



Tally Ho Creek Enhancement Planning Preliminary Results

City of Arroyo Grande
Coastal San Luis RCD
Central Coast Salmon Enhancement
Waterways Consulting



October 8, 2009

Meeting Overview

- Present the Study Approach
- Describe the work completed to date
- Summarize our preliminary findings
- Provide an overview of potential opportunities and constraints
- Solicit feedback from the community and other stakeholders

Study Approach

Overall Objective: Identify potential Opportunities and Constraints and provide Enhancement Recommendations

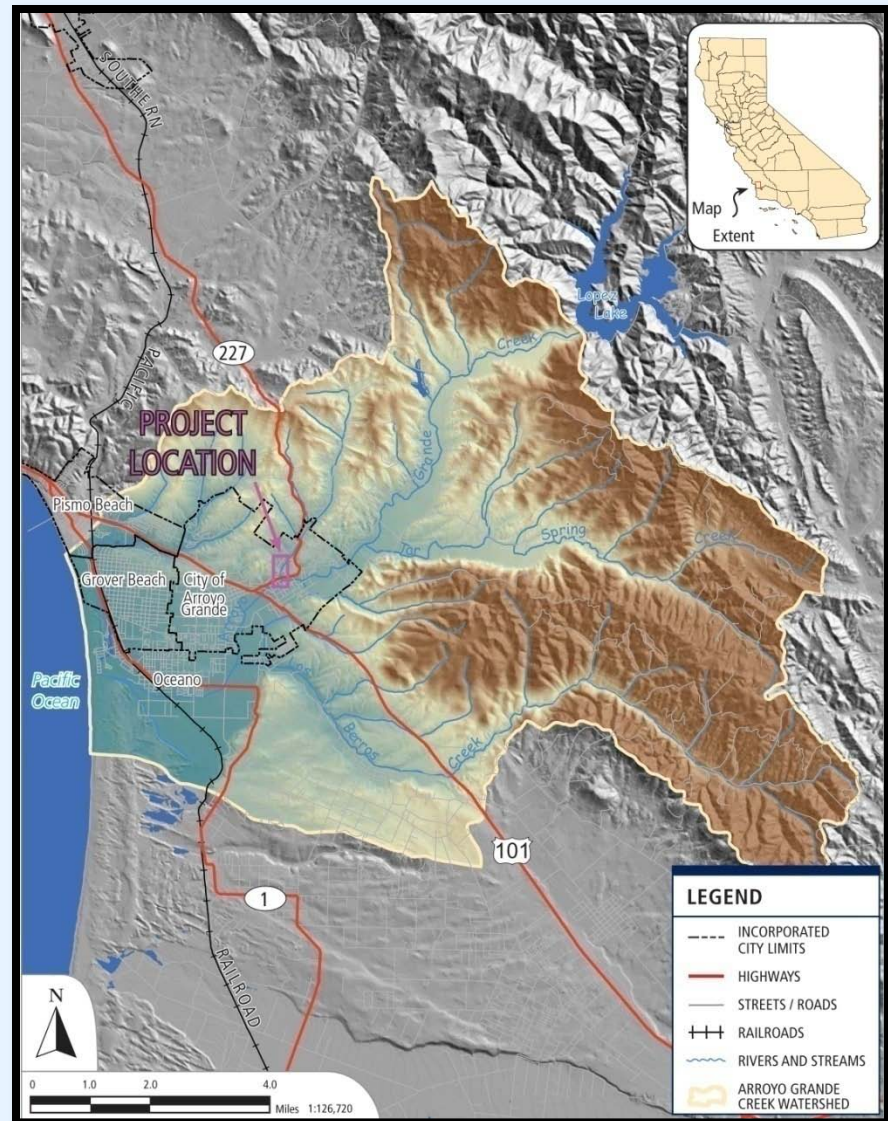
Study Plan:

- Compile hydrology
- Evaluate flood frequencies
- Reconnaissance survey of channel conditions
- Define existing biological conditions
- Outline potential opportunities & constraints
- *Define desired future condition*
- *Provide recommendations that match the desired future condition*

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Project Area

- Tally Ho (Corbett) Creek
- Branch Street to Clark Property (above 227)
- Appx. 1 mile of channel
- Within city limits of Arroyo Grande
- 3rd largest tributary to lower Arroyo Grande Creek
- On urban fringe
- Highly erodible sandy soils



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Hydrology

Reach	Return Period	Modeling Method		
		HEC-HMS ¹	FEMA	USGS Regression
		(cfs)		
1-3	2-yr	297	-	176
	5-yr	684	-	398
	10-yr	978	580	591
	20-yr	1504	-	-
	50-yr	1997	1800	1117
	100-yr	2472	2600	1368
4-6	2-yr	217	-	142
	5-yr	487	-	327
	10-yr	694	500	492
	20-yr	1112	-	-
	50-yr	1498	1600	952
	100-yr	1873	2300	1176

¹Method used for assessment

Flood Frequencies

Objective: Evaluate extent and frequency of flooding (where and how often)

Approach:

