C COMMUNITY DEVELOPMENT DEPARTMENT
Planning Division

City of Arts & Innovation

Draft Mitigated Negative Declaration

AGENDA ITEM NO.: 2

WARD: 2

1. **Case Number:** **P17-0853 (General Plan Amendment) and P17-0854 (Rezoning)**

2. **Project Title:** **Entrada Housing Project**

3. **Hearing Date:** **September 6, 2018**

4. **Lead Agency:** City of Riverside
Community Development Department
Planning Division
3900 Main Street, 3rd Floor
Riverside, CA 92522

5. **Contact Person:** Matthew Taylor
Phone Number: (951) 826-5944

6. **Project Location:** The project area is bounded by 7th Street on the south and Chicago Avenue on the east. APNs: 211-181-019, 211-181-020, 211-181-021, 211-181-022, 211-181-024, 211-181-025, 211-181-026.

7. **Project Applicant/Project Sponsor's Name and Address:** Wakeland Housing and Development Corp.
1230 Columbia Street, Suite 950
San Diego, CA 92101

8. **General Plan Designation:** Current: MDR – Medium-Density Residential and HDR – High-Density Residential
Proposed: HDR – High-Density Residential

9. **Zoning**: Current: R-1-7000 – Single-Family Residential
Proposed: R-3-1500 – Multi-Family Residential

10. **Description of Project: (**Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

Wakeland Housing and Development Corporation, in partnership with Riverside Housing Development Corporation is developing "Entrada," a community of affordable rental housing units with on-site resident services. Located in the Riverside community of Chicago/Linden, a subset of the larger Eastside Neighborhood, Entrada will consist of approximately sixty-five (65) units, including one (1) unrestricted manager's unit and 64 units affordable to very low-income households (households earning between 30 and 60 percent of the Area Median Income (AMI)). The units will be one-, two-, and three-bedrooms located in 11 two- and three-story buildings providing a combination of stacked flats and townhouses. The community will include a 2,500 square foot community center and a 900 square foot commercial space. Both the community center and the commercial space will be designed as amenities for residents, and will not be oriented to public use. The community center will include facilities for resident recreation, a common laundry room, as well as providing connections to services and events such as healthy cooking workshops. The total site area is 2.03 net acres (2.63 gross acres).

Access to the community will be provided from both Chicago Avenue and 7th Street. A total of 106 parking spaces will be provided on-site, 80 of which will be covered carports.

This project implements Phase One of the Chicago-Linden Strategic Plan by revitalizing the Chicago-Linden community through the relocation of overcrowded tenants living in substandard apartment buildings, demolition of those substandard buildings and new construction of an affordable rental community. The project area has been fully developed in the past. Some of the previously occurring buildings within the project area have already been demolished. All remaining existing structures will be removed prior to project implementation. The project area contained a total of 41 units, most of which have been removed. Those units still accommodating tenants will be relocated prior to project implementation. The project is to be built in one phase, and for purposes of this analysis is expected to be complete by early 2020.

To implement the proposed project, the applicant has requested a General Plan Amendment and Zone Change. The current General Plan Land Use designation of the project site is split between MDR – Medium Density Residential (1.19 net acres) and HDR – High-Density Residential (0.85 net acres), and the current Zoning designation of the entire site is R-1-7000 – Single-Family Residential. The applicant requests a General Plan Amendment to amend the site's Land Use designation to HDR – High Density Residential and Rezoning to change the site's Zoning designation to R-3-1500 – Multiple-Family Residential, allowing up to 29 units per gross acre. Under these designations, the site could accommodate up to 77 units. Multiple-family residences and associated amenities are permitted as a matter of right in the proposed R-3-1500 Zone, subject to the ministerial approval of Administrative Design Review. As such, detailed project-specific design documents will be reviewed ministerially prior to the issuance of building permits. To facilitate this analysis, illustrative conceptual plans have been provided as a supplement to the Project Description (Exhibits 3 and 4).

The applicant has also entered into an Affordable Housing Agreement, which pursuant to Riverside Municipal Code Chapter 19.545.080 (Density Bonus – Incentives, Concessions and In-Lieu Incentives) allows incentives, waivers or other concessions in development standards for the provision of affordable housing units. The project proponent is seeking reduced parking requirement as a Density Bonus concession in order to accommodate the 65 affordable rental units and supplemental amenities.

11. **Surrounding land uses and setting: Briefly describe the project's surroundings:**

	Existing Land Use	General Plan Designation	Zoning Designation
Project Site	Single- and multi-family residential	Medium Density Residential (MDR); High Density residential (HDR)	R-1-7000 Single-Family Residential
North	Multi-family residential	High Density Residential (HDR)	R-3-1500 Multi-Family Residential
East	Commercial; light industrial (lumber, tire, auto body shop)	Business/Office Park (B/OP)	CR Commercial Retail; R-3-1500 Multi-Family Residential
South	Single-family residential	Medium Density Residential (MDR); High Density Residential (HDR)	R-1-7000 Single-Family Residential

West	Single- and multi-family residential	Medium Density Residential (MDR)	R-1-7000 Single-Family Residential

12. **Other public agencies whose approval is required (e.g., permits, financial approval, or participation agreement.):**

    a. City of Riverside Housing Authority
    b. Riverside County Airport Land Use Commission

13. **Other Environmental Reviews Incorporated by Reference in this Review:**

    a. General Plan 2025
    b. GP 2025 FPEIR and Addenda
    c. Chicago-Linden Strategic Plan
    d. Chicago-Linden Strategic Plan Mitigated Negative Declaration

14. **List of Appendices**

    a. Appendix A – CalEEMod Output Tables
    b. Appendix B – Traffic Impact Analysis
    c. Appendix C – JMRC Memo
    d. Appendix D – Airport Land Use Commission Riverside County – Director's Determination

15. **Acronyms**

AICUZ -	Air Installation Compatible Use Zone Study
AQMP -	Air Quality Management Plan
AUSD -	Alvord Unified School District
CEQA -	California Environmental Quality Act
CMP -	Congestion Management Plan
EIR -	Environmental Impact Report
EMWD -	Eastern Municipal Water District
EOP -	Emergency Operations Plan
FEMA -	Federal Emergency Management Agency
FPEIR -	GP 2025 Final Programmatic Environmental Impact Report
GIS -	Geographic Information System
GhG -	Green House Gas
GP 2025 -	General Plan 2025
IS -	Initial Study
LHMP -	Local Hazard Mitigation Plan
MARB/MIP -	March Air Reserve Base/March Inland Port
MJPA-JLUS -	March Joint Powers Authority - Joint Land Use Study
MSHCP -	Multiple-Species Habitat Conservation Plan
MVUSD -	Moreno Valley Unified School District
NCCP -	Natural Communities Conservation Plan
OEM -	Office of Emergency Services
OPR -	Office of Planning & Research, State
PEIR -	Program Environmental Impact Report
PW -	Public Works, Riverside
RCALUC -	Riverside County Airport Land Use Commission
RCALUCP -	Riverside County Airport Land Use Compatibility Plan

RCP -	Regional Comprehensive Plan
RCTC -	Riverside County Transportation Commission
RMC -	Riverside Municipal Code
RPD -	Riverside Police Department
RPU -	Riverside Public Utilities
RTIP -	Regional Transportation Improvement Plan
RTP -	Regional Transportation Plan
RUSD -	Riverside Unified School District
SCAG -	Southern California Association of Governments
SCAQMD -	South Coast Air Quality Management District
SCH -	State Clearinghouse
SKR-HCP -	Stephens' Kangaroo Rat - Habitat Conservation Plan
SWPPP -	Storm Water Pollution Prevention Plan
USGS -	United States Geologic Survey
WMWD -	Western Municipal Water District
WQMP -	Water Quality Management Plan

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture & Forest Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Service	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation which reflects the independent judgment of the City of Riverside, it is recommended that:

The City of Riverside finds that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☐
The City of Riverside finds that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	☒
The City of Riverside finds that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	☐
The City of Riverside finds that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	☐
The City of Riverside finds that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	☐

Signature _____ Date _____

Printed Name & Title _____ For City of Riverside

Environmental Initial Study

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a. **Earlier Analysis Used.** Identify and state where they are available for review.

   b. **Impacts Adequately Addressed.** Identify which effects from the above checklist were with in the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c. **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measure which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) The explanation of each issue should identify:

a. the significance criteria or threshold, if any, used to evaluate each question; and

b. the mitigation measure identified, if any, to reduce the impact to less than significance.

RIVERSIDE COUNTY

N

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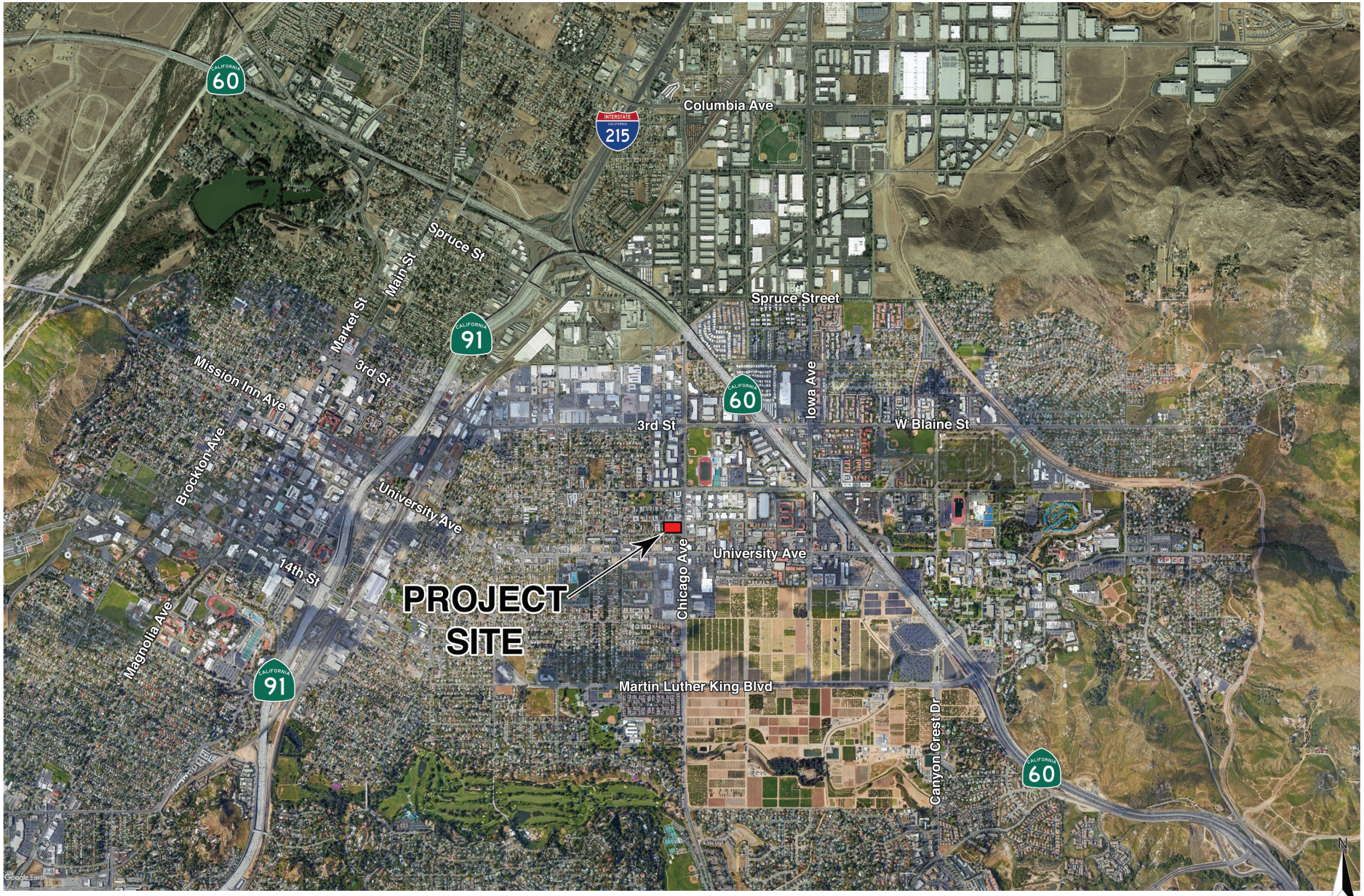
Entrada Housing Development
Regional Location Map
Riverside, California

Exhibit

1



Source: Google Earth, 2018

04.12.18

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Entrada Housing Development
Vicinity Map
Riverside, California

Exhibit
2

Source: Google Earth, 2018

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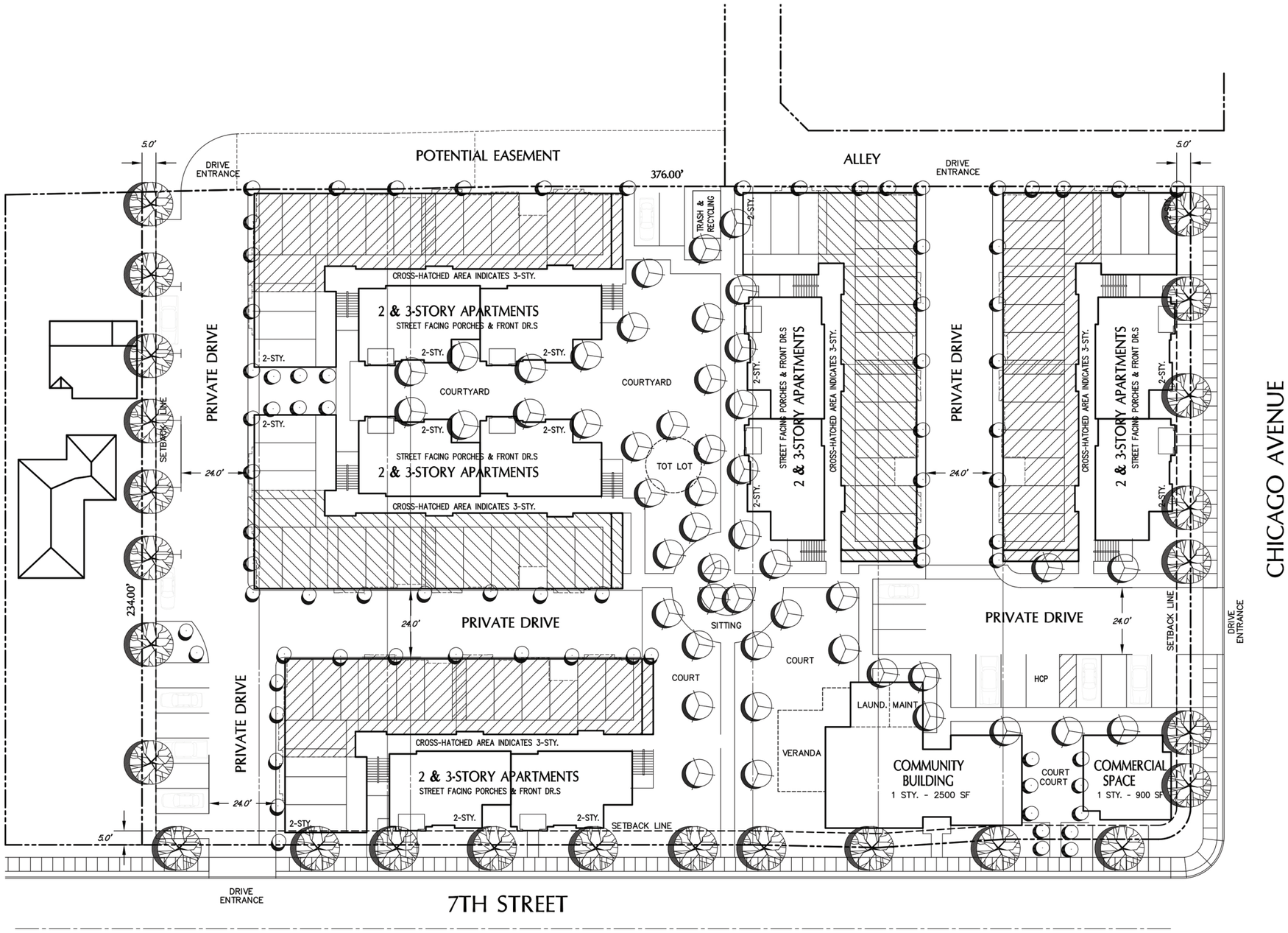
Entrada Housing Development
Project Location Map
Riverside, California

Exhibit
3



COURTYARD HOUSING

TOTAL SITE AREA:	88,442 S.F. / 2.03 AC
DENSITY:	32.0 DU/AC
1 BDRM. FLATS:	15 UNITS
2 BDRM. FLATS:	20 UNITS
3 BDRM. FLATS:	30 UNITS
NUMBER OF UNITS:	65 UNITS

RESIDENTIAL PARKING - REQUIRED:

1 BDRM.:	15 X .5	=	3.0
2 BDRM.:	2 X 20 X .5	=	20.0
3 BDRM.:	3 X 30 X .5	=	45.0
TOTAL REQD. RES. PARKING		=	68.0

RESIDENTIAL PARKING - PROPOSED:

ATTACHED CARPORTS:	=	80.0
OPEN SPACES:	=	26.0
TOTAL PROPOSED PARKING	=	106.0

PROPOSED PARKING RATIO = 1.6 SPACES PER UNIT

N

04.12.18

Source: Wakeland Housing & Development Corp., 2018

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Entrada Housing Development
Conceptual Site Plan
Riverside, California

Exhibit
4

STREET SCENE ALONG CHICAGO AVENUE

STREET SCENE ALONG SEVENTH STREET

N

04.12.18

Source:Wakeland Housing & Development Corp., 2018

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Entrada Housing Development
Conceptual Elevations
Riverside, California

Exhibit

5

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

1a. Response: ***(Source: General Plan 2025 FPEIR Figure 5.1-1 – Scenic and Special Boulevards and Parkways, Table 5.1-A – Scenic and Special Boulevards, and Table 5.1-B – Scenic Parkways, Chicago-Linden Strategic Plan)***

Less Than Significant Impact. The project site is located in a fully urbanized area, and is surrounded on all sides by existing development, including an alley and multi-family units on the north; Chicago Avenue and a mix of commercial and industrial uses on the east; 7th Street and single-family units on the south; and multi-family units on the west. The project proposes one-, two- and three-story buildings on the site. Single story buildings will include amenities for the residents, including the community center and commercial space, both located closest to the corner of Chicago Avenue and 7th Street. Two- and three-story elements of the project will occur in the center of the site, along Chicago Avenue and toward the alley. This layout will assure that impacts of larger structures on 7th Street are relieved, particularly for the single-family residences to the south. The urban environment in which the project is located limits views of scenic vistas currently. From Chicago Avenue, views of the hills to the east are blocked by existing commercial development, although hilltops can be seen above these buildings. The project, being located to the west, will not impact these views. From 7th Street, views are extremely limited because of the narrowness of the street, and the density of existing development. Views from the front yards of the homes on the south side of 7th Street will not substantially change; insofar as existing buildings currently block long-range views to the north. Views from the alley on the north side of the site to the south will be substantially the same as currently experienced, because of the existing and previously occurring two story multi-family structures on the site.

Overall, impacts associated with scenic vistas will be less than significant and will be substantially similar to those currently occurring on and around the subject property.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

1b. Response: ***(Source: General Plan 2025 Figure CCM-4 – Master Plan of Roadways, General Plan 2025 FPEIR Figure 5.1-1 – Scenic and Special Boulevards, Parkways, Table 5.1-A – Scenic and Special Boulevards, Table 5.1-B – Scenic Parkways)***

No Impact. The proposed project is not located on or in the vicinity of a scenic highway, or a scenic boulevard, parkway or special boulevard as designated by the City's General Plan 2025. There are no rock outcroppings or historic buildings within proximity of the proposed project. A potentially locally significant historic residence was previously identified at 1823 7th Street[1]. This property is located approximately 400 feet west of the project site and will not be impacted by the proposed project. The proposed project will have no impact on scenic resources.

[1] "Cultural Resources Survey Chicago-Linden Strategic Plan" JMRC, July 2013.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒

1c. Response: ***(Source: General Plan 2025)***

No Impact. The proposed project consists of an infill project within an urbanized area completely surrounded by existing development. The architecture of the townhomes, community center, and commercial building will be consistent and compatible with the style currently occurring in the neighborhood, will be designed to meet the development standards of the adopted Chicago-Linden Strategic Plan. The project will enhance the visual character of the area by replacing vacant lots and buildings with new construction designed in a manner consistent with the Citywide Design Guidelines for new residential development. Therefore, it will not degrade the existing visual character of the area and no impact directly, indirectly or cumulatively to the visual character or quality of the neighborhood will occur.

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

1d. Response: ***(Source: General Plan 2025, General Plan 2025 FPEIR Figure 5.1-2 – Mount Palomar Lighting Area, Title 19 – Article VIII – Chapter 19.556 – Lighting, Citywide Design and Sign Guidelines)***

Less Than Significant Impact. The project would not result in a new source of substantial light or glare which would adversely affect day or nighttime views as the project. The site is not within the Mount Palomar Lighting Area. New sources of light will consist of one-, two- and three-story townhouses and will include landscaping lighting, security lighting, and parking lot lights from stationary sources, as well as lights from headlights accessing the site. The project area is urbanized and contains existing sources of light and glare from existing residential dwellings, streetlights, and vehicular headlights. Buildout of the proposed project would result in a residential complex, which will add new sources of light. However, new buildings will be consistent in design with existing development, and no highly reflective exterior or roofing materials that constitute significant sources of localized glare are anticipated. Street lights will be consistent with the City's Roadway Lighting systems.

The proposed project will be required to submit an exterior lighting plan and must comply with General Plan 2025 FPEIR mitigation measure AES 3, which stipulates the following: "To further reduce impacts related to light pollution, the City shall require at the time of issuing of building permits all developments that introduce light sources, or modifications to existing light sources, to have shielding devices or other light pollution limiting characteristics such as hoods or lumen restrictions." The City also requires that new projects submit photometric studies and lighting specifications for Design Review. These plans must conform to City standards and must be approved prior to construction of the project. Adherence to the measure and conformance with the City's standard requirements will ensure that light sources occurring on the project site will not significantly impact the lighting environment in the area.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
2. AGRICULTURE AND FOREST RESOURCES:				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information complied by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

2a. Response: ***(Source: General Plan 2025 – Figure OS-2 – Agricultural Suitability)***

No Impact. The Project is located within an urbanized area. A review of Figure OS-2 – Agricultural Suitability of the General Plan 2025 reveals that the project site is not designated as and is not adjacent to or in proximity to any land classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. Therefore, the project will have no impact directly, indirectly or cumulatively to agricultural uses.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

2b. Response: ***(Source: General Plan 2025 – Figure OS-3 - Williamson Act Preserves))***

No Impact. A review of Figure OS-3 – Williamson Act Preserves of the General Plan 2025 shows that the site is not designated or adjacent to any lands classified as Williamson Act Preserve and Contracted Land or Williamson Act Preserve. Furthermore, the project site is within a built environment. No Williamson Act contracts are implemented on the site. The proposed project will not conflict with existing zoning for agricultural uses or any applicable Williamson Act contracts. Therefore**,** no impacts will occur from this project directly, indirectly or cumulatively.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

2c. Response: ***(Source: General Plan 2025 – Zoning Map of the City of Riverside)***

No Impact. The City of Riverside has no forest land nor does it have any timberland. Further, the subject site is zoned as R-1-7000 Single-Family Residential and does not contain forest land. Therefore, no impacts will occur from this project directly, indirectly or cumulatively.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
2d. Response: **No Impact.** Although the City of Riverside is known as a "City of Trees", the City's Urban Forest Tree Policy Manual provides guidelines for the preservation and protection of the city's tree heritage. Further, as stated above, the City of Riverside has no forest land that can support 10-percent native tree cover nor does it have any timberland, therefore no impacts will occur from this project directly, indirectly or cumulatively.				
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
2e. Response: ***(Source: General Plan – Figure OS-2 – Agricultural Suitability, Figure OS-3 – Williamson Act Preserves, Zoning Map of the City of Riverside)*** **No Impact**. The project is located in an urbanized area of the City in an existing neighborhood. Additionally, the site is identified as urban/built out land and therefore does not support agricultural resources or operations. The project will not result in the conversion of designated farmland to non-agricultural uses. There are no agricultural resources or operations, including farmlands within proximity of the subject site. The City of Riverside has no forest land that can support 10-percent native tree cover. There will be no impact associated with agricultural or forestry conversion.				

3. AIR QUALITY.				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

3a. Response: ***(Source: South Coast Air Quality Management District's 2007 Air Quality Management Plan (AQMP))***

Less Than Significant Impact. The proposed project is consistent with the General Plan 2025 Program "Typical Growth Scenario". The Air Quality Management Plan (AQMP) for the South Coast Air Basin (SCAB) sets forth a comprehensive program that will lead the SCAB into compliance with all Federal and State air quality standards. The City of Riverside is located within the Riverside County sub region of the SCAG projections. The General Plan 2025 FPEIR determined that implementation of the General Plan 2025 would generally meet attainment forecasts and attainment of the standards of the AQMP.

Furthermore, the approved Chicago-Linden Strategic Plan, and, as a direct result, the proposed project, fosters the revitalization of the Chicago-Linden neighborhood including the proposed project. Given that the proposed project is part of the initiatives set forth in the Strategic Plan it is consistent with the General Plan 2025 policies to promote mixed use, pedestrian-friendly communities that serve to reduce air pollutant emissions over time. This project is consistent with these policies.

Thus, the proposed project will have no impact directly, indirectly or cumulatively to the implementation of an air quality plan.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐

3b. Response: ***(Source: General Plan 2025 FPEIR Table 5.3-B SCAQMD CEQA Regional Significance Thresholds, South Coast Air Quality Management District's 2007 AQMP, CalEEMod)***

Less Than Significant Impact. The implementation of the proposed project would result in the construction of a multi-family residential complex, a commercial building, and a community building. The analysis provided below represents the full build out of the entire project. For analysis purposes, it is assumed that the construction period would be nine months, beginning in mid-2019. The project proponent estimates that the proposed project's construction phase would take place in 2019 and extend to early 2020. The construction and operation of the proposed project will result in the release of criteria air pollutants. The California Emissions Estimator Model (CalEEMod) Version 2016.1.3 was used to determine air quality emissions that will be generated by construction and operation of the proposed project. Table 1 summarizes the short-term construction-related emissions, and Table 2 summarizes the ongoing emissions that will be generated at operation.

<u>Construction Emissions</u>

The construction period includes demolition, site preparation, grading, building construction, paving, and architectural coating associated with the proposed project. For analysis purposes, it is assumed that construction will occur over a nine-month period.

As depicted in Table 1, emissions generated by construction activities will not exceed SCAQMD thresholds of significance for criteria air pollutants. The data reflect average daily emissions over a nine-month construction period, including both summer and winter weather conditions. It should be noted that the table shows projected mitigated emissions. Implementation of standard requirements including, but not limited to, the implementation of dust control practices in conformance with SCAQMD Rule 403 were included in the assumptions to calculate potential emissions. According to the CalEEMod analysis outputs, impacts to air quality from construction of the proposed project are expected to be less than significant since the levels are below the SCAQMD thresholds.

Table 1
Construction Emissions for the Entrada Housing Development
(lbs per day)

	CO	NOx	ROG	SOx	PM10	PM2.5
2018	19.18	24.42	23.07	0.04	7.52	4.44
SCAQMD Threshold	**550.00**	**100.00**	**75.00**	**150.00**	**150.00**	**55.00**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.1. CalEEMod output tables generated 4.23.18. Value shown represents the average emissions from summer and winter, unmitigated. See Appendix A.

Operational Emissions

Operational emissions are ongoing emissions that will occur over the life of the project. Operational emissions include area source emissions, emissions from energy (electric and natural gas) demand, and mobile source (vehicles) emissions. As shown in the table below, operational emissions will not exceed SCAQMD thresholds of significance for any criteria pollutants. Impacts will be less than significant.

Table 2
Construction Emissions for the Entrada Housing Development
(lbs per day)

	CO	NOx	ROG	SOx	PM10	PM2.5
Operation Emissions	21.03	6.49	2.93	0.05	3.89	1.11
SCAQMD Threshold	**550.00**	**100.00**	**75.00**	**150.00**	**150.00**	**55.00**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.1. CalEEMod output tables generated 4.23.18. Value shown represents the average emissions from summer and winter, unmitigated. See Appendix A.

c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐

3c. Response: ***(Source: General Plan 2025 FPEIR Table 5.3-B SCAQMD CEQA Regional Significance Thresholds, South Coast Air Quality Management District's 2007 Air Quality Management Plan, CalEEMod 2016 Model)***

Less than Significant Impact. The portion of the Basin within which the City is located is designated as a non-attainment area for ozone, PM-10 and PM-2.5 under State standards, and as a non-attainment area for ozone, carbon monoxide, PM-10, and PM-2.5 under Federal standards. Per the GP 2025 FPEIR, AQMP thresholds indicate future construction activities under the General Plan are projected to result in significant levels of NOx and ROG, both ozone precursors, PM-10, PM-2.5 and CO. Although long-term emissions are expected to decrease by 2025, all criteria pollutants remain above the SCAQMD thresholds.

Since the proposed project is consistent with the approved Chicago-Linden Strategic Plan, and the project will not exceed thresholds established by SCAQMD, cumulative impacts related to criteria pollutants as a result of the project are expected to be less than significant. Further, the proposed project does not result in any new significant impacts that were not previously evaluated and for which a statement of overriding considerations was adopted as part of the General Plan 2025 FPEIR. Therefore, cumulative air quality emissions impacts are less than significant.

d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

3d. Response: ***(Source: South Coast Air Quality Management District's Mass Rate Look-Up Table, CalEEMod)***

Less Than Significant Impact. Short-term impacts associated with construction will result in increased air emissions from grading, earthmoving, and construction activities. Mitigation Measures of the General Plan 2025 FPEIR require individual development to employ construction approaches that minimize pollutant emissions (General Plan 2025 FPEIR MM AIR 1-MM AIR 5, e.g., watering for dust control, tuning equipment, limiting truck idling times).

Table 3
Localized Significance Thresholds for the Entrada Housing Development
(lbs/day)

	CO	**NOx**	**PM10**	**PM2.5**
Construction[1]	19.18	24.42	7.52	4.44
LST Construction	**2,292**	**304**	**14**	**8**
Operational[2]	21.03	6.49	3.89	1.11
LST Operation	**2,292**	**304**	**4**	**2**
Exceed?	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.1. CalEEMod output tables generated 4.23.18; Mass Rate Look-up Table, SCAQMD Area Source Receptor 23 (Metropolitan Riverside County) for a 5-acre project, sensitive receptor at 25 meters.
[1] Maximum unmitigated construction emissions
[2] Maximum unmitigated operational emissions

The nearest sensitive receptors are residential developments immediately surrounding the project site's north and west boundaries. During construction, localized exposure of sensitive receptors to pollutant concentrations would range from weeks to months depending on the construction phase and proximity of emissions sources. Construction equipment will not be constantly in close proximity to any one sensitive receptor throughout the duration of construction activities. Maximum localized emissions were quantified for each construction activity and are shown above in Table 3. Furthermore, the proposed project will not require a CO hotspot analysis given that it meets other project level conformity requirements by being in compliance with the SCAQMD significance criteria as shown in Table 3.

Project construction and operational emissions were analyzed using the CalEEMod model, which determined that project emissions would not exceed the SCAQMD thresholds for construction and operation thresholds. Therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations and a less than significant impact would occur.

e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3e. Response: ***(Source: General Plan 2025 FPEIR Table 5.3-B SCAQMD CEQA Regional Significance Thresholds, South Coast Air Quality Management District's 2007 Air Quality Management Plan, CalEEMod 2016 Model)***

Less Than Significant Impact. The operation of a residential complex is not typically associated with the generation of objectionable odors. The construction activities associated with the expected build out of the project site will generate airborne odors like diesel exhaust emissions, and architectural coating applications. However, these emissions would occur only during daylight hours, be short-term in duration, and would be isolated to the immediate vicinity of the construction site. Therefore, they would not expose a substantial number of people to objectionable odors on a permanent basis.

The proposed use may potentially expose people to odors associated with cooking and housekeeping within the residential component of the project. Depending on the use that occurs within the commercial building proposed on the project site, some odors may be generated by that use. Neither land use, however, has the potential to generate significant objectionable odors that would affect substantial numbers of people. Impacts associated with objectionable odors are expected to be less than significant.

4. BIOLOGICAL RESOURCES. Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

4a. Response: ***(Source: General Plan 2025 – Figure OS-6 – Stephen's Kangaroo Rat (SKR) Core Reserve and Other Habitat Conservation Plans (HCP), Figure OS-7 – MSHCP Cores and Linkages, Figure OS-8 – MSHCP Cell Areas, General Plan 2025 FPEIR Figure 5.4-2 – MSHCP Area Plans, Figure 5.4-4 - MSHCP Criteria Cells and Subunit Areas, Figure 5.4-6 – MSHCP Narrow Endemic Plant Species Survey Area, Figure 5.4-7 – MSHCP Criteria Area Species Survey Area, Figure 5.4-8 – MSHCP Burrowing Owl Survey Area)***

No Impact. The project site is located on a previously developed/improved site within an urbanized area surrounded by development on all sides. Common species typical of the urban environment occur on and around the project, based on the existence of ornamental landscaping within the area. The project site and its vicinity are not located in or near a Western Riverside MSHCP criteria cell or conservation area. The project will have no impact directly, indirectly and cumulatively on habitat modifications, species identified as a candidate, sensitive, or special status species in local or regional plans, and policies or regulations of the California Department of Fish and Game or U.S. Fish and Wildlife Service.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

4b. Response: ***(Source: General Plan 2025 – Figure OS-6 – Stephen's Kangaroo Rat (SKR) Core Reserve and Other Habitat Conservation Plans (HCP), Figure OS-7 – MSHCP Cores and Linkages, Figure OS-8 – MSHCP Cell Areas, General Plan 2025 FPEIR Figure 5.4-2 – MSHCP Area Plans, Figure 5.4-4 - MSHCP Criteria Cells and Subunit Areas, Figure 5.4-6 – MSHCP Narrow Endemic Plant Species Survey Area, Figure 5.4-7 – MSHCP Criteria Area Species Survey Area, Figure 5.4-8 – MSHCP Burrowing Owl Survey Area, MSHCP Section 6.1.2 - Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools)***

No Impact. As stated above, the project is located on a previously developed site within an urbanized area where no riparian habitat or other sensitive natural community exists on site or within proximity to the project site. The project site is not located within any MSHCP Narrow Endemic Plant Species Survey Areas (NEPSSA). The soils and conditions present at the project site are not suitable for sensitive species. Moreover, no narrow endemic or sensitive plant species, vernal pools, or riparian habitat. Therefore, no impact to any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service will occur directly, indirectly, and cumulatively.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

4c. Response: ***(Source: City of Riverside GIS/CADME USGS Quad Map Layer)***

No Impact. The project is located within an urbanized area where no federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.), exist on site or within proximity to the project site. The project site does not contain any discernible drainage courses, inundated areas, wetland vegetation, or hydric soils and thus does not include United States Army Corps of Engineers (USACE) jurisdictional drainages or wetlands. Therefore, the proposed project would have no impact to federally protected wetlands as defined by Section 404 of the Clean Water Act directly, indirectly and cumulatively.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

4d. Response: ***(Source: MSHCP, General Plan 2025 –Figure OS-7 – MSHCP Cores and Linkage)***

No Impact. The subject area is located within an urban neighborhood, which is comprised of buildings and is not within a MSHCP linkage area. The site has been developed for a number of years and contains no native habitat, such that the project cannot interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. For this reason, the proposed project will have no impacts to wildlife movement.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

4e. Response: ***(Source: MSHCP, Title 16 Section 16.72.040 – Establishing the Western Riverside County MSHCP Mitigation Fee, Title 16 Section 16.40.040 – Establishing a Threatened and Endangered Species Fees, City of Riverside Urban Forest Tree Policy Manual)***

No Impact. The proposed project is subject to all applicable Federal, State, and local policies and regulations related to the protection of biological resources and tree preservation. In addition, any project within the City of Riverside's boundaries that proposes planting a street tree within a City right-of-way must follow the Urban Forest Tree Policy Manual. The Manual documents guidelines for the planting, pruning, preservation, and removal of all trees in City rights-of-way. The specifications in the Manual are based on national standards for tree care established by the International Society of Arboriculture, the National Arborists Association, and the American National Standards Institute. No impact is anticipated.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

4f. Response: ***(Source: MSHCP, General Plan 2025 – Figure OS-6 – Stephen's Kangaroo Rat (SKR) Core Reserve and Other Habitat Conservation Plans (HCP), Stephens' Kangaroo Rat Habitat Conservation Plan, Lake Mathews Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan, and El Sobrante Landfill Habitat Conservation Plan)***

No Impact. The greater Chicago-Linden neighborhood, including the project site, is an urbanized area and does not contain any designated conservation lands. The project is within the boundary of the Western Riverside MSHCP, and will be responsible for the payment of fees, if applicable. However, the project is not within or in the vicinity of a conservation area, as defined by the Plan, due to its urbanized character. The neighborhood is not identified as being within, and therefore will not impact, an adopted Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan directly, indirectly and cumulatively. Therefore, the proposed project will have no impact on the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

5. **CULTURAL RESOURCES.** Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5 of the CEQA Guidelines?	☐	☐	☒	☐

5a. Response: ***(Source: GP 2025 FPEIR Table 5.5-A Historical Districts and Neighborhood Conservation Areas and Appendix D, Title 20 of the Riverside Municipal Code; Appendix C: Entrada Project Cultural Resources Survey Update for the Entrada Project, Chicago/Linden Strategic Plan prepared by JM Research and Consulting)***

Less Than Significant Impact. The project site is located in a neighborhood that has existed for many years. The project is not located within a designated historic district or neighborhood, and no cultural resources have been recorded within the site boundaries. The project site is within the Chicago Linden Strategic Plan, for which JM Research and Consulting (JMRC) prepared a Cultural Resources Survey in 2013. JMRC identified seventy-five properties on seventy-seven parcels within approximately 44 acres bounded by Linden Street to the north, Chicago Avenue to the east, Seventh Street to the south and Dwight Avenue to the west. The Survey concluded that the project area, the Chicago/Linden neighborhood, is located within the Eastside Neighborhood. Development with the project area was largely attributed to early-20th century single-family and mid-20th century multi-family residential development. Several properties had been previously surveyed, yet none had been designated or found to be eligible for designation.

The records search identified 43 cultural resources within a one-mile radius of the project site. These resources are historic built environments consisting of individual buildings, as well as a historic district and a railroad segment. None of these historic resources occurred within the project site.

Only six properties were identified as potentially eligible for local individual designation. The following six properties: The Ekins Residence at 3509 Ottawa Avenue (1894); Pember-Herrick Grove Palm Row (ca. 1890s); Pacific Ready-Cut Kit House Style No. 385 at 1823 Seventh Street (1926); Apartment house at 1855-61 Loma Vista Street (1956); Palma Vista Apartments at 1783-97 Loma Vista Street (1957-8); and the Courtyard apartments at 1806 Loma Vista Street (1959) were identified as potentially eligible for local individual designation based on their historic or architectural distinction and were given a CHR Status Code of "5S3 – Appears to be individually eligible for local listing or designation through survey evaluation." These identified properties are not located within or adjacent to the project area.

The only one of these properties occurring in the vicinity of the project site is located at 1823 7th Street, about 400 feet west of the proposed project. The proposed project does not propose any physical demolition, destruction, relocation, or alteration of this site, nor will it impact any of the other identified resources within the neighborhood

In May 2018, JMRC prepared a focused update of the 2013 survey for the currently proposed project area. This update reviewed the 2013 survey efforts and included a record search, field survey and digital photographs of the project area in order to identify changes to properties since the 2013 survey. The update identified changes to the properties, including demolition of buildings at 1705, 1719, and 1733 Seventh Street, and that the remaining buildings are currently vacant. The conclusions made in the 2013 survey remain in effect, no historic properties are located within the project site, and the proposed development of the subject site is consistent to that proposed by the Strategic Plan.

The proposed project will be consistent with the Strategic Plan, which includes design guidelines pertaining to facades, lighting, fencing and other features to be sensitive to the neighborhood character in which it occurs. For this reason, the construction and subsequent operation of the proposed project will not significantly impact historic or potential historic structures. There will be a less than significant impact on historical resources as defined in Section 15064.5 of the CEQA Guidelines.

b. Cause a substantial adverse change in the significance of an archeological resource pursuant to § 15064.5 of the CEQA Guidelines?	☐	☐	☒	☐

5b. Response: ***(Source: GP 2025 FPEIR Figure 5.5-1 - Archaeological Sensitivity and Figure 5.5-2 - Prehistoric Cultural Resources Sensitivity, Cultural Resources Report for the Chicago/Linden Strategic Plan prepared by JM Research and Consulting ;Appendix C: Entrada Project Cultural Resources Survey Update for the Entrada Project, Chicago/Linden Strategic Plan prepared by JM Research and Consulting)***

Less Than Significant Impact. All of the project area has been previously developed and disturbed numerous times in association with construction of homes, roads, and park facilities. The project site itself has been developed for a number of years, including two story structures that would have required over-excavation, and property-wide grading for parking areas and structures. A Sacred Lands Files search conducted by the Native American Heritage Commission in 2012, failed to indicate the presence of any Native American traditional cultural places or landscapes in the Strategic Plan project area. 15 Native American Tribes that have tribal cultural affiliations in the project area were contacted for consultation on the proposed project by BCR Consulting at the time the Strategic Plan was prepared. The Survey update conducted for the proposed project in 2018 included a new records search, which identified resources which are all historic in nature. In accordance with state law, the City sent out SB 18 and AB 52 consultation letters to the appropriate tribal authorities in order to invite them to consult on the proposed project. As of August 2018, comments have been received and consultation has been conducted with the Soboba Band of Luiseño Indians, Viejas Band of Kumeyaay Indians, and Morongo Band of Mission Indians. No known archaeological resources were identified, and none are known to occur within the project area. Consulting tribes identified no specific concerns relating to potential impacts to Tribal cultural resources, which are not known to exist on the project site, and only standard conditions relating to the treatment and disposition of inadvertent discoveries were requested.

There will therefore be no direct, indirect or cumulative impact on archeological resources as a result of implementation of the proposed project.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

5c. Response: ***(Source: General Plan 2025 Policy HP-1.3, Cultural Resources Report for the Chicago/Linden Specific Plan prepared by JM Research and Consulting ; Appendix C: Entrada Project Cultural Resources Survey Update for the Entrada Project, Chicago/Linden Strategic Plan prepared by JM Research and Consulting)***

No Impact. The project is located on a previously developed/improved site within an urbanized area where no paleontological resources or unique geologic features have been identified. The General Plan reports that areas south of Mockingbird Canyon Reservoir, located approximately seven miles southwest of the project site, are the only areas in the General Plan planning area that are considered to have paleontological resources or unique geologic features. Further, the cultural resources survey that was conducted for the Strategic Plan area, including the project site, did not indicate that there was a presence of paleontological features or resources in the project area. The 2018 update to the 2013 survey found no new findings or discoveries related to paleontological resources. The project will have no impact directly or indirectly to a unique paleontological resource or site or unique geologic feature.

d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

5d. Response: ***(Source: GP 2025 FPEIR Figure 5.5-1 - Archaeological Sensitivity and Figure 5.5-2 - Prehistoric Cultural Resources Sensitivity Cultural Resources Report for the Chicago/Linden Strategic Plan prepared by JM Research and Consulting ; Appendix C: Entrada Project Cultural Resources Survey Update for the Entrada Project, Chicago/Linden Strategic Plan prepared by JM Research and Consulting)***

No Impact. The project is located on a previously developed site within an urbanized area that has been covered with impervious surfaces and buildings for a number of years. No known burial sites or cemeteries occur in the vicinity of the project site. Even so, in the event human remains are discovered during construction of the proposed project the project contractor would be subject to state law regarding the discovery and disturbance of human remains, which requires the project contractor to immediately notify law enforcement and allow the coroner to determine the nature of the remains (historic or prehistoric, human or not). The coroner is also responsible for the proper removal and potential re-burial of the remains, and consultation with Tribal officials if the remains are determined to be Native American. As a result of these State requirements, impacts to human remains are expected to be less than significant. For this reason, the project will have

less than significant impacts directly, indirectly or cumulatively on any human remains, including those interred outside of formal cemeteries.

6. GEOLOGY AND SOILS. Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐

6i. Response: ***(Source: General Plan 2025 Figure PS-1 – Regional Fault Zones & General Plan 2025 FPEIR Appendix E – Geotechnical Report)***

No Impact. There are no Alquist-Priolo zones located within the City, the greater Chicago/Linden neighborhood or the project area. Further, project site and surrounding area does not contain any known fault line and the potential for fault rupture is non-existent. No impact is anticipated.

ii. Strong seismic ground shaking?	☐	☐	☒	☐

6ii. Response: ***(Source: General Plan 2025 Figure PS-1 – Regional Fault Zones)***

Less Than Significant Impact. The San Jacinto Fault Zone, located approximately 9 miles from the project site, in the northeastern portion of the City, or the Elsinore Fault Zone, located in the southern portion of the city's Sphere of Influence, have the potential to cause moderate to large earthquakes that would cause significant ground shaking. The proposed project will be required to comply with California Building Code regulations, which have been designed to reduce impacts to persons or property in the event of a significant earthquake. Therefore, impacts associated with strong seismic ground shaking will be less than significant.

iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐

6iii. Response: ***(Source: General Plan 2025 Figure PS-1 – Regional Fault Zones, Figure PS-2 – Liquefaction Zones, General Plan 2025 FPEIR Figure PS-3 – Soils with High Shrink-Swell Potential, and Appendix E – Geotechnical Report)***

Less Than Significant Impact. The project site is located in an area with low potential for liquefaction as depicted in the GP 2025 Liquefaction Zones Map – Figure PS-2. Site-specific geotechnical analysis will be required by the City as part of the building permit process, to assess the suitability of on-site soils for the structures proposed. The proposed project will also be required to comply with the California Building Code regulations, to ensure that impacts related to seismic-related ground failure, including liquefaction, are reduced to less than significant levels directly, indirectly and cumulatively.

iv. Landslides?	☐	☐	☐	☒

6iv. Response: ***(Source: General Plan 2025 FPEIR Figure 5.6-1 – Areas Underlain by Steep Slope, Appendix E – Geotechnical Report, Title 18 – Subdivision Code, Title 17 – Grading Code)***

No Impact. The project site is in an area with generally flat topography and is not located in an area prone to landslides per Figure 5.6-1 of the General Plan 2025 Program Final PEIR. Therefore, there will be no impact related to landslides directly, indirectly and cumulatively.

b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

6b. Response: ***(Source: General Plan 2025 FPEIR Figure 5.6-1 – Areas Underlain by Steep Slope, Figure 5.6-4 – Soils, Table 5.6-B – Soil Types, Title 18 – Subdivision Code, Title 17 – Grading Code)***

Less Than Significant Impact. The implementation of the proposed project will involve ground-disturbing activities, such as grading, that could potentially result in soil erosion. Given that the proposed project area is over one acre, state and federal requirements call for the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) establishing erosion and sediment controls for construction activities. The proposed project must also comply with the National Pollutant Discharge Elimination System (NPDES) regulations. In addition, all projects must comply with Title 18 and Title 17 of the Municipal Code, which require the implementation of measures designed to minimize soil erosion. Compliance with state and federal requirements as well as with the Municipal Code will ensure that impacts to soil erosion or loss of topsoil will be less than significant.

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐

6c. Response: ***(Source: General Plan 2025 Figure PS-1 – Regional Fault Zones, Figure PS-2 – Liquefaction Zones, General Plan 2025 FPEIR Figure PS-3 – Soils with High Shrink-Swell Potential, Figure 5.6-1 - Areas Underlain by Steep Slope, Figure 5.6-4 – Soils, Table 5.6-B – Soil Types, and Appendix E – Geotechnical Report)***

Less Than Significant Impact. The proposed project is currently developed and has a generally flat topography. The proposed project will be required to complete a site-specific soils analysis prior to issuance of building permits, to ensure that structures are not placed on expansive soils. This analysis will also determine whether special construction techniques are required for the size and structure of the proposed apartments. However, since the site has been developed with two-story structures in the past, it is not expected that significant soil remediation will be required. With the implementation of this standard requirement, the proposed project will have less than significant impacts relating to unstable soils.

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒

6d. Response: ***(Source: General Plan 2025 FPEIR Figure 5.6-4 – Soils, Figure 5.6-4 – Soils, Table 5.6-B – Soil Types, General Plan 2025 Update 2018 Figure PS-3 Soils with High Shrink-Swell Potential, and California Building Code as adopted by the City of Riverside and set out in Title 16 of the Riverside Municipal Code)***

No Impact. The proposed project consists of a development on a previously developed site. The proposed project does not occur on expansive soils, according to General Plan 2025 Figure PS-3: Soils with High Shrink-Swell Potential. The project will adhere to the California Building Code adopted by the City of Riverside and set out in Title 16 of the Riverside Municipal Code. With the implementation of these standard requirements, the proposed project will have no impact resulting in substantial risks to life or property due to expansive soils directly or indirectly or cumulatively.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

6e. Response: ***(Source: General Plan 2025 FPEIR Figure 5.6-4 – Soils, Table 5.6-B – Soil Types)***

No Impact. The entire Chicago-Linden neighborhood, including the project site, is currently served by sewer infrastructure which has capacity to accommodate the proposed project. Sewer line connections along 7th street and Chicago Avenue will service the project site. No septic systems would be constructed as a result of the proposed project. Therefore, there will be no direct, indirect or cumulative impact.

7. GREENHOUSE GAS EMISSIONS. Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

7a. Response: ***(Source: South Coast Air Quality Management District's 2007 Air Quality Management Plan, CalEEMod 2016 Model, Riverside Restorative Growthprint – Climate Action Plan)***

Less Than Significant Impact. The proposed project includes the development of 65 apartment units, a community center and a small commercial building. The proposed project will occur on a site that has had existing, older structures for a number of years. These structures were not energy efficient, and not subject to current energy efficiency regulations. The same modeling tool used to determine air quality impacts was used to model greenhouse gas emissions for the proposed project. Greenhouse gas emissions are cumulative, insofar as the emissions accumulate in the atmosphere even when emitting activities stop. Operational activities will occur on the site for the life of the project. Construction emissions are short term, and will end when construction is complete. However, as required by SCAQMD, construction emissions are amortized over a 30 year period. As shown in Table 4, the implementation of the proposed project is likely to generate 209.22 metric tons per year (amortized), resulting from construction; and 1,079.10 metric tons of GHGs annually during the operation of the project.

Table 1
GHG Emissions from Construction of the Entrada Housing Development
(metric tons per year)

	CO2	CH4	N2O	CO2e
Construction Activities	208.27	0.04	0.00	209.22
Operational Activities[1]	1,054.12	0.60	0.00	1,079.10

Source: CalEEMod Version 2016.3.1. CalEEMod output tables generated 4.23.18. Values shown represent the total GHG emission projections.
1. Operation GHG emissions include area, energy, mobile, waste, and water source emissions.

SCAQMD has not formally adopted a significance threshold for GHG emissions associated with residential projects. On December 5, 2008, the SCAQMD formally adopted a greenhouse gas significance threshold of 10,000 MTCO2e/yr that only applies to stationary sources for industrial uses where SCAQMD is the lead agency (SCAQMD Resolution No. 08-35). This threshold was adopted based upon an October 2008 staff report and draft interim guidance document[2] that also recommended a threshold for all projects using a tiered approach.

It was recommended by SCAQMD staff that a project's greenhouse gas emissions be considered significant if it could not comply with at least one of the following "tiered" tests:

- Tier 1: Is there an applicable exemption?
- Tier 2: Is the project compliant with a greenhouse gas reduction plan that is, at a minimum, consistent with the goals of AB 32?
- Tier 3: Is the project below an absolute threshold (10,000 MTCO2e/yr for industrial projects; 3,000 MTCO2e/yr for residential and commercial projects)?
- Tier 4: Is the project below a (yet to be set) performance threshold?
- Tier 5: Would the project achieve a screening level with off-site mitigation?

The proposed project is consistent and compliant with Tier 3, in that the project is considered a residential project with an absolute threshold below 3,000 MTCO2e/yr.

Furthermore, the project will be required to comply with the City's General Plan policies, statewide Title 24 Building Code requirements designed to reduce GHG emissions, and City GHG reduction programs. The proposed project will improve energy efficiency in this area by replacing older, inefficient structures with efficiently constructed buildings, resulting in a beneficial impact relating to greenhouse gas emissions.

Based on the above analysis, the project's greenhouse gas emissions would be less than significant directly, indirectly and cumulatively.

[2] Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, prepared by SCAQMD, October 2008.

b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

7b. Response: ***(Source: South Coast Air Quality Management District's 2007 Air Quality Management Plan, CalEEMod 2016 Model, Riverside Restorative Growthprint – Climate Action Plan)***

Less Than Significant Impact. The SCAQMD supports State, Federal and international policies to reduce levels of ozone depleting gases through its Global Warming Policy and other rules it implements and has established an interim Greenhouse Gas (GHG) threshold. As indicated above, the proposed project would comply with the City's General Plan policies, State Building Code provisions designed to reduce GHG emissions, and the City's GHG reduction programs. Projects that are consistent with the projections of employment and population forecasts identified by the SCAG are considered consistent with the AQMP growth projections, since these forecast numbers were used by SCAG's modeling section to forecast travel demand and air quality for planning activities such as the RTP, the SCAQMD's AQMP, RTIP, and the Regional Housing Plan.

Furthermore, in 2014 the City of Riverside was one of twelve municipalities that collaborated with Western Riverside Council of Governments (WRCOG) on the Subregional Climate Action Plan which provided the city a basis of emission reduction targets and measures as well as action steps that served as a foundation for the Riverside Restorative Growthprint – Climate Action Plan (CAP). The City's CAP stated that in 2010 communitywide CO2e emissions totaled 2,617,540 metric tons. In order to achieve the state-wide AB 32 goal and Executive Order (EO) S-3-05, which aim for a reduction of 80% below 1990 levels, the City has targeted a reduction of 1,542,274 metric tons of CO2e. The proposed project would generate 1,079.10 metric tons of CO2e annually, an increase of less than 1%. In addition, the proposed project will be required to install energy efficient appliances and would be built under current California Building Energy Efficiency Standards (Title 24, Part 6) thus resulting in buildings that will further contribute to reductions in CO2e when compared to the older buildings which occur or have occurred on-site.

The proposed project is not anticipated to conflict with any applicable plan, policy or regulation related to the reduction in the emissions of GHG and thus impacts will be less than significant.

8. HAZARDS & HAZARDOUS MATERIALS. Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐

8a. Response: ***(Source: General Plan 2025 Public Safety Element, GP 2025 FPEIR, California Health and Safety Code)***

Less Than Significant Impact. The development of apartment units will not result in the transport of hazardous materials. The residential use of the site would typically include limited storage and use of hazardous materials such as oils, solvents, pesticides, electronic waste, and other materials associated with housekeeping and landscaping activities. These materials would be stored on site in small quantities, and therefore would not pose a significant threat to the public. Oversight by the appropriate federal, state, and local agencies, and compliance by the new development with applicable regulations related to the handling, storage and disposal of hazardous materials will cause the project to have a less than significant impact.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐

8b. Response: ***(Source: General Plan 2025 Public Safety Element, GP 2025 FPEIR Tables 5.7 A – D, California Health and Safety Code, Title 49 of the Code of Federal Regulations, California Building Code, City of Riverside's EOP, 2002 and Riverside Operational Area – Multi-Jurisdictional LHMP, 2004 Part 1, OEM's Strategic Plan***

Less Than Significant Impact. During project construction certain types of hazardous materials, for instance diesel fuels, will be used on site. A Storm Water Pollution Prevention Plan (SWPPP), listing Best Management Practices (BMPs) to prevent construction pollutants and products from violating any water quality standard or waste discharge requirement would be prepared for the proposed project. The release of any spills would be prevented through the implementation of BMPs.

Upon operation, the proposed project would create a use that is consistent with the surrounding residential development. Thus, the project will involve the limited use of hazardous materials for household use in small quantities, and will comply with all applicable federal, state, and local laws and regulations pertaining to the use, disposal, handling and storage of hazardous waste, which are designed to protect against the risk of upset or accident. As such, the proposed project will comply with existing regulations which will ensure that the public would not be exposed to any unusual or excessive risks related to hazardous materials. For this reason, impacts associated with accidental release of hazardous materials will be less than significant.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

8c. Response: ***(Source: General Plan 2025 Public Safety and Education Elements, GP 2025 FPEIR Table 5.7-D - CalARP RMP Facilities in the Project Area, Figure 5.13-2 – RUSD Boundaries, Table 5.13-D RUSD Schools, Figure 5.13-3 AUSD Boundaries, Table 5.13-E AUSD Schools, Figure 5.13-4 – Other School District Boundaries, California Health and Safety Code, Title 49 of the Code of Federal Regulations)***

No Impact. Although small amounts of household hazardous materials and/or waste will be used and stored within individual apartments, and the site is located less than ¼ mile from the John W. North High School, the limited use of household cleaning products will not pose a hazard to the school. No impact is anticipated.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

8d. Response: ***(Source: General Plan 2025 Figure PS-5 – Hazardous Waste Sites, GP 2025 FPEIR Tables 5.7-A – CERCLIS Facility Information, Figure 5.7-B – Regulated Facilities in TRI Information and 5.7-C – DTSC EnviroStor Database Listed Sites)***

No Impact. A review of hazardous materials site lists compiled pursuant to Government Code Section 65962.5 found that the project site is not included on any such lists, nor is it adjacent to such a site. Therefore, the project would have no impact relating to the creation of any significant hazard to the public or environment directly, indirectly, or cumulatively.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

8e. Response: ***(Source: General Plan 2025 Figure PS-6 – Airport Safety Zones and Influence Areas, RCALUCP and March Air Reserve Base/March Inland Port Comprehensive Land Use Plan (1999), Air Installation Compatible Use Zone Study for March Air Reserve Base (August 2005)), Airport Land Use Commission (ALUC) Development Review – Director's Determination)***

No Impact. The project area is located within Airport Compatibility Zone E of the March Air Reserve Base/Inland Port Airport Influence Area (AIA). As a result of this, the project proponent submitted a development review application pursuant to the Riverside County Airport Land Use Commission (ALUC) Resolution No. 15-01. ALUC staff reviewed the proposed project. On November 9, 2017, ALUC issued a letter that determined that the proposed project is consistent with the 2014 March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. Therefore, the project will have no impact resulting in a safety hazard for people residing or working within an airport land use plan or within two miles of an airport.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

8f. Response: ***(Source: General Plan 2025 Figure PS-6 – Airport Safety Zones and Influence Areas)***

No Impact. Given that the project area is not located within proximity of a private airstrip, and does not propose a private airstrip, the construction and subsequent operation of the proposed project, a residential development, will not expose people residing or working in the city to a safety hazard related to a private airstrip and would have no impact directly, indirectly or cumulatively.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

8g. Response: ***(Source: GP 2025 FPEIR Chapter 7.5.7 – Hazards and Hazardous Materials)***

Less Than Significant Impact. The proposed project will have entry points via 7th Street, a local collector street, and Chicago Avenue, a major roadway. This will allow the project to have access to the city's network of streets, which have been designed to meet the Public Works and Fire Departments' specifications. The alley located directly north of the project site will be temporarily closed from its entrance on Chicago Avenue due to paving and other upgrades during the construction of the project. Even so, the surrounding developments will not be significantly impacted since there are multiple exit and entry points that will remain available. After the project's completion, the alley will be restored. Thus, it is anticipated that the proposed project will have a less than significant impact directly, indirectly or cumulatively to an emergency response or evacuation plan.

h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

8h. Response: ***(Source: General Plan 2025 Figure PS-7 – Fire Hazard Areas, GIS Map Layer VHFSZ 2010, City of Riverside's EOP, 2002, Riverside Operational Area – Multi-Jurisdictional LHMP, 2004 Part 1/Part 2 and OEM's Strategic Plan)***

No Impact. The project site, and greater Chicago Linden neighborhood, are located in an urbanized area where no wildland fire hazards occur. Additionally, the project site is not located within a Very High Fire Severity Zone (VHFSZ) or adjacent to wildland areas or a VHFSZ. For this reason, no impact will occur regarding wildland fires either directly, indirectly and cumulatively.

9. HYDROLOGY AND WATER QUALITY. Would the project:				
a. Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐

9a. Response: ***(Source: GP 2025 FPEIR Table 5.8-A – Beneficial Uses Receiving Water; GP 2025 Figure 5.8-1 Watersheds)***

Less Than Significant Impact. The project site has been developed with close to 100 percent of impervious surface with the exception of landscaped areas. Upon construction of the buildings and parking lots for this project, the permeable area of the project site will increase slightly with additional landscaped area. The project site is located within the Santa Ana River Watershed (GP 2025 Figure 5.8-1). There is a potential for water quality impacts to occur without proper controls. For instance, soils loosened during grading, spills of fluids or fuels from vehicles and equipment or miscellaneous construction materials and debris, if mobilized and transported offsite in overland flow, could degrade water quality. Given that the area of ground disturbance affected by construction of the proposed project would exceed one acre, the proposed project is subject to the requirements of the statewide National Pollutant Discharge Elimination System (NPDES) stormwater permit for construction activity (Order 98-08 DWQ). A Water Quality Management Plan (WQMP) will be required for the proposed project to comply with the requirements of the local NPDES Stormwater Program. The proponent of the proposed project would implement a SWPPP listing BMPs to prevent construction pollutants and products from violating any water quality standards or waste discharge requirements. As a result of this standard requirement, impacts would be less than significant.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐

9b. Response: ***(Source: General Plan 2025 Table PF-1 – RPU Projected Domestic Water Supply (AC-FT/YR), RPU Urban Water Management Plan)***

Less Than Significant Impact. Potable drinking water would be supplied to the proposed project by the City of Riverside Public Utilities (RPU). A 48-inch water transmission main runs along 7th Street and will offer connections for the proposed project. The existing water distribution lines, including the 7th Street main, provide adequate water volume and pressure. Approximately 97 percent of the water supplied by RPU is supplied from Bunker Hill, Riverside North and South, and the Gage Exchange groundwater basins. The Bunker Hill basin is adjudicated, and its safe-yield and export rights from the basin are well defined. While not adjudicated, the Colton, Riverside North, and Riverside South basins are subject to management under a 1969 judgment. None of these basins are over-drafted, nor are they projected to become so. The proposed project would be consistent with the city's and the Chicago-Linden Strategic Plan's growth projections; therefore, operational use of groundwater is expected to be less than significant.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐

9c. Response: ***(Source: "The Chicago-Linden Strategic Plan, 2014"; "Report on Master Drainage Plan for the City of Riverside (university Area): Zone One," prepared by the Riverside County Flood Control and Water Conservation District, July 1967. "Riverside General Plan 2025: Public Facilities and Infrastructure Element," prepared by the City of Riverside, Amended November 2012.)***

Less Than Significant Impact. As described above, the proposed project area has been covered with extensive impervious surfaces, with the exception of landscaped areas, for many years. There are no streams or rivers adjacent to the project area. The drainage patterns of the project area and overall neighborhood are well established, and the proposed project is not likely to change those patterns since the project area is currently serviced by the city's storm drain system which is comprised of gutters, pipes, inlets and culverts that carry rainwater flows to the Santa Ana River. The subject site is located within the central portion of the University drainage basin. An 18-inch concrete storm drain and reinforced concrete pipe (RCP) along

Chicago Avenue conveys localized drainage. This existing facility is adequate and will not need to be upgraded in order to service the proposed project. The subject site is well protected by existing flood control retention and drainage improvements. Furthermore, there are no known drainage issues or problems within the neighborhood. Therefore, with the use of existing facilities not warranting the construction of additional facilities, the project will have no impact resulting in the construction of new storm water drainage facilities or the expansion of existing facilities. The project will be required to prepare and implement a Water Quality Management Plan for the prevention of erosion and siltation during construction and operation. The City will require approval of drainage system improvements that meet its standards and do no created erosion hazards. Therefore, with implementation of the City's standard requirements, the project will have a less than significant impact directly, indirectly or cumulatively to existing drainage patterns.

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐

9d. Response: ***(Source: "The Chicago-Linden Strategic Plan, 2014"; "Report on Master Drainage Plan for the City of Riverside (University Area): Zone One," prepared by the Riverside County Flood Control and Water Conservation District, July 1967. "Riverside General Plan 2025: Public Facilities and Infrastructure Element," prepared by the City of Riverside, Amended November 2012.)***

Less Than Significant Impact. As explained in Response 9c, the project site is currently serviced by an existing storm drain system that includes an 18-inch concrete storm drain and reinforced concrete pipe (RCP) along Chicago Avenue which conveys localized drainage. The alley to the north of the project site has historically experienced flooding unrelated to the project site. The proposed project will drain to the south, and will manage on-site flows to meet City standards. Therefore, the proposed project will have no impact on the alley to the north of the site. Drainage issues associated with the alley to the north will be addressed through the project's site-specific hydrology study, which is a standard requirement of the City prior to the issuance of grading permits. The proposed project would require grading of the project site which would affect the drainage patterns of the site. However, drainage patterns would remain similar to existing conditions. The project site's drainage plan would be designed by a registered civil engineer to safely retain, detain, and/or convey stormwater runoff, including storm flows from the alley to the north, preventing flooding on- or off-site. Impacts would be less than significant.

e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐

9e. Response: ***(Source: "The Chicago-Linden Strategic Plan, 2014"; "Report on Master Drainage Plan for the City of Riverside (University Area): Zone One," prepared by the Riverside County Flood Control and Water Conservation District, July 1967. "Riverside General Plan 2025: Public Facilities and Infrastructure Element," prepared by the City of Riverside, Amended November 2012.)***

Less Than Significant Impact. Within the scope of the project is the installation of a storm water drainage system concurrent with the construction of this project. The storm water drainage system will be adequately sized to accommodate the drainage created by this project.

The project is expected to generate the following pollutants: sediment/turbidity, nutrients, trash and debris, oxygen demanding substances, bacteria and viruses, oil and grease, and pesticides. These expected pollutants will be treated through the incorporation of BMPs within the site design, including source control and treatment control measures specified in the project specific WQMP.

Therefore, as the expected pollutants will be mitigated through the project site design, source control and treatment controls already integrated into the project design, the project will not create or contribute runoff water exceeding capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff and there will be a less than significant impact.

f. Otherwise substantially degrade water quality?	☐	☐	☒	☐

9f. Response: ***(Source: "The Chicago-Linden Strategic Plan, 2014"; "Report on Master Drainage Plan for the City of Riverside (University Area): Zone One," prepared by the Riverside County Flood Control and Water Conservation District, July 1967. "Riverside General Plan 2025: Public Facilities and Infrastructure Element," prepared by the City of Riverside, Amended November 2012.)***

Less Than Significant Impact. Given that the project site is over one acre is size, the proposed project will be required to submit a Water Quality Management Plan (WQMP) that will comply with the requirements of the local NPDES Stormwater Permit and have coverage under the State's General Permit for Construction Activities. The proposed project would implement a SWPPP listing BMPs to prevent construction pollutants and products from violating any water quality standards. The purpose of this requirement is to ensure treatment BMPs are installed/constructed as part of the project so that the pollutants generated by the project will be treated in perpetuity. For this reason, impacts related to degrading water quality are less than significant directly, indirectly and cumulatively.

g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

9g. Response: ***(Source: General Plan 2025 Figure PS-4 – Flood Hazard Areas, and FEMA Flood Hazard Maps***

No Impact. The project area is not located in a FEMA-designated Special Flood Hazard Area per FEMA's National Flood Insurance Rate Map 06065C0726G dated August 28, 2008. While flood insurance may not be mandatory in this instance, HUD recommends that all insurable structures maintain flood insurance under the National Flood Insurance Program (NFIP). The project will not place a structure within a 100-year flood hazard area that would impede or redirect flood flows and no impact will occur directly, indirectly or cumulatively.

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒

9h. Response: ***(Source: General Plan 2025 Figure PS-4 – Flood Hazard Areas, and FEMA Flood Hazard Maps Enter zone and panel number)***

No Impact. The project area is not located in a FEMA-designated Special Flood Hazard Area, as described in response 9g., above. No impact will occur.

i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒

9i. Response: ***(Source: General Plan 2025 Figure PS-4 – Flood Hazard Areas, and FEMA Flood Hazard Maps)***

No Impact. The project site is not located within or near a flood hazard area as depicted on General Plan 2025 Program FPEIR Figure 5.8-2 – Hazard Areas or the National Flood Insurance Rate Map (Map Number 06065C0726G dated August 28, 2008). For this reason, the proposed project will not place structures within a flood hazard or dam inundation area that would expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam and therefore no impact will occur.

j. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

9j. Response: ***(Source: GP 2025 FPEIR Chapter 7.5.8 – Hydrology and Water Quality)***

No Impact. Tsunamis are a phenomenon that occurs in coastal areas; therefore, since the City is not located in a coastal area, no impacts due to tsunamis will occur. In addition, the proposed project site and surroundings have generally flat topography in an urbanized area where mudflows will not occur. The project site is not in the vicinity of any of the lakes, rivers or streams that have been mapped in the City, and will therefore not be impacted by seiches. Therefore, no impact associated with tsunamis, seiches or mudflow are expected.

10. LAND USE AND PLANNING: Would the project:				
a. Physically divide an established community?	☐	☐	☒	☐

10a. Response: ***(Source: General Plan 2025 Land Use and Urban Design Element, Entrada Housing Project site plan, City of Riverside GIS/CADME map layers)***

Less Than Significant Impact. The greater Chicago-Linden neighborhood currently consists of a mix of residential development. In 2014, the city adopted the Chicago-Linden Strategic Plan in order to provide guidance on revitalizing and improving affordable housing options within the neighborhood. The project is consistent with the Chicago-Linden Strategic Plan, insofar as it implements its goals of improving living conditions in the neighborhood, and creates a cohesive community that integrates services and recreation into the project site.

Residents within existing buildings will be relocated in compliance with the requirements of State law, as necessary, and new units for very low and low income households created. Further, the physical division of an established generally refers to a linear feature or the removal of access that separates an existing community from other areas. The proposed project does not include these components. Instead the proposed project, through the community center and commercial components, would further connect the community. Impacts are expected to be less than significant as a result of the proposed project.

b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

10b. Response: ***(Source: General Plan 2025, General Plan 2025 Figure LU-10 – Land Use Policy Map, Chicago-Linden Strategic Plan, Title 19 – Zoning Code)***

Less Than Significant Impact. The proposed project is a direct result of the implementation of programs and polices within the Chicago-Linden Strategic Plan, which provides guidance for the improvement of the neighborhood.

Program 1.2 and Policy 2 are directly fulfilled by the proposed project. Program 1.2 of the Plan stipulates the development of "high quality multi-family (29-35) and mixed use project for Housing Authority-owned properties at 1705, 1725, and 1733 7th Street, incorporating neighborhood daycare". Policy 2, states "Continue the Housing Authority's commitment to owning and operating affordable housing in the Chicago-Linden neighborhood", which will also be implemented by the project. Policy 5, "Improve the quality of life for Chicago-Linden neighborhood residents" and Program 5.1 "Implement a broad range of activities at the Community Center. etc" will also be implemented by the proposed project. Although the community center cited in the Plan was proposed at a different location, the activities and programs could be used in the project's community center component.

In addition, the Housing Element's Objective H-2, aims "To provide adequate diversity in housing types and affordability levels to accommodate housing needs of Riverside residents, encourage economic development and sustainability, and promote an inclusive community." The proposed project would provide an added 65 units of affordable housing to the city's housing stock thus implementing Objective H-2. Policy H-2.6 states that "Collaborative Partnerships. Seek, support, and strengthen collaborative partnerships of nonprofit organizations, the development community, and local government to aid in the production of affordable and market rate housing," which the project proponent is intending to fulfill by developing an underutilized area into a more viable and safe residential community. The project proponent is seeking a reduction in the required number of on-site parking spaces as a concession pursuant to the Density Bonus Ordinance in order to facilitate the development of affordable housing units. Policy H-2.7 provides the basis for the approval of this concession, "Housing Incentives. Facilitate the development of market rate and affordable housing through the provision of regulatory concessions and financial incentives, where feasible and appropriate." For these reasons, the proposed project will carry out several of the General Plan 2025 objectives and policies and would thus be consistent with its goals.

The applicant has also entered into an Affordable Housing Agreement, which according to Riverside Municipal Code Chapter 19.545.080 Affordable Housing Agreement the project proponent is eligible to receive a concession in development standards. The project proponent is seeking reduced parking requirement in order to accommodate the 65 affordable rental units and supplemental amenities.

Even though the development of the site was outlined in the Strategic Plan, the proposed project will require a General Plan Amendment and a Zone Change in order to develop the site as proposed. The project will be designed to be consistent with the pattern of development of the surrounding area, providing adequate access, circulation and connectivity consistent with the General Plan 2025, and will be in compliance with the requirements of the Zoning and Subdivision Codes, once the appropriate changes are approved.

General Plan

The Medium Density Residential (MDR) designation allows for the construction of up to 6.2 dwelling units per acre or 18.6 persons per acre or, with an approved PRD, 24 persons per acre. The project proponent is proposing a General Plan Amendment to change the land use designation for the 2.03 net acres included in the project to High Density Residential (HDR) which allows 29 dwelling units per gross acre. A mix of residential and commercial development surrounds the project site. As described above, the project is also consistent with the Chicago-Linden Strategic Plan, and implements its policies and programs. As a result, impacts of the General Plan Amendment will be less than significant.

