



Flood Control/Fish Passage

FLOOD CONTROL

The staff of the Flood Control Division of the Department of Public Works provides administration for the Marin County Flood Control and Water Conservation District. The District is a political subdivision of the State of California and is a separate and distinct agency from the County. It was established in 1953 by an act of the State legislature. The Board of Supervisors of the County sits as the Board of the District. Within the District, eight separate flood control zones have been formed. The purpose of the zones is to collect taxes to fund specific flood control projects within that particular zone. The taxes collected are restricted and must be spent within each respective zone. There is no impact on the County's General Fund.

Summary of Proposed Flood Control Projects and Expenditures

Project Description	In Progress (Prior Year Carry Forward)	2010/11	2011/12	2012/13	2013/14	2014/15
	\$	\$	\$	\$	\$	\$
Dredging, Novato Creek Zone 1		180,000	1,500,000			
Seminary Drive Pump Station* Zone 3		1,000,000				
SCADA System Installation Zones 3, 4 & 7		50,000				
West Creek Flood Wall Zone 4		90,000	250,000			
Replace Slough Culvert Zone 9			110,000			
Corte Madera Creek Unit 4 Zone 9A**		520,000		10,150,000		
Coyote Creek Middle Reach Dredging – Zone 3			750,000			
Estancia Ditch Improvements Zone 7		500,000				
Pump Station No. 2 Reconstruction – Zone 7		2,400,000				
Boyle Park Creek Restoration & Stormwater Outreach Project Zone 3***	136,000	91,300	304,300	55,400	27,700	
TOTALS	\$136,000	\$4,831,300	\$2,914,300	\$10,205,400	\$27,700	\$0

* Joint funding - Flood Control/932 Mitigation Fees.

** Joint funding – Army Corps of Engineers

*** Matching funds from City of Mill Valley & Richardson's Bay Regional Agency. Project funded through a grant from US Environmental Protection Agency San Francisco Bay Area Water Quality Improvement Fund.

<p>Dredging, Novato Creek Zone 1</p>

1. Project Description and Background

To dredge Novato Creek between Railroad and Diablo Avenues as part of the maintenance of the Novato Flood Control Project.

2. Project Objective

Remove sediment from creek to maintain creek capacity and provide 50-Year storm frequency protection.

3. Cost Estimate

\$1,680,000

4. Basis of Estimate

Flood Control Staff

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
F. C. Zone 1 Funds		\$180,000	\$1,500,000			
Grant Funds						
Special Funds						
Other Funds						

**Seminary Drive Pump Station
Zone 3**

1. Project Description and Background

Construct a storm water pump station at the Redwood Highway Frontage Road and northbound Highway 101 interchange (i.e., Seminary Drive exit) in unincorporated Mill Valley. The pump station, which will be equipped with backup power, will improve roadway drainage and eliminate roadway closures that presently occur when there are high tides.

2. Project Objective

Reduce tidal flooding at the Redwood Highway Frontage Road and northbound Highway 101 Interchange (i.e., Seminary drive exit).

3. Cost Estimate

\$1,000,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
F.C. Zone 3 Funds		\$779,000				
General Fund						
Grant Funds						
Special Funds		221,000				

<p>SCADA System Installation Zones 3, 4 and 7</p>
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1. Project Description and Background

Three of the eight Flood Control Zones rely on pump stations for flood protection. Zone Three has four stations, Zone Four has two stations and Zone Seven has five stations. Each of these stations is equipped with an alarm system that sends a signal when the water exceeds a set level or power is lost to the station. This project will install SCADA (Supervisory Control and Data Acquisition) systems in the six stations in Zones Three and Four. A SCADA system will allow monitoring in real time from the Civic Center of any data that can be measured, such as the rate of pumping, the heat of a motor or how long a pump has been operating. This will allow on-duty staff to anticipate problems and hopefully respond before they actually occur. Zone Seven's stations will be done as funds come available.

2. Project Objective

To increase the County's ability to respond to major storm events in a timely manner.

3. Cost Estimate

\$50,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
F.C. Zone 3 Funds		\$30,000				
F.C. Zone 4 Funds		20,000				
Special Funds						
Other Funds						

**West Creek Flood Wall
Zone 4**

1. Project Description and Background

During a severe rain event in December 2001, West Creek in Bel Aire overflowed along a portion of its upper reach flooding some yards and homes along Blackfield Drive. This project is to construct a flood barrier adjacent to West Creek.

2. Project Objective

To eliminate flooding from West Creek along its upper reach.

3. Cost Estimate

\$340,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
F.C. Zone 4 Funds		\$90,000	\$250,000			
Grant Funds						
Special Funds						
Other Funds						

<p>Replace Slough Culvert Zone 9</p>

1. Project Description and Background

As a result of the construction of Unit Three of the U.S. Army Corps of Engineers Corte Madera Creek Flood Control Project, a small meander was cut off from the main channel by the new levee and thus became a slough. This slough is still there and receives water from and discharges water to the main creek via two 36" culverts through the levee. These culverts are badly deteriorated and need to be replaced.

