

Stream Maintenance Program Annual Notification Report for 2016 Maintenance Projects

Prepared for: The SMP Inter-Agency Working Group



East Fork McDowell Creek, Petaluma, CA - Spring 2016

April 30, 2016



**Stream Maintenance Program
Annual Notification Report for
2016 Maintenance Projects**

April 30, 2016

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Section 1

Project List, Locations and Best Management Practices

1.1. Ground Disturbing Project List and Type

The following sediment removal and bank stabilization projects are anticipated for the 2016 maintenance season:

Zone 1A

1. Cook 1 Localized Scale
2. Ducker 1 and 2A Localized Scale
3. LaBath 2 Localized Scale
4. Laguna 3 Localized Scale
5. Paulin 6A Localized Scale
6. Copeland 2 Reach Scale
7. Laguna 4 Reach Scale
8. Russell 2 Reach Scale
9. Brush 2A Sediment Basin Clearing
10. Cook 2 Sediment Basin Clearing
11. Copeland 3/4 Sediment Basin Clearing
12. Copeland 4/5 Sediment Basin Clearing
13. Five 1 Sediment Basin Clearing
14. Santa Rosa 2 Sediment Basin Clearing
15. Wilfred 1C Sediment Basin Clearing
16. Brush Creek Reservoir Outlet Clearing
17. Matanzas Creek Reservoir Outlet Clearing
18. Piner Creek Reservoir Outlet Clearing
19. Santa Rosa Creek Reservoir Outlet Clearing
20. Peterson 1 Bank Repair
21. Russell 1A Bank Repair

Zone 2A

22. E. Fork McDowell 1 Localized Scale
23. Corona 1 Reach Scale
24. Adobe 1 and 2 Sediment Basin Clearing

Zone 3A

25. Fryer 3 Reach Scale

Zone 5A

26. Fife 3 and 4 Sediment Basin Clearing

Zone 8A

27. Bloomfield 1 Culvert Replacement

1.2. Ground Disturbing Project Site Locations and Other Information

The following presents location and geographic information for each of the 2016 project sites:

Project Name	Location Description	Creek	Tributary to	USGS Quad, Township, Range, Section	Latitude/ Longitude	Sediment Management Trigger(s)
Zone 1A						
<i>Localized Scale Projects</i>						
Cook 1	Culvert at Graymill Court	Cook Creek	Coleman Creek	Cotati Quad, T6N, R7W, Section 18	38.368 N, -122.682 W	Sediment causing hydraulic constriction
Ducker 1 and 2A	Non-contiguous gravel bars between Middle Rincon Road and Acacia Lane	Ducker Creek	Austin Creek	Santa Rosa Quad, T7N, R7W, Section 07	38.470 N, -122.672 W	Gravel bar surface above OHWM; sediment forming alternating bars
LaBath 2	At the confluence with Hinebaugh Creek	Labath Creek	Hinebaugh Creek	Cotati Quad, T6N, R8W, Section 22	38.354 N, -122.727 W	Sediment causing hydraulic constriction
Laguna 3	Above confluences with Copeland and Washoe Creek	Laguna de Santa Rosa	Mark West Creek	Cotati Quad, T6N, R8W, Section 22	38.343 N, -122.723 W	Sediment forming island in the center of channel; sediment forming alternating Bars
Paulin 6A	at McBride Lane and Range Avenue crossings	Paulin Creek	Piner Creek	Santa Rosa Quad, T7N, R8W, Section 10	38.463 N, -122.733 W	Sediment forming alternating bars
<i>Reach Scale Projects</i>						
Copeland 2	From Seed Farm Drive to Commerce Boulevard	Copeland Creek	Laguna de Santa Rosa	Cotati Quad, T6N, R8W, Section 26	38.343 N, -122.707 W	Channel is systemically aggrading such that channel capacity is at risk
Laguna 4	From Gravenstein Way to Commerce Boulevard	Laguna de Santa Rosa	Mark West Creek	Cotati Quad, T6N, R8W, Section 26	38.334 N, -122.709 W	Sediment blocking outfalls; sediment accumulating in a way that supports excessive vegetation growth, threatening channel capacity and creating undue roughness