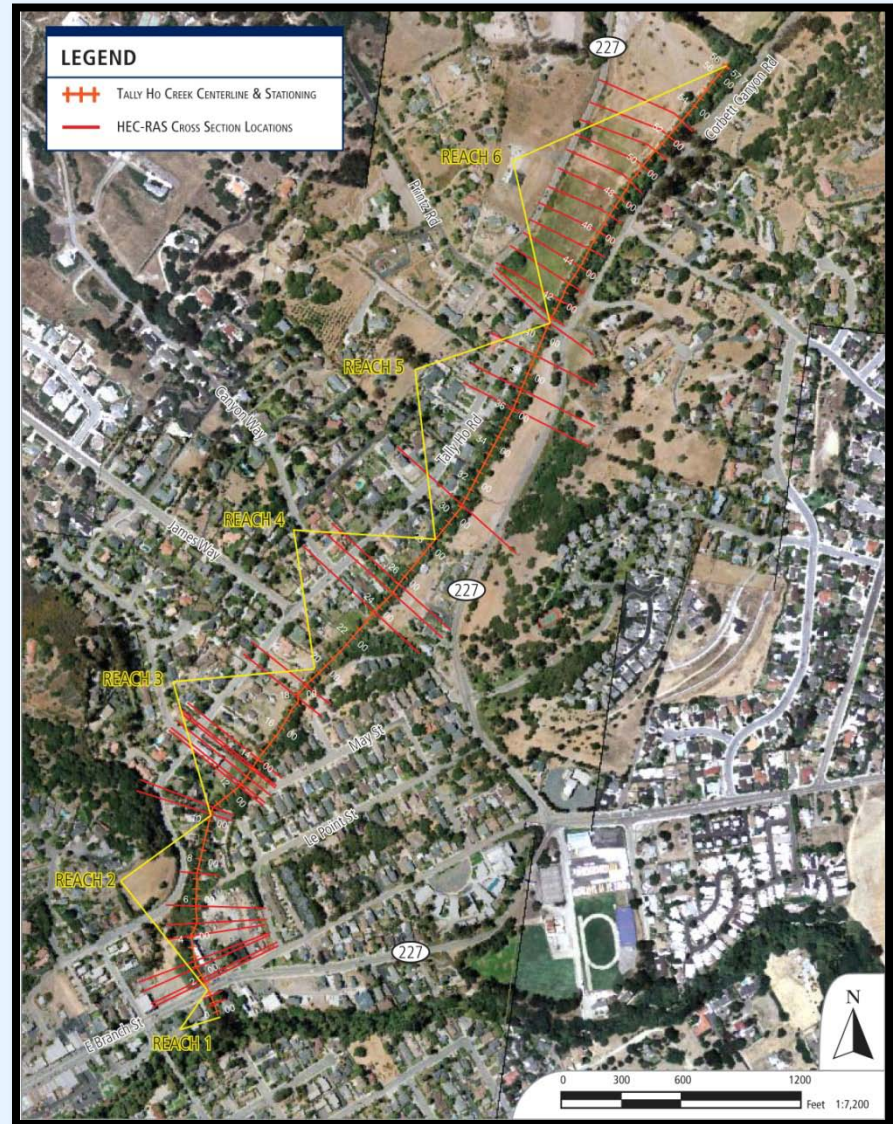
- Collect topographic data for model (cross-sections)
- Build a hydraulic model (HEC-RAS)
- Evaluate a range of discharge events (2, 5, 10, 20, 50, 100 year)
- Identify an event, by reach, where flood elevations impact adjacent infrastructure

Limitations: Resolution of data; Hydrology; Infrastructure

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Reach Approach

- Reaches defined based on channel geometry and roughness
- Total of 5 reaches defined in project area (2 through 6)
- Opportunities, constraints, and recommendations will be defined based on reach

