



**Sonoma  
Water**

**North Coast Regional Water Quality  
Control Board**

**Sonoma Water Stream Maintenance  
Program (SMP)  
Waste Discharge Renewal**

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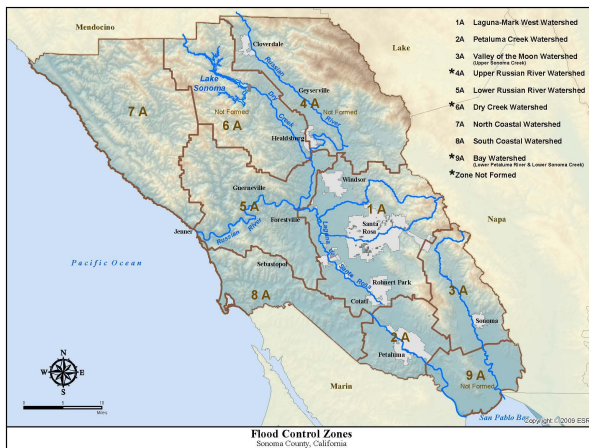
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# Sonoma Water Stream Maintenance Program (SMP)

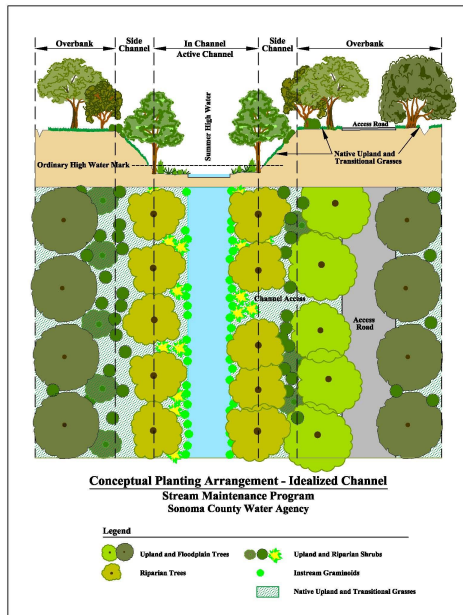
## Waste Discharge Renewal

- Utilizes a Watershed Perspective that Provides Flood Protection and Ecological Uplift
- Data Driven Approach to Manage Resources
- Engages an Onsite and Offsite Multi-Partner Mitigation Strategy
- Provides Regional Benefits and Flexibility for New Opportunities and Challenges



# Watershed Perspective that Provides Flood Protection and Ecological Uplift

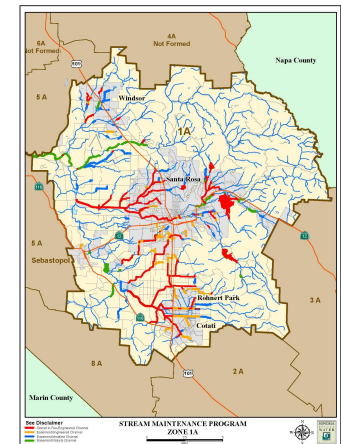
- SMP incorporates basic ecological principles into management strategies
- Including using shading, succession, and focused sediment collection to delay larger removals



# Watershed Perspective that Provides Flood Protection and Ecological Uplift

## 2010-19 Flood Work included:

- **27 miles** sediment management
- **67 acres** of riparian area restored
- **274,000 cubic yards** sediment management
- **274 miles** of vegetation management that increases riparian canopy and protects resources, and public safety.



# Data Driven Approach to Manage Resources

- Characterize site conditions and natural resources present
- Annual assessments to track sediment accumulation and vegetation growth
- Repeated biological surveys to document changing conditions and protect wildlife
- Utilize data and spatial database for pre-construction notification-annual reporting
- Create web tool for regulator access and project tracking

SMP Tree 1 INSTALLATION AND MONITORING FORM

Project: 2017 Coastal 2 Reach Site

Location: Capetown 1

Client: Sonoma Water

Year Installed: 2017

Year Completed: Linear Final Planned 2000

Notes: Sediment excavated immediately within reach. Plantings were installed within three disturbed areas, per Channel Form. The trees installed at 11' spacings within existing gaps, with a slightly together spacing near Cornerstone Blvd. Three plantings within the in-stream sediment basin area at Cornerstone Blvd may not be retained long term due to access issues. In-stream grasslands and herbaceous perennials clustered in groups of the same species to encourage treatment of sediment rates.

