



# CEQA Referral Initial Study

## And Notice of Intent to Adopt a Mitigated Negative Declaration

**Date:** April 24, 2024

**To:** Distribution List (See Attachment A)

**From:** Jeremy Ballard, Senior Planner, Planning and Community Development

**Subject:** GENERAL PLAN AMENDMENT AND REZONE APPLICATION NO. PLN2020-0123 – 132 INVESTMENTS

**Comment Period:** April 24, 2024 – May 28, 2024

**Respond By:** May 28, 2024

**Public Hearing Date:** June 20, 2024

**Time:** 6:00 P.M.

**Location:** Tenth Street Place  
1010 10<sup>th</sup> Street, Modesto, CA 95354  
Chambers – Basement Level

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You may have previously received an Early Consultation Notice regarding this project, and your comments, if provided, were incorporated into the Initial Study. Based on all comments received, Stanislaus County anticipates adopting a Mitigated Negative Declaration for this project. This referral provides notice of a 30-day comment period during which Responsible and Trustee Agencies and other interested parties may provide comments to this Department regarding our proposal to adopt the Mitigated Negative Declaration.

All applicable project documents are available for review at: Stanislaus County Department of Planning and Community Development, 1010 10<sup>th</sup> Street, Suite 3400, Modesto, CA 95354. Please provide any additional comments to the above address or call us at (209) 525-6330 if you have any questions. Thank you.

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**Applicant:** Abdo Almolaiki, d.b.a. 132 Investments

**Project Location:** 15101 Maze Boulevard (State Route 132), on the northwest corner of State Route 132 and S McCracken Road, abutting the Stanislaus and San Joaquin County border, in the Vernalis area.

**APN:** 016-001-001

**Williamson Act Contract:** N/A

**General Plan:** Agriculture

**Current Zoning:** Planned Development (P-D) (23)

**Project Description:** Request to amend the General Plan designation from Agriculture and zoning designation from Planned Development (P-D) (23) to a new Planned Development, to allow for the development of an 18-pump fueling station, serving both heavy-duty trucks and passenger vehicles,

and a 8,400 square-foot retail building made up of a convenience market and two shell suites for future retail use on a 9-acre portion of a 15.66-acre parcel.

Full document with attachments available for viewing at:  
<http://www.stancounty.com/planning/pl/act-projects.shtm>



**GENERAL PLAN AMENDMENT AND REZONE APPLICATION NO. PLN2020-0123 – 132 INVESTMENTS**

Attachment A

Distribution List

X	CA DEPT OF CONSERVATION Land Resources		STAN CO ALUC
X	CA DEPT OF FISH & WILDLIFE		STAN CO ANIMAL SERVICES
	CA DEPT OF FORESTRY (CAL FIRE)	X	STAN CO BUILDING PERMITS DIVISION
X	CA DEPT OF TRANSPORTATION DIST 10	X	STAN CO CEO
X	CA OPR STATE CLEARINGHOUSE		STAN CO CSA
X	CA RWQCB CENTRAL VALLEY REGION	X	STAN CO DER
	CA STATE LANDS COMMISSION		STAN CO ERC
X	CEMETERY DISTRICT: PATTERSON	X	STAN CO FARM BUREAU
	CENTRAL VALLEY FLOOD PROTECTION	X	STAN CO HAZARDOUS MATERIALS
	CITY OF		STAN CO PARKS & RECREATION
	COMMUNITY SERVICES/SANITARY DIST	X	STAN CO PUBLIC WORKS
X	COOPERATIVE EXTENSION	X	STAN CO PUBLIC WORKS - SURVEY
X	COUNTY OF: SAN JOAQUIN		STAN CO RISK MANAGEMENT
X	DER - GROUNDWATER RESOURCES DIVISION	X	STAN CO SHERIFF
X	FIRE PROTECTION DIST: WEST STAN	X	STAN CO SUPERVISOR DIST 5: CONDIT
X	GSA: NORTHWESTERN DELTA- MENDOTA	X	STAN COUNTY COUNSEL
X	HOSPITAL DIST: DEL PUERTO	X	StanCOG
X	IRRIGATION DIST: WEST STAN	X	STANISLAUS FIRE PREVENTION BUREAU
X	MOSQUITO DIST: TURLOCK	X	STANISLAUS LAFCO
X	STANISLAUS COUNTY EMERGENCY MEDICAL SERVICES	X	STATE OF CA SWRCB – DIV OF DRINKING WATER DIST. 10
	MUNICIPAL ADVISORY COUNCIL:	X	SURROUNDING LAND OWNERS
X	PACIFIC GAS & ELECTRIC		INTERESTED PARTIES
	POSTMASTER:	X	TELEPHONE COMPANY: AT&T
	RAILROAD:	X	TRIBAL CONTACTS (CA Government Code §65352.3)
X	SAN JOAQUIN VALLEY APCD		US ARMY CORPS OF ENGINEERS
X	SCHOOL DIST 1: PATTERSON JOINT	X	US FISH & WILDLIFE
	SCHOOL DIST 2:		US MILITARY (SB 1462)
	WORKFORCE DEVELOPMENT		USDA NRCS
X	STAN CO AG COMMISSIONER		WATER DIST:

**STANISLAUS COUNTY  
CEQA REFERRAL RESPONSE FORM**

**TO:** Stanislaus County Planning & Community Development  
1010 10<sup>th</sup> Street, Suite 3400  
Modesto, CA 95354

**FROM:** \_\_\_\_\_

**SUBJECT:** GENERAL PLAN AMENDMENT AND REZONE APPLICATION NO. PLN2020-0123 –  
132 INVESTMENTS

Based on this agency's particular field(s) of expertise, it is our position the above described project:

- \_\_\_\_\_ Will not have a significant effect on the environment.
- \_\_\_\_\_ May have a significant effect on the environment.
- \_\_\_\_\_ No Comments.

Listed below are specific impacts which support our determination (e.g., traffic general, carrying capacity, soil types, air quality, etc.) – (attach additional sheet if necessary)

- 1.
- 2.
- 3.
- 4.

Listed below are possible mitigation measures for the above-listed impacts: *PLEASE BE SURE TO INCLUDE WHEN THE MITIGATION OR CONDITION NEEDS TO BE IMPLEMENTED (PRIOR TO RECORDING A MAP, PRIOR TO ISSUANCE OF A BUILDING PERMIT, ETC.):*

- 1.
- 2.
- 3.
- 4.

In addition, our agency has the following comments (attach additional sheets if necessary).

\_\_\_\_\_  
\_\_\_\_\_

Response prepared by:

\_\_\_\_\_  
Name Title Date





**DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT**

1010 10<sup>TH</sup> Street, Suite 3400, Modesto, CA 95354  
Planning Phone: (209) 525-6330 Fax: (209) 525-5911  
Building Phone: (209) 525-6557 Fax: (209) 525-7759

## CEQA INITIAL STUDY

Adapted from CEQA Guidelines APPENDIX G Environmental Checklist Form, Final Text, January 1, 2020

1. **Project title:** General Plan Amendment and Rezone Application No. PLN2020-0123-132 Investments
2. **Lead agency name and address:** Stanislaus County  
1010 10<sup>th</sup> Street, Suite 3400  
Modesto, CA 95354
3. **Contact person and phone number:** Jeremy Ballard, Senior Planner  
(209) 525-6330
4. **Project location:** 15101 Maze Boulevard (State Route 132), on the northwest corner of State Route 132 and McCracken Road, abutting the Stanislaus and San Joaquin County border, in the Vernalis area (APN:016-001-001).
5. **Project sponsor's name and address:** Abdo Almolaiki, d.b.a. 132 Investments  
125 Maze Boulevard  
Modesto, CA 95351
6. **General Plan designation:** Agriculture
7. **Zoning:** Planned Development (P-D) (23)
8. **Description of project:**

Request to amend the General Plan designation from Agriculture and zoning designation from Planned Development (P-D) (23) to a new Planned Development, to allow for the development of an 18-pump fueling station, serving both heavy-duty trucks and passenger vehicles, and a 8,400 square-foot retail building made up of a convenience market and two shell suites for future retail use, on a 9-acre portion of a 15.66-acre parcel.

The portion of the retail structure that will be occupied by a convenience market is proposed to be 4,800 square feet. The portion of the building for the two separate retail users, to be identified in the future, are proposed to be 1,800 square feet each. The convenience market will include areas for product display, storage, bathrooms, office, and a walk-in cooler and freezer. The fueling station will include a 1,380 square-foot canopied island that will include six fueling pumps for heavy-duty trucks and a 5,130 square-foot canopied island with 12 passenger vehicle fueling pumps. A total of 111 standard passenger vehicle parking spaces and 20 EV charging station spaces are proposed around the market structure and site perimeter. An open graveled area at the north end of the project site is proposed to accommodate the parking of heavy-duty trucks during use of the convenience market or other on-site business or amenities. No overnight truck parking is proposed. Additionally, the site will develop a 499-gallon propane tank and dispenser for retail sales and 2,000 square-foot area for aboveground fuel tanks totaling 16,000 gallons. The project will be served by a new domestic well and private septic facilities. The proposed domestic well will be drilled to a depth of approximately 250 feet and will use approximately 1.94-acre feet per year of water for domestic purposes. The project proposes two driveways, one onto State Route (SR) 132 and the second onto McCracken Road. Proposed hours of operation are anticipated to be seven days a week from 6:00 a.m. to 10:00 p.m. for the convenience market and 24 hours a day for the fueling stations. The applicant expects two shifts per day with 8-12 employees each shift and a total of three truck deliveries per day for the convenience market. Employees and hours of operation for the future retail uses will be identified at a later time during a separate discretionary land use process.

Landscaping consisting of a mixture of evergreen and shade trees, ornamental grasses, low lying shrubs, and groundcover will be installed along both road frontages, throughout the customer parking areas, around the proposed market building, and around a walking path area that is located adjacent to the market. The proposed storm water basins for the site will be located along the northeastern portion of the site adjacent to the driveway onto McCracken Road and abutting the northwest corner of the SR 132 and McCracken intersection. Each basin will be planted with seasonal grasses and cobble. Additionally, the applicant is proposing installation of a 30-foot-tall free standing gasoline pricing sign. The sign will be located at the southeastern corner of the project site adjacent to the SR 132 and McCracken intersection.

The parcel abutting the project site to the west, which is located within San Joaquin County but is under common ownership as the project site, is developed with mixed uses such as two retail stores, an event center, drive thru coffee stand, and a RV park and walnut orchards. Although the proposed project is a separate development than those currently in operation within San Joaquin County, an existing access road that runs east to west along the SR 132 frontage between the two parcels is proposed to be paved and landscaped, connecting the two sites via reciprocal access.

The project site has a General Plan designation of Agriculture and a zoning designation of Planned Development (P-D) (23). P-D 23 was originally approved on July 15, 1976 (Rez 76-11) to allow the development of a farm animal zoo, including construction of 14 small animal pen structures. On January 4, 1979 the Planned Development was modified to convert half of the zoo space into a weekend only outdoor sales area for vendors to sell hand-crafted goods. The use has ceased for some time and all existing structures are proposed to be demolished as a result of development of the site. A rezone to a new Planned Development district is necessary for the development of the project.

- 9. Surrounding land uses and setting:** Orchards and scattered single family dwellings in all directions, commercial development and mobile home park to the west within San Joaquin County, Highway 33 and Vernalis further to the west, the San Joaquin River to the east, and State Route 132 to the south.
- 10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):** Caltrans  
San Joaquin Valley Air Pollution Control District  
Stanislaus County Department of Public Works  
Stanislaus County Department of Environmental Resources
- 11. Attachments:**
- I. Central California Information Center Report, dated October 13, 2020
  - II. Traffic Impact Analysis prepared by KD Anderson and Associates, Inc., revised on September 27, 2021

**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.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Aesthetics                  | <input type="checkbox"/> Agriculture & Forestry Resources | <input type="checkbox"/> Air Quality                        |
| <input type="checkbox"/> Biological Resources        | <input type="checkbox"/> Cultural Resources               | <input type="checkbox"/> Energy                             |
| <input type="checkbox"/> Geology / Soils             | <input type="checkbox"/> Greenhouse Gas Emissions         | <input type="checkbox"/> Hazards & Hazardous Materials      |
| <input type="checkbox"/> Hydrology / Water Quality   | <input type="checkbox"/> Land Use / Planning              | <input type="checkbox"/> Mineral Resources                  |
| <input type="checkbox"/> Noise                       | <input type="checkbox"/> Population / Housing             | <input type="checkbox"/> Public Services                    |
| <input type="checkbox"/> Recreation                  | <input checked="" type="checkbox"/> Transportation        | <input type="checkbox"/> Tribal Cultural Resources          |
| <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Wildfire                         | <input type="checkbox"/> Mandatory Findings of Significance |

**DETERMINATION: (To be completed by the Lead Agency)**

On the basis of this initial evaluation:

- I find that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- I find 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.
- I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- I find 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.
- I find 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 on file.  
 \_\_\_\_\_  
 Prepared by Jeremy Ballard, Senior Planner

April 18, 2024  
 \_\_\_\_\_  
 Date

**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 Section XVII, “Earlier Analyses,” 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 within 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 measures which were incorporated or refined from the earlier document and the extent to which they address site-specific development standards 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). References 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) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.
  - 9) The explanation of each issue should identify:
    - a) the significant 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 significant.

**ISSUES**

I. AESTHETICS – Except as provided in Public Resources Code Section 21099, could the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

**Discussion:** The site itself is not considered to be a scenic resource or unique scenic vista. The portion of the site in Stanislaus County is currently developed with 14 storage shed structures, used with the previous farm zoo and hand-crafted goods sales operation of P-D (23). The use has ceased for some time and all 16 structures are proposed to be demolished as a result of development of the site. The remaining portion of the site is planted in walnut orchard. The proposed project will landscape the developed portion of the site with a mixture of evergreen and shade trees, ornamental grasses, low lying shrubs, and groundcover which will be installed along both road frontages, throughout the customer parking areas, around the proposed market building, and around a walking path area that is located adjacent to the market. Additionally, the applicant has proposed a 30-foot-tall free standing gasoline pricing sign.

The only scenic designation in the County is along I-5, which is 6± miles west of the project site. The project will not degrade the existing visual character or quality of the site or its surroundings. The applicant has proposed 51 free-standing light poles, 24 feet in height, installed throughout the developed area. Development standards will be added to this project to address glare from any on-site lighting. No adverse impacts to the existing visual character of the site or its surroundings are anticipated.

**Mitigation:** None.

**References:** Application information; Stanislaus County Zoning Ordinance; the Stanislaus County General Plan; and Support Documentation<sup>1</sup>.

<b>II. AGRICULTURE AND FOREST RESOURCES:</b> 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 Department 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 compiled 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 forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
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?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			X	
d) Result in the loss of forest land or conversion of forest land to non-forest use?			X	
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?			X	

**Discussion:** A 2.85-acre portion of the 15.66-acre site was previously developed as a farm animal zoo including the sales of hand-crafted goods and is not currently in agricultural production with the balance of the property planted in walnuts. The site is not enrolled in a Williamson Act Contract. As proposed, 9 acres of the 15.66-acre parcel will be developed for a convenience market and fueling station, the remaining 6.66 acres will remain planted in walnuts. The USDA Natural Resources Conservation Service’s Western Stanislaus County Soil Survey indicates that nearly the entire property is made up of Capay clay wet, which has a Story Index Rating of 35 and a Grade of 4. The California Revised Storie Index is a rating system based on soil properties that dictate the potential for soils to be used for irrigated agricultural production in California. This rating system grades soils with an Index rating of 81 and 100 as excellent soils to be used for irrigated farmland. Stanislaus County considers land that meets at least one of the following requirements to be prime farmland under the Uniform Rules: parcels comprised of Grade 1 or 2 soils; irrigated pastureland which supports livestock used for the production of food and fiber; and land used for unprocessed agricultural plant production with an annual gross value of not less than eight hundred dollars per acre. The project site does not meet the County’s definition for prime agriculture under the County’s Uniform Rules. However, the California Department of Conservation’s Important Farmland Maps identifies the project site as Prime Farmland.

The project site is located within the West Stanislaus Irrigation District (WSID). The WSID responded to the project referral stating that existing irrigation infrastructure exists on the site and will be required to be relocate infrastructure and provide an easement for its continued use. A condition of approval will be added to the project to ensure these requirements are met.

Goal 2, Policy 2.7 of the Agricultural Element states that, "Proposed amendments to the General Plan Diagram (map) that would allow the conversion of agricultural land to non-agricultural uses shall be approved only if they are consistent with the County's conversion criteria." Implementation 1, of the Agricultural Element's Policy 2.7 describes the procedures for processing amendments to the General Plan land use designation from "Agriculture" to another designation:

Conversion Consequences. *The direct and indirect effects, as well as the cumulative effects, of the proposed conversion of agricultural land shall be fully evaluated.*

Conversion Considerations. *In evaluating the consequences of a proposed amendment, the following factors shall be considered: plan designation; soil type; adjacent uses; proposed method of sewage treatment; availability of water, transportation, public utilities, fire and police protection, and other public services; proximity to existing airports and airstrips; impacts on air and water quality, wildlife habitat, endangered species and sensitive lands; and any other factors that may aid the evaluation process.*

Conversion Criteria. *Proposed amendments to the General Plan Diagram (map) that would allow the conversion of agricultural land to urban uses shall be approved only if the Board of Supervisors makes the following findings:*

- A. *Overall, the proposal is consistent with the goals and policies of the General Plan.*
- B. *There is evidence on the record to show a demonstrated need for the proposed project based on population projections, past growth rates, and other pertinent data.*
- C. *No feasible alternative site exists in areas already designated for the proposed uses.*
- D. *Approval of the proposal will not constitute a part of, or encourage, piecemeal conversion of a larger agricultural area to non-agricultural uses and will not be growth-inducing (as used in the California Environmental Quality Act).*
- E. *The proposed project is designed to minimize conflict and will not interfere with agricultural operations on surrounding agricultural lands or adversely affect agricultural water supplies.*
- F. *Adequate and necessary public services and facilities are available or will be made available as a result of the development.*
- G. *The design of the proposed project has incorporated all reasonable measures, as determined during the CEQA review process, to mitigate impacts to agricultural lands, fish and wildlife resources, air quality, water quality and quantity, or other natural resources.*

A comment letter was received from the California Department of Conservation (DOC) stating that the County must consider feasible alternatives or mitigations to the loss of agricultural land. The DOC recommended further discussion on other farmland converted as a result of this project, impacts to current and future agricultural operations in the vicinity, and any mitigation measures.

As the entirety of the parcel within Stanislaus County was rezoned to a Planned Development zoning district to allow for a farm animal zoo in 1976 and later in 1979 for the sales of hand-crafted goods, the conversion of a portion of the agricultural land on the parcel took place at that time. To allow for the development of the convenience market and fueling station, a new Planned Development zoning district is needed. The General Plan designation of the parcel is still Agriculture and must be consistent with the proposed zoning district, thus the application includes a General Plan amendment to Planned Development as well. However, because of the unique nature of the site including the previous agro-commercial uses of P-D 23, adjacency to a mix of commercial and residential uses within San Joaquin County, the location of a state highway, and soils that are not considered prime, the amendment of the General Plan Designation from Agriculture to Planned Development is considered to be consistent with the required conversion criteria of Goal 2 of the Agricultural Element. Because of these factors, it is not anticipated that the project would lead to, directly or indirectly, conversion of agricultural lands adjacent to the project nor are impacts to those lands expected to be significant.

All new or expanding uses approved by discretionary permit in the A-2 zoning district or on a parcel adjoining the A-2 zoning district are required to incorporate a minimum 150-foot-wide agricultural buffer setback, or 300-foot-wide buffer setback for people-intensive uses. Public roadways, utilities, drainage facilities, rivers and adjacent riparian areas, landscaping, parking lots, and similar low people intensive uses are permitted uses within the buffer setback area. The nearest A-2 zoned property is located a minimum of 60 feet to the south, across SR 132 and to the east, across McCracken Road, of the project site. Based on the proposed use a 300-foot-wide buffer for people intensive uses would be required, however, the applicant has proposed an alternative buffer for compliance with the policy. Along the frontage

of both SR 132 and McCracken Road, the applicant has proposed a combination of shade trees and evergreen hedges positioned behind the two proposed storm drain basins as their alternative.

Impacts to agricultural resources are considered to be less than significant.

**Mitigation:** None.

**References:** Natural Resources Conservation Service Soil Survey; application information; Stanislaus Soil Survey (1957); California State Department of Conservation Farmland Mapping and Monitoring Program - Stanislaus County Farmland 2018; Referral response received from West Stanislaus Irrigation District, dated February 04, 2021; Referral response received from Department of Conservation, dated February 10, 2021; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) 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?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those odors adversely affecting a substantial number of people)?			X	

**Discussion:** The proposed project is located within the San Joaquin Valley Air Basin (SJVAB) and, therefore, falls under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). In conjunction with the Stanislaus Council of Governments (StanCOG), the SJVAPCD is responsible for formulating and implementing air pollution control strategies. The SJVAPCD’s most recent air quality plans are the 2007 PM10 (respirable particulate matter) Maintenance Plan, the 2008 PM2.5 (fine particulate matter) Plan, and the 2007 Ozone Plan. These plans establish a comprehensive air pollution control program leading to the attainment of state and federal air quality standards in the SJVAB, which has been classified as “extreme non-attainment” for ozone, “attainment” for respirable particulate matter (PM-10), and “non-attainment” for PM 2.5, as defined by the Federal Clean Air Act.

The primary source of air pollutants generated by this project would be classified as being generated from "mobile" sources. Mobile sources would generally include dust from roads, farming, and automobile exhausts. Mobile sources are generally regulated by the Air Resources Board of the California EPA which sets emissions for vehicles and acts on issues regarding cleaner burning fuels and alternative fuel technologies. As such, the SJVAPCD has addressed most criteria air pollutants through basin wide programs and policies to prevent cumulative deterioration of air quality within the SJVAB. The project will increase traffic in the area and, thereby, impacting air quality.

Construction activities associated with new development can temporarily increase localized PM10, PM2.5, volatile organic compound (VOC), nitrogen oxides (NOX), sulfur oxides (SOX), and carbon monoxide (CO) in the project’s vicinity. The primary source of construction-related CO, SOX, VOC, and NOX emission is gasoline and diesel-powered, heavy-duty mobile construction equipment. Primary sources of PM10 and PM2.5 emissions are generally clearing and demolition activities, grading operations, construction vehicle traffic on unpaved ground, and wind blowing over exposed surfaces. Construction associated with the project includes development of an 18-pump fueling station, serving both heavy-duty trucks and passenger vehicles, and 8,400 square-foot retail building made up of a convenience market and two shell suites for future retail use. The project site will also be developed with a total of 111 standard passenger vehicle parking spaces and 20 EV charging station spaces are proposed around the market structure and site perimeter. An open graveled area at the north end of the project is proposed accommodate heavy-duty truck parking during use of the convenience market or other on-site business or amenities. No overnight parking is proposed. Additionally, the site will develop a 499-gallon propane tank and dispenser for retail sales and 2,000 square-foot area for aboveground fuel tanks totaling 16,000 gallons.



Development of the site will include frontage landscaping be installed along both road frontages, throughout the customer parking areas, around the proposed market building, and around a walking path area that is located adjacent to the market.

The SJVAPCD's Small Project Analysis Level (SPAL) Analysis indicates that the typical minimum threshold of significance for convenience markets with fueling stations projects are an average of 1,900 passenger vehicle trips and 35 average heavy duty truck trips per day. A traffic impact analysis was completed for the project by KD Anderson & Associates, Inc. on September 27, 2021. The analysis stated that the average daily vehicle trips for passenger vehicles will be 675 trips and 88 heavy duty truck trips. Although the heavy duty truck trips exceed the SJVAPCD's 35 truck average, due to the fact that they are coming from existing pass-by trips combined with requirements to meet Air District standards in place, impacts are anticipated to be less than significant.

The project was referred to SJVAPCD during the early consultation process, in which they responded the project was not expected to exceed annual emissions from construction and operation of criteria pollutants past any of the significant SJVAPCD thresholds. The SJVAPCD's comment letter also stated that the project would be subject to other SJVAPCD rules and regulations such as Rule 2010 and 2201 – Air Quality Permitting for Stationary Sources, Rule 9510 – Indirect Source Review, and Regulation VIII – Fugitive PM 10 Prohibitions. The SJVAPCD requested the applicant demonstrate compliance with these Rules and Regulations through SJVAPCD permitting such as an Authority to Construction (ATC), Permit to Operate (PTO), and an Air Impact Assessment (AIA) prior to issuance of any permit. These permit requirements will be added as development standards for the project.

Potential impacts on local and regional air quality are anticipated to be less than significant, falling below SJVAPCD thresholds, as a result of the nature of the proposed project and project's operation after construction. Implementation of the proposed project would fall below the SJVAPCD significance thresholds for both short-term construction and long-term operational emissions, as discussed above. Because construction and operation of the project would not exceed the SJVAPCD significance thresholds, the proposed project would not increase the frequency or severity of existing air quality standards or the interim emission reductions specified in the air plans.

For these reasons, the proposed project would be consistent with the applicable air quality plans. Also, the proposed project would not conflict with applicable regional plans or policies adopted by agencies with jurisdiction over the project and would be considered to have a less than significant impact.

**Mitigation:** None.

**References:** Application material; San Joaquin Valley Air Pollution Control District - Regulation VIII Fugitive Dust/PM-10 Synopsis; www.valleyair.org; Referral response received from San Joaquin Valley Air Pollution Control District, dated May 28, 2021; Traffic Impact Analysis Prepared by KD Anderson & Associates, Inc., revised September 27, 2021; and the Stanislaus County General Plan and Support Documentation<sup>1</sup>.

IV. BIOLOGICAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
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?			X	
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?			X	

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?			X	

**Discussion:** It does not appear this project will result in impacts to endangered species or habitats, locally designated species, or wildlife dispersal or mitigation corridors. The project is located within the Vernalis Quad of the California Natural Diversity Database (CNDDDB). There are 10 animal species which are state or federally listed, threatened, or identified as species of special concern or a candidate of special concern within the Vernalis CNDDDB Quad such as the Swainsons Hawk, the Western Yellow Billed Cuckoo, the Tricolored Blackbird, the Green Sturgeon – Southern DPS, Delta Smelt, Steelhead-Central Valley DPS, Chinook Salmon Central Valley Spring Run ESU and Fall/Late Fall Run ESU, Riparian Woodrat, Riparian Brush Rabbit, and the Delta Button-Celery. CNDDDB data shows a record of the riparian brush rabbit and the riparian woodrat within one mile of the project site along the west bank of the San Joaquin River and a tri-colored blackbird within a quarter mile of the project site at the intersection of SR 132 and River Road. Per the CNDDDB, it is believed that the case of the Riparian Brush Rabbit and the Riparian Woodrat have been extirpated from the vicinity, therefore it would be unlikely to have a presence on the project site.

With the project site being zoned for the purposes of operating a farm animal zoo and for the sales of hand-crafted goods on a portion of the project site and the remaining balance of the parcel having been historically and continually in agricultural production would unlikely allow for suitable habitat.

The project will not conflict with a Habitat Conservation Plan, a Natural Community Conservation Plan, or other locally approved conservation plans. Impacts to endangered species or habitats, locally designated species, or wildlife dispersal or mitigation corridors are considered to be less than significant.

An early consultation was referred to the California Department of Fish and Wildlife and no response was received to date.

**Mitigation:** None.

**References:** California Department of Fish and Wildlife’s Natural Diversity Database Quad Species List; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

V. CULTURAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?			X	

c) Disturb any human remains, including those interred outside of formal cemeteries?			X	
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**Discussion:** As this project is a General Plan Amendment it was referred to the tribes listed with the Native American Heritage Commission (NAHC), in accordance with SB 18, for a 90-day review period. Tribal notification of the project was not referred to any tribes in conjunction with AB 52 requirements, as Stanislaus County has not received any requests for consultation from the tribes listed with the NAHC. No responses from the tribal contacts were received. A records search conducted by the Central California Information Center (CCIC) indicated that there are no historical, cultural, or archeological resources recorded on-site but that the site has a moderate to high sensitivity for the discovery of such resources. As stated previously, the project site was rezoned to a PD-23 for the purposes of developing a farm animal zoo and allowing the sales of hand-crafted goods on a portion of the project site, the remaining balance has been historically and continually in agricultural production, which would be less likely to include undisturbed cultural resources. A development standard will be added to the project which requires if any cultural or tribal resources are discovered during project-related activities, all work is to stop, and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. *Cultural Resources* impacts are considered to be less-than significant.

**Mitigation:** None.

**References:** Application materials; Central California Information Center Report, dated October 13, 2020; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

VI. ENERGY -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

**Discussion:** The CEQA Guidelines Appendix F states that energy consuming equipment and processes, which will be used during construction or operation such as energy requirements of the project by fuel type and end use, energy conservation equipment and design features, energy supplies that would serve the project, total estimated daily vehicle trips to be generated by the project, and the additional energy consumed per-trip by mode, shall be taken into consideration when evaluating energy impacts. Additionally, the project’s compliance with applicable state or local energy legislation, policies, and standards must be considered.

The site will be to be served by the Pacific Gas & Electric Company (PG&E) for electrical services. The project was referred to PG&E with no response received to date.

The SJVAPCD’s Small Project Analysis Level (SPAL) Analysis indicates that the typical minimum threshold of significance for convenience markets with fueling stations projects are an average of 1,900 passenger vehicle trips and 35 average heavy duty truck trips per day. A traffic impact analysis was completed for the project by KD Anderson & Associates, Inc. on September 27, 2021. The analysis stated that the average daily vehicle trips for passenger vehicles will be 675 trips and 88 heavy duty truck trips. Although the heavy duty truck trips exceed the SJVAPCD’s 35 truck average, due to the fact that they are coming from existing pass-by trips combined with requirements to meet Air District standards in place, impacts are anticipated to be less than significant.

Senate Bill 743 (SB743) requires that the transportation impacts under the California Environmental Quality Act (CEQA) evaluate impacts by using Vehicle Miles Traveled (VMT) as a metric. Stanislaus County has currently not adopted any significance thresholds for VMT, and projects are treated on a case-by-case basis for evaluation under CEQA. However, the State of California - Office of Planning and Research (OPR) has issued guidelines regarding VMT significance under CEQA. One of the guidelines, presented in the December 2018 document Technical Advisory on Evaluating Transportation Impacts in CEQA, states that locally serving retail would generally redistribute trips from other local uses, rather than generate new trips. The prepared traffic analysis also analyzed VMT and found that the project would consist of an additional retail opportunity for residents of western Stanislaus County traveling on SR 132 and 33 and would likely be a

closer option for residences than current options, thus likely having a net effect in helping to incrementally reduce regional VMT. Ultimately, the analysis found the projects impact on VMT to be less than significant.

Construction of the market and development of the site all applicable SJVAPCD permits would be required to be obtained and all SJVAPCD standards will be required to be met. Additionally, all construction must meet California Green Building Standards Code (CALGreen Code), which includes mandatory provisions applicable to all new residential, commercial, and school buildings. The intent of the CALGreen Code is to establish minimum statewide standards to significantly reduce the greenhouse gas emissions from new construction. The CALGreen Code includes provisions to reduce water use, wastewater generation, and solid waste generation, as well as requirements for bicycle parking and designated parking for fuel-efficient and carpool/vanpool vehicles in commercial development. It is the intent of the CALGreen Code that buildings constructed pursuant to the code achieve at least a 15 percent reduction in energy usage when compared to the state’s mandatory energy efficiency standards contained in Title 24. The CALGreen Code also sets limits on VOCs (volatile organic compounds) and formaldehyde content of various building materials, architectural coatings, and adhesives.

The project will be required to meet all applicable SJVAPCD and PG&E standards and to obtain all applicable SJVAPCD permits. The proposed project would be consistent with all applicable renewable energy or energy efficiency requirements. Impacts related to Energy are considered to be less-than significant.

**Mitigation:** None.

**References:** Application material; San Joaquin Valley Air Pollution Control District - Regulation VIII Fugitive Dust/PM-10 Synopsis; www.valleyair.org; Referral response received from San Joaquin Valley Air Pollution Control District, dated May 28, 2021; Traffic Impact Analysis Prepared by KD Anderson & Associates, Inc., dated September 27, 2021 California Green Building Standards Code Title 24, Part 11(Cal Green); 2016 California Energy Code Title 24, Part 6; State of California – Office of Planning and Research (OPR) guidelines regarding VMT significance under CEQA; Stanislaus County General Plan; and Support Documentation<sup>1</sup>.

