

**Table A-1
Sample Design for Baseline Monitoring
Urban Runoff Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Stockton Urban	L-CAL-1	Eutrophication; suspended sediment; herbicides and pesticides; MTBE; and illicit waste disposal	Fall	1	1	1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	2
	L-CAL-1		Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-CAL-1		Spring	1		1	Lab: VOCs, BTEX, TPPH and MTBE; TKN, ammonia; herbicides and pesticides; and general minerals, anions, and heavy metals. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	L-CAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
Mormon Slough	L-MS-1	Suspended sediment and illicit waste disposal	Winter	1		1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides; total and fecal coliform bacteria, and pathogens; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-MS-1		Spring	1		1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
Indian Creek	L-IC-1	Bacteria and pathogens; eutrophication; herbicides and pesticides; and illicit waste disposal	Winter	1		1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides; total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	L-IC-1		Spring	1		1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	L-IC-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
Cosgrove Creek	M-CGR-1	Bacteria and pathogens; eutrophication; herbicides and pesticides; illicit waste disposal; and loss of wetland function	Winter	1		1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides; suspended solids; total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/ reduction potential, temperature, turbidity, and flow rate.	1

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Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Cosgrove Creek	M-CGR-1	Bacteria and pathogens; eutrophication; herbicides and pesticides; illicit waste disposal; and loss of wetland function	Spring	1	1	1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	2
	M-CGR-1		Summer	1		1	Lab: TKN, ammonia; nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
Lower North Fork Calaveras	M-NCAL-1	Bacteria and pathogens, suspended sediment, and loss of wetland function	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	M-NCAL-1		Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
San Andreas Urban	M-SADR-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; MTBE; illicit waste disposal; and loss of wetland function	Winter	1		1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
			Spring	1		1	Lab: VOCs, BTEX, TPH and MTBE; TKN, ammonia; general minerals, anions, and heavy metals; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	M-SADR-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
South Fork Calaveras Ranches	M-CVTS-1 M-SA-1 M-SD-1 M-CHR-1	Bacteria and pathogens, suspended sediment, and loss of wetland function	Summer	4		4	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	4
	M-CVTS-1 M-SA-1 M-SD-1 M-CHR-1		Winter	4		4	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	4

**Table A-2
Sample Design for Focused Monitoring
Urban Runoff Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Focused Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
South Fork Calaveras Tributaries	M-CVTS-2 U-SA-2 U-SD-2 U-CHR-2	Bacteria and pathogens, and suspended sediment	Winter	4		4	Lab: Suspended solids, particle settling velocity, and grain size distribution; total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	4
	M-CVTS-2 U-SA-2 U-SD-2 U-CHR-2		Summer	4		4	Lab: Suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate	4
Arnold Urban	U-COW-2	Eutrophication; suspended sediment; herbicides and pesticides; illicit waste disposal; and loss of wetland function	Winter	1	1	1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	U-COW-2		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1

**Table A-3
Sample Design for Baseline Monitoring
Wwtp Effluent And Failed Septic System Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Indian Creek	L-IC-1	Bacteria and pathogens, eutrophication, THM	Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; trihalomethanes and haloacetic acids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
Cosgrove Creek	M-CGR-1	Bacteria and pathogens, eutrophication, THM, effluent-dominated stream, and loss of wetland function	Spring	1	1	1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; trihalomethanes and haloacetic acids; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	2
Lower North Fork Calaveras	M-NCAL-1	Bacteria and pathogens, eutrophication, and loss of wetland function	Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	M-NCAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
San Andreas Urban	M-SADR-1	Bacteria and pathogens, eutrophication, effluent-dominated stream, THM, and loss of wetland function	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	M-SADR-1		Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and trihalomethanes and haloacetic acids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1

**Table A-4
Sample Design for Focused Monitoring
Wwtp Effluent And Failed Septic System Impacted Watershed Management Areas
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Impacted WMA	Focused Sample Locations	Focused Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Indian Creek	M-IC-1 M-IC-2	Bacteria and pathogens, eutrophication	Spring	2		2	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; trihalomethanes and haloacetic acids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	2
Cosgrove Creek	M-CGR-2 M-CGR-3 M-SCV-1	Bacteria and pathogens, eutrophication, THM, effluent-dominated stream, and loss of wetland function	Spring	3		3	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	3
	M-CGR-2		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; Trihalomethanes and haloacetic acids; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
Arnold Urban	U-COW-2	Bacteria and pathogens, eutrophication, and loss of wetland function	Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1

