

Coastal Mendocino County Storm Water Resource Plan Stakeholder Public Meeting October 24, 2017



Storm Water Resource Plan (SWRP)

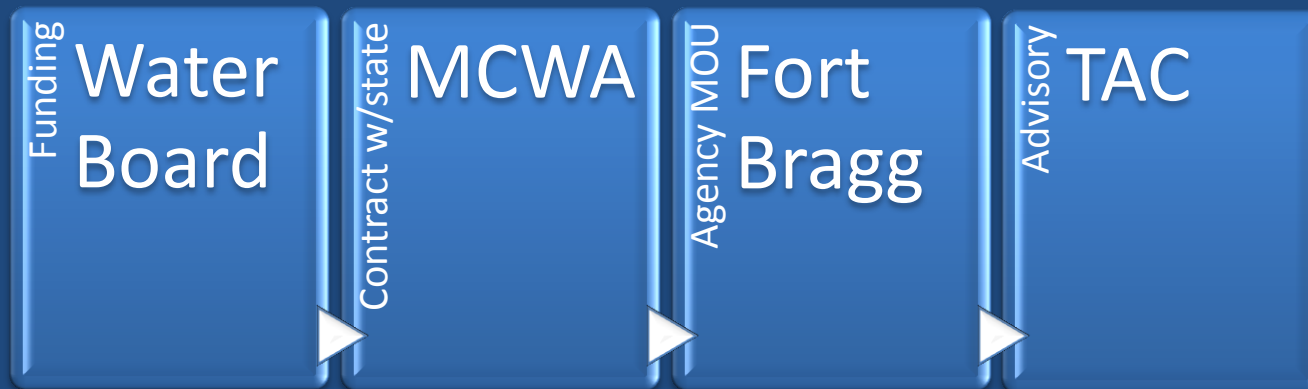
- The SWRP is a plan that outlines the state of our community's watersheds and identifies how the district can improve and protect our rivers, creeks, streams, and groundwater via storm water resource management.
- A SWRP is a requirement for receiving state funds that address projects which capture and re-use storm water runoff, providing improved water quality and quantity for the community.

Proposition 1 Background

- Prop 1 authorized \$7.5 billion in general obligation bonds for water projects including:
 - Surface and groundwater storage
 - Ecosystem and watershed protection and restoration
 - Drinking water protection
- Of the \$7.5 billion, Prop 1 provides \$200 million in grant funds for multi-benefit storm water management projects.

SWRP Grant Update

- \$242,990 grant awarded to the Mendocino County Water Agency
- \$270,045 total effort, including County match
- Identifies projects that capture and re-use storm water runoff to provide multiple benefits.



Areas & Towns Benefitting from SWRP

- Pudding Creek-
Frontal Pacific Ocean
Watershed
- Noyo River
Watershed
- Big River Watershed
- Mendocino
- Fort Bragg
- Casper
- Cleone



Multiple Benefits Per SWRP Guidelines

TABLE 3. BENEFIT METRICS		
Benefit	Example	Metric Unit(s)
Water Quality <i>while contributing to compliance with applicable permit and/or TMDL requirements</i>	Increased filtration and/or treatment of runoff	Pollutant Load Reduction pounds (lbs)/day kilograms (kg)/day milligram/Liter microgram /Liter most probable number of bacteria or indicator organisms (mpn)/mL
	Nonpoint source pollution control	
	Reestablished natural water drainage and treatment	Volume Treated million gallons per day (mgd) acre-feet per year (afy)
Water Supply <i>through groundwater management and/or runoff capture and use¹¹</i>	Water supply reliability	Volume Captured <i>in terms of augmentation/replacement of water supply, or reduced dependence on imported water</i>
	Water conservation	million gallons per day (mgd) acre-feet per year (afy)
	Conjunctive use	Cost dollars per volume per year (of augmented water supply)
Flood Management	Decreased flood risk by reducing runoff rate and/or volume	Rate, Volume, and/or Size cubic feet per second (cfs) acre-feet (af) cubic feet (cf) acres or linear feet
	Reduced sanitary sewer overflows	
Environmental	Environmental and habitat protection and improvement, including: - wetland enhancement/creation; - riparian enhancement; and/or - instream flow improvement	Size and/or Rate acres cubic feet per second (cfs) carbon sequestration (megagrams of carbon per area)

Multiple Benefits Per SWRP Guidelines

TABLE 3. BENEFIT METRICS		
Benefit	Example	Metric Unit(s)
Environmental <i>(continued)</i>	Increased urban green space	Other¹² area units of landscape and buffer measure of improved hydrology number of biotic structure number of physical structures reduced temperature (degrees)
	Reduced energy use, greenhouse gas emissions, or provides a carbon sink	
	Reestablishment of the natural hydrograph	
	Water temperature improvements	
Community	Enhanced and/or created recreational and public use areas	Size size of population served number of people number of jobs acres
	Community involvement	
	Employment opportunities provided	

Multiple Benefit Selection

Indicate which benefit(s) are associated with each category

Eligible projects must have multiple benefits. The Technical Advisory Committee (TAC) has ranked the 5 main benefit categories. Assign multiple benefits to each category below in order to assist TAC in refining the multiple benefits associated with each category.

