

Application of Criteria for a Project of Air Quality Concern

Project Title: Intersection Improvement SR 128 and Petrified Forest Road

Project Summary for Air Quality Conformity Task Force Meeting: December 3, 2015

Description

- Project will construct traffic signal at intersection of SR 128 and Petrified Forest Road in Calistoga, CA.
- No change to SR 128 or Petrified Forest Road mainline
- Existing intersection is 4-way stop controlled
- Proposed improvements include signalization, striping and ADA improvements
- Possible free right from Petrified Forest Road to south bound SR 128 to reduce delays on Petrified Forest Road

Background

- Field Review with Caltrans Local Assistance completed November 4, 2015
- Waiting for confirmation from Caltrans on required special studies for NEPA/CEQA review
- Anticipate completion of NEPA/CEQA June 2016
- Seeking air quality conformity determination on or before January 2, 2016
- Schedule based on deadline for STIP funding allocation

Not a Project of Air Quality Concern (40 CFR 93.123(b)(1))

(i) New or expanded highway projects with significant number/increase in diesel vehicles?

- Not a new or expanded highway project
- The proposed project is an individual intersection signalization and is therefore is exempt from regional conformity determination as per 40 CFR 93.126.
- No change in traffic volume or truck percentages on SR 128
- No change

(ii) Affects intersections at LOS D, E, or F with a significant number of diesel vehicles?

- Truck traffic represent 25% of intersection traffic volume
- Intersection currently at LOS D with 25 second delay
- Intersection projected to be LOS F (2040) with delays in excess of 120 seconds without project
- Project results in intersection at LOS D (2040) with 49 second delay
- No project changes to land use that would affect diesel traffic percentage

(iii) New bus and rail terminals and transfer points?—Not Applicable

(iv) Expanded bus and rail terminals and transfer points?—Not Applicable

(v) Affects areas identified in PM₁₀ or PM_{2.5} implementation plan as site of violation?

- No state implementation plan for PM_{2.5}
- Therefore, not identified in plan as an area of potential violation
- Nearest PM₁₀ or PM_{2.5} violations in 2007 in Redwood City, 10 miles southeast

Project Assessment Form for PM_{2.5} Interagency Consultation

RTIP ID# <i>(required)</i> 230518									
TIP ID# <i>(required)</i> NAP150001									
Air Quality Conformity Task Force Consideration Date Dec 3, 2015									
Project Description <i>(clearly describe project)</i> See Attached Figure 1, Project Vicinity Map SR 128 is the major two-lane east-west arterial that serves Napa County and provides access to Highway 101 to the northwest at Healdsburg/Geyserville and to Santa Rosa via Petrified Forest Road. The intersection with Petrified Forest Road is all-way stop on all approaches. ADA compliant Ramps are present at only two corners of the intersection. The City of Calistoga has documented the need for improvements to this intersection since 2000. There is a high volume of pass through trips originating in Sonoma and Lake Counties which use this intersection, combined with the lower Napa Valley traffic headed to Santa Rosa, make this intersection one of the busiest peak hour intersections in Calistoga, with combined average daily trips in excess of 12,000 ADT's. Existing conditions (2010) during Peak PM the intersection operates at LOS D with a 25.5 second delay and based on the General Plan projections, traffic volumes at the intersection are anticipated to nearly double over the next 25 years. Under these volumes, and without any improvements, the study intersection would be expected to operate at LOS F." The proposed project is to install a traffic signal.									
Type of Project: <i>Pick one project type:</i> Change to existing State highway intersection by installing a traffic signal.									
County Napa	Narrative Location/Route & Postmiles SR 128 PM 3.52 to 3.72 Caltrans Projects – EA#								
Lead Agency: City of Calistoga		mkirn@ci.calistoga.ca.us							
Contact Person Michael Kirn	Phone# 707-942-2782	Fax# 707-942-9472	Email						
Federal Action for which Project-Level PM Conformity is Needed <i>(check appropriate box)</i>									
<input checked="" type="checkbox"/>	Categorical Exclusion (NEPA)	<input type="checkbox"/>	EA or Draft EIS	<input type="checkbox"/>	FONSI or Final EIS	<input type="checkbox"/>	PS&E or Construction	<input type="checkbox"/>	Other
Scheduled Date of Federal Action:									
NEPA Delegation – Project Type <i>(check appropriate box)</i>									
<input type="checkbox"/>	Exempt	<input checked="" type="checkbox"/>	Section 6004 – Categorical Exemption	<input type="checkbox"/>	Section 6005 – Non-Categorical Exemption				
Current Programming Dates <i>(as appropriate)</i>									
	PE/Environmental	ENG	ROW	CON					
Start	November 2015		January 2017	1/2018					
End	November 2016		July 2017	1/2019					
Project Purpose and Need (Summary): <i>(please be brief)</i> Construct traffic signal at intersection of SR 128 and Petrified Forest Road to mitigate future LOS F to LOS C or better.									

