 84.71 | 37.84 | 26.63 | 169.43 | 136.94 | 168.38 | 5.79 | 273.86 | 8.10 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 34.36 | 20.96 | 20.96 | 24.21 | 24.38 | 24.38 | 27.91 | 10.38 | 10.38 | 14.81 | 12.61 | 7.84 |
| Movement LOS | C | C | C | C | C | C | C | B | B | B | B | A |
| d_A, Approach Delay [s/veh] | 29.20 | | | 24.35 | | | 15.40 | | | 12.46 | | |
| Approach LOS | C | | | C | | | B | | | B | | |
| d_I, Intersection Delay [s/veh] | 17.00 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.527 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| I_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 812 | 812 | 1942 | 1942 |
| d_b, Bicycle Delay [s] | 13.74 | 13.74 | 0.03 | 0.03 |
| I_b,int, Bicycle LOS Score for Intersection | 1.853 | 2.218 | 2.657 | 2.786 |
| Bicycle LOS | A | B | B | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 5: Power Road & Access A**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.000 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 1 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 2056 | 0 | 0 | 2322 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 87 | 25 | 114 | 54 | 54 | 98 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 38 | 0 | 0 | 11 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2181 | 25 | 114 | 2387 | 54 | 98 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 593 | 7 | 31 | 649 | 15 | 27 |
| Total Analysis Volume [veh/h] | 2371 | 27 | 124 | 2595 | 59 | 107 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.02 | 0.00 | 1.59 | 0.03 | 0.00 | 0.69 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 407.06 | 0.00 | 10000.00 | 67.71 |
| Movement LOS | A | A | F | A | F | F |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 10.26 | 0.00 | 9.66 | 3.98 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 256.49 | 0.00 | 241.61 | 99.55 |
| d_A, Approach Delay [s/veh] | 0.00 | | 18.56 | | 3597.86 | |
| Approach LOS | A | | C | | F | |
| d_I, Intersection Delay [s/veh] | 122.60 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Power Road & Access B**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 80.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.751 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 2056 | 0 | 0 | 2322 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 160 | 25 | 0 | 168 | 0 | 101 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 38 | 0 | 0 | 11 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2254 | 25 | 0 | 2501 | 0 | 101 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 613 | 7 | 0 | 680 | 0 | 27 |
| Total Analysis Volume [veh/h] | 2450 | 27 | 0 | 2718 | 0 | 110 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.00 | 0.03 | 0.00 | 0.75 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 80.52 |
| Movement LOS | A | A | | A | | F |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.54 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 113.38 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.00 | | 80.52 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 1.67 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Access C & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 12.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.030 |

**Intersection Setup**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 576 | 0 | 0 | 895 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 13 | 170 | 106 | 0 | 173 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 99 | 0 | 0 | 29 |
| Total Hourly Volume [veh/h] | 0 | 13 | 845 | 106 | 0 | 1097 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 4 | 230 | 29 | 0 | 298 |
| Total Analysis Volume [veh/h] | 0 | 14 | 918 | 115 | 0 | 1192 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.01 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 12.90 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 2.30 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 12.90 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.08 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Access D & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 65.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.764 |