Categories

Environment

1, 3, 5

Water Supply

1, 3, 12

Water Quality

1, 3, 8, 4, 5, 6, 10,
11, 12

Community

11, 3, 5

Flood Management

10, 3, 5, 8, 9, 2

Benefits

1 - Decreased Turbidity

Improved water clarity and fish habitats

2 - Surface Water Supply

For community and the environment

3 - Decreased Flood Risk

4 - Wetland Creation

Provides storm water treatment and critical habitat

5 - Riparian Enhancement

Improved aquatic species habitat. Reduction in streambank erosion.

6 - Employment Opportunities

7 - Recreational Area Development

8 - Instream Flow Improvement

Increases stream flow during dry season

9 - Reduced Sewer Overflow

Keeps nutrients and pathogens out of creeks and rivers

10 - Decreased Sediment Loading

Improved water clarity and fish habitats

11 - Groundwater Supply

Help maintain aquifer levels

12 - Nonpoint Source Pollution

Decreased pollution from construction sites, and non-visible pollutants from streets and parking lots

Project Proposal Process

- Eligible Agencies
 - Public Agencies
 - Non-Profit Organizations
 - Public Utilities
 - Mutual Water Companies
- Partial List Eligible Project Types
 - Green Infrastructure
 - Low-Impact Development
 - Storm water Capture & Reuse
- Project ideas and public comments will be accepted through October 30, 2017

Projects

Examples, Brainstorming, & Public Input

- Storm Water Control Devices
- Groundwater Recharge
- Wetland Enhancement/Restoration
- Riparian Enhancement/Restoration
- LID Retrofits
- Dirt Road Decommissioning/Improvement
- Residential Rain Barrels
- Stream Channel Restoration

Projects

Curbside Rain Garden



Projects

Storm Water Treatment (Bioretention) Basin



Projects

Residential Rain Gardens

residential rain garden

(keep 10 feet away from most structures)