In light of the recent decision by the California Supreme Court upholding the Ross Valley flood fee, staff is now preparing a plan to move forward with a flood control program. Public Works staff will be working with the Flood Advisory Board and the Flood Control Board of Supervisors in developing the program. The flood fee is generating \$2 million per year and staff will be aggressively pursuing grant funding to complement the program.

2. Project Objective

To replace deteriorated culverts and maintain a healthy flow exchange in the slough.

3. Cost Estimate

\$110,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
F.C. Zone 9 Funds			\$50,000			
Grant Funds*			60,000			
Special Funds						
Other Funds						

*Not secured

**Corte Madera Creek Unit 4
Zone 9A**

1. Project Description and Background

Replace the fish ladder and rivet the banks of Unit 4 in Ross. US Army Corps of Engineers (ACOE) pays 98.5% of total cost. This project is dependent on Congressional funding for the federal share.

2. Project Objective

Complete flood control project.

3. Cost Estimate

\$10,670,000

4. Basis of Estimate

Flood Control District Staff

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
F.C. Zone 9A Funds		\$20,000		\$150,000		
Federal Funds		500,000		10,000,000		
Special Funds						
Other Funds						

**Coyote Creek Middle Reach Dredging
Zone 3**

1. Project Description and Background

The middle reach of Coyote Creek, from the concrete channel outfall to the Highway 1 overcrossing, requires periodic dredging every 5-10 years in order to remove accumulated sediments and maintain its intended design capacity for flow. The last dredging project occurred in 2003.

2. Project Objective

To restore the middle reach of Coyote Creek to its intended design capacity for flow.

3. Cost Estimate

\$750,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
F.C. Zone 3 Funds			\$750,000			
Federal Funds						
Special Funds						
Other Funds						

**Estancia Ditch Improvements
Zone 7**

1. Project Description and Background

Estancia Ditch receives storm water runoff from a drainage area extending from Estancia Way to Rincon Way in the eastern end of Santa Venetia and then drains to Pump Station No. 5. The limited capacity of the drainage way can cause flooding in the surrounding area.

2. Project Objective

Increase the capacity of Estancia Ditch to lowering and resurfacing the channel bottom. In addition, make street drainage improvements on Estancia Way to increase flow to the channel.

3. Cost Estimate

\$500,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
F.C. Zone 9A Funds						
Federal Funds						
Special Funds						
Other Funds						
Unsecured		\$500,000				

**Pump Station No. 2 Reconstruction
Zone 7**

1. Project Description and Background

Pump Station No. 2 in Santa Venetia was constructed in the 1960's from what was previously a sanitary sewer station. Several deficiencies have been identified and will be corrected through a complete reconstruction of the antiquated facility.

2. Project Objective

Update the entire facility including: 1) expanding the currently limited pumping capacity to handle the 100 year flow; 2) providing an enclosed structure to house the exposed electrical panel and work area, which are presently exposed; and 3) replacing aging components to meet current industry standards.

3. Cost Estimate

\$2,400,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
F.C. Zone 7 Funds		\$500,000				
Grant Funds						
Special Funds						
Other Funds						
Unsecured		1,900,000				

**Boyle Park Creek Restoration and Stormwater
Outreach Project Zone 3**

1. Project Description and Background

The County of Marin, partnering with the City of Mill Valley and the Marin County Stormwater Pollution Prevention Program (MCSTOPPP) will implement work to support implementation of the Pathogens TMDL for Richardson Bay. The proposed projects will: reduce pathogen delivery through a riparian restoration project; increase awareness of the sources and impacts of pathogens; and improve watershed monitoring efforts. County Flood Control, MCSTOPPP and the City of Mill Valley will implement a restoration and outreach project at Boyle Park. A tributary to Warner Creek at the edge of the park along Elm Ave. will be re-graded to a stable slope and vegetated with native plants. Outreach to the neighborhoods in the watershed and to visitors at the park will be completed through MCSTOPPP and DPW staff.

2. Project Objective

The restoration project will improve water quality in a tributary to Warner Creek by fencing off and infiltrating stormwater through a restored riparian corridor.

3. Cost Estimate

\$614,700

4. Basis of Estimate

Planner's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
Flood Zone 3 Funds	\$	\$22,900	\$29,600	\$18,900	\$9,400	
Grant Funds		48,000	271,300	33,500	16,800	
Special Funds						
Other Funds ¹	136,000	20,400	3,500	3,000	1,500	

¹ Matching funds from the City of Mill Valley and Richardson's Bay Regional Agency

This is a project funded through a grant from US Environmental Protection Agency San Francisco Bay Area Water Quality Improvement Fund.