Project Name	Location Description	Creek	Tributary to	USGS Quad, Township, Range, Section	Latitude/ Longitude	Sediment Management Trigger(s)
Russell 2	From Mendocino Avenue to Highway 101	Russell Creek	Piner Creek	Santa Rosa Quad, T7N, R8W, Section 10	38.472 N, -122.728 W	Sediment forming alternating bars
<i>In-stream Sediment Basin Clearing</i>						
Brush 2A	Basin at the confluence with Austin Creek	Brush Creek	Santa Rosa Creek	Santa Rosa Quad, T7N, R7W, Section 07	38.463 N, -122.676 W	Sediment filled in-stream sediment basin
Cook 2 Basin	Basin at Petaluma Hill Road	Cook Creek	Coleman Creek	Cotati Quad, T6N, R7W, Section 18	38.364 N, -122.675 W	Sediment filled in-stream sediment basin
Copeland 3/4	Basin above and below Country Club Drive	Copeland Creek	Laguna de Santa Rosa	Cotati Quad, T6N, R8W, Section 25	38.343 N, -122.69 W	Sediment filled in-stream sediment basin
Copeland 4/5	Basin above and below Snyder Lane	Copeland Creek	Laguna de Santa Rosa	Cotati Quad, T6N, R8W, Section 25	38.343 N, -122.685 W	Sediment filled in-stream sediment basin
Five 1	Basin below Snyder Lane	Five Creek	Crane Creek	Cotati Quad, T6N, R8W, Section 13	38.361 N, -122.685 W	Sediment filled in-stream sediment basin
Santa Rosa 2	Two gravel bars downstream of Peterson Creek confluence	Santa Rosa Creek	Laguna de Santa Rosa	Sebastopol Quad, T7N, R9W, Section 14	38.445 N, -122.816 W	Gravel bar surface above ordinary high water mark
Wilfred 1C	Basin at Snyder Road	Wilfred Creek	Bellvue Wilfred Creek	Santa Rosa Quad, T6N, R8W, Section 12	38.372 N, -122.686 W	Sediment filled in-stream sediment basin
<i>Reservoir Outlet Clearing Projects</i>						
Brush Creek Reservoir	n/a	Brush Creek	Santa Rosa Creek	Santa Rosa Quad, T7N, R7W, Section 6	38.487 N, -122.671 W	Sediment accumulated around reservoir outlet
Matanzas Creek Reservoir	n/a	Matanzas Creek	Santa Rosa Creek	Santa Rosa Quad, T7N, R7W, Section 32	38.405 N, -122.652 W	Sediment accumulated around reservoir outlet
Piner Creek Reservoir	n/a	Piner Creek	Santa Rosa Creek	Santa Rosa Quad, T7N, R8W, Section 11	38.466 N, -122.706 W	Sediment accumulated around reservoir outlet

Project Name	Location Description	Creek	Tributary to	USGS Quad, Township, Range, Section	Latitude/ Longitude	Sediment Management Trigger(s)
Santa Rosa Creek Reservoir	n/a	Santa Rosa Creek	N/A	Santa Rosa Quad, T7N, R7W, Section 17	38.46 N, -122.654 W	Sediment accumulated around reservoir outlet
Bank Stabilization Projects						
Peterson 1	Approximately 900 feet upstream from the confluence with Santa Rosa Creek, STA 516+00	Peterson Creek	Santa Rosa Creek	Sebastopol Quad, T7N, R8W, Section 18	38.349 N, -122.732 W	Levee side bank slumping into channel
Russell 1A	Approximately 75 feet downstream from the top of the reach	Russell Creek	Piner Creek	Santa Rosa Quad, T7N, R8W, Section 10	38.471 N, -122.734	Levee side bank slumping into channel
Zone 2A						
Localized Scale Project						
E. Fork McDowell 1	At the uppermost culvert	East Fork McDowell Creek	McDowell Creek	Petaluma River Quad, T5N, R7W, Section 34	38.237 N, -122.614 W	Sediment forming islands in the center of channel; sediment forming alternating bars
Reach Scale Project						
Corona 1*	Section parallel to Highway 101	Corona Creek	Capri Creek	Cotati Quad, T5N, R7W, Section 22	38.260 N, -122.652 W	Sediment accumulating in a way that supports excessive vegetation growth, threatening channel capacity
In-stream Sediment Basin Clearing Project						
Adobe 1 and 2	Basin below Highway 116 and basin above/ below South Fork McDowell Boulevard	Adobe Creek	Petaluma River	Petaluma River Quad, T5N, R7W, Section 35	38.232 N, -122.599 W	Sediment filled in-stream sediment basin
Zone 3A						
Reach Scale Project						
Fryer 3*	4th Street West to Arroyo Way	Fryer Creek	Sonoma Creek	Sonoma Quad T5N, R5W Section 7	38.287 N, -122.465 W	Sediment to forming alternating bars

