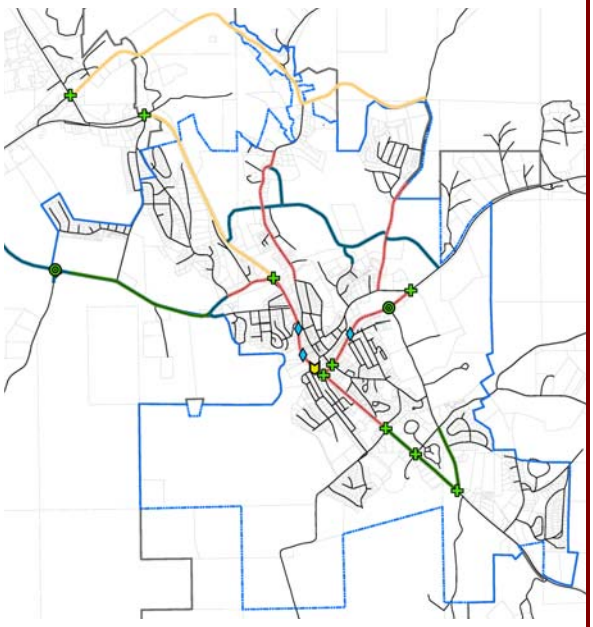

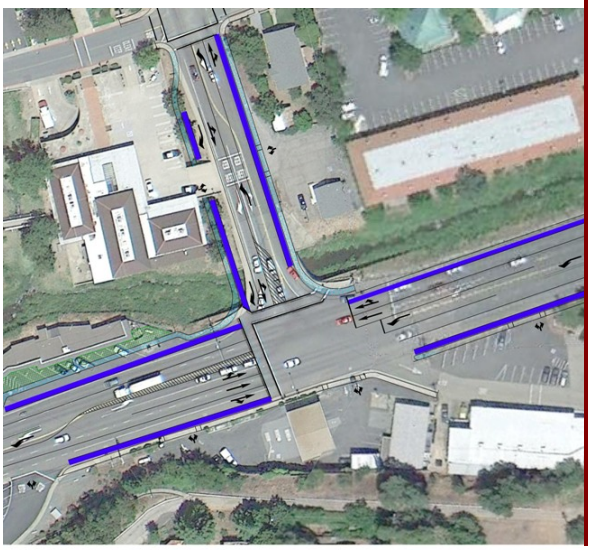

City of Jackson

Transportation Capital Improvement Program (TCIP), Traffic Impact Mitigation (TIM) Fee Update, And Nexus Report

February, 25 2013

Prepared for:

The City of Jackson

Funded by;

Caltrans Community Based Transportation Planning Grant (Grant # 74A0568)

With Support from:

The Amador County Transportation Commission

Prepared by:

omni · means
ENGINEERS · PLANNERS

CITY OF JACKSON
TRANSPORTATION CAPITAL IMPROVEMENT PROGRAM (TCIP), TRAFFIC IMPACT MITIGATION (TIM) FEE UPDATE, AND NEXUS REPORT

February, 25 2013

PREPARED FOR:

THE CITY OF JACKSON
33 BROADWAY
JACKSON, CA 95642

FUNDED BY:

CALTRANS COMMUNITY BASED TRANSPORTATION PLANNING GRANT
(GRANT # 74A0568)

WITH SUPPORT FROM:

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I. INTRODUCTION

This report presents the analysis and findings necessary to update the City of Jackson's existing local Transportation Capital Improvement Program (TCIP) and Traffic Impact Mitigation (TIM) fee, which were adopted in 2002. In 2008, the City of Jackson completed an update to their General Plan, which resulted in changes to the land use and traffic demands anticipated to impact the City. This impact analysis was based on the "maximum allowable densities" possible under the new General Plan Land Use Element. This increment of potential development was added to the Amador County Transportation Commission (ACTC) regional travel demand model in affect at that time in order to create the list of planned transportation improvements identified in the Plan's Circulation Element. The General Plan Update also established new policies requiring an update to the City's TCIP and TIM fees, which were identified as the implementation measures needed to ensure these improvements are built over time.

In 2010, the City and ACTC partnered on an application to the Caltrans Community Based Transportation Planning grant program in order to work with local interests and accomplish this objective. Upon award (Grant # 74A0568), the City and ACTC then jointly selected the firm OMNI-MEANS to complete the following Scope of Work of;

- Develop a Jackson sub-area travel demand model consistent with the revised Regional Traffic Model and refinements to the growth assumptions in the City's 2008 General Plan.
- Identify specific improvement alternatives and gather public and stakeholder input on these concepts.
- Create detailed designs and architectural renderings of the proposed improvements.
- Provide accurate cost estimates for the proposed improvements.
- Update the City's existing TCIP and TIM fees program and establish the Nexus analysis needed to ensure compliance with the "proportionality" requirements AB 1600.
- Perform an Initial Study and Mitigated Negative Declaration for the program in order to ensure programmatic compliance with the California Environmental Quality Act (CEQA).

This Nexus Report is intended to provide a detailed explanation of the TCIP analysis and TIM fee methodologies needed to update the City's existing program, which was adopted in 2002 through *Ordinance No. 2002-11*. The fees identified in Chapter VII represent the recommended fees based upon the State law mandated nexus requirements.

PURPOSE OF THE STUDY

The primary purpose for this update is to bring the City's 2002 TCIP and TIM fees up to date by reflecting its 2008 General Plan Update. The 2012 TCIP fees have been updated pursuant to the Mitigation Fee Act, as set forth in Sections 66000 et seq. of the California Government Code (Assembly Bill 1600). The Mitigation Fee Act was enacted by the California State legislature in 1987 and requires that all public agencies satisfy the following requirements when establishing, increasing, or imposing a fee as a condition of approval for a development project:

1. Identify the purpose of the fee;
2. Identify the use to which the fee will be put;
3. Determine that there is a reasonable relationship between the fee's use and the type of development on which the fee is imposed;
4. Determine how there is a reasonable relationship between the need for the public facility and the type of development on which the fee is imposed; and,
5. Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The "reasonable relationship" test was supplemented by a test of "rough proportionality" in the 1994 United State Supreme Court decision *Dolan v. City of Tigard*. In this decision, the Court ruled that, when a public agency requires an exaction from new development, the agency cannot rely solely on a general, qualitative relationship between a land use and required facility but must make a finding that the exaction is related to the proportional impact of that land use. The Court specifically stated in its opinion that "no precise mathematical calculation is required, but the City must make some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development." This decision effectively added an additional finding that there is a rough proportionality between the amount of the fee and the impact of the development on which the fee is imposed.

As required by Government Code Section 66000 et seq. and subsequent court rulings, this report will show that a reasonable relationship exists between the calculated fee amounts and development land uses on which they are imposed. Additionally, it will be demonstrated that a rough proportionality exists between the impact of a land use on a facility and amount of the fee imposed on it. The following section details the organization of this Report.

ORGANIZATION OF REPORT

The remainder of this Report has been organized into the following sections:

Section II **Overview of Previous 2002 TCIP and TIM Fees** - Provides an overview of how existing program of improvement projects and local fee schedule.

Section III **Planning Area Growth Projections** - Discusses projected growth within and immediately adjacent to the City of Jackson.

Section IV **Future Transportation Improvement Needs** - Provides the traffic demand analysis that determines the needed transportation improvements.

Section V **Transportation Capital Improvement Program Update** – Identifies the 2012 TCIP improvement projects, associated costs, and overall finance plan for the program of projects.

Section VI **Traffic Impact Mitigation Fee Update Calculation Methodology** - Establishes the nexus, or "proportionality requirements", required by Government Code 66000 et seq. (AB 1600) and provides a detailed explanation of the methodology used to calculate the fees for each land use categories in the fee schedule.

Section VII **Traffic Impact Mitigation Fee Update** - Provides the updated City 2012 TIM fees for development occurring within the existing City Limits and Sphere of Influence, as well as a comparison of fees from similar jurisdictions and State averages. This section also includes a more detailed explanation of the assumptions used in the fee calculation.

Section VIII **Implementation and Administration** - Provides information regarding implementing the program, including the annual reporting and five-year update requirements.

II. OVERVIEW OF THE PREVIOUS 2002 TCIP AND TIM FEES

In 2002, the City Council adopted *Resolution No. 2002-11*, thereby adopting a new traffic mitigation fee program and associated traffic mitigation fees. This program replaced the previous fee program developed to maintain thoroughfares and bridges.

PREVIOUS GROWTH ASSUMPTIONS

The land use and traffic demand assumptions used to establish both the 2002 TCIP and TIM represented the best available information regarding the regional traffic demands forecast by the ACTC's regional travel demand model in use at that time, as well as developable lands within the City of Jackson based on its previous 1981 General Plan

PREVIOUS TRANSPORTATION CAPITAL IMPROVEMENT PROJECTS

The transportation improvement projects identified in the 2002 TCIP and TIM reflect both local and regionally significant projects that were derived from the City's 1981 General Plan, and 1999 Circulation Element, the ACTC's 1996 Regional Transportation Plan (RTP), and the traffic analysis performed at that time. These projects are shown in Table 1.

TABLE 1:
CITY OF JACKSON 2002 TRANSPORTATION CAPITAL IMPROVEMENT PROGRAM.

Jurisdiction	Route/Purpose	Location/Description	Amount to be Funded by Fee Program	Amount from other Sources	Total Cost[4] (2000)
Jackson	Court Street/Highway 88	Miscellaneous operational and safety Improvements at intersection. (NEXUS is 48%)	$96,000 (48%)	ACTC $20,000 (10%) City $20,000 (10%) Caltrans $64,000 (32%)	$200,000
Jackson	Jackson Gate/SR 49 Connector	Design and construct new route between SR 49 and North Main Street/Jackson Gate Road per General Plan Circulation Element.	$600,000	ACTC $480,000 (24%) City $480,000 (24%) Deficit $440,000 (22%)	$2,000,000[5]
Jackson	Argonaut Lane Upgrade	Miscellaneous operational and safety improvements including intersections with Argonaut Lane and Argonaut Drive	$295,210 (53%)	County $261,790 (47%)	$557,000
Jackson	Intersection Improvements	SR 49 at French Road (NEXUS IS 22%)	$66,000	Caltrans $150,000 (50%) Deficit $84,000 (28%)	$300,000
Jackson	Intersection Improvements	SR 49 at Clinton Road Surplus which can be fee generated	$75,000 (25%)	Caltrans $150,000 (50%) HES $150,000 (50%)	$300,000
Jackson	Intersection Improvements	SR 49 at Broadway	$$36,750	Deficit $68,250	$105,000
Jackson	Bridge Fund	Broadway Bridge (NEXUS is 90%) Surplus which can be fee generated	$95,400 (10%) [$763,200 (80%)]	ACTC-RSTP $95,400 (10%) HBRR $763,200 (80%)	$954,000
Jackson	Mission Boulevard	Construct Mission Boulevard from SR 88 to Broadway.	$928,800 (90%)	Deficit $103,200 (10%)	$1,032,000[6]
		Totals amounts required to fund program Amount Available from "other sources "Nexus amount from fee program Actual amount of funds from Table 1 Deficit not funded from "other sources" Surplus amount raised from Fee Program Surplus fees needed to fund deficit Possible deficit remaining to fund	$2,118,160 (39%) **$2,956,360[7]** $2,780,410 **$662,250** **$695,450** **$33,200**	$2,634,390 (48%) **$695,450 (13%)**	

Notes
4. All costs escalated 5% from 1999 Costs.
5. Per estimate by City Engineer.
6. Cost based on "City of Jackson Circulation Element" dated August, 1999 by Fehr & Peers Associates escalated 5% to Year 2000 plus the construction completed by Sutter-Amador Hospital ($680,000 + $358,000)
7. This is the total amount that can legally be raised from the Fee Program. The amount does not necessarily agree with the total on Table 1. Table 1 is based on the expected growth in the City during the 10-year time period that may or may not occur. The fees on Table 1 are set reasonably close to the amount needed but show a possible deficit of 1.5 percent. The actual fees charged to non-residential uses my vary from those shown on Table 1 if the City adopts a schedule based on the Institute of Transportation Engineers Manual. We anticipate some changes in the non-residential fees after the cities and the County enter in a joint powers agreement.

PREVIOUS TRAFFIC IMPACT MITIGATION FEES

The TIM fees adopted in 2002 were based on calculations reflecting planning-level cost estimates for the proposed improvements shown in Table 1, local growth forecasts, the assumptions on outside funding in place at that time, and industry-standard trip generation methodologies. Table 2 presents the 2002 TIM fees.

TABLE 2:
CITY OF JACKSON 2002 TRAFFIC IMPACT MITIGATION FEES

Residential Category	Development Project Type	Adjusted Trip Rate[1]	Fee Amount $131.80/trip end
Residential	Single Family Detached	10.0 / D.U.[2]	$1,318 / D.U.
	Multi-Family Attached Apartments, duplexes or condominiums are charged per dwelling unit without regard to square footage or number of bedrooms.	7.1 / D.U.	$938 / D.U.
	Mobile Home Park or Subdivision An area or tract of land where more than two spaces are rented or individually owned to accommodate mobile homes. Retirement Community Five or more residential units, enforceably restricted to those 55 or over and designed for the elderly.	4.22 / D.U.	$556 / D.U.
	Congregate Care Facility Congregate care facilities typically consist of one or more multi-unit buildings designed for elderly living; they may also contain common dining rooms, medical facilities and recreational facilities.	2.15 / D.U.	$283 / D.U.
Non-Residential Category	**Development Project Type**	**Adjusted Trip Rate[1]**	**Fee Amount $131.80/trip end**
Retail Commercial	High Volume Retail: Drug Store, Department Store, Grocery Store Discount Store, Mini Mart, Automobile Sales Liquor Store, Supermarket, Laundromat Auto Parts, Clothing/Apparel Store, Delicatessen Bank, Health Fitness Center, Record/Video Rental & Sales Hardware Store, Pharmacy Specialty Retail Center Small shopping centers that contain a variety of retail shops including apparel; hard goods; and services such as real estate offices, dance studios, florists, and small restaurants Shopping Center May contain Supermarkets, Drug Stores, Banks, Movie Theater and miscellaneous small retail shops.	20 / 1,000 S.F.[3]	$1,700 / 1,000 S.F.
	Medium Volume Retail: Bakery, Automobile Repair, Child Care Club Store, Dry Cleaner, Shoe Store Gift Shop, Lumber/Building Supplies, Sporting Goods Store Nursery, Jewelry Store, Stationary Store Photo Store, Print Shop (retail), Toy Store Electronics Store, Book Store, Factory Outlet Center Tire Store, Health Food Store	13 / 1,000 S.F.	$1,105 / 1,000 S.F.
	Low Volume Retail: Antique Store, Boat/Equipment Repair Shop Appliance Store, Furniture Store Gallery, Museum Kennel, Boat/RV/Mobile Home Sales Clock Store, Repair Shop (TV, Radio, Vacuum, etc.) Wine or beer tasting rooms or product retail sales in conjunction with a winery or brewery	1.5 / 1,000 S.F.	$128 / 1,000 S.F.
Office	General Office	11 / 1,000 S.F.	$935 / 1,000 S.F.
Food Services	Stand Alone Restaurant w/ drive through	161 / 1,000 S.F.	$13,685 / 1,000 S.F.
	Quality Sit-down Restaurant Drinking Establishment (Bar)	23 / 1,000 S.F.	$1,955 / 1,000 S.F.
Specialty Commercial	Gas Station with or without convenience store	32 / Fueling Space[4]	$2,720 / Fueling Space
	Car Wash, Quick Lube	21 / Stall	$1,785 / Stall
	Hotel/Motel/Resort/Bed and Breakfast	5.2 / Unit[5]	$442 / Unit

Non-Residential Category	Development Project Type	Adjusted Trip Rate[1]	Fee Amount $131.80/trip end
Medical	Hospital	11.8 / Bed	$1,003 / Bed
	Nursing home / Convalescent Home	2.6 / Bed	$221 / Bed
	Medical Office or Medical or Health Clinic providing diagnostic or treatment services	30 / 1,000 S.F.	$2,550 / 1,000 S.F.
Industrial	Light, including: Airport/Airstrip — Meat Packing Facility Livestock Feedlot/Auction Yard — Printing Plant Material Testing Laboratory — Electronics Plant	6 / 1,000 S.F.	$510 / 1,000 S.F.
	Heavy, including: Auto Wrecking and Junk Yard — Mining Operation Foundry and Smelter — Refining Plant Lumber Mill	1.5 / 1,000 S.F.	$128 / 1,000 S.F.
	Manufacturing/Assembly/Agricultural Processing Manufacturing or assembly facilities where the primary activity is the conversion of raw materials, products or parts into finished commodities for sale or distribution, including a winery or brewery.	1 / 1,000 S.F.	$255 / 1,000 S.F.
Institutional	Elementary School — Middle School Church or other place of worship	10 / 1,000 S.F.	$850 / 1,000 S.F.
	High School	13 / 1,000 S.F.	$1,105 / 1,000 S.F.
Public Utilities	Utilities (Publicly or privately owned) Production, generation, storage, transmission and treatment facilities, mechanical or industrial space, parts and equipment storage, repair areas, and office space in the same project and related to or used for these utility uses.	6 / 1,000 S.F.	$510 / 1,000 S.F.
Warehousing /Storage	Warehouse Facilities primarily devoted to the storage of materials, including wholesale distribution facilities	5 / 1,000 S.F.	$659 / 1,000 S.F.
	Mini-storage Facilities Buildings housing separate storage units or vaults used for storage.	2 / 1,000 S.F.	$170 / 1,000 S.F.
Other	Golf Course	21 / Hole	$1,785 / Hole
	Theater (Movie)	6.4 / 1,000 S.F.	$544 / 1,000 S.F.
	Theater (Live)	1.5 / 1,000 S.F.	$128 / 1,000 S.F.
	Recreational — Visitor Center	3.1 /Parking Space	$264 / Parking Space

Notes:
1. The vehicle trip rates are for calculation of fees only. These trip rates have been adjusted to consider pass by trips, diverted trips, trip length, peak hour impacts and other factors.
2. Dwelling Unit.
3. Square Feet of the gross floor area, measured to the nearest square foot; applicable to structures only.
4. The number of fueling spaces is determined by the maximum number of vehicles capable of being fueled simultaneously.
5. Sleeping unit, dwelling unit, rental unit, or other component by which the development is marketed.

III. PLANNING AREA GROWTH PROJECTIONS

This section provides an overview of future growth projections associated with build-out of the City's General Plan, as well as development within City's Sphere of Influence (SOI), and immediately adjacent areas of the unincorporated county, which collectively serve as the Planning Area for this study. The limits of these boundaries are presented in Figure 3. As outlined in Section IV, the projections for this study also include the incremental increase of regional and interregional traffic attributable to growth in the larger Amador County region, surrounding Counties, and the State at-large. This growth is anticipated to affect the local circulation of City residents, as well as regional and interregional through-put on the State Highway corridors that pass through the City.

PLANNING AREA GROWTH PROJECTIONS

The land use growth assumptions for this study represent buildout of the developable vacant lands within the City of Jackson's current City Limits and SOI, as well as planned development in immediately adjacent areas of the unincorporated county. The City and SOI buildout projections reflect refinements to the General Plan's Land Use Element, which were determined by City staff based on realistic densities for the planned growth and historic market dynamics affecting new development in the area. Projections for the unincorporated areas within the Planning Area, as well as background growth for the region, surrounding Counties, and the State at-large are based on Department of Finance (DOF) assumptions that are incorporated with the Regional Traffic Model's future conditions analysis used for this study. Working Paper 1, in Appendix A, fully documents the model development process including growth projections.

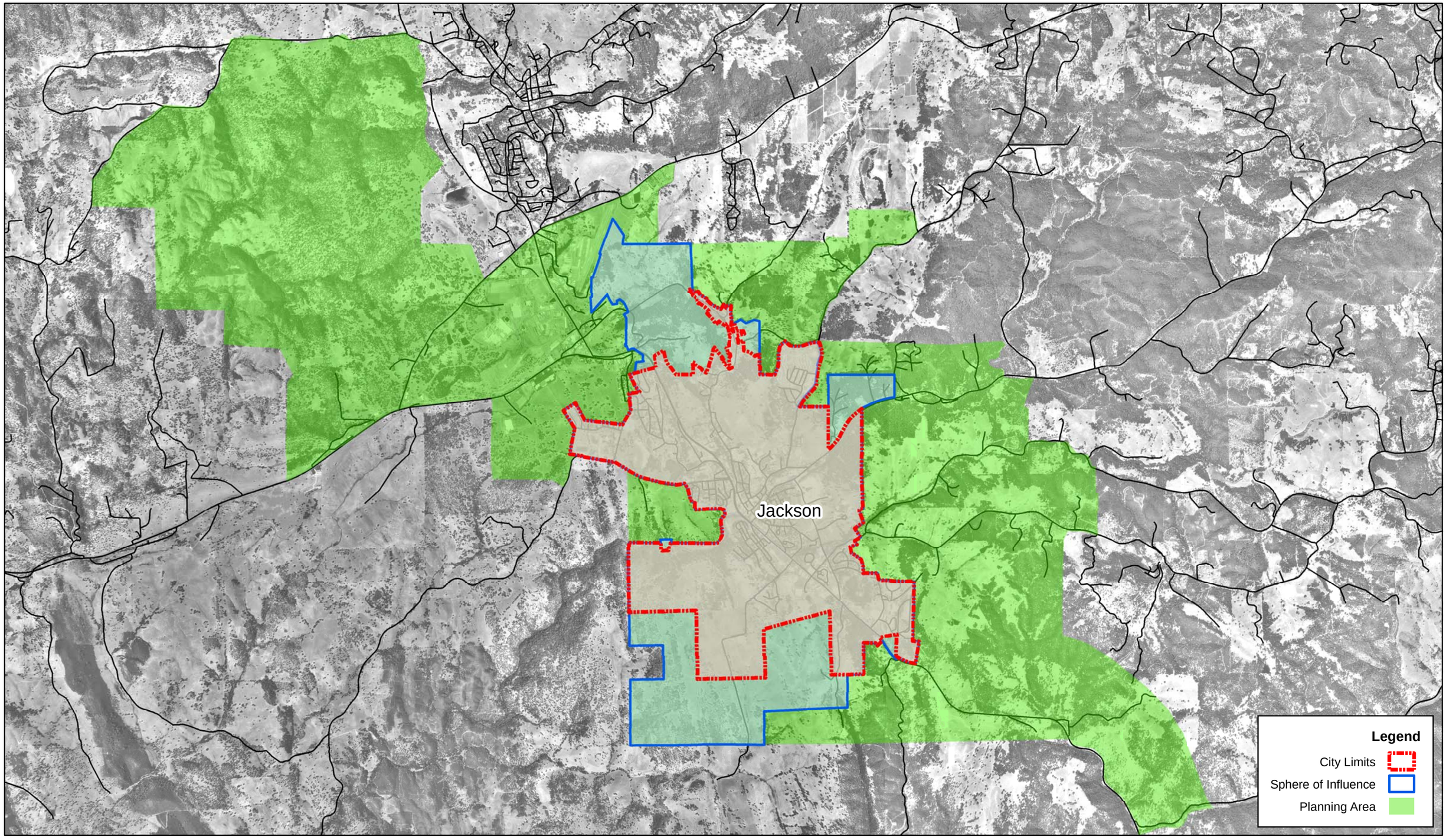
As shown in Table 3, Jackson is expected to grow by 949 dwelling units within the City Limits, 20 units within the SOI, and 1,161 within the Planning Area. Additionally, 205 new ksf of non-residential growth is projected within the City Limits, and 1,429 ksf is projected within the Planning Area. Lastly, school enrollment within the City Limits is projected to grow by 264 students. This analysis demonstrates that the majority of growth in the Planning Area is projected to occur outside the City Limits and SOI, but within the Planning Area, which further highlights in importance of identifying the impacts from this development on the City's local circulation so they can be anticipated and adequately mitigated.

However, as outlined in Section VI, it is important to note that only growth within the City's current City Limits and its SOI is included in the calculations used for the proposed TIM fees that would apply to future building permits issued by the City. Because there are currently no plans for additional annexation beyond these established limits, development outside the City's current SOI is *not* included these calculations, because these parcels would pay their local traffic impact fees to Amador County.

TABLE 3:
BUILDOUT GROWTH PROJECTIONS BY AREA

		Existing Land Uses			Buildout Growth			Total Buildout Land Uses		
Land Use	**Units**	**City Limits**	**Sphere of Influence**	**Planning Area**	**City Limits**	**Sphere of Influence**	**Planning Area**	**City Limits**	**Sphere of Influence**	**Planning Area**
Residential										
Single-Family Dwelling Units	DU	1,344	26	227	493	20	319	1,837	46	546
Multi-Family Dwelling Units	DU	1,024	0	71	456	0	842	1,480	0	913
Total		*2,368*	*26*	*298*	*949*	*20*	*1,161*	*3,317*	*46*	*1,459*
Non-Residential										
Central Business District	KSF	201	0	0	0	0	0	201	0	0
Shopping Center	KSF	119	0	508	6	0	0	125	0	508
General Commercial	KSF	373	0	584	98	0	94	471	0	678
Office	KSF	504	0	187	33	0	604	537	0	792
Medical Office	KSF	384	0	2	68	0	0	452	0	2
Light Industrial	KSF	47	14	110	0	0	741	47	14	852
Heavy Industrial	KSF	0	0	276	0	0	0	0	0	276
Total		*1,627*	*14*	*1,668*	*205*	*0*	*1,439*	*1,832*	*14*	*3,107*
School Enrollment										
Elementary/Middle School	ENR	792	0	0	264	0	0	1,056	0	0
High School	ENR	652	0	0	0	0	0	652	0	0
Total		*1,444*	*0*	*0*	*264*	*0*	*0*	*1,708*	*0*	*0*

Note: DU = Dwelling Units, KSF = 1,000 Square Feet, ACR = Acres, ENR = Students



City of Jackson CIP & TIF Update

Figure 1

Project Study Area & Boundaries

N

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IV. FUTURE TRANSPORTATION IMPROVEMENT NEEDS

As described in Section III and presented in Figure 1, the Planning Area boundary incorporates the City of Jackson's current City Limits and SOI, as well as immediately adjacent areas of the unincorporated county, which are planned for future development. For the purpose of this Section, it is important to note that some of the transportation improvements identified herein are in immediately adjacent areas outside of the City's jurisdiction. As discussed below, these improvements are included in this study because they provide critical circulation and connectivity benefits to the City that mitigate future traffic demands generated from within and beyond the Planning Area.

The following land-use and transportation information was collected for this study in order to obtain a comprehensive understanding of existing and future traffic demands and associated improvement needs:

- The Land Use and Circulations Elements from the City's 2008 General Plan.
- Existing traffic count data and roadway capacity configurations provided through the ACTC's 2010 Regional Traffic Model, which was subsequently updated for this study.
- Existing Traffic Impact Studies completed for recent development projects, as well as other circulation improvement plans within the Planning Area.
- Field surveys and evaluations of existing traffic and circulation conditions.
- The "Table 5" list of regionally significant improvements in the Jackson area from the ACTC's Regional Transportation Plan (RTP), Amador County's Regional Traffic Mitigation Fee (RTMF) program of projects, and the City's 2002 TCIP.
- Geographic Information systems (GIS)-based mapping and land use data files, existing improvement design files, and aerial photographs, as well as other types of digital and hard-copy data that were readily available from the ACTC and the City.

For this study, a sub-area travel demand model was created from ACTC's Regional Traffic Model to determine the improvement needs anticipated under future conditions. The ACTC regional travel demand model roadway network configuration (including roadway classifications) was refined and expanded in the City model to verify that the model includes all significant roadways within the Planning Area, Sphere of Influence and City Limits necessary to accurately forecast future daily and peak hour traffic volumes for use in this study. In addition, the Traffic Area Zone (TAZ) boundaries and roadway network connection paths (centroid connectors) were modified, split, and joined as necessary to provide the necessary configuration to accurately assign traffic volumes generated within these TAZ boundaries to/from the model roadway network. This process is fully documented in *Working Paper #2,* which is included in Appendix B.

Figure 2 illustrates the TAZ boundaries contained within the travel demand model as well as the City Limit, SOI, and Planning Area boundaries. Growth between the base model and the buildout model was established within each boundary and by assigning each TAZ to the City Limit, SOI, or Planning Area boundary. The listing of growth for each land use per TAZ is provided in Appendix C of this report. Buildout residential growth is presented in Figure 3 by dwelling units. Growth in each TAZ is represented by five different categories of growth amounts, as shown in the figure legend. As presented in Figure 3, residential growth in the TDM is spread somewhat unevenly through the study area. Significant amounts of new units are projected in the southern half of the City, south of SR 88, on either side of SR 49.

Non-residential growth is presented in Figure 4 by KSF (1,000 square feet). As with Figure 6, growth in each TAZ is represented by five different categories of growth amounts as shown in the legend. *{Note: Hotel*

rooms are used as one of the model input, thus a standard 650 square foot per room assumption was used to derive rough square footage growth estimates.} As presented in Figure 4, non-residential growth is spread more evenly through the City, with a concentration of new uses east of SR 49 and north of SR 88. Some commercial and office growth is also projected south of French Bar Road on either side of SR 49.

TRANSPORTATION FACILITY LEVEL OF SERVICE METHODOLOGIES

This section details the analysis used in the determination of transportation improvement needs identified in this study including all data, assumptions, methodologies, software, and technical parameters.

Data Collection

Existing traffic counts were supplied by ACTC for critical study locations throughout the City of Jackson. These traffic counts were supplemented by other recent traffic counts acquired from recent studies and planning documents. A map illustrating study roadway segments selected for daily analysis is presented in Figure 5.

Level of Service Thresholds

Policy 2.A.1 of the City's Circulation Element states the following:

> *"The City shall maintain an average daily LOS "C" on all roadways, with an upper threshold of LOS "D" to be permitted along State Routes 49 and 88. This policy is consistent with the 2004 Amador County Regional Transportation Plan and recognizes that much of the traffic on Highway 49 and 88 is a result of development outside the boundaries of the City of Jackson…"*

As highlighted in Section III, it is important to note that the increase in traffic on City roadways is not commensurate with growth within the City. For example, as stated in the City's General Plan, "for the seven year period between 2000 and 2007 there was 8.2% growth in City population, whereas during the same time period there was a 36% increase in the peak average daily trips at the Main Street/Highway 49 intersection."

ROADWAY FACILITY STATUS & CONDITION

Roadway capacities for this study were determined based on the roadway classifications obtained from the Regional Traffic Model's roadway network file provided by the ACTC. Based on the traffic count data presented in Table 4, existing daily Levels-of-Service (LOS) were determined using the capacities presented in Table 5, organized by facility classifications.

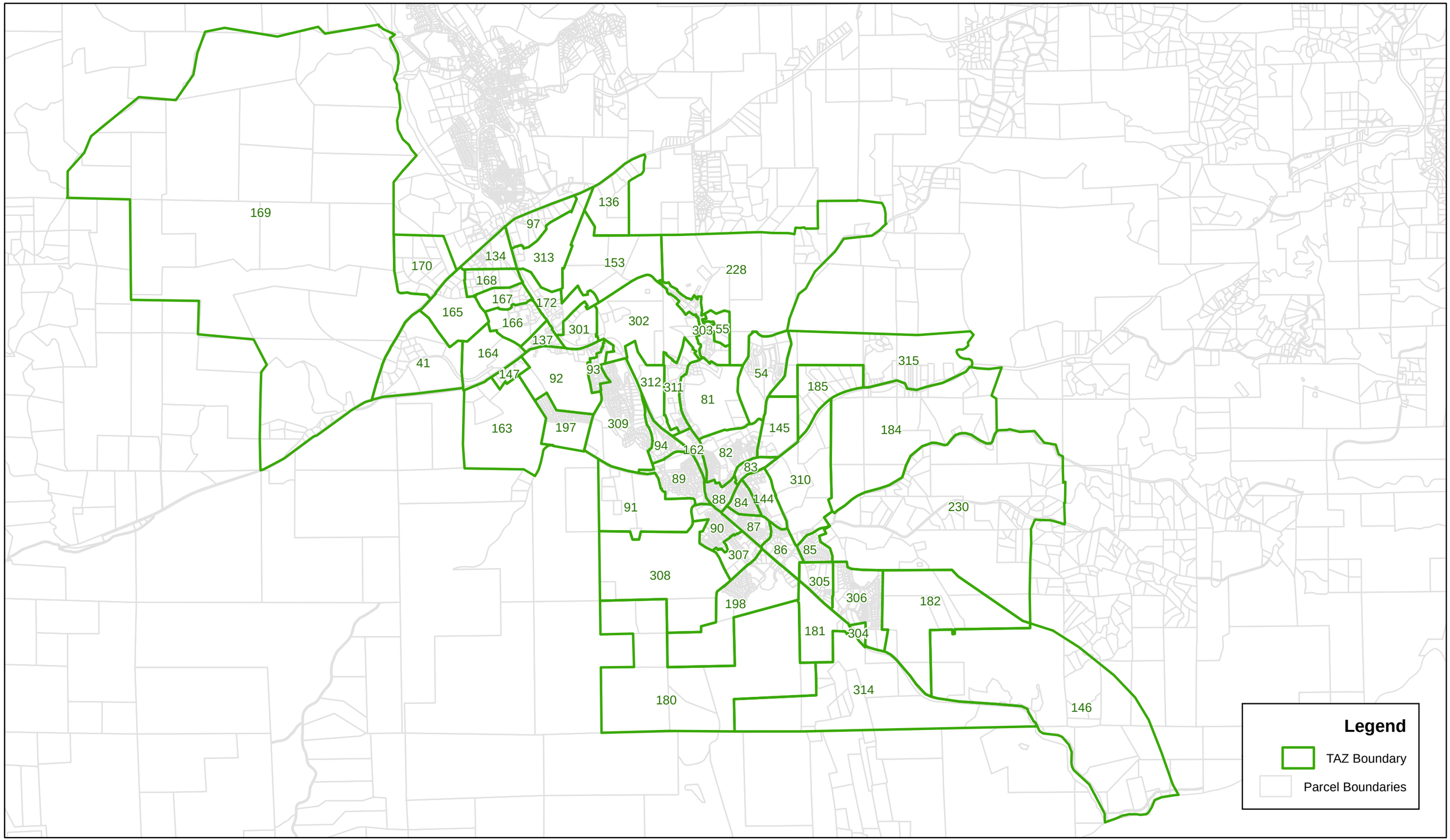
TABLE 4:
EXISTING DAILY TRAFFIC COUNTS

Roadway	Existing ADT
SR 49, north of Calaveras/Amador County Line	7100
SR 49, north of Calaveras/Amador County Line	7200
SR 49, south of Scottsville Boulevard	8100
SR 49, south of Broadway	8300
SR 49, south of Clinton Road	14200
SR 49, north of French Bar Road	14700
SR 49, north of South Avenue	18900
SR 49, south of SR 88 (South Junction)	20900
SR 49, north of SR 88 (South Junction)	20960
SR 49, north of Main Street	18400
SR 49, south of Argonaut Lane	20700
SR 49, north of Argonaut Lane	21200
SR 49, south of SR 88 (North Junction)	21000
SR 49, north of Jackson Gate Road	20000
SR 49, north of SR 104	19400

Roadway	Existing ADT
SR 49, north of SR 104	16800
SR 49, north of Old Highway 49	7000
SR 88, west of SR 104	15200
SR 88, west of SR 104	14460
SR 88, east of SR 104	9040
SR 88, east of Wicklow Way	11740
SR 88, west of SR 49	16500
SR 88, west of Court Street	9100
SR 88, east of Court Street	11000
SR 88, west of Dalton Road	8300
SR 104, north of SR 88	7900
SR 104, west of Forrest Products Road	8400
SR 104, west of SR 49	6200
Ridge Road, east of Old Ridge Road	14275
Ridge Road, east of Running Gold Road	13600
Jackson Gate Road, north of China Graveryard Road	3200
Jackson Gate Road, at City Limits	2641
New York Ranch Road, east of China Graveyard Road	1680
New York Ranch Road, east of Court Street	4140
Hoffman Street, west of SR 49	2160
Main Street, east of SR 49	2330
Court Street, west of New York Ranch Road	3450
Clinton Road, east of Butte Mountain Road	1400
Butte Mountain Road, east of Clinton Road	751
Eureka Road, west of Old Ridge Road	2959
Old Ridge Road, east of Eureka Road	3002
Stoney Creek Road, west of Argonaut Lane	350
Old Highway 49, east of SR 49	7400
Sutter-Ione Road, west of SR 49	310