VII. GEOLOGY AND SOILS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
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.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
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?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	

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?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

**Discussion:** The USDA Natural Resources Conservation Service’s Western Stanislaus County Soil Survey indicates that nearly the entire property is made up of Capay clay wet. As contained in Chapter 5 of the General Plan Support Documentation, the areas of the County subject to significant geologic hazard are located in the Diablo Range, west of Interstate 5; however, as per the California Building Code, all of Stanislaus County is located within a geologic hazard zone (Seismic Design Category D, E, or F) and soil tests may be required at building permit application. Results from the soil tests will determine if unstable or expansive soils are present. If such soils are present, special engineering of the structure will be required to compensate for the soil deficiency. Any structures resulting from this project will be designed and built according to building standards appropriate to withstand shaking for the area in which they are constructed. An early consultation referral response received from Stanislaus County Department of Public Works indicated that a grading, drainage, and erosion/sediment control plan for the project will be required, subject to Public Works review and Standards and Specifications. The applicant is proposing the development of two on-site basins to ensure all stormwater is kept on-site. Stanislaus County Department of Environmental Resources (DER) responded, stating the project would be required to install individual and secondary wastewater treatment units (Measure X) for all on-site wastewater treatment system. Development standards will be placed on the project for each requirement of Public Works and DER.

The project site is not located near an active fault or within a high earthquake zone. Landslides are not likely due to the flat terrain of the area.

DER, Public Works, and the Building Permits Division review and approve any building or grading permit to ensure their standards are met. Development standards regarding these requirements will be triggered when a building permit is requested.

**Mitigation:** None.

**References:** Referral response received from the Stanislaus County Department of Environmental Resources (DER), dated February 12, 2021; Referral response from the Stanislaus County Department of Public Works, dated February 8, 2021; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

VIII. GREENHOUSE GAS EMISSIONS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

**Discussion:** The principal Greenhouse Gasses (GHGs) are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H<sub>2</sub>O). CO<sub>2</sub> is the reference gas for climate change because it is the predominant greenhouse gas emitted. To account for the varying warming potential of different GHGs, GHG emissions are often quantified and reported as CO<sub>2</sub> equivalents (CO<sub>2</sub>e). In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] No. 32), which requires the California Air Resources Board (ARB) design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020. Two additional bills, SB 350 and SB32, were passed in 2015 further amending the states Renewables Portfolio Standard (RPS) for electrical generation and amending the reduction targets to 40% of 1990 levels by 2030.

Construction associated with the project includes development of an 18-pump fueling station, serving both heavy-duty trucks and passenger vehicles, and an 8,000 square-foot retail building made up of a convenience market and two shell suites for future retail use. The project site will also be developed with a total of 111 standard passenger vehicle parking spaces and 20 EV charging station spaces are proposed around the market structure and site perimeter. An open graveled area at the north end of the project site is proposed to accommodate the parking of heavy-duty trucks during use of the convenience market or other on-site business or amenities. No overnight parking is proposed. Additionally, the site will develop a 499-gallon propane tank and dispenser for retail sales and 2,000 square-foot area for aboveground fuel tanks totaling 16,000 gallons. Development of the site will include landscaping across both road frontages on SR 132 and McCracken Road. Additional landscaping will be planted within portion of the customer parking areas, around the proposed market building, and the walking path area.

The SJVAPCD’s Small Project Analysis Level (SPAL) Analysis indicates that the typical minimum threshold of significance for convenience markets with fueling stations projects are an average of 1,900 passenger vehicle trips and 35 average heavy duty truck trips per day. A traffic impact analysis was completed for the project by KD Anderson & Associates, Inc. on September 27, 2021. The analysis stated that the average daily vehicle trips for passenger vehicles will be 675 trips and 88 heavy duty truck trips. Although the heavy duty truck trips exceed the SJVAPCD’s 35 truck average, due to the fact that they are coming from existing pass-by trips combined with requirements to meet Air District standards in place, impacts are anticipated to be less than significant.

The project was referred to SJVAPCD during the early consultation process, in which they responded the project was not expected to exceed annual emissions from construction and operation of criteria pollutants past any of the significant SJVAPCD thresholds. The SJVAPCD’s comment letter also stated that the project would be subject to other SJVAPCD rules and regulations such as Rule 2010 and 2201 – Air Quality Permitting for Stationary Sources, Rule 9510 – Indirect Source Review, and Regulation VIII – Fugitive PM 10 Prohibitions. The SJVAPCD requested the applicant demonstrate compliance with these Rules and Regulations through SJVAPCD permitting such as an Authority to Construct (ATC), Permit to Operate (PTO), and an Air Impact Assessment (AIA) prior to issuance of any permit. These permit requirements will be added as required for the project.

Senate Bill 743 (SB743) requires that the transportation impacts under the California Environmental Quality Act (CEQA) evaluate impacts by using Vehicle Miles Traveled (VMT) as a metric. Stanislaus County has currently not adopted any significance thresholds for VMT, and projects are treated on a case-by-case basis for evaluation under CEQA. However, the State of California - Office of Planning and Research (OPR) has issued guidelines regarding VMT significance under CEQA. One of the guidelines, presented in the December 2018 document Technical Advisory on Evaluating Transportation Impacts in CEQA, states that locally serving retail would generally redistribute trips from other local uses, rather than generate new trips. The prepared traffic analysis also analyzed VMT and found that the project would consist of an additional retail opportunity for residents of western Stanislaus County traveling on SR 132 and 33 and would likely be a closer option for residences than current options, thus likely having a net effect in helping to incrementally reduce regional VMT. Ultimately, the analysis found the projects impact on VMT to be less than significant.

**Mitigation:** None.

**References:** Application material; San Joaquin Valley Air Pollution Control District - Regulation VIII Fugitive Dust/PM-10 Synopsis; www.valleyair.org; Referral response received from San Joaquin Valley Air Pollution Control District, dated May 28, 2021; Traffic Impact Analysis Prepared by KD Anderson & Associates, Inc., revised September 27, 2021; State of California - Office of Planning and Research (OPR) guidelines regarding VMT significance under CEQA; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

IX. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	

<p><b>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?</b></p>			<p>X</p>	
<p><b>c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</b></p>			<p>X</p>	
<p><b>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?</b></p>			<p>X</p>	
<p><b>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 or excessive noise for people residing or working in the project area?</b></p>			<p>X</p>	
<p><b>f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</b></p>			<p>X</p>	
<p><b>g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?</b></p>			<p>X</p>	

**Discussion:** The project does not interfere with the Stanislaus County Local Hazard Mitigation Plan, which identifies risks posed by disasters and identifies ways to minimize damage from those disasters. The Stanislaus County Department of Environmental Resources (DER) is responsible for overseeing hazardous materials. This project was referred to the Department of Environmental Resources – Hazardous Materials Division, who did not respond. However, the facility will be required to obtain all required hazardous materials permits through the DER Hazardous Materials (Haz Mat) Division, including but not limited to submission of hazardous materials Business information into the California Electronic Reporting System (CERS), preparation of a Risk Management Prevention Program which must be implemented prior to operation of the facility, preparation of a Phase I or Phase II study, and compliance with the County’s UST/AST program.

Gasoline and diesel tanks are heavily regulated by the federal Environmental Protection Agency (EPA) and State Water Resources Control Board, as well as the local regulatory agency, such as, the Haz Mat Division and Fire Departments. As the lead entity for the Underground Storage Tank (UST) and Above Storage Tank (AST) Programs, Haz Mat reviews, approves, and monitors the construction, operation, repair and removals of UST or AST systems in Stanislaus County. The UST and AST programs are in place in order to protect the environment and groundwater from contamination resulting from UST/ASTs. Each UST/AST site is inspected annually as mandated by State law. Depending on the end uses, the gas station may include an EV charging station or hydrogen fuel. At the time of construction, including the installation of fuel tanks, all applicable building, fire, and hazardous material codes will need to be met as part of the permitting process. Permitting and compliance with Haz Mat’s UST/AST Programs and all applicable state or federal permitting will be applied to the project as development standards.

The retail and convenience store will be subject to submitting food facility plans to DER for review and approval, which would require conformance with any local or State requirements for grease interceptors or charbroilers. The food facility will also need to meet the Air District’s standards for chain-driven (CD) and underfired (UF) charbroilers and for Gasoline dispensing facilities (GDFs). These requirements will be applied as development standards for the project.

Pesticide exposure is a risk in areas located in the vicinity of agriculture. Sources of exposure include contaminated groundwater from drift from spray applications. Application of sprays is strictly controlled by the Agricultural Commissioner and can only be accomplished after first obtaining permits. Additionally, agricultural buffers are intended to reduce the risk of spray exposure to surrounding people. The nearest A-2 zoned property is located a minimum of 60 feet to the south, across SR 132 and to the east, across McCracken Road, of the project site. Based on the proposed use a 300-foot-wide buffer for people intensive uses would be required, however, the applicant has proposed an alternative buffer for compliance

with the policy. Along the frontage of both SR 132 and McCracken Road, the applicant has proposed a combination of shade trees and evergreen hedges positioned behind the two proposed storm drain basins as their alternative.

The project site is not within the vicinity of any airstrip or wildlands.

**Mitigation:** None.

**References:** Application material; Referral response received from the Department of Environmental Resources (DER), dated February 12, 2021; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

X. HYDROLOGY AND WATER QUALITY -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			X	
i) result in substantial erosion or siltation on- or off-site;			X	
ii) substantially increase the rate of amount of surface runoff in a manner which would result in flooding on- or off-site.			X	
iii) 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; or			X	
iv) impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

**Discussion:** The project has proposed to develop an individual potable domestic well from use of the commercial development, which would include a convenience market, future retail uses, and irrigation of landscaped area. Stormwater capture will take place within two proposed landscaped basins along the eastern and southeastern portions of the development.

The project site is located within the West Stanislaus Irrigation District (WSID). The WSID responded to the project referral stating that existing irrigation infrastructure exists on the site and will be required to be relocate infrastructure and provide an easement for its continued use. A condition of approval will be added to the project to ensure these requirements are met.

Areas subject to flooding have been identified in accordance with the Federal Emergency Management Act (FEMA). Run-off is not considered an issue because of several factors which limit the potential impact. These factors include the relatively flat terrain of the subject site, and relatively low rainfall intensities in the Central Valley. Areas subject to flooding have been



identified in accordance with the Federal Emergency Management Act. The project site itself is located in Zone X (outside the 0.2 percent floodplain) and, as such, exposure to people or structures to a significant risk of loss/injury/death involving flooding due to levee/dam failure and/or alteration of a watercourse, at this location is not an issue with respect to this project. Flood zone requirements are enforced through the building permit process. The Building Permits Division also reviews building permits and determines if geotechnical reports are required with submission of building permits. A requirement to obtain all applicable building permits will be incorporated into the project's development standards.

A referral response received from the Stanislaus County Department of Public Works indicated that a grading, drainage, and erosion/sediment control plan for the project is required and will be subject to Public Works review and Standards and Specifications, as well as the submittal of a Storm Water Pollution Prevention Plan (SWPPP) prior to the approval of any grading plan. The submittal and approval of the grading, drainage, erosion/sediment control plan and SWPPP will be made part of the development standards for this project prior to issuance of a building permit. Accordingly, runoff associated with the construction at the proposed project site will be reviewed as part of the grading review process and be required to be maintained on-site. Additionally, any construction will be reviewed under the Building Permit process and must be reviewed and approved by DER and adhere to current Local Agency Management Program (LAMP) standards. LAMP standards include minimum setback from wells to prevent negative impacts to groundwater quality.

The proposed new potable domestic well is to be constructed on-site and is proposed to include a casing diameter of approximately 8" and a pump with a range of 5-10 gallons per minute. The depth of the well is anticipated to be no less than 250 feet with more specific locations during the drilling phase based on water quality testing. In total, the well usage is expected to be approximately 1.95-acre feet per year. The well will be subject to review under the County's Well Permitting Program, which will determine whether a new well will require environmental review. At the proposed usage amount, which is below the 2.5-acre feet per year threshold established by County Code, the drilling of the well would be considered a de minimis extraction.

The Sustainable Groundwater Management Act (SGMA) was passed in 2014 with the goal of ensuring the long-term sustainable management of California's groundwater resources. SGMA requires agencies throughout California to meet certain requirements including forming Groundwater Sustainability Agencies (GSA), developing Groundwater Sustainability Plans (GSP), and achieving balanced groundwater levels within 20 years. The site is located in the West Stanislaus Irrigation District GSA, which is a part of the Delta Mendota Groundwater Subbasin. The GSA's initial GSP has been determined to be inadequate by the California Department of Water Resources (DWR). The GSA is expected to resubmit their plan by the end of 2024 for review and adoption.

The California Safe Drinking Water Act (California Health and Safety Code (CHSC) Section 116275(h)) defines a Public Water System as a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. A public water system includes the following:

1. Any collection, treatment, storage, and distribution facilities under control of the operator of the system that are used primarily in connection with the system.
2. Any collection or pretreatment storage facilities not under the control of the operator that are used primarily in connection with the system.
3. Any water system that treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

A referral response received from DER indicated that the proposed well for the project site will meet the definition of a Public Water System as defined in California Health and Safety Code Section 116275(h). To become a Public Water System, the applicant must submit an application for a water supply permit with the associated technical report to Stanislaus County DER which will determine if the well water meets State of California mandated standards for water quality and must also obtain concurrence from the State of California Water Resources Control Board (SWRCB), Drinking Water Division, in accordance to CHSC Section 116527 (SB1263). If the well water does not meet State of California standards, the applicant may need to either drill a new well or install a water treatment system for the new well. Title 22 compliant well testing will take place during the initial drilling process. Potential contaminants of concern that would require treatment include Total Dissolved Solids and similar naturally occurring minerals, Hexavalent Chromium, Arsenic, organic compounds, and Nitrates. This requirement of issuance of a water supply permit will be added as a condition of approval, to be met prior to issuance of a building permit.

**Mitigation:** None.

**References:** Application material; Referral response received from the Stanislaus County Department of Environmental Resources (DER) dated February 12, 2021; Referral response received from West Stanislaus Irrigation District, dated February 04, 2021; Referral response received from the Stanislaus County Department of Public Works, dated February 8, 2021; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

XI. LAND USE AND PLANNING -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Physically divide an established community?			X	
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

**Discussion:** This is a request to amend the General Plan designation from Agriculture and zoning designation from Planned Development (P-D) (23) to a new Planned Development, to allow for the development of an 18-pump fueling station, serving both heavy-duty trucks and passenger vehicles, and an 8,400 square-foot retail building made up of a convenience market and two shell suites for future retail use on a 9-acre portion of a 15.66-acre.

The project site has a General Plan designation of Agriculture and a zoning designation of Planned Development (P-D) (23). P-D 23 was originally developed with 14 structures that were utilized as a farm animal zoo and for the sales of hand-crafted goods. The use has ceased for some time and all 14 structures are proposed to be demolished as a result of development of the site. All of the existing structures are proposed to be demolished as a result of development of the site. A rezone to a new Planned Development district is necessary for the development of the project.

As stated by the Introduction to the General Plan, General Plan Amendments affect the entire County and any evaluation must give primary concern to the County as a whole; therefore, a fundamental question must be asked in each case: "Will this amendment, if adopted, generally improve the economic, physical and social well-being of the County in general?" Additionally, the County in reviewing General Plan amendments shall consider how the levels of public and private service might be affected; as well as how the proposal would advance the long-term goals of the County. In each case, in order to take affirmative action regarding a General Plan Amendment application, it must be found that the General Plan Amendment will maintain a logical land use pattern without detriment to existing and planned land uses and that the County and other affected government agencies will be able to maintain levels of service consistent with the ability of the government agencies to provide a reasonable level of service. In the case of a proposed amendment to the Land Use diagrams of the Land Use Element, an additional finding that the amendment is consistent with the goals and policies of the General Plan must also be made. Additionally, Goal 2 of the Land Use Element aims to ensure compatibility between land uses.

The Land Use Element describes the Planned Development designation as a designation intended for land which, because of demonstrably unique characteristics, may be suitable for a variety of uses without detrimental effects on other property. The Land Use Element also requires that the Agricultural Element's Conversion Criteria (Goal 2, Policy 2.7) be met when converting agricultural land to non-agricultural uses. A comment letter was received from the California Department of Conservation (DOC) stating that the County must consider feasible alternatives or mitigations to the loss of agricultural land. The DOC recommended further discussion on other farmland converted as a result of this project, impacts to current and future agricultural operations in the vicinity, and any mitigation measures.

Section II – Agricultural Resources contains the full discussion on Conversion Criteria and the DOC's letter. Because of the unique nature of the site including the previous agro-commercial uses of P-D 23, adjacency to a mix of commercial and residential uses within San Joaquin County, the location of a state highway, and soils that are not considered prime, the amendment of the General Plan Designation from Agriculture to Planned Development the proposed project would be consistent with the required conversion criteria of Goal 2 of the Agricultural Element. Because of these factors, it is not anticipated that the project would lead to, directly or indirectly, conversion of agricultural lands adjacent to the project nor are impacts to those lands expected to be significant.

To approve a Rezone, the Planning Commission must find that it is consistent with the General Plan. Pursuant to the General Plan, land within a Planned Development designation should be zoned A-2 (General Agriculture) until development occurs through Planned Development zoning. Therefore, the proposed Planned Development General Plan Designation and rezoning the parcel to a new Planned Development would be consistent.

The project will not physically divide an established community nor conflict with any habitat conservation plans.

**Mitigation:** None.

**References:** Application material; Referral Response received from Department of Conservation, dated February 10, 2021; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

<b>XII. MINERAL RESOURCES -- Would the project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Included</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) <b>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?</b>			X	
b) <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?</b>			X	

**Discussion:** The location of all commercially viable mineral resources in Stanislaus County has been mapped by the State Division of Mines and Geology in Special Report 173. There are no known significant resources on the site, nor is the project site located in a geological area known to produce resources.

**Mitigation:** None.

**References:** Stanislaus County General Plan and Support Documentation<sup>1</sup>.

<b>XIII. NOISE -- Would the project result in:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Included</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) <b>Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</b>			X	
b) <b>Generation of excessive groundborne vibration or groundborne noise levels?</b>			X	
c) <b>For a project located within the vicinity of a private airstrip or 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?</b>			X	

**Discussion:** The proposed convenience market and fuel station hours of operation are anticipated to be seven days a week from 6:00 a.m. to 10:00 p.m. for the convenience market and 24 hours a day for the fueling stations. The applicant expects two shifts per day with 8-12 employees each shift and a total of three truck deliveries per day for the convenience market. Customer traffic is anticipated to generate 88 truck trips and 676 vehicle trips daily. Employees and hours of operation for the future retail uses will be identified at a later time during a separate discretionary land use process. The Stanislaus County General Plan Noise Element identifies daytime (7:00 a.m. to 10:00 p.m.) maximum allowable average noise exposure for stationary noise sources to be an hourly average of 55 decibels and maximum level of 75 decibels, and

nighttime (10:00 p.m. to 7:00 a.m.) to be an hourly average of 45 decibels and maximum of 65 decibels, measured at residential or other noise-sensitive land use on neighboring properties. The Stanislaus County General Plan identifies noise levels up to 75 dB Ldn (or CNEL) as the normally acceptable level of noise environment for industrial, manufacturing, utilities, and agriculture uses.

The site itself is impacted by the noise generated from State Route 132. All construction activities will be required to meet the noise ordinance and Noise Element standards.

The site is not located within an airport land use plan. Noise impacts are considered to be less-than significant.

**Mitigation:** None.

**References:** Application materials; Stanislaus County Noise Ordinance; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

XIV. POPULATION AND HOUSING -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Induce substantial unplanned 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)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

**Discussion:** The property is improved with a legal non-conforming duplex and four-plex, which are proposed to remain. The site is not included in the vacant sites inventory for the 2016 Stanislaus County Housing Element, which covers the 5<sup>th</sup> cycle Regional Housing Needs Allocation (RHNA) for the County and will therefore not impact the County's ability to meet their RHNA. No population growth will be induced, nor will any existing housing be displaced as a result of this project.

Impacts related to *Population and Housing* are considered to be less-than significant.

**Mitigation:** None.

**References:** Application materials; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

XV. PUBLIC SERVICES --	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Would the project result in the 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:			X	
Fire protection?			X	
Police protection?			X	
Schools?			X	
Parks?			X	
Other public facilities?			X	

**Discussion:** The project site is served by the West Stanislaus Fire District for fire protection services, the Patterson Joint Unified School District for school services, the Stanislaus County Sheriff Department for police protections, and the Pacific Gas & Electric Company (PG&E) for power, and proposes to be served by an on-site well and septic system. County adopted Public Facilities Fees, as well as fire and school fees are required to be paid based on the development type prior to issuance of a building permit. Payment of the applicable district fees will be required prior to issuance of a building permit.

As discussed in full within Section X – *Hydrology and Water Quality*, the project has proposed to develop an individual potable domestic well from use of the commercial development, which would include a convenience market, future retail uses, and irrigation of landscaped area. The proposed new potable domestic well is to be constructed on-site and is proposed to include a casing diameter of approximately 8” and a pump with a range of 5-10 gallons per minute and is subject to the requirements of SB1263 as a new public water system. In total, the well usage is expected to be approximately 1.95 acre feet per year. The well will be subject to review under the County’s Well Permitting Program, which will determine whether a new well will require environmental review. Construction will be reviewed under the Building Permit process and must be reviewed and approved by DER and adhere to current Local Agency Management Program (LAMP) standards. LAMP standards include minimum setback from wells to prevent negative impacts to groundwater quality.

This project was circulated to all applicable public service providers including: school, fire, police, irrigation district, and public works department during the early consultation referral period. The project is not anticipated to have any significant adverse impact on public services.

**Mitigation:** None.

**References:** Stanislaus County General Plan and Support Documentation<sup>1</sup>.

XVI. RECREATION --	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
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?			X	
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?			X	

**Discussion:** This project will not increase demands for recreational facilities, as such impacts typically are associated with residential development. One of the storm drainage basins proposed to be installed onsite will include a walking path and landscaping.

No significant impacts related to *Recreation* were identified.

**Mitigation:** None.

**References:** Application material; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

XVII. TRANSPORTATION -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?		X		
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	

<p><b>c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</b></p>			<p><b>X</b></p>	
<p><b>d) Result in inadequate emergency access?</b></p>			<p><b>X</b></p>	

**Discussion:** The convenience market and fueling stations proposes two driveways, one onto State Route (SR) 132 and the second on McCracken Road. Proposed hours of operation are anticipated to be seven days a week from 6:00 a.m. to 10:00 p.m. for the convenience market and 24 hours a day for the fueling stations. The applicant expects two shifts per day with 8-12 employees each shift and a total of three truck deliveries per day for the convenience market. Employees and hours of operation for the future retail uses will be identified at a later time during a separate discretionary land use process.

A response received from the California Department of Transportation (Caltrans) requested that the project may cause a significant impact to the State Highway System. Caltrans requested that a traffic impact analysis (TIA) take place to study any near-term and long-term impacts to their to the state’s facilities. A TIA was initially performed by KD Anderson & Associates, Inc. on June 4, 2021 and revised on September 27, 2021 to address comments from both the County and Caltrans. The analysis found that the project would likely generate 675 daily trips, including 205 daily trips for the gas station and convenience store and 470 daily trips for a future quick service restaurant, for passenger vehicles. Additionally, the analysis found that that Heavy-Duty truck trips would account for a total daily average of 88 trips per day. Although no longer a criteria for CEQA evaluation, the analysis found that Level of Service (LOS) conditions of vehicles existing the site via the SR 132 driveway or McCracken Road would exceed the minimum LOS D standard of the County. However, this factor alone would not warrant Caltrans or the County’s criteria for signalization of the SR 132 and McCracken intersection. The analysis did note the Cumulate traffic conditions of the year 2046 the intersection would operate at a LOS of F but future assumptions of Caltrans long term plans of widening SR 132 to four lanes and other traffic calming devices would alleviate congestion to a potential LOS C for the intersection. Additionally, to provide adequate mobility between the proposed project site and the commercial development existing within San Joaquin to the west, the analysis recommended development of internal circulation between both sites. The applicant has developed their proposal to provide for this recommendation.

The analysis did also find that the proposed project would pose a standalone significant safety impact due to the potential for cueing in mainline SR 132 to turn left towards onto the project site as well as vehicles slowing to turn right onto McCracken Road or the project site driveway located on SR 132. The analysis developed mitigation to these impacts in the form of a center turn lane north of the eastbound lane, extending from McCracken Road the length of the site’s frontage on SR 132 and an acceleration/deceleration lane for westbound vehicles ingress and egress to the site. A measure to design project driveways and the northern corners of the SR 132 and McCracken Road intersection to accommodate turning movements of STAA trucks was also included. Other projects requirements suggested by the analysis that were not intended as mitigation included preparation of STAA truck turning exhibits and construction of the access between the project site and the commercial development in San Joaquin County. These mitigation measures have been applied to the project and the design will ultimately be subject to Caltrans standards.

As stated in both Sections VI - *Energy* and VIII – *Greenhouse Gas Emissions*, Senate Bill 743 (SB743) requires that the transportation impacts under the California Environmental Quality Act (CEQA) evaluate impacts by using Vehicle Miles Traveled (VMT) as a metric. Stanislaus County has currently not adopted any significance thresholds for VMT, and projects are treated on a case-by-case basis for evaluation under CEQA. However, the State of California - Office of Planning and Research (OPR) has issued guidelines regarding VMT significance under CEQA. One of the guidelines, presented in the December 2018 document Technical Advisory on Evaluating Transportation Impacts in CEQA, states that locally serving retail would generally redistribute trips from other local uses, rather than generate new trips. The analysis also analyzed VMT and found that the project would consist of an additional retail opportunity for residents of western Stanislaus County traveling on SR 132 and 33 and would likely be a closer option for residences than current options, thus likely having a net effect in helping to incrementally reduce regional VMT. Ultimately, the analysis found the projects impact on VMT to be less than significant.

Both Caltrans and Stanislaus County’s Public Works Department has reviewed the analysis and has agreed with its assumptions and conclusions.

A referral response received from Stanislaus County’s Public Works Department provided project requirements for development of the site to be applied to the project for areas such as: encroachment permits for work being done in County

or state right-of-way, dedication of right-of-way for both McCracken and SR 132, a requirement for a grading and drainage plan, and requirements related to parking, loading and unloading of vehicles in the right-of-way. These requirements will be placed as development standards for the project.

Impacts associated with *Transportation* are expected to have a less than significant impact with mitigation included.

**Mitigation:**

1. A left turn lane shall be developed north of the eastbound lane of SR 132, subject to approval by California Department of Transportation, to accommodate left hand turns into the site. The left turn lane shall begin 600 feet west of the project's proposed driveway onto SR 132 and shall continue to the SR 132/McCracken Road intersection.
2. A deceleration lane or enhanced 12-foot shoulder shall be developed on the northern side of the westbound lane of SR 132, subject to approval by California Department of Transportation (Caltrans), to accommodate right hand turns into the project site. The deceleration lane shall begin 600 feet east of the SR 132/McCracken Road intersection, and shall provide a right turn pocket onto North McCracken Road; the deceleration lane shall continue west of the SR 132/McCracken Road intersection and shall provide a right turn pocket onto the project driveway on SR 132.
3. An acceleration lane or enhanced 12-foot shoulder shall be developed on the northern side of the westbound lane of SR 132, subject to approval by California Department of Transportation (Caltrans), to accommodate right hand turns out of the project site. The acceleration lane shall begin west of the proposed driveway onto SR 132 for 600 feet or for a distance as determined by Caltrans.
4. All project driveways and both northwest and northeast corners of the SR 132 and McCracken Road intersection shall be constructed to accommodate the turning requirements of STAA trucks.

**References:** Application materials; Referral response received from California Department of Transportation, dated February 17, 2021; Email Correspondence from California Department of Transportation, dated July 7, 2021; Referral response from Stanislaus County Department of Public Works, dated February 8, 2021; Traffic Impact Analysis prepared by KD Anderson & Associates, Inc., dated revised September 27, 2021; State of California - Office of Planning and Research (OPR) guidelines regarding VMT significance under CEQA; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

XVIII. TRIBAL CULTURAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) 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:			X	
i) 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			X	

<p>ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set for the in subdivision (c) of Public Resource 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.</p>			<p>X</p>	
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**Discussion:** As this project is a General Plan Amendment it was referred to the tribes listed with the Native American Heritage Commission (NAHC), in accordance with SB 18, for a 90-day review period. Tribal notification of the project was not referred to any tribes in conjunction with AB 52 requirements, as Stanislaus County has not received any requests for consultation from the tribes listed with the NAHC. No responses from the tribal contacts were received. A records search conducted by the Central California Information Center (CCIC) indicated that there are no historical, cultural, or archeological resources recorded on-site but that the site has a moderate to high sensitivity for the discovery of such resources. As stated previously, the project site was rezoned to a PD-23 for the purposes of developing a farm animal zoo and for the sales of hand-crafted goods on a portion of the project site, the remaining balance has been historically and continually in agricultural production, which would be less likely to include undisturbed cultural resources. A development standard will be added to the project which requires if any cultural or tribal resources are discovered during project-related activities, all work is to stop, and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. Tribal Cultural Resources are considered to be less-than significant.

**Mitigation:** None.

**References:** Application material; Central California Information Center Report for the project site, dated October 13, 2020; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

<p><b>XIX. UTILITIES AND SERVICE SYSTEMS -- Would the project:</b></p>	<p>Potentially Significant Impact</p>	<p>Less Than Significant With Mitigation Included</p>	<p>Less Than Significant Impact</p>	<p>No Impact</p>
<p>a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?</p>			<p>X</p>	
<p>b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?</p>			<p>X</p>	
<p>c) 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?</p>			<p>X</p>	
<p>d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?</p>			<p>X</p>	
<p>e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?</p>			<p>X</p>	



**Discussion:** Limitations on providing services have not been identified. The project has proposed to develop an individual potable domestic well from use of the commercial development, which would include a convenience market, future retail uses, and irrigation of landscaped area, which is anticipated to be below 2.5 acre feet per year as well as a private on-site septic system. Stormwater capture will take place within two proposed landscaped basins along the eastern and southeastern portions of the development.

A referral response received from Stanislaus County Department of Public Works indicated that a grading, drainage, and erosion/sediment control plan for the project is required and will be subject to Public Works review and Standards and Specifications, as well as the submittal of a Storm Water Pollution Prevention Plan (SWPPP) prior to the approval of any grading plan. The submittal and approval of the grading, drainage, erosion/sediment control plan and SWPPP will be made development standards for this project prior to issuance of a building permit. Accordingly, runoff associated with the construction at the proposed project site will be reviewed as part of the grading review process and be required to be maintained on-site. Additionally, any construction will be reviewed under the Building Permit process and must be reviewed and approved by DER and adhere to current Local Agency Management Program (LAMP) standards. LAMP standards include minimum setback from wells and septic systems to prevent negative impacts to groundwater quality.

As discussed in Section X – *Hydrology and Water Quality* the proposed well for the project site will meet the definition of a Public Water System as defined in California Health and Safety Code Section 116275(h). To become a Public Water System, the applicant must submit an application for a water supply permit with the associated technical report to Stanislaus County DER which will determine if the well water meets State of California mandated standards for water quality and must also obtain concurrence from the State of California Water Resources Control Board (SWRCB), Drinking Water Division, in accordance to CHSC Section 116527 (SB1263). If the well water does not meet State of California standards, the applicant may need to either drill a new well or install a water treatment system for the new well. Title 22 compliant well testing will take place during the test well process. Potential contaminants of concern that would require treatment include Total Dissolved Solids and similar naturally occurring minerals, Hexavalent Chromium, Arsenic, organic compounds, and Nitrates. This requirement of issuance of a water supply permit will be added as a development standard, to be met prior to issuance of a building permit.

The project site is located within the West Stanislaus Irrigation District (WSID). The WSID responded to the project referral stating that existing irrigation infrastructure exists on the site and will be required to be relocate infrastructure and provide an easement for its continued use. A development standard will be added to the project to ensure these requirements are met.