**Table A-5
Sample Design for Baseline Monitoring
Agricultural Practices Impacted Watershed Management Areas
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Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Mormon Slough	L-MS-4	Bacteria and pathogens; eutrophication; herbicides and pesticides; elevated water temperature	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-MS-4		Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-MS-4		Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-MS-4		Summer	1	1	1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
Old Calaveras Agricultural	L-OCAL-1	Bacteria and pathogens; eutrophication; herbicides and pesticides; elevated water temperature; and diminished function of riparian corridors	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, evaluation of shade canopy over stream.	1
	L-OCAL-1		Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-OCAL-1		Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-OCAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, evaluation of shade canopy over stream. Aerial photographic survey to identify loss of riparian vegetation; size, diversity, and function of existing riparian vegetation.	1
Calaveras Main Stem Agricultural	L-CAL-5	Eutrophication; herbicides and pesticides; low dissolved oxygen content; diminished function of riparian corridors; and loss of wetland function	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1

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Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Calaveras Main Stem Agricultural	L-CAL-5	Eutrophication; herbicides and pesticides; low dissolved oxygen content; diminished function of riparian corridors; and loss of wetland function	Winter	1	1	1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	L-CAL-5		Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-CAL-5		Summer	1		1	Lab: TKN, ammonia; Geosmin, MIB, taste and odor; general minerals, anions, heavy metals; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
Indian Creek	L-IC-1	Bacteria and pathogens; eutrophication; suspended sediment; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	L-IC-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity.	1
Cosgrove Creek	M-CGR-1	Bacteria and pathogens; eutrophication; suspended sediment; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
			Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity.	1

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Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Lower North Fork Calaveras	M-NCAL-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	M-NCAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity.	1
San Andreas Urban	M-SADR-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	M-SADR-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity.	1
South Fork Calaveras	M-SCAL-1	Bacteria and pathogens; eutrophication; suspended sediment; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	M-SCAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity.	1

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Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
South Fork Calaveras Ranches	M-CVTS-1 M-SA-1 M-SD-1 M-CHR-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Winter	4		4	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	4
	M-CVTS-1 M-SA-1 M-SD-1 M-CHR-1		Summer	4		4	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity.	4

**Table A-6
Sample Design for Focused Monitoring
Agricultural Practices Impacted Watershed Management Areas
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Impacted WMA	Focused Sample Locations	Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Stockton Diverting Canal	L-SDC-1	Eutrophication; herbicides and pesticides; elevated water temperature; and illicit waste disposal	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-SDC-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
Mormon Slough	L-MS-5 L-MS-6 L-MS-7	Eutrophication; herbicides and pesticides; elevated water temperature	Fall	3		3	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	3
	L-MS-5 L-MS-6 L-MS-7		Summer	3		3	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	3
Old Calaveras Agricultural	L-OCAL-2 L-OCAL-3	Eutrophication; herbicides and pesticides; elevated water temperature; and diminished function of riparian corridors	Fall	2		2	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, evaluation of shade canopy over stream.	2
	L-OCAL-2 L-OCAL-3		Summer	2		2	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, evaluation of shade canopy over stream.	2
North Bench Agriculture	L-DC-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	L-DC-1		Summer	0		1	Field: Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, flow rate, and flow depth.	0
South Bench Agriculture	L-SG-1 L-PC-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Winter	2		2	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	2

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South Bench Agriculture	L-SG-1 L-PC-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Summer	0		2	Field: Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, flow rate, and flow depth.	0
Indian Creek	M-IC-1 M-IC-2	Bacteria and pathogens; suspended sediment; herbicides and pesticides	Winter	2		2	Lab: Total and fecal coliform bacteria and pathogens; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	M-IC-1 M-IC-2		Spring	2		2	Lab: Total and fecal coliform bacteria; suspended solids; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	2
Cosgrove Creek	M-CGR-2 M-CGR-3 M-SVC-1	Bacteria and pathogens; suspended sediment	Winter	3		3	Lab: Total and fecal coliform bacteria and pathogens; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	3
Calaveras Main Stem Agricultural	M-CAL-1	Bacteria and pathogens; eutrophication; herbicides and pesticides; diminished function of riparian corridors; and loss of wetland function	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-1		Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-1		Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
New Hogan	M-NHR-1	Bacteria and pathogens; eutrophication; suspended sediment; elevated water temperature; diminished function of riparian corridors	Fall	1	1	1	Lab: TKN, ammonia; general minerals and anions; herbicides and pesticides; suspended solids; BOD; and total and fecal coliform bacteria. Field: pH, specific conductance, oxidation/reduction potential, temperature, turbidity, and depth.	2