**Intersection Setup**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 1 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 576 | 0 | 0 | 895 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 139 | 13 | 77 | 106 | 34 | 34 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 99 | 0 | 0 | 29 |
| Total Hourly Volume [veh/h] | 139 | 13 | 752 | 106 | 34 | 958 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 38 | 4 | 204 | 29 | 9 | 260 |
| Total Analysis Volume [veh/h] | 151 | 14 | 817 | 115 | 37 | 1041 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.76 | 0.03 | 0.01 | 0.00 | 0.09 | 0.01 |
| d_M, Delay for Movement [s/veh] | 65.36 | 12.32 | 0.00 | 0.00 | 14.35 | 0.00 |
| Movement LOS | F | B | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 5.15 | 0.09 | 0.00 | 0.00 | 0.29 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 128.80 | 2.13 | 0.00 | 0.00 | 7.16 | 0.00 |
| d_A, Approach Delay [s/veh] | 60.86 | | 0.00 | | 0.49 | |
| Approach LOS | F | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.86 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Access E & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 12.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.027 |

**Intersection Setup**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 576 | 0 | 0 | 895 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 13 | 52 | 38 | 0 | 67 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 99 | 0 | 0 | 29 |
| Total Hourly Volume [veh/h] | 0 | 13 | 727 | 38 | 0 | 991 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 4 | 198 | 10 | 0 | 269 |
| Total Analysis Volume [veh/h] | 0 | 14 | 790 | 41 | 0 | 1077 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | No | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 12.17 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 2.09 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 12.17 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.09 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Power Road & Guadaluoe Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 33.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.684 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Guadalupe Road | | | Guadalupe Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 254 | 1373 | 251 | 233 | 1565 | 317 | 226 | 358 | 150 | 186 | 347 | 228 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 45 | 45 | 45 | 0 | 48 | 0 | 0 | 0 | 48 | 48 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 37 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 98 | 0 | 0 | 105 | 0 | 0 | 65 | 0 | 0 | 75 |
| Total Hourly Volume [veh/h] | 299 | 1455 | 198 | 233 | 1629 | 212 | 226 | 358 | 133 | 234 | 347 | 153 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 81 | 395 | 54 | 63 | 443 | 58 | 61 | 97 | 36 | 64 | 94 | 42 |
| Total Analysis Volume [veh/h] | 325 | 1582 | 215 | 253 | 1771 | 230 | 246 | 389 | 145 | 254 | 377 | 166 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Beginning of First Yellow |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 1 | 6 | 0 | 5 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 | 8 | 15 | 0 |
| Maximum Green [s] | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 | 25 | 45 | 0 |
| Amber [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 15 | 47 | 0 | 21 | 53 | 0 | 16 | 35 | 0 | 17 | 36 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 | 2.0 | 4.5 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | Yes | | No | Yes | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 | 0.00 | 4.50 | 4.50 |
| g_i, Effective Green Time [s] | 74 | 61 | 61 | 74 | 53 | 53 | 33 | 16 | 16 | 33 | 17 | 17 |
| g / C, Green / Cycle | 0.62 | 0.50 | 0.50 | 0.62 | 0.44 | 0.44 | 0.27 | 0.13 | 0.13 | 0.27 | 0.14 | 0.14 |
