Appendix A
List of Stakeholders Engaged

ESA

APPENDIX A
List of Stakeholders Engaged

Specific audiences engaged in the planning process are identified below. These audiences include: cities, government officials, landowners, public land managers, locally regulated commercial, agricultural and industrial stakeholders, non-governmental organizations, mosquito and vector control districts and the general public.

TABLE 1
LIST OF STAKEHOLDERS ENGAGED

Organization	Type	Watershed
1st District Supervisor	Government	Sonoma
5th District Supervisor	Government	Petaluma
City of Petaluma	Government	Petaluma
City of Sonoma	Government	Sonoma
Daily Acts	Non-Governmental	Petaluma
Friends of the Petaluma River	Non-Governmental	Petaluma
Zone 2A Petaluma River Watershed- Flood Control Advisory Committee	Government	Petaluma
Zone 3A Valley of the Moon - Flood Control Advisory Committee	Government	Sonoma
Marin Sonoma Mosquito & Vector Control District	Special District	Both
Sonoma Ecology Center	Non-Governmental	Sonoma
Sonoma County Regional Parks	Government	Both
Sonoma County Agricultural Preservation and Open Space District	Government	Both
Sonoma Land Trust	Non-Governmental	Both
Sonoma County Transportation and Public Works	Government	Both
Valley of the Moon Water District	Government	Sonoma
Sonoma Resource Conservation District	Special District	Both
Sonoma County Permit Sonoma	Government	Both
Lawrence Berkeley National Laboratory	Non-Governmental	N/A
California State Parks	Government	Both
California State Water Resources Control Board	Government	N/A

TABLE 2 (CONTINUED)
LIST OF STAKEHOLDERS ENGAGED

Organization	Type	Watershed
Sonoma County Farm Bureau	Non-Governmental	Both
San Francisco Bay Regional Water Quality Control Board	Government	Both
Sonoma County Water Agency	Special District	Both
San Francisco Estuary Institute	Non-Governmental	Both
Private landowners	Private	Both
Sonoma Valley Groundwater Sustainability Agency Board of Directors	Government	Sonoma
Petaluma Valley Groundwater Sustainability Agency Board of Directors	Government	Petaluma
Sonoma Valley Vintners and Growers Association	Non-Governmental	Sonoma
Petaluma Gap Winegrowers Alliance	Non-Governmental	Petaluma
Pacific Gas & Electric	Private	Both
California Native Plant Society-Milo Baker Chapter	Non-Governmental	Both
Community Alliance with Family Farmers/Farmer's Guild	Non-Governmental	Both
California Sustainable Winegrowing Alliance	Non-Governmental	Both
Sonoma County Winegrape Commission	Non-Governmental	Both
Permaculture Artisans	Private	Both
Vineyard Management Companies	Private	Both
USDA Natural Resources Conservation Service	Government	Both
Springs Community Alliance	Non-Governmental	Sonoma
La Luz Center	Non-Governmental	Sonoma
Sonoma Valley Health Roundtable	Non-Governmental	Sonoma
Creekside Village Homeowners Association	Non-Governmental	Sonoma

Appendix B

Project Evaluation Form and Process Checklist

ESA

Southern Sonoma County Stormwater Resources Plan Evaluation Process

Section 1 General

1.1. Is the project, or benefits provided by the project, located within the planning area (Sonoma Creek or Petaluma River watersheds)?

1.2. Is the project located on public land?

1.3. Is the project located on private land with a cooperating landowner?

1.4. Will the project provide synergistic benefits due to location relative to other existing or proposed projects?

1.5. Is the project supported by entities that have created permanent, local, or regional funding (i.e., entities who have established a new, multi-year local or regional source of funding dedicated to storm water and/or dry weather runoff capture projects, and who provide funds for both capital and operations and maintenance)?

Section 2 Water Quality Benefits

2.1. Does the project address one or more of the constituents covered under a TMDL or 303(d) listing for either Sonoma Creek or Petaluma River through increased filtration and/or treatment?

2.1.1. Please provide the following project information to estimate the amount of pollutant load removed through filtration and/or treatment:

- What is the BMP type? – Infiltration Trench/Detention Basin/Filter Strip/Vegetated Swale/Other (Please Specify)
- What is the BMP size (acres)?
- If a detention basin, infiltration trench, or similar, what is the BMP volume (cubic feet)?
- What is the contributing area to the BMP (acres)?
- What is the weighted runoff coefficient "C" based on land use?
- What is the dominant Hydrologic Soil Group at the BMP site?
- What is the Mean Annual Precipitation (MAP) value at the project location (inches)?
- Do you have information on background pollutant concentrations (if different than those proposed for SWRP)?
-

2.2. Does the project divert stormwater through infiltration and/or evapotranspiration?

2.2.1. Please provide the following project information to estimate the volume of stormwater diverted through infiltration and/or evapotranspiration:
- What is the BMP type? – Infiltration Trench/Detention Basin/Filter Strip/Vegetated Swale/Other (Please Specify)
- What is the BMP size (acres)?
- What is the BMP volume (cubic feet)?
- What is the contributing area to the BMP (acres)?
- What is the weighted runoff coefficient "C" based on land use?
- What is the Hydrologic Soil Group at the BMP site?
- What is the Mean Annual Precipitation (MAP) value at the project location (inches)?