PM_{2.5} Project Assessment Form for Interagency Consultation

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*

Surrounding land uses include a 183 space mobile home park, gas station and a tow business. Major connector to Santa Rosa and Lake County.

Opening Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Current LOS C, with delay of 18.0 seconds.

Future No Build LOS F, with over 120 second delay.

Future with signal LOS C, with 23.7 second delay.

RTP Horizon Year / Design Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

RTP horizon 2040. Proposed signalization will not change proposed AADT's.

Petrified Forest AADT – 27,300; SR 128 east of intersection AADT 28,400; SR 128 west of intersection AADT 11,850. Estimated truck traffic is 25.1% per Wine Country Interregional Partnership Phase II, Origin and Destination, December 2006.

Project Assessment Form for PM_{2.5} Interagency Consultation

Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

Based on Caltrans' 2012 Traffic Volumes on California State Highways the following is noted:

Route	Postmile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
128	3.62	CALISTOGA, PETRIFIED FOREST	1,200	12,500	10,800	1,200	12,700	11,100

RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

Opening Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses

Not applicable.

RTP Horizon Year / Design Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses

Not applicable.

Describe potential traffic redistribution effects of congestion relief (*impact on other facilities*)

There is no anticipated traffic redistribution through the project.

PM_{2.5} Project Assessment Form for Interagency Consultation

Comments/Explanation/Details *(please be brief)*

The proposed project is an individual intersection signalization and is therefore is exempt from regional conformity determination as per 40 CRF 93.126.

The project is not a new or expanded highway project.

The project does not include the construction of a new bus or rail terminal with a significant number of diesel vehicles congregating at a single location.

