

Project Limits





Project Team --Acknowledgements

- City of Paso Robles
- Central Coast Low Impact Design Initiative
- SvR Design Company
- Cannon
- Earth Systems Pacific
- Raminha Construction



Complete Street

Conforms to a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. They connect business districts, neighborhoods, parks and schools, and can be designed to accommodate the diverse traffic needs of cars, trucks, pedestrians and bicyclists.



Green Street

rather than a waste—through landscaped streetside planters or swales that capture stormwater runoff and allow it to soak into the ground as soil and vegetation filter pollutants. This replenishes groundwater supplies that feed fresh, cool water to rivers and streams.

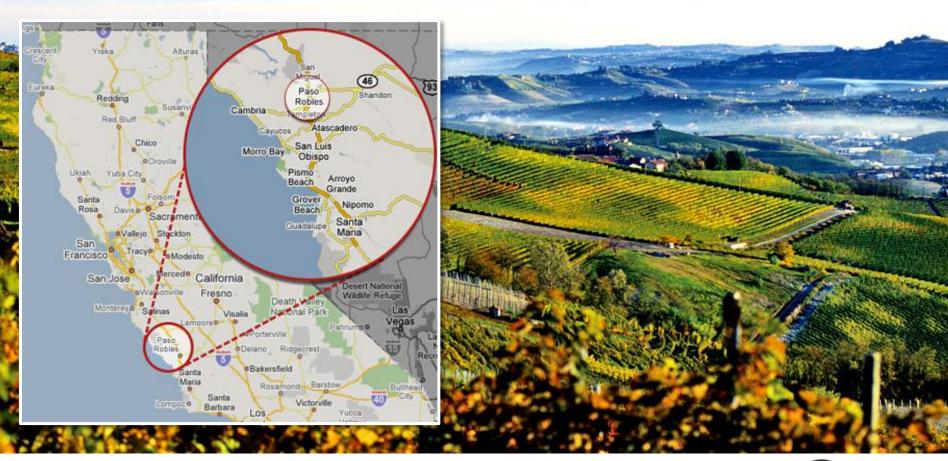


Overview

- Background
- Drivers
- Goals
- Green Street Features
- Project Accomplishments
- Operations and Maintenance
- Questions

CAN THIS SLIDE COME OUT?







Pop. 30,000

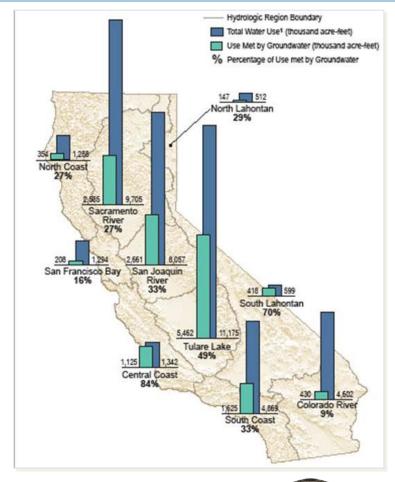




- Pop. 30,000
- 14 in. rain per year



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- Only supply is local ground/surface water





- Pop. 30,000
- 14 in. rain per year
- Only supply is local ground/surface water
- Fast-growing wine industry



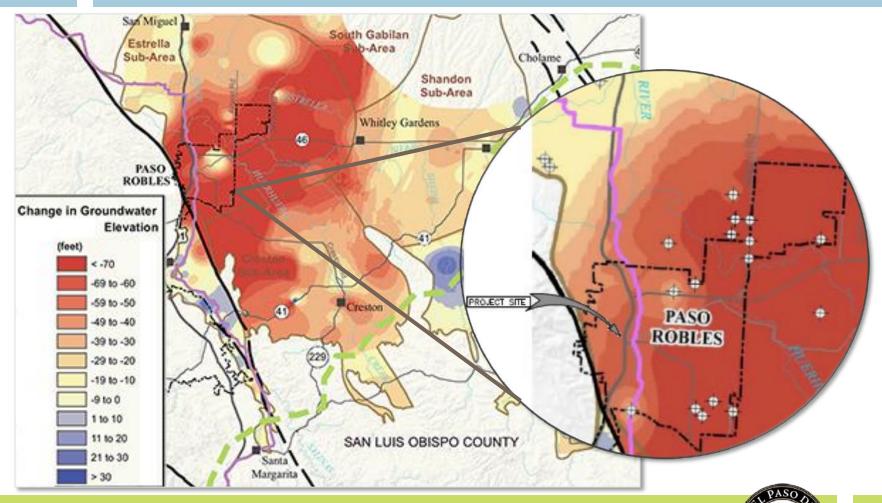




Aging Infrastructure



Declining Groundwater Levels



Record Drought

2013/14:

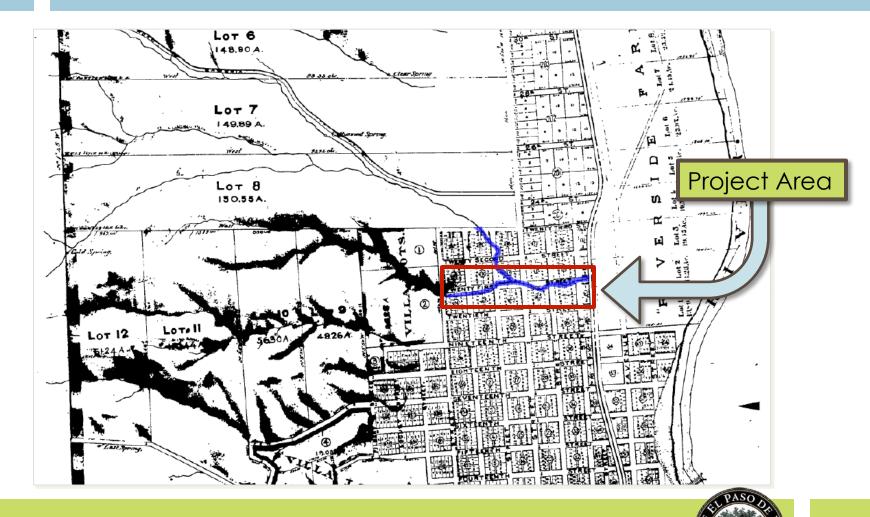
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE
Total	0.00	0.00	0.00	0.01	0.26	0.30	0.00	2.75	1.96	0.85	0.00	0.00
Cumulative	0.00	0.00	0.00	0.01	0.27	0.57	0.57	3.32	5.28	6.13	6.13	6.13
Total	0.00	0.00	0.00	0.01	0.27	0.57	0.57	3.32	3.28	0.13	0.13	0.13

2012/13

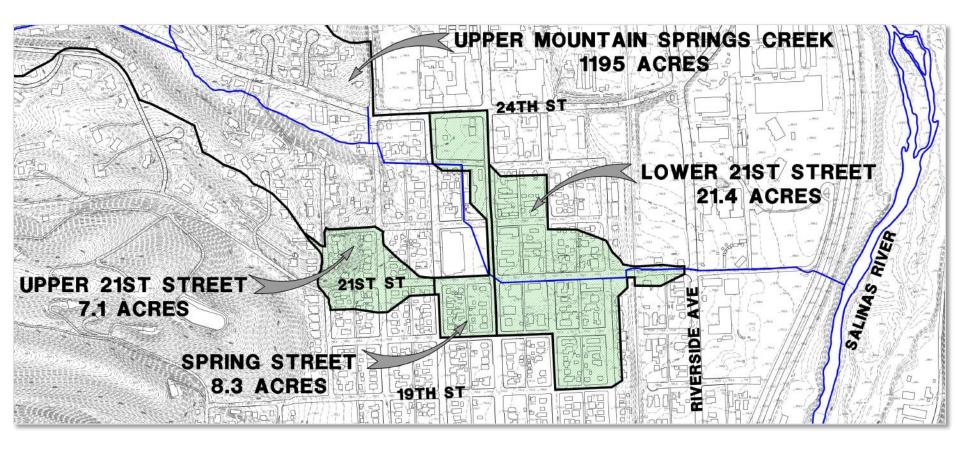
	JUL	AUG	SEP	ОСТ	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE
Total	0.00	0.00	0.00	0.28	0.75	3.94	1.02	0.28	0.69	0.07	0.15	0.00
Cumulative Total	0.00	0.00	0.00	0.28	1.03	4.97	5.99	6.27	6.96	7.03	7.18	7.18
Average	0.03	0.04	0.19	0.61	1.43	2.36	3.10	2.86	2.32	1.07	0.30	0.03