Project Name	Location Description	Creek	Tributary to	USGS Quad, Township, Range, Section	Latitude/ Longitude	Sediment Management Trigger(s)
Zone 5A						
<i>In-stream Sediment Basin Clearing</i>						
Fife 3 and 4 (previously named Reach 0B):	Establish new basin within section that parallels Armstrong Woods Road and clear basin at Laughlin Road	Fife Creek	Russian River	Guerneville Quad, T8N, R10W, Section 29	38.510 N, -122.995 W	Sediment filled in-stream sediment basin
Zone 8A						
<i>Culvert Replacement</i>						
Bloomfield 1	Two culvert replacements on upper and lower end of reach	Bloomfield Creek	Estero Americano	Two Rock Quad, T6N, R9W, Section 33	38.311 N, -122.853 W	Damaged culvert replacement

*Project Specific Notifications, as per San Francisco Bay Regional Water Quality Control Board Waste Discharge Requirements and Water Quality Certification (Order No. R2-2016-0020), are provided in Appendix A.

1.3. Vegetation Management Activity List

During the 2016 maintenance season, vegetation maintenance will include tree and brush thinning, and removal of exotic species and other vegetation blockages to improve hydraulic capacity and retain or enhance appropriate habitat. Vegetation maintenance will be completed according to Appendix E of the SMP Manual (*Vegetation Management Plan*) as well as the associated terms and conditions of all programmatic permits and biological opinions.

For 2016, vegetation maintenance will be completed in the locations listed below in Table 1-1. All proposed vegetation management activities involve less than 100 contiguous feet of vegetation removal per reach. Proposed activities—including exotic management, blackberry management and willow or tree pruning—will occur in only a portion of the identified reach, not the entire reach length. An accounting of the total (non-contiguous) length worked per reach will be included in the 2016 Annual Post-Maintenance Summary Report.

An addendum will be sent out in August to supplement this list if any subsequent requests for vegetation management are made for areas not shown below. The submission and approval of such an addendum is specified in the CDFW Streambed Alteration Agreement (No. 1600-2009-0399-R3) for the SMP.

Table 1-1. Vegetation Management Activity List.

Reach ¹	Vegetation Management Action(s) ²			Vegetation Management Trigger(s)
	<i>Blackberry Management</i>	<i>Exotics Management</i>	<i>Willow Pruning</i>	
Zone 1A				
Austin1		X	X	Invasive non-native plant cover greater than 20% throughout reach
Austin2		X	X	Invasive non-native plant cover greater than 20% throughout reach
Austin3		X		Invasive non-native plant cover greater than 20% throughout reach
BellWil1	X			Invasive non-native plant cover greater than 20% throughout reach
BellWil2	X			invasive non-native plant cover greater than 20% throughout reach
BellWil3	X	X	X	Dead or Dying Trees; Recruits greater than 6' tall within treeless buffers around channel hardscaping, culverts or bridgeheads; >20% of willows have trunk sprouts over 6' tall; Invasive non-native plant cover greater than 20% throughout reach
BellWil4	X	X	X	>20% of willows have trunk sprouts over 6' tall; Downed trees or localized woody debris present in-channel >3'; Homeless encampments present; Urban channel, sight lines obstructed by vegetation
Brush1	X	X	X	Invasive non-native plant cover greater than 20% throughout reach; Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation
Brush2A	X			Invasive non-native plant cover greater than 20% throughout reach
Brush2B			X	Seral or Temporary Toe tree density greater than allowed; Recruits between established temporary tree spacing larger than 6' tall; Invasive non-native plant cover greater than 20% throughout reach; Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation
Brush2C	X	X	X	Invasive non-native plant cover greater than 20% throughout reach
Coleman1		X	X	Invasive non-native plant cover greater than 20% throughout reach; Recruits between established temporary tree spacing larger than 6' tall
Coleman2			X	Seral or Temporary Toe tree density greater than allowed; Permanent toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Downed trees or localized woody debris present in-channel >3'