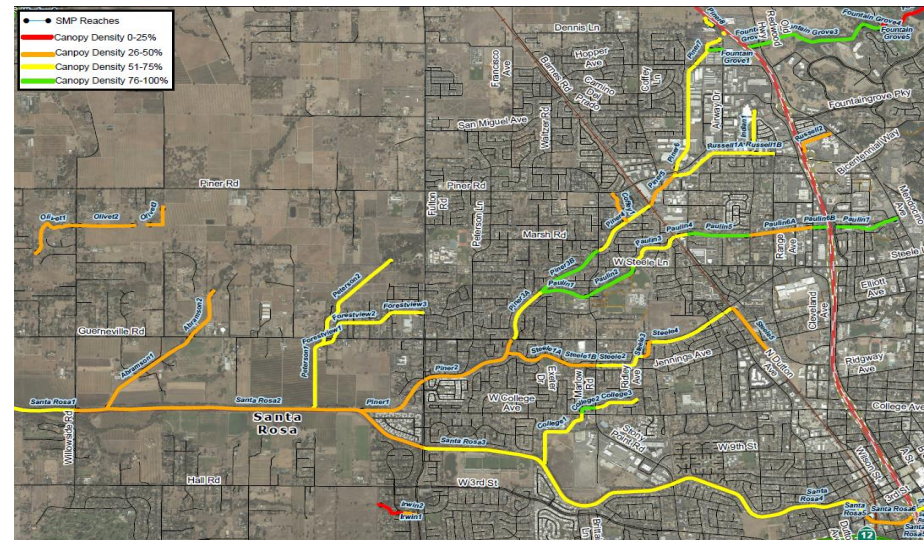
Category	Group	Name	Size	Quantity	Year 1 Qty Added	Year 1 Qty Retained	Year 2 Qty Added	Year 2 Qty Retained	Year 3 Qty Added	Year 3 Qty Retained
Trees	Trees	Alder nigropurpurea	1-gallon	46	27		27			
Trees	Trees	Alnus rubra	1-gallon	52	30		32			
Trees	Trees	Fraxinus velutina	1-gallon	27	12		21			
Trees	Trees	Salix lasiolepis	Cutting	65	65		59			
N/A	Herbaceous Perennials	Actaea verticillata	1-gallon	50	0		0			
N/A	Herbaceous Perennials	Oenothera biennis	1-gallon	100	present and spreading		present and spreading			
N/A	Herbaceous Perennials	Symphoricarpos albertii	1-gallon	25	0		0			
In-stream Grasses and Grasslands	In-stream Grasses and Grasslands	Carex lasiocarpa	1-gallon	100	present		minimal occurrence			
In-stream Grasses and Grasslands	In-stream Grasses and Grasslands	Elymus trichosperma	1-gallon	50	present		single occurrence			
In-stream Grasses and Grasslands	In-stream Grasses and Grasslands	Arnica montana	1-gallon	50	0		single occurrence			
In-stream Grasses and Grasslands	In-stream Grasses and Grasslands	Arnica montana	1-gallon	100	present		present			
In-stream Grasses and Grasslands	In-stream Grasses and Grasslands	Arnica montana	1-gallon	50	present		present			
In-stream Grasses and Grasslands	In-stream Grasses and Grasslands	Lemna sp.	1-gallon	100	present and spreading		present and spreading			
In-stream Grasses and Grasslands	In-stream Grasses and Grasslands	Scleria reticularis	1-gallon	50	0		single occurrence			

Category: Section Effects: Total Installed: 1,100 100% 1,100 100% 1,100 100% 1,100 100% 1,100 100% 1,100 100% 1,100 100%

2018 High natural recruitment of native species throughout reach. Fraxinus spp., Alnus rhombifolia, Salix lasiolepis and Carex lasiocarpa found in-stream in these groupings. 2019: Same as previous year.

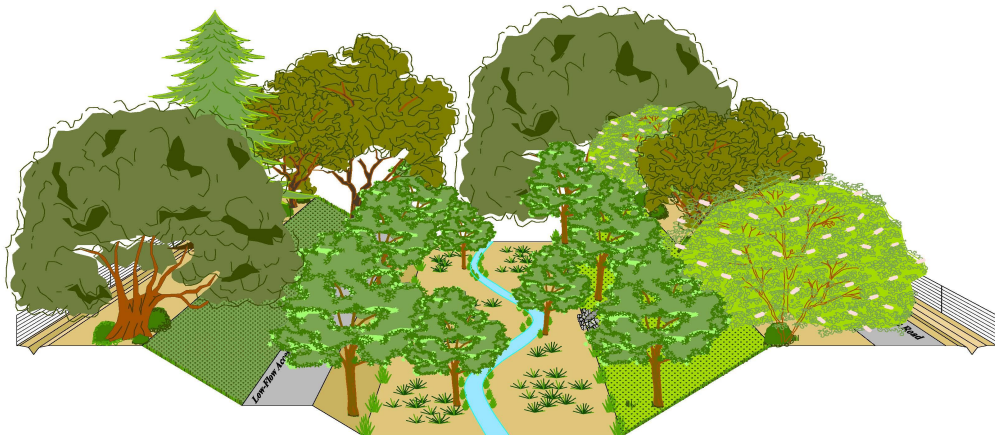
2018 Established mature mixed canopy primarily consisting of emerging willows. Some growth within SMP trees planted up-drain in between mature emerging willows. Long term plan is to do phased removal of emerging willows and plantings will replace lost canopy. Reach scale localized plantings throughout reach on both sides of line NTH trees removed within 10' spacings at least from biological 2017 NTH trees are not to be included. Submit the 10' side within of the seed bank installed, see NTH notes for more detail. Plant failures occurred from over competition of mature vegetation. For planting and measurements, 2019 Several plantings were labeled which indicated height but no age and/or spreading from base. These were Cornerstone that have more soil and are growing considerably faster than other plantings. Landscape think at least from sediment basin but being bypassing to compete.

Category: 1 Long Creek, 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5 9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5 19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5 29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5 39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5 49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5 59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5 69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5 78.5 79.5 80.5 81.5 82.5 83.5 84.5 85.5 86.5 87.5 88.5 89.5 90.5 91.5 92.5 93.5 94.5 95.5 96.5 97.5 98.5 99.5 100.5



# Onsite and Offsite Multi-Partner Mitigation Strategy

- Tier 1 (onsite) -**67 acres** of riparian habitat using **46,000** native trees and plants



## Tier 3 Watershed Partnership Program (offsite)

- Invested over **\$2 million**
- Restored **72 acres** of riparian habitat regionally

# Provides Regional Benefits and Flexibility for New Opportunities and Challenges

- Species protection and habitat development
- Acts as vegetated buffer, sediment containment, and water quality filter
- Public protection and recreation
- Fire management
- Urban trash management





**QUESTIONS?**