Historic Flooding



Urban Runoff Water Quality































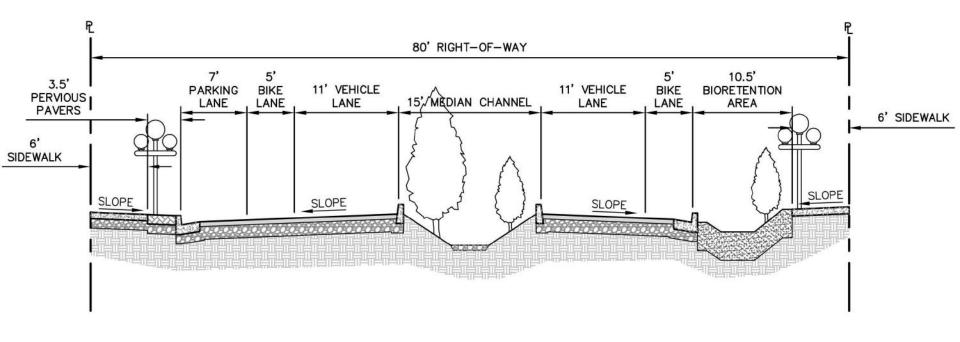


Project Goals

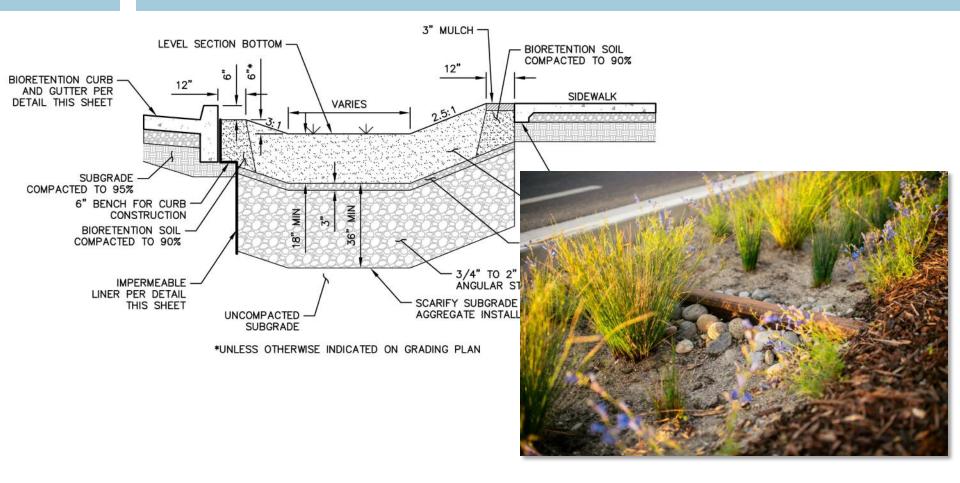
- Improve stormwater quality reaching the Salinas River
- Reduce street flooding
- Recharge groundwater
- Replace aging utilities
- Improve safety and mobility for pedestrians and bicycles
- Shade the street with trees
- Promote infill and redevelopment
- Incorporate Community Participation