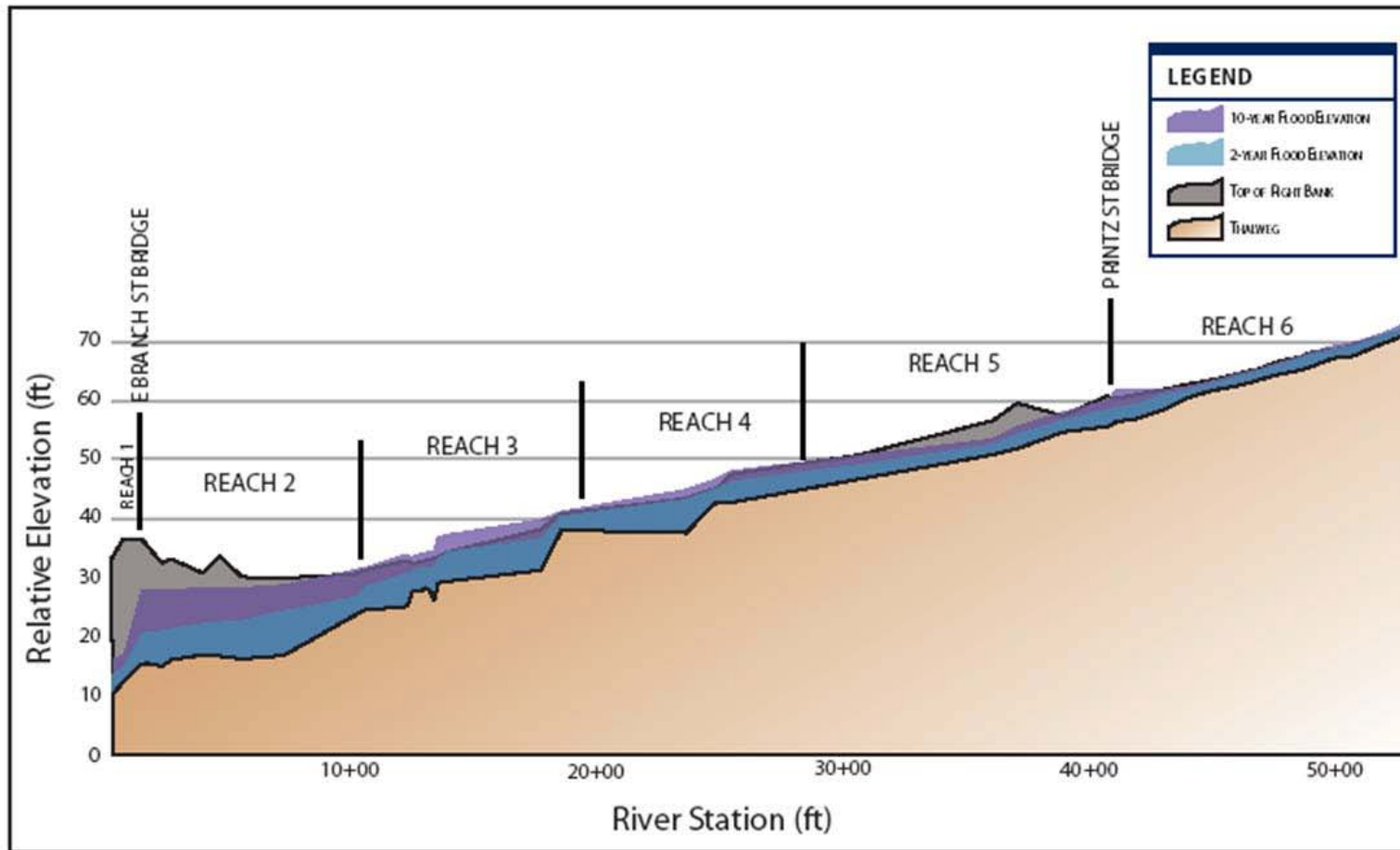


Hydraulic Model

- Model developed using HEC-RAS; 1-dimensional steady state model
- A total of 42 cross-sections were input in the model; Higher detail where geometry of channel changes
- Two bridges included in model
- Other structures such as houses and fences were accounted for with adjustments to floodplain roughness (this is a limitation)
- The 2-year, 5-year, 10-year, 20-year, 50-year, and 100-year floods were run based on the US Army Corps HEC-HMS model

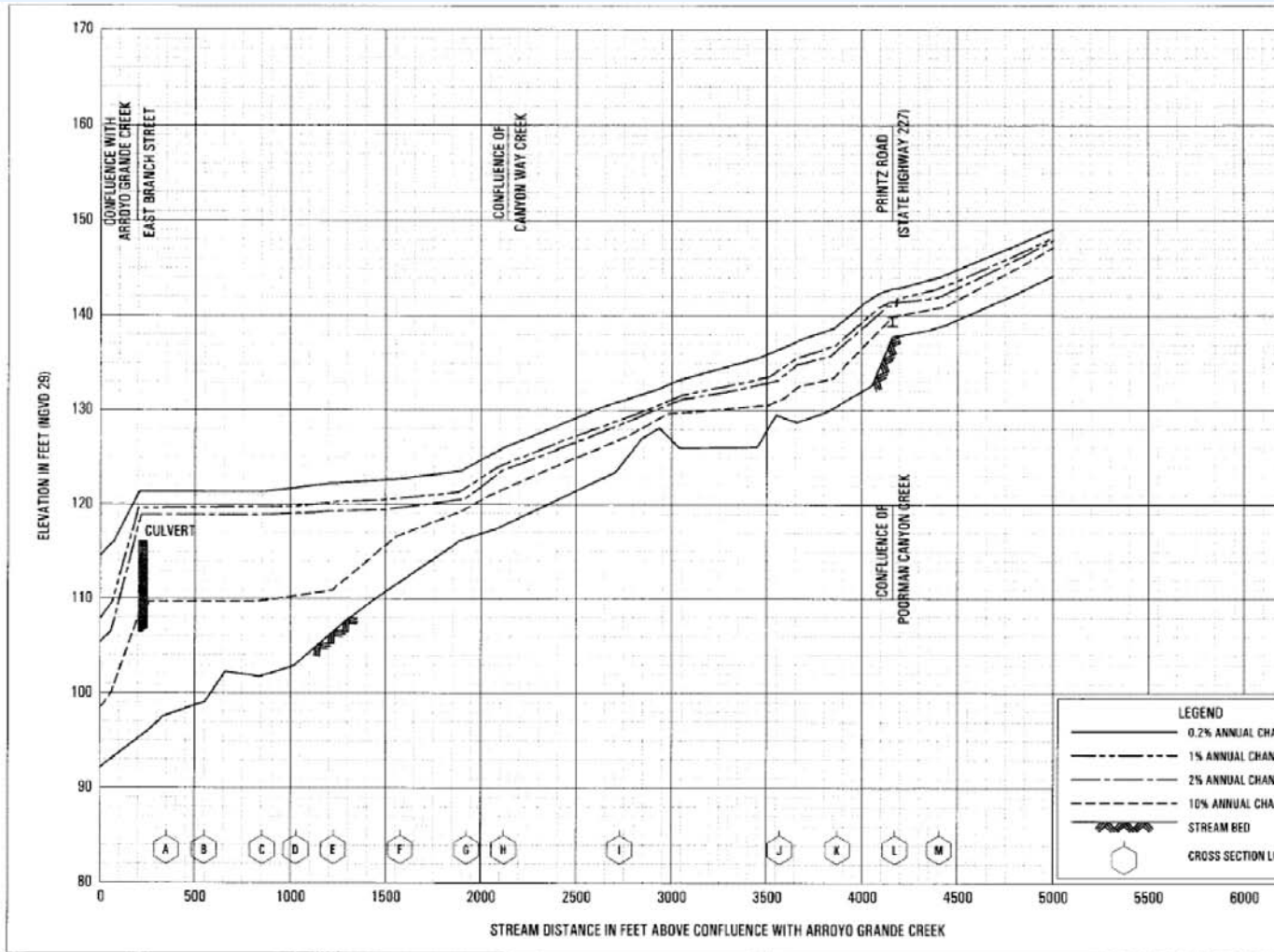
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Model Results – WSE Profile