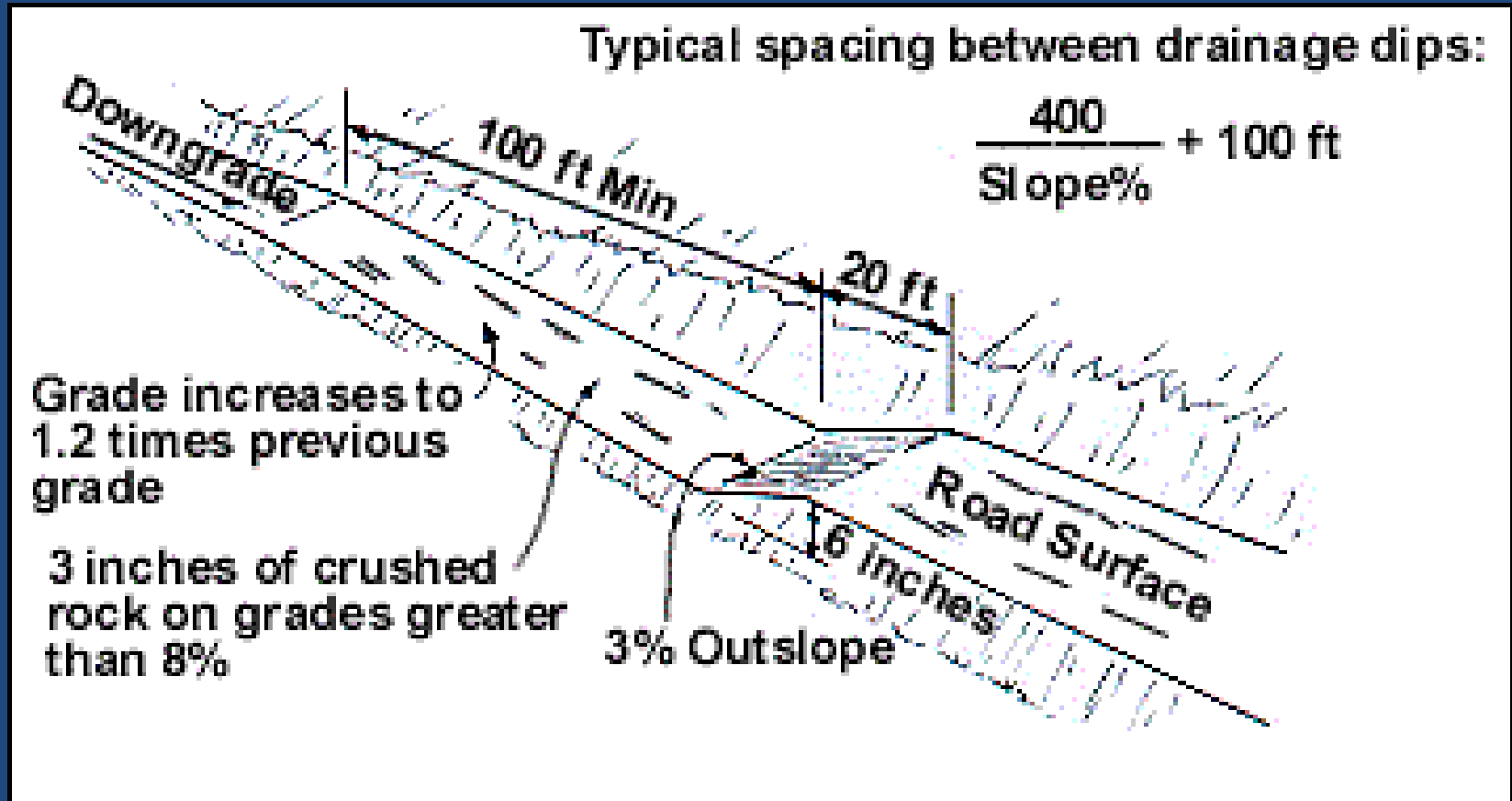
Projects

Storm Water Detention Basin



Projects

Dirt Road Drainage Improvements



Projects

Ephemeral Retention Pools



Submitted Projects

Mendocino
County
Facilities

City of Fort
Bragg

Noyo
Headlands

Company
Ranch Road



Avila Center

Rain Gardens & Infiltration Trench

790 S. Franklin Street
Fort Bragg

Benefit Table

Primary

In-Stream flow improvement
Reduce storm water run-off
rate and volume

Secondary

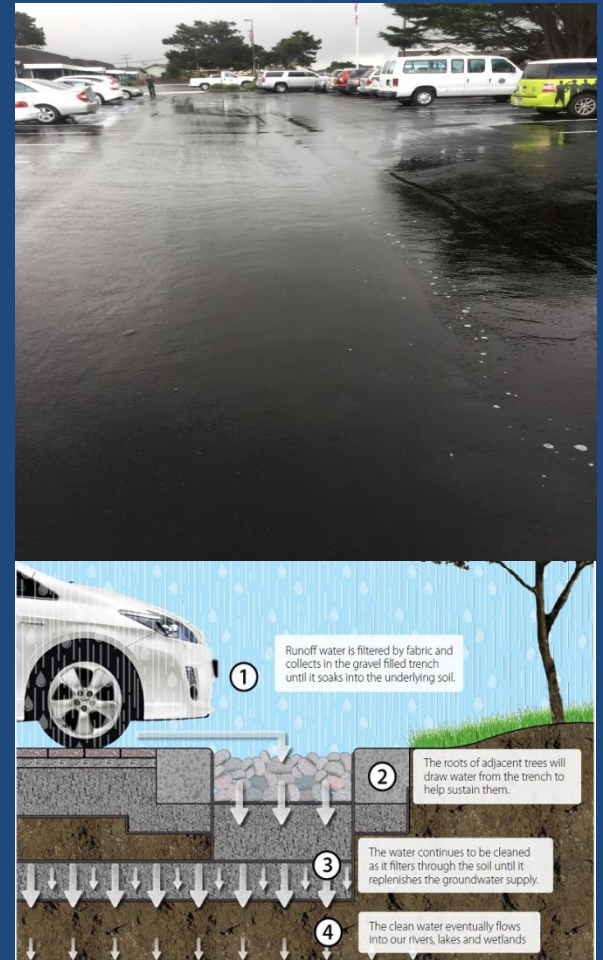
Re-establishment of natural
hydrographs
Re-establishment of
groundwater supply

Cost

\$80,000.00

Metric

Annual Rainfall – 43 inches
Impervious Area – 1.5 acres
Volume Captured (85th
percentile) – 4.6 Acre-Feet
per Year
Cost per Acre-Foot (over 20
years) - \$868.00