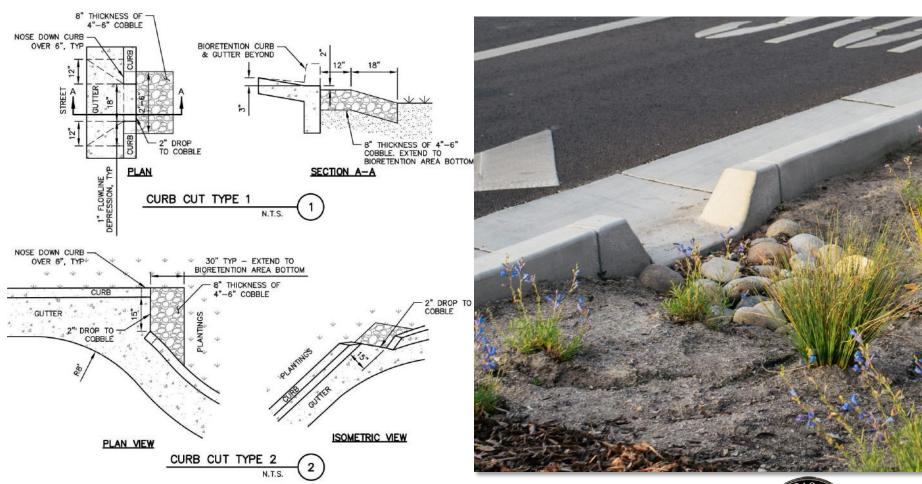
Separate Urban/Flood



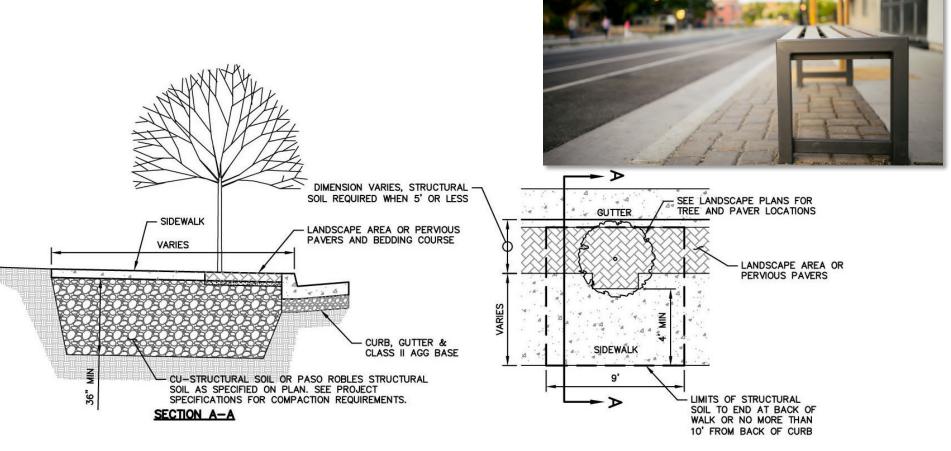




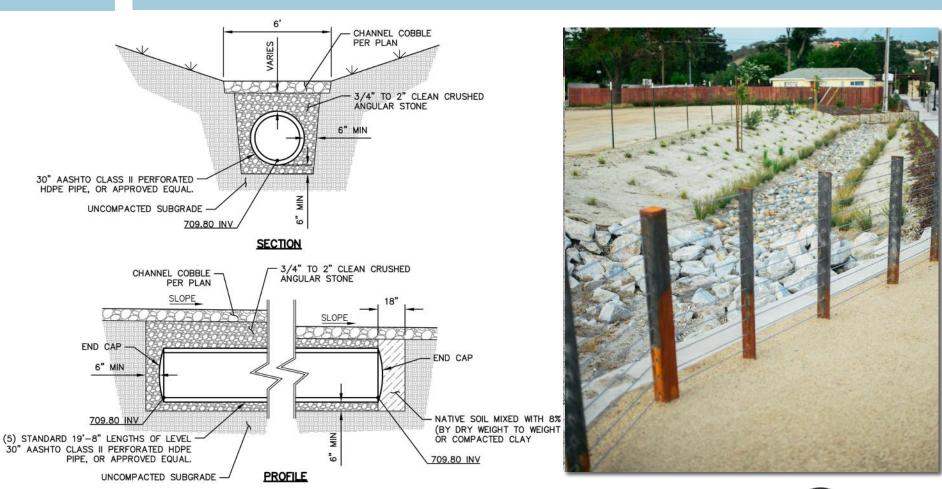
















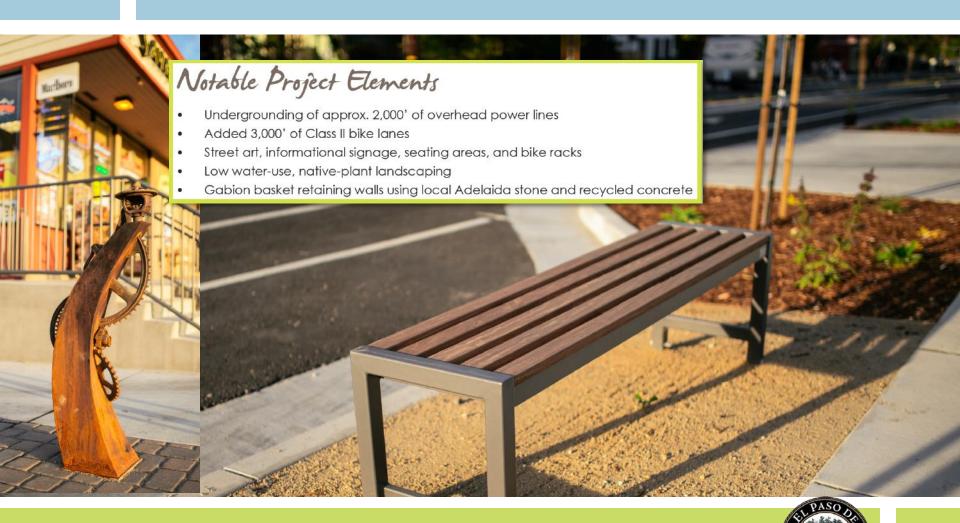
21st Street In Action



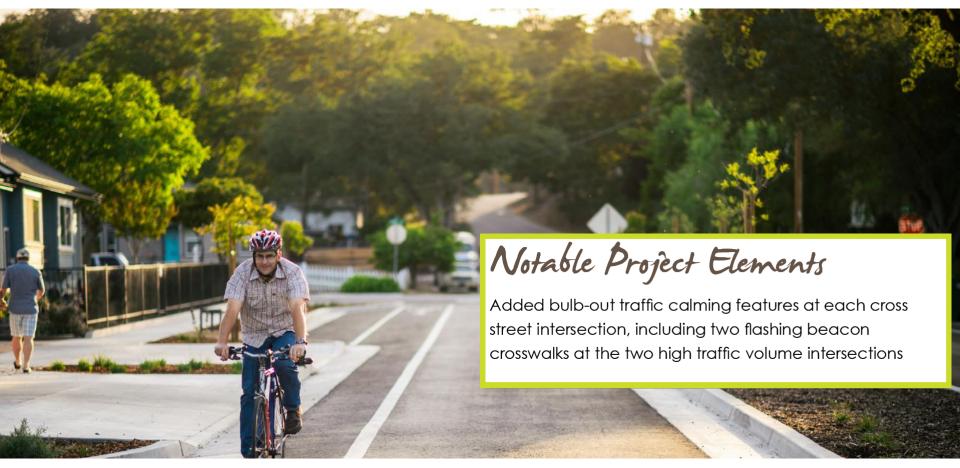
Urban Median Channel



Improved Aesthetics



Pedestrian Safety



Street Trees / Shading





The Project exceeds the Regional Water Board's post-construction stormwater control requirements (for the 21st Street right-of-way) and provides additional infiltration from the surrounding tributary drainage.

From February-April 2014, there were nine rain events which resulted in approximately 250,000 gallons of total recharge. For context, the average daily water use for a four-person household is 400 gallons.



Figure 1 - Storm drain discharge, 21st St. @ Park St. - Before



Figure 2 – 21st St. @ Park St. - After





Figure 3 - 21st St. @ Pine St. - Before



Figure 4 – 21st St. @ Pine St. – After





Figure 5 – 21st St. near Pine St. – Before



Figure 6 – 21st St. near Pine St. - After



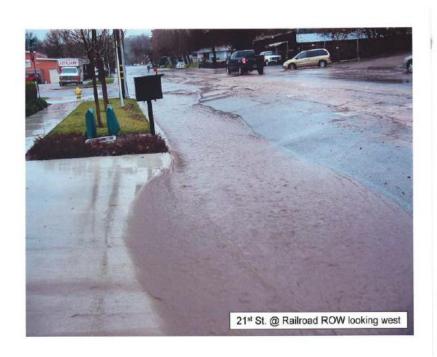


Figure 7 – 21st St. @ Railroad ROW looking west - Before



Figure 8 - 21st St. @ Railroad ROW looking west - After

Operations and Maintenance