| (v / s)_i Volume / Saturation Flow Rate | 0.53 | 0.31 | 0.14 | 0.50 | 0.35 | 0.14 | 0.20 | 0.10 | 0.10 | 0.20 | 0.11 | 0.10 |
| s, saturation flow rate [veh/h] | 619 | 5094 | 1589 | 508 | 5094 | 1589 | 1251 | 3560 | 1626 | 1282 | 3560 | 1589 |
| c, Capacity [veh/h] | 405 | 2543 | 793 | 342 | 2242 | 700 | 350 | 479 | 219 | 358 | 509 | 227 |
| d1, Uniform Delay [s] | 32.44 | 21.83 | 17.41 | 21.19 | 28.83 | 21.99 | 37.28 | 50.03 | 50.20 | 37.48 | 49.28 | 49.20 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.38 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 15.36 | 1.16 | 0.84 | 13.39 | 2.93 | 1.26 | 8.79 | 0.93 | 2.28 | 0.98 | 0.80 | 1.70 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.80 | 0.62 | 0.27 | 0.74 | 0.79 | 0.33 | 0.70 | 0.76 | 0.78 | 0.71 | 0.74 | 0.73 |
| d, Delay for Lane Group [s/veh] | 47.80 | 22.99 | 18.25 | 34.58 | 31.76 | 23.25 | 46.07 | 50.97 | 52.48 | 38.46 | 50.09 | 50.90 |
| Lane Group LOS | D | C | B | C | C | C | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 5.34 | 10.18 | 3.41 | 3.96 | 14.13 | 4.26 | 6.77 | 5.21 | 4.99 | 6.24 | 5.36 | 4.77 |
| 50th-Percentile Queue Length [ft/ln] | 133.62 | 254.60 | 85.18 | 98.88 | 353.26 | 106.55 | 169.19 | 130.20 | 124.80 | 155.88 | 134.04 | 119.28 |
| 95th-Percentile Queue Length [veh/ln] | 9.14 | 15.42 | 6.13 | 7.12 | 20.30 | 7.65 | 11.03 | 8.95 | 8.66 | 10.33 | 9.16 | 8.35 |
| 95th-Percentile Queue Length [ft/ln] | 228.41 | 385.44 | 153.32 | 177.98 | 507.38 | 191.20 | 275.85 | 223.76 | 216.41 | 258.26 | 228.98 | 208.84 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 47.80 | 22.99 | 18.25 | 34.58 | 31.76 | 23.25 | 46.07 | 51.07 | 52.48 | 38.46 | 50.09 | 50.90 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | D | C | B | C | C | C | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 26.31 | | | 31.21 | | | 49.75 | | | 46.55 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 33.95 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.684 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 675 | 775 | 475 | 492 |
| d_b, Bicycle Delay [s] | 26.33 | 22.51 | 34.88 | 34.13 |
| l_b,int, Bicycle LOS Score for Intersection | 2.781 | 2.857 | 2.024 | 2.279 |
| Bicycle LOS | C | C | B | B |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 2: Power Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 32.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.722 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Elliot Road | | | Elliot Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 501 | 1385 | 376 | 57 | 1535 | 280 | 506 | 418 | 338 | 246 | 331 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 90 | 90 | 92 | 101 | 43 | 0 | 0 | 100 | 43 | 92 | 44 | 45 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 9 | 0 | 37 | 22 | 37 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 160 | 0 | 0 | 92 | 0 | 0 | 126 | 0 | 0 | 55 |
| Total Hourly Volume [veh/h] | 591 | 1475 | 324 | 174 | 1578 | 188 | 506 | 527 | 255 | 375 | 397 | 111 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 161 | 401 | 88 | 47 | 429 | 51 | 138 | 143 | 69 | 102 | 108 | 30 |
| Total Analysis Volume [veh/h] | 642 | 1603 | 352 | 189 | 1715 | 204 | 550 | 573 | 277 | 408 | 432 | 121 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 35 | 0 | 20 | 35 | 0 | 25 | 30 | 0 | 25 | 30 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 27 | 67 | 0 | 11 | 51 | 0 | 23 | 24 | 0 | 18 | 19 | 0 |
| Vehicle Extension [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 3.4 | 0.0 | 2.0 | 3.4 | 0.0 |
| Minimum Recall | No | Yes | | No | Yes | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 3.40 | 3.40 | 0.00 | 3.40 | 3.40 |
| g_i, Effective Green Time [s] | 56 | 47 | 47 | 56 | 35 | 35 | 37 | 21 | 21 | 37 | 17 | 17 |
| g / C, Green / Cycle | 0.53 | 0.45 | 0.45 | 0.53 | 0.34 | 0.34 | 0.35 | 0.20 | 0.20 | 0.35 | 0.17 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.44 | 0.31 | 0.22 | 0.23 | 0.34 | 0.13 | 0.22 | 0.11 | 0.17 | 0.20 | 0.08 | 0.08 |