Zoning Ordinance

The subject site is zoned R-1-7000 – Single Family Residential. The project is proposing a Zone Change to R-3-1500 – Multiple-Family Residential, which will allow the development of the project site at the density proposed. The project is consistent with the development standards of the Chicago-Linden Strategic Plan and will conform to these standards. Project review procedures for all uses also require Design Review approval by the City's Development Review Committee (DRC), pursuant to Section 19.710.020(D) of the Riverside Municipal Code.

Impacts associated with the implementation of the project will be less than significant.

c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

10c. Response: ***(Source: General Plan 2025, General Plan 2025 – Figure LU-10 – Land Use Policy Map)***

No Impact. The greater Chicago-Linden neighborhood, including the project site, is an urbanized area and does not contain any designated conservation lands. The project is within the boundary of the Western Riverside MSHCP, and will be responsible for the payment of fees, if applicable. However, the project is not within or in the vicinity of a conservation area, as defined by the Plan, due to its urbanized character. The neighborhood is not identified as being within, and therefore will not impact, an adopted Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan directly, indirectly and cumulatively. Therefore, the proposed project will have no impact on the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

11. MINERAL RESOURCES. Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

11a. Response: ***(Source: General Plan 2025 Figure – OS-1 – Mineral Resources)***

No Impact. The proposed project is located within an established urban core where extensive development was occurred. Furthermore, according to the 2025 General Plan, the project is located in a State-classified MRZ-3 Mineral Resources Zone indicating that the area contains known or inferred mineral occurrences of undetermined mineral resource significance (Figure OS-1 – Mineral Resources). The project area is not, nor is it adjacent to, a locally important mineral resource recovery site delineated in the 2025 General Plan. Thus, the project will have no impact on mineral resources directly, indirectly or cumulatively.

b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

11b. Response: ***(Source: General Plan 2025 Figure – OS-1 – Mineral Resources)***

No Impact. As described above, the project site is not, nor is it adjacent to a locally important mineral resource recovery site delineated in the 2025 General Plan (see 11a discussion). Given that the site is fully developed and has been designated for residential land uses for decades, no mineral extraction has occurred in the greater Linden-Chicago neighborhood or in the areas adjacent to the neighborhood. For this reason, there will be no impacts associated with the loss of important mineral resources.

12. NOISE. Would the project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

12a. Response: ***(Source: General Plan Figure N-1 – 2003 Roadway Noise Figure N-5 (2025 Roadway Noise), N-6 (2025 Freeway Noise) and N-7 (2025 Railroad Noise), Figure N-10 (2025 Noise/Land Use Noise Compatibility Criteria))***

Less Than Significant Impact. The proposed project is compatible with the existing residential character and land use pattern of the neighborhood. The project does not involve construction of any significant long-term sources of noise, such as new roadways, freeways, railroads, or airports. However, the proposed project will result in the construction of a new residential development that is comprised two- and three-story townhome style apartment buildings as well a community center, commercial building, and parking lot. The project will also include improvements to the existing sidewalks. The primary source of noise associated with build out of the project will be from construction activity. Specifically, noise from large diesel engines, grading equipment, truck deliveries, and hauling vehicles will increase noise levels within the community temporarily. Riverside Municipal Code Section 7.35.010(B)(5) regulates the allowable hours of construction activity to 7:00 A.M. to 7:00 P.M. on weekdays and 8:00 A.M. to 5:00 P.M. on Saturdays, with no construction activities allowed on Sunday or Federal holidays. In addition, the Municipal Code limits noise levels from construction activities to the maximum permitted exterior noise level for the affected land use. Noise impacts could be disruptive, but will be temporary and periodic as demolition, grading, and construction occur.

Once these activities are completed, noise levels can be expected to return to current levels, consistent with a residential neighborhood. The proposed project will occur in an area that is currently urbanized. According to the General Plan (Figure N-6), future roadway noise from Chicago Avenue and freeway noise from Interstate 215, ranging between 60 and 65 CNEL will encroach onto the subject property in portions of the site where development is proposed. CNEL represents an averaging, weighted for time of day, of the noise levels on a project site over a 24 hour period. According to the General Plan (Figure N-10), noise levels up to 65 CNEL are considered normally acceptable noise levels for multi-family residential units and hotels/motels. Furthermore, the application of standard construction techniques consistent with the current Building Code requirements provides noise attenuation of approximately 20 dBA. Therefore, interior noise levels can be expected to range between 40 and 45 dBA CNEL, also consistent with General Plan standards. Finally, the City requires the preparation and submittal of an acoustical analysis with the submittal of plans for building permit plan check. This standard requirement assures that the project's noise levels will be consistent with City standards, and that impacts associated with long term noise levels will be less than significant. Therefore, proposed land uses are expected to be compatible with future traffic noise levels onsite.

Operational noise associated with day-to-day activities of residents is expected to be very limited, and consistent with the noise levels that now occur in the neighborhood. City standard requirements such as General Plan Objective N-1 which requires the minimization of noise levels from point sources throughout the community and, wherever possible, mitigate the effects of noise to provide a safe and healthful environment, will assure that noise levels remain less than significant.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

12b. Response: ***(Source: General Plan Figure N-1 – 2003 Roadway Noise)***

Less Than Significant Impact. Demolition, grading, and construction activities facilitated by the proposed project will result in short-term, temporary ground-borne noise and vibration that could affect residents surrounding the project area. Vibration sources will likely include heavy construction equipment, such as large bulldozers and jackhammers. Construction-related vibration will be short-term and temporary and will cease once construction is complete. The project will be required to comply with the City's noise standards, as discussed in item 12a., above. Compliance with these standards will assure that impacts associated with vibration will be less than significant directly, indirectly or cumulatively.

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

12c. Response: ***(Source: General Plan Figure N-1 – 2003 Roadway Noise)***

Less Than Significant Impact. Buildout of the project will result in a net increase of 65 dwelling units, one community center, and one 900 square foot commercial building and a parking lot in the subject site. These land uses are compatible with existing land use patterns and the residential character of the neighborhood. Construction noise will be periodic and temporary. Once complete, noise levels are not expected to result in noticeable changes in the community noise environment. Primary noise sources can be expected to include lawn and HVAC equipment and vehicular traffic typical of a residential community. The community center is expected to serve the immediate neighborhood population and not attract a substantial number of new vehicles (or vehicular noise) from outside the neighborhood. The enhancement of alleys and sidewalks, as facilitated by the proposed project will improve pedestrian and bicycle access to the community center, Patterson Park, and other local destinations, and may reduce traffic-related noise throughout the neighborhood. Overall long-term noise levels are not expected to significantly increase, and impacts will be less than significant.

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

12d. Response: ***(Source: FPEIR Table 5.11-J – Construction Equipment Noise Levels, Appendix G – Noise Existing Conditions Report***

Less Than Significant Impact. The primary source of temporary or periodic noise associated with build out of the proposed project will be from construction activity. Although periodic and temporary, construction noise can be expected to increase ambient noise levels over existing conditions. This increase may be particularly noticeable and disruptive to residential units adjacent to the project area. The construction period is expected to require less than a year, with the early grading and site preparation stages causing the highest increases in noise levels. Once vertical construction begins, noise levels will be less elevated, and primarily associated with power tools and lighter weight equipment.

Both the General Plan 2025 and Municipal Code Title 7 (Noise) limit construction activities to specific times and days of the week. These limitations assure that construction noise occurs during the less sensitive daytime hours. During the more sensitive evening and nighttime periods, construction will not be permitted. Considering the short-term nature of construction and the provisions of the Noise Code, the temporary and periodic increase in noise levels due to construction projects is expected to be less than significant.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

12e. Response: ***(Source: (Source: General Plan 2025 Figure PS-6 – Airport Safety Zones and Influence Areas, RCALUCP and March Air Reserve Base/March Inland Port Comprehensive Land Use Plan (1999), Air Installation Compatible Use Zone Study for March Air Reserve Base (August 2005))), Airport Land Use Commission (ALUC) Development Review – Director's Determination)***

No Impact. The project area is located within Airport Compatibility Zone E of the March Air Reserve Base/Inland Port Airport Influence Area (AIA). As a result of this, the project proponent submitted a development review application pursuant to the Riverside County Airport Land Use Commission (ALUC) Resolution No. 15-01. ALUC staff reviewed the proposed project. On November 9, 2017, ALUC issued a letter that determined that the proposed project is consistent with the 2014 March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. Therefore, the project will have no impact resulting in a safety hazard for people residing or working within an airport land use plan or within two miles of an airport.

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

12f. Response: ***(Source: General Plan 2025 Figure PS-6 – Airport Safety Zones and Influence Area)***

No Impact. The proposed project is not located in the vicinity of a private airstrip. Thus, the proposed project will not expose people residing or working to excessive noise levels either directly, indirectly or cumulatively.

13. POPULATION AND HOUSING. Would the project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐

13a. Response: ***(Source: General Plan 2025 Table LU-3 – Land Use Designations)***

Less Than Significant Impact. In the 2014 Chicago-Linden Strategic Plan, the addition of new residential complexes was analyzed as well as the development of a new community center, which was intended to serve the social and recreational needs of residents in the greater Chicago-Linden neighborhood.

The proposed project will result in the construction and operation of a residential complex which will be composed of 65 dwelling units that could marginally induce population growth. With an average household size of 3.56 persons per household in the project area, the proposed project could result in an additional 232 residents. However, the site has been previously occupied by multi-family dwellings in multiple apartment buildings, and although the total number of residents previously within the project boundary is unknown, the proposed project is likely to result in a similar number of residents as have previously occurred.

According to the California Department of Finance – Demographic Research Unit's Report E-1, the City of Riverside's currently population is 326,792. The proposed project would represent a limited population increase of less than 1% over existing conditions. In addition, the project is intended to serve the social and housing needs for the broader Eastside population thus improving housing opportunities for the area's residents. For these reasons, the proposed project will not result in substantial population growth in an area, either directly, indirectly or cumulatively.

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

13b. Response: ***(Source: CADME Land Use 2003 Layer)***

Less Than Significant Impact. The project involves the redevelopment of an underutilized site and will displace existing people/residents; however, the displacement impact will be less than significant directly, indirectly and cumulatively because residents have been relocated, and additional affordable housing units will result from implementation of the project. The project site previously contained a total of 41 units, and will be replaced with a total of 65 units. The project is consistent with the General Plan 2025 objectives and policies. For example, the Housing Element's Objective H-2, aims "To provide adequate diversity in housing types and affordability levels to accommodate housing needs of Riverside residents, encourage economic development and sustainability, and promote an inclusive community." The proposed project would provide and added 65 units of affordable housing to the city's housing stock thus implementing Objective H-2. Policy H-2.6 states that "Collaborative Partnerships. Seek, support, and strengthen collaborative partnerships of nonprofit organizations, the development community, and local government to aid in the production of affordable and market rate housing," which the project proponent is intending to fulfill by developing an underutilized area into a more viable and safe community. The project proponent is seeking a reduction in the required number of on-site parking spaces as a concession pursuant to the Density Bonus Ordinance in order to facilitate the development of affordable housing units. Policy H-2.7 provides the basis for the approval of this concession, "Housing Incentives. Facilitate the development of market rate and affordable housing through the provision of regulatory concessions and financial incentives, where feasible and appropriate."

For these reasons, the proposed project will carry out several of the General Plan 2025 objectives and policies and would thus be consistent with its goals. Impacts associated with housing unit construction and replacement will be less than significant.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

14. PUBLIC SERVICES.				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a. Fire protection?	☐	☐	☒	☐

14a. Response: ***(Source: FPEIR Table 5.13-B – Fire Station Locations, Table 5.13-C – Riverside Fire Department Statistics and Ordinance 5948 § 1)***

Less Than Significant Impact. The project is in an urbanized area and has been serviced by the Fire Department in the past. The proposed project will consist of a residential component, community center, and a commercial component. Fire facilities and services are provided by Station #4, located at 3510 Cranford Avenue, 1/4 mile east of the project site. Existing water distribution lines, along 7th Street and Chicago Avenue provide adequate water volumes and pressure, and no major expansions of the system are anticipated in order to accommodate the proposed project. With the continued implementation of General Plan 2025 policies, compliance with existing codes and standards, and through Fire Department practices, there will be less than significant impacts on the demand for additional fire facilities or services.

b. Police protection?	☐	☐	☒	☐

14b. Response: ***(Source: General Plan 2025 Figure PS-8 – Neighborhood Policing Centers)***

Less Than Significant Impact. The proposed project implements the goals and policies of the Chicago-Linden Strategic Plan. One of the main goals of the Strategic Plan is to improve public safety in the project area, and its implementation is expected to have an overall positive impact on neighborhood safety and crime prevention. The proposed project will contribute to neighborhood improvements, including the alley improvement program, and participation in the Crime-Free Multi-Housing program. Finally, the proposed project will provide safer, more modern living conditions for residents, and encourage a sense of neighborhood through programs and services offered at the project's community center.

Police facilities and services are provided by the Neighborhood Policing Center UNET-UCR located at 1201 University Avenue, less than 1 mile east of the project. With implementation of the General Plan 2025 policies, compliance with existing codes and standards and through Police Department practices, there will be less than significant impacts on the demand for additional police facilities or services either directly, indirectly or cumulatively.

c. Schools?	☐	☐	☒	☐

14c. Response: ***(Source: FPEIR Figure 5.13-2 – RUSD Boundaries, Table 5.13-D – RUSD)***

Less Than Significant impact. The project area is located in the Riverside Unified School District (RUSD). Based on RUSD's student generation rates of 1.4 school children per dwelling unit, the proposed project has the potential to result in approximately 91 school children. Adequate school facilities and services are provided by RUSD to serve this project. The proposed community center has the potential to host after school programs that would further support the educational and recreational needs of area students. With continued implementation of General Plan 2025 policies, compliance with existing codes and standards, and through School District impact fees used to offset the impact of new development, there will be less than significant impacts on the demand for school facilities or services either directly, indirectly, or cumulatively.

d. Parks?	☐	☐	☒	☐

14d. Response: ***(Source: General Plan 2025 Figure PR-1 – Parks, Open Spaces and Trails, Table PR-4 – Park and Recreation Facilities, Parks Master Plan 2003, GP 2025 FPEIR Table 5.14-A – Park and Recreation Facility Types)***

Less Than Significant Impact. The ultimate build out of the proposed project will generate a less than 1% increase in the city's population. This does not constitute a substantial population increase such that additional park facilities would be required. Recreational opportunities will be provided within the project at the community center and in project common

areas. The proposed project is within ¼ mile of Patterson Park, which offers sports and passive recreation opportunities. In addition, with implementation of General Plan 2025 policies, compliance with existing codes and standards, and through Park, Recreation and Community Services practices, as well as payment of local and regional park development fees, there will be less than significant impacts on the demand for additional park facilities or services either directly, indirectly or cumulatively.

e. Other public facilities?	☐	☐	☒	☐

14e. Response: ***(Source: General Plan 2025 Figure LU-8 – Community Facilities, FPEIR Figure 5.13-5 - Library Facilities, Figure 5.13-6 - Community Centers, Table 5.3-F – Riverside Community Centers, Table 5.13-H – Riverside Public Library Service Standards)***

Less Than Significant Impact. The project consists of four residential building that will total 65 dwelling units, a community center, and small commercial building. Adequate public facilities and services, within the greater Chicago-Linden Neighborhood will serve this project. On-site amenities and infrastructure in surrounding streets have sufficient capacity to serve the proposed project. In addition, with implementation of General Plan 2025 policies, compliance with existing codes and standards, and through Park and Recreation and Community Services and Library practices, there will be no impacts on the demand for additional public facilities or services either directly, indirectly or cumulatively.

15. RECREATION.				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐

15a. Response: ***(Source: General Plan 2025 Figure PR-1 – Parks, Open Spaces and Trails, Table PR-4 – Park and Recreation Facilities, Figure CCM-6 – Master plan of Trails and Bikeways)***

Less Than Significant Impact. The proposed project would result in net increase of 65 dwelling units and a population increase of approximately 232 residents. This does not constitute a substantial population increase such that there will be a substantial physical deterioration of existing recreational facilities. Residents will have access to Patterson Park and its facilities, but will not over-tax these facilities. Furthermore, the proposed project will include a community center for the will be able to provide recreational services to the project site.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

15b. Response:

No Impact. The project will include new recreational facilities at the community center and recreational opportunities in common areas. The project's facilities, however, will not have an adverse impact on the environment, and the community center's impacts have been considered throughout this Initial Study.

16. TRANSPORTATION/TRAFFIC. Would the project result in:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☒	☐	☐

16a. Response: ***(Source: General Plan 2025 Figure CCM-4 – Master Plan of Roadways, Traffic Impact Report for the Entrada Housing Project prepared by Kunzman Associates, Inc.)***

Less Than Significant Impact with Mitigation. In order to estimate potential traffic associated with the site, a project-specific Traffic Impact Analysis was prepared by Kunzman Associates, Inc. (please see Appendix B). The traffic impact report is a comprehensive analysis that involved a review of existing traffic conditions, trips generated by the project, distribution of the project trips to roads outside the project, calculation of existing plus project traffic conditions, and an analysis of opening year traffic conditions without and with the project, and an analysis of buildout year traffic conditions without and with the project was include since the proposed project involves a General Plan Amendment.

Currently, the project site is partially vacant and partially developed with residential uses, which does not result in significant trips. Roadways adjacent to the site include Chicago Avenue to the east, and 7th Street to the south. The proposed project will have access to both Chicago Avenue and 7th Street.

As stated above, the proposed project requests a General Plan Amendment to change the existing General Plan Land Use designation for 1.88 acres from MDR – Medium Density Residential to HDR – High Density Residential and a Rezoning to change the zone of the entire 2.03-acre (net) site from R-1-7000 – Single-Family Residential to R-3-1500 – Multiple-Family Residential. The R-1-7000 zone allows for development of a maximum of 6.3 single-family detached residential dwelling units per gross acre (or up to 8 per acre with a Planned Residential Development Permit); the R-3-1500 allows for a maximum of 29 multi-family attached residential dwelling units per gross acre.

At current conditions the project site of 2.63 gross acres allows for 21 single-family detached dwellings units, which are projected to generated 189 daily vehicle trips. As shown in Table 5 below, the proposed project, including the apartments, community center and commercial space, will generate a total of 990 daily trips. This estimate is conservative, insofar as the commercial building and community center will be geared to project residents, rather than outside the area, but its space was included in order to assure that all potential trips were considered. It is assumed that a portion of the commercial space generated trips, which are characterized as a convenience market land use in the table below, will come from pass-by trips. The project trips have been reduced based upon the City of Riverside Public Works Department, Traffic Impact Analysis Preparation Guide January 2016.

Table 5
Entrada Housing Project
Traffic Report Summary

			Peak Hour						**Daily**
Land Use	**Quantity**	**Units**	**Morning**			**Evening**			
Trip Generation Rates			**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	
Multifamily Housing (Low-Rise)	1.00	DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32
Convenience Market	1.00	TSF	31.27	31.27	62.5	25.05	24.06	49.1	762.28
Trips Generated									
Multifamily Housing (Low-Rise)	65	DU	7	23	30	23	13	36	476
Convenience Market	0.900	TSF	28	28	56	23	22	44	686
Subtotal			35	51	86	46	35	80	1,162
Pass-By Trips Reduction									
Convenience Market (25%)			-7	-7	-14	-6	-6	-12	-172
New Trips Generated			**28**	**44**	**72**	**40**	**29**	**68**	**990**

In order to effectively analyze project impacts, the study intersections that were analyzed consist of Chicago Avenue at the project's North Access along 7th Street and Chicago Avenue at 7th Street. The City of Riverside allows a rating of "D" for its acceptable Level of Service (LOS) for the study intersections. Both intersections are currently operating above a D rating. In order to analyze the traffic conditions with the proposed project, existing traffic volumes are combined with areawide growth. For analysis purpose the opening year is 2020 and buildout year is 2025.

Per the traffic impact report, there is a potential for significant impact to occur at three intersections during the opening year. These intersections are Chicago Avenue at the project's north access, Chicago Avenue at 7th Street, and Chicago Avenue at the project's south access, without improvements. With the addition of a striped center median, allowing for left turns from Chicago Avenue at these locations, these locations will operate at an acceptable level. Therefore, with the implementation of the mitigation measure provided below, impacts are reduced to less than significant level, since the project will not degrade the LOS to a lower rating than D which is considered acceptable by the city.

The traffic impact report also considered the build out of the General Plan (2025) as it relates to the proposed General Plan Amendment for the project. That analysis found that, as with opening year conditions, the same three intersections at Chicago Avenue would operate at unacceptable levels. However, with the implementation of a center median, all intersections would operate at acceptable levels, as under opening year conditions. With mitigation, therefore, the General Plan Amendment and associated Zone Change would have a less than significant impact on the circulation system.

The improvements were outlined in the traffic impact report's Figure 40 which may be found in Appendix B and included site-specific circulation and access recommendations. Mitigation Measure 16-1 details the required improvements that will assure that the added 839 daily vehicle trips the proposed project will add to existing conditions create less than significant impacts to applicable plans, ordinances, policies that establish effectiveness for the performance or policy establishing measures to the performance of the circulation system, which takes into account all relevant components of the circulation system. Implementation of Mitigation Measure 16-1 will result in a less than significant impact.

b. Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒

16b. Response: ***(Source: General Plan 2025 Figure 8 – Circulation Element)***

No Impact. Neither Chicago Avenue nor 7th Street are included in the County's Congestion Management Program. There will therefore be no impact to the CMP.

c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒

16c. Response: ***(Source: General Plan 2025 Figure PS-6 – Airport Safety Zones and Influence Areas)***

No Impact. The subject site is not located within an airport influence area. The proposed project will not change air traffic patterns, increase air traffic levels, or change the location of air traffic patterns. For this reason, the project will have no impact directly, indirectly or cumulatively on-air traffic patterns.

d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐

16d. Response: ***(Source: Project Site Plan; Traffic Impact Analysis for the Entrada Housing Project prepared by Kunzman Associates, Inc.)***

Less Than Significant Impact. The proposed project is compatible with adjacent residential developments. It has been designed so as not to cause any hazards to the surrounding area or general public. Intersections of project driveways with public streets are provided at a 90-degree angle and have sufficient sight lines to allow the safe maneuvering of vehicles onto and out of the project. In addition, the City Engineer will review project plans to assure that they meet City standards for roadway improvements and safety. As a result of this standard City requirement, project impacts associated with design hazards will be less than significant directly, indirectly, and cumulatively

e. Result in inadequate emergency access?	☐	☐	☒	☐

16e. Response: ***(Source: California Department of Transportation Highway Design Manual, Municipal Code, Traffic Impact***

Less Than Significant Impact. Access to the project site will be provided by driveway entrances along 7th Street and Chicago Avenue, as well as an entrance via an alley on the site's northern boundary. Traffic improvements facilitated by the proposed project have the potential, during their construction, to obstruct lanes of travel that may have a temporary impact on emergency access. However, the project's construction plans will be reviewed by the city, and traffic management plans developed as needed to assure traffic safety, as required by the City. The proposed project will also require plan approval by Riverside Fire Department. Impacts associated with emergency access are expected to be less than significant directly, indirectly and cumulatively.

f. Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities)?	☐	☐	☒	☐

16f. Response: ***(Source: General Plan 2025 Circulation Element Figure 9 – Transit Routes; Figure 10 City of Riverside Bike Paths)***

Less Than Significant Impact. The proposed project as designed is not in conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks). The added amenities would include bike lanes along Chicago Avenue, as required in the Strategic Plan. The project site is currently served by Riverside Transit Agency Routes 13 and 22 along Chicago Avenue and Routes 1, 14, 22, 204, and Gold Line along University Avenue. There will be no interruptions to these stops are routes as a result of the proposed project. Therefore, the proposed project impacts related to adopted policies, plans or programs supporting alternative transportation are less than significant directly, indirectly and cumulatively.

17. TRIBAL CULTURAL RESOURCES Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒

17a. Response: ***(Source: GP 2025 FPEIR Figure 5.5-1 - Archaeological Sensitivity and Figure 5.5-2 - Prehistoric Cultural Resources Sensitivity, Cultural Resources Report for the Chicago/Linden Strategic Plan prepared by JM Research and Consulting; Appendix C: Entrada Project Cultural Resources Survey Update for the Entrada Project, Chicago/Linden Strategic Plan prepared by JM Research and Consulting)***

No Impact. The project site is located within the Chicago-Linden neighborhood. The project site has been previously developed and disturbed numerous times in association with construction of homes and roads. Only two (2) small parcels are vacant and currently undeveloped, although both have had development on them in the past. A Sacred Lands File search conducted by the Native American Heritage Commission on November 26, 2012 failed to indicate the presence of any Native American traditional cultural places or landscapes in the Strategic Plan project area, which includes the project site. Fifteen (15) Native American tribes that have tribal cultural affiliations in the project area were contacted for consultation on the proposed project by BCR Consulting, on November 30, 2012. In 2018, the city sent out SB 18 and AB 52 consultation letters to the appropriate tribal authorities in order to invite them to consult on the proposed project. As of August 2018, consultation has been conducted and concluded with the Soboba Band of Luiseño Indians, Viejas Band of Kumeyaay Indians and Morongo Band of Mission Indians.

As described in the Cultural Resources discussion, an update to the 2013 project-specific cultural resources survey was conducted in May 2018, which included a record search, field survey and digital photography of the project area to supplement the review of previous survey efforts. In addition, the record search conducted in 2018 identified only resources that were related to the historic built environment. Since there are no prehistoric or archaeological deposits identified within a one-mile radius of the subject site, the survey concluded that there is a low level of sensitivity for buried archaeological deposits within the subject site.

No resources were identified, and none are known to occur within the project area. Therefore, no direct, indirect or cumulative impact would occur to sites, features, places or cultural landscapes that are listed or eligible for listing in the California Register of Historic Resources or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

17b. Response: ***(Source: GP 2025 FPEIR Figure 5.5-1 - Archaeological Sensitivity and Figure 5.5-2 - Prehistoric Cultural Resources Sensitivity, Cultural Resources Report for the Chicago/Linden Strategic Plan prepared by JM Research and Consulting; Appendix C: Entrada Project Cultural Resources Survey Update for the Entrada Project, Chicago/Linden Strategic Plan prepared by JM Research and Consulting)***

No Impact. As stated above, the proposed project area was analyzed as part the cultural resources report for the greater Chicago-Linden Strategic Plan, which included a thorough records research, historical research, and field survey have produced negative results. A focused update to the survey was conducted for the project area.

No archaeological resources were identified, and as a result no tribal resources are expected to be adversely impacted by the proposed project. As described above, the 2018 update to the survey concluded that there is a low level of sensitivity for buried archaeological deposits within the subject site since there have not been any prehistoric or historical archaeological deposits identified within a one-mile radius of the subject site. Consulting tribes identified no specific concerns relating to

potential impacts to Tribal cultural resources, which are not known to exist on the project site, and only standard conditions relating to the treatment and disposition of inadvertent discoveries were requested.

The construction and ultimate operation of the proposed project is not expected to result in direct, indirect or cumulative impacts to resources determined by the City, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.

18. UTILITIES AND SYSTEM SERVICES. Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐

18a. Response: ***(Source: General Plan 2025 Figure PF-2 – Sewer Facilities Map, FPEIR Figure 5.16-5 – Sewer Service Areas, Table 5.16-K - Estimated Future Wastewater Generation for the City of Riverside's Sewer Service Area)***

Less Than Significant Impact. As stated in the Hydrology discussion, the project site is located within the Santa Ana River Watershed (GP 2025 Figure 5.8-1). As required by state and local law, all new development is required to comply with all provisions of the NPDES program and the City's Municipal Separate Sewer Permit (MS4), as enforced by the Regional Water Quality Control Board (RWQCB). Implementation of this requirement will work to ensure the wastewater treatment requirements of the RWQCB are met. The site's sewer and wastewater services are provided by the Riverside Public Utilities Department. Existing wastewater facilities in the project site's vicinity include conveyance pipes within the right-of-way of Chicago Avenue and a sewer easement on 7th Street. The pipes along Chicago Avenue are 18-inch vitrified clay pipes. Wastewater will be disposed of via the existing sewer system, which has adequate capacity to serve the site. With the implementation of the above referenced regulatory requirements to ensure the RWQCB standards are not violated the project's development and operation would result in less than significant impacts.

b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

18b. Response: ***(Source: General Plan 2025 Table PF-1 – RPU PROJECTED DOMESTIC WATER Supply (AC-FT/YR), Table PF-2 – RPU Projected Water Demand, FPEIR Table 5.16-G – General Plan Projected Water Demand for RPU Including Water Reliability for 2025)***

No Impact. The site's wastewater services are provided by the Riverside Public Utilities. Currently, there is comprehensive system of wastewater facilities in the project site's vicinity which includes conveyance pipes within the right-of-way of Chicago Avenue and a sewer easement on 7th Street. The pipes along Chicago Avenue are 18-inch vitrified clay pipes. Although the project will intensify the density of the site, the existing sewer system has adequate capacity to serve the existing demand within the project area**.** The existing system has capacity to adequate serve the proposed project.

The project is consistent with the Typical Growth Scenario of the General Plan 2025 where future water and wastewater generation was determined to be adequate (see Tables 5.16-E, 5.16-F, 5.16-G, 5.16-H, 5.16-I, 5.16-J and 5.16-K of the General Plan 2025 Final PEIR). Therefore, the project will have no impact resulting in the construction of new water or wastewater treatment facilities or the expansion of existing facilities directly, indirectly or cumulatively.

c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

18c. Response: ***(Source: FPEIR Figure 5.16-2 - Drainage Facilities)***

No Impact. The project area is currently serviced by the city's storm drain system which is comprised of gutters, pipes, inlets and culverts that carry rainwater flows to the Santa Ana River. The subject site is located within the central portion of the University drainage basin. An 18-inch concrete storm drain and reinforced concrete pipe (RCP) along Chicago Avenue conveys localized drainage. This facility is adequate and will not need to be upgraded in order to service the proposed project. The subject site is well protected by existing flood control retention and drainage improvements. Therefore, with the use of existing facilities not warranting the construction of additional facilities, the project will have no impact resulting in the construction of new storm water drainage facilities or the expansion of existing facilities directly, indirectly or cumulatively.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐

18d. Response: ***(Source: FPEIR Figure 5.16-3 – Water Service Areas, Figure 5.16-4 – Water Facilities, Table 5.16-E – RPU Projected Domestic Water Supply (AC-FT/YR, Table 5.16-F – Projected Water Demand, Table 5.16-G – General Plan Projected Water Demand for RPU including Water Reliability for 2025)***

Less Than Significant. The City's Urban Water Management Plan must be updated every five years to include the most recent population trends. Similarly, the City must consult with the Riverside Public Utilities regarding development projects exceeding the thresholds noted in the CEQA Guidelines Section 15155 to ensure that sufficient water supplies are available and this review took place.

Domestic water supply and demand has been projected to the year 2040 by the RPU's Urban Water Management Plan, although the proposed project will require the adoption of a GPA and Zone Change to intensify the density of the site, the gross additional dwelling units would be 14 more than projected estimations based on land use designations. The urban water use target for 2020 is 213 gallons per capita per day (gpcd), the project's operational year is 2020. Using the RPU's water factor, and the project's anticipated population of 232 persons, the project's total demand would be 49,416 gpd. However, the project's net additional demand (14 units and 50 people) would result in 10,650 gallons per day, or 11.93 acre feet per year. Total water supplies for RPU in the year 2020 would be 116,903 acre feet per year. The increased demand thus would be less than 1%. Water supply is projected to remain sufficient. Further, the RPU plans to increase water supplies by conjunctive use projects and recycled water infrastructure projects. Therefore, the proposed project will have a less than significant impact on water supplies either directly, indirectly or cumulatively.

e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐

18e. Response: ***(Source: FPEIR Figure 5.16-3 – Water Service Areas, Figure 5.16-4 – Water Facilities, Table 5.16-E – RPU Projected Domestic Water Supply (AC-FT/YR, Table 5.16-F – Projected Water Demand, Table 5.16-G – General Plan Projected Water Demand for RPU including Water Reliability for 2025)***

Less Than Significant Impact. See 18c response.

f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐

18f. Response: ***(Source: FPEIR Table 5.16-A – Existing Landfills and Table 5.16-M – Estimated Future Solid Waste Generation from the Planning Area)***

Less Than Significant Impact. Solid waste is disposed via trash and recycling services from City approved waste haulers. All solid waste within the city is taken to the Robert A. Nelson Transfer Station, then the waste is transferred to either the El Sobrante Landfill or Lamb Canyon Landfill for ultimate disposal. There are sufficient disposal capacities within the two landfills to service the city and the proposed project.

The implementation of the city's recycling efforts, which have earned the city recognition as a "Model City for Local Government Recycling and Waste Reduction", will contribute to further reduce waste and limit the city's solid waste that is diverted from ending up in landfills. Impacts will be less than significant.

g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

18g. Response: ***(Source: California Integrated Waste Management Board 2002 Landfill Facility Compliance Study)***

No Impact. The California Integrated Waste Management Act under the Public Resource Code requires that local jurisdictions divert at least 50% of all solid waste generated by January 1, 2000. In 2015, the City is had achieved a 60% diversion rate, well above State requirements. This achievement has earned the City recognition as a "Model City for Local Government Recycling and Waste Reduction." With continued implementation of the city's recycling and clean-up programs, such as C.U.R.E (Clean Up Riverside's Environment), compliance with federal, state, and local statues and regulations related to solid waste will be achieved by the proposed project. Therefore, no impacts related to solid waste statutes will occur directly, indirectly or cumulatively.

19. MANDATORY FINDINGS OF SIGNIFICANCE.				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or an endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐

19a. Response: ***(Source: General Plan 2025 – Figure OS-6 – Stephen's Kangaroo Rat (SKR) Core Reserve and Other Habitat Conservation Plans (HCP), Figure OS-7 – MSHCP Cores and Linkages, Figure OS-8 – MSHCP Cell Areas, General Plan 2025 FPEIR Figure 5.4-2 – MSHCP Area Plans, Figure 5.4-4 - MSHCP Criteria Cells and Subunit Areas, Figure 5.4-6 – MSHCP Narrow Endemic Plant Species Survey Area)***

Less Than Significant Impact.

Biological Resources

As stated in the Biological Resources discussion, the subject site is a previously developed and disturbed site located within an urban neighborhood which diminishes the potential for the occurrence of sensitive biological resources. Development of the proposed project would thus result in less than significant impact to biological resources.

Cultural Resources

No archaeological, historic, or paleontological resources have been identified onsite. Three tribes have requested consultation with the City on the proposed project. The City will incorporate recommendations or mitigation measures into the final Initial Study prior to completion of the document and approval of the project.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐

19b. Response: ***(Source: FPEIR Section 6 – Long-Term Effects/ Cumulative Impacts for the General Plan 2025 Program)***

Less Than Significant Impact. The proposed project will contribute to the cumulative impacts of development in the City and broader Inland Empire since the project is requesting a General Plan Amendment and a Change of Zone which will increase the intensity of development currently allowed under the General Plan 2025. This increased impact will affect traffic as explained in Section 16, Traffic/Transportation. In order to reduce these impacts Mitigation Measures 16-1 through 16-6 will be required. Once these measures are implemented the impacts to traffic as a result of the proposed project will be reduced to less than significant levels, and cumulative impacts associated with build out of the General Plan will also be less than significant.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

19c. Response: ***(Source: FPEIR Section 5 – Environmental Impact Analysis for the General Plan 2025 Program)***

Less Than Significant Impact. The proposed project will not significantly impact human beings. The project is small scale, will add only 14 additional housing units to the area, and will not result in exceeded thresholds of significance relating to air quality, noise, public facilities, hazards and hazardous materials or transportation. Based on the analysis and conclusions in this initial study, the project will not cause substantial adverse effects, directly or indirectly to human beings. Therefore, potential direct and indirect impacts on human beings that result from the proposed project are less than significant.

Staff Recommended Mitigation Measures

Impact Category	Mitigation Measures	Implementation Timing	Responsible Monitoring Party[3]	Monitoring/Reporting Method
Transportation	**MM Trans 16-1:** An extension of the striped median on Chicago Avenue shall be provided from its current location south of 7th Street to the project's northern boundary. On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.	Prior to Final Occupancy	Planning Division Public Works Department	Compliance with Project Conditions of Approval. Approval of Off-Site Improvement Plans. Issuance of a Certificate of Occupancy.

[3] All agencies are City of Riverside Departments/Divisions unless otherwise noted.

Appendix A – CalEEMod Output Tables

CalEEMod Output Tables

for the

Entrada Housing Project

Prepared for:
City of Riverside
3900 Main Street, 3rd Floor
Riverside, CA 92522

City of Arts & Innovation

Prepared by:

Terra Nova Planning & Research, Inc.®
42635 Melanie Place, Suite #101
Palm Desert, California 92211

May 2018

Wakeland Riverside

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	0.90	1000sqft	0.02	900.00	0
Day-Care Center	2.50	1000sqft	0.06	2,500.00	0
Parking Lot	106.00	Space	0.95	42,400.00	0
Apartments Mid Rise	65.00	Dwelling Unit	1.00	65,000.00	186

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	13			**Operational Year**	2019
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project site is 2.03 acres

Construction Phase - Assumes a 9 month build out

Architectural Coating - Assumes low VOC

Woodstoves - The project will not have woodstoves or fireplaces

Construction Off-road Equipment Mitigation - Assumes BMPs for construction equipment

Area Mitigation -

Wakeland Riverside - South Coast AQMD Air District, Summer

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	100.00
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	20
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	20
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	20
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00

tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	220.00	100.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	10.00	15.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	55.25	0.00
tblFireplaces	NumberNoFireplace	6.50	0.00
tblFireplaces	NumberWood	3.25	0.00
tblGrading	AcresOfGrading	7.50	3.00
tblLandUse	LotAcreage	1.71	1.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblWoodstoves	NumberCatalytic	3.25	0.00
tblWoodstoves	NumberNoncatalytic	3.25	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	23.0675	24.4143	19.4524	0.0368	6.3460	1.4376	7.5152	3.3628	1.3440	4.4384	0.0000	3,524.6693	3,524.6693	0.6509	0.0000	3,538.5664
Maximum	**23.0675**	**24.4143**	**19.4524**	**0.0368**	**6.3460**	**1.4376**	**7.5152**	**3.3628**	**1.3440**	**4.4384**	**0.0000**	**3,524.6693**	**3,524.6693**	**0.6509**	**0.0000**	**3,538.5664**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	23.0675	20.7597	19.4524	0.0368	4.0822	1.4376	5.2514	2.1581	1.3440	3.2337	0.0000	3,524.6693	3,524.6693	0.6509	0.0000	3,538.5664
Maximum	**23.0675**	**20.7597**	**19.4524**	**0.0368**	**4.0822**	**1.4376**	**5.2514**	**2.1581**	**1.3440**	**3.2337**	**0.0000**	**3,524.6693**	**3,524.6693**	**0.6509**	**0.0000**	**3,538.5664**

Wakeland Riverside - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**14.97**	**0.00**	**0.00**	**35.67**	**0.00**	**30.12**	**35.82**	**0.00**	**27.14**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6587	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	9.6798	9.6798	9.5400e-003	0.0000	9.9184
Energy	0.0183	0.1574	0.0719	1.0000e-003		0.0127	0.0127		0.0127	0.0127		199.9963	199.9963	3.8300e-003	3.6700e-003	201.1848
Mobile	1.2870	6.2066	15.9993	0.0504	3.7871	0.0561	3.8432	1.0134	0.0528	1.0662		5,118.6595	5,118.6595	0.2727		5,125.4778
Total	**2.9640**	**6.4265**	**21.4716**	**0.0517**	**3.7871**	**0.0983**	**3.8855**	**1.0134**	**0.0950**	**1.1085**	**0.0000**	**5,328.3356**	**5,328.3356**	**0.2861**	**3.6700e-003**	**5,336.5810**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4982	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	9.6798	9.6798	9.5400e-003	0.0000	9.9184
Energy	0.0183	0.1574	0.0719	1.0000e-003		0.0127	0.0127		0.0127	0.0127		199.9963	199.9963	3.8300e-003	3.6700e-003	201.1848
Mobile	1.2870	6.2066	15.9993	0.0504	3.7871	0.0561	3.8432	1.0134	0.0528	1.0662		5,118.6595	5,118.6595	0.2727		5,125.4778
Total	**3.8035**	**6.4265**	**21.4716**	**0.0517**	**3.7871**	**0.0983**	**3.8855**	**1.0134**	**0.0950**	**1.1085**	**0.0000**	**5,328.3356**	**5,328.3356**	**0.2861**	**3.6700e-003**	**5,336.5810**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**-28.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/12/2018	5/2/2018	5	15	
2	Grading	Grading	5/3/2018	5/23/2018	5	15	
3	Building Construction	Building Construction	5/24/2018	10/10/2018	5	100	
4	Paving	Paving	10/11/2018	10/31/2018	5	15	
5	Architectural Coating	Architectural Coating	11/1/2018	12/5/2018	5	25	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0.95

Residential Indoor: 131,625; Residential Outdoor: 43,875; Non-Residential Indoor: 5,100; Non-Residential Outdoor: 1,700; Striped Parking Area: 2,544 (Architectural Coating – sqft)

OffRoad Equipment

Wakeland Riverside - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	66.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Oxidation Catalyst for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429		2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**		**1.4365**	**1.4365**		**1.3429**	**1.3429**		**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0701	0.0502	0.6523	1.5900e-003	0.1453	1.1600e-003	0.1465	0.0385	1.0700e-003	0.0396		158.5157	158.5157	5.4100e-003		158.6508
Total	**0.0701**	**0.0502**	**0.6523**	**1.5900e-003**	**0.1453**	**1.1600e-003**	**0.1465**	**0.0385**	**1.0700e-003**	**0.0396**		**158.5157**	**158.5157**	**5.4100e-003**		**158.6508**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4838	20.7095	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429	0.0000	2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**20.7095**	**15.1107**	**0.0241**		**1.4365**	**1.4365**		**1.3429**	**1.3429**	**0.0000**	**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0701	0.0502	0.6523	1.5900e-003	0.1200	1.1600e-003	0.1212	0.0323	1.0700e-003	0.0334		158.5157	158.5157	5.4100e-003		158.6508
Total	**0.0701**	**0.0502**	**0.6523**	**1.5900e-003**	**0.1200**	**1.1600e-003**	**0.1212**	**0.0323**	**1.0700e-003**	**0.0334**		**158.5157**	**158.5157**	**5.4100e-003**		**158.6508**

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2342	0.0000	6.2342	3.3331	0.0000	3.3331			0.0000			0.0000
Off-Road	2.1515	24.2895	10.3804	0.0206		1.1683	1.1683		1.0748	1.0748		2,077.4666	2,077.4666	0.6467		2,093.6352
Total	**2.1515**	**24.2895**	**10.3804**	**0.0206**	**6.2342**	**1.1683**	**7.4025**	**3.3331**	**1.0748**	**4.4080**		**2,077.4666**	**2,077.4666**	**0.6467**		**2,093.6352**

3.3 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0539**	**0.0386**	**0.5018**	**1.2300e-003**	**0.1118**	**8.9000e-004**	**0.1127**	**0.0296**	**8.2000e-004**	**0.0305**		**121.9352**	**121.9352**	**4.1600e-003**		**122.0391**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9899	0.0000	3.9899	2.1332	0.0000	2.1332			0.0000			0.0000
Off-Road	2.1515	20.6461	10.3804	0.0206		1.1683	1.1683		1.0748	1.0748	0.0000	2,077.4666	2,077.4666	0.6467		2,093.6352
Total	**2.1515**	**20.6461**	**10.3804**	**0.0206**	**3.9899**	**1.1683**	**5.1582**	**2.1332**	**1.0748**	**3.2080**	**0.0000**	**2,077.4666**	**2,077.4666**	**0.6467**		**2,093.6352**

3.3 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.0923	8.9000e-004	0.0932	0.0249	8.2000e-004	0.0257		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0539**	**0.0386**	**0.5018**	**1.2300e-003**	**0.0923**	**8.9000e-004**	**0.0932**	**0.0249**	**8.2000e-004**	**0.0257**		**121.9352**	**121.9352**	**4.1600e-003**		**122.0391**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9127	20.7077	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051		2,329.7759	2,329.7759	0.5019		2,342.3232
Total	**2.9127**	**20.7077**	**15.7183**	**0.0250**		**1.2575**	**1.2575**		**1.2051**	**1.2051**		**2,329.7759**	**2,329.7759**	**0.5019**		**2,342.3232**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0596	1.6966	0.4225	3.6600e-003	0.0896	0.0124	0.1020	0.0258	0.0119	0.0377		390.1213	390.1213	0.0266		390.7850
Worker	0.3556	0.2550	3.3116	8.0900e-003	0.7377	5.8800e-003	0.7436	0.1957	5.4200e-003	0.2011		804.7721	804.7721	0.0274		805.4581
Total	**0.4152**	**1.9516**	**3.7341**	**0.0118**	**0.8273**	**0.0183**	**0.8456**	**0.2215**	**0.0173**	**0.2387**		**1,194.8933**	**1,194.8933**	**0.0540**		**1,196.2432**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9127	17.6015	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051	0.0000	2,329.7759	2,329.7759	0.5019		2,342.3232
Total	**2.9127**	**17.6015**	**15.7183**	**0.0250**		**1.2575**	**1.2575**		**1.2051**	**1.2051**	**0.0000**	**2,329.7759**	**2,329.7759**	**0.5019**		**2,342.3232**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0596	1.6966	0.4225	3.6600e-003	0.0768	0.0124	0.0892	0.0227	0.0119	0.0345		390.1213	390.1213	0.0266		390.7850
Worker	0.3556	0.2550	3.3116	8.0900e-003	0.6095	5.8800e-003	0.6153	0.1642	5.4200e-003	0.1696		804.7721	804.7721	0.0274		805.4581
Total	**0.4152**	**1.9516**	**3.7341**	**0.0118**	**0.6863**	**0.0183**	**0.7046**	**0.1868**	**0.0173**	**0.2041**		**1,194.8933**	**1,194.8933**	**0.0540**		**1,196.2432**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4046	14.2518	11.9787	0.0178		0.8505	0.8505		0.7836	0.7836		1,774.2430	1,774.2430	0.5419		1,787.7896
Paving	0.1659					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5706**	**14.2518**	**11.9787**	**0.0178**		**0.8505**	**0.8505**		**0.7836**	**0.7836**		**1,774.2430**	**1,774.2430**	**0.5419**		**1,787.7896**

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0808	0.0580	0.7526	1.8400e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2300e-003	0.0457		182.9028	182.9028	6.2400e-003		183.0587
Total	**0.0808**	**0.0580**	**0.7526**	**1.8400e-003**	**0.1677**	**1.3400e-003**	**0.1690**	**0.0445**	**1.2300e-003**	**0.0457**		**182.9028**	**182.9028**	**6.2400e-003**		**183.0587**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4046	12.1140	11.9787	0.0178		0.8505	0.8505		0.7836	0.7836	0.0000	1,774.2430	1,774.2430	0.5419		1,787.7896
Paving	0.1659					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5706**	**12.1140**	**11.9787**	**0.0178**		**0.8505**	**0.8505**		**0.7836**	**0.7836**	**0.0000**	**1,774.2430**	**1,774.2430**	**0.5419**		**1,787.7896**

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0808	0.0580	0.7526	1.8400e-003	0.1385	1.3400e-003	0.1399	0.0373	1.2300e-003	0.0385		182.9028	182.9028	6.2400e-003		183.0587
Total	**0.0808**	**0.0580**	**0.7526**	**1.8400e-003**	**0.1385**	**1.3400e-003**	**0.1399**	**0.0373**	**1.2300e-003**	**0.0385**		**182.9028**	**182.9028**	**6.2400e-003**		**183.0587**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	22.6988					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**22.9974**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0701	0.0502	0.6523	1.5900e-003	0.1453	1.1600e-003	0.1465	0.0385	1.0700e-003	0.0396		158.5157	158.5157	5.4100e-003		158.6508
Total	**0.0701**	**0.0502**	**0.6523**	**1.5900e-003**	**0.1453**	**1.1600e-003**	**0.1465**	**0.0385**	**1.0700e-003**	**0.0396**		**158.5157**	**158.5157**	**5.4100e-003**		**158.6508**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	22.6988					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	1.7049	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**22.9974**	**1.7049**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0701	0.0502	0.6523	1.5900e-003	0.1200	1.1600e-003	0.1212	0.0323	1.0700e-003	0.0334		158.5157	158.5157	5.4100e-003		158.6508
Total	**0.0701**	**0.0502**	**0.6523**	**1.5900e-003**	**0.1200**	**1.1600e-003**	**0.1212**	**0.0323**	**1.0700e-003**	**0.0334**		**158.5157**	**158.5157**	**5.4100e-003**		**158.6508**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2870	6.2066	15.9993	0.0504	3.7871	0.0561	3.8432	1.0134	0.0528	1.0662		5,118.6595	5,118.6595	0.2727		5,125.4778
Unmitigated	1.2870	6.2066	15.9993	0.0504	3.7871	0.0561	3.8432	1.0134	0.0528	1.0662		5,118.6595	5,118.6595	0.2727		5,125.4778

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	432.25	415.35	380.90	1,443,747	1,443,747
Day-Care Center	185.15	15.53	14.58	198,554	198,554
Office Park	10.28	1.48	0.68	25,847	25,847
Parking Lot	0.00	0.00	0.00		
Total	627.68	432.35	396.16	1,668,148	1,668,148

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Day-Care Center	16.60	8.40	6.90	12.70	82.30	5.00	28	58	14
Office Park	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Office Park	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991
Day-Care Center	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991
Parking Lot	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991
Apartments Mid Rise	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0183	0.1574	0.0719	1.0000e-003		0.0127	0.0127		0.0127	0.0127		199.9963	199.9963	3.8300e-003	3.6700e-003	201.1848
NaturalGas Unmitigated	0.0183	0.1574	0.0719	1.0000e-003		0.0127	0.0127		0.0127	0.0127		199.9963	199.9963	3.8300e-003	3.6700e-003	201.1848

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1579.22	0.0170	0.1455	0.0619	9.3000e-004		0.0118	0.0118		0.0118	0.0118		185.7906	185.7906	3.5600e-003	3.4100e-003	186.8947
Day-Care Center	40.6849	4.4000e-004	3.9900e-003	3.3500e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7865	4.7865	9.0000e-005	9.0000e-005	4.8149
Office Park	80.063	8.6000e-004	7.8500e-003	6.5900e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.4192	9.4192	1.8000e-004	1.7000e-004	9.4752
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0183**	**0.1574**	**0.0719**	**1.0000e-003**		**0.0127**	**0.0127**		**0.0127**	**0.0127**		**199.9963**	**199.9963**	**3.8300e-003**	**3.6700e-003**	**201.1848**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.57922	0.0170	0.1455	0.0619	9.3000e-004		0.0118	0.0118		0.0118	0.0118		185.7906	185.7906	3.5600e-003	3.4100e-003	186.8947
Day-Care Center	0.0406849	4.4000e-004	3.9900e-003	3.3500e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7865	4.7865	9.0000e-005	9.0000e-005	4.8149
Office Park	0.080063	8.6000e-004	7.8500e-003	6.5900e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.4192	9.4192	1.8000e-004	1.7000e-004	9.4752
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0183**	**0.1574**	**0.0719**	**1.0000e-003**		**0.0127**	**0.0127**		**0.0127**	**0.0127**		**199.9963**	**199.9963**	**3.8300e-003**	**3.6700e-003**	**201.1848**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4982	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	9.6798	9.6798	9.5400e-003	0.0000	9.9184
Unmitigated	1.6587	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	9.6798	9.6798	9.5400e-003	0.0000	9.9184

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1233					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3693					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1660	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296		9.6798	9.6798	9.5400e-003		9.9184
Total	**1.6587**	**0.0625**	**5.4004**	**2.8000e-004**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**9.6798**	**9.6798**	**9.5400e-003**	**0.0000**	**9.9184**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1233					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2089					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1660	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296		9.6798	9.6798	9.5400e-003		9.9184
Total	**2.4982**	**0.0625**	**5.4004**	**2.8000e-004**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**9.6798**	**9.6798**	**9.5400e-003**	**0.0000**	**9.9184**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Wakeland Riverside

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	0.90	1000sqft	0.02	900.00	0
Day-Care Center	2.50	1000sqft	0.06	2,500.00	0
Parking Lot	106.00	Space	0.95	42,400.00	0
Apartments Mid Rise	65.00	Dwelling Unit	1.00	65,000.00	186

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	13			**Operational Year**	2019
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project site is 2.03 acres

Construction Phase - Assumes a 9 month build out

Architectural Coating - Assumes low VOC

Woodstoves - The project will not have woodstoves or fireplaces

Construction Off-road Equipment Mitigation - Assumes BMPs for construction equipment

Area Mitigation -

Wakeland Riverside - South Coast AQMD Air District, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	100.00
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	20
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	20
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	20
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00

tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	220.00	100.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	10.00	15.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	55.25	0.00
tblFireplaces	NumberNoFireplace	6.50	0.00
tblFireplaces	NumberWood	3.25	0.00
tblGrading	AcresOfGrading	7.50	3.00
tblLandUse	LotAcreage	1.71	1.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblWoodstoves	NumberCatalytic	3.25	0.00
tblWoodstoves	NumberNoncatalytic	3.25	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	23.0736	24.4191	19.1843	0.0361	6.3460	1.4376	7.5152	3.3628	1.3440	4.4384	0.0000	3,461.6832	3,461.6832	0.6506	0.0000	3,475.5859
Maximum	**23.0736**	**24.4191**	**19.1843**	**0.0361**	**6.3460**	**1.4376**	**7.5152**	**3.3628**	**1.3440**	**4.4384**	**0.0000**	**3,461.6832**	**3,461.6832**	**0.6506**	**0.0000**	**3,475.5859**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	23.0736	20.7645	19.1843	0.0361	4.0822	1.4376	5.2514	2.1581	1.3440	3.2337	0.0000	3,461.6832	3,461.6832	0.6506	0.0000	3,475.5859
Maximum	**23.0736**	**20.7645**	**19.1843**	**0.0361**	**4.0822**	**1.4376**	**5.2514**	**2.1581**	**1.3440**	**3.2337**	**0.0000**	**3,461.6832**	**3,461.6832**	**0.6506**	**0.0000**	**3,475.5859**

Wakeland Riverside - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**14.97**	**0.00**	**0.00**	**35.67**	**0.00**	**30.12**	**35.82**	**0.00**	**27.14**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6587	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	9.6798	9.6798	9.5400e-003	0.0000	9.9184
Energy	0.0183	0.1574	0.0719	1.0000e-003		0.0127	0.0127		0.0127	0.0127		199.9963	199.9963	3.8300e-003	3.6700e-003	201.1848
Mobile	1.2279	6.3413	15.1220	0.0477	3.7871	0.0566	3.8437	1.0134	0.0532	1.0667		4,842.6118	4,842.6118	0.2728		4,849.4316
Total	**2.9049**	**6.5612**	**20.5943**	**0.0490**	**3.7871**	**0.0988**	**3.8859**	**1.0134**	**0.0955**	**1.1089**	**0.0000**	**5,052.2879**	**5,052.2879**	**0.2862**	**3.6700e-003**	**5,060.5347**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4982	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	9.6798	9.6798	9.5400e-003	0.0000	9.9184
Energy	0.0183	0.1574	0.0719	1.0000e-003		0.0127	0.0127		0.0127	0.0127		199.9963	199.9963	3.8300e-003	3.6700e-003	201.1848
Mobile	1.2279	6.3413	15.1220	0.0477	3.7871	0.0566	3.8437	1.0134	0.0532	1.0667		4,842.6118	4,842.6118	0.2728		4,849.4316
Total	**3.7444**	**6.5612**	**20.5943**	**0.0490**	**3.7871**	**0.0988**	**3.8859**	**1.0134**	**0.0955**	**1.1089**	**0.0000**	**5,052.2879**	**5,052.2879**	**0.2862**	**3.6700e-003**	**5,060.5347**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**-28.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/12/2018	5/2/2018	5	15	
2	Grading	Grading	5/3/2018	5/23/2018	5	15	
3	Building Construction	Building Construction	5/24/2018	10/10/2018	5	100	
4	Paving	Paving	10/11/2018	10/31/2018	5	15	
5	Architectural Coating	Architectural Coating	11/1/2018	12/5/2018	5	25	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0.95

Residential Indoor: 131,625; Residential Outdoor: 43,875; Non-Residential Indoor: 5,100; Non-Residential Outdoor: 1,700; Striped Parking Area: 2,544 (Architectural Coating – sqft)

OffRoad Equipment

Wakeland Riverside - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	66.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Oxidation Catalyst for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429		2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**		**1.4365**	**1.4365**		**1.3429**	**1.3429**		**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0762	0.0550	0.5903	1.4900e-003	0.1453	1.1600e-003	0.1465	0.0385	1.0700e-003	0.0396		148.2883	148.2883	5.0600e-003		148.4148
Total	**0.0762**	**0.0550**	**0.5903**	**1.4900e-003**	**0.1453**	**1.1600e-003**	**0.1465**	**0.0385**	**1.0700e-003**	**0.0396**		**148.2883**	**148.2883**	**5.0600e-003**		**148.4148**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4838	20.7095	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429	0.0000	2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**20.7095**	**15.1107**	**0.0241**		**1.4365**	**1.4365**		**1.3429**	**1.3429**	**0.0000**	**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0762	0.0550	0.5903	1.4900e-003	0.1200	1.1600e-003	0.1212	0.0323	1.0700e-003	0.0334		148.2883	148.2883	5.0600e-003		148.4148
Total	**0.0762**	**0.0550**	**0.5903**	**1.4900e-003**	**0.1200**	**1.1600e-003**	**0.1212**	**0.0323**	**1.0700e-003**	**0.0334**		**148.2883**	**148.2883**	**5.0600e-003**		**148.4148**

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2342	0.0000	6.2342	3.3331	0.0000	3.3331			0.0000			0.0000
Off-Road	2.1515	24.2895	10.3804	0.0206		1.1683	1.1683		1.0748	1.0748		2,077.4666	2,077.4666	0.6467		2,093.6352
Total	**2.1515**	**24.2895**	**10.3804**	**0.0206**	**6.2342**	**1.1683**	**7.4025**	**3.3331**	**1.0748**	**4.4080**		**2,077.4666**	**2,077.4666**	**0.6467**		**2,093.6352**

3.3 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.0586**	**0.0423**	**0.4541**	**1.1500e-003**	**0.1118**	**8.9000e-004**	**0.1127**	**0.0296**	**8.2000e-004**	**0.0305**		**114.0679**	**114.0679**	**3.8900e-003**		**114.1652**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9899	0.0000	3.9899	2.1332	0.0000	2.1332			0.0000			0.0000
Off-Road	2.1515	20.6461	10.3804	0.0206		1.1683	1.1683		1.0748	1.0748	0.0000	2,077.4666	2,077.4666	0.6467		2,093.6352
Total	**2.1515**	**20.6461**	**10.3804**	**0.0206**	**3.9899**	**1.1683**	**5.1582**	**2.1332**	**1.0748**	**3.2080**	**0.0000**	**2,077.4666**	**2,077.4666**	**0.6467**		**2,093.6352**

3.3 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.0923	8.9000e-004	0.0932	0.0249	8.2000e-004	0.0257		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.0586**	**0.0423**	**0.4541**	**1.1500e-003**	**0.0923**	**8.9000e-004**	**0.0932**	**0.0249**	**8.2000e-004**	**0.0257**		**114.0679**	**114.0679**	**3.8900e-003**		**114.1652**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9127	20.7077	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051		2,329.7759	2,329.7759	0.5019		2,342.3232
Total	**2.9127**	**20.7077**	**15.7183**	**0.0250**		**1.2575**	**1.2575**		**1.2051**	**1.2051**		**2,329.7759**	**2,329.7759**	**0.5019**		**2,342.3232**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0622	1.6994	0.4690	3.5600e-003	0.0896	0.0126	0.1022	0.0258	0.0120	0.0378		379.0590	379.0590	0.0285		379.7721
Worker	0.3867	0.2793	2.9970	7.5600e-003	0.7377	5.8800e-003	0.7436	0.1957	5.4200e-003	0.2011		752.8483	752.8483	0.0257		753.4905
Total	**0.4488**	**1.9787**	**3.4660**	**0.0111**	**0.8273**	**0.0185**	**0.8458**	**0.2215**	**0.0175**	**0.2389**		**1,131.9073**	**1,131.9073**	**0.0542**		**1,133.2627**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9127	17.6015	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051	0.0000	2,329.7759	2,329.7759	0.5019		2,342.3232
Total	**2.9127**	**17.6015**	**15.7183**	**0.0250**		**1.2575**	**1.2575**		**1.2051**	**1.2051**	**0.0000**	**2,329.7759**	**2,329.7759**	**0.5019**		**2,342.3232**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0622	1.6994	0.4690	3.5600e-003	0.0768	0.0126	0.0894	0.0227	0.0120	0.0347		379.0590	379.0590	0.0285		379.7721
Worker	0.3867	0.2793	2.9970	7.5600e-003	0.6095	5.8800e-003	0.6153	0.1642	5.4200e-003	0.1696		752.8483	752.8483	0.0257		753.4905
Total	**0.4488**	**1.9787**	**3.4660**	**0.0111**	**0.6863**	**0.0185**	**0.7048**	**0.1868**	**0.0175**	**0.2043**		**1,131.9073**	**1,131.9073**	**0.0542**		**1,133.2627**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4046	14.2518	11.9787	0.0178		0.8505	0.8505		0.7836	0.7836		1,774.2430	1,774.2430	0.5419		1,787.7896
Paving	0.1659					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5706**	**14.2518**	**11.9787**	**0.0178**		**0.8505**	**0.8505**		**0.7836**	**0.7836**		**1,774.2430**	**1,774.2430**	**0.5419**		**1,787.7896**

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0879	0.0635	0.6811	1.7200e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2300e-003	0.0457		171.1019	171.1019	5.8400e-003		171.2479
Total	**0.0879**	**0.0635**	**0.6811**	**1.7200e-003**	**0.1677**	**1.3400e-003**	**0.1690**	**0.0445**	**1.2300e-003**	**0.0457**		**171.1019**	**171.1019**	**5.8400e-003**		**171.2479**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4046	12.1140	11.9787	0.0178		0.8505	0.8505		0.7836	0.7836	0.0000	1,774.2430	1,774.2430	0.5419		1,787.7896
Paving	0.1659					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5706**	**12.1140**	**11.9787**	**0.0178**		**0.8505**	**0.8505**		**0.7836**	**0.7836**	**0.0000**	**1,774.2430**	**1,774.2430**	**0.5419**		**1,787.7896**

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0879	0.0635	0.6811	1.7200e-003	0.1385	1.3400e-003	0.1399	0.0373	1.2300e-003	0.0385		171.1019	171.1019	5.8400e-003		171.2479
Total	**0.0879**	**0.0635**	**0.6811**	**1.7200e-003**	**0.1385**	**1.3400e-003**	**0.1399**	**0.0373**	**1.2300e-003**	**0.0385**		**171.1019**	**171.1019**	**5.8400e-003**		**171.2479**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	22.6988					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**22.9974**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0762	0.0550	0.5903	1.4900e-003	0.1453	1.1600e-003	0.1465	0.0385	1.0700e-003	0.0396		148.2883	148.2883	5.0600e-003		148.4148
Total	**0.0762**	**0.0550**	**0.5903**	**1.4900e-003**	**0.1453**	**1.1600e-003**	**0.1465**	**0.0385**	**1.0700e-003**	**0.0396**		**148.2883**	**148.2883**	**5.0600e-003**		**148.4148**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	22.6988					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	1.7049	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**22.9974**	**1.7049**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0762	0.0550	0.5903	1.4900e-003	0.1200	1.1600e-003	0.1212	0.0323	1.0700e-003	0.0334		148.2883	148.2883	5.0600e-003		148.4148
Total	**0.0762**	**0.0550**	**0.5903**	**1.4900e-003**	**0.1200**	**1.1600e-003**	**0.1212**	**0.0323**	**1.0700e-003**	**0.0334**		**148.2883**	**148.2883**	**5.0600e-003**		**148.4148**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2279	6.3413	15.1220	0.0477	3.7871	0.0566	3.8437	1.0134	0.0532	1.0667		4,842.6118	4,842.6118	0.2728		4,849.4316
Unmitigated	1.2279	6.3413	15.1220	0.0477	3.7871	0.0566	3.8437	1.0134	0.0532	1.0667		4,842.6118	4,842.6118	0.2728		4,849.4316

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	432.25	415.35	380.90	1,443,747	1,443,747
Day-Care Center	185.15	15.53	14.58	198,554	198,554
Office Park	10.28	1.48	0.68	25,847	25,847
Parking Lot	0.00	0.00	0.00		
Total	627.68	432.35	396.16	1,668,148	1,668,148

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Day-Care Center	16.60	8.40	6.90	12.70	82.30	5.00	28	58	14
Office Park	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Office Park	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991
Day-Care Center	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991
Parking Lot	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991
Apartments Mid Rise	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0183	0.1574	0.0719	1.0000e-003		0.0127	0.0127		0.0127	0.0127		199.9963	199.9963	3.8300e-003	3.6700e-003	201.1848
NaturalGas Unmitigated	0.0183	0.1574	0.0719	1.0000e-003		0.0127	0.0127		0.0127	0.0127		199.9963	199.9963	3.8300e-003	3.6700e-003	201.1848

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1579.22	0.0170	0.1455	0.0619	9.3000e-004		0.0118	0.0118		0.0118	0.0118		185.7906	185.7906	3.5600e-003	3.4100e-003	186.8947
Day-Care Center	40.6849	4.4000e-004	3.9900e-003	3.3500e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7865	4.7865	9.0000e-005	9.0000e-005	4.8149
Office Park	80.063	8.6000e-004	7.8500e-003	6.5900e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.4192	9.4192	1.8000e-004	1.7000e-004	9.4752
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0183**	**0.1574**	**0.0719**	**1.0000e-003**		**0.0127**	**0.0127**		**0.0127**	**0.0127**		**199.9963**	**199.9963**	**3.8300e-003**	**3.6700e-003**	**201.1848**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.57922	0.0170	0.1455	0.0619	9.3000e-004		0.0118	0.0118		0.0118	0.0118		185.7906	185.7906	3.5600e-003	3.4100e-003	186.8947
Day-Care Center	0.0406849	4.4000e-004	3.9900e-003	3.3500e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7865	4.7865	9.0000e-005	9.0000e-005	4.8149
Office Park	0.080063	8.6000e-004	7.8500e-003	6.5900e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.4192	9.4192	1.8000e-004	1.7000e-004	9.4752
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0183**	**0.1574**	**0.0719**	**1.0000e-003**		**0.0127**	**0.0127**		**0.0127**	**0.0127**		**199.9963**	**199.9963**	**3.8300e-003**	**3.6700e-003**	**201.1848**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4982	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	9.6798	9.6798	9.5400e-003	0.0000	9.9184
Unmitigated	1.6587	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	9.6798	9.6798	9.5400e-003	0.0000	9.9184

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1233					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3693					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1660	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296		9.6798	9.6798	9.5400e-003		9.9184
Total	**1.6587**	**0.0625**	**5.4004**	**2.8000e-004**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**9.6798**	**9.6798**	**9.5400e-003**	**0.0000**	**9.9184**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1233					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2089					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1660	0.0625	5.4004	2.8000e-004		0.0296	0.0296		0.0296	0.0296		9.6798	9.6798	9.5400e-003		9.9184
Total	**2.4982**	**0.0625**	**5.4004**	**2.8000e-004**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**9.6798**	**9.6798**	**9.5400e-003**	**0.0000**	**9.9184**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Wakeland Riverside

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	0.90	1000sqft	0.02	900.00	0
Day-Care Center	2.50	1000sqft	0.06	2,500.00	0
Parking Lot	106.00	Space	0.95	42,400.00	0
Apartments Mid Rise	65.00	Dwelling Unit	1.00	65,000.00	186

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	13			**Operational Year**	2019
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project site is 2.03 acres

Construction Phase - Assumes a 9 month build out

Architectural Coating - Assumes low VOC

Woodstoves - The project will not have woodstoves or fireplaces

Construction Off-road Equipment Mitigation - Assumes BMPs for construction equipment

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	100.00
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	20
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	20
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	20
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00

tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	220.00	100.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	10.00	15.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	55.25	0.00
tblFireplaces	NumberNoFireplace	6.50	0.00
tblFireplaces	NumberWood	3.25	0.00
tblGrading	AcresOfGrading	7.50	3.00
tblLandUse	LotAcreage	1.71	1.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblWoodstoves	NumberCatalytic	3.25	0.00
tblWoodstoves	NumberNoncatalytic	3.25	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.5026	1.6351	1.2873	2.3700e-003	0.0923	0.0916	0.1839	0.0372	0.0871	0.1242	0.0000	208.2717	208.2717	0.0379	0.0000	209.2184
Maximum	**0.5026**	**1.6351**	**1.2873**	**2.3700e-003**	**0.0923**	**0.0916**	**0.1839**	**0.0372**	**0.0871**	**0.1242**	**0.0000**	**208.2717**	**208.2717**	**0.0379**	**0.0000**	**209.2184**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.5026	1.4053	1.2873	2.3700e-003	0.0677	0.0916	0.1593	0.0263	0.0871	0.1133	0.0000	208.2715	208.2715	0.0379	0.0000	209.2182
Maximum	**0.5026**	**1.4053**	**1.2873**	**2.3700e-003**	**0.0677**	**0.0916**	**0.1593**	**0.0263**	**0.0871**	**0.1133**	**0.0000**	**208.2715**	**208.2715**	**0.0379**	**0.0000**	**209.2182**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**14.06**	**0.00**	**0.00**	**26.64**	**0.00**	**13.37**	**29.31**	**0.00**	**8.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-12-2018**	**7-11-2018**	0.8560	0.7469
2	**7-12-2018**	**9-30-2018**	0.7518	0.6619
		Highest	0.8560	0.7469

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2932	7.8200e-003	0.6751	4.0000e-005		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	1.0977	1.0977	1.0800e-003	0.0000	1.1247
Energy	3.3500e-003	0.0287	0.0131	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003	0.0000	239.1090	239.1090	5.1400e-003	1.5400e-003	239.6962
Mobile	0.2000	1.0848	2.5937	8.2300e-003	0.6339	9.5600e-003	0.6434	0.1699	8.9900e-003	0.1789	0.0000	758.3299	758.3299	0.0416	0.0000	759.3688
Waste						0.0000	0.0000		0.0000	0.0000	6.8997	0.0000	6.8997	0.4078	0.0000	17.0936
Water						0.0000	0.0000		0.0000	0.0000	1.4283	55.5835	57.0118	0.1479	3.7200e-003	61.8171
Total	**0.4965**	**1.1213**	**3.2819**	**8.4500e-003**	**0.6339**	**0.0156**	**0.6494**	**0.1699**	**0.0150**	**0.1849**	**8.3280**	**1,054.1201**	**1,062.4481**	**0.6035**	**5.2600e-003**	**1,079.1005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2932	7.8200e-003	0.6751	4.0000e-005		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	1.0977	1.0977	1.0800e-003	0.0000	1.1247
Energy	3.3500e-003	0.0287	0.0131	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003	0.0000	239.1090	239.1090	5.1400e-003	1.5400e-003	239.6962
Mobile	0.2000	1.0848	2.5937	8.2300e-003	0.6339	9.5600e-003	0.6434	0.1699	8.9900e-003	0.1789	0.0000	758.3299	758.3299	0.0416	0.0000	759.3688
Waste						0.0000	0.0000		0.0000	0.0000	6.8997	0.0000	6.8997	0.4078	0.0000	17.0936
Water						0.0000	0.0000		0.0000	0.0000	1.4283	55.5835	57.0118	0.1479	3.7200e-003	61.8171
Total	**0.4965**	**1.1213**	**3.2819**	**8.4500e-003**	**0.6339**	**0.0156**	**0.6494**	**0.1699**	**0.0150**	**0.1849**	**8.3280**	**1,054.1201**	**1,062.4481**	**0.6035**	**5.2600e-003**	**1,079.1005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/12/2018	5/2/2018	5	15	
2	Grading	Grading	5/3/2018	5/23/2018	5	15	
3	Building Construction	Building Construction	5/24/2018	10/10/2018	5	100	
4	Paving	Paving	10/11/2018	10/31/2018	5	15	
5	Architectural Coating	Architectural Coating	11/1/2018	12/5/2018	5	25	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0.95

Residential Indoor: 131,625; Residential Outdoor: 43,875; Non-Residential Indoor: 5,100; Non-Residential Outdoor: 1,700; Striped Parking Area: 2,544 (Architectural Coating – sqft)

OffRoad Equipment

Wakeland Riverside - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	66.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Oxidation Catalyst for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0186	0.1827	0.1133	1.8000e-004		0.0108	0.0108		0.0101	0.0101	0.0000	16.2692	16.2692	4.1200e-003	0.0000	16.3723
Total	**0.0186**	**0.1827**	**0.1133**	**1.8000e-004**		**0.0108**	**0.0108**		**0.0101**	**0.0101**	**0.0000**	**16.2692**	**16.2692**	**4.1200e-003**	**0.0000**	**16.3723**

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	4.2000e-004	4.5500e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	1.0262	1.0262	4.0000e-005	0.0000	1.0271
Total	**5.2000e-004**	**4.2000e-004**	**4.5500e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**1.0262**	**1.0262**	**4.0000e-005**	**0.0000**	**1.0271**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0186	0.1553	0.1133	1.8000e-004		0.0108	0.0108		0.0101	0.0101	0.0000	16.2692	16.2692	4.1200e-003	0.0000	16.3722
Total	**0.0186**	**0.1553**	**0.1133**	**1.8000e-004**		**0.0108**	**0.0108**		**0.0101**	**0.0101**	**0.0000**	**16.2692**	**16.2692**	**4.1200e-003**	**0.0000**	**16.3722**