- One-Year Plant Establishment Contract
- Operation and Maintenance Manual
- Maintenance Assessment District









Summary

- Change Management is key
- Forward thinking of City Council
- Meeting Regulatory requirements
- LID Design Standards are available
- Complete streets better serve the entire community –not just car centric
- Green streets preserve our natural resources, reduce pavement burden, restore native beauty,

Knowledge Sharing

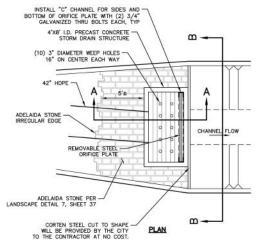
- Sustainable Water Management Conference, AWWA, Portland, Oregon
- Whole Water Conference (W2C), AWWA, Monterey, California
- International Sustainability Conference, ASCE, Long Beach, California
- Central Coast Post-Construction Stormwater Management Requirements Presentation, ASCE, San Luis Obispo, California
- **Bioretention Area Design Trainings**, Low Impact Development Initiative, San Luis Obispo, Buellton, and Salinas
- Low Impact Development Construction Management Workshop, Low Impact Development Initiative, San Luis Obispo, California
- Introduction to Sustainable Environments, Guest Lecture on 21st Street, California Polytechnic State University, San Luis Obispo, California
- Green Planning, Guest Lecture on 21st Street, California Polytechnic State University, San Luis Obispo, California