| s, saturation flow rate [veh/h] | 1462 | 5094 | 1589 | 820 | 5094 | 1589 | 2512 | 5094 | 1589 | 2069 | 5094 | 1589 |
| c, Capacity [veh/h] | 763 | 2275 | 710 | 460 | 1707 | 533 | 897 | 1041 | 325 | 741 | 851 | 265 |
| d1, Uniform Delay [s] | 28.22 | 23.33 | 20.54 | 18.14 | 34.72 | 26.48 | 26.40 | 37.25 | 40.04 | 25.51 | 39.59 | 39.22 |
| k, delay calibration | 0.50 | 0.04 | 0.12 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.08 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 10.83 | 0.15 | 0.60 | 0.22 | 7.30 | 0.17 | 0.25 | 0.17 | 4.88 | 0.24 | 0.18 | 0.45 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.84 | 0.70 | 0.50 | 0.41 | 1.00 | 0.38 | 0.61 | 0.55 | 0.85 | 0.55 | 0.51 | 0.46 |
| d, Delay for Lane Group [s/veh] | 39.05 | 23.48 | 21.13 | 18.36 | 42.02 | 26.65 | 26.65 | 37.42 | 44.92 | 25.75 | 39.77 | 39.67 |
| Lane Group LOS | D | C | C | B | F | C | C | D | D | C | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 5.07 | 9.74 | 5.75 | 1.01 | 14.57 | 3.69 | 4.99 | 4.21 | 6.98 | 3.53 | 3.25 | 2.73 |
| 50th-Percentile Queue Length [ft/ln] | 126.67 | 243.50 | 143.68 | 25.20 | 364.32 | 92.35 | 124.81 | 105.28 | 174.46 | 88.33 | 81.27 | 68.20 |
| 95th-Percentile Queue Length [veh/ln] | 8.76 | 14.86 | 9.68 | 1.81 | 20.90 | 6.65 | 8.66 | 7.58 | 11.31 | 6.36 | 5.85 | 4.91 |
| 95th-Percentile Queue Length [ft/ln] | 218.96 | 371.45 | 241.97 | 45.35 | 522.41 | 166.23 | 216.42 | 189.41 | 282.77 | 158.99 | 146.28 | 122.75 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 39.05 | 23.48 | 21.13 | 18.36 | 42.02 | 26.65 | 26.65 | 37.42 | 44.92 | 25.75 | 39.77 | 39.67 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | D | C | C | B | F | C | C | D | D | C | D | D |
| d_A, Approach Delay [s/veh] | 27.01 | | | 38.41 | | | 34.67 | | | 33.80 | | |
| Approach LOS | C | | | D | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 32.85 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.722 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1162 | 855 | 357 | 261 |
| d_b, Bicycle Delay [s] | 9.15 | 17.07 | 35.20 | 39.42 |
| l_b,int, Bicycle LOS Score for Intersection | 3.076 | 2.770 | 2.399 | 2.118 |
| Bicycle LOS | C | C | B | B |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 3: Power Road & Warner Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 55.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.909 |

**Intersection Setup**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Power Road | | | Power Road | | | Warner Road | | | Warner Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 166 | 1960 | 135 | 94 | 2493 | 270 | 284 | 51 | 226 | 242 | 35 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 71 | 0 | 0 | 67 | 45 | 48 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 16 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 45 | 0 | 0 | 104 | 0 | 0 | 75 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 166 | 2047 | 90 | 94 | 2597 | 211 | 332 | 51 | 151 | 242 | 35 | 24 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 45 | 556 | 24 | 26 | 706 | 57 | 90 | 14 | 41 | 66 | 10 | 7 |
| Total Analysis Volume [veh/h] | 180 | 2225 | 98 | 102 | 2823 | 229 | 361 | 55 | 164 | 263 | 38 | 26 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 4 | 15 | 0 | 4 | 15 | 0 | 4 | 8 | 0 | 4 | 8 | 0 |
| Maximum Green [s] | 20 | 65 | 0 | 20 | 65 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 | 3.0 | 4.4 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Split [s] | 13 | 62 | 0 | 8 | 57 | 0 | 16 | 38 | 0 | 12 | 34 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 | 2.0 | 4.4 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 | 0.00 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 80 | 71 | 71 | 80 | 65 | 65 | 38 | 16 | 16 | 38 | 14 | 14 |
| g / C, Green / Cycle | 0.61 | 0.54 | 0.54 | 0.61 | 0.50 | 0.50 | 0.29 | 0.12 | 0.12 | 0.29 | 0.11 | 0.11 |