2.3. Does the project enhance groundwater quality?

2.4. Does the project reduce non-point source pollution?

2.4.1. What is the amount of pollutant load removed through non-point source pollution control (lbs/year)?

2.5. Does the project reestablish natural water drainage and treatment?

2.6. Does the project incorporate a strategy(ies) or BMP(s) previously identified in current TMDL, Basin Plan, Salt and Nutrient Management Plan, NPDES MS4 permit, or other locally-relevant water quality planning document or guidance manual?

2.7. Does the project address water quality through source reduction or treatment in a high priority drainage area based on prior assessment?

2.8. Does the project result in reduced mixing of stormwater and wastewater?

Section 3 Water Supply Benefits

3.1. Does the project collect and store or divert stormwater above ground for potable or non-potable use?

3.1.1. Please provide the following information to calculate the volume of stormwater collected, stored, or diverted to offset irrigation use:
- What is the available volume for storage (gallons)?
- What is the estimated number of times the available storage can be filled and fully emptied on an annual basis?

3.2. Does the project infiltrate stormwater into a water supply aquifer?

3.2.1. Please provide the following information to calculate the volume of stormwater infiltrated:
- What is the BMP type? – Infiltration Trench/Detention Basin/Filter Strip/Vegetated Swale/Other (Please Specify)
- What is the BMP size (acres)?
- What is the BMP volume (cubic feet)?
- What is the contributing area to the BMP (acres)?

- What is the weighted runoff coefficient “C” based on land use?
- What is the Hydrologic Soil Group at the BMP site?
- What is the Mean Annual Precipitation (MAP) value at the project location (inches)?

3.2.2. Please provide any additional supporting information confirming project will recharge a water supply aquifer

3.3. Does the project infiltrate stormwater into a non-water supply aquifer?

3.3.1. Please provide the following information to calculate the volume of stormwater infiltrated?

- What is the BMP type? – Infiltration Trench/Detention Basin/Filter Strip/Vegetated Swale/Other (Please Specify)
- What is the BMP size (acres)?
- What is the BMP volume (cubic feet)?
- What is the contributing area to the BMP (acres)?
- What is the weighted runoff coefficient “C” based on land use?
- What is the Hydrologic Soil Group at the BMP site?
- What is the Mean Annual Precipitation (MAP) value at the project location (inches)?

3.4. Does the project enhance water supply reliability through means other than storage, diversion, or infiltration of stormwater (e.g., water conservation)?

3.5. Does the project further conjunctive use management through means other than direct recharge of stormwater?

3.6. Has the project been previously identified as a water supply/conservation project in any watershed planning document?

3.7. Does the project produce increased water use efficiency (i.e., water conservation)?

Section 4 Flood Management Benefits

4.1. Does the project provide peak flood flow and/or volume reduction?

4.1.1. Please provide the following information to calculate the magnitude of peak flow (cfs) and flood volume (acre-feet/year) reductions?

- What is the size of detention basin (acres)?
- What is the volume of detention basin (acre-feet)?
- What is the contributing watershed area to the detention basin (acres)?
- What is the composite curve number (CN) for the contributing watershed area based on land use?
- What is the lag time for the contributing watershed area (hours)?
  -
- What is the Mean Annual Precipitation (MAP) value at the project location (inches)?

4.2. Has modeling been completed to ensure detention will not result in increased flooding due to timing considerations?
4.3. Does the project reduce a flooding problem known or anticipated to occur locally?
4.4. Was the project previously identified to reduce flood risk in a local flood management plan, master plan, or watershed plan?

Section 5 Environmental Benefits

5.1. Does the project conserve, create, or enhance wetlands, aquatic, and/or riparian habitat?

5.1.1. What is the area of wetland, aquatic, and/or riparian habitat created or enhanced (acres)?

5.2. Does the project increase streamflow during low flow season for benefit of habitats and endangered/threatened species?

5.2.1. What is the magnitude of increase in streamflow during low flow season (% of seasonal flow)?

5.3. Does the project create urban green space?

5.3.1. What is the area of urban green space added (acres)?

5.4. Does the project re-establish the natural hydrograph (e.g., slowing in timing of peak flow, conversion of impervious area to pervious)?