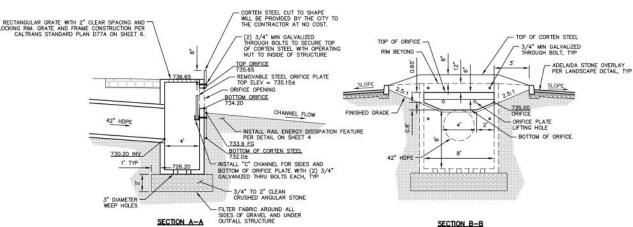
Awards

- 2014 Project of the Year for Transportation, APWA, Central Coast Chapter
- 2014 Sustainable Project of the Year, ASCE, San Luis Obispo Branch
- 2014 Outstanding Roads and Streets Project, League of California Cities
- 2014 Green Innovation Award, USGBC, California Central Coast Chapter



Stormwater Outfall

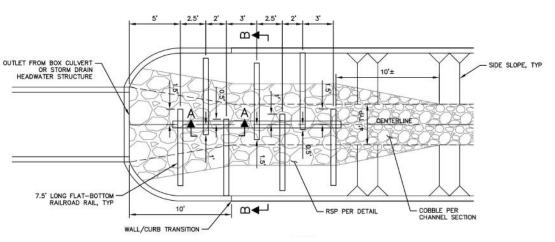


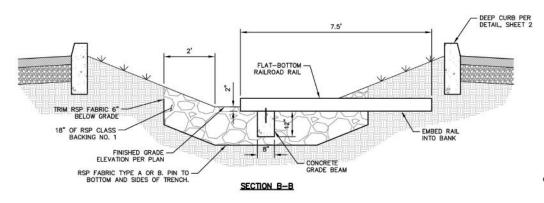




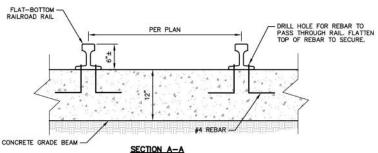


Natural Channel Energy Dissipation







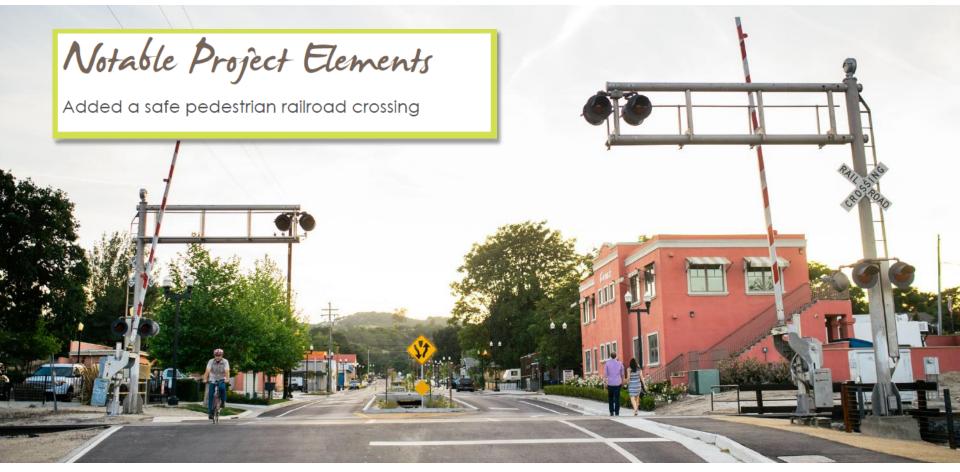








Railroad Crossing









Paso Robles



"Shaped by HISTORY - looking to the FUTURE"

HISTORY AND LAND USE

Notable Project Elements

Along the street, informational signage is posted to educate the public on topics such as: Green Streets, Complete Streets, and the history of 21st Street and the recent improvements

developed over time, the creek was buried in underground pipes piece by piece between the early 1940's and mid 1980's.



Highway 101