Planning & Building Services

Infiltration Trench & Landscaping



120 W. Fir Street
Fort Bragg

Benefit Table

Primary

In-Stream flow improvement
Reduce storm water run-off
rate and volume

Secondary

Re-establishment of natural
hydrographs
Re-establishment of
groundwater supply

Cost

\$56,000.00

Metric

Annual Rainfall – 43 inches
Impervious Area - .4 acres
Volume Captured (85th
percentile) – 1.2 Acre-Feet
per Year
Cost per Acre-Foot (over 20
years) - \$2,292.00





County DOT Yard

Infiltration Trench

120 E. Bush Street
Fort Bragg

Benefit Table

Primary

In-Stream flow improvement
Reduce stormwater run-off
rate and volume

Secondary

Re-establishment of natural
hydrographs
Re-establishment of
groundwater supply

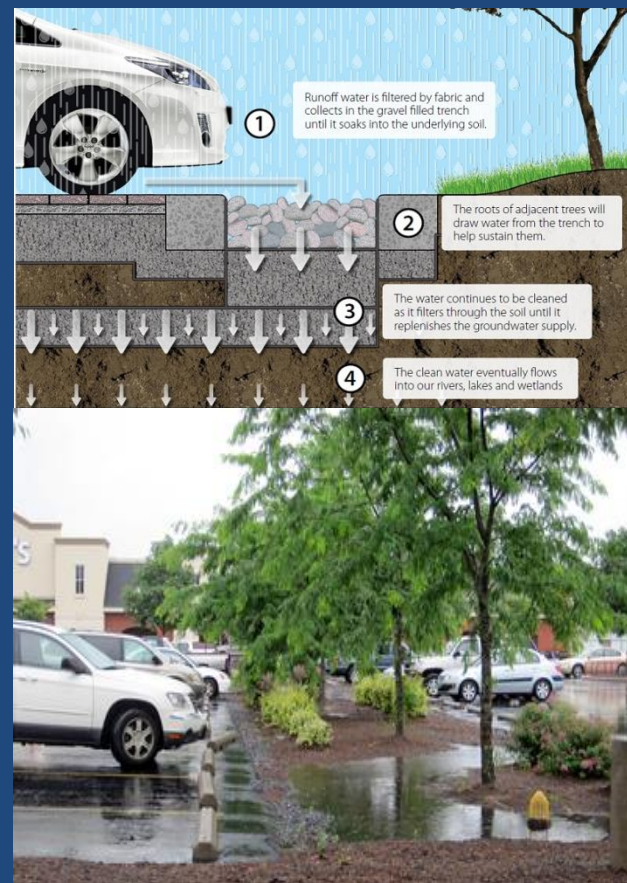
Cost

\$121,000.00

Metric

Annual Rainfall – 43 inches
Impervious Area - .2 acres
Volume Captured (85th
percentile) – .6 Acre-Feet per
Year