| (v / s)_i Volume / Saturation Flow Rate | 0.51 | 0.44 | 0.06 | 0.34 | 0.55 | 0.14 | 0.23 | 0.02 | 0.10 | 0.18 | 0.01 | 0.02 |
| s, saturation flow rate [veh/h] | 351 | 5094 | 1589 | 304 | 5094 | 1589 | 1593 | 3560 | 1589 | 1489 | 3560 | 1589 |
| c, Capacity [veh/h] | 259 | 2751 | 858 | 211 | 2530 | 790 | 534 | 435 | 194 | 501 | 385 | 172 |
| d1, Uniform Delay [s] | 39.73 | 24.56 | 14.74 | 26.96 | 32.90 | 19.34 | 41.27 | 51.19 | 56.19 | 38.52 | 52.56 | 52.87 |
| k, delay calibration | 0.50 | 0.11 | 0.11 | 0.21 | 0.11 | 0.11 | 0.50 | 0.11 | 0.15 | 0.46 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.31 | 0.59 | 0.06 | 3.35 | 53.47 | 0.20 | 6.71 | 0.13 | 12.81 | 3.58 | 0.11 | 0.40 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.69 | 0.81 | 0.11 | 0.48 | 1.12 | 0.29 | 0.68 | 0.13 | 0.85 | 0.53 | 0.10 | 0.15 |
| d, Delay for Lane Group [s/veh] | 54.05 | 25.15 | 14.80 | 30.31 | 86.38 | 19.55 | 47.98 | 51.32 | 69.00 | 42.10 | 52.67 | 53.27 |
| Lane Group LOS | D | C | B | C | F | B | D | D | E | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 3.15 | 17.44 | 1.39 | 1.34 | 37.20 | 3.98 | 11.24 | 0.81 | 5.95 | 7.48 | 0.57 | 0.79 |
| 50th-Percentile Queue Length [ft/ln] | 78.73 | 436.01 | 34.63 | 33.53 | 929.90 | 99.54 | 281.05 | 20.30 | 148.86 | 187.02 | 14.21 | 19.84 |
| 95th-Percentile Queue Length [veh/ln] | 5.67 | 24.29 | 2.49 | 2.41 | 51.32 | 7.17 | 16.74 | 1.46 | 9.96 | 11.97 | 1.02 | 1.43 |
| 95th-Percentile Queue Length [ft/ln] | 141.71 | 607.24 | 62.33 | 60.35 | 1282.93 | 179.17 | 418.52 | 36.54 | 248.91 | 299.16 | 25.58 | 35.71 |

**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 54.05 | 25.15 | 14.80 | 30.31 | 86.38 | 19.55 | 47.98 | 51.32 | 69.00 | 42.10 | 52.67 | 53.27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | D | C | B | C | F | B | D | D | E | D | D | D |
| d_A, Approach Delay [s/veh] | 26.82 | | | 79.71 | | | 54.24 | | | 44.22 | | |
| Approach LOS | C | | | E | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 55.52 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.909 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 850 | 774 | 483 | 422 |
| d_b, Bicycle Delay [s] | 21.62 | 24.59 | 37.62 | 40.71 |
| l_b,int, Bicycle LOS Score for Intersection | 2.961 | 3.352 | 2.100 | 1.839 |
| Bicycle LOS | C | C | B | A |

## Sequence

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 4: Sossaman Road & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 13.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.519 |

**Intersection Setup**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 45.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | | | | | | | Elliot Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 57 | 93 | 15 | 57 | 44 | 201 | 226 | 503 | 93 | 6 | 412 | 55 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 24 | 22 | 45 | 0 | 0 | 48 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 22 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 5 | 0 | 0 | 74 | 0 | 0 | 31 | 0 | 0 | 18 |
| Total Hourly Volume [veh/h] | 57 | 93 | 10 | 57 | 44 | 151 | 248 | 598 | 62 | 6 | 482 | 37 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 25 | 3 | 15 | 12 | 41 | 67 | 163 | 17 | 2 | 131 | 10 |
| Total Analysis Volume [veh/h] | 62 | 101 | 11 | 62 | 48 | 164 | 270 | 650 | 67 | 7 | 524 | 40 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Amber [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 87 | 0 | 0 | 87 | 0 |
| Vehicle Extension [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | L | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| L, Total Lost Time per Cycle [s] | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 | 6.40 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 | 4.40 |
| g_i, Effective Green Time [s] | 13 | 13 | 13 | 13 | 34 | 34 | 34 | 34 | 34 |
| g / C, Green / Cycle | 0.22 | 0.22 | 0.22 | 0.22 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.06 | 0.05 | 0.13 | 0.32 | 0.39 | 0.01 | 0.28 | 0.03 |