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Impacted WMA	Focused Sample Locations	Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
New Hogan	M-NHR-1	Bacteria and pathogens; eutrophication; suspended sediment; elevated water temperature; diminished function of riparian corridors	Winter	1		1	Lab: TKN, ammonia; general minerals and anions; herbicides and pesticides; suspended solids; heavy metals; BOD; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, and depth	1
	M-HNR-1		Summer	1		1	Lab: VOCs, BTEX, TPPH and MTBE; TKN, ammonia; general minerals and anions; herbicides and pesticides; suspended solids; heavy metals; BOD; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, and depth. Aerial photographic survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation.	1
Lower North Fork Calaveras	M-NCAL-2	Bacteria and pathogens; eutrophication; suspended sediment.	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-NCAL-2		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and total and fecal coliform bacteria. Field: Survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation.	1
Upper North Fork Calaveras	U-NCAL-1 U-ESP-1	Bacteria and pathogens; eutrophication; suspended sediment	Winter	2		2	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; total and fecal coliform bacteria; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions	2
Jesus Maria Creek	U-JM-2	Bacteria and pathogens; eutrophication; suspended sediment	Winter	1	1	1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; total and fecal coliform bacteria; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions	2
South Fork Calaveras Tributaries	M-CVTS-2 U-SA-2 U-SD-2 U-CHR-2	Eutrophication; herbicides and pesticides	Winter	4		4	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	4
	M-CVTS-2 U-SA-2 U-SD-2 U-CHR-2		Summer	4		4	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	4

**Table A-7
Sample Design for Baseline Monitoring
Industrial Practices Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
San Andreas Urban	M-SADR-1	Metals	Winter	1		1	Lab: General minerals, anions, and heavy metals; suspended solids, particle settling velocity, and grain size distribution. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-SADR-1		Spring	1		1	Lab: General minerals, anions, and heavy metals. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1

Table A-8
Sample Design for Focused Monitoring
Industrial Practices Impacted Watershed Management Areas
Calaveras River Watershed Management Program

Impacted WMA	Focused Sample Locations	Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
South Fork Calaveras Ranches	M-CVTS-1 M-CC-1 M-CC-2	Metals, hazardous waste sites	Spring	3	1	3	Lab: General minerals, anions, and metals; heavy metals; suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	4

**Table A-9
Sample Design for Baseline Monitoring
Ohv And Watercraft Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Stockton Urban	L-CAL-1	Bacteria and pathogens, MTBE	Fall	1	1	1	Lab: VOCs, BTEX, TPPH and MTBE. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	2
	L-CAL-1		Winter	1		1	Lab: VOCs, BTEX, TPPH and MTBE; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	L-CAL-1		Spring	1		1	Lab: VOCs, BTEX, TPPH and MTBE. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	L-CAL-1		Summer	1		1	Lab: VOCs, BTEX, TPPH and MTBE; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1

Table A-10
Sample Design for Focused Monitoring
Ohv And Watercraft Impacted Watershed Management Areas
Calaveras River Watershed Management Program

Impacted WMA	Focused Sample Locations	Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
New Hogan	M-NHR-1	Bacteria and pathogens, MTBE	Summer	1		1	Lab: VOCs, BTEX, TPPH and MTBE; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
South Fork Calaveras Tributaries	U-SA-3 U-SA-5 U-SA-6 U-WPL-1 U-BT-1	Bacteria and pathogens, suspended sediment, MTBE, increased flooding due to altered stream channel, and diminished function of riparian corridors	Winter	5		5	Lab: Suspended solids, particle settling velocity, grain size distribution; herbicides and pesticides; and total and fecal coliform bacteria and pathogens Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	5
	U-SA-3 U-SA-5 U-SA-6 U-WPL-1 U-BT-1		Summer	5	1	5	Lab: VOCs, BTEX, TPPH and MTBE; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: Survey to identify channel modification and loss of riparian vegetation from OHV activity; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	6
Arnold Urban	U-SA-4 U-COW-1A U-COW-1B	Bacteria and pathogens, suspended sediment, MTBE, increased flooding due to altered stream channel, and diminished function of riparian corridors	Winter	3		3	Lab: Suspended solids; and total and fecal coliform bacteria and pathogens Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	3
	U-SA-4 U-COW-1A U-COW-1B		Summer	3		3	Lab: VOCs, BTEX, TPPH and MTBE; suspended solids; and total and fecal coliform bacteria. Field: Survey to identify channel modification and loss of riparian vegetation from OHV activity; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	3