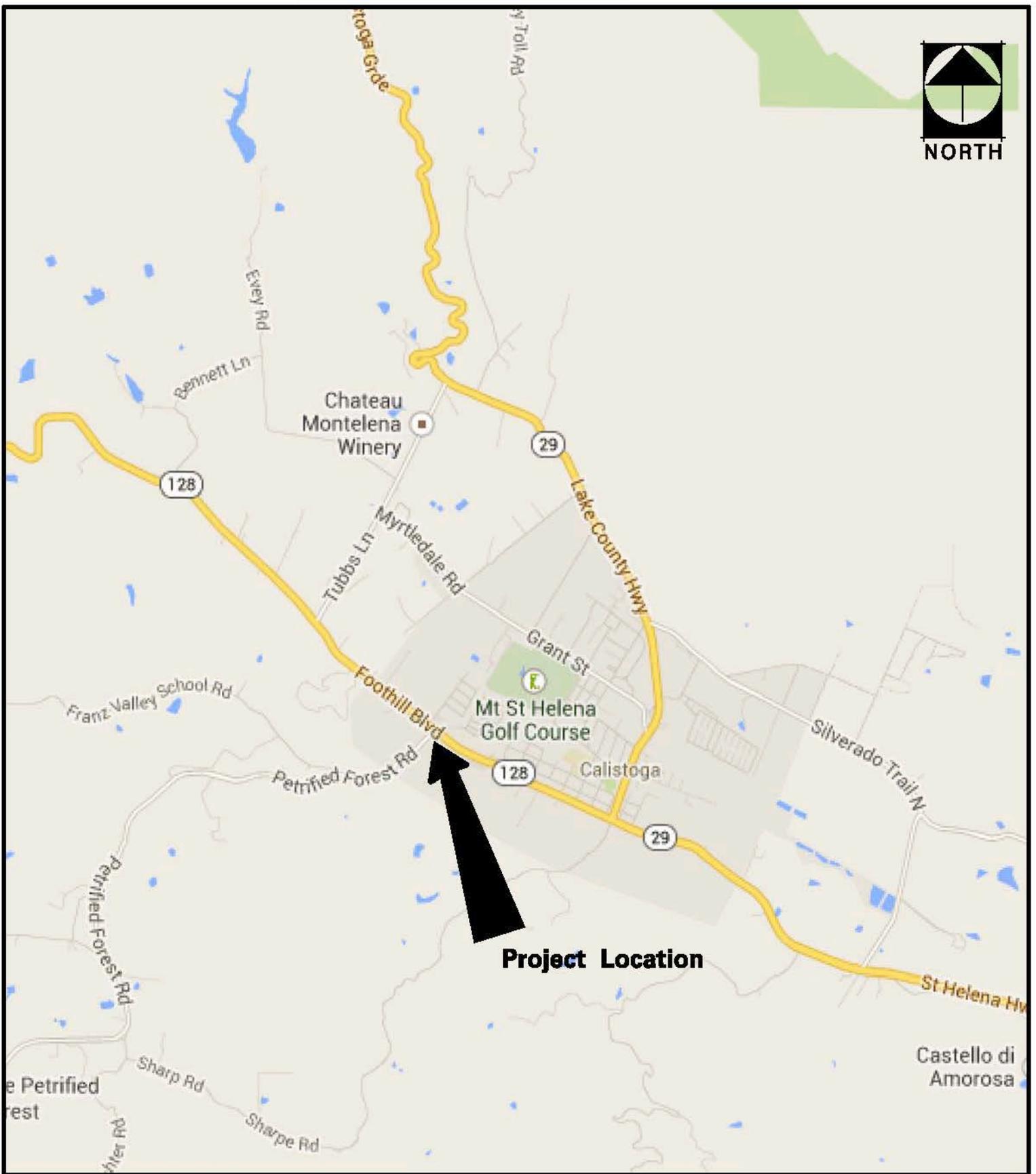