The project is not anticipated to have a significant impact to utilities and service systems.

**Mitigation:** None.

**References:** Application material; Referral response received from Stanislaus County Department of Environmental Resources (DER), dated February 12, 2021; Referral response received from Stanislaus County Department of Public Works, dated February 8, 2021; Referral Response received from West Stanislaus Irrigation District, dated February 04, 2021; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	

<p>c) Require the installation of maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?</p>			X	
<p>d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?</p>			X	

**Discussion:** The Stanislaus County Local Hazard Mitigation Plan identifies risks posed by disasters and identifies ways to minimize damage from those disasters. With the Wildfire Hazard Mitigation Activities of this plan in place, impacts to an adopted emergency response plan or emergency evacuation plan are anticipated to be less-than significant. The terrain of the site is relatively flat, and the site has access to a County-maintained road. The site is located in a Local Responsibility Area (LRA) for fire protection and is served by West Stan Fire Protection District (WSFPD). The project was referred to the WSFPD, but no response was received. California Building Code establishes minimum standards for the protection of life and property by increasing the ability of a building to resist intrusion of flame and embers. All construction is required to meet fire code, which will be verified through the building permit review process. A grading and drainage plan will be required and all fire protection, and emergency vehicle access standards met. These requirements will be applied as development standards for the project.

Wildfire risk and risks associated with postfire land changes are considered to be less-than significant.

**Mitigation:** None.

**References:** Application materials; California Building Code Title 24, Part 2, Chapter 7; Stanislaus County Local Hazard Mitigation Plan; Stanislaus County General Plan; and Support Documentation<sup>1</sup>.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE --	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
<p>a) Does the project have the potential to substantially 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</p>			X	
<p>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.)</p>			X	
<p>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p>			X	

**Discussion:** The project is located at the northwest portion of the SR 132 and McCracken Road intersection, which abuts the Stanislaus and San Joaquin County jurisdictional lines running from north to west along the project site. Within San Joaquin County there are multiple commercial uses and a mobile park directly west of the project site. The remaining

surrounding uses to the property include orchards and scattered single family dwellings in all directions. Currently only one other discretionary action is being processed by the County in the vicinity, a parcel map application, located southwest of the project site near the intersection of SR 132 and River Road. The application will only be for the creation of parcels consistent with the General Agriculture A-2-40 zoning district and not include any physical development.

The project site has a General Plan designation of Agriculture and a zoning designation of Planned Development (P-D) (23). P-D 23 was originally developed with 14 structures that were utilized as a farm animal zoo and for the sales of hand-crafted goods. The use has ceased for some time and all existing structures are proposed to be demolished as a result of development of the site. A rezone to a new Planned Development district is necessary for the development of the project.

Section II – *Agriculture and Forest Resources* and Section XI - Land Use and Planning contain a full discussion of the land use action and amendment of the General Plan, however, because of the unique nature of the site including the previous agro-commercial uses of P-D 23, adjacency to a mix of commercial and residential uses within San Joaquin County, the location of a state highway, and soils that are not considered prime, the amendment of the General Plan Designation from Agriculture to Planned Development the proposed project would be consistent with the required conversion criteria of Goal 2 of the Agricultural Element. Because of these factors, it is not anticipated that the project would lead to, directly or indirectly, conversion of agricultural lands adjacent to the project nor are impacts to those lands expected to be significant.

As discussed in Section X – *Hydrology and Water Quality* the proposed well for the project site will meet the definition of a which requires the applicant must submit an application for a water supply permit with the associated technical report to Stanislaus County DER which will determine if the well water meets State of California mandated standards for water quality and must also obtain concurrence from the State of California Water Resources Control Board (SWRCB), Drinking Water Division. If the well water does not meet State of California standards, the applicant may need to either drill a new well or install a water treatment system for the new well. Title 22 compliant well testing will take place during the test well process.

Additionally, the project will be subject to two mitigation measures that included a center turn lane extended the length of the site's frontage on SR 132 and an acceleration/deceleration lane for westbound vehicles ingress and egress to the site. The measures are intended to reduce impacts to safety but lessening cueing onto State Route 132.

Review of this project has not indicated any features which might significantly impact the environmental quality of the site and/or the surrounding area.

**Mitigation:** None.

**References:** Application material; Initial Study; Stanislaus County General Plan and Support Documentation<sup>1</sup>.

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


<sup>1</sup>Stanislaus County General Plan and Support Documentation adopted in August 23, 2016, as amended. **Housing Element** adopted on April 5, 2016.

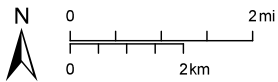
# 132 INVESTMENTS MAZE BLVD

## GPA REZ PLN2020-0123

### AREA MAP

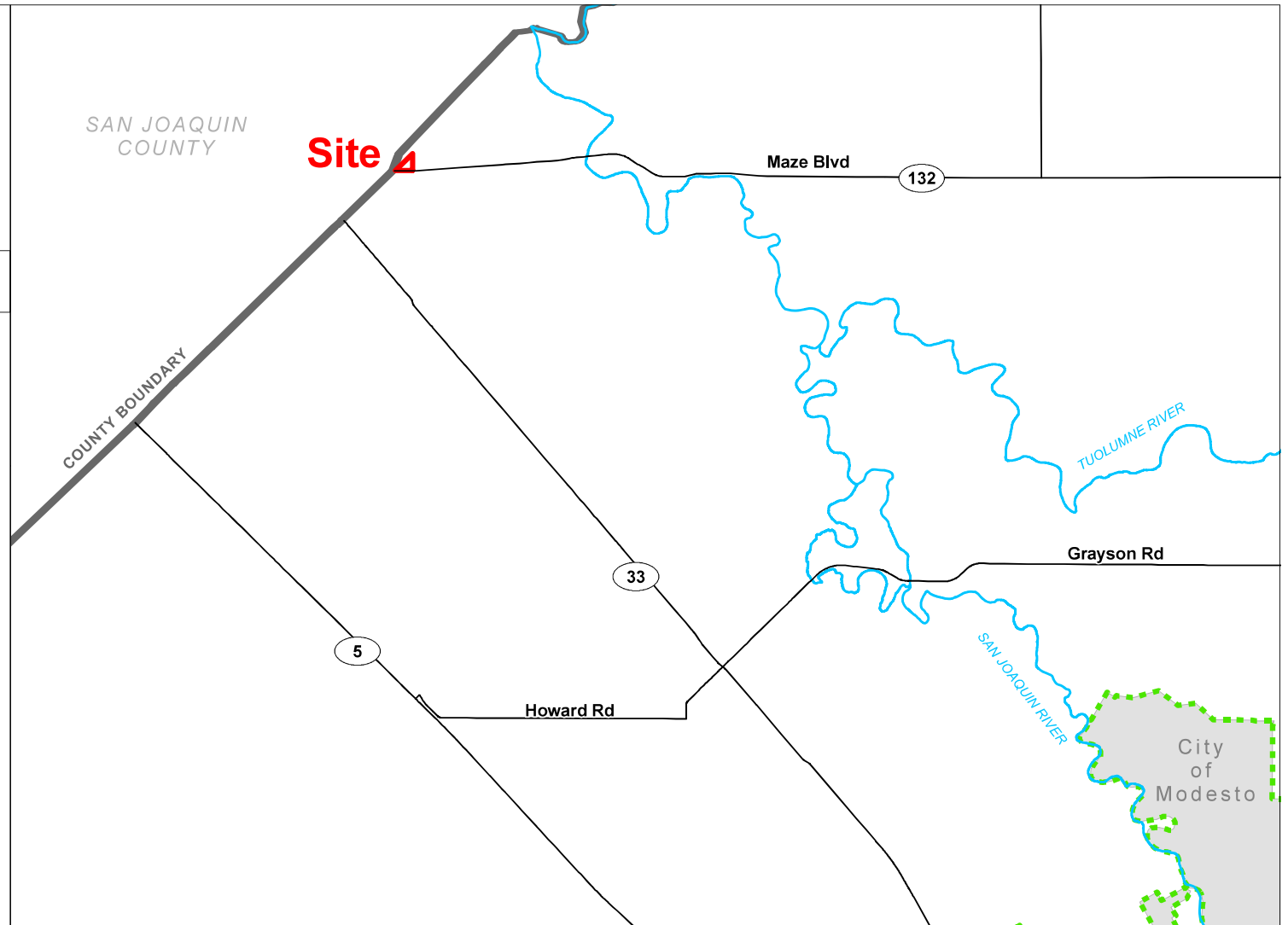
#### LEGEND

-  Project Site
-  Sphere of Influence
-  City
-  Road
-  River



Source: Planning Department GIS

Date: 1/4/2021



**132 INVESTMENTS  
MAZE BLVD**

**GPA REZ  
PLN2020-0123**

*GENERAL PLAN MAP*


LEGEND

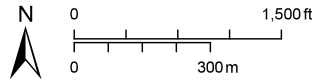
 Project Site

 Parcel

 Road

**General Plan**

 Agriculture



Source: Planning Department GIS

Date: 1/4/2021

SAN JOAQUIN  
COUNTY

KASSON RD

**AG**

**Site**

MAZE BLVD

MC CRACKEN RD

**AG**






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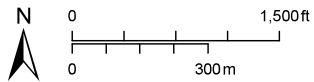
**132 INVESTMENTS  
MAZE BLVD**

**GPA REZ  
PLN2020-0123**

*ZONING MAP*

LEGEND

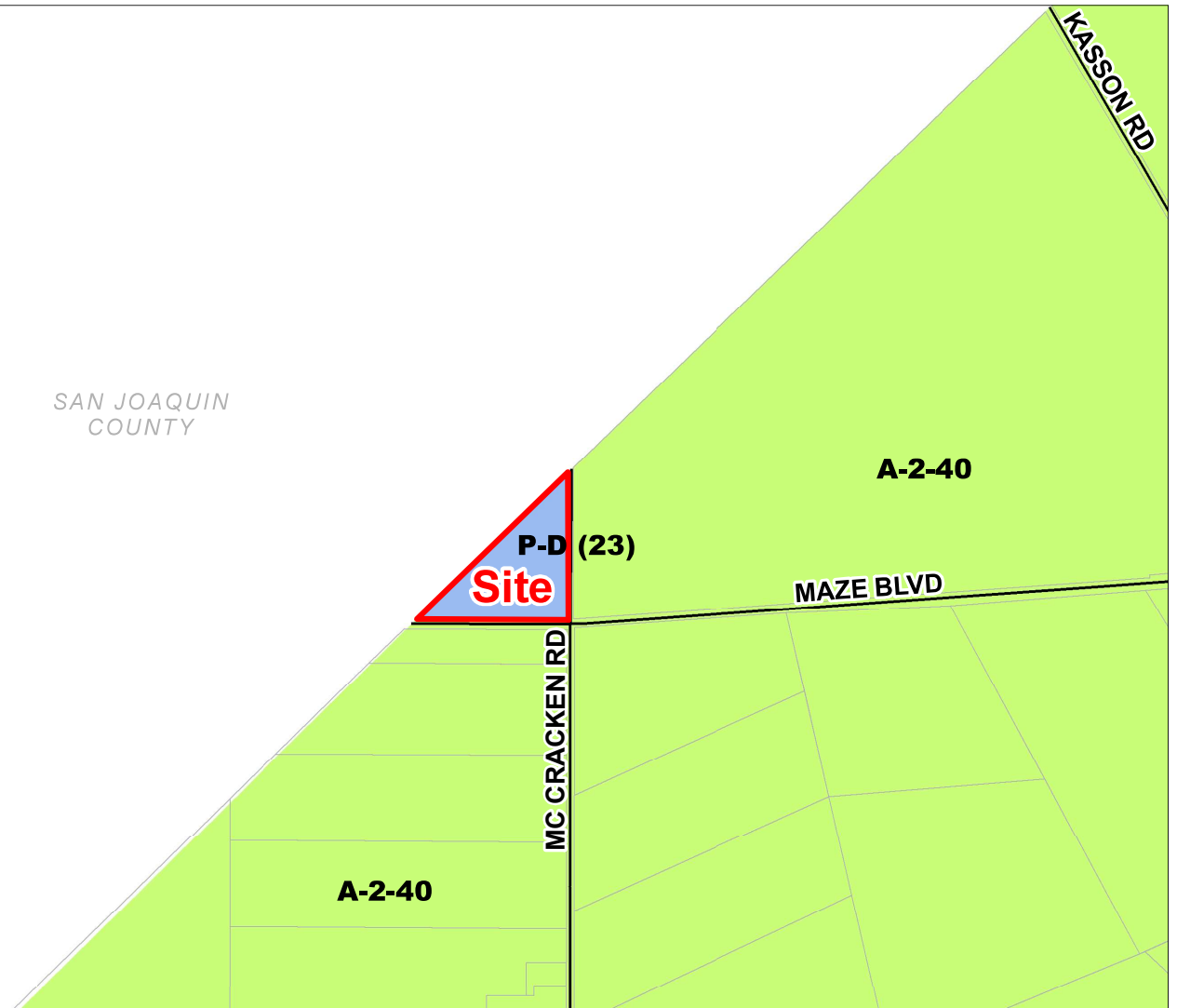
-  Project Site
-  Parcel
-  Road
- Zoning Designation**
-  General Agriculture 40 Acre
-  Planned Development



Source: Planning Department GIS

Date: 1/4/2021

SAN JOAQUIN  
COUNTY



**132 INVESTMENTS  
MAZE BLVD**

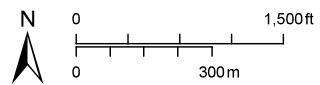
**GPA REZ  
PLN2020-0123**

*2017 AERIAL AREA MAP*

LEGEND

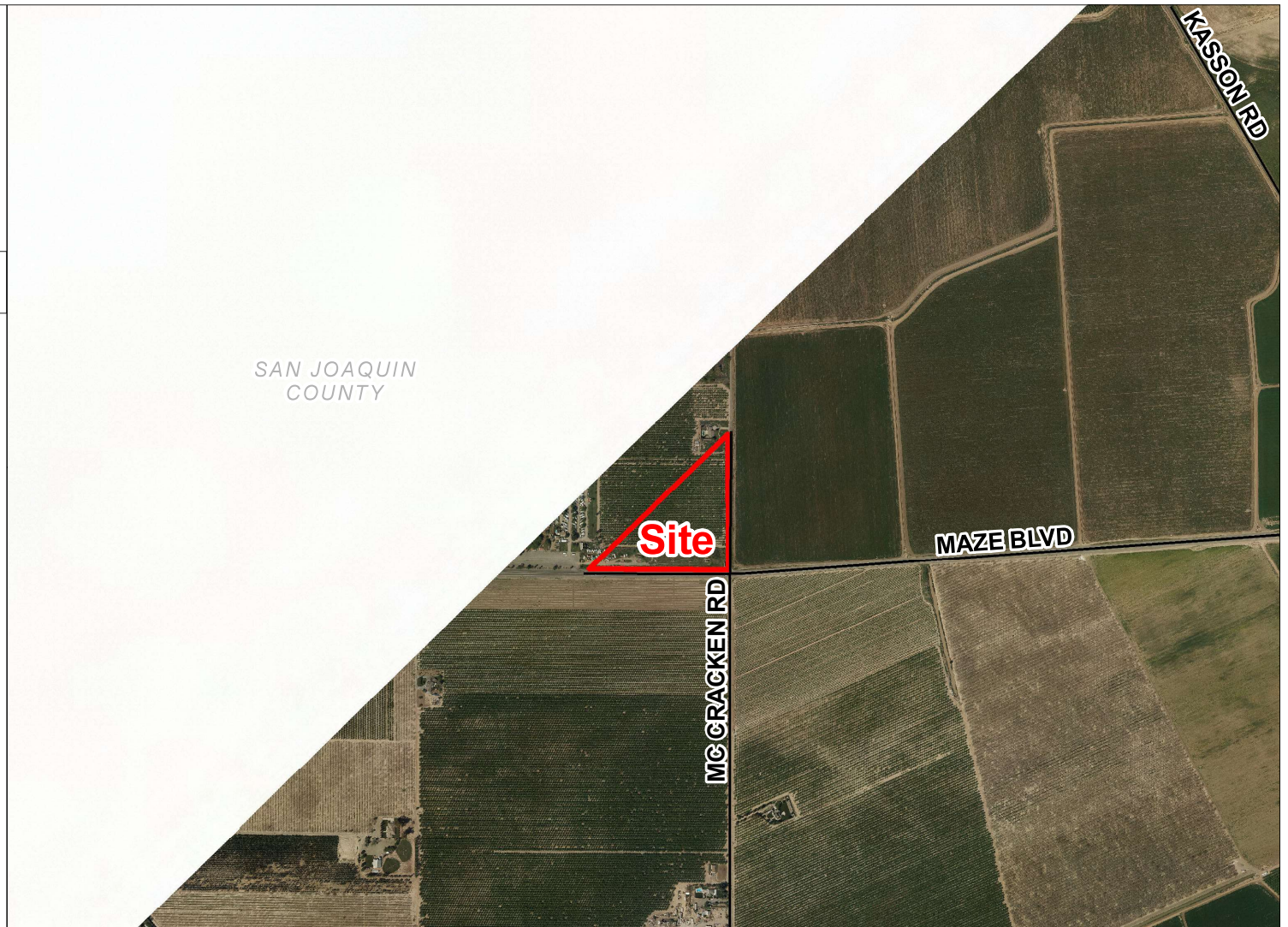
 Project Site

 Road



Source: Planning Department GIS

Date: 1/4/2021





**132 INVESTMENTS  
MAZE BLVD**

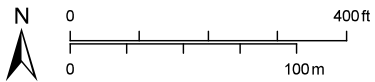
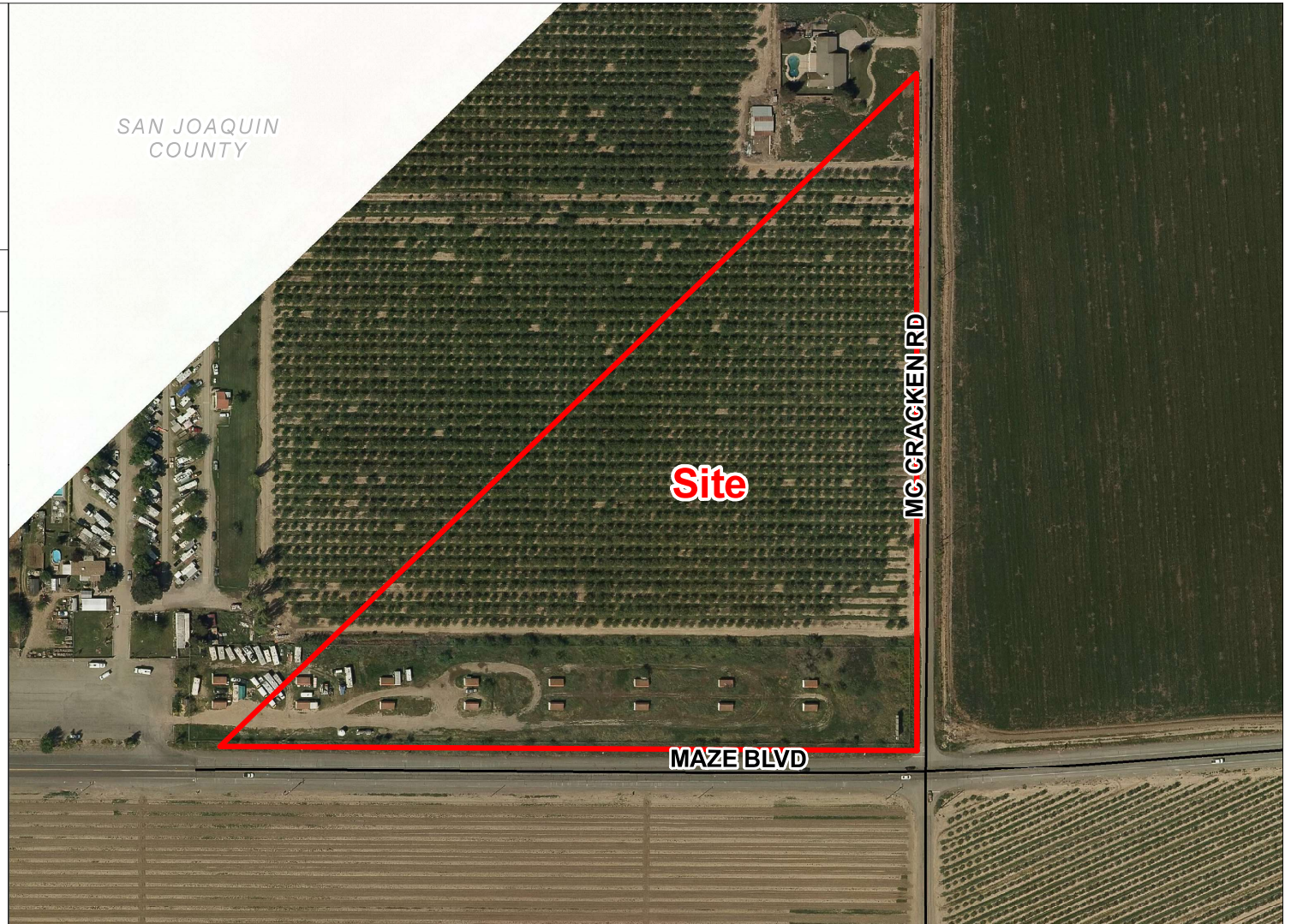
**GPA REZ  
PLN2020-0123**

*2017 AERIAL SITE MAP*

LEGEND

 Project Site

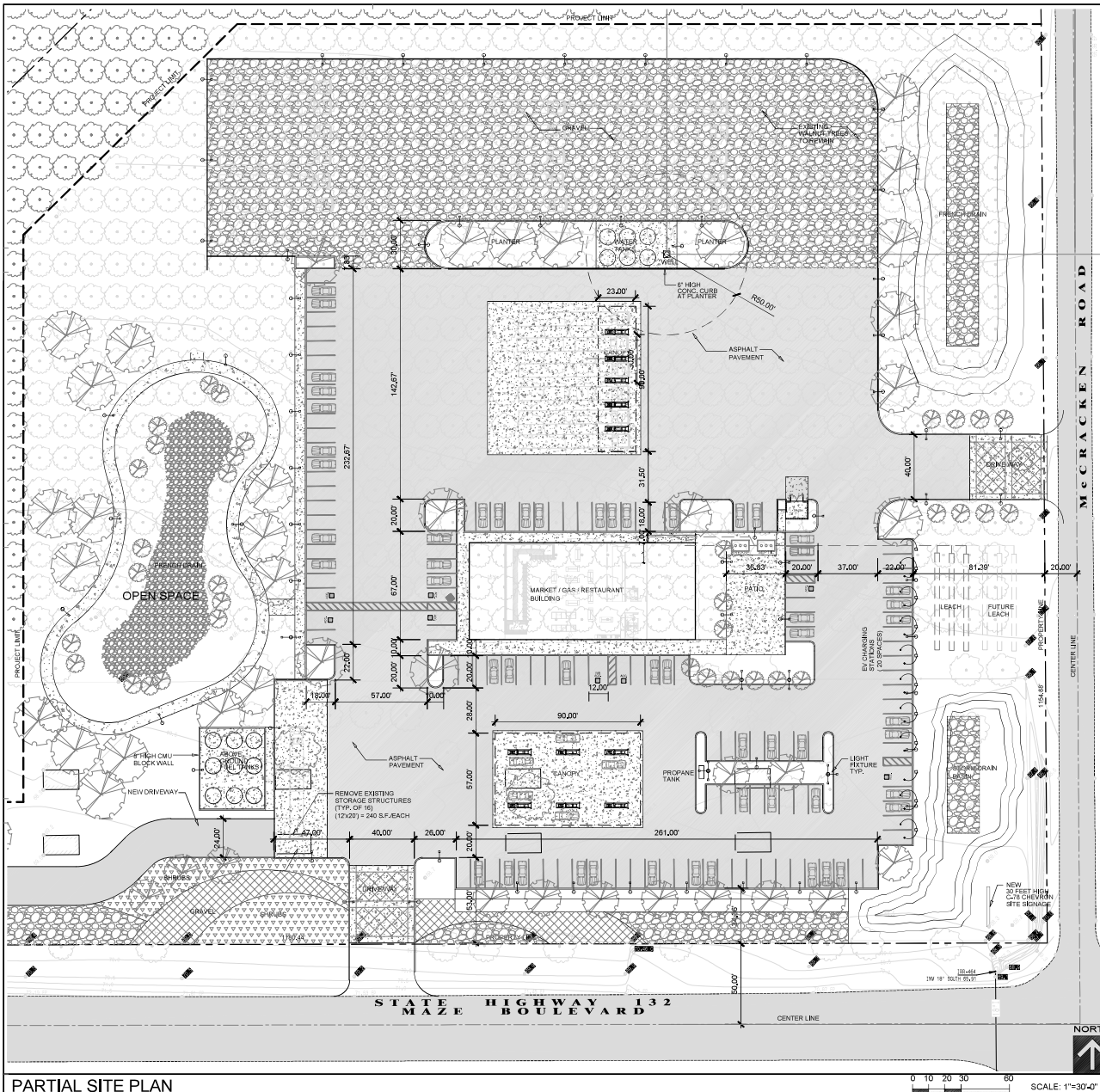
 Road



Source: Planning Department GIS

Date: 1/4/2021





PARTIAL SITE PLAN

0 10 20 30 60 SCALE: 1"=30'-0"

PROJECT DATA

A.P.N. 016-001-001  
 PROPOSED USE: CONVENIENT STORE / GAS  
 OCCUPANCY: B  
 TYPE OF CONSTRUCTION: (FIRE SPRINKLERED) V-8  
 EXISTING ZONING: AGRICULTURAL  
 NEW ZONING TO: PLAN DEVELOPMENT - COM.  
 TOTAL SITE AREA 681,638 S.F. (15.65 ACRES)

PROJECT SITE AREA  
 FRONT OPEN LAND 172,088 S.F. (2.85 ACRES)  
 PLANTED ORCHARD AREA 221,391 S.F. (5.15 ACRES)  
 PROJECT SITE AREA 396,479 S.F. (9.0 ACRES)

BUILDING AREA:  
 RETAIL - SUITE A 1,800 S.F.  
 CONVENIENT STORE - SUITE B 4,800 S.F.  
 STORAGE - SUITE C 1,800 S.F.  
 TOTAL BUILDING AREA 8,400 S.F.

REGULAR CARS FUEL CANOPY AREA 5,130 S.F.  
 TRUCKS FUEL CANOPY AREA 1,380 S.F.  
 ABOVE GROUND FUEL TANK (TOTAL OF 16,000 GALLONS) 2,000 S.F.  
 PROPANE TANK 499 GALLONS

**PARKING REQUIRED**

RETAIL 1 SPACE / 300 S.F. 1800 OCCUPANTS/300 = 6 6 SPACES  
 MARKET/CONVENIENT STORE 1 SPACE / 300 S.F. 6,600 S.F. / 300 = 22 22 SPACES

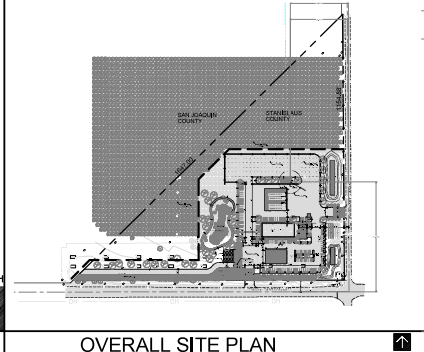
**PARKING-PROVIDED**

PROPOSED STANDARD STANDARD ELECTRIC VEHICLE CHARGING 19 SPACES  
 PROPOSED VAN ACCESSIBLE ELECTRIC VEHICLE CHARGING STATION 1 SPACE  
 PROPOSED STANDARD OFF-STREET PARKING 111 SPACES  
 PROPOSED VAN ACCESSIBLE PROPOSED STANDARD ACCESSIBLE 2 SPACE 5 SPACES  
 TOTAL 138 SPACES

LANDSCAPE AREA 246,227 S.F. DECORATIVE ROCK AREA- 1'-2" WHITE COLOR  
 ASPHALT PAVEMENT 119,496 S.F. CONCRETE PAVEMENT 37,282 S.F. 4" TO 8" COBBLE- GRAY TONES  
 TRASH AREA 376 S.F.

SHEET INDEX

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SP-1,1	SITE PLAN
A-1	FLOOR PLAN
A-2	EXTERIOR ELEVATIONS
A-2,1	EXTERIOR COLOR ELEVATIONS
L-1	CONCEPTUAL LANDSCAPE PLAN
L-2	CONCEPTUAL LANDSCAPE PLAN
L-3	CONCEPTUAL LANDSCAPE PLAN



OVERALL SITE PLAN



2330 I Coffee Road #9 Modesto, CA 95355  
 Phone: 209-438-5714 edmonds@edjacobs.com

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EDMOND J. JACOBS ARCHITECT CONSULTANT:  
 PROJECT ADDRESS:  
 132 COMPLEX

NEW GAS / MARKET BUILDING

15010 MAZE BOULEVARD  
 PATTERSON, CA 95363

CLIENT:  
 132 INVESTMENT, LLC  
 DATE: DECEMBER 6, 2023  
 DRAWN: ETJ  
 FILE: X262019  
 PROJECT NO: 285-19  
 PERMIT NO:  
 REVISIONS BY

DESCRIPTION:  
 SITE PLAN  
 SHEET NO:  
 SP-1

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PROJECT ADDRESS:

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**NEW  
GAS/ MARKET  
BUILDING**

15010 MAZE BOULEVARD  
PATTERSON, CA 95363

CLIENT:

132 INVESTMENT, LLC

2405 E. HIGHWAY 132  
VERNALIS, CA 95385

DATE: DECEMBER 6, 2023

DRAWN: ETJ

FILE: X23-2019

PROJECT NO: 286-19

PERMIT NO:

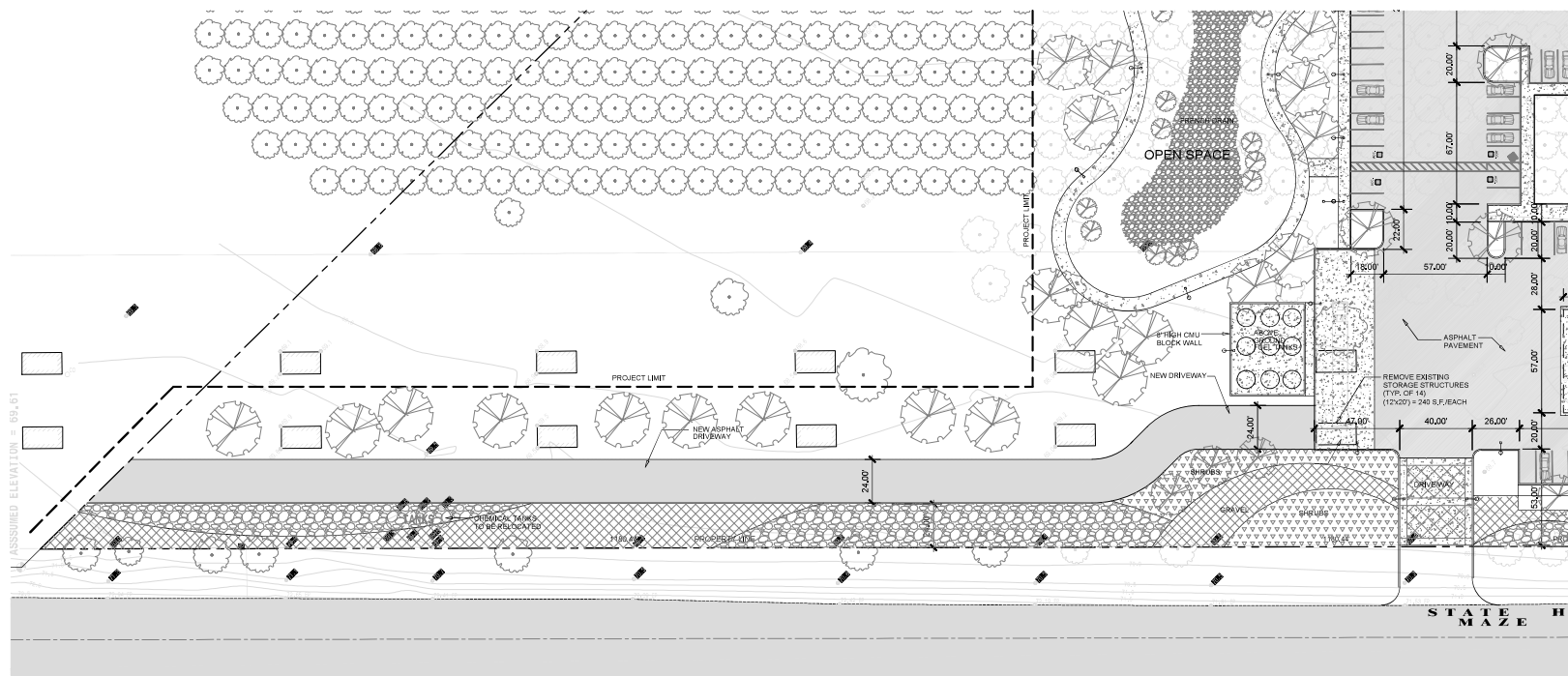
REVISIONS	BY

DESCRIPTION:

**SITE PLAN**

SHEET NO.