TABLE 5:
LEVEL OF SERVICE (LOS) CRITERIA FOR ROADWAYS

	LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
All Facilities (Volume-to-Capacity Ratio (V/C))	<0.6	0.6-0.7	0.7-0.8	0.8-0.9	0.9-1.0
	Average Daily Traffic (ADT) – Total of Both Directions				
Roadway Type	**A**	**B**	**C**	**D**	**E**
4-Lane Minor Arterial		24,900	30,800	32,700	34,900
2-Lane Minor Arterial (w/ Climbing Lane)		12,200	16,500	22,200	25,100
2-Lane Minor Arterial (w/ Turning Lane)	2,600	5,900	10,300	16,900	20,200
2-Lane Minor Arterial	1,600	4,500	8,600	14,200	18,600
2-Lane Major Collector	1,000	3,000	5,500	8,750	11,200
2-Lane Minor Collector	600	2,000	3,500	4,900	5,500
2-Lane Local Street	600	2,000	3,500	4,900	5,500



City of Jackson CIP & TIF Update

Figure 2

City Travel Demand Model TAZ Boundaries

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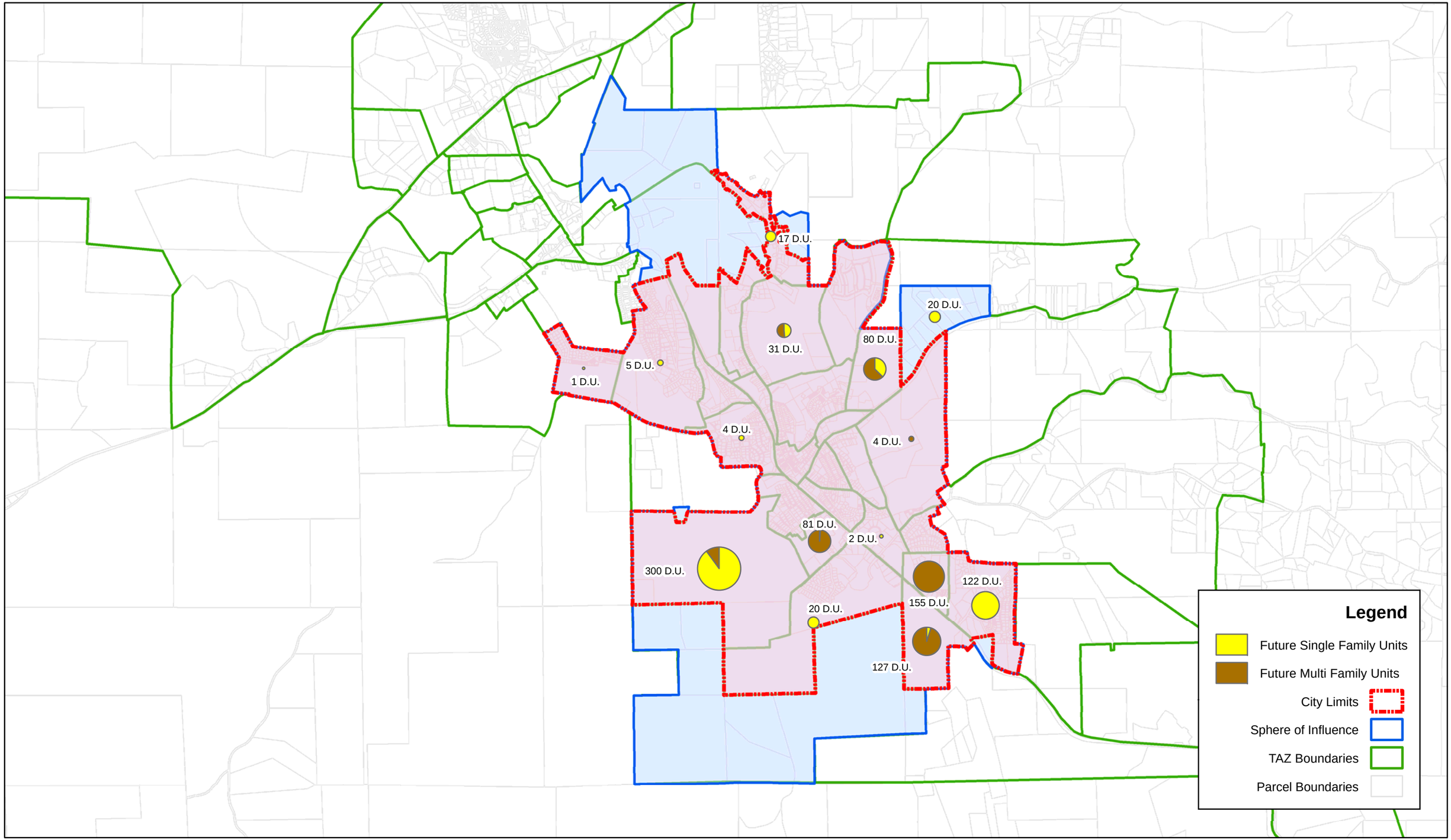

City of Jackson CIP & TIF Update

Figure 3

Jackson City Limits & SOI Residential Growth by TAZ

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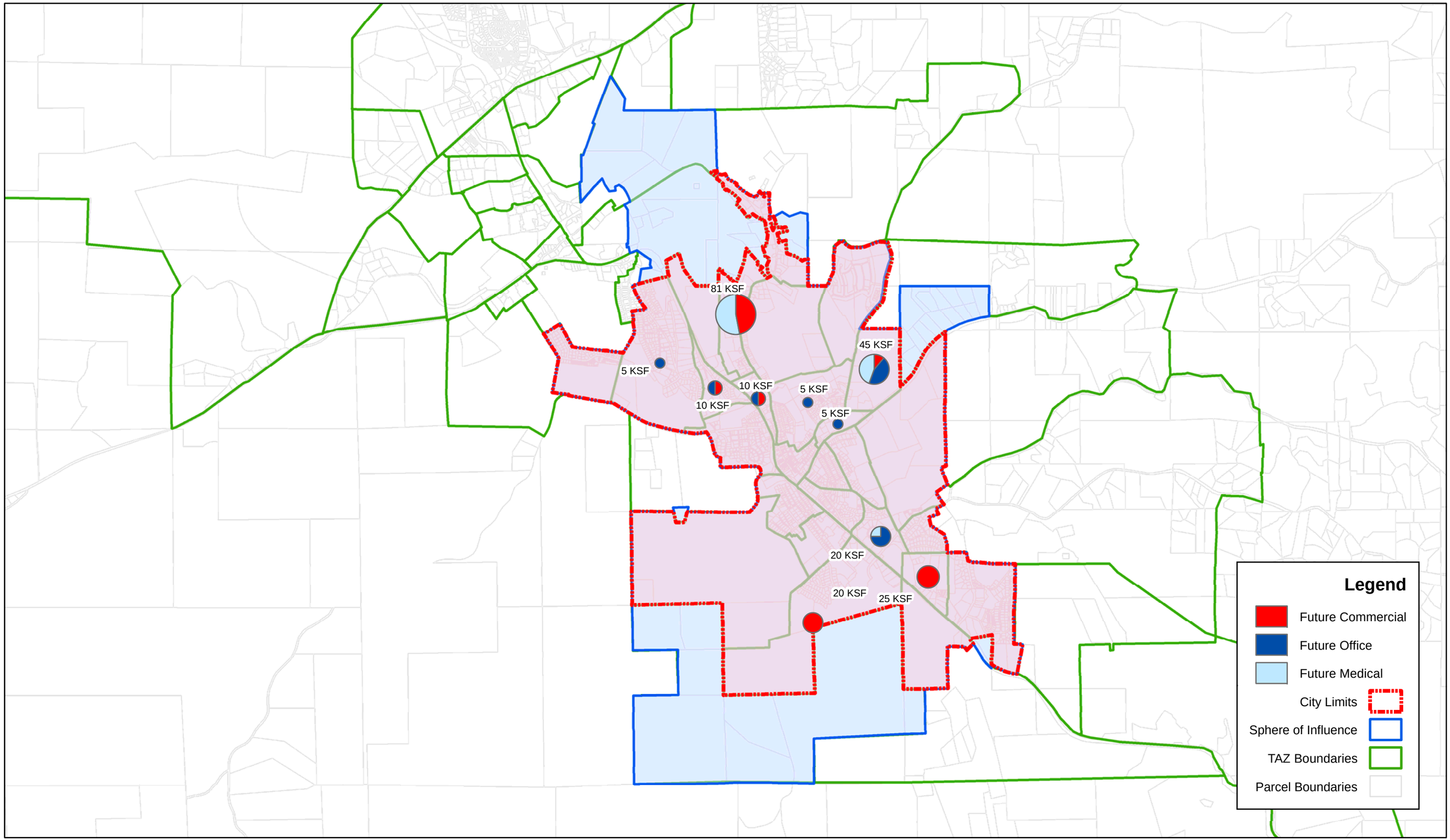

City of Jackson CIP & TIF Update

Figure 4

Jackson City Limits & SOI Non-Residential Growth by TAZ

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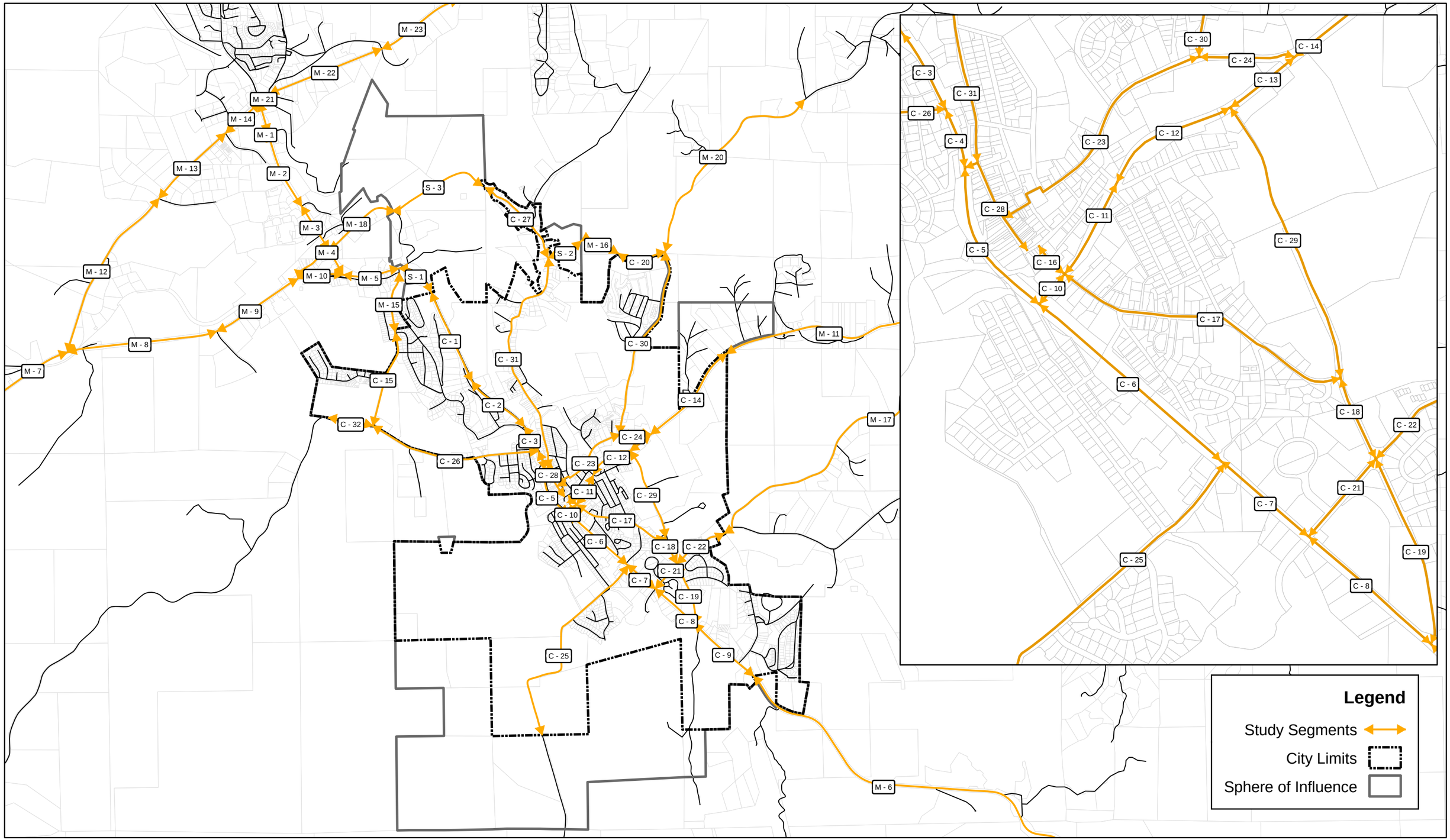

City of Jackson CIP & TIF Update

Figure 5

Roadway Study Segment IDs

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Roadway Capacity Modifiers

For facilities that do not meet standard cross sections, a reduced volume threshold was developed for this study. As identified in the *Highway Capacity Manual 2010* (Exhibit 15-7) presents free-flow speed reductions based on narrow lanes and/or shoulders. Table 6 presents those reductions in miles per hour, as presented in the *HCM 2010*.

TABLE 6:
HCM 2010 WIDTH-BASED FREE-FLOW SPEED REDUCTIONS

	Shoulder Width			
Lane Width	**>0 <2**	**>2 <4**	**>4 <6**	**6 or >6**
>9 <10	6.4	4.8	3.5	2.2
>10 <11	5.3	3.7	2.4	1.1
>11 <12	4.7	3	1.7	0.4
12 or >12	4.2	2.6	1.3	0

Based on these free-flow speed reductions, capacity constraints were developed for roadway facilities based on a 30 mph free-flow speed. Table 7 presents the free-flow speed reductions, and the relative percent decrease in capacity.

TABLE 7:
WIDTH-BASED PERCENT CAPACITY REDUCTIONS

	Shoulder Width			
Lane Width	**>0 <2**	**>2 <4**	**>4 <6**	**6 or >6**
>9 <10	23.6	25.2	26.5	27.8
>10 <11	24.7	26.3	27.6	28.9
>11 <12	25.3	27	28.3	29.6
12 or >12	25.8	27.4	28.7	30
	Shoulder Width			
Lane Width	**>0 <2**	**>2 <4**	**>4 <6**	**6 or >6**
>9 <10	79%	84%	88%	93%
>10 <11	82%	88%	92%	96%
>11 <12	84%	90%	94%	99%
12 or >12	86%	91%	96%	100%

As presented in Table 7, the reductions based on narrow travel lanes and shoulder widths vary considerably based on specific dimensions.

For the purpose of this study, all roadway segment level of service calculations include capacity reductions based on average existing shoulder widths and lane widths for each facility segment. These capacity modification assumptions along with daily LOS are presented in Table 8 for each segment in the Jackson modeling area. Roadway segments are organized by their location in the City Limits, SOI, or County.

These service levels were determined using the modified capacities described above. Therefore identified deficiencies do not necessarily indicate a need for additional travel lanes. For example, roadway improvements to bring these facilities' shoulder and lane widths to cross-section standards would in some cases result in acceptable operations.

TABLE 8:
EXISTING & BUILDOUT DAILY ROADWAY LEVEL OF SERVICE

Segment ID	Segment Jurisdiction	Roadway	Segment Begin	Segment End	Target LOS	Existing Capacity Classification	Facility Type Capacity	Capacity Mod[3]	Adjusted Capacity	Existing Volume	Volume / Capacity	Calculated Existing LOS	Projected Buildout ADT	Projected Buildout LOS
C - 1	City of Jackson	State Route 49/88	City Limits	Jackson Lodge Entrance	D	Minor Arterial, 2-Lane with Climbing Lane	25,100	90%	22,590	20,700	92%	**E**	25264	**F**
C - 2	City of Jackson	State Route 49/88	Jackson Lodge Entrance	Sutter Street	D	Minor Arterial, 4-Lane with Turning Lane	34,900	90%	31,410	20,700	66%	B	25264	**F**
C - 3	City of Jackson	State Route 49/88	Sutter Street	Hoffman Street	D	Minor Arterial, 4-Lane with Turning Lane	34,900	90%	31,410				23268	C
C - 4	City of Jackson	State Route 49/88	Hoffman Street	Main Street	D	Minor Arterial, 4-Lane with Turning Lane	34,900	84%	29,316	18,400	63%	B	24083	C
C - 5	City of Jackson	State Route 49/88	Main Street	SR 88	D	Minor Arterial, 4-Lane with Turning Lane	34,900	94%	32,806	20,960	64%	B	26908	C
C - 6	City of Jackson	State Route 49	SR 88	French Bar Road	D	Minor Arterial, 4-Lane with Turning Lane	34,900	94%	32,806	20,900	64%	B	23952	C
C - 7	City of Jackson	State Route 49	French Bar Road	Clinton Road	D	Minor Arterial, 2-Lane with Turning Lane	20,200	100%	20,200	14,700	73%	D	17372	**E**
C - 8	City of Jackson	State Route 49	Clinton Road	Broadway Avenue	D	Minor Arterial, 2-Lane with Turning Lane	20,200	100%	20,200	14,200	70%	D	17472	**E**
C - 9	City of Jackson	State Route 49	Broadway Avenue	City Limits	D	Minor Arterial, 2-Lane with Turning Lane	20,200	100%	20,200	8,300	41%	C	13355	D
C - 10	City of Jackson	State Route 88	State Route 49	Broadway Avenue	D	Minor Arterial, 2-Lane with Turning Lane	20,200	94%	18,988				10991	D
C - 11	City of Jackson	State Route 88	Broadway Avenue	Pitt Street	D	Minor Arterial, 2-Lane	18,600	94%	17,484				10178	D
C - 12	City of Jackson	State Route 88	Pitt Street	Mission Boulevard	D	Minor Arterial, 2-Lane	18,600	94%	17,484				6308	C
C - 13	City of Jackson	State Route 88	Mission Boulevard	Court Street	D	Minor Arterial, 2-Lane	18,600	94%	17,484	9,100	52%	D	9626	D
C - 14	City of Jackson	State Route 88	Court Street	City Limits	D	Minor Arterial, 2-Lane	18,600	94%	17,484	11,000	63%	D	11541	D
C - 15	City of Jackson	Argonaut Lane	Buena Vista Drive	Hoffman Street	C	Minor Collector, 2-Lane	7,700	84%	6,468				1906	B
C - 16	City of Jackson	Broadway Avenue	Water Street	SR 88	C	Minor Collector, 2-Lane	7,700	84%	6,468				813	B
C - 17	City of Jackson	Broadway Avenue	SR 88	Mission Boulevard	C	Minor Collector, 2-Lane	7,700	84%	6,468				0	A
C - 18	City of Jackson	Broadway Avenue	Mission Boulevard	Clinton Road	C	Minor Collector, 2-Lane	7,700	94%	7,238				3766	C
C - 19	City of Jackson	Broadway Avenue	Clinton Road	SR 49	C	Minor Collector, 2-Lane	7,700	79%	6,083				3950	**D**
C - 20	City of Jackson	China Graveyard Road	City Limits	New York Ranch Road	C	Minor Collector, 2-Lane	7,700	79%	6,083				1287	B
C - 21	City of Jackson	Clinton Road	SR 49	Broadway Avenue	C	Minor Collector, 2-Lane	7,700	84%	6,468				3880	C
C - 22	City of Jackson	Clinton Road	City Limits	Butte Mountain Road	C	Minor Collector, 2-Lane	7,700	79%	6,083				1697	B
C - 23	City of Jackson	Court Street	Main Street	New York Ranch Road	C	Minor Collector, 2-Lane	7,700	79%	6,083	3,450	57%	C	4169	**D**
C - 24	City of Jackson	Court Street	New York Ranch Road	SR 88	C	Minor Collector, 2-Lane	7,700	79%	6,083				931	B
C - 25	City of Jackson	French Bar Road	City Limits	SR 49	C	Minor Collector, 2-Lane	7,700	79%	6,083				1800	B
C - 26	City of Jackson	Hoffman Street	Argonaut Lane	SR 49 / 88	C	Minor Collector, 2-Lane	7,700	88%	6,776	2,160	32%	B	2388	B
C - 27	City of Jackson	Jackson Gate Road	City Limits	China Graveyard Road	C	Minor Collector, 2-Lane	7,700	79%	6,083	2,641	43%	C	3091	C
C - 28	City of Jackson	Main Street	SR 49 / 88	Water Street	C	Minor Collector, 2-Lane	7,700	79%	6,083	2,330	38%	C	2635	C
C - 29	City of Jackson	Mission Boulevard	SR 88	Broadway Avenue	C	Major Collector, 2-Lane	11,200	100%	11,200				4460	C
C - 30	City of Jackson	New York Ranch Road	Court Street	China Graveyard Road	C	Minor Collector, 2-Lane	7,700	88%	6,776	4,216	62%	C	4582	**D**
C - 31	City of Jackson	North Main Street	SR 49 / 88	China Graveyard Road	C	Minor Collector, 2-Lane	7,700	79%	6,083	3,200	53%	C	4020	**D**
C - 32	City of Jackson	Stoney Creek Road	City Limits	Argonaut Lane	C	Minor Collector, 2-Lane	7,700	79%	6,083	310	5%	A	460	A
S - 1	Sphere of Influence	State Route 49/88	Argonaut Lane	City Limits	D	Minor Arterial, 2-Lane with Climbing Lane	25,100	90%	22,590	19,579	87%	D	25264	**F**
S - 2	Sphere of Influence	China Graveyard Road	Jackson Gate Road	Sphere of Influence Boundary	C	Minor Collector, 2-Lane	7,700	79%	6,083				1367	B
S - 3	Sphere of Influence	Jackson Gate Road	Sphere of Influence Boundary	City Limits	C	Minor Collector, 2-Lane	7,700	79%	6,083	2,641	43%	C	3167	C
M - 1	Modeling Area (County)	State Route 49	SR 104	Airport Road	D	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	20,000	57%	B	25996	C
M - 2	Modeling Area (County)	State Route 49	Airport Road	Industry Boulevard	D	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	20,000	57%	B	25958	C
M - 3	Modeling Area (County)	State Route 49	Industry Boulevard	Jackson Gate Road	D	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	20,000	57%	B	25813	C
M - 4	Modeling Area (County)	State Route 49	Jackson Gate Road	SR 88	D	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900				22783	B
M - 5	Modeling Area (County)	State Route 49/88	SR 49 / SR 88 Junction	Argonaut Lane	D	Minor Arterial, 4-Lane with Turning Lane	34,900	99%	34,551	21,200	61%	B	27412	C
M - 6	Modeling Area (County)	State Route 49	City Limits	Calaveras County Line	D	Minor Arterial, 2-Lane	18,600	100%	18,600	8,100	44%	C	12296	D
M - 7	Modeling Area (County)	State Route 88	Modeling Area Boundary	SR 104	D	Minor Arterial, 2-Lane	18,600	94%	17,484	15,200	87%	**E**	20564	**F**
M - 8	Modeling Area (County)	State Route 88	SR 104	Wicklow Way	D	Minor Arterial, 2-Lane	18,600	94%	17,484	9,040	52%	D	12189	D
M - 9	Modeling Area (County)	State Route 88	Wicklow Way	Martell Road	D	Minor Arterial, 2-Lane with Turning Lane	20,200	94%	18,988	11,740	62%	D	15030	D
M - 10	Modeling Area (County)	State Route 88	Martell Road	SR 49	D	Minor Arterial, 2-Lane with Turning Lane	20,200	99%	19,998	16,500	83%	D	19645	**E**
M - 11	Modeling Area (County)	State Route 88	City Limits	Modeling Area Boundary	D	Minor Arterial, 2-Lane	18,600	94%	17,484	8,300	47%	D	8735	D
M - 12	Modeling Area (County)	State Route 104	SR 88	Industry Boulevard	C	Minor Arterial, 2-Lane with Turning Lane	20,200	90%	18,180	7,900	43%	C	11522	D
M - 13	Modeling Area (County)	State Route 104	Industry Boulevard	Forest Products Road	C	Minor Arterial, 2-Lane	18,600	90%	16,740	8,400	50%	**D**	12621	**D**
M - 14	Modeling Area (County)	State Route 104	Forest Products Road	SR 49	C	Minor Arterial, 2-Lane with Turning Lane	20,200	100%	20,200	6,200	31%	C	10160	C
M - 15	Modeling Area (County)	Argonaut Lane	SR 49 / 88	Buena Vista Drive	C	Minor Collector, 2-Lane	7,700	84%	6,468				3345	C
M - 16	Modeling Area (County)	China Graveyard Road	Sphere of Influence Boundary	City Limits	C	Minor Collector, 2-Lane	7,700	79%	6,083				1367	B
M - 17	Modeling Area (County)	Clinton Road	City Limits	Modeling Area Boundary	C	Minor Collector, 2-Lane	7,700	79%	6,083	1,400	23%	B	1696	B
M - 18	Modeling Area (County)	Jackson Gate Road	SR 49	Sphere of Influence Boundary	C	Minor Collector, 2-Lane	7,700	79%	6,083	2,641	43%	C	3772	C
M - 19	Modeling Area (County)	Martell Road	SR 88	SR 49	C	Minor Collector, 2-Lane	7,700	88%	6,776				2975	C
M - 20	Modeling Area (County)	New York Ranch Road	China Graveyard Road	Modeling Area Boundary	C	Major Collector, 2-Lane	11,200	79%	8,848	1,680	19%	B	1485	B
M - 21	Modeling Area (County)	Ridge Road	SR 49	Sutter Hill Road	C	Minor Arterial, 2-Lane with Turning Lane	20,200	94%	18,988				17423	**E**
M - 22	Modeling Area (County)	Ridge Road	Sutter Hill Road	Old Ridge Road	C	Minor Arterial, 2-Lane	18,600	94%	17,484				13211	**D**
M - 23	Modeling Area (County)	Ridge Road	Old Ridge Road	Modeling Area Boundary	C	Minor Arterial, 2-Lane with Turning Lane	20,200	94%	18,988	14,275	75%	**D**	15163	**D**

Note: Bolded entries denote roadways operating above acceptable LOS thresholds

1. Shoulder Code = Shoulder width adjustment. 1=6' or wider, 2=4' to 6', 3=2' to 4', 4=2' or less

2. Lane Code = Lane width adjustment. 1=12' or wider, 2=11' to 12', 3=10' to 11', 4=10' or less

3. Capacity Mod = Percent of total facility capacity achievable based on Shoulder Code and Lane Code

EXISTING DEFICIENCIES

As presented in Table 9, two study segments within City Limits are currently identified as deficient, as are three study segments within the Planning Area, but outside the City Limits and SOI. Future deficiencies at these locations, in their current configurations, cannot be fully attributable to future development, and therefore improvements at these locations are not eligible for TIM funding. They are the following:

Roadway Segment Deficiencies

City Limits

State Route 49/88

Between the City Limits and Jackson Lodge Entrance is currently operating at LOS E. This segment is a 2 lane minor arterial, with an additional northbound climbing lane. The shoulders are currently substandard, ranging between 2' to 4'.

Sphere of Influence

There are no existing deficiencies identified within the SOI.

Planning Area

State Route 88

Between the Modeling Area boundary (i.e. Planning Area boundary) and SR 104, SR 88 is currently operating at LOS E. This segment is a 2 lane minor arterial with shoulders narrower than 6'.

State Route 104

Between Industry Boulevard and Forest Products Road, SR 104 is currently operating at LOS D. This segment is a 2 lane minor arterial, with narrow shoulders between 2' and 4'.

Ridge Road

Between Old Ridge Road and the Modeling Area boundary (i.e. Planning Area boundary), Ridge Road is currently operating at LOS D. This segment is a 2 lane minor arterial with left turn lanes at intersections and shoulders narrower than 6'.

Intersection Deficiencies

As identified by the ACTC Regional Traffic Model, three intersections are operating at deficient service levels. These intersections are the following:

- SR 49/88 @ Argonaut Lane – LOS F
- SR 88 @ Broadway Avenue – LOS F
- SR 49 @ French Bar Road – LOS F

BUILDOUT DEFICIENCIES

In Table 9, Buildout deficiencies are also identified. These deficiencies are representative of conditions under future land use buildout and no roadway improvements. Improvements in the TCIP mitigate many of these deficiencies. The following deficiencies were identified and developed in the Planning Area:

Roadway Segment Deficiencies

City Limits

State Route 49/88
Between the City Limits and Jackson Lodge Entrance, and between the Jackson Lodge Entrance and Sutter Street, SR 49/88 is projected to operate at LOS F. This segment is currently a 2 lane minor arterial, with an additional northbound climbing lane. The shoulders are currently substandard, ranging between 2' to 4'.

State Route 49
Between French Bar Road and Broadway Avenue, SR 49 is projected to operate at LOS E. This segment is currently a 2 lane minor arterial with a continuous two-way left turn lane.

Broadway Avenue
Between Clinton Road and SR 49, Broadway Avenue is projected to operate at LOS D. This segment is currently a 2 lane minor collector with stretches of narrow travel lanes and shoulders. Some portions of this segment have no paved shoulders.

Court Street
Between Main Street and New York Ranch Road, Court Street is projected to operate at LOS D. This segment is currently a 2 lane minor collector with narrow travel lanes and shoulders. Some portions of this segment have no striped centerline and no paved shoulders.

New York Ranch Road
Between Court Street and China Graveyard Road, New York Ranch Road is projected to operate at LOS D. This segment is currently a 2 lane minor collector with narrow travel lanes and shoulders. Some portions of this segment have no paved shoulders.

North Main Street
Between SR 49/88 and China Graveyard Road, New York Ranch Road is projected to operate at LOS D. This segment is currently a 2 lane minor collector with narrow travel lanes and shoulders. Some portions of this segment have no striped centerline and no paved shoulders.

Sphere of Influence

State Route 49/88
Between Argonaut Lane and the City Limits, SR 49/88 is projected to operate at LOS F. This segment is currently a 2 lane minor arterial, with an additional northbound climbing lane. The shoulders are currently substandard, ranging between 2' to 4'.

Planning Area

State Route 88
Between the Modeling Area boundary (i.e. Planning Area boundary) and SR 104, SR 88 is projected to operate at LOS F. This segment is a 2 lane minor arterial with shoulders narrower than 6'.

Between Martell Road and SR 49, SR 88 is projected to operate at LOS E. This segment is currently a 2 lane minor arterial with left turn lanes at intersections with shoulders narrower than 6'.

State Route 104
Between Industry Boulevard and Forest Products Road, SR 104 is projected to operate at LOS D. This segment is a 2 lane minor arterial, with narrow shoulders between 2' and 4'.

Ridge Road
Between SR 49 and Sutter Hill Road, Ridge Road is projected to operate at LOS E. This segment is a 2 lane minor arterial with left turn lanes and shoulders less than 6'.

Between Sutter Hill Road and Old Ridge Road, Ridge Road is projected to operate at LOS D. This segment is a 2 lane minor arterial with shoulders less than 6'.

Between Old Ridge Road and the Modeling Area boundary (i.e. Planning Area boundary), Ridge Road is projected to operate at LOS D. This segment is a 2 lane minor arterial with left turn lanes at intersections and shoulders narrower than 6'.

Intersection Deficiencies
As identified by the ACTC Regional Traffic Model, five intersections are projected to operate at deficient service levels at buildout conditions. These intersections are the following:

- SR 49 @ Jackson Gate Road – LOS F
- SR 49/88 @ Argonaut Lane – LOS F
- SR 49/88 @ Kennedy Mine Road – LOS F
- SR 88 @ Broadway Avenue – LOS F
- SR 49 @ French Bar Road – LOS F

BUILDOUT IMPROVEMENTS
The TCIP was developed in order to mitigate future operational and safety deficiencies, as well as mitigate future multi-modal access deficiencies. The improvements in the TCIP do not mitigate all future roadway deficiencies. Table 9 presents buildout service levels under the improved buildout circulation network. The related TCIP improvements are indicated in the "Related TCIP Project column.