**Table A-11
Sample Design for Baseline Monitoring
Mining Activity Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Calaveras Main Stem	M-CAL-2	Bacteria and pathogens; eutrophication; herbicides and pesticides; suspended sediment, metals, increased flooding due to altered stream channel	Fall	1		1	Lab: TKN, ammonia; general minerals and anions; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-2		Winter	1		1	Lab: TKN, ammonia; general minerals and anions; herbicides and pesticides; suspended solids; total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-2		Spring	1		1	Lab: TKN, ammonia; herbicides and pesticides; suspended solids; and general minerals, anions, and heavy metals. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-2		Summer	1		1	Lab: TKN, ammonia; herbicides and pesticides; Suspended solids; general minerals, anions, and heavy metals; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions. Survey to identify channel modification from mining activity; size of erosional faces, size of tailings, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	1
South Fork Calaveras	M-SCAL-1	Metals, suspended sediment	Winter	1		1	Lab: General minerals, anions, metals; heavy metals; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
South Fork Calaveras Ranches	M-CVTS-1 M-SA-1 M-SD-1	Suspended sediment, metals, increased flooding due to altered stream channel, and diminished function of riparian corridors	Winter	3		3	Lab: Suspended solids, particle settling velocity, and grain size distribution; general minerals, anions, and metals; and heavy metals. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	3
	M-CVTS-1 M-SA-1 M-SD-1		Summer	0		3	Field: Survey to identify channel modification and altered vegetation associated with historic mining activity; size of erosional faces, size of tailings, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	0

**Table A-12
Sample Design for Focused Monitoring
Mining Activity Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Focused Sample Locations	Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Calaveras Main Stem Agricultural	L-CAL-6A L-CAL-6B L-CAL-6C	Suspended sediment, metals, taste and odor, increased flooding due to altered stream channel, and diminished function of riparian corridors	Summer	3	1	3	Lab: TKN, ammonia; Geosmin, MIB, taste and odor; BOD; general minerals, anions, heavy metals; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity; Survey to identify channel modification, pond locations, and altered vegetation patterns associated with mining activity; pond dimensions, pond flow rate, pond gradient, stream flow rate, stream flow depth, channel dimensions, and stream gradient; primary productivity, periphyton coverage and speciation; and size of alteration, diversity, and function of riparian vegetation.	4
South Bench Agricultural	L-SG-1	Suspended sediment, metals, increased flooding due to altered stream channel, and diminished function of riparian corridors	Winter	1		1	Lab: Suspended solids, particle settling velocity, and grain size distribution; and general minerals, anions, and metals Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-SG-1		Summer	0		1	Field: Survey to identify channel modification and altered vegetation associated with historic mining activity; size of erosional faces, size of tailings, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	0
Lower North Fork Calaveras	M-CHG-1	Suspended sediment, metals, increased flooding due to altered stream channel	Winter	1		1	Lab: Suspended solids; general minerals, anions, and metals; and heavy metals. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CHG-1		Summer	0		1	Field: Survey on to identify channel modification from mining activity; size of erosional faces, size of tailings, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	0

**Table A-13
Sample Design for Focused Monitoring
Forest Practices Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Focused Sample Locations	Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Lower North Fork Calaveras	M-NCAL-2	Suspended sediment; herbicides and pesticides; and diminished function of riparian corridors.	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-NCAL-2		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; and total and fecal coliform bacteria. Field: Aerial photographic survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation.	1
Upper North Fork Calaveras	U-ESP-1	Suspended sediment; herbicides and pesticides; and diminished function of riparian corridors.	Winter	1		1	Lab: Herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	U-ESP-1		Summer	0		1	Field: Survey to identify loss of riparian vegetation associated with, in part, historic forest harvest practices; and size, diversity, and function of existing riparian vegetation.	0
Jesus Maria Creek	U-JM-2	Suspended sediment; herbicides and pesticides; and diminished function of riparian corridors.	Winter	1	1	1	Lab: Herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	U-JM-2		Summer	0		1	Field: Survey to identify loss of riparian vegetation associated with, in part, historic forest harvest practices; and size, diversity, and function of existing riparian vegetation.	0
South Fork Calaveras Tributaries	U-CVTS-1 U-SA-4 U-SA-6 U-WPL-1	Suspended sediment; herbicides and pesticides; and diminished function of riparian corridors.	Winter	4		4	Lab: Herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	4
	U-SA-4 U-SA-6 U-WPL-1		Summer	3		3	Lab: Herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions. Survey to identify loss of riparian vegetation associated with, in part, historic forest harvest practices; and size, diversity, and function of existing riparian vegetation.	3

Table A-14
Sample Design for Focused Monitoring
Fire Impacted Watershed Management Areas
Calaveras River Watershed Management Program