**SP-1.1**



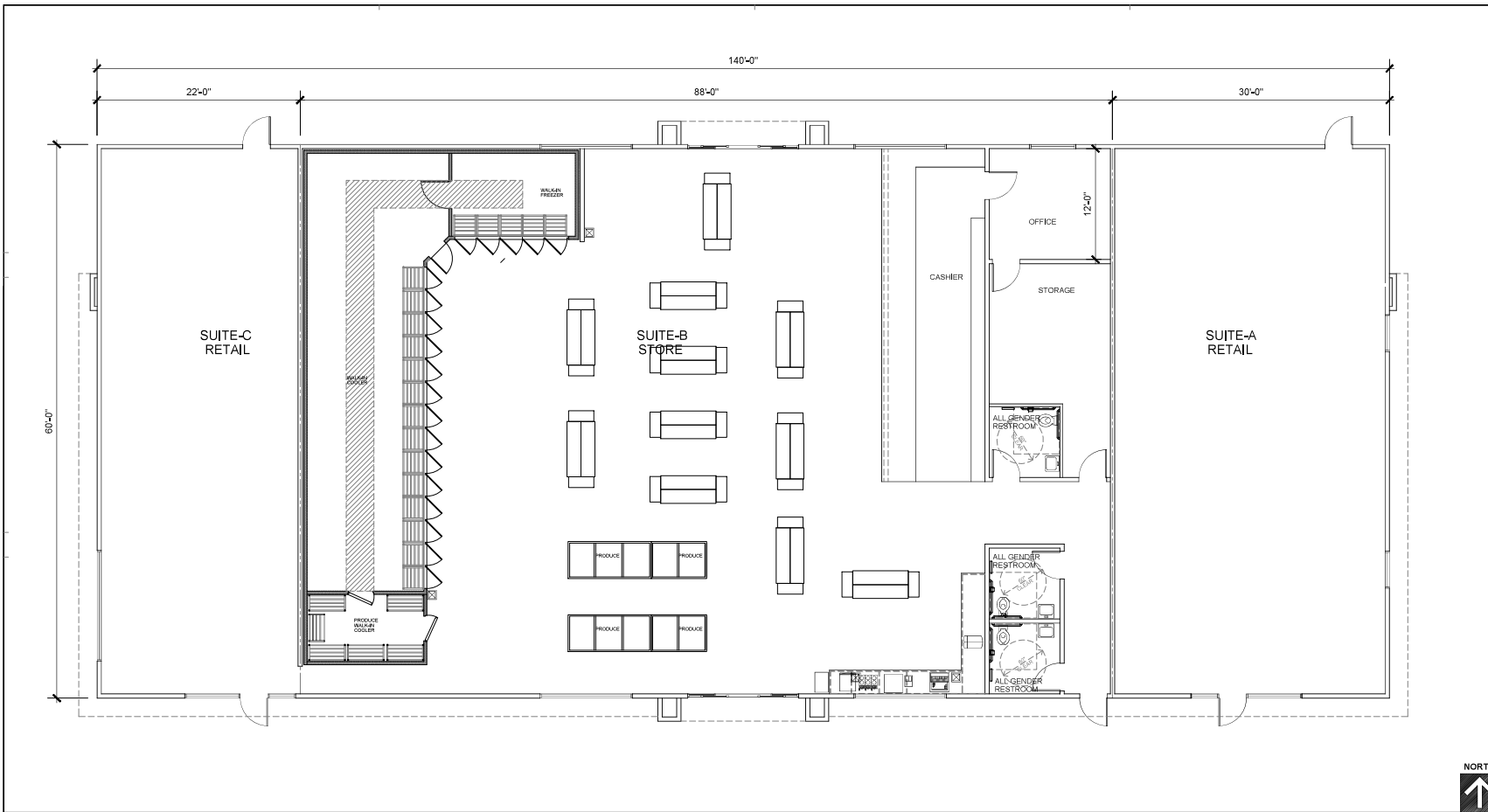
ASSUMED ELEVATION = 954.91

STATE MAZE HIGHWAY



0 10 20 30 60  
SCALE: 1"=30'-0"

PARTIAL SITE PLAN



2301 Coffee Road #B • Modesto, CA 95335  
Phone: 209-438-8774 • edmond@edjacobs.com

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CONSULTANT:

PROJECT ADDRESS:  
132 COMPLEX

**NEW  
GAS/MARKET  
BUILDING**

15010 MAZE BOULEVARD  
PATTERSON, CA 95363

CLIENT:  
132 INVESTMENT, LLC

2405 E. HIGHWAY 132  
VERNALIS, CA 95385



FLOOR PLAN

SCALE: 3/16" = 1'-0"

DATE:	DECEMBER 6, 2023
DRAWN:	ETJ
FILE:	286-19-PLAN
PROJECT NO:	286-19
PERMIT NO:	
REVISIONS	BY

DESCRIPTION:  
**FLOOR PLAN**

SHEET NO.  
**A-1**

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PROJECT ADDRESS:

132 COMPLEX

**NEW GAS/MARKET BUILDING**

15010 MAZE BOULEVARD  
PATTERSON, CA 95363

CLIENT:

132 INVESTMENT, LLC

2405 E. HIGHWAY 132  
VERNALIS, CA 95385

DATE: DECEMBER 6, 2023

DRAWN: ETJ

FILE: 285-19-PLAN

PROJECT NO: 285-19

PERMIT NO:

REVISIONS

BY

DESCRIPTION

**EXTERIOR ELEVATIONS**

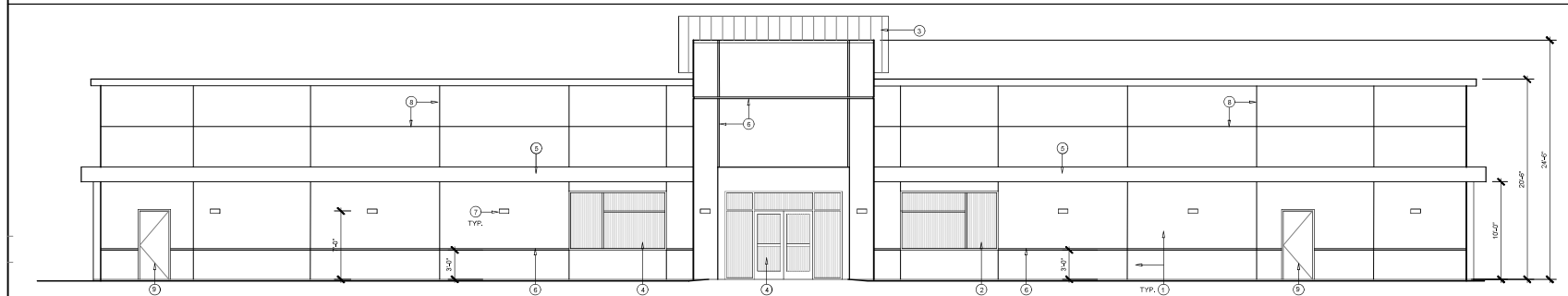
SHEET NO.

**A-2**



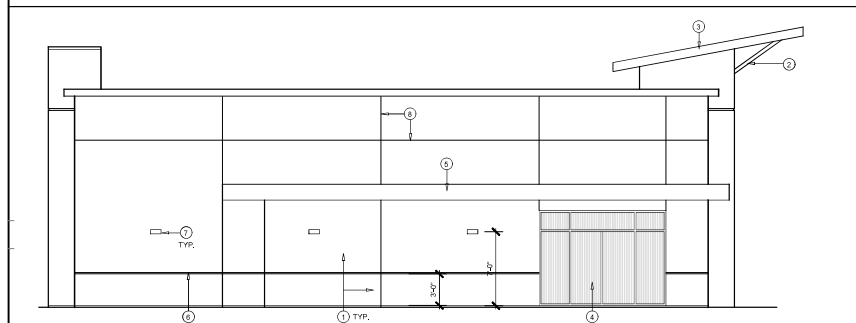
**SOUTH ELEVATION**

SCALE: 3/16" = 1'-0"



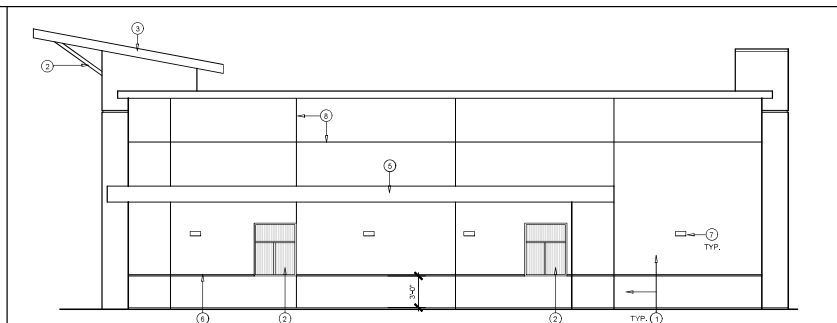
**NORTH ELEVATION**

SCALE: 3/16" = 1'-0"



**WEST ELEVATION**

SCALE: 3/16" = 1'-0"



**EAST ELEVATION**

SCALE: 3/16" = 1'-0"

DESCRIPTION	FINISH
① 7/8" THICK (3 COATS) STUCCO	SMOOTH FINISH COLOR: PER COLOR ELEVATIONS
② METAL BRACE	COLOR: PER COLOR ELEVATIONS
③ STANDING SEAM METAL ROOF ROOF SYSTEM	MANUF. COLOR: GRAY
④ ALUMINUM STOREFRONT	COLOR: CLEAR ANODIZED FINISH GLASS: LOW-E
⑤ STUCCOED OVERHANG	SMOOTH FINISH COLOR: PER COLOR ELEVATIONS
⑥ 2" ALUMINUM CHANNEL	COLOR: CLEAR ANODIZED FINISH
⑦ LED LIGHT FIXTURE	COLOR: WHITE
⑧ EXPANSION JOINT	COLOR: PAINT TO MATCH WALL COLOR
⑨ METAL DOOR	COLOR: PER COLOR ELEVATIONS

**EXTERIOR FINISH KEYNOTES**



2301 Coffee Road #B • Modesto, CA 95335  
 Phone: 209-438-0274 • edmond@edjacobs.com

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CONSULTANT:

PROJECT ADDRESS:

132 COMPLEX

NEW GAS/ MARKET BUILDING

15010 MAZE BOULEVARD  
 PATTERSON, CA 95363

CLIENT:  
 132 INVESTMENT, LLC

2405 E. HIGHWAY 132  
 VERNALIS, CA 95385

DATE: DECEMBER 6, 2023

DRAWN: ETJ

FILE: 206-19-PLAN

PROJECT NO: 206-19

PERMIT NO:

REVISIONS	BY

DESCRIPTION:  
**EXTERIOR COLOR ELEVATIONS**  
 SHEET NO.

**A-2.1**



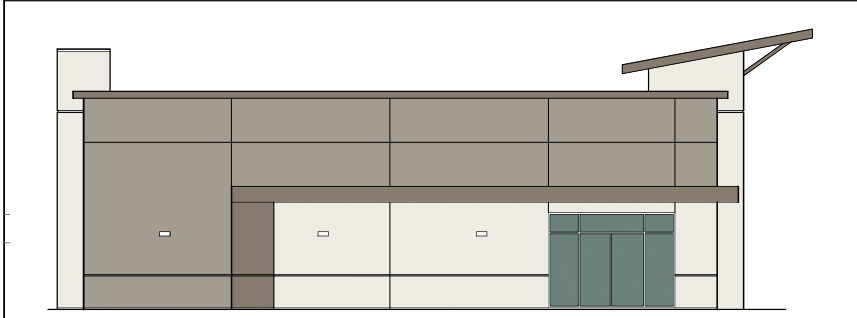
SOUTH ELEVATION

SCALE: 3/16" = 1'-0"



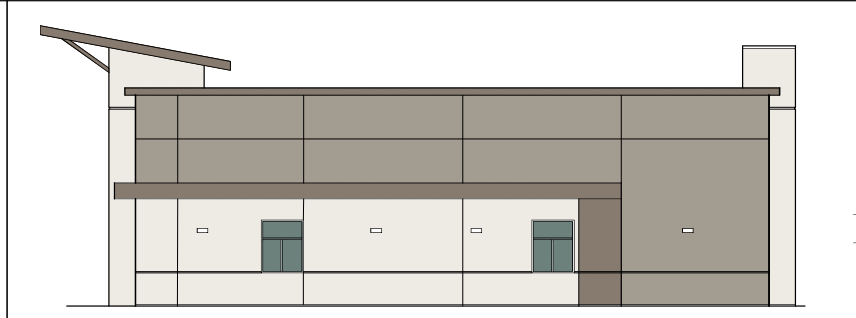
NORTH ELEVATION

SCALE: 3/16" = 1'-0"



WEST ELEVATION

SCALE: 3/16" = 1'-0"



EAST ELEVATION

SCALE: 3/16" = 1'-0"

	SAND FINISH COLOR: SNOWBOUND SW 7004 BY SHERWIN WILLIAMS
	SAND FINISH COLOR: PEWTER TANKARD SW 0023 BY SHERWIN WILLIAMS
	SAND FINISH COLOR: BACKDROP SW 7003 BY SHERWIN WILLIAMS

EXTERIOR FINISH SCHEDULE

**CENTRAL CALIFORNIA INFORMATION CENTER**

*California Historical Resources Information System*

Department of Anthropology – California State University, Stanislaus

One University Circle, Turlock, California 95382

(209) 667-3307



---

*Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties*

**Date:** 10/13/2020

**Records Search File#:** 11526N

**Project:** Site Approval, Rezoning  
and General Plan Amendment, Gas  
Station and Convenience Store on SR 132  
at McCracken Road

Edmond T. Jacobs, Architect  
2301 Coffee Road, Suite B  
Modesto, CA 95355  
209-408-0674/209-499-3495

[edmond@etjarchitect.com](mailto:edmond@etjarchitect.com)

Dear Mr. Jacobs:

We have conducted a records search as per your request for the above-referenced project area located on the Vernalis USGS 7.5-minute quadrangle map in Stanislaus County.

Search of our files includes review of our maps for the specific project area and the immediate vicinity of the project area, and review of the following:

National Register of Historic Places (NRHP)  
California Register of Historical Resources (CRHR)  
*California Inventory of Historic Resources* (1976)  
*California Historical Landmarks*  
California Points of Historical Interest listing  
Office of Historic Preservation Built Environment Resource Directory (BERD) and the  
Archaeological Determinations of Eligibility (ADOE)  
*Survey of Surveys* (1989)  
Caltrans State and Local Bridges Inventory  
General Land Office Plats  
Other pertinent historic data available at the CCaIC for each specific county

The following details the results of the records search:

**Prehistoric or historic resources within the project area:**

- (1) There are no formally reported prehistoric archaeological resources or historic buildings located within the project area.
- (2) A segment of the Tesla-Salado-Manteca transmission line (construction date of 1952) is located on or immediately adjacent to the project area (historical resource P-50-003228).

- (3) The General Land Office Survey Plats for T3S R6E (1860) and T3S R6E (1875-1883) show that the project area within the NE ¼ of the SW ¼ of Section 35, part of an 160-acre parcel immediately adjacent to the Rancho El Pescadero Mexican Land Grant.
- (4) The Map of the County of Stanislaus, California (1906) references H. Southerland as the historic landowner of that time.
- (5) The 1969 edition of the Vernalis USGS 7.5' quadrangle references buildings and structures that are at least 51 years in age (or older) on or adjacent to the project area, qualifying as possible historical resources. We have no information on file that pertains to these buildings or structures.

**Prehistoric or historic resources within the immediate vicinity of the project area:** None formally reported to the Information Center.

**Resources that are known to have value to local cultural groups:** None has been formally reported to the Information Center.

**Previous investigations within the project area:** None has been formally reported to the Information Center.

**Recommendations/Comments:** Based on existing data in our files the project area has a moderate to high sensitivity for the possible discovery of historic archaeological resources or historic buildings or structures.

Please be advised that a historical resource is defined as a building, structure, object, prehistoric or historic archaeological site, or district possessing physical evidence of human activities over 45 years old. Since the project area has not been subject to previous investigations, there may be unidentified features involved in your project that are 45 years or older and considered as historical resources requiring further study and evaluation by a qualified professional of the appropriate discipline.

If the current project does not include ground disturbance, further study for archaeological resources is not recommended at this time. If ground disturbance is considered a part of the current project, we recommend further review for the possibility of identifying prehistoric or historic-era archaeological resources.

If the proposed project contains buildings or structures that meet the minimum age requirement (45 years in age or older) it is recommended that the resource/s be assessed by a professional familiar with architecture and history of the county. Review of the available historic building/structure data has included only those sources listed above and should not be considered comprehensive.

If at any time you might require the services of a qualified professional the Statewide Referral List for Historical Resources Consultants is posted for your use on the internet at <http://chrisinfo.org>

If archaeological resources are encountered during project-related activities, work should be temporarily halted in the vicinity of the discovered materials and workers should avoid altering the materials and their context until a qualified professional archaeologist has evaluated the situation and provided appropriate recommendations. Project personnel should not collect cultural resources.

If human remains are discovered, California Health and Safety Code Section 7050.5 requires you to protect the discovery and notify the county coroner, who will determine if the find is Native American. If the remains are recognized as Native American, the coroner shall then notify the Native American Heritage Commission (NAHC). California Public Resources Code Section 5097.98 authorizes the NAHC to appoint a Most Likely Descendant (MLD) who will make recommendations for the treatment of the discovery.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the State Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

We thank you for contacting this office regarding historical resource preservation. Please let us know when we can be of further service. Please sign and return the attached **Access Agreement Short Form**.

**Note:** Billing will be transmitted separately via email from the Financial Services office (\$150.00), payable within 60 days of receipt of the invoice.

**If you wish to include payment by Credit Card, you must wait to receive the official invoice from Financial Services so that you can reference the CMP # (Invoice Number), and then contact the link below:**

<https://commerce.cashnet.com/ANTHROPOLOGY>



Sincerely,

*E. A. Greathouse*

E. A. Greathouse, Coordinator  
Central California Information Center  
California Historical Resources Information System

Copy of invoice to Laurie Marroquin, Financial Services ([lamarroquin@csustan.edu](mailto:lamarroquin@csustan.edu))

**TRAFFIC OPERATIONAL ANALYSIS**

For

**SR 132/ MCCRACKEN ROAD GAS STATION / CONVENIENCE STORE PROJECT**  
Stanislaus County, CA

*Prepared for:*

**132 INVESTMENTS LLC**  
2405 E. Highway 132  
Vernalis, CA 95385

*Prepared by:*

**KDAnderson & Associates, Inc.**  
3853 Taylor Road, Suite G  
Loomis, CA 95650  
(916) 660-1555

Revised September 27, 2021  
~~June 4, 2021~~

0045-01

SR 132 McCracken Road Gas Station TIA

*KD Anderson & Associates, Inc.*

Transportation Engineers

**ATTACHMENT II**

**TRAFFIC OPERATIONAL ANALYSIS FOR  
SR 132 / MCCrackEN ROAD GAS STATION / C-STORE PROJECT**

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September 27, 2021

*KDA*

**TRAFFIC IMPACT ANALYSIS FOR  
SR 132 / MCCRACKEN ROAD GAS STATION / C-STORE PROJECT**  
Stanislaus County, CA

## **INTRODUCTION**

This report summarizes **KDAnderson & Associates'** analysis of the potential traffic impacts associated with development of a Gas Station / Convenience Store along SR 132 at the McCracken Road intersection in rural Stanislaus County. Figure 1 identifies the project's location, and Figure 2 is the project site plan.

### **Study Scope**

The purpose of this analysis is to identify potential project traffic operational effects and transportation impacts under CEQA. The analysis includes an evaluation of existing traffic operations in the area based on recent data that has been adjusted to account for the effects of COVID 19. Project effects have been evaluated within the context of this existing background traffic and under a long-term scenario that assumes regional traffic growth per the SR 132 Extension project: Dakota to Gates EIR Traffic Operational Analysis Report (TOAR). To assess project traffic effects, the characteristics of the proposed project have been determined, including estimated automobile and truck trip generation, as well as the directional distribution / assignment of the project traffic. "Existing plus Project" and "Long Term Cumulative plus Project" conditions were then evaluated.

The study area includes the adjoining SR 132 / McCracken Road intersection and the project's two proposed access points on SR 132 and on McCracken Road.

The status of other facilities for transportation modes, including pedestrian and bicycle circulation and transit services has been described. The project's impact under CEQA within the requirements of SB 743 based on Vehicle Miles Traveled (VMT) has also been discussed within the context of screening criteria presented in Office of Planning and Research (OPR) CEQA guidance.

### **Summary Conclusions**

**Setting.** Because current traffic volumes on McCracken Road are low, traffic operating conditions in the area of the proposed project are acceptable based on satisfaction of Stanislaus County's minimum standards for Level of Service. A traffic signal is not warranted today at the SR 132 / McCracken Road intersection, and while no left turn lane exists on SR 132, current traffic volume levels do not require a turn lane.

**Trip Generation.** The proposed project includes new full access driveways on SR 132 and on McCracken Road. The project is expected to generate a total of 260 a.m. and 279 p.m. peak hour trips at those locations. Of these totals 22 trips are expected to be heavy trucks at both times.

**VMT Impacts.** SB 743 requires the Governor’s Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. In this case, the proposed project provides another opportunity for gasoline and convenience items for western Stanislaus County / San Joaquin County area residents and employees and other persons traveling on SR 132. The project will likely be closer to some residences and businesses than current options and as a result the project is likely to have the net effect of helping to incrementally reduce regional VMT. Based on these considerations and on OPR screening guidance, the project’s Transportation impact under CEQA based on VMT is not significant.

**Safety Impacts under CEQA.** The proposed project will increase the length of average delays on existing approaches to SR 132 and traffic pausing to turn left towards the site will cause queuing in mainline SR 132. This is a significant safety impact under CEQA, and mitigation is required. A center left turn area on SR 132 will be needed. Subject to Caltrans approval, this treatment would begin as a westbound left turn lane at McCracken Road, continue westerly along the project frontage and create a Two-Way Left-Turn (TWLT) lane that extended for at least 600 feet beyond the driveway.

The project will cause slow moving trucks to turn off of and onto SR 132 at the McCracken Road intersection and at the new driveway. Conflicts between slow moving trucks and high speed through traffic on SR 132 is a significant safety issue that will require mitigation. An acceleration / deceleration area beginning east of the McCracken Road intersection and continuing westerly beyond the project driveway will be needed. This area could take the form of dedicated turn lanes or a widened shoulder constructed to the standard travel lane section. The site layout and all access points will also need to be designed to accommodate the turning requirement of STAA trucks.

**Impacts to Alternative Transportation Modes.** The project could generate pedestrians traveling between the site and the existing commercial and residential areas to the west near Greenwood Road. Mixing pedestrians and high speed traffic along SR 132 is a potential safety issue that should be addressed by creating an all-weather connection between the two areas.

**Long Term Conditions.** Year 2046 traffic conditions were assessed based on traffic volume forecasts derived from the *SR 132 Extension Dakota to Gates EIR Traffic Operational Analysis Report (TOAR)*. Without improvements to SR 132, long term traffic operations with the project would fall below minimum standards with appreciable congestion and long queues. Widening SR 132 to four lanes, as anticipated by the SR 132 Transportation Concept Report (TCR) but not yet identified in the Stanislaus County Regional Transportation Plan will be needed, however, even with widening long delays will result for motorists attempting to access SR 132. If the project proceeds the SR 132 / McCracken Road intersection would eventually need a traffic signal or roundabout.

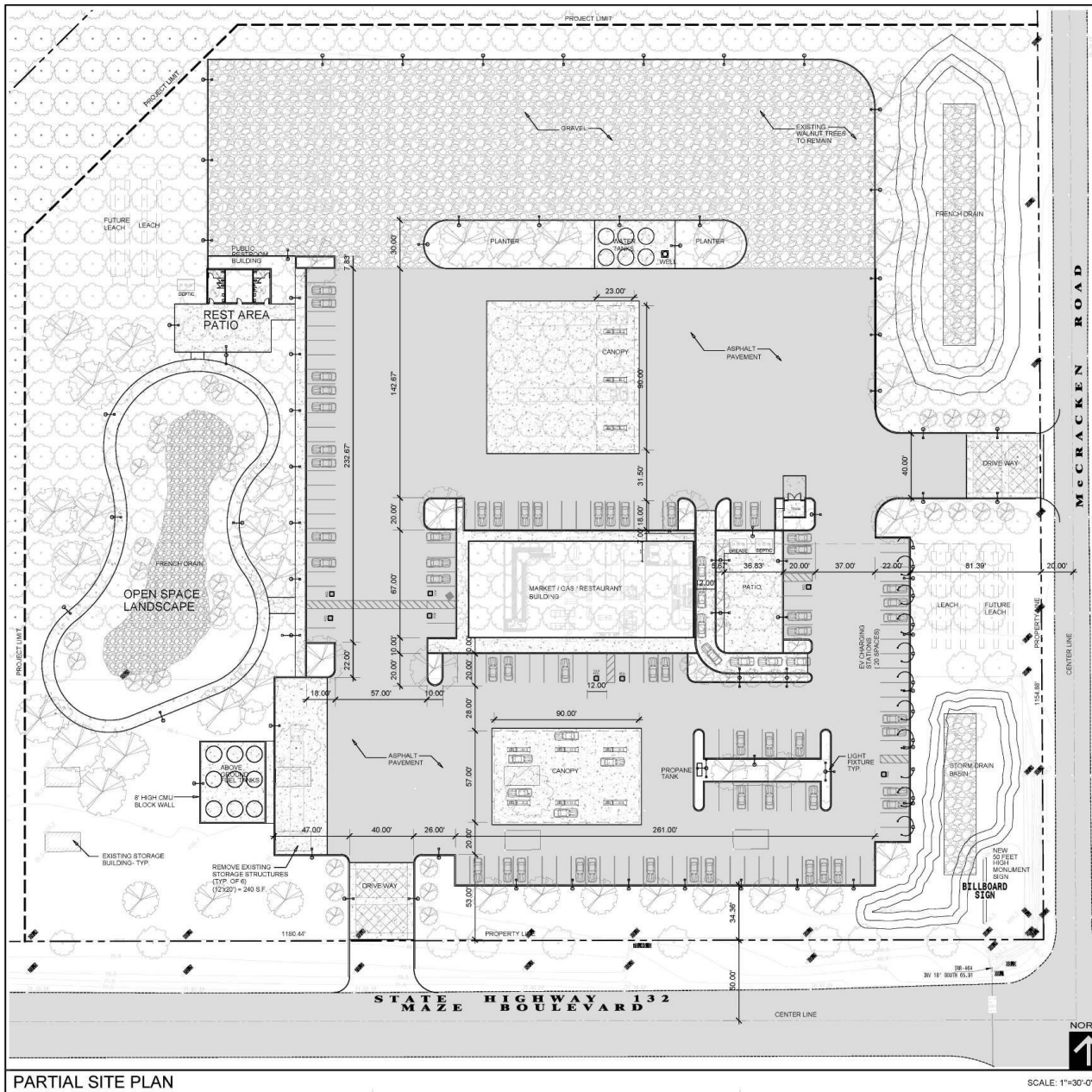
**Site Access.** The proposed driveway on SR 132 should be made wide enough to accommodate two exiting lanes and should be made wide enough to accommodate the turning requirements of inbound trucks when other vehicles are waiting to exit. With that improvement driveway throats would be adequate.






VICINITY MAP





PROJECT DATA	
A.P.N.	016-001-001
PROPOSED USE:	CONVENIENT STORE / GAS
OCCUPANCY:	B
TYPE OF CONSTRUCTION:	V-B (FIRE SPRINKLERED)
EXISTING ZONING:	AGRICULTURAL
NEW ZONING TO:	PLAN DEVELOPMENT - COM.
TOTAL SITE AREA	681,638 S.F. (15.85 ACRES)
<b>PROJECT SITE AREA</b>	
FRONT OPEN LAND	124,009 S.F. (2.85 ACRES)
PLANTED ORCHARD AREA	224,391 S.F. (5.15 ACRES)
<b>PROJECT SITE AREA</b>	<b>348,480 S.F.</b> <b>(8.0 ACRES)</b>
<b>BUILDING AREA:</b>	
FOOD COURT - SUITE A	1,800 S.F.
CONVENIENT STORE - SUITE B	4,800 S.F.
STORAGE - SUITE C	1,800 S.F.
<b>TOTAL BUILDING AREA</b>	<b>8,400 S.F.</b>
PUBLIC RESTROOM BUILDING AREA	880 S.F.
REGULAR CARS FUEL CANOPY AREA	5,130 S.F.
TRUCKS FUEL CANOPY AREA	1,380 S.F.
ABOVE GROUND FUEL TANK (TOTAL OF 16,000 GALLONS)	2,000 S.F.
PROPANE TANK	499 GALLONS
<b>PARKING REQUIRED</b>	
RESTAURANT	10 SPACES
1 SPACE / 4 SEATS	
40 OCCUPANTS/4 = 10	
MARKET/CONVENIENT STORE	22 SPACES
1 SPACE / 300 S.F.	
6,600 S.F. / 300 = 22	
<b>PARKING-PROVIDED</b>	
PROPOSED STANDARD	19 SPACES
STANDARD ELECTRIC VEHICLE CHARGING	
PROPOSED VAN ACCESSIBLE	1 SPACE
ELECTRIC VEHICLE CHARGING STATION	
PROPOSED STANDARD	111 SPACES
OFF-STREET PARKING	
PROPOSED VAN ACCESSIBLE	2 SPACE
PROPOSED STANDARD ACCESSIBLE	5 SPACES
<b>TOTAL</b>	<b>138 SPACES</b>
LANDSCAPE AREA	198,228 S.F.
ASPHALT PAVEMENT	103,344 S.F.
CONCRETE PAVEMENT	37,252 S.F.
TRASH AREA	376 S.F.
<b>SHEET INDEX</b>	
SP-1	SITE PLAN
A-1	FLOOR PLAN
A-2	EXTERIOR ELEVATIONS
A-2.1	EXTERIOR COLOR ELEVATIONS
<b>OVERALL SITE PLAN</b>	



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ARCHITECT:

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CONSULTANT:

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PROJECT ADDRESS

**132 COMPLEX**

**NEW GAS/ MARKET BUILDING**

15101 MAZE BOULEVARD  
PATTERSON, CA 95363

CLIENT:

132 INVESTMENT, LLC

2405 E. HIGHWAY 132  
VERNALIS, CA 95385

DATE: NOVEMBER 25, 2020

DRAWN: ETJ

FILE: X28-2019

PROJECT NO: 285-19

PERMIT NO:

REVISIONS: BY:

---

DESCRIPTION:

**SITE PLAN**

SHEET NO:

**SP-1**

**SITE PLAN**

figure 2

## **Recommended Mitigations / Conditions of Approval**

**SR 132 Improvements.** Under an Encroachment Permit from Caltrans install the following improvements to SR 132.

1. ***Install a continuous center Two-Way Left-Turn (TWLT)*** on SR 132 beginning as a westbound left turn lane at the SR 132 / McCracken Road intersection and continuing westerly to a point at least 600 feet beyond the project's driveway.
2. On westbound SR 132 ***install westbound right turn lanes or enhanced 12-foot shoulders*** from a point 600 feet east of McCracken Road to a point 600 feet beyond the project driveway.
3. ***Construct all project access and reconstruct SR 132 / McCracken Road northside corners*** as needed to accommodate the turning requirements of STAA trucks.