Reach ¹	Vegetation Management Action(s) ²			Vegetation Management Trigger(s)
	<i>Blackberry Management</i>	<i>Exotics Management</i>	<i>Willow Pruning</i>	
Colgan2		X	X	Dead or Dying Trees; >20% of willows have trunk sprouts over 6' tall
Colgan5A			X	Dead or Dying Trees; Invasive non-native plant cover greater than 20% throughout reach; Vegetation obstructing vehicle access road(s); Dead or damaged vegetation presenting hazard; Urban channel, sight lines obstructed by vegetation; Urban channel prone to delinquent activity
Colgan6	X	X	X	Tree and/or woody shrub recruits greater than 6' tall covering >20% of side banks; Invasive non-native plant cover greater than 20% throughout reach; Downed trees or localized woody debris present in-channel >3'; Downed trees or localized woody debris
Cook1	X	X	X	Recruits between established permanent tree spacing larger than 6'; Recruits greater than 6' tall within treeless buffers around channel hardscaping, culverts or bridgeheads; Invasive non-native plant cover greater than 20% throughout reach
Copeland1		X	X	Seral or Temporary Toe tree density greater than allowed; Recruits between established temporary tree spacing larger than 6' tall; Permanent toe tree density greater than allowed; Urban channel, sight lines obstructed by vegetation
Copeland2		X	X	Seral or Temporary Toe tree density greater than allowed; Permanent toe tree density greater than allowed; Recruits between established permanent tree spacing larger than 6'; Vegetation obstructing vehicle access road(s); Vegetation obstructing fence line
Copeland3		X	X	Seral or Temporary Toe tree density greater than allowed; Permanent toe tree density greater than allowed; Recruits between established permanent tree spacing larger than 6'; Tree recruits larger than 15' tall between established upper bank tree spacing
Copeland4			X	Seral or Temporary Toe tree density greater than allowed; Permanent toe tree density greater than allowed; Vegetation obstructing vehicle access road(s); Vegetation obstructing fence line
Copeland5	X		X	Dead or Dying Trees; Seral or Temporary Toe tree density greater than allowed; Recruits between established temporary tree spacing larger than 6' tall; Permanent toe tree density greater than allowed
Cotati1		X	X	Invasive non-native plant cover greater than 20% throughout reach
Cotati2A	X	X	X	Invasive non-native plant cover greater than 20% throughout reach

Reach ¹	Vegetation Management Action(s) ²			Vegetation Management Trigger(s)
	Blackberry Management	Exotics Management	Willow Pruning	
Cotati2B	X	X	X	Invasive non-native plant cover greater than 20% throughout reach
Crane1	X	X	X	Dead or Dying Trees; Seral or Temporary Toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation
Crane2		X		Dead or Dying Trees; Seral or Temporary Toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation
Five1			X	Seral or Temporary Toe tree density greater than allowed; Vegetation obstructing vehicle access road(s); Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation
Gossage1			X	Dead or Dying Trees; >20% of willows have trunk sprouts over 6' tall; Downed trees or localized woody debris present in-channel >3'
Gossage3		X	X	>20% of willows have trunk sprouts over 6' tall
Golf1		X	X	Recruits between established temporary tree spacing larger than 6' tall; Recruits between established permanent tree spacing larger than 6'; >20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Hinebaugh1	X	X	X	Seral or Temporary Toe tree density greater than allowed; Recruits between established temporary tree spacing larger than 6' tall; Permanent toe tree density greater than allowed; Recruits between established permanent tree spacing larger than 6'
Hinebaugh2		X	X	Recruits between established temporary tree spacing larger than 6' tall; Recruits between established permanent tree spacing larger than 6'; >20% of willows have trunk sprouts over 6' tall; Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation
Hinebaugh3B			X	>20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Hinebaugh4			X	Recruits greater than 6' tall within treeless buffers around channel hardscaping, culverts or bridgeheads; >20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation; Urban channel prone to delinquent activity