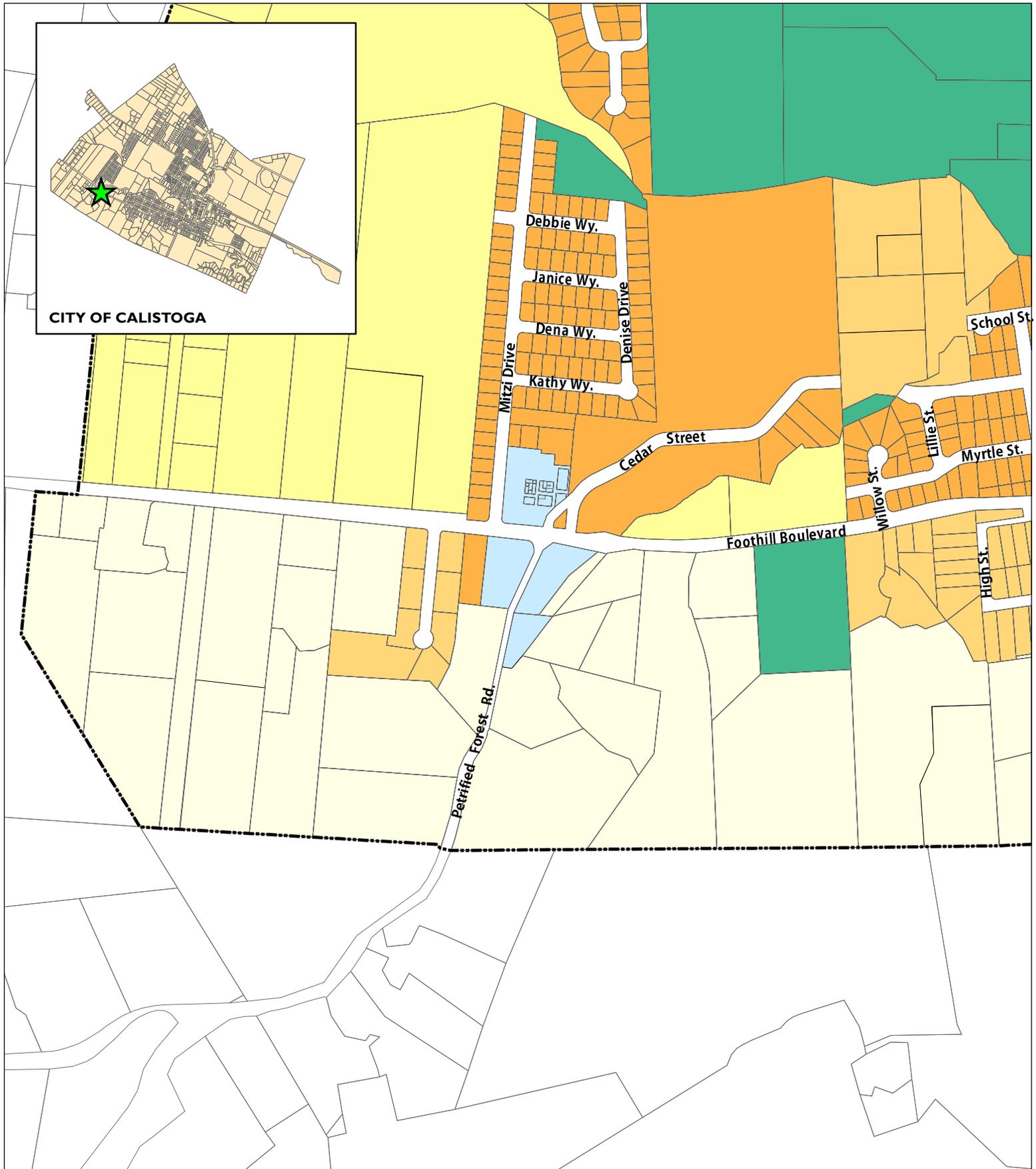