TABLE 9:
MITIGATED BUILDOUT DAILY ROADWAY SEGMENT LOS

Segment ID	Segment Jurisdiction	Roadway	Segment Begin	Segment End	Target LOS	Related TCIP Project	Improved Capacity Classification	Facility Type Capacity	Capacity Mod[3]	Adjusted Capacity	Buildout ADT	Calculated Buildout LOS
C - 1	City of Jackson	State Route 49/88	City Limits	Jackson Lodge Entrance	D	Jackson Grade Shoulder Widening (CIP 4)	Minor Arterial, 2-Lane with Climbing Lane	25,100	100%	25,100	26,104	**F**
C - 2	City of Jackson	State Route 49/88	Jackson Lodge Entrance	Sutter Street	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	23,129	B
C - 3	City of Jackson	State Route 49/88	Sutter Street	Hoffman Street	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	27,776	C
C - 4	City of Jackson	State Route 49/88	Hoffman Street	Main Street	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	26,130	C
C - 5	City of Jackson	State Route 49/88	Main Street	SR 88	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	28,883	C
C - 6	City of Jackson	State Route 49	SR 88	French Bar Road	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	26,118	C
C - 7	City of Jackson	State Route 49	French Bar Road	Clinton Road	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	19,391	B
C - 8	City of Jackson	State Route 49	Clinton Road	Broadway Avenue	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 2-Lane with Turning Lane	20,200	100%	20,200	19,018	**E**
C - 9	City of Jackson	State Route 49	Broadway Avenue	City Limits	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 2-Lane with Turning Lane	20,200	100%	20,200	15,444	D
C - 10	City of Jackson	State Route 88	State Route 49	Broadway Avenue	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 2-Lane with Turning Lane	20,200	100%	20,200	10,658	D
C - 11	City of Jackson	State Route 88	Broadway Avenue	Pitt Street	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 2-Lane	18,600	100%	18,600	9,329	D
C - 12	City of Jackson	State Route 88	Pitt Street	Mission Boulevard	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 2-Lane	18,600	100%	18,600	6,335	C
C - 13	City of Jackson	State Route 88	Mission Boulevard	Court Street	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 2-Lane	18,600	100%	18,600	10,525	D
C - 14	City of Jackson	State Route 88	Court Street	City Limits	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 2-Lane	18,600	100%	18,600	12,321	D
C - 15	City of Jackson	Argonaut Lane	Buena Vista Drive	Hoffman Street	C		Minor Collector, 2-Lane	7,700	84%	6,468	2,599	C
C - 16	City of Jackson	Broadway Avenue	Water Street	SR 88	C		Minor Collector, 2-Lane	7,700	84%	6,468	825	B
C - 17	City of Jackson	Broadway Avenue	SR 88	Mission Boulevard	C		Minor Collector, 2-Lane	7,700	84%	6,468	505	A
C - 18	City of Jackson	Broadway Avenue	Mission Boulevard	Clinton Road	C		Minor Collector, 2-Lane	7,700	100%	7,700	4,855	C
C - 19	City of Jackson	Broadway Avenue	Clinton Road	SR 49	C	South Broadway Frontage Improvements (CIP 8)	Minor Collector, 2-Lane	7,700	100%	7,700	3,748	C
C - 20	City of Jackson	China Graveyard Road	City Limits	New York Ranch Road	C	China Graveyard Road Rehabilitation (CIP 1)	Minor Collector, 2-Lane	7,700	100%	7,700	1,993	B
C - 21	City of Jackson	Clinton Road	SR 49	Broadway Avenue	C		Minor Collector, 2-Lane	7,700	84%	6,468	4,313	**D**
C - 22	City of Jackson	Clinton Road	City Limits	Butte Mountain Road	C		Minor Collector, 2-Lane	7,700	79%	6,083	2,121	B
C - 23	City of Jackson	Court Street	Main Street	New York Ranch Road	C	Court Street Conversion (CIP 2)	Minor Collector, 2-Lane	7,700	79%	6,083	1,745	B
C - 24	City of Jackson	Court Street	New York Ranch Road	SR 88	C		Minor Collector, 2-Lane	7,700	79%	6,083	666	B
C - 25	City of Jackson	French Bar Road	City Limits	SR 49	C		Minor Collector, 2-Lane	7,700	79%	6,083	2,352	C
C - 26	City of Jackson	Hoffman Street	Argonaut Lane	SR 49 / 88	C		Minor Collector, 2-Lane	7,700	88%	6,776	375	A
C - 27	City of Jackson	Jackson Gate Road	City Limits	China Graveyard Road	C	Jackson Gate Road Rehabilitation (CIP 3)	Minor Collector, 2-Lane	7,700	100%	7,700	2,594	B
C - 28	City of Jackson	Main Street	SR 49 / 88	Water Street	C		Minor Collector, 2-Lane	7,700	79%	6,083	2,657	C
C - 29	City of Jackson	Mission Boulevard	SR 88	Broadway Avenue	C		Major Collector, 2-Lane	11,200	100%	11,200	5,231	C
C - 30	City of Jackson	New York Ranch Road	Court Street	China Graveyard Road	C	New York Ranch Road Frontage Improvements (CIP 9)	Minor Collector, 2-Lane	7,700	100%	7,700	3,828	C
C - 31	City of Jackson	North Main Street	SR 49 / 88	China Graveyard Road	C		Minor Collector, 2-Lane	7,700	100%	7,700	4,211	C
C - 32	City of Jackson	Stoney Creek Road	City Limits	Argonaut Lane	C	Wicklow Way Extension (CIP 10)	Minor Arterial, 2-Lane	18,600	100%	18,600	6,453	C
C - 32	City of Jackson	Sutter Street	Hoffman Street	SR 49 / 88	C	Sutter Street Extension (CIP 11)	Minor Arterial, 2-Lane	18,600	100%	18,600	8,922	**D**
S - 1	Sphere of Influence	State Route 49/88	Argonaut Lane	City Limits	D	Jackson SR 49/88 Corridor Improvement Projects (CIP 13)	Minor Arterial, 2-Lane with Climbing Lane	25,100	100%	25,100	26,104	**F**
S - 2	Sphere of Influence	China Graveyard Road	Jackson Gate Road	Sphere of Influence Boundary	C		Minor Collector, 2-Lane	7,700	100%	7,700	2,481	B
S - 3	Sphere of Influence	Jackson Gate Road	Sphere of Influence Boundary	City Limits	C		Minor Collector, 2-Lane	7,700	100%	7,700	2,143	B
M - 1	Modeling Area (County)	State Route 49	SR 104	Airport Road	D		Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	29,792	C
M - 2	Modeling Area (County)	State Route 49	Airport Road	Industry Boulevard	D		Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	29,716	C
M - 3	Modeling Area (County)	State Route 49	Industry Boulevard	Jackson Gate Road	D		Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	29,882	C
M - 4	Modeling Area (County)	State Route 49	Jackson Gate Road	SR 88	D		Minor Arterial, 4-Lane with Turning Lane	34,900	100%	34,900	25,879	C
M - 5	Modeling Area (County)	State Route 49/88	SR 49 / SR 88 Junction	Argonaut Lane	D		Minor Arterial, 4-Lane with Turning Lane	34,900	99%	34,551	27,467	C
M - 6	Modeling Area (County)	State Route 49	City Limits	Calaveras County Line	D		Minor Arterial, 2-Lane	18,600	100%	18,600	14,485	**E**
M - 7	Modeling Area (County)	State Route 88	Modeling Area Boundary	SR 104	D		Minor Arterial, 2-Lane	18,600	94%	17,484	23,154	**F**
M - 8	Modeling Area (County)	State Route 88	SR 104	Wicklow Way	D		Minor Arterial, 2-Lane	18,600	94%	17,484	15,189	**E**
M - 9	Modeling Area (County)	State Route 88	Wicklow Way	Martell Road	D		Minor Arterial, 2-Lane with Turning Lane	20,200	94%	18,988	14,194	D
M - 10	Modeling Area (County)	State Route 88	Martell Road	SR 49	D		Minor Arterial, 2-Lane with Turning Lane	20,200	99%	19,998	16,118	D
M - 11	Modeling Area (County)	State Route 88	City Limits	Modeling Area Boundary	D		Minor Arterial, 2-Lane	18,600	94%	17,484	9,312	D
M - 12	Modeling Area (County)	State Route 104	SR 88	Industry Boulevard	C		Minor Arterial, 2-Lane with Turning Lane	20,200	90%	18,180	12,602	**D**
M - 13	Modeling Area (County)	State Route 104	Industry Boulevard	Forest Products Road	C		Minor Arterial, 2-Lane	18,600	90%	16,740	14,576	**E**
M - 14	Modeling Area (County)	State Route 104	Forest Products Road	SR 49	C		Minor Arterial, 2-Lane with Turning Lane	20,200	100%	20,200	10,201	C
M - 15	Modeling Area (County)	Argonaut Lane	SR 49 / 88	Buena Vista Drive	C		Minor Collector, 2-Lane	7,700	84%	6,468	2,504	C
M - 16	Modeling Area (County)	China Graveyard Road	Sphere of Influence Boundary	City Limits	C	China Graveyard Road Rehabilitation (CIP 1)	Minor Collector, 2-Lane	7,700	100%	7,700	2,481	B
M - 17	Modeling Area (County)	Clinton Road	City Limits	Modeling Area Boundary	C		Minor Collector, 2-Lane	7,700	79%	6,083	2,047	B
M - 18	Modeling Area (County)	Jackson Gate Road	SR 49	Sphere of Influence Boundary	C	Jackson Gate Road Rehabilitation (CIP 3)	Minor Collector, 2-Lane	7,700	100%	7,700	2,828	C
M - 19	Modeling Area (County)	Martell Road	SR 88	SR 49	C		Minor Collector, 2-Lane	7,700	88%	6,776	3,065	C
M - 20	Modeling Area (County)	New York Ranch Road	China Graveyard Road	Modeling Area Boundary	C		Major Collector, 2-Lane	11,200	79%	8,848	2,705	C
M - 21	Modeling Area (County)	Ridge Road	SR 49	Sutter Hill Road	C		Minor Arterial, 2-Lane with Turning Lane	20,200	94%	18,988	18,861	**E**
M - 22	Modeling Area (County)	Ridge Road	Sutter Hill Road	Old Ridge Road	C		Minor Arterial, 2-Lane	18,600	94%	17,484	13,179	**D**
M - 23	Modeling Area (County)	Ridge Road	Old Ridge Road	Modeling Area Boundary	C		Minor Arterial, 2-Lane with Turning Lane	20,200	94%	18,988	15,610	**D**
M - 24	Modeling Area (County)	Wicklow Way	SR 88	Current Terminus	C	Wicklow Way Extension (CIP 10)	Minor Arterial, 2-Lane with Turning Lane	20,200	100%	20,200	9,499	C

Note: Bolded entries denote roadways operating above acceptable LOS thresholds, Green highlight indicates TCIP-related improvement

1. Shoulder Code = Shoulder width adjustment. 1=6' or wider, 2=4' to 6', 3=2' to 4', 4=2' or less

2. Lane Code = Lane width adjustment. 1=12' or wider, 2=11' to 12', 3=10' to 11', 4=10' or less

3. Capacity Mod = Percent of total facility capacity achievable based on Shoulder Code and Lane Code

V. TRANSPORTATION CAPITAL IMPROVEMENT PROGRAM UPDATE

IDENTIFICATION OF IMPROVEMENT PROJECTS AND PRELIMINARY COST ESTIMATES

The transportation capital improvement projects for the City of Jackson were identified through the technical analysis presented in Section IV and by incorporating previously planned improvements. In preparing the preliminary cost estimates for all of the proposed TCIP projects, a unit cost sheet was prepared. The unit cost sheet provides an average unit cost per item based on reliable sources and recent projects that will give the most accurate total cost for each line item used on the estimate. The main source used for the creation of the unit cost sheet is the latest version of the Contract Cost Data provided by The State of California Department of Transportation, Caltrans. In addition, recent roadway project bid summary results were also used to refine the unit costs.

As noted in Section III, the TCIP improvement needs are based on the improvements needed to mitigate deficiencies anticipated under General Plan buildout conditions and with the background growth affecting the City's circulation system. Additionally, facilities needed to enhance pedestrian safety and complete the City's bicycle facilities identified in the City's Pedestrian & Bicycle Transportation Plan have also been incorporated into these roadway projects.

Roadway improvement cost estimates were derived based on the cross sections presented in Figure 6, which are consistent with applicable standards. These cross sections were modified based on existing conditions, including available right-of-way, and environmental and/or physical constraints. The TCIP projects identified in Figure 7 and listed in Table 10. Design exhibits and cost estimate sheets for these improvements are included in Appendix D.

DEVELOPER FUNDED IMPROVEMENTS

It is anticipated that a portion of the cross sections for new roadway improvements will be funded by property owners when parcels are developed adjacent to roadways included in the study. These frontage improvement costs are mostly associated with the roadway segment improvements where parcels adjacent to the roadway segment are entirely or largely undeveloped. If parcels are underutilized, improvements would be constructed at the time building permits are issued for land development, consistent with General Plan. As shown in the TCIP Improvements & Funding Strategy in Table 10, adjacent parcel property owners will be responsible for construction of roadway frontage improvements. Pursuant to City Development Standards, these frontage improvements include curb, gutter, and sidewalks, as well as landscaping and bicycle lanes where applicable.

Similarly, it is anticipated that in certain cases new development will be required to build entirely new roadway facilities in order to provide access to and through their project site as a condition of its approval. These new roadways are integral links within the City's overall circulation system and the associated developer-funded cost is accounted for in the TCIP Improvements & Funding Strategy in Table 10.

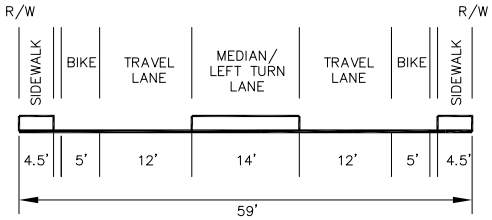
OTHER FUNDING SOURCES

Besides funding from the City's local TIM program and the developer-funded improvements discussed above, the TCIP assumes funding from multiple Local, Regional, State, and Federal sources. These include the State Transportation Improvement Program (STIP), the State Highway Operation and Protection Program (SHOPP) and Minor Program, the Amador County Regional Transportation Mitigation Fee (RTMF) program, and the Federal Transportation Alternatives (TA) Program, as well as local Gas Tax revenues. As shown in the TCIP Improvements & Funding Strategy included in Table 10 , other funding may be acquired through competitive grant programs such as the Highway Safety

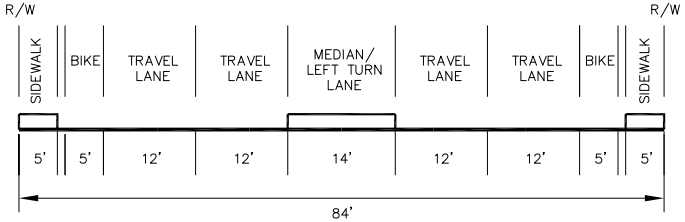
Improvement Program (HSIP), the Safe Routes to School Program (SF2S), and the Highway Bridge Program (HBP). Although funding through these three sources can not be assured, it is intended that this Finance Plan should have the flexibility needed to allow such funding to be acquired, if possible. In such an event, relevant amendments will be made to the Finance Plan, in order maintain nexus, or "proportionality", of the TIM fees imposed on new development, as identified in Section VI. Similarly, some projects that do not have an identified funding source at this time are simply identified as "Tier II", or unfunded. In the event that adequate funding for these projects is acquired from unforeseen sources, comparable amendments to the Finance Plan will be made at that time.

IMPROVEMENTS ON CALTRANS RIGHT-OF-WAY

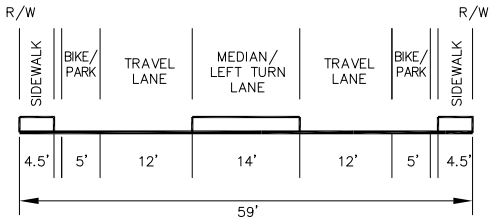
The costs for improvements identified on the State Highway System are anticipated to be shared between multiple funding sources, including local fee contributions, developer frontage costs, and regional and state funding sources. Ultimately, construction of STIP-funded improvements on the State Highway System is subject to Caltrans review, the programming of relevant funding through the ACTC, and approval of the California Transportation Commission. The Finance Plan included in this study lays the foundation for the City's future funding requests to the ACTC, CTC, and any other relevant funding authority.



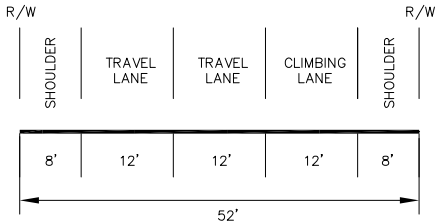
MINOR ARTERIAL, 2–LANE WITH TURNING LANE



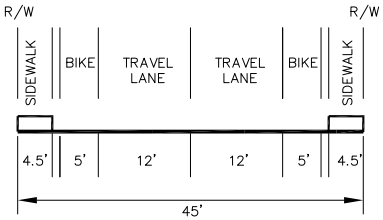
MINOR ARTERIAL, 4–LANE WITH TURNING LANE



MAJOR COLLECTOR, 2–LANE



MINOR ARTERIAL, 2–LANE WITH CLIMBING LANE



MINOR COLLECTOR/LOCAL STREET, 2–LANE

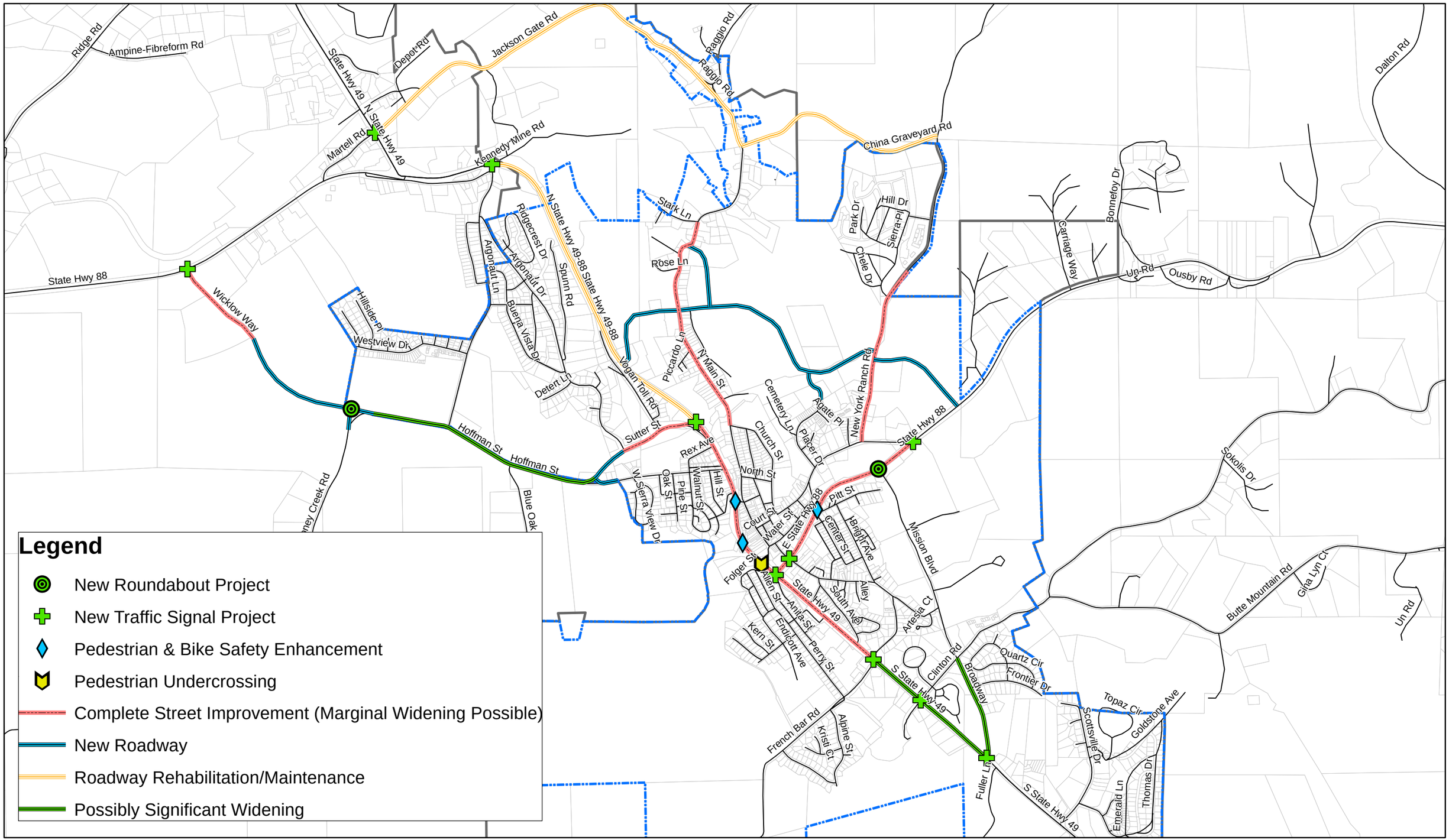
NOTE:
STANDARD CROSS–SECTIONS MAY BE MODIFIED AT THE DISCRETION OF CITY ENGINEER AND BASED ON ACTUAL CONDITIONS ON SITE

City of Jackson CIP & TIF Update

Figure 6

Standard Cross Sections

JOB NO 25–0011–01



City of Jackson CIP & TIF Update

Figure 7

TCIP Improvement Projects Map

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ENGINEERS·PLANNERS

TABLE 10:
TCIP IMPROVEMENTS & FUNDING STRATEGY

Project Category	CIP #	PROJECT NAME	PROJECT LOCATION	EXTENT	RECOMMENDED CIP IMPROVEMENT	PROJECT COST	SEGMENT COST	TOTAL COST	FINANCE PLAN												
									STIP	SHOPP	Minor	RTMF	HSIP	SR2S	HBP	TA	2%TDA/BTA	Developer	Local TIM	Gas Tax	TIER II
Local Maintenance & Operations	1	China Graveyard Rd. Rehabilitation	China Graveyard Road	Jackson Gate to New York Ranch Rd.	Rehabilitation (Resurface, Restripe, Shoulders, Drainage, Signage)	$ 431,000	$ 431,000	$ 431,000												$ 431,000	
	2	Court Street Conversion	Court Street	Main to Summit	Convert to One-Way Easbound Only, Restripe to Enhance Parking	$ 5,000	$ 5,000	$ 5,000												$ 5,000	
	3	Jackson Gate Rd Rehabilitation	Jackson Gate Road	SR 49 to China Graveyard	Rehabilitation (Resurface, Restripe, Shoulders, Drainage, Signage)	$ 807,000	$ 807,000	$ 807,000												$ 807,000	
Caltrans Upgrades to SHS	4	Jackson Grade Shoulder Widening	SR 49/88	Argonaut Lane to Vogan Toll Rd.	Widen shoulders to 8' on both sides	$ 1,135,000	$ 1,135,000	$ 1,135,000	$ 1,135,000												
To Be Submitted for Competative Grant Funding	5	North Main Pedestrian Safety / Traffic Calming	North Main	Stark Lane to Church St.	Construct new sidewalks on east side (integrate with existing sidewalks where ADA compliant), construct stop sign and pedestrian crossing with flashing beacon at Tyack Lane between Dedert Park foot bridge and Oro De Amador Park area, restripe shoulders, add safety signage. Install stop sign and crosswalk at Kennedy Lane.	$ 1,083,000	$ 1,083,000	$ 1,083,000								$ 1,083,000					
	6	Argonaut Lane Intersection	SR 49/88 - Argonaut Lane Intersection	SR 49/88 @ Argonaut	Signalize intersection:construct .10 miles of 2 & 3 lane roadway, improve .15 miles of SR49/88	$ 2,715,000	$ 2,715,000	$ 2,715,000	$ 2,715,000												
To be Built with New Development	7	SR 49 / Jackson Gate Rd. Intersection	SR 49 / Jackson Gate Rd. Intersection	SR 49 @ Jackson Gate Road	Signalize intersection, "Phase II": add sidewalks and construct additional left turn lanes	$ 1,321,000	$ 1,321,000	$ 1,321,000			$ 471,841							$ 184,000			$ 665,159
	8	South Broadway Frontage Improvements	Broadway	Clinton to SR 49	Add bike/NEV lanes and construct sidewalks on both sides of Broadway from Frontier to SR 49, Connect new sidewalk from Frontier to existing sidewalk on south side, Add Pedestrian crosswalk at Frontier, Install traffic calming roundabout midway between Frontier and SR 49 in conjunction with access for future development.	$ 1,234,000	$ 1,234,000	$ 1,234,000											$ 805,893	$ 428,107		
	9	New York Ranch Rd. Frontage Improvements	New York Ranch Road	Court St. to China Graveyard	Construct sidewalk where missing on east side from Court St. to Oro De Amador Park Drive/Gold City Parkway, Construct sidewalk where missing on west side from Oro De Amador Park Drive/Gold City Parkway to existing sidwalk on West side connected by crosswalk, add crosswalks at Court Street and Oro De Amador Park Drive/Gold City Parkway	$ 2,843,000	$ 2,843,000	$ 2,843,000										$ 2,843,000			
	10	Wicklow Way Extension	A. SR 88/Wicklow Way Intersection to Wicklow Way /	SR 88/Wicklow Way Intersection to Wicklow Way /	Construct 4-way signalized intersection aligned with proposed Sierra Pacific Drive, Construct new roadway from Wicklow Way to Stoney Creek Rd. with one travel lane in each direction with a 16' median, 8' shoulders, and landscape-seperated sidewalks, Install traffic calming roundabout in conjunction with access for future development between Wicklow Way to Stoney Creek Rd.,	$ 7,715,000	$ 7,715,000	$ 11,918,000											$ 8,938,500	$ 2,979,500		
			B. Stoney Creek Road	Wicklow Way to Argonaut	Reconstruct 1,500' of roadway, includes 12' lanes, 8' shoulders, one 5' sidewalk and a 84' ROW (existing ROW =/-48' varies	$ 1,441,000	$ 1,441,000														
			B. Hoffman Street	Argonaut to Sutter Extension	Reconstruct 2,400' of roadway, includes 12' lanes, 8' shoulders, one 5' sidewalk and a 84' ROW	$ 2,762,000	$ 2,762,000														
	11	Sutter Street Extension	A. Sutter Street/ Sutter Street	Hoffman Street to SR 49/88	Widen 900 ' of existing roadway with 8' shoulders, one 5' sidewalk, flaching beacon at Junior High School Entrance. Construct 1,200 ' of new roadway with 8' shoulders, one 5' sidewalk, and a major retaining wall, Realign Hoffman to intersect new Sutter	$ 4,563,000	$ 4,563,000	$ 6,315,000				$ 3,422,250							$ 1,140,750		
			B. SR 49/88 Intersection	SR 49/88 @ Sutter Street	Signalize intersection, includes 700' of sidewalk, traffic signal, restriping, turn lanes, relacoation of intersection and relocation of school driveway	$ 1,752,000	$ 1,752,000			$ 1,500,000		$ 252,000									
	12	"Jackson Local Collector"	A. SR 49/88 Intersection	SR 49/88 @ Suryan Drive (Vogan Toll Rd. to Jackson Lodge Entrance)	Signalize intersection, Deceleration lane / turn pocket from Vogan Toll Rd. to intersection, RT Turn North Bound Accelleration lane, Re-configure adjacent buisness access, widen shoulders to 8'	$ 1,163,000	$ 4,009,000	$ 15,158,000										$ 872,250	$ 290,750		
			A. Suryan Drive	SR 49/88 to North Main	Construct new roadway with one travel lane in each direction, a center median, bike lanes and sidewalks	$ 2,846,000												$ 2,134,500	$ 711,500		
			B. Oro De Amador Park Drive	North Main to New York Ranch	Widen Kennedy St. to align with Suryan Drive, Construct new roadway with one travel lane in each direction, a center median, landscape buffer separating sidewalks and bike lanes, integrate sidewalks with recreational trails system	$ 5,530,000	$ 7,785,000														$ 5,530,000
			B. "Hillman Way"	North Main to Oro De Amador Park Drive	Construct new roadway with one travel lane in each direction, a center median, landscape buffer separating sidewalks and bike lanes, integrate sidewalks with recreational trails system, Add pedestrian crosswalk at North Main	$ 1,372,000															$ 1,372,000
			B. Placer Drive Extension	Current Terminus to Oro De Amador Park Drive	Construct local street connection between current terminus and Oro De Amador Park Drive, conform to existing cross-section	$ 883,000															$ 883,000
			C. Gold City Parkway	New York Ranch to SR 88	Construct new roadway with one travel lane in each direction, a center landscaped median, sidewalks and bike lanes, add pedestrian crosswalk at New York Ranch Rd.	$ 2,760,000	$ 3,364,000											$ 2,760,000			
			C. SR 88 Intersection	SR 88 @ Gold City Parkway	Deceleration lane / left-turn pocket, receiving pocket / acceleration lane / turn pocket	$ 604,000												$ 604,000			
Local/Regional Improvements to Existing SHS	13	Jackson SR 49/88 Corridor Improvement Projects	A. SR 49/88	"Suryan Drive" to Main Street	Add bike lanes. Construct sidewalk on east side and on west side where missing.	$ 1,941,000	$ 1,941,000									$ 1,941,000					
			B. SR 49/88 Intersection	SR 49/88 @ Main Stre	Upgrade existing crosswalks with enhanced striping and in-pavement lighting.	$ 50,000	$ 1,854,000		$ 50,000												
			B. SR 49/88	Main to SR 88	Add bike lanes. Construct sidewalk on west side side. Reconstruct east side commercial frontage to provide parallel on-street parkting, sidewalks, bulbouts, and landscaping. Construct raised landscaped median.	$ 1,754,000			$ 1,754,000												
			B. SR 49/88 @ Mel's Diner Parking Lot		Crosswalk with in-pavement lighting, bike/ped activated beacon	$ 50,000			$ 50,000												
			C. SR 49/88 Intersection	Intersection of SR 49 & SR 88	Restripe intersection with bridge widening to reflect lane re-configuration, install interconnect cable to synchronize with SR 88/Broadway signal	$ 1,251,000	$ 1,251,000		$ 1,251,000												
			C. SR 88	SR 49 to Broadway	Widen existing bridge structure to add northbound right-turn lane on to SR 49/88, restripe to lengthen northbound left turn pocket on to Broadway, add bikelanes, add new sidewalks where missing - connecting to existing sidewalks																
			C. SR 88/Broadway In	SR 88 @ Broadway	Signalize intersection, install interconnect cable with SR 49/88 Intersection for synchronization, include pedestrian cross-walks																
			D. SR 49	SR 88 to French Bar	Add bike lanes, construct sidewalk on west side where missing, construct sidewalk on east side from Sounth Ave. Bridge to French Bar, construct raised median with channelized turn pockets, Extend second southbound lane from French Bar	$ 1,507,000	$ 2,720,000	$ 12,363,000	$ 1,507,000												
			D. SR 49 Intersection	SR 49 @ French Bar Rd	Install traffic signal per Caltrans' design (modifications may be ultimately required)	$ 889,000					$ 889,000										
			D. SR 49	French Bar to Clinton Rd.	Widen to 2 lanes on each direction, extend second southbound lane from French Bar to Clinton, add new sidewalks where missing	$ 324,000			$ 324,000												
			E. SR 49 Intersection	SR 49 @ Broadway Avenue	Realign and signalize intersection	$ 577,000	$ 577,000												$ 577,000		
			F. SR 49	Clinton to Scottsville Rd.	Add sidewalk on west side from Clinton on Broadway, sidewalk on east side from Broadway to Scottsville	$ 1,087,000	$ 1,087,000										$ 1,087,000				
			G. SR 88	Broadway to Pitt	Add bike lanes. Construct sidewalk on north side	$ 869,000	$ 2,933,000		$ 869,000												
			G. SR 88	SR 88 @ Pitt Street	crosswalk with in-pavement lighting, pedestrian/bike-activated beacon																
			G. SR 88	Pitt to Mission	Add bike lanes (except over existing bridge section). Construct sidewalk on north side where missing.																
			G. SR 88	SR 88 @ Mission Blvd	Construct Roundabout with sidewalks and crosswalk to Mission	$ 1,064,000			$ 1,064,000												
			G. SR 88	Mission to Court	Add bike lanes, construct sidewalk on north side & connect with existing sidewalks at County Administrative building on Court Street	$ 247,000			$ 247,000												
			G. SR 88	SR 88 @ Court Street	Signalize intersection.	$ 753,000			$ 753,000												
					TOTAL:	$ 57,328,000	$ 57,328,000	$ 57,328,000	$ 11,719,000	$ 1,500,000	$ 1,360,841	$ 3,674,250	$ -	$ -	$ -	$ 3,024,000	$ 1,087,000	$ 19,142,143	$ 6,127,607	$ 1,243,000	$ 8,450,159

VI. TRANSPORTATION IMPACT FEE UPDATE CALCULATION METHODOLOGY

As discussed in Section I of this report, State law requires that certain criteria be met prior to establishing, increasing, or imposing a fee as a condition of approval for a development project. Following is a detailed discussion of the "proportionality" requirements of AB 1600 and the nexus findings relative to the City of Jackson's TCIP and TIM fees.

1. IDENTIFY THE PURPOSE OF THE FEE

The purpose of the traffic fee is to fund the proportionate share of the costs needed to improve the City's traffic circulation system that is attributable to new development within the City and it's SOI.

2. IDENTIFY THE USE OF THE FEE

Fee revenue will be used to fund improvements to the existing traffic system that are required to provide adequate multi-modal traffic circulation within the City under future conditions. The transportation facilities that will be required are identified in the City's Transportation Capital Improvement Program, which is presented in this report.

3. REASONABLE RELATIONSHIP BETWEEN FEE'S USE AND THE TYPE OF DEVELOPMENT

Development of remaining vacant land in the City, which is zoned for both residential and nonresidential land uses, will place increasing demands on the City's transportation system and create or contribute to the need to improve this system. Traffic fees imposed on new residential and nonresidential land uses will be used to fund improvements to the City's circulation system and thereby address the impacts from this development. Residents and employees place demands on the City's circulation system at different rates depending on the land use type. These rates are quantified in the Institute of Transportation Engineers Trip Generation manual through the assignment of trips generated by different land use types.

4. REASONABLE RELATIONSHIP BETWEEN THE NEED FOR THE FACILITY AND THE TYPE OF DEVELOPMENT

Development within the City will create new residents and employees who will use the City's transportation system. The additional demands placed on the existing system from new residents and employees will require the City to expand and upgrade existing facilities as well as construct new facilities to handle the increased demand. These new roadways will also include new connections and "reliever routes" that will provide better local circulation, as well as enhanced through-put for regional and interregional travel passing through the City of Jackson. Traffic impact fee revenue from new development will be used to fund a portion of the construction costs associated with these improvements.

5. REASONABLE RELATIONSHIP BETWEEN THE AMOUNT OF THE FEE AND THE COST OF THE PUBLIC FACILITY OR PORTION ATTRIBUTABLE TO THE DEVELOPMENT

As stated in Section I, various findings must be made to ensure that there is a reasonable relationship or a rough proportionality between the amount of the fee and the cost of the public facility or portion attributable to new development. Although the U.S. Supreme Court specifically stated, "no precise mathematical calculation is required...," an analysis should be presented in enough detail to demonstrate that logical, thorough consideration was applied in the process of determining the fee levied on new

development. The relationship between the amount of the fee and the portion of the facility and cost attributable to the development type is based on the average daily trip rates assigned to each specific land use category, as shown in the ITE Trip Generation manual. The amount of average daily trips generated by each land use type, as assigned by the ITE, establishes the usage or demand for traffic facilities and can therefore be used to quantify a proportionate traffic fee.

There are several generally accepted methodologies used to determine impact fees for new development. For transportation facilities, the most common approach used to calculate TIM fees is the "Plan-Based" methodology, which includes a determination of the fair share contributions anticipated from partnering agencies and the improvements that will be built by new development. The following section provides a brief discussion of this methodology.

PLAN-BASED METHODOLOGY

Steps to calculate the traffic fee under the plan-based methodology are as follows:

Step 1 Identify the Planning Area and develop a projection of the anticipated development within the Planning Area, as well as background growth factors that should be accounted for.

Step 2 Determine those improvements to the existing transportation system that are needed in order to adequately meet future traffic demands.

Step 3 Estimate the total cost of these improvements, minus the costs needed to correct *existing* deficiencies.

Step 4 Subtract revenues available from existing funds, available funds, and anticipated funds in order to determine the net cost to be funded by new development.

Step 5 Determine the increment of growth with in the Planning Area that is specifically attributable to the local impact fee program.

Step 6 Assign average daily trip-generation rates to each type of development; these trip rates will be used to allocate the cost identified in Step 4.

Step 7 Multiply the increment of growth included in the impact fee program determined in Step 5 by the trip rates identified in Step 6 in order to determine the total trips that will be used in the impact fee calculation.

Step 8 Distribute the cost to each type of development based on its trips-generation rate and average trip length in miles.

Step 9 Divide the total costs of TCIP-funded improvements by total new trip miles generated at buildout to determine the fee per unit for each land use category

The traffic fees calculated in this 2012 TCIP Update will fund a portion of the costs associated with the planned transportation facilities. Other funding sources include revenue required to be paid or dedicated by property owners or from local, Regional, State, and Federal sources.

VII. TRAFFIC IMPACT MITIGATION FEE UPDATE

FACILITIES & COSTS - 2012 TCIP

The total cost of transportation improvements to support buildout of the City's General Plan is approximately $57 million. Approximately $32 million of these improvements will seek funding from outside the local fee program and developer exactions. As required by existing City policy, approximately $19 million will be funded by property owners and developers of parcels adjacent and surrounding these improvements facilities contained in the program for frontage improvements. The balance, approximately $6 million, will be funded through the TCIP fees applied to future development.

CURRENT ROADWAY DEFICIENCIES

None of the facilities with existing deficiencies will receive funding through the proposed TIM program, through either the local fee program or developer exactions.

CITY (TCIP) TRAFFIC FEE CALCULATION

The City's TCIP fee was calculated using the methodology described in Chapter VI of this report. The fee was developed based on the cost estimates for the projects identified in Chapter V of this report, and are summarized in Table 11.

TABLE 11:
SUMMARY OF COST ALLOCATED TO FEE PROGRAM

Case	Improvements Costs	Developer-Funded Costs	Outside Funding Costs	Tier II Cost	Total Fee Cost
Buildout Conditions	$ 57,328,000	$ 19,142,143	$ 23,608,091	$ 8,450,159	$ 6,127,607
				Net Fee Program Allocation:	*$ 6,127,607*

The buildout scenario includes, within the City Limits and SOI, 969 new dwelling units, 205,000 new non-residential square feet, and 264 new students. Table 12 presents the daily trip generation estimates based on buildout of these General Plan land uses, and the estimated number of additional trip miles generated through buildout of these uses. Buildout uses include the SOI buildout land uses (consisting of 20 SFDU).

TABLE 12:
CALCULATION OF NEW GENERAL PLAN TRIP MILES

Land Use		Buildout Growth	ITE Land Use Category	Daily Trip Rage	Trips Generated	Average Distance	Trip-end to Trip	Additional Trip-Miles
Residential								
Single-Family Dwelling Units	DU	513	210	9.52	4,884	7.9	0.5	19,291
Multi-Family Dwelling Units	DU	456	220	6.65	3,032	7.9	0.5	11,978
Total		*969*			*7,916*			
Non-Residential								
Shopping Center	KSF	6	820	42.70	256	4.3	0.5	551
General Commercial	KSF	98	826	44.32	4,343	4.3	0.5	9,338
Office	KSF	33	710	11.03	364	8.8	0.5	1,602
Medical Office	KSF	68	720	36.13	2,457	8.8	0.5	10,810
Total		*205*			*7,420*			
School Enrollment								
Elementary/Middle School	ENR	264	520	1.29	341	4.3	0.5	732
				Total New Daily Trips:	*15,677*	***Total New Trip Miles:***		*54,302*
Note: DU = Dwelling Units, KSF = 1,000 Square Feet, ENR = Students, ITE 9th Edition Rates								

As presented in Table 12, the buildout of the General Plan would result in 15,925 new citywide daily trips and 55,279 new citywide trip miles. Table 13 presents the calculation of the cost per equivalent dwelling unit (EDU) that will be used to determine the impact fee per unit for individual land uses.

TABLE 13:
COST PER EDU CALCULATION

Description	Amount
Total TCIP Improvements Cost	$6,127,607
GP Buildout New Trip Miles	54,302
Cost per Trip Mile	$112.84

As presented in Table 13, based on total cost of citywide improvements and the total added daily trip miles upon General Plan buildout, the cost per new trip mile to fund the fee program has been calculated to be $112.84. Table 14 presents the calculation of resulting impact fees per individual land use. As presented in Table 14, the cost per SFDU is $4,243.