5.4.1. What is the magnitude of slowing in timing of peak flow (% of lag time)?

5.5. Does the project improve water temperature for the benefit of habitats and endangered/threatened species?

5.5.1. How many linear feet of additional riparian canopy are added?

5.6. Does the project reduce energy use or GHG emissions, or increase carbon sinks?

5.6.1. What is the magnitude of reduction in energy use (kwh/yr) or GHG emissions (lbs/yr), or increase in carbon sequestration (lbs /year)?

5.7. Was the project previously identified in conservation, restoration, watershed management, urban greening and/or other watershed-based plan?

Section 6 Community Benefits

6.1. Does the project create jobs?

6.1.1. What is the number of jobs created (full time employment equivalents)?

6.2. Does the project provide public education opportunities and/or incorporate a public education element?

6.3. Does the project enhance or create recreational and public use areas?
    6.3.1. What is the area of recreational and public use areas that would be enhanced and/or created (acres or miles of trail)?
6.4. Does the project include community involvement and/or volunteer opportunities?
    6.4.1. What is the number of persons engaged through community involvement and/or volunteer opportunities (people/year)?
6.5. Is the project, or project benefits, located in or adjacent to a disadvantaged community?
6.6. Does the project incentivize behavior or actions that are consistent with the SWRP goals?
6.7. Was the project previously identified in a community, recreational, education, development, active transportation, job opportunity and/or another watershed-based plan?

Water Quality Scoring (p. 1 of 2)

WATER QUALITY
Step 2
9 possible points, max score of 10

Step 3
30 possible points/score

Total Possible Water Quality Score
40

Note: Main Benefits are noted.
All others are Additional Benefits

From Step 1

Step 2 Initial Quantification

Step 3 Detailed Quantification

MAIN BENEFIT
1. Does the project address one or more of the constituents covered under a TMDL or 303(d) listing for either the Sonoma Creek or Petaluma River through increased filtration and/or treatment?

No

Yes (2 pts)

Have estimates of expected pollutant load reductions through filtration and/or treatment been calculated?

No

Yes

ENTER VALUE HERE
(Y pts)

2. Does the project divert stormwater through infiltration and/or evapotranspiration?

No

Yes (1 pts)

Have estimates of expected stormwater diversion through infiltration and/or evapotranspiration been calculated?

No

Yes

ENTER VALUE HERE
(Y pts)

3. Does the project enhance groundwater quality?

No

Yes (1 pts)

4. Does the project reduce non-point source pollution?

No

Yes (1 pts)

Have estimates of the expected pollutant load reductions through non-point source pollution control been calculated?

No

Yes

ENTER VALUE HERE
(Y pts)

GO TO WATER QUALITY SCORING PAGE 2

Water Quality Scoring (p. 2 of 2)

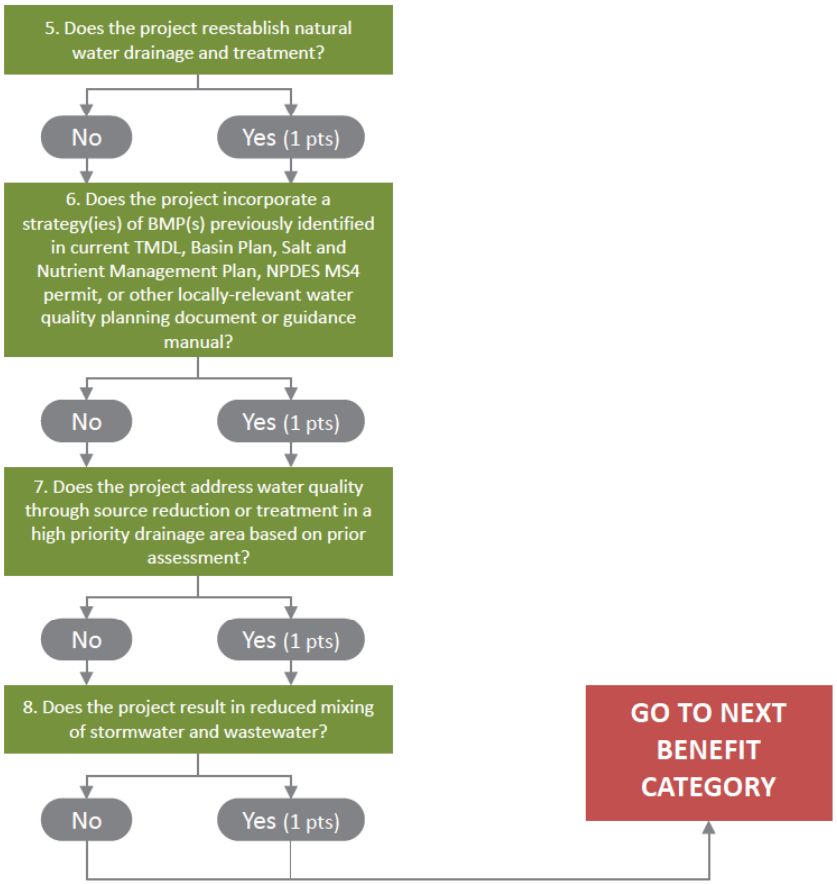
WATER QUALITY
Step 2
9 possible points, max score of 10