Figure 1

Location Map

Petrified Forest Intersection Improvements





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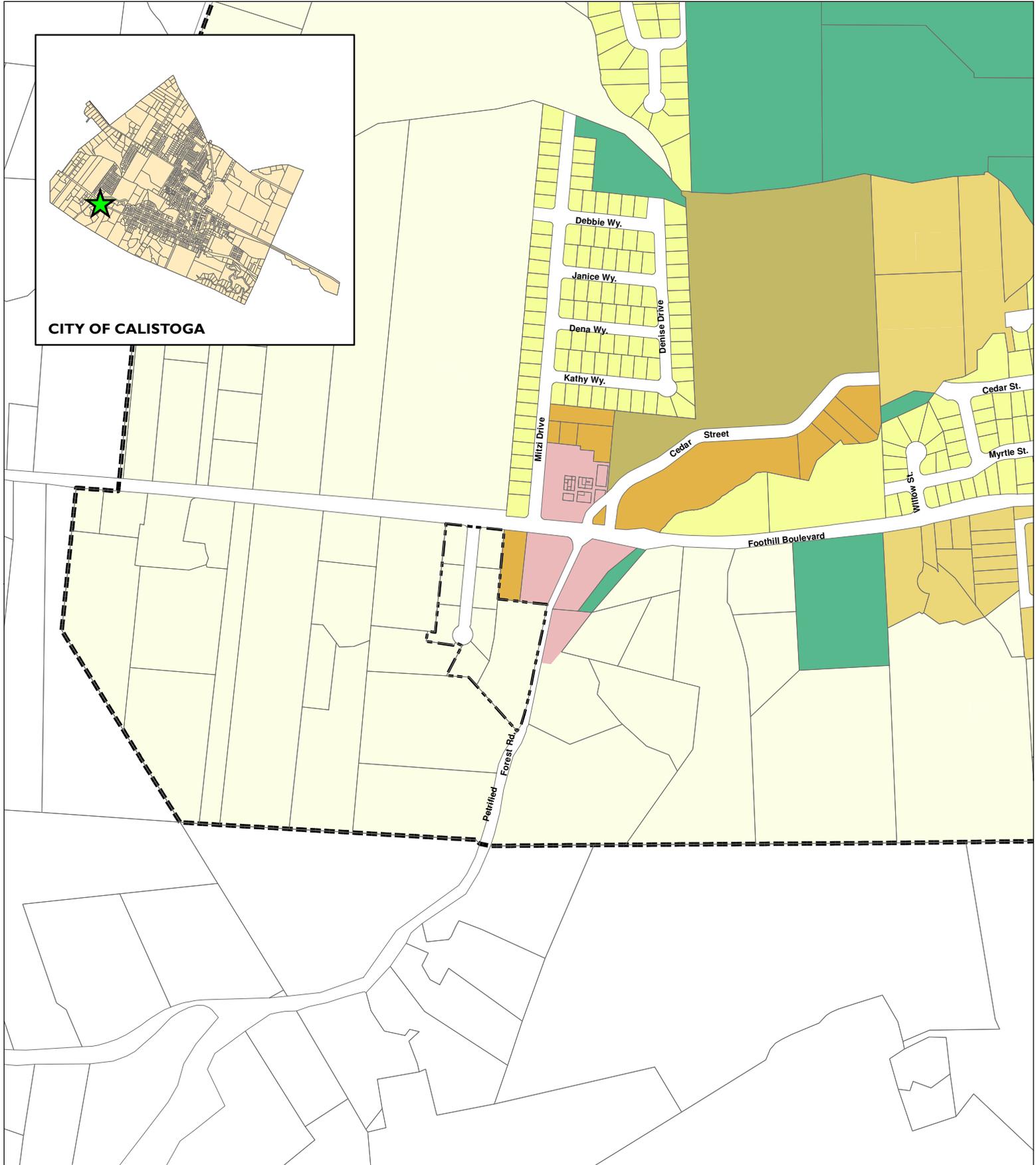
GENERAL PLAN LAND USE DESIGNATIONS IN PROXIMITY TO PETRIFIED FOREST ROAD AND STATE HWY 128 INTERSECTION