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	4.2000e-004	4.5500e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	1.0262	1.0262	4.0000e-005	0.0000	1.0271
Total	**5.2000e-004**	**4.2000e-004**	**4.5500e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.0262**	**1.0262**	**4.0000e-005**	**0.0000**	**1.0271**

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0468	0.0000	0.0468	0.0250	0.0000	0.0250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0161	0.1822	0.0779	1.5000e-004		8.7600e-003	8.7600e-003		8.0600e-003	8.0600e-003	0.0000	14.1348	14.1348	4.4000e-003	0.0000	14.2449
Total	**0.0161**	**0.1822**	**0.0779**	**1.5000e-004**	**0.0468**	**8.7600e-003**	**0.0555**	**0.0250**	**8.0600e-003**	**0.0331**	**0.0000**	**14.1348**	**14.1348**	**4.4000e-003**	**0.0000**	**14.2449**

3.3 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	3.3000e-004	3.5000e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7894	0.7894	3.0000e-005	0.0000	0.7901
Total	**4.0000e-004**	**3.3000e-004**	**3.5000e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7894**	**0.7894**	**3.0000e-005**	**0.0000**	**0.7901**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0299	0.0000	0.0299	0.0160	0.0000	0.0160	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0161	0.1549	0.0779	1.5000e-004		8.7600e-003	8.7600e-003		8.0600e-003	8.0600e-003	0.0000	14.1348	14.1348	4.4000e-003	0.0000	14.2448
Total	**0.0161**	**0.1549**	**0.0779**	**1.5000e-004**	**0.0299**	**8.7600e-003**	**0.0387**	**0.0160**	**8.0600e-003**	**0.0241**	**0.0000**	**14.1348**	**14.1348**	**4.4000e-003**	**0.0000**	**14.2448**

3.3 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	3.3000e-004	3.5000e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	0.7894	0.7894	3.0000e-005	0.0000	0.7901
Total	**4.0000e-004**	**3.3000e-004**	**3.5000e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7894**	**0.7894**	**3.0000e-005**	**0.0000**	**0.7901**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1456	1.0354	0.7859	1.2500e-003		0.0629	0.0629		0.0603	0.0603	0.0000	105.6769	105.6769	0.0228	0.0000	106.2460
Total	**0.1456**	**1.0354**	**0.7859**	**1.2500e-003**		**0.0629**	**0.0629**		**0.0603**	**0.0603**	**0.0000**	**105.6769**	**105.6769**	**0.0228**	**0.0000**	**106.2460**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0300e-003	0.0866	0.0223	1.8000e-004	4.4100e-003	6.2000e-004	5.0400e-003	1.2700e-003	6.0000e-004	1.8700e-003	0.0000	17.4849	17.4849	1.2400e-003	0.0000	17.5160
Worker	0.0175	0.0144	0.1540	3.8000e-004	0.0362	2.9000e-004	0.0365	9.6200e-003	2.7000e-004	9.8900e-003	0.0000	34.7326	34.7326	1.1900e-003	0.0000	34.7622
Total	**0.0206**	**0.1009**	**0.1763**	**5.6000e-004**	**0.0406**	**9.1000e-004**	**0.0415**	**0.0109**	**8.7000e-004**	**0.0118**	**0.0000**	**52.2175**	**52.2175**	**2.4300e-003**	**0.0000**	**52.2782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1456	0.8801	0.7859	1.2500e-003		0.0629	0.0629		0.0603	0.0603	0.0000	105.6767	105.6767	0.0228	0.0000	106.2459
Total	**0.1456**	**0.8801**	**0.7859**	**1.2500e-003**		**0.0629**	**0.0629**		**0.0603**	**0.0603**	**0.0000**	**105.6767**	**105.6767**	**0.0228**	**0.0000**	**106.2459**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0300e-003	0.0866	0.0223	1.8000e-004	3.7900e-003	6.2000e-004	4.4100e-003	1.1200e-003	6.0000e-004	1.7200e-003	0.0000	17.4849	17.4849	1.2400e-003	0.0000	17.5160
Worker	0.0175	0.0144	0.1540	3.8000e-004	0.0299	2.9000e-004	0.0302	8.0700e-003	2.7000e-004	8.3500e-003	0.0000	34.7326	34.7326	1.1900e-003	0.0000	34.7622
Total	**0.0206**	**0.1009**	**0.1763**	**5.6000e-004**	**0.0337**	**9.1000e-004**	**0.0346**	**9.1900e-003**	**8.7000e-004**	**0.0101**	**0.0000**	**52.2175**	**52.2175**	**2.4300e-003**	**0.0000**	**52.2782**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.1069	0.0898	1.3000e-004		6.3800e-003	6.3800e-003		5.8800e-003	5.8800e-003	0.0000	12.0718	12.0718	3.6900e-003	0.0000	12.1639
Paving	1.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0118**	**0.1069**	**0.0898**	**1.3000e-004**		**6.3800e-003**	**6.3800e-003**		**5.8800e-003**	**5.8800e-003**	**0.0000**	**12.0718**	**12.0718**	**3.6900e-003**	**0.0000**	**12.1639**

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.9000e-004	5.2500e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1841	1.1841	4.0000e-005	0.0000	1.1851
Total	**6.0000e-004**	**4.9000e-004**	**5.2500e-003**	**1.0000e-005**	**1.2300e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.1841**	**1.1841**	**4.0000e-005**	**0.0000**	**1.1851**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.0909	0.0898	1.3000e-004		6.3800e-003	6.3800e-003		5.8800e-003	5.8800e-003	0.0000	12.0717	12.0717	3.6900e-003	0.0000	12.1639
Paving	1.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0118**	**0.0909**	**0.0898**	**1.3000e-004**		**6.3800e-003**	**6.3800e-003**		**5.8800e-003**	**5.8800e-003**	**0.0000**	**12.0717**	**12.0717**	**3.6900e-003**	**0.0000**	**12.1639**

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.9000e-004	5.2500e-003	1.0000e-005	1.0200e-003	1.0000e-005	1.0300e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	1.1841	1.1841	4.0000e-005	0.0000	1.1851
Total	**6.0000e-004**	**4.9000e-004**	**5.2500e-003**	**1.0000e-005**	**1.0200e-003**	**1.0000e-005**	**1.0300e-003**	**2.8000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**1.1841**	**1.1841**	**4.0000e-005**	**0.0000**	**1.1851**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2837					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7300e-003	0.0251	0.0232	4.0000e-005		1.8800e-003	1.8800e-003		1.8800e-003	1.8800e-003	0.0000	3.1916	3.1916	3.0000e-004	0.0000	3.1992
Total	**0.2875**	**0.0251**	**0.0232**	**4.0000e-005**		**1.8800e-003**	**1.8800e-003**		**1.8800e-003**	**1.8800e-003**	**0.0000**	**3.1916**	**3.1916**	**3.0000e-004**	**0.0000**	**3.1992**

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	7.1000e-004	7.5800e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.8000e-003	4.7000e-004	1.0000e-005	4.9000e-004	0.0000	1.7103	1.7103	6.0000e-005	0.0000	1.7118
Total	**8.6000e-004**	**7.1000e-004**	**7.5800e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.8000e-003**	**4.7000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.7103**	**1.7103**	**6.0000e-005**	**0.0000**	**1.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2837					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7300e-003	0.0213	0.0232	4.0000e-005		1.8800e-003	1.8800e-003		1.8800e-003	1.8800e-003	0.0000	3.1916	3.1916	3.0000e-004	0.0000	3.1992
Total	**0.2875**	**0.0213**	**0.0232**	**4.0000e-005**		**1.8800e-003**	**1.8800e-003**		**1.8800e-003**	**1.8800e-003**	**0.0000**	**3.1916**	**3.1916**	**3.0000e-004**	**0.0000**	**3.1992**

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	7.1000e-004	7.5800e-003	2.0000e-005	1.4700e-003	1.0000e-005	1.4900e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.7103	1.7103	6.0000e-005	0.0000	1.7118
Total	**8.6000e-004**	**7.1000e-004**	**7.5800e-003**	**2.0000e-005**	**1.4700e-003**	**1.0000e-005**	**1.4900e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.7103**	**1.7103**	**6.0000e-005**	**0.0000**	**1.7118**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2000	1.0848	2.5937	8.2300e-003	0.6339	9.5600e-003	0.6434	0.1699	8.9900e-003	0.1789	0.0000	758.3299	758.3299	0.0416	0.0000	759.3688
Unmitigated	0.2000	1.0848	2.5937	8.2300e-003	0.6339	9.5600e-003	0.6434	0.1699	8.9900e-003	0.1789	0.0000	758.3299	758.3299	0.0416	0.0000	759.3688

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	432.25	415.35	380.90	1,443,747	1,443,747
Day-Care Center	185.15	15.53	14.58	198,554	198,554
Office Park	10.28	1.48	0.68	25,847	25,847
Parking Lot	0.00	0.00	0.00		
Total	627.68	432.35	396.16	1,668,148	1,668,148

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Day-Care Center	16.60	8.40	6.90	12.70	82.30	5.00	28	58	14
Office Park	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Office Park	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991
Day-Care Center	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991
Parking Lot	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991
Apartments Mid Rise	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	205.9974	205.9974	4.5100e-003	9.3000e-004	206.3879
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	205.9974	205.9974	4.5100e-003	9.3000e-004	206.3879
NaturalGas Mitigated	3.3500e-003	0.0287	0.0131	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003	0.0000	33.1116	33.1116	6.3000e-004	6.1000e-004	33.3084
NaturalGas Unmitigated	3.3500e-003	0.0287	0.0131	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003	0.0000	33.1116	33.1116	6.3000e-004	6.1000e-004	33.3084

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	576415	3.1100e-003	0.0266	0.0113	1.7000e-004		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	30.7597	30.7597	5.9000e-004	5.6000e-004	30.9425
Day-Care Center	14850	8.0000e-005	7.3000e-004	6.1000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.7925	0.7925	2.0000e-005	1.0000e-005	0.7972
Office Park	29223	1.6000e-004	1.4300e-003	1.2000e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5595	1.5595	3.0000e-005	3.0000e-005	1.5687
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.3500e-003**	**0.0287**	**0.0131**	**1.8000e-004**		**2.3200e-003**	**2.3200e-003**		**2.3200e-003**	**2.3200e-003**	**0.0000**	**33.1116**	**33.1116**	**6.4000e-004**	**6.0000e-004**	**33.3084**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	576415	3.1100e-003	0.0266	0.0113	1.7000e-004		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	30.7597	30.7597	5.9000e-004	5.6000e-004	30.9425
Day-Care Center	14850	8.0000e-005	7.3000e-004	6.1000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.7925	0.7925	2.0000e-005	1.0000e-005	0.7972
Office Park	29223	1.6000e-004	1.4300e-003	1.2000e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5595	1.5595	3.0000e-005	3.0000e-005	1.5687
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.3500e-003**	**0.0287**	**0.0131**	**1.8000e-004**		**2.3200e-003**	**2.3200e-003**		**2.3200e-003**	**2.3200e-003**	**0.0000**	**33.1116**	**33.1116**	**6.4000e-004**	**6.0000e-004**	**33.3084**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	277253	166.7135	3.6500e-003	7.5000e-004	167.0295
Day-Care Center	13475	8.1026	1.8000e-004	4.0000e-005	8.1179
Office Park	14544	8.7454	1.9000e-004	4.0000e-005	8.7620
Parking Lot	37312	22.4359	4.9000e-004	1.0000e-004	22.4784
Total		**205.9974**	**4.5100e-003**	**9.3000e-004**	**206.3878**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	277253	166.7135	3.6500e-003	7.5000e-004	167.0295
Day-Care Center	13475	8.1026	1.8000e-004	4.0000e-005	8.1179
Office Park	14544	8.7454	1.9000e-004	4.0000e-005	8.7620
Parking Lot	37312	22.4359	4.9000e-004	1.0000e-004	22.4784
Total		**205.9974**	**4.5100e-003**	**9.3000e-004**	**206.3878**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2932	7.8200e-003	0.6751	4.0000e-005		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	1.0977	1.0977	1.0800e-003	0.0000	1.1247
Unmitigated	0.2932	7.8200e-003	0.6751	4.0000e-005		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	1.0977	1.0977	1.0800e-003	0.0000	1.1247

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0225					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2499					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0208	7.8200e-003	0.6751	4.0000e-005		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	1.0977	1.0977	1.0800e-003	0.0000	1.1247
Total	**0.2932**	**7.8200e-003**	**0.6751**	**4.0000e-005**		**3.7000e-003**	**3.7000e-003**		**3.7000e-003**	**3.7000e-003**	**0.0000**	**1.0977**	**1.0977**	**1.0800e-003**	**0.0000**	**1.1247**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0225					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2499					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0208	7.8200e-003	0.6751	4.0000e-005		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	1.0977	1.0977	1.0800e-003	0.0000	1.1247
Total	**0.2932**	**7.8200e-003**	**0.6751**	**4.0000e-005**		**3.7000e-003**	**3.7000e-003**		**3.7000e-003**	**3.7000e-003**	**0.0000**	**1.0977**	**1.0977**	**1.0800e-003**	**0.0000**	**1.1247**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	57.0118	0.1479	3.7200e-003	61.8171
Unmitigated	57.0118	0.1479	3.7200e-003	61.8171

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.23501 / 2.6699	52.3382	0.1391	3.4900e-003	56.8559
Day-Care Center	0.107224 / 0.275719	2.7155	3.5500e-003	9.0000e-005	2.8325
Office Park	0.15996 / 0.0980402	1.9581	5.2500e-003	1.3000e-004	2.1287
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**57.0118**	**0.1479**	**3.7100e-003**	**61.8171**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.23501 / 2.6699	52.3382	0.1391	3.4900e-003	56.8559
Day-Care Center	0.107224 / 0.275719	2.7155	3.5500e-003	9.0000e-005	2.8325
Office Park	0.15996 / 0.0980402	1.9581	5.2500e-003	1.3000e-004	2.1287
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**57.0118**	**0.1479**	**3.7100e-003**	**61.8171**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.8997	0.4078	0.0000	17.0936
Unmitigated	6.8997	0.4078	0.0000	17.0936

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	29.9	6.0694	0.3587	0.0000	15.0368
Day-Care Center	3.25	0.6597	0.0390	0.0000	1.6344
Office Park	0.84	0.1705	0.0101	0.0000	0.4224
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.8997**	**0.4078**	**0.0000**	**17.0936**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	29.9	6.0694	0.3587	0.0000	15.0368
Day-Care Center	3.25	0.6597	0.0390	0.0000	1.6344
Office Park	0.84	0.1705	0.0101	0.0000	0.4224
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.8997**	**0.4078**	**0.0000**	**17.0936**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B – Traffic Impact Analysis

KUNZMAN ASSOCIATES, INC.

ENTRADA HOUSING DEVELOPMENT

TRAFFIC IMPACT ANALYSIS (REVISED)

August 14, 2018

Traffic Engineering | Transportation Planning | Parking | Noise/Vibration | Expert Witness
Air Quality | Global Climate Change | Health Risk Assessment

ENTRADA HOUSING DEVELOPMENT

TRAFFIC IMPACT ANALYSIS (REVISED)

August 14, 2018

Prepared by:

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JN 7376

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ENTRADA HOUSING DEVELOPMENT

TRAFFIC IMPACT ANALYSIS (REVISED)

This report contains the revised traffic impact analysis for the proposed Entrada Housing Development project. The project site is located at the northwest corner of the Chicago Avenue and 7th Street intersection in the City of Riverside. The 2.03 acre project site is proposed to be developed with 65 dwelling units of multifamily housing (low-rise) and 900 square feet of convenience market.

The traffic impact analysis contains documentation of Existing traffic conditions, trips generated by the project, distribution of the project trips to roads outside the project, calculation of Existing Plus Project[1] traffic conditions, an analysis of Opening Year (2020) traffic conditions without and with the project, and an analysis of Buildout Year (2025) traffic conditions without and with the project. Each of these topics is contained in a separate section of the report. The first section is "Findings", and subsequent sections expand upon the findings. In this way, information on any particular aspect of the study can be easily located by the reader.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided in Appendix A.

---

[1] The existing plus project conditions has been analyzed to comply with the Sunnyvale West Neighborhood Association v. City of Sunnyvale CEQA court case. This scenario assumes the full development of the proposed project and full absorption of the proposed project trips on the circulation system at the present time.

I. FINDINGS

This section summarizes the existing traffic conditions, project impacts, and the proposed mitigation measures.

A. Definition of Deficiency and Significant Impact

The following definitions of deficiencies and significant impacts have been developed in accordance with the City of Riverside requirements:

The definition of an intersection deficiency has been obtained from the City of Riverside Traffic Impact Analysis Preparation Guide, 2016. The Guide states that peak hour intersection operations of Level of Service D or better are generally acceptable along all City roadways of Collector or higher classification. An exception to the local road standard is Level of Service E, at intersections of City Arterials that are used by regional freeway bypass traffic and at heavily traveled freeway interchanges.

B. Existing Traffic Conditions

1. The project site is partially undeveloped and partially developed with residential. It is not generating significant trips.

2. Existing roadways adjacent to the project include Chicago Avenue, Linden Street, 7th Street, and University Avenue.

3. The study intersections currently operate at acceptable Levels of Service during the peak hours for Existing traffic conditions, except for the following study intersections that currently operate at unacceptable Levels of Service during the peak hours:

   Chicago Avenue (NS) at:
   - Project North Access/7th Street (EW) - #3
   - 7th Street (EW) - #5

C. Traffic Impacts

1. The proposed land uses for the 2.03 acre project site consist of 65 dwelling units of multifamily housing (low-rise) and 900 square feet of convenience market. The project site is proposed to provide access to Chicago Avenue and 7th Street.

2. The proposed development is projected to generate a total of approximately 990 daily vehicle trips, 72 of which will occur during the morning peak hour and 68 of which will occur during the evening peak hour.

4. For Existing Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
Project North Access/7th Street (EW) - #3
Project South Access (EW) - #4
7th Street (EW) - #5

5. For Opening Year (2020) Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

   Chicago Avenue (NS) at:
   Project North Access/7th Street (EW) - #3
   7th Street (EW) - #5

6. For Opening Year (2020) With Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

   Chicago Avenue (NS) at:
   Project North Access/7th Street (EW) - #3
   Project South Access (EW) - #4
   7th Street (EW) - #5

   As shown in Table 7, the project site does not significantly impact any study intersections for Opening Year (2020) With Project traffic conditions, with improvements.

7. For Buildout Year (2025) Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

   Chicago Avenue (NS) at:
   Project North Access/7th Street (EW) - #3
   7th Street (EW) - #5

8. For Buildout Year (2025) With Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

   Chicago Avenue (NS) at:
   Project North Access/7th Street (EW) - #3
   Project South Access (EW) - #4
   7th Street (EW) - #5

As shown in Table 10, the project site does not significantly impact any study intersections for Buildout Year (2025) With Project traffic conditions, with improvements.

D. Project Specific On-Site Mitigation Measures

The following measures are recommended to mitigate the impact of the project on traffic circulation:

1. Site-specific circulation and access recommendations are depicted on Figure 40.

2. Chicago Avenue from the north project boundary to 7th Street is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

3. 7th Street from the west project boundary to Chicago Avenue is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

4. Sufficient on-site parking should be provided to meet City of Riverside parking code requirements.

5. On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

6. Sight distance at the project accesses shall comply with standard California Department of Transportation and City of Riverside sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and approved as consistent with this measure prior to issue of grading permits.

7. As is the case for any roadway design, the City of Riverside should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

E. Significantly Impacted Intersection Mitigation Measures

The following measure is recommended to mitigate the impact of the project on significantly impacted study area intersections:

1. The recommended mitigation measures for the significantly impacted study area intersections is an extension of the north-south two-way left turn median on Chicago Avenue from its occurrence south of the project, to the project's north boundary.

Figure 41 exhibits a conceptual striping plan for these improvements. The existing on-street parking would remain.

II. CONGESTION MANGEMENT PROGRAM METHODOLOGY

This section discusses the County of Riverside Congestion Management Program (2011). The purpose, prescribed methodology, and definition of a significant traffic impact are discussed.

A. Congestion Management Program

The Congestion Management Program is a result of Proposition 111 which was a statewide initiative approved by the voters in June, 1990. The proposition allowed for a nine cent per gallon state gasoline tax increase over a five year period.

Proposition 111 explicitly stated that the new gas tax revenues were to be used to fix existing traffic problems and was not to be used to promote future development. For a City to get its share of the Proposition 111 gas tax, it has to follow certain procedures specified by the State Legislature. The legislation requires that a traffic impact analysis be prepared for new development. The traffic impact analysis is prepared to monitor and fix traffic problems caused by new development.

The Legislature requires that adjacent jurisdictions use a standard methodology for conducting a traffic impact analysis. To assure that adjacent jurisdictions use a standard methodology in preparing a traffic impact analysis, one common procedure is that all Cities within a County, and the County agency itself, adopt and use one standard methodology for conducting a traffic impact analysis.

Although each City has developed standards for preparing a traffic impact analysis, traffic impact analysis requirements do vary in detail from one City to another, but not in overall intent or concept. The general approach selected by each City for conducting a traffic impact analysis has common elements.

The general approach for conducting a traffic impact analysis is that existing peak hour intersection turning movement volumes are counted and the percent of roadway capacity currently being used is determined. Then growth in traffic volumes are accounted for and added to existing traffic volumes and the percent of roadway capacity used is again determined. The project trips are then added and the percent of roadway capacity used is again determined. If the new project adds trips to an overcrowded facility, then the new project has to mitigate the traffic impact so that the facility operates at a level that is no worse than before the project trips was added.

If the project size is below a certain minimum threshold level, then a project does not have to have a traffic impact analysis prepared, once it is shown or agreed that the project is below the minimum threshold.

If a project is bigger than the minimum threshold size, then a traffic impact analysis is required.

B. Prescribed Methodology for a Traffic Impact Analysis

The traffic impact analysis must include all monitored intersections to which the project adds trips above a certain minimum amount.

In the City of Riverside, the minimum project added trips that are needed before an intersection has to be studied is 50 or more peak hour trips.

The City of Riverside allows Level of Service D to be used as a maximum acceptable threshold for the study intersections.

A significant impact occurs at a study intersection when the addition of project generated trips causes either peak hour Level of Service to degrade from acceptable Level of Service (A thru D) to unacceptable Level of Service (E or F) or peak hour delay to increase as follows:

Level of Service A/B	=	By 10.0 seconds
Level of Service C	=	By 8.0 seconds
Level of Service D	=	By 5.0 seconds
Level of Service E	=	By 2.0 seconds
Level of Service F	=	By 1.0 seconds

In the City of Riverside, the technique used to assess the capacity needs of an intersection is known as the intersection Delay methodology (see Appendix D) based on the Highway Capacity Manual. To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection. Signalized intersections are considered deficient (Level of Service F) if the overall intersection critical volume to capacity ratio equals or exceeds 1.0, even if the level of service defined by the delay value is below the defined Level of Service standard. The Volume to Capacity ratio is defined as the critical volumes divided by the intersection capacity. A Volume to Capacity ratio greater than 1.0 implies an infinite queue.

The Level of Service analysis for signalized intersections has been performed using optimized signal timing. This analysis has included an assumed lost time of four seconds per phase. Signal timing optimization has considered pedestrian safety and signal coordination requirements. Appropriate time for pedestrian crossings has also been considered in the signalized intersection analysis.

The yellow times have been calculated based on the California Manual on Uniform Traffic Control Devices (2014 Edition), Table 4D-102 (CA).

Project trips are generated using rates and procedures contained in the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

This traffic analysis has been prepared in accordance with the traffic impact analysis requirements.

The project generated trips were added to the study intersections, and a full intersection analysis was conducted, even when the project added trips failed to meet the minimum thresholds that require an intersection analysis.

C. Mitigation Measures

If a project is large enough to require that a traffic impact analysis be prepared, and if the project adds trips to an intersection above a minimum threshold, and if the intersection is operating at above an acceptable level of operation, then the project must mitigate its traffic impact.

Traffic mitigation can be in many forms including adding lanes. Lanes can sometimes be obtained through restriping or elimination of parking, and sometimes require spot roadway widening.

III. PROJECT DESCRIPTION

This section discusses the project's location and proposed development. Figure 1 shows the project location and Figure 2 illustrates the site plan.

A. Location

The project site is located at the northwest corner of the Chicago Avenue and 7th Street intersection in the City of Riverside.

B. Proposed Development

The 2.03 acre project site is proposed to be developed with 65 dwelling units of multifamily housing (low-rise) and 900 square feet of convenience market. The project site is proposed to provide access to Chicago Avenue and 7th Street.

C. General Plan Amendment

A General Plan Amendment is being requested for the project site to go from Medium Density Residential (R-1-7000) to High Density Residential (R-3-1500). Medium Density Residential (R-1-7000) allows for a maximum of 8.0 single-family detached residential dwelling units per acre and High Density Residential (R-3-1500) allows for a maximum of 29.0 multi-family attached residential dwelling units per acre. For Medium Density Residential (R-1-7000), the 2.03 acre project site allows for a maximum of 16 single-family detached residential dwelling units. For High Density Residential (R-3-1500), the 2.03 acre project site allows for a maximum of 59 multi-family attached residential dwelling units. The project site is allowed a bonus density under State law to bring the total number of multi-family attached residential dwelling units to 65 dwelling units.

Figure 1
Project Location Map

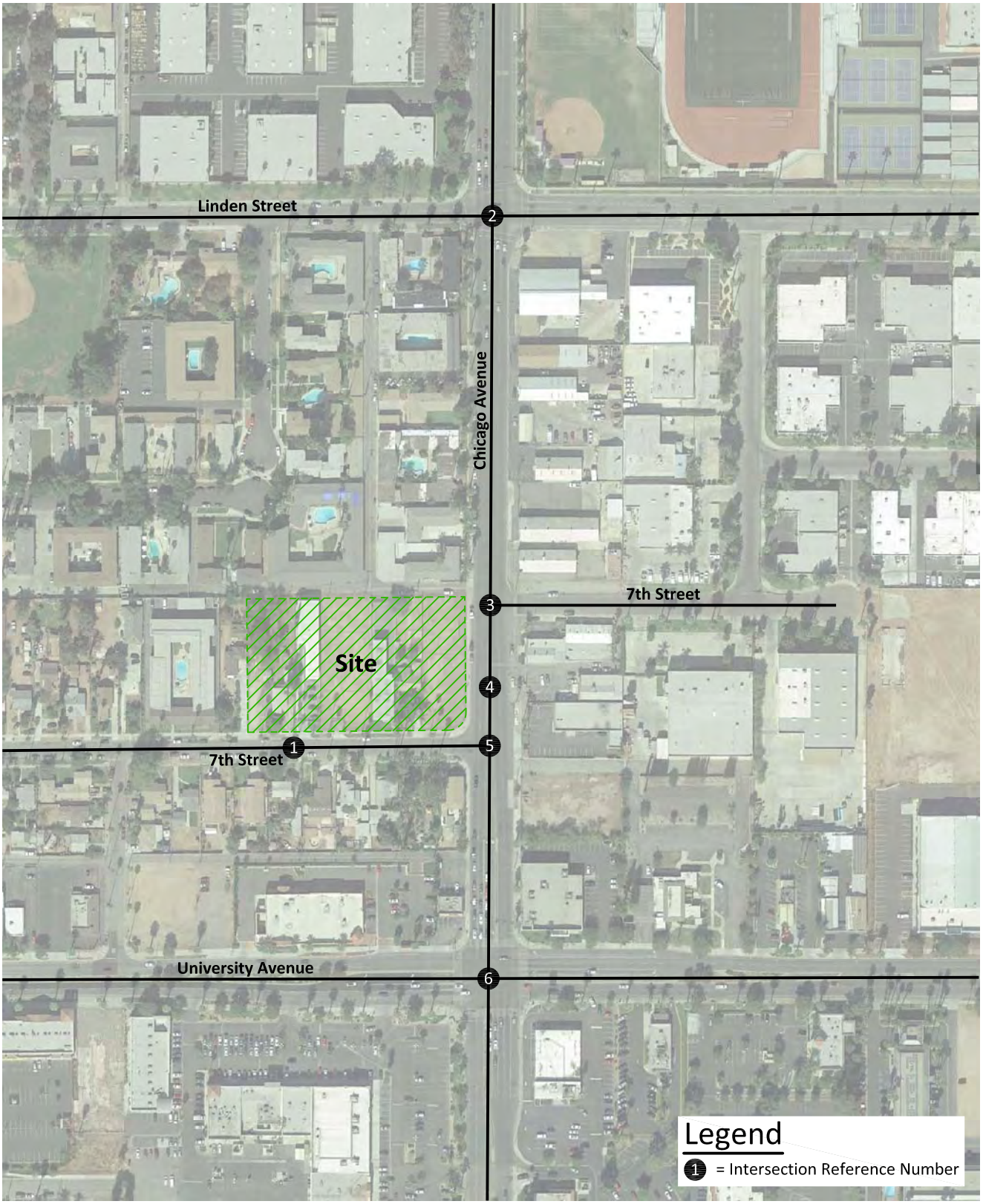

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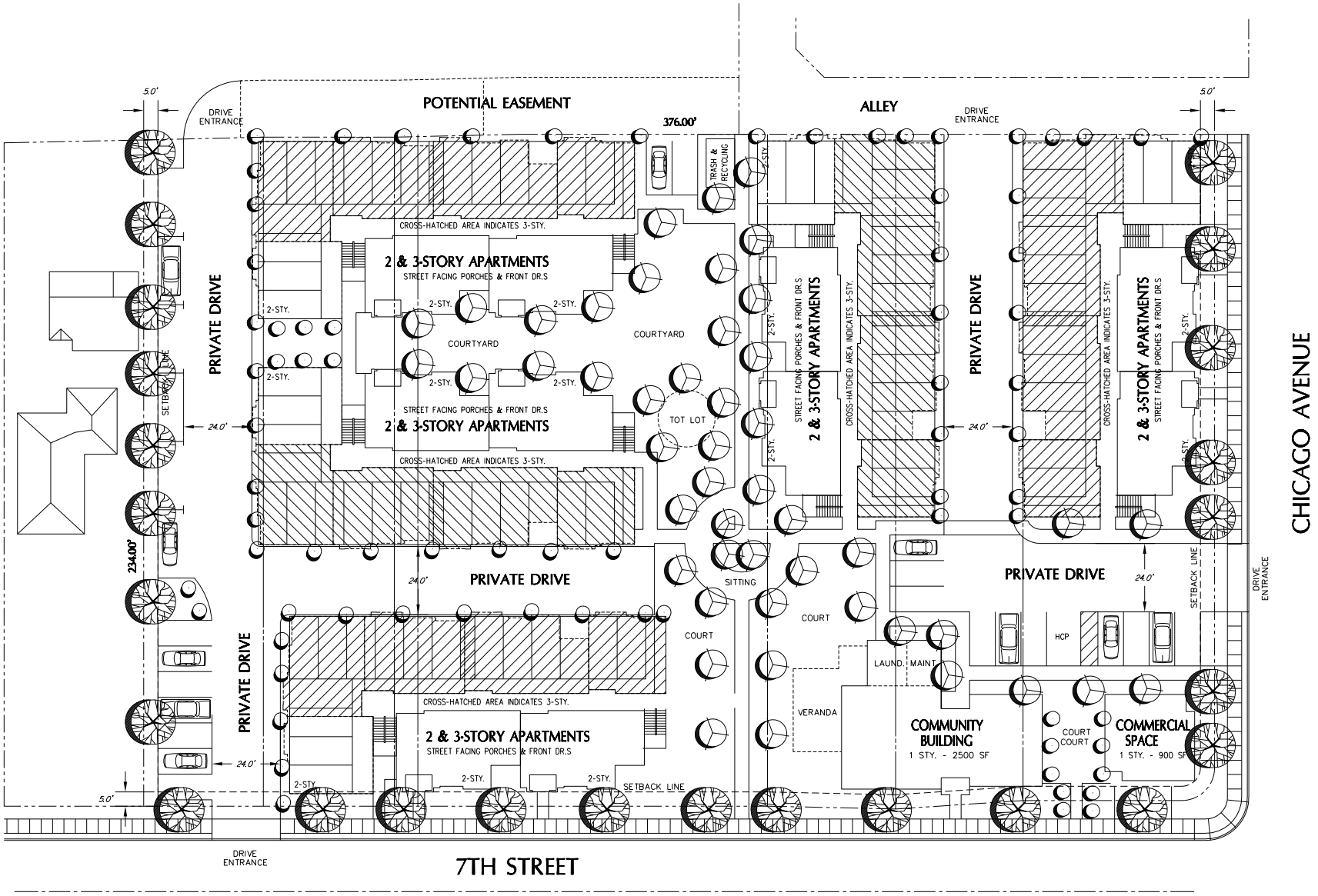
Figure 2
Site Plan



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IV. EXISTING TRAFFIC CONDITIONS

The traffic conditions as they exist today are discussed below and illustrated on Figures 3 to 11.

A. Study Area

Appendix B includes the scoping agreement with City of Riverside staff. The study area includes the following intersections:

Study Intersections	Jurisdiction
Project Access (NS) at:	
7th Street (EW) - #1	City of Riverside
Chicago Avenue (NS) at:	
Linden Street (EW) - #2	City of Riverside
Project North Access/7th Street (EW) - #3	City of Riverside
Project South Access (EW) - #4	City of Riverside
7th Street (EW) - #5	City of Riverside
University Avenue (EW) - #6	City of Riverside

B. Surrounding Street System

Existing roadways within the study area include Chicago Avenue, Linden Street, 7th Street, and University Avenue.

Chicago Avenue: This north-south four lane undivided to five lane divided roadway is classified as a 110 Foot Arterial on the City of Riverside General Plan Circulation Element. It currently carries approximately 21,200 to 26,400 vehicles per day in the study area.

Linden Street: This east-west two lane undivided to four lane undivided roadway is classified as a 66 Foot Collector west of Chicago Avenue and as an 80 Foot Collector east of Chicago Avenue on the City of Riverside General Plan Circulation Element. It currently carries approximately 5,100 to 7,900 vehicles per day in the study area.

7th Street: This east-west two lane undivided roadway is not classified on the City of Riverside General Plan Circulation Element. It currently carries approximately 400 to 800 vehicles per day in the study area.

University Avenue: This east-west four lane divided roadway is classified as a Parkway on the City of Riverside General Plan Circulation Element. It currently carries approximately 19,700 to 22,600 vehicles per day in the study area.

C. Existing Travel Lanes and Intersection Controls

Figure 3 identifies the Existing roadway conditions and intersection geometry for study roadways. The Existing number of through lanes for roadways and the intersection controls are identified.

D. Existing Average Daily Traffic Volumes

Figure 4 depicts the Existing average daily traffic volumes. The Existing average daily traffic volumes have been obtained and factored from peak hour intersection turning movement counts (see Appendix C) made for Kunzman Associates, Inc. in April 2018 using the following formula for each intersection leg:

PM Peak Hour (Approach Volume + Exit Volume) x 12 = Leg Volume.

This is a conservative estimate and may overestimate the average daily traffic volumes.

E. Existing Intersection Delay

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D). To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection.

The Existing delay and Level of Service for intersections in the vicinity of the project are shown in Table 1. Existing delay is based upon manual weekday morning and evening peak hour intersection turning movement counts made for Kunzman Associates, Inc. in April 2018 (see Figures 5 and 6). Intersection turning movement count worksheets are provided in Appendix C.

There are two peak hours in a weekday. The morning peak period is between 7:00 AM and 9:00 AM, and the evening peak period is between 4:00 PM and 6:00 PM. The actual peak hour within the two hour interval is the four consecutive 15 minute periods with the highest total volume when all movements are added together. Thus, the evening peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15 minute periods have the highest combined volume. Explicit peak hour factors have been calculated using the data collected for this project.

The study intersections currently operate at acceptable Levels of Service during the peak hours for Existing traffic conditions, except for the following study intersections that currently operate at unacceptable Levels of Service during the peak hours:

Chicago Avenue (NS) at:
- Project North Access/7th Street (EW) - #3
- 7th Street (EW) - #5

Existing delay worksheets are provided in Appendix D.

F. City of Riverside Circulation Plan

Figure 7 shows the current City of Riverside General Plan Circulation Element. Both existing and future roadways are included in the Circulation Element of the General Plan and are graphically depicted on Figure 7. This figure shows the nature and extent of arterial highways that are needed to adequately serve the ultimate development depicted by the

land use element of the General Plan. The City of Riverside General Plan roadway cross-sections are illustrated on Figure 8.

G. Existing Transit Service

The study area is currently served by the Riverside Transit Agency Routes 13 and 22 Chicago Avenue and Riverside Transit Agency Routes 1, 14, 22, 204, and Gold Line along University Avenue. The existing bus routes provided within the study area are shown on Figure 9.

H. Bicycle & Pedestrian Facilities

Existing pedestrian facilities adjacent to the project site are shown on Figure 10. The City of Riverside bike paths are illustrated on Figure 11.

Table 1

Existing Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	25.1-C	18.3-B
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	40.9-E	53.6-F
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	38.2-E	60.3-F
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	21.1-C	32.1-C

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane

[2] Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

Figure 3
Existing Through Travel Lanes and Intersection Controls

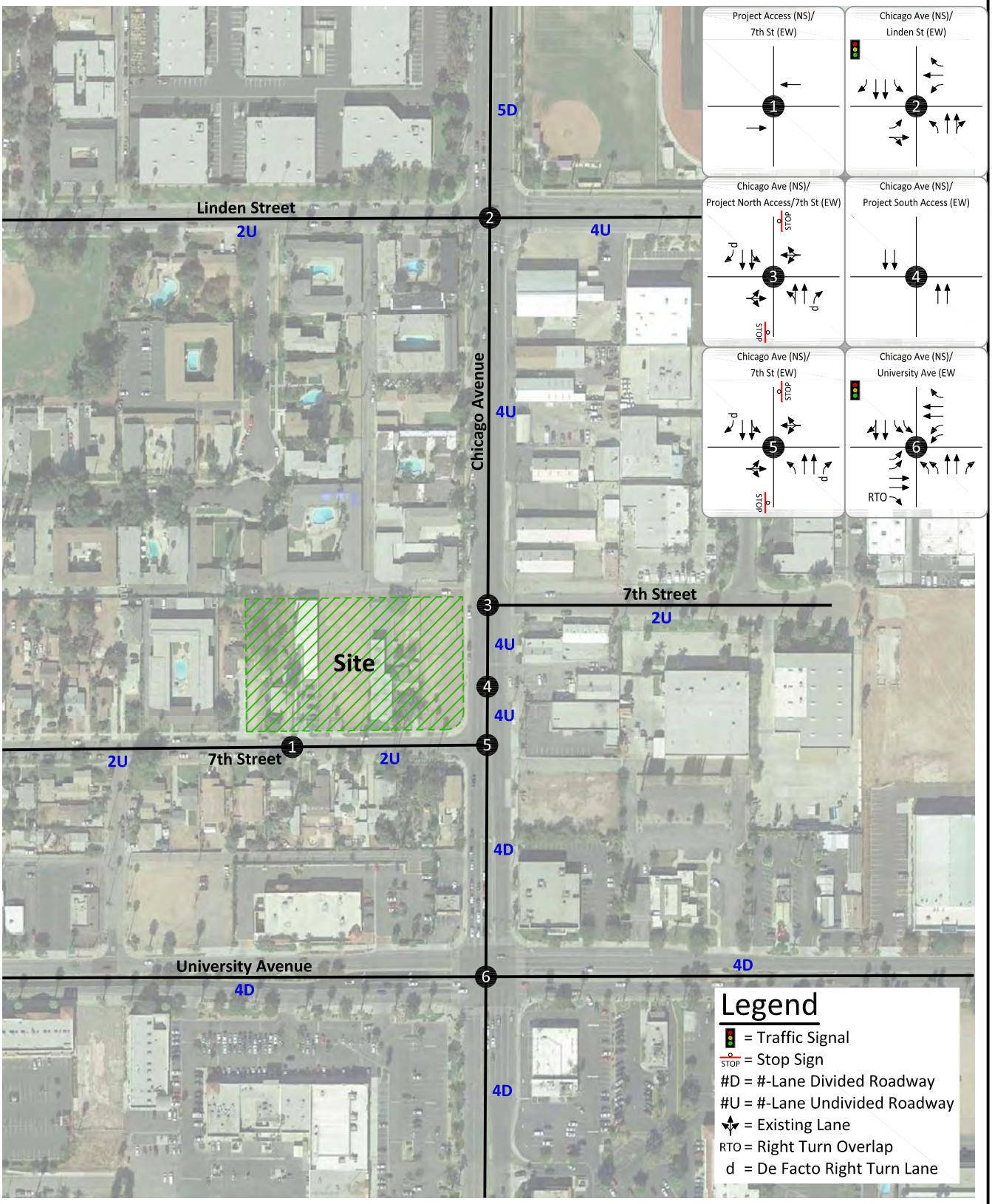

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Figure 4
Existing Average Daily Traffic Volumes

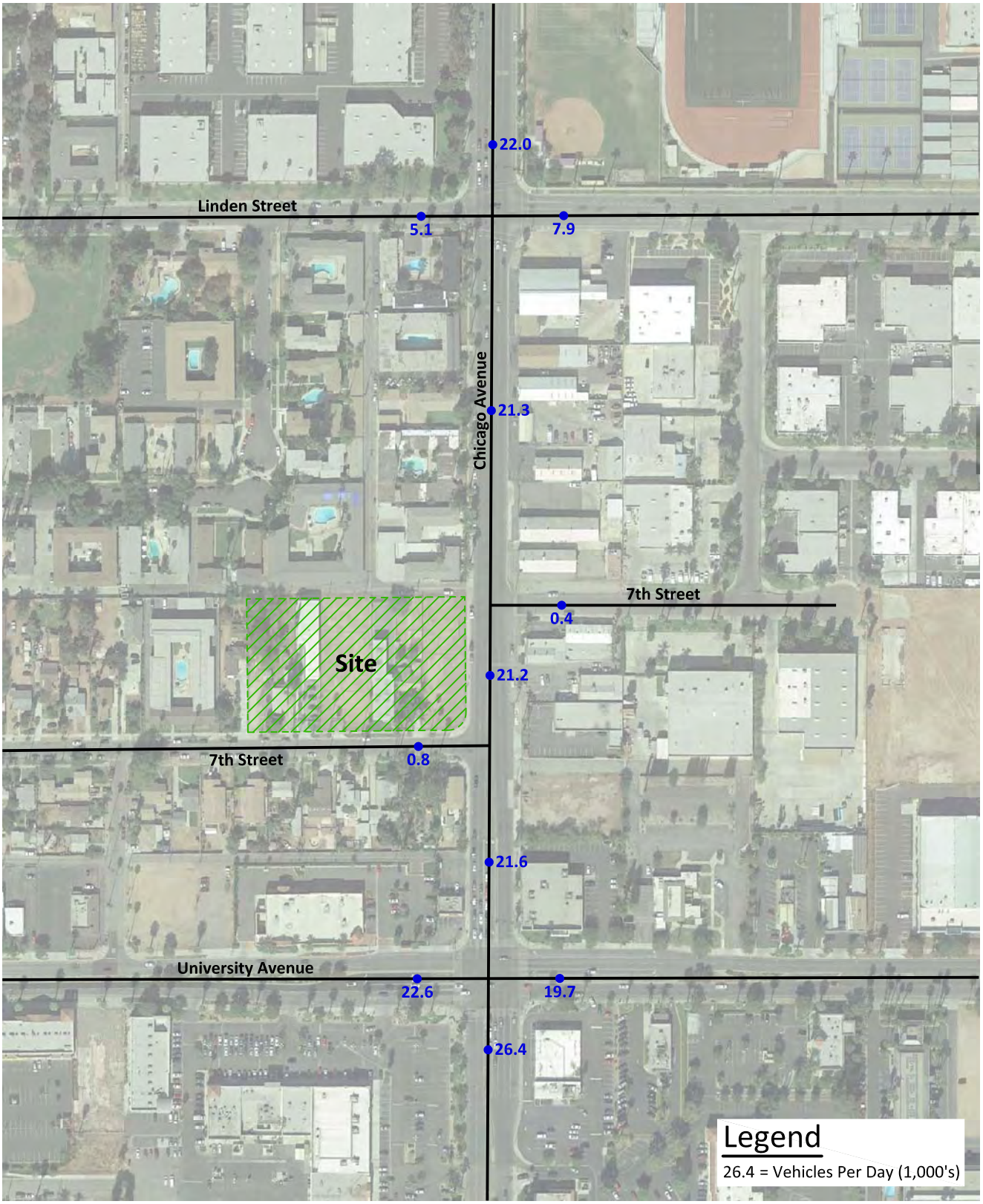

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Figure 5
Existing Morning Peak Hour Intersection Turning Movement Volumes

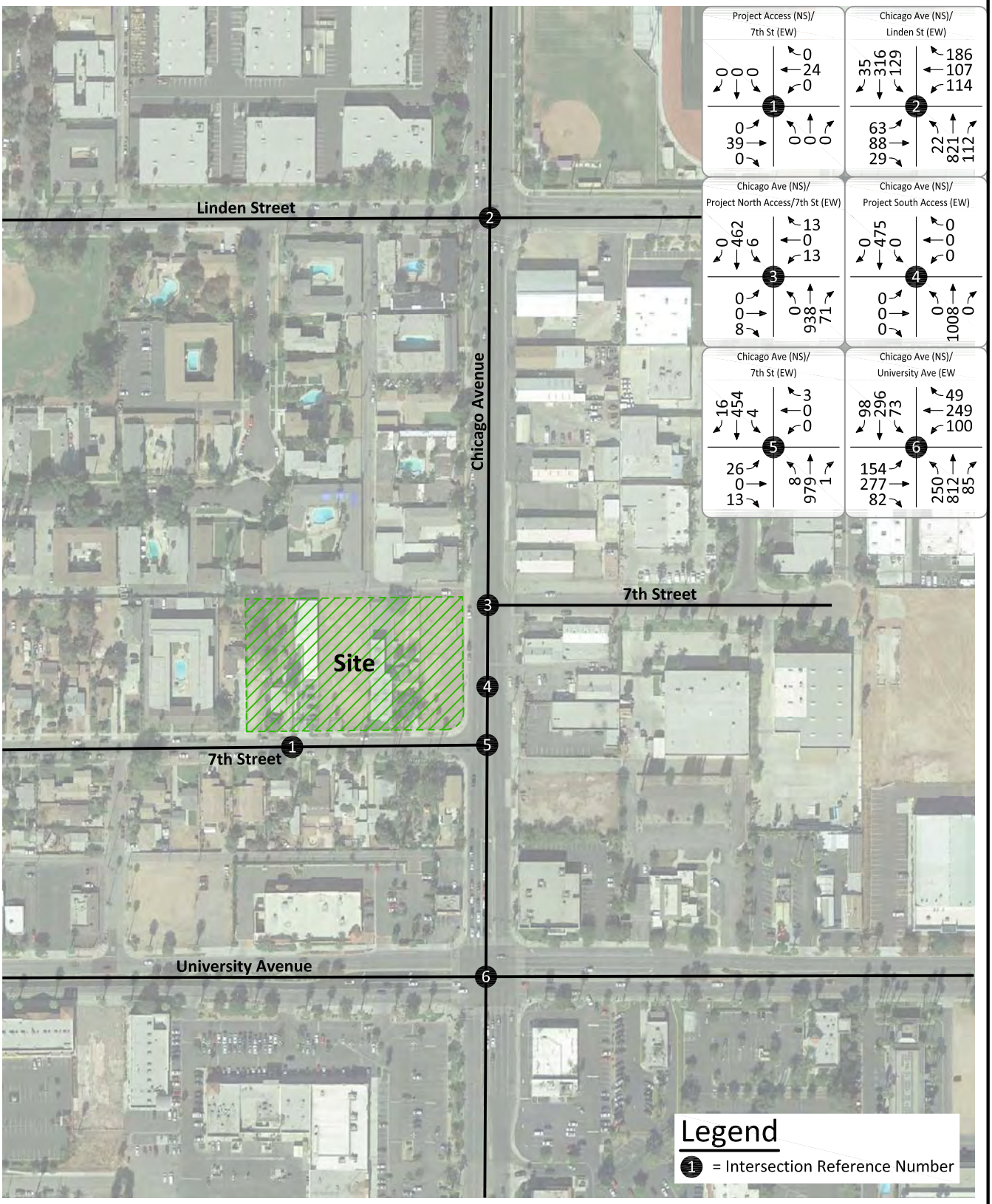

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Figure 6
Existing Evening Peak Hour Intersection Turning Movement Volumes

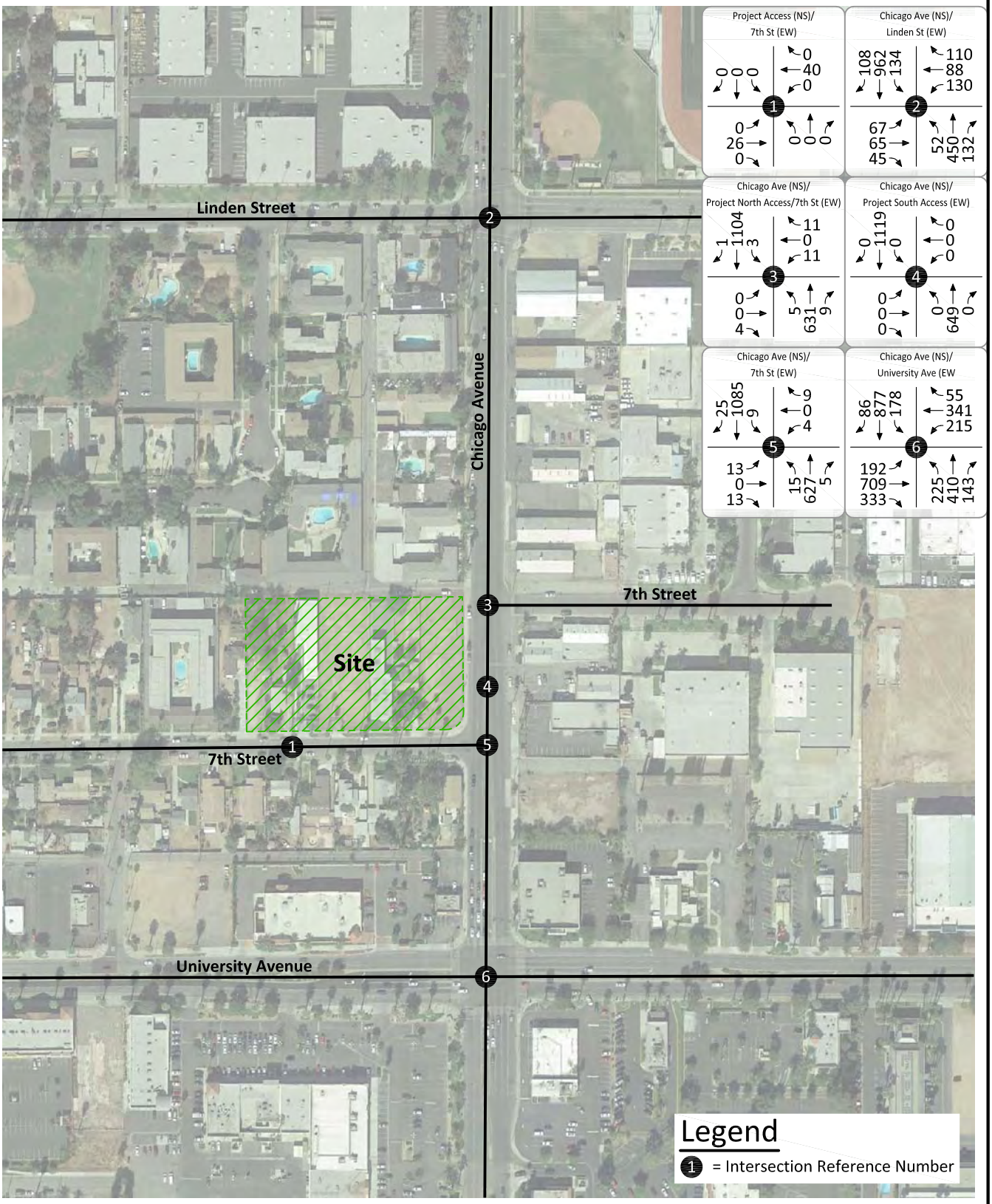

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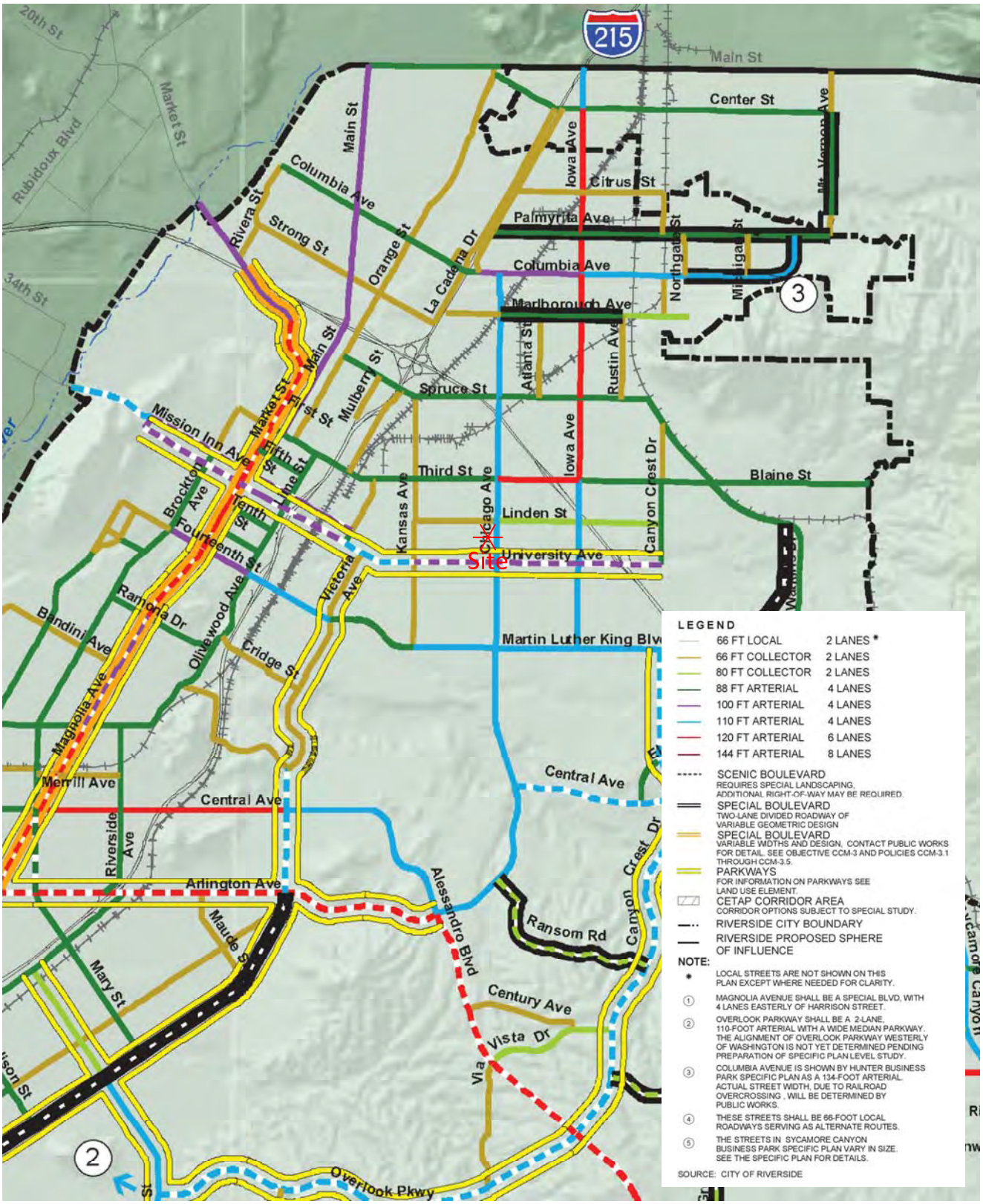
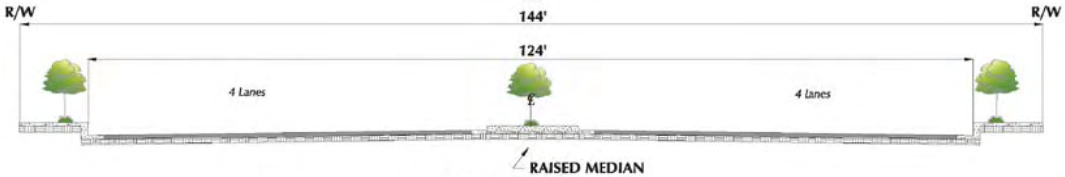
Figure 7
City of Riverside General Plan Circulation Element

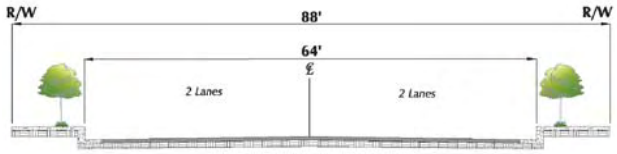


Source: City of Riverside

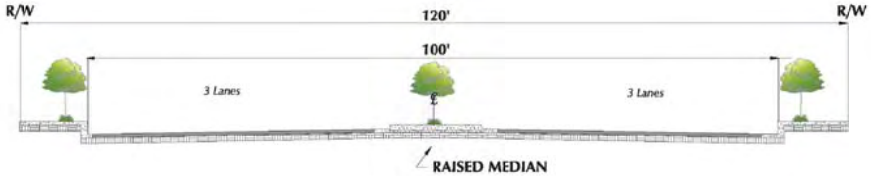
Figure 8
City of Riverside General Plan Roadway Cross-Sections



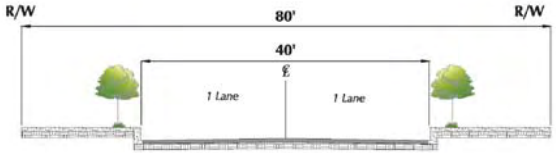
144-FOOT ARTERIAL



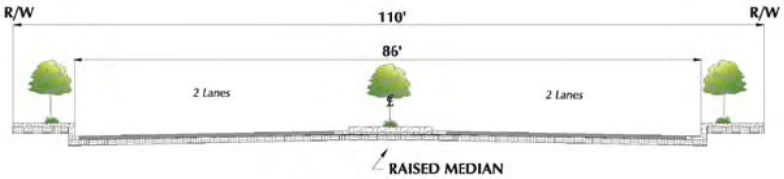
88-FOOT ARTERIAL



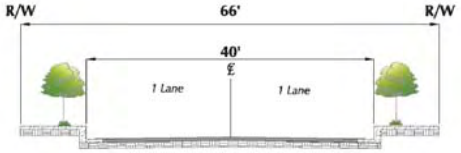
120-FOOT ARTERIAL



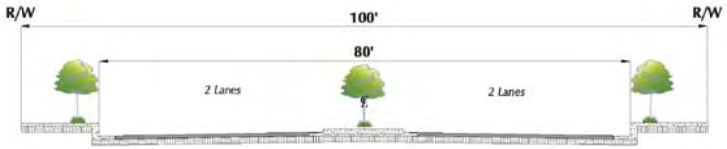
80-FOOT COLLECTOR



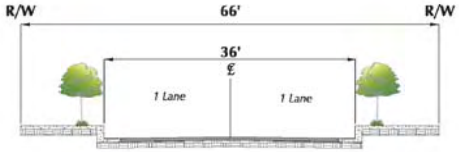
110-FOOT ARTERIAL



66-FOOT COLLECTOR



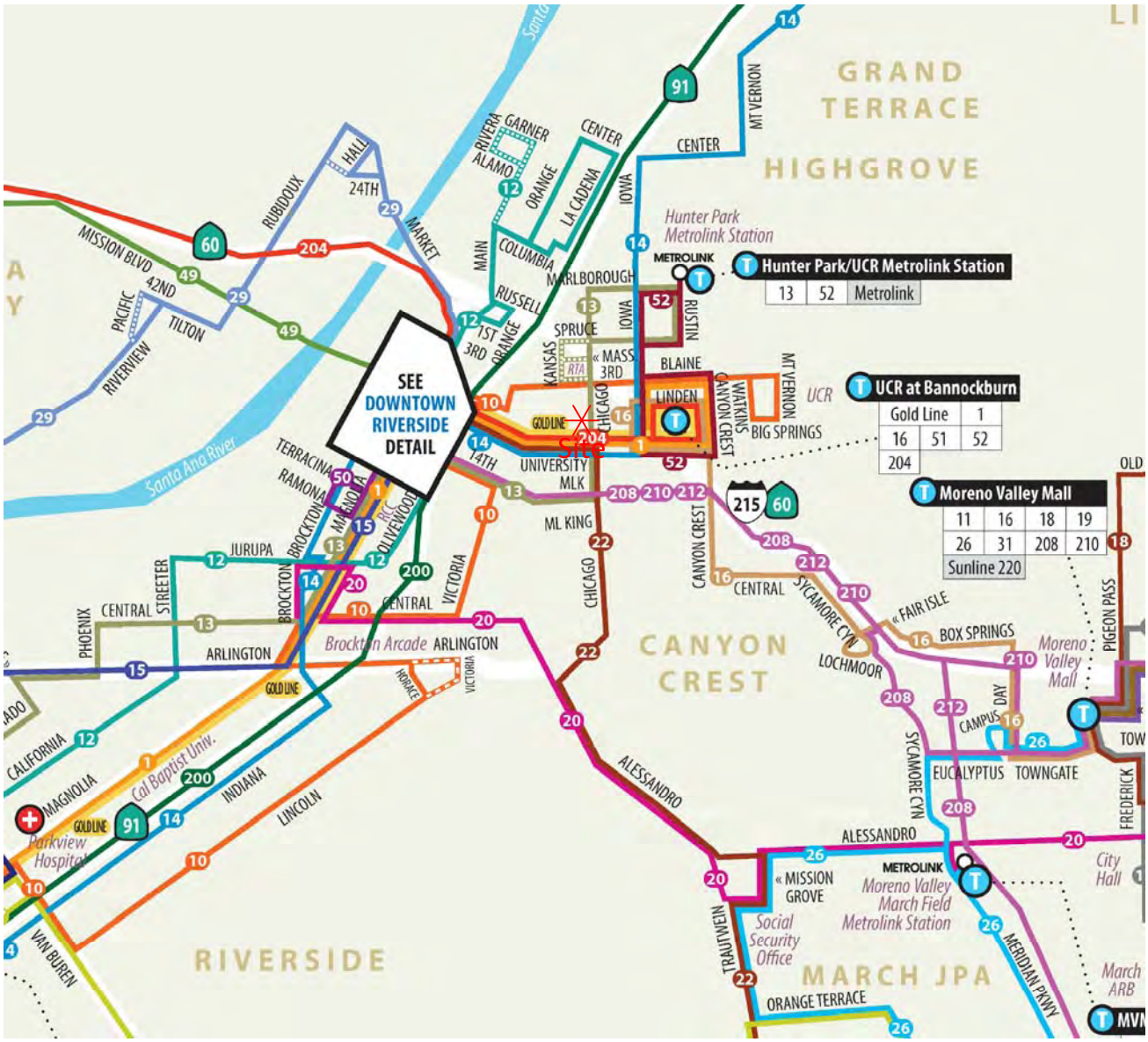
100-FOOT ARTERIAL



LOCAL STREET

Source: City of Riverside

Figure 9
Existing Transit Routes



Legend

41 Route Number	Point of Interest	Interstate
Route Path	Medical Facility	State Highway
Commuter Routing	Transfer Point	Main Road
Alternate Routing	Metrolink Station	Water

Source: Riverside Transit Agency

Figure 10
Existing Pedestrian Facilities

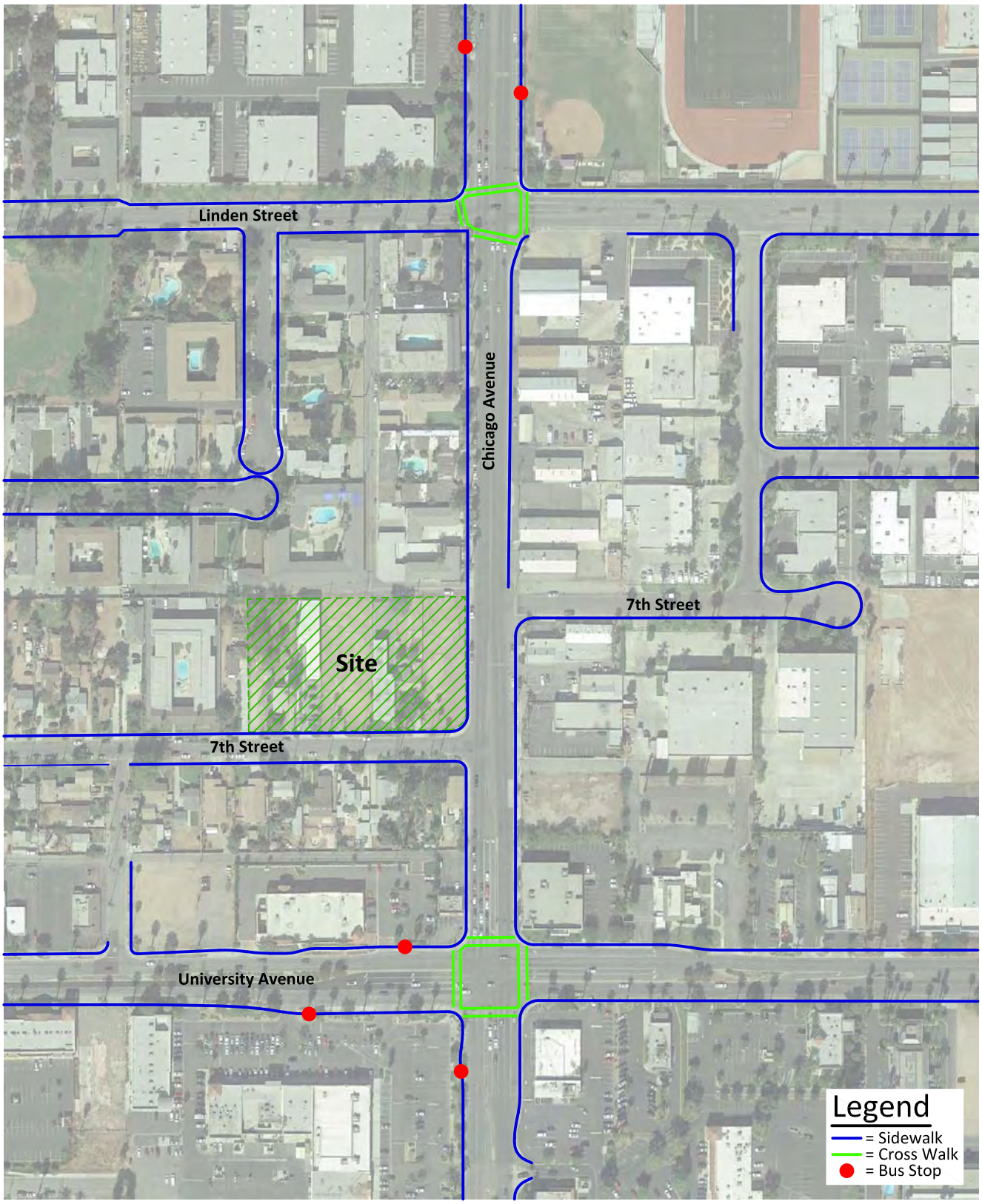


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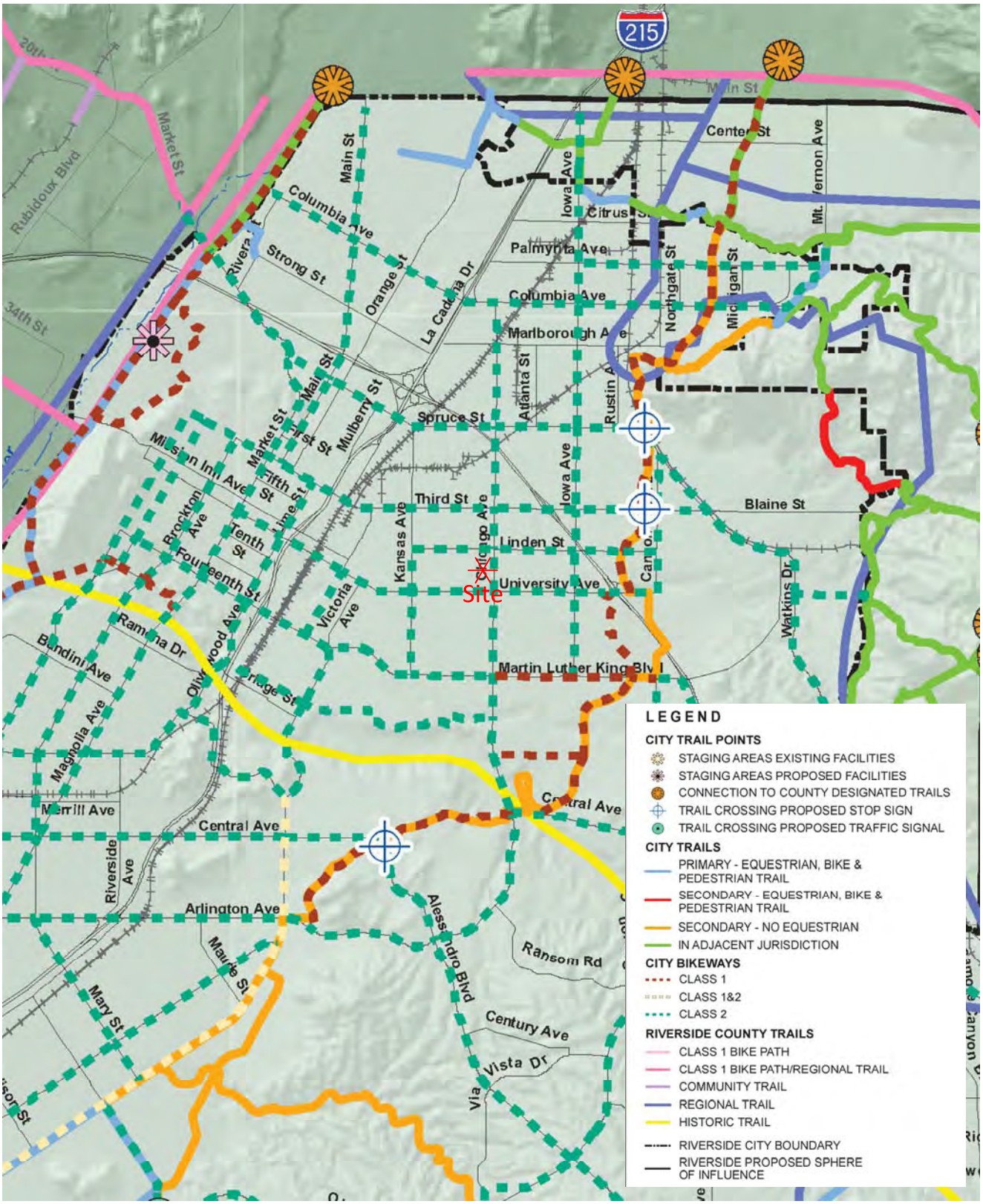
Figure 11
City of Riverside Bike Paths



Source: City of Riverside

V. PROPOSED PROJECT

The 2.03 acre project site is proposed to be developed with 65 dwelling units of multifamily housing (low-rise) and 900 square feet of convenience market. The project site is proposed to provide access to Chicago Avenue and 7th Street.

A. Site Traffic

1. Trip Generation

The trips generated by the project are determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and life styles remain similar to what are known today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily trips, morning peak hour inbound and outbound trips, and evening peak hour inbound and outbound trips for the proposed land uses. By multiplying the trip generation rates by the land use quantities, the traffic volumes are determined. Table 2 shows the project trip generation based upon rates obtained from the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

As shown in Table 2, the proposed development is projected to generate a total of approximately 990 daily vehicle trips, 72 of which will occur during the morning peak hour and 68 of which will occur during the evening peak hour.

It should be noted that for the convenience market land use, a portion of the trips would come from pass-by trips, trips that are currently on the roadway system. The project trips have been reduced as a result of pass-by trips based upon the City of Riverside Public Works Department, Traffic Impact Analysis Preparation Guide, January 2016.

Traffic volumes shown in Table 2 consist of the total trips generated for each project land use. As a residential trip generated by the project will also be making trips to the convenience market land use within the project, a double counting of those trips occurs. In order to analyze a "conservative" scenario in terms of the assignment of project trips, the traffic volumes from the convenience market portion of the project site have not been reduced as a result of the internal interaction between the proposed land uses.

2. Trip Distribution

Figures 12 to 14 contain the directional distributions of the project trips for the proposed land uses. To determine the trip distributions for the proposed project, peak hour intersection turning movement counts of the existing directional distribution of traffic volumes for existing areas in the vicinity of the site and other

additional information on future development and traffic impacts in the area were reviewed.

3. Trip Assignment

Based on the identified trip generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 15. Morning and evening peak hour intersection turning movement volumes expected from the project are shown on Figures 16 and 17, respectively.

4. Modal Split

The trip reducing potential of public transit has not been considered in this report. Essentially the project trip projections are conservative in that public transit might be able to reduce the traffic volumes.

B. General Plan Amendment

1. Description

A General Plan Amendment is being requested for the project site to go from Medium Density Residential (R-1-7000) to High Density Residential (R-3-1500). Medium Density Residential (R-1-7000) allows for a maximum of 8.0 single-family detached residential dwelling units per acre and High Density Residential (R-3-1500) allows for a maximum of 29.0 multi-family attached residential dwelling units per acre. For Medium Density Residential (R-1-7000), the 2.03 acre project site allows for a maximum of 16 single-family detached residential dwelling units. For High Density Residential (R-3-1500), the 2.03 acre project site allows for a maximum of 59 multi-family attached residential dwelling units. The project site is allowed a bonus density under State law to bring the total number of multi-family attached residential dwelling units to 65 dwelling units.