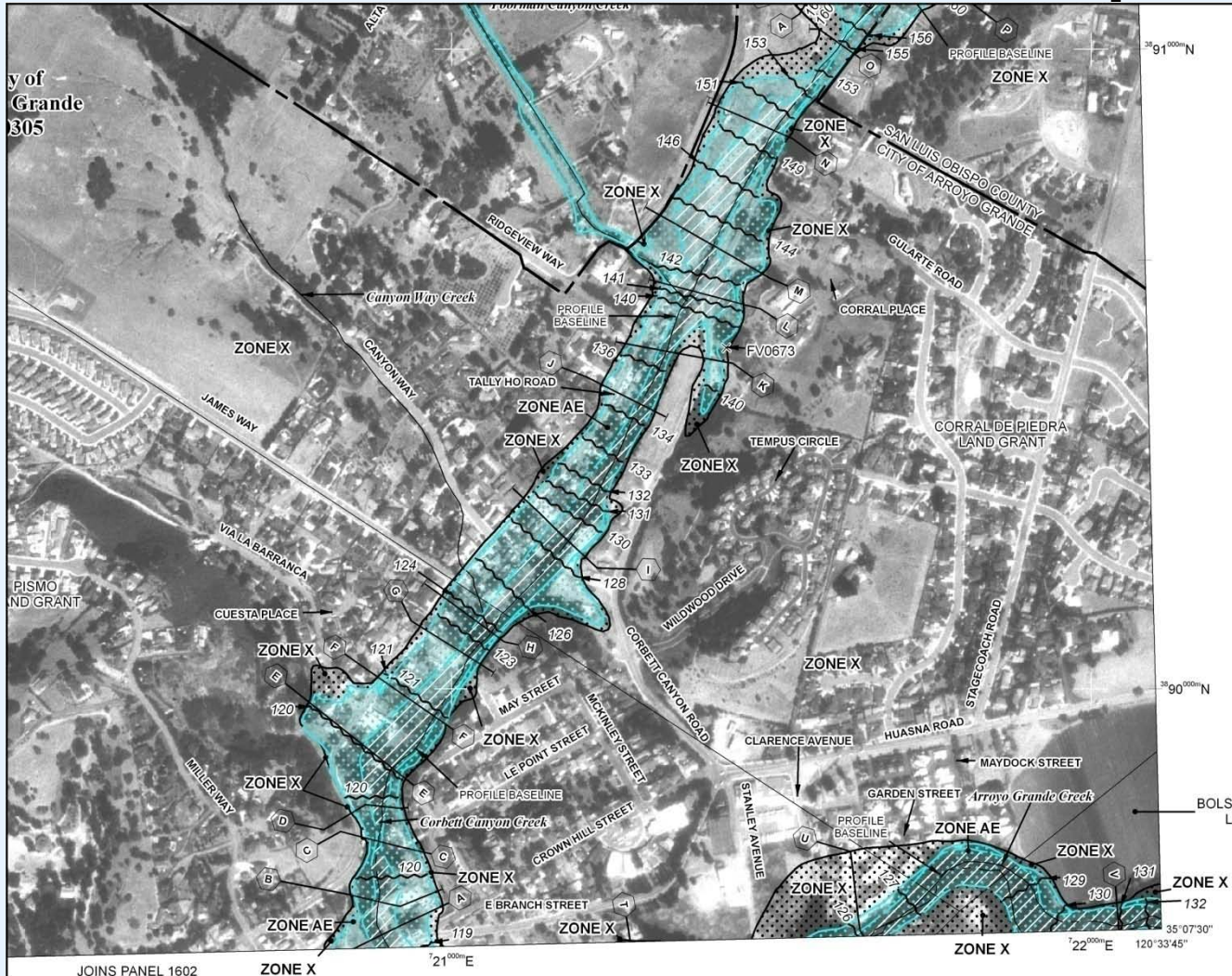
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Model Results – FEMA WSE Profile