- Rural Residential
- Rural Residential - Hillside
- Public/Quasi-Public
- Low Density Residential (1 - 4 dwelling units per acre)
- Medium Density Residential (4 - 10 dwelling units per acre)
- Community Commercial



0 500 1,000 Feet

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- parcels
- R-1: One-Family Residential
- R-1-10: One-Family Residential
- R-2: Two-Family Residential
- RR: Rural Residential
- R-1-10: One-Family Residential
- MHP: Mobile Home Park
- P: Public/Quasi-Public
- RR-H: Rural Residential - Hillside
- R-2: Two-Family Residential
- CC: Community Commercial

SCALE



**ZONING DISTRICTS IN PROXIMITY TO
PETRIFIED FOREST ROAD AND STATE HWY 128 INTERSECTION**

Study Name Napa-128-Petrified Forest Rd
 Start Date 3/5/2015
 Start Time 6:30AM-6:30PM
 Site Code

Vehicle, Bike and Pedestrian Movement

Start Time	Southbound approach							Northbound approach							Eastbound							Westbound							
	Cedar St							Petrified Forest Road							EB Hwy 128							WB Hwy 128							
	Right	Thru	Left	Bike	Ped	Total	Total by Hour	Right	Thru	Left	Bike	Ped	Total	Total by Hour	Right	Thru	Left	Bike	Ped	Total	Total by Hour	Right	Thru	Left	Bike	Ped	Total	Total by Hour	Total E+W
6:30 AM	1	1	1	0	0	3		107	0	14	0	0	121		59	21	0	0	0	80		1	18	37	0	0	56		
6:45 AM	0	2	1	0	0	3	6	115	0	25	0	0	140	261	60	22	0	0	0	82	162	0	21	17	0	0	38	94	256
7:00 AM	0	3	1	0	0	4		83	0	17	0	0	100		61	28	0	0	0	89		1	18	43	0	0	62		
7:15 AM	0	2	0	0	0	2		107	0	18	0	0	125		56	31	0	0	0	87		4	27	50	0	0	81		
7:30 AM	0	3	6	0	0	9		112	2	20	0	0	134		65	35	0	0	0	100		1	24	44	0	2	71		
7:45 AM	1	0	4	0	0	5	20	132	0	28	0	0	160	519	71	48	0	0	0	119	395	1	23	58	0	0	82	296	691
8:00 AM	1	0	7	0	0	8		116	1	30	0	0	147		45	47	0	0	0	92		1	21	50	0	0	72		
8:15 AM	0	2	3	0	0	5		83	2	28	0	0	113		43	39	0	0	0	82		1	29	47	0	0	77		
8:30 AM	1	0	5	0	0	6		95	1	33	0	0	129		51	42	1	0	0	94		3	18	47	0	0	68		
8:45 AM	0	2	4	0	0	6	25	80	1	34	0	0	115	504	43	29	0	0	0	72	340	4	22	49	0	1	76	293	633
9:00 AM	0	0	5	0	0	5		74	1	23	0	0	98		54	23	0	0	0	77		2	28	55	0	0	85		
9:15 AM	1	4	3	0	0	8		79	2	21	0	0	102		52	21	0	0	0	73		9	22	49	0	2	82		
9:30 AM	1	4	2	0	0	7		66	1	23	0	0	90		31	14	2	0	0	47		1	31	55	0	5	92		
9:45 AM	1	2	6	0	0	9	29	58	2	23	0	0	83	373	35	31	0	0	0	66	263	8	31	38	0	1	78	337	600
10:00 AM	0	4	2	0	0	6		45	0	24	0	0	69		38	24	1	0	0	63		7	29	46	0	0	82		
10:15 AM	1	3	8	0	0	12		42	0	20	0	0	62		40	17	0	0	0	57		7	23	54	0	0	84		
10:30 AM	1	1	7	0	0	9		64	4	43	0	0	111		36	24	1	0	0	61		4	20	38	0	0	62		
10:45 AM	2	1	8	0	0	11	38	45	0	25	0	0	70	312	48	23	1	0	0	72	253	4	21	65	0	0	90	318	571
11:00 AM	1	0	1	0	0	2		58	2	35	0	0	95		31	27	2	0	0	60		5	37	65	0	0	107		
11:15 AM	0	1	10	0	0	11		60	0	30	0	0	90		50	27	2	0	0	79		4	25	59	0	0	88		
11:30 AM	0	0	11	0	0	11		38	1	35	0	0	74		23	30	0	0	0	53		7	27	45	0	0	79		
11:45 AM	4	0	4	0	0	8	32	56	0	30	0	0	86	345	29	31	0	0	0	60	252	8	28	55	0	0	91	365	617
12:00 PM	3	2	8	0	0	13		44	1	30	0	0	75		40	41	0	0	0	81		5	28	44	0	0	77		
12:15 PM	0	1	1	0	0	2		54	1	36	0	0	91		33	31	1	0	0	65		12	29	57	0	1	99		
12:30 PM	0	4	7	0	0	11		62	0	29	0	0	91		26	38	0	0	0	64		7	30	45	0	0	82		
12:45 PM	0	4	8	0	0	12	38	61	0	29	0	1	90	347	40	29	0	0	0	69	279	4	28	43	0	2	77	335	614
1:00 PM	0	3	3	0	0	6		56	3	33	0	0	92		34	22	0	0	0	56		5	33	52	0	0	90		
1:15 PM	1	2	5	0	0	8		60	0	43	0	0	103		36	21	0	0	0	57		6	28	49	0	0	83		
1:30 PM	1	0	1	0	0	2		58	0	31	0	0	89		56	36	0	0	0	92		7	25	50	0	0	82		
1:45 PM	1	3	5	0	0	9	25	59	0	42	0	0	101	385	29	33	0	0	0	62	267	9	31	53	0	1	94	349	616
2:00 PM	1	1	6	0	0	8		59	0	35	0	0	94		27	39	1	0	0	67		8	35	70	0	3	116		
2:15 PM	2	6	7	0	0	15		77	0	28	0	0	105		37	33	1	0	0	71		6	36	73	0	0	115		
2:30 PM	3	2	5	0	0	10		68	1	45	0	0	114		26	28	0	0	0	54		3	34	64	0	0	101		
2:45 PM	0	3	5	0	0	8	41	67	0	47	0	0	114	427	37	24	0	0	0	61	253	11	45	76	0	1	133	465	718
3:00 PM	0	6	4	0	0	10		57	0	43	0	0	100		55	39	3	0	0	97		13	54	113	0	0	180		

Figure 4C-101 (CA) - Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Volume

SATISFIED*

YES

NO

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	2-3pm	3-4pm	4-5pm	5-6pm	Hour
Both Approaches - Major Street	✓		718	928	976	923	
Higher Approach - Minor Street	✓		427	477	524	512	

* All plotted points fall above the applicable curves in Figure 4C-1. (URBAN AREAS)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curves in Figure 4C-2. (RURAL AREAS)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

WARRANT 3 - Peak Hour

SATISFIED

YES

NO

(Part A or Part B must be satisfied)

PART A

SATISFIED

YES

NO

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersections with three approaches.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