Impacted WMA	Focused Sample Locations	Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
South Fork Calaveras Tributaries	U-SD-3 U-SD-4	Suspended sediment and diminished function of riparian corridors.	Winter	2		2	Lab: Suspended solids Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	U-SD-3 U-SD-4 U-SA-2 U-SA-3 M-CVTS-2		Summer	0		5	Field: Survey to identify loss of riparian vegetation associated with in part historic burns; and size, diversity, and function of existing riparian vegetation.	0

**Table A-15
Sample Design for Baseline Monitoring
Reservoir Release Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Baseline Sample Locations	Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Calaveras Main Stem	M-CAL-2	Suspended sediment and low dissolved oxygen content.	Fall	1		1	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-2		Winter	1		1	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1

**Table A-16
Sample Design for Focused Monitoring
Reservoir Release Impacted Watershed Management Areas
Calaveras River Watershed Management Program**

Impacted WMA	Focused Sample Locations	Problem Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
North Bench Agriculture	L-OCAL-4	Suspended sediment and low dissolved oxygen content.	Winter	1		1	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
South Bench Agriculture	L-PC-1	Suspended sediment and low dissolved oxygen content.	Winter	1		1	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
Calaveras Main Stem	M-CAL-1	Suspended sediment and low dissolved oxygen content.	Fall	1		1	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-1		Winter	1		1	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
New Hogan	M-NHR-1	Suspended sediment and low dissolved oxygen content.	Fall	1	1	1	Lab: Suspended solids. Field: Diurnal dissolved oxygen, pH, specific conductance, oxidation/reduction potential, temperature, turbidity, and depth.	2
	M-NHR-1		Winter	1		1	Lab: Suspended solids. Field: Diurnal dissolved oxygen, pH, specific conductance, oxidation/reduction potential, temperature, turbidity, and depth.	1
Arnold Urban	U-COW-1A U-COW-1B	Suspended sediment and low dissolved oxygen content.	Fall	2		2	Lab: Suspended solids Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	U-COW-1A U-COW-1B U-COW-2		Winter	3	1	3	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	4
	U-COW-2		Summer	1		1	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1

**Table A-17
Baseline Monitoring Summary
Calaveras River Watershed Management Program**

Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Stockton Urban	L-CAL-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides, and pesticides; MTBE; and illicit waste disposal	Fall	1	1	1	Lab: VOCs, BTEX, TPH and MTBE; TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	2
	L-CAL-1		Winter	1		1	Lab: VOCs, BTEX, TPH and MTBE; TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria, and pathogen. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-CAL-1		Spring	1		1	Lab: VOCs, BTEX, TPH and MTBE; TKN, ammonia; herbicides and pesticides; general minerals, anions, and heavy metals. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	L-CAL-1		Summer	1		1	Lab: VOCs, BTEX, TPH and MTBE; TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
Mormon Slough	L-MS-1	Suspended sediment and illicit waste disposal	Winter	1		1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides; total and fecal coliform bacteria, and pathogens; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-MS-1		Spring	1		1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
Mormon Slough	L-MS-4	Bacteria and pathogens; eutrophication; herbicides and pesticides; elevated water temperature	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-MS-4		Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-MS-4		Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1

Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
	L-MS-4		Summer	1	1	1	<p>Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria.</p> <p>Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.</p>	2

**Table A-17
Baseline Monitoring Summary
Calaveras River Watershed Management Program**

Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Old Calaveras Agricultural	L-OCAL-1	Bacteria and pathogens; eutrophication; herbicides and pesticides; elevated water temperature; and diminished function of riparian corridors	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, evaluation of shade canopy over stream.	1
	L-OCAL-1		Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-OCAL-1		Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-OCAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, evaluation of shade canopy over stream. Aerial photographic survey to identify loss of riparian vegetation; size, diversity, and function of existing riparian vegetation.	1
Calaveras Main Stem Agricultural	L-CAL-5	Eutrophication; herbicides and pesticides; low dissolved oxygen content; diminished function of riparian corridors; and loss of wetland function	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-CAL-5		Winter	1	1	1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	L-CAL-5		Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-CAL-5		Summer	1		1	Lab: TKN, ammonia; Geosmin, MIB, taste and odor; general minerals, anions, heavy metals; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions. Aerial photographic survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation	1
Indian Creek	L-IC-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; THM; illicit waste disposal; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors	Winter	1		1	Lab: TKN, ammonia; general minerals, anions, and heavy metals; herbicides and pesticides; suspended solids; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1