Step 3
30 possible points/score

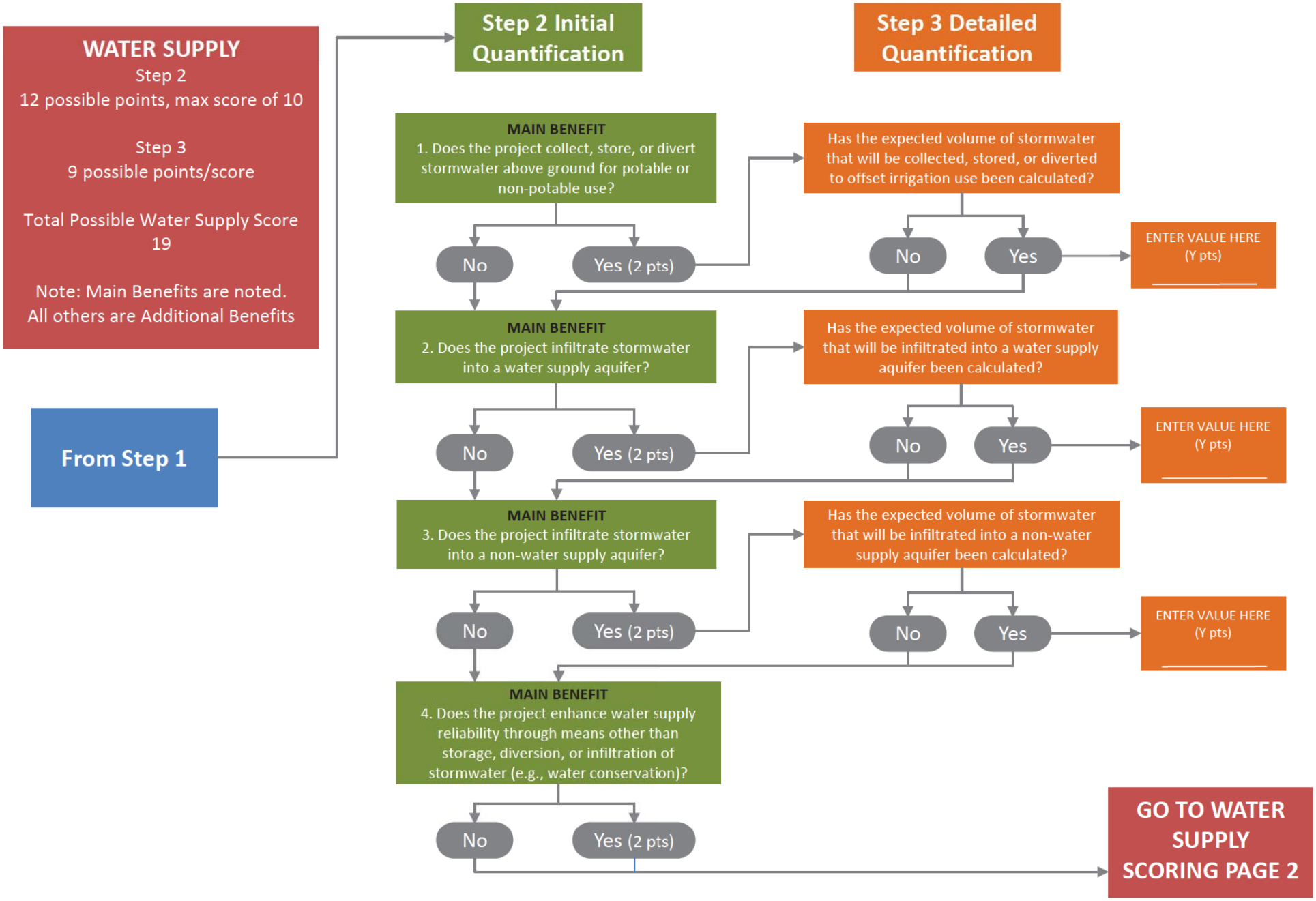
Total Possible Water Quality Score
40

Note: Main Benefits are noted.
All others are Additional Benefits

Step 2 Initial Quantification (cont.)