TABLE 14:
2012 CITY TCIP FEE PROGRAM

Land Use Category[1,2]	Unit	Daily Trip Ends[3]	Average Distance	Trip-end to Trip	Additional Trip-Miles	Cost per Trip Mile	Impact Fee per Unit or KSF
RESIDENTIAL LAND USES							
Single-Family Dwelling Unit	per Unit	9.52	7.9	0.5	37.60	$112.84	$4,243
Multi-Family Dwelling Unit	per Unit	6.65	7.9	0.5	26.30	$112.84	$2,968
Assisted Living	per Bed	2.66	7.9	0.5	10.50	$112.84	$1,185
Congregate Care Facility	per Unit	2.02	7.9	0.5	8.00	$112.84	$903
Mobile Home Dwelling	per Unit	4.99	7.9	0.5	19.70	$112.84	$2,223
Senior Adult House Attached	per Unit	3.44	7.9	0.5	13.60	$112.84	$1,535
RESORT/TOURIST							
Hotel	per Room	8.17	7.6	0.5	31.00	$112.84	$3,498
Motel	per Room	5.63	7.6	0.5	21.40	$112.84	$2,415
INDUSTRIAL							
General Light Industrial	per KSF	6.97	9.0	0.5	31.40	$112.84	$3,543
General Heavy Industrial	per KSF	1.50	9.0	0.5	6.80	$112.84	$767
Industrial Park	per KSF	6.83	9.0	0.5	30.70	$112.84	$3,464
Manufacturing	per KSF	3.82	9.0	0.5	17.20	$112.84	$1,941
Mini-warehouse	per KSF	2.50	9.0	0.5	11.30	$112.84	$1,275
Warehouse	per KSF	3.56	9.0	0.5	16.00	$112.84	$1,805
INSTITUTIONAL							
Cemetary	per Acre	4.73	4.3	0.5	10.20	$112.84	$1,151
Church	per KSF	9.11	4.3	0.5	19.60	$112.84	$2,212
Daycare Center	per KSF	74.06	4.3	0.5	159.20	$112.84	$17,965
Elementary School	per Student	1.29	4.3	0.5	2.80	$112.84	$316
High School	per KSF	1.71	4.3	0.5	3.70	$112.84	$418
Hospital	per KSF	13.22	4.3	0.5	28.40	$112.84	$3,205
OFFICE							
Business Park	per KSF	12.44	8.8	0.5	54.70	$112.84	$6,173
General Office	per KSF	11.03	8.8	0.5	48.50	$112.84	$5,473
Government Office Complex	per KSF	27.92	8.8	0.5	122.80	$112.84	$13,857
Medical/Dental Office	per KSF	36.13	8.8	0.5	159.00	$112.84	$17,942
Office Park	per KSF	11.42	8.8	0.5	50.20	$112.84	$5,665
R&D Center	per KSF	8.11	8.8	0.5	35.70	$112.84	$4,029
COMMERCIAL							
Automobile Sales	per KSF	32.30	4.3	0.5	69.40	$112.84	$7,831
Building Materials/Lumber	per KSF	45.16	4.3	0.5	97.10	$112.84	$10,957
Convenience Market	per KSF	737.99	4.3	0.5	1586.70	$112.84	$179,049
Department Store	per KSF	22.88	4.3	0.5	49.20	$112.84	$5,552
Drive-In Bank	per KSF	148.15	4.3	0.5	318.50	$112.84	$35,941
Drugstore	per KSF	90.06	4.3	0.5	193.60	$112.84	$21,847
Fast Food w/ Drive-Thru	per KSF	496.12	4.3	0.5	1066.70	$112.84	$120,370
Fast Food w/o Drive-Thru	per KSF	716.00	4.3	0.5	1539.40	$112.84	$173,712
Free Standing Discount Store	per KSF	57.24	4.3	0.5	123.10	$112.84	$13,891
Furniture Store	per KSF	5.06	4.3	0.5	10.90	$112.84	$1,230
Gasoline/Service Station	per VFP	168.56	4.3	0.5	362.40	$112.84	$40,895
Health Club	per KSF	32.93	4.3	0.5	70.80	$112.84	$7,989
High Turnover/Sit Down Restaurant	per KSF	127.15	4.3	0.5	273.40	$112.84	$30,851
Movie Theater	per Screen	292.50	4.3	0.5	628.90	$112.84	$70,967
Nursery/Garden Center	per KSF	68.10	4.3	0.5	146.40	$112.84	$16,520
Quality Restaurant	per KSF	89.95	4.3	0.5	193.40	$112.84	$21,824
Shopping Center	per KSF	42.70	4.3	0.5	91.80	$112.84	$10,359
Specialty Retail Center	per KSF	44.32	4.3	0.5	95.30	$112.84	$10,754
Supermarket	per KSF	102.24	4.3	0.5	219.80	$112.84	$24,803

Notes:
1) Newly proposed land uses that do not conform to the land uses listed in Table 28 will be evaluated independently to establish an appropriate impact fee for the proposed land use
2) The City's Traffic Engineer will rely on data from the ITE Trip Generation Manual, or other valid traffic engineering data as may be available
3)Trip generation rates based on ITE Trip Generation Manual, 9th Edition

As presented in Table 14, the resulting fee cost per EDU is $4,243 compared to the existing 2002 traffic fee of $1,318 per EDU. Although the fee has increased significantly since the previous update, the fee amount per EDU still compares favorably to other nearby local fees, and statewide fee averages.

Table 15 presents a comparison of other nearby fees, and average national and statewide fees obtained from *National Impact Fee Survey: 2011* and *National Impact Fee Survey: 2008*, both prepared by Duncan Associates. The 2011 survey includes 274 jurisdictions, including 37 in California. The 2008 survey includes 280 jurisdictions, including 38 in California.

TABLE 15:
TRAFFIC FEE PROGRAM COMPARISONS

Jurisdiction	Fee Amount
United States Average 2008	$3,077
United States Average 2011	$3,228
California Average 2008	$5,267
California Average 2011	$6,486
Sutter Creek	$3,161 to $4,923*
Ione	$3,058
Angels Camp	$4,244
Plymouth	$4,600
Proposed City of Jackson:	***$4,243***
**Special parking mitigations may apply*	

As presented in Table 15, the proposed TCIP fee for the City of Jackson is generally lower on an EDU basis than recent statewide fee averages for similar programs, and comparable to neighboring agency fees. The proposed fees are slightly higher than those currently in Ione and Sutter Creek (without parking mitigation fee), but essential equal to those in Angels Camp, and slightly lower than those in Plymouth, and Sutter Creek (with parking mitigation fee).

VIII. TRANSPORTATION IMPACT FEE IMPLEMENTATION AND ADMINISTRATION

FEE IMPLEMENTATION

According to California Government Code, prior to levying a new fee or increasing an existing fee, an agency must hold at least one open and public meeting. At least 10 days prior to this meeting, the agency must make data on infrastructure costs and funding sources available to the public. Notice of the time and place of the meeting, and a general explanation of the matter, are to be published in accordance with Section 6062a of the Government Code, which states that publication of notice shall occur, for 10 days in a newspaper regularly published once a week or more. The City may then adopt the new fees at the second reading.

The updated traffic fees should be adopted through a City ordinance or resolution. Any future increases to the fees resulting from annual inflation or minor adjustments could be adopted annually by resolution. Once the updated traffic fees are adopted by the City Council, they shall become effective no sooner than sixty days later, unless an urgency measure is adopted. An urgency measure is an interim authorization that waives the sixty-day waiting period and allows the new fees to be collected immediately if a finding of a current and immediate threat to the public health, welfare, and safety can be demonstrated. The interim authorization requires a four-fifths vote of the City council and stays in effect for thirty days; no more than two extensions of the authorization can be granted.

ANNUAL ADMINISTRATIVE DUTIES

The Government Code requires the City to report every year and every fifth year certain financial information regarding the fees. The City must make available within 180 days after the last day of each fiscal year the following information for the prior fiscal year:

(a) A brief description of the type of fee in the account or fund
(b) The amount of the fee
(c) The beginning and ending balance in the account or fund
(d) The amount of the fee collected and the interest earned
(e) An identification of each public improvement for which fees were expended and the amount of expenditures
(f) An identification of an approximate date by which time construction on the improvement will commence if it is determined that sufficient funds exist to complete the project
(g) A description of each inter-fund transfer or loan made from the account and when it will be repaid
(h) Identification of any refunds made once it is determined that sufficient monies have been collected to fund all fee-related projects

The City must make this information available for public review and must also present it at the next regularly scheduled public meeting not less than 15 days after this information is made available to the public.

For the fifth fiscal year following the first deposit into the account or fund, and every five years thereafter, the City must make the following findings with respect to any remaining funds in the fee account, regardless of whether those funds are committed or uncommitted:

(1) Identify the purpose to which the fee is to be put
(2) Demonstrate a reasonable relationship between the fee and the purpose for which it is

charged

(3) Identify all sources and amounts of funding anticipated to complete financing any incomplete improvements

(4) Designate the approximate dates on which funding in item (3) above is expected to be deposited into the fee account

As with the annual disclosure, the five-year report must be made public within 180 days after the end of the City's fiscal year and must be reviewed at the next regularly scheduled public meeting. These findings must be made by the City otherwise the law requires that the City refund the money to the then current record owners of the development projects on a prorated basis.

INTER-FUND TRANSFERS

It is recommended that the City adopt a policy that will allow for the transfer of fee revenues between fee funds. This will provide greater funding flexibility and facilitate the timely phasing of improvements by allowing fees to be combined and used as necessary. All inter-fund transfers must be repaid with interest.

INFLATION ADJUSTMENTS

All fees calculated in this 2012 TCIP Report are reflected in current-year dollars. These fees should be adjusted in future years to reflect inflation, revised facility standards, receipt of additional funding from alternative sources (i.e., State or Federal grants), revised replacement costs, or changes in demographics or the City's land use plan. In addition to such periodic adjustments, the fees should be inflated each year by a predetermined index, such as the Engineering News Record 20-City Construction Cost Index.

FEE CREDITS OR REIMBURSEMENTS

The City will provide fee credits or possibly reimbursements to developers who construct facilities that are shown in the 2012 TCIP as being fee-funded, but not for developer-funded improvements or those mitigations specifically required of new development by CEQA. Fee credits or reimbursements may be provided up to the actual cost paid by the developer. Credits or reimbursements may be repaid based on the priority of the capital improvements, as determined by the City. In some cases, repayment for constructed facilities that have low priority may be postponed. Fee credits and reimbursements will be determined by the City on a case-by-case basis, based on any existing obligations against the funds available.

PROJECT COSTS

Actual costs for a particular project may be more or less than the fee portion calculated for that project. It is expected that on average, the amount collected will be appropriate for financing the planned projects. Fee adjustments will need to be made during periodic updates to the 2012 TCIP for differences based on actual costs incurred on project work completed and revised cost estimates for remaining projects.

APPENDIX

APPENDIX A
Working Paper #1

City of Jackson
Circulation Improvement Program and Transportation Impact Fee Update

WORKING PAPER #1
Background Transportation & Land Use Report

Prepared for:

Amador County Transportation Commission & the City of Jackson

Prepared by:

omni · means
ENGINEERS · PLANNERS

CITY OF JACKSON CIRCULATION IMPROVEMENT PROGRAM AND TRANSPORTATION IMPACT FEE UPDATE

WORKING PAPER #1
BACKGROUND TRANSPORTATION & LAND USE REPORT

PREPARED FOR:
AMADOR COUNTY TRANSPORTATION COMMISSION
11400 AMERICAN LEGION DRIVE
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INTRODUCTION

In February 2012, Amador County Transportation Commission (ACTC) contracted OMNI-MEANS to update the City of Jackson (City) Circulation Improvement Program and Transportation Impact Fee. A major component of this task is to modify and refine the regional travel demand model (TDM) in order to more accurately assess the City's transportation improvement needs. In 2011, ACTC updated the regional Amador County TDM (Regional TDM) in order to assess current and future regional transportation improvement needs. However, this model was not developed to specifically assess local needs. For this reason, ACTC has contracted OMNI-MEANS to develop a City of Jackson TDM (City TDM) that is tuned specifically to better represent travel demand and traffic volumes in the City. With the more refined travel demand model, the need for both local and regional transportation improvements will be determined and fair share costs and associated transportation impact fees will be calculated and allocated to new development, consistent with the nexus requirements of Government Code 66000.

WORKING PAPER #1

This working paper presents the background setting for the project including the existing transportation system, existing roadway facility status, traffic volumes, and service levels, existing transit services, and existing land use data. This working paper also presents a brief overview of OMNI-MEANS's efforts to refine the existing Regional TDM traffic analysis zone structure in order to provide a City TDM that is more responsive to local-level model refinements. Lastly, this working paper presents a summary of model land use inputs for not only existing conditions, but also for future year conditions to be used in the *Year 2035 Scenario* and *Year 2050 Scenario*.

PROJECT SETTING

The City of Jackson is located in Amador County, California, situated at the junction of State Route 88 (SR 88) and State Route 49 (SR 49) in the Sierra Nevada foothills. The City is the County seat and second largest City in the County, with a population of 4,651 as of the 2010 U.S. Census. SR 88 and SR 49 are the major regional routes in and out of the City. The Community of San Andreas, the Calaveras County seat, is about 10 miles south on SR 49. About 7 miles north of Jackson, SR 49 dead ends into State Route 16, which provides access to Rancho Murrieta and the Sacramento region further west. SR 88, west of the City, passes by Ione and Camanche Reservoir before ending in the City of Stockton about 35 miles southwest of the City. Figure 1 presents the City of Jackson City Limits, Sphere of Influence (SOI), and project study area.

EXISTING TRANSPORTATION SYSTEM

Interregional travel to, from, and through the City is served primary by the bisecting SR 49 and SR 88 highways along with SR 104. For local travel, a hierarchy of arterial, collector, and local streets serve the City and vicinity in and around the study area. The following is a summary of the roadways that provide primary circulation within the City and modeling area:

> ***State Route 49*** is a north–south highway that passes through many historic mining communities. SR 49 begins at Oakhurst, Madera County, in the Sierra Nevada Mountains, where it diverges from State Route 41. It continues in a generally northwest direction, weaving through the communities of Goldside and Ahwahnee, before crossing into Mariposa County. State Route 49 then continues northward through the counties of Tuolumne, Calaveras, Amador, El Dorado, Placer, Nevada, Yuba, Sierra, and Plumas, where it reaches its northern terminus at State Route 70, in Vinton. Within the study area, SR 49 is a four-lane arterial from Valley View Way in the north to French Bar Road in the south. North of Valley View Way and south of French Bar Road, SR 49 is a two-lane arterial. SR 49 runs concurrently with SR 88 for about 2 miles through Jackson.

State Route 88 is an east-west highway that begins in Stockton, crossing the Sierra Nevada at Carson Pass, and ending at the border with Nevada, whereupon it becomes Nevada State Route 88. SR 88 is the only two-lane highway that stays open through the winter, making it the third major interstate route through the mountains along with Interstate 80 and U.S. Route 50. Within the study area, SR 88 is two-lane arterial except where it runs concurrently with SR 49 for about 2 miles from Martell through Jackson.

State Route 104 is an east-west highway that connects State Route 99 (SR 99) near Galt to SR 49 in the City of Sutter Creek via the city of Ione. The route begins in the City of Galt in Sacramento County at SR 99. It then heads eastward, forming the northern boundary of the City of Galt. The route turns northeast, passing near the community of Clay, and enters Amador County, where it begins a short overlap with SR 124 in Ione. Past Ione, SR 104 has another short overlap with SR 88, where it goes through the community of Sunnybrook. Its eastern terminus is at SR 49 in Sutter Creek. Within the study area, SR 104 is a two-lane major collector. Ridge Road, east of the route's terminus at SR 49, is the continuation of SR 104, heading northwest from Sutter Creek into Pine Grove and SR 88.

Argonaut Lane is a two-lane minor collector that connects Stony Creek Road to SR 49/88 on the west side of the highway. It provides access to many residences and to the Argonaut High School parking lots.

Broadway Avenue is a two-lane minor collector that connects SR 88 to Clinton Road and SR 49 on the east side of the highway. Broadway Avenue provides access to many residences and also to Sutter Amador Hospital via Mission Boulevard from the south.

Butte Mountain Road is a two-lane minor collector that begins at Clinton Road and traverses east, providing access to rural residences east of Jackson.

China Graveyard Road is a two-lane minor collector that connects Jackson Gate Road to New York Rand Road. It provides an alternate bypass route between these two roads without going into downtown Jackson.

Clinton Road is a long two-lane minor collector that begins just west of SR 49 in the City that meanders about 8 miles in a generally northeast direction before ending in the community of Clinton. Clinton Road is an important ingress/egress point for a large segment of rural residences to and from the highway.

Court Street is a two-lane minor collector that begins at Main Street and ends east where it connects to SR 88. Court Street runs parallel to SR 88 east of SR 49 and provides access to the downtown area, residences, and many public facility buildings.

French Bar Road is a two-lane minor collector that begins at Broadway Avenue, providing access to residences northeast of the highway, before forming an offset intersection at SR 49. From SR 49, French Bar Road extends southwesterly providing access to commercial uses and residences before exiting the study area.

Hoffman Street/Stony Creek Road is a two-lane major collector in the study area that extends from SR 49 in the center of Jackson and extends in southwesterly direction from SR 49 to Buena Vista Road near the Calaveras County line. In the study area, Hoffman Street provides access to Jackson Junior High School, Argonaut High School (via

Argonaut Lane), and the Amador County Superior Court. Stony Creek Road reverts to a two-lane minor collector outside the study area.

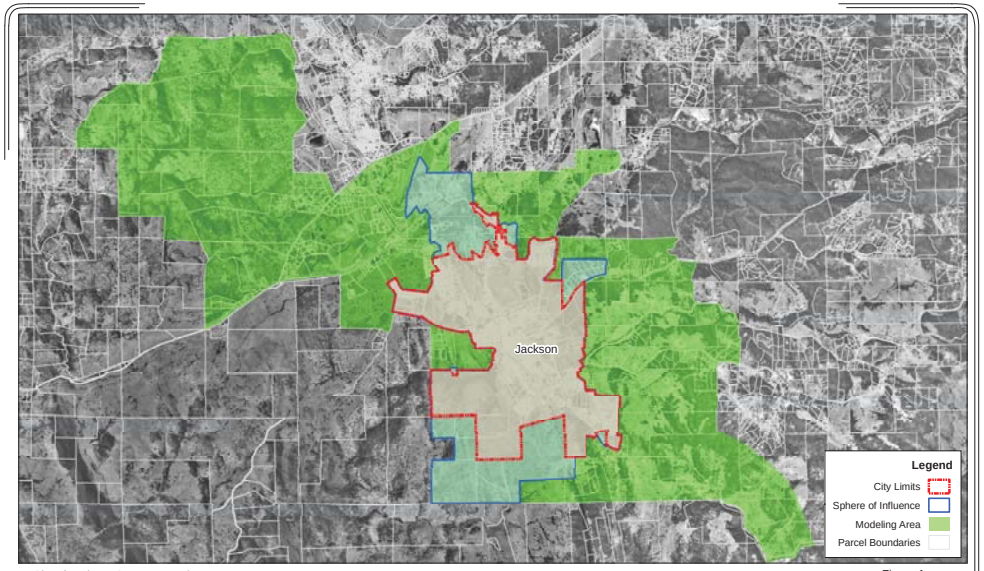
Jackson Gate Road is a two-lane major collector that loops around from SR 49 in the Martell area to the southeast where it connects with Main Street in the City. Jackson Gate Road provides access from the Martell area to the northeast Jackson area, serving some commercial uses and historic sites as well as residences. Jackson Gate Road also provides a small connection between SR 49 and SR 88, bypassing the major intersection at the northern end of the study area.

Main Street is a historic two-lane major collector that extends from the downtown Jackson area to the north, where it transitions into Jackson Gate Road. Main Street serves a variety of commercial, office, and residential uses between the downtown area and Jackson Gate Road.

Mission Boulevard is a two-lane major collector that extends from Broadway Avenue to SR 88, providing access to the Sutter Amador Hospital. In the future Mission Boulevard will also provide access to currently undeveloped offices, medical, commercial, and residential uses planned in the area.

New York Ranch Road is a two-lane major collector that begins at Court Street in the City and extends northerly outside the study area where it terminates at Ridge Road. New York Ranch Road provides access to the Jackson Rancheria Casino and many residences and offices within the study area.

Ridge Road is a two-lane arterial continuation of SR 104 where it terminates at SR 49. Ridge Road begins at SR 49, continuing northeast past the study area serving some residencies, intersecting New York Ranch Road, and terminating in Pine Grove where it intersects SR 88.



City of Jackson CIP & TIF Update

Figure 1

Project Study Area & Boundaries

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EXISTING REPORTS

OMNI-MEANS reviewed recent and historic completed reports within the study area to acquire a full understanding of the City's transportation system and planning history. The following documents and reports were reviewed in preparation for this project:

Amador County Model Development Report

The Amador County TDM was prepared by Fehr & Peers for ACTC in 2011 and represents the most current travel demand forecasting for the study area. The model development report provides the technical documentation of the Regional TDM creation process including inputs such as land use and transportation network as well as outputs, such as existing conditions calibration and future year forecasts. The 2011 TDM was an update to a 2005 TDM also prepared by Fehr & Peers that was used to develop the ACTC Regional Transportation Plan, General Plan Updates for the County and several Cities, updates to traffic impact fee programs, and master plans for various portions of the County. The report provides existing traffic counts used in the calibration process and future forecasts on many regional roadways, including facilities in the City that will be used in the creation of the City TDM to ensure consistency.

City of Jackson Circulation Element

The City of Jackson Circulation Element was prepared in 2006 and includes goals, policies, and implementation measures, an inventory of existing transportation facilities in the City, and a future needs assessment, followed lastly by a preferred circulation plan. Seven (7) overall goals from the Circulation Element are listed below:

1. To enhance accessibility and mobility within the Central business District (CBD) in order to promote its economic vitality and historic value.
2. To promote effective transport of goods and safe and efficient movement of all segments of the population.
3. To maintain a balanced freight transportation system to provide for the safe and efficient movement of goods.
4. To preserve and enhance the character of scenic and historic routes through the community.
5. Provide effective and efficient public transportation and reduce automobile dependency.
6. To provide a safe, comprehensive and integrated circulation system for non-motorized transportation.
7. To protect Westover Field as a valuable asset to the region.

The City's Circulation Element identified no roadways operating below LOS D at the time of the report's preparation. However, the following intersection deficiencies were identified:

The following stop controlled intersections have extensive delays on the side street approaches during peak hours:

- SR 88/Broadway Avenue – LOS F on the minor street approach (Broadway) during the a.m. and p.m. peak hours.
- SR 49/French Bar Road – LOS F on the minor street approach (French Bar Raod) during the p.m. peak hour.

The following key intersections and roadway segments have operational and safety problems:

- SR 49/Sutter Street – skewed angle of intersection, limited sight distance, heavy student pedestrian use and conflicting movements with other driveways along the east side of SR 49

- The Historic Broadway Corridor – between Clinton Road and SR 88 is limited by very narrow lanes and limited turning radii at several intersections.
- SR 49/Hoffman Street – limited by the steep grade and narrow width of Hoffman Street as it approaches SR 49.

The Circulation Element contains improvements for the City planned to support the buildout of the City of Jackson Land Use Element. Some of these improvements are included in the *2012 Regional Transportation Plan* as Tier 1, Tier 2, or Tier 3 improvements. The improvements included in the Circulation Element are as follows:

Roadways:

- Widen SR 49/88 from Main Street north to the SR 49/88 junction in Martell to six lanes or because this alternative may be infeasible, accept LOS F along this segment which provides traffic calming or slower speeds. Support Caltrans shoulder widening to improve safety.
- Widen SR 49/88 from Main Street south to the SR 49/88 intersection in Jackson to six lanes or because this alternative may be infeasible, accept LOS D, E, and F along this segment. Support sidewalks, landscaping, and other "context sensitive solutions".
- Widen SR 49 from the SR 49/88 intersection in Jackson south to French Bar Road to six lanes or accept LOS D, E, or F at this location.
- Widening of the roadway segment of SR 49 from French Bar Road to Clinton Road to four lanes.
- Widening of the roadway segment of SR 49 from Clinton Road to Broadway to four lanes.
- Widening of the roadway segment of SR 49 south of Broadway to four lanes.
- Widening the roadway segment of SR 88 from SR 49/SR 88 junction in Jackson to Court Street to four lanes where feasible and/or accept LOS D, E, and F conditions.
- Complete Mission Boulevard extension. (Constructed)
- Construct the Sutter Street extension to connect upper Hoffman Street with Sutter Street to SR 49/88.

Intersections:

- Install traffic control signal at the intersection of SR 49/88 and Sutter Street.
- Construction of a second southbound left turn lane at the intersection of SR 49/SR 88 (Jackson).
- Install traffic control signal at the intersection of SR 88/Broadway if feasible.
- Install traffic control signal at the intersection of SR 49/French Bar Road.
- A second southbound left turn lane shall be constructed at the intersection of SR 49/Clinton Road.

2012 Regional Transportation Plan

The 2012 Regional Transportation Plan (RTP) Circulation Improvement Program is broken up into three tiers of improvements. Projects were identified using the 2011 Regional TDM. Tier 1 improvements are projects with reasonably assured full funding from local, regional, state, and federal sources. Tier 2A improvements are projects with partial funding committed but with full funding not assured. Lastly, Tier 2B improvements are projects whose implementation and/or full funding are not reasonably assured. Table 1 presents the projects listed in the RTP that fall within the project study area.

TABLE 1:
2012 REGIONAL TRANSPORTATION PLAN JACKSON-AREA PROJECTS

Location	Improvement Description	Tier
SR 88/Court St.	Intersection Improvements	I
South Ave. Bridge	Bridge Replacement	I
French Bar Bridge	Bridge Replacement	I
Pitt St. Bridge	Bridge Replacement	I
Sutter Street, west of SR 49	Construct Extention from Upper Hoffman	IIA
SR 49, south of SR 88 (North Junction)	Add bikelanes; sidewalks; ped.Xing @ French Bar	IIB
New York Ranch Road, east of China Graveyard Road	Add bikelanes; sidewalks; ped xing@ French Bar	IIB
Main Street, east of SR 49	Install curb ramps; widen sidewalks; bike racks	IIB
SR49/88-Argonaut Avenue Intersection	Signalize Intersection	IIB
SR49 -French Bar to Clinton	Add Lane; Widen Shoulder	IIB
SR49/French Bar Intersection	Realign Intx.;signalize, add NB receiving pocket	IIB
Stony Creek Extension	Argonaut Lane to Wicklow Way	IIB
SR88/49 Intersection	Pedestrian Improvements	IIB
SR88/Broadway Intersection	Pedestrian Crosswalks; Signage	IIB
Main Street - SR49/88 to Water St.	Install curb ramps; widen sidewalks; bike racks	IIB
SR49 - French Bar to Broadway	Bikelanes; sidewalks; ped xing; lighting	IIB
Clinton Road - Broadway to Jackson City Limits	Bikelanes; sidewalks; crosswalk; curb ramps	IIB
SR 88 at Pitt Street	Crosswalk; striping; flashing beacon	IIB
Argonaut Dr - SR49/88 to Sutter St.	Curb ramps; sidewalks	IIB
Court St. - South Main St. to SR88	Curb ramps; sidewalks	IIB
SR49/88 - Vogan Toll Rd. to Detert Park	Sidewalks; crosswalks w/ ped refuge	IIB
SR88 - SR49 to Jackson City Limits	Safety/Traffic Calming signage	IIB
SR88 at Mission Blvd.	Crosswalk w/ flashing beacon	IIB

TRAFFIC COUNT DATA

Recent traffic count data was assimilated from multiple available sources, including the 2011 Regional TDM model development report. Traffic count data was also acquired from Kittelson & Associates, who is currently updating the ACTC RTP. Table 2 presents the traffic data collected from these sources.

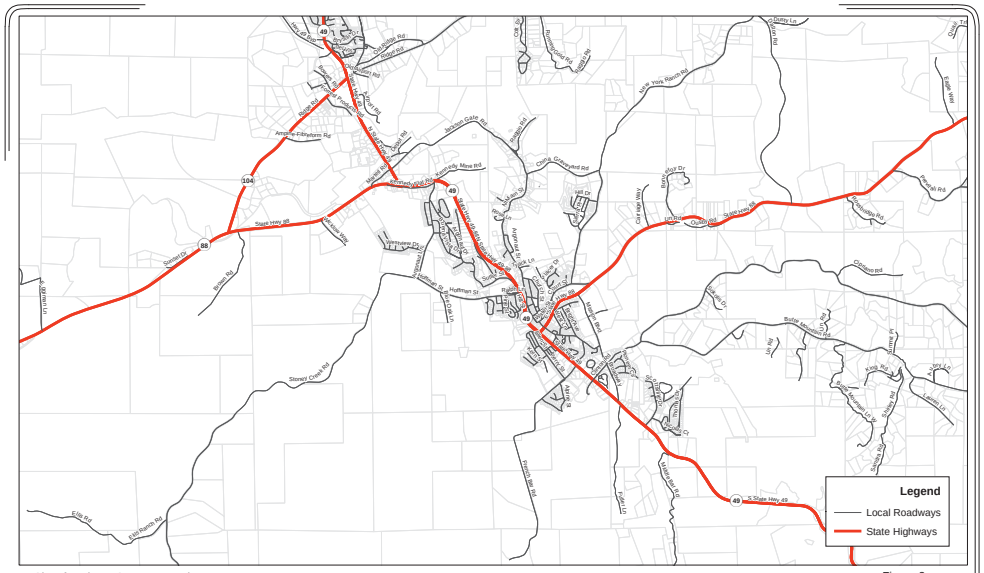
TABLE 2:
EXISTING DAILY TRAFFIC COUNTS

Roadway	Existing ADT
SR 49, north of Calaveras/Amador County Line	7100
SR 49, north of Calaveras/Amador County Line	7200
SR 49, south of Scottsville Boulevard	8100
SR 49, south of Broadway	8300
SR 49, south of Clinton Road	14200
SR 49, north of French Bar Road	14700
SR 49, north of South Avenue	18900
SR 49, south of SR 88 (South Junction)	20900
SR 49, north of SR 88 (South Junction)	20960
SR 49, north of Main Street	18400
SR 49, south of Argonaut Lane	20700
SR 49, north of Argonaut Lane	21200
SR 49, south of SR 88 (North Junction)	21000

Roadway	Existing ADT
SR 49, north of Jackson Gate Road	20000
SR 49, north of SR 104	19400
SR 49, north of SR 104	16800
SR 49, north of Old Highway 49	7000
SR 88, west of SR 104	15200
SR 88, west of SR 104	14460
SR 88, east of SR 104	9040
SR 88, east of Wicklow Way	11740
SR 88, west of SR 49	16500
SR 88, west of Court Street	9100
SR 88, east of Court Street	11000
SR 88, west of Dalton Road	8300
SR 104, north of SR 88	7900
SR 104, west of Forrest Products Road	8400
SR 104, west of SR 49	6200
Ridge Road, east of Old Ridge Road	14275
Ridge Road, east of Running Gold Road	13600
Jackson Gate Road, north of China Graveryard Road	3200
Jackson Gate Road, at City Limits	2641
New York Ranch Road, east of China Graveyard Road	1680
New York Ranch Road, east of Court Street	4140
Hoffman Street, west of SR 49	2160
Main Street, east of SR 49	2330
Court Street, west of New York Ranch Road	3450
Clinton Road, east of Butte Mountain Road	1400
Butte Mountain Road, east of Clinton Road	751
Eureka Road, west of Old Ridge Road	2959
Old Ridge Road, east of Eureka Road	3002
Stoney Creek Road, west of Argonaut Lane	350
Old Highway 49, east of SR 49	7400
Sutter-Ione Road, west of SR 49	310

BASE MAPPING

Base mapping for the project study area was obtained from a variety of sources including ACTC, Amador County, United States Census Bureau, United State Geological Survey (USGS), and Google Earth. Satellite and aerial imagery was obtained from USGS 7.5 minute quadrangle maps obtained through the Cal-Atlas Geospatial Clearinghouse and from Google Earth. 2011 TIGER local and major roadway centerline shapefiles were obtained from the U.S. Census Bureau website. City, SOI, and parcel boundaries were obtained from the Amador County GIS website. Parcel-based land use database information was obtained from ACTC. The Regional TDM, also provided by ACTC, also included the existing and future roadway model networks and other model-specific mapping such as traffic analysis zones. These were used as the basis for developing the City TDM model networks. Figure 2 presents the study area roadway network over aerial imagery.



City of Jackson CIP & TIF Update

Figure 2

Existing Study Area Roadway Network

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ROADWAY FACILITY STATUS & CONDITION

Roadway capacities were determined based on the roadway classifications obtained from the Regional TDM roadway network file and existing Circulation Element. Based on the traffic count data presented in Table 2, existing daily levels-of-service were determined using the capacities presented in Table 3, organized by facility classifications. These roadway capacities were obtained from the existing City of Jackson Circulation Element.

TABLE 3:
LEVEL OF SERVICE (LOS) CRITERIA FOR ROADWAYS

	LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
All Facilities (Volume-to-Capacity Ratio (V/C))	<0.6	0.6-0.7	0.7-0.8	0.8-0.9	0.9-1.0
	Average Daily Traffic (ADT) – Total of Both Directions				
Roadway Type	**A**	**B**	**C**	**D**	**E**
4-Lane Minor Arterial		24,900	30,800	32,700	34,900
2-Lane Minor Arterial (w/ Climbing Lane)		12,200	16,500	22,200	25,100
2-Lane Minor Arterial (w/ Turning Lane)	2,600	5,900	10,300	16,900	20,200
2-Lane Minor Arterial	1,600	4,500	8,600	14,200	18,600
2-Lane Major Collector	1,000	3,000	5,500	8,750	11,200
2-Lane Minor Collector	600	2,000	3,500	4,900	5,500
2-Lane Local Street	600	2,000	3,500	4,900	5,500

Roadway Capacity Modifiers

For facilities that do not meet standard cross sections, a reduced volume threshold has been developed. In the *Highway Capacity Manual 2010*, Exhibit 15-7 presents free-flow speed reductions based on narrow lanes and/or shoulders. Table 14 presents those reductions in miles per hour, as presented in the *HCM 2010*.

TABLE 4:
HCM 2010 WIDTH-BASED FREE-FLOW SPEED REDUCTIONS

	Shoulder Width			
Lane Width	**>0 <2**	**>2 <4**	**>4 <6**	**6 or >6**
>9 <10	6.4	4.8	3.5	2.2
>10 <11	5.3	3.7	2.4	1.1
>11 <12	4.7	3	1.7	0.4
12 or >12	4.2	2.6	1.3	0

Based on these free-flow speed reductions, capacity constraints were developed for roadway facilities based on a 30 mph free-flow speed. Table 5 presents the free-flow speed reductions, and the relative percent decrease in capacity.

TABLE 5:
WIDTH-BASED PERCENT CAPACITY REDUCTIONS

	Shoulder Width			
Lane Width	**>0 <2**	**>2 <4**	**>4 <6**	**6 or >6**
>9 <10	23.6	25.2	26.5	27.8
>10 <11	24.7	26.3	27.6	28.9
>11 <12	25.3	27	28.3	29.6
12 or >12	25.8	27.4	28.7	30
	Shoulder Width			
Lane Width	**>0 <2**	**>2 <4**	**>4 <6**	**6 or >6**
>9 <10	79%	84%	88%	93%
>10 <11	82%	88%	92%	96%
>11 <12	84%	90%	94%	99%
12 or >12	86%	91%	96%	100%

As presented in Table 5, the reductions based on narrow travel lanes and shoulder widths vary considerably based on specific dimensions.

For the purpose of this study, all roadway segment level of service calculations include capacity reductions based on average shoulder widths and lane widths for each facility segment. These capacity modification assumptions along with daily LOS are presented in Table 6 for each segment in the Jackson modeling area. Roadway segments are organized by their location in the City Limits, SOI, or County.

As presented in Table 6, there are no roadways within the Jackson City Limits or SOI currently operating at unacceptable service levels. However, outside the City, within the County and in the modeling area, there are five (5) roadway segments currently operating above acceptable service level thresholds. SR 104 between SR 88 and Industry Boulevard (Segment M-12) and between Industry Boulevard and Forest Products Road (Segment M-13) are currently operating at LOS D. SR 88 between the modeling area boundary and SR 104 (Segment M-7) and between Martell Road and SR 49 (Segment M-10), and Ridge Road between Old Ridge Road and the modeling area boundary (Segment M-23) are currently operating at LOS E.

These service levels were determined using the modified capacities described previously. Therefore these deficiencies do not necessarily indicate a need for additional travel lanes. Roadway improvements to bring these facilities to standard cross sections, in shoulder widths and lane widths, would in most cases result in acceptable operations.