**Table A-17
Baseline Monitoring Summary
Calaveras River Watershed Management Program**

Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Indian Creek	L-IC-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; THM; illicit waste disposal; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors	Spring	1		1	Lab: TKN, ammonia; trihalomethanes and haloacetic acids; general minerals, anions, and heavy metals; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	L-IC-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity. Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, flow rate, and flow depth.	1
Cosgrove Creek	M-CGR-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; metals; THM; effluent-dominated stream; illicit waste disposal; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function.	Winter	1		1	Lab: TKN, ammonia; suspended solids, particle settling velocity, and grain size distribution; general minerals, anions, and heavy metals; herbicides and pesticides; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	M-CGR-1		Spring	1	1	1	Lab: TKN, ammonia; herbicides and pesticides; trihalomethanes and haloacetic acids; general minerals, anions, and heavy metals; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	M-CGR-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity. Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, flow rate, and flow depth.	1
Calaveras Main Stem	M-CAL-2	Eutrophication, bacteria and pathogens; suspended sediment; metals; herbicides and pesticides; low dissolved oxygen content; and increased flooding due to altered stream channel	Fall	1		1	Lab: TKN, ammonia; general minerals and anions; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-2		Winter	1		1	Lab: TKN, ammonia; general minerals and anions; herbicides and pesticides; suspended solids; total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1

**Table A-17
Baseline Monitoring Summary
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Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Calaveras Main Stem	M-CAL-2	Eutrophication, bacteria and pathogens; suspended sediment; metals; herbicides and pesticides; low dissolved oxygen content; and increased flooding due to altered stream channel	Spring	1		1	Lab: TKN, ammonia; herbicides and pesticides; suspended solids; and general minerals, anions, and heavy metals. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-2		Summer	1		1	Lab: TKN, ammonia; herbicides and pesticides; Suspended solids; general minerals, anions, and heavy metals; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions. Survey on to identify channel modification from mining activity; size of erosional faces, size of tailings, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	1
Lower North Fork Calaveras	M-NCAL-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	M-NCAL-1		Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	M-NCAL-1		Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	M-NCAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity. Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, flow rate, and flow depth.	1

**Table A-17
Baseline Monitoring Summary
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Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
San Andreas Urban	M-SADR-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; metals; effluent-dominated stream; THM; MTBE; illicit waste disposal; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Winter	1		1	Lab: TKN, ammonia; herbicides and pesticides; general minerals, anions, and heavy metals; suspended solids; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	M-SADR-1		Spring	1		1	Lab: VOCs, BTEX, TPH and MTBE; TKN, ammonia; trihalomethanes and haloacetic acids; general minerals, anions, and heavy metals; herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-SADR-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity. Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, flow rate, and flow depth.	1
South Fork Calaveras	M-SCAL-1	Bacteria and pathogens; eutrophication; suspended sediment; metals; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors	Winter	1		1	Lab: TKN, ammonia; general minerals, anions, and metals; herbicides and pesticides; heavy metals; suspended solids; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	M-SCAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity. Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, flow rate, and flow depth.	1
South Fork Calaveras Ranches	M-CVTS-1 M-SA-1 M-SD-1 M-CHR-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; metals; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Winter	4		4	Lab: TKN, ammonia; suspended solids; general minerals, anions, and metals; herbicides and pesticides; heavy metals; and total and fecal coliform bacteria and pathogens Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	4

**Table A-17
Baseline Monitoring Summary
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Impacted WMA	Baseline Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
South Fork Calaveras Ranches	M-CVTS-1 M-SA-1 M-SD-1 M-CHR-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; metals; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function	Summer	4		4	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity. Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth.	4

**Table A-18
Focused Monitoring Summary
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Impacted WMA	Focused Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Mormon Slough	L-MS-5 L-MS-6 L-MS-7	Eutrophication; herbicides and pesticides; elevated water temperature	Fall	3		3	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	3
	L-MS-5 L-MS-6 L-MS-7		Summer	3		3	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	3
Stockton Diverting Canal	L-SDC-1	Eutrophication; herbicides and pesticides; elevated water temperature; and illicit waste disposal	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-SDC-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
Old Calaveras Agricultural	L-OCAL-2 L-OCAL-3	Eutrophication; herbicides and pesticides; elevated water temperature; and diminished function of riparian corridors	Fall	2		2	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, evaluation of shade canopy over stream.	2
Old Calaveras Agricultural	L-OCAL-2 L-OCAL-3	Eutrophication; herbicides and pesticides; elevated water temperature; and diminished function of riparian corridors	Summer	2		2	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, evaluation of shade canopy over stream. Survey to identify loss of riparian vegetation; size, diversity, and function of existing riparian vegetation.	2
North Bench Agriculture	L-OCAL-4	Suspended sediment and low dissolved oxygen content.	Winter	1		1	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	L-DC-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; elevated water temperature; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function.	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	1
	L-DC-1		Summer	0		1	Field: Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, flow rate, and flow depth.	0