Reach ¹	Vegetation Management Action(s) ²			Vegetation Management Trigger(s)
	<i>Blackberry Management</i>	<i>Exotics Management</i>	<i>Willow Pruning</i>	
Hinebaugh6		X		Seral or Temporary Toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Hinebaugh6			X	Seral or Temporary Toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Hinebaugh7A		X	X	Invasive non-native plant cover greater than 20% throughout reach
Hinebaugh7B		X	X	Invasive non-native plant cover greater than 20% throughout reach
Hunter1			X	Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation; >20% of willows have trunk sprouts over 6' tall
Hunter2			X	Urban channel, sight lines obstructed by vegetation; Urban channel prone to delinquent activity
Hunter3			X	>20% of willows have trunk sprouts over 6' tall; Vegetation obstructing vehicle access road(s); Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation
Laguna1		X	X	Dead or Dying Trees; Recruits between established temporary tree spacing larger than 6' tall; >20% of willows have trunk sprouts over 6' tall; Downed trees or localized woody debris present in-channel >3'
Laguna2		X	X	Seral or Temporary Toe tree density greater than allowed; Tree and/or woody shrub recruits greater than 6' tall covering >20% of side banks; Invasive non-native plant cover greater than 20% throughout reach; Homeless encampments present; Urban channel sight lines obstructed by vegetation
Laguna3	X			Invasive non-native plant cover greater than 20% throughout reach
Laguna4	X		X	Urban channel, sight lines obstructed by vegetation
MiddleBrush1		X		Dead or Dying Trees; Downed trees or localized woody debris present in-channel >3'; Downed trees or localized woody debris present on side/ upper banks >3'
Moorland1A			X	Tree recruits larger than 15' tall between established upper bank tree spacing; >20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Paulin4		X		Invasive non-native plant cover greater than 20% throughout reach

Reach ¹	Vegetation Management Action(s) ²			Vegetation Management Trigger(s)
	<i>Blackberry Management</i>	<i>Exotics Management</i>	<i>Willow Pruning</i>	
Paulin5		X		Invasive non-native plant cover greater than 20% throughout reach
Peterson1		X	X	Downed trees or localized woody debris present in-channel >3'
Piner1			x	Downed trees or localized woody debris present in-channel >3'
Piner4		X		Invasive non-native plant cover greater than 20% throughout reach
Piner5		X		Invasive non-native plant cover greater than 20% throughout reach
Piner6			X	Localized vegetation causing significant bank scour; Urban channel, sight lines obstructed by vegetation
Roseland1			X	>20% of willows have trunk sprouts over 6' tall; Invasive non-native plant cover greater than 20% throughout reach
Roseland1A			X	Dead or Dying Trees; Invasive non-native plant cover greater than 20% throughout reach; Vegetation obstructing fence line
Roseland2			X	>20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Santa Rosa1	X	X	X	Seral or Temporary Toe tree density greater than allowed; Permanent toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Downed trees or localized woody debris present in-channel >3'
Santa Rosa2		X	X	Seral or Temporary Toe tree density greater than allowed; Recruits between established temporary tree spacing larger than 6' tall; >20% of willows have trunk sprouts over 6' tall; Downed trees or localized woody debris present in-channel >3'
Santa Rosa4		X		Invasive non-native plant cover greater than 20% throughout reach
Santa Rosa5		X	X	Seral or Temporary Toe tree density greater than allowed; Permanent toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Downed trees or localized woody debris present in-channel >3'
Santa Rosa6		X	X	Permanent toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Seral or Temporary Toe tree density greater than allowed
Santa Rosa Div1	X	X	X	Seral or Temporary Toe tree density greater than allowed; Tree and/or woody shrub recruits greater than 6' tall covering >20% of side banks; Invasive non-native plant cover greater than 20% throughout reach