| s, saturation flow rate [veh/h] | 1169 | 1838 | 1281 | 1645 | 846 | 1840 | 734 | 1870 | 1589 |
| c, Capacity [veh/h] | 207 | 408 | 297 | 365 | 424 | 1038 | 304 | 1055 | 897 |
| d1, Uniform Delay [s] | 27.09 | 19.29 | 23.35 | 20.79 | 18.07 | 9.31 | 16.98 | 7.89 | 5.83 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.30 | 0.13 | 0.13 | 0.55 | 0.60 | 0.31 | 0.01 | 0.13 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.30 | 0.27 | 0.21 | 0.58 | 0.64 | 0.69 | 0.02 | 0.50 | 0.04 |
| d, Delay for Lane Group [s/veh] | 27.39 | 19.42 | 23.48 | 21.34 | 18.67 | 9.62 | 16.99 | 8.02 | 5.83 |
| Lane Group LOS | C | B | C | C | B | A | B | A | A |
| Critical Lane Group | No | No | No | Yes | No | Yes | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.79 | 1.13 | 0.71 | 2.34 | 2.89 | 4.42 | 0.06 | 2.72 | 0.15 |
| 50th-Percentile Queue Length [ft/ln] | 19.79 | 28.32 | 17.79 | 58.39 | 72.13 | 110.40 | 1.60 | 68.01 | 3.82 |
| 95th-Percentile Queue Length [veh/ln] | 1.42 | 2.04 | 1.28 | 4.20 | 5.19 | 7.86 | 0.11 | 4.90 | 0.28 |
| 95th-Percentile Queue Length [ft/ln] | 35.62 | 50.97 | 32.03 | 105.10 | 129.83 | 196.56 | 2.87 | 122.42 | 6.88 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 27.39 | 19.42 | 19.42 | 23.48 | 21.34 | 21.34 | 18.67 | 9.62 | 9.62 | 16.99 | 8.02 | 5.83 |
| Movement LOS | C | B | B | C | C | C | B | A | A | B | A | A |
| d_A, Approach Delay [s/veh] | 22.26 | | | 21.82 | | | 12.09 | | | 7.98 | | |
| Approach LOS | C | | | C | | | B | | | A | | |
| d_I, Intersection Delay [s/veh] | 13.13 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.519 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 889 | 889 | 2693 | 2693 |
| d_b, Bicycle Delay [s] | 9.24 | 9.24 | 3.59 | 3.59 |
| l_b,int, Bicycle LOS Score for Intersection | 1.855 | 2.134 | 3.239 | 2.531 |
| Bicycle LOS | A | B | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 5: Power Road & Access A**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.000 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 1 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access A | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1937 | 0 | 0 | 1619 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 92 | 27 | 122 | 56 | 56 | 102 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 16 | 0 | 0 | 37 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2045 | 27 | 122 | 1712 | 56 | 102 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 556 | 7 | 33 | 465 | 15 | 28 |
| Total Analysis Volume [veh/h] | 2223 | 29 | 133 | 1861 | 61 | 111 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.02 | 0.00 | 1.43 | 0.02 | 0.00 | 0.64 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 325.83 | 0.00 | 10000.00 | 55.93 |
| Movement LOS | A | A | F | A | F | F |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 9.99 | 0.00 | 9.93 | 3.60 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 249.85 | 0.00 | 248.22 | 90.01 |
| d_A, Approach Delay [s/veh] | 0.00 | | 21.73 | | 3582.60 | |
| Approach LOS | A | | C | | F | |
| d_I, Intersection Delay [s/veh] | 149.29 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Power Road & Access B**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 66.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.695 |

**Intersection Setup**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 45.00 | | 45.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Power Road | | Power Road | | Access B | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1937 | 0 | 0 | 1619 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 168 | 27 | 0 | 178 | 0 | 105 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 16 | 0 | 0 | 37 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2121 | 27 | 0 | 1834 | 0 | 105 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 576 | 7 | 0 | 498 | 0 | 29 |
| Total Analysis Volume [veh/h] | 2305 | 29 | 0 | 1993 | 0 | 114 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.00 | 0.02 | 0.00 | 0.70 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.98 |