2. Trip Generation Comparison

The 16 single-family detached residential dwelling units is projected to generate approximately 151 daily vehicle trips, 12 (3 inbound and 9 outbound) of which occur during the morning peak hour and 16 (10 inbound and 6 outbound) of which occur during the evening peak hour. The trip generation is based upon rates obtained from the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codey 210.

The proposed development is projected to a generate approximately 839 more daily vehicle trips, 60 more trips during morning peak hour and 52 more trips during the evening peak hour. Of the 60 more trips during the morning peak hour, 25 more are inbound trips and 35 more are outbound trips. Of the 52 more trips during the evening peak hour, 30 more are inbound trips and 23 more are outbound trips.

Table 2

Project Trip Generation[1]

Land Use	Quantity	Units[2]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Multifamily Housing (Low-Rise)	1.00	DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32
Convenience Market	1.00	TSF	31.27	31.27	62.54	25.05	24.06	49.11	762.28
Trips Generated									
Multifamily Housing (Low-Rise)	65	DU	7	23	30	23	13	36	476
Convenience Market	0.900	TSF	28	28	56	23	22	44	686
Subtotal			35	51	86	46	35	80	1,162
Pass-By Trips Reduction									
Convenience Market (25%)[3]			-7	-7	-14	-6	-6	-12	-172
New Trips Generated			28	44	72	40	29	68	990

[1] Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codes 220 and 851.

[2] DU = Dwelling Units, TSF = Thousand Square Feet

[3] Pass-by rate percentage from the City of Riverside Public Works Department Traffic Impact Analysis Preparation Guide, January 2016.

Figure 12
Project Trip Distribution - Residential

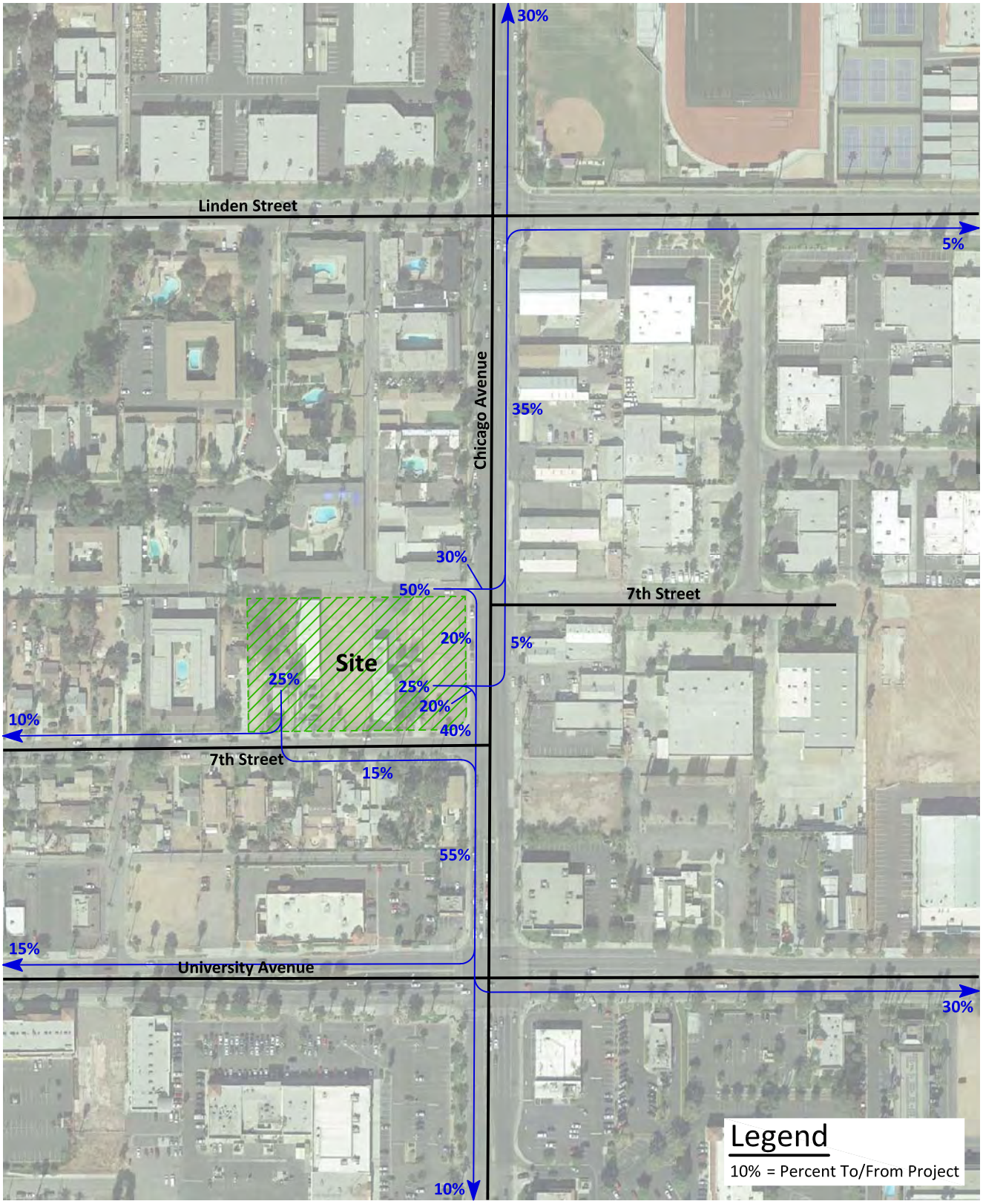


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Figure 13
Project Trip Distribution - Convenience Market

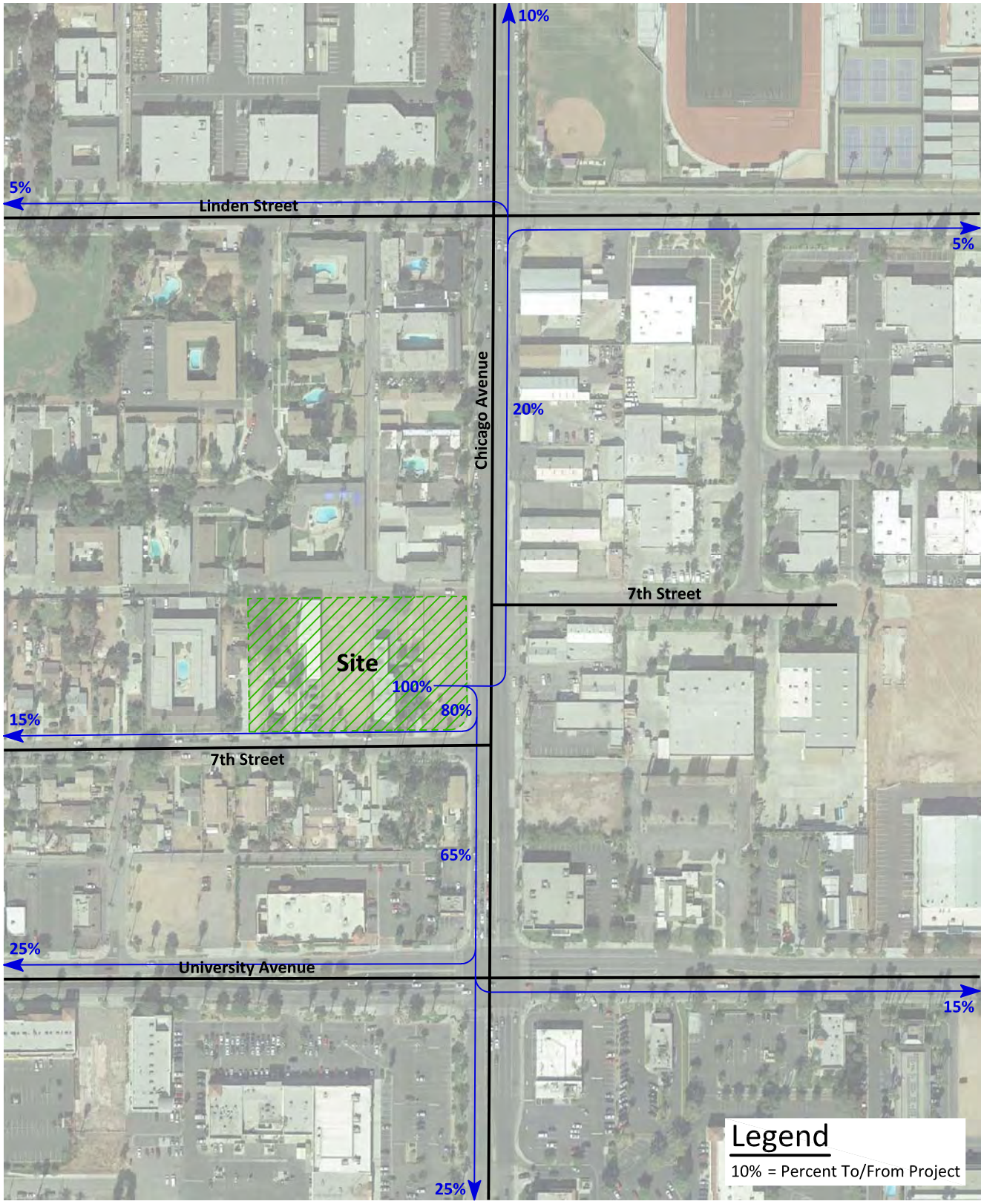

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Figure 14
Pass-By Trip Distribution

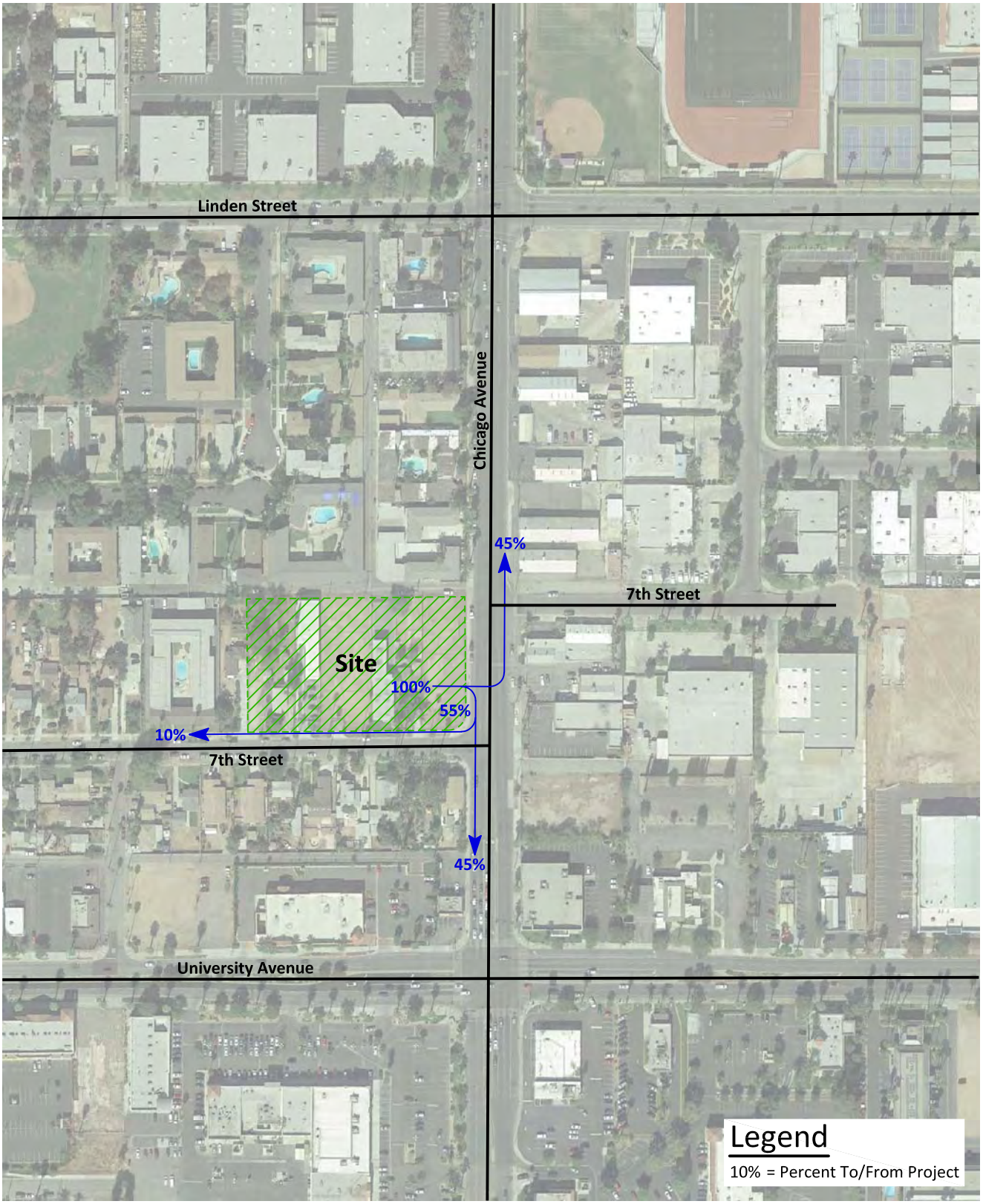

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Figure 15
Project Average Daily Traffic Volumes

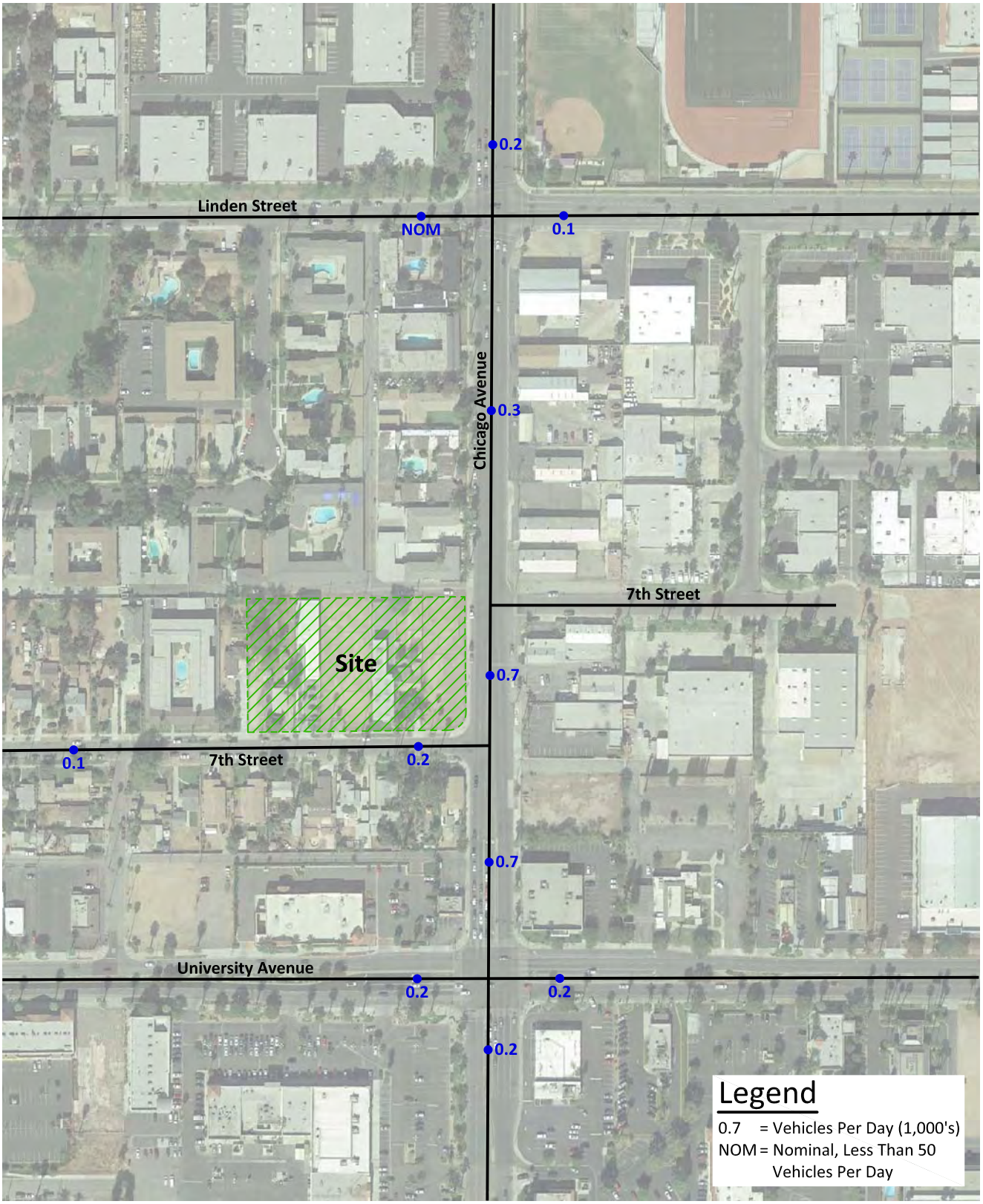


Figure 16
Project Morning Peak Hour Intersection Turning Movement Volumes

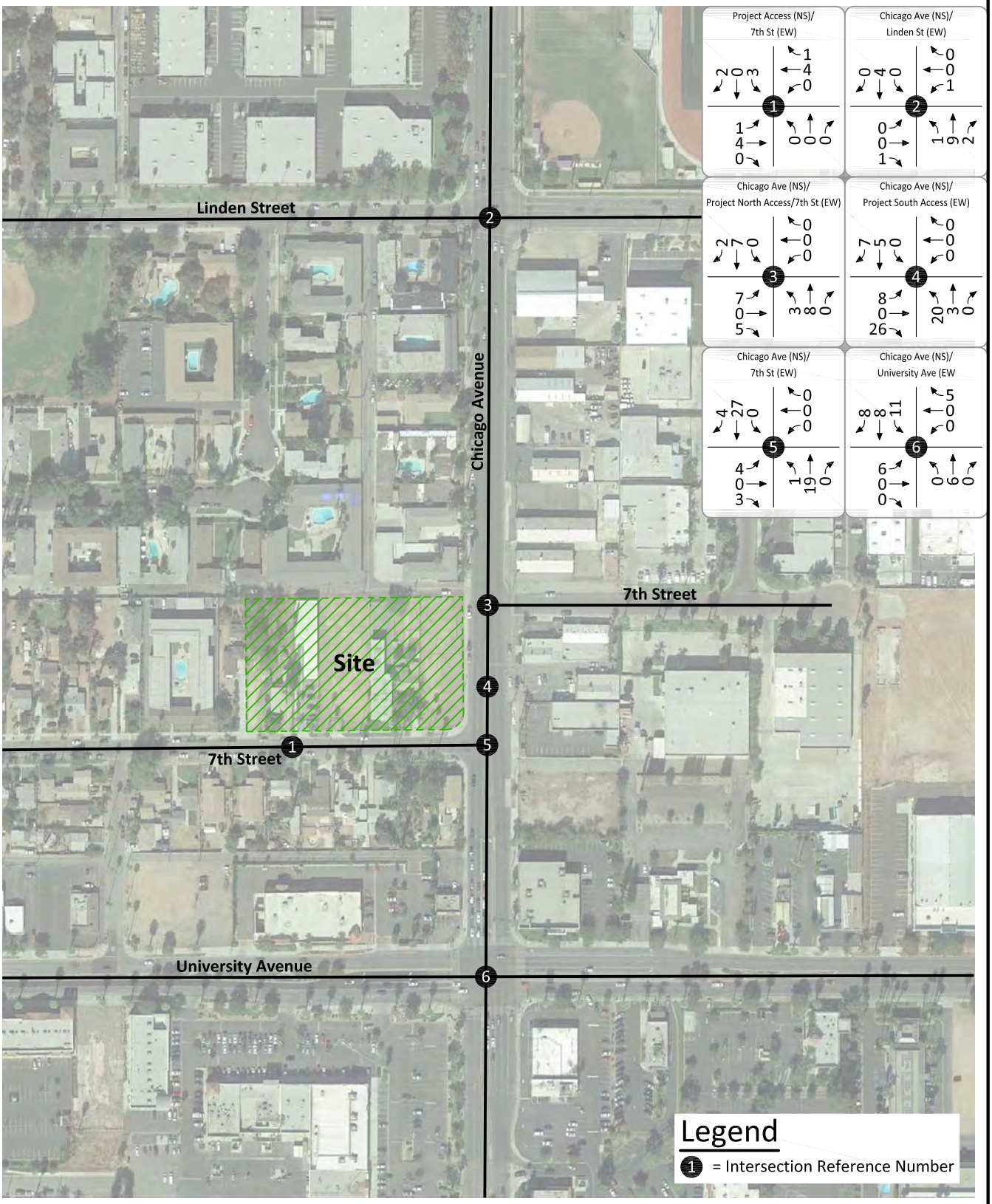
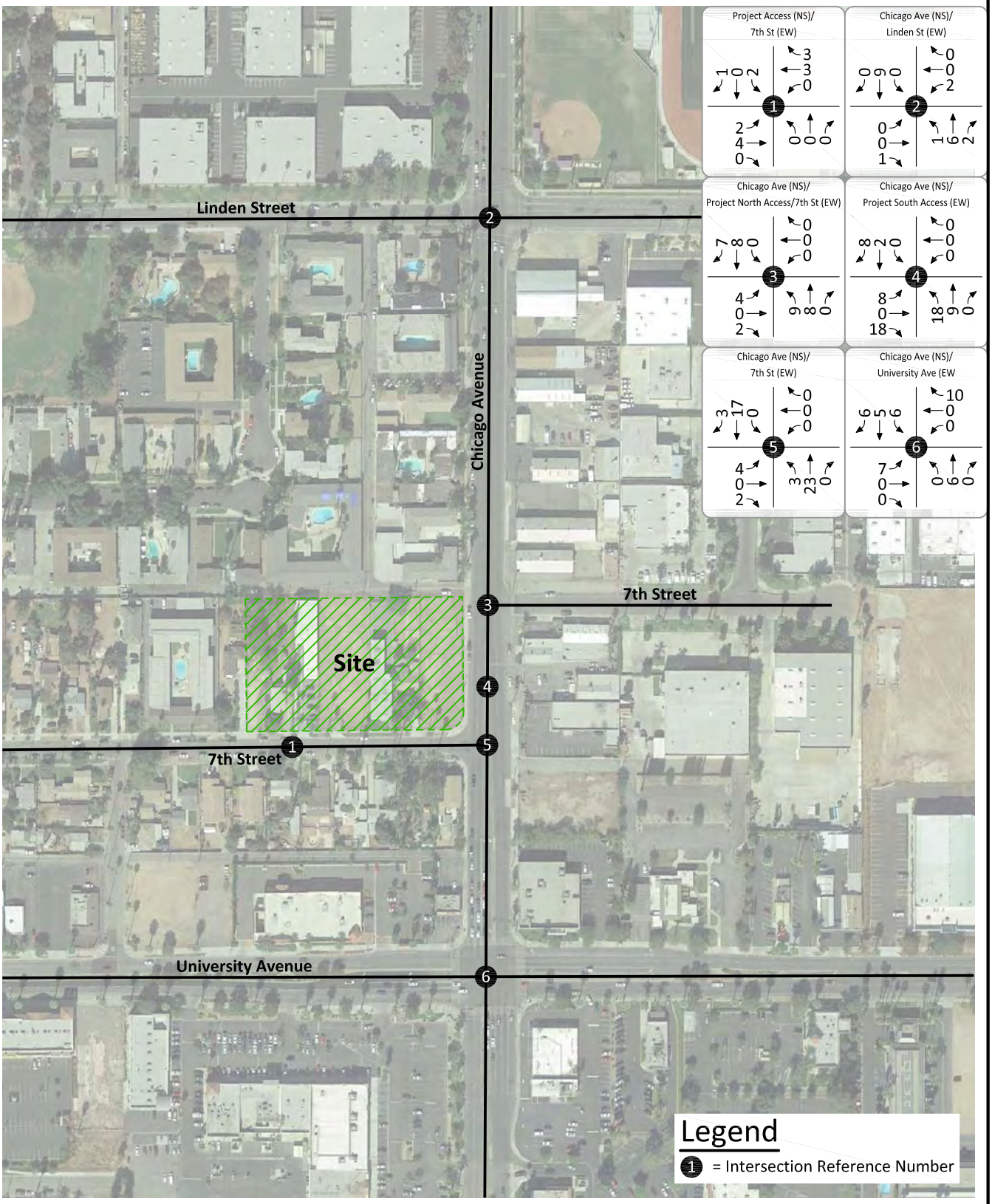


Figure 17
Project Evening Peak Hour Intersection Turning Movement Volumes



VI. EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Once the project related trips are assigned to the existing street network and added to existing volumes, the traffic impact can be assessed. Figures 18 to 20 illustrate the Existing Plus Project traffic conditions.

A. Method of Projection

To assess Existing Plus Project traffic conditions, project trips are combined with existing traffic volumes.

B. Existing Plus Project Average Daily Traffic Volumes

Upon project completion and occupancy, the Existing Plus Project average daily traffic volumes are as illustrated on Figure 18.

C. Existing Plus Project Intersection Delay

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D). To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection.

The delay and Level of Service for Existing Plus Project traffic conditions have been calculated and are shown in Table 3. Existing Plus Project morning and evening peak hour intersection turning movement volumes are shown on Figures 19 and 20, respectively.

For Existing Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
- Project North Access/7th Street (EW) - #3
- Project South Access (EW) - #4
- 7th Street (EW) - #5

The study intersections are projected to operate at acceptable Levels of Service during the peak hours for Existing Plus Project traffic conditions, with improvements.

Table 3

Existing Plus Project Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Project Access (NS) at:															
7th Street (EW) - #1	**CSS**	0	0	0	**0.5**	0	**0.5**	0.5	0.5	0	0	0.5	0.5	8.9-A	8.9-A
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	25.3-C	18.4-B
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	42.9-E	57.7-F
- With Improvements[4]	CSS	**1**	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	21.9-C	24.1-C
Project South Access (EW) - #4	**CSS**	0.5	1.5	0	0	2	d	**0.5**	0	**0.5**	0	0	0	23.0-C	44.0-E
- With Improvements[4]	**CSS**	**1**	2	0	0	2	d	**0.5**	0	**0.5**	0	0	0	14.2-B	21.3-C
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	41.3-E	68.7-F
- With Improvements[4]	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	21.2-C	26.1-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	21.3-C	32.3-C

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

[2] Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

[4] Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Figure 18
Existing Plus Project Average Daily Traffic Volumes

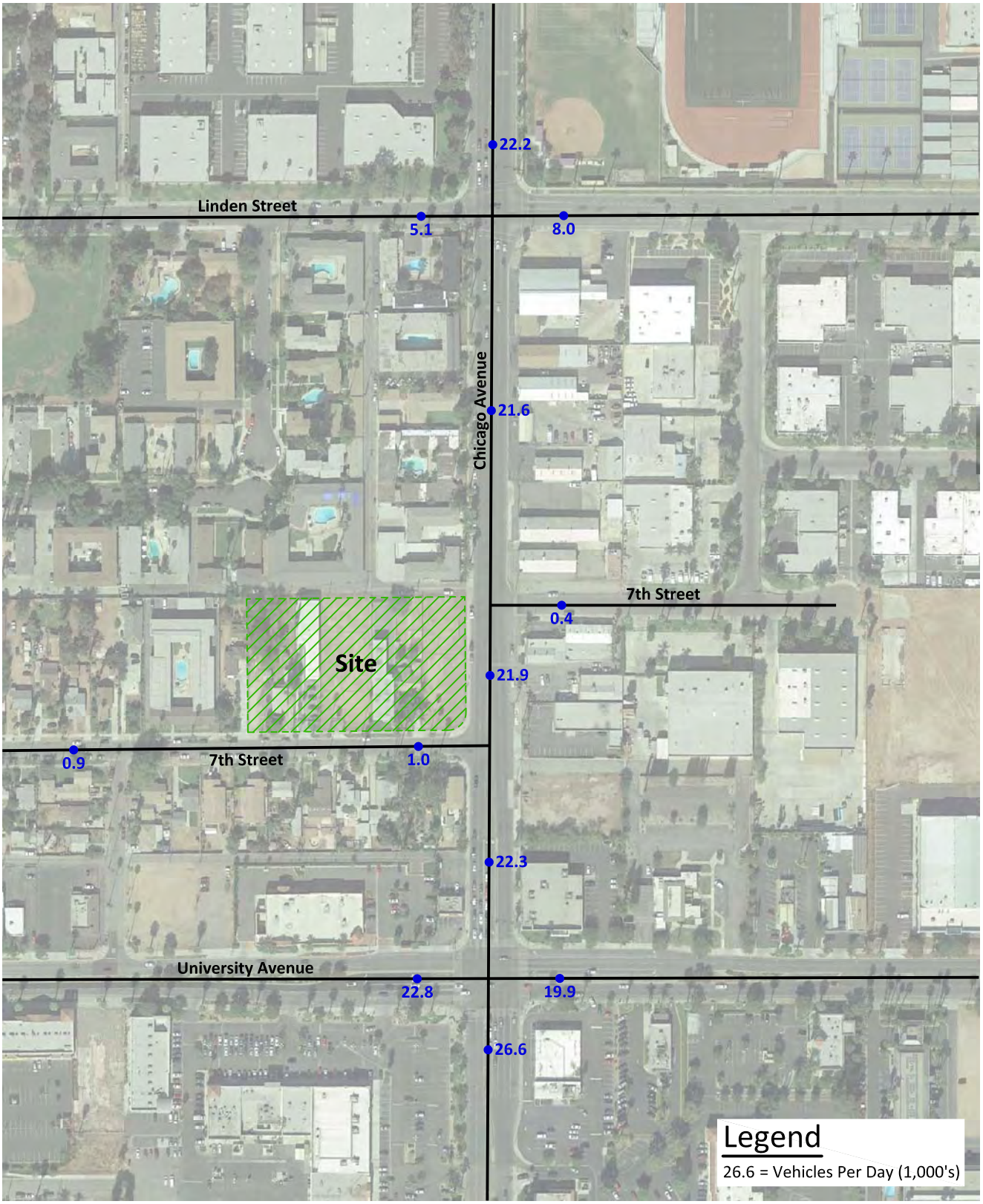


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Figure 19
Existing Plus Project
Morning Peak Hour Intersection Turning Movement Volumes

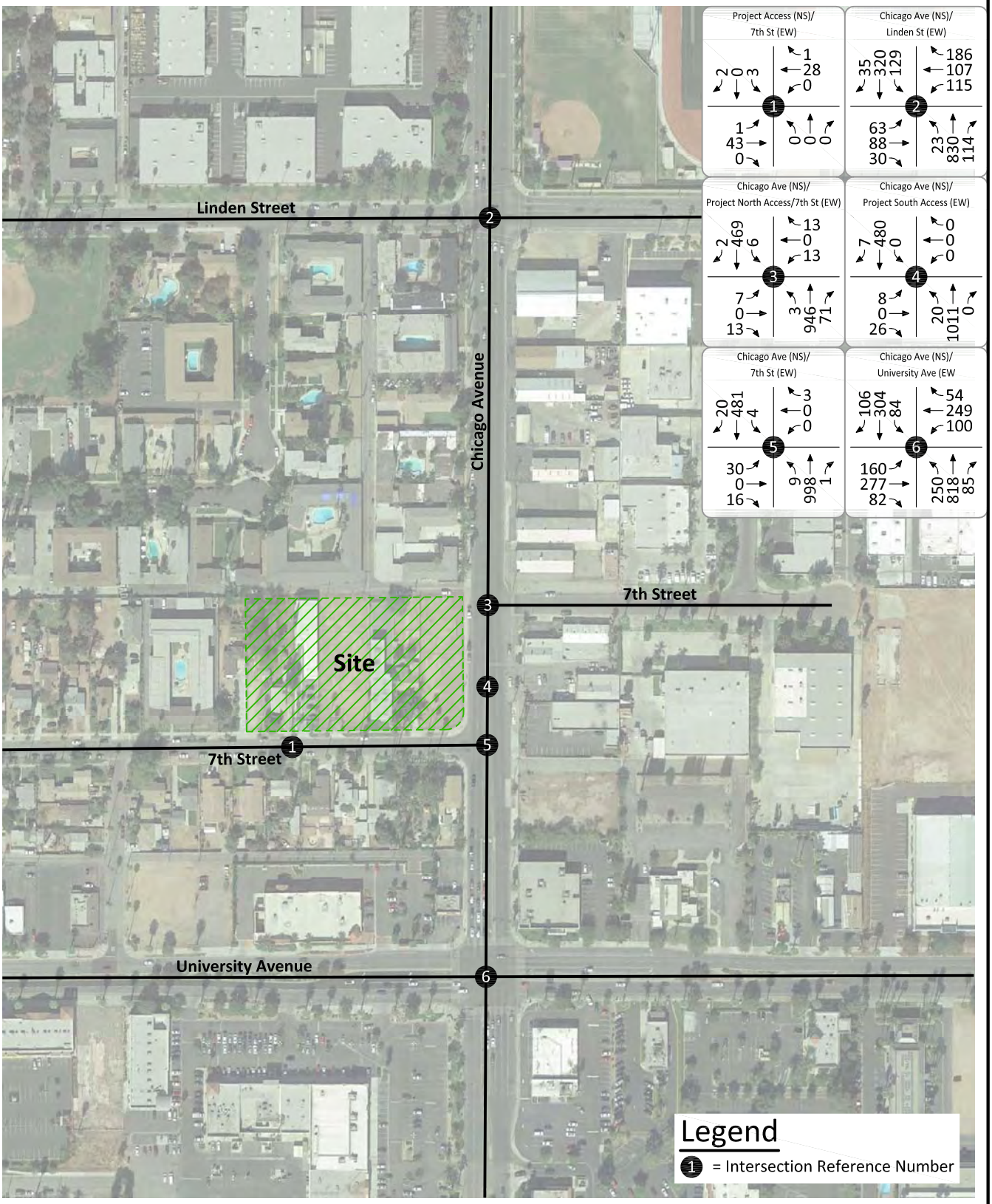
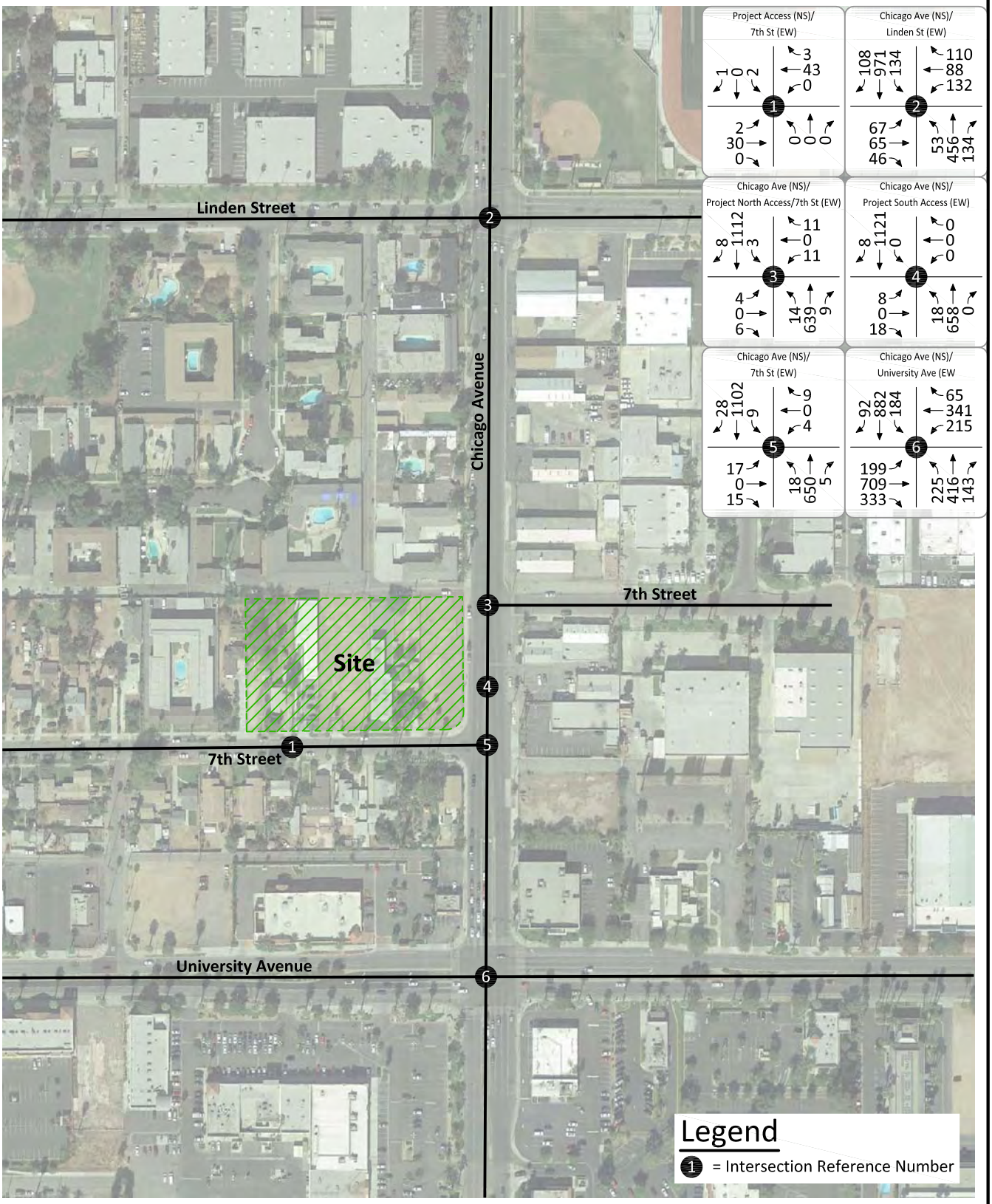


Figure 20
Existing Plus Project
Evening Peak Hour Intersection Turning Movement Volumes



VII. OPENING YEAR TRAFFIC CONDITIONS

Figures 21 to 33 illustrate the Opening Year traffic conditions.

A. Method of Projection

To assess Opening Year traffic conditions, existing traffic volumes are combined with areawide growth. The Opening Year for analysis purposes in this report is 2020.

To account for areawide growth on roadways, traffic volumes have been calculated based on a "conservative" 2.0 percent annual growth rate of existing traffic volumes over the two (2) year period.

B. Other Development

Table 4 lists the proposed land uses for the other development (see Figure 21) and shows the daily and peak hour vehicle trips generated by each development in the study area. Lists of other potential developments within the study area have been provided by the Planning Department of the City of Riverside. Potential developments within the study area are included in the analysis if they are not currently built, they are approved, their approval has not expired, and they would contribute trips to the study intersections. Figures 22 through 24 contain the directional distribution and assignment of the other development trips that are anticipated to generate significant trips to the study area roadway network.

Figure 25 shows the average daily traffic volumes that can be expected for the other development. Other development morning and evening peak hour intersection turning movement volumes are shown on Figures 26 and 27, respectively.

C. Opening Year (2020) Average Daily Traffic Volumes

The Opening Year (2020) Without Project average daily traffic volumes are as illustrated on Figure 28 and Opening Year (2020) With Project average daily traffic volumes are as illustrated on Figure 29.

D. Opening Year (2020) Intersection Delay

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D). To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection.

The delay and Level of Service for Opening Year (2020) Without Project traffic conditions have been calculated and are shown in Table 5. Opening Year (2020) Without Project morning and evening peak hour intersection turning movement volumes are shown on Figures 30 and 31, respectively.

For Opening Year (2020) Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the

following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
- Project North Access/7th Street (EW) - #3
- 7th Street (EW) - #5

The study intersections are projected to operate at acceptable Levels of Service during the peak hours for Opening Year (2020) Without Project traffic conditions, with improvements.

The delay and Level of Service for Opening Year (2020) With Project traffic conditions have been calculated and are shown in Table 6. Opening Year (2020) With Project morning and evening peak hour intersection turning movement volumes are shown on Figures 32 and 33, respectively.

For Opening Year (2020) With Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
- Project North Access/7th Street (EW) - #3
- Project South Access (EW) - #4
- 7th Street (EW) - #5

The study intersection are projected to operate at acceptable Levels of Service during the peak hours for Opening Year (2020) With Project traffic conditions, with improvements.

E. Significant Transportation Impact

The City of Riverside allows Level of Service D to be used as a maximum acceptable threshold for the study intersections.

A significant impact occurs at a study intersection when the addition of project generated trips causes either peak hour Level of Service to degrade from acceptable Level of Service (A thru D) to unacceptable Level of Service (E or F) or peak hour delay to increase as follows:

Level of Service A/B	=	By 10.0 seconds
Level of Service C	=	By 8.0 seconds
Level of Service D	=	By 5.0 seconds
Level of Service E	=	By 2.0 seconds
Level of Service F	=	By 1.0 seconds

As shown in Table 7, the project site does significantly impact the following study intersections for Opening Year (2020) With Project traffic conditions, without improvements:

Chicago Avenue (NS) at:

Project North Access/7th Street (EW) - #3
Project South Access (EW) - #4
7th Street (EW) - #5

As shown in Table 7, the project site does not significantly impact the study intersections for Opening Year (2020) With Project traffic conditions, with improvements. The recommended mitigation measure is an extension of the north-south two-way left turn median on Chicago Avenue from its occurrence south of the project, to the project's north boundary. Figure 41 exhibits a conceptual striping plan for these improvements. The existing on-street parking would remain.

Table 4

Other Development Trip Generation[1]

Traffic Analysis Zone	Name	Land Use	Quantity	Units[2]	Peak Hour						Daily
					Morning			Evening			
					Inbound	Outbound	Total	Inbound	Outbound	Total	
1	P16-0168	Storage Facility	797	UN	6	5	11	8	8	16	143
	P18-0199	Industrial - Single Tenant	26.076	TSF	16	2	18	2	14	16	130
2	P14-0045	Apartment Complex	212	DU	22	76	98	77	46	123	1,551
3	P15-0877	Hotel	126	RM	35	25	60	39	37	76	1,053
Total					79	108	187	126	105	231	2,877

[1] Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codes 110, 151, 220, and 310.

[2] UN = Units; TSF = Thousand Square Feet; DU = Dwelling Units; RM = Rooms

Table 5

Opening Year (2020) Without Project Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	26.9-C	18.8-B
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	44.5-E	59.3-F
- With Improvements[4]	CSS	**1**	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	22.7-C	24.8-C
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	41.4-E	68.5-F
- With Improvements[4]	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	21.6-C	26.5-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	21.6-C	40.4-D

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

[2] Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

[4] Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Table 6

Opening Year (2020) With Project Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Project Access (NS) at:															
7th Street (EW) - #1	**CSS**	0	0	0	**0.5**	0	**0.5**	0.5	0.5	0	0	0.5	0.5	8.9-A	8.9-A
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	27.2-C	19.0-B
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	46.7-E	63.6-F
- With Improvements[4]	CSS	**1**	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	23.1-C	25.5-D
Project South Access (EW) - #4	**CSS**	0.5	1.5	0	0	2	d	**0.5**	0	**0.5**	0	0	0	24.2-C	48.3-E
- With Improvements[4]	**CSS**	**1**	2	0	0	2	d	**0.5**	0	**0.5**	0	0	0	14.5-B	22.4-C
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	45.0-E	78.8-F
- With Improvements[4]	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	22.2-C	27.8-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	21.9-C	41.0-D

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

[2] Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

[4] Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Table 7

Opening Year (2020) With Project Traffic Contribution

Intersection	Peak Hour	Opening Year (2020)									
		Without Project		With Project							
				Without Improvements				With Improvements			
		Delay	LOS[1]	Delay	LOS	Project Impact	Significant Impact[2]	Delay	LOS	Project Impact	Significant Impact[2]
Chicago Avenue (NS) at:											
Linden Street (EW) - #2	Morning	26.9	C	27.2	C	0.3	No				
	Evening	18.8	B	19.0	B	0.2	No				
Project North Access/7th Street (EW) - #3	Morning	44.5	E	46.7	E	2.2	Yes	23.1	C	-21.4	No
	Evening	59.3	F	63.6	F	4.3	No	25.5	D	-33.8	No
7th Street (EW) - #5	Morning	41.4	E	45.0	E	3.6	Yes	22.2	C	-19.2	No
	Evening	68.5	F	78.8	F	10.3	Yes	27.8	D	-40.7	No
University Avenue (EW) - #6	Morning	21.6	C	21.9	C	0.3	No				
	Evening	40.4	D	41.0	D	0.6	No				

[1] LOS = Level of Service

[2] A significant impact occurs at a study intersection when the addition of project generated trips adds 10.0 seconds of delay at an intersection operating at Level of Service A or B, 8.0 seconds of delay at an intersection operating at Level of Service C, 5.0 seconds of delay at an intersection operating at Level of Service D, 2.0 seconds of delay at an intersection operating at Level of Service E, or 1.0 seconds of delay at an intersection operating at Level of Service F.

Figure 21
Other Development Traffic Analysis Zone Map

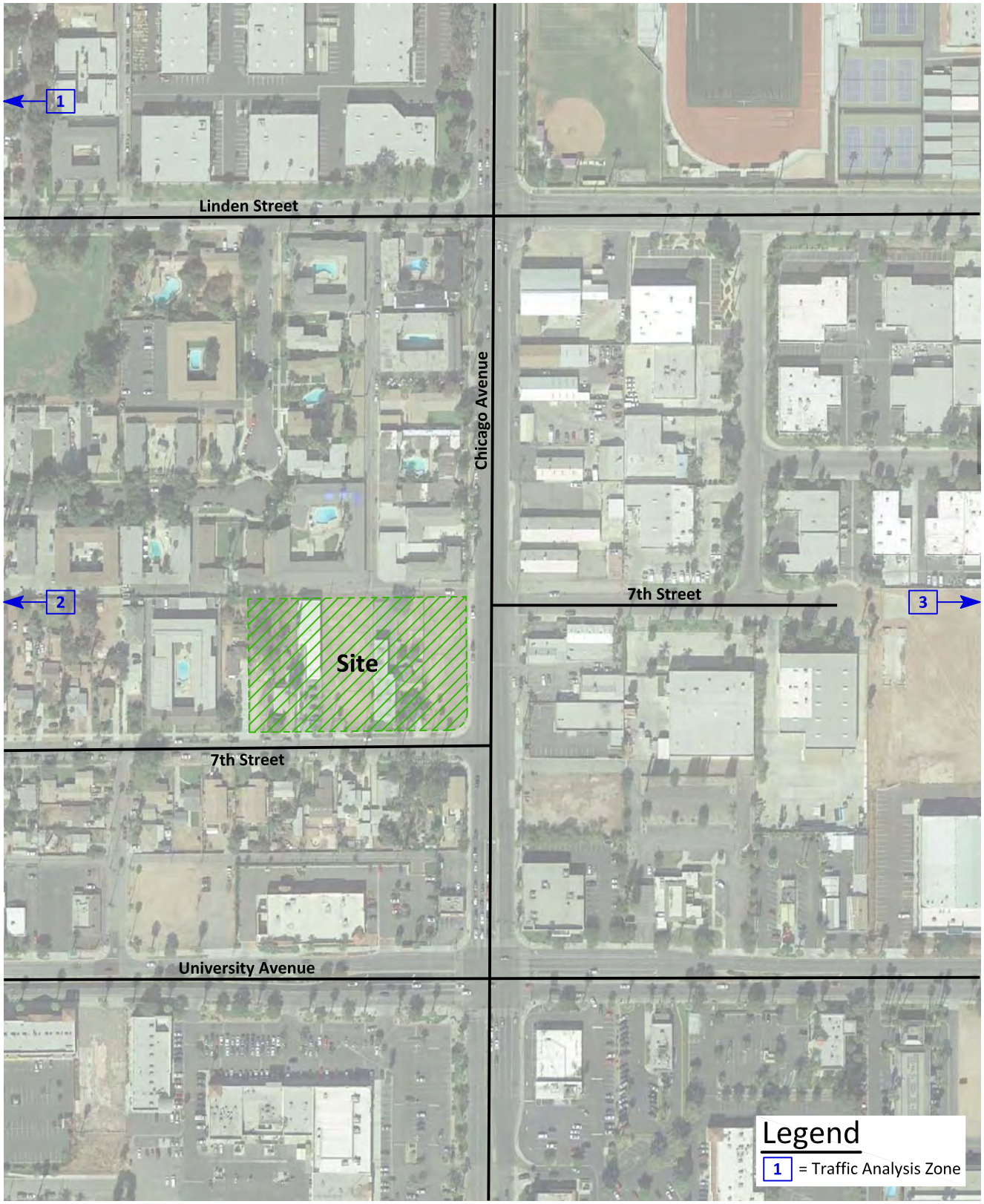


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Figure 22
Other Development Traffic Analysis Zone 1 Trip Distribution

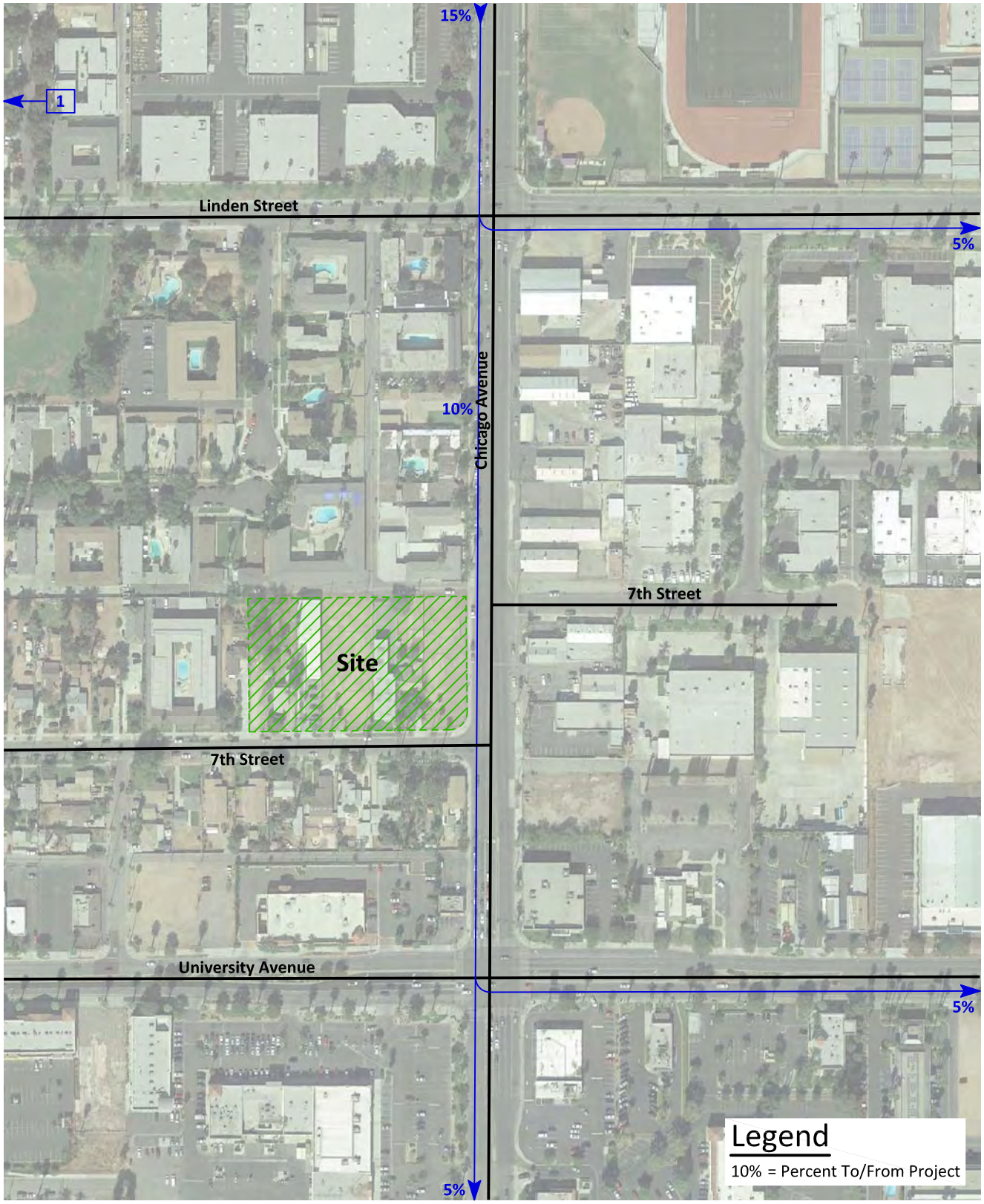

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Figure 23
Other Development Traffic Analysis Zone 2 Trip Distribution

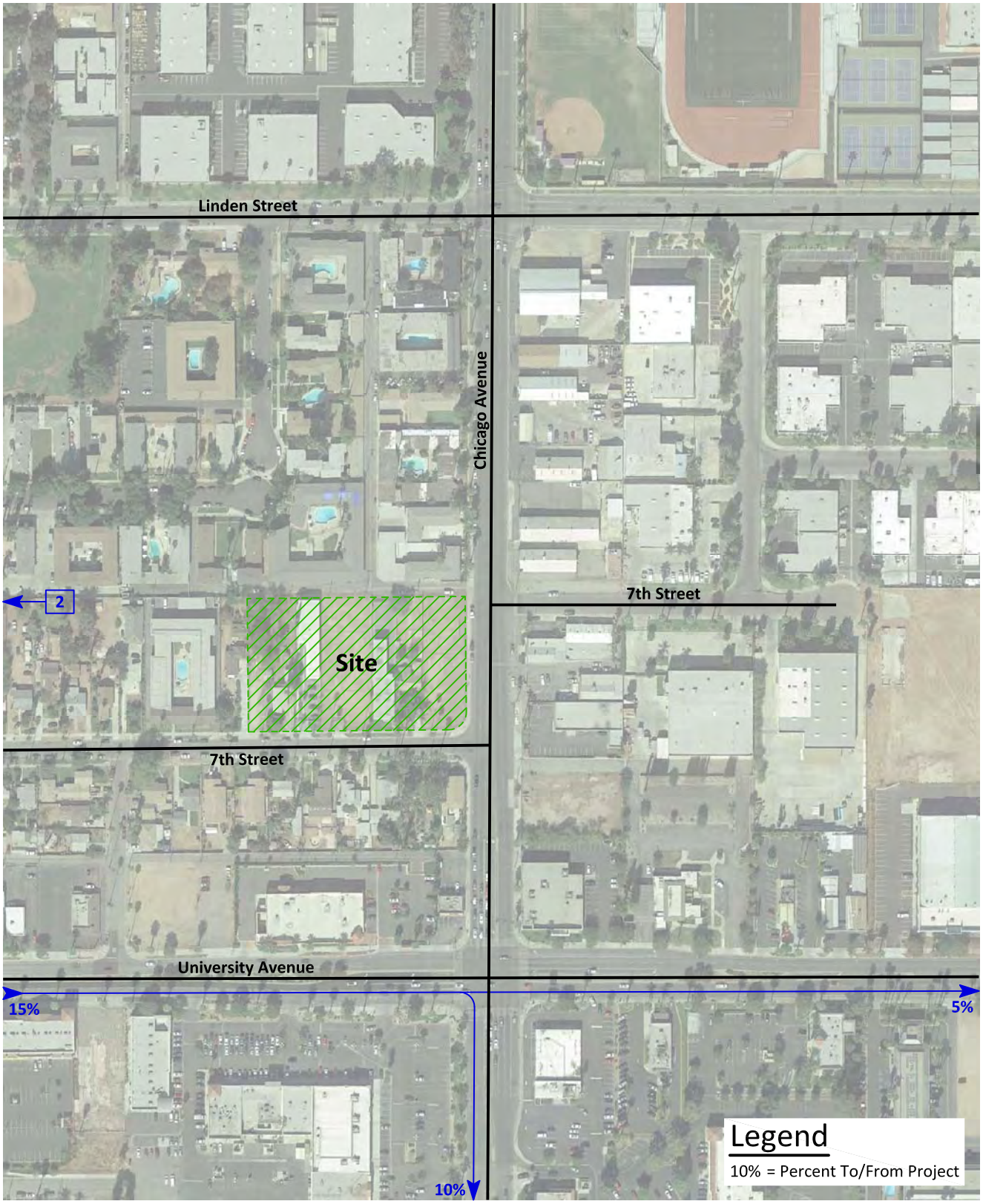

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Figure 24
Other Development Traffic Analysis Zone 3 Trip Distribution

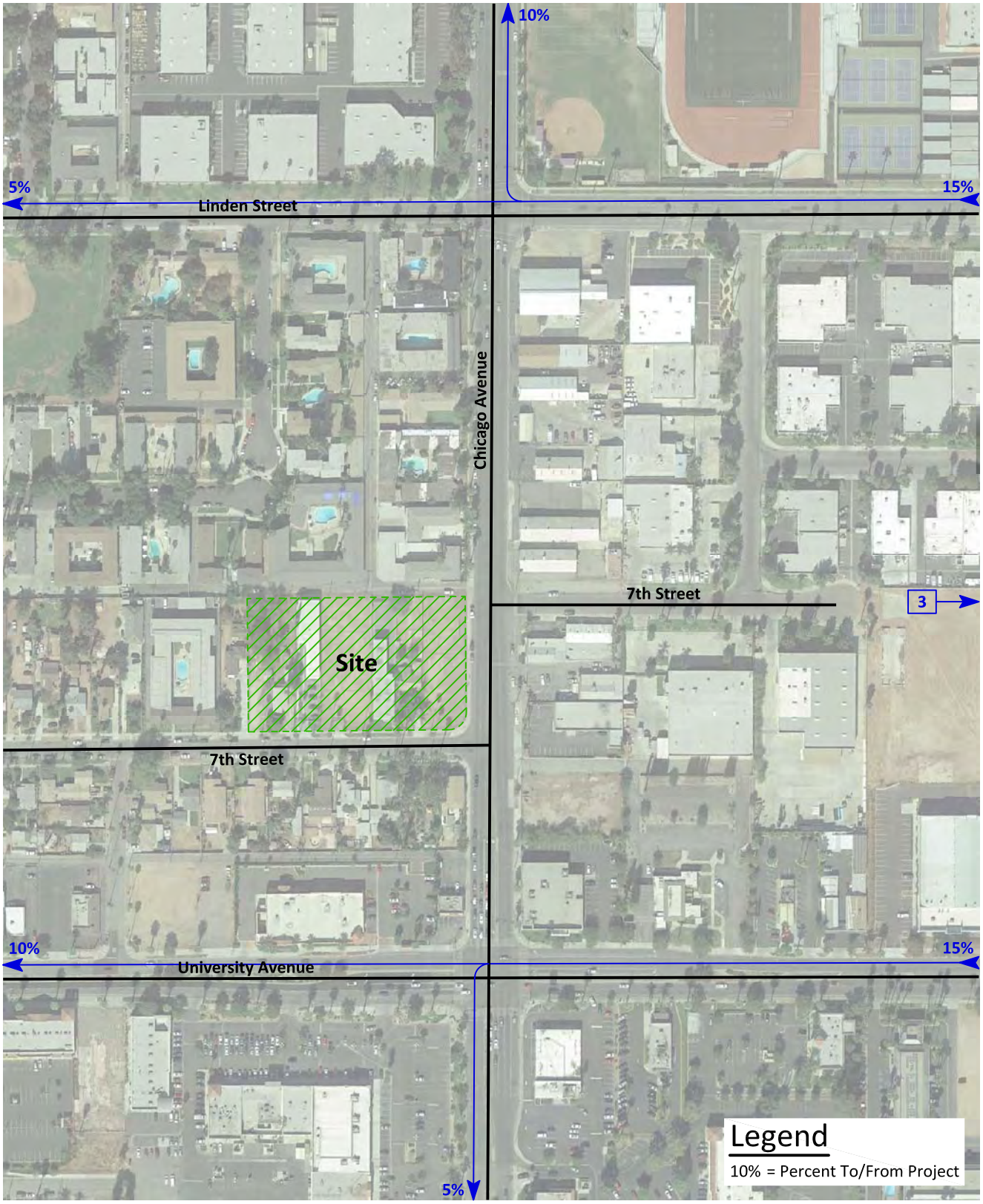

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Figure 25
Other Development Average Daily Traffic Volumes

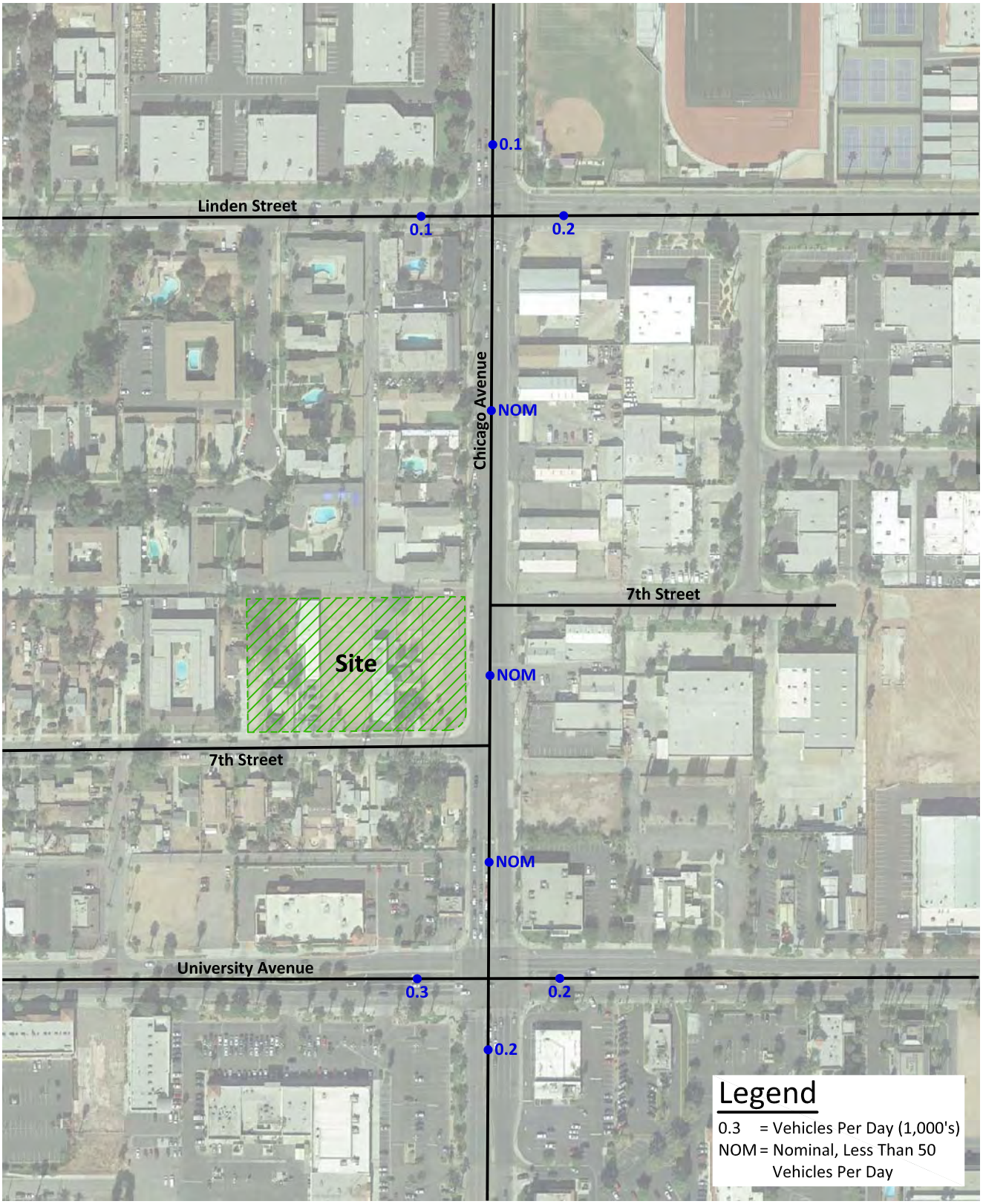


Figure 26
Other Development
Morning Peak Hour Intersection Turning Movement Volumes

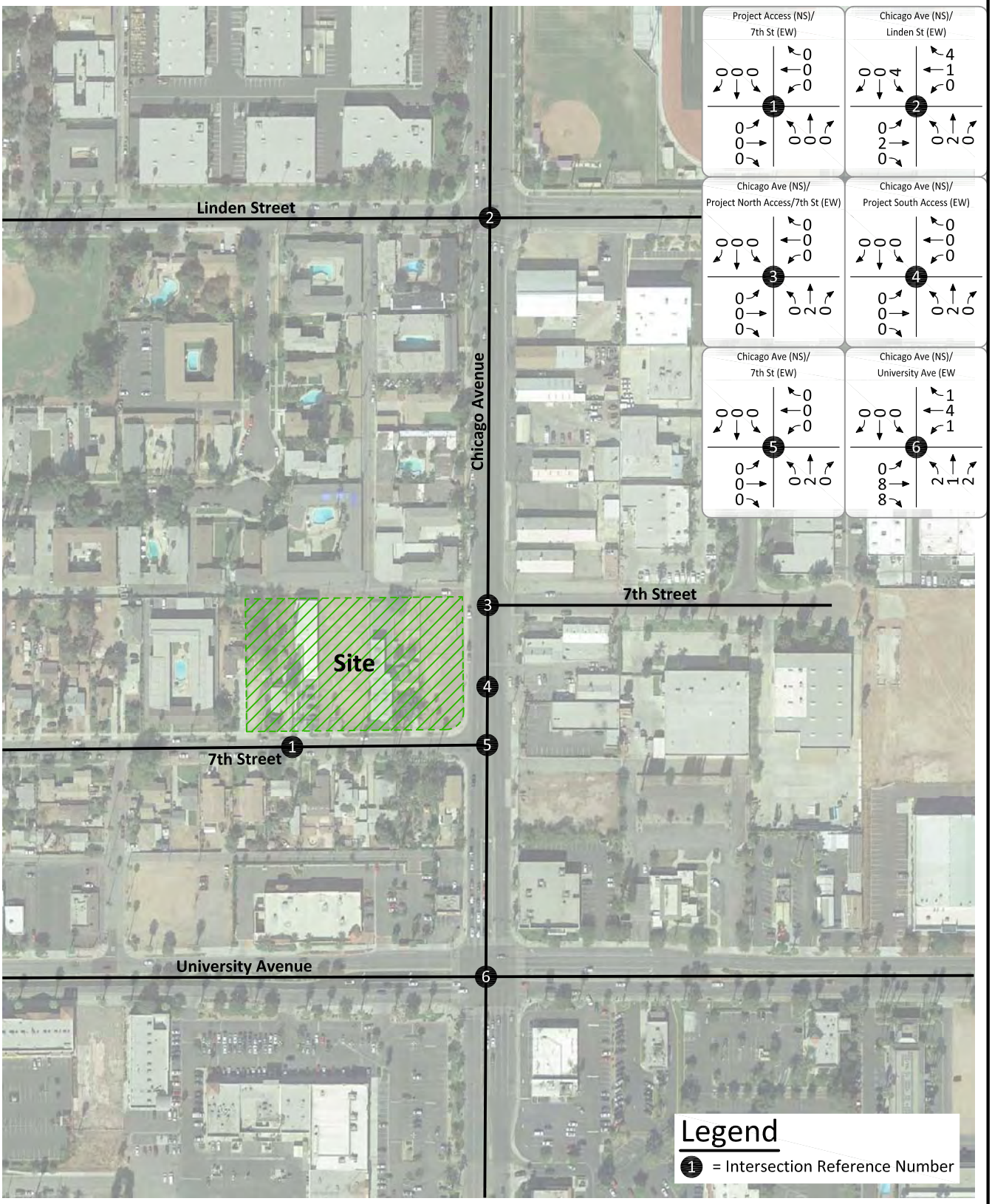


Figure 27
Other Development
Evening Peak Hour Intersection Turning Movement Volumes

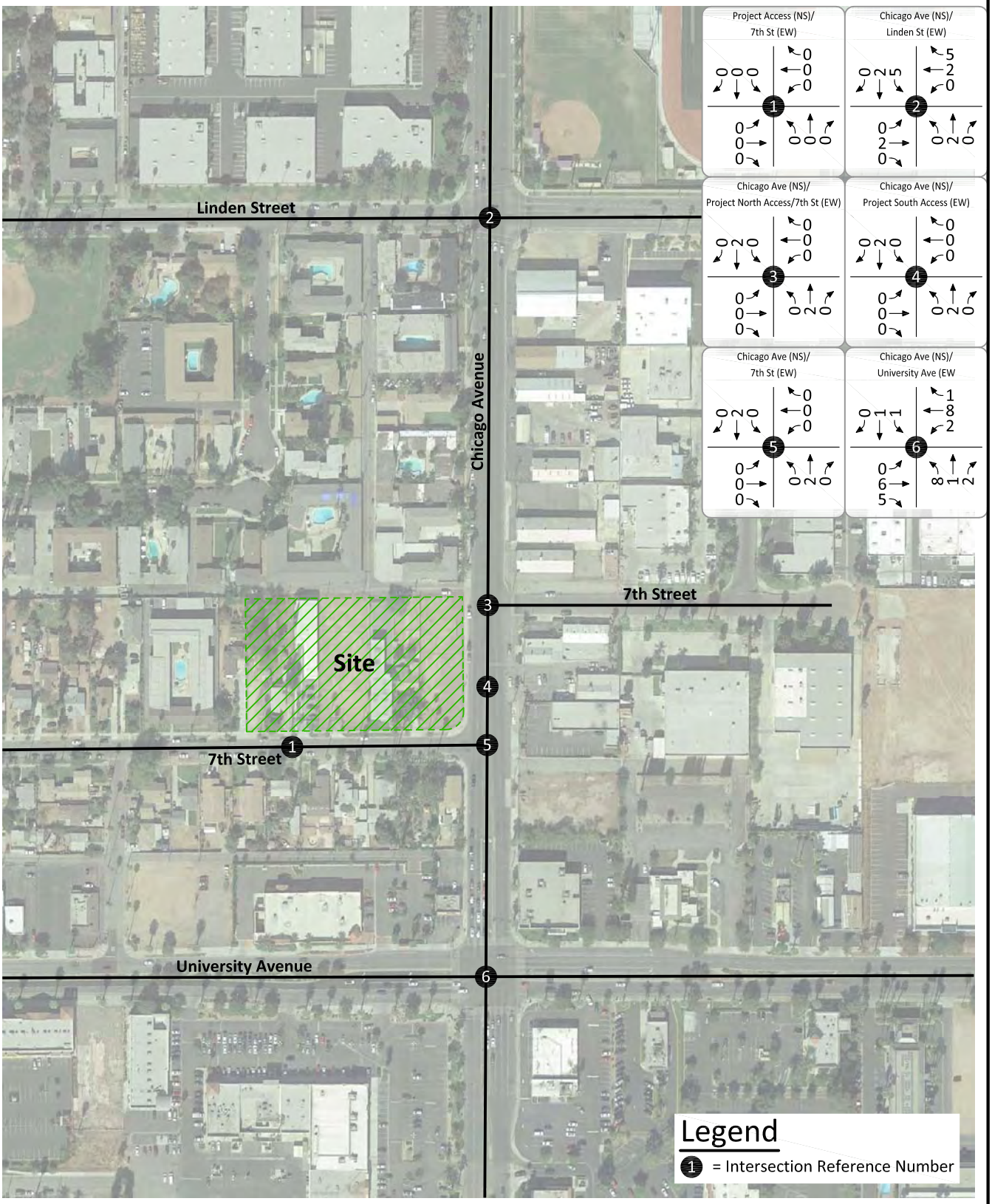


Figure 28
Opening Year (2020) Without Project Average Daily Traffic Volumes

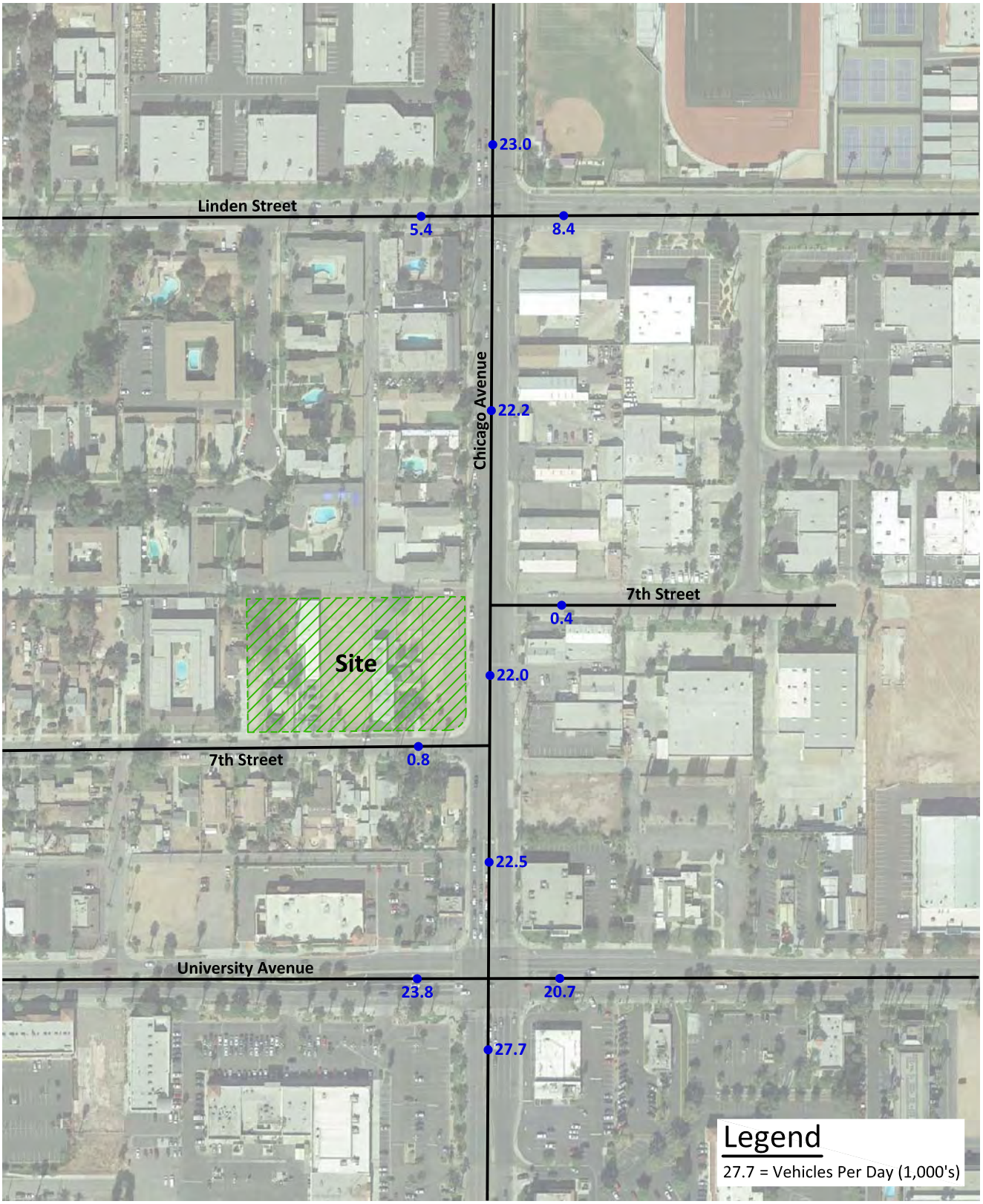


Figure 29
Opening Year (2020) With Project Average Daily Traffic Volumes

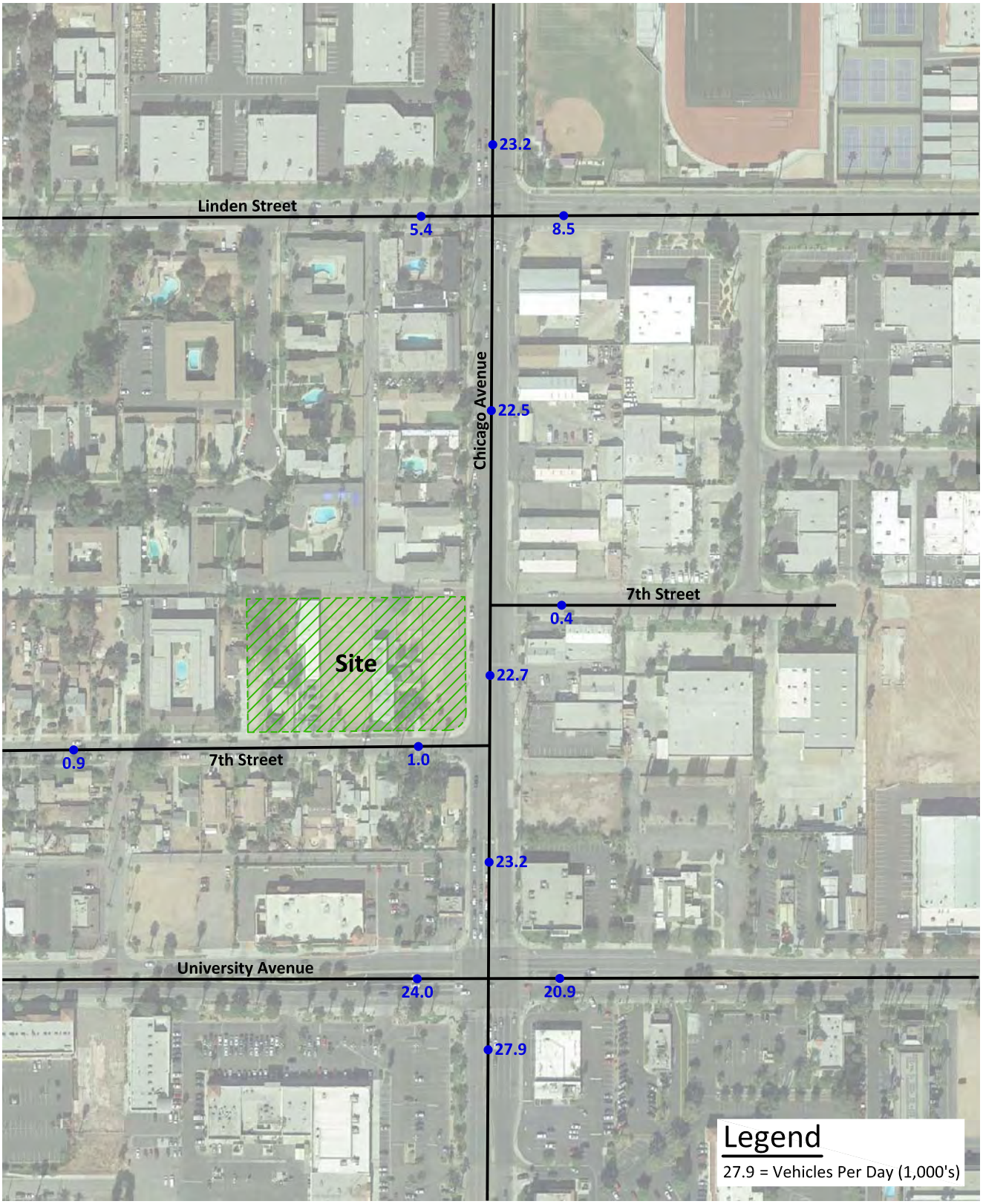


Figure 30
Opening Year (2020) Without Project
Morning Peak Hour Intersection Turning Movement Volumes