## **Other Requirements**

4. Prepare and submit to Stanislaus County STAA truck turning exhibits and written summary narrative needed to support a Stanislaus County application to Caltrans for an ***STAA terminal route designation*** on McCracken Road from SR 132 to the project access.
5. Construct an ***all-weather pedestrian route*** from the project's western boundary to the Orchard RV Park.



## **EXISTING SETTING**

### **Existing Street System**

Regional access to the project is provided by State Route 132, which in turn links the site with SR 33 and Interstate 5 to the west and with SR 99 and the Modesto urban area to the east. Local access to the project will be via driveways on SR 132 and via McCracken Road.

The text that follows describes these existing transportation facilities. Functionally, the Stanislaus County General Plan Circulation Element classifies study area streets as Arterials, Collectors or Local Streets.

**State Route 132 (SR 132).** SR 132 is a major roadway providing important access from the Modesto area westerly to Interstate 5. In Stanislaus County near the project SR 132 is designated a Principal Arterial and is a two-lane conventional highway. Further east Caltrans is currently constructing Phase 1 of a project to improve SR 132 to expressway standards, and Phase 2, which would extend those improvements to Gates Road (i.e., six miles east of the project) is undergoing environmental review. Near the project SR 132 is a two-lane roadway with eight-foot shoulders, and prima facie 55 mph speed limit applies. A continuous Two-Way Left-Turn (TWLT) lane begins about 1,800 feet west of the McCracken Road intersection in the vicinity of existing highway commercial uses with direct access to SR 132. SR 132 is designed an STAA truck route.

The most recent daily traffic counts reported by Caltrans (2019) indicate that SR 33 carried an *Annual Average Daily Traffic (AADT)* volume of 15,000 vehicles per day at the San Joaquin County line immediately west of the project, with the peak month volume rising to 22,900 vehicles per day (vpd). Caltrans reports that trucks comprise 15% of the total traffic volume on SR 132 west of the San Joaquin County / Stanislaus County line.

**McCracken Road.** McCracken Road is a local Stanislaus County road that extends north from the I-5 / Howard Road interchange for about 5 miles to SR 33 and another 2 miles to SR 132. About ½ mile north of SR 132 McCracken Road intersects Greenwood Road, and that road continues northeasterly to Kasson Road. In the area of the project McCracken Road generally has two 10-foot travel lanes separated by a centerline stripe and unimproved shoulders. The rural prima facie 55 mph speed limit applies.

No 24-hr traffic counts are available for McCracken Road, but assuming 10% of the daily traffic occurs in the p.m. peak hour, recent peak hour intersection counts suggest that the road carries about 300 vpd north of SR 132.

### **Existing Study Intersections**

The geometric configuration and traffic controls at the study intersection are discussed in the text which follows.

The **SR 132 / McCracken Road intersection** is controlled by stop signs on the northbound and southbound McCracken Road approaches. There are no auxiliary turn lanes at the intersection,

but the corners of the intersection have been widened to accommodate truck turns. There are no marked crosswalks or streetlights at this intersection.

### **Alternative Transportation Modes**

**Public Transit.** Stanislaus Regional Transit provides transit service county-wide. Fixed route service is provided by StaRT, but no route extends to the area of this project.

**Bicycle Facilities.** The Stanislaus County Non-Motorized Transportation Master Plan (StanCOG 2021) guides development of pedestrian and bicycle facilities in the County<sup>1</sup>. While the wide shoulder on SR 132 can accommodate bicycles, there are no dedicated bicycle facilities in this area of the County, and the plan does not suggest future improvements.

**Pedestrian Facilities.** There are no dedicated pedestrian facilities along SR 132 or McCracken Road in this area of rural Stanislaus County.

### **Existing Traffic Volumes**

To quantify existing traffic conditions, new weekday a.m. and p.m. peak hour intersection turning movement counts were conducted on April 20, 2020. These volumes would not necessarily represent “normal” conditions due to the overall effects of COVID-19 on travel. Current CEQA guidance suggests that a baseline of “normal” traffic should be created that reflects non-Covid-19 conditions.

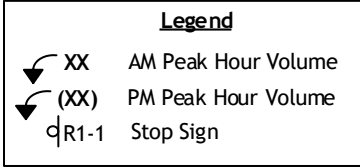
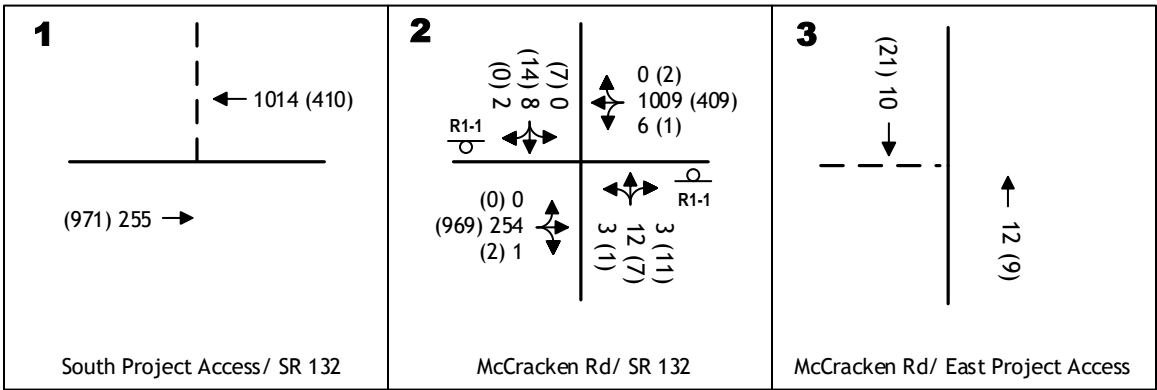
A method was developed to adjust the April 2021 traffic counts to “normal” Year 2020 volumes.

1. Pre-COVID traffic counts were obtained for the SR 132 / Gates Road intersection from the *Final Traffic Operations Report (TOAR) for the State Route 132 Dakota Avenue to Gates Road Extension Project*.
2. Cellphone based GIS data was obtained from StreetLight Data Inc. for average weekday Year 2019 peak hours at the SR 132 / Gates Road intersection and the SR 132 / Kasson Road intersection just east of the project. The results were compared to determine the anticipated difference in directional peak hour traffic volume on SR 132 between locations west of Gates Road and west of Kasson Road.
3. The identified volume differences were added to the SR 132 through traffic volumes in the 2021 SR 132 / McCracken Road traffic counts.

Figure 3 displays the adjusted weekday 2021 a.m. and p.m. peak hour traffic volumes at the SR 132 / McCracken Road intersection used for this analysis.

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<sup>1</sup> [http://www.stancog.org/pdf/documents/final\\_nonmotorized\\_transportation\\_plan.pdf](http://www.stancog.org/pdf/documents/final_nonmotorized_transportation_plan.pdf)



**EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS**

## Level of Service Calculation

"Levels of Service" were determined at study area intersections and driveways to quantitatively evaluate traffic conditions and to provide a basis for comparison of operating conditions with and without project generated traffic.

"Level-of-Service" (LOS) is a quantitative measure of traffic operating conditions whereby a letter grade "A" through "F" is assigned to an intersection. LOS "A" through "F" represents progressively worsening traffic conditions. The characteristics associated with the various LOS for intersections are presented in Table 1. LOS "E" and "F" are associated with severe congestion and delay and are unacceptable to most motorists.

<b>TABLE 1 LEVEL OF SERVICE DEFINITIONS</b>			
<b>Level of Service</b>	<b>Signalized Intersection</b>	<b>Unsignalized Intersection</b>	<b>Roadway (Daily)</b>
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay $\leq 10.0$ sec	Little or no delay. Delay $\leq 10$ sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay $> 10.0$ sec and $\leq 20.0$ sec	Short traffic delays. Delay $> 10$ sec/veh and $\leq 15$ sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay $> 20.0$ sec and $\leq 35.0$ sec	Average traffic delays. Delay $> 15$ sec/veh and $\leq 25$ sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay $> 35.0$ sec and $\leq 55.0$ sec	Long traffic delays. Delay $> 25$ sec/veh and $\leq 35$ sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay $> 55.0$ sec and $\leq 80.0$ sec	Very long traffic delays, failure, extreme congestion. Delay $> 35$ sec/veh and $\leq 50$ sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay $> 80.0$ sec	Intersection blocked by external causes. Delay $> 50$ sec/veh	Forced flow, breakdown.

Sources: Highway Capacity Manual, 6<sup>th</sup> Edition.

Levels of Service were calculated for different intersection control types using the respective methods in the Highway Capacity Manual, 6<sup>th</sup> Edition (HCM) using SYNCHRO 10.0 / Simtraffic software.

**Year 2021 Peak Hour Traffic Conditions**

**Level of Service.** Levels of Service (LOS) were calculated at the SR 132 / McCracken Road intersections (Refer to Appendix for calculation worksheets) under the "Adjusted" Year 2021 conditions. Current LOS at the study intersection is presented on Table 2. As shown, the stop-controlled approaches to the SR 132 / McCracken Road intersection operates at LOS B in the a.m. peak hour and LOS B in the p.m. peak hour.

**Peak Hour Traffic Signal Warrants.** Traffic operating conditions at unsignalized intersections is also evaluated based on the extent to which existing or projected traffic volumes satisfy traffic signal warrant requirements based on guidelines contained in the Manual of Uniform Traffic Control Devices (MUTCD). The peak hour traffic volumes at the intersection were reviewed to determine whether either the a.m. or p.m. volume satisfies peak hour warrant requirements (i.e., Warrant 3). Today the volume of traffic is well below the minimum thresholds for peak hour volumes on high-speed roads.

**Safety Improvements.** Caltrans has already acted to install safety improvements along SR 132 in the general area of the proposed project. These include:

- Edgeline Striping with Rumble Strip
- Centerline Striping with Rumble Strip
- Delineators along the edge of shoulder at intersections
- Left turn lanes at key intersections
- Two-way Left-Turn (TWLT) lane in the area of private access west of the project

*Left turn lanes* are generally provided at major intersections on SR 132, including the Greenwood Road intersection about ½ mile west of the project and the signalized Kasson Road / River Road intersection about 1¼ miles to the east. Decisions regarding the need for separate left turn lanes are made in response to factors such as automobile and truck traffic volume and collision history following the general guidance of Highway Safety Manual. Today conditions at the SR 132 / McCracken Road intersection do not appear to justify separate left turn lanes.

<b>TABLE 2 YEAR 2021 PEAK HOUR INTERSECTION LEVELS OF SERVICE</b>					
<b>Location</b>	<b>Control</b>	<b>AM Peak Hour</b>		<b>PM Peak Hour</b>	
		<b>Average Delay (sec / veh)</b>	<b>LOS</b>	<b>Average Delay (sec / veh)</b>	<b>LOS</b>
SR 132 / McCracken Road	NB/SB Stop				
NB left+thru+right turn		14	B	13	B
SB left+thru+right turn		11	B	10	B
<b>Bold</b> values indicate conditions in excess of the County’s LOS D minimum					



## **Regulatory Framework**

The text which follows summarizes the circulation policies which govern the study area.

### **State of California**

#### ***SB 743***

SB 743 modified CEQA direction and requires local agencies to move from a Level of Service (LOS) based analysis to evaluation of impacts based on Vehicle Miles Traveled (VMT). General guidance as to methods for calculating VMT and significance criteria are contained in the Office of Planning & Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research 2018). However, while SB 743 eliminates LOS as a CEQA criteria, this measure can still be considered in terms of General Plan consistency.

#### ***California Department of Transportation***

In its **Vehicle Miles Traveled-Focused Transportation Impact Study Guideline (2020)**, Caltrans establishes operational objectives for highway performance based on VMT and safety rather than Level of Service while addressing impacts to alternative transportation modes.

Caltrans plans / policies for its state highways are also presented in the **SR 132 Transportation Concept Report, 2014 (SR 132 TCR)**. The Concept facility for the 20-year planning horizon is a 4-lane expressway, although the TCR indicates that current two-lane conventional highway will operate at LOS E-F through 2030.

Caltrans policy regarding applicable traffic controls is based on **Traffic Operations Policy Directive 13-02**. This directive requires that Caltrans consider the relative merits of alternative traffic controls when it becomes necessary to stop traffic on state highways. Roundabouts are the default intersection control, but all-way stops and traffic signals are to be considered. The policy directive requires preparation of an *Intersection Control Evaluation (ICE)* to determine the preferred traffic control.

**Caltrans Encroachment Permit** is required for improvements made to the state highway by private parties or local agencies, and the design of these improvements is subject to Caltrans approval.

Large trucks are permitted on designated facilities under the **Surface Transportation Authority Act (STAA)**. Roadways to be added to designated routes are processed through Caltrans with evidence of the adequacy of each road and intersection for the trucks.

## Regional

### *Stanislaus Council of Governments (StanCOG)*

The **2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/STS)** for Stanislaus County is a federally mandated, long-range transportation plan for the nine incorporated cities and the unincorporated county. The RTP specifies the policies, projects, and programs necessary over a 20-plus year period to maintain, manage, and improve the region's transportation systems. It establishes goals and objectives for the future system. It identifies the actions necessary to achieve these goals and describes a funding strategy and options for implementing the actions. The RTP is updated every 3 years. The present 2018 update concerns the period from 2018 to 2040.

To coordinate local planning efforts with other regional, state, and federal agencies, and to monitor and respond to policies that will affect the development and implementation of the RTP, the Stanislaus Council of Governments prioritizes transportation projects in a Regional Transportation Improvement Program for federal and state funding. The process is based on each project for need, feasibility, and adherence to federal transportation policies.

The RTP's Regional Road network includes SR 132 through the study area. Tier I projects (i.e., projects that have a funding source) included Appendix K of the RTP/STS include:

- SR 132: SR 132 Extension Dakota to Gates: 4-lane divided Expressway

## PROJECT CHARACTERISTICS

The characteristics of the project with regards to trip generation and distribution are discussed in this report section.

### Project Description

**Land Uses.** The proposed project is a Gasoline Station with Convenience Store and adjoining Fast Food Restaurant with Drive-thru lane. The project offers 12 automobile fuel dispensers, and the Convenience Store building is 8,400 sf, including storage and the 1,800 sf food court. An outdoor patio and separate restroom building are also provided. A separate commercial truck fueling area is proposed. This area can accommodate six vehicles fueling concurrently, however, large tractor-trailer combinations that fuel on both sides of the rig concurrently would occupy two positions.

**Site Layout.** The project circulation layout includes a primary automobile circulation on the south side of the site and truck circulation on the north. Both areas would use both project driveways. The truck fueling positions are facing easterly, which would allow westbound truck entry via the SR 132 driveway and truck exit directly to McCracken Road. However, the circulation layout surrounding the truck positions is broad enough to allow trucks to maneuver into and out the positions from either direction.

Two driveways are proposed. The SR 132 driveway is located 450 feet west of McCracken Road measured centerline to centerline just beyond the limits of the intersection's existing eastbound "no passing" zone striping. This driveway would have full access as proposed. The McCracken Road driveway is 360 feet north of SR 132, and full access is planned at this location as well.

### Trip Generation

**Approach.** To quantify the amount of vehicular traffic generated by the project, daily and a.m. / p.m. peak hour trip generation rates presented in the Institute of Transportation Engineers (ITE) publication *Trip Generation Manual, 10<sup>th</sup> Edition*, were employed. These rates are presented in Table 3. The *ITE Trip Generation Handbook, 3<sup>rd</sup> Edition* includes data regarding the share of traffic drawn to retail commercial land uses from the stream of traffic passing the project site (i.e., pass-by trips).

**Trip Generation Rates.** Trip Generation rates are available for Gasoline Stations with Convenience Stores (Code 945), and these rates are applicable to the project based on the number of fueling positions. For this analysis it has been assumed that the food court will also be a trip generator, and the ITE rate for Fast Food Restaurant with Drive Thru Aisle (Code 934) have been employed. Other elements of the plan are ancillary features that would not generate their own trips (i.e., rest rooms).



Source	Description	Quantity	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
945	Gas Station with Convenience Market	Fueling position	205.36	51%	49%	12.47	51%	49%	13.99
934	Fast Food Restaurant with Drive-Thru	ksf	470.95	51%	49%	40.19	52%	48%	32.67

**Trip Generation Forecasts.** The number of vehicle trips that may be generated by the project is shown in Table 4. As shown, it has been assumed that internal “trips” made between the restaurant and gas sales elements of the project would be equal to 25% of the restaurant trip generation. After this discount, a total of 260 trips is projected at the project driveway in the a.m. peak hour, and 279 trips is forecasted in the weekday p.m. peak hour. Of these totals, 158 a.m. peak hour and 154 p.m. peak hour trips would be made by “pass-by” motorists who simply stop at this location as part of another trip along SR 132. The remainder would either be trips made by motorists on other regional facilities such as SR 33 or Kasson Road who divert momentarily to this location or would be primary trips generated by area residents to this location.

**Heavy Truck Trip Generation.** The share of total trips generated by heavy truck has been considered from three perspectives. Applying Code 945 ITE rates to the fueling positions that are available to tractor trailer combinations for concurrent fueling (i.e., two trucks in positions) suggests that 25 a.m. and 28 p.m. peak hour trips would be heavy trucks.

Alternatively, it is possible to estimate truck visits based on the total daily diesel fuel sales anticipated by the proponent and the average number of gallons per truck fuel sale. The project proponent has indicated that 50,000 to 75,000 gallons of diesel fuel may be sold monthly. Over 30 days this would equate to 1,667 to 2,500 gallons per day. Tractor trailer combinations typically have tank capacity for 150 to 200 gallons. Assuming fueling occurs when tanks are 75% empty, the average full up could be 112 to 150 gallons. Thus, if all diesel sales were made to tractor trailer combinations, then the number of daily truck sales would be 11 to 22. Based on this calculation and the share of daily trips generated in the peak hour by code 945 (i.e., 6.8%), only 1 or 2 heavy truck sales would be anticipated each hour (i.e. 2 to 4 trips).

Additionally, we considered the time needed to fuel up a tractor trailer and the number of heavy trucks that can theoretically be accommodated concurrently over an hour. A typical pump can deliver 10 gallons per minute, so 20 gallons per minute can be dispensed using two pumps concurrently. Assuming 112 to 150 gallons per sale, sales would require 5.6 to 7.5 minutes just to fill. A workable estimate accounting for all aspects of the visit would be 10 minutes per transaction, or 6 truck sales per position per hour. If fully utilized, the two tractor trailer positions could accommodate 12 sales per hour, or 24 peak hour trips.

For this analysis it has been conservatively assumed that peak hour heavy truck trips would be the average of the three estimates or 22 heavy truck trips per hour (i.e., 11 in and 11 out). On a daily basis, we have assumed twice the truck trips anticipated based on fuel sales, or 88 trips.

Source	Description	Quantity	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
945	Gas Station w/ C Store	18 Fueling positions	3,696	114	110	224	128	124	252
	Internal Trips		212	9	9	18	8	8	16
	External Trips		3,484	105	101	206	120	116	236
	Pass-by Trips	63%-56% <sup>1</sup>	1,742	65	65	130	66	66	132
	Net Primary External Trips		1,742	40	36	76	54	50	104
934	Food Court	1.8 ksf	848	37	35	72	31	28	59
	Internal Trips		212	9	9	18	8	8	16
	External Trips		636	28	26	54	23	20	43
	Pass-by trips	50%	318	14	14	28	11	11	22
	Net Primary External Trips		318	14	12	26	12	9	21
Total Site	<i>Total Pass-by Trips</i>		2,060	79	79	158	77	77	154
	Total Primary External Trips		2,060	54	48	102	66	59	125
	<b>Total Driveway Trips</b>		<b>3,120</b>	<b>133</b>	<b>127</b>	<b>260</b>	<b>143</b>	<b>136</b>	<b>279</b>
	<b>Heavy Trucks</b>		<b>88</b>	<b>11</b>	<b>11</b>	<b>22</b>	<b>11</b>	<b>11</b>	<b>22</b>

<sup>1</sup> source Trip Generation handbook, 3<sup>rd</sup> Edition, Table F.37 and F.38, daily trip pass-by assumed to be 50%

### Trip Distribution

The distribution of project trips will reflect the project’s location near the crossroads of two major regional highways (SR 33 and SR 132) as well as the demographics of the area around the site. Assumptions have been made relative to the distribution of the project’s *Primary* trips and link diverted trips made specifically to visit the site and for *Pass-by* trips drawn from traffic already passing the site on SR 132.

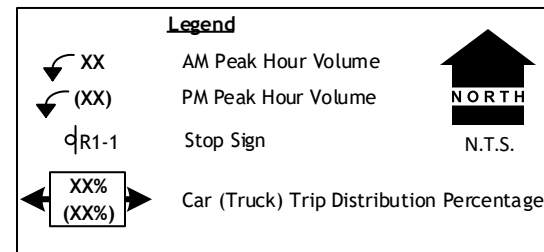
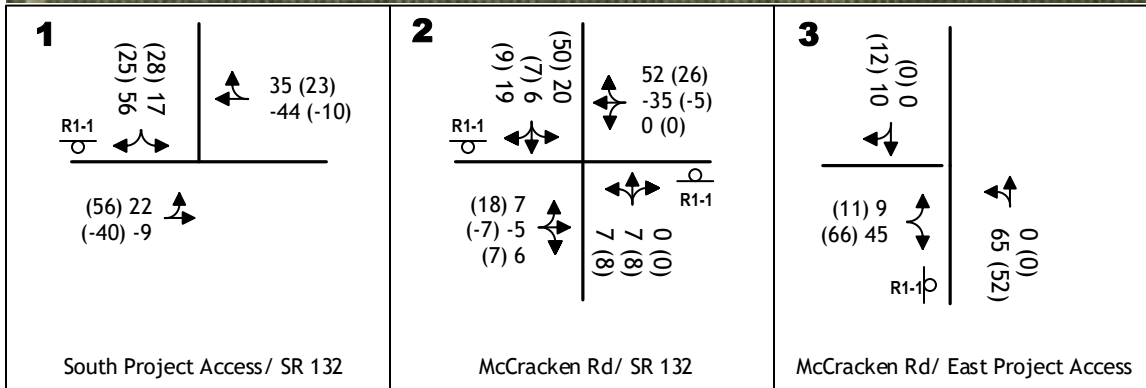
For this analysis, trips made by patrons who are traveling on SR 33 and are diverted to the site have been classified as “new” trips relative to the immediate study area. Due to the layout of SR 33, it is likely that trips originating on northbound SR 33 would use McCracken Road to reach the site, as would trips leaving the site but intending to travel south on SR 33. Pass-by trips have been assumed to be drawn from traffic on SR 132 in proportion to the directional traffic volume of traffic passing the site during each peak hour. Table 5 presents the primary and pass by trip distribution assumptions made for this analysis.

**TABLE 5  
PROJECT TRIP DISTRIBUTION SUMMARY**

Direction	Route	Percent of Total Trips					
		Primary Trips		Pass-by Trips			
		Auto	Truck	Auto	Truck		
North	McCracken Road	25%	0%				
South	McCracken Road to SR 33	25%	25%				
East	SR 132	25%	50%				
West	SR 132	25%	25%				
Total		100%	100%				
				<b>AM</b>	<b>PM</b>	<b>AM</b>	<b>PM</b>
Eastbound on SR 132				20%	75%	20%	75%
Westbound on SR 132				80%	25%	80%	25%
				100%	100%	100%	100%

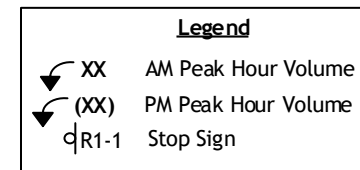
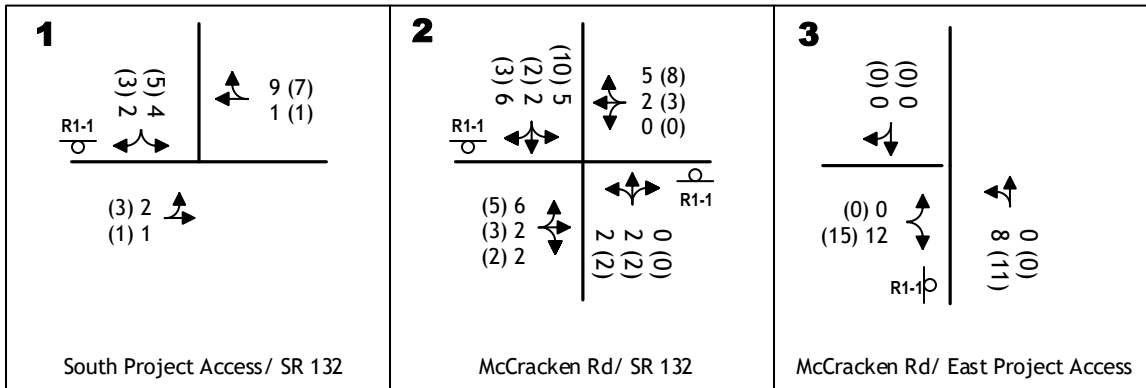
**Trip Assignment**

Using the trip generation and distribution assumptions described above, the trips generated by the proposed project were assigned to the study area street system via the project’s driveways. Figure 4 presents peak hour traffic volumes accompanying development of the project, while Figure 5 is the project’s truck trips. Full access was assumed at each location.



**PROJECT ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS**





**PROJECT ONLY (TRUCK) TRAFFIC VOLUMES AND LANE CONFIGURATIONS**

## **EXISTING PLUS PROJECT CONDITIONS**

### **Vehicle Miles Traveled (VMT) Impact**

SB 743 requires the Governor’s Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. For land use projects, OPR identified Vehicle Miles Traveled (VMT) per capita, VMT per employee, and net VMT as new metrics for transportation analysis. The CEQA Guidelines state that lead agencies, such as Stanislaus County, may establish “thresholds of significance” to assist with the determination of significant impacts of a project. The CEQA Guidelines generally state that projects that decrease VMT can be assumed to have a less than significant transportation impact. The CEQA Guidelines do not provide any specific criteria on how to determine what level of project VMT would be considered a significant impact.

The OPR Technical Advisory indicates that it is generally good practice to evaluate retail land use projects by estimating the “total change in VMT” in the project study area. According to the OPR Technical Advisory, this is because new retail development often redistributes existing shopping trips rather than solely creating new trips, and so the effect of the project on the overall region needs to be considered. The OPR Technical Advisory recommends that any increase in regional VMT due to a new retail project could be considered a significant impact, however, the Advisory also noted that “locally serving retail” less than 50,000 sf in size can be presumed to have no significant impact on regional VMT. Similar methodologies could be applied to other non-office commercial land uses, such as restaurants, gas stations and cafes.

In this case, the proposed project provides another opportunity for gasoline, food and convenience items for western Stanislaus County residents and other persons traveling on SR 33 and SR 132. The project will likely be closer to some residences than current options and as a result the project is likely to have the net effect helping to incrementally reduce regional VMT. Based on these considerations and on OPR guidance, the project’s Transportation impact under CEQA based on VMT is not significant.

### **Traffic Volume Forecasts**

Project trips were superimposed onto adjusted Year 2021 background traffic volumes to create the “Existing plus Project” traffic peak hour volumes presented in Figure 6.

### **Existing Plus Project Intersection Operations**

**Level of Service.** Table 6 summarizes the results of Level of Service calculations for study intersections under “Existing plus Project” conditions. As noted, the addition of project traffic without improvements would result in long delays on the approaches to SR 132 at the McCracken Road intersection and at the project’s driveways. While conditions in the morning would exceed the Stanislaus County minimum LOS D standard, under current CEQA guidelines intersection LOS is not a significance criteria.

**Queueing.** Table 7 identifies the length of 95<sup>th</sup> percentile queues at key locations. With regards to safety on the state highway, the most significant project impact is the creation of queues of eastbound traffic behind vehicles to turn left across westbound traffic at the project access and at the McCracken Road intersection. This is a significant safety issue that will need to be addressed by creating a separate left turn area. The design of recommended improvements is discussed later in this report.

**Traffic Signal Warrants.** The volume of traffic at SR 132 McCracken Road intersection and at the SR 132 / Project Driveway was compared to MUTCD peak hour warrants requirements to determine whether conditions with the project reach the level that may justify a traffic signal. The volume of traffic on the southbound McCracken Road approach in the p.m. peak hour is projected to reach 87 vehicles, which would exceed the minimum 75 vehicle threshold for locations with design speed in excess of 40 mph. The a.m. peak hour volume does not reach the level that meets the minimum requirements.

While meeting peak hour warrants may suggest that a traffic signal could be needed, simply satisfying an individual warrant among the nine addressed in the MUTCD is not by itself justification for a traffic signal. As noted in Policy Directive 13.02, alternatives to signalization would need to be considered. In this case widening the southbound McCracken Road approach to provide room to separate left and right turns would result in volumes that did not satisfy peak hour warrants. The design of recommended improvements is discussed later in this report.

**Safety Impacts under CEQA.** The proposed project will increase the length of average delays on existing approaches to SR 132 and traffic pausing to turn left towards the site will cause queuing in mainline SR 132. This is a significant safety impact under CEQA, and mitigation is required. A center left turn area on SR 132 will be needed. Subject to Caltrans approval, this treatment would begin as a westbound left turn lane at McCracken Road, continue westerly along the project frontage and create a Two-Way Left-Turn (TWLT) lane that extended for at least 600 feet beyond the driveway.

The project will cause slow moving trucks to turn off of and onto SR 132 at the McCracken Road intersection and at the new driveway. Conflicts between slow moving trucks and high speed through traffic on SR 132 is a significant safety issue that will require mitigation. An acceleration / deceleration area beginning east of the McCracken Road intersection and continuing westerly beyond the project driveway will be needed. This area could take the form of dedicated turn lanes or a widened shoulder constructed to the standard travel lane section. The site layout will also need to be designed to accommodate the turning requirement of STAA trucks.

### **Impacts to Other Transportation Modes**

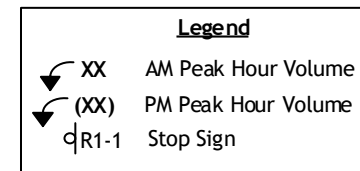
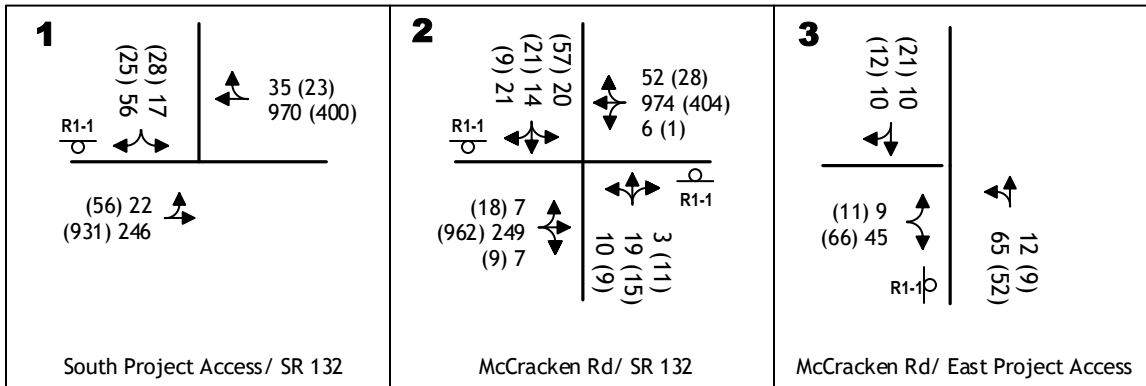
**Pedestrian Facilities.** While there are few developed areas around the project to create pedestrian travel to and from the site, the project could result in pedestrian travel between the site and the existing land uses along the northside of SR 132 east of Greenwood Road. The existing

highway convenience center is about ¼ mile beyond the project and the Orchard RV Park is about 600 feet beyond the project. Adding regular pedestrian travel on the SR 132 shoulder the area of the project and its access could be a safety issue, and an all-weather pedestrian route off the highway linking the two areas would be desirable.

**Bicycle Facilities.** The same locations west of the project could generate bicycle trips to and from the site, however, the 8-foot shoulder along SR 132 is adequate for bicycles, and the project's impact on bicycles is not significant.