Cost per Acre-Foot (over 20
years) - \$2,432.00





County Library

Infiltration Trench

499 E. Laurel Street
Fort Bragg

Benefit Table

Primary

In-Stream flow improvement
Reduce storm water run-off
rate and volume

Secondary

Re-establishment of natural
hydrographs
Re-establishment of
groundwater supply

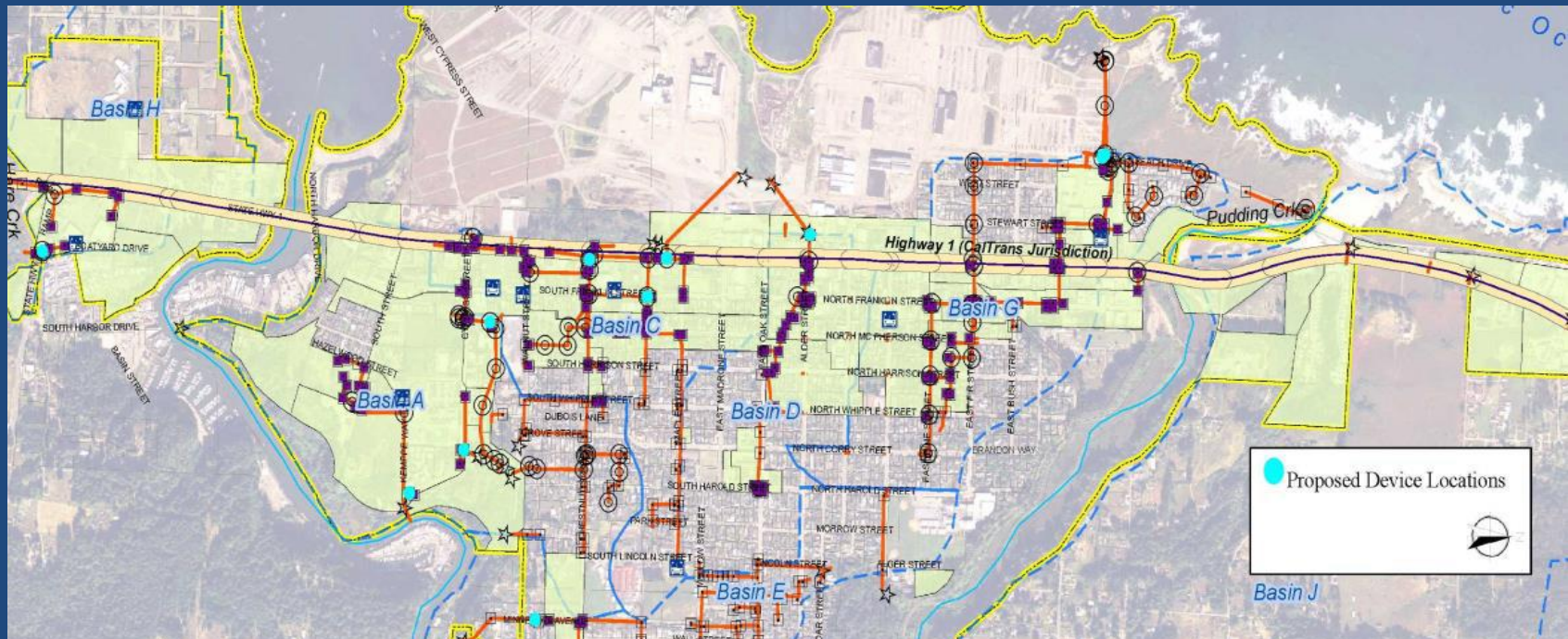
Cost

\$13,000.00

Metric

Annual Rainfall – 43 inches
Impervious Area - .1 acres
Volume Captured (85th
percentile) – .30 Acre-Feet
per Year
Cost per Acre-Foot (over 20
years) - \$2,400.00





Noyo Headlands

GP Mill Site Redevelopment



Project goal is to re-adopt practical pathways to a revitalized network of above-ground watercourses and wetlands that receive and process stormwater. The project will focus on locations where surface expression corresponds to below-ground aquifers (or deviates from them) in order to protect important infrastructure and locations that bend around Native American cultural sites. This also allows above-ground watercourses to meander, ensuring the most promising results for stormwater polishing, and ecological and public health.

Primary Benefits	Secondary Benefits	Estimated Cost
<ul style="list-style-type: none">• Creation of new wetlands• Decreased flood risk• Employment opportunities• Increased urban green space	<ul style="list-style-type: none">• Community involvement• Improved public use areas• Provide carbon sink• Re-establish natural hydrograph	\$250,000 - \$300,000



Company Ranch Road

Sediment Reduction Project



Installation of additional ditch relief culverts

Above: Inlet with rock headwall, notched ditch block and temporary sediment control wattle.

Below: Outlet with flume extension to rock energy dissipater



The DIRT database indicates that some 2,150 cubic yards of sediment may be prevented from entering the Noyo River over a 10 year period as a result of sediment reduction treatments on Company Ranch Road. Proposed work includes: installing 6 new ditch relief culverts, upsizing 5 stream crossing culverts, replacement of 6 ditch relief culverts and other sediment reduction treatments such as outsloping, rolling grade breaks, removal of outside berm, repair of erosion areas and rock surfacing.

Project benefits of a more hydrologically transparent road are; improved road conditions for residences of Company Ranch Road and the traveling public, decreased maintenance costs as a result of storm proofing treatments, and enhanced protection of identified beneficial uses.

Primary Benefits	Secondary Benefits	Estimated Cost
<ul style="list-style-type: none">• Decreased flood risk• Employment opportunities• Increased filtration of runoff• Instream flow improvement	<ul style="list-style-type: none">• Nonpoint source pollution control• Re-establishment of natural hydrograph	\$450,000 for construction



Outside berm removed in 2012 to existing road elevations. Reestablishing the crown in 2013 has recreated an outside berm that needs to be brought down.



Completed road section after berm removal, reshaping and rock surfacing. A crowned road surface with inside ditch was retained as opposed to out-sloping due to public safety concerns.

Questions & Comments

Breakout Sessions

County Facilities

- *Chris Watt*

Company Ranch Road

- *Alex Straessle*

707-234-2803

straessa@mendocinocounty.org

Noyo Headlands

- *George Reinhardt*

City of Fort Bragg

- *Chantell O'Neal*

Thank You