**Table A-18
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Impacted WMA	Focused Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
South Bench Agriculture	L-SG-1 L-PC-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; metals; elevated water temperature; low dissolved oxygen content; increased flooding due to altered stream channel; diminished function of riparian corridors; and loss of wetland function.	Winter	2		2	Lab: TKN, ammonia; suspended solids; herbicides and pesticides; general minerals, anions, and metals; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions, and bankfull width/depth and flow rate.	2
	L-SG-1 L-PC-1		Summer	0		2	Field: Survey to identify channel modification and loss of riparian vegetation; size, diversity, and function of existing riparian vegetation; size of erosional faces, size of tailings, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth.	0
Calaveras Main Stem Agricultural	M-CAL-1	Bacteria and pathogens; eutrophication; herbicides and pesticides; low dissolved oxygen content; diminished function of riparian corridors; and loss of wetland function	Fall	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-1		Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
Calaveras Main Stem Agricultural	M-CAL-1	Eutrophication; herbicides and pesticides; low dissolved oxygen content; diminished function of riparian corridors; and loss of wetland function	Spring	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CAL-1		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions. Survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation	1
	L-CAL-6A L-CAL-6B L-CAL-6C	Suspended sediment, metals, taste and odor, increased flooding due to altered stream channel, and diminished function of riparian corridors	Summer	3	1	3	Lab: TKN, ammonia; Geosmin, MIB, taste and odor; BOD; general minerals, anions, heavy metals; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, and turbidity; survey to identify channel modification, pond locations, and altered vegetation patterns associated with mining activity; pond dimensions, pond flow rate, pond gradient, stream flow rate, stream flow depth, channel dimensions, and stream gradient; primary productivity, periphyton coverage and speciation; and size of alteration, diversity, and function of riparian vegetation.	4

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Impacted WMA	Focused Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Indian Creek	M-IC-1 M-IC-2	Bacteria and pathogens; herbicides and pesticides; suspended sediment	Winter	2		2	Lab: Total and fecal coliform bacteria and pathogens; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	M-IC-1 M-IC-2	Bacteria and pathogens; eutrophication; herbicides and pesticides	Spring	2		2	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; trihalomethanes and haloacetic acids; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	2
Cosgrove Creek	M-CGR-2 M-CGR-3 M-SVC-1	Bacteria and pathogens, eutrophication, suspended sediment; THM, effluent-dominated stream, and loss of wetland function	Winter	3		3	Lab: Total and fecal coliform bacteria and pathogens; herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	3
Cosgrove Creek	M-CGR-2 M-CGR-3 M-SVC-1	Bacteria and pathogens, eutrophication, suspended sediment; THM, effluent-dominated stream, and loss of wetland function	Spring	3		3	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	3
	M-CGR-2		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; trihalomethanes and haloacetic acids; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
New Hogan	M-NHR-1	Bacteria and pathogens; eutrophication; suspended sediment; elevated water temperature; low dissolved oxygen content; diminished function of riparian corridors	Fall	1	1	1	Lab: TKN, ammonia; general minerals and anions; herbicides and pesticides; suspended solids; BOD; and total and fecal coliform bacteria. Field: Diurnal dissolved oxygen, pH, specific conductance, oxidation/reduction potential, temperature, turbidity, and depth.	2
	M-NHR-1		Winter	1		1	Lab: TKN, ammonia; general minerals and anions; herbicides and pesticides; suspended solids; BOD; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-NHR-1		Summer	1		1	Lab: VOCs, BTEX, TPPH and MTBE; TKN, ammonia; general minerals and anions; herbicides and pesticides; suspended solids; heavy metals; BOD; and total and fecal coliform bacteria and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions. Survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation.	1

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Impacted WMA	Focused Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Lower North Fork Calaveras	M-CHG-1	Suspended sediment, metals, increased flooding due to altered stream channel	Winter	1		1	Lab: Suspended solids; and general minerals, anions, metals, and heavy metals. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-CHG-1		Summer	0		1	Field: Survey on to identify channel modification from mining activity; size of erosional faces, size of tailings, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	0
	M-NCAL-2	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; and diminished function of riparian corridors.	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	M-NCAL-2		Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; and total and fecal coliform bacteria. Field: Aerial photographic survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation.	1
Upper North Fork Calaveras	U-ESP-1	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; and diminished function of riparian corridors.	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; and suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	1
	U-ESP-1		Summer	0		1	Field: Survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation.	0
Upper North Fork Calaveras	U-NCAL-1	Bacteria and pathogens; eutrophication; suspended sediment	Winter	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; total and fecal coliform bacteria; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions	1
	U-NCAL-1		Summer	0		1	Field: Survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation.	0
Jesus Maria Creek	U-JM-2	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; and diminished function of riparian corridors.	Winter	1	1	1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	U-JM-2		Summer	0		1	Field: Survey to identify loss of riparian vegetation; and size, diversity, and function of existing riparian vegetation.	0
South Fork Calaveras Ranches	M-CVTS-1 M-CC-1 M-CC-2	Metals, hazardous waste sites	Spring	3	1	3	Lab: General minerals, anions, metals, and heavy metals; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	4