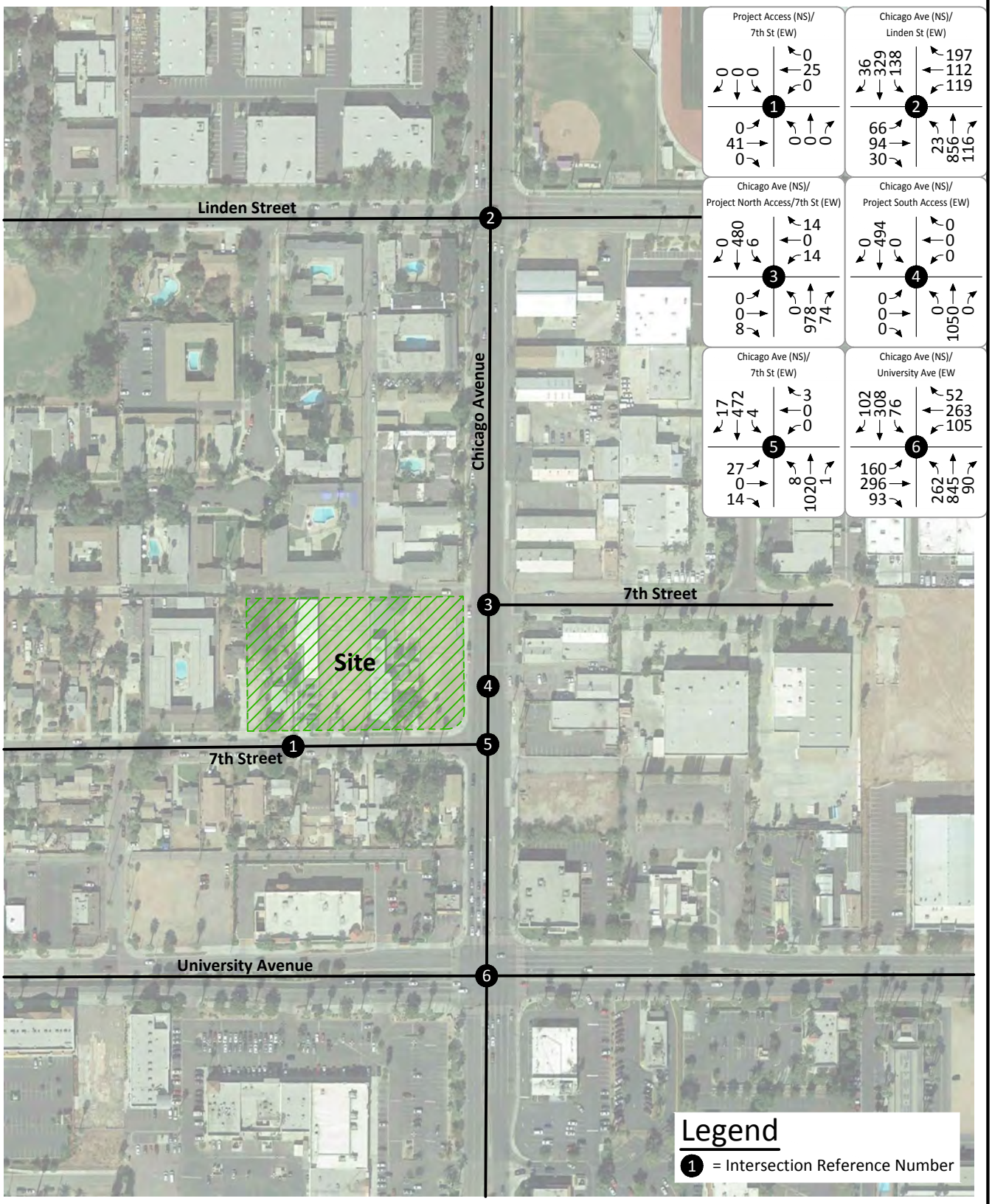


Figure 31
Opening Year (2020) Without Project
Evening Peak Hour Intersection Turning Movement Volumes

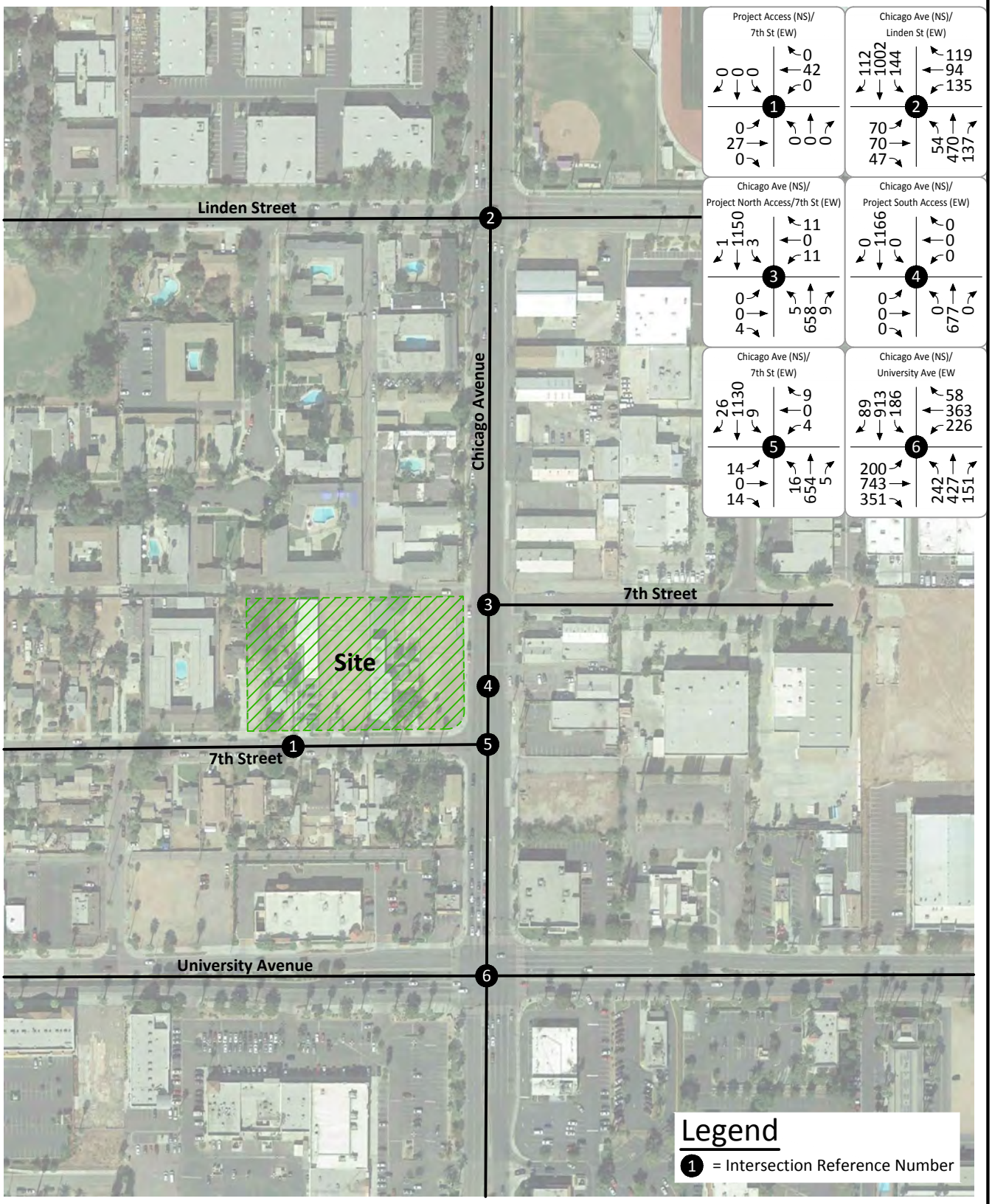


Figure 32
Opening Year (2020) With Project
Morning Peak Hour Intersection Turning Movement Volumes

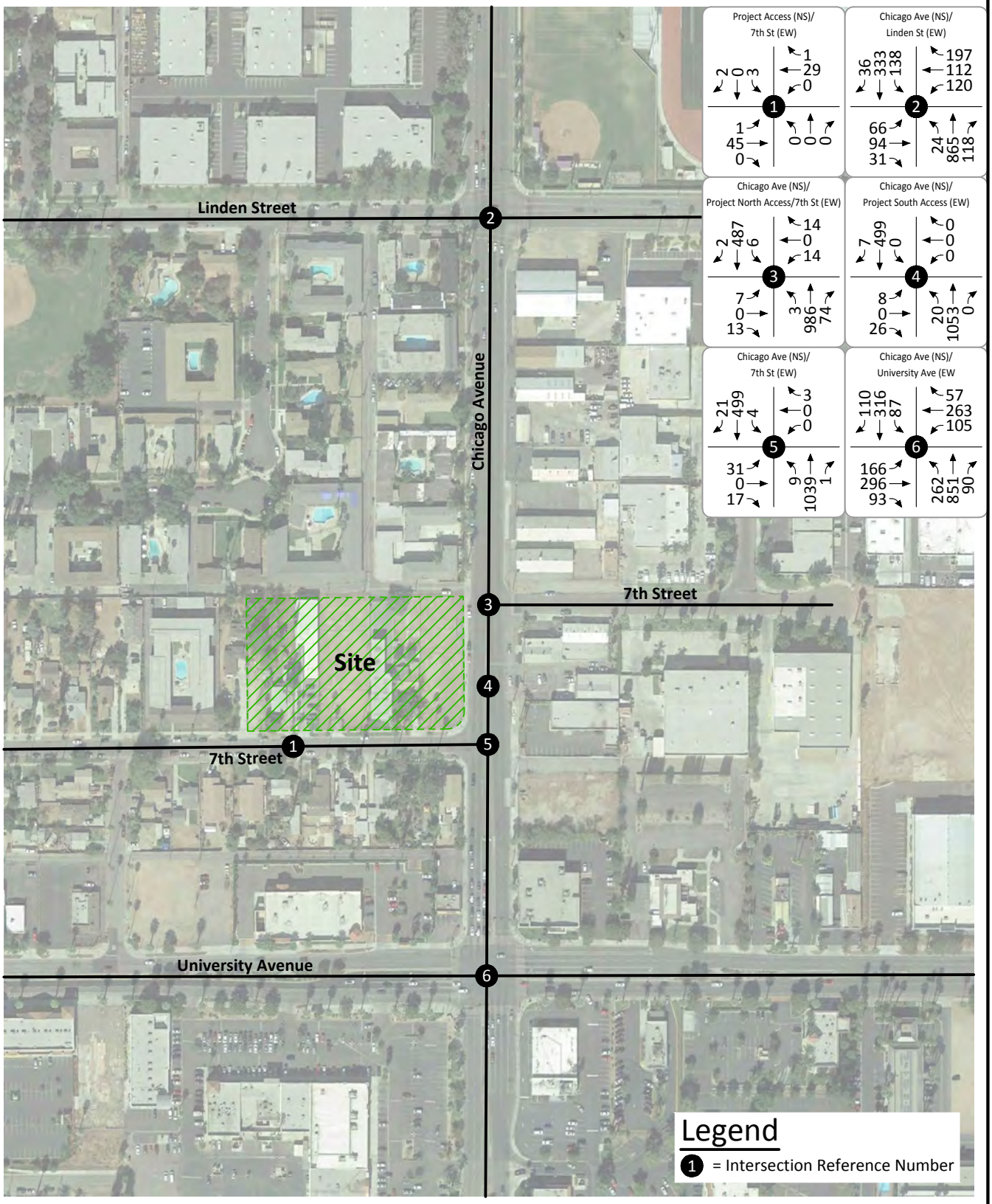
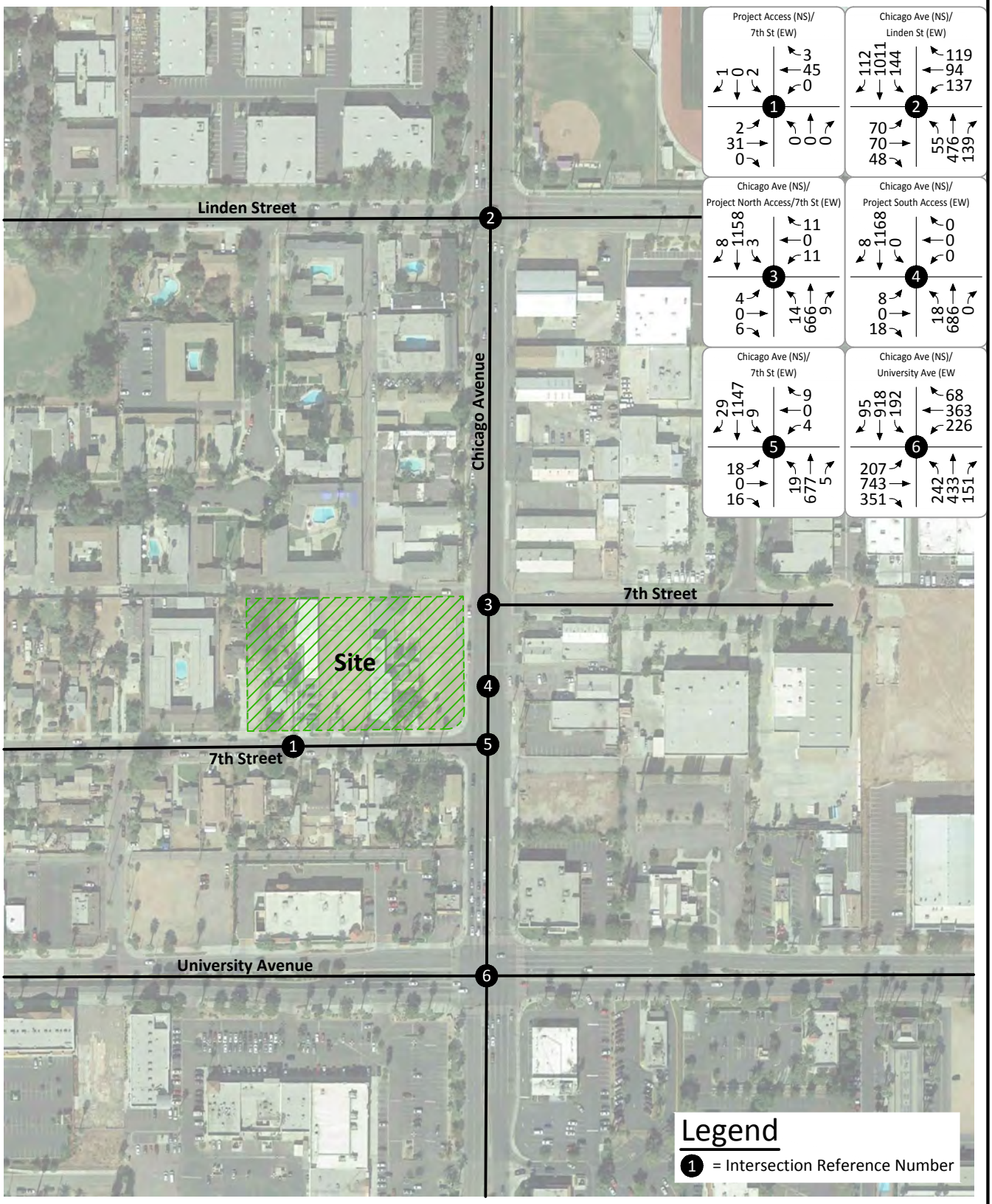


Figure 33
Opening Year (2020) With Project
Evening Peak Hour Intersection Turning Movement Volumes



VIII. BUILDOUT YEAR (2025) TRAFFIC CONDITIONS

Figures 34 to 39 illustrate the Buildout Year (2025) traffic conditions.

A. Method of Projection

A Buildout Year (2025) analysis has been included as the project is undertaking a General Plan Amendment.

To assess Buildout Year traffic conditions, existing traffic volumes are combined with areawide growth and other development trips. The Buildout Year for analysis purposes in this report is 2025.

To account for areawide growth on roadways, traffic volumes have been calculated based on a "conservative" 2.0 percent annual growth rate of existing traffic volumes over the seven (7) year period.

B. Buildout Year (2025) Average Daily Traffic Volumes

The Buildout Year (2025) Without Project average daily traffic volumes are as illustrated on Figure 34 and Buildout Year (2025) With Project average daily traffic volumes are as illustrated on Figure 35.

C. Buildout Year (2025) Intersection Delay

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D). To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection.

The delay and Level of Service for Buildout Year (2025) Without Project traffic conditions have been calculated and are shown in Table 8. Buildout Year (2025) Without Project morning and evening peak hour intersection turning movement volumes are shown on Figures 36 and 37, respectively.

For Buildout Year (2025) Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
- Project North Access/7th Street (EW) - #3
- 7th Street (EW) - #5

The study intersections are projected to operate at acceptable Levels of Service during the peak hours for Buildout Year (2025) Without Project traffic conditions, with improvements.

The delay and Level of Service for Buildout Year (2025) With Project traffic conditions have been calculated and are shown in Table 7. Buildout Year (2025) With Project morning and evening peak hour intersection turning movement volumes are shown on Figures 38 and 39, respectively.

For Buildout Year (2025) With Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
- Project North Access/7th Street (EW) - #3
- Project South Access (EW) - #4
- 7th Street (EW) - #5

The study intersection are projected to operate at acceptable Levels of Service during the peak hours for Buildout Year (2025) With Project traffic conditions, with improvements.

D. Significant Transportation Impact

The City of Riverside allows Level of Service D to be used as a maximum acceptable threshold for the study intersections.

A significant impact occurs at a study intersection when the addition of project generated trips causes either peak hour Level of Service to degrade from acceptable Level of Service (A thru D) to unacceptable Level of Service (E or F) or peak hour delay to increase as follows:

Level of Service A/B	=	By 10.0 seconds
Level of Service C	=	By 8.0 seconds
Level of Service D	=	By 5.0 seconds
Level of Service E	=	By 2.0 seconds
Level of Service F	=	By 1.0 seconds

As shown in Table 10, the project site does significantly impact the following study intersections for Buildout Year (2025) With Project traffic conditions, without improvements:

Chicago Avenue (NS) at:
- Project North Access/7th Street (EW) - #3
- Project South Access (EW) - #4
- 7th Street (EW) - #5

As shown in Table 10, the project site does <u>not</u> significantly impact the study intersections for Buildout Year (2025) With Project traffic conditions, with improvements. The recommended mitigation measure is an extension of the painted north-south two-way left turn median on Chicago Avenue from its occurrence south of the project, to the project's north boundary. Figure 41 exhibits a conceptual striping plan for these improvements. The existing on-street parking would remain.

E. Fair Share Analysis

Table 11 exhibits the recommended mitigation measures and includes the fair share analysis. The project's pro-rata share traffic contribution has also been calculated for the Buildout Year (2025) With Project traffic scenario at the impacted intersections. The pro rata contribution has been calculated based on the project peak hour traffic contributed to the improvement location relative to the total new peak hour Buildout Year (2025) With Project traffic volume.

Table 8

Buildout Year (2025) Without Project Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	31.5-C	20.3-C
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	57.2-F	79.2-F
- With Improvements[4]	CSS	**1**	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	26.0-D	28.6-D
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	52.7-F	97.6-F
- With Improvements[4]	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	24.5-C	31.5-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	23.2-C	44.7-D

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

[2] Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

[4] Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Table 9

Buildout Year (2025) With Project Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Project Access (NS) at:															
7th Street (EW) - #1	**CSS**	0	0	0	**0.5**	0	**0.5**	0.5	0.5	0	0	0.5	0.5	9.0-A	9.0-A
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	31.8-C	20.5-C
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	59.7-F	86.0-F
- With Improvements[4]	CSS	**1**	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	26.6-D	29.5-D
Project South Access (EW) - #4	**CSS**	0.5	1.5	0	0	2	d	**0.5**	0	**0.5**	0	0	0	27.9-D	62.2-F
- With Improvements[4]	**CSS**	**1**	2	0	0	2	d	**0.5**	0	**0.5**	0	0	0	15.3-C	25.4-D
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	57.8-F	115.1-F
- With Improvements[4]	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	25.2-D	33.1-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	23.5-C	44.7-D

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

[2] Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

[4] Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Table 10

Buildout Year (2025) With Project Traffic Contribution

Intersection	Peak Hour	Buildout Year (2025)									
		Without Project		With Project							
				Without Improvements				With Improvements			
		Delay	LOS[1]	Delay	LOS	Project Impact	Significant Impact[2]	Delay	LOS	Project Impact	Significant Impact[2]
Chicago Avenue (NS) at:											
Linden Street (EW) - #2	Morning	31.5	C	31.8	C	0.3	No				
	Evening	20.3	C	20.5	C	0.2	No				
Project North Access/7th Street (EW) - #3	Morning	57.2	F	59.7	F	2.5	Yes	26.6	D	-30.6	No
	Evening	79.2	F	86.0	F	6.8	No	29.5	D	-49.7	No
7th Street (EW) - #5	Morning	52.7	F	57.8	F	5.1	Yes	25.2	D	-27.5	No
	Evening	97.6	F	115.	F	17.4	Yes	33.1	D	-64.5	No
University Avenue (EW) - #6	Morning	23.2	C	23.5	C	0.3	No				
	Evening	44.7	D	44.7	D	0.0	No				

[1] LOS = Level of Service

[2] A significant impact occurs at a study intersection when the addition of project generated trips adds 10.0 seconds of delay at an intersection operating at Level of Service A or B, 8.0 seconds of delay at an intersection operating at Level of Service C, 5.0 seconds of delay at an intersection operating at Level of Service D, 2.0 seconds of delay at an intersection operating at Level of Service E, or 1.0 seconds of delay at an intersection operating at Level of Service F.

Table 11

Recommended Intersection Mitigation Measures and Project Fair Share Contribution

Intersection	Recommended Mitigation Measure	Peak Hour	Existing Traffic Volume	Buildout Year (2025) With Project Traffic Volume	New Trips	Project Trips	Project Share of New Trips
Chicago Avenue (NS) at:							
Project North Access/7th Street (EW) - #3	Restriping to provide north-south two-way left turn median	Morning	1,511	1,772	261	32	12.3%
		Evening	1,779	2,089	310	38	12.3%
7th Street (EW) - #5	Restriping to provide north-south two-way left turn median	Morning	1,504	1,789	285	58	20.4%
		Evening	1,805	2,132	327	52	15.9%

Figure 34
Buildout Year (2025) Without Project Average Daily Traffic Volumes

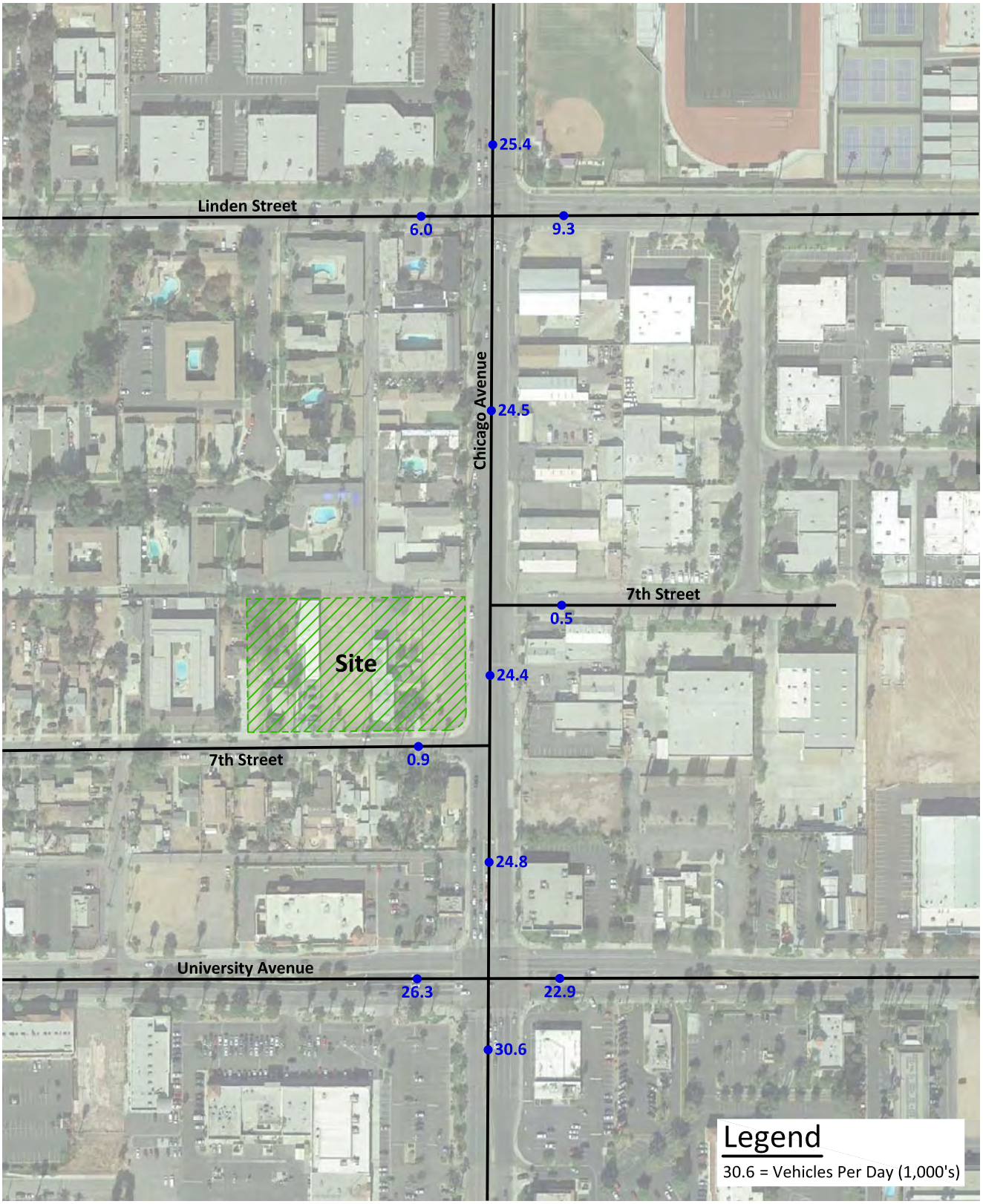


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Figure 35
Buildout Year (2025) With Project Average Daily Traffic Volumes

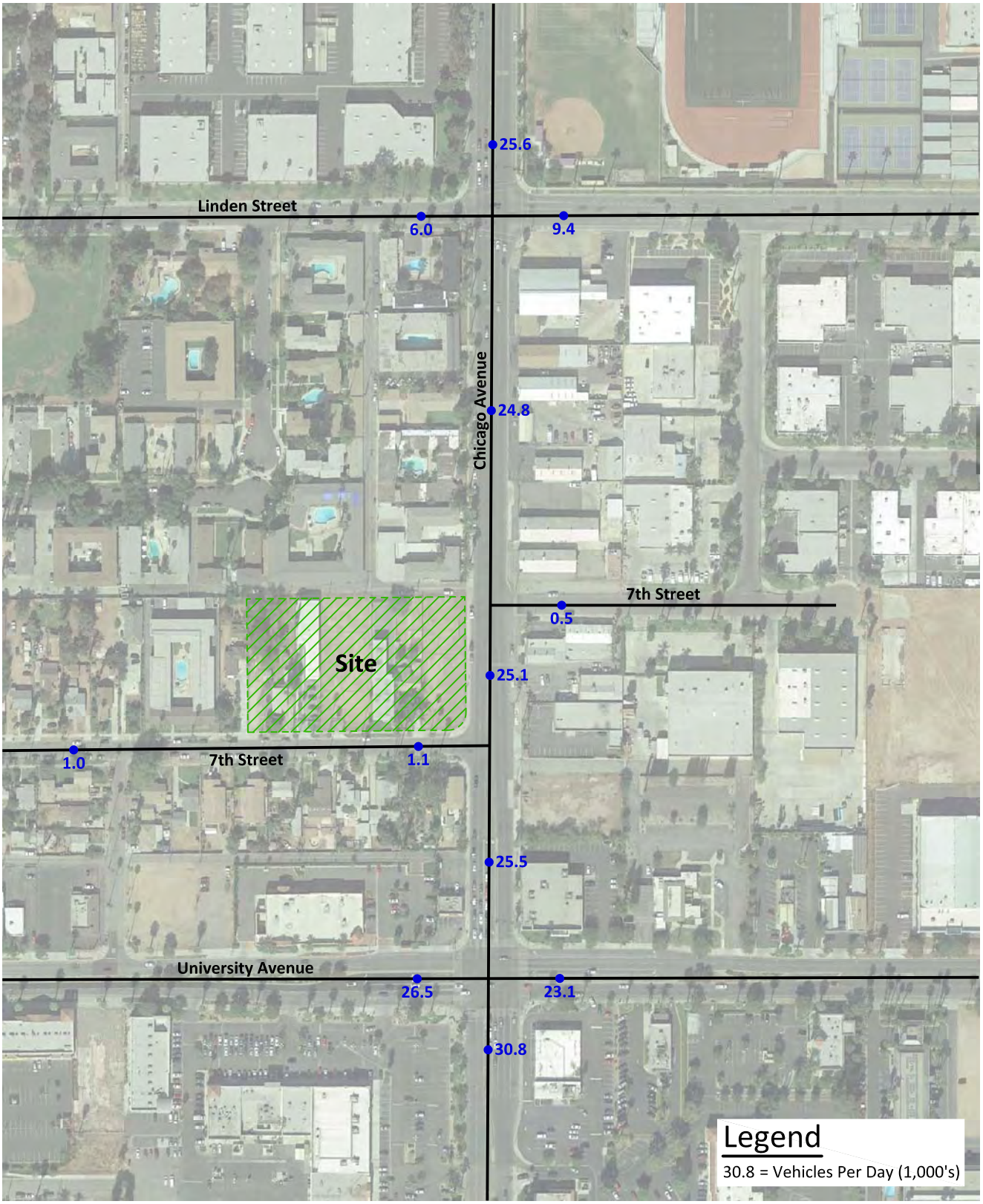

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Figure 36
Buildout Year (2025) Without Project
Morning Peak Hour Intersection Turning Movement Volumes

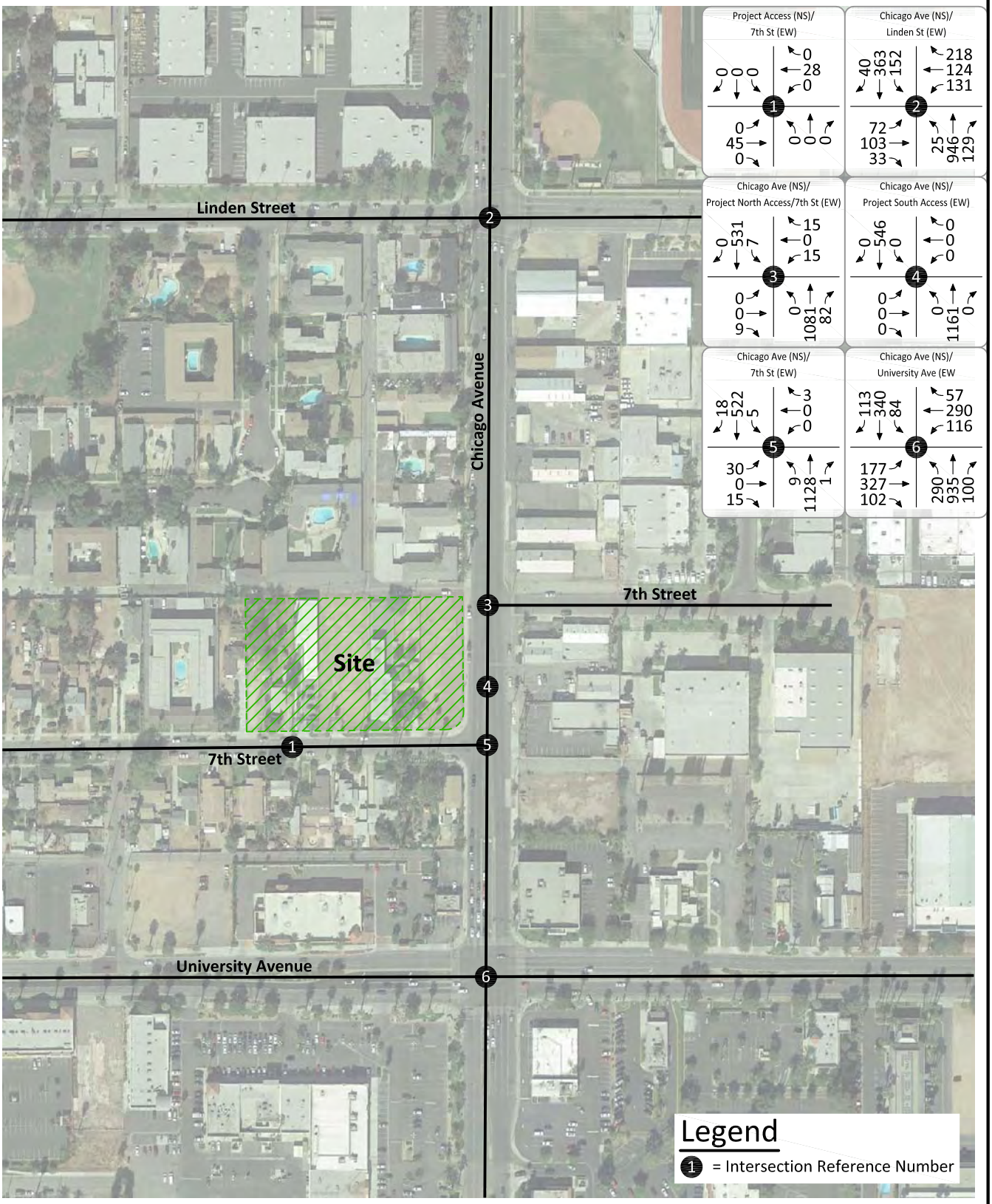

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Figure 37
Buildout Year (2025) Without Project
Evening Peak Hour Intersection Turning Movement Volumes

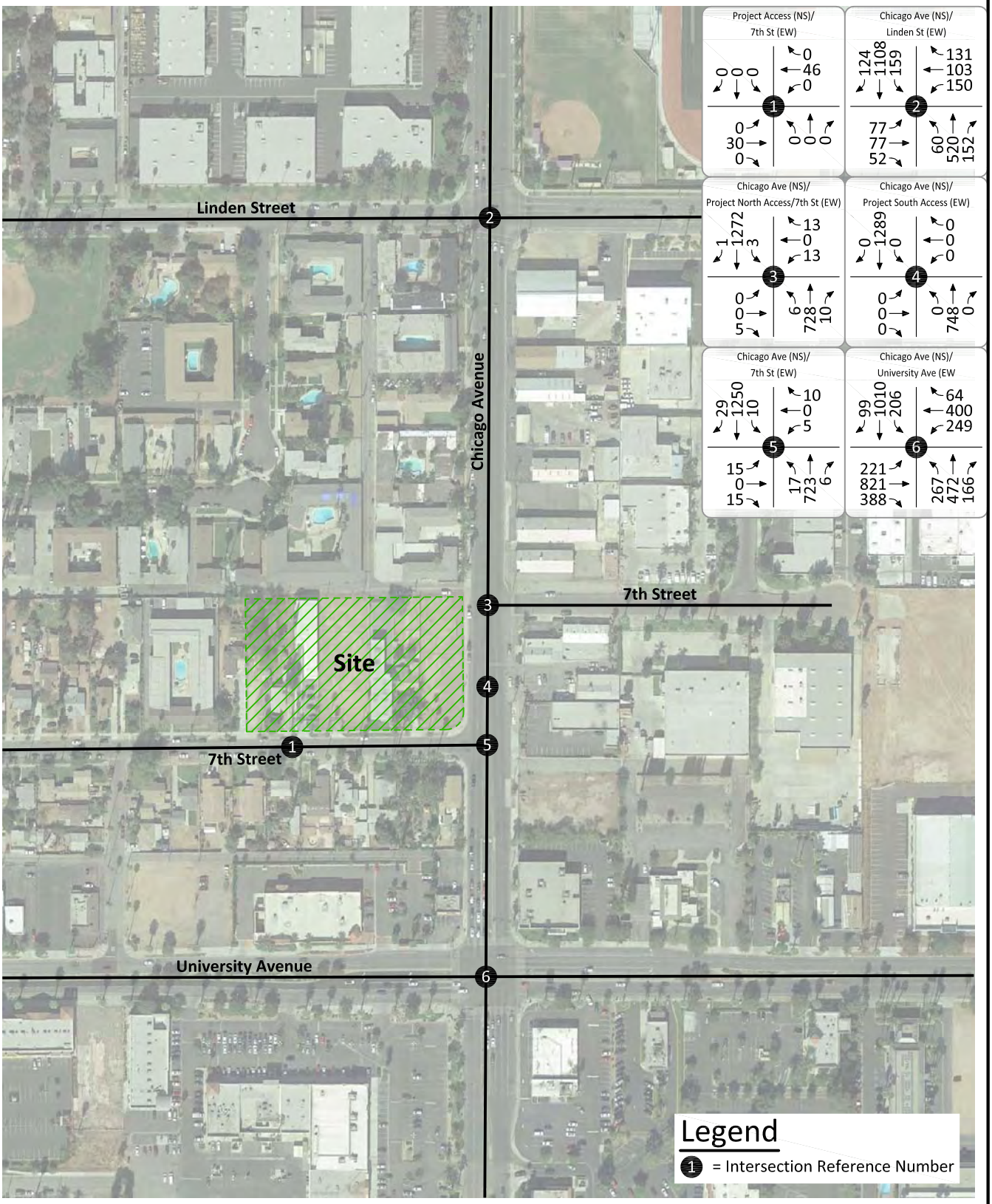

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Figure 38
Buildout Year (2025) With Project
Morning Peak Hour Intersection Turning Movement Volumes

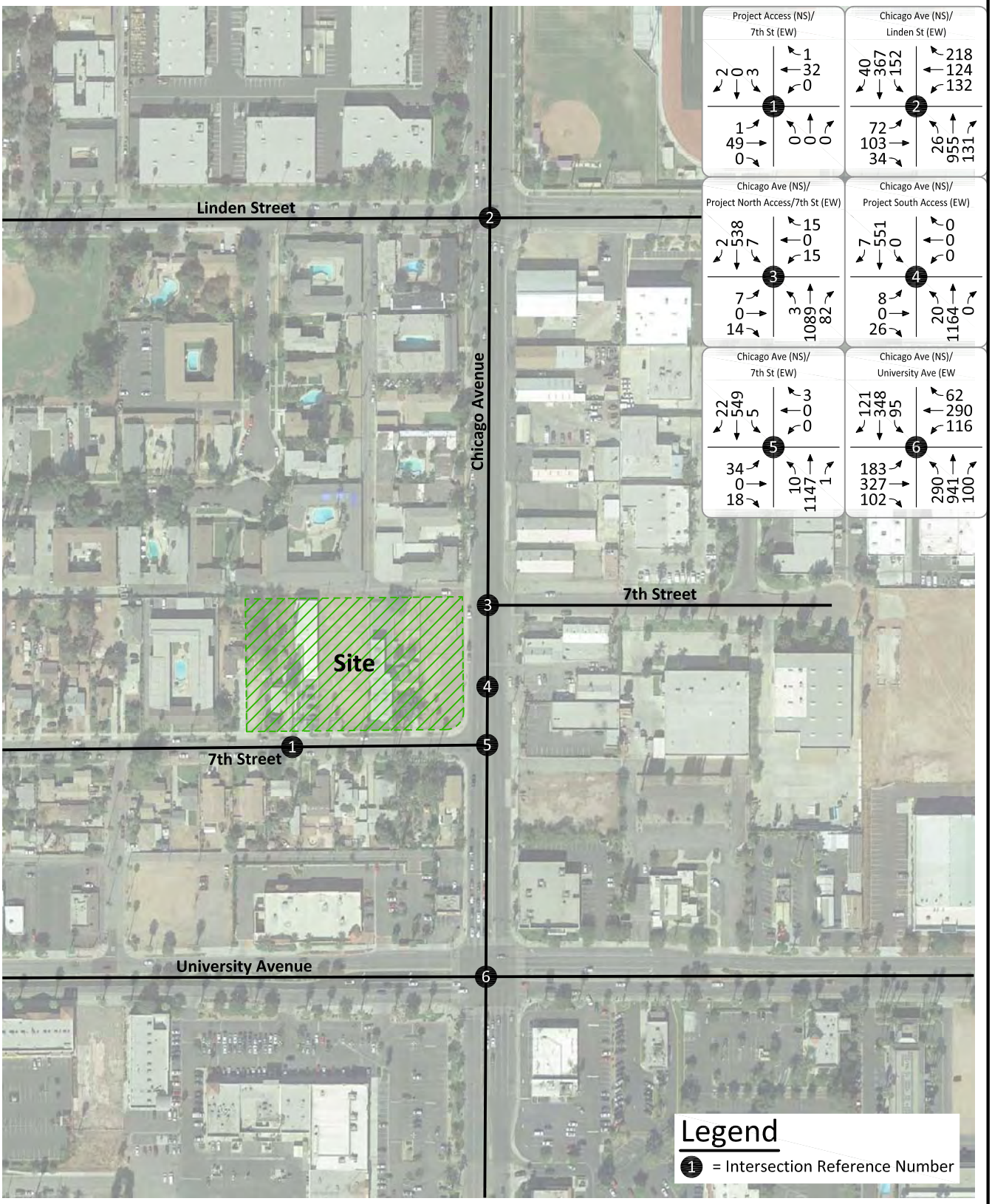

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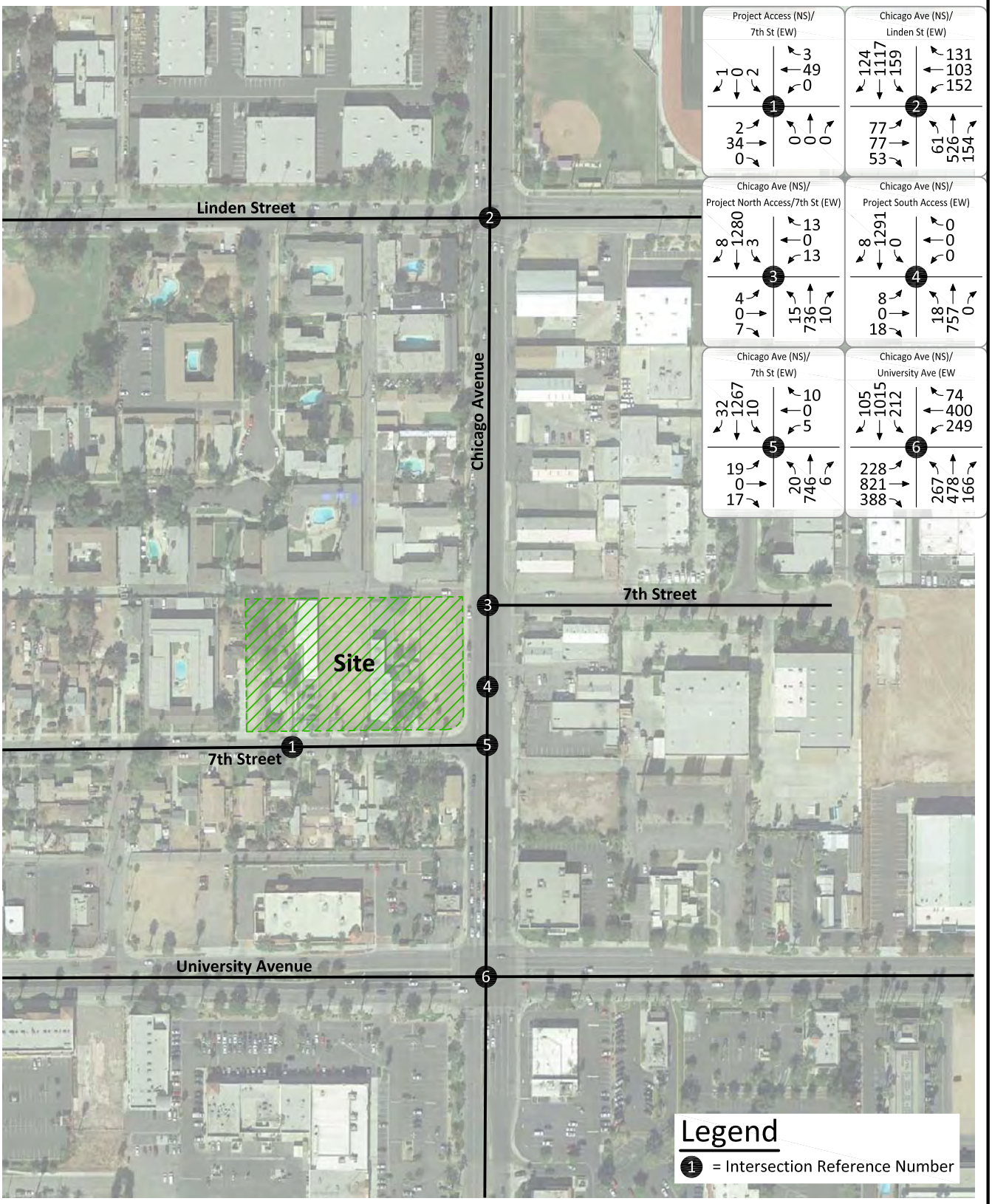
Figure 39
Buildout Year (2025) With Project
Evening Peak Hour Intersection Turning Movement Volumes



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IX. RECOMMENDATIONS

A. Site Access

The project site is proposed to provide access to Chicago Avenue and 7th Street.

B. Project Specific Roadway Improvements

1. On- Site

Site-specific circulation and access recommendations are depicted on Figure 40.

Chicago Avenue from the north project boundary to 7th Street is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

7th Street from the west project boundary to Chicago Avenue is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

Sufficient on-site parking should be provided to meet City of Riverside parking code requirements.

Sight distance at the project accesses shall comply with standard California Department of Transportation and City of Riverside sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and approved as consistent with this measure prior to issue of grading permits.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

2. Off-Site

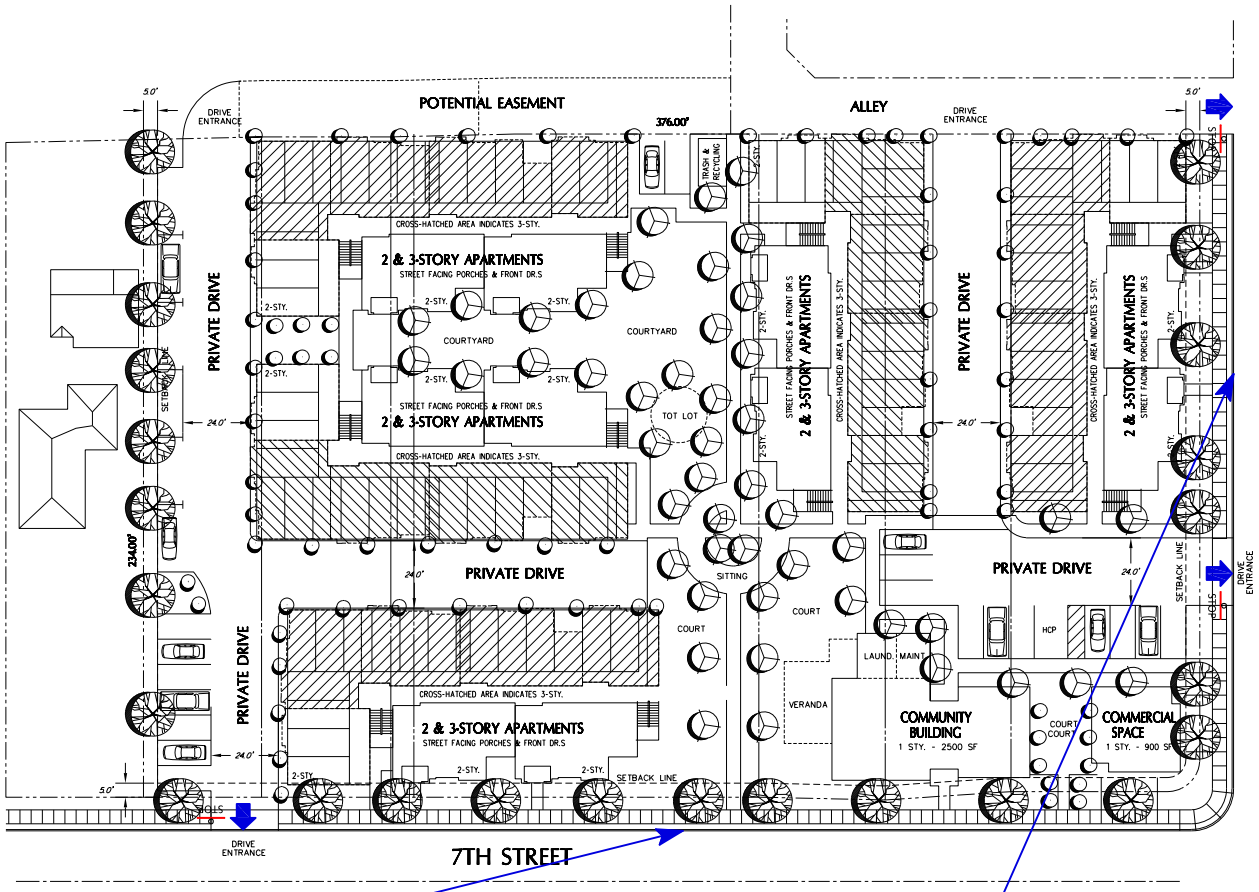
As is the case for any roadway design, the City of Riverside should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

C. Significantly Impacted Intersection Mitigation Measures

The following measure is recommended to mitigate the impact of the project on significantly impacted study area intersections:

The recommended mitigation measure for the significantly impacted study area intersections is an extension of the north-south two-way left turn median on Chicago Avenue from its occurrence south of the project, to the project's north boundary. Figure 41 exhibits a conceptual striping plan for these improvements. The existing on-street parking would need remain.

Figure 40
Circulation Recommendations



7th Street from the west project boundary to Chicago Avenue is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

Chicago Avenue from the north project boundary to 7th Street is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

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On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

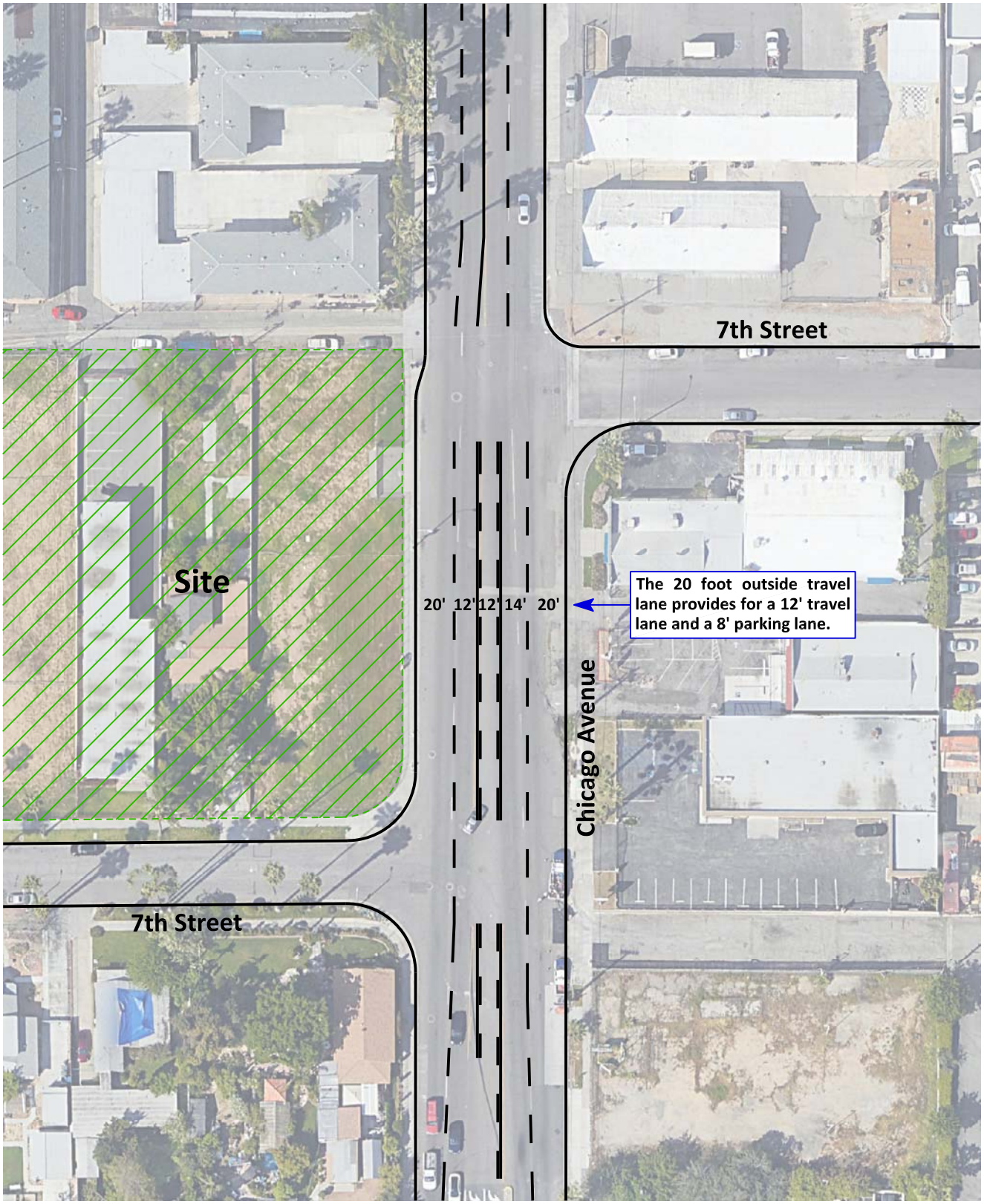
As is the case for any roadway design, the City of Riverside should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Legend

STOP = Stop Sign

= Full Access Driveway

Figure 41
Chicago Avenue Conceptual Striping Plan



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APPENDICES

Appendix A – Glossary of Transportation Terms

Appendix B – City of Riverside Scoping Agreement

Appendix C – Intersection Turning Movement Count Worksheets

Appendix D – Explanation and Calculation of Intersection Delay

APPENDIX A

Glossary of Transportation Terms

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

City of Riverside Scoping Agreement

Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the City of Riverside Public Works Traffic Engineering Division requirements for traffic impact analysis of the following project. The analysis must follow the City Traffic Impact Analysis Preparation Guide dated January 2016.

Case No. _____
Related Cases -
SP No. _____
EIR No. _____
GPA No. _____
CZ No. _____
Project Name: Entrada Housing Development
Project Location: Northwest corner of Chicago Avenue and 7th Street, in the City of Riverside
Project Description: 65 Dwelling Unit Multifamily Housing (Low-Rise) Apartments and 900 square feet of convenience market

	Consultant	Developer
Name:	Bryan Crawford, Kunzman Associates, Inc.	Nicole Sauviat Criste, Terra Nova Planning & Research, Inc.
Address:	111 Town and Country Road, Suite 34	42635 Melanie Place, Suite 101
	Orange, CA 92868	Palm Desert, CA 92211
Telephone:	714-376-0224 x 213 bryan@traffic-engineer.com	760-341-4800 x 211 ncriste@terranovaplanning.com

A. Trip Generation Source: ITE *Trip Generation Manual,* most recent edition

Existing Land Use: MDR
Existing Zoning: R-1-7000
Total Daily Trips: 990

Proposed Land Use: No Change
Proposed Zoning: No Change

	In	Out	Total
AM Trips	28	44	72
PM Trips	40	29	68

Internal Trip Allowance ☐ Yes ☒ No (% Trip Discount)
Pass-By Trip Allowance ☒ Yes ☐ No (25% - Convenience Market % Trip Discount)
(Attach additional sheet if this is a multi-use site with a breakdown of trips generated)

B. Trip Geographic Distribution: N 35 % S 55 % E 0 % W 10 %
(See attached exhibit for detailed assignment)

C. Background Traffic

Project Completion Year: 2020 Annual Ambient Growth Rate: 2.0 %
Other area projects to be included: Cumulative List obtained from City

Please contact Planning Division or use the most recently provided data

Model/Forecast methodology if required _____

D. Build-out Studies: Does this project require a Build-out Study per TIA Guidelines Section 7.2?

☐ Yes ■ No

E. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

1. Project Access (NS) at 7th Street (EW)
2. Chicago Avenue (NS) at Linden Street (EW)
3. Chicago Avenue (NS) at Project North Access/7th Street (EW)
4. Chicago Avenue (NS) at Project South Access (EW)
5. Chicago Avenue (NS) at 7th Street (EW)
6. Chicago Avenue (NS) at University Avenue (EW)
7. _____
8. _____

F. Study Roadway Segments (For Build-out Studies):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

G. Other Jurisdictional Impacts

Is this project within any other Agency's Sphere of Influence or one-mile radius of boundaries? ☐ Yes ■ No

If so, name of Jurisdiction: _____

H. Site Plan (please attach a legible 11'X17' copy)

I. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Public Works Traffic Department)

_____

_____

Recommended by:

Consultant's Representative — Date: 3/27/2018

Scoping Agreement Submitted on — Date: 3/27/2018

Scoping Agreement Resubmitted on — Date: 4/25/2018

Approved Scoping Agreement:

City of Riverside
Traffic Engineering Division — Date: 4/30/18

cc: Planning Division

Table 1

Project Trip Generation[1]

Land Use	Quantity	Units[2]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Multifamily Housing (Low-Rise)	1.00	DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32
Convenience Market	1.00	TSF	31.27	31.27	62.54	25.05	24.06	49.11	762.28
Trips Generated									
Multifamily Housing (Low-Rise)	65	DU	7	23	30	23	13	36	476
Convenience Market	0.900	TSF	28	28	56	23	22	44	686
Gross Trips Generated			35	51	86	46	35	80	1,162
Pass-By Trips Reduction									
Convenience Market (25%)[3]			-7	-7	-14	-6	-6	-12	-172
New Trip Generated			28	44	72	40	29	68	990

[1] Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codes 220 and 851.

[2] DU = Dwelling Units, TSF = Thousand Square Feet

[3] Pass-by rate percentage from the City of Riverside Public Works Department Traffic Impact Analysis Preparation Guide, January 2016.