Reach ¹	Vegetation Management Action(s) ²			Vegetation Management Trigger(s)
	<i>Blackberry Management</i>	<i>Exotics Management</i>	<i>Willow Pruning</i>	
Steele1A		X	X	Invasive non-native plant cover greater than 20% throughout reach
Todd2	X	X		Invasive non-native plant cover greater than 20% throughout reach
Todd3			X	Urban channel, sight lines obstructed by vegetation; Homeless encampments present; >20% of willows have trunk sprouts over 6' tall
Todd4A		X	X	>20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation; Urban channel prone to delinquent activity
Todd4B		X	X	Dead or Dying Trees; >20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation; Urban channel prone to delinquent activity
Todd5A	X		X	Urban channel, sight lines obstructed by vegetation; Permanent toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Urban channel prone to delinquent activity
Todd5B	X		X	Invasive non-native plant cover greater than 20% throughout reach
Wilfred Ext.1		X	X	Seral or Temporary Toe tree density greater than allowed; Permanent toe tree density greater than allowed; Tree recruits larger than 15' tall between established upper bank tree spacing; Tree and/or woody shrub recruits greater than 6' tall covering >20% of reach
Wilfred1A	X		X	Recruits between established temporary tree spacing larger than 6' tall; Recruits between established permanent tree spacing larger than 6'; >20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Wilfred1B	X		X	Recruits between established temporary tree spacing larger than 6' tall; Recruits between established permanent tree spacing larger than 6'; >20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Wilfred1C	X		X	Recruits between established temporary tree spacing larger than 6' tall; Recruits between established permanent tree spacing larger than 6'; >20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Windsor1A	X	X	X	Dead or Dying Trees; >20% of willows have trunk sprouts over 6' tall; Invasive non-native plant cover greater than 20% throughout reach; Vegetation obstructing fence line

Reach ¹	Vegetation Management Action(s) ²			Vegetation Management Trigger(s)
	<i>Blackberry Management</i>	<i>Exotics Management</i>	<i>Willow Pruning</i>	
Windsor1B		X	X	Invasive non-native plant cover greater than 20% throughout reach
Windsor3		X	X	Tree and/or woody shrub recruits greater than 6' tall covering >20% of side banks; >20% of willows have trunk sprouts over 6' tall; Downed trees or localized woody debris present in-channel >3'; Localized vegetation causing significant bank scour
Windsor4		X		Invasive non-native plant cover greater than 20% throughout reach
Zone 2A				
Adobe1			X	Dead or Dying Trees
Adobe2			X	Dead or Dying Trees
Capri2B		X	X	Dead or Dying Trees; Seral or Temporary Toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Downed trees or localized woody debris present on side/ upper banks >3'; Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation
Corona6		X (cattails)		Invasive non-native plant cover greater than 20% throughout reach; Urban channel, sight lines obstructed by vegetation
Corona7		X (cattails)		Invasive non-native plant cover greater than 20% throughout reach; Urban channel, sight lines obstructed by vegetation
East Fork McDowell1		X		Invasive non-native plant cover greater than 20% throughout reach
Jessie Lane1	X	X		Invasive non-native plant cover greater than 20% throughout reach
Lichau1			X	>20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Lichau2			X	>20% of willows have trunk sprouts over 6' tall; Urban channel, sight lines obstructed by vegetation
Lichau3	X	X		Invasive non-native plant cover greater than 20% throughout reach
Washington3			X	Dead or Dying Trees; >20% of willows have trunk sprouts over 6' tall; Dead or damaged vegetation presenting hazard; Urban channel, sight lines obstructed by vegetation