COUNTY SERVICE AREAS

In addition to Flood Control projects, staff is also involved in completing projects for County Service Areas 6 and 29. These projects are funded from residential taxes to remove silt from waterways and creeks for homeowner boating use.

Summary of Proposed County Service Area Projects and Expenditures

Project Description	In Progress (Prior Year Carry Forward)	2010/11	2011/12	2012/13	2013/14	2014/15
	\$	\$	\$	\$	\$	\$
CSA 6 Las Gallinas Creek Maintenance Dredge		2,450,000	1,050,000			
CSA 29 Paradise Cay Maintenance Dredge				485,000		
TOTALS	-	\$2,450,000	\$1,050,000	\$485,000	\$0	\$0

**Las Gallinas Creek Maintenance Dredging
CSA 6**

1. Project Description and Background

To dredge Las Gallinas Creek for recreation/boating use to minus 7 feet from Buck's Landing to Mark Twain Ave.

2. Project Objective

Removal of silt to maintain navigable waterways for homeowners boating use.

3. Cost Estimate

\$3,500,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
General Fund		\$1,400,000	\$			
Grant Funds						
Special Funds						
Other Funds		1,050,000	1,050,000			

**CSA 29 Paradise Cay
Maintenance Dredge**

1. Project Description and Background

To dredge Paradise Cay for recreation/boating use to minus 7 feet within the waterways and to minus 8 feet in the entry channels.

2. Project Objective

Removal of silt to maintain navigable waterways for homeowners boating use.

3. Cost Estimate

\$485,000

4. Basis of Estimate

Flood Control Staff

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
CSA Funds				\$485,000		
Grant Funds						
Special Funds						
Other Funds						

FISH PASSAGE PROJECTS

In Spring 2005, Marin County Board of Supervisors voted to establish a County Fisheries Restoration Program aimed at restoring fish passage through county culverts on salmon streams in West Marin. Marin's watersheds are very important to the recovery of coho salmon populations, as it is estimated that approximately 10% of all California wild coho salmon spawn in streams flowing into Tomales Bay. Grant funding supports a large part of this program. Inclusion of unfunded projects does not guarantee funding in future years, as unfunded projects will be subject to available funding and updated priorities with new emerging needs.

Summary of Proposed Fish Passage Projects and Expenditures

Project Description	In Progress (Prior Year Carry Forward)	2010/11	2011/12	2012/13	2013/14	2014/15
	\$	\$	\$	\$	\$	\$
Arroyo Creek #1 @ Castro Street		400,000				
San Geronimo Creek #2 @ Railroad Avenue			350,000			
Larsen Creek Fish Ladder			600,000			
East Fork Woodacre Creek #2 @ Garden Way					250,000	
Montezuma Creek					400,000	
TOTALS	\$0	\$400,000	\$950,000	\$0	\$650,000	\$0

Arroyo Creek #1 @ Castro Street

1. Project Description and Background

Retrofit of existing culvert with an arched culvert to improve fish passage.

2. Project Objective

Restore fish passage for coho salmon and steelhead.

3. Cost Estimate

\$400,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
General Fund						
Grant Funds						
Special Funds						
Other Funds*		\$400,000				

Project Funding is being pursued

San Geronimo Creek #2 @ Railroad Avenue

1. Project Description and Background

Retrofit existing concrete box culvert with concrete baffles and roughened riffle ramp.

2. Project Objective

Improve fish passage for coho salmon and steelhead.

3. Cost Estimate

\$350,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
General Fund						
Grant Funds						
Special Funds						
Other Funds*			\$350,000			

*Project Funding is being pursued

Larson Creek Fish Ladder

1. Project Description and Background

Retrofit existing concrete box culvert with concrete baffles and roughened riffle ramp.

2. Project Objective

Improve fish passage for coho salmon and steelhead.

3. Cost Estimate

\$600,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
General Fund						
Grant Funds						
Special Funds						
Other Funds*			\$600,000			

*Project Funding is being pursued

East Fork Woodacre Creek #2 @ Garden Way

1. Project Description and Background

Replace existing concrete culvert with natural bottom arched culvert.

2. Project Objective

Restore fish passage for coho salmon and steelhead.

3. Cost Estimate

\$250,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
General Fund						
Grant Funds						
Special Funds						
Other Funds*					\$250,000	

*Project Funding is being pursued

Montezuma Creek

1. Project Description and Background

Replace existing concrete culverts with natural bottom arched culvert.

2. Project Objective

Restore fish passage for coho salmon and steelhead.

3. Cost Estimate

\$400,000

4. Basis of Estimate

Engineer's Estimate

<u>Funding Source</u>	<u>Available Prior Year Funds</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>
General Fund						
Grant Funds						
Special Funds						
Other Funds*					\$400,000	

*Project Funding is being pursued