Figure 1
Project Location Map

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Figure 2
Site Plan

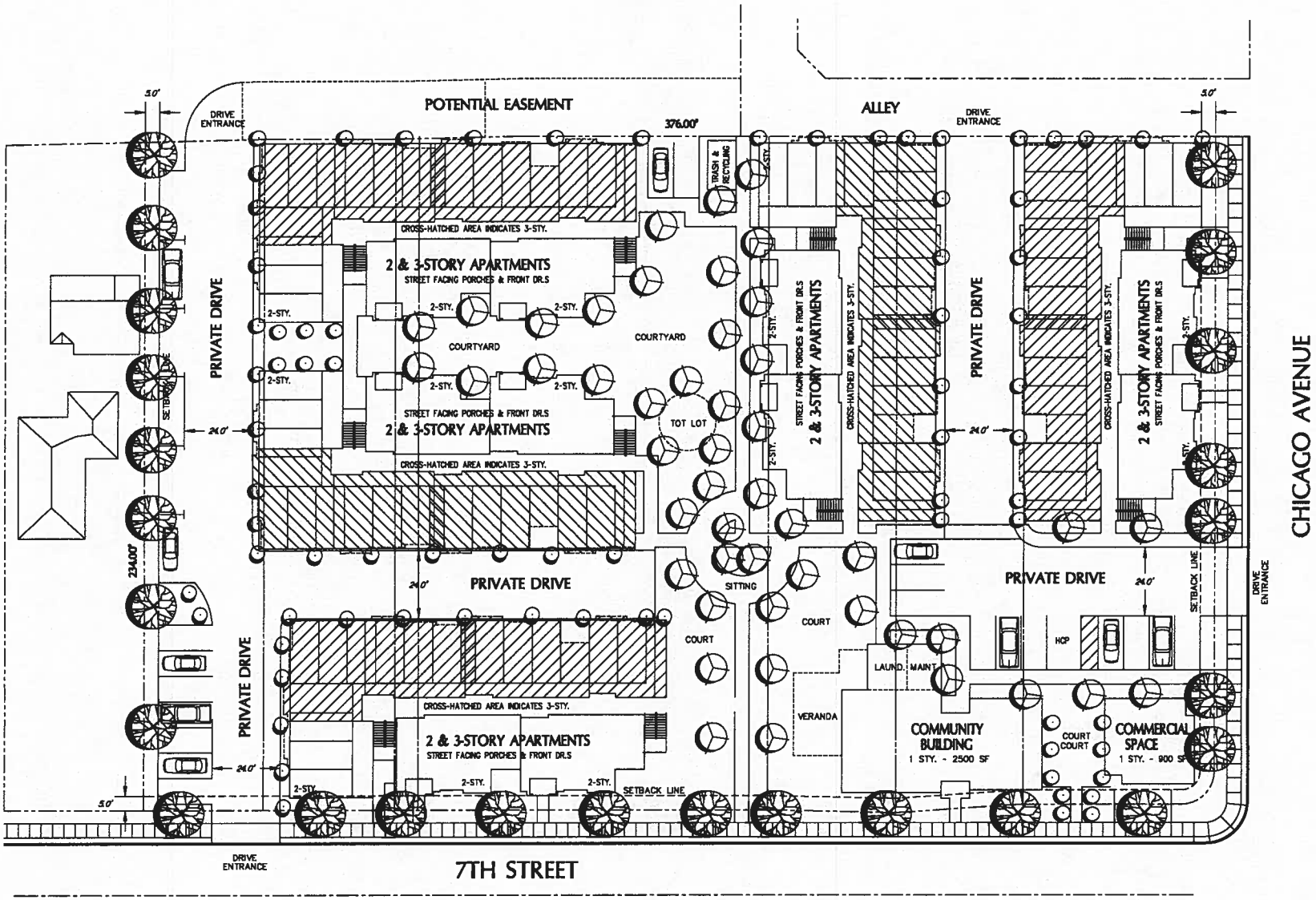

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Figure 3
Project Trip Distribution - Residential

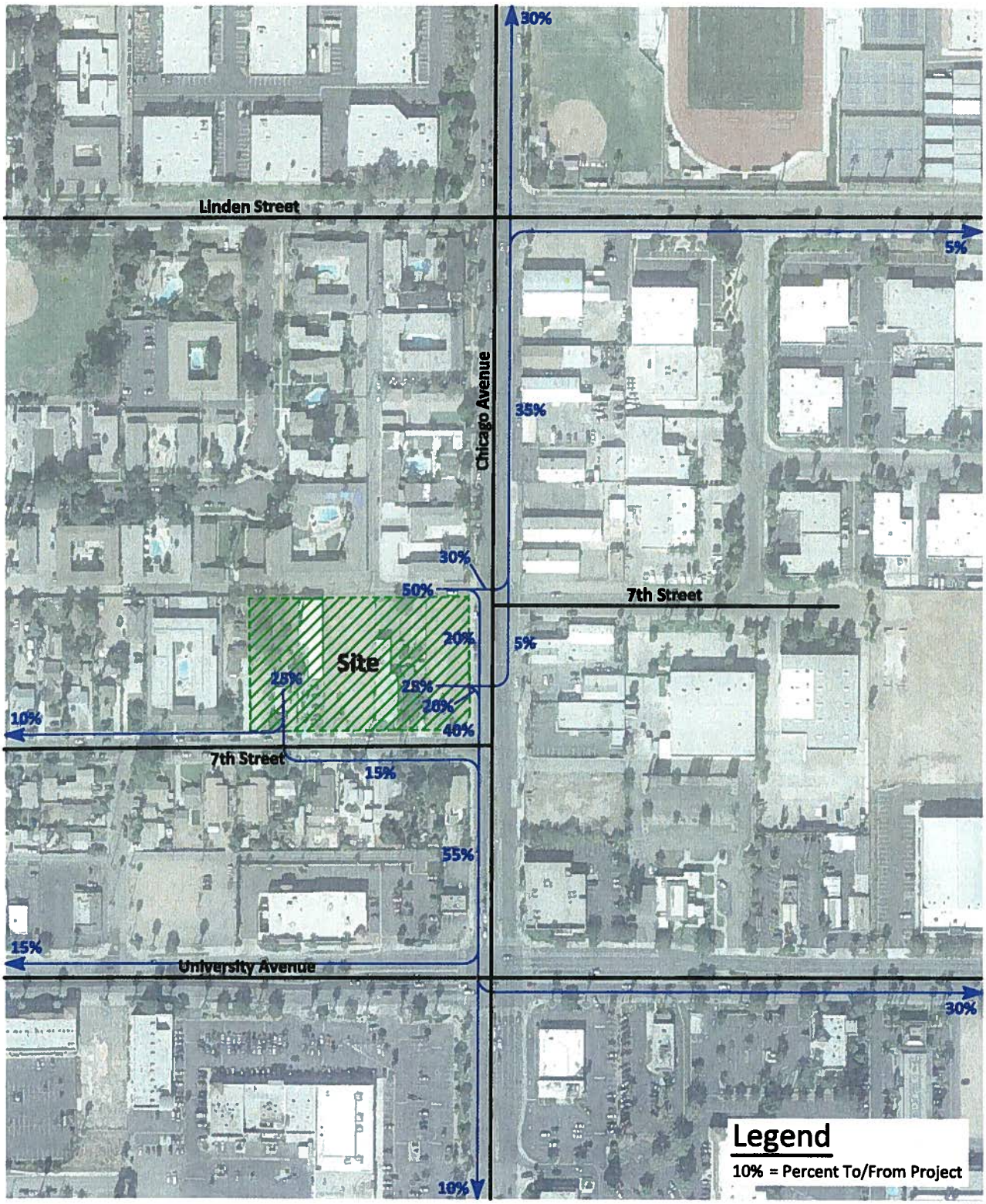

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Figure 4
Project Trip Distribution - Convenience Market

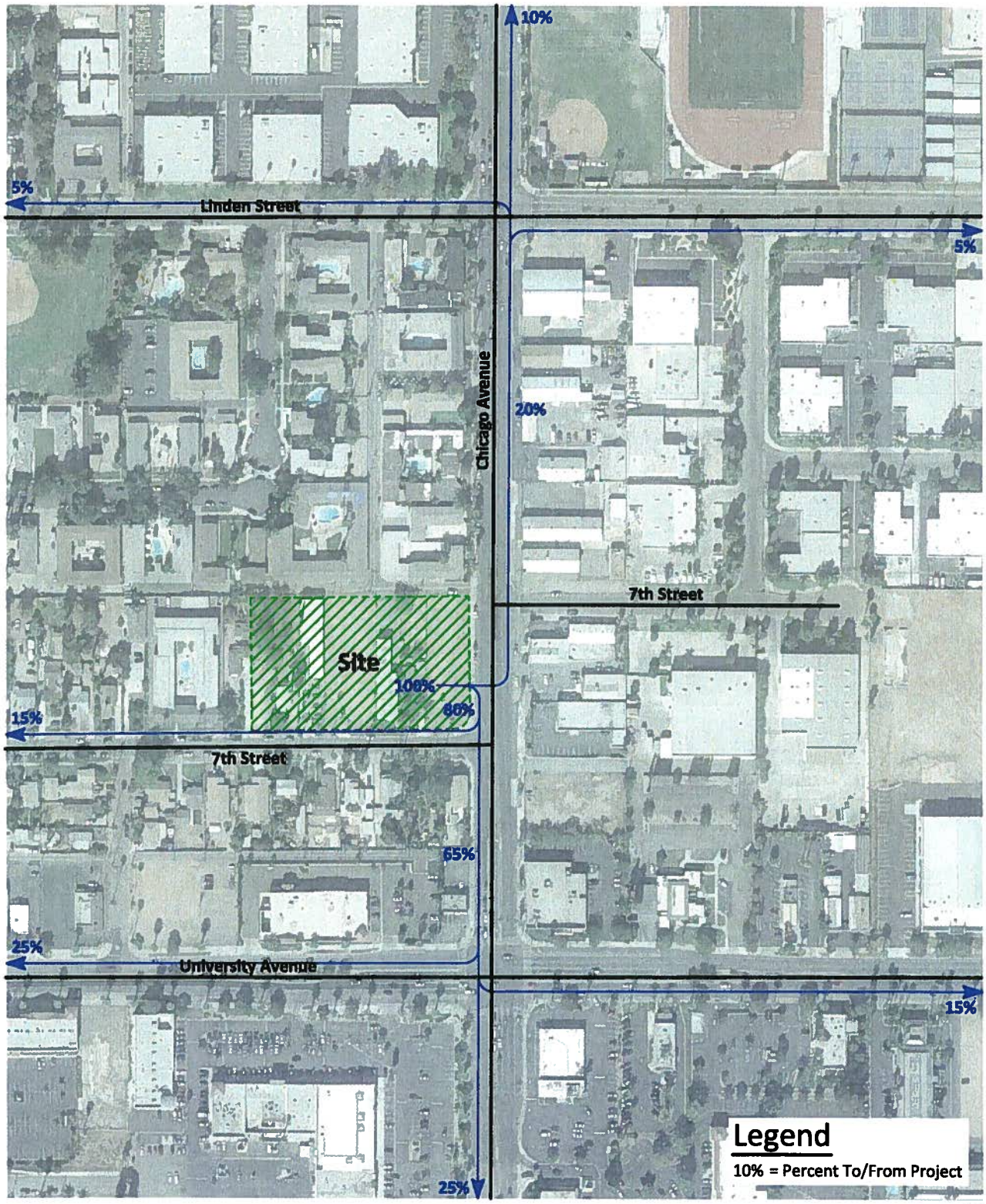

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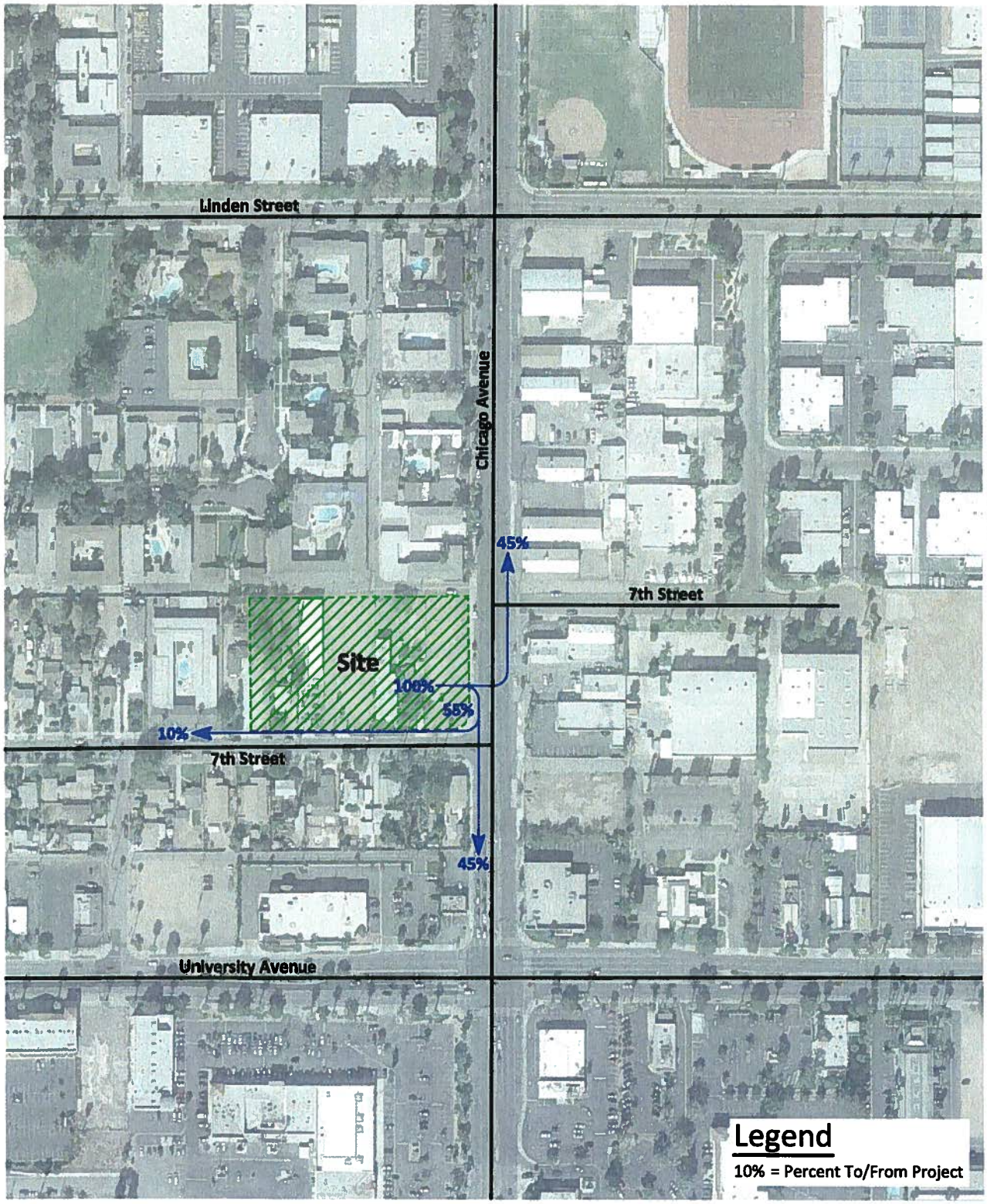
Figure 5
Pass-By Trip Distribution



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APPENDIX C

Intersection Turning Movement Count Worksheets

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Riverside	PROJECT #:	SC1691
Wed, Apr 18, 18	NORTH & SOUTH:	Chicago	LOCATION #:	1
	EAST & WEST:	Linden	CONTROL:	SIGNAL

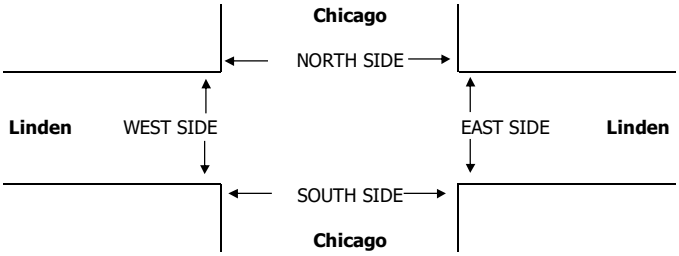
NOTES:

AM
PM
MD
OTHER
OTHER

N
◄ W
E ►
S

Dggi#X0bxuqvWx#Ch1W0xuqv

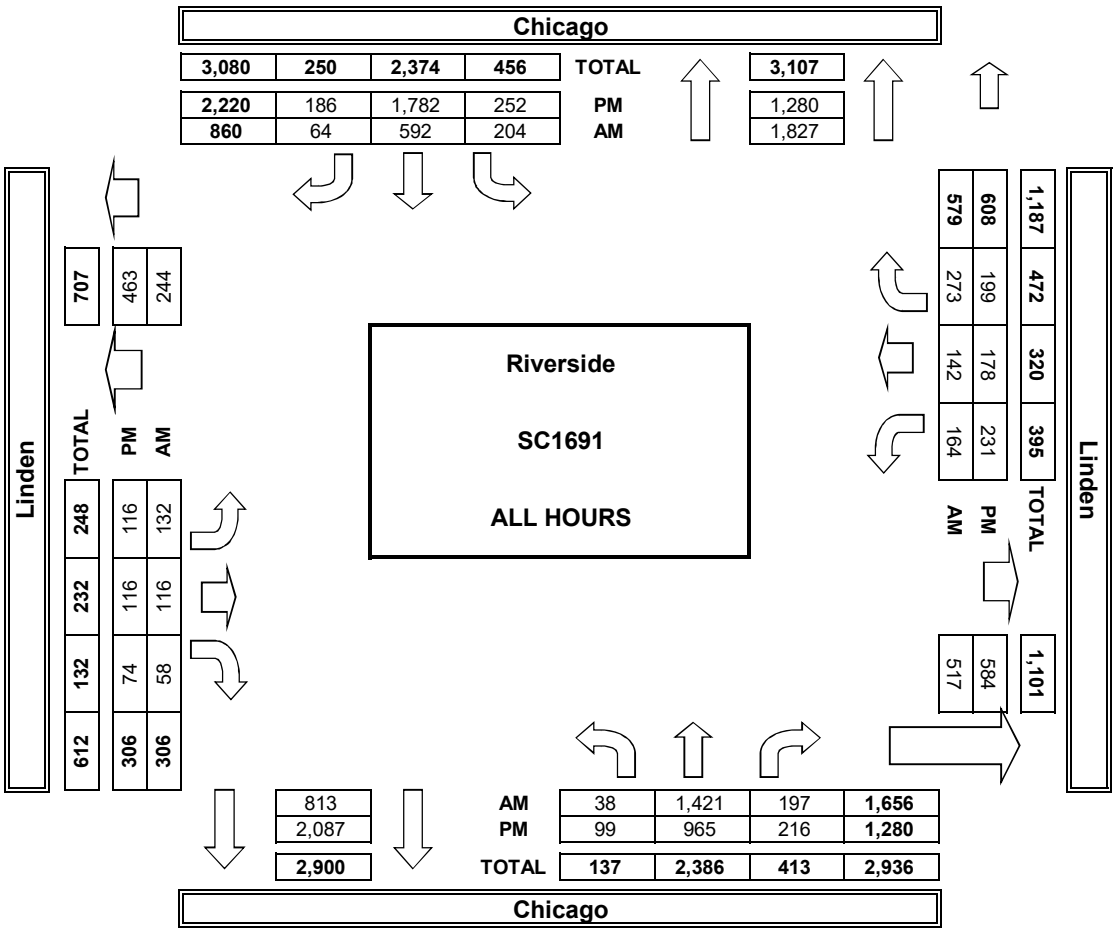
		NORTHBOUND Chicago			SOUTHBOUND Chicago			EASTBOUND Linden			WESTBOUND Linden				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	4	142	18	21	45	5	15	8	2	21	20	31	332	0	0	0	1	1
	7:15 AM	2	157	33	22	50	11	15	13	9	22	9	27	370	0	0	0	0	0
	7:30 AM	6	177	34	33	54	7	11	40	8	31	22	42	465	0	0	0	0	0
	7:45 AM	6	201	44	56	83	6	13	35	6	53	44	79	626	0	0	0	0	0
	8:00 AM	6	226	24	24	77	9	16	12	6	25	38	55	518	0	0	0	0	0
	8:15 AM	4	217	10	16	102	13	23	1	9	5	3	10	413	0	0	0	0	0
	8:30 AM	5	165	22	17	91	5	25	4	9	6	4	17	370	0	0	0	0	0
	8:45 AM	5	136	12	15	90	8	14	3	9	1	2	12	307	0	1	0	0	1
	VOLUMES	38	1,421	197	204	592	64	132	116	58	164	142	273	3,401	0	1	0	1	2
	APPROACH %	2%	86%	12%	24%	69%	7%	43%	38%	19%	28%	25%	47%						
	APP/DEPART	1,656	/	1,827	860	/	813	306	/	517	579	/	244	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	22	821	112	129	316	35	63	88	29	114	107	186	2,022					
	APPROACH %	2%	86%	12%	27%	66%	7%	35%	49%	16%	28%	26%	46%						
	PEAK HR FACTOR		0.933			0.828			0.763			0.578		0.808					
	APP/DEPART	955	/	1,070	480	/	459	180	/	329	407	/	164	0					
PM	4:00 PM	14	143	21	24	194	16	18	12	7	23	22	29	523	0	0	0	0	0
	4:15 PM	13	128	25	33	212	25	16	11	7	38	28	16	552	0	0	0	0	0
	4:30 PM	8	137	17	31	214	17	5	14	11	16	20	28	518	0	0	0	0	0
	4:45 PM	9	112	37	38	247	24	16	13	13	35	21	26	591	0	0	0	0	0
	5:00 PM	18	108	36	28	254	26	14	19	8	36	25	38	610	0	0	0	0	0
	5:15 PM	11	123	31	33	266	28	12	14	12	30	22	16	598	0	0	0	0	0
	5:30 PM	14	107	28	35	195	30	25	19	12	29	20	30	544	0	0	0	0	0
	5:45 PM	12	107	21	30	200	20	10	14	4	24	20	16	478	0	0	0	0	0
	VOLUMES	99	965	216	252	1,782	186	116	116	74	231	178	199	4,414	0	0	0	0	0
	APPROACH %	8%	75%	17%	11%	80%	8%	38%	38%	24%	38%	29%	33%						
	APP/DEPART	1,280	/	1,280	2,220	/	2,087	306	/	584	608	/	463	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	52	450	132	134	962	108	67	65	45	130	88	110	2,343					
	APPROACH %	8%	71%	21%	11%	80%	9%	38%	37%	25%	40%	27%	34%						
	PEAK HR FACTOR		0.961			0.920			0.790			0.828		0.960					
	APP/DEPART	634	/	627	1,204	/	1,137	177	/	331	328	/	248	0					

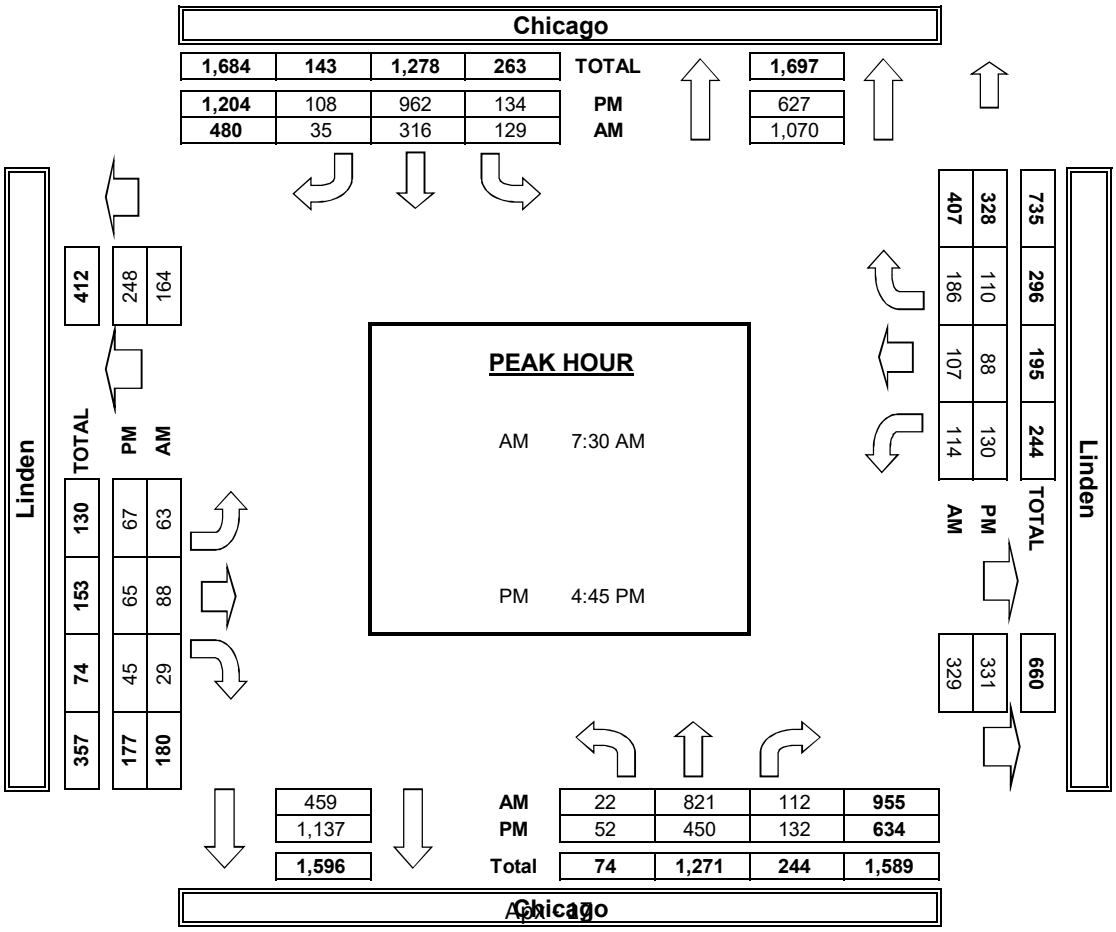


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR			7:30 AM			0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR			4:45 PM			0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Wed, Apr 18, 18	LOCATION:	Riverside	PROJECT #:	SC1691
	NORTH & SOUTH:	Chicago	LOCATION #:	2
	EAST & WEST:	7th	CONTROL:	STOP E/W

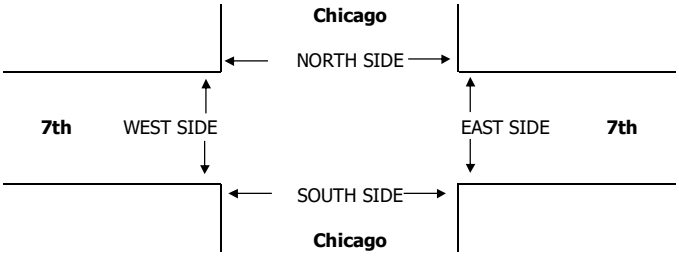
NOTES:

PM SB queue

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

Dggi#X0Wxuqv#w#Ch1#Wxuqv

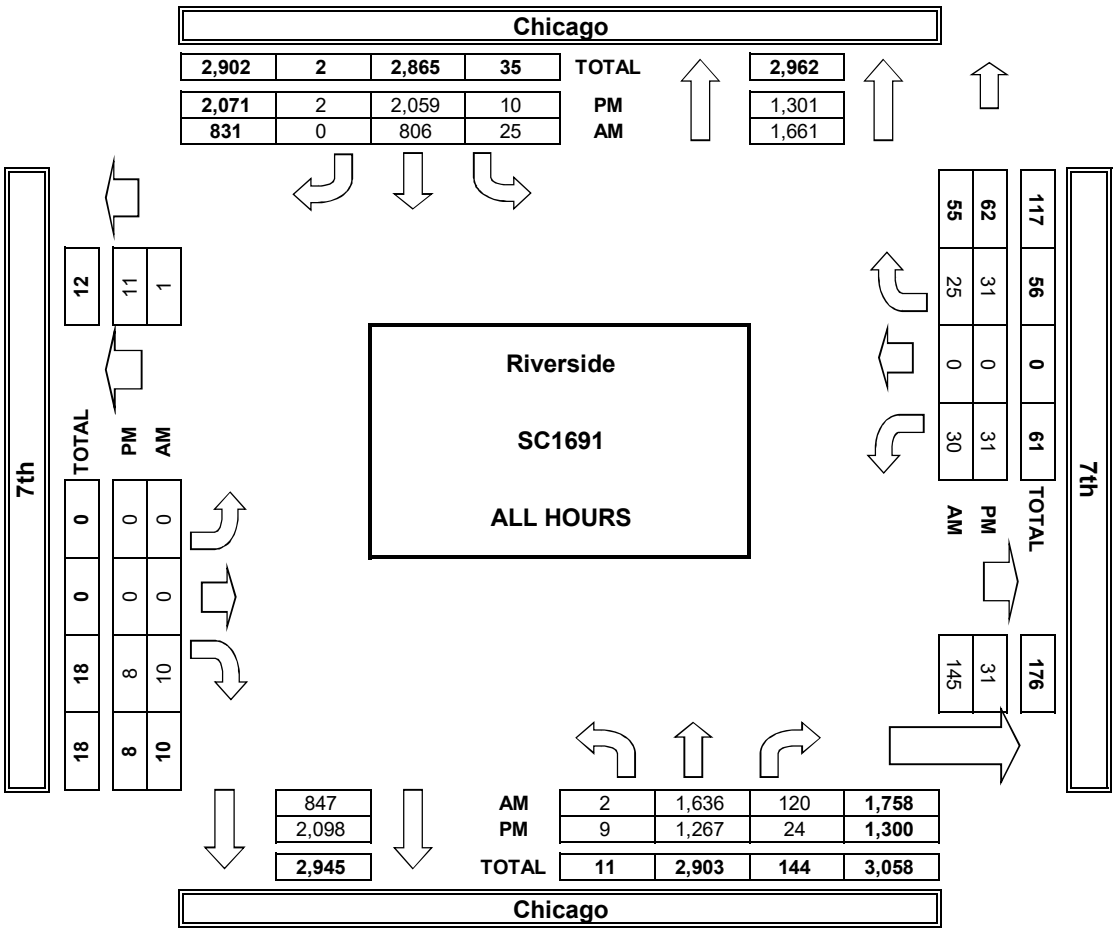
		NORTHBOUND Chicago			SOUTHBOUND Chicago			EASTBOUND 7th			WESTBOUND 7th				U-TURNS				
	LANES:	NL 0	NT 2	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	158	20	4	63	0	0	0	0	1	0	2	248	0	0	0	0	0
	7:15 AM	0	208	12	8	73	0	0	0	1	2	0	2	306	0	0	0	0	0
	7:30 AM	0	226	15	1	98	0	0	0	1	6	0	4	351	0	0	0	0	0
	7:45 AM	0	235	33	3	136	0	0	0	1	4	0	1	413	0	0	0	0	0
	8:00 AM	0	249	12	0	114	0	0	0	4	2	0	5	386	0	0	0	0	0
	8:15 AM	0	228	11	2	114	0	0	0	2	1	0	3	361	0	0	0	0	0
	8:30 AM	2	183	13	1	100	0	0	0	1	7	0	4	311	1	0	0	0	1
	8:45 AM	0	149	4	6	108	0	0	0	0	7	0	4	278	0	0	0	0	0
	VOLUMES	2	1,636	120	25	806	0	0	0	10	30	0	25	2,654	1	0	0	0	1
	APPROACH %	0%	93%	7%	3%	97%	0%	0%	0%	100%	55%	0%	45%						
	APP/DEPART	1,758	/	1,661	831	/	847	10	/	145	55	/	1	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	938	71	6	462	0	0	0	8	13	0	13	1,511					
	APPROACH %	0%	93%	7%	1%	99%	0%	0%	0%	100%	50%	0%	50%						
	PEAK HR FACTOR		0.941			0.842			0.500			0.650		0.915					
	APP/DEPART	1,009	/	951	468	/	483	8	/	77	26	/	0	0					
PM	4:00 PM	0	186	7	0	221	0	0	0	1	12	0	8	435	0	0	0	0	0
	4:15 PM	0	167	5	3	248	1	0	0	1	6	0	7	438	0	1	0	0	1
	4:30 PM	3	152	3	1	255	0	0	0	0	6	0	5	425	0	1	0	0	1
	4:45 PM	1	164	4	1	283	0	0	0	1	2	0	3	459	0	0	0	0	0
	5:00 PM	0	162	1	0	281	0	0	0	1	2	0	2	449	0	0	0	0	0
	5:15 PM	1	153	1	1	285	1	0	0	2	1	0	1	446	0	0	0	0	0
	5:30 PM	1	144	1	3	262	0	0	0	1	1	0	3	416	0	1	0	0	1
	5:45 PM	3	139	2	1	224	0	0	0	1	1	0	2	373	0	0	0	0	0
	VOLUMES	9	1,267	24	10	2,059	2	0	0	8	31	0	31	3,441	0	3	0	0	3
	APPROACH %	1%	97%	2%	0%	99%	0%	0%	0%	100%	50%	0%	50%						
	APP/DEPART	1,300	/	1,301	2,071	/	2,098	8	/	31	62	/	11	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	5	631	9	3	1,104	1	0	0	4	11	0	11	1,779					
	APPROACH %	1%	98%	1%	0%	100%	0%	0%	0%	100%	50%	0%	50%						
	PEAK HR FACTOR		0.954			0.965			0.500			0.500		0.969					
	APP/DEPART	645	/	643	1,108	/	1,119	4	/	11	22	/	6	0					

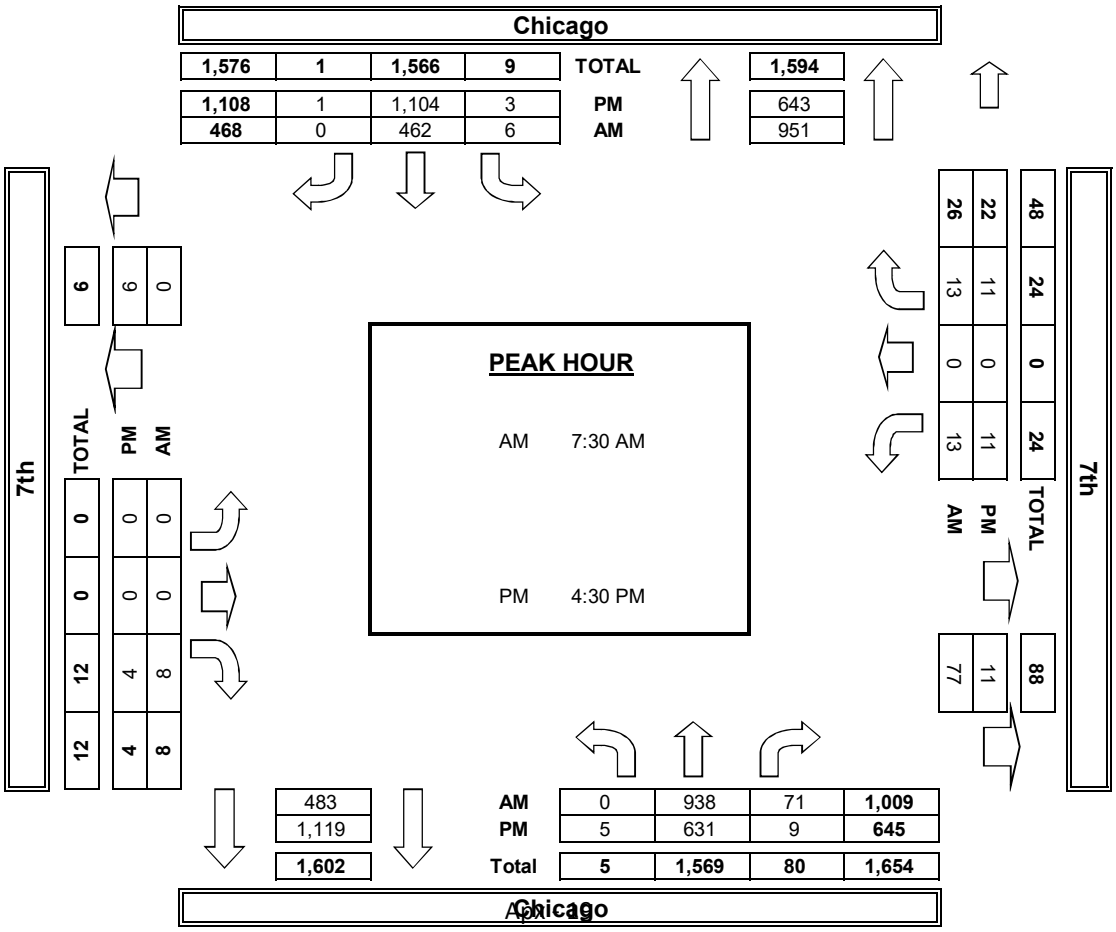


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR			7:30 AM			0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR			4:30 PM			0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

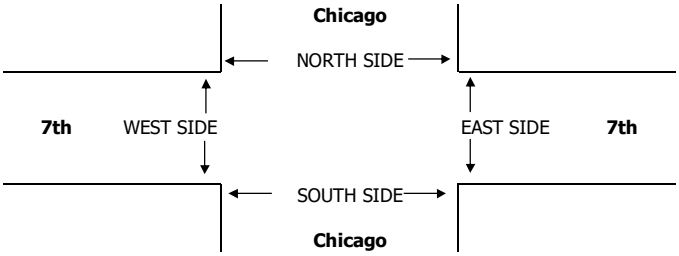
DATE:				
Wed, Apr 18, 18	LOCATION:	Riverside	PROJECT #:	SC1691
	NORTH & SOUTH:	Chicago	LOCATION #:	3
	EAST & WEST:	7th	CONTROL:	STOP E/W

NOTES:

PM SB queue

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

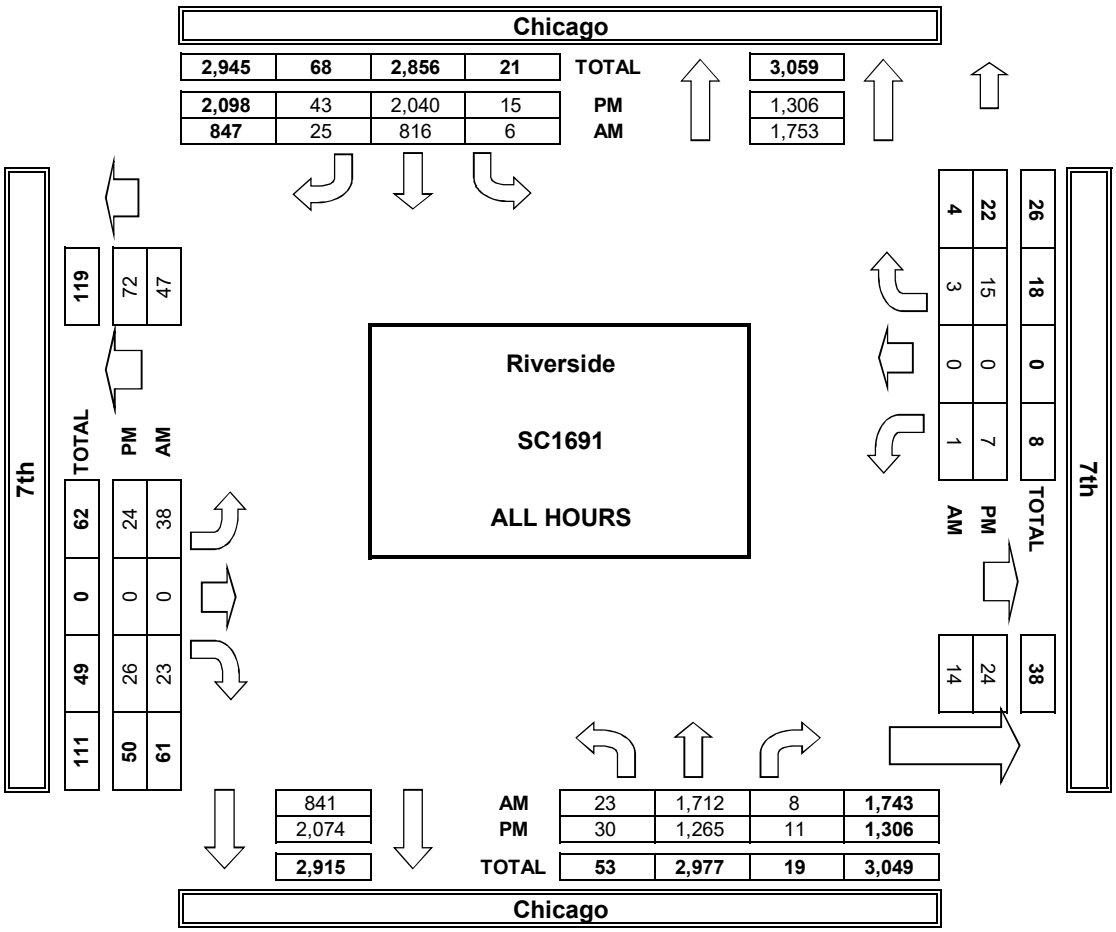
		NORTHBOUND Chicago			SOUTHBOUND Chicago			EASTBOUND 7th			WESTBOUND 7th				U-TURNS				
	LANES:	NL 0	NT 2	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	2	189	0	0	68	3	5	0	6	0	0	0	273	0	0	0	0	0
	7:15 AM	4	196	0	0	78	3	2	0	1	0	0	0	284	0	0	0	0	0
	7:30 AM	1	236	0	0	101	5	9	0	2	0	0	0	354	0	0	0	0	0
	7:45 AM	5	251	0	0	119	4	8	0	3	0	0	0	390	0	0	0	0	0
	8:00 AM	0	247	1	3	115	5	4	0	2	0	0	1	378	0	0	0	0	0
	8:15 AM	2	245	0	2	119	2	5	0	6	0	0	2	383	0	0	0	0	0
	8:30 AM	2	195	3	1	118	1	2	0	3	1	0	0	326	0	0	0	0	0
	8:45 AM	7	153	4	0	98	2	3	0	0	0	0	0	267	1	0	0	0	1
	VOLUMES	23	1,712	8	6	816	25	38	0	23	1	0	3	2,655	1	0	0	0	1
	APPROACH %	1%	98%	0%	1%	96%	3%	62%	0%	38%	25%	0%	75%						
	APP/DEPART	1,743	/	1,753	847	/	841	61	/	14	4	/	47	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	8	979	1	5	454	16	26	0	13	0	0	3	1,505					
	APPROACH %	1%	99%	0%	1%	96%	3%	67%	0%	33%	0%	0%	100%						
	PEAK HR FACTOR		0.965			0.965			0.886			0.375		0.965					
	APP/DEPART	988	/	1,008	475	/	467	39	/	6	3	/	24	0					
PM	4:00 PM	8	190	3	2	229	7	5	0	4	0	0	4	452	0	0	0	0	0
	4:15 PM	2	169	2	3	254	6	2	0	3	1	0	2	444	0	0	0	0	0
	4:30 PM	5	163	4	4	234	7	1	0	3	1	0	2	424	0	0	0	0	0
	4:45 PM	2	163	1	3	277	8	5	0	4	1	0	3	467	0	1	0	0	1
	5:00 PM	4	151	0	1	291	5	4	0	3	1	0	4	464	0	1	0	0	1
	5:15 PM	4	150	0	1	283	5	3	0	3	1	0	0	450	0	0	0	0	0
	5:30 PM	3	149	0	0	251	1	2	0	3	1	0	0	410	1	0	0	0	1
	5:45 PM	2	130	1	1	221	4	2	0	3	1	0	0	365	0	0	0	0	0
	VOLUMES	30	1,265	11	15	2,040	43	24	0	26	7	0	15	3,476	1	2	0	0	3
	APPROACH %	2%	97%	1%	1%	97%	2%	48%	0%	52%	32%	0%	68%						
	APP/DEPART	1,306	/	1,306	2,098	/	2,074	50	/	24	22	/	72	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	15	627	5	9	1,085	25	13	0	13	4	0	9	1,805					
	APPROACH %	2%	97%	1%	1%	97%	2%	50%	0%	50%	31%	0%	69%						
	PEAK HR FACTOR		0.940			0.942			0.722			0.650		0.966					
	APP/DEPART	647	/	651	1,119	/	1,102	26	/	12	13	/	40	0					

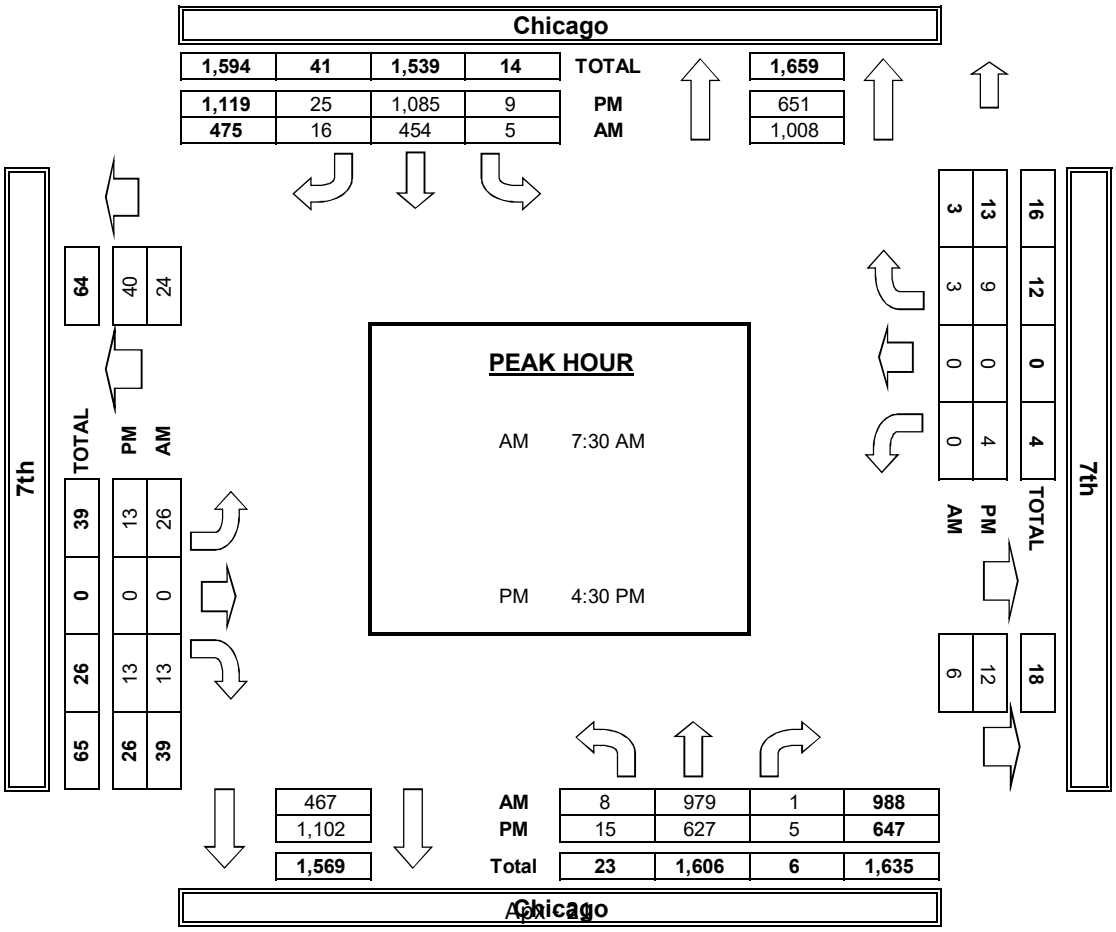


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR			7:30 AM			0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR			4:30 PM			0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Wed, Apr 18, 18	LOCATION:	Riverside	PROJECT #:	SC1691
	NORTH & SOUTH:	Chicago	LOCATION #:	4
	EAST & WEST:	University	CONTROL:	SIGNAL

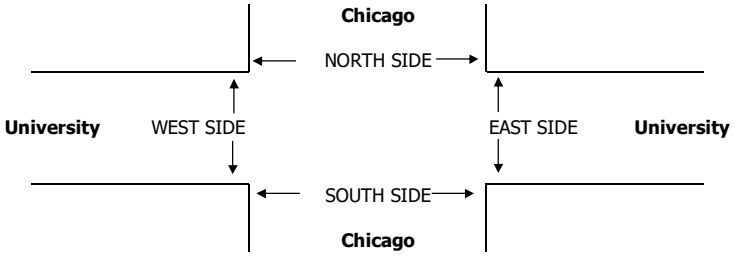
NOTES:

PM SB queue

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Dggi#K0Wxuqv#w#Ch1#Wxuqv

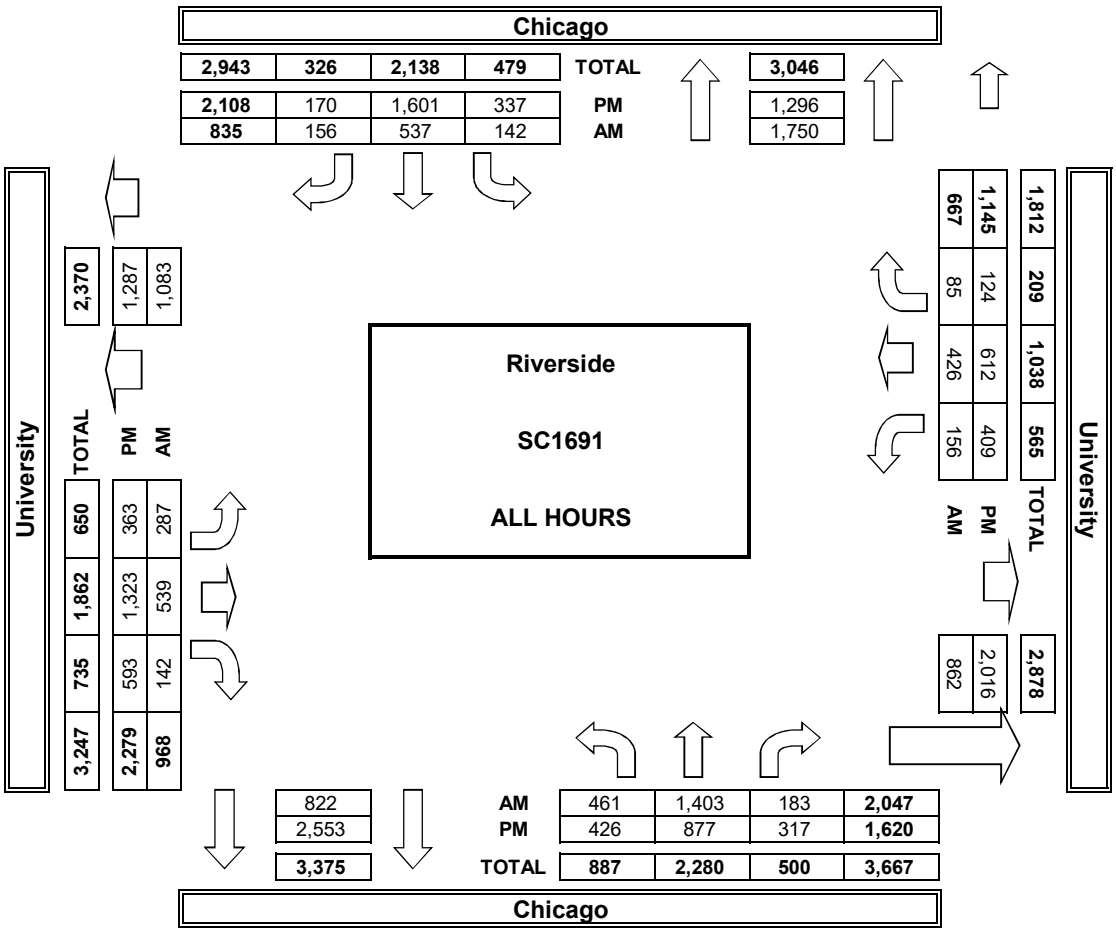
		NORTHBOUND Chicago			SOUTHBOUND Chicago			EASTBOUND University			WESTBOUND University				U-TURNS				
	LANES:	NL 2	NT 2	NR 1	SL 2	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	55	153	14	7	47	13	27	45	13	9	48	9	440	0	0	0	1	1
	7:15 AM	65	159	22	15	56	8	37	76	7	11	32	4	492	0	2	9	1	12
	7:30 AM	50	204	22	9	61	26	39	86	16	15	58	15	601	0	3	3	1	7
	7:45 AM	80	214	26	19	80	33	49	72	17	26	64	12	692	0	3	4	1	8
	8:00 AM	72	203	20	23	73	21	34	70	21	34	85	11	667	0	2	4	2	8
	8:15 AM	48	191	17	22	82	18	32	49	28	25	42	11	565	0	2	5	4	11
	8:30 AM	49	149	27	31	64	17	39	62	19	15	41	12	525	0	2	7	1	10
	8:45 AM	42	130	35	16	74	20	30	79	21	21	56	11	535	0	1	8	2	11
	VOLUMES	461	1,403	183	142	537	156	287	539	142	156	426	85	4,517	0	15	40	13	68
	APPROACH %	23%	69%	9%	17%	64%	19%	30%	56%	15%	23%	64%	13%						
	APP/DEPART	2,047	/	1,750	835	/	822	968	/	862	667	/	1,083	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	250	812	85	73	296	98	154	277	82	100	249	49	2,525					
	APPROACH %	22%	71%	7%	16%	63%	21%	30%	54%	16%	25%	63%	12%						
	PEAK HR FACTOR		0.896			0.884			0.910			0.765		0.912					
	APP/DEPART	1,147	/	1,009	467	/	470	513	/	433	398	/	613	0					
PM	4:00 PM	61	155	43	42	181	23	40	141	53	45	54	19	857	0	4	8	3	15
	4:15 PM	34	109	46	44	207	26	43	136	72	51	69	13	850	0	1	15	7	23
	4:30 PM	48	123	55	43	176	16	45	156	63	44	74	20	863	0	0	12	6	18
	4:45 PM	52	116	33	36	210	29	52	176	94	67	85	10	960	0	2	9	14	25
	5:00 PM	61	110	42	51	218	18	47	160	85	55	81	9	937	0	0	9	4	13
	5:15 PM	51	93	34	50	219	22	43	179	86	47	95	24	943	0	2	9	5	16
	5:30 PM	61	91	34	41	230	17	50	194	68	46	80	12	924	1	2	12	3	18
	5:45 PM	58	80	30	30	160	19	43	181	72	54	74	17	818	0	1	6	9	16
	VOLUMES	426	877	317	337	1,601	170	363	1,323	593	409	612	124	7,152	1	12	80	51	144
	APPROACH %	26%	54%	20%	16%	76%	8%	16%	58%	26%	36%	53%	11%						
	APP/DEPART	1,620	/	1,296	2,108	/	2,553	2,279	/	2,016	1,145	/	1,287	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	225	410	143	178	877	86	192	709	333	215	341	55	3,764					
	APPROACH %	29%	53%	18%	16%	77%	8%	16%	57%	27%	35%	56%	9%						
	PEAK HR FACTOR		0.913			0.980			0.958			0.920		0.980					
	APP/DEPART	778	/	624	1,141	/	1,400	1,234	/	1,050	611	/	690	0					

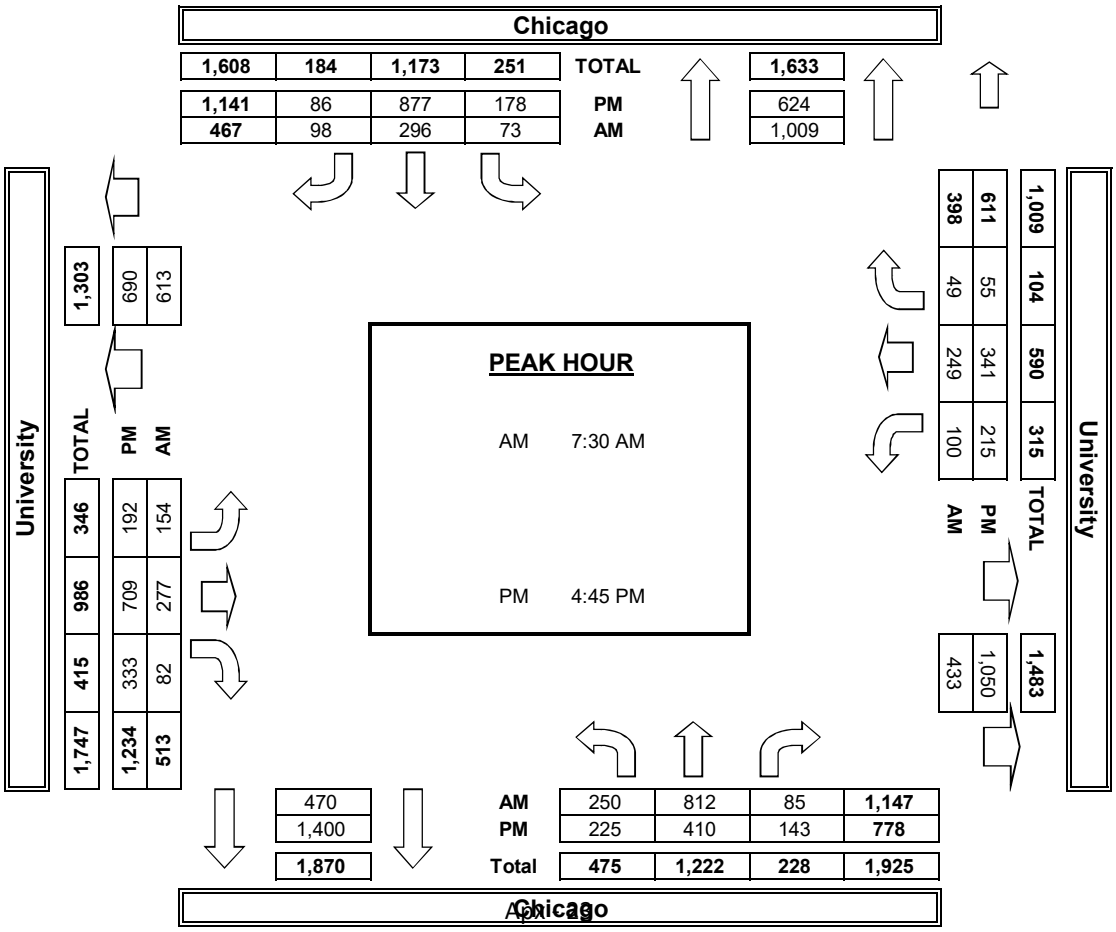


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR			7:30 AM			0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR			4:45 PM			0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





APPENDIX D

Explanation and Calculation of Intersection Delay

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The levels of service at the unsignalized and signalized intersections are calculated using the delay methodology in the Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane time's 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)
2. Lane utilization factor (to account for not all lanes loading equally)
3. Lane width
4. Percent of heavy trucks
5. Approach grade
6. Parking
7. Bus stops at intersections
8. Area type (CBD or other)
9. Right turns
10. Left turns
11. Pedestrian activity
12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay methodology and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length
2. Amount of red time faced by a lane group
3. Amount of yellow time for that lane group
4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic is added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.

The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 18 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached.
what percent the traffic can increase before Level of Service E is reached.

LEVEL OF SERVICE DESCRIPTION[1]

Level of Service	Description	Average Total Delay per Vehicle (Seconds)	
		Signalized	Unsignalized
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

[1] Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2010.0.

Existing

Entrada Housing Development

Vistro File: C:\...\AME.vistro
Report File: C:\...\AME.pdf

Scenario 1 Existing Morning Peak Hour
8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	WB Left	0.772	25.1	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	40.9	E
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	38.2	E
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	WB Thru	0.556	21.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	25.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.772

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
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]	7	254	35	40	98	11	19	27	9	35	33	58
Total Analysis Volume [veh/h]	27	1016	139	160	391	43	78	109	36	141	132	230
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
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]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	23	0	13	25	0	11	22	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	3	26	26	8	31	31	5	11	7	13	13
g / C, Green / Cycle	0.04	0.37	0.37	0.12	0.44	0.44	0.08	0.16	0.10	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.32	0.32	0.09	0.11	0.03	0.04	0.08	0.08	0.07	0.15
s, saturation flow rate [veh/h]	1774	1863	1785	1774	3547	1583	1774	1785	1774	1863	1583
c, Capacity [veh/h]	73	685	656	207	1572	702	139	278	185	338	288
d1, Uniform Delay [s]	32.83	20.56	20.57	30.16	12.25	11.20	31.25	27.27	30.65	25.33	27.54
k, delay calibration	0.11	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]	3.12	3.32	3.50	6.08	0.08	0.04	3.55	1.52	6.42	0.73	5.11
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

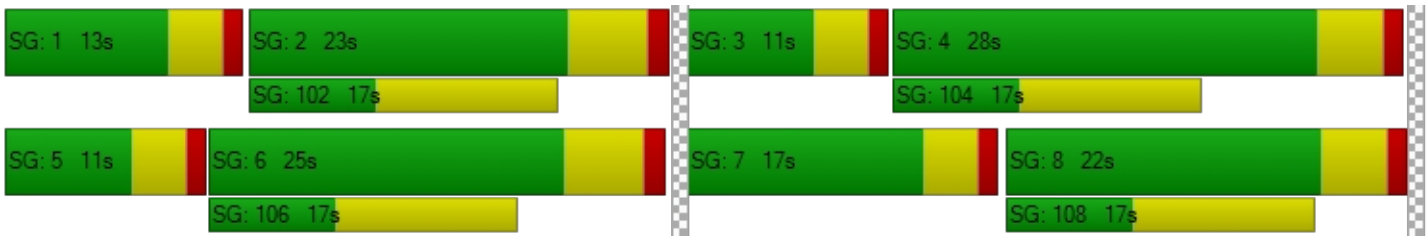
X, volume / capacity	0.37	0.86	0.86	0.77	0.25	0.06	0.56	0.52	0.76	0.39	0.80
d, Delay for Lane Group [s/veh]	35.94	23.88	24.07	36.24	12.33	11.24	34.80	28.79	37.07	26.07	32.65
Lane Group LOS	D	C	C	D	B	B	C	C	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.48	8.38	8.09	2.79	1.67	0.34	1.39	2.30	2.60	1.96	3.99
50th-Percentile Queue Length [ft/ln]	12.10	209.53	202.17	69.79	41.77	8.49	34.65	57.38	64.94	48.95	99.65
95th-Percentile Queue Length [veh/ln]	0.87	13.13	12.75	5.02	3.01	0.61	2.49	4.13	4.68	3.52	7.17
95th-Percentile Queue Length [ft/ln]	21.78	328.23	318.76	125.62	75.19	15.28	62.37	103.28	116.90	88.11	179.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.94	23.96	24.07	36.24	12.33	11.24	34.80	28.79	28.79	37.07	26.07	32.65
Movement LOS	D	C	C	D	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.25			18.69			30.89			32.16		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	25.11											
Intersection LOS	C											
Intersection V/C	0.772											

Sequence

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



Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	40.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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
Total Hourly Volume [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	0	256	19	2	126	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1025	78	7	505	0	0	0	9	14	0	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.12	0.00	0.03
d_M, Delay for Movement [s/veh]	8.41	0.00	0.00	10.79	0.00	0.00	25.04	40.88	9.88	38.76	40.28	15.31
Movement LOS	A	A	A	B	A	A	D	E	A	E	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.03	0.01	0.00	0.04	0.04	0.04	0.50	0.50	0.50
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.72	0.36	0.00	0.91	0.91	0.91	12.56	12.56	12.56
d_A, Approach Delay [s/veh]	0.00			0.15			9.88			27.04		
Approach LOS	A			A			A			D		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	38.2
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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
Total Hourly Volume [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	2	254	0	1	118	4	7	0	3	0	0	1
Total Analysis Volume [veh/h]	8	1015	1	4	470	17	27	0	13	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.14	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.38	0.00	0.00	10.34	0.00	0.00	26.19	38.21	12.29	34.88	36.35	12.09
Movement LOS	A	A	A	B	A	A	D	E	B	D	E	B
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	0.02	0.01	0.00	0.55	0.55	0.55	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.56	0.00	0.00	0.44	0.22	0.00	13.63	13.63	13.63	0.44	0.44	0.44
d_A, Approach Delay [s/veh]	0.07			0.08			21.67			12.09		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.65											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
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	223	23	20	81	27	42	76	22	27	68	13
Total Analysis Volume [veh/h]	274	890	93	80	325	107	169	304	90	110	273	54
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
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]	125
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	25	70	0	12	57	0	18	29	29	14	25	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	57	57	57	57	57	57	57	57	57	57	57	57
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	7	18	18	5	16	16	7	8	20	6	7	7
g / C, Green / Cycle	0.13	0.32	0.32	0.09	0.29	0.29	0.11	0.14	0.35	0.10	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.08	0.25	0.06	0.02	0.12	0.12	0.05	0.09	0.06	0.03	0.08	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1708	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	441	1123	501	306	533	489	394	479	558	351	434	194
d1, Uniform Delay [s]	23.66	17.86	14.22	24.34	16.59	16.63	23.63	23.44	12.75	23.88	23.91	22.85
k, delay calibration	0.11	0.11	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	1.00
d2, Incremental Delay [s]	1.43	1.31	0.18	0.45	0.53	0.59	0.74	1.40	0.13	0.51	1.51	0.77
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	0.79	0.19	0.26	0.42	0.43	0.43	0.64	0.16	0.31	0.63	0.28
d, Delay for Lane Group [s/veh]	25.09	19.17	14.39	24.79	17.12	17.23	24.36	24.85	12.88	24.38	25.41	23.62
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.65	4.67	0.77	0.47	2.11	1.98	1.01	1.86	0.71	0.66	1.69	0.65
50th-Percentile Queue Length [ft/ln]	41.28	116.80	19.19	11.86	52.70	49.56	25.32	46.44	17.63	16.45	42.26	16.16
95th-Percentile Queue Length [veh/ln]	2.97	8.22	1.38	0.85	3.79	3.57	1.82	3.34	1.27	1.18	3.04	1.16
95th-Percentile Queue Length [ft/ln]	74.30	205.42	34.55	21.36	94.86	89.20	45.57	83.60	31.73	29.60	76.08	29.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.09	19.17	14.39	24.79	17.15	17.23	24.36	24.85	12.88	24.38	25.41	23.62
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	20.11			18.36			22.79			24.93		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.09											
Intersection LOS	C											
Intersection V/C	0.556											

Sequence

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

Entrada Housing Development

Vistro File: C:\...\PME.vistro
Report File: C:\...\PME.pdf

Scenario 1 Existing Evening Peak Hour
8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	SB Left	0.655	18.3	B
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	53.6	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	60.3	F
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	WB Left	0.732	32.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
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	117	34	35	251	28	17	17	12	34	23	29
Total Analysis Volume [veh/h]	54	469	138	140	1002	113	70	68	47	135	92	115
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	48	0	37	73	0	17	22	0	23	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	52	52	52	52	52	52	52	52	52	52	52
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	17	17	6	19	19	4	6	6	7	7
g / C, Green / Cycle	0.07	0.32	0.32	0.12	0.36	0.36	0.09	0.11	0.12	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.17	0.17	0.08	0.28	0.07	0.04	0.07	0.08	0.05	0.07
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1737	1774	1863	1583
c, Capacity [veh/h]	130	590	544	207	1276	570	152	189	204	258	219
d1, Uniform Delay [s]	23.26	14.76	14.78	22.25	15.00	11.59	22.84	22.33	22.25	20.51	21.03
k, delay calibration	0.11	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]	2.10	0.75	0.83	3.84	1.10	0.17	2.15	3.12	3.61	0.84	1.95
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	0.42	0.53	0.54	0.68	0.79	0.20	0.46	0.61	0.66	0.36	0.53
d, Delay for Lane Group [s/veh]	25.36	15.51	15.61	26.09	16.11	11.76	24.99	25.45	25.86	21.35	22.98
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.64	2.63	2.46	1.67	4.38	0.76	0.87	1.43	1.70	1.02	1.34
50th-Percentile Queue Length [ft/ln]	16.04	65.70	61.49	41.71	109.46	18.89	21.68	35.86	42.47	25.42	33.61
95th-Percentile Queue Length [veh/ln]	1.16	4.73	4.43	3.00	7.81	1.36	1.56	2.58	3.06	1.83	2.42
95th-Percentile Queue Length [ft/ln]	28.88	118.25	110.68	75.07	195.25	34.00	39.02	64.55	76.45	45.75	60.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.36	15.54	15.61	26.09	16.11	11.76	24.99	25.45	25.45	25.86	21.35	22.98
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	16.36			16.83			25.27			23.68		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.30											
Intersection LOS	B											
Intersection V/C	0.655											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	53.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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
Total Hourly Volume [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	1	163	2	1	285	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	5	651	9	3	1139	1	0	0	4	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.08	0.00	0.02
d_M, Delay for Movement [s/veh]	10.96	0.00	0.00	8.91	0.00	0.00	47.55	52.33	12.81	34.63	53.58	12.23
Movement LOS	B	A	A	A	A	A	E	F	B	D	F	B
95th-Percentile Queue Length [veh/ln]	0.02	0.01	0.00	0.01	0.00	0.00	0.03	0.03	0.03	0.33	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.62	0.31	0.00	0.24	0.12	0.00	0.65	0.65	0.65	8.34	8.34	8.34
d_A, Approach Delay [s/veh]	0.08			0.02			12.81			23.43		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.35											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	60.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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
Total Hourly Volume [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	4	162	1	2	281	6	3	0	3	1	0	2
Total Analysis Volume [veh/h]	16	649	5	9	1123	26	13	0	13	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.16	0.00	0.03	0.03	0.00	0.01
d_M, Delay for Movement [s/veh]	11.12	0.00	0.00	8.91	0.00	0.00	55.44	60.31	18.60	35.72	56.51	11.00
Movement LOS	B	A	A	A	A	A	F	F	C	E	F	B
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.03	0.01	0.00	0.66	0.66	0.66	0.15	0.15	0.15
95th-Percentile Queue Length [ft/ln]	2.04	0.00	0.00	0.73	0.37	0.00	16.61	16.61	16.61	3.67	3.67	3.67
d_A, Approach Delay [s/veh]	0.27			0.07			37.02			18.61		
Approach LOS	A			A			E			C		
d_I, Intersection Delay [s/veh]	0.78											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	32.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.732

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	410	143	178	877	86	192	709	333	215	341	55
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
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]	57	105	36	45	224	22	49	181	85	55	87	14
Total Analysis Volume [veh/h]	230	418	146	182	895	88	196	723	340	219	348	56
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
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]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	23	0	12	23	0	32	43	43	12	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	8	33	33	7	33	33	7	22	35	7	22	22
g / C, Green / Cycle	0.08	0.37	0.37	0.08	0.37	0.37	0.08	0.25	0.39	0.08	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.09	0.05	0.27	0.27	0.06	0.20	0.21	0.06	0.10	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1805	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	289	1311	585	267	687	666	288	878	614	270	859	383
d1, Uniform Delay [s]	40.58	20.33	19.75	40.53	24.55	24.56	40.16	32.09	21.53	40.93	28.73	26.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	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	1.00
d2, Incremental Delay [s]	5.01	0.64	1.02	3.05	6.60	6.83	2.82	2.02	0.78	5.84	0.31	0.17
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

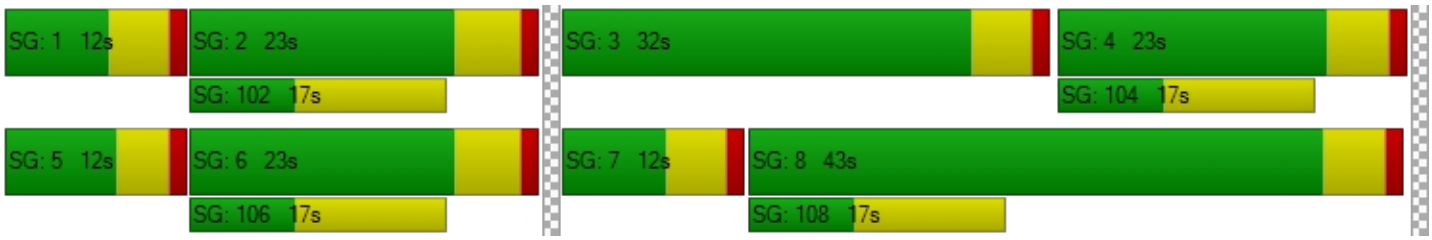
X, volume / capacity	0.80	0.32	0.25	0.68	0.73	0.73	0.68	0.82	0.55	0.81	0.41	0.15
d, Delay for Lane Group [s/veh]	45.58	20.97	20.77	43.58	31.15	31.39	42.98	34.11	22.31	46.77	29.04	27.04
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.62	3.06	2.16	2.01	9.74	9.49	2.17	7.39	5.43	2.55	3.10	0.94
50th-Percentile Queue Length [ft/ln]	65.40	76.49	54.08	50.29	243.45	237.28	54.36	184.85	135.76	63.84	77.45	23.49
95th-Percentile Queue Length [veh/ln]	4.71	5.51	3.89	3.62	14.86	14.54	3.91	11.85	9.25	4.60	5.58	1.69
95th-Percentile Queue Length [ft/ln]	117.72	137.68	97.35	90.52	371.39	363.59	97.85	296.33	231.30	114.91	139.41	42.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.58	20.97	20.77	43.58	31.25	31.39	42.98	34.11	22.31	46.77	29.04	27.04
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	28.06			33.19			32.30			35.09		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	32.15											
Intersection LOS	C											
Intersection V/C	0.732											

Sequence

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



Existing Plus Project

Entrada Housing Development

Vistro File: C:\...\AME.vistro
Report File: C:\...\AMEP.pdf

Scenario 2 Existing Plus Project Morning Peak Hour
8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.003	8.9	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	WB Left	0.775	25.3	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	42.9	E
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.039	23.0	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	41.3	E
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	WB Thru	0.563	21.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	39	24	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	2	1	4	4	1
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	0	0	0	0
Total Hourly Volume [veh/h]	3	2	1	43	28	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	11	7	0
Total Analysis Volume [veh/h]	3	2	1	45	29	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
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	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.91	8.46	7.28	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.05	0.05	0.00	0.00
d_A, Approach Delay [s/veh]	8.73		0.16		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.63					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.775

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	9	2	0	4	0	0	0	1	1	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	830	114	129	320	35	63	88	30	115	107	186
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
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]	7	257	35	40	99	11	19	27	9	36	33	58
Total Analysis Volume [veh/h]	28	1027	141	160	396	43	78	109	37	142	132	230
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	65	0	21	72	0	12	25	0	19	32	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	71	71	71	71	71	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	3	26	26	8	32	32	6	11	7	13	13
g / C, Green / Cycle	0.04	0.37	0.37	0.12	0.45	0.45	0.08	0.15	0.10	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.32	0.32	0.09	0.11	0.03	0.04	0.08	0.08	0.07	0.15
s, saturation flow rate [veh/h]	1774	1863	1785	1774	3547	1583	1774	1783	1774	1863	1583
c, Capacity [veh/h]	75	691	663	207	1580	705	138	275	186	338	287
d1, Uniform Delay [s]	33.11	20.65	20.67	30.48	12.29	11.23	31.60	27.66	30.95	25.61	27.84
k, delay calibration	0.11	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]	3.09	3.33	3.52	6.11	0.08	0.04	3.62	1.58	6.42	0.74	5.15
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	0.38	0.86	0.86	0.77	0.25	0.06	0.57	0.53	0.76	0.39	0.80
d, Delay for Lane Group [s/veh]	36.20	23.98	24.19	36.58	12.38	11.26	35.22	29.25	37.36	26.35	32.99
Lane Group LOS	D	C	C	D	B	B	D	C	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.51	8.57	8.27	2.82	1.71	0.34	1.40	2.35	2.64	1.98	4.03
50th-Percentile Queue Length [ft/ln]	12.65	214.18	206.73	70.60	42.74	8.56	35.08	58.66	66.06	49.55	100.85
95th-Percentile Queue Length [veh/ln]	0.91	13.37	12.99	5.08	3.08	0.62	2.53	4.22	4.76	3.57	7.26
95th-Percentile Queue Length [ft/ln]	22.76	334.18	324.63	127.07	76.92	15.41	63.15	105.59	118.91	89.19	181.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.20	24.07	24.19	36.58	12.38	11.26	35.22	29.25	29.25	37.36	26.35	32.99
Movement LOS	D	C	C	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.37			18.76			31.33			32.48		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	25.27											
Intersection LOS	C											
Intersection V/C	0.775											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	42.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	8	0	0	7	2	7	0	5	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
Total Hourly Volume [veh/h]	3	946	71	6	469	2	7	0	13	13	0	13
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	1	258	19	2	128	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1034	78	7	513	2	8	0	14	14	0	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.05	0.00	0.02	0.12	0.00	0.03
d_M, Delay for Movement [s/veh]	8.45	0.00	0.00	10.84	0.00	0.00	26.41	42.90	10.58	40.35	41.83	15.62
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	C
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.03	0.01	0.00	0.21	0.21	0.21	0.52	0.52	0.52
95th-Percentile Queue Length [ft/ln]	0.22	0.11	0.00	0.73	0.36	0.00	5.17	5.17	5.17	13.08	13.08	13.08
d_A, Approach Delay [s/veh]	0.02			0.15			16.34			27.98		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	0.74											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	3	5	7	8	26
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	0	0	0	0
Total Hourly Volume [veh/h]	20	1011	480	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	266	126	2	2	7
Total Analysis Volume [veh/h]	21	1064	505	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
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	0.01	0.01	0.00	0.04	0.04
d_M, Delay for Movement [s/veh]	8.50	0.00	0.00	0.00	23.01	10.44
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.06	0.03	0.00	0.00	0.24	0.24
95th-Percentile Queue Length [ft/ln]	1.46	0.73	0.00	0.00	6.04	6.04
d_A, Approach Delay [s/veh]	0.16		0.00		13.31	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	41.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	19	0	0	27	4	4	0	3	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
Total Hourly Volume [veh/h]	9	998	1	4	481	20	30	0	16	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	2	259	0	1	125	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1034	1	4	498	21	31	0	17	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.17	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.48	0.00	0.00	10.43	0.00	0.00	28.36	41.32	13.26	36.93	38.83	12.20
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.02	0.01	0.00	0.70	0.70	0.70	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.65	0.00	0.00	0.45	0.23	0.00	17.55	17.55	17.55	0.45	0.45	0.45
d_A, Approach Delay [s/veh]	0.07			0.08			23.02			12.20		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.78											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.563

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	11	8	8	6	0	0	0	0	5
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	818	85	84	304	106	160	277	82	100	249	54
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
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	224	23	23	83	29	44	76	22	27	68	15
Total Analysis Volume [veh/h]	274	897	93	92	333	116	175	304	90	110	273	59
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	72	0	13	59	0	19	31	31	14	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	58	58	58	58	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	7	18	18	5	17	17	7	8	20	6	7	7
g / C, Green / Cycle	0.13	0.32	0.32	0.09	0.29	0.29	0.11	0.13	0.35	0.10	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.08	0.25	0.06	0.03	0.12	0.13	0.05	0.09	0.06	0.03	0.08	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1702	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	438	1125	502	324	545	498	393	475	553	347	429	191
d1, Uniform Delay [s]	23.96	18.07	14.34	24.42	16.56	16.60	23.94	23.74	13.00	24.18	24.24	23.24
k, delay calibration	0.11	0.11	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	1.00
d2, Incremental Delay [s]	1.47	1.34	0.18	0.48	0.53	0.60	0.79	1.44	0.14	0.52	1.58	0.90
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	0.80	0.19	0.28	0.43	0.43	0.45	0.64	0.16	0.32	0.64	0.31
d, Delay for Lane Group [s/veh]	25.43	19.41	14.52	24.90	17.09	17.20	24.74	25.18	13.13	24.70	25.82	24.14
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.68	4.79	0.78	0.55	2.21	2.07	1.07	1.89	0.72	0.67	1.72	0.72
50th-Percentile Queue Length [ft/ln]	41.97	119.79	19.47	13.78	55.36	51.78	26.69	47.22	18.03	16.71	43.03	18.06
95th-Percentile Queue Length [veh/ln]	3.02	8.38	1.40	0.99	3.99	3.73	1.92	3.40	1.30	1.20	3.10	1.30
95th-Percentile Queue Length [ft/ln]	75.55	209.54	35.04	24.81	99.65	93.20	48.05	85.00	32.45	30.08	77.45	32.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.43	19.41	14.52	24.90	17.12	17.20	24.74	25.18	13.13	24.70	25.82	24.14
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	20.35			18.46			23.14			25.31		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.33											
Intersection LOS	C											
Intersection V/C	0.563											

Sequence

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

Entrada Housing Development

Vistro File: C:\...\PME.vistro
Report File: C:\...\PMEP.pdf

Scenario 2 Existing Plus Project Evening Peak Hour
8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.002	8.9	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	SB Left	0.661	18.4	B
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	57.7	F
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.082	44.0	E
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	68.7	F
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	WB Left	0.736	32.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	26	40	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	4	3	3
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	0	0	0	0
Total Hourly Volume [veh/h]	2	1	2	30	43	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	8	11	1
Total Analysis Volume [veh/h]	2	1	2	32	45	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
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	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.93	8.53	7.31	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.24	0.24	0.10	0.10	0.00	0.00
d_A, Approach Delay [s/veh]	8.80		0.43		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.48					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	18.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	6	2	0	9	0	0	0	1	2	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	456	134	134	971	108	67	65	46	132	88	110
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
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	119	35	35	253	28	17	17	12	34	23	29
Total Analysis Volume [veh/h]	55	475	140	140	1011	113	70	68	48	138	92	115
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	47	0	38	73	0	17	22	0	23	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	53	53	53	53	53	53	53	53	53	53	53
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	17	17	6	19	19	5	6	6	7	7
g / C, Green / Cycle	0.07	0.32	0.32	0.12	0.36	0.36	0.09	0.11	0.12	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.17	0.17	0.08	0.29	0.07	0.04	0.07	0.08	0.05	0.07
s, saturation flow rate [veh/h]	1774	1863	1719	1774	3547	1583	1774	1736	1774	1863	1583
c, Capacity [veh/h]	131	597	551	206	1285	573	152	189	205	258	219
d1, Uniform Delay [s]	23.45	14.76	14.79	22.49	15.08	11.61	23.06	22.55	22.48	20.69	21.21
k, delay calibration	0.11	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]	2.12	0.74	0.82	3.93	1.11	0.17	2.17	3.22	3.83	0.83	1.94
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	0.42	0.53	0.54	0.68	0.79	0.20	0.46	0.61	0.67	0.36	0.52
d, Delay for Lane Group [s/veh]	25.56	15.51	15.61	26.42	16.18	11.77	25.23	25.77	26.32	21.52	23.15
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.66	2.68	2.51	1.69	4.47	0.76	0.88	1.47	1.76	1.03	1.36
50th-Percentile Queue Length [ft/ln]	16.50	67.03	62.69	42.28	111.63	19.03	21.91	36.64	44.11	25.67	33.94
95th-Percentile Queue Length [veh/ln]	1.19	4.83	4.51	3.04	7.93	1.37	1.58	2.64	3.18	1.85	2.44
95th-Percentile Queue Length [ft/ln]	29.70	120.65	112.84	76.10	198.27	34.25	39.44	65.96	79.40	46.21	61.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.56	15.54	15.61	26.42	16.18	11.77	25.23	25.77	25.77	26.32	21.52	23.15
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	16.38			16.92			25.57			23.98		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.41											
Intersection LOS	B											
Intersection V/C	0.661											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	57.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	8	0	0	8	7	4	0	2	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
Total Hourly Volume [veh/h]	14	639	9	3	1112	8	4	0	6	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	4	165	2	1	287	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	14	659	9	3	1148	8	4	0	6	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00	0.05	0.00	0.01	0.09	0.00	0.02
d_M, Delay for Movement [s/veh]	11.14	0.00	0.00	8.94	0.00	0.00	52.01	57.19	14.34	36.91	57.68	12.51
Movement LOS	B	A	A	A	A	A	F	F	B	E	F	B
95th-Percentile Queue Length [veh/ln]	0.07	0.04	0.00	0.01	0.00	0.00	0.20	0.20	0.20	0.36	0.36	0.36
95th-Percentile Queue Length [ft/ln]	1.79	0.89	0.00	0.25	0.12	0.00	5.03	5.03	5.03	8.90	8.90	8.90
d_A, Approach Delay [s/veh]	0.23			0.02			29.41			24.71		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	0.54											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	44.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.082