Reach ¹	Vegetation Management Action(s) ²			Vegetation Management Trigger(s)
	<i>Blackberry Management</i>	<i>Exotics Management</i>	<i>Willow Pruning</i>	
Washington ⁴		X	X	Seral or Temporary Toe tree density greater than allowed; >20% of willows have trunk sprouts over 6' tall; Invasive non-native plant cover greater than 20% throughout reach; Vegetation obstructing fence line; Urban channel, sight lines obstructed by vegetation
Zone 6A				
West Slough ¹	X	X	X	Seral or Temporary Toe tree density greater than allowed; Invasive non-native plant cover greater than 20% throughout reach; Homeless encampments present; Tree and/or woody shrub recruits greater than 6' tall covering >20% of side banks

¹Reach is engineered unless otherwise noted in parentheses.

²All proposed vegetation management work involves less than 100 feet of contiguous vegetation removal per reach. An accounting of the total (non-contiguous) length worked per reach will be included in the 2016 Annual Post-Maintenance Summary Report.

1.4. List of Best Management Practices by Program Activity

Table 1-2 below lists the Best Management Practices (BMPs) that shall be implemented during the 2016 field season according to program activities. For a complete description of each BMP, please refer to Table 7-1 (*Stream Maintenance Program Best Management Practices*) in the program Manual.

Table 1-2. Best Management Practices by Program Activity

BMP Name	Ground Disturbing Activities					Vegetation Management Activities				
	Sediment Removal	Bank Stabilization	Culvert Repair and Installation	Reservoir Outlet Clearing	Sediment Disposal	Willow Removal	Blackberry Removal	Cattail Removal	Tree Pruning and Exotics Removal	Nursery Stock Tree Planting
General Impact Avoidance and Minimization										
GEN-1	Work Window	X	X	X	X	X	X	X	X	
GEN-2	Staging and Stockpiling of Materials	X	X	X	X	X	X	X	X	X
GEN-3	Channel Access	X	X	X	X		X	X	X	X
Air Quality Protection										
AQ-1	Dust Management	X	X	X	X	X	X	X	X	X
AQ-2	Enhanced Dust Management	X	X	X	X	X	X	X	X	X
Biological Resources Protection										
BR-1	Area of Disturbance	X	X	X	X		X	X	X	X
BR-2	Pre-maintenance Educational Training	X	X	X	X		X	X	X	X
BR-3	Biotechnical Bank Stabilization		X	X						
BR-4	Impact Avoidance and Minimization During Dewatering	X	X	X	X					
BR-5	Fish and Amphibian Species Relocation Plan	X	X	X	X					
BR-6	On-Call Wildlife Biologist	X	X	X	X	X	X	X	X	X
BR-7	Special Status Plant Survey	X	X	X	X	X	X	X	X	X
BR-8	Nesting Migratory Bird and Raptor Pre-maintenance Surveys	X	X	X	X	X	X	X	X	X
BR-9 ¹	California Freshwater Shrimp Avoidance and Impact Minimization for Vegetation Management	X	X	X		X	X	X	X	
BR-10	California Red-legged Frog Avoidance and Impact Minimization Measures for Ground-Disturbing Activities	X	X	X	X		X	X	X	X
BR-11	California Red-legged Frog Avoidance and Impact Minimization Measures for Vegetation Management				X		X	X	X	X
BR-12	California Tiger Salamander Avoidance and Impact Minimization	X		X	X	X		X		