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Impacted WMA	Focused Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
South Fork Calaveras Tributaries	U-CVTS-1 U-SA-4	Suspended sediment; herbicides and pesticides; and diminished function of riparian corridors.	Winter	2		2	Lab: Herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	U-SA-4		Summer	1		1	Lab: Herbicides and pesticides; and suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions. Survey to identify loss of riparian vegetation associated with, in part, historic forest harvest practices; and size, diversity, and function of existing riparian vegetation.	1
South Fork Calaveras Tributaries	U-SD-3 U-SD-4	Suspended sediment and diminished function of riparian corridors.	Winter	2		2	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	U-SD-3 U-SD-4 U-SA-2 U-SA-3 M-CVTS-2		Summer	0		5	Field: Survey to identify loss of riparian vegetation associated with in part historic burns; and size, diversity, and function of existing riparian vegetation.	0
South Fork Calaveras Tributaries	M-CVTS-2 U-SA-2 U-SD-2 U-CHR-2	Bacteria and pathogens; eutrophication; suspended sediment; and herbicides and pesticides.	Winter	4		4	Lab: TKN, ammonia, nitrate, nitrite, orthophosphate; and herbicides and pesticides; suspended solids; total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	4
	M-CVTS-2 U-SA-2 U-SD-2 U-CHR-2		Summer	4		4	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; and herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate	4
South Fork Calaveras Tributaries	U-SA-3 U-SA-5 U-SA-6 U-WPL-1 U-BT-1	Bacteria and pathogens, suspended sediment, MTBE, increased flooding due to altered stream channel, and diminished function of riparian corridors	Winter	5		5	Lab: Suspended solids; herbicides and pesticides; and total and fecal coliform bacteria and pathogens Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	5
	U-SA-3 U-SA-5 U-SA-6 U-WPL-1 U-BT-1		Summer	5	1	5	Lab: VOCs, BTEX, TPH and MTBE; suspended solids; herbicides and pesticides; and total and fecal coliform bacteria. Field: Survey to identify channel modification and loss of riparian vegetation from OHV activity; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	6
Arnold Urban	U-COW-1A U-COW-1B	Suspended sediment and low dissolved oxygen content.	Fall	2		2	Lab: Suspended solids. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2

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Impacted WMA	Focused Sample Locations	Problems Addressed	Sample Frequency	Lab Samples	QA/QC Samples	Field Samples	Target Analytes	Total Number of Lab Samples
Arnold Urban	U-COW-2	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; illicit waste disposal; low dissolved oxygen content; and loss of wetland function	Winter	1	1	1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria, and pathogens. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	2
	U-SA-4, U-COW-1A U-COW-1B	Bacteria and pathogens, suspended sediment, low dissolved oxygen content.	Winter	3		3	Lab: Suspended solids; and total and fecal coliform bacteria and pathogens Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, flow rate, flow depth, and channel dimensions.	3
	U-COW-2	Bacteria and pathogens; eutrophication; suspended sediment; herbicides and pesticides; illicit waste disposal; low dissolved oxygen content; and loss of wetland function.	Summer	1		1	Lab: TKN, ammonia, nitrate, nitrite, and orthophosphate; herbicides and pesticides; suspended solids; and total and fecal coliform bacteria. Field: pH, specific conductance, dissolved oxygen, oxidation/reduction potential, temperature, turbidity, and flow rate.	1
	U-SA-4, U-COW-1A U-COW-1B	Bacteria and pathogens; suspended sediment; MTBE; low dissolved oxygen content; increased flooding due to altered stream channel; and diminished function of riparian corridors.	Summer	3		3	Lab: VOCs, BTEX, TPPH and MTBE; suspended; and total and fecal coliform bacteria. Field: Survey to identify channel modification and loss of riparian vegetation from OHV activity; size of erosional faces, stream class, channel dimensions, channel gradient, channel roughness, bankfull width and depth, flow rate, and flow depth; and alteration of size, diversity, and function of riparian vegetation.	3