TABLE 6
EXISTING DAILY ROADWAY LEVEL OF SERVICE

Segment ID	Segment Jurisdiction	Roadway	Segment Begin	Segment End	Target LOS	Existing Capacity Classification	Facility Type Capacity	Shoulder Code[1]	Lane Code[2]	Capacity Mod[3]	Adjusted Capacity	Existing Volume	Volume / Capacity	Calculated Existing LOS
C - 1	City of Jackson	State Route 49/88	City Limits	Sutter Street	D	Minor Arterial, 2-Lane with Climbing Lane	25,400	1	A	90%	22,100	19,570	87%	D
C - 2	City of Jackson	State Route 49/88	Sutter Street	Hoffman Street	D	Minor Arterial, 4-Lane with Turning Lane	34,900	3	A	90%	31,410			
C - 3	City of Jackson	State Route 49/88	Hoffman Street	Main Street	D	Minor Arterial, 4-Lane with Turning Lane	34,900	4	A	84%	29,316	18,400	63%	B
C - 4	City of Jackson	State Route 49/88	Main Street	SR 88	D	Minor Arterial, 4-Lane with Turning Lane	34,900	2	A	94%	32,806	20,960	64%	B
C - 5	City of Jackson	State Route 49	SR 88	French Bar Road	D	Minor Arterial, 4-Lane with Turning Lane	34,900	2	A	94%	32,806	20,900	64%	B
C - 6	City of Jackson	State Route 49	French Bar Road	Clinton Road	D	Minor Arterial, 2-Lane with Turning Lane	20,200	1	A	100%	20,200	14,700	73%	D
C - 7	City of Jackson	State Route 49	Clinton Road	Broadway Avenue	D	Minor Arterial, 2-Lane with Turning Lane	20,200	1	A	100%	20,200	14,200	70%	D
C - 8	City of Jackson	State Route 49	Broadway Avenue	City Limits	D	Minor Arterial, 2-Lane with Turning Lane	20,200	1	A	100%	20,200	8,300	41%	C
C - 9	City of Jackson	State Route 88	State Route 49	Broadway Avenue	D	Minor Arterial, 2-Lane with Turning Lane	20,200	2	A	94%	18,988			
C - 10	City of Jackson	State Route 88	Broadway Avenue	Pitt Street	D	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484			
C - 11	City of Jackson	State Route 88	Pitt Street	Mission Boulevard	D	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484			
C - 12	City of Jackson	State Route 88	Mission Boulevard	Court Street	D	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484	9,100	52%	D
C - 13	City of Jackson	State Route 88	Court Street	City Limits	D	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484	11,000	63%	D
C - 14	City of Jackson	Argonaut Lane	Buena Vista Drive	Hoffman Street	C	Minor Collector, 2-Lane	5,500	4	A	84%	4,628			
C - 15	City of Jackson	Broadway Avenue	Water Street	SR 88	C	Minor Collector, 2-Lane	5,500	4	A	84%	4,628			
C - 16	City of Jackson	Broadway Avenue	SR 88	Mission Boulevard	C	Minor Collector, 2-Lane	5,500	4	B	84%	4,628			
C - 17	City of Jackson	Broadway Avenue	Mission Boulevard	Clinton Road	C	Minor Collector, 2-Lane	5,500	2	A	94%	5,170			
C - 18	City of Jackson	Broadway Avenue	Clinton Road	SR 49	C	Minor Collector, 2-Lane	5,500	4	D	79%	4,345			
C - 19	City of Jackson	China Graveyard Road	City Limits	New York Ranch Road	C	Minor Collector, 2-Lane	5,500	4	D	79%	4,345			
C - 20	City of Jackson	Clinton Road	SR 49	Broadway Avenue	C	Minor Collector, 2-Lane	5,500	4	A	84%	4,628			
C - 21	City of Jackson	Clinton Road	Broadway Avenue	Butte Mountain Road	C	Minor Collector, 2-Lane	5,500	4	D	79%	4,345			
C - 22	City of Jackson	Court Street	Main Street	New York Ranch Road	C	Minor Collector, 2-Lane	5,500	4	D	79%	4,345	3,450	79%	D
C - 23	City of Jackson	Court Street	New York Ranch Road	SR 88	C	Minor Collector, 2-Lane	5,500	4	D	79%	4,345			
C - 24	City of Jackson	French Bar Road	City Limits	SR 49	C	Minor Collector, 2-Lane	5,500	4	D	79%	4,345			
C - 25	City of Jackson	Hoffman Street	Argonaut Lane	SR 49 / 88	C	Major Collector, 2-Lane	11,200	3	C	88%	9,856	2,160	22%	B
C - 26	City of Jackson	Jackson Gate Road	City Limits	China Graveyard Road	C	Major Collector, 2-Lane	11,200	4	D	79%	8,848	2,641	30%	C
C - 27	City of Jackson	Main Street	SR 49 / 88	Broadway Avenue	C	Major Collector, 2-Lane	11,200	4	D	79%	8,848	2,330	26%	B
C - 28	City of Jackson	Mission Boulevard	SR 88	Broadway Avenue	C	Major Collector, 2-Lane	11,200	3	A	100%	11,200			
C - 29	City of Jackson	New York Ranch Road	Court Street	China Graveyard Road	C	Major Collector, 2-Lane	11,200	3	D	86%	9,632	4,216	44%	C
C - 30	City of Jackson	North Main Street	SR 49 / 88	China Graveyard Road	C	Major Collector, 2-Lane	11,200	4	D	79%	8,848	3,200	36%	C
C - 31	City of Jackson	Stoney Creek Road	City Limits	Argonaut Lane	C	Major Collector, 2-Lane	11,200	4	D	79%	8,848	310	4%	A
S - 1	Sphere of Influence	State Route 49/88	Argonaut Lane	City Limits	D	Minor Arterial, 2-Lane with Climbing Lane	25,400	3	A	90%	22,100	19,570	87%	D
S - 2	Sphere of Influence	China Graveyard Road	Jackson Gate Road	Sphere of Influence Boundary	C	Minor Collector, 2-Lane	5,500	4	D	79%	4,345			
S - 3	Sphere of Influence	Jackson Gate Road	Sphere of Influence Boundary	City Limits	C	Major Collector, 2-Lane	11,200	4	D	79%	8,848	2,641	30%	C
M - 1	Modeling Area (County)	State Route 49	SR 104	Airport Road	D	Minor Arterial, 4-Lane with Turning Lane	34,900	1	A	100%	34,900	20,000	57%	B
M - 2	Modeling Area (County)	State Route 49	Airport Road	Industry Boulevard	D	Minor Arterial, 4-Lane with Turning Lane	34,900	1	A	100%	34,900	20,000	57%	B
M - 3	Modeling Area (County)	State Route 49	Industry Boulevard	Jackson Gate Road	D	Minor Arterial, 4-Lane with Turning Lane	34,900	1	A	100%	34,900	20,000	57%	B
M - 4	Modeling Area (County)	State Route 49	Jackson Gate Road	SR 88	D	Minor Arterial, 4-Lane with Turning Lane	34,900	1	A	100%	34,900			
M - 5	Modeling Area (County)	State Route 49/88	SR 49 / SR 88 Junction	Argonaut Lane	D	Minor Arterial, 4-Lane with Turning Lane	34,900	1	B	99%	34,511	21,200	61%	B
M - 6	Modeling Area (County)	State Route 49	City Limits	Calaveras County Line	D	Minor Arterial, 2-Lane	18,600	3	A	100%	18,600	8,100	44%	C
M - 7	Modeling Area (County)	State Route 88	Modeling Area Boundary	SR 104	D	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484	15,200	87%	E
M - 8	Modeling Area (County)	State Route 88	SR 104	Wickline Way	D	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484	9,040	52%	D
M - 9	Modeling Area (County)	State Route 88	Wickline Way	Martell Road	D	Minor Arterial, 2-Lane with Turning Lane	20,200	2	A	94%	18,988	11,740	62%	D
M - 10	Modeling Area (County)	State Route 88	Martell Road	SR 49	D	Minor Arterial, 2-Lane	18,600	1	B	99%	18,414	16,500	90%	E
M - 11	Modeling Area (County)	State Route 88	City Limits	Modeling Area Boundary	D	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484	8,300	47%	D
M - 12	Modeling Area (County)	State Route 104	SR 88	Industry Boulevard	C	Minor Arterial, 2-Lane	18,600	3	A	90%	16,740	7,900	47%	D
M - 13	Modeling Area (County)	State Route 104	Industry Boulevard	Forest Products Road	C	Minor Arterial, 2-Lane	18,600	3	A	90%	16,740	8,400	50%	D
M - 14	Modeling Area (County)	State Route 104	Forest Products Road	SR 49	C	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484	6,200	35%	C
M - 15	Modeling Area (County)	Argonaut Lane	SR 49 / 88	Buena Vista Drive	C	Minor Collector, 2-Lane	5,500	4	A	84%	4,628			
M - 16	Modeling Area (County)	China Graveyard Road	Sphere of Influence Boundary	City Limits	C	Minor Collector, 2-Lane	5,500	4	D	79%	4,345			
M - 17	Modeling Area (County)	Clinton Road	Butte Mountain Road	Modeling Area Boundary	C	Minor Collector, 2-Lane	5,500	4	D	79%	4,345	1,400	32%	B
M - 18	Modeling Area (County)	Jackson Gate Road	SR 49	Sphere of Influence Boundary	C	Major Collector, 2-Lane	11,200	4	D	79%	8,848	2,641	30%	C
M - 19	Modeling Area (County)	Martell Road	SR 88	SR 49	C	Major Collector, 2-Lane	11,200	3	C	88%	9,856			
M - 20	Modeling Area (County)	New York Ranch Road	China Graveyard Road	Modeling Area Boundary	C	Major Collector, 2-Lane	11,200	4	D	79%	8,848	1,680	19%	B
M - 21	Modeling Area (County)	Ridge Road	SR 49	Sutter Hill Road	C	Minor Arterial, 2-Lane with Turning Lane	20,200	2	A	94%	18,988			
M - 22	Modeling Area (County)	Ridge Road	Sutter Hill Road	Old Ridge Road	C	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484			
M - 23	Modeling Area (County)	Ridge Road	Old Ridge Road	Modeling Area Boundary	C	Minor Arterial, 2-Lane	18,600	2	A	94%	17,484	14,275	82%	E

Note: Bolded entries denote roadways operating above acceptable LOS thresholds

1 Shoulder Code = Shoulder width adjustment. 1=6' or wider, 2=4' to 6', 3=2' to 4', 4=2' or less

2 Lane Code = Lane width adjustment. 1=12' or wider, 2=11' to 12', 3=10' to 11', 4=10' or less

3 Capacity Mod = Percent of total facility capacity achievable based on Shoulder Code and Lane Code

EXISTING AMADOR REGIONAL TRANSIT SYSTEM SERVICES

Public transportation within Amador County is provided by Amador Transit through a general public fixed route service and Dial-a-Ride service. The bus service currently operates six routes Monday through Friday between the hours of 5:30 A.M. and 7:30 P.M., with the exception of County holidays, throughout Amador County. Dial-a-Ride is offered from 6:00 A.M. to 6:00 P.M. No services are provided on weekends. Some services are only operated on school days. Specific to the City of Jackson, Amador Transit operates two routes that serve the City – Route 2 (Upcountry) and Route 5 (Sutter Creek – Jackson Shuttle). These services are briefly described below.

Route 2: Upcountry

This route was formerly known as Route M, or the Mace Meadows route. A morning, midday, and afternoon out and back run is made from the Sutter Hill Transit Center to Amador Station in Mace Meadows, serving Jackson, Pine Grove and Pioneer along the way. The outbound direction leaves Petkovich Park in Jackson at 5:55 AM, 10:55 AM and 4:00 PM, while the inbound direction leaves Amador Station at 6:34 AM, 11:46 AM and 5:03 PM. A one-way trip between Jackson and Amador Station (the last stop) is roughly 1 hour.

Route 5: Sutter Creek-Jackson Shuttle

This service, formerly known as the S route, is the core of the local fixed route service. Two shuttles (A and B) are operated. The two shuttle serve the same areas, but Shuttle A operates southbound on Argonaut Road and northbound on Jackson Gate Road while Shuttle B operates northbound on Argonaut Road and southbound on Jackson Gate Road. Six round trips are made daily on Shuttle A at 7:30 am, 9:00 am, 10:30 am, 11:30 am, 1:00 pm and 3:15 pm. Shuttle B serves seven daily departures at 7:05 am, 8:15 am, 9:45 am, 11:00 am, 12:30 pm, 2:10 pm and 5:15 pm. Stops in Jackson include (but are not limited to) the court house, library, Petkovich Park, CVS, Raley's, Sutter Amador Hospital, Court Street medicl complex and the Senior Center.

Dial-a-Ride (DAR)

Dial-a-Ride currently operates only in the Jackson-Sutter Service area, within 3/4 of a mile of regular fixed route service. Service was initiated on July 18, 2011.

Route Deviations

Outside of the DAR service area, the fixed-routes will deviate up to 3/4 of a mile to pick-up or drop-off an individual who qualifies for door-to-door service under the American with Disabilities Act guidelines. Route deviations are only allowed for ADA eligible passengers with approved applications.

CALAVERAS TRANSIT

Beginning in 2010, Amador Transit provided service to Mokelumne Hill in Calaveras County via Route 4 in order to provide more regional connections. This route originated in Sutter Hill, with stops in Jackson, and continued on to Mokelumne Hill. Starting September 1, 2012, Route 4 will be discontinued, however Calaveras Transit will now be providing transit service directly to the Raley's in Jackson, allowing for continued service between Jackson and Mokelumne Hill.

Amador Transit Fare Media

Fares for Amador Transit are $1.00 on the shuttle for all passengers. On the local fixed routes, fares are $2.00 for the general public, and $1.00 for elderly, disabled or youths. Dial-a-Ride fares and route deviations, available only to ADA eligible passengers, are $2.00 per trip.

Discounted monthly passes available to the elderly, disabled or youths can be purchased for $40.00. Various multi-ticket options are available to all passengers. The Sacramento Express fare is $5.50 per trip for the general public, or $3.00 for RT pass-holders. For seniors and individuals with disabilities, the fare

is $3.15 per trip or $1.75 for RT pass-holders. Student fares are $4.50 or $1.75 for RT pass-holders.

AMADOR TRANSIT SYSTEM CAPITAL ASSETS

Amador Transit Passenger Facilities

Along the Amador Transit bus routes, there are a total of 18 stops with amenities. Within Jackson, this includes four bus shelter locations – Argonaut Lane and Westview Drive, New York Ranch Road and Rollingwood, Court Street and Placer Drive, and Petkovich Park. One bench is located at 150 Main Street.

TRAVEL DEMAND MODEL DEVELOPMENT

This section presents the tasks undertaken thus far to create a City TDM. The City TDM is not a stand-alone travel demand model, but rather a nested City-level refinement to the Regional TDM.

TRAVEL DEMAND MODEL ROADWAY NETWORK

Street networks handle the trips generated by land uses. The travel demand model simulates a road's ability to handle travel demand based on facility type (e.g. freeway, highway, arterial, and collector), number of lanes, speed, and alignment.

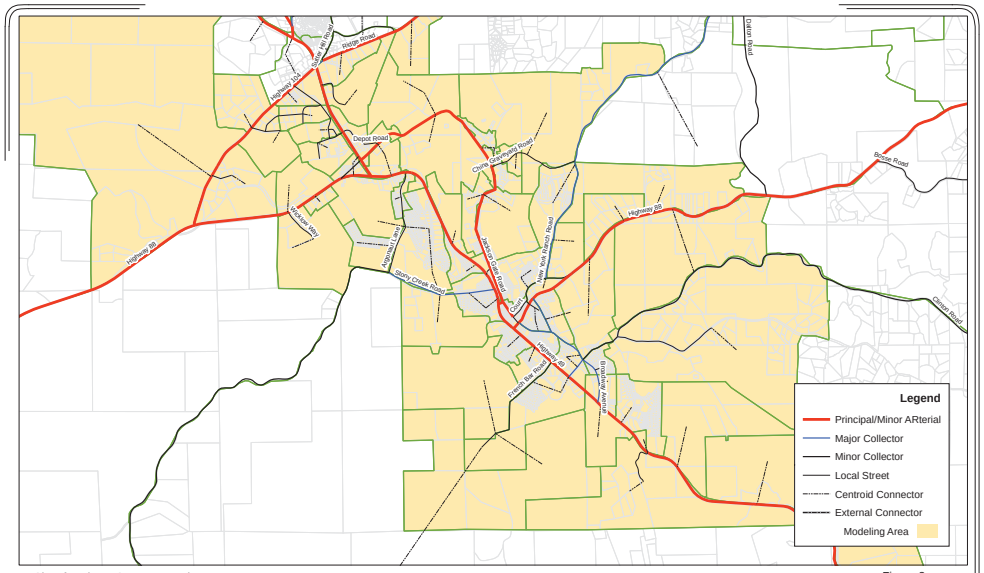
The street network from the Regional TDM was not modified, except for the street network within the modeling area. The City TDM roadway network is presented in Figure 3. As with the TAZs, the roadway network was modified in order to more accurately reflect local traffic sheds and travel demand.

TRAFFIC ANALYSIS ZONE STRUCTURE

The TAZ structure from the Regional TDM was modified for the purposes of creating a more refined City TDM that more accurately reflects travel demand and traffic sheds on a local basis. Figure 4 presents the study area in the model and the representative TAZs from the Regional TDM. These 45 TAZs from the Regional TDM were split, modified, and moved as necessary to obtain a more representative traffic model for the City. This process resulted in the creation of 15 new TAZs within the model in the study area, for a total of 60 TAZs. The new TAZ structure is presented in Figure 5.

EXISTING LAND USE DATA INPUTS

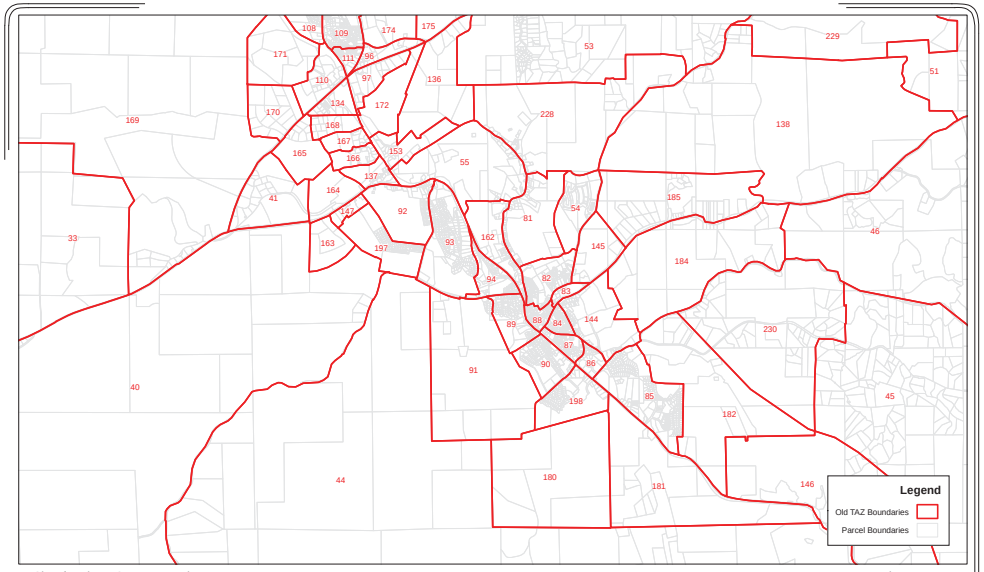
Existing land uses were developed after reviewing the Regional TDM existing land use database. The intent of the City TDM is to be developed consistent with the Regional TDM. After reviewing the land uses in the City TDM area, inconsistencies between the model uses and actual conditions were identified in a number of TAZs that would make accurate local calibration impossible. Working with ACTC, Kittelson & Associates, and Fehr & Peers, revisions were made to the Regional TDM land uses for existing conditions such that they accurately reflect as-built conditions. These as-built conditions were verified using ACTC's comprehensive land use inventory developed internally for generating accurate U-Plan baseline conditions. Table 7 presents a summary of existing land uses within the modeling area. Appendix Table 1 presents these land uses by TAZ.



City of Jackson CIP & TIF Update

Figure 3

Travel Demand Model Network



City of Jackson CIP & TIF Update

Figure 4

Old Regional Travel Demand Model TAZ Boundaries

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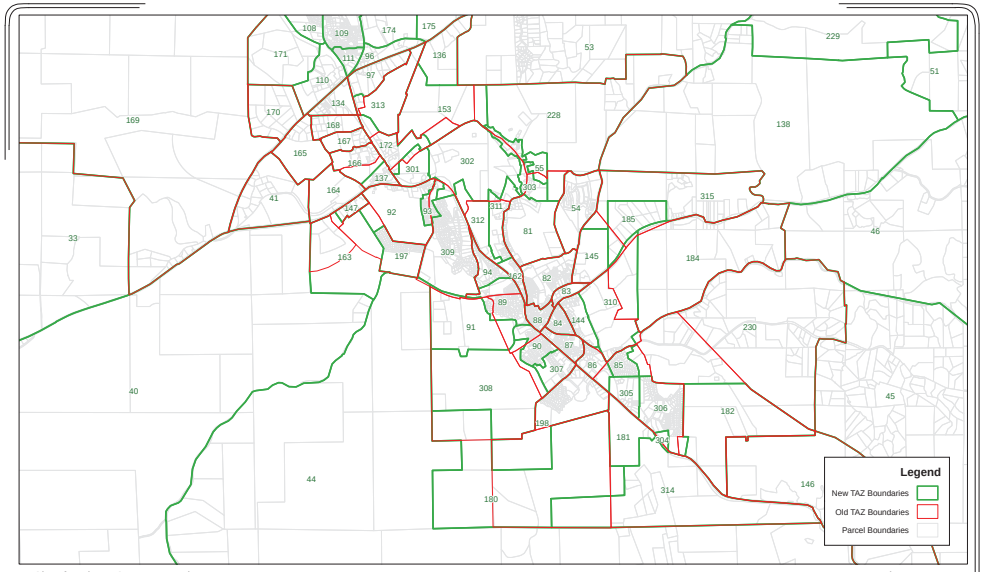

City of Jackson CIP & TIF Update

Figure 5

New City Travel Demand Model TAZ Boundaries

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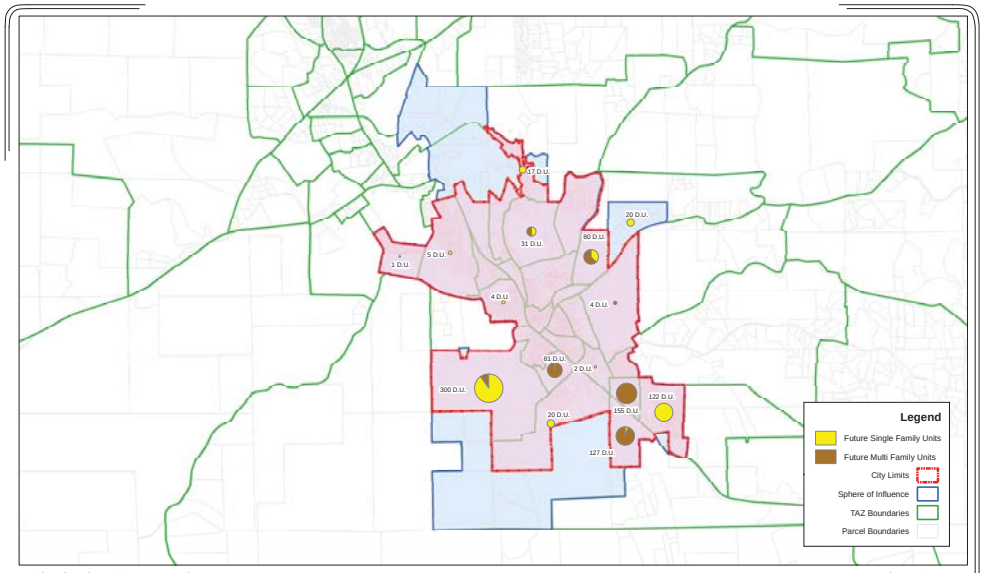
TABLE 7:
EXISTING CITY TDM LAND USES

Land Use	Units	Quantity
Residential		
Single-Family Dwelling Units	DU	1,597
Multi-Family Dwelling Units	DU	1,095
Total		2,692
Non-Residential		
Central Business District	KSF	201
Shopping Center	KSF	627
General Commercial	KSF	957
Office	KSF	686
Medical Office	KSF	387
Light Industrial	KSF	171
Heavy Industrial	KSF	276
Park	ACR	23
Elementary School	ENR	792
High School	ENR	652

Note: DU = Dwelling Units, KSF = 1,000 Square Feet, ACR = Acres, ENR = Students

FUTURE YEAR LAND USE ASSUMPTIONS

Two future year scenarios will be developed as a part of the travel demand modeling effort for the City TDM. Both scenarios assume buildout of General Plan land uses within the Jackson City Limits and SOI. However, the first scenario will anticipate regional growth outside the Jackson City Limits and SOI over the next 20 years, the *Year 2035 Scenario*. The second scenario will anticipate regional growth outside the Jackson City Limits and SOI over the next 35 years, the *Year 2050 Scenario*. Growth increments outside the City Limits and SOI for both the *Year 2035 Scenario* and *Year 2050 Scenario* were obtained from ACTC. Buildout land uses for both scenarios within the Jackson City Limits and SOI were determined based on consultation with City staff, the City's General Plan, and parcel vacancy data. Table 8 presents the projected buildout of General Plan land uses assumed in both the *Year 2035 Scenario* and *Year 2050* Scenario within the Jackson City Limits and SOI. Figures 6 and 7 present the growth by TAZ in residential and non residential uses respectively, within the Jackson City and SOI.



City of Jackson CIP & TIF Update

Figure 6

Jackson City Limits & SOI Residential Growth by TAZ

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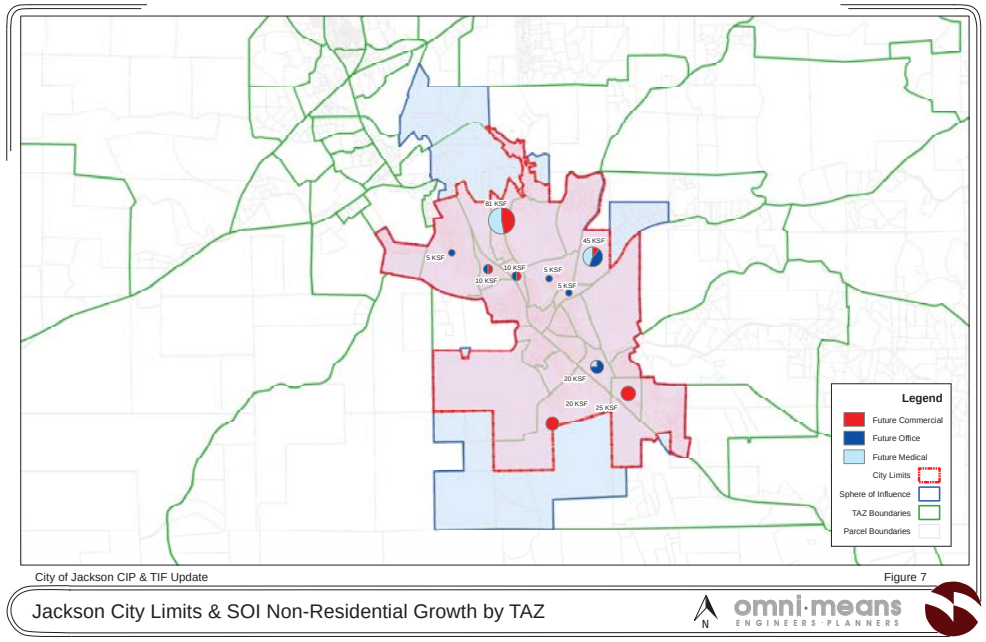

City of Jackson CIP & TIF Update

Figure 7

Jackson City Limits & SOI Non-Residential Growth by TAZ

N

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TABLE 8:
JACKSON CITY LIMITS AND SOI BUILDOUT LAND USES

Land Use	Units	Existing Quantity	Buildout Growth	Buildout Total
Residential				
Single-Family Dwelling Units	DU	1,370	513	1,883
Multi-Family Dwelling Units	DU	1,024	456	1,480
Total		*2,394*	*969*	*3,363*
Non-Residential				
Central Business District	KSF	201	0	201
Shopping Center	KSF	119	6	125
General Commercial	KSF	373	98	471
Office	KSF	504	60	564
Medical Office	KSF	384	68	452
Light Industrial	KSF	61	0	61
Heavy Industrial	KSF	0	0	0
Total		*1,641*	*232*	*1,873*
School Enrollment				
Elementary/Middle School	ENR	792	264	1,056
High School	ENR	652	0	652
Total		*1,444*	*264*	*1,708*

Note: DU = Dwelling Units, KSF = 1,000 Square Feet, ACR = Acres, ENR = Students

Year 2035 Scenario

The *Year 2035 Scenario* assumes buildout of General Plan land uses within the Jackson City Limits and SOI, as presented in Table 8. Land uses outside the City Limits and SOI were obtained from ACTC. The increment of growth presented in these land uses represents the foreseeable development of regional land uses over the next 20 years, as projected by U-Plan software. Table 9 presents a summary of the increment growth and cumulative *Year 2035 Scenario* buildout uses within the Jackson modeling area and within the entire county. Appendix Table 2 presents the *Year 2035 Scenario* land uses by TAZ.

Year 2050 Scenario

The *Year 2050 Scenario* also assumes buildout of General Plan land uses within the Jackson City Limits and SOI, as presented in Table 8. Land uses outside the City Limits and SOI were again obtained from ACTC. However, the increment of growth presented in these land uses represents longer-range development forecasts for regional land uses over the next 35 years, as projected by U-Plan software. Table 10 presents a summary of the increment growth and cumulative *Year 2050 Scenario* buildout uses within the Jackson modeling area, Jackson modeling area and within the entire county. Appendix Table 3 presents the *Year 2050 Scenario* land uses by TAZ.

TABLE 9:
YEAR 2035 GROWTH IN MODELING AREA & COUNTYWIDE

Land Use	Units	Modeling Area Existing Quantity	Jackson Modeling Area 2035 Growth	Jackson Modeling Area 2035 Total	Entire County Existing Quantity	Entire County Year 2035 Growth	Entire County Year 2035 Total
Residential							
Single-Family Dwelling Units	DU	1,597	670	2,267	16,644	4,007	20,651
Multi-Family Dwelling Units	DU	1,095	954	2,049	2,396	2,391	4,787
Total		*2,692*	*1,624*	*4,316*	*19,040*	*6,398*	*25,438*
Non-Residential							
Central Business District	KSF	201	0	201	483	137	621
Shopping Center	KSF	627	6	633	627	6	633
General Commercial	KSF	957	173	1,130	1,748	394	2,142
Office	KSF	686	529	1,215	1,340	803	2,142
Medical Office	KSF	387	68	455	434	70	504
Light Industrial	KSF	171	451	622	516	707	1,223
Heavy Industrial	KSF	276	0	276	519	0	519
Total		*3,304*	*1,227*	*4,531*	*5,666*	*2,117*	*7,783*
School Enrollment							
Elementary/Middle School	ENR	792	264	1,056	3,095	264	3,359
High School	ENR	652	0	652	1,919	0	1,919
Total		*1,444*	*264*	*1,708*	*12,149*	*264*	*5,278*

Note: DU = Dwelling Units, KSF = 1,000 Square Feet, ACR = Acres, ENR = Students

TABLE 10:
YEAR 2050 GROWTH IN MODELING AREA & COUNTYWIDE

Land Use	Units	Jackson Modeling Area 2035 Quantity	Jackson Modeling Area 2050 Growth	Jackson Modeling Area 2050 Total	Entire County 2035 Quantity	Entire County Year 2050 Growth	Entire County Year 2050 Total
Residential							
Single-Family Dwelling Units	DU	2,267	162	2,429	20,651	3,443	24,094
Multi-Family Dwelling Units	DU	2,049	344	2,393	4,787	1,324	6,111
Total		*4,316*	*506*	*4,822*	*25,438*	*4,767*	*30,205*
Non-Residential							
Central Business District	KSF	201	0	201	621	28	649
Shopping Center	KSF	633	0	633	633	0	633
General Commercial	KSF	1,130	19	1,149	2,142	188	2,330
Office	KSF	1,215	140	1,355	2,142	282	2,424
Medical Office	KSF	455	0	455	504	19	523
Light Industrial	KSF	622	290	912	1,223	580	1,804
Heavy Industrial	KSF	276	0	276	519	0	519
Total		*4,531*	*449*	*4,980*	*7,783*	*1,098*	*8,882*
School Enrollment							
Elementary/Middle School	ENR	1,056	0	1,056	3,359	0	3,359
High School	ENR	652	0	652	1,919	0	1,919
Total		*1,708*	*0*	*1,708*	*15,307*	*0*	*5,278*

Note: DU = Dwelling Units, KSF = 1,000 Square Feet, ACR = Acres, ENR = Students

APPENDIX B
Working Paper #2

City of Jackson
Circulation Improvement Program and Transportation Impact Fee Update

WORKING PAPER #2
Travel Demand Model Development Report

Prepared for:

Amador County Transportation Commission & the City of Jackson

Prepared by:

omni · means
ENGINEERS · PLANNERS

CITY OF JACKSON CIRCULATION IMPROVEMENT PROGRAM AND TRANSPORTATION IMPACT FEE UPDATE

WORKING PAPER #2
TRAVEL DEMAND MODEL DEVELOPMENT REPORT

PREPARED FOR:
AMADOR COUNTY TRANSPORTATION COMMISSION
11400 AMERICAN LEGION DRIVE
JACKSON, CA 95642

&

CITY OF JACKSON
33 BROADWAY
JACKSON, CA 95642

PREPARED BY:
OMNI-MEANS, LTD.
ENGINEERS & PLANNERS
943 RESERVE DRIVE, SUITE 100
ROSEVILLE, CA 95816
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SEPTEMBER 2012

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INTRODUCTION

In February 2012, Amador County Transportation Commission (ACTC) contracted OMNI-MEANS to update the City of Jackson (City) Circulation Improvement Program and Transportation Impact Fee. A major component of this task is to modify and refine the regional travel demand model (TDM) in order to more accurately assess the City's transportation improvement needs. In 2011, ACTC updated the regional Amador County TDM (Regional TDM) in order to assess current and future regional transportation improvement needs. However, this model was not developed to specifically assess local needs. For this reason, ACTC has contracted OMNI-MEANS to develop a City of Jackson TDM (City TDM) that is tuned specifically to better represent travel demand and traffic volumes in the City. With the more refined travel demand model, the need for both local and regional transportation improvements will be determined and fair share costs and associated transportation impact fees will be calculated and allocated to new development, consistent with the nexus requirements of AB 1600.

WORKING PAPER #2

The previously completed *Working Paper #1* presented the background transportation and land use conditions used to establish a baseline for the City TDM development process. *Working Paper #1* briefly described the model traffic analysis zone changes made to create a refined City TDM and presented future year land use inputs for the *Year 2035 Scenario* and *Year 2050 Scenario*. This working paper will present a detailed summary of the tasks that have been completed so far by OMNI-MEANS in the creation of the City TDM including existing conditions model calibration and outputs, and future year model run outputs.

CALIBRATION OF EXISTING CONDITIONS MODEL

This working paper presents the methodology, processes, and supporting technical documentation for the City TDM development process, calibration of the City TDM to existing conditions, and traffic model outputs for the existing and future conditions scenarios. The City TDM is not a stand-alone TDM, but rather a nested City-level refinement to the Regional TDM.

TRAVEL DEMAND MODEL DEVELOPMENT

This section presents the supporting technical documentation for the City TDM development process. The procedure is outlined below:

1. Collect parcel data and aggregate areas into Traffic Analysis Zones (TAZ)
2. Model the traffic network
3. Create the four-step modeling process
4. Calibrate the base year model
5. Forecast build-out year travel demand (incomplete)

Land Use Data

Travel demand models simulate travel demand by first estimating trips generated in zones within the study area. The number and type of trips generated and attracted between areas depend on land use. The County Assessor's parcel database provides land use data in terms of zoning and development type (e.g. housing, commercial development, public uses).

For this model update, ACTC provided OMNI-MEANS with a detailed 2012 land use inventory by parcel. The land uses obtained from ACTC were organized in units consistent with the existing Regional TDM, Table 1 presents a summary of 2012 land uses by area in the the Regional TDM, and in the Jackson area City TDM. Table 2 presents a summary of 2012 land uses within the Jackson City Limits and Sphere of Influence (SOI). A more detailed inventory of existing land uses within the City TDM can be found in *Working Paper #1*.