BMP	Name	Ground Disturbing Activities					Vegetation Management Activities				
		Sediment Removal	Bank Stabilization	Culvert Repair and Installation	Reservoir Outlet Clearing	Sediment Disposal	Willow Removal	Blackberry Removal	Cattail Removal	Tree Pruning and Exotics Removal	Nursery Stock Tree Planting
	Measures for Sediment and Debris Removal										
BR-13	California Tiger Salamander Avoidance and Impact Minimization Measures for Bank Stabilization		X	X							
BR-14	California Tiger Salamander Avoidance and Impact Minimization Measures for Vegetation Management				X		X	X	X	X	
BR-15	Foothill Yellow-legged Frog Avoidance and Impact Minimization Measures for Ground-Disturbing Activities	X	X	X	X		X	X	X		
BR-16	Foothill Yellow-legged Frog Avoidance and Impact Minimization Measures for Vegetation Management				X		X	X	X		
BR-17	Western Pond Turtle Pre-maintenance Surveys for Ground-Disturbing Activities	X	X	X	X		X	X	X	X	
BR-18	Zone 1A Salmonid Avoidance and Impact Minimization Measures	X	X	X			X	X	X	X	
BR-19 ²	Zones 2A and 3A Salmonid Avoidance and Impact Minimization Measures	X	X	X			X	X	X	X	
Cultural Resources Protection											
CR-1	Phase I Cultural Investigation and Report		X	X	X	X					
CR-2	Previously Undiscovered Cultural Resources	X	X	X	X	X	X	X	X	X	
CR-3	Previously Undiscovered Paleontological Resources	X	X	X	X	X	X	X	X	X	
Hazardous Materials Safety											
HAZ-1	Spill Prevention and Response	X	X	X	X	X	X	X	X	X	
HAZ-2	Equipment and Vehicle Maintenance	X	X	X	X	X	X	X	X	X	
HAZ-3	Equipment and Vehicle Cleaning	X	X	X	X	X	X	X	X	X	
HAZ-4	Refueling	X	X	X	X	X	X	X	X	X	
HAZ-5	On-Site Hazardous Materials Management	X	X	X	X	X	X	X	X	X	
HAZ-6	Existing Hazardous Sites or Waste	X	X	X	X	X	X	X	X	X	
HAZ-7	Fire Prevention	X	X	X	X	X	X	X	X	X	
HAZ-8	Testing and Disposal of Spoils	X	X	X	X	X					
Vegetation Management											
VEG-1	Removal of Existing Vegetation	X	X	X	X		X		X	X	

BMP	Name	Ground Disturbing Activities					Vegetation Management Activities				
		Sediment Removal	Bank Stabilization	Culvert Repair and Installation	Reservoir Outlet Clearing	Sediment Disposal	Willow Removal	Blackberry Removal	Cattail Removal	Tree Pruning and Exotics Removal	Nursery Stock Tree Planting
VEG-2	Use of Herbicides				X		X	X	X	X	
VEG-3	Planting and Revegetation After Soil Disturbance	X	X	X	X				X	X	
Water Quality and Channel Protection											
WQ-1	Apply Erosion Control Fabric to or Hydroseeding of Exposed Soils	X	X	X	X	X	X	X	X	X	
WQ-2	Prevent Scour Downstream of Sediment Removal	X			X						
WQ-3	In-Channel Grading	X	X	X							
Good Neighbor Policies											
GN-1	Work Site Housekeeping	X	X	X	X	X	X	X	X	X	
GN-2	Public Outreach	X	X	X	X	X	X	X	X	X	
GN-3	Noise Control	X	X	X	X	X	X	X	X	X	
GN-4	Traffic Flow, Pedestrians, and Safety Measures	X	X	X	X	X	X	X	X	X	
GN-5	Odors	X	X	X	X	X					

¹For activities in Zones 2A and 3A, this includes implementation of the impact avoidance, minimization and mitigation measures as described in the *California Freshwater Shrimp Management Plan for Sonoma County Water Agency's Stream Maintenance Program, Zones 2A and 3A (Plan)*. The Plan fulfills the requirements for the Water Agency's SMP Waste Discharge and Water Quality Certification (Order No. R2-2011-0020, provision 51, c (page 17)) and is consistent with the SMP Manual, programmatic permits and programmatic Biological Opinion.

²This includes implementation of the impact avoidance, minimization and mitigation measures as described in the *Steelhead Management Plan for Sonoma County Water Agency's Stream Maintenance Program, Zones 2A and 3A (Plan)*. The Plan fulfills the requirements for the Water Agency's SMP Waste Discharge and Water Quality Certification (Order No. R2-2011-0020, provision 51, c (page 17)) and is consistent with the SMP Manual, programmatic permits and programmatic Biological Opinion.