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	9	2	8	8	18
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	0	0	0	0
Total Hourly Volume [veh/h]	18	658	1121	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	173	295	2	2	5
Total Analysis Volume [veh/h]	19	693	1180	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
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	0.03	0.01	0.01	0.00	0.08	0.04
d_M, Delay for Movement [s/veh]	11.38	0.00	0.00	0.00	44.02	15.30
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.10	0.05	0.00	0.00	0.42	0.42
95th-Percentile Queue Length [ft/ln]	2.38	1.19	0.00	0.00	10.41	10.41
d_A, Approach Delay [s/veh]	0.30		0.00		23.81	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.45					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	68.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	23	0	0	17	3	4	0	2	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
Total Hourly Volume [veh/h]	18	650	5	9	1102	28	17	0	15	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	5	168	1	2	285	7	4	0	4	1	0	2
Total Analysis Volume [veh/h]	19	673	5	9	1141	29	18	0	16	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.24	0.00	0.03	0.04	0.00	0.01
d_M, Delay for Movement [s/veh]	11.27	0.00	0.00	9.00	0.00	0.00	63.02	68.66	23.21	38.25	60.80	11.18
Movement LOS	B	A	A	A	A	A	F	F	C	E	F	B
95th-Percentile Queue Length [veh/ln]	0.10	0.00	0.00	0.03	0.01	0.00	1.03	1.03	1.03	0.16	0.16	0.16
95th-Percentile Queue Length [ft/ln]	2.48	0.00	0.00	0.75	0.37	0.00	25.73	25.73	25.73	3.91	3.91	3.91
d_A, Approach Delay [s/veh]	0.31			0.07			44.29			19.51		
Approach LOS	A			A			E			C		
d_I, Intersection Delay [s/veh]	1.07											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	32.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	6	5	6	7	0	0	0	0	10
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	416	143	184	882	92	199	709	333	215	341	65
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
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]	57	106	36	47	225	23	51	181	85	55	87	17
Total Analysis Volume [veh/h]	230	424	146	188	900	94	203	723	340	219	348	66
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
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]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	23	0	12	23	0	32	43	43	12	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	8	33	33	7	33	33	8	22	35	7	22	22
g / C, Green / Cycle	0.08	0.37	0.37	0.08	0.37	0.37	0.09	0.25	0.39	0.08	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.09	0.05	0.27	0.27	0.06	0.20	0.21	0.06	0.10	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1802	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	289	1310	585	267	687	664	296	878	614	270	851	380
d1, Uniform Delay [s]	40.58	20.37	19.76	40.59	24.66	24.67	40.05	32.09	21.53	40.93	28.90	27.20
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	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	1.00
d2, Incremental Delay [s]	5.01	0.66	1.02	3.36	6.87	7.13	2.81	2.02	0.78	5.84	0.32	0.22
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

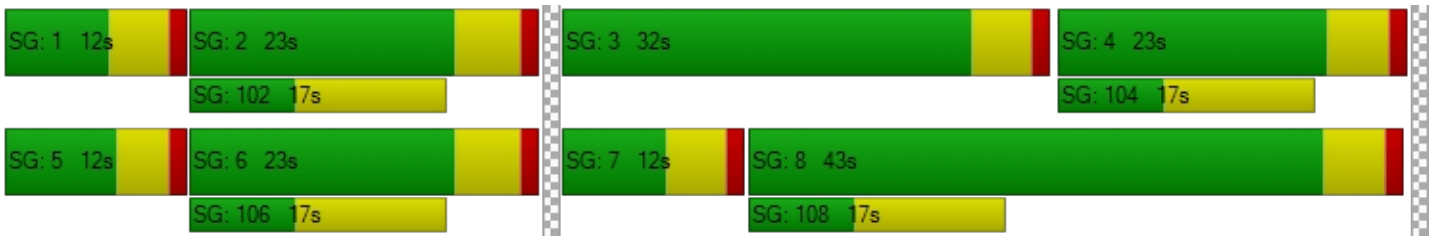
X, volume / capacity	0.80	0.32	0.25	0.70	0.73	0.74	0.69	0.82	0.55	0.81	0.41	0.17
d, Delay for Lane Group [s/veh]	45.58	21.03	20.78	43.95	31.53	31.80	42.87	34.10	22.31	46.77	29.22	27.42
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.62	3.11	2.16	2.09	9.93	9.67	2.25	7.39	5.43	2.55	3.11	1.12
50th-Percentile Queue Length [ft/ln]	65.40	77.77	54.10	52.23	248.21	241.69	56.24	184.85	135.76	63.84	77.74	27.98
95th-Percentile Queue Length [veh/ln]	4.71	5.60	3.90	3.76	15.10	14.77	4.05	11.85	9.25	4.60	5.60	2.01
95th-Percentile Queue Length [ft/ln]	117.72	139.99	97.38	94.01	377.39	369.16	101.23	296.33	231.30	114.91	139.93	50.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.58	21.03	20.78	43.95	31.65	31.80	42.87	34.10	22.31	46.77	29.22	27.42
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	28.04			33.62			32.34			35.10		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	32.29											
Intersection LOS	C											
Intersection V/C	0.736											

Sequence

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



Entrada Housing Development

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Scenario 3 Existing Plus Project Morning Peak Hour - With Improvements

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8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.061	21.9	C
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.020	14.2	B
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	21.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	8	0	0	7	2	7	0	5	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
Total Hourly Volume [veh/h]	3	946	71	6	469	2	7	0	13	13	0	13
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	1	258	19	2	128	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1034	78	7	513	2	8	0	14	14	0	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.02	0.00	0.02	0.06	0.00	0.03
d_M, Delay for Movement [s/veh]	8.45	0.00	0.00	10.84	0.00	0.00	15.15	20.24	10.13	21.92	19.77	13.28
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.03	0.01	0.00	0.13	0.13	0.13	0.29	0.29	0.29
95th-Percentile Queue Length [ft/ln]	0.22	0.00	0.00	0.73	0.36	0.00	3.18	3.18	3.18	7.29	7.29	7.29
d_A, Approach Delay [s/veh]	0.02			0.15			11.96			17.60		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.51											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	3	5	7	8	26
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	0	0	0	0
Total Hourly Volume [veh/h]	20	1011	480	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	266	126	2	2	7
Total Analysis Volume [veh/h]	21	1064	505	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.02	0.04
d_M, Delay for Movement [s/veh]	8.50	0.00	0.00	0.00	14.16	10.16
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.06	0.00	0.00	0.00	0.18	0.18
95th-Percentile Queue Length [ft/ln]	1.53	0.00	0.00	0.00	4.42	4.42
d_A, Approach Delay [s/veh]	0.16		0.00		11.07	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	19	0	0	27	4	4	0	3	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
Total Hourly Volume [veh/h]	9	998	1	4	481	20	30	0	16	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	2	259	0	1	125	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1034	1	4	498	21	31	0	17	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.08	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.48	0.00	0.00	10.43	0.00	0.00	15.58	19.83	10.73	21.16	18.90	12.20
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.02	0.01	0.00	0.35	0.35	0.35	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.65	0.00	0.00	0.45	0.23	0.00	8.80	8.80	8.80	0.45	0.45	0.45
d_A, Approach Delay [s/veh]	0.07			0.08			13.86			12.20		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.51											
Intersection LOS	C											

Entrada Housing Development

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Scenario 3 Existing Plus Project Evening Peak Hour - With Improvements

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8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.021	24.1	C
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.034	21.3	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.095	26.1	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	24.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	8	0	0	8	7	4	0	2	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
Total Hourly Volume [veh/h]	14	639	9	3	1112	8	4	0	6	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	4	165	2	1	287	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	14	659	9	3	1148	8	4	0	6	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.01	0.04	0.00	0.02
d_M, Delay for Movement [s/veh]	11.14	0.00	0.00	8.94	0.00	0.00	24.13	21.49	13.22	17.41	22.22	10.89
Movement LOS	B	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.01	0.00	0.00	0.10	0.10	0.10	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	1.79	0.00	0.00	0.25	0.12	0.00	2.61	2.61	2.61	4.18	4.18	4.18
d_A, Approach Delay [s/veh]	0.23			0.02			17.59			14.15		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.36											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	9	2	8	8	18
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	0	0	0	0
Total Hourly Volume [veh/h]	18	658	1121	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	173	295	2	2	5
Total Analysis Volume [veh/h]	19	693	1180	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.03	0.04
d_M, Delay for Movement [s/veh]	11.38	0.00	0.00	0.00	21.34	13.83
Movement LOS	B	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.10	0.00	0.00	0.00	0.25	0.25
95th-Percentile Queue Length [ft/ln]	2.52	0.00	0.00	0.00	6.18	6.18
d_A, Approach Delay [s/veh]	0.30		0.00		16.06	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.34					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	26.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.095

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	23	0	0	17	3	4	0	2	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
Total Hourly Volume [veh/h]	18	650	5	9	1102	28	17	0	15	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	5	168	1	2	285	7	4	0	4	1	0	2
Total Analysis Volume [veh/h]	19	673	5	9	1141	29	18	0	16	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.10	0.00	0.03	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	11.27	0.00	0.00	9.00	0.00	0.00	26.12	23.52	14.79	17.78	22.96	10.68
Movement LOS	B	A	A	A	A	A	D	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.10	0.00	0.00	0.03	0.01	0.00	0.44	0.44	0.44	0.09	0.09	0.09
95th-Percentile Queue Length [ft/ln]	2.48	0.00	0.00	0.75	0.37	0.00	11.02	11.02	11.02	2.13	2.13	2.13
d_A, Approach Delay [s/veh]	0.31			0.07			20.79			12.86		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.61											
Intersection LOS	D											

Opening Year (2020) Without Project

Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 4 Opening Year (2020) Without Project Morning Peak Hour

Report File: C:\...\AMOYWO.pdf

8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	WB Left	0.794	26.9	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	44.5	E
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	41.4	E
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	WB Thru	0.573	21.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	26.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.794

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	4	0	0	0	2	0	0	1	4
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	856	116	138	329	36	66	94	30	119	112	197
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
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]	7	265	36	43	102	11	20	29	9	37	35	61
Total Analysis Volume [veh/h]	28	1059	144	171	407	45	82	116	37	147	139	244
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	64	0	21	71	0	13	26	0	19	32	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	76	76	76	76	76	76	76	76	76	76	76
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	3	29	29	9	35	35	6	12	8	14	14
g / C, Green / Cycle	0.04	0.38	0.38	0.12	0.46	0.46	0.08	0.16	0.11	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.33	0.10	0.11	0.03	0.05	0.09	0.08	0.07	0.15
s, saturation flow rate [veh/h]	1774	1863	1786	1774	3547	1583	1774	1787	1774	1863	1583
c, Capacity [veh/h]	73	704	675	217	1627	726	135	280	190	350	298
d1, Uniform Delay [s]	35.61	22.01	22.04	32.51	12.62	11.50	34.15	29.65	33.15	27.16	29.72
k, delay calibration	0.11	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]	3.25	3.53	3.75	6.27	0.08	0.04	4.41	1.65	6.59	0.73	5.54
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	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	0.38	0.87	0.87	0.79	0.25	0.06	0.61	0.55	0.77	0.40	0.82
d, Delay for Lane Group [s/veh]	38.86	25.54	25.79	38.79	12.70	11.53	38.56	31.30	39.74	27.89	35.26
Lane Group LOS	D	C	C	D	B	B	D	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.55	9.67	9.35	3.26	1.88	0.38	1.62	2.67	2.95	2.25	4.65
50th-Percentile Queue Length [ft/ln]	13.70	241.85	233.82	81.49	47.08	9.57	40.41	66.69	73.72	56.28	116.13
95th-Percentile Queue Length [veh/ln]	0.99	14.77	14.37	5.87	3.39	0.69	2.91	4.80	5.31	4.05	8.18
95th-Percentile Queue Length [ft/ln]	24.66	369.37	359.21	146.68	84.75	17.23	72.74	120.04	132.69	101.30	204.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.86	25.65	25.79	38.79	12.70	11.53	38.56	31.30	31.30	39.74	27.89	35.26
Movement LOS	D	C	C	D	B	B	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	25.96			19.77			33.83			34.57		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	26.94											
Intersection LOS	C											
Intersection V/C	0.794											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	44.5
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	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
Total Hourly Volume [veh/h]	0	978	74	6	480	0	0	0	8	14	0	14
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	0	267	20	2	131	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1069	81	7	525	0	0	0	9	15	0	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.14	0.00	0.03
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	11.04	0.00	0.00	26.58	44.48	9.95	42.68	44.29	16.49
Movement LOS	A	A	A	B	A	A	D	E	A	E	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.03	0.02	0.00	0.04	0.04	0.04	0.60	0.60	0.60
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.75	0.38	0.00	0.93	0.93	0.93	14.91	14.91	14.91
d_A, Approach Delay [s/veh]	0.00			0.15			9.95			29.59		
Approach LOS	A			A			A			D		
d_I, Intersection Delay [s/veh]	0.61											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	41.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	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
Total Hourly Volume [veh/h]	8	1020	1	4	472	17	27	0	14	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	2	264	0	1	122	4	7	0	4	0	0	1
Total Analysis Volume [veh/h]	8	1057	1	4	489	18	28	0	15	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.15	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.44	0.00	0.00	10.54	0.00	0.00	27.97	41.45	12.83	37.73	39.24	12.32
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	B
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	0.02	0.01	0.00	0.62	0.62	0.62	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.57	0.00	0.00	0.46	0.23	0.00	15.49	15.49	15.49	0.46	0.46	0.46
d_A, Approach Delay [s/veh]	0.06			0.08			22.69			12.32		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.69											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.573

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	0	0	0	0	8	8	1	4	1
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	262	845	90	76	308	102	160	296	93	105	263	52
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
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]	72	232	25	21	84	28	44	81	25	29	72	14
Total Analysis Volume [veh/h]	287	927	99	83	338	112	175	325	102	115	288	57
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	73	0	12	59	0	19	29	29	16	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	59	59	59	59	59	59	59	59	59	59	59	59
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	8	19	19	5	17	17	7	8	21	6	7	7
g / C, Green / Cycle	0.13	0.33	0.33	0.09	0.29	0.29	0.11	0.14	0.35	0.10	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.06	0.02	0.13	0.13	0.05	0.09	0.06	0.03	0.08	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1707	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	453	1157	516	306	544	499	386	489	563	348	450	201
d1, Uniform Delay [s]	24.36	18.19	14.33	25.18	16.95	17.00	24.59	24.22	13.15	24.75	24.56	23.41
k, delay calibration	0.11	0.11	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	1.00
d2, Incremental Delay [s]	1.48	1.34	0.18	0.47	0.53	0.60	0.83	1.56	0.15	0.55	1.53	0.77
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	0.80	0.19	0.27	0.43	0.44	0.45	0.67	0.18	0.33	0.64	0.28
d, Delay for Lane Group [s/veh]	25.84	19.53	14.51	25.66	17.49	17.60	25.42	25.78	13.30	25.30	26.08	24.17
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.80	5.06	0.84	0.51	2.28	2.14	1.10	2.08	0.84	0.72	1.85	0.71
50th-Percentile Queue Length [ft/ln]	45.02	126.47	21.02	12.84	57.09	53.56	27.50	51.99	20.95	17.96	46.32	17.65
95th-Percentile Queue Length [veh/ln]	3.24	8.75	1.51	0.92	4.11	3.86	1.98	3.74	1.51	1.29	3.34	1.27
95th-Percentile Queue Length [ft/ln]	81.03	218.69	37.84	23.12	102.76	96.40	49.50	93.58	37.70	32.33	83.38	31.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.84	19.53	14.51	25.66	17.52	17.60	25.42	25.78	13.30	25.30	26.08	24.17
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	20.53			18.80			23.56			25.65		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.65											
Intersection LOS	C											
Intersection V/C	0.573											

Sequence

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

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 4 Opening Year (2020) Without Project Evening Peak Hour

Report File: C:\...\PMOYWO.pdf

8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	SB Left	0.674	18.8	B
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	59.3	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	68.5	F
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	SB Left	0.731	40.4	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	5	2	0	0	2	0	0	2	5
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	470	137	144	1002	112	70	70	47	135	94	119
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
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	122	36	38	261	29	18	18	12	35	24	31
Total Analysis Volume [veh/h]	56	490	143	150	1044	117	73	73	49	141	98	124
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	61	0	24	73	0	22	22	0	23	23	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	54	54	54	54	54	54	54	54	54	54	54
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	18	18	6	20	20	5	6	6	7	7
g / C, Green / Cycle	0.07	0.33	0.33	0.12	0.37	0.37	0.09	0.11	0.11	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.18	0.18	0.08	0.29	0.07	0.04	0.07	0.08	0.05	0.08
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1739	1774	1863	1583
c, Capacity [veh/h]	132	615	568	206	1319	589	154	190	202	254	216
d1, Uniform Delay [s]	24.07	14.82	14.84	23.21	15.21	11.59	23.66	23.22	23.19	21.42	22.02
k, delay calibration	0.11	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]	2.17	0.72	0.79	4.87	1.11	0.16	2.26	3.63	4.29	0.96	2.41
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
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	0.43	0.53	0.54	0.73	0.79	0.20	0.47	0.64	0.70	0.39	0.57
d, Delay for Lane Group [s/veh]	26.24	15.54	15.63	28.09	16.31	11.75	25.92	26.85	27.48	22.38	24.42
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.69	2.82	2.63	1.92	4.74	0.80	0.94	1.60	1.88	1.14	1.54
50th-Percentile Queue Length [ft/ln]	17.33	70.47	65.86	47.88	118.58	20.06	23.56	40.11	46.98	28.48	38.45
95th-Percentile Queue Length [veh/ln]	1.25	5.07	4.74	3.45	8.31	1.44	1.70	2.89	3.38	2.05	2.77
95th-Percentile Queue Length [ft/ln]	31.20	126.85	118.55	86.18	207.87	36.10	42.41	72.20	84.57	51.27	69.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.24	15.57	15.63	28.09	16.31	11.75	25.92	26.85	26.85	27.48	22.38	24.42
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	16.45			17.25			26.50			25.06		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.85											
Intersection LOS	B											
Intersection V/C	0.674											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	59.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	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
Total Hourly Volume [veh/h]	5	658	9	3	1150	1	0	0	4	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	1	170	2	1	297	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	5	679	9	3	1187	1	0	0	4	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.09	0.00	0.02
d_M, Delay for Movement [s/veh]	11.22	0.00	0.00	9.00	0.00	0.00	52.39	57.83	13.10	37.56	59.35	12.68
Movement LOS	B	A	A	A	A	A	F	F	B	E	F	B
95th-Percentile Queue Length [veh/ln]	0.03	0.01	0.00	0.01	0.01	0.00	0.03	0.03	0.03	0.36	0.36	0.36
95th-Percentile Queue Length [ft/ln]	0.65	0.32	0.00	0.25	0.13	0.00	0.67	0.67	0.67	9.08	9.08	9.08
d_A, Approach Delay [s/veh]	0.08			0.02			13.10			25.12		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	0.36											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	68.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	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
Total Hourly Volume [veh/h]	16	654	5	9	1130	26	14	0	14	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	4	169	1	2	292	7	4	0	4	1	0	2
Total Analysis Volume [veh/h]	17	677	5	9	1170	27	14	0	14	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.19	0.00	0.03	0.04	0.00	0.01
d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	9.01	0.00	0.00	62.88	68.48	21.07	38.90	62.87	11.22
Movement LOS	B	A	A	A	A	A	F	F	C	E	F	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.03	0.02	0.00	0.81	0.81	0.81	0.16	0.16	0.16
95th-Percentile Queue Length [ft/ln]	2.27	0.00	0.00	0.75	0.38	0.00	20.32	20.32	20.32	3.97	3.97	3.97
d_A, Approach Delay [s/veh]	0.28			0.07			41.98			19.74		
Approach LOS	A			A			E			C		
d_I, Intersection Delay [s/veh]	0.88											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	40.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	1	2	1	1	0	0	6	5	2	8	1
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	242	427	151	186	913	89	200	743	351	226	363	58
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
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	109	39	47	233	23	51	190	90	58	93	15
Total Analysis Volume [veh/h]	247	436	154	190	932	91	204	758	358	231	370	59
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	17	56	0	15	54	0	15	42	42	17	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	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]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	22	49	49	9	36	36	9	29	56	10	30	30
g / C, Green / Cycle	0.19	0.41	0.41	0.08	0.31	0.31	0.08	0.25	0.48	0.09	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.10	0.06	0.28	0.28	0.06	0.21	0.23	0.07	0.10	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1805	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	638	1467	655	260	574	556	275	883	756	304	912	407
d1, Uniform Delay [s]	42.21	23.14	22.48	53.40	39.17	39.20	53.12	42.36	20.84	52.59	36.36	33.83
k, delay calibration	0.11	0.11	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	1.00
d2, Incremental Delay [s]	0.38	0.11	0.18	3.91	5.66	5.91	3.90	2.58	0.46	3.89	0.29	0.16
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

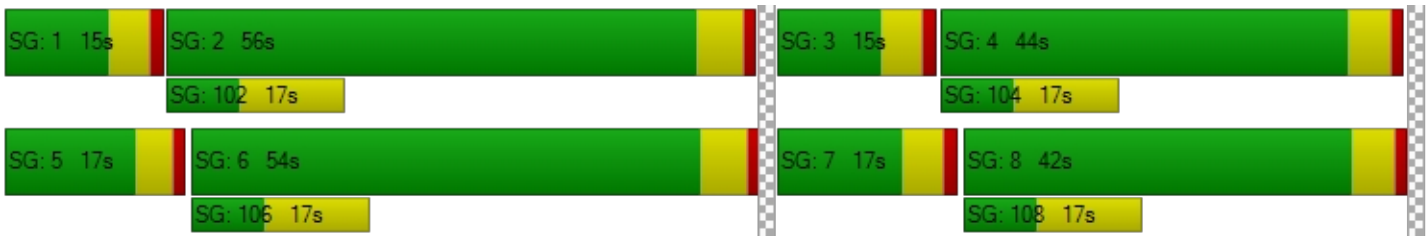
X, volume / capacity	0.39	0.30	0.24	0.73	0.90	0.91	0.74	0.86	0.47	0.76	0.41	0.14
d, Delay for Lane Group [s/veh]	42.60	23.25	22.67	57.31	44.83	45.11	57.01	44.94	21.30	56.48	36.65	33.99
Lane Group LOS	D	C	C	E	D	D	E	D	C	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.14	3.97	2.74	2.85	14.80	14.42	3.08	10.67	6.58	3.48	4.42	1.32
50th-Percentile Queue Length [ft/ln]	78.49	99.17	68.51	71.24	370.10	360.53	76.96	266.84	164.41	86.88	110.46	32.96
95th-Percentile Queue Length [veh/ln]	5.65	7.14	4.93	5.13	21.11	20.65	5.54	16.03	10.78	6.26	7.87	2.37
95th-Percentile Queue Length [ft/ln]	141.28	178.51	123.31	128.23	527.85	516.23	138.53	400.79	269.56	156.38	196.65	59.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.60	23.25	22.67	57.31	44.95	45.11	57.01	44.94	21.30	56.48	36.65	33.99
Movement LOS	D	C	C	E	D	D	E	D	C	E	D	C
d_A, Approach Delay [s/veh]	28.85			46.90			40.39			43.35		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	40.44											
Intersection LOS	D											
Intersection V/C	0.731											

Sequence

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



Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 5 Opening Year (2020) Without Project Morning Peak Hour - With Improvements

Report File: C:\...\AMOYWOI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.068	22.7	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	21.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.068

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	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
Total Hourly Volume [veh/h]	0	978	74	6	480	0	0	0	8	14	0	14
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	0	267	20	2	131	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1069	81	7	525	0	0	0	9	15	0	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.07	0.00	0.03
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	11.04	0.00	0.00	15.13	20.50	9.95	22.69	20.31	13.64
Movement LOS	A	A	A	B	A	A	C	C	A	C	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.03	0.02	0.00	0.04	0.04	0.04	0.33	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.75	0.38	0.00	0.93	0.93	0.93	8.15	8.15	8.15
d_A, Approach Delay [s/veh]	0.00			0.15			9.95			18.16		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	0.41											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	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
Total Hourly Volume [veh/h]	8	1020	1	4	472	17	27	0	14	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	2	264	0	1	122	4	7	0	4	0	0	1
Total Analysis Volume [veh/h]	8	1057	1	4	489	18	28	0	15	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.08	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.44	0.00	0.00	10.54	0.00	0.00	15.49	19.96	10.59	21.60	19.12	12.32
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	0.02	0.01	0.00	0.31	0.31	0.31	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.57	0.00	0.00	0.46	0.23	0.00	7.82	7.82	7.82	0.46	0.46	0.46
d_A, Approach Delay [s/veh]	0.06			0.08			13.78			12.32		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.46											
Intersection LOS	C											

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 5 Opening Year (2020) Without Project Evening Peak Hour - With Improvements

Report File: C:\...\PMOYWOI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.000	24.8	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.077	26.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	24.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	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
Total Hourly Volume [veh/h]	5	658	9	3	1150	1	0	0	4	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	1	170	2	1	297	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	5	679	9	3	1187	1	0	0	4	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.04	0.00	0.02
d_M, Delay for Movement [s/veh]	11.22	0.00	0.00	9.00	0.00	0.00	24.76	21.64	13.10	17.38	22.24	10.97
Movement LOS	B	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.01	0.01	0.00	0.03	0.03	0.03	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	0.65	0.00	0.00	0.25	0.13	0.00	0.67	0.67	0.67	4.19	4.19	4.19
d_A, Approach Delay [s/veh]	0.08			0.02			13.10			14.18		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.23											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	26.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.077

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	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
Total Hourly Volume [veh/h]	16	654	5	9	1130	26	14	0	14	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	4	169	1	2	292	7	4	0	4	1	0	2
Total Analysis Volume [veh/h]	17	677	5	9	1170	27	14	0	14	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.08	0.00	0.03	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	9.01	0.00	0.00	26.50	23.56	14.60	17.86	23.32	10.70
Movement LOS	B	A	A	A	A	A	D	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.03	0.02	0.00	0.36	0.36	0.36	0.09	0.09	0.09
95th-Percentile Queue Length [ft/ln]	2.27	0.00	0.00	0.75	0.38	0.00	8.96	8.96	8.96	2.14	2.14	2.14
d_A, Approach Delay [s/veh]	0.28			0.07			20.55			12.90		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.52											
Intersection LOS	D											

Opening Year (2020) With Project

Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 6 Opening Year (2020) With Project Morning Peak Hour

Report File: C:\...\AMOYW.pdf

8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.003	8.9	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	WB Left	0.796	27.2	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	46.7	E
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.041	24.2	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	45.0	E
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	WB Thru	0.580	21.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	39	24	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 Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	2	1	4	4	1
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	0	0	0	0
Total Hourly Volume [veh/h]	3	2	1	45	29	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	12	8	0
Total Analysis Volume [veh/h]	3	2	1	47	31	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
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	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.93	8.47	7.28	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.05	0.05	0.00	0.00
d_A, Approach Delay [s/veh]	8.75		0.15		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.60					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.796

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	11	2	4	4	0	0	2	1	1	1	4
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	865	118	138	333	36	66	94	31	120	112	197
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
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]	7	268	37	43	103	11	20	29	10	37	35	61
Total Analysis Volume [veh/h]	30	1071	146	171	412	45	82	116	38	149	139	244
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	65	0	21	72	0	12	25	0	19	32	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	77	77	77	77	77	77	77	77	77	77	77
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	3	29	29	9	35	35	6	12	8	14	14
g / C, Green / Cycle	0.04	0.38	0.38	0.12	0.46	0.46	0.08	0.15	0.11	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.33	0.10	0.12	0.03	0.05	0.09	0.08	0.07	0.15
s, saturation flow rate [veh/h]	1774	1863	1786	1774	3547	1583	1774	1785	1774	1863	1583
c, Capacity [veh/h]	77	711	681	217	1633	729	134	276	192	350	297
d1, Uniform Delay [s]	35.90	22.12	22.15	32.89	12.71	11.56	34.57	30.14	33.48	27.49	30.07
k, delay calibration	0.11	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]	3.22	3.54	3.78	6.32	0.08	0.04	4.51	1.76	6.59	0.73	5.60
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	0.39	0.87	0.88	0.79	0.25	0.06	0.61	0.56	0.78	0.40	0.82
d, Delay for Lane Group [s/veh]	39.12	25.66	25.93	39.21	12.79	11.60	39.08	31.90	40.07	28.22	35.67
Lane Group LOS	D	C	C	D	B	B	D	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.59	9.90	9.58	3.30	1.93	0.39	1.64	2.73	3.02	2.28	4.71
50th-Percentile Queue Length [ft/ln]	14.78	247.53	239.47	82.54	48.29	9.68	40.97	68.32	75.53	57.03	117.66
95th-Percentile Queue Length [veh/ln]	1.06	15.06	14.65	5.94	3.48	0.70	2.95	4.92	5.44	4.11	8.26
95th-Percentile Queue Length [ft/ln]	26.60	376.54	366.36	148.57	86.92	17.43	73.75	122.97	135.96	102.65	206.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.12	25.77	25.93	39.21	12.79	11.60	39.08	31.90	31.90	40.07	28.22	35.67
Movement LOS	D	C	C	D	B	B	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	26.11			19.90			34.39			34.96		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	27.16											
Intersection LOS	C											
Intersection V/C	0.796											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	46.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	10	0	0	7	2	7	0	5	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
Total Hourly Volume [veh/h]	3	986	74	6	487	2	7	0	13	14	0	14
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	1	269	20	2	133	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1078	81	7	532	2	8	0	14	15	0	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.05	0.00	0.02	0.15	0.00	0.03
d_M, Delay for Movement [s/veh]	8.51	0.00	0.00	11.09	0.00	0.00	28.07	46.68	10.74	44.46	46.00	16.88
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	C
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.03	0.02	0.00	0.22	0.22	0.22	0.62	0.62	0.62
95th-Percentile Queue Length [ft/ln]	0.22	0.11	0.00	0.76	0.38	0.00	5.49	5.49	5.49	15.53	15.53	15.53
d_A, Approach Delay [s/veh]	0.02			0.14			17.04			30.67		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	0.80											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.041

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	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 Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	5	5	7	8	26
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	0	0	0	0
Total Hourly Volume [veh/h]	20	1053	499	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	277	131	2	2	7
Total Analysis Volume [veh/h]	21	1108	525	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
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	0.01	0.01	0.00	0.04	0.04
d_M, Delay for Movement [s/veh]	8.56	0.00	0.00	0.00	24.21	10.57
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.06	0.03	0.00	0.00	0.25	0.25
95th-Percentile Queue Length [ft/ln]	1.48	0.74	0.00	0.00	6.30	6.30
d_A, Approach Delay [s/veh]	0.16		0.00		13.69	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	45.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	21	0	0	27	4	4	0	3	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
Total Hourly Volume [veh/h]	9	1039	1	4	499	21	31	0	17	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	2	269	0	1	129	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1077	1	4	517	22	32	0	18	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.19	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.54	0.00	0.00	10.64	0.00	0.00	30.45	45.02	14.00	40.00	42.01	12.43
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.02	0.01	0.00	0.79	0.79	0.79	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.66	0.00	0.00	0.47	0.23	0.00	19.72	19.72	19.72	0.46	0.46	0.46
d_A, Approach Delay [s/veh]	0.07			0.08			24.53			12.43		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.82											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	21.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	7	2	11	8	8	6	8	8	1	4	6
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	262	851	90	87	316	110	166	296	93	105	263	57
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
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]	72	233	25	24	87	30	46	81	25	29	72	16
Total Analysis Volume [veh/h]	287	933	99	95	346	121	182	325	102	115	288	63
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	73	0	12	59	0	19	31	31	14	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	8	20	20	6	18	18	7	8	21	6	7	7
g / C, Green / Cycle	0.13	0.33	0.33	0.09	0.30	0.30	0.11	0.14	0.35	0.10	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.06	0.03	0.13	0.13	0.05	0.09	0.06	0.03	0.08	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1701	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	451	1161	518	322	556	507	384	487	559	345	446	199
d1, Uniform Delay [s]	24.70	18.40	14.46	25.33	16.96	17.00	24.98	24.56	13.40	25.11	24.92	23.85
k, delay calibration	0.11	0.11	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	1.00
d2, Incremental Delay [s]	1.50	1.35	0.18	0.51	0.54	0.61	0.91	1.59	0.16	0.56	1.57	0.90
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	0.80	0.19	0.30	0.44	0.44	0.47	0.67	0.18	0.33	0.65	0.32
d, Delay for Lane Group [s/veh]	26.20	19.75	14.64	25.84	17.51	17.61	25.89	26.15	13.56	25.67	26.49	24.75
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.83	5.18	0.85	0.60	2.40	2.24	1.17	2.11	0.86	0.73	1.89	0.80
50th-Percentile Queue Length [ft/ln]	45.79	129.55	21.34	14.88	60.02	56.01	29.18	52.87	21.42	18.27	47.15	19.97
95th-Percentile Queue Length [veh/ln]	3.30	8.92	1.54	1.07	4.32	4.03	2.10	3.81	1.54	1.32	3.39	1.44
95th-Percentile Queue Length [ft/ln]	82.43	222.89	38.41	26.78	108.03	100.82	52.52	95.17	38.56	32.89	84.87	35.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.20	19.75	14.64	25.84	17.54	17.61	25.89	26.15	13.56	25.67	26.49	24.75
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	20.77			18.96			23.96			26.05		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.92											
Intersection LOS	C											
Intersection V/C	0.580											

Sequence

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

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 6 Opening Year (2020) With Project Evening Peak Hour

Report File: C:\...\PMOYW.pdf

8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.002	8.9	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	SB Left	0.679	19.0	B
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	63.9	F
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.090	48.3	E
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	78.8	F
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	SB Left	0.733	41.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	26	40	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 Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	4	3	3
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	0	0	0	0
Total Hourly Volume [veh/h]	2	1	2	31	45	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	8	12	1
Total Analysis Volume [veh/h]	2	1	2	33	47	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
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	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.95	8.54	7.32	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.24	0.24	0.10	0.10	0.00	0.00
d_A, Approach Delay [s/veh]	8.81		0.42		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.679

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	8	2	5	11	0	0	2	1	2	2	5
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	476	139	144	1011	112	70	70	48	137	94	119
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
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	124	36	38	263	29	18	18	13	36	24	31
Total Analysis Volume [veh/h]	57	496	145	150	1053	117	73	73	50	143	98	124
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	62	0	23	73	0	22	22	0	23	23	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	55	55	55	55	55	55	55	55	55	55	55
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	18	18	6	20	20	5	6	6	7	7
g / C, Green / Cycle	0.07	0.33	0.33	0.12	0.37	0.37	0.09	0.11	0.11	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.18	0.18	0.08	0.30	0.07	0.04	0.07	0.08	0.05	0.08
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1738	1774	1863	1583
c, Capacity [veh/h]	133	622	574	205	1328	593	153	189	202	254	216
d1, Uniform Delay [s]	24.25	14.81	14.83	23.44	15.26	11.59	23.87	23.45	23.43	21.61	22.21
k, delay calibration	0.11	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]	2.19	0.71	0.78	4.99	1.11	0.16	2.28	3.75	4.51	0.96	2.41
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
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	0.43	0.53	0.54	0.73	0.79	0.20	0.48	0.65	0.71	0.39	0.58
d, Delay for Lane Group [s/veh]	26.44	15.53	15.62	28.44	16.37	11.75	26.16	27.20	27.94	22.57	24.62
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.71	2.87	2.68	1.94	4.83	0.81	0.95	1.64	1.93	1.15	1.55
50th-Percentile Queue Length [ft/ln]	17.81	71.79	67.05	48.50	120.75	20.17	23.80	40.95	48.36	28.77	38.83
95th-Percentile Queue Length [veh/ln]	1.28	5.17	4.83	3.49	8.43	1.45	1.71	2.95	3.48	2.07	2.80
95th-Percentile Queue Length [ft/ln]	32.05	129.23	120.69	87.30	210.86	36.31	42.84	73.72	87.05	51.79	69.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.44	15.56	15.62	28.44	16.37	11.75	26.16	27.20	27.20	27.94	22.57	24.62
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	16.46			17.33			26.81			25.37		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.95											
Intersection LOS	B											
Intersection V/C	0.679											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	63.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	10	0	0	10	7	4	0	2	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
Total Hourly Volume [veh/h]	14	666	9	3	1158	8	4	0	6	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	4	172	2	1	299	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	14	687	9	3	1195	8	4	0	6	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00	0.06	0.00	0.01	0.10	0.00	0.02
d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	9.03	0.00	0.00	57.47	63.40	14.95	40.10	63.94	13.01
Movement LOS	B	A	A	A	A	A	F	F	B	E	F	B
95th-Percentile Queue Length [veh/ln]	0.07	0.04	0.00	0.01	0.01	0.00	0.22	0.22	0.22	0.39	0.39	0.39
95th-Percentile Queue Length [ft/ln]	1.87	0.93	0.00	0.25	0.13	0.00	5.54	5.54	5.54	9.71	9.71	9.71
d_A, Approach Delay [s/veh]	0.22			0.02			31.95			26.55		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	48.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	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 Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	11	4	8	8	18
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	0	0	0	0
Total Hourly Volume [veh/h]	18	686	1168	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	181	307	2	2	5
Total Analysis Volume [veh/h]	19	722	1229	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
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	0.03	0.01	0.01	0.00	0.09	0.04
d_M, Delay for Movement [s/veh]	11.67	0.00	0.00	0.00	48.29	16.02
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.10	0.05	0.00	0.00	0.45	0.45
95th-Percentile Queue Length [ft/ln]	2.49	1.25	0.00	0.00	11.35	11.35
d_A, Approach Delay [s/veh]	0.30		0.00		25.59	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	78.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	25	0	0	19	3	4	0	2	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
Total Hourly Volume [veh/h]	19	677	5	9	1147	29	18	0	16	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	5	175	1	2	297	8	5	0	4	1	0	2
Total Analysis Volume [veh/h]	20	701	5	9	1187	30	19	0	17	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.01	0.01	0.00	0.28	0.00	0.04	0.04	0.00	0.01
d_M, Delay for Movement [s/veh]	11.56	0.00	0.00	9.10	0.00	0.00	72.30	78.80	27.22	41.69	67.65	11.42
Movement LOS	B	A	A	A	A	A	F	F	D	E	F	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.03	0.02	0.00	1.24	1.24	1.24	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	2.73	0.00	0.00	0.77	0.38	0.00	31.01	31.01	31.01	4.24	4.24	4.24
d_A, Approach Delay [s/veh]	0.32			0.07			51.01			20.73		
Approach LOS	A			A			F			C		
d_I, Intersection Delay [s/veh]	1.21											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	41.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.733

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	7	2	7	6	6	7	6	5	2	8	11
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	242	433	151	192	918	95	207	743	351	226	363	68
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
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	110	39	49	234	24	53	190	90	58	93	17
Total Analysis Volume [veh/h]	247	442	154	196	937	97	211	758	358	231	370	69
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	17	56	0	15	54	0	16	42	42	17	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	119	119	119	119	119	119	119	119	119	119	119	119
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	22	50	50	9	37	37	10	30	57	11	30	30
g / C, Green / Cycle	0.19	0.41	0.41	0.08	0.31	0.31	0.08	0.25	0.48	0.09	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.10	0.06	0.28	0.28	0.06	0.21	0.23	0.07	0.10	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1802	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	638	1472	657	266	580	561	282	881	754	303	903	403
d1, Uniform Delay [s]	42.79	23.39	22.68	54.03	39.53	39.56	53.73	42.99	21.21	53.34	37.12	34.76
k, delay calibration	0.11	0.11	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	1.00
d2, Incremental Delay [s]	0.38	0.11	0.18	3.97	5.68	5.96	3.96	2.61	0.47	3.94	0.30	0.20
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

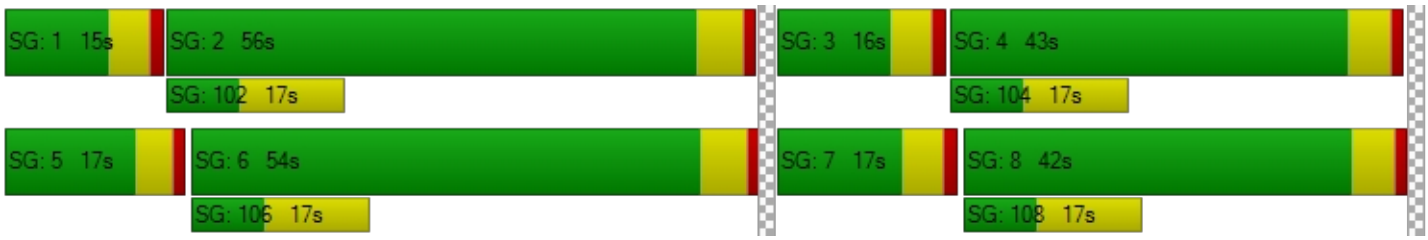
X, volume / capacity	0.39	0.30	0.23	0.74	0.91	0.91	0.75	0.86	0.47	0.76	0.41	0.17
d, Delay for Lane Group [s/veh]	43.18	23.50	22.86	58.00	45.20	45.52	57.69	45.60	21.68	57.28	37.42	34.96
Lane Group LOS	D	C	C	E	D	D	E	D	C	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.19	4.08	2.78	2.98	15.19	14.78	3.23	10.85	6.70	3.53	4.51	1.58
50th-Percentile Queue Length [ft/ln]	79.70	102.08	69.41	74.56	379.67	369.52	80.75	271.13	167.53	88.20	112.63	39.57
95th-Percentile Queue Length [veh/ln]	5.74	7.35	5.00	5.37	21.58	21.09	5.81	16.25	10.95	6.35	7.99	2.85
95th-Percentile Queue Length [ft/ln]	143.46	183.74	124.94	134.21	539.45	527.15	145.35	406.15	273.67	158.77	199.66	71.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.18	23.50	22.86	58.00	45.34	45.52	57.69	45.60	21.68	57.28	37.42	34.96
Movement LOS	D	C	C	E	D	D	E	D	C	E	D	C
d_A, Approach Delay [s/veh]	29.15			47.38			41.07			44.01		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	40.99											
Intersection LOS	D											
Intersection V/C	0.733											

Sequence

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



Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 7 Opening Year (2020) With Project Morning Peak Hour - With Improvements

Report File: C:\...\AMOYWI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.070	23.1	C
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.020	14.5	B
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	22.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.070

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	10	0	0	7	2	7	0	5	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
Total Hourly Volume [veh/h]	3	986	74	6	487	2	7	0	13	14	0	14
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	1	269	20	2	133	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1078	81	7	532	2	8	0	14	15	0	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.02	0.00	0.02	0.07	0.00	0.03
d_M, Delay for Movement [s/veh]	8.51	0.00	0.00	11.09	0.00	0.00	15.54	21.04	10.22	23.14	20.65	13.75
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.03	0.02	0.00	0.13	0.13	0.13	0.33	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.22	0.00	0.00	0.76	0.38	0.00	3.27	3.27	3.27	8.32	8.32	8.32
d_A, Approach Delay [s/veh]	0.02			0.14			12.15			18.44		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.53											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	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 Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	5	5	7	8	26
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	0	0	0	0
Total Hourly Volume [veh/h]	20	1053	499	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	277	131	2	2	7
Total Analysis Volume [veh/h]	21	1108	525	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.02	0.04
d_M, Delay for Movement [s/veh]	8.56	0.00	0.00	0.00	14.45	10.24
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.06	0.00	0.00	0.00	0.18	0.18
95th-Percentile Queue Length [ft/ln]	1.56	0.00	0.00	0.00	4.51	4.51
d_A, Approach Delay [s/veh]	0.16		0.00		11.21	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.34					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	21	0	0	27	4	4	0	3	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
Total Hourly Volume [veh/h]	9	1039	1	4	499	21	31	0	17	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	2	269	0	1	129	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1077	1	4	517	22	32	0	18	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.09	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.54	0.00	0.00	10.64	0.00	0.00	16.02	20.60	10.90	22.17	19.57	12.43
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.02	0.01	0.00	0.38	0.38	0.38	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.66	0.00	0.00	0.47	0.23	0.00	9.49	9.49	9.49	0.46	0.46	0.46
d_A, Approach Delay [s/veh]	0.07			0.08			14.18			12.43		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.51											
Intersection LOS	C											

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 7 Opening Year (2020) With Project Evening Peak Hour - With Improvements

Report File: C:\...\PMOYWI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.022	25.5	D
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.037	22.4	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.107	27.8	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	10	0	0	10	7	4	0	2	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
Total Hourly Volume [veh/h]	14	666	9	3	1158	8	4	0	6	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	4	172	2	1	299	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	14	687	9	3	1195	8	4	0	6	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.01	0.04	0.00	0.02
d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	9.03	0.00	0.00	25.46	22.39	13.55	17.98	23.19	11.04
Movement LOS	B	A	A	A	A	A	D	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.01	0.01	0.00	0.11	0.11	0.11	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	1.87	0.00	0.00	0.25	0.13	0.00	2.76	2.76	2.76	4.34	4.34	4.34
d_A, Approach Delay [s/veh]	0.22			0.02			18.31			14.51		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.35											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	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 Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	11	4	8	8	18
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	0	0	0	0
Total Hourly Volume [veh/h]	18	686	1168	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	181	307	2	2	5
Total Analysis Volume [veh/h]	19	722	1229	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.04	0.04
d_M, Delay for Movement [s/veh]	11.67	0.00	0.00	0.00	22.37	14.22
Movement LOS	B	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.00	0.26	0.26
95th-Percentile Queue Length [ft/ln]	2.64	0.00	0.00	0.00	6.50	6.50
d_A, Approach Delay [s/veh]	0.30		0.00		16.63	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	27.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.107

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	25	0	0	19	3	4	0	2	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
Total Hourly Volume [veh/h]	19	677	5	9	1147	29	18	0	16	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	5	175	1	2	297	8	5	0	4	1	0	2
Total Analysis Volume [veh/h]	20	701	5	9	1187	30	19	0	17	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.01	0.01	0.00	0.11	0.00	0.04	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	11.56	0.00	0.00	9.10	0.00	0.00	27.82	24.82	15.48	18.43	24.08	10.81
Movement LOS	B	A	A	A	A	A	D	C	C	C	C	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.03	0.02	0.00	0.50	0.50	0.50	0.09	0.09	0.09
95th-Percentile Queue Length [ft/ln]	2.73	0.00	0.00	0.77	0.38	0.00	12.52	12.52	12.52	2.20	2.20	2.20
d_A, Approach Delay [s/veh]	0.32			0.07			21.99			13.15		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.64											
Intersection LOS	D											

Buildout Year (2025) Without Project

Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 8 Buildout Year (2025) Without Project Morning Peak Hour

Report File: C:\...\AM25WO.pdf

8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	EB Left	0.839	31.5	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	57.2	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	52.7	F
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	EB Left	0.614	23.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	31.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	4	0	0	0	2	0	0	1	4
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	946	129	152	363	40	72	103	33	131	124	218
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
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]	8	293	40	47	112	12	22	32	10	41	38	67
Total Analysis Volume [veh/h]	31	1171	160	188	449	50	89	127	41	162	153	270
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	65	0	21	72	0	12	25	0	19	32	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	92	92	92	92	92	92	92	92	92	92	92
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	37	37	12	45	45	6	14	10	18	18
g / C, Green / Cycle	0.04	0.41	0.41	0.13	0.49	0.49	0.07	0.15	0.11	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.02	0.36	0.37	0.11	0.13	0.03	0.05	0.09	0.09	0.08	0.17
s, saturation flow rate [veh/h]	1774	1863	1786	1774	3547	1583	1774	1786	1774	1863	1583
c, Capacity [veh/h]	74	759	727	229	1754	783	121	275	202	371	316
d1, Uniform Delay [s]	42.95	25.37	25.47	38.98	13.44	12.12	41.99	36.30	39.73	32.10	35.52
k, delay calibration	0.11	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]	3.71	3.95	4.34	7.13	0.08	0.03	8.24	2.19	7.29	0.73	6.62
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
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	0.42	0.89	0.90	0.82	0.26	0.06	0.73	0.61	0.80	0.41	0.86
d, Delay for Lane Group [s/veh]	46.66	29.32	29.81	46.12	13.52	12.15	50.24	38.49	47.02	32.83	42.14
Lane Group LOS	D	C	C	D	B	B	D	D	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.74	13.37	13.02	4.42	2.47	0.50	2.25	3.67	3.96	3.04	6.36
50th-Percentile Queue Length [ft/ln]	18.55	334.17	325.45	110.52	61.84	12.51	56.35	91.82	99.07	75.88	158.99
95th-Percentile Queue Length [veh/ln]	1.34	19.36	18.94	7.87	4.45	0.90	4.06	6.61	7.13	5.46	10.50
95th-Percentile Queue Length [ft/ln]	33.38	484.07	473.38	196.72	111.32	22.52	101.43	165.28	178.32	136.58	262.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.66	29.53	29.81	46.12	13.52	12.15	50.24	38.49	38.49	47.02	32.83	42.14
Movement LOS	D	C	C	D	B	B	D	D	D	D	C	D
d_A, Approach Delay [s/veh]	29.95			22.34			42.55			41.06		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	31.51											
Intersection LOS	C											
Intersection V/C	0.839											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	57.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	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
Total Hourly Volume [veh/h]	0	1081	82	7	531	0	0	0	9	15	0	15
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	0	295	22	2	145	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1181	90	8	580	0	0	0	10	16	0	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.19	0.00	0.04
d_M, Delay for Movement [s/veh]	8.64	0.00	0.00	11.74	0.00	0.00	31.35	56.15	10.17	55.26	57.19	20.30
Movement LOS	A	A	A	B	A	A	D	F	B	F	F	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.04	0.02	0.00	0.04	0.04	0.04	0.83	0.83	0.83
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.98	0.49	0.00	1.08	1.08	1.08	20.70	20.70	20.70
d_A, Approach Delay [s/veh]	0.00			0.16			10.17			37.78		
Approach LOS	A			A			B			E		
d_I, Intersection Delay [s/veh]	0.74											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	52.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	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
Total Hourly Volume [veh/h]	9	1128	1	5	522	18	30	0	15	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	2	292	0	1	135	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1169	1	5	541	19	31	0	16	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.21	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.61	0.00	0.00	11.12	0.00	0.00	34.32	52.74	15.13	46.97	48.72	12.97
Movement LOS	A	A	A	B	A	A	D	F	C	E	E	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.01	0.00	0.86	0.86	0.86	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.68	0.00	0.00	0.64	0.32	0.00	21.45	21.45	21.45	0.50	0.50	0.50
d_A, Approach Delay [s/veh]	0.07			0.10			27.79			12.97		
Approach LOS	A			A			D			B		
d_I, Intersection Delay [s/veh]	0.82											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.614

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	0	0	0	0	8	8	1	4	1
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	935	100	84	340	113	177	327	102	116	290	57
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
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]	79	256	27	23	93	31	49	90	28	32	79	16
Total Analysis Volume [veh/h]	318	1025	110	92	373	124	194	359	112	127	318	63
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	73	0	12	59	0	19	31	31	14	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	9	23	23	6	20	20	7	9	23	6	9	9
g / C, Green / Cycle	0.14	0.35	0.35	0.09	0.31	0.31	0.11	0.14	0.36	0.10	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.09	0.29	0.07	0.03	0.14	0.14	0.06	0.10	0.07	0.04	0.09	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1707	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	476	1253	559	303	579	530	362	514	573	336	487	217
d1, Uniform Delay [s]	26.50	19.05	14.56	27.68	17.86	17.90	27.49	26.36	14.20	27.39	26.48	25.11
k, delay calibration	0.11	0.11	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	1.00
d2, Incremental Delay [s]	1.62	1.37	0.17	0.56	0.54	0.60	1.24	1.74	0.16	0.70	1.49	0.73
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	0.82	0.20	0.30	0.45	0.45	0.54	0.70	0.20	0.38	0.65	0.29
d, Delay for Lane Group [s/veh]	28.12	20.42	14.73	28.24	18.40	18.50	28.73	28.10	14.36	28.10	27.98	25.84
Lane Group LOS	C	C	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.23	6.21	1.00	0.64	2.79	2.60	1.39	2.57	1.03	0.90	2.26	0.86
50th-Percentile Queue Length [ft/ln]	55.81	155.13	25.12	15.98	69.74	65.08	34.82	64.22	25.82	22.39	56.58	21.41
95th-Percentile Queue Length [veh/ln]	4.02	10.29	1.81	1.15	5.02	4.69	2.51	4.62	1.86	1.61	4.07	1.54
95th-Percentile Queue Length [ft/ln]	100.46	257.27	45.22	28.77	125.53	117.15	62.68	115.60	46.47	40.30	101.84	38.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.12	20.42	14.73	28.24	18.43	18.50	28.73	28.10	14.36	28.10	27.98	25.84
Movement LOS	C	C	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	21.68			19.98			25.97			27.74		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	23.21											
Intersection LOS	C											
Intersection V/C	0.614											

Sequence

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

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 8 Buildout Year (2025) Without Project Evening Peak Hour

Report File: C:\...\PM25WO.pdf

8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	EB Thru	0.717	20.3	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	79.2	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	97.6	F
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	NB Left	0.796	44.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	5	2	0	0	2	0	0	2	5
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	520	152	159	1108	124	77	77	52	150	103	131
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
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]	16	135	40	41	289	32	20	20	14	39	27	34
Total Analysis Volume [veh/h]	63	542	158	166	1154	129	80	80	54	156	107	136
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	62	0	23	73	0	22	22	0	23	23	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	5	21	21	7	24	24	5	6	7	8	8
g / C, Green / Cycle	0.08	0.36	0.36	0.12	0.40	0.40	0.09	0.10	0.12	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.04	0.20	0.20	0.09	0.33	0.08	0.05	0.08	0.09	0.06	0.09
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1739	1774	1863	1583
c, Capacity [veh/h]	135	664	613	218	1430	638	153	182	207	251	213
d1, Uniform Delay [s]	26.58	15.47	15.48	25.49	15.87	11.66	26.26	26.10	25.71	23.87	24.61
k, delay calibration	0.11	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]	2.47	0.71	0.77	5.37	1.12	0.15	2.74	5.72	5.51	1.15	3.15
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	0.47	0.55	0.55	0.76	0.81	0.20	0.52	0.74	0.75	0.43	0.64
d, Delay for Lane Group [s/veh]	29.05	16.18	16.25	30.85	17.00	11.81	29.00	31.83	31.22	25.01	27.76
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.88	3.46	3.22	2.39	5.87	0.96	1.17	2.07	2.38	1.41	1.94
50th-Percentile Queue Length [ft/ln]	21.99	86.56	80.56	59.72	146.87	23.88	29.21	51.69	59.46	35.35	48.38
95th-Percentile Queue Length [veh/ln]	1.58	6.23	5.80	4.30	9.85	1.72	2.10	3.72	4.28	2.55	3.48
95th-Percentile Queue Length [ft/ln]	39.58	155.81	145.00	107.50	246.25	42.99	52.57	93.04	107.03	63.64	87.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.05	16.20	16.25	30.85	17.00	11.81	29.00	31.83	31.83	31.22	25.01	27.76
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.27			18.12			30.77			28.38		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	20.30											
Intersection LOS	C											
Intersection V/C	0.717											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	79.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	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
Total Hourly Volume [veh/h]	6	728	10	3	1272	1	0	0	5	13	0	13
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	2	188	3	1	328	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	6	751	10	3	1313	1	0	0	5	13	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.14	0.00	0.02
d_M, Delay for Movement [s/veh]	11.97	0.00	0.00	9.27	0.00	0.00	68.43	76.05	13.94	47.85	79.21	14.99
Movement LOS	B	A	A	A	A	A	F	F	B	E	F	B
95th-Percentile Queue Length [veh/ln]	0.03	0.02	0.00	0.01	0.01	0.00	0.04	0.04	0.04	0.56	0.56	0.56
95th-Percentile Queue Length [ft/ln]	0.87	0.44	0.00	0.27	0.13	0.00	0.93	0.93	0.93	13.88	13.88	13.88
d_A, Approach Delay [s/veh]	0.09			0.02			13.94			31.42		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	0.47											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	97.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	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
Total Hourly Volume [veh/h]	17	723	6	10	1250	29	15	0	15	5	0	10
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	4	187	2	3	323	8	4	0	4	1	0	3
Total Analysis Volume [veh/h]	18	748	6	10	1294	30	16	0	16	5	0	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.30	0.00	0.04	0.06	0.00	0.02
d_M, Delay for Movement [s/veh]	12.21	0.00	0.00	9.28	0.00	0.00	89.53	97.55	31.60	49.02	83.78	12.24
Movement LOS	B	A	A	A	A	A	F	F	D	E	F	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.04	0.02	0.00	1.30	1.30	1.30	0.24	0.24	0.24
95th-Percentile Queue Length [ft/ln]	2.70	0.00	0.00	0.89	0.45	0.00	32.45	32.45	32.45	6.03	6.03	6.03
d_A, Approach Delay [s/veh]	0.28			0.07			60.56			24.50		
Approach LOS	A			A			F			C		
d_I, Intersection Delay [s/veh]	1.22											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	44.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.796

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	1	2	1	1	0	0	6	5	2	8	1
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	267	472	166	206	1010	99	221	821	388	249	400	64
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
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	120	42	53	258	25	56	209	99	64	102	16
Total Analysis Volume [veh/h]	272	482	169	210	1031	101	226	838	396	254	408	65
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	16	49	0	15	48	0	16	50	50	16	50	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	12	54	54	10	53	53	11	35	51	11	35	35
g / C, Green / Cycle	0.09	0.41	0.41	0.08	0.41	0.41	0.08	0.27	0.39	0.08	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.11	0.06	0.31	0.31	0.07	0.24	0.25	0.07	0.12	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1805	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	307	1468	655	264	755	732	281	947	626	294	960	428
d1, Uniform Delay [s]	58.74	25.92	25.07	59.20	33.32	33.39	58.85	45.87	31.81	58.90	39.19	36.17
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	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	1.00
d2, Incremental Delay [s]	8.48	0.60	0.95	5.40	7.08	7.41	5.34	2.99	1.06	7.54	0.30	0.16
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	0.33	0.26	0.80	0.76	0.76	0.80	0.88	0.63	0.86	0.43	0.15
d, Delay for Lane Group [s/veh]	67.22	26.52	26.02	64.60	40.40	40.80	64.20	48.86	32.87	66.44	39.49	36.33
Lane Group LOS	E	C	C	E	D	D	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.73	5.10	3.55	3.56	16.54	16.19	3.85	13.23	10.10	4.42	5.40	1.60
50th-Percentile Queue Length [ft/ln]	118.37	127.43	88.71	89.03	413.38	404.66	96.30	330.74	252.44	110.47	135.02	39.89
95th-Percentile Queue Length [veh/ln]	8.30	8.80	6.39	6.41	23.20	22.78	6.93	19.19	15.31	7.87	9.21	2.87
95th-Percentile Queue Length [ft/ln]	207.58	220.00	159.67	160.26	580.10	569.61	173.34	479.87	382.72	196.65	230.30	71.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.22	26.52	26.02	64.60	40.58	40.80	64.20	48.86	32.87	66.44	39.49	36.33
Movement LOS	E	C	C	E	D	D	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	38.42			44.35			46.89			48.63		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.65											
Intersection LOS	D											
Intersection V/C	0.796											

Sequence

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

Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 10 Buildout Year (2025) Without Project Morning Peak Hour - With Improvements

Report File: C:\...\AM25WOI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.085	26.0	D
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	24.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.085

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	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
Total Hourly Volume [veh/h]	0	1081	82	7	531	0	0	0	9	15	0	15
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	0	295	22	2	145	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1181	90	8	580	0	0	0	10	16	0	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.09	0.00	0.04
d_M, Delay for Movement [s/veh]	8.64	0.00	0.00	11.74	0.00	0.00	16.21	22.82	10.17	26.03	22.70	14.85
Movement LOS	A	A	A	B	A	A	C	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.04	0.02	0.00	0.04	0.04	0.04	0.41	0.41	0.41
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.98	0.49	0.00	1.08	1.08	1.08	10.16	10.16	10.16
d_A, Approach Delay [s/veh]	0.00			0.16			10.17			20.44		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.45											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	24.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	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
Total Hourly Volume [veh/h]	9	1128	1	5	522	18	30	0	15	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	2	292	0	1	135	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1169	1	5	541	19	31	0	16	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.09	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.61	0.00	0.00	11.12	0.00	0.00	16.76	22.21	11.06	24.51	21.01	12.97
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.01	0.00	0.38	0.38	0.38	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.68	0.00	0.00	0.64	0.32	0.00	9.54	9.54	9.54	0.50	0.50	0.50
d_A, Approach Delay [s/veh]	0.07			0.10			14.82			12.97		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.48											
Intersection LOS	C											

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 10 Buildout Year (2025) Without Project Evening Peak Hour - With Improvements

Report File: C:\...\PM25WOI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.000	28.6	D
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.106	31.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	28.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	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
Total Hourly Volume [veh/h]	6	728	10	3	1272	1	0	0	5	13	0	13
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	2	188	3	1	328	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	6	751	10	3	1313	1	0	0	5	13	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.05	0.00	0.02
d_M, Delay for Movement [s/veh]	11.97	0.00	0.00	9.27	0.00	0.00	28.63	24.15	13.94	19.07	25.08	11.50
Movement LOS	B	A	A	A	A	A	D	C	B	C	D	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.01	0.01	0.00	0.04	0.04	0.04	0.22	0.22	0.22
95th-Percentile Queue Length [ft/ln]	0.87	0.00	0.00	0.27	0.13	0.00	0.93	0.93	0.93	5.54	5.54	5.54
d_A, Approach Delay [s/veh]	0.09			0.02			13.94			15.29		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.27											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	31.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.106

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	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
Total Hourly Volume [veh/h]	17	723	6	10	1250	29	15	0	15	5	0	10
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	4	187	2	3	323	8	4	0	4	1	0	3
Total Analysis Volume [veh/h]	18	748	6	10	1294	30	16	0	16	5	0	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.11	0.00	0.04	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	12.21	0.00	0.00	9.28	0.00	0.00	31.47	27.17	16.42	19.60	26.52	11.09
Movement LOS	B	A	A	A	A	A	D	D	C	C	D	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.04	0.02	0.00	0.50	0.50	0.50	0.11	0.11	0.11
95th-Percentile Queue Length [ft/ln]	2.70	0.00	0.00	0.89	0.45	0.00	12.38	12.38	12.38	2.78	2.78	2.78
d_A, Approach Delay [s/veh]	0.28			0.07			23.94			13.93		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.60											
Intersection LOS	D											

Buildout Year (2025) With Project

Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 9 Buildout Year (2025) With Project Morning Peak Hour

Report File: C:\...\AM25W.pdf

8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.003	9.0	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	EB Left	0.841	31.8	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	59.7	F
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.049	27.9	D
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	57.8	F
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	EB Left	0.621	23.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	39	24	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 Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	2	1	4	4	1
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	0	0	0	0
Total Hourly Volume [veh/h]	3	2	1	49	32	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	13	8	0
Total Analysis Volume [veh/h]	3	2	1	52	34	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
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	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.97	8.49	7.29	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.05	0.05	0.00	0.00
d_A, Approach Delay [s/veh]	8.78		0.14		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.841

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	11	2	4	4	0	0	2	1	1	1	4
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	955	131	152	367	40	72	103	34	132	124	218
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
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]	8	295	41	47	114	12	22	32	11	41	38	67
Total Analysis Volume [veh/h]	32	1182	162	188	454	50	89	127	42	163	153	270
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
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	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	55	59	0	20	24	0	12	23	0	18	29	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	93	93	93	93	93	93	93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	38	38	12	46	46	6	14	11	18	18
g / C, Green / Cycle	0.04	0.41	0.41	0.13	0.50	0.50	0.07	0.15	0.11	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.02	0.37	0.37	0.11	0.13	0.03	0.05	0.09	0.09	0.08	0.17
s, saturation flow rate [veh/h]	1774	1863	1785	1774	3547	1583	1774	1784	1774	1863	1583
c, Capacity [veh/h]	75	765	733	229	1763	787	120	273	202	371	315
d1, Uniform Delay [s]	43.42	25.52	25.63	39.47	13.49	12.14	42.55	36.88	40.20	32.51	35.97
k, delay calibration	0.11	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]	3.75	3.95	4.36	7.20	0.08	0.03	8.56	2.30	7.34	0.73	6.69
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

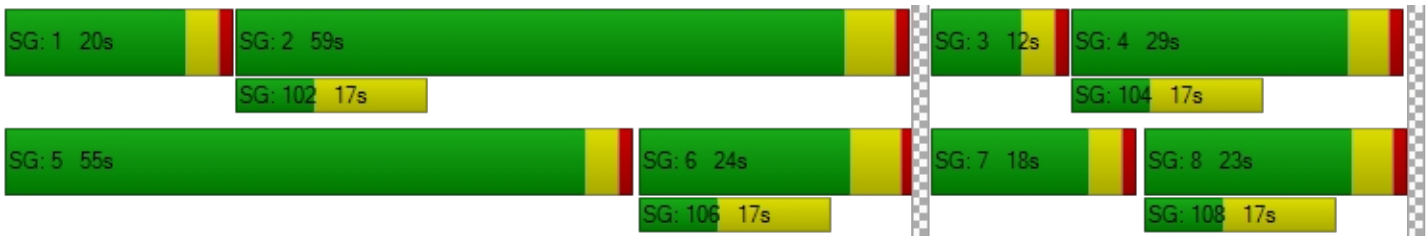
X, volume / capacity	0.42	0.89	0.90	0.82	0.26	0.06	0.74	0.62	0.81	0.41	0.86
d, Delay for Lane Group [s/veh]	47.17	29.48	29.99	46.67	13.56	12.18	51.11	39.17	47.53	33.24	42.66
Lane Group LOS	D	C	C	D	B	B	D	D	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.77	13.66	13.32	4.48	2.53	0.51	2.29	3.76	4.04	3.08	6.45
50th-Percentile Queue Length [ft/ln]	19.37	341.61	333.01	112.02	63.21	12.63	57.25	93.93	100.94	76.93	161.16
95th-Percentile Queue Length [veh/ln]	1.39	19.73	19.31	7.95	4.55	0.91	4.12	6.76	7.27	5.54	10.61
95th-Percentile Queue Length [ft/ln]	34.86	493.16	482.65	198.81	113.78	22.73	103.06	169.08	181.70	138.47	265.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.17	29.69	29.99	46.67	13.56	12.18	51.11	39.17	39.17	47.53	33.24	42.66
Movement LOS	D	C	C	D	B	B	D	D	D	D	C	D
d_A, Approach Delay [s/veh]	30.13			22.46			43.29			41.56		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	31.77											
Intersection LOS	C											
Intersection V/C	0.841											

Sequence

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



Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	59.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	10	0	0	7	2	7	0	5	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
Total Hourly Volume [veh/h]	3	1089	82	7	538	2	7	0	14	15	0	15
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	1	298	22	2	147	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1190	90	8	588	2	8	0	15	16	0	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.06	0.00	0.02	0.20	0.00	0.04
d_M, Delay for Movement [s/veh]	8.68	0.00	0.00	11.79	0.00	0.00	33.36	59.19	11.26	57.83	59.70	21.00
Movement LOS	A	A	A	B	A	A	D	F	B	F	F	C
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.04	0.02	0.00	0.27	0.27	0.27	0.87	0.87	0.87
95th-Percentile Queue Length [ft/ln]	0.23	0.11	0.00	0.99	0.49	0.00	6.63	6.63	6.63	21.63	21.63	21.63
d_A, Approach Delay [s/veh]	0.02			0.16			18.95			39.42		
Approach LOS	A			A			C			E		
d_I, Intersection Delay [s/veh]	0.94											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	27.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	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 Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	5	5	7	8	26
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	0	0	0	0
Total Hourly Volume [veh/h]	20	1164	551	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	306	145	2	2	7
Total Analysis Volume [veh/h]	21	1225	580	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
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	0.01	0.01	0.00	0.05	0.04
d_M, Delay for Movement [s/veh]	8.74	0.00	0.00	0.00	27.91	10.95
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.06	0.03	0.00	0.00	0.28	0.28
95th-Percentile Queue Length [ft/ln]	1.56	0.78	0.00	0.00	7.12	7.12
d_A, Approach Delay [s/veh]	0.15		0.00		14.83	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.38					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	57.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	21	0	0	27	4	4	0	3	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
Total Hourly Volume [veh/h]	10	1147	1	5	549	22	34	0	18	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	3	297	0	1	142	6	9	0	5	0	0	1
Total Analysis Volume [veh/h]	10	1189	1	5	569	23	35	0	19	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.25	0.00	0.03	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.71	0.00	0.00	11.23	0.00	0.00	37.87	57.79	17.05	49.91	52.31	13.09
Movement LOS	A	A	A	B	A	A	E	F	C	E	F	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.01	0.00	1.09	1.09	1.09	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.77	0.00	0.00	0.65	0.32	0.00	27.22	27.22	27.22	0.51	0.51	0.51
d_A, Approach Delay [s/veh]	0.07			0.09			30.54			13.09		
Approach LOS	A			A			D			B		
d_I, Intersection Delay [s/veh]	0.99											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.621

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	7	2	11	8	8	6	8	8	1	4	6
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	941	100	95	348	121	183	327	102	116	290	62
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
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]	79	258	27	26	95	33	50	90	28	32	79	17
Total Analysis Volume [veh/h]	318	1032	110	104	382	133	201	359	112	127	318	68
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	73	0	12	59	0	19	31	31	14	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	9	23	23	6	21	21	7	9	23	6	9	9
g / C, Green / Cycle	0.14	0.35	0.35	0.09	0.32	0.32	0.10	0.14	0.36	0.10	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.09	0.29	0.07	0.03	0.14	0.15	0.06	0.10	0.07	0.04	0.09	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1701	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	475	1259	562	314	589	538	359	512	570	333	485	216
d1, Uniform Delay [s]	26.83	19.23	14.65	27.90	17.90	17.93	27.91	26.69	14.44	27.76	26.82	25.52
k, delay calibration	0.11	0.11	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	1.00
d2, Incremental Delay [s]	1.64	1.38	0.17	0.61	0.55	0.61	1.36	1.76	0.17	0.72	1.52	0.82
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	0.82	0.20	0.33	0.45	0.46	0.56	0.70	0.20	0.38	0.66	0.31
d, Delay for Lane Group [s/veh]	28.48	20.61	14.82	28.51	18.45	18.55	29.27	28.45	14.61	28.47	28.34	26.34
Lane Group LOS	C	C	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.27	6.34	1.02	0.73	2.93	2.72	1.47	2.61	1.05	0.91	2.30	0.94
50th-Percentile Queue Length [ft/ln]	56.65	158.53	25.43	18.30	73.22	68.00	36.77	65.18	26.32	22.73	57.43	23.56
95th-Percentile Queue Length [veh/ln]	4.08	10.47	1.83	1.32	5.27	4.90	2.65	4.69	1.89	1.64	4.14	1.70
95th-Percentile Queue Length [ft/ln]	101.98	261.78	45.77	32.95	131.80	122.40	66.19	117.32	47.37	40.91	103.38	42.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.48	20.61	14.82	28.51	18.48	18.55	29.27	28.45	14.61	28.47	28.34	26.34
Movement LOS	C	C	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	21.89			20.18			26.39			28.11		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.47											
Intersection LOS	C											
Intersection V/C	0.621											

Sequence

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

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 9 Buildout Year (2025) With Project Evening Peak Hour

Report File: C:\...\PM25W.pdf

8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.002	9.0	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	EB Thru	0.721	20.5	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	86.0	F
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.117	62.2	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	115.1	F
6	Chicago Ave (NS) at University Ave (EW	Signalized	HCM 2010	NB Left	0.800	44.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	26	40	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 Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	4	3	3
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	0	0	0	0
Total Hourly Volume [veh/h]	2	1	2	34	49	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	9	13	1
Total Analysis Volume [veh/h]	2	1	2	36	52	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
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	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.99	8.56	7.33	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.24	0.24	0.10	0.10	0.00	0.00
d_A, Approach Delay [s/veh]	8.85		0.39		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.721

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	8	2	5	11	0	0	2	1	2	2	5
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	526	154	159	1117	124	77	77	53	152	103	131
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
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]	16	137	40	41	291	32	20	20	14	40	27	34
Total Analysis Volume [veh/h]	64	548	160	166	1164	129	80	80	55	158	107	136
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	62	0	23	73	0	23	22	0	23	22	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	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
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	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	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	R	L	C	L	C	R
C, Cycle Length [s]	61	61	61	61	61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
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]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	5	22	22	7	25	25	5	6	7	8	8
g / C, Green / Cycle	0.08	0.36	0.36	0.12	0.41	0.41	0.09	0.10	0.12	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.04	0.20	0.20	0.09	0.33	0.08	0.05	0.08	0.09	0.06	0.09
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1738	1774	1863	1583
c, Capacity [veh/h]	136	669	618	218	1439	643	152	181	209	253	215
d1, Uniform Delay [s]	26.92	15.56	15.57	25.82	15.99	11.70	26.63	26.49	26.00	24.10	24.85
k, delay calibration	0.11	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]	2.52	0.70	0.77	5.38	1.13	0.15	2.79	6.05	5.48	1.12	3.04
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	0.47	0.55	0.55	0.76	0.81	0.20	0.53	0.75	0.76	0.42	0.63
d, Delay for Lane Group [s/veh]	29.44	16.26	16.34	31.20	17.12	11.85	29.43	32.55	31.48	25.22	27.90
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.91	3.55	3.30	2.42	6.02	0.97	1.19	2.13	2.44	1.43	1.95
50th-Percentile Queue Length [ft/ln]	22.68	88.72	82.52	60.58	150.43	24.15	29.66	53.14	60.94	35.78	48.86
95th-Percentile Queue Length [veh/ln]	1.63	6.39	5.94	4.36	10.04	1.74	2.14	3.83	4.39	2.58	3.52
95th-Percentile Queue Length [ft/ln]	40.82	159.69	148.54	109.05	251.00	43.47	53.39	95.65	109.69	64.40	87.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.44	16.29	16.34	31.20	17.12	11.85	29.43	32.55	32.55	31.48	25.22	27.90
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.39			18.25			31.38			28.59		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	20.47											
Intersection LOS	C											
Intersection V/C	0.721											