TABLE 1:
2012 EXISTING LAND USE SUMMARY BY MODELING AREA

Modeling Area	Single-Family Dwelling Units	Multi-Family Dwelling Units	Central Business District (in KSF)	Shopping Center (in KSF)	General Commercial (in KSF)	Office (in KSF)	Medical (in KSF)	Light Industrial (in KSF)	Heavy Industrial (in KSF)	Students
Alpine	1242	0	0	0	108	108	0	0	0	128
Amador City	103	13	43	0	6	0	0	0	0	0
Central & East Amador	8651	299	12	0	400	150	12	189	0	664
Ione	1289	295	72	0	84	106	9	29	94	1260
Jackson	1597	1095	201	627	957	686	387	171	276	1444
Plymouth	437	126	25	0	44	58	5	11	0	262
Sutter Creek	932	417	130	0	89	213	22	59	0	1256
West Amador Co.	2393	151	0	0	60	19	0	58	149	0
Countywide Total	**16644**	**2396**	**483**	**627**	**1748**	**1340**	**434**	**516**	**519**	**5014**

TABLE 2:
2012 EXISTING LAND USE SUMMARY WITHIN JACKSON CITY LIMITS AND SOI

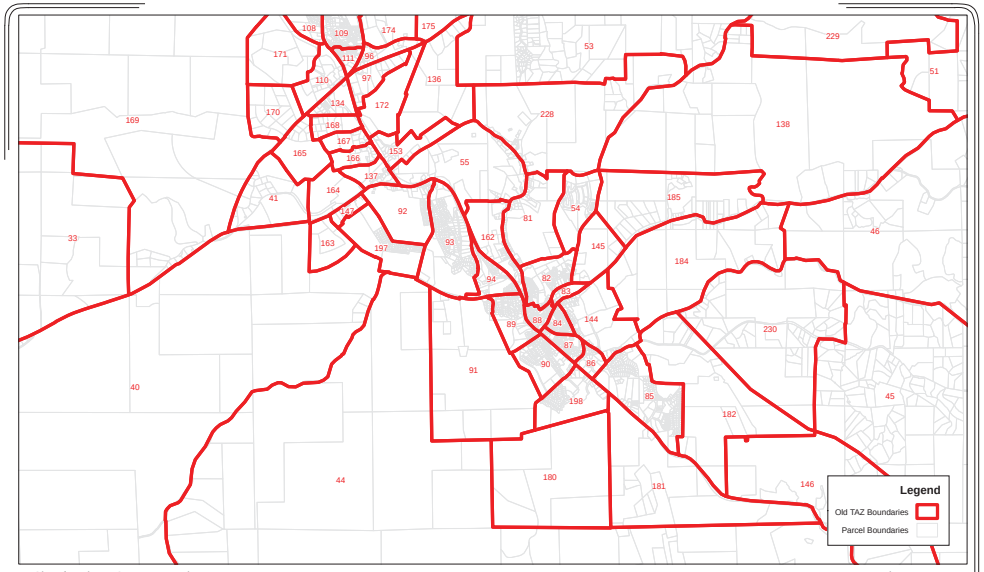
Land Use	Units	Existing Quantity	Buildout Growth	Buildout Total
Residential				
Single-Family Dwelling Units	DU	1,370	513	1,883
Multi-Family Dwelling Units	DU	1,024	456	1,480
Total		*2,394*	*969*	*3,363*
Non-Residential				
Central Business District	KSF	201	0	201
Shopping Center	KSF	119	6	125
General Commercial	KSF	373	98	471
Office	KSF	504	60	564
Medical Office	KSF	384	68	452
Light Industrial	KSF	61	0	61
Heavy Industrial	KSF	0	0	0
Total		*1,641*	*232*	*1,873*
School Enrollment				
Elementary/Middle School	ENR	792	264	1,056
High School	ENR	652	0	652
Total		*1,444*	*264*	*1,708*

Note: DU = Dwelling Units, KSF = 1,000 Square Feet, ACR = Acres, ENR = Students

The land uses presented in Tables 1 and 2 are simplified into areas referred to as "Traffic Analysis Zones" (TAZs) for travel demand modeling purposes. Aggregating minute areas like parcels into larger zones decreases the computation intensity of the model and simplifies data processing. The TAZs are defined using real-world traffic boundaries, such as natural geographic barriers (e.g. rivers and creeks) and "man-made" barriers (e.g. major street right-of-ways and railroads).

For the purposes of this model, the TAZ boundaries from the Regional TDM were not modified, except for those that lay within the Jackson modeling area. The City of Healdsburg was originally represented by 45 TAZs in the Regional TDM, presented in Figure 1. Whereas this amount of TAZs was sufficient to simulate regional travel demand for on a County-wide basis, it is inadequate when attempting to study City-level roadways.

In order to reasonably simulate existing and future travel demand within the City of Jackson, a total of 60 TAZs were used to create the City TDM. Existing TAZ boundaries were modified to follow City Limit and SOI boundaries, as well as better represent realistic traffic sheds. 25 new TAZs were created where it was necessary to further subdivide traffic sheds and provide a more accurate model calibrated to existing conditions. Because the City TDM runs within the Regional TDM, only TAZs that were previously vacant were available for our use. The 60 Jackson TAZs are presented in Figure 2.



City of Jackson CIP & TIF Update

Figure 1

Old Regional Travel Demand Model TAZ Boundaries

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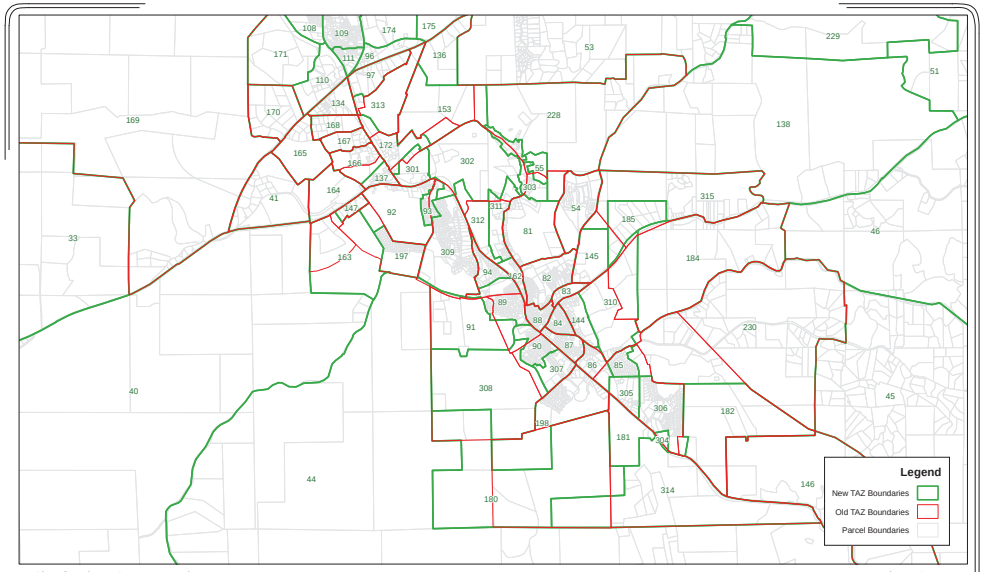

City of Jackson CIP & TIF Update

Figure 2

New City Travel Demand Model TAZ Boundaries

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Network Creation

Street networks handle the trips generated by land uses. The travel demand model simulates a road's ability to handle travel demand based on facility type (e.g. freeway, highway, arterial, and collector), number of lanes, speed, and alignment.

As with the TAZ boundaries, for the purposes of this model the street network from the Regional TDM was not modified, except for the City of Jackson area street network. The street network was expanded and refined in order to reasonably simulate existing and future travel demand within the City of Jackson. Roadway classifications, presented in Table 3, and street alignments, were acquired from Amador County's GIS database shapefiles and incorporated into the travel demand model. Figure 3 presents the City TDM street network.

TABLE 3:
ROADWAY CLASSIFICATION

Classification	Capacity (Vehicles per Lane per Hour)	Free-Flow Speed (mph)	Example Roadway
Principal / Minor Arterial	950-1050	45-60	State Route 49, State Route 88
Major Collector	600-750	35-50	New York Ranch Road
Minor Collector	650	25-40	Jackson Gate Road
Local	400-500	25-30	Argonaut Lane

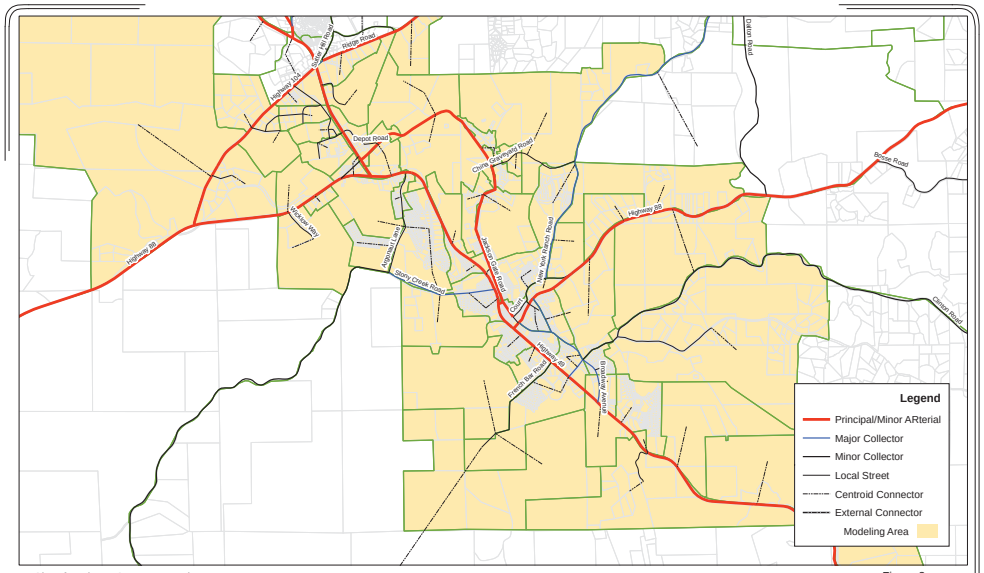
MODEL CALIBRATION

Calibrating the model so that it reasonably reflects real world travel demand requires matching the model estimate on a set of links against traffic counts. The City TDM has been calibrated on a city-level, rather than a regional level.

Travel demand models can be calibrated by individual facility, on a system-wide basis, and on a facility-type basis. Each calibration method has advantages and disadvantages, depending on the street network and TAZ resolution of the model, the regional extent of the model, and the specific purpose of the model.

Individual Facility

Table 4 presents the calibration for each selected facility used in the calibration process. This table presents the difference in daily volume and in percentage between the amount of daily trips the travel demand model is projecting on individual facilities and each individual facility's actual daily traffic count.



City of Jackson CIP & TIF Update

Figure 3

Travel Demand Model Network

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TABLE 4:
JACKSON TRAVEL DEMAND MODEL – CALIBRATION BY FACILITY

Roadway	Facility Type	Existing ADT	Model Forecast	Model Diff	% Error Model	-% Target	Squared Error
SR 49, north of Calaveras/Amador County Line	2-Lane Minor Arterial	7100	8422	-1322	-18.6%	15.0%	3.47%
SR 49, south of Scottsville Boulevard	2-Lane Minor Arterial	8100	8519	-419	-5.2%	15.0%	0.27%
SR 49, south of Broadway	2-Lane Minor Arterial	8300	9423	-1123	-13.5%	15.0%	1.83%
SR 49, north of French Bar Road	4-Lane Minor Arterial	14700	15209	-509	-3.5%	15.0%	0.12%
SR 49, north of South Avenue	4-Lane Minor Arterial	18900	17040	1860	9.8%	15.0%	0.97%
SR 49, south of SR 88 (South Junction)	4-Lane Minor Arterial	20900	18844	2056	9.8%	15.0%	0.97%
SR 49, north of Main Street	4-Lane Minor Arterial	18400	20226	-1826	-9.9%	15.0%	0.98%
SR 49, south of Argonaut Lane	4-Lane Minor Arterial	19580	17477	2103	10.7%	15.0%	1.15%
SR 49, north of Argonaut Lane	4-Lane Minor Arterial	21200	19921	1279	6.0%	15.0%	0.36%
SR 49, south of SR 88 (North Junction)	4-Lane Minor Arterial	21000	19675	1325	6.3%	15.0%	0.40%
SR 49, north of Jackson Gate Road	4-Lane Minor Arterial	20000	17383	2617	13.1%	15.0%	1.71%
SR 49, north of SR 104	4-Lane Minor Arterial	19400	18223	1177	6.1%	15.0%	0.37%
SR 49, north of Old Highway 49	2-Lane Minor Arterial	10228	11410	-1182	-11.6%	15.0%	1.34%
SR 88, west of SR 104	2-Lane Minor Arterial	15200	16691	-1491	-9.8%	15.0%	0.96%
SR 88, east of SR 104	2-Lane Minor Arterial	9040	10258	-1218	-13.5%	15.0%	1.82%
SR 88, east of Wicklow Way	2-Lane Minor Arterial	11740	13350	-1610	-13.7%	15.0%	1.88%
SR 88, west of SR 49	2-Lane Minor Arterial	16500	14773	1727	10.5%	15.0%	1.10%
SR 88, west of Court Street	2-Lane Minor Arterial	9100	8350	750	8.2%	15.0%	0.68%
SR 88, east of Court Street	2-Lane Minor Arterial	11000	9058	1942	17.7%	15.0%	3.12%
SR 88, west of Dalton Road	2-Lane Minor Arterial	8300	8751	-451	-5.4%	15.0%	0.30%
SR 104, north of SR 88	2-Lane Minor Arterial	7900	7859	41	0.5%	15.0%	0.00%
SR 104, west of Forrest Products Road	2-Lane Minor Arterial	8400	7941	459	5.5%	15.0%	0.30%
SR 104, west of SR 49	2-Lane Minor Arterial	6200	7133	-933	-15.0%	15.0%	2.26%
Ridge Road, east of Old Ridge Road	2-Lane Minor Arterial	14275	12456	1819	12.7%	25.0%	1.62%
Ridge Road, east of Running Gold Road	2-Lane Minor Arterial	13600	12179	1421	10.4%	25.0%	1.09%
Jackson Gate Road, at City Limits	2-Lane Local Street	2641	2801	-160	-6.1%	25.0%	0.37%
New York Ranch Road, east of China Graveyard Road	2-Lane Major Collector	1680	1379	301	17.9%	25.0%	3.21%
New York Ranch Road, east of Court Street	2-Lane Major Collector	4220	2109	2111	50.0%	25.0%	25.02%
Hoffman Street, west of SR 49	2-Lane Major Collector	2160	2423	-263	-12.2%	25.0%	1.48%
Main Street, east of SR 49	2-Lane Local Street	2330	2745	-415	-17.8%	25.0%	3.17%
Court Street, west of New York Ranch Road	2-Lane Local Street	3450	3037	413	12.0%	25.0%	1.43%
Clinton Road, east of Butte Mountain Road	2-Lane Minor Collector	1400	986	414	29.6%	25.0%	8.74%
Butte Mountain Road, east of Clinton Road	2-Lane Local Street	751	359	392	52.2%	25.0%	27.25%
Eureka Road, west of Old Ridge Road	2-Lane Local Street	1150	1360	-210	-18.3%	25.0%	3.33%
Old Ridge Road, east of Eureka Road	2-Lane Local Street	1150	1095	55	4.8%	25.0%	0.23%
Stoney Creek Road, west of Argonaut Lane	2-Lane Minor Collector	350	324	26	7.4%	25.0%	0.55%
Old Highway 49, east of SR 49	2-Lane Minor Arterial	7400	6863	537	7.3%	25.0%	0.53%

As presented in Table 4, majority of the facilities meet the percent error target for individual facilities. Notable exceptions are SR 49 north of the Calaveras/Amador County line, SR 88 east of Court Street, New York Ranch Road east of Court Street, Clinton Road east of Butte Mountain Road, and Butte Mountain Road east of Clinton Road. All of these facilities are near edges of the Jackson modeling area in the City TDM.

Facility Type

The travel demand model validation is based on criteria created by the Federal Highway Administration (*Federal Highway Administration, Calibration and Adjustment of System Planning Models, 1990.)* and Caltrans (*California Department of Transportation, Travel Forecasting Guidelines, 1992.).* Table 5 presents the Federal Highway Administration (FHWA)-recommended absolute error targets and Root-Mean-Squared Error targets for each facility type.

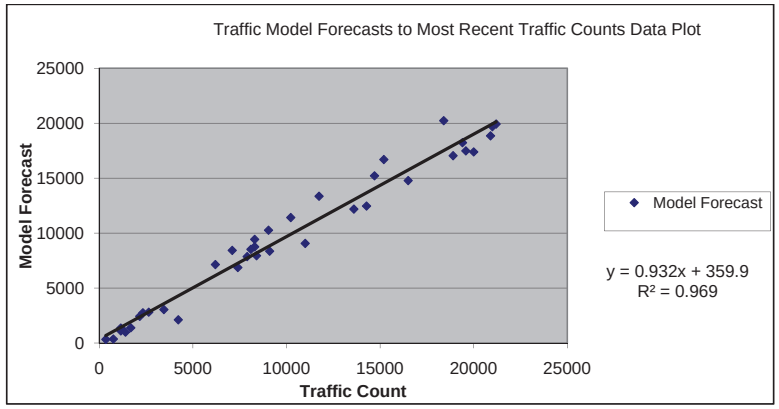
TABLE 5:
JACKSON TRAVEL DEMAND MODEL – CALIBRATION BY FACILITY TYPE

Roadway Classification	Daily Count	Model Volume	% Model	% Target	RMSE Model	RMSE Target
Arterial	311,188	305,936	1.7%	15.0%	10.7%	40.0%
Collector / Local	56,557	50,116	11.4%	25.0%	23.6%	50.0%
Total	367,745	356,052	3.2%	5.0%	16.8%	35.0%

Table 5 shows that the model satisfies each facility-specific absolute percent-error target and the RMSE targets for all facilities.

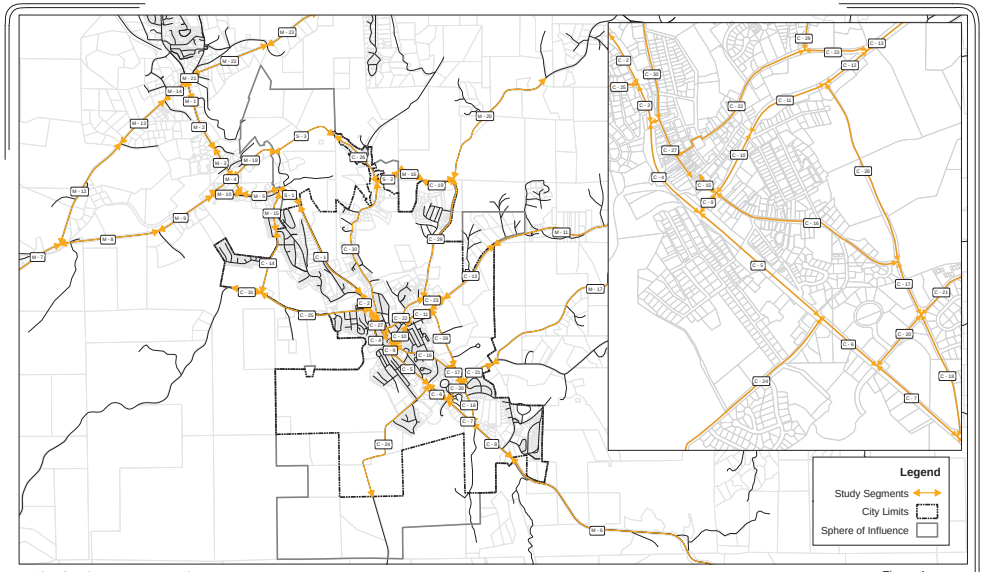
Region-wide Correlation Coefficient

The region-wide model correlation was calculated by plotting the model forecasts against the roadway counts. An acceptable correlation coefficient is 0.88. As shown in the following chart, which plots model traffic forecasts to the most recent traffic counts, the model correlation coefficient is 0.969, meaning the model explains slightly more than 96% of the variability in the traffic counts.



CITY TRAVEL DEMAND MODEL OUTPUTS

Having established acceptable model calibration, model outputs were prepared for roadway segments throughout the modeling area. Figure 4 presents the study roadway segments by ID. These ID numbers are referenced in Table 6, which presents existing traffic counts where available, existing model outputs, and future year projections.



City of Jackson CIP & TIF Update

Figure 4

Roadway Study Segment IDs

omni·means
ENGINEERS · PLANNERS

TABLE 6:
EXISTING & FUTURE TRAFFIC VOLUMES BY SEGMENT

Segment ID	Segment Jurisdiction	Roadway	Segment Begin	Segment End	Target LOS	Existing Capacity Classification	Existing Volume	Volume / Capacity	Calculated Existing LOS	Existing Model ADT	Projected 2035 ADT	Projected 2035 LOS	Projected 2050 ADT	Projected 2050 LOS
C - 1	City of Jackson	State Route 49/88	City Limits	Sutter Street	D	Minor Arterial, 2-Lane with Climbing Lane	16,170	67%	D	17476	25264	F	28665	F
C - 2	City of Jackson	State Route 49/88	Sutter Street	Hoffman Street	D	Minor Arterial, 4-Lane with Turning Lane				17793	25268	C	28743	D
C - 3	City of Jackson	State Route 49/88	Hoffman Street	Main Street	D	Minor Arterial, 4-Lane with Turning Lane	18,488	63%	B	20848	26893	C	31413	F
C - 4	City of Jackson	State Route 49/88	Main Street	SR 88	D	Minor Arterial, 4-Lane with Turning Lane	20,963	64%	B	18841	26908	C	30758	E
C - 5	City of Jackson	State Route 49	SR 88	French Bar Road	D	Minor Arterial, 4-Lane with TurningLane	20,900	64%	B	19253	23952	C	24355	C
C - 6	City of Jackson	State Route 49	French Bar Road	Clinton Road	D	Minor Arterial, 2-Lane with Turning Lane	14,700	73%	D	15869	17172	E	20411	F
C - 7	City of Jackson	State Route 49	Clinton Road	Broadway Avenue	D	Minor Arterial, 2-Lane with Turning Lane	14,200	70%	D	9681	17472	E	19224	D
C - 8	City of Jackson	State Route 49	Broadway Avenue	City Limits	D	Minor Arterial, 2-Lane with Turning Lane	8,000	41%	C	9423	13151	D	10532	E
C - 9	City of Jackson	State Route 88	State Route 49	Broadway Avenue	D	Minor Arterial, 2-Lane with Turning Lane				12862	10991	D	9121	C
C - 10	City of Jackson	State Route 88	Broadway Avenue	Pio Street	D	Minor Arterial, 2-Lane				12845	10178	D	8112	D
C - 11	City of Jackson	State Route 88	Pio Street	Mission Boulevard	D	Minor Arterial, 2-Lane				8265	6388	C	4312	C
C - 12	City of Jackson	State Route 88	Mission Boulevard	Court Street	D	Minor Arterial, 2-Lane	9,100	52%	D	8349	9626	D	9401	D
C - 13	City of Jackson	State Route 88	Court Street	City Limits	D	Minor Arterial, 2-Lane	11,000	63%	D	9837	11545	D	10148	D
C - 14	City of Jackson	Argonaut Lane	Buena Vista Drive	Hoffman Street	C	Minor Collector, 2-Lane				1638	1906	C	2173	C
C - 15	City of Jackson	Broadway Avenue	Water Street	SR 88	C	Minor Collector, 2-Lane				816	811	B	800	B
C - 16	City of Jackson	Broadway Avenue	SR 88	Mission Boulevard	C	Minor Collector, 2-Lane				0	0	A	0	A
C - 17	City of Jackson	Broadway Avenue	Mission Boulevard	Clinton Road	C	Minor Collector, 2-Lane				438	3766	D	7094	F
C - 18	City of Jackson	Broadway Avenue	Clinton Road	SR 49	C	Minor Collector, 2-Lane				533	3950	E	7366	F
C - 19	City of Jackson	China Graveyard Road	City Limits	New York Ranch Road	C	Minor Collector, 2-Lane				1030	1287	B	1545	B
C - 20	City of Jackson	Clinton Road	SR 49	Broadway Avenue	C	Minor Collector, 2-Lane				1541	3860	D	4620	E
C - 21	City of Jackson	Clinton Road	City Limits	Butte Mountain Road	C	Minor Collector, 2-Lane				1344	1697	C	2049	C
C - 22	City of Jackson	Court Street	Main Street	New York Ranch Road	C	Minor Collector, 2-Lane	3,450	79%	D	4440	4569	E	5878	F
C - 23	City of Jackson	Court Street	New York Ranch Road	SR 88	C	Minor Collector, 2-Lane				826	931	B	1036	B
C - 24	City of Jackson	French Bar Road	City Limits	SR 49	C	Minor Collector, 2-Lane				223	1800	C	3377	D
C - 25	City of Jackson	Hoffman Street	Argonaut Lane	SR 49 / 88	C	Major Collector, 2-Lane	2,160	22%	B	2422	2388	B	2878	C
C - 26	City of Jackson	Jackson Gate Road	City Limits	China Graveyard Road	C	Major Collector, 2-Lane	2,641	30%	C	1201	3091	C	2598	B
C - 27	City of Jackson	Main Street	SR 49 / 88	Water Street	C	Major Collector, 2-Lane	2,130	26%	B	2848	2633	C	2630	C
C - 28	City of Jackson	Mission Boulevard	SR 88	Broadway Avenue	C	Major Collector, 2-Lane				1263	4860	C	7636	D
C - 29	City of Jackson	New York Ranch Road	Court Street	China Graveyard Road	C	Major Collector, 2-Lane	4,216	48%	C	2109	4582	C	2848	C
C - 30	City of Jackson	North Main Street	SR 49 / 88	China Graveyard Road	C	Major Collector, 2-Lane	3,200	36%	C	565	4520	C	2585	C
C - 31	City of Jackson	Sutter Creek Road	City Limits	Argonaut Lane	C	Major Collector, 2-Lane	310	4%	A	324	460	A	630	A
S - 1	Sphere of Influence	State Route 49/88	Argonaut Lane	City Limits	D	Minor Arterial, 2-Lane with ClimbingLane	16,170	67%	D	17476	25264	F	28665	F
S - 2	Sphere of Influence	China Graveyard Road	Jackson Gate Road	Sphere of Influence Boundary	C	Minor Collector, 2-Lane				1112	1367	B	1623	C
S - 3	Sphere of Influence	Jackson Gate Road	Sphere of Influence Boundary	City Limits	C	Major Collector, 2-Lane	2,641	30%	C	1152	2167	C	2703	C
M - 1	Modeling Area (County)	State Route 49	SR 104	Airport Road	D	Minor Arterial, 4-Lane with Turning Lane	20,000	37%	B	16838	25996	C	31831	D
M - 2	Modeling Area (County)	State Route 49	Airport Road	Industry Boulevard	D	Minor Arterial, 4-Lane with Turning Lane	20,000	57%	B	19643	25958	C	31608	D
M - 3	Modeling Area (County)	State Route 49	Industry Boulevard	Jackson Gate Road	D	Minor Arterial, 4-Lane with Turning Lane	20,000	57%	B	16508	25813	C	28134	C
M - 4	Modeling Area (County)	State Route 49	Jackson Gate Road	SR 88	D	Minor Arterial, 4-Lane with Turning Lane				16605	22783	B	28888	C
M - 5	Modeling Area (County)	State Route 49/88	SR 49 / SR 88 Junction	Argonaut Lane	D	Minor Arterial, 4-Lane with Turning Lane	21,200	63%	B	19674	27412	C	32098	D
M - 6	Modeling Area (County)	State Route 49	City Limits	Calaveras County Line	D	Minor Arterial, 2-Lane	8,100	44%	C	8421	12296	D	14014	E
M - 7	Modeling Area (County)	State Route 88	Modeling Area Boundary	SR 104	D	Minor Arterial, 2-Lane	15,200	87%	E	16698	20564	F	27419	F
M - 8	Modeling Area (County)	State Route 88	SR 104	Wilkilow Way	D	Minor Arterial, 2-Lane	9,040	52%	D	10258	12169	D	16555	E
M - 9	Modeling Area (County)	State Route 88	Wilkilow Way	Martell Road	D	Minor Arterial, 2-Lane with Turning Lane	11,740	62%	D	13149	15830	D	19929	F
M - 10	Modeling Area (County)	State Route 88	Martell Road	SR 49	D	Minor Arterial, 2-Lane	16,500	90%	E	14773	19645	F	21863	F
M - 11	Modeling Area (County)	State Route 88	City Limits	Modeling Area Boundary	D	Minor Arterial, 2-Lane	8,300	47%	D	8983	8735	D	9853	D
M - 12	Modeling Area (County)	State Route 104	SR 88	Industry Boulevard	C	Minor Arterial, 2-Lane	7,900	47%	D	7858	11522	D	11652	E
M - 13	Modeling Area (County)	State Route 104	Industry Boulevard	Forest Products Road	C	Minor Arterial, 2-Lane	8,400	50%	D	7940	12621	D	16382	E
M - 14	Modeling Area (County)	State Route 104	Forest Products Road	SR 49	C	Minor Arterial, 2-Lane	6,200	33%	C	7435	10160	D	13356	E
M - 15	Modeling Area (County)	Argonaut Lane	SR 49 / 88	Buena Vista Drive	C	Minor Collector, 2-Lane				2825	3345	D	3861	D
M - 16	Modeling Area (County)	China Graveyard Road	Sphere of Influence Boundary	City Limits	C	Minor Collector, 2-Lane				1112	1367	B	1623	C
M - 17	Modeling Area (County)	Clinton Road	City Limits	Modeling Area Boundary	C	Minor Collector, 2-Lane	1,480	32%	B	986	1694	C	1578	B
M - 18	Modeling Area (County)	Jackson Gate Road	SR 49	Sphere of Influence Boundary	C	Major Collector, 2-Lane	2,641	30%	C	2880	3772	C	5861	D
M - 19	Modeling Area (County)	Martell Road	SR 88	SR 49	C	Major Collector, 2-Lane				2636	2975	C	3124	C
M - 20	Modeling Area (County)	New York Ranch Road	China Graveyard Road	Modeling Area Boundary	C	Major Collector, 2-Lane	1,680	19%	B	1379	1485	B	980	B
M - 21	Modeling Area (County)	Ridge Road	SR 49	Sutter Hill Road	C	Minor Arterial, 2-Lane with Turning Lane				14113	17423	E	20758	F
M - 22	Modeling Area (County)	Ridge Road	Sutter Hill Road	Old Ridge Road	C	Minor Arterial, 2-Lane				12870	15211	D	14392	E
M - 23	Modeling Area (County)	Ridge Road	Old Ridge Road	Modeling Area Boundary	C	Minor Arterial, 2-Lane	14,275	82%	E	12456	15163	E	14231	E

Note: Bolded values denote roadways operating above acceptable LOS thresholds

1. Shoulder Code = Shoulder width adjustment, 1=6' or wider, 2=5' to 6', 3=2' to 4', 4=2' or less

2. Lane Code = Lane width adjustment, 1=12' or wider, 2=11' to 12', 3=10' to 11', 4=10' or less

3. Capacity Mod = Percent of total facility capacity achievable based on Shoulder Code and Lane Code

APPENDIX C
Land Uses By TAZ

2010 Land Uses by TAZ

TAZ	ATYPE	ATYPE_S1	SF_DU	MF_DU	CBD_KSF	SC_KSF	GC_KSF	OFF_KSF	LI_KSF	MED_KSF	ES_ENR	PARK_ACI	HS_ENR	HI_KSF	PRISON	SKI	CASINO	WINE	REC
41	9	Jackson	1	0	0	0	7.9	55.9	15.2	0	0	0	0	0	0	0	0	0	0
54	9	Jackson	3	271	0	0	9.2	27.7	0	32.3	0	2	0	0	0	0	0	0	0
55	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	9	Jackson	35	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
82	9	Jackson	123	49	10.5	0	7.1	70.8	0	64.5	428	0	0	0	0	0	0	0	0
83	9	Jackson	5	37	0	0	1.4	69.5	0	0	0	0	0	0	0	0	0	0	0
84	9	Jackson	98	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	9	Jackson	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86	9	Jackson	21	109	0	0	16.5	73.7	0	12.6	0	0	0	0	0	0	0	0	0
87	9	Jackson	66	150	0	0	11	3.9	0	0	0	0	0	0	0	0	0	0	0
88	9	Jackson	20	11	188.5	0	11.8	56.3	9.3	0	0	0	0	0	0	0	0	0	0
89	9	Jackson	146	4	0	0	13	58.6	7.5	3	0	0	0	0	0	0	0	0	0
90	9	Jackson	96	0	0	0	44.5	4.7	0	0	0	0	0	0	0	0	0	0	0
91	9	Jackson	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	9	Jackson	7	43	0	0	27	6.2	13.6	0	0	0	0	0	0	0	0	0	0
93	9	Jackson	45	0	0	0	3.8	0	0	0	0	0	0	0	0	0	0	0	0
94	9	Jackson	18	0	0	0	38.6	4.3	0	0	364	0	0	0	0	0	0	0	0
97	9	Jackson	0	0	0	0	30.4	25.6	11	0	0	0	0	0	0	0	0	0	0
134	9	Jackson	0	0	0	0	20.5	0	39.6	0	0	18.8	0	0	0	0	0	0	0
136	9	Jackson	3	0	0	0	0	17.6	0	0	0	0	0	0	0	0	0	0	0
137	9	Jackson	6	0	0	0	123.5	1.7	20	0	0	0	0	0	0	0	0	0	0
144	9	Jackson	52	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	9	Jackson	1	88	0	0	0	0	0	89.3	0	0	0	0	0	0	0	0	0
146	9	Jackson	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	9	Jackson	0	0	0	43.5	85.9	4	0	0	0	0	0	0	0	0	0	0	0
153	9	Jackson	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	9	Jackson	20	4	1.5	0	24.8	14	0	0	0	0	0	0	0	0	0	0	0
163	9	Jackson	0	0	0	204.5	0	0	0	0	0	0	0	0	0	0	0	0	0
164	9	Jackson	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	275.9	0	0	0	0	0
166	9	Jackson	0	0	0	110.9	51.1	0	0	0	0	0	0	0	0	0	0	0	0
167	9	Jackson	0	0	0	149.3	68.4	0	0	0	0	0	0	0	0	0	0	0	0
168	9	Jackson	0	0	0	0	21.9	0	0	0	0	0	0	0	0	0	0	0	0
169	9	Jackson	2	0	0	0	47.2	11	11	0	0	0	0	0	0	0	0	0	0
170	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	9	Jackson	2	0	0	0	72.2	0	0	2.1	0	0	0	0	0	0	0	0	0
180	9	Jackson	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181	9	Jackson	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
182	9	Jackson	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
184	9	Jackson	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185	9	Jackson	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197	9	Jackson	85	47	0	0	0	92	0	0	0	2	652	0	0	0	0	0	0
198	9	Jackson	72	0	0	67	100.9	0	10.4	0	0	0	0	0	0	0	0	0	0
228	9	Jackson	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230	9	Jackson	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
301	9	Jackson	1	28	0	0	24.4	0	0	0	0	0	0	0	0	0	0	0	0
302	9	Jackson	8	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0
303	9	Jackson	26	35	0	0	25.7	0	0	2.5	0	0	0	0	0	0	0	0	0
304	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
305	9	Jackson	5	8	0	0	18.7	0	0	2	0	0	0	0	0	0	0	0	0
306	9	Jackson	93	0	0	0	19	0	5	13.2	0	0	0	0	0	0	0	0	0

307	9	Jackson	35	0	0	51.8	18.2	0	0	0	0	0	0	0	0	0	0	0
308	9	Jackson	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	9	Jackson	207	2	0	0	3	25.2	0	0	0	0	0	0	0	0	0	0
310	9	Jackson	16	74	0	0	0	0	4.7	165	0	0	0	0	0	0	0	0
311	9	Jackson	29	101	0	0	5.3	0	10	0	0	0	0	0	0	0	0	0
312	9	Jackson	0	6	0	0	4	2.8	0	0	0	0	0	0	0	0	0	0
313	9	Jackson	0	0	0	0	0	60.7	0	0	0	0	0	0	0	0	0	0
314	9	Jackson	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
315	9	Jackson	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2010 to Buildout Land Use Growth by TAZ

TAZ	ATYPE	ATYPE_S1	SF_DU	MF_DU	CBD_KSF	SC_KSF	GC_KSF	OFF_KSF	LI_KSF	MED_KSF	ES_ENR	PARK_ACI	HS_ENR	HI_KSF	PRISON	SKI	CASINO	WINE	REC
41	9	Jackson	40	9	0	0	46.83682	75.14585	0	0	0	0	0	0	0	0	0	0	0
54	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	9	Jackson	15	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
82	9	Jackson	0	0	0	0	0	5	0	0	264	0	0	0	0	0	0	0	0
83	9	Jackson	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
84	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86	9	Jackson	2	0	0	0	0	15	0	5	0	0	0	0	0	0	0	0	0
87	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
88	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
89	9	Jackson	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	9	Jackson	2	4	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0
93	9	Jackson	4	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	9	Jackson	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0
97	9	Jackson	0	0	0	0	0	0	260.7223	0	0	0	0	0	0	0	0	0	0
134	9	Jackson	0	0	0	0	0	0	83	0	0	0	0	0	0	0	0	0	0
136	9	Jackson	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	9	Jackson	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	9	Jackson	30	50	0	0	5	20	0	20	0	0	0	0	0	0	0	0	0
146	9	Jackson	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	9	Jackson	0	0	0	0	0	37.7639	0	0	0	0	0	0	0	0	0	0	0
153	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	9	Jackson	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0
163	9	Jackson	8	0	0	0	0	53.38195	0	0	0	0	0	0	0	0	0	0	0
164	9	Jackson	24	0	0	0	0	86.2917	0	0	0	0	0	0	0	0	0	0	0
165	9	Jackson	0	0	0	0	0	0	95.04175	0	0	0	0	0	0	0	0	0	0
166	9	Jackson	2	104	0	0	19	151.5834	0	0	0	0	0	0	0	0	0	0	0
167	9	Jackson	1	96	0	0	0	48.7639	0	0	0	0	0	0	0	0	0	0	0
168	9	Jackson	0	0	0	0	0	0	272.7223	0	0	0	0	0	0	0	0	0	0
169	9	Jackson	114	203	0	0	0	0	29.60073	0	0	0	0	0	0	0	0	0	0
170	9	Jackson	14	397	0	0	28	27	0	0	0	0	0	0	0	0	0	0	0
172	9	Jackson	4	0	0	0	0	97	0	0	0	0	0	0	0	0	0	0	0
180	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181	9	Jackson	6	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
182	9	Jackson	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
184	9	Jackson	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185	9	Jackson	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197	9	Jackson	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
198	9	Jackson	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0
228	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230	9	Jackson	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
301	9	Jackson	2	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
302	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
303	9	Jackson	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
304	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
305	9	Jackson	0	155	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0
306	9	Jackson	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