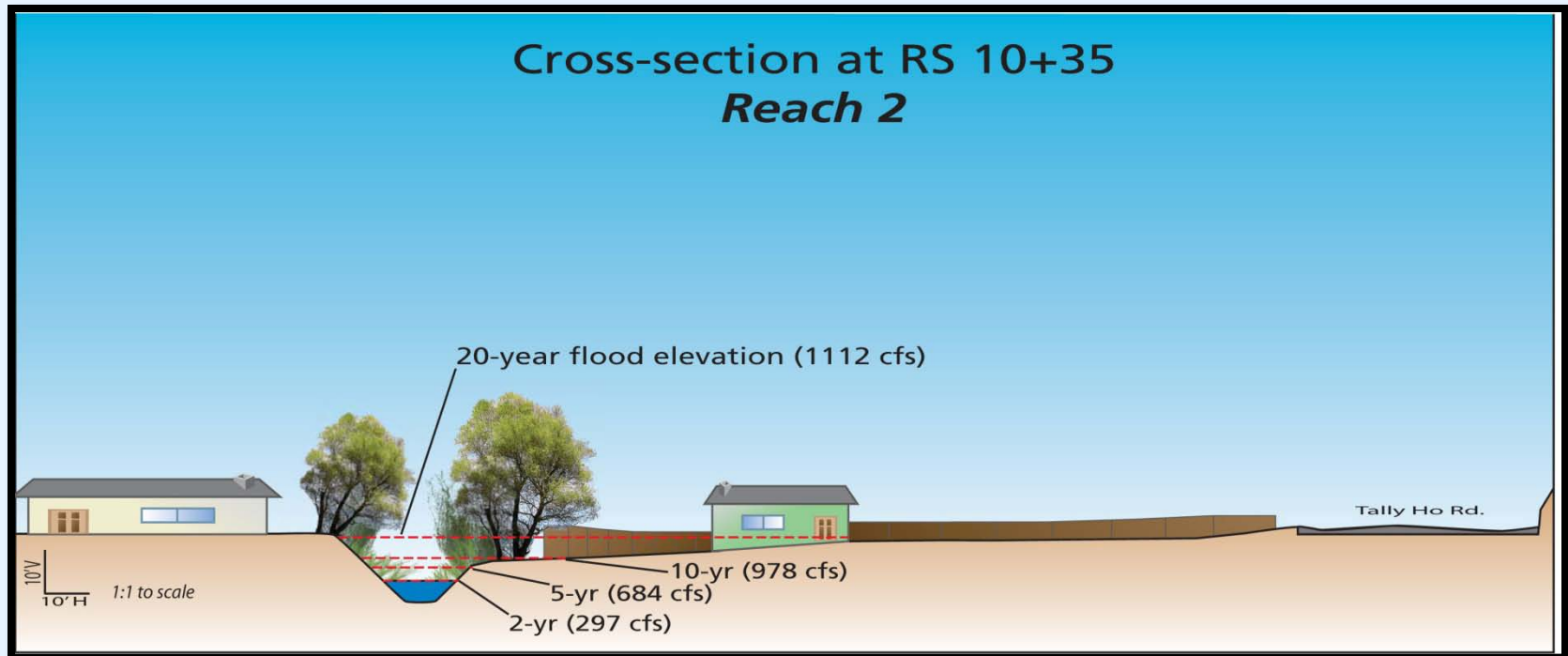
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Model Results – FEMA FIRM Map



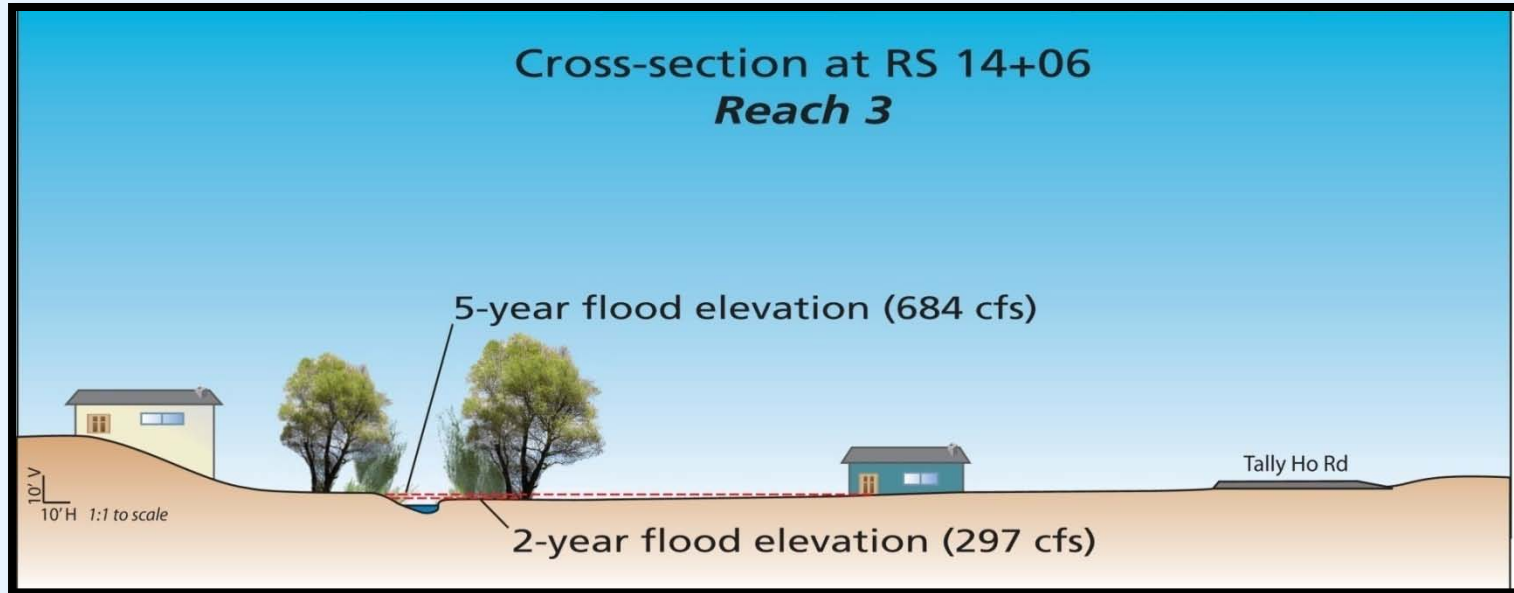
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Model Results – Reach 2