Water Supply Scoring (p. 1 of 2)



Water Supply Scoring (p. 2 of 2)

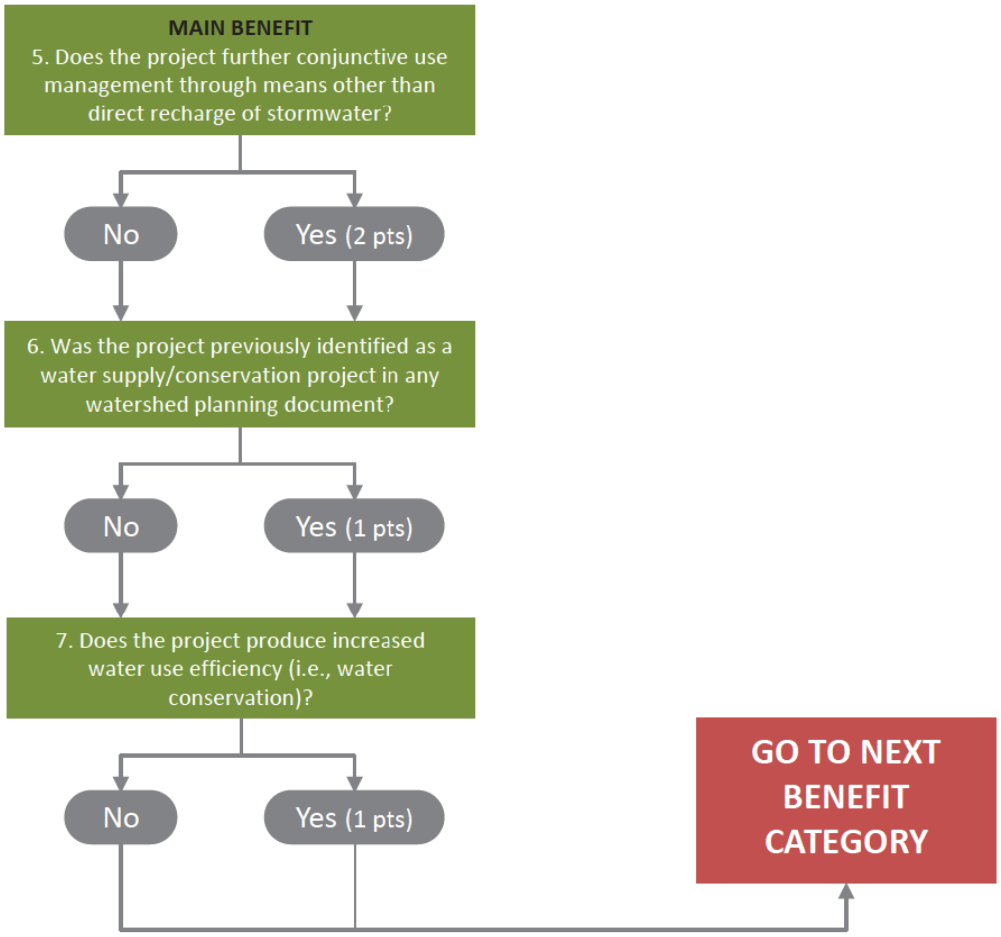
WATER SUPPLY
Step 2
12 possible points, max score of 10