PART B

SATISFIED

YES

NO

APPROACH LANES	One	2 or More	4-5pm	Hour
Both Approaches - Major Street	✓		976	
Higher Approach - Minor Street	✓		524	

The plotted points fall above the applicable curves in Figure 4C-3. (URBAN AREAS)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<u>OR</u> , The plotted points fall above the applicable curves in Figure 4C-4. (RURAL AREAS)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA) - Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

N/A

SATISFIED YES NO

Part 1 (Part A or B must be satisfied)

Hours ----->

A.	Vehicles per hour for any 4 hours				
	Pedestrians per hour for any 4 hours				

Figure 4C-5 or Figure 4C-6
SATISFIED YES NO

Hours ----->

B.	Vehicles per hour for any 1 hours				
	Pedestrians per hour for any 1 hours				

Figure 4C-7 or Figure 4C-8
SATISFIED YES NO

Part 2

SATISFIED YES NO

<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft.	Yes <input type="checkbox"/> No <input type="checkbox"/>
<u>OR</u> , The proposed signal will not restrict the progressive movement of traffic.	Yes <input type="checkbox"/> No <input type="checkbox"/>

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

N/A

SATISFIED YES NO

Part A

SATISFIED YES NO

Gap/Minutes and # of Children

			Hour	
Gaps vs Minutes	Minutes Children Using Crossing			
	Number of Adequate Gaps			Gaps < Minutes Yes <input type="checkbox"/> No <input type="checkbox"/>
	School Age Pedestrians Crossing Street / hr			<u>AND</u> Children > 20/hr Yes <input type="checkbox"/> No <input type="checkbox"/>

<u>AND</u> , Consideration has been given to less restrictive remedial measures.	Yes <input type="checkbox"/> No <input type="checkbox"/>
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Part B

SATISFIED YES NO

The distance to the nearest traffic signal along the major street is greater than 300 ft.	Yes <input type="checkbox"/> No <input type="checkbox"/>
<u>OR</u> , The proposed signal will not restrict the progressive movement of traffic.	Yes <input type="checkbox"/> No <input type="checkbox"/>

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA) - Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System
(All Parts Must Be Satisfied)

N/A

SATISFIED YES NO

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 FT	N _____ ft, S _____ ft, E _____ ft, W _____ ft	Yes <input type="checkbox"/> No <input type="checkbox"/>
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes <input type="checkbox"/> No <input type="checkbox"/>
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant
(All Parts Must Be Satisfied)

SATISFIED YES NO

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reported crash.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
5 OR MORE	1	
REQUIREMENTS	CONDITIONS	✓
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume	✓
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	✓
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8	
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

WARRANT 8 - Roadway Network
(All Parts Must Be Satisfied)

N/A

SATISFIED YES NO

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour _____ Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes <input type="checkbox"/> No <input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Sat. or Sun. _____ Veh/Hr		
CHARACTERISTIC OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B
Hwy. System Serving as Principal Network for Through Traffic			
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan			
Any Major Route Characteristics Met, Both Streets			Yes <input type="checkbox"/> No <input type="checkbox"/>

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA) - Traffic Signal Warrants Worksheet (Sheet 5 of 5)

**WARRANT 9 - Intersection Near a Grade Crossing
(Both Parts A and B Must Be Satisfied)**

N/A

SATISFIED

YES

NO

<p><u>PART A</u></p> <p>A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit line _____ ft.</p>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<p><u>PART B</u></p> <p>There is one minor street approach lane at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9.</p> <p>Major Street - Total of both approaches: _____ VPH</p> <p>Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH x AF (Use Table 4C-2, 3, & 4 below to calculate AF) = _____ VPH</p>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<p><u>OR</u>, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10.</p> <p>Major Street - Total of both approaches: _____ VPH</p> <p>Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH x AF (Use Table 4C-2, 3, & 4 below to calculate AF) = _____ VPH</p>	

The minor street approach volume may be multiplied by up to three following adjustment factor (AF) as described in Section 4C.10.

- 1- Number of Rail Traffic per Day _____ Adjustment factor from table 4C-2 _____
- 2- Percentage of High-Occupancy Buses on Minor Street Approach _____ Adjustment factor from table 4C-3 _____
- 3- Percentage of Tractor-Trailer Trucks on Minor Street Approach _____ Adjustment factor from table 4C-4 _____

NOTE: If no data is available or known, then use AF = 1 (no adjustment)