307	9	Jackson	1	80	0	6	0	0	0	0	0	0	0	0	0	0	0	0
308	9	Jackson	270	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	9	Jackson	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
310	9	Jackson	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
311	9	Jackson	0	0	0	0	38	0	0	43	0	0	0	0	0	0	0	0
312	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
313	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
314	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
315	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Buildout Land Uses by TAZ

TAZ	ATYPE	ATYPE_S1	SF_DU	MF_DU	CBD_KSF	SC_KSF	GC_KSF	OFF_KSF	LI_KSF	MED_KSF	ES_ENR	PARK_ACI	HS_ENR	HI_KSF	PRISON	SKI	CASINO	WINE	REC
41	9	Jackson	41	9	0	0	54.73682	131.0459	15.2	0	0	0	0	0	0	0	0	0	0
54	9	Jackson	3	271	0	0	9.2	27.7	0	32.3	0	2	0	0	0	0	0	0	0
55	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	9	Jackson	50	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
82	9	Jackson	123	49	10.5	0	7.1	75.8	0	64.5	692	0	0	0	0	0	0	0	0
83	9	Jackson	5	37	0	0	1.4	74.5	0	0	0	0	0	0	0	0	0	0	0
84	9	Jackson	98	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	9	Jackson	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86	9	Jackson	23	109	0	0	16.5	88.7	0	17.6	0	0	0	0	0	0	0	0	0
87	9	Jackson	66	150	0	0	11	3.9	0	0	0	0	0	0	0	0	0	0	0
88	9	Jackson	20	11	188.5	0	11.8	56.3	9.3	0	0	0	0	0	0	0	0	0	0
89	9	Jackson	150	4	0	0	13	58.6	7.5	3	0	0	0	0	0	0	0	0	0
90	9	Jackson	96	0	0	0	44.5	4.7	0	0	0	0	0	0	0	0	0	0	0
91	9	Jackson	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	9	Jackson	9	47	0	0	27	38.2	13.6	0	0	0	0	0	0	0	0	0	0
93	9	Jackson	49	17	0	0	3.8	0	0	0	0	0	0	0	0	0	0	0	0
94	9	Jackson	18	0	0	0	43.6	9.3	0	0	364	0	0	0	0	0	0	0	0
97	9	Jackson	0	0	0	0	30.4	25.6	271.7223	0	0	0	0	0	0	0	0	0	0
134	9	Jackson	0	0	0	0	20.5	0	122.6	0	0	18.8	0	0	0	0	0	0	0
136	9	Jackson	50	0	0	0	0	17.6	0	0	0	0	0	0	0	0	0	0	0
137	9	Jackson	7	0	0	0	123.5	1.7	20	0	0	0	0	0	0	0	0	0	0
144	9	Jackson	52	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	9	Jackson	31	138	0	0	5	20	0	109.3	0	0	0	0	0	0	0	0	0
146	9	Jackson	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	9	Jackson	0	0	0	43.5	85.9	41.7639	0	0	0	0	0	0	0	0	0	0	0
153	9	Jackson	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	9	Jackson	20	4	1.5	0	29.8	19	0	0	0	0	0	0	0	0	0	0	0
163	9	Jackson	8	0	0	204.5	0	53.38195	0	0	0	0	0	0	0	0	0	0	0
164	9	Jackson	25	0	0	0	0	86.2917	0	0	0	0	0	0	0	0	0	0	0
165	9	Jackson	0	0	0	0	0	0	95.04175	0	0	0	0	275.9	0	0	0	0	0
166	9	Jackson	2	104	0	110.9	70.1	151.5834	0	0	0	0	0	0	0	0	0	0	0
167	9	Jackson	1	96	0	149.3	68.4	48.7639	0	0	0	0	0	0	0	0	0	0	0
168	9	Jackson	0	0	0	0	21.9	0	272.7223	0	0	0	0	0	0	0	0	0	0
169	9	Jackson	116	203	0	0	47.2	11	40.60073	0	0	0	0	0	0	0	0	0	0
170	9	Jackson	14	397	0	0	28	27	0	0	0	0	0	0	0	0	0	0	0
172	9	Jackson	6	0	0	0	72.2	97	0	2.1	0	0	0	0	0	0	0	0	0
180	9	Jackson	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181	9	Jackson	8	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
182	9	Jackson	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
184	9	Jackson	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185	9	Jackson	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197	9	Jackson	86	47	0	0	0	92	0	0	0	2	652	0	0	0	0	0	0
198	9	Jackson	92	0	0	67	120.9	0	10.4	0	0	0	0	0	0	0	0	0	0
228	9	Jackson	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230	9	Jackson	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
301	9	Jackson	3	40	0	0	24.4	0	0	0	0	0	0	0	0	0	0	0	0
302	9	Jackson	8	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0
303	9	Jackson	43	35	0	0	25.7	0	0	2.5	0	0	0	0	0	0	0	0	0
304	9	Jackson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
305	9	Jackson	5	163	0	0	43.7	0	0	2	0	0	0	0	0	0	0	0	0
306	9	Jackson	215	0	0	0	19	0	5	13.2	0	0	0	0	0	0	0	0	0

307	9	Jackson	36	80	0	57.8	18.2	0	0	0	0	0	0	0	0	0	0	0
308	9	Jackson	271	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	9	Jackson	212	2	0	0	3	30.2	0	0	0	0	0	0	0	0	0	0
310	9	Jackson	16	78	0	0	0	0	4.7	165	0	0	0	0	0	0	0	0
311	9	Jackson	29	101	0	0	43.3	0	10	43	0	0	0	0	0	0	0	0
312	9	Jackson	0	6	0	0	4	2.8	0	0	0	0	0	0	0	0	0	0
313	9	Jackson	0	0	0	0	0	60.7	0	0	0	0	0	0	0	0	0	0
314	9	Jackson	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
315	9	Jackson	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX D
Cost Estimate Worksheets

Roadway: China Graveyard Rd

From Jackson Gate to New York Ranch Rd

Prepared By:

omni · means
ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST

Improvement: Resurface, Restripe

(TYPICAL SECTION WILL REMAIN AS IS)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***3,590***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	0	CY	$20.00	$0
Existing Facilities				
Removal of Existing Trees	0	EA	$583.00	$0
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,041	Ton	$90.00	$93,699
Class 2 Aggregate Base	0	CY	$45.00	$0
Concrete Items				
Concrete Sidewalk	0	CY	$400.00	$0
Curb and Gutter	0	LF	$23.32	$0
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	10770	LF	$0.50	$5,385
Pavement Markings	0	SF	$3.00	$0
Signs	0	EA	$200.00	$0

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	0	EA	$5,119.80	$0
Storm Drain Mainline w/ Manholes	0	LF	$81.27	$0
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	0	EA	$2,650.00	$0
Street Lights Conduit System	0	LF	$15.90	$0
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Grind and Overlay	86160	SF	$2.00	$172,320
Subtotal Construction Items				**$271,404**
Traffic Control			2%	$5,428
Construction Contingency			25%	$67,851
Engineering and Administration			25%	$86,171
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$430,854**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. Cost is for grind and 2 inch overlay only.

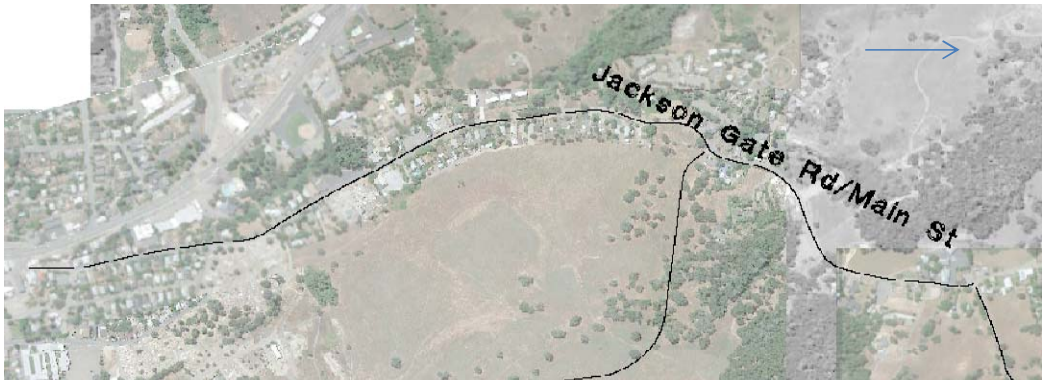
Roadway: Jackson Gate Rd
From SR 49 to China Graveyard Rd

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST

Improvement: Resurface, Restripe



(TYPICAL SECTION WILL REMAIN AS IS)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***6,716***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	0	CY	$20.00	$0
Existing Facilities				
Removal of Existing Trees	0	EA	$583.00	$0
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,948	Ton	$90.00	$175,288
Class 2 Aggregate Base	0	CY	$45.00	$0
Concrete Items				
Concrete Sidewalk	0	CY	$400.00	$0
Curb and Gutter	0	LF	$23.32	$0
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	20148	LF	$0.50	$10,074
Pavement Markings	0	SF	$3.00	$0
Signs	0	EA	$200.00	$0

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	0	EA	$5,119.80	$0
Storm Drain Mainline w/ Manholes	0	LF	$81.27	$0
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	0	EA	$2,650.00	$0
Street Lights Conduit System	0	LF	$15.90	$0
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Grind and Overlay	161184	SF	$2.00	$322,368
Subtotal Construction Items				**$507,730**
Traffic Control			2%	$10,155
Construction Contingency			25%	$126,932
Engineering and Administration			25%	$161,204
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$806,021**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. Cost is for grind and 2 inch overlay only.
3. Average width of road taken as 24 ft. Actual width varies in some areas.

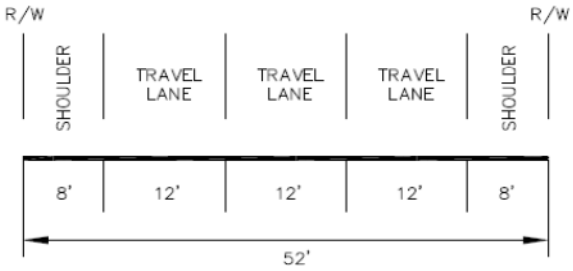
Roadway: Highway 49/88

From Argonaut Lane to Vogan Toll Road

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN *PROJECT LENGTH (ft):* ***2,744***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	3,862	CY	$20.00	$77,239
Existing Facilities				
Removal of Existing Trees	4	EA	$583.00	$2,332
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	5,769	Ton	$90.00	$519,233
Class 2 Aggregate Base	2,439	CY	$45.00	$109,760
Concrete Items				
Concrete Sidewalk	0	CY	$400.00	$0
Curb and Gutter	0	LF	$23.32	$0
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	10976	LF	$0.50	$5,488
Pavement Markings	126	SF	$3.00	$378
Signs	1	EA	$200.00	$200

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	0	EA	$5,119.80	$0
Storm Drain Mainline w/ Manholes	0	LF	$81.27	$0
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	0	EA	$2,650.00	$0
Street Lights Conduit System	0	LF	$15.90	$0
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$714,630**
Traffic Control			2%	$14,293
Construction Contingency			25%	$178,657
Engineering and Administration			25%	$226,895
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$1,134,475**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Overlay existing road; remove and replace outside 8' on each side when paving shoulders

Roadway: North Main

From Stark Lane to Church St

Prepared By:

omni · means
ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST

COST BREAKDOWN *PROJECT LENGTH (ft):* ***3,820***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	1,692	CY	$20.00	$33,848
Existing Facilities				
Removal of Existing Trees	1	EA	$583.00	$583
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	0	Ton	$90.00	$0
Class 2 Aggregate Base	660	CY	$45.00	$29,681
Concrete Items				
Concrete Sidewalk	637	CY	$400.00	$254,667
Curb and Gutter	7,640	LF	$23.32	$178,165
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	3	EA	$1,908.00	$5,724
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	7740	LF	$0.50	$3,870
Pavement Markings	0	SF	$3.00	$0
Signs	8	EA	$200.00	$1,600

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	0	EA	$5,119.80	$0
Storm Drain Mainline w/ Manholes	0	LF	$81.27	$0
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	0	EA	$2,650.00	$0
Street Lights Conduit System	0	LF	$15.90	$0
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Flasing Beacon & Connection Work	2	EA	$10,000.00	$20,000
Subtotal Construction Items				**$528,138**
Traffic Control			2%	$10,563
Construction Contingency			25%	$132,034
Engineering and Administration			25%	$167,684
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	30,560	SF	$8.00	$244,480
Roadway Total				**$1,082,899**

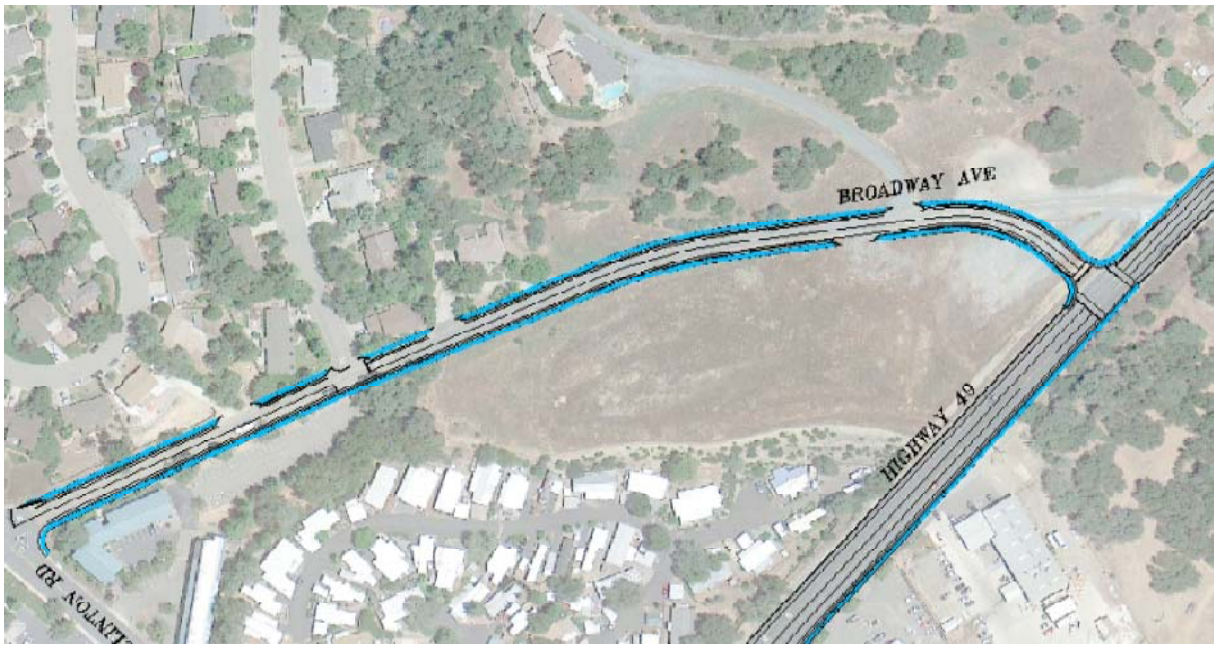
Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Assume median is landscaped.
4. Assume R/W take is approximately sidewalk, curb & gutter width X length of improvements

Roadway: BROADWAY AVENUE

From Clinton Road to Highway 49

Prepared By:

PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN *PROJECT LENGTH (ft):* ***1,522***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	1,919	CY	$20.00	$38,387
Existing Facilities				
Removal of Existing Trees	14	EA	$583.00	$8,162
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,646	Ton	$90.00	$148,139
Class 2 Aggregate Base	1,045	CY	$45.00	$47,026
Concrete Items				
Concrete Sidewalk	249	CY	$400.00	$99,689
Curb and Gutter	2,924	LF	$23.32	$68,188
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	6	EA	$2,332.00	$13,992
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	4566	LF	$0.50	$2,283
Pavement Markings	252	SF	$3.00	$756
Signs	2	EA	$200.00	$400

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	8	EA	$5,119.80	$40,958
Storm Drain Mainline w/ Manholes	1,522	LF	$81.27	$123,688
Relocate Fire Hydrant	1	EA	$4,134.00	$4,134
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	19	EA	$2,650.00	$50,350
Street Lights Conduit System	2850	LF	$15.90	$45,315
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$691,467**
Traffic Control			2%	$13,829
Construction Contingency			25%	$172,867
Engineering and Administration			25%	$219,541
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	16,992	SF	$8.00	$135,937
Roadway Total				**$1,233,640**

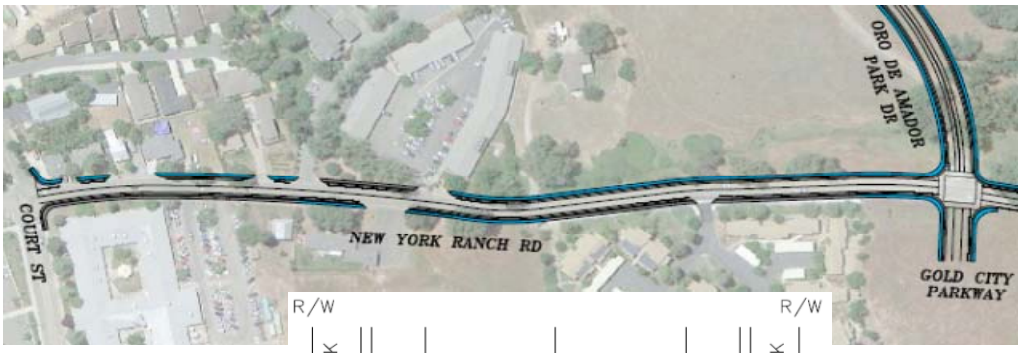
Roadway: New York Ranch Road

From Court St to Oro de Amador Park Dr/Gold City Pkwy

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN *PROJECT LENGTH (ft):* ***1,525***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	4,666	CY	$20.00	$93,329
Existing Facilities				
Removal of Existing Trees	12	EA	$583.00	$6,996
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,382	Ton	$90.00	$124,403
Class 2 Aggregate Base	282	CY	$45.00	$12,698
Concrete Items				
Concrete Sidewalk	172	CY	$400.00	$68,611
Curb and Gutter	2,851	LF	$23.32	$66,474
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	10	EA	$2,332.00	$23,320
Curb Ramp	2	EA	$1,908.00	$3,816
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	3676	LF	$0.50	$1,838
Pavement Markings	294	SF	$3.00	$882
Signs	5	EA	$200.00	$1,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	8	EA	$5,119.80	$40,958
Storm Drain Mainline w/ Manholes	1,525	LF	$81.27	$123,932
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	19	EA	$2,650.00	$50,350
Street Lights Conduit System	2850	LF	$15.90	$45,315
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	5	EA	$5,000.00	$25,000
Subtotal Construction Items				**$688,922**
Traffic Control			2%	$13,778
Construction Contingency			25%	$172,230
Engineering and Administration			25%	$218,733
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$1,093,663**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Improvements within right-of-way.

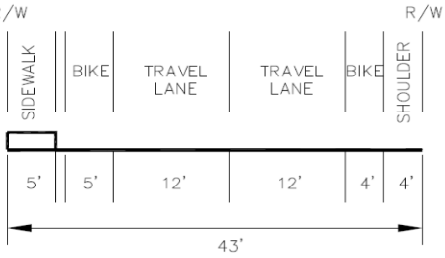
Roadway: New York Ranch Road

From Oro de Amador Park Dr/Gold City Pkwy to China Graveyard Rd

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***3,975***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	3,758	CY	$20.00	$75,165
Existing Facilities				
Removal of Existing Trees	20	EA	$583.00	$11,660
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	4,727	Ton	$90.00	$425,462
Class 2 Aggregate Base	2,326	CY	$45.00	$104,666
Concrete Items				
Concrete Sidewalk	77	CY	$400.00	$30,933
Curb and Gutter	811	LF	$23.32	$18,917
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	2	EA	$2,332.00	$4,664
Curb Ramp	7	EA	$1,908.00	$13,356
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	11379	LF	$0.50	$5,690
Pavement Markings	630	SF	$3.00	$1,890
Signs	5	EA	$200.00	$1,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	2	EA	$5,119.80	$10,240
Storm Drain Mainline w/ Manholes	3,975	LF	$81.27	$323,035
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	5	EA	$2,650.00	$13,250
Street Lights Conduit System	750	LF	$15.90	$11,925
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	10	EA	$5,000.00	$50,000
Subtotal Construction Items				**$1,101,853**
Traffic Control			2%	$22,037
Construction Contingency			25%	$275,463
Engineering and Administration			25%	$349,838
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$1,749,191**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Improvements within right-of-way.

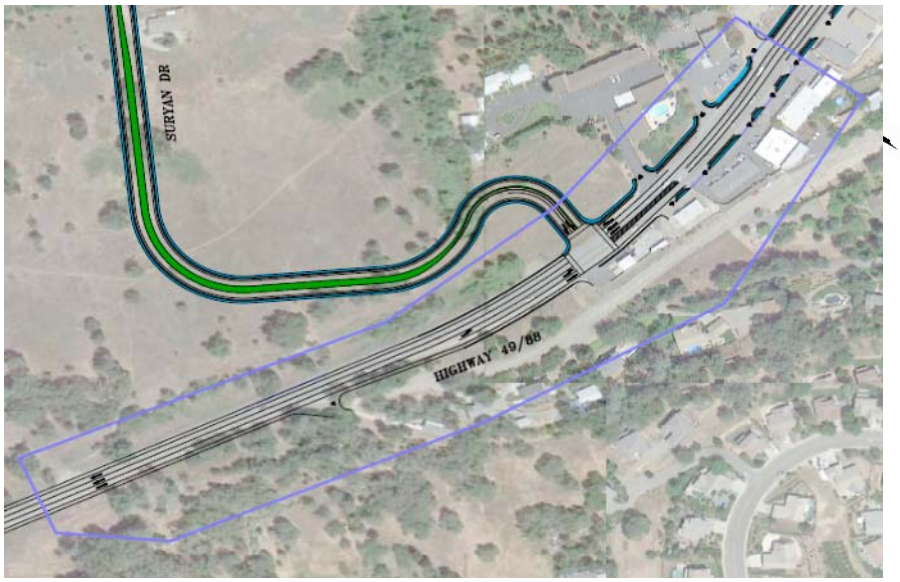
Intersection

Highway 49/88 @ Suryan Drive

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	1,918	CY	$20.00	$38,353
Existing Facilities				
Removal of Existing Trees	8	EA	$583.00	$4,664
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	3,637	Ton	$90.00	$327,291
Class 2 Aggregate Base	1,187	CY	$45.00	$53,430
Concrete Items				
Concrete Sidewalk	40	CY	$400.00	$15,803
Curb and Gutter	352	LF	$23.32	$8,215
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	9	EA	$2,332.00	$20,988
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	7775	LF	$0.50	$3,888
Pavement Markings	924	SF	$3.00	$2,772
Signs	5	EA	$200.00	$1,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	1	EA	$5,119.80	$5,120
Storm Drain Mainline w/ Manholes	532	LF	$81.27	$43,234
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	2	EA	$2,650.00	$5,300
Street Lights Conduit System	300	LF	$15.90	$4,770
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	1	LS	$170,000.00	$170,000
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$704,826**
Traffic Control			2%	$14,097
Construction Contingency			25%	$176,207
Engineering and Administration			25%	$223,782
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	5,500	SF	$8.00	$44,000
Roadway Total				**$1,162,912**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Overlay SR 49 and restripe where there is sufficient existing pavement.

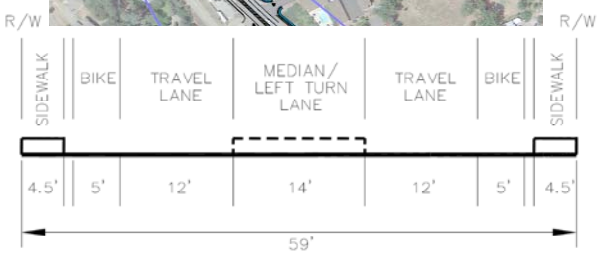
Roadway: Suryan Drive

From Highway 49/88 to North Main Street

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***1,783***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	6,621	CY	$20.00	$132,412
Existing Facilities				
Removal of Existing Trees	20	EA	$583.00	$11,660
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	2,516	Ton	$90.00	$226,484
Class 2 Aggregate Base	2,512	CY	$45.00	$113,029
Concrete Items				
Concrete Sidewalk	296	CY	$400.00	$118,600
Curb and Gutter	3,547	LF	$23.32	$82,713
Median Island Curb	3,567	LF	$27.56	$98,303
Median Island Flatwork	0	SF	$7.00	$0
Driveway	1	EA	$2,332.00	$2,332
Curb Ramp	3	EA	$1,908.00	$5,724
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	7134	LF	$0.50	$3,567
Pavement Markings	252	SF	$3.00	$756
Signs	5	EA	$200.00	$1,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	9	EA	$5,119.80	$46,078
Storm Drain Mainline w/ Manholes	1,783	LF	$81.27	$144,898
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	15401	SF	$10.00	$154,013
Street Lights and Pull Boxes	24	EA	$2,650.00	$63,600
Street Lights Conduit System	3600	LF	$15.90	$57,240
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$1,262,410**
Traffic Control			2%	$25,248
Construction Contingency			25%	$315,602
Engineering and Administration			25%	$400,815
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	105,223	SF	$8.00	$841,784
Roadway Total				**$2,845,859**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Assume median is landscaped.

Roadway: Oro de Amador Park Drive

From North Main Street to New York Ranch Road

Prepared By:

PRELIMINARY OPINION OF COST

(based on the City of Jackson Standards where applicable)

COST BREAKDOWN *PROJECT LENGTH (ft):* ***3,889***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	13,982	CY	$20.00	$279,641
Existing Facilities				
Removal of Existing Trees	20	EA	$583.00	$11,660
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	8,386	Ton	$90.00	$754,773
Class 2 Aggregate Base	7,438	CY	$45.00	$334,726
Concrete Items				
Concrete Sidewalk	432	CY	$400.00	$172,852
Curb and Gutter	0	LF	$23.32	$0
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	8	EA	$1,908.00	$15,264
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	15557	LF	$0.50	$7,778
Pavement Markings	252	SF	$3.00	$756
Signs	5	EA	$200.00	$1,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	0	EA	$5,119.80	$0
Storm Drain Mainline w/ Manholes	0	LF	$81.27	$0
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	32892	SF	$10.00	$328,918
Street Lights and Pull Boxes	26	EA	$2,650.00	$68,900
Street Lights Conduit System	3900	LF	$15.90	$62,010
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	1	EA	$5,000.00	$5,000
Bridge at New York Ranch Intersection	1	LS	$97,000.00	$97,000
Subtotal Construction Items				**$2,140,278**
Traffic Control			2%	$42,806
Construction Contingency			25%	$535,070
Engineering and Administration			25%	$679,538
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	1,869	SF	$150.00	$280,328
Undeveloped	231,482	SF	$8.00	$1,851,856
Roadway Total				**$5,529,875**

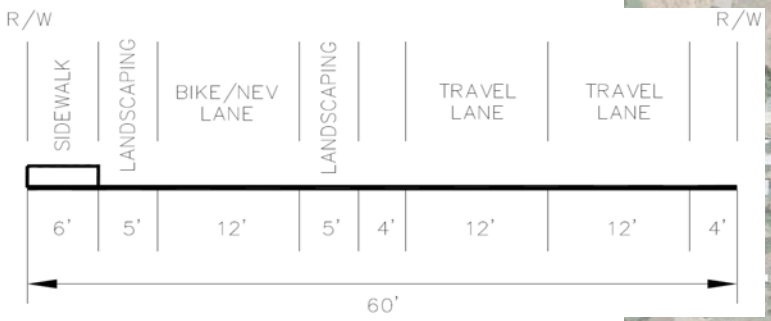
Roadway: Hillman Way

From North Main Street to New York Ranch Road

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



(INSERT TYPICAL CR

(based on the City of Jackson Standards where applicable)

COST BREAKDOWN *PROJECT LENGTH (ft):* ***1,063***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	3,845	CY	$20.00	$76,904
Existing Facilities				
Removal of Existing Trees	6	EA	$583.00	$3,498
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	2,467	Ton	$90.00	$222,003
Class 2 Aggregate Base	2,210	CY	$45.00	$99,430
Concrete Items				
Concrete Sidewalk	118	CY	$400.00	$47,256
Curb and Gutter	0	LF	$23.32	$0
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	2	EA	$1,908.00	$3,816
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	4253	LF	$0.50	$2,127
Pavement Markings	252	SF	$3.00	$756
Signs	2	EA	$200.00	$400

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	0	EA	$5,119.80	$0
Storm Drain Mainline w/ Manholes	0	LF	$81.27	$0
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	4633	SF	$10.00	$46,325
Street Lights and Pull Boxes	7	EA	$2,650.00	$18,550
Street Lights Conduit System	1050	LF	$15.90	$16,695
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	1	EA	$5,000.00	$5,000
Subtotal Construction Items				**$542,758**
Traffic Control			2%	$10,855
Construction Contingency			25%	$135,690
Engineering and Administration			25%	$172,326
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	63,795	SF	$8.00	$510,360
Roadway Total				**$1,371,989**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. AC dike included in Type A Asphalt Concrete cost.

Roadway: Placer Drive Extension

From Current Terminus to Oro de Amador Park Drive

Prepared By:

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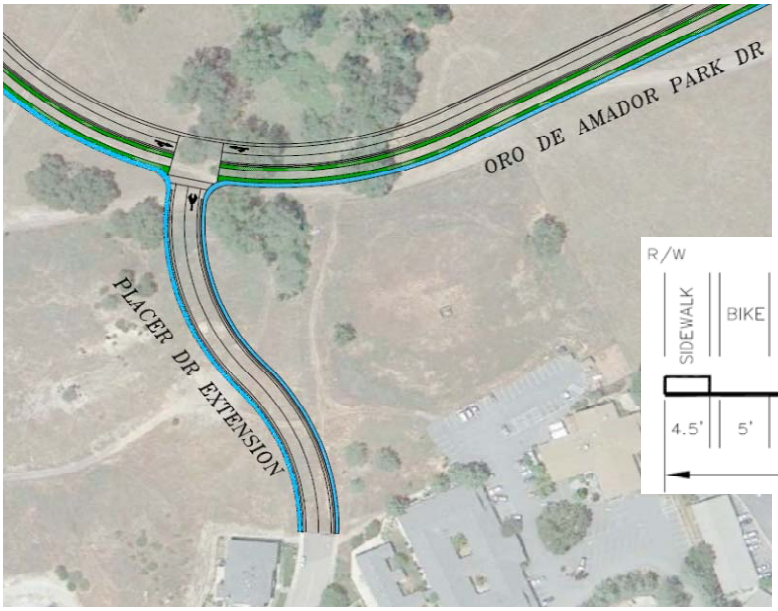
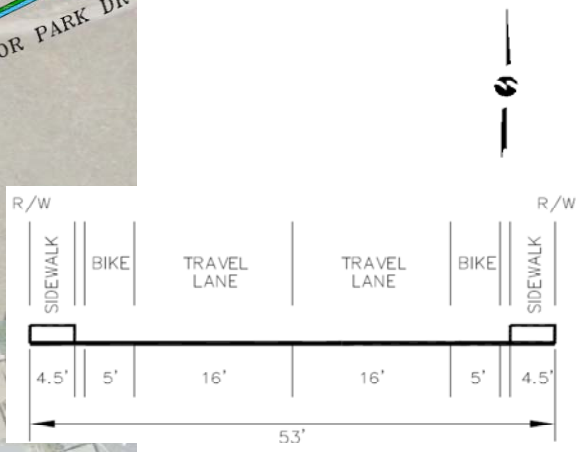
PRELIMINARY OPINION OF COST





(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***622***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	1,978	CY	$20.00	$39,566
Existing Facilities				
Removal of Existing Trees	1	EA	$583.00	$583
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,228	Ton	$90.00	$110,517
Class 2 Aggregate Base	1,183	CY	$45.00	$53,226
Concrete Items				
Concrete Sidewalk	104	CY	$400.00	$41,471
Curb and Gutter	1,244	LF	$23.32	$29,013
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	4	EA	$1,908.00	$7,632
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	1866	LF	$0.50	$933
Pavement Markings	84	SF	$3.00	$252
Signs	2	EA	$200.00	$400

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	3	EA	$5,119.80	$15,359
Storm Drain Mainline w/ Manholes	622	LF	$81.27	$50,548
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	8	EA	$2,650.00	$21,200
Street Lights Conduit System	1200	LF	$15.90	$19,080
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$389,781**
Traffic Control			2%	$7,796
Construction Contingency			25%	$97,445
Engineering and Administration			25%	$123,755
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	32,969	SF	$8.00	$263,753
Roadway Total				**$882,530**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.

Roadway: Gold City Parkway

From New York Ranch Road to Highway 88

Prepared By:

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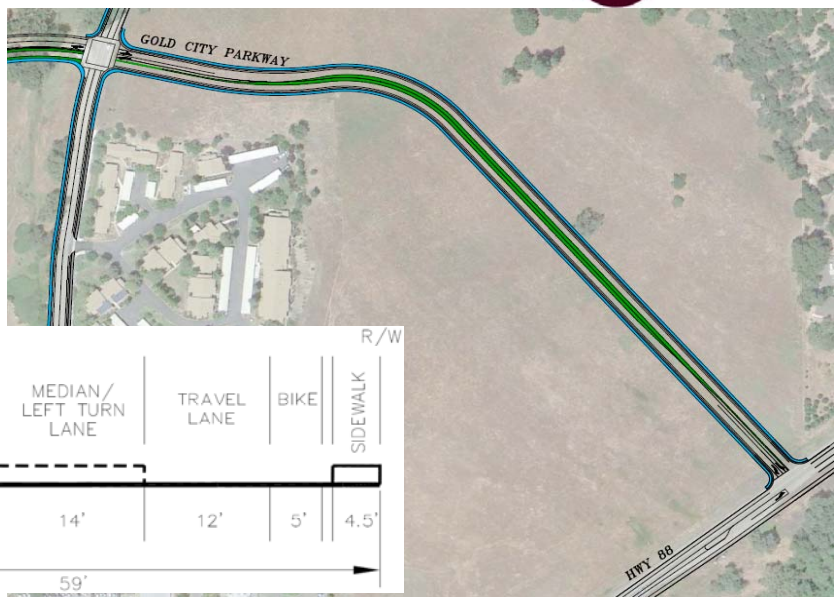
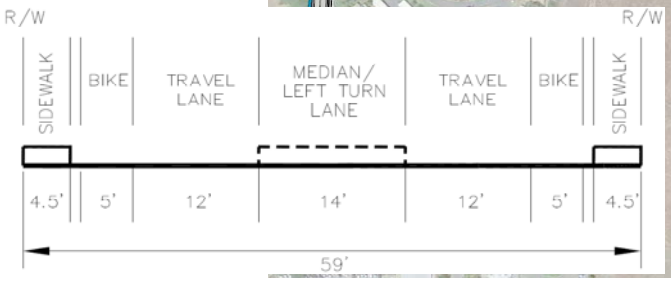
PRELIMINARY OPINION OF COST





(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***1,738***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	6,454	CY	$20.00	$129,071
Existing Facilities				
Removal of Existing Trees	1	EA	$583.00	$583
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	2,459	Ton	$90.00	$221,309
Class 2 Aggregate Base	2,454	CY	$45.00	$110,411
Concrete Items				
Concrete Sidewalk	290	CY	$400.00	$115,875
Curb and Gutter	3,476	LF	$23.32	$81,066
Median Island Curb	3,476	LF	$27.56	$95,805
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	3	EA	$1,908.00	$5,724
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	6952	LF	$0.50	$3,476
Pavement Markings	252	SF	$3.00	$756
Signs	2	EA	$200.00	$400

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	9	EA	$5,119.80	$46,078
Storm Drain Mainline w/ Manholes	1,738	LF	$81.27	$141,241
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	14857	SF	$10.00	$148,574
Street Lights and Pull Boxes	23	EA	$2,650.00	$60,950
Street Lights Conduit System	3450	LF	$15.90	$54,855
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	1	EA	$5,000.00	$5,000
Subtotal Construction Items				**$1,221,175**
Traffic Control			2%	$24,424
Construction Contingency			25%	$305,294
Engineering and Administration			25%	$387,723
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	102,549	SF	$8.00	$820,393
Roadway Total				**$2,759,009**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Assume median is landscaped.