**Transit.** It is conceivable that some employees would elect to use transit service if it was available to this area of Stanislaus County, but the number of transit users caused by this project would not justify changes to StaRT routes to serve this area.





## EXISTING PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

**TABLE 6  
YEAR 2021 PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Location	Control	AM Peak Hour				PM Peak Hour			
		Year 2021		Year 2021 Plus Project		Year 2021		Year 2021 Plus Project	
		Average Delay (sec / veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec / veh)	LOS	Average Delay (sec/veh)	LOS
SR 132 / McCracken Road NB left+thru+right turn	NB/SB Stop	14	B	<b>44</b>	<b>E</b>	13	B	30	D
SB left+thru+right turn		11	B	<b>48</b>	<b>E</b>	10	B	32	D
SR 132 / Project Driveway SB left+right turn	SB Stop	-	-	22	C	-	-	18	C
McCracken Rd / Project Drwy EB left+right turn	NB Stop	-	-	3	A	-	-	4	A
<b>Bold</b> values indicate conditions in excess of the County's LOS D minimum									

**TABLE 7  
2021 PLUS PROJECT PEAK HOUR 95<sup>th</sup> % QUEUES**

Intersection	Lane	Storage (feet)	AM Peak Hour				PM Peak Hour			
			Existing		Existing Plus Project		Existing		Existing Plus Project	
			Volume (vph)	95 <sup>th</sup> % Queue (ft)	Volume (vph)	95 <sup>th</sup> % Queue (ft)	Volume (vph)	95 <sup>th</sup> % Queue (ft)	Volume (vph)	95 <sup>th</sup> % Queue (ft)
SR 132 / McCracken Road	NB approach	n.a	18	55	32	95	19	45	35	80
	SB approach	260 <sup>1</sup>	10	40	55	155	21	50	87	135
	EB approach	n.a.	0 <sup>2</sup>	<25	7 <sup>2</sup>	95	0 <sup>2</sup>	<25	18 <sup>2</sup>	90
	WB approach	n.a.	6 <sup>2</sup>	25	6 <sup>2</sup>	30	1 <sup>2</sup>	<25	1 <sup>2</sup>	<25
SR 132 / Project Driveway	EB approach	n.a.	-	-	22 <sup>2</sup>	110	-	-	56	135
	SB approach	80	-	-	73	90	-	-	53	80
McCracken Road / Project Driveway	NB approach	75 <sup>2</sup>	-	-	65 <sup>1</sup>	<b>&lt;25</b>	-	-	52 <sup>2</sup>	<b>&lt;25</b>
	EB approach	100	-	-	54	65	-	-	77	75

<sup>1</sup> distance to driveway  
<sup>2</sup> number of left turns made from through lane  
**BOLD** is 95<sup>th</sup> % queue that exceeds storage by 20 feet or more

## CUMULATIVE (YEAR 2046) TRAFFIC CONDITIONS

The relative effects of the proposed project have also been assessed within the context of future traffic conditions that account for long term development in Stanislaus County and regional traffic growth on SR 132.

### Methodology / Assumptions

**SR 132 Extension Dakota to Gates EIR.** The TOAR supporting the EIR is currently under public review and comment but provides long term traffic volume information for SR 132 immediately west of Gates Road. The incremental change in peak hour volume in each direction between Year 2018 and Year 2046 condition is noted in Table 8.

Location	Time Period	Direction	Year 2018 <sup>1</sup> (vph)	Year 2046 <sup>2</sup> (vph)	Change (vph)
SR 132 West of Gates Road	AM	Westbound	1,296	1,980	684
		Eastbound	123	870	747
	PM	Westbound	433	980	447
		Eastbound	1,443	2,070	627

Source: State Route 132 Dakota Avenue to Gates Road Extension TOAR  
<sup>1</sup> Figure 3. <sup>2</sup> Figure 14

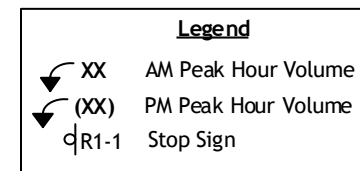
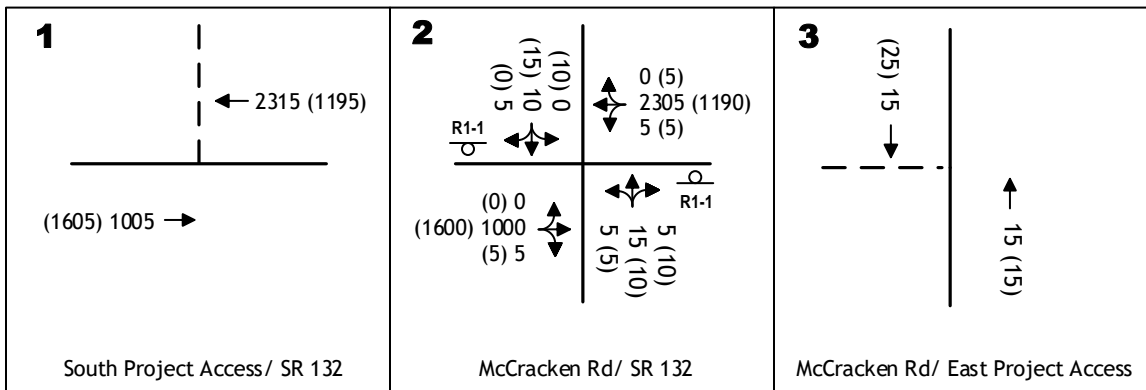
**Tri-County Travel Demand Forecasting Model.** As alternative source for future traffic volume forecast was considered. The SJCOG Tri County traffic model includes the San Joaquin County, Stanislaus County and Merced County areas, and this tool has been used for the RTP/STS updates in each jurisdiction. The current version of the Tri-County traffic model was reviewed with regards to conditions in the area of the proposed project. The hourly traffic volume increases suggested by the Tri-County model are similar to but less than those identified in the SR 132 TOAR. The Tri-County model does not include minor Stanislaus County roads such as McCracken Road.

**Forecasts.** For this analysis it has conservatively been assumed that the volume increases identified in the SR 132 TOAR (Table 8) would also occur to mainline traffic on SR 132 at the McCracken Road intersection. It has been assumed that the background traffic volume on McCracken Road would be similar to that occurring today.

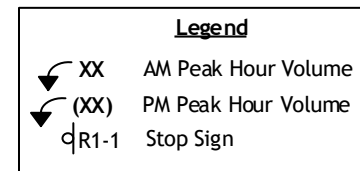
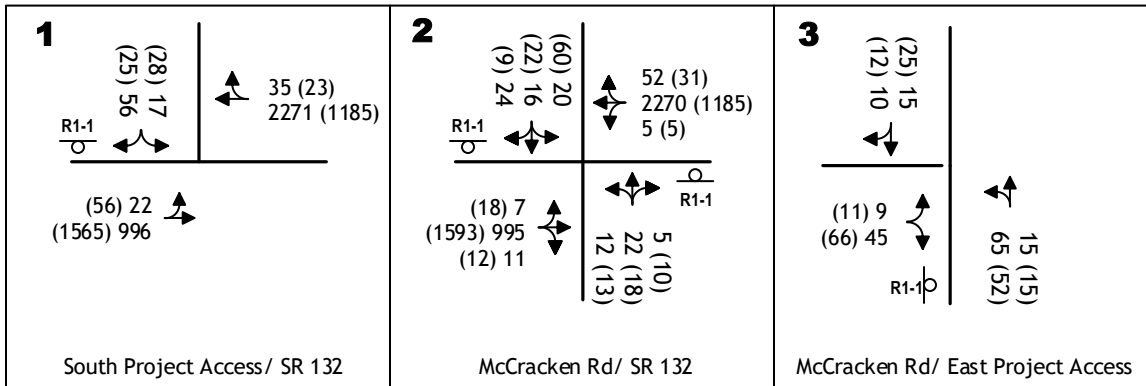
Figure 7 presents the long term (year 2046) Cumulative background traffic volumes assumed for this analysis, while Figure 8 presents Cumulative plus project traffic volumes.

**Circulation System Improvements.** As noted earlier the 2018 Stanislaus County RTP/SCS Tier 1 project list does not identify work on SR 132 in the area of the project, although a four-lane expressway is the ultimate concept for the highway. This analysis initially assumes no improvements have been made to SR 132 in this area.





## 2046 TRAFFIC VOLUMES AND LANE CONFIGURATIONS



## 2046 PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

## **Year 2046 Conditions without the Proposed Project**

**Intersection Level of Service.** Table 9 identifies peak hour Levels of Service at study locations with and without the proposed project if no improvements are made to SR 132 by 2046. As shown, if the project does not proceed then long delays will occur for traffic waiting on the McCracken Road approaches to SR 132 and LOS F will result. Peak hour traffic signal warrant would not be met.

**95<sup>th</sup> Percentile Queues.** As noted in Table 10, if the project does not proceed then relatively long queues will occur on the McCracken Road approaches and in the pm peak hour traffic waiting to turn left onto southbound McCracken Road will cause a long queue in the westbound through lane on SR 132.

## **Year 2046 Conditions with the Proposed Project**

**Intersection Level of Service.** Table 9 also identifies the Level of Services at study intersections and driveways if the proposed project proceeds as planned but SR 132 is not widened. As shown all approaches to the state highway will operate at LOS F with extremely long delays, and queuing on southbound McCracken Road would extend so far as to cause LOS F the project access as well. The status of traffic signal warrants would be the same as noted under short term conditions (i.e., p.m. peak hour warrant met at the SR 132 / McCracken Road intersection).

**95<sup>th</sup> Percentile Queue Lengths.** As shown in Table 10, extremely long queues will occur at all locations based on SimTraffic simulation under Year 2046 conditions with no improvements to SR 132.



**TABLE 9  
YEAR 2046 PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE WITHOUT IMPROVEMENTS**

Location	Control	AM Peak Hour				PM Peak Hour			
		Year 2046		Year 2046 Plus Project		Year 2046		Year 2046 Plus Project	
		Average Delay (sec / veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec / veh)	LOS	Average Delay (sec/veh)	LOS
SR 132 / McCracken Road NB left+thru+right turn	NB/SB Stop	96	F	>300	F	>300	F	>300	F
SB left+thru+right turn		51	F	>300	F	>300	F	>300	F
SR 132 / Project Driveway SB left+right turn	SB Stop	-	-	>300	F	-	-	>300	F
McCracken Rd / Project Drwy EB left+right turn	NB Stop	-	-	>300	F	-	-	>300	F

**Bold** values indicate conditions in excess of the County's LOS D minimum

**TABLE 10  
2046 PLUS PROJECT PEAK HOUR 95<sup>th</sup> % QUEUES WITHOUT IMPROVEMENTS**

Intersection	Lane	Storage (feet)	AM Peak Hour				PM Peak Hour			
			Year 2046		Year 2046 Plus Project		Year 2046		Year 2046 Plus Project	
			Volume (vph)	95 <sup>th</sup> % Queue (ft)	Volume (vph)	95 <sup>th</sup> % Queue (ft)	Volume (vph)	95 <sup>th</sup> % Queue (ft)	Volume (vph)	95 <sup>th</sup> % Queue (ft)
SR 132 / McCracken Road	NB approach	n.a.	25	100	39	>1,000	25	280	41	790
	SB approach	260 <sup>1</sup>	15	55	60	390	25	320	91	400
	EB approach	n.a.	0 <sup>2</sup>	>25	7 <sup>2</sup>	575	0 <sup>2</sup>	<25	18 <sup>2</sup>	535
	WB approach	n.a.	5 <sup>2</sup>	90	5 <sup>2</sup>	>1,000	5 <sup>2</sup>	415	5 <sup>2</sup>	<1,000
SR 132 / Project Driveway	EB approach	-	-	-	22 <sup>2</sup>	>1,000	-	-	56	<1,000
	SB approach	-	-	-	73	700	-	-	53	695
McCracken Road / Project Driveway	NB approach	75 <sup>2</sup>	-	-	65 <sup>2</sup>		-	-	52 <sup>2</sup>	<b>&lt;25</b>
	EB approach	140 <sup>3</sup>	-	-	54	685	-	-	77	725

<sup>1</sup> distance to driveway

<sup>2</sup> number of left turns made from through lane

**BOLD** is 95<sup>th</sup> % queue that exceeds storage by 20 feet or more

## **Year 2046 Conditions with Proposed Project and 4-Lane SR 132**

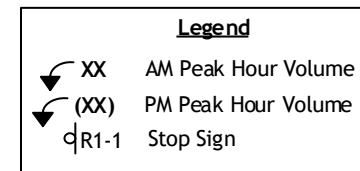
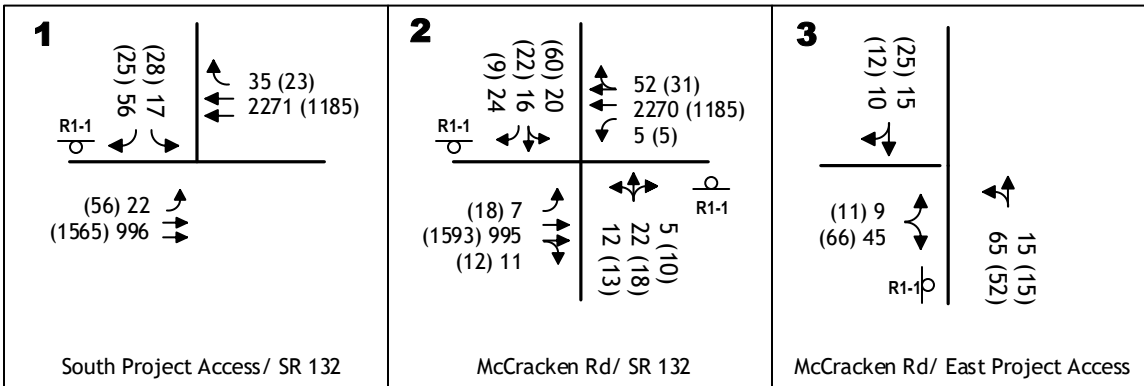
**Assumptions.** The extent to which traffic operations would improve with implementation of the 4-lane SR 132 identified in the TCR has been assessed. This analysis assumes the following improvements would also be made:

- Two travel lanes in each direction on SR 132
- Center TWLT lane
- Separate southbound right turn lane on McCracken Road
- Separate westbound right turn lane at the project access on SR 132
- Width available on the SR 132 driveway to allow separate southbound right turns

Figure 9 presents the traffic volumes and lane configurations under this scenario.

**Intersection Level of Service.** Table 11 identifies peak hour Levels of Service at study locations with the proposed project if improvements are made to SR 132 by 2046. As shown, if the highway is widened as assumed very long delays will still occur for traffic waiting on the McCracken Road approaches to SR 132 and on the project driveways (i.e., LOS F).

**95<sup>th</sup> Percentile Queues.** As noted in Table 12, if the project proceeds with a 4-lane SR 132 then relatively long queues will still occur on the McCracken Road approaches and in the p.m. peak hour traffic waiting to turn left onto southbound McCracken Road will reach the driveway and cause a very long queue in the westbound through lane on SR 132.



## 2046 PLUS PROJECT 4 LANE STOP SIGN CONTROL TRAFFIC VOLUMES AND LANE CONFIGURATIONS

**TABLE 11  
YEAR 2046 PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE WITH FOUR LANE SR 132**

Location	Control	Year 2046 Plus Project AM Peak Hour				Year 2046 Plus Project PM Peak Hour			
		4 Lane SR 132		4 Lane SR 132 and Traffic Signal		4 Lane SR 132		4 Lane SR 132 and Traffic Signal	
		Average Delay (sec / veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec / veh)	LOS	Average Delay (sec/veh)	LOS
SR 132 / McCracken Road NB left+thru+right turn SB left+thru+right turn	NB/SB Stop	> <b>300</b>	<b>F</b>	-	-	> <b>263</b>	<b>F</b>	-	-
		> <b>300</b>	<b>F</b>			> <b>289</b>	<b>F</b>		
	Signal	-	-	22	C	-	-	12	B
	Roundabout	-	-	31	D	-	-	12	B
SR 132 / Project Driveway SB left+right turn	SB Stop	<b>218</b>	<b>F</b>	31	D	27	D	10	B
McCracken Rd / Project Drwy EB left+right turn	NB Stop	> <b>300</b>	<b>F</b>	3	A	<b>228</b>	<b>F</b>	4	A
<b>Bold</b> values indicate conditions in excess of the County's LOS D minimum									

**TABLE 12  
2046 PLUS PROJECT PEAK HOUR 95<sup>th</sup> % QUEUES WITH FOUR LANE SR 132**

Intersection	Lane	Storage (feet)	Year 2046 Plus Project AM Peak Hour				Year 2046 Plus Project PM Peak Hour			
			4 Lane SR 132		4 Lane SR 132 and Traffic Signal		4 Lane SR 132		4 Lane SR 132 and Traffic Signal	
			Volume (vph)	95 <sup>th</sup> % Queue (ft)	Volume (vph)	95 <sup>th</sup> % Queue (ft)	Volume (vph)	95 <sup>th</sup> % Queue (ft)	Volume (vph)	95 <sup>th</sup> % Queue (ft)
SR 132 / McCracken Rd w Stop Signs	NB approach	n.a.	39	610	39	75	41	310	41	80
	SB left+thru	260 <sup>1</sup>	36	405	53	100	82	410	111	175
	SB right turn	260 <sup>1</sup>	24	200	24	60	9	135	9	55
	EB left turn	n.a.	7	75	7 <sup>1</sup>	50	18	45	18	<25
	EB thru	n.a.							1577	250
	WB left turn	n.a.	5	<25	5 <sup>1</sup>	25	5	<25	5	<25
	WB thru	n.a.							1,216	215
SR 132 / Project Driveway	EB left turn	n.a.	22	90	22	60	56	60	56	60
	SB left turn	n.a.	17	280	0	-	28	65	0	-
	SB right turn	n.a.	56	170	56	70	25	45	25	45
McCracken Road / Project Driveway	NB approach	260 <sup>1</sup>	65 <sup>1</sup>	<25	65 <sup>1</sup>	<b>&lt;25</b>	52 <sup>1</sup>	<25	52 <sup>1</sup>	<b>&lt;25</b>
	EB approach	n.a.	54	465	71	70	77	495	106	80

<sup>1</sup> distance to driveway  
**BOLD** is 95<sup>th</sup> % queue that exceeds storage by 20 feet or more

## **Year 2046 Conditions with the Proposed Project, 4-lane SR 132 and Traffic Signal**

**Assumptions.** This scenario assumes that Caltrans will elect to permit a traffic signal to be constructed at the SR 132 / McCracken Road intersection with the balance of the improvements noted above also being constructed. As noted earlier, Caltrans considers the relative merits of alternative traffic controls when it becomes necessary to stop traffic on state highways. Roundabouts are the default intersection control, but traffic signals are to be considered. The policy directive requires preparation of an *Intersection Control Evaluation (ICE)* to determine the preferred traffic control. This issue would be revisited if/when Caltrans proceeds with the environmental documents for widening SR 132 in this area.

This analysis assumes the following improvements would also be made:

- Two travel lanes in each direction on SR 132
- Center TWLT lane
- Separate southbound right turn lane on McCracken Road
- Separate westbound right turn lane at the project access on SR 132
- Left turns prohibited from the project driveway onto SR 132 due to distance to signal or roundabout

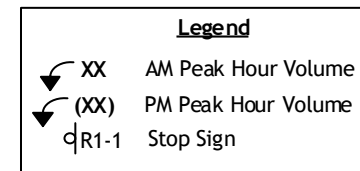
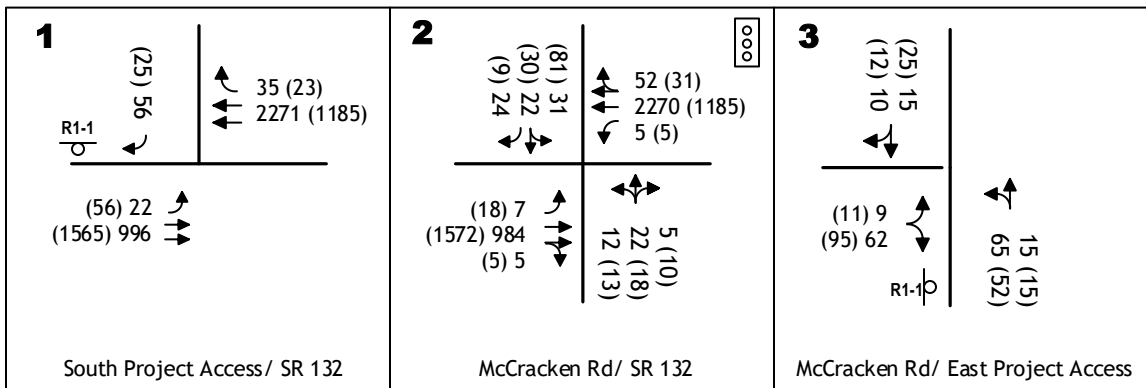
Figure 10 presents the traffic volumes and lane configurations under this scenario.

**Intersection Level of Service.** Table 11 also identifies the Level of Services at study intersections and driveways if the proposed project proceeds, SR 132 is widened, and a traffic signal is installed at the SR 132 / McCracken Road intersection. As shown all approaches to the state highway will operate with acceptable LOS (i.e., LOS D or better), as would the traffic signal.

As a comparison, the Level of Service was also determined for the SR 132 / McCracken Road intersection assuming a two-lane roundabout was installed. A roundabout would yield LOS C as well.

**95<sup>th</sup> Percentile Queue Lengths.** As shown in Table 12, relatively short queues will occur at all locations based on SimTraffic simulation under Year 2046 conditions with the assumed improvements.





## 2046 PLUS PROJECT 4 LANE SIGNAL CONTROL TRAFFIC VOLUMES AND LANE CONFIGURATIONS

## **ACCESS / INTERNAL CIRCULATION**

The adequacy of the site Access and Internal Circulation layout is based on consideration of these factors under long term conditions:

1. Conflicts created by queues extending back from the SR 132 / McCracken Road intersection.
2. Availability of adequate driveway throat depths.
3. Truck Access / Circulation.

### **McCracken Road Conflicts at Driveway**

Under short term conditions (i.e., Existing plus project) the queue of southbound traffic on McCracken Road approaching SR 132 is projected to reach 155 feet. This is about 100 feet short of the driveway, so access is feasible. Under Year 2046 conditions with a traffic signal, that queue is 160 feet and access remains feasible.

### **Queue Length / Driveway Throats**

The projected queues in the two driveways were compared to the available throat depth in the current plan. At the **SR 132 driveway** there is roughly 80 feet of driveway depth and another 100 feet of open area where additional queueing could occur. Under short term conditions the 95<sup>th</sup> percentile queue will reach 155 feet if only a single lane is provided, and it will be necessary to provide two exit lanes. Under long term conditions when a traffic signal is installed and the access is limited to right-turns-only the queue is 70 feet.

At the **McCracken Road driveway** the short term queue is projected to reach 75 feet, and the 100 foot throat is adequate. The queue is 80 feet in the future with the traffic signal.

### **Truck Access and Circulation**

As noted earlier, the project will cause slow moving trucks to turn off of and onto SR 132 at the McCracken Road intersection and at the new driveway. Mitigations were prescribed, including creating an acceleration / deceleration area beginning east of the McCracken Road intersection and continuing westerly beyond the project driveway in the form of dedicated turn lanes or a widened shoulder constructed to the standard travel lane section.

The site layout will also need to be designed to accommodate the turning requirement of STAA trucks. This should include providing the driveway width for inbound truck turns outside of the location of exiting vehicles. McCracken Road will need to be designated by Caltrans to allow STAA trucks to use the new driveway, and a formal application through Stanislaus County to Caltrans with supporting drawings will be required.

### **Drive-Thru Lane**

The site plan includes a drive-thru lane for the food court that is roughly 150 feet long and shows storage for seven vehicles. The adequacy of this depth will depend on the nature of the actual food service provide, as a “nationally” recognized brand name would generate more demand than can be accommodated, particularly if a coffee related use was proposed. However, while the drive-thru queue could extend beyond the designated aisle, the queue would have to extend for another 100 feet before it reached the McCracken Road driveway and 200 feet before it reached McCracken Road.

## APPENDIX

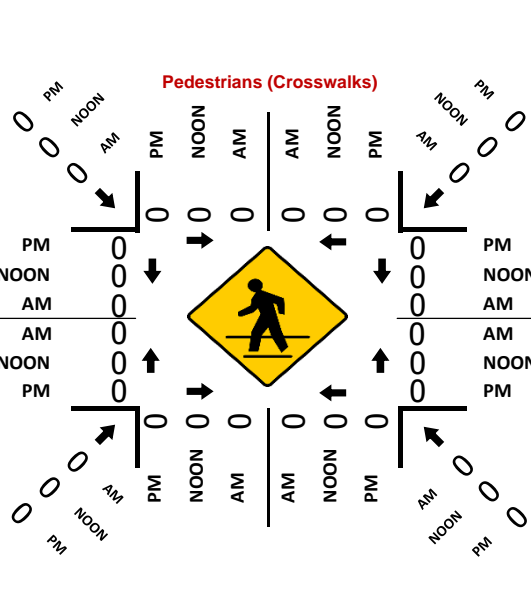
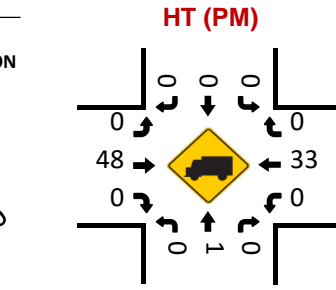
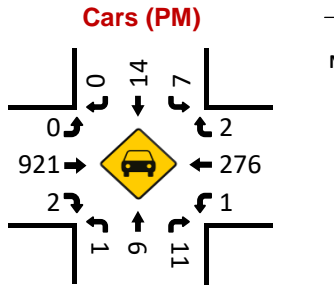
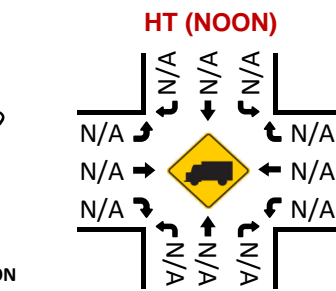
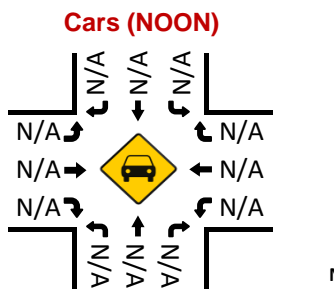
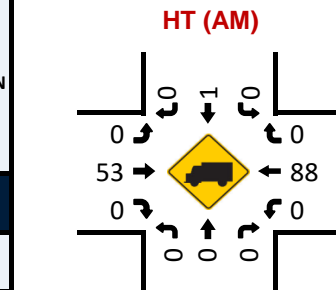
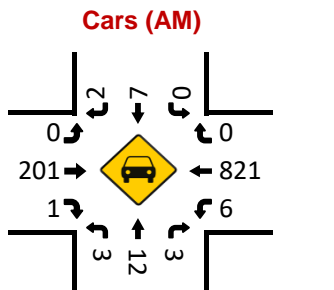
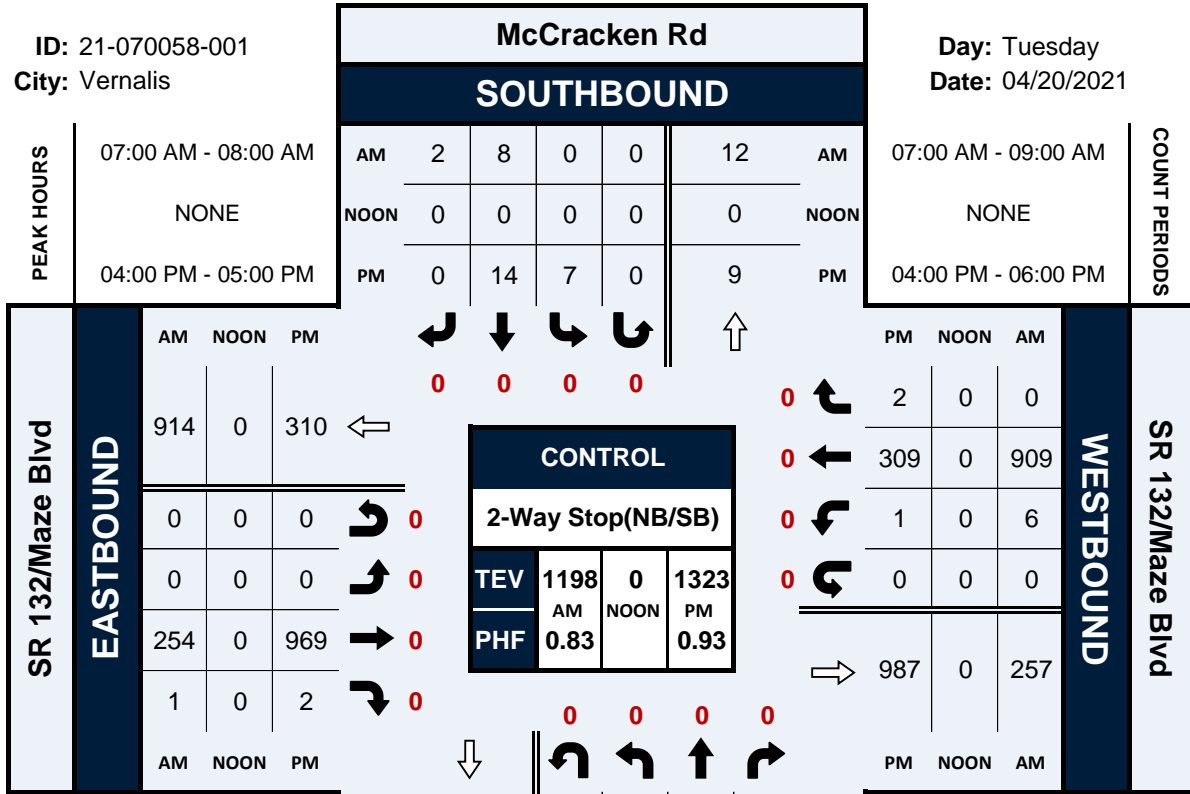
Traffic counts  
Synchro reports  
Simtraffic results

# McCracken Rd & SR 132/Maze Blvd

## Peak Hour Turning Movement Count

ID: 21-070058-001  
City: Vernalis

Day: Tuesday  
Date: 04/20/2021



# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** McCracken Rd & SR 132/Maze Blvd  
**City:** Vernalis  
**Control:** 2-Way Stop(NB/SB)

**Project ID:** 21-070058-001  
**Date:** 4/20/2021

### Total

NS/EW Streets:	McCracken Rd				McCracken Rd				SR 132/Maze Blvd				SR 132/Maze Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	1	1	0	0	1	1	0	0	67	0	0	0	289	0	0	360
7:15 AM	0	4	0	0	0	4	0	0	0	68	0	0	3	237	0	0	316
7:30 AM	1	3	2	0	0	2	1	0	0	63	1	0	0	195	0	0	268
7:45 AM	2	4	0	0	0	1	0	0	0	56	0	0	3	188	0	0	254
8:00 AM	0	2	0	0	0	1	0	0	0	63	0	0	0	161	0	0	227
8:15 AM	1	2	2	0	0	0	0	0	0	57	0	0	1	180	0	0	243
8:30 AM	0	3	0	0	0	0	0	0	1	54	1	0	0	139	0	0	198
8:45 AM	1	0	0	0	0	0	2	0	0	51	0	0	1	126	1	0	182
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	5	19	5	0	0	9	4	0	1	479	2	0	8	1515	1	0	2048
	17.24%	65.52%	17.24%	0.00%	0.00%	69.23%	30.77%	0.00%	0.21%	99.38%	0.41%	0.00%	0.52%	99.41%	0.07%	0.00%	
<b>PEAK HR:</b>	<b>07:00 AM - 08:00 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL:</b>	3	12	3	0	0	8	2	0	0	254	1	0	6	909	0	0	1198
<b>PEAK HR FACTOR:</b>	0.375	0.750	0.375	0.000	0.000	0.500	0.500	0.000	0.000	0.934	0.250	0.000	0.500	0.786	0.000	0.000	0.832
	0.750				0.625				0.938				0.792				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	2	6	0	1	2	0	0	0	242	0	0	0	76	0	0	329
4:15 PM	0	2	3	0	4	7	0	0	0	205	1	0	1	81	2	0	306
4:30 PM	0	0	1	0	2	4	0	0	0	271	0	0	0	76	0	0	354
4:45 PM	1	3	1	0	0	1	0	0	0	251	1	0	0	76	0	0	334
5:00 PM	0	0	1	0	3	3	0	0	0	231	0	0	1	53	0	0	292
5:15 PM	0	1	0	0	0	3	2	0	0	227	0	0	0	90	0	0	323
5:30 PM	0	2	0	0	0	1	1	0	0	244	0	0	0	84	0	0	332
5:45 PM	0	2	0	0	0	2	0	0	0	276	0	0	1	67	0	0	348
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	1	12	12	0	10	23	3	0	0	1947	2	0	3	603	2	0	2618
	4.00%	48.00%	48.00%	0.00%	27.78%	63.89%	8.33%	0.00%	0.00%	99.90%	0.10%	0.00%	0.49%	99.18%	0.33%	0.00%	
<b>PEAK HR:</b>	<b>04:00 PM - 05:00 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL:</b>	1	7	11	0	7	14	0	0	0	969	2	0	1	309	2	0	1323
<b>PEAK HR FACTOR:</b>	0.250	0.583	0.458	0.000	0.438	0.500	0.000	0.000	0.000	0.894	0.500	0.000	0.250	0.954	0.250	0.000	0.934
	0.594				0.477				0.896				0.929				

# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** McCracken Rd & SR 132/Maze Blvd  
**City:** Vernalis  
**Control:** 2-Way Stop(NB/SB)

**Project ID:** 21-070058-001  
**Date:** 4/20/2021

### Cars

NS/EW Streets:	McCracken Rd				McCracken Rd				SR 132/Maze Blvd				SR 132/Maze Blvd							
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND							
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL			
7:00 AM	0	1	1	0	0	1	1	0	0	54	0	0	0	262	0	0	320			
7:15 AM	0	4	0	0	0	4	0	0	0	55	0	0	3	212	0	0	278			
7:30 AM	1	3	2	0	0	1	1	0	0	51	1	0	0	182	0	0	242			
7:45 AM	2	4	0	0	0	1	0	0	0	41	0	0	3	165	0	0	216			
8:00 AM	0	2	0	0	0	1	0	0	0	54	0	0	0	146	0	0	203			
8:15 AM	1	2	2	0	0	0	0	0	0	39	0	0	1	160	0	0	205			
8:30 AM	0	3	0	0	0	0	0	0	1	43	1	0	0	121	0	0	169			
8:45 AM	1	0	0	0	0	0	2	0	0	34	0	0	1	105	1	0	144			
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL			
<b>APPROACH %'s:</b>	5	19	5	0	0	8	4	0	1	371	2	0	8	1353	1	0	1777			
	17.24%	65.52%	17.24%	0.00%	0.00%	66.67%	33.33%	0.00%	0.27%	99.20%	0.53%	0.00%	0.59%	99.34%	0.07%	0.00%				
<b>PEAK HR:</b>	07:00 AM - 08:00 AM																TOTAL			
<b>PEAK HR VOL:</b>	3	12	3	0	0	7	2	0	0	201	1	0	6	821	0	0	1056			
<b>PEAK HR FACTOR:</b>	0.38	0.750	0.375	0.000	0.000	0.438	0.500	0.000	0.000	0.914	0.250	0.000	0.500	0.783	0.000	0.000	0.825			
	0.750				0.563				0.918				0.789							
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND							
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL			
4:00 PM	0	2	6	0	1	2	0	0	0	231	0	0	0	66	0	0	308			
4:15 PM	0	1	3	0	4	7	0	0	0	198	1	0	1	69	2	0	286			
4:30 PM	0	0	1	0	2	4	0	0	0	259	0	0	0	72	0	0	338			
4:45 PM	1	3	1	0	0	1	0	0	0	233	1	0	0	69	0	0	309			
5:00 PM	0	0	1	0	3	3	0	0	0	217	0	0	1	49	0	0	274			
5:15 PM	0	1	0	0	0	3	2	0	0	215	0	0	0	86	0	0	307			
5:30 PM	0	2	0	0	0	1	1	0	0	230	0	0	0	77	0	0	311			
5:45 PM	0	2	0	0	0	2	0	0	0	265	0	0	1	65	0	0	335			
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL			
<b>APPROACH %'s:</b>	1	11	12	0	10	23	3	0	0	1848	2	0	3	553	2	0	2468			
	4.17%	45.83%	50.00%	0.00%	27.78%	63.89%	8.33%	0.00%	0.00%	99.89%	0.11%	0.00%	0.54%	99.10%	0.36%	0.00%				
<b>PEAK HR:</b>	04:00 PM - 05:00 PM																TOTAL			
<b>PEAK HR VOL:</b>	1	6	11	0	7	14	0	0	0	921	2	0	1	276	2	0	1241			
<b>PEAK HR FACTOR:</b>	0.25	0.500	0.458	0.000	0.438	0.500	0.000	0.000	0.000	0.889	0.500	0.000	0.250	0.958	0.250	0.000	0.918			
	0.563				0.477				0.891				0.969							



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: McCracken Rd & SR 132/Maze Blvd  
 City: Vernalis  
 Control: 2-Way Stop(NB/SB)

Project ID: 21-070058-001  
 Date: 4/20/2021

**HT**

NS/EW Streets:	McCracken Rd				McCracken Rd				SR 132/Maze Blvd				SR 132/Maze Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	13	0	0	0	27	0	0	40
7:15 AM	0	0	0	0	0	0	0	0	0	13	0	0	0	25	0	0	38
7:30 AM	0	0	0	0	0	1	0	0	0	12	0	0	0	13	0	0	26
7:45 AM	0	0	0	0	0	0	0	0	0	15	0	0	0	23	0	0	38
8:00 AM	0	0	0	0	0	0	0	0	0	9	0	0	0	15	0	0	24
8:15 AM	0	0	0	0	0	0	0	0	0	18	0	0	0	20	0	0	38
8:30 AM	0	0	0	0	0	0	0	0	0	11	0	0	0	18	0	0	29
8:45 AM	0	0	0	0	0	0	0	0	0	17	0	0	0	21	0	0	38
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	0	0	0	0	0	1	0	0	0	108	0	0	0	162	0	0	271
	0.00%				100.00%				0.00%				0.00%				
<b>PEAK HR:</b>	07:00 AM - 08:00 AM																TOTAL
<b>PEAK HR VOL:</b>	0	0	0	0	0	1	0	0	0	53	0	0	0	88	0	0	142
<b>PEAK HR FACTOR:</b>	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.883	0.000	0.000	0.000	0.815	0.000	0.000	0.888
	0.250				0.250				0.883				0.815				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	11	0	0	0	10	0	0	21
4:15 PM	0	1	0	0	0	0	0	0	0	7	0	0	0	12	0	0	20
4:30 PM	0	0	0	0	0	0	0	0	0	12	0	0	0	4	0	0	16
4:45 PM	0	0	0	0	0	0	0	0	0	18	0	0	0	7	0	0	25
5:00 PM	0	0	0	0	0	0	0	0	0	14	0	0	0	4	0	0	18
5:15 PM	0	0	0	0	0	0	0	0	0	12	0	0	0	4	0	0	16
5:30 PM	0	0	0	0	0	0	0	0	0	14	0	0	0	7	0	0	21
5:45 PM	0	0	0	0	0	0	0	0	0	11	0	0	0	2	0	0	13
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	0	1	0	0	0	0	0	0	0	99	0	0	0	50	0	0	150
	0.00%				100.00%				0.00%				0.00%				
<b>PEAK HR:</b>	04:00 PM - 05:00 PM																TOTAL
<b>PEAK HR VOL:</b>	0	1	0	0	0	0	0	0	0	48	0	0	0	33	0	0	82
<b>PEAK HR FACTOR:</b>	0.00	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.688	0.000	0.000	0.820
	0.250				0.667				0.667				0.688				

# National Data & Surveying Services

## Intersection Turning Movement Count

Location: McCracken Rd & SR 132/Maze Blvd  
 City: Vernalis  
 Control: 2-Way Stop(NB/SB)

Project ID: 21-070058-001  
 Date: 4/20/2021

### Bikes

NS/EW Streets:	McCracken Rd				McCracken Rd				SR 132/Maze Blvd				SR 132/Maze Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	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	0	0
7:30 AM	0	0	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	0	0
8:00 AM	0	0	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	0	0
8:30 AM	0	0	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	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HR :</b>	07:00 AM - 08:00 AM																TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	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	0	0
4:30 PM	0	0	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	0	0
5:00 PM	0	0	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	0	0
5:30 PM	0	0	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	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HR :</b>	04:00 PM - 05:00 PM																TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0



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2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

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Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.2	0.1	0.0	1.0
Total Del/Veh (s)	0.7	11.2	14.4	10.9	9.2

Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	5	56	70	54
Average Queue (ft)	0	2	18	10
95th Queue (ft)	4	25	53	38
Link Distance (ft)	427	4564	2033	329
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	254	1	6	1009	0	3	12	3	0	8	2
Future Vol, veh/h	0	254	1	6	1009	0	3	12	3	0	8	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	79	79	79	75	75	75	80	80	80
Heavy Vehicles, %	85	22	29	2	10	10	20	11	2	25	14	29
Mvmt Flow	0	270	1	8	1277	0	4	16	4	0	10	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1277	0	0	271	0	0	1571	1564	271	1574	1564	1277
Stage 1	-	-	-	-	-	-	271	271	-	1293	1293	-
Stage 2	-	-	-	-	-	-	1300	1293	-	281	271	-
Critical Hdwy	4.95	-	-	4.12	-	-	7.3	6.61	6.22	7.35	6.64	6.49
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.61	-	6.35	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.61	-	6.35	5.64	-
Follow-up Hdwy	2.965	-	-	2.218	-	-	3.68	4.099	3.318	3.725	4.126	3.561
Pot Cap-1 Maneuver	339	-	-	1292	-	-	81	106	768	79	105	178
Stage 1	-	-	-	-	-	-	697	669	-	179	221	-
Stage 2	-	-	-	-	-	-	182	224	-	678	664	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	339	-	-	1292	-	-	73	104	768	68	103	178
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	104	-	68	103	-
Stage 1	-	-	-	-	-	-	697	669	-	179	216	-
Stage 2	-	-	-	-	-	-	168	219	-	658	664	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	45.7	41.1
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	112	339	-	-	1292	-	-	112
HCM Lane V/C Ratio	0.214	-	-	-	0.006	-	-	0.112
HCM Control Delay (s)	45.7	0	-	-	7.8	0	-	41.1
HCM Lane LOS	E	A	-	-	A	A	-	E
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.4



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2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

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Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.1	0.0	0.1
Total Del/Veh (s)	1.5	5.9	12.6	10.4	3.2

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Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD

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Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	5	20	55	59
Average Queue (ft)	0	1	16	19
95th Queue (ft)	5	12	45	50
Link Distance (ft)	427	4564	2033	329
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	969	2	1	409	2	1	7	11	7	14	0
Future Vol, veh/h	0	969	2	1	409	2	1	7	11	7	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	93	93	93	59	59	59	92	92	92
Heavy Vehicles, %	28	5	22	2	11	29	22	13	2	18	10	33
Mvmt Flow	0	1077	2	1	440	2	2	12	19	8	15	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	442	0	0	1079	0	0	1529	1522	1078	1537	1522	441
Stage 1	-	-	-	-	-	-	1078	1078	-	443	443	-
Stage 2	-	-	-	-	-	-	451	444	-	1094	1079	-
Critical Hdwy	4.38	-	-	4.12	-	-	7.32	6.63	6.22	7.28	6.6	6.53
Critical Hdwy Stg 1	-	-	-	-	-	-	6.32	5.63	-	6.28	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.32	5.63	-	6.28	5.6	-
Follow-up Hdwy	2.452	-	-	2.218	-	-	3.698	4.117	3.318	3.662	4.09	3.597
Pot Cap-1 Maneuver	993	-	-	646	-	-	86	112	266	87	114	556
Stage 1	-	-	-	-	-	-	243	282	-	564	562	-
Stage 2	-	-	-	-	-	-	551	557	-	242	285	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	993	-	-	646	-	-	77	112	266	74	114	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	77	112	-	74	114	-
Stage 1	-	-	-	-	-	-	243	282	-	564	561	-
Stage 2	-	-	-	-	-	-	535	556	-	216	285	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			32.4			53.2		
HCM LOS							D			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	163	993	-	-	646	-	-	97
HCM Lane V/C Ratio	0.198	-	-	-	0.002	-	-	0.235
HCM Control Delay (s)	32.4	0	-	-	10.6	0	-	53.2
HCM Lane LOS	D	A	-	-	B	A	-	F
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.8

1: SR 132 & SOUTH PROJECT ACCESS Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.1	0.1
Total Del/Veh (s)	7.0	2.5	22.2	4.4

2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.4	0.1	0.1	1.1
Total Del/Veh (s)	2.1	13.0	44.2	47.8	13.0

3: MCCRACKEN RD & EAST PROJECT ACCESS Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.1
Total Del/Veh (s)	3.1	2.2	0.2	2.3

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	26.7

**Intersection: 1: SR 132 & SOUTH PROJECT ACCESS**

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	148	14	119
Average Queue (ft)	30	1	45
95th Queue (ft)	109	8	90
Link Distance (ft)	5016	427	541
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD**

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	180	59	129	179
Average Queue (ft)	14	4	34	59
95th Queue (ft)	92	27	94	152
Link Distance (ft)	427	4564	2033	329
Upstream Blk Time (%)	0			0
Queuing Penalty (veh)	0			0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 3: MCCRACKEN RD & EAST PROJECT ACCESS**

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	73	40
Average Queue (ft)	30	2
95th Queue (ft)	65	14
Link Distance (ft)	534	329
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Network Summary**

Network wide Queuing Penalty: 0

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	249	7	6	974	52	10	19	3	20	14	21
Future Vol, veh/h	7	249	7	6	974	52	10	19	3	20	14	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	79	79	79	75	75	75	80	80	80
Heavy Vehicles, %	85	22	29	2	10	10	20	11	2	25	14	29
Mvmt Flow	7	265	7	8	1233	66	13	25	4	25	18	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1299	0	0	272	0	0	1587	1598	269	1579	1568	1266
Stage 1	-	-	-	-	-	-	283	283	-	1282	1282	-
Stage 2	-	-	-	-	-	-	1304	1315	-	297	286	-
Critical Hdwy	4.95	-	-	4.12	-	-	7.3	6.61	6.22	7.35	6.64	6.49
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.61	-	6.35	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.61	-	6.35	5.64	-
Follow-up Hdwy	2.965	-	-	2.218	-	-	3.68	4.099	3.318	3.725	4.126	3.561
Pot Cap-1 Maneuver	331	-	-	1291	-	-	79	101	770	78	104	181
Stage 1	-	-	-	-	-	-	687	661	-	182	223	-
Stage 2	-	-	-	-	-	-	181	218	-	665	654	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	331	-	-	1291	-	-	56	96	770	60	99	181
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	96	-	60	99	-
Stage 1	-	-	-	-	-	-	670	644	-	177	218	-
Stage 2	-	-	-	-	-	-	139	213	-	620	638	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0			85.6			112.8		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	84	331	-	-	1291	-	-	93
HCM Lane V/C Ratio	0.508	0.022	-	-	0.006	-	-	0.739
HCM Control Delay (s)	85.6	16.1	0	-	7.8	0	-	112.8
HCM Lane LOS	F	C	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.2	0.1	-	-	0	-	-	3.8



1: SR 132 & SOUTH PROJECT ACCESS Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.1	0.0	0.1	0.7
Total Del/Veh (s)	13.6	1.3	17.6	10.3

2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.4	0.1	0.0	0.2
Total Del/Veh (s)	2.5	6.0	29.8	31.5	5.8

3: MCCRACKEN RD & EAST PROJECT ACCESS Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.1	0.1
Total Del/Veh (s)	3.5	2.3	0.3	2.5

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	24.5

**Intersection: 1: SR 132 & SOUTH PROJECT ACCESS**

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	202	16	105
Average Queue (ft)	42	1	37
95th Queue (ft)	136	8	79
Link Distance (ft)	5016	427	541
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD**

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	182	24	99	172
Average Queue (ft)	16	1	32	65
95th Queue (ft)	91	12	79	134
Link Distance (ft)	427	4564	2033	329
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 3: MCCRACKEN RD & EAST PROJECT ACCESS**

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	82	31
Average Queue (ft)	40	2
95th Queue (ft)	72	14
Link Distance (ft)	534	329
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Network Summary**

Network wide Queuing Penalty: 0

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	56	931	400	23	28	25
Future Vol, veh/h	56	931	400	23	28	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	90	93	92	92	92
Heavy Vehicles, %	5	5	11	30	18	12
Mvmt Flow	61	1034	430	25	30	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	455	0	-	0	1599 443
Stage 1	-	-	-	-	443 -
Stage 2	-	-	-	-	1156 -
Critical Hdwy	4.15	-	-	-	6.58 6.32
Critical Hdwy Stg 1	-	-	-	-	5.58 -
Critical Hdwy Stg 2	-	-	-	-	5.58 -
Follow-up Hdwy	2.245	-	-	-	3.662 3.408
Pot Cap-1 Maneuver	1090	-	-	-	107 594
Stage 1	-	-	-	-	615 -
Stage 2	-	-	-	-	279 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1090	-	-	-	93 594
Mov Cap-2 Maneuver	-	-	-	-	93 -
Stage 1	-	-	-	-	534 -
Stage 2	-	-	-	-	279 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	41.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1090	-	-	-	154
HCM Lane V/C Ratio	0.056	-	-	-	0.374
HCM Control Delay (s)	8.5	0	-	-	41.7
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.2	-	-	-	1.6

Intersection												
Int Delay, s/veh	20.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	962	9	1	404	28	9	15	11	57	21	9
Future Vol, veh/h	18	962	9	1	404	28	9	15	11	57	21	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	93	93	93	59	59	59	92	92	92
Heavy Vehicles, %	28	5	22	2	11	29	22	13	2	18	10	33
Mvmt Flow	20	1069	10	1	434	30	15	25	19	62	23	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	464	0	0	1079	0	0	1582	1580	1074	1587	1570	449
Stage 1	-	-	-	-	-	-	1114	1114	-	451	451	-
Stage 2	-	-	-	-	-	-	468	466	-	1136	1119	-
Critical Hdwy	4.38	-	-	4.12	-	-	7.32	6.63	6.22	7.28	6.6	6.53
Critical Hdwy Stg 1	-	-	-	-	-	-	6.32	5.63	-	6.28	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.32	5.63	-	6.28	5.6	-
Follow-up Hdwy	2.452	-	-	2.218	-	-	3.698	4.117	3.318	3.662	4.09	3.597
Pot Cap-1 Maneuver	974	-	-	646	-	-	79	103	267	80	106	550
Stage 1	-	-	-	-	-	-	231	271	-	558	558	-
Stage 2	-	-	-	-	-	-	539	544	-	229	273	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	974	-	-	646	-	-	61	98	267	~ 57	100	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	98	-	~ 57	100	-
Stage 1	-	-	-	-	-	-	219	257	-	530	557	-
Stage 2	-	-	-	-	-	-	507	543	-	182	259	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	80.7	\$ 320
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	102	974	-	-	646	-	-	71
HCM Lane V/C Ratio	0.582	0.021	-	-	0.002	-	-	1.332
HCM Control Delay (s)	80.7	8.8	0	-	10.6	0	-	\$ 320
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	2.8	0.1	-	-	0	-	-	7.6

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

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	11	66	52	9	21	12
Future Vol, veh/h	11	66	52	9	21	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	59	48	92
Heavy Vehicles, %	2	23	21	2	2	2
Mvmt Flow	12	72	57	15	44	13

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	180	51	57	0	0
Stage 1	51	-	-	-	-
Stage 2	129	-	-	-	-
Critical Hdwy	6.42	6.43	4.31	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.507	2.389	-	-
Pot Cap-1 Maneuver	810	961	1434	-	-
Stage 1	971	-	-	-	-
Stage 2	897	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	778	961	1434	-	-
Mov Cap-2 Maneuver	778	-	-	-	-
Stage 1	932	-	-	-	-
Stage 2	897	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1434	-	930	-	-
HCM Lane V/C Ratio	0.039	-	0.09	-	-
HCM Control Delay (s)	7.6	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

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2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

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Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.6	0.1	0.0	1.6
Total Del/Veh (s)	1.9	15.0	96.3	50.7	11.6



Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	3	183	115	78
Average Queue (ft)	0	12	35	18
95th Queue (ft)	2	91	101	56
Link Distance (ft)	427	4564	2033	330
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	750	5	5	1295	0	5	15	5	0	10	5
Future Vol, veh/h	0	750	5	5	1295	0	5	15	5	0	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	85	22	29	2	10	10	20	11	2	25	14	29
Mvmt Flow	0	815	5	5	1408	0	5	16	5	0	11	5

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	1408	0	0	820	0	0	2244	2236	818	2246	2238	1408
Stage 1	-	-	-	-	-	-	818	818	-	1418	1418	-
Stage 2	-	-	-	-	-	-	1426	1418	-	828	820	-
Critical Hdwy	4.95	-	-	4.12	-	-	7.3	6.61	6.22	7.35	6.64	6.49
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.61	-	6.35	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.61	-	6.35	5.64	-
Follow-up Hdwy	2.965	-	-	2.218	-	-	3.68	4.099	3.318	3.725	4.126	3.561
Pot Cap-1 Maneuver	296	-	-	809	-	-	26	40	376	25	39	148
Stage 1	-	-	-	-	-	-	345	377	-	151	191	-
Stage 2	-	-	-	-	-	-	153	194	-	334	372	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	296	-	-	809	-	-	19	39	376	16	38	148
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	39	-	16	38	-
Stage 1	-	-	-	-	-	-	345	377	-	151	186	-
Stage 2	-	-	-	-	-	-	135	189	-	315	372	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		0		221.6		105.8	
HCM LOS					F		F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	38	296	-	-	809	-	-	51
HCM Lane V/C Ratio	0.715	-	-	-	0.007	-	-	0.32
HCM Control Delay (s)	221.6	0	-	-	9.5	0	-	105.8
HCM Lane LOS	F	A	-	-	A	A	-	F
HCM 95th %tile Q(veh)	2.6	0	-	-	0	-	-	1.1

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2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

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Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.9	0.1	60.6	1.4
Total Del/Veh (s)	2.3	15.6	667.5	775.6	20.8

Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	3	760	263	296
Average Queue (ft)	0	75	120	155
95th Queue (ft)	2	412	280	317
Link Distance (ft)	427	4564	2033	329
Upstream Blk Time (%)				6
Queuing Penalty (veh)				1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1600	5	5	1190	5	5	10	10	10	15	0
Future Vol, veh/h	0	1600	5	5	1190	5	5	10	10	10	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	28	5	22	2	11	29	22	13	2	18	10	33
Mvmt Flow	0	1739	5	5	1293	5	5	11	11	11	16	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1298	0	0	1744	0	0	3056	3050	1742	3059	3050	1296
Stage 1	-	-	-	-	-	-	1742	1742	-	1306	1306	-
Stage 2	-	-	-	-	-	-	1314	1308	-	1753	1744	-
Critical Hdwy	4.38	-	-	4.12	-	-	7.32	6.63	6.22	7.28	6.6	6.53
Critical Hdwy Stg 1	-	-	-	-	-	-	6.32	5.63	-	6.28	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.32	5.63	-	6.28	5.6	-
Follow-up Hdwy	2.452	-	-	2.218	-	-	3.698	4.117	3.318	3.662	4.09	3.597
Pot Cap-1 Maneuver	456	-	-	360	-	-	6	11	107	~ 7	~ 12	170
Stage 1	-	-	-	-	-	-	98	132	-	182	221	-
Stage 2	-	-	-	-	-	-	177	218	-	99	134	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	456	-	-	360	-	-	~ 10	107	-	~ 11	170	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 10	-	-	~ 11	-	-
Stage 1	-	-	-	-	-	-	98	132	-	182	210	-
Stage 2	-	-	-	-	-	-	155	207	-	82	134	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	456	-	-	360	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.015	-	-	-
HCM Control Delay (s)	-	0	-	-	15.2	0	-	-
HCM Lane LOS	-	A	-	-	C	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

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

1: SR 132 & SOUTH PROJECT ACCESS Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	781.8	0.1	872.6	323.6
Total Del/Veh (s)	1084.7	5.2	2843.7	284.2

2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	10.7	602.9	0.1	336.6	529.2
Total Del/Veh (s)	98.5	63.3	1926.3	3275.8	128.5

3: MCCRACKEN RD & EAST PROJECT ACCESS Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	390.1	0.0	0.1	169.6
Total Del/Veh (s)	1733.9	1.4	1245.0	853.1

Total Network Performance

Denied Del/Veh (s)	644.7
Total Del/Veh (s)	402.0

**Intersection: 1: SR 132 & SOUTH PROJECT ACCESS**

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	5067	27	552
Average Queue (ft)	4294	2	455
95th Queue (ft)	6701	15	699
Link Distance (ft)	5016	427	541
Upstream Blk Time (%)	68		69
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD**

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	437	1771	1072	334
Average Queue (ft)	225	187	586	316
95th Queue (ft)	574	1467	1128	386
Link Distance (ft)	427	4564	2033	329
Upstream Blk Time (%)	50	1		86
Queuing Penalty (veh)	509	0		53
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 3: MCCRACKEN RD & EAST PROJECT ACCESS**

Movement	EB	SB
Directions Served	LR	TR
Maximum Queue (ft)	544	439
Average Queue (ft)	356	184
95th Queue (ft)	686	441
Link Distance (ft)	534	1659
Upstream Blk Time (%)	44	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Network Summary**

Network wide Queuing Penalty: 561
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Intersection						
Int Delay, s/veh	83					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	22	996	2271	35	17	56
Future Vol, veh/h	22	996	2271	35	17	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	22	10	26	24	4
Mvmt Flow	24	1083	2468	38	18	61

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	2506	0	-	0	3618 2487
Stage 1	-	-	-	-	2487 -
Stage 2	-	-	-	-	1131 -
Critical Hdwy	4.19	-	-	-	6.64 6.24
Critical Hdwy Stg 1	-	-	-	-	5.64 -
Critical Hdwy Stg 2	-	-	-	-	5.64 -
Follow-up Hdwy	2.281	-	-	-	3.716 3.336
Pot Cap-1 Maneuver	170	-	-	-	~ 5 ~ 37
Stage 1	-	-	-	-	55 -
Stage 2	-	-	-	-	279 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	170	-	-	-	~ 3 ~ 37
Mov Cap-2 Maneuver	-	-	-	-	~ 3 -
Stage 1	-	-	-	-	36 -
Stage 2	-	-	-	-	279 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	\$ 3854.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	170	-	-	-	10
HCM Lane V/C Ratio	0.141	-	-	-	7.935
HCM Control Delay (s)	29.6	0	-	-	\$ 3854.1
HCM Lane LOS	D	A	-	-	F
HCM 95th %tile Q(veh)	0.5	-	-	-	11.3

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

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	995	11	5	2270	52	12	22	5	20	16	24
Future Vol, veh/h	7	995	11	5	2270	52	12	22	5	20	16	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	85	22	29	2	10	10	20	11	2	25	14	29
Mvmt Flow	8	1082	12	5	2467	57	13	24	5	22	17	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2524	0	0	1094	0	0	3631	3638	1088	3625	3616	2496
Stage 1	-	-	-	-	-	-	1104	1104	-	2506	2506	-
Stage 2	-	-	-	-	-	-	2527	2534	-	1119	1110	-
Critical Hdwy	4.95	-	-	4.12	-	-	7.3	6.61	6.22	7.35	6.64	6.49
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.61	-	6.35	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.61	-	6.35	5.64	-
Follow-up Hdwy	2.965	-	-	2.218	-	-	3.68	4.099	3.318	3.725	4.126	3.561
Pot Cap-1 Maneuver	90	-	-	638	-	-	~ 2	~ 5	262	~ 2	~ 5	30
Stage 1	-	-	-	-	-	-	236	276	-	33	52	-
Stage 2	-	-	-	-	-	-	33	52	-	227	271	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	90	-	-	638	-	-	~ 4	262	-	~ 4	30	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 4	-	-	~ 4	-	-
Stage 1	-	-	-	-	-	-	182	213	-	26	52	-
Stage 2	-	-	-	-	-	-	~ 3	52	-	153	209	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	90	-	-	638	-	-	-
HCM Lane V/C Ratio	-	0.085	-	-	0.009	-	-	-
HCM Control Delay (s)	-	48.7	0	-	10.7	0	-	-
HCM Lane LOS	-	E	A	-	B	A	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	-

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

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	9	45	65	15	15	10
Future Vol, veh/h	9	45	65	15	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	93	92	92	92
Heavy Vehicles, %	2	26	12	2	2	2
Mvmt Flow	10	49	70	16	16	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	178	22	27	0	0
Stage 1	22	-	-	-	-
Stage 2	156	-	-	-	-
Critical Hdwy	6.42	6.46	4.22	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.534	2.308	-	-
Pot Cap-1 Maneuver	812	990	1524	-	-
Stage 1	1001	-	-	-	-
Stage 2	872	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	775	990	1524	-	-
Mov Cap-2 Maneuver	775	-	-	-	-
Stage 1	955	-	-	-	-
Stage 2	872	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	6.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1524	-	946	-	-
HCM Lane V/C Ratio	0.046	-	0.062	-	-
HCM Control Delay (s)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

1: SR 132 & SOUTH PROJECT ACCESS Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	477.0	0.0	553.1	281.6
Total Del/Veh (s)	364.5	3.3	2424.8	207.9

2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	4.5	5.8	0.2	0.0	5.1
Total Del/Veh (s)	22.0	52.7	1285.4	1574.6	78.2

3: MCCRACKEN RD & EAST PROJECT ACCESS Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	724.7	0.0	0.1	337.4
Total Del/Veh (s)	1596.5	1.9	788.7	650.4

Total Network Performance

Denied Del/Veh (s)	284.3
Total Del/Veh (s)	295.3

**Intersection: 1: SR 132 & SOUTH PROJECT ACCESS**

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	5068	10	561
Average Queue (ft)	3678	1	441
95th Queue (ft)	6551	7	695
Link Distance (ft)	5016	427	541
Upstream Blk Time (%)	40		59
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD**

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	442	2938	700	336
Average Queue (ft)	201	418	379	311
95th Queue (ft)	533	2128	791	401
Link Distance (ft)	427	4564	2033	329
Upstream Blk Time (%)	20	2		83
Queuing Penalty (veh)	325	0		76
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 3: MCCRACKEN RD & EAST PROJECT ACCESS**

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	545	20	454
Average Queue (ft)	399	1	201
95th Queue (ft)	725	11	523
Link Distance (ft)	534	329	1659
Upstream Blk Time (%)	62		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Network Summary**

Network wide Queuing Penalty: 400

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	56	1565	1185	23	28	25
Future Vol, veh/h	56	1565	1185	23	28	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	11	30	18	12
Mvmt Flow	61	1701	1288	25	30	27

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1313	0	0 3124 1301
Stage 1	-	-	- 1301 -
Stage 2	-	-	- 1823 -
Critical Hdwy	4.15	-	- 6.58 6.32
Critical Hdwy Stg 1	-	-	- 5.58 -
Critical Hdwy Stg 2	-	-	- 5.58 -
Follow-up Hdwy	2.245	-	- 3.662 3.408
Pot Cap-1 Maneuver	517	-	- ~ 11 187
Stage 1	-	-	- 236 -
Stage 2	-	-	- 128 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	517	-	- 0 187
Mov Cap-2 Maneuver	-	-	- 0 -
Stage 1	-	-	- 0 -
Stage 2	-	-	- 128 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	32.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	517	-	-	-	187
HCM Lane V/C Ratio	0.118	-	-	-	0.308
HCM Control Delay (s)	12.9	0	-	-	32.6
HCM Lane LOS	B	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	1.2