Step 3
9 possible points/score

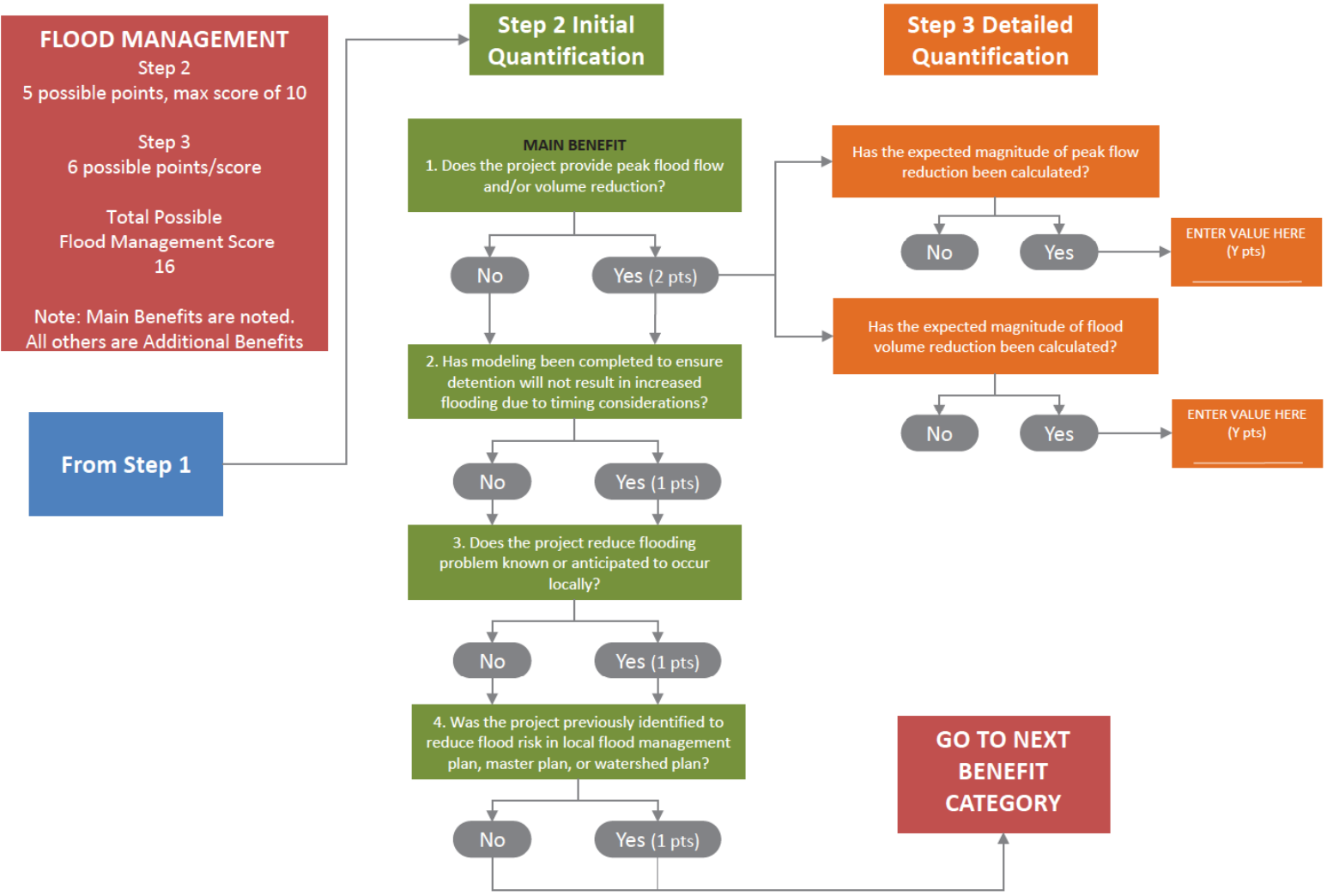
Total Possible Water Supply Score
19

Note: Main Benefits are noted.
All others are Additional Benefits

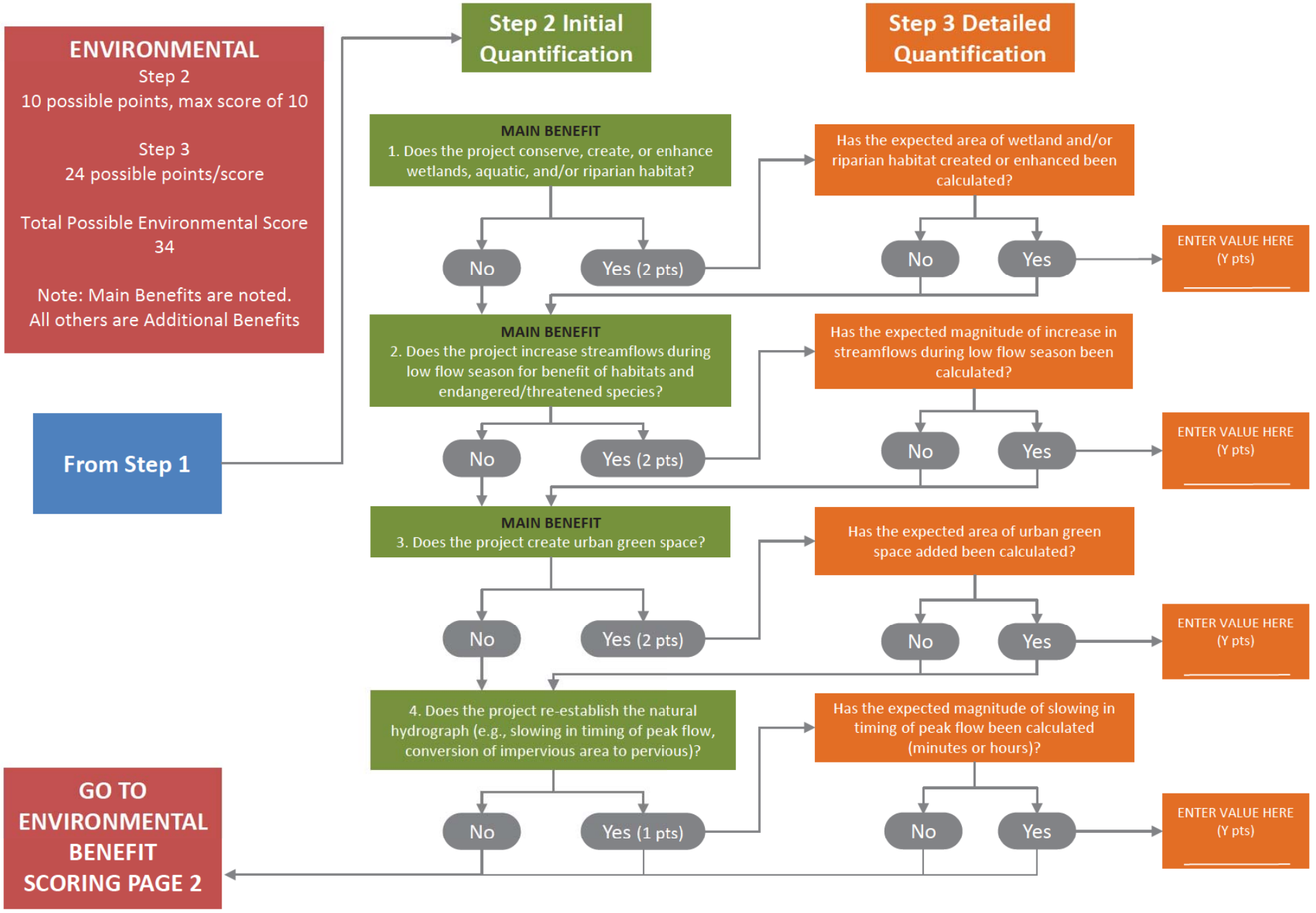
Step 2 Initial Quantification (cont.)