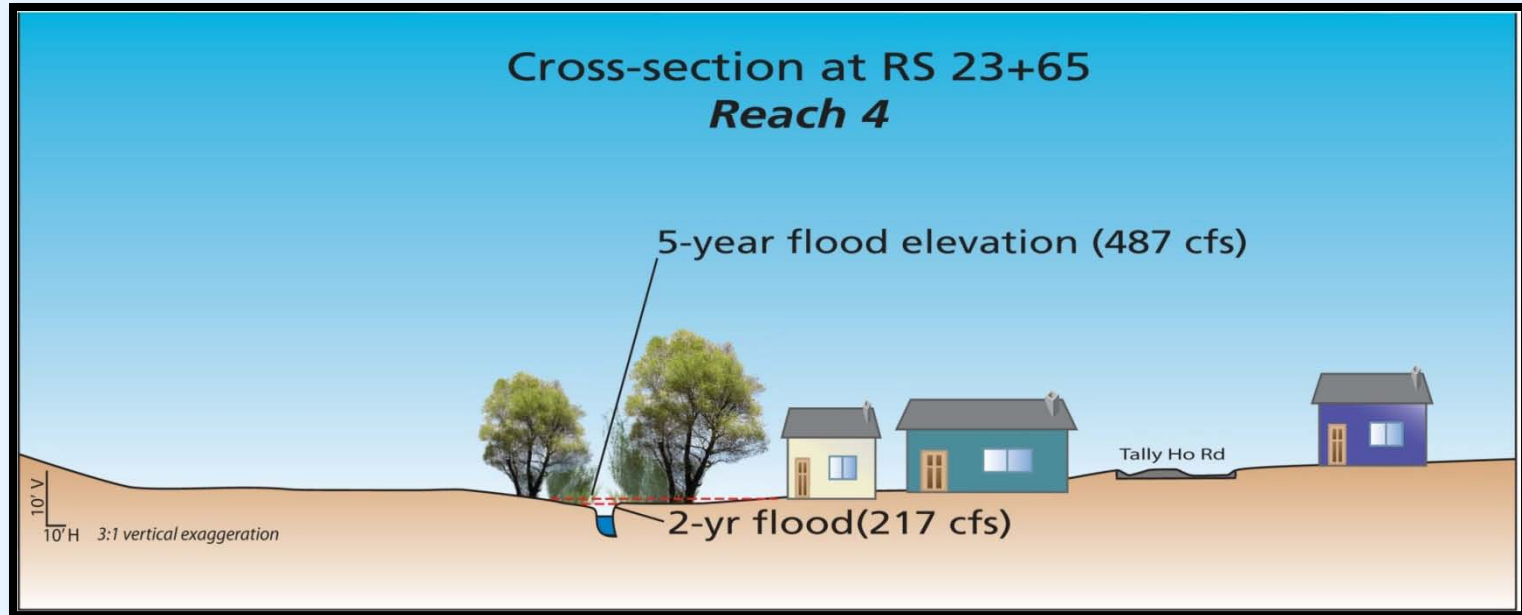
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Model Results – Reach 3



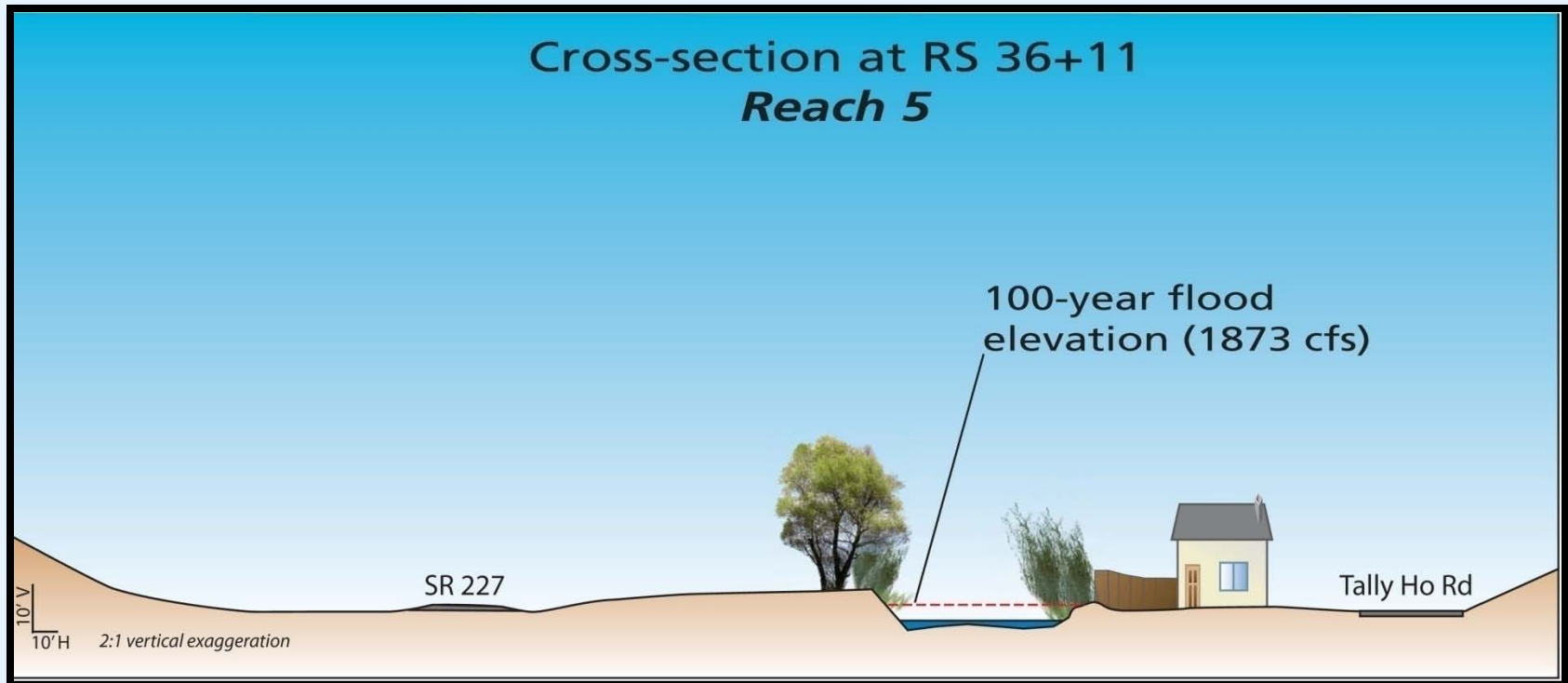
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Model Results – Reach 4