Intersection

Highway 88 @ Gold City Parkway

Prepared By:

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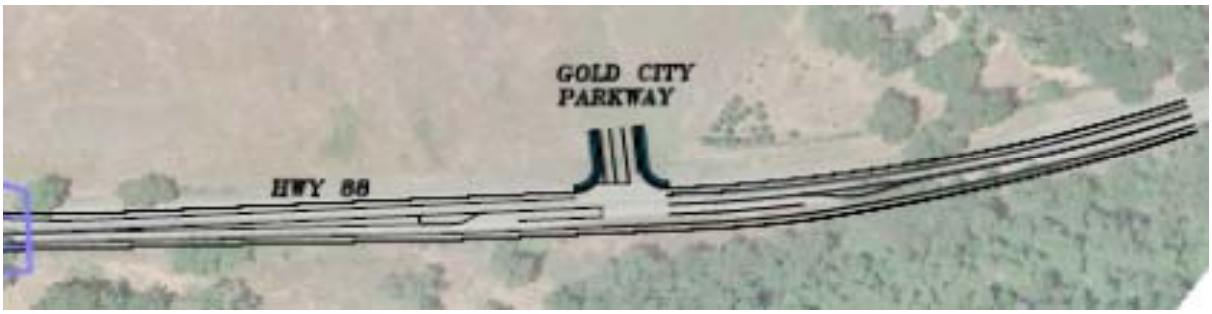
PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	1,192	CY	$20.00	$23,846
Existing Facilities				
Removal of Existing Trees	3	EA	$583.00	$1,749
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,951	Ton	$90.00	$175,629
Class 2 Aggregate Base	746	CY	$45.00	$33,553
Concrete Items				
Concrete Sidewalk	12	CY	$400.00	$4,754
Curb and Gutter	10	LF	$23.32	$222
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	2	EA	$1,908.00	$3,816
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	6650	LF	$0.50	$3,325
Pavement Markings	924	SF	$3.00	$2,772
Signs	5	EA	$200.00	$1,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	0	EA	$5,119.80	$0
Storm Drain Mainline w/ Manholes	190	LF	$81.27	$15,441
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	0	EA	$2,650.00	$0
Street Lights Conduit System	0	LF	$15.90	$0
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	3	EA	$5,000.00	$15,000
Subtotal Construction Items				**$281,106**
Traffic Control			2%	$5,622
Construction Contingency			25%	$70,277
Engineering and Administration			25%	$89,251
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	19,669	SF	$8.00	$157,352
Roadway Total				**$603,608**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Overlay SR 49 and restripe where there is sufficient existing pavement.

Roadway: Highway 49/88

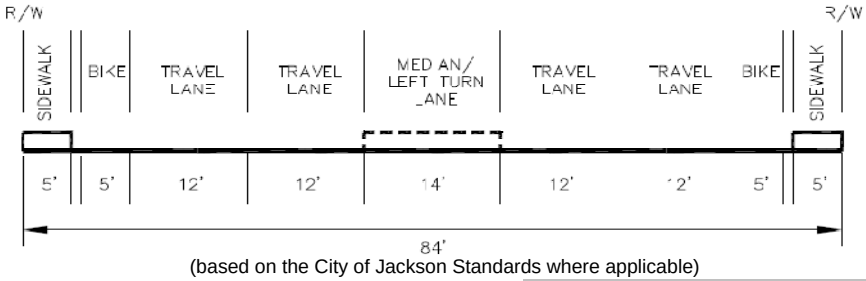
From Sutter Street to Main Street

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST

Improvement: XXX



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***872***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	2,053	CY	$20.00	$41,058
Existing Facilities				
Removal of Existing Trees	2	EA	$583.00	$1,166
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	2,234	Ton	$90.00	$201,040
Class 2 Aggregate Base	1,206	CY	$45.00	$54,250
Concrete Items				
Concrete Sidewalk	154	CY	$400.00	$61,630
Curb and Gutter	1,544	LF	$23.32	$36,006
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	10	EA	$2,332.00	$23,320
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	872	LF	$2.30	$2,006
Thermoplastic Striping	0	LF	$0.50	$0
Pavement Markings	504	SF	$3.00	$1,512
Signs	2	EA	$200.00	$400

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	4	EA	$5,119.80	$20,479
Storm Drain Mainline w/ Manholes	872	LF	$81.27	$70,865
Relocate Fire Hydrant	1	EA	$4,134.00	$4,134
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	10	EA	$2,650.00	$26,500
Street Lights Conduit System	1500	LF	$15.90	$23,850
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	7	EA	$5,000.00	$35,000
Subtotal Construction Items				**$603,215**
Traffic Control			2%	$12,064
Construction Contingency			25%	$150,804
Engineering and Administration			25%	$191,521
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	8,000	SF	$8.00	$64,000
Roadway Total				**$1,021,604**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Existing 56-66' paved section. Assume an overlay on 40' and the remaining to be removed and replaced

Roadway: Highway 49/88

From Jackson Lodge Driveway to Sutter St.

Prepared By:

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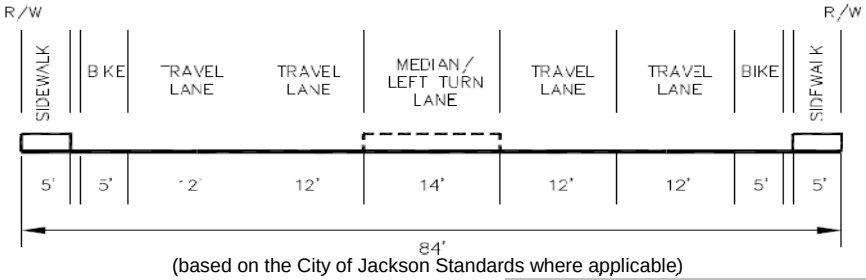
PRELIMINARY OPINION OF COST

Improvement: XXX



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***925***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	2,131	CY	$20.00	$42,624
Existing Facilities				
Removal of Existing Trees	1	EA	$583.00	$583
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	2,370	Ton	$90.00	$213,259
Class 2 Aggregate Base	1,279	CY	$45.00	$57,547
Concrete Items				
Concrete Sidewalk	117	CY	$400.00	$46,778
Curb and Gutter	1,690	LF	$23.32	$39,411
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	8	EA	$2,332.00	$18,656
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	925	LF	$2.30	$2,128
Thermoplastic Striping	0	LF	$0.50	$0
Pavement Markings	588	SF	$3.00	$1,764
Signs	0	EA	$200.00	$0

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	5	EA	$5,119.80	$25,599
Storm Drain Mainline w/ Manholes	925	LF	$81.27	$75,172
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	11	EA	$2,650.00	$29,150
Street Lights Conduit System	1650	LF	$15.90	$26,235
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$578,905**
Traffic Control			2%	$11,578
Construction Contingency			25%	$144,726
Engineering and Administration			25%	$183,802
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$919,012**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Existing 56-66' paved section. Assume an overlay on 40' and the remaining to be removed and replaced.
4. Proposed improvements within right-of-way.

Roadway: Highway 49/88

From Main Street to Highway 88

Prepared By:

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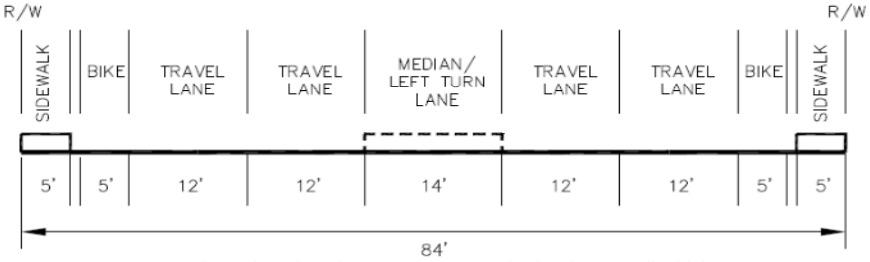
PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN *PROJECT LENGTH (ft):* ***945***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	2,434	CY	$20.00	$48,688
Existing Facilities				
Removal of Existing Trees	4	EA	$583.00	$2,332
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	2,956	Ton	$90.00	$266,003
Class 2 Aggregate Base	1,496	CY	$45.00	$67,314
Concrete Items				
Concrete Sidewalk	151	CY	$400.00	$60,444
Curb and Gutter	1,670	LF	$23.32	$38,944
Median Island Curb	555	LF	$27.56	$15,296
Median Island Flatwork	0	SF	$7.00	$0
Driveway	11	EA	$2,332.00	$25,652
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	945	LF	$2.30	$2,174
Thermoplastic Striping	1640	LF	$0.50	$820
Pavement Markings	672	SF	$3.00	$2,016
Signs	1	EA	$200.00	$200

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	5	EA	$5,119.80	$25,599
Storm Drain Mainline w/ Manholes	945	LF	$81.27	$76,797
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	6485	SF	$10.00	$64,850
Street Lights and Pull Boxes	11	EA	$2,650.00	$29,150
Street Lights Conduit System	1650	LF	$15.90	$26,235
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	7	EA	$5,000.00	$35,000
Box Culvert over Creek	1	LS	$235,000.00	$235,000
Subtotal Construction Items				**$1,022,514**
Traffic Control			2%	$20,450
Construction Contingency			25%	$255,629
Engineering and Administration			25%	$324,648
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	16,258	SF	$8.00	$130,061
Roadway Total				**$1,753,303**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Existing 56-66' paved section. Assume an overlay on 40' and the remaining to be removed and replaced.
4. This estimate includes striping for parking (on-street and in proposed lots).
5. This estimate does not inclued the in roadway lights or the pedestrian bridge.
6. Because parking net loss = 0, not parking right-of-way was considered as being taken.

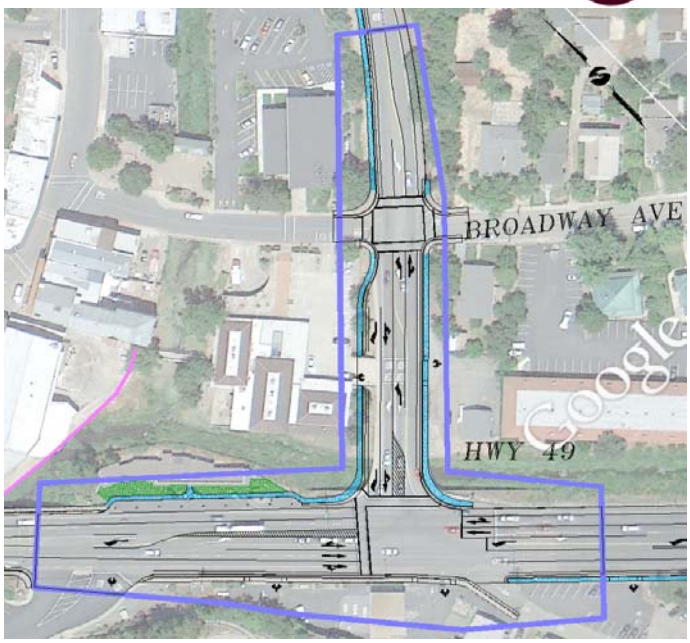
Intersection

Highway 49/88 @ Highway 88 & Broadway

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



COST BREAKDOWN

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	545	CY	$20.00	$10,905
Existing Facilities				
Removal of Existing Trees	5	EA	$583.00	$2,915
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	2,267	Ton	$90.00	$204,025
Class 2 Aggregate Base	284	CY	$45.00	$12,796
Concrete Items				
Concrete Sidewalk	101	CY	$400.00	$40,593
Curb and Gutter	1,042	LF	$23.32	$24,299
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	3	EA	$2,332.00	$6,996
Curb Ramp	8	EA	$1,908.00	$15,264
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	4499	LF	$0.50	$2,250
Pavement Markings	630	SF	$3.00	$1,890
Signs	5	EA	$200.00	$1,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	3	EA	$5,119.80	$15,359
Storm Drain Mainline w/ Manholes	1,132	LF	$81.27	$91,994
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	7	EA	$2,650.00	$18,550
Street Lights Conduit System	1050	LF	$15.90	$16,695
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	1	LS	$220,000.00	$220,000
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Concrete Box Culvert Widening	1	LS	$102,300.00	$102,300
Retaining Wall	1	LS	$315,000.00	$315,000
Interconnect Cable	600	LF	$20.00	$12,000
Import Borrow (Fill for the widening Area)	1	LS	$72,500.00	$72,500
Subtotal Construction Items				**$787,831**
Traffic Control			2%	$15,757
Construction Contingency			25%	$196,958
Engineering and Administration			25%	$250,136
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$1,250,682**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Overlay SR 49 and restripe where there is sufficient existing pavement.
4. Existing surface will be overlaid 5" HMA and where widening occurs, section used is 7" HMA, 12" AB
5. Improvements within R/W

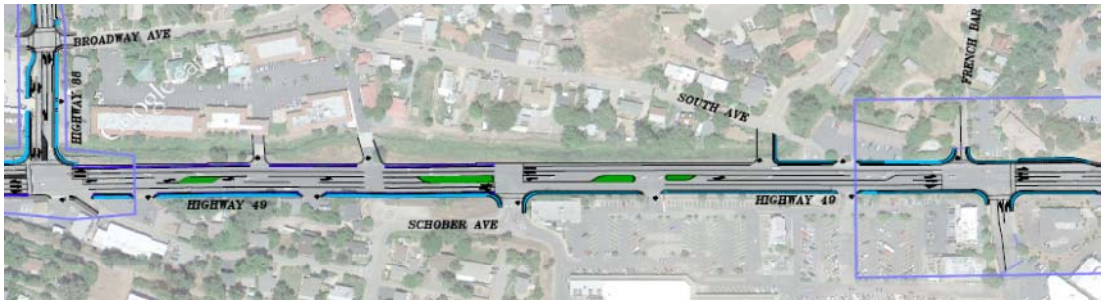
Roadway: Highway 49

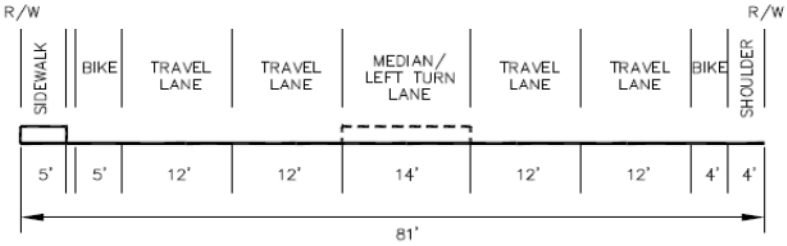
From Highway 88 to French Bar Road

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST





(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***1,615***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	1,306	CY	$20.00	$26,116
Existing Facilities				
Removal of Existing Trees	5	EA	$583.00	$2,915
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	3,366	Ton	$90.00	$302,921
Class 2 Aggregate Base	179	CY	$45.00	$8,048
Concrete Items				
Concrete Sidewalk	165	CY	$400.00	$65,952
Curb and Gutter	1,733	LF	$23.32	$40,407
Median Island Curb	1,421	LF	$27.56	$39,168
Median Island Flatwork	591	SF	$7.00	$4,134
Driveway	4	EA	$2,332.00	$9,328
Curb Ramp	2	EA	$1,908.00	$3,816
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	6459	LF	$0.50	$3,230
Pavement Markings	756	SF	$3.00	$2,268
Signs	5	EA	$200.00	$1,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	5	EA	$5,119.80	$25,599
Storm Drain Mainline w/ Manholes	1,615	LF	$81.27	$131,246
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	4769	SF	$10.00	$47,692
Street Lights and Pull Boxes	12	EA	$2,650.00	$31,800
Street Lights Conduit System	1800	LF	$15.90	$28,620
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	1	LS	$170,000.00	$170,000
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	1	EA	$5,000.00	$5,000
			$3,500.00	
			$12.00	
			$150.00	
			$8.00	
Subtotal Construction Items				**$949,258**
Traffic Control			2%	$18,985
Construction Contingency			25%	$237,315
Engineering and Administration			25%	$301,390
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$1,506,948**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Improvements within right-of-way.
4. This estimate does not include the cost of the realignment of South Avenue, nor the cost of the proposed bridge at this location.

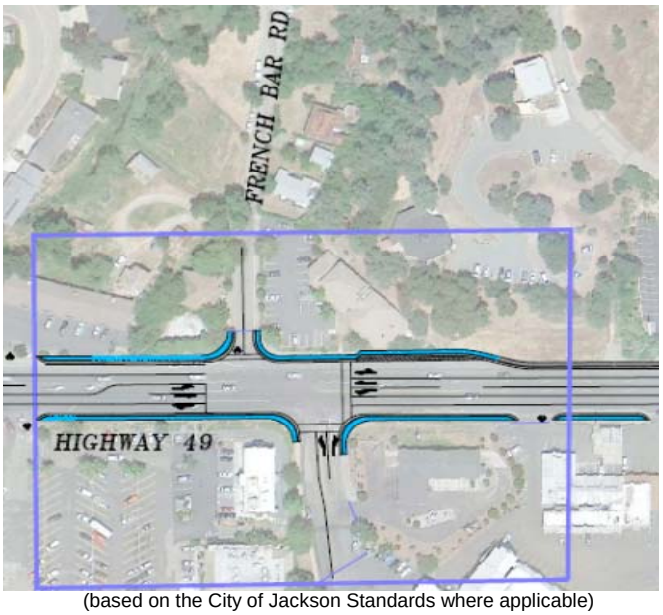
Intersection

Highway 49 @ French Bar Road

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	281	CY	$20.00	$5,626
Existing Facilities				
Removal of Existing Trees	0	EA	$583.00	$0
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,535	Ton	$90.00	$138,142
Class 2 Aggregate Base	114	CY	$45.00	$5,143
Concrete Items				
Concrete Sidewalk	103	CY	$400.00	$41,197
Curb and Gutter	1,235	LF	$23.32	$28,798
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	6	EA	$1,908.00	$11,448
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	2564	LF	$0.50	$1,282
Pavement Markings	378	SF	$3.00	$1,134
Signs	5	EA	$200.00	$1,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	3	EA	$5,119.80	$15,359
Storm Drain Mainline w/ Manholes	1,235	LF	$81.27	$100,364
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	8	EA	$2,650.00	$21,200
Street Lights Conduit System	1200	LF	$15.90	$19,080
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	1	LS	$170,000.00	$170,000
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$559,774**
Traffic Control			2%	$11,195
Construction Contingency			25%	$139,943
Engineering and Administration			25%	$177,728
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$888,641**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Improvements within right-of-way.

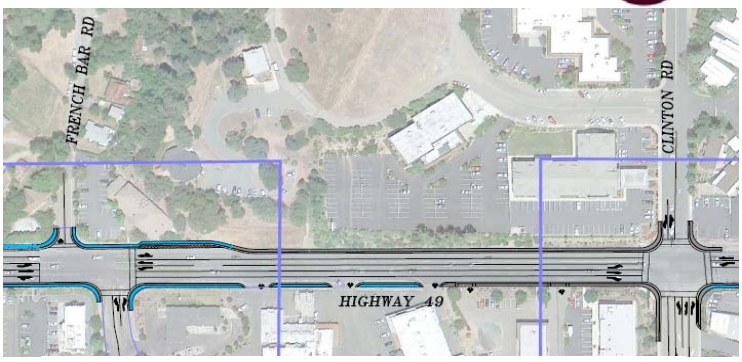
Roadway: Highway 49

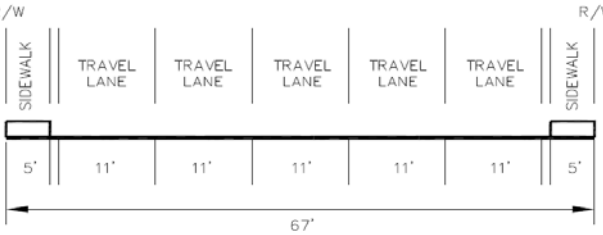
From French Bar Road to Clinton Road

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST





(based on the City of Jackson Standards where applicable)

COST BREAKDOWN *PROJECT LENGTH (ft):* ***677***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	48	CY	$20.00	$962
Existing Facilities				
Removal of Existing Trees	0	EA	$583.00	$0
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,125	Ton	$90.00	$101,269
Class 2 Aggregate Base	20	CY	$45.00	$919
Concrete Items				
Concrete Sidewalk	17	CY	$400.00	$6,776
Curb and Gutter	147	LF	$23.32	$3,427
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	3	EA	$2,332.00	$6,996
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	4063	LF	$0.50	$2,032
Pavement Markings	294	SF	$3.00	$882
Signs	2	EA	$200.00	$400

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	1	EA	$5,119.80	$5,120
Storm Drain Mainline w/ Manholes	677	LF	$81.27	$55,018
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	4	EA	$2,650.00	$10,600
Street Lights Conduit System	600	LF	$15.90	$9,540
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$203,938**
Traffic Control			2%	$4,079
Construction Contingency			25%	$50,985
Engineering and Administration			25%	$64,750
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$323,752**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Improvements within right-of-way.
4. Includes half of the Clinton intersection, as there is no intersection cost estimate for this location.

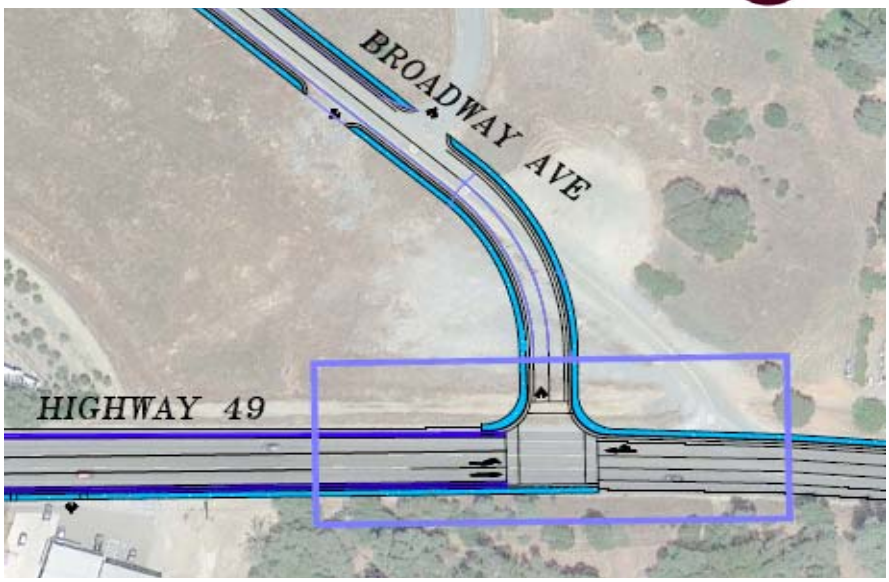
Intersection

Highway 49 @ Broadway Avenue

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	252	CY	$20.00	$5,036
Existing Facilities				
Removal of Existing Trees	0	EA	$583.00	$0
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	572	Ton	$90.00	$51,490
Class 2 Aggregate Base	130	CY	$45.00	$5,865
Concrete Items				
Concrete Sidewalk	48	CY	$400.00	$19,073
Curb and Gutter	538	LF	$23.32	$12,542
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	6	EA	$1,908.00	$11,448
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	1383	LF	$0.50	$691
Pavement Markings	168	SF	$3.00	$504
Signs	2	EA	$200.00	$400

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	1	EA	$5,119.80	$5,120
Storm Drain Mainline w/ Manholes	538	LF	$81.27	$43,721
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	4	EA	$2,650.00	$10,600
Street Lights Conduit System	600	LF	$15.90	$9,540
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	1	LS	$170,000.00	$170,000
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$346,030**
Traffic Control			2%	$6,921
Construction Contingency			25%	$86,507
Engineering and Administration			25%	$109,865
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	3,412	SF	$8.00	$27,299
Roadway Total				**$576,621**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Overlay SR 49 and restripe; does not include full new section.

Roadway: Highway 49

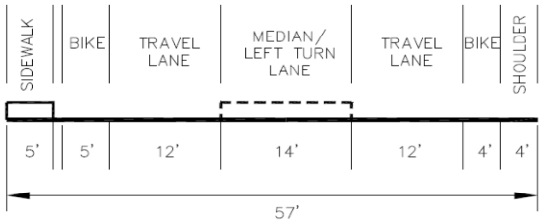
From Clinton Road to Broadway Avenue

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST

Improvement: XXX



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN *PROJECT LENGTH (ft):* ***1,093***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	261	CY	$20.00	$5,225
Existing Facilities				
Removal of Existing Trees	3	EA	$583.00	$1,749
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,486	Ton	$90.00	$133,719
Class 2 Aggregate Base	108	CY	$45.00	$4,853
Concrete Items				
Concrete Sidewalk	97	CY	$400.00	$38,703
Curb and Gutter	973	LF	$23.32	$22,690
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	6	EA	$2,332.00	$13,992
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	4372	LF	$0.50	$2,186
Pavement Markings	420	SF	$3.00	$1,260
Signs	2	EA	$200.00	$400

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	3	EA	$5,119.80	$15,359
Storm Drain Mainline w/ Manholes	1,093	LF	$81.27	$88,824
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	6	EA	$2,650.00	$15,900
Street Lights Conduit System	900	LF	$15.90	$14,310
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$359,171**
Traffic Control			2%	$7,183
Construction Contingency			25%	$89,793
Engineering and Administration			25%	$114,037
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$570,184**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Only overlay of existing roadway is used in this estimate, since the existing width of pavement is about 55'.
4. All improvements within right-of-way.
5. Includes half of the Clinton intersection, as there is no intersection cost estimate for this location.

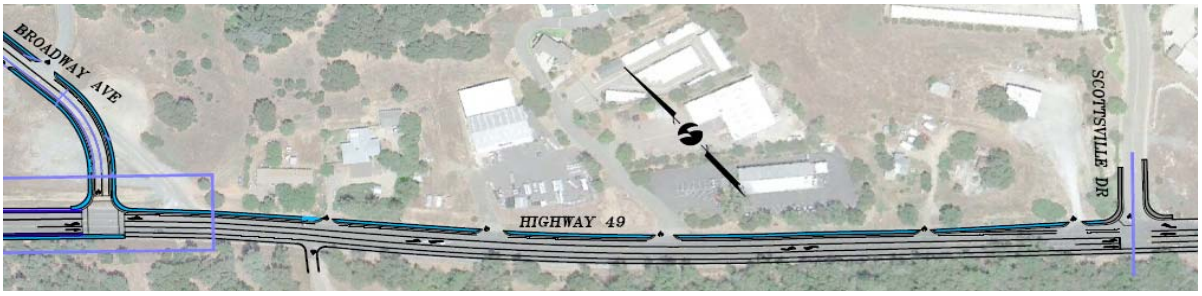
Roadway: Highway 49

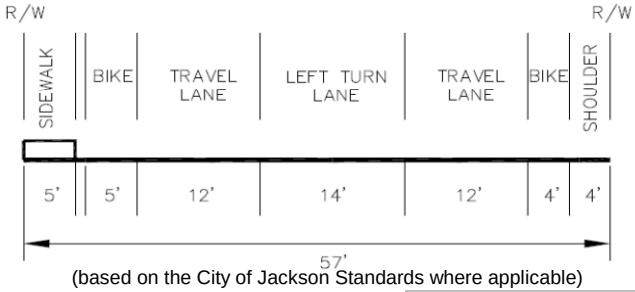
From Broadway Avenue to Scottsville Boulevard

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST





(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***1,562***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	367	CY	$20.00	$7,337
Existing Facilities				
Removal of Existing Trees	0	EA	$583.00	$0
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	0	Ton	$90.00	$0
Class 2 Aggregate Base	149	CY	$45.00	$6,700
Concrete Items				
Concrete Sidewalk	140	CY	$400.00	$55,889
Curb and Gutter	1,509	LF	$23.32	$35,190
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	10	EA	$1,908.00	$19,080
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	3123.62	LF	$0.50	$1,562
Pavement Markings	546	SF	$3.00	$1,638
Signs	1	EA	$200.00	$200

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	4	EA	$5,119.80	$20,479
Storm Drain Mainline w/ Manholes	1,562	LF	$81.27	$126,939
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	10	EA	$2,650.00	$26,500
Street Lights Conduit System	1500	LF	$15.90	$23,850
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$325,363**
Traffic Control			2%	$6,507
Construction Contingency			25%	$81,341
Engineering and Administration			25%	$103,303
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$516,514**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. All improvements within right-of-way.
4. Existing roadway appears to be newly paved and striped. This estimate only includes striping for bike lanes.

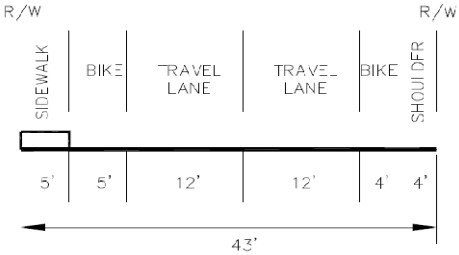
Roadway: Highway 88

From Broadway Avenue to Mission Boulevard

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST



(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***1,680***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	365	CY	$20.00	$7,308
Existing Facilities				
Removal of Existing Trees	2	EA	$583.00	$1,166
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,573	Ton	$90.00	$141,593
Class 2 Aggregate Base	148	CY	$45.00	$6,673
Concrete Items				
Concrete Sidewalk	139	CY	$400.00	$55,667
Curb and Gutter	1,503	LF	$23.32	$35,050
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	10	EA	$1,908.00	$19,080
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	5040	LF	$0.50	$2,520
Pavement Markings	252	SF	$3.00	$756
Signs	6	EA	$200.00	$1,200

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	4	EA	$5,119.80	$20,479
Storm Drain Mainline w/ Manholes	1,680	LF	$81.27	$136,528
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	10	EA	$2,650.00	$26,500
Street Lights Conduit System	1500	LF	$15.90	$23,850
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
In-Roadway Warning Lights &	1	LS	$50,000.00	$50,000
Pedestrian Beacon				
Subtotal Construction Items				**$528,370**
Traffic Control			2%	$10,567
Construction Contingency			25%	$132,092
Engineering and Administration			25%	$167,757
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	3,762	SF	$8.00	$30,100
Roadway Total				**$868,886**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Match to existing bridge on Highway 88. Overlay and restripe only.
4. Overlay and restripe existing roadway.

Intersection: Mission Blvd. & Highway 88

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST

Improvement: Roundabout

(based on the City of Jackson Standards where applicable)

COST BREAKDOWN

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	1,952	CY	$20.00	$39,038
Existing Facilities				
Removal of Existing Trees	0	EA	$583.00	$0
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,014	Ton	$90.00	$91,261
Class 2 Aggregate Base	1,017	CY	$45.00	$45,780
Concrete Items				
Concrete Sidewalk	78	CY	$400.00	$31,067
Curb and Gutter	839	LF	$23.32	$19,561
Median Island Curb	709	LF	$27.56	$19,539
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	4	EA	$1,908.00	$7,632
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	2711	LF	$0.50	$1,356
Pavement Markings	252	SF	$3.00	$756
Signs	20	EA	$200.00	$4,000

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	2	EA	$5,119.80	$10,240
Storm Drain Mainline w/ Manholes	419	LF	$81.27	$34,051
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	4143	SF	$10.00	$41,427
Street Lights and Pull Boxes	6	EA	$2,650.00	$15,900
Street Lights Conduit System	900	LF	$15.90	$14,310
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Truck Apron (reinforced)	2,513	SF	$10.00	$25,135
Truck Apron Curb (reinforced)	220	LF	$30.00	$6,597
Underground Utility Relocations (typical)	1	LS	$200,000.00	$200,000
Subtotal Construction Items				**$607,648**
Traffic Control			15%	$91,147
Construction Contingency			25%	$151,912
Engineering and Administration			25%	$212,677
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$1,063,384**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. AC/AB Structural Section based on type "Arterial" Jackson Standard p. 21/138 Multiplied by ENR
3. 4" AB under sidewalk and curb/gutter included as part of the AB item.
4. Stamped Concrete (no landscape) for roundabout channelizing medians
5. Landscaping included for center island and channelizing medians.
6. All improvements within right-of-way.

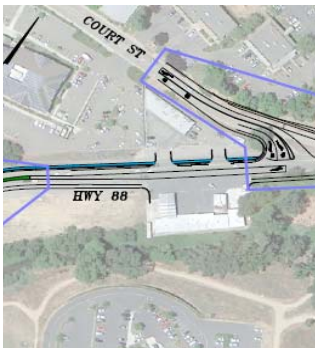
Roadway: Highway 88

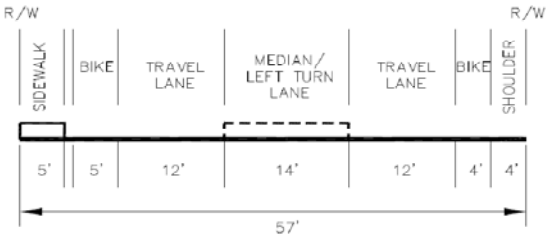
From Mission Boulevard to Court Street

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST





(based on the City of Jackson Standards where applicable)

COST BREAKDOWN — *PROJECT LENGTH (ft):* ***405***

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	499	CY	$20.00	$9,990
Existing Facilities				
Removal of Existing Trees	0	EA	$583.00	$0
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	602	Ton	$90.00	$54,206
Class 2 Aggregate Base	294	CY	$45.00	$13,238
Concrete Items				
Concrete Sidewalk	36	CY	$400.00	$14,407
Curb and Gutter	365	LF	$23.32	$8,512
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	2	EA	$2,332.00	$4,664
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	1620	LF	$0.50	$810
Pavement Markings	168	SF	$3.00	$504
Signs	3	EA	$200.00	$600

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	1	EA	$5,119.80	$5,120
Storm Drain Mainline w/ Manholes	405	LF	$81.27	$32,913
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	2	EA	$2,650.00	$5,300
Street Lights Conduit System	300	LF	$15.90	$4,770
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	0	LS	$170,000.00	$0
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Subtotal Construction Items				**$155,033**
Traffic Control			2%	$3,101
Construction Contingency			25%	$38,758
Engineering and Administration			25%	$49,223
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$246,115**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Do not replace existing pavement; overlay only.
4. All improvements lie within right-of-way.

Intersection

Highway 88 @ Court Street

Prepared By:

omni·means ENGINEERS · PLANNERS

PRELIMINARY OPINION OF COST

(based on the City of Jackson Standards where applicable)

COST BREAKDOWN

Item Description	Quantity	Units	Unit Cost	Total Cost
Earthwork				
Roadway Excavation	2,337	CY	$20.00	$46,735
Existing Facilities				
Removal of Existing Trees	6	EA	$583.00	$3,498
Relocate Existing Fence	0	LF	$14.84	$0
Structural Section				
Type A Asphalt Concrete	1,678	Ton	$90.00	$151,037
Class 2 Aggregate Base	1,474	CY	$45.00	$66,316
Concrete Items				
Concrete Sidewalk	3	CY	$400.00	$1,000
Curb and Gutter	63	LF	$23.32	$1,472
Median Island Curb	0	LF	$27.56	$0
Median Island Flatwork	0	SF	$7.00	$0
Driveway	0	EA	$2,332.00	$0
Curb Ramp	0	EA	$1,908.00	$0
Signing/Striping Improvements				
Thermoplastic Striping (New 6-lane Rd)	0	LF	$2.70	$0
Thermoplastic Striping (New 4-lane Rd)	0	LF	$2.30	$0
Thermoplastic Striping	3325	LF	$0.50	$1,663
Pavement Markings	420	SF	$3.00	$1,260
Signs	1	EA	$200.00	$200

Drainage & Utility Improvements				
New Drainage Inlets w/ laterals	0	EA	$5,119.80	$0
Storm Drain Mainline w/ Manholes	63	LF	$81.27	$5,120
Relocate Fire Hydrant	0	EA	$4,134.00	$0
Lighting and Landscaping				
Landscaping & Irrigation	0	SF	$10.00	$0
Street Lights and Pull Boxes	0	EA	$2,650.00	$0
Street Lights Conduit System	0	LF	$15.90	$0
Traffic Signals				
Traffic Signal Modification (low)	0	LS	$184,000.00	$0
Traffic Signal Modification (high)	0	LS	$210,000.00	$0
Traffic Signal New (low)	1	LS	$170,000.00	$170,000
Traffic Signal New (high)	0	LS	$220,000.00	$0
Additional Items				
Relocate Utility Poles	0	EA	$5,000.00	$0
Retaining wall	43	CY	$600.00	$25,517
Subtotal Construction Items				**$473,818**
Traffic Control			2%	$9,476
Construction Contingency			25%	$118,454
Engineering and Administration			25%	$150,437
Right-of-way				
Developed (parking)	0	Stall	$3,500.00	$0
Developed (landscape/conc)	0	SF	$12.00	$0
Developed (Building)	0	SF	$150.00	$0
Undeveloped	0	SF	$8.00	$0
Roadway Total				**$752,185**

Assumptions/Notes:
1. Asphalt conversion: 145 lbs = 1 ft^3
2. 4" AB under sidewalk and curb/gutter included as part of the AB item.
3. Improvements within right-of-way.
4. Remove and replace pavement with new structural section.