Flood Management Scoring



Environmental Benefit Scoring (p. 1 of 2)



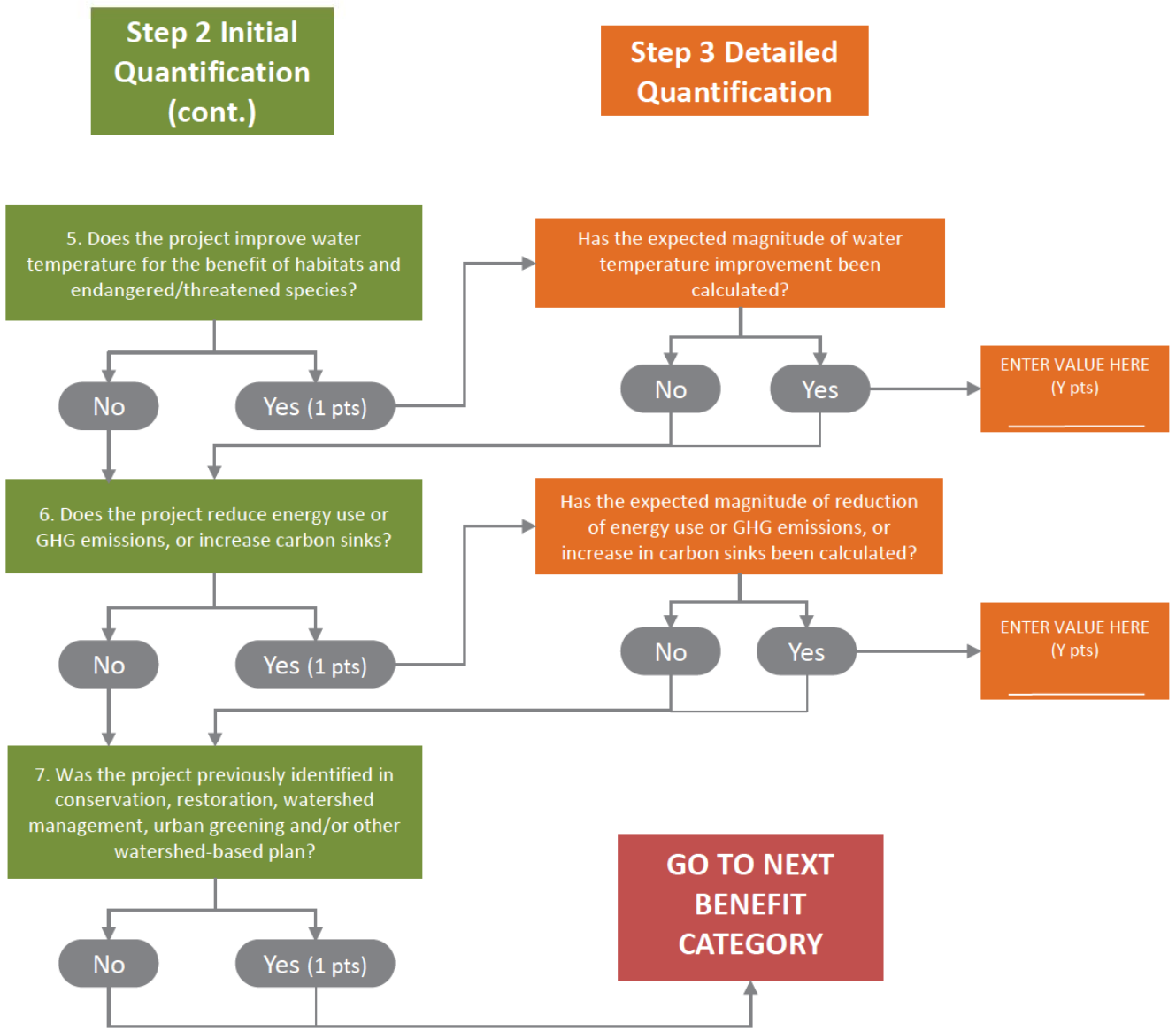
Environmental Benefit Scoring (p. 2 of 2)