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Model Results – Reach 5



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Riparian Resources

- Emergent marsh
- Willow riparian
- Oak woodland
- Non-native grassland



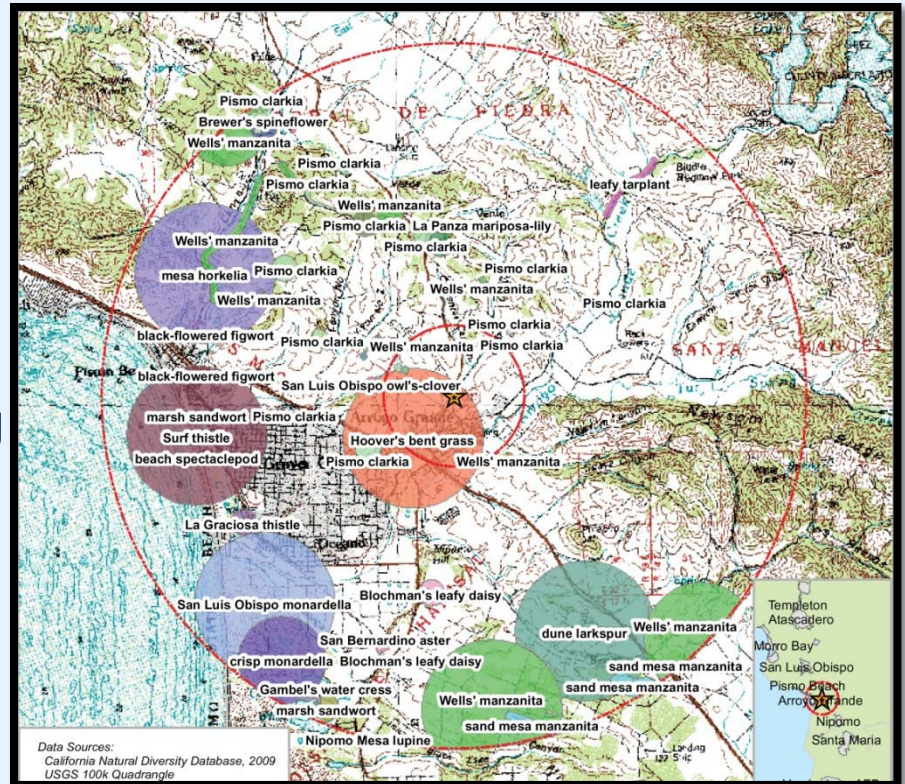
Wildlife Resources

- Good cover and structure in several locations
- Limited by encroachment of development / narrow corridor, invasive species
- Predominately passerine birds, some use by raptors (hawks), wading (herons) and waterbirds (ducks)
- Amphibians and reptiles likely include red-legged frog, tree frog, bull frog, native snakes and lizards.
- Mammals include black-tailed deer, racoon, rodents.

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Special Status Species

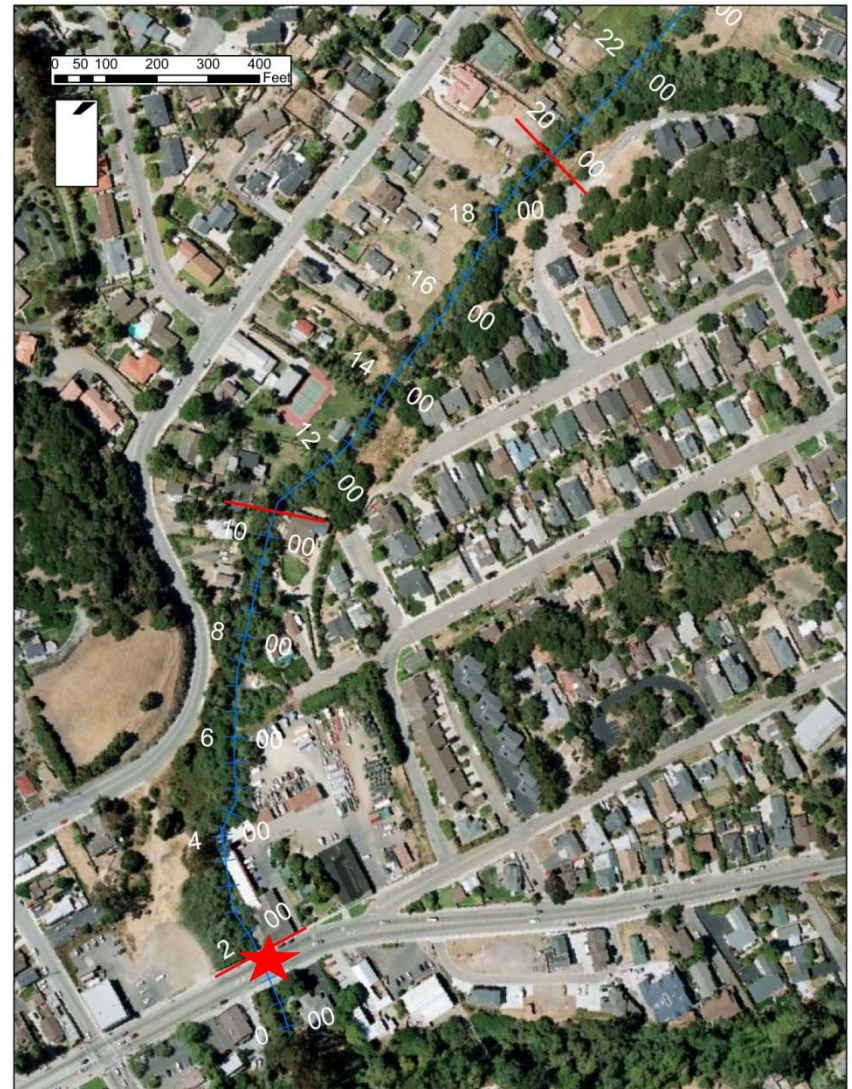
- Plants:
 - Several CNPS may occur; No State or Federally listed species likely to occur in project area.
- Animals:
 - California red-legged frog (federally threatened) known to occur
 - State species of concern may occur: southwestern pond turtle, coast range newt.