| Movement LOS | A | A | | A | | F |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.12 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 103.10 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.00 | | 65.98 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 1.69 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Access C & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 14.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.036 |

**Intersection Setup**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access C | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 851 | 0 | 0 | 661 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 13 | 180 | 113 | 0 | 181 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 41 | 0 | 0 | 96 |
| Total Hourly Volume [veh/h] | 0 | 13 | 1072 | 113 | 0 | 938 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 4 | 291 | 31 | 0 | 255 |
| Total Analysis Volume [veh/h] | 0 | 14 | 1165 | 123 | 0 | 1020 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.04 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 14.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 2.78 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 14.56 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.09 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Access D & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 136.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.021 |

**Intersection Setup**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 1 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access D | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 851 | 0 | 0 | 661 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 145 | 13 | 81 | 113 | 36 | 36 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 41 | 0 | 0 | 96 |
| Total Hourly Volume [veh/h] | 145 | 13 | 973 | 113 | 36 | 793 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 39 | 4 | 264 | 31 | 10 | 215 |
| Total Analysis Volume [veh/h] | 158 | 14 | 1058 | 123 | 39 | 862 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 1.02 | 0.03 | 0.01 | 0.00 | 0.12 | 0.01 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 136.37 | 13.80 | 0.00 | 0.00 | 17.82 | 0.00 |
| Movement LOS | F | B | A | A | C | A |
| 95th-Percentile Queue Length [veh/ln] | 7.90 | 0.10 | 0.00 | 0.00 | 0.41 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 197.50 | 2.56 | 0.00 | 0.00 | 10.30 | 0.00 |
| d_A, Approach Delay [s/veh] | 126.39 | | 0.00 | | 0.77 | |
| Approach LOS | F | | A | | A | |
| d_I, Intersection Delay [s/veh] | 9.95 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Access E & Elliot Road**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 13.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.032 |

**Intersection Setup**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 2 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Speed [mph] | 25.00 | | 45.00 | | 45.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Access E | | Elliot Road | | Elliot Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 851 | 0 | 0 | 661 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 13 | 54 | 41 | 0 | 72 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 41 | 0 | 0 | 96 |
| Total Hourly Volume [veh/h] | 0 | 13 | 946 | 41 | 0 | 829 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 4 | 257 | 11 | 0 | 225 |
| Total Analysis Volume [veh/h] | 0 | 14 | 1028 | 45 | 0 | 901 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.01 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 13.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | B | A | A | | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 2.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 13.60 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.10 | | | | | |
| Intersection LOS | B | | | | | |