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

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	1593	12	5	1185	31	13	18	10	60	22	9
Future Vol, veh/h	18	1593	12	5	1185	31	13	18	10	60	22	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	28	5	22	2	11	29	22	13	2	18	10	33
Mvmt Flow	20	1732	13	5	1288	34	14	20	11	65	24	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1322	0	0	1745	0	0	3111	3111	1739	3109	3100	1305
Stage 1	-	-	-	-	-	-	1779	1779	-	1315	1315	-
Stage 2	-	-	-	-	-	-	1332	1332	-	1794	1785	-
Critical Hdwy	4.38	-	-	4.12	-	-	7.32	6.63	6.22	7.28	6.6	6.53
Critical Hdwy Stg 1	-	-	-	-	-	-	6.32	5.63	-	6.28	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.32	5.63	-	6.28	5.6	-
Follow-up Hdwy	2.452	-	-	2.218	-	-	3.698	4.117	3.318	3.662	4.09	3.597
Pot Cap-1 Maneuver	446	-	-	360	-	-	~ 6	~ 10	108	~ 6	~ 11	168
Stage 1	-	-	-	-	-	-	93	127	-	180	219	-
Stage 2	-	-	-	-	-	-	172	212	-	94	128	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	446	-	-	360	-	-	-	0	108	-	0	168
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	93	0	-	180	207	-
Stage 2	-	-	-	-	-	-	136	201	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	446	-	-	360	-	-	-
HCM Lane V/C Ratio	-	0.044	-	-	0.015	-	-	-
HCM Control Delay (s)	-	13.4	0	-	15.2	0	-	-
HCM Lane LOS	-	B	A	-	C	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	-

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



Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	11	66	52	15	25	12
Future Vol, veh/h	11	66	52	15	25	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	23	21	2	2	2
Mvmt Flow	12	72	57	16	27	13

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	164	34	40	0	0
Stage 1	34	-	-	-	-
Stage 2	130	-	-	-	-
Critical Hdwy	6.42	6.43	4.31	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.507	2.389	-	-
Pot Cap-1 Maneuver	827	982	1456	-	-
Stage 1	988	-	-	-	-
Stage 2	896	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	794	982	1456	-	-
Mov Cap-2 Maneuver	794	-	-	-	-
Stage 1	948	-	-	-	-
Stage 2	896	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	5.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1456	-	950	-	-
HCM Lane V/C Ratio	0.039	-	0.088	-	-
HCM Control Delay (s)	7.6	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

1: SR 132 & SOUTH PROJECT ACCESS Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.2	0.0	3.3	0.1
Total Del/Veh (s)	7.9	1.6	217.5	8.2

2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.7	0.1	18.6	0.8
Total Del/Veh (s)	1.8	13.7	864.3	608.0	29.1

3: MCCRACKEN RD & EAST PROJECT ACCESS Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	34.6	0.0	0.1	11.6
Total Del/Veh (s)	365.5	2.0	76.6	132.6

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	51.9

**Intersection: 1: SR 132 & SOUTH PROJECT ACCESS**

Movement	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	108	14	17	16	254	173
Average Queue (ft)	31	0	1	1	98	62
95th Queue (ft)	88	7	8	9	281	170
Link Distance (ft)		416	416		512	
Upstream Blk Time (%)					0	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)	300			200		200
Storage Blk Time (%)					13	2
Queuing Penalty (veh)					7	0

**Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD**

Movement	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	90	14	33	28	57	480	318	225
Average Queue (ft)	19	0	3	1	4	259	240	58
95th Queue (ft)	73	7	18	15	26	609	404	202
Link Distance (ft)		416		4564	4564	2015	311	
Upstream Blk Time (%)							52	
Queuing Penalty (veh)							31	
Storage Bay Dist (ft)	200		200					200
Storage Blk Time (%)							66	2
Queuing Penalty (veh)							16	1

**Intersection: 3: MCCRACKEN RD & EAST PROJECT ACCESS**

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	424	35	86
Average Queue (ft)	172	2	16
95th Queue (ft)	466	16	74
Link Distance (ft)	534	311	1659
Upstream Blk Time (%)	8		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Network Summary**

Network wide Queuing Penalty: 55
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Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗↗	↗↗	↗	↘	↗
Traffic Vol, veh/h	22	996	2271	35	17	56
Future Vol, veh/h	22	996	2271	35	17	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	200	-	200
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	22	10	26	24	4
Mvmt Flow	24	1083	2468	38	18	61

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	2506	0	0 3058 1234
Stage 1	-	-	- 2468 -
Stage 2	-	-	- 590 -
Critical Hdwy	4.28	-	- 7.28 6.98
Critical Hdwy Stg 1	-	-	- 6.28 -
Critical Hdwy Stg 2	-	-	- 6.28 -
Follow-up Hdwy	2.29	-	- 3.74 3.34
Pot Cap-1 Maneuver	160	-	- ~ 7 165
Stage 1	-	-	- 36 -
Stage 2	-	-	- 460 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	160	-	- ~ 6 165
Mov Cap-2 Maneuver	-	-	- 27 -
Stage 1	-	-	- 31 -
Stage 2	-	-	- 460 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	95.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	160	-	-	-	27	165
HCM Lane V/C Ratio	0.149	-	-	-	0.684	0.369
HCM Control Delay (s)	31.4	-	-	-	282	39
HCM Lane LOS	D	-	-	-	F	E
HCM 95th %tile Q(veh)	0.5	-	-	-	2.2	1.6

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

Intersection												
Int Delay, s/veh	68.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕			↕	↗
Traffic Vol, veh/h	7	995	11	5	2270	52	12	22	5	20	16	24
Future Vol, veh/h	7	995	11	5	2270	52	12	22	5	20	16	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	85	22	29	2	10	10	20	11	2	25	14	29
Mvmt Flow	8	1082	12	5	2467	57	13	24	5	22	17	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2524	0	0	1094	0	0	2356	3638	547	3075	3616	1262
Stage 1	-	-	-	-	-	-	1104	1104	-	2506	2506	-
Stage 2	-	-	-	-	-	-	1252	2534	-	569	1110	-
Critical Hdwy	5.8	-	-	4.14	-	-	7.9	6.72	6.94	8	6.78	7.48
Critical Hdwy Stg 1	-	-	-	-	-	-	6.9	5.72	-	7	5.78	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.9	5.72	-	7	5.78	-
Follow-up Hdwy	3.05	-	-	2.22	-	-	3.7	4.11	3.32	3.75	4.14	3.59
Pot Cap-1 Maneuver	49	-	-	634	-	-	15	~ 4	481	~ 3	~ 4	128
Stage 1	-	-	-	-	-	-	196	267	-	~ 21	47	-
Stage 2	-	-	-	-	-	-	157	48	-	421	259	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	49	-	-	634	-	-	~ 7	~ 3	481	-	~ 3	128
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 7	~ 3	-	~ 15	36	-
Stage 1	-	-	-	-	-	-	164	223	-	~ 18	47	-
Stage 2	-	-	-	-	-	-	78	48	-	311	217	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	\$ 6057.1	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)		4	49	-	-	634	-	-	128
HCM Lane V/C Ratio	10.598	0.155	-	-	0.009	-	-	-	0.204
HCM Control Delay (s)	\$ 6057.1	91.5	-	-	10.7	-	-	-	40.2
HCM Lane LOS		F	F	-	-	B	-	-	E
HCM 95th %tile Q(veh)		7.1	0.5	-	-	0	-	-	0.7

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

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	9	45	65	15	15	10
Future Vol, veh/h	9	45	65	15	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	93	92	92	92
Heavy Vehicles, %	2	26	12	2	2	2
Mvmt Flow	10	49	70	16	16	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	178	22	27	0	0
Stage 1	22	-	-	-	-
Stage 2	156	-	-	-	-
Critical Hdwy	6.42	6.46	4.22	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.534	2.308	-	-
Pot Cap-1 Maneuver	812	990	1524	-	-
Stage 1	1001	-	-	-	-
Stage 2	872	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	775	990	1524	-	-
Mov Cap-2 Maneuver	775	-	-	-	-
Stage 1	955	-	-	-	-
Stage 2	872	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	6.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1524	-	946	-	-
HCM Lane V/C Ratio	0.046	-	0.062	-	-
HCM Control Delay (s)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

1: SR 132 & SOUTH PROJECT ACCESS Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.3	0.0	2.1	0.2
Total Del/Veh (s)	9.4	1.0	27.0	6.3

2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.1	199.0	6.9
Total Del/Veh (s)	1.5	6.6	262.8	286.8	16.7

3: MCCRACKEN RD & EAST PROJECT ACCESS Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	29.7	0.0	0.1	11.8
Total Del/Veh (s)	228.2	2.3	36.8	99.2

Total Network Performance

Denied Del/Veh (s)	7.5
Total Del/Veh (s)	36.9

**Intersection: 1: SR 132 & SOUTH PROJECT ACCESS**

Movement	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	75	3	2	2	90	60
Average Queue (ft)	28	0	0	0	25	17
95th Queue (ft)	61	2	2	2	64	45
Link Distance (ft)		415	415			512
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	300			200	200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

**Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD**

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	71	14	24	30	27	60	297	324	225
Average Queue (ft)	12	1	1	4	1	2	112	236	27
95th Queue (ft)	45	6	13	19	11	42	308	408	136
Link Distance (ft)		415	415		4564	4564	2015	311	
Upstream Blk Time (%)								43	
Queuing Penalty (veh)								39	
Storage Bay Dist (ft)	200			200					200
Storage Blk Time (%)								62	0
Queuing Penalty (veh)								6	0

**Intersection: 3: MCCRACKEN RD & EAST PROJECT ACCESS**

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	425	32	101
Average Queue (ft)	176	1	15
95th Queue (ft)	494	14	75
Link Distance (ft)	534	311	1659
Upstream Blk Time (%)	10		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Network Summary**

Network wide Queuing Penalty: 45
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Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑	↗	↘	↗
Traffic Vol, veh/h	56	1565	1185	23	28	25
Future Vol, veh/h	56	1565	1185	23	28	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	200	200	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	90	93	92	92	92
Heavy Vehicles, %	5	5	11	30	18	12
Mvmt Flow	61	1739	1274	25	30	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1299	0	-	0	2266 637
Stage 1	-	-	-	-	1274 -
Stage 2	-	-	-	-	992 -
Critical Hdwy	4.2	-	-	-	7.16 7.14
Critical Hdwy Stg 1	-	-	-	-	6.16 -
Critical Hdwy Stg 2	-	-	-	-	6.16 -
Follow-up Hdwy	2.25	-	-	-	3.68 3.42
Pot Cap-1 Maneuver	513	-	-	-	~ 28 397
Stage 1	-	-	-	-	198 -
Stage 2	-	-	-	-	285 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	513	-	-	-	~ 25 397
Mov Cap-2 Maneuver	-	-	-	-	109 -
Stage 1	-	-	-	-	174 -
Stage 2	-	-	-	-	285 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	33.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	513	-	-	-	109	397
HCM Lane V/C Ratio	0.119	-	-	-	0.279	0.068
HCM Control Delay (s)	13	-	-	-	50.4	14.7
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1.1	0.2

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

Intersection												
Int Delay, s/veh	90											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕			↕	↗
Traffic Vol, veh/h	18	1593	12	5	1185	31	13	18	10	60	22	9
Future Vol, veh/h	18	1593	12	5	1185	31	13	18	10	60	22	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	93	93	93	59	59	59	48	48	48
Heavy Vehicles, %	28	5	22	2	11	29	22	13	2	18	10	33
Mvmt Flow	20	1770	13	5	1274	33	22	31	17	125	46	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1307	0	0	1783	0	0	2487	3134	892	2242	3124	654
Stage 1	-	-	-	-	-	-	1817	1817	-	1301	1301	-
Stage 2	-	-	-	-	-	-	670	1317	-	941	1823	-
Critical Hdwy	4.66	-	-	4.14	-	-	7.94	6.76	6.94	7.86	6.7	7.56
Critical Hdwy Stg 1	-	-	-	-	-	-	6.94	5.76	-	6.86	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.94	5.76	-	6.86	5.7	-
Follow-up Hdwy	2.48	-	-	2.22	-	-	3.72	4.13	3.32	3.68	4.1	3.63
Pot Cap-1 Maneuver	406	-	-	344	-	-	~ 11	~ 9	285	~ 19	~ 10	343
Stage 1	-	-	-	-	-	-	65	113	-	148	215	-
Stage 2	-	-	-	-	-	-	369	205	-	253	116	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	406	-	-	344	-	-	~ 5	~ 8	285	-	~ 9	343
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 5	~ 8	-	~ 67	68	-
Stage 1	-	-	-	-	-	-	62	107	-	141	212	-
Stage 2	-	-	-	-	-	-	269	202	-	162	110	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	\$ 4363.9	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)		8	406	-	-	344	-	-	343
HCM Lane V/C Ratio		8.686	0.049	-	-	0.016	-	-	0.055
HCM Control Delay (s)		\$ 4363.9	14.3	-	-	15.6	-	-	16.1
HCM Lane LOS		F	B	-	-	C	-	-	C
HCM 95th %tile Q(veh)		10.2	0.2	-	-	0	-	-	0.2

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

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	11	66	52	15	25	12
Future Vol, veh/h	11	66	52	15	25	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	59	48	92
Heavy Vehicles, %	2	23	21	2	2	2
Mvmt Flow	12	72	57	25	52	13

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	198	59	65	0	0
Stage 1	59	-	-	-	-
Stage 2	139	-	-	-	-
Critical Hdwy	6.42	6.43	4.31	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.507	2.389	-	-
Pot Cap-1 Maneuver	791	951	1424	-	-
Stage 1	964	-	-	-	-
Stage 2	888	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	759	951	1424	-	-
Mov Cap-2 Maneuver	759	-	-	-	-
Stage 1	924	-	-	-	-
Stage 2	888	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	5.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1424	-	918	-	-
HCM Lane V/C Ratio	0.04	-	0.091	-	-
HCM Control Delay (s)	7.6	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

1: SR 132 & SOUTH PROJECT ACCESS Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.2	0.1
Total Del/Veh (s)	7.2	3.2	31.3	4.8

2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.7	0.1	0.0	0.5
Total Del/Veh (s)	4.8	29.1	34.2	31.5	22.2

3: MCCRACKEN RD & EAST PROJECT ACCESS Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.1
Total Del/Veh (s)	3.2	2.3	0.2	2.3

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	36.7

**Intersection: 1: SR 132 & SOUTH PROJECT ACCESS**

Movement	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R
Maximum Queue (ft)	74	4	52	48	87
Average Queue (ft)	21	0	2	2	32
95th Queue (ft)	60	4	47	44	70
Link Distance (ft)		5010	421	421	511
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)	300				
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD**

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	73	212	242	38	773	818	92	112	76
Average Queue (ft)	10	68	82	6	300	335	36	49	22
95th Queue (ft)	50	155	179	26	657	717	75	98	59
Link Distance (ft)		421	421		4564	4564	2015	311	
Upstream Blk Time (%)			0						
Queuing Penalty (veh)			0						
Storage Bay Dist (ft)	200			200					200
Storage Blk Time (%)	0	0			10				
Queuing Penalty (veh)	0	0			0				

**Intersection: 3: MCCRACKEN RD & EAST PROJECT ACCESS**

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	82	37
Average Queue (ft)	38	3
95th Queue (ft)	69	19
Link Distance (ft)	534	311
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Network Summary**

Network wide Queuing Penalty: 1
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Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑	↗		↗
Traffic Vol, veh/h	22	996	2271	35	0	56
Future Vol, veh/h	22	996	2271	35	0	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	200	-	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	22	10	26	24	4
Mvmt Flow	24	1083	2468	38	0	61

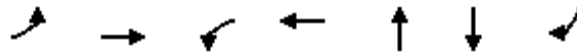
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	2506	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.28	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.29	-	-
Pot Cap-1 Maneuver	160	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	160	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	39
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	160	-	-	-	165
HCM Lane V/C Ratio	0.149	-	-	-	0.369
HCM Control Delay (s)	31.4	-	-	-	39
HCM Lane LOS	D	-	-	-	E
HCM 95th %tile Q(veh)	0.5	-	-	-	1.6

Queues  
2: SR 132/MAZE BLVD & MCCRACKEN RD

AM 2046 PL PROJ  
4 lane signal control



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	8	1075	5	2524	42	58	26
v/c Ratio	0.13	0.46	0.04	0.98	0.35	0.57	0.13
Control Delay	44.0	5.4	38.8	26.3	42.6	61.4	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	5.4	38.8	26.3	42.6	61.4	1.3
Queue Length 50th (ft)	4	84	2	~611	18	29	0
Queue Length 95th (ft)	19	208	14	#1064	55	#93	0
Internal Link Dist (ft)		409		4512	1981	300	
Turn Bay Length (ft)	200		200				200
Base Capacity (vph)	61	2322	134	2579	126	105	205
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.46	0.04	0.98	0.33	0.55	0.13

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary  
 2: SR 132/MAZE BLVD & MCCRACKEN RD

AM 2046 PL PROJ  
 4 lane signal control



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↖	↗
Traffic Volume (veh/h)	7	984	5	5	2270	52	12	22	5	31	22	24
Future Volume (veh/h)	7	984	5	5	2270	52	12	22	5	31	22	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	640	1574	1470	1870	1752	1752	1604	1737	1870	1530	1693	1470
Adj Flow Rate, veh/h	8	1070	5	5	2467	57	13	24	5	34	24	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	85	22	29	2	10	10	20	11	2	25	14	29
Cap, veh/h	6	2181	10	12	2364	54	67	50	9	117	46	77
Arrive On Green	0.01	0.71	0.71	0.01	0.71	0.71	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	610	3052	14	1781	3326	77	210	817	139	830	740	1246
Grp Volume(v), veh/h	8	524	551	5	1230	1294	42	0	0	58	0	26
Grp Sat Flow(s),veh/h/ln	610	1495	1571	1781	1664	1738	1166	0	0	1569	0	1246
Q Serve(g_s), s	0.9	13.3	13.3	0.2	61.5	61.5	0.6	0.0	0.0	0.0	0.0	1.7
Cycle Q Clear(g_c), s	0.9	13.3	13.3	0.2	61.5	61.5	3.6	0.0	0.0	3.0	0.0	1.7
Prop In Lane	1.00		0.01	1.00		0.04	0.31		0.12	0.59		1.00
Lane Grp Cap(c), veh/h	6	1068	1123	12	1183	1236	126	0	0	163	0	77
V/C Ratio(X)	1.30	0.49	0.49	0.43	1.04	1.05	0.33	0.00	0.00	0.36	0.00	0.34
Avail Cap(c_a), veh/h	35	1068	1123	126	1183	1236	150	0	0	185	0	97
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.8	5.4	5.4	42.8	12.5	12.5	39.4	0.0	0.0	39.5	0.0	38.9
Incr Delay (d2), s/veh	270.3	0.4	0.3	23.0	36.9	39.0	1.5	0.0	0.0	1.3	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.3	3.5	0.2	28.8	30.8	0.9	0.0	0.0	1.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	313.1	5.8	5.8	65.8	49.4	51.5	41.0	0.0	0.0	40.8	0.0	41.5
LnGrp LOS	F	A	A	E	F	F	D	A	A	D	A	D
Approach Vol, veh/h		1083			2529			42				84
Approach Delay, s/veh		8.0			50.5			41.0				41.0
Approach LOS		A			D			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.8	6.4	68.3		11.8	6.7	68.0				
Change Period (Y+Rc), s		6.5	5.8	6.5		6.5	5.8	6.5				
Max Green Setting (Gmax), s		6.7	6.1	60.4		6.7	5.0	61.5				
Max Q Clear Time (g_c+I1), s		5.6	2.2	15.3		5.0	2.9	63.5				
Green Ext Time (p_c), s		0.0	0.0	9.4		0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				37.9								
HCM 6th LOS				D								



Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	9	62	65	15	15	10
Future Vol, veh/h	9	62	65	15	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	93	92	92	92
Heavy Vehicles, %	2	26	12	2	2	2
Mvmt Flow	10	67	70	16	16	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	178	22	27	0	0
Stage 1	22	-	-	-	-
Stage 2	156	-	-	-	-
Critical Hdwy	6.42	6.46	4.22	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.534	2.308	-	-
Pot Cap-1 Maneuver	812	990	1524	-	-
Stage 1	1001	-	-	-	-
Stage 2	872	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	775	990	1524	-	-
Mov Cap-2 Maneuver	775	-	-	-	-
Stage 1	955	-	-	-	-
Stage 2	872	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	6.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1524	-	956	-	-
HCM Lane V/C Ratio	0.046	-	0.081	-	-
HCM Control Delay (s)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

1: SR 132 & SOUTH PROJECT ACCESS Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.3	0.0	0.1	0.2
Total Del/Veh (s)	9.7	1.5	10.0	6.3

2: SR 132/MAZE BLVD & MCCRACKEN RD Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.1	0.7	0.1
Total Del/Veh (s)	9.7	13.1	26.3	26.8	12.1

3: MCCRACKEN RD & EAST PROJECT ACCESS Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.1	0.1
Total Del/Veh (s)	3.6	2.3	0.3	2.6

Total Network Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	27.1

**Intersection: 1: SR 132 & SOUTH PROJECT ACCESS**

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	R	R
Maximum Queue (ft)	75	3	8	11	58
Average Queue (ft)	26	0	0	0	17
95th Queue (ft)	61	3	6	5	42
Link Distance (ft)		421	421		511
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	300			200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 2: SR 132/MAZE BLVD & MCCRACKEN RD**

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	99	306	298	26	235	256	109	226	102
Average Queue (ft)	21	117	132	3	94	118	31	79	14
95th Queue (ft)	67	244	250	16	181	214	81	175	55
Link Distance (ft)		421	421		4564	4564	2015	311	
Upstream Blk Time (%)		0						0	
Queuing Penalty (veh)		0						0	
Storage Bay Dist (ft)	200			200					200
Storage Blk Time (%)		1			0			1	0
Queuing Penalty (veh)		0			0			0	0

**Intersection: 3: MCCRACKEN RD & EAST PROJECT ACCESS**

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	95	36
Average Queue (ft)	48	3
95th Queue (ft)	80	18
Link Distance (ft)	534	311
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Network Summary**

Network wide Queuing Penalty: 1
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Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑	↗		↗
Traffic Vol, veh/h	56	1565	1185	23	0	25
Future Vol, veh/h	56	1565	1185	23	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	200	-	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	90	93	92	92	92
Heavy Vehicles, %	5	5	11	30	18	12
Mvmt Flow	61	1739	1274	25	0	27

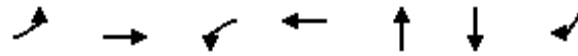
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1299	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.2	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.25	-	-
Pot Cap-1 Maneuver	513	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	513	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	513	-	-	-	397
HCM Lane V/C Ratio	0.119	-	-	-	0.068
HCM Control Delay (s)	13	-	-	-	14.7
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.2

Queues  
2: SR 132/MAZE BLVD & MCCRACKEN RD

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4 lane signal control



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	20	1753	5	1307	70	232	19
v/c Ratio	0.17	0.84	0.04	0.71	0.26	0.95	0.06
Control Delay	41.3	17.8	40.4	15.5	28.1	82.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	17.8	40.4	15.5	28.1	82.6	0.3
Queue Length 50th (ft)	9	294	2	180	22	111	0
Queue Length 95th (ft)	34	#568	14	367	40	108	0
Internal Link Dist (ft)		409		4512	1981	300	
Turn Bay Length (ft)	200		200				200
Base Capacity (vph)	132	2400	119	2123	271	245	332
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.73	0.04	0.62	0.26	0.95	0.06

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 2: SR 132/MAZE BLVD & MCCRACKEN RD

PM 2046 PL PROJ  
 4 lane signal control



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕			↕	↖
Traffic Volume (veh/h)	18	1572	5	5	1185	31	13	18	10	81	30	9
Future Volume (veh/h)	18	1572	5	5	1185	31	13	18	10	81	30	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1826	1574	1870	1737	1470	1574	1707	1870	1633	1752	1411
Adj Flow Rate, veh/h	20	1747	6	5	1274	33	22	31	17	169	62	19
Peak Hour Factor	0.90	0.90	0.90	0.93	0.93	0.93	0.59	0.59	0.59	0.48	0.48	0.48
Percent Heavy Veh, %	28	5	22	2	11	29	22	13	2	18	10	33
Cap, veh/h	32	2020	7	12	1820	47	58	63	20	192	42	229
Arrive On Green	0.02	0.57	0.57	0.01	0.55	0.55	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1414	3546	12	1781	3287	85	0	330	106	600	220	1196
Grp Volume(v), veh/h	20	854	899	5	639	668	70	0	0	231	0	19
Grp Sat Flow(s),veh/h/ln	1414	1735	1824	1781	1650	1722	436	0	0	820	0	1196
Q Serve(g_s), s	1.1	33.8	33.8	0.2	22.8	22.9	0.0	0.0	0.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s	1.1	33.8	33.8	0.2	22.8	22.9	15.5	0.0	0.0	15.5	0.0	1.1
Prop In Lane	1.00		0.01	1.00		0.05	0.31		0.24	0.73		1.00
Lane Grp Cap(c), veh/h	32	988	1039	12	914	953	142	0	0	234	0	229
V/C Ratio(X)	0.63	0.86	0.87	0.43	0.70	0.70	0.49	0.00	0.00	0.99	0.00	0.08
Avail Cap(c_a), veh/h	126	1125	1183	114	1030	1075	142	0	0	234	0	229
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.2	14.8	14.8	40.0	13.2	13.2	28.4	0.0	0.0	35.2	0.0	26.9
Incr Delay (d2), s/veh	18.9	6.5	6.3	22.8	1.8	1.8	2.6	0.0	0.0	55.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	11.3	11.9	0.2	6.8	7.1	1.1	0.0	0.0	7.8	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.2	21.3	21.1	62.8	15.0	14.9	31.1	0.0	0.0	90.2	0.0	27.0
LnGrp LOS	E	C	C	E	B	B	C	A	A	F	A	C
Approach Vol, veh/h		1773			1312			70				250
Approach Delay, s/veh		21.6			15.1			31.1				85.4
Approach LOS		C			B			C				F
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.0	6.3	52.6		22.0	7.6	51.3				
Change Period (Y+Rc), s		6.5	5.8	6.5		6.5	5.8	6.5				
Max Green Setting (Gmax), s		15.5	5.2	52.5		15.5	7.2	50.5				
Max Q Clear Time (g_c+I1), s		17.5	2.2	35.8		17.5	3.1	24.9				
Green Ext Time (p_c), s		0.0	0.0	10.2		0.0	0.0	8.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			24.0									
HCM 6th LOS			C									

HCM 6th TWSC  
 3: MCCRACKEN RD & EAST PROJECT ACCESS

PM 2046 PL PROJ  
 4 lane signal control

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	11	95	52	15	25	12
Future Vol, veh/h	11	95	52	15	25	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	59	48	92
Heavy Vehicles, %	2	23	21	2	2	2
Mvmt Flow	12	103	57	25	52	13

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	198	59	65	0	0
Stage 1	59	-	-	-	-
Stage 2	139	-	-	-	-
Critical Hdwy	6.42	6.43	4.31	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.507	2.389	-	-
Pot Cap-1 Maneuver	791	951	1424	-	-
Stage 1	964	-	-	-	-
Stage 2	888	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	759	951	1424	-	-
Mov Cap-2 Maneuver	759	-	-	-	-
Stage 1	924	-	-	-	-
Stage 2	888	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	5.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1424	-	927	-	-
HCM Lane V/C Ratio	0.04	-	0.124	-	-
HCM Control Delay (s)	7.6	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

# MOVEMENT SUMMARY

 Site: 2 [SR 132 / McCracken Rd (Site Folder: General)]

2046 AM  
 Site Category: (None)  
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist ] ft				
South: McCracken Rd														
3	L2	12	20.0	13	20.0	0.107	11.3	LOS B	0.3	8.5	0.71	0.71	0.71	31.3
8	T1	22	11.0	24	11.0	0.107	10.6	LOS B	0.3	8.5	0.71	0.71	0.71	31.6
18	R2	5	2.0	5	2.0	0.107	9.8	LOS A	0.3	8.5	0.71	0.71	0.71	30.9
Approach		39	12.6	42	12.6	0.107	10.7	LOS B	0.3	8.5	0.71	0.71	0.71	31.4
East: SR 132														
1	L2	5	2.0	5	2.0	0.978	38.4	LOS E	48.8	1316.7	0.89	0.62	1.19	23.3
6	T1	2270	10.0	2467	10.0	0.978	38.0	LOS E	50.3	1359.0	0.87	0.60	1.17	23.3
16	R2	52	10.0	57	10.0	0.978	37.5	LOS E	50.3	1359.0	0.85	0.59	1.16	22.9
Approach		2327	10.0	2529	10.0	0.978	38.0	LOS E	50.3	1359.0	0.87	0.60	1.17	23.3
North: McCracken Rd														
7	L2	31	25.0	34	25.0	0.742	96.5	LOS F	2.4	71.7	0.96	1.25	2.16	14.4
4	T1	22	14.0	24	14.0	0.742	93.7	LOS F	2.4	71.7	0.96	1.25	2.16	14.5
14	R2	24	29.0	26	29.0	0.742	97.6	LOS F	2.4	71.7	0.96	1.25	2.16	14.2
Approach		77	23.1	84	23.1	0.742	96.0	LOS F	2.4	71.7	0.96	1.25	2.16	14.3
West: SR 132														
5	L2	7	85.0	8	85.0	0.485	10.5	LOS B	2.3	68.2	0.26	0.13	0.26	31.0
2	T1	984	22.0	1070	22.0	0.485	8.6	LOS A	2.3	68.2	0.25	0.12	0.25	33.1
12	R2	5	29.0	5	29.0	0.485	8.6	LOS A	2.3	66.8	0.24	0.12	0.24	31.9
Approach		996	22.5	1083	22.5	0.485	8.7	LOS A	2.3	68.2	0.25	0.12	0.25	33.1
All Vehicles		3439	13.9	3738	13.9	0.978	30.5	LOS D	50.3	1359.0	0.69	0.48	0.92	25.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



# MOVEMENT SUMMARY

 Site: 2 [SR 132 / McCracken Rd (Site Folder: General)]

2046 PM  
 Site Category: (None)  
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist ft ]				
South: McCracken Rd														
3	L2	13	22.0	14	22.0	0.182	20.0	LOS C	0.5	13.6	0.83	0.83	0.83	28.1
8	T1	18	13.0	20	13.0	0.182	18.8	LOS C	0.5	13.6	0.83	0.83	0.83	28.4
18	R2	10	2.0	11	2.0	0.182	17.4	LOS C	0.5	13.6	0.83	0.83	0.83	27.8
Approach		41	13.2	45	13.2	0.182	18.9	LOS C	0.5	13.6	0.83	0.83	0.83	28.2
East: SR 132														
1	L2	5	2.0	5	2.0	0.533	8.7	LOS A	3.2	88.1	0.27	0.13	0.27	33.4
6	T1	1185	11.0	1288	11.0	0.533	8.8	LOS A	3.2	88.1	0.26	0.12	0.26	33.2
16	R2	31	29.0	34	29.0	0.533	9.1	LOS A	3.1	85.2	0.26	0.12	0.26	31.8
Approach		1221	11.4	1327	11.4	0.533	8.8	LOS A	3.2	88.1	0.26	0.12	0.26	33.1
North: McCracken Rd														
7	L2	81	18.0	88	18.0	0.370	18.0	LOS C	1.2	35.1	0.78	0.87	1.08	27.9
4	T1	30	10.0	33	10.0	0.370	17.3	LOS C	1.2	35.1	0.78	0.87	1.08	28.1
14	R2	9	33.0	10	33.0	0.370	19.3	LOS C	1.2	35.1	0.78	0.87	1.08	27.1
Approach		120	17.1	130	17.1	0.370	17.9	LOS C	1.2	35.1	0.78	0.87	1.08	27.9
West: SR 132														
5	L2	18	28.0	20	28.0	0.715	14.6	LOS B	6.1	160.4	0.59	0.39	0.59	30.4
2	T1	1572	5.0	1709	5.0	0.715	13.6	LOS B	6.1	160.4	0.58	0.38	0.58	31.1
12	R2	5	22.0	5	22.0	0.715	13.8	LOS B	6.1	159.3	0.57	0.37	0.57	30.0
Approach		1595	5.3	1734	5.3	0.715	13.6	LOS B	6.1	160.4	0.58	0.38	0.58	31.1
All Vehicles		2977	8.4	3236	8.4	0.715	11.9	LOS B	6.1	160.4	0.46	0.30	0.47	31.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.