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Opportunities & Constraints Reaches 2 & 3

- **C:** Culvert constriction at Branch Street
- **C:** General confinement of channel by existing infrastructure
- **O:** Remove non-native vegetation



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Opportunities & Constraints Reaches 4 & 5

- **C:** Existing sediment plug
- **C:** RLF breeding habitat
- **C:** Existing infrastructure
- **O:** Relatively undeveloped along left bank
- **O:** Protect rt bank @ 227
- **O:** Remove non-native vegetation
- **O:** Revegetation of portions of Reach 5 where flooding is less of a concern



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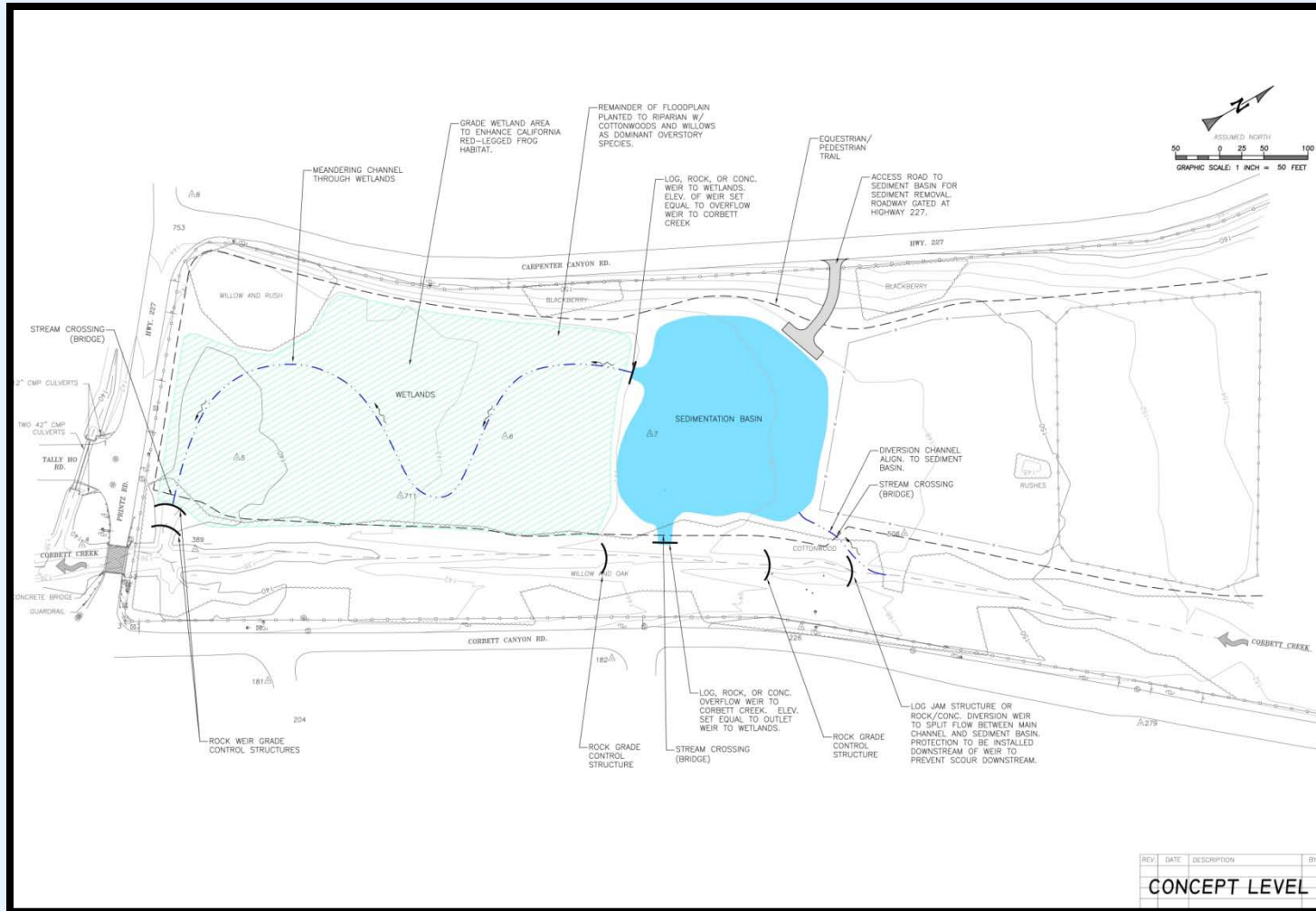
Opportunities & Constraints Reaches 6

- **C:** Constriction at bridge
- **O:** Potential to retain sediment
- **O:** Potential to detain high flows
- **O:** Potential to create RLF breeding and rearing habitat
- **O:** Potential to expand riparian area



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Clark Property Opportunities





Thank You for Attending!

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