Sequence

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

Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	86.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	10	0	0	10	7	4	0	2	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
Total Hourly Volume [veh/h]	15	736	10	3	1280	8	4	0	7	13	0	13
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	4	190	3	1	330	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	15	760	10	3	1321	8	4	0	7	13	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.00	0.01	0.00	0.08	0.00	0.02	0.15	0.00	0.02
d_M, Delay for Movement [s/veh]	12.20	0.00	0.00	9.30	0.00	0.00	76.04	84.48	16.96	51.55	86.03	15.69
Movement LOS	B	A	A	A	A	A	F	F	C	F	F	C
95th-Percentile Queue Length [veh/ln]	0.09	0.04	0.00	0.01	0.01	0.00	0.30	0.30	0.30	0.60	0.60	0.60
95th-Percentile Queue Length [ft/ln]	2.25	1.12	0.00	0.27	0.13	0.00	7.50	7.50	7.50	14.97	14.97	14.97
d_A, Approach Delay [s/veh]	0.23			0.02			38.45			33.62		
Approach LOS	A			A			E			D		
d_I, Intersection Delay [s/veh]	0.70											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	62.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.117

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	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 Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	11	4	8	8	18
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	0	0	0	0
Total Hourly Volume [veh/h]	18	757	1291	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	199	340	2	2	5
Total Analysis Volume [veh/h]	19	797	1359	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
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	0.04	0.01	0.01	0.00	0.12	0.05
d_M, Delay for Movement [s/veh]	12.51	0.00	0.00	0.00	62.20	18.48
Movement LOS	B	A	A	A	F	C
95th-Percentile Queue Length [veh/ln]	0.11	0.06	0.00	0.00	0.58	0.58
95th-Percentile Queue Length [ft/ln]	2.81	1.40	0.00	0.00	14.41	14.41
d_A, Approach Delay [s/veh]	0.29		0.00		31.43	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	115.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	25	0	0	19	3	4	0	2	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
Total Hourly Volume [veh/h]	20	746	6	10	1267	32	19	0	17	5	0	10
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	5	193	2	3	328	8	5	0	4	1	0	3
Total Analysis Volume [veh/h]	21	772	6	10	1312	33	20	0	18	5	0	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.01	0.01	0.00	0.40	0.00	0.04	0.06	0.00	0.02
d_M, Delay for Movement [s/veh]	12.39	0.00	0.00	9.37	0.00	0.00	105.78	115.10	43.24	52.70	90.60	12.55
Movement LOS	B	A	A	A	A	A	F	F	E	F	F	B
95th-Percentile Queue Length [veh/ln]	0.13	0.00	0.00	0.04	0.02	0.00	1.82	1.82	1.82	0.26	0.26	0.26
95th-Percentile Queue Length [ft/ln]	3.23	0.00	0.00	0.91	0.45	0.00	45.39	45.39	45.39	6.47	6.47	6.47
d_A, Approach Delay [s/veh]	0.33			0.07			76.16			25.94		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	1.65											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW

Control Type:	Signalized	Delay (sec / veh):	44.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	7	2	7	6	6	7	6	5	2	8	11
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	267	478	166	212	1015	105	228	821	388	249	400	74
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
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	122	42	54	259	27	58	209	99	64	102	19
Total Analysis Volume [veh/h]	272	488	169	216	1036	107	233	838	396	254	408	76
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
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]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	16	24	0	42	50	0	41	48	48	16	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	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	C	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
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]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	12	53	53	11	53	53	11	35	51	11	34	34
g / C, Green / Cycle	0.09	0.41	0.41	0.08	0.41	0.41	0.09	0.27	0.39	0.08	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.11	0.06	0.31	0.31	0.07	0.24	0.25	0.07	0.12	0.05
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1802	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	306	1453	648	283	758	733	301	943	624	293	935	417
d1, Uniform Delay [s]	58.69	26.32	25.41	58.52	33.26	33.34	58.16	45.93	31.89	58.85	39.90	37.09
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	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	1.00
d2, Incremental Delay [s]	8.70	0.63	0.98	4.27	7.23	7.61	4.26	3.09	1.08	7.74	0.32	0.21
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

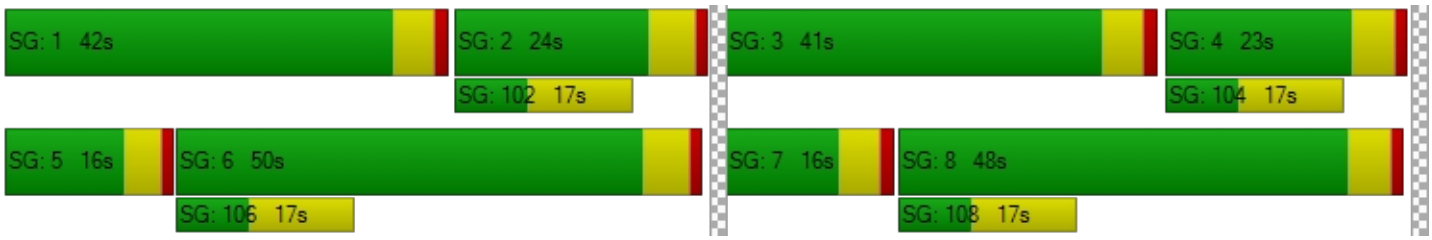
X, volume / capacity	0.89	0.34	0.26	0.76	0.76	0.77	0.77	0.89	0.63	0.87	0.44	0.18
d, Delay for Lane Group [s/veh]	67.39	26.94	26.38	62.79	40.49	40.94	62.42	49.02	32.97	66.59	40.22	37.29
Lane Group LOS	E	C	C	E	D	D	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.74	5.21	3.58	3.61	16.74	16.38	3.91	13.25	10.12	4.42	5.46	1.90
50th-Percentile Queue Length [ft/ln]	118.50	130.32	89.43	90.18	418.45	409.53	97.81	331.37	252.90	110.57	136.47	47.50
95th-Percentile Queue Length [veh/ln]	8.31	8.96	6.44	6.49	23.45	23.02	7.04	19.23	15.33	7.87	9.29	3.42
95th-Percentile Queue Length [ft/ln]	207.77	223.93	160.97	162.32	586.18	575.47	176.06	480.64	383.30	196.80	232.26	85.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.39	26.94	26.38	62.79	40.69	40.94	62.42	49.02	32.97	66.59	40.22	37.29
Movement LOS	E	C	C	E	D	D	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	38.68			44.22			46.82			48.99		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.71											
Intersection LOS	D											
Intersection V/C	0.800											

Sequence

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



Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 11 Buildout Year (2025) With Project Morning Peak Hour - With Improvements

Report File: C:\...\AM25WI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.087	26.6	D
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.022	15.3	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	25.2	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	26.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.087

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	10	0	0	7	2	7	0	5	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
Total Hourly Volume [veh/h]	3	1089	82	7	538	2	7	0	14	15	0	15
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
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]	1	298	22	2	147	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1190	90	8	588	2	8	0	15	16	0	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.03	0.00	0.02	0.09	0.00	0.04
d_M, Delay for Movement [s/veh]	8.68	0.00	0.00	11.79	0.00	0.00	16.68	23.46	10.48	26.59	23.11	14.98
Movement LOS	A	A	A	B	A	A	C	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.04	0.02	0.00	0.15	0.15	0.15	0.42	0.42	0.42
95th-Percentile Queue Length [ft/ln]	0.23	0.00	0.00	0.99	0.49	0.00	3.65	3.65	3.65	10.38	10.38	10.38
d_A, Approach Delay [s/veh]	0.02			0.16			12.64			20.79		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	15.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	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 Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	5	5	7	8	26
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	0	0	0	0
Total Hourly Volume [veh/h]	20	1164	551	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	306	145	2	2	7
Total Analysis Volume [veh/h]	21	1225	580	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.02	0.04
d_M, Delay for Movement [s/veh]	8.74	0.00	0.00	0.00	15.28	10.49
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.00	0.19	0.19
95th-Percentile Queue Length [ft/ln]	1.63	0.00	0.00	0.00	4.79	4.79
d_A, Approach Delay [s/veh]	0.15		0.00		11.59	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.32					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	25.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	21	0	0	27	4	4	0	3	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
Total Hourly Volume [veh/h]	10	1147	1	5	549	22	34	0	18	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
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]	3	297	0	1	142	6	9	0	5	0	0	1
Total Analysis Volume [veh/h]	10	1189	1	5	569	23	35	0	19	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.11	0.00	0.03	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.71	0.00	0.00	11.23	0.00	0.00	17.37	22.96	11.42	25.18	21.52	13.09
Movement LOS	A	A	A	B	A	A	C	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.01	0.00	0.46	0.46	0.46	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.77	0.00	0.00	0.65	0.32	0.00	11.45	11.45	11.45	0.51	0.51	0.51
d_A, Approach Delay [s/veh]	0.07			0.09			15.28			13.09		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.54											
Intersection LOS	D											

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 11 Buildout Year (2025) With Project Evening Peak Hour - With Improvements

Report File: C:\...\PM25WI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.027	29.5	D
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.043	25.4	D
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.136	33.1	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	29.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	10	0	0	10	7	4	0	2	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
Total Hourly Volume [veh/h]	15	736	10	3	1280	8	4	0	7	13	0	13
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	4	190	3	1	330	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	15	760	10	3	1321	8	4	0	7	13	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.00	0.01	0.00	0.03	0.00	0.02	0.05	0.00	0.02
d_M, Delay for Movement [s/veh]	12.20	0.00	0.00	9.30	0.00	0.00	29.53	25.09	14.54	19.80	26.31	11.59
Movement LOS	B	A	A	A	A	A	D	D	B	C	D	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.01	0.01	0.00	0.14	0.14	0.14	0.23	0.23	0.23
95th-Percentile Queue Length [ft/ln]	2.25	0.00	0.00	0.27	0.13	0.00	3.42	3.42	3.42	5.76	5.76	5.76
d_A, Approach Delay [s/veh]	0.23			0.02			19.99			15.70		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.39											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	25.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.043

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	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 Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	11	4	8	8	18
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	0	0	0	0
Total Hourly Volume [veh/h]	18	757	1291	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	199	340	2	2	5
Total Analysis Volume [veh/h]	19	797	1359	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.01	0.00	0.04	0.05
d_M, Delay for Movement [s/veh]	12.51	0.00	0.00	0.00	25.45	15.35
Movement LOS	B	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.12	0.00	0.00	0.00	0.30	0.30
95th-Percentile Queue Length [ft/ln]	2.97	0.00	0.00	0.00	7.44	7.44
d_A, Approach Delay [s/veh]	0.29		0.00		18.34	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	33.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.136

Intersection Setup

Name												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	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
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	25	0	0	19	3	4	0	2	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
Total Hourly Volume [veh/h]	20	746	6	10	1267	32	19	0	17	5	0	10
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
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]	5	193	2	3	328	8	5	0	4	1	0	3
Total Analysis Volume [veh/h]	21	772	6	10	1312	33	20	0	18	5	0	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.01	0.01	0.00	0.14	0.00	0.04	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	12.39	0.00	0.00	9.37	0.00	0.00	33.11	28.71	17.52	20.26	27.49	11.22
Movement LOS	B	A	A	A	A	A	D	D	C	C	D	B
95th-Percentile Queue Length [veh/ln]	0.13	0.00	0.00	0.04	0.02	0.00	0.64	0.64	0.64	0.12	0.12	0.12
95th-Percentile Queue Length [ft/ln]	3.23	0.00	0.00	0.91	0.45	0.00	15.97	15.97	15.97	2.88	2.88	2.88
d_A, Approach Delay [s/veh]	0.33			0.07			25.73			14.23		
Approach LOS	A			A			D			B		
d_I, Intersection Delay [s/veh]	0.70											
Intersection LOS	D											

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Appendix C – Cultural Resources Survey Update for the Entrada Housing Project

JM Research and Consulting

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MEMORANDUM

DATE: May 29, 2018

TO: Shonda Herold, Project Manager
Wakeland Housing and Development Corp
1230 Columbia Street, Suite 950
San Diego, CA 92101

FROM: Jennifer Mermilliod, M.A., Principal Historian/Architectural Historian

SUBJECT: Entrada Project Cultural Resources Survey Update for the Entrada Project, Chicago/Linden Strategic Plan, Riverside, Riverside County, California

Dear Ms. Herold,

JM Research & Consulting (JMRC) completed a focused update of the Cultural Resources Survey (JMRC 2013) for the Chicago/Linden Strategic Plan in Riverside, Riverside County for a portion of the original survey area that is now being developed under the plan. The current Entrada Project is located west of Chicago Avenue and north of Seventh Street, in the Chicago-Linden area of the Eastside Neighborhood and is generally 2 acres in size. The project is specifically located at 1705, 1719, 1725, 1733, 1747, 1753 and 1761 Seventh Street, also known as Assessor Parcel Nos. 211-181-019 to 022 and 024 to 026 (Project Area). The project includes the development of multi-family residential, and other proposed or potential offsite improvements include the relocation of the sewer line currently bisecting the subject properties into Seventh Street, minor street dedication along Seventh Street, and undergrounding currently overhead electric lines and storm drain improvements in the alley north of the Project Area.

Jennifer Mermilliod, M.A., Principal Historian/Architectural Historian, JMRC, acted as Principal Historic Consultant and managed the survey update, and archaeological investigation was subcontracted to Duke Cultural Resources Management LLC, (Duke CRM). All staff involved in the research, identification, documentation, and evaluation of the subject properties meet or exceed the Secretary of the Interior's Professional Qualifications Standards.

The intensive-level update was conducted in May 2018 in accordance with the Secretary of the Interior's Standards and applicable Guidelines, and included a record search, field survey and digital photography of the Project Area to document changes since previous study, as well as a

review of previous survey efforts (JMRC 2013). Updates to the properties included in the Entrada Project Area are documented in this memo report.

The JMRC 2013 survey was conducted for the Chicago/Linden Strategic Plan and included seventy-five (75) properties on seventy-seven (77) parcels within approximately 44 acres and was bounded by Linden Street to the north, Chicago Avenue to the east, Seventh Street to the south, and Dwight Avenue to the west, in Riverside, Riverside County, California (Plan Area). The cultural resources survey combined reconnaissance-level fieldwork, a one-mile radius record search completed by BCR consulting Eastern Information Center (EIC), selective property-specific research, intensive-level historic and area research, and full context development and all of the properties within the Entrada Project Area were within the boundary of the Plan Area. The study showed that the Chicago/Linden neighborhood is located within the Eastside Neighborhood and mainly represents early-20th century single-family and mid-20th century multi-family residential development. Development of a portion of this neighborhood began in the late 19th century after the completion of the Gage canal and the opening of the Eastside to citriculture and residential settlement with grove development and one of the first town lot additions to the city Subsequently, many small scale bungalows were constructed in the 1920s and 1930s. Like other areas of Riverside and throughout the nation, construction ceased during World War II and resumed with the infill addition of a handful of single- and multi-family residences. Population-driven demands for housing in the postwar period prompted the accommodation of increased density on single-family lots through the conversion of many residences to multi-family use, the addition of rear units, and the development of varied-scale multi-family housing in the mid-1950s, including dingbat, garden, and courtyard apartments.

For this survey update, a new one-mile radius records search was conducted by Duke CRM on May 8, 2018 at the EIC, located at the University of California, Riverside, which is the state-designated repository for records concerning historic and archaeological resources, studies and reports, and National Register of Historic Places (NR) and California Register of Historical Resources (CR) eligible properties in Riverside County. Although the Cultural Resources Survey for the Chicago/Linden Strategic Plan was submitted to the EIC in 2013, the results of the 2018 records search indicate that this was not received or appropriately filed as the results indicate that no previous cultural resources studies have included the Project Area. Within the one-mile radius, the new records search showed 40 reports are on file, three of which were conducted directly adjacent to the eastern project boundary in 1990, 2000, and 2003 (RI-3190, RI-4404, and RI-5056, respectively). All three were large-scale intensive pedestrian surveys that included the portion of Chicago Avenue adjacent to the project. An additional 37 cultural resources studies have been conducted within a one-mile radius of the project. Six of these were large-scale cultural resources studies with study areas larger than 100 acres. Of these, seven had study areas between 10 and 50 acres, 16 had study areas between 1 and 10 acres, and eight had study areas of less than 1 acre. Approximately 70 percent of the one-mile radius surrounding the Project Area has been surveyed for cultural resources.

The records search indicated that a total of 43 cultural resources have been recorded within a one-mile radius of the Project Area. All of these resources are historic built environments. The majority are historic buildings, though there is also a historic district and a railroad segment. None of these historic resources are within the Project Area. There are no prehistoric or historical archaeological resources recorded within a one-mile radius of the project. The results of the records search are summarized in the table and separated according to the cultural resources and reports recorded in the 2013 records search from the newer resources and reports identified in the 2018 records search.

Table 1. 2013 and 2018 Records Search Results

Study Year	Archaeological Resources	Historic Built Environment Resources	Reports
2013	None	P-33-4495, 4768H, 9690, 9691, 9774, 11521, 11629, 11902, 12186, 12187, 13218	RI-3383, 3605, 3693, 4404, 4450, 4799, 4997, 5056, 5622, 5744, 5748, 5873, 5993, 5996, 5997, 5998, 6001, 6284, 6838, 7062, 7169, 7324, 7924, 7925, 8412, 8545, 8577, 8840
2018	None	P-33-9546, 10973, 11784, 13076, 15155, 15156, 15157, 15158, 15159, 15160, 15161, 15162, 15163, 15167, 15168, 15169, 15170, 15171, 15172, 15173, 15174, 15175, 15176, 15177, 15178, 15179, 15180, 15181, 15182, 19936, 23958, 26899	RI-3190, 4429, 7058, 8598, 9118, 9126, 9143, 9318, 9654, 9676, 9709, 9990

All of the properties within the Entrada Project Area were constructed during the second wave of residential development in the city in an area east of the original Mile Square townsite (1870) known as the Eastside. The following theme is excerpted from JMRC 2013:

<u>EARLY 20th CENTURY RESIDENTIAL DEVELOPMENT & ARCHITECTURE, ca. 1901-1941</u>
Residential development continued in Riverside and on the Eastside across the turn of the century and increased significantly with dramatic nationwide growth after World War I as evidenced in Riverside with the conversion of citrus groves and, to a lesser degree, vineyards and walnut orchards, to whole neighborhoods or residential infill, commercial and industrial construction, and public and religious buildings and spaces. By 1910, residential construction was transforming the appearance of the Eastside, which at the time, ended at Kansas Avenue. Between Eucalyptus and Kansas Avenues, only two lots remained vacant along the south side of Eighth Street (University Avenue) while on the north, development lagged behind with about half of the lots developed (JMRC 2003; Sanborn 1908). A jagged line of construction to the north of Eighth Street slowly moved east, and development in the Plan Area, on the edge of the City limits at Chicago Avenue and beyond the then-perceived boundary of the Eastside, was even slower to develop.

In 1910, the small Alta Mesa tract was carved from the 10-acre A.S. White grove and the southern 10 acres of the Pember-Herrick grove. The tract was developed by Herrick and Charles S. Wimpress, who had purchased the A.S. White grove, and retained ownership of the lots after subdivision. Born in England, Wimpress arrived in California in 1903 and had resided on Mulberry Street in Riverside since 1907, employed as secretary of the Victoria Avenue Citrus Association and member of the Present Day Club (RDP 1933). Named for its southern location on the Highgrove mesa, the tract was delineated to straddle Seventh Street between Ottawa and Chicago Avenues. The development added 14 large, approximately 90 x 236’ lots to the Plan Area north of Seventh Street, and a double, bisected row of smaller 60 x 155’ lots is outside the Plan Area to the south (Figure 1).

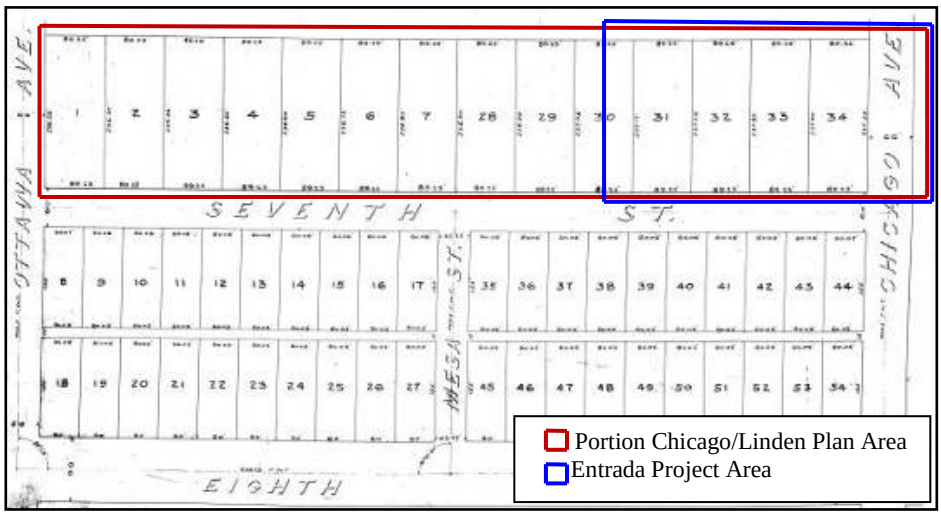

Figure 1. Alta Mesa Tract (City of Riverside 1870-56:1910)

<u>1705 SEVENTH STREET</u>

Senior Apartments (1988) located at 1705 Seventh Street (211-181-026) was excluded from survey in 2013 due to age and has been subsequently demolished.

2013

2018

<u>1719 SEVENTH STREET</u>

The single-family residence (ca. 1920s) located at 1719 Seventh Street (211-181-022) was found to be extensively altered in 2013 and has been subsequently demolished.

2013

2018

1725 SEVENTH STREET

The multi-family apartment building (1964-65) located at 1725 Seventh Street (211-181-021) was found to lack original architectural expression in 2013 and is now vacant in 2018.

2013

2018

1733 SEVENTH STREET

Grand Prix Apartments (1964-65) located at 1733 Seventh Street (211-181-020) was found to lack original architectural expression in 2013 and has been subsequently demolished

2013

2018

1747 SEVENTH STREET

This multi-family apartment building (1964-65) located at 1747 Seventh Street (211-181-019) was found to be a typical example of a dingbat apartment and is now vacant in 2018.

2013

2018

1753 SEVENTH STREET

The G.A. Adams bungalow (ca. 1915) located at 1753 Seventh Street (211-181-024) was found to be extensively altered by additions and a porch enclosure in 2013 and is now vacant in 2018.

2013

2018

1761 SEVENTH STREET

The Minimal Traditional residence (1941) located at 1761 Seventh Street (211-181-025) was one of a pair of adjacent sister properties constructed just before World War II by architect and owner/builder G.A. Adams. The residence was found to lack architectural expression and failed to portray important historic associations in 2013 and is now vacant in 2018.

2013

2018

Entrada Project Area properties continue to appear unable to meet eligibility criteria under Title 20 or for listing in the NR or CR. All properties were assigned a CHR Status Code of ***6Z – Found ineligible for NR, CR, or Local designation through survey evaluation*** in JMRC 2013, which is still applicable. The Project Area and surrounding area is highly disturbed by built environment features like buildings, paved roads, and elevated highways and is unlikely to yield archaeological resources. The absence of previously recorded prehistoric or historical archaeological resources within a one-mile radius also indicates low sensitivity for buried archaeological deposits within the Project Area. Further archaeological investigation or monitoring is not recommended.

Please contact me should you need any clarification or further assistance.

Regards,

Jennifer Mermilliod, Principal, JMRC

DUKE CRM

18 Technology Dr. Suite 103
Irvine, CA 92618
949-356-6660
www.dukecrm.com

May 25, 2018

Jennifer Mermilliod, M.A., Principal Investigator
JM Research & Consulting
6974 Brockton Ave. Suite 101
Riverside, CA 92506

Subject: Records Search Results for the Chicago/Linden Strategic Plan, City of Riverside, California

Dear Ms. Mermilliod:

At the request of JM Research and Consulting, Duke Cultural Resources Management, LLC (DUKE CRM) has conducted a records search for the Chicago/Linden Strategic Plan, located in the City of Riverside, Riverside County, California.

The records search was conducted on May 8, 2018 by Alex Bulato, B.A., of DUKE CRM at the Eastern Information Center (EIC) located at the University of California, Riverside. The EIC is the state-designated repository for records concerning historic and archaeological resources, studies and reports, and National and California Register-eligible properties in Riverside County. The records search checked for records concerning such resources and reports within a one-mile radius of the project area. A prior records search was completed for this project by BCR Consulting in 2013.

The results of this records search indicate that no previous cultural resources studies have included the project area. However, 40 reports have been completed within a one-mile radius. Three of these – RI-3190, RI-4404, and RI-5056 – were conducted directly adjacent to the eastern project boundary in 1990, 2000, and 2003, respectively. All three of these studies were large-scale intensive pedestrian surveys that included the portion of Chicago Avenue adjacent to the project. An additional 37 cultural resources studies have been conducted within a one-mile radius of the project. Six of these were large-scale cultural resources studies with study areas larger than 100 acres. Of the remaining studies, seven had study areas between ten and fifty acres, sixteen had study areas between one and ten acres, and eight had study areas of less than one acre. Approximately 70 percent of the one-mile radius surrounding the project area has been surveyed for cultural resources.

There have been a total of 43 cultural resources recorded within a one-mile radius of the project area. All of these resources are historic built environments. The majority are historic buildings, though there is also a historic district and a railroad segment. None of these historic resources are within the project area. There are no prehistoric or historical archaeological resources recorded within a one-mile radius of the project. The results of the records search are summarized in the table below. We have separated the cultural resources and reports recorded in the 2013 records search from the newer resources and reports identified in the 2018 records search.

Table 1. Records Search Results

Study Year	Archaeological Resources	Historic Built Environment Resources	Reports
2013	None	P-33-4495, 4768H, 9690, 9691, 9774, 11521, 11629, 11902, 12186, 12187, 13218	RI-3383, 3605, 3693, 4404, 4450, 4799, 4997, 5056, 5622, 5744, 5748, 5873, 5993, 5996, 5997, 5998, 6001, 6284, 6838, 7062, 7169, 7324, 7924, 7925, 8412, 8545, 8577, 8840
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The absence of any previously recorded prehistoric or historical archaeological resources within a one-mile radius of the project indicates a low level of sensitivity for buried archaeological deposits within the project area. Additionally, the project area and the surrounding one-mile radius can primarily be categorized as built environment consisting of paved roads, elevated highways, and commercial and residential buildings, and is therefore highly disturbed and unlikely to yield any archaeological resources. Based on the results of this records search, DUKE CRM does not recommend archaeological monitoring be required during ground-disturbing activities related to the project.

Thank you for contacting DUKE CRM regarding this request. If you have any questions or comments, you can contact me at (949) 356-6660 or by e-mail at curt@dukecrm.com.

Sincerely,

DUKE CULTURAL RESOURCES MANAGEMENT, LLC

Curt Duke, M.A., RPA
President/Archaeologist

Attachments:
Project Location Map

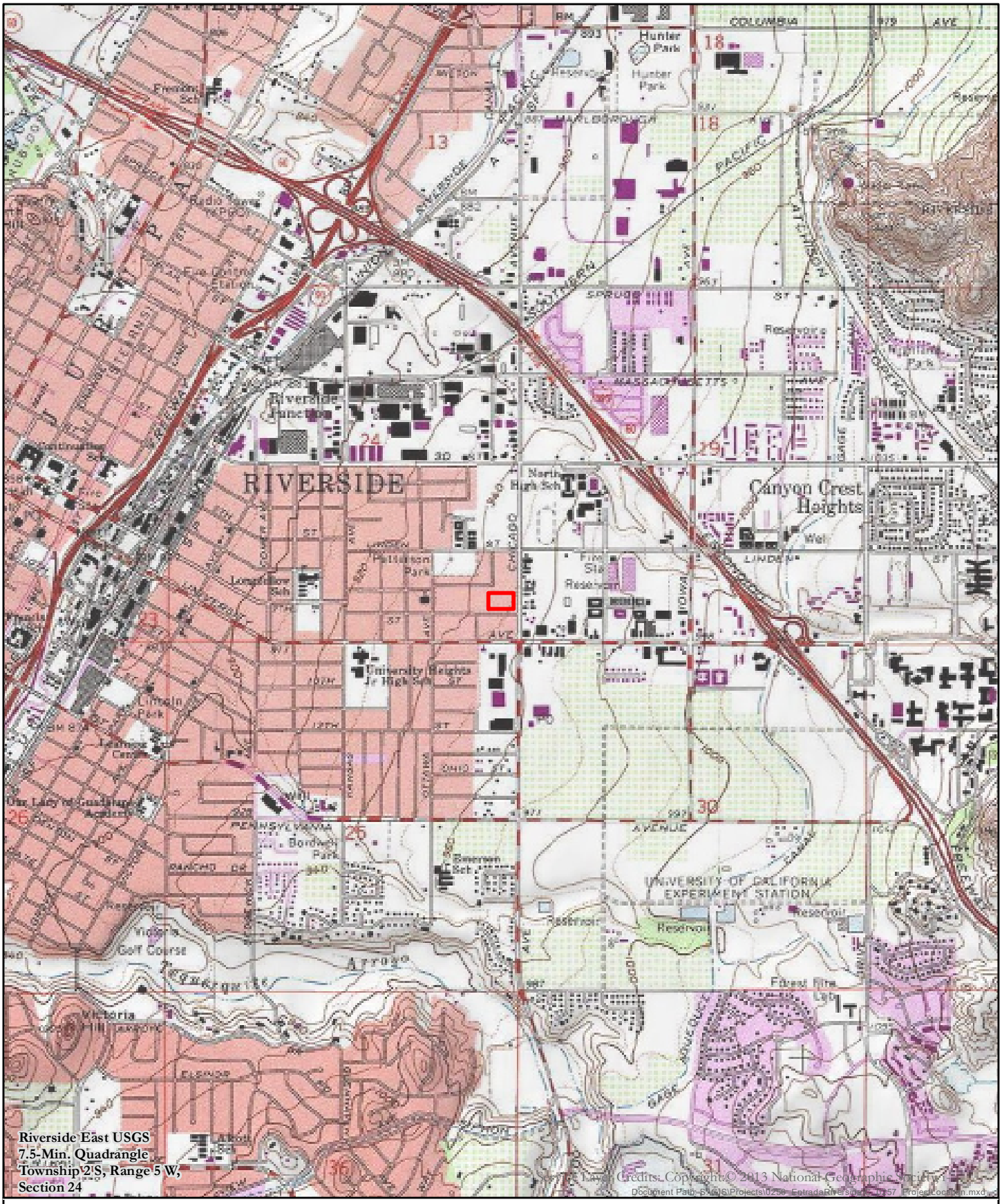


Figure 1 - Project Location
Entrada Project
City of Riverside, Riverside County

Project Area

0 2,000 4,000 Feet

1 inch = 2,000 feet 1:24,000

N

DUKE CRM

AIRPORT LAND USE COMMISSION
RIVERSIDE COUNTY

November 9, 2017

CHAIR
Rod Ballance
Riverside

VICE CHAIRMAN
Steve Manos
Lake Elsinore

COMMISSIONERS

Arthur Butler
Riverside

John Lyon
Riverside

Glen Holmes
Hemet

Russell Betts
Desert Hot Springs

Steven Stewart
Palm Springs

STAFF

Director
Simon A. Housman

John Guerin
Paul Rull
Barbara Santos

County Administrative Center
4080 Lemon St., 14th Floor.
Riverside, CA 92501
(951) 955-5132

www.rcaluc.org

Mr. Matt Taylor, Project Planner
City of Riverside Planning Division
3900 Main Street, 3rd Floor
Riverside CA 92522

RE: AIRPORT LAND USE COMMISSION (ALUC) DEVELOPMENT REVIEW – DIRECTOR'S DETERMINATION

File No.:	ZAP1289MA17
Related File No.:	P17-0853 (General Plan Amendment), P17-0781 (Rezone)
APNs:	211-181-019 thru -022, -024 thru -026

Dear Mr. Taylor:

Under the delegation of the Riverside County Airport Land Use Commission (ALUC) pursuant to ALUC Resolution No.15-01 (as adopted on August 13, 2015), staff reviewed City of Riverside Case Nos. P17-0781 (Rezone), a proposal to rezone the seven above-referenced parcels totaling 2.04 acres located on the northwest corner of Chicago Avenue and 7th Street from Single-Family Residential (R-1-7000) to Multiple-Family Residential (R-3-1500), and P17-0853 (General Plan Amendment), a proposal to amend the land use designation of four of these parcels (211-181-019, -020, -024, -025) from Medium Density Residential to High Density Residential. (There is no associated discretionary development application at this time.)

The site is located within Airport Compatibility Zone E of the March Air Reserve Base/Inland Port Airport Influence Area (AIA). Within Compatibility Zone E of the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, residential density and non-residential intensity are not restricted.

As ALUC Director, I hereby find the above-referenced project **CONSISTENT** with the 2014 March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan ("March ALUCP").

If you have any questions, please contact Paul Rull, ALUC Urban Regional Planner IV, at (951) 955-6893 or John Guerin, ALUC Principal Planner, at (951) 955-0982.

Sincerely,
RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

Simon A. Housman, ALUC Director

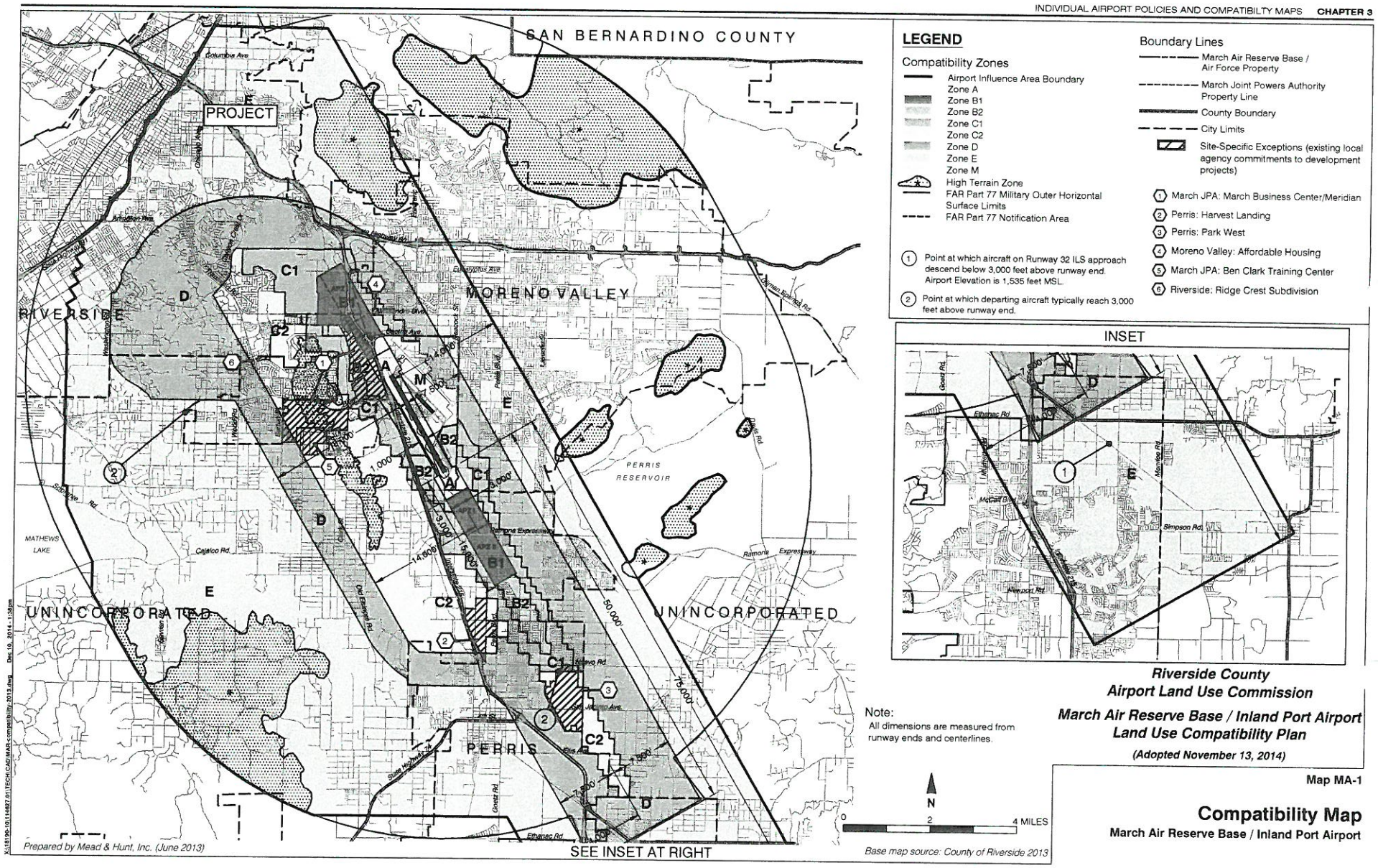
Attachments: Notice of Airport in Vicinity

cc: Wakeland Housing & Development Corporation (applicant/property owner)
Housing Authority of the City of Riverside (property owner)
Riverside Housing & Development Corporation (property owner)
Gary Gosliga, Airport Manager, March Inland Port Airport Authority
Denise Hauser or Daniel Rockholt, March Air Reserve Base
ALUC Case File

Y:\AIRPORT CASE FILES\March\ZAP1289MA17\ZAP1289MA17.LTR.doc

NOTICE OF AIRPORT IN VICINITY

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances [can vary from person to person. You may wish to consider what airport annoyances], if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you. Business & Professions Code Section 11010 (b)(13)(A)



Riverside County
Airport Land Use Commission

March Air Reserve Base / Inland Port Airport
Land Use Compatibility Plan

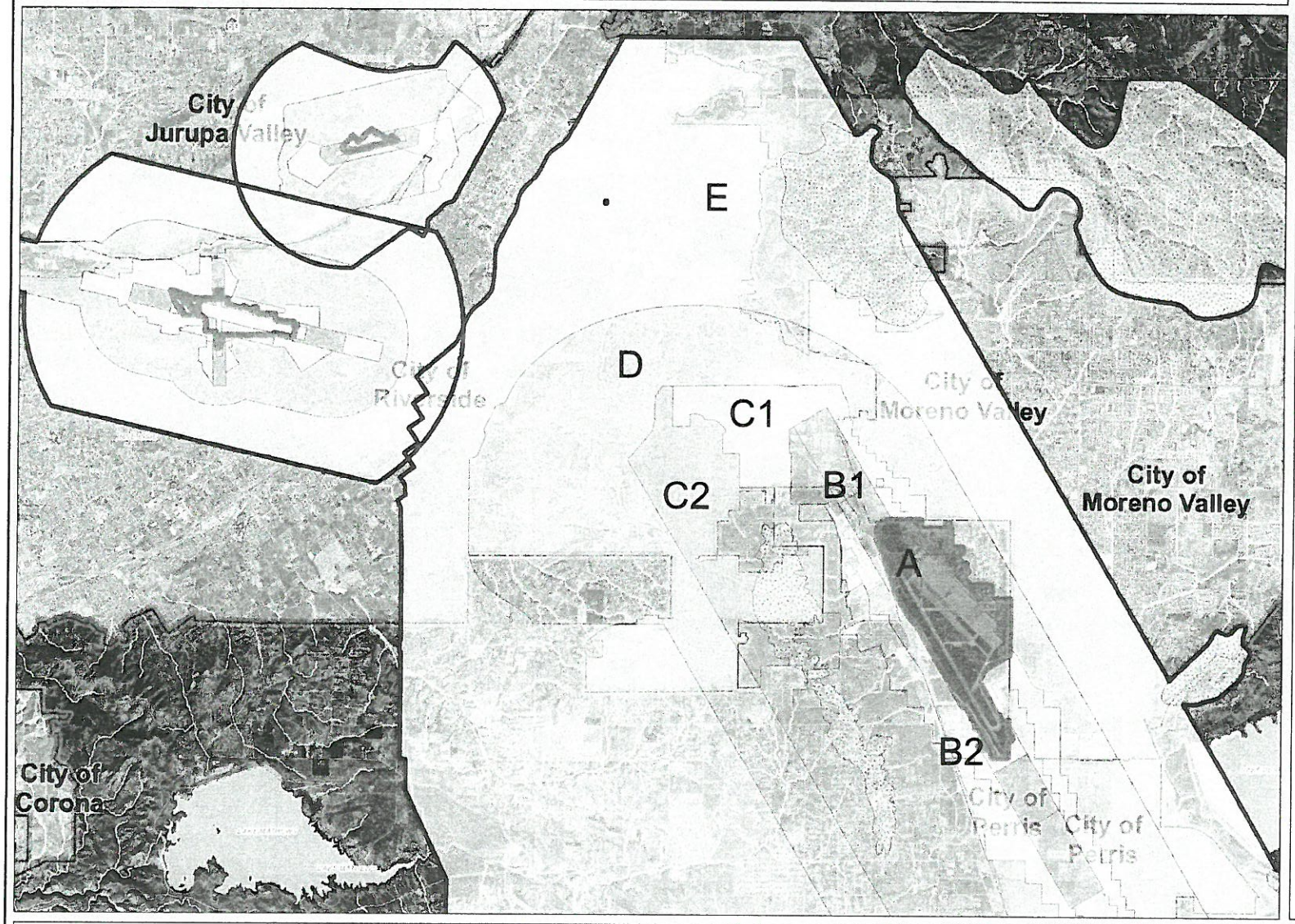
(Adopted November 13, 2014)

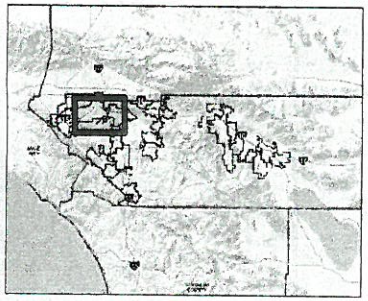
Map MA-1

Compatibility Map

March Air Reserve Base / Inland Port Airport

My Map





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- AIA
- Airport Compatibility
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  - B1-APZ I
  - B1-APZ I-EXC1
  - B1-APZ II
  - B1-APZ II-EXC1
  - B1-EXC1
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  - B2-EXC1
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  - C1-EXC4
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  - C2
  - C2-EXC1
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  - C2-EXC5
  - C2-EXC6
  - C2-HIGHT

RCIT

0 14,232 28,465 Feet

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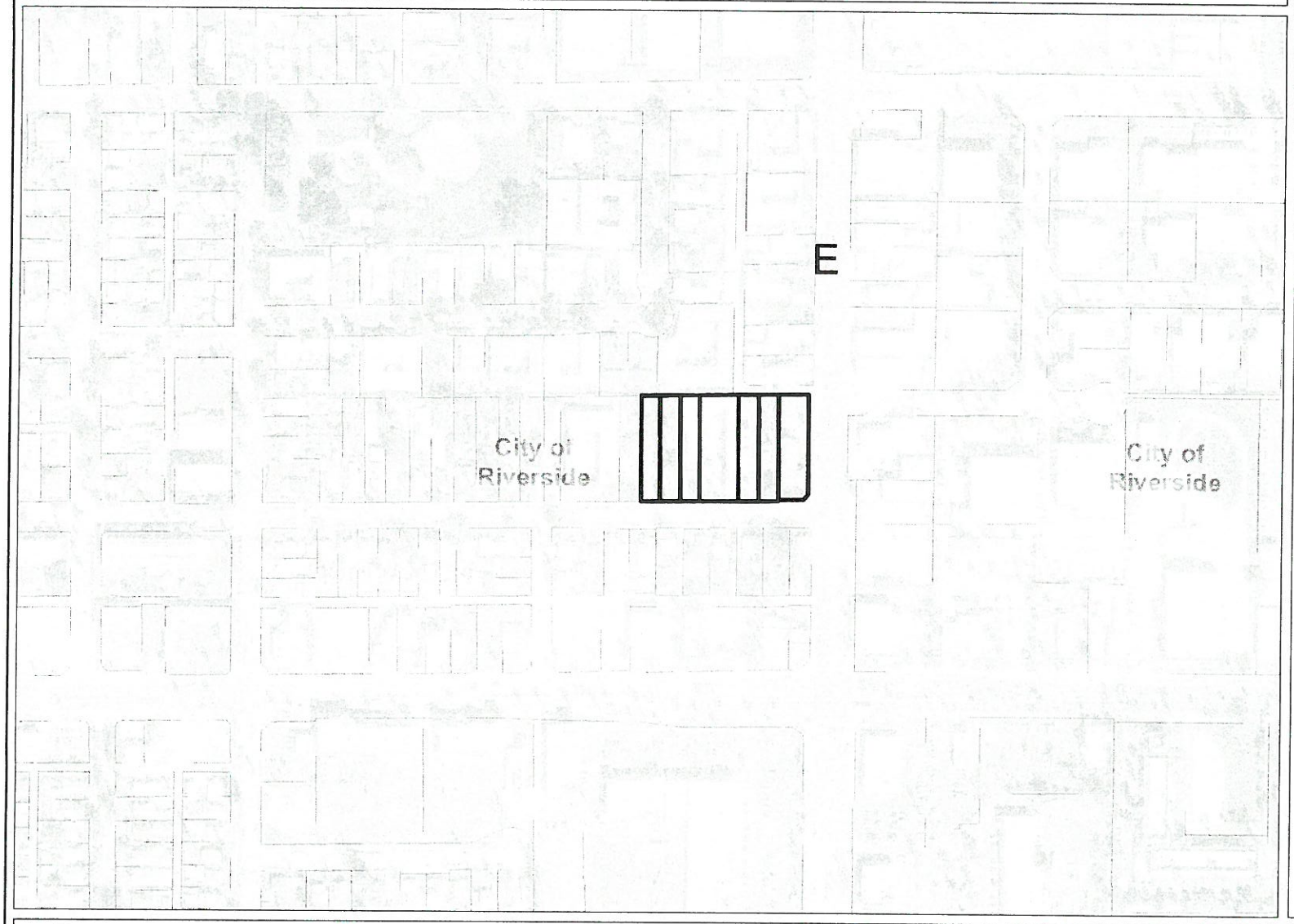

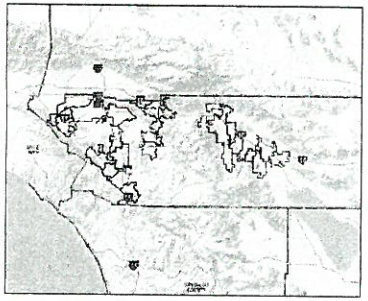

Legend

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  - C2-HIGHT

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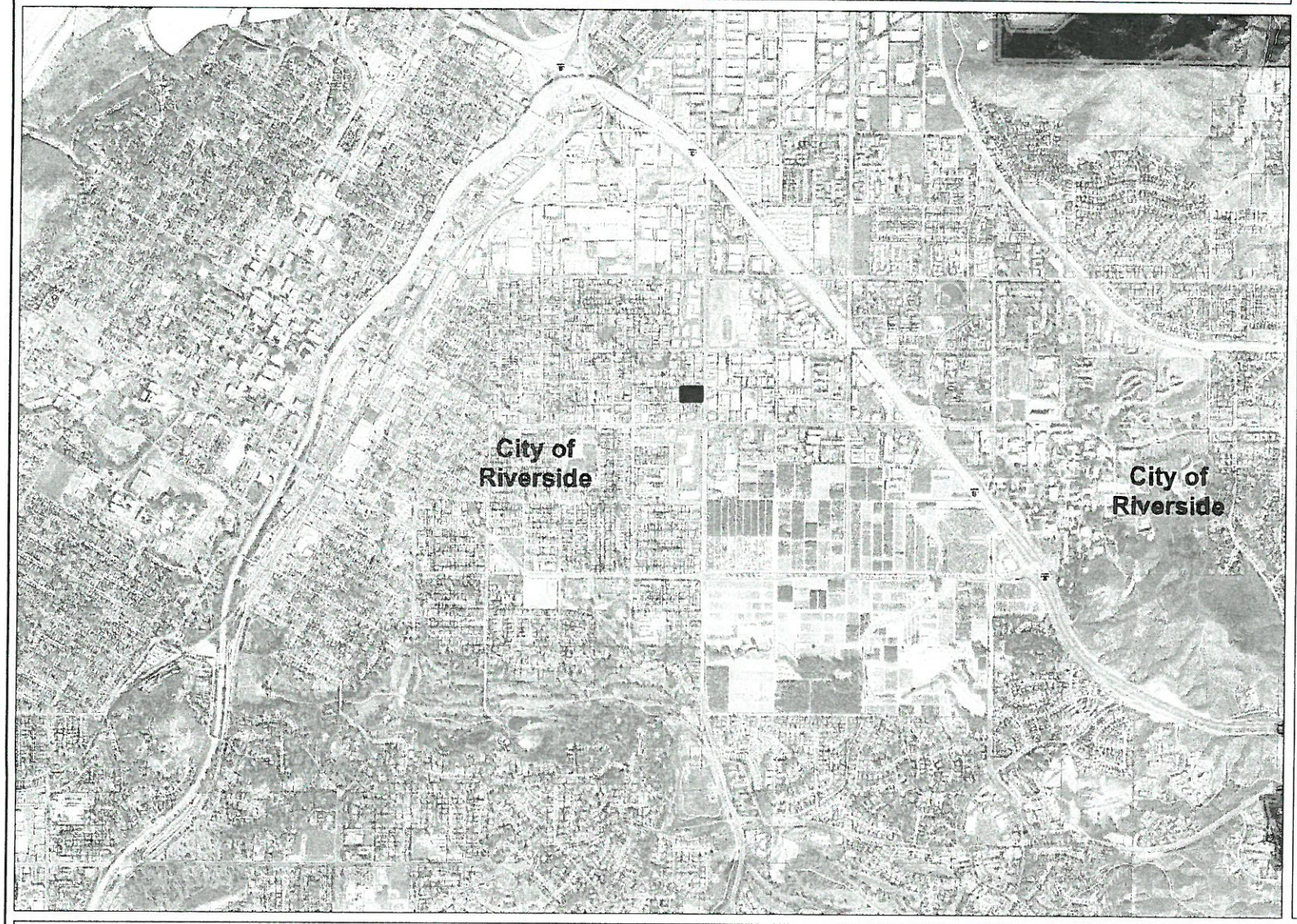

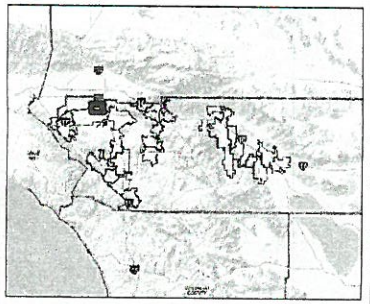

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  - Lakes
  - Rivers

RCIT

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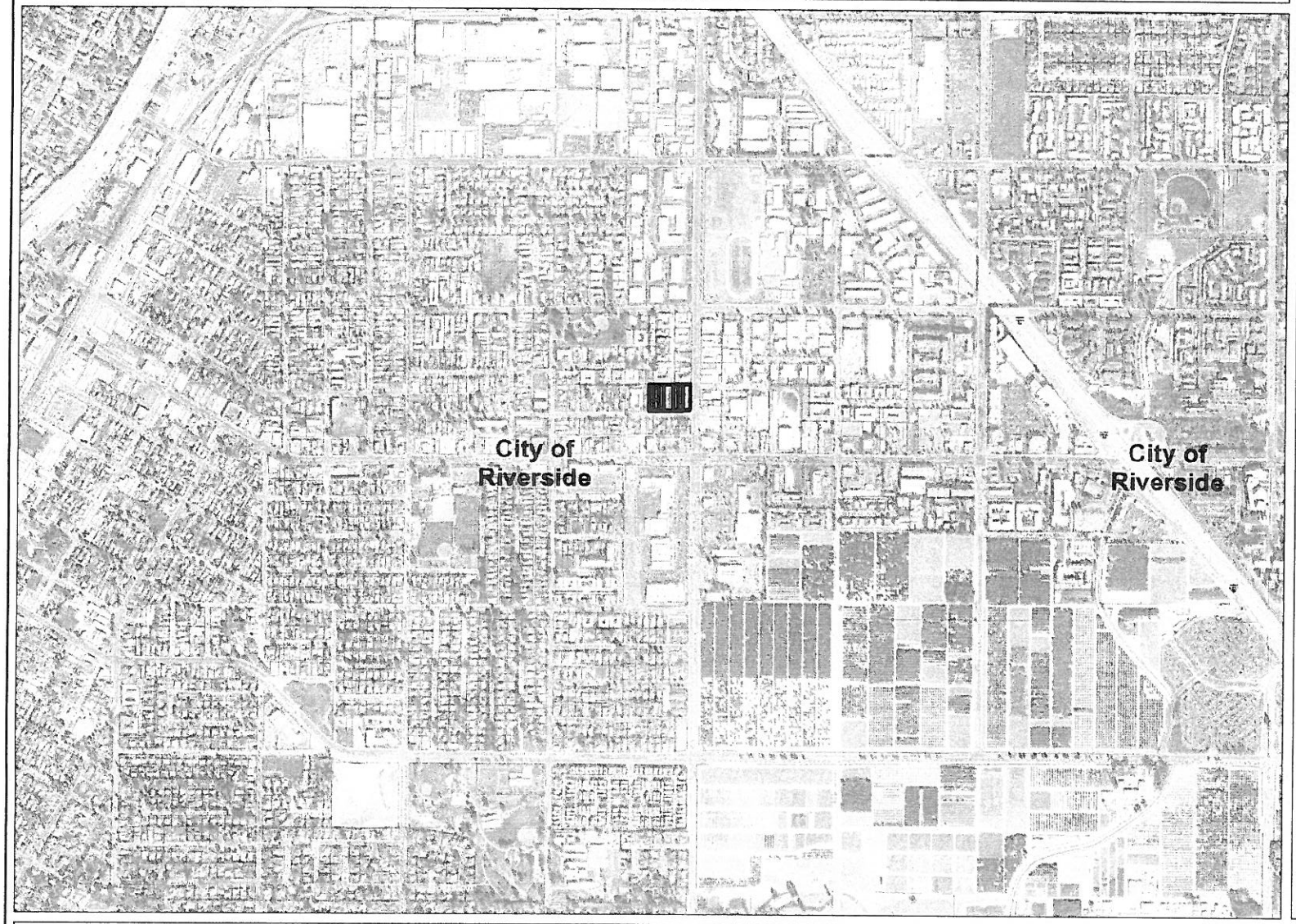

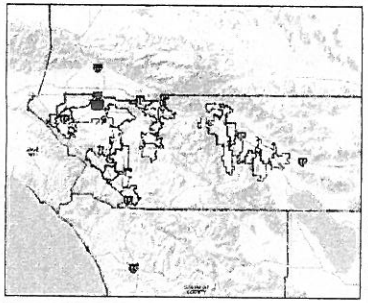

Legend

- City Boundaries
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- hydrographylines
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  - Lakes
  - Rivers

RCIT

0 1,668 3,336 Feet

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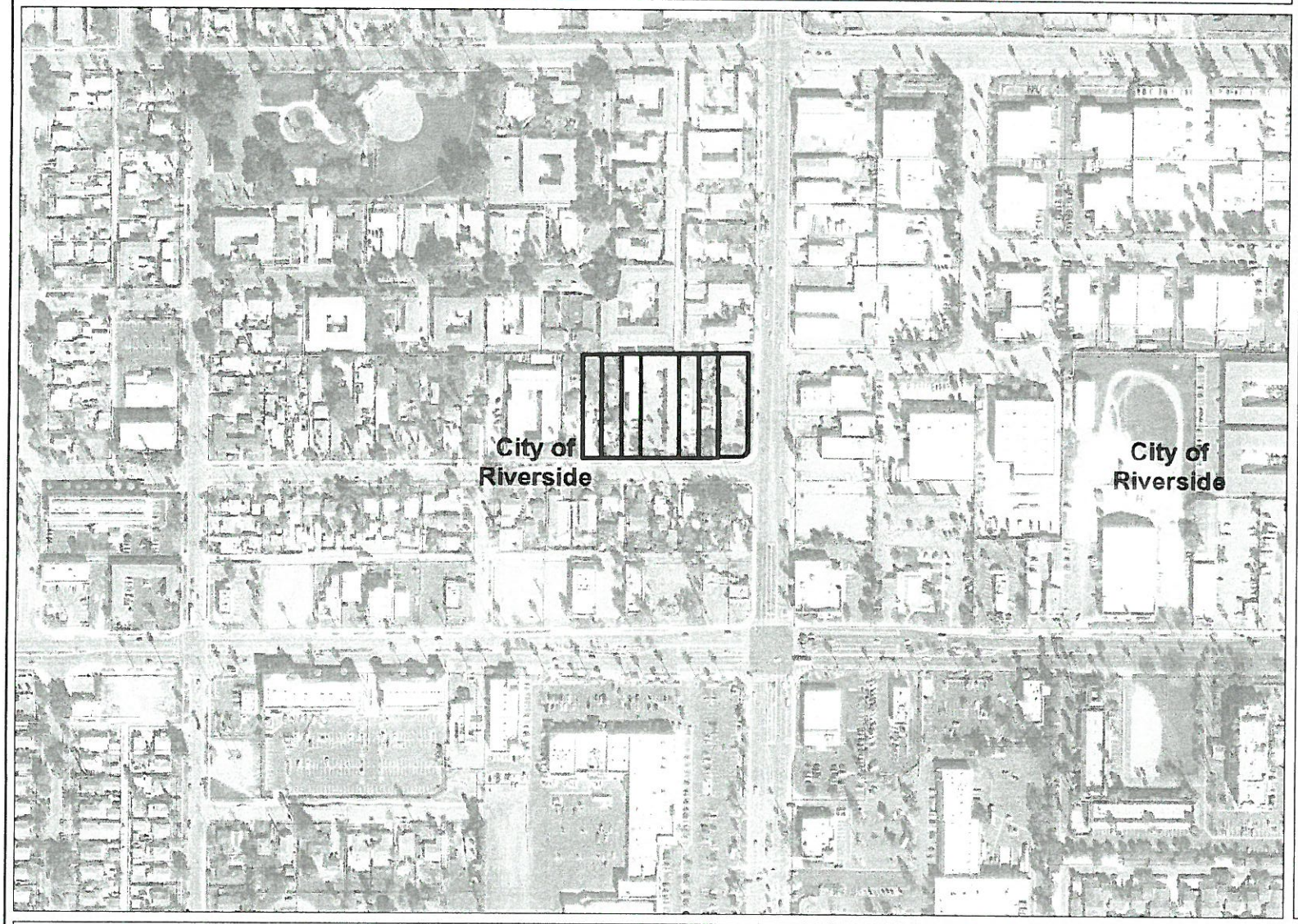

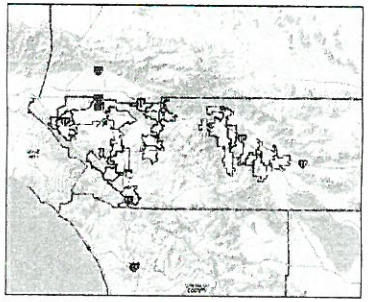

Legend

- City Boundaries
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- cities
- hydrographylines
- waterbodies
  - Lakes
  - Rivers

RCIT

0 417 834 Feet

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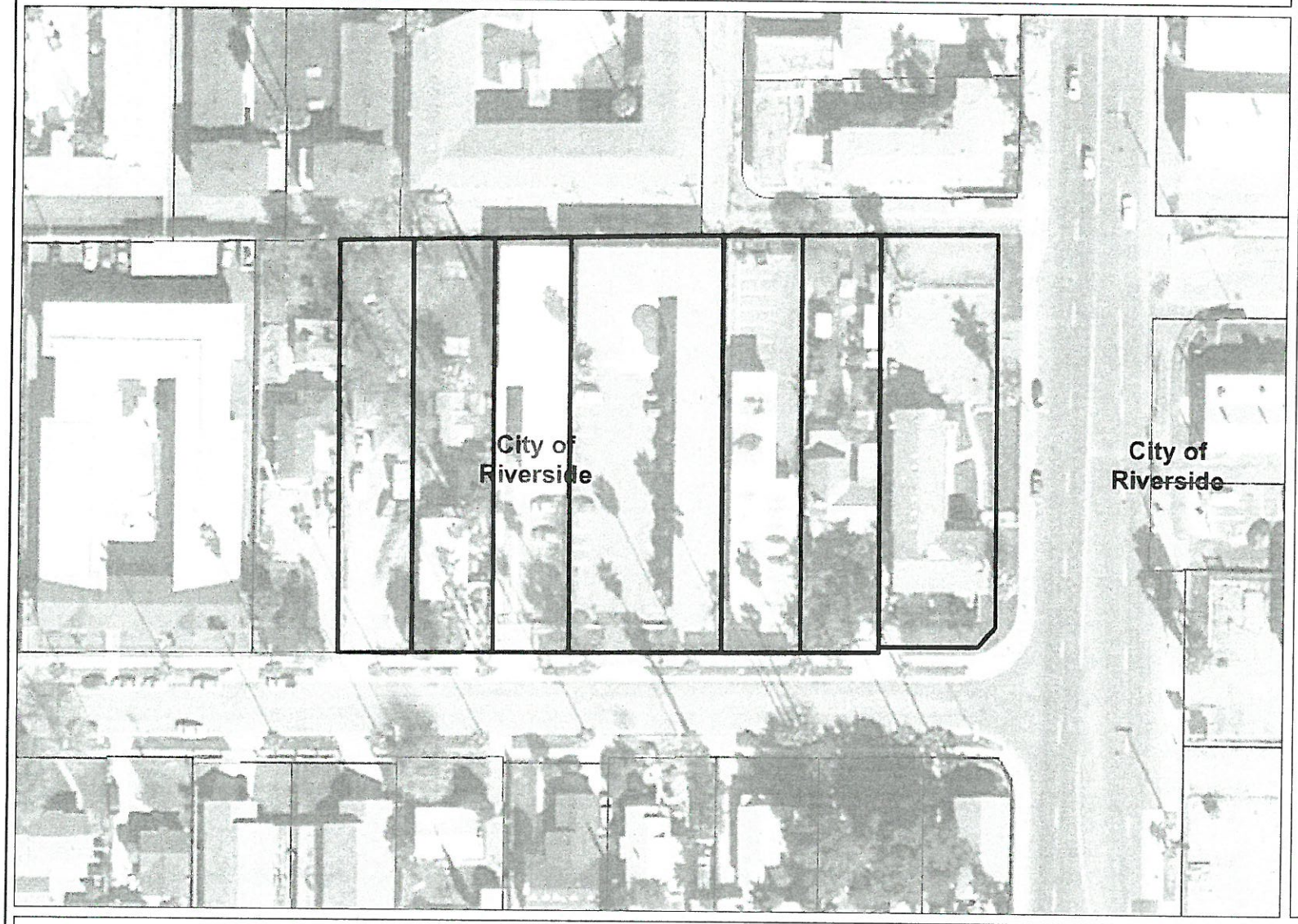
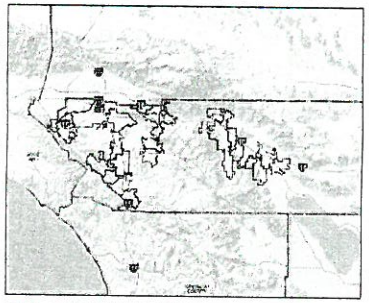
Notes

My Map





Legend

- City Boundaries
- Cities
- roadsanno
- highways
  - HWY
  - INTERCHANGE
  - INTERSTATE
  - OFFRAMP
  - ONRAMP
  - USHWY
- counties
- cities
- hydrographylines
- waterbodies
  - Lakes
  - Rivers

RCIT

0 104 208 Feet

IMPORTANT Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

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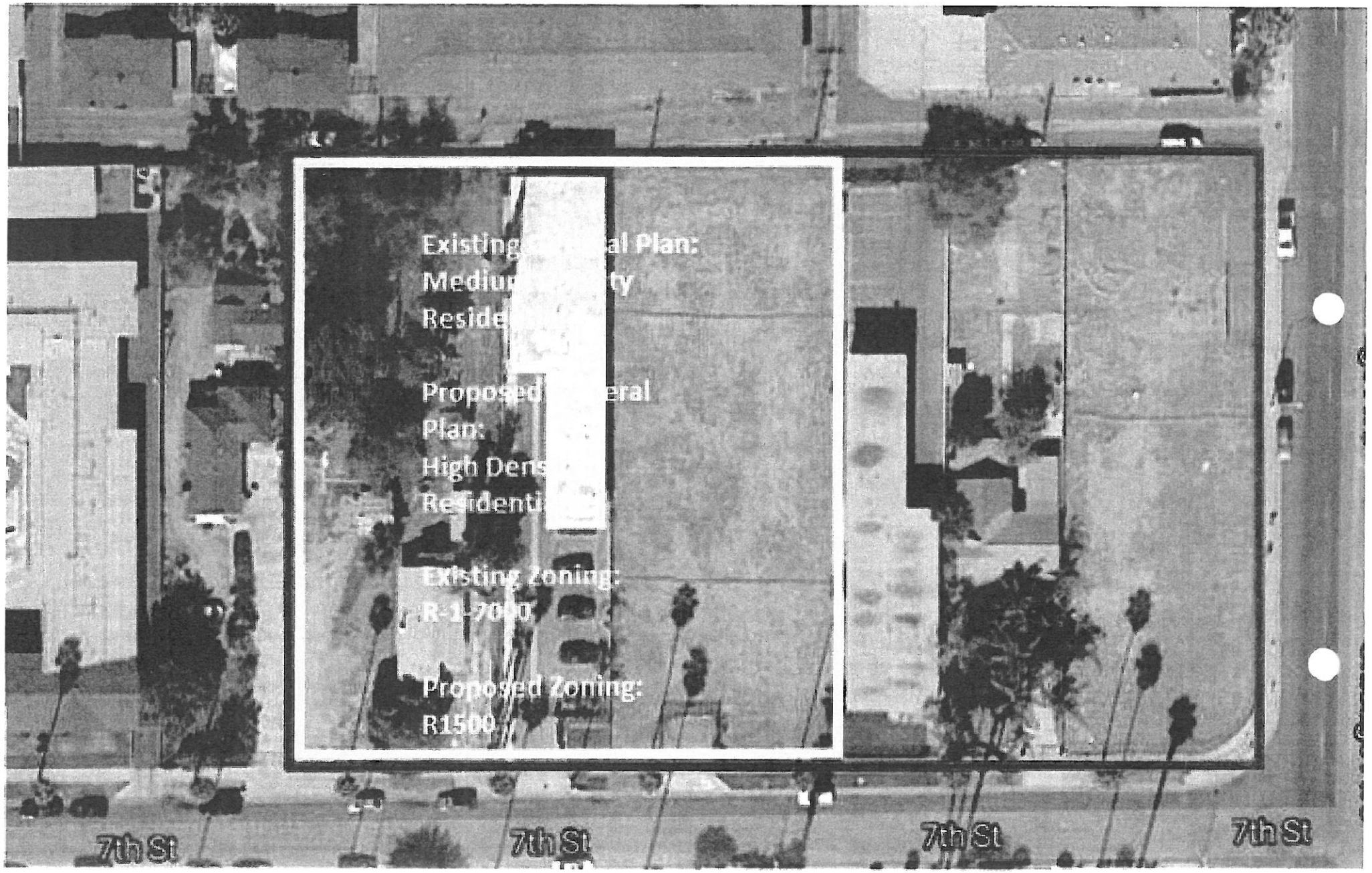
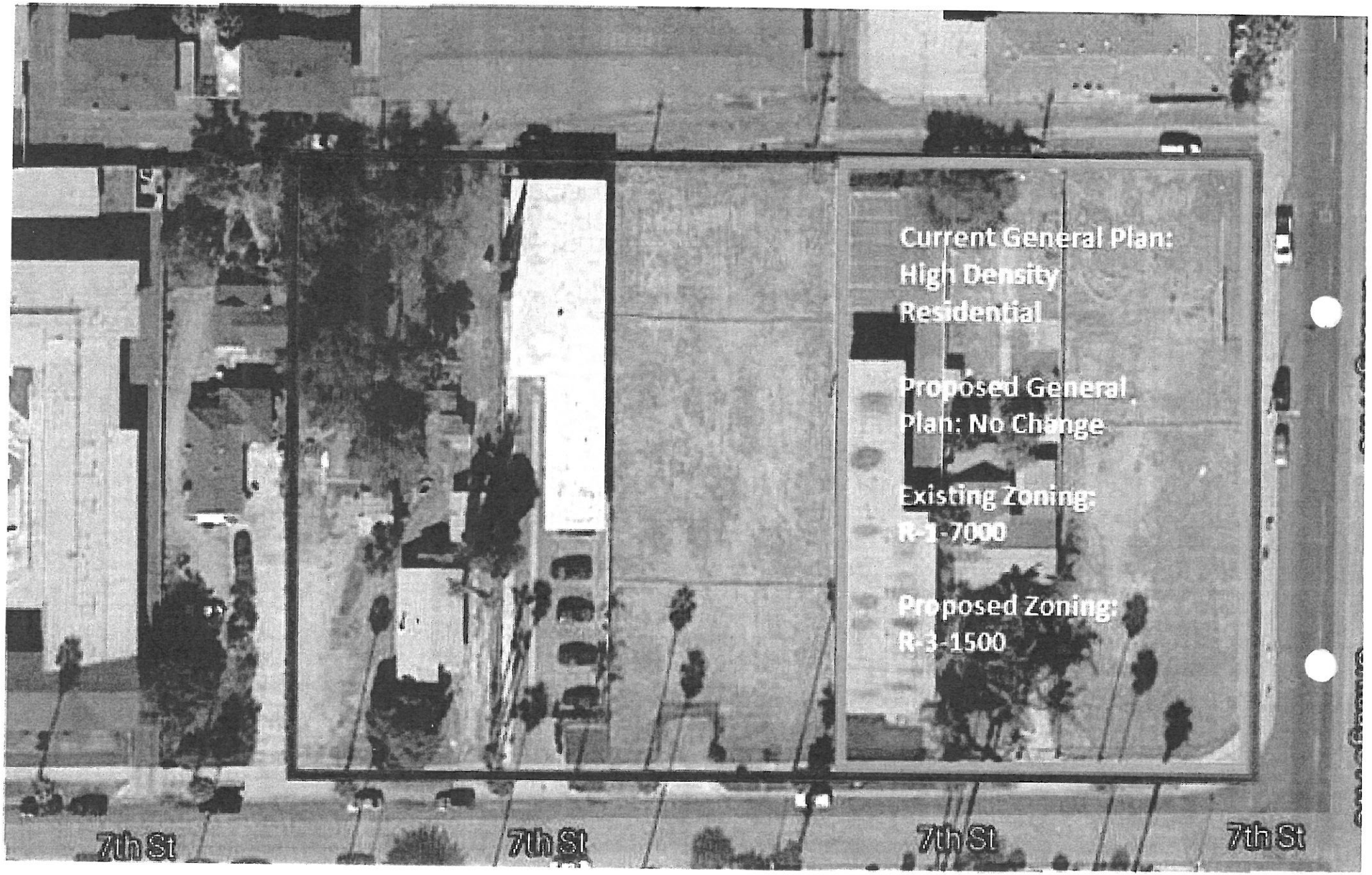
Notes

Affected Parcel #s (subject site)	Street Address	Property Owner	Parcel Size	Existing GP	Existing Zoning	Proposed GP	Proposed Zoning
211-181-026	1705 7th Street, Riverside	Housing Authority of the City of Riverside	.36	HDR (29 du/ace)	R-1-7000	No Change	R-3-1500
211-181-022	1719 7th Street, Riverside	Wakeland Entrada, LP	.24	HDR	R-1-7000	No Change	R-3-1500
211-181-021	1725 7th Street, Riverside	Housing Authority of the City of Riverside	.24	HDR	R-1-7000	No Change	R-3-1500
211-181-020	1733 7th Street, Riverside	Housing Authority of the City of Riverside	.48	MDR (8 du/ac)	R-1-7000	HDR (29 du/ac)	R-3-1500
211-181-019	1747 7th Street, Riverside	Wakeland Entrada, LP	.24	MDR	R-1-7000	HDR (29 du/ac)	R-3-1500
211-181-024	1753 7th Street, Riverside	Riverside Housing Development Corporation	.24	MDR	R-1-7000	HDR (29 du/ac)	R-3-1500
211-181-025	1761 7th Street, Riverside	Riverside Housing Development Corporation	.24	MDR	R-1-7000	HDR (29 du/ac)	R-3-1500
		Total Project Site:	2.04 Acres				

The project site (described above) total 2.04 acres, is generally rectangular in shape and located at the North West corner of Chicago Avenue and 7th Street, in the Eastside Neighborhood.

TOTAL PROJECT SITE

Yellow - GP & Zoning



Green= Zonings