ENVIRONMENTAL
Step 2
10 possible points, max score of 10

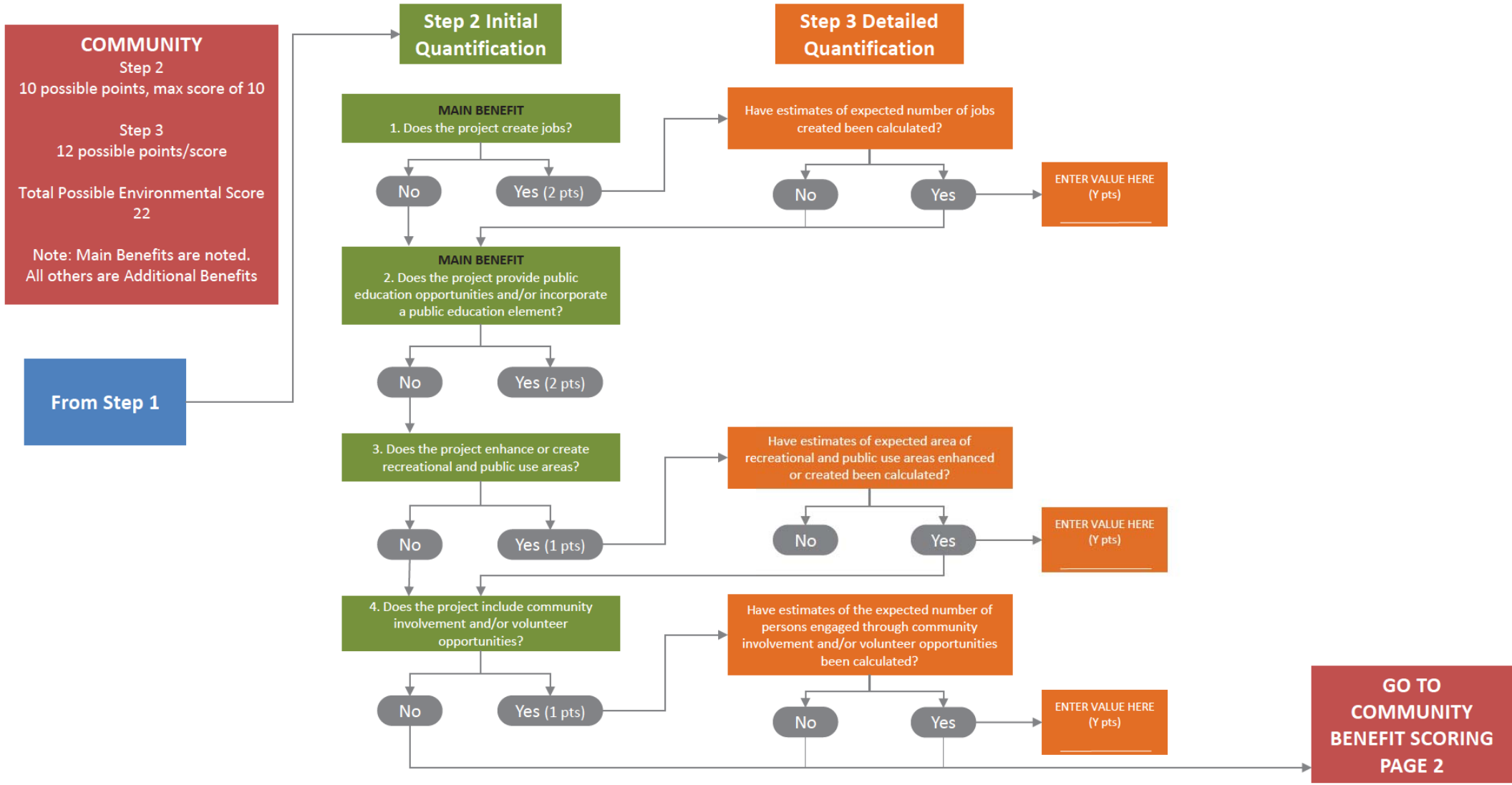
Step 3
24 possible points/score

Total Possible Environmental Score
34

Note: Main Benefits are noted.
All others are Additional Benefits



Community Benefit Scoring (p. 1 of 2)



Community Benefit Scoring (p. 2 of 2)

COMMUNITY BENEFIT
Steps 2 and 3
xx possible points
*see worksheet for examples and required metrics
Note: Main Benefits are noted. All others are Additional Benefits

Step 2 Initial Quantification (cont.)

Appendix C

Project Summaries and Scoring Details

ESA

1. Petaluma River Corona Reach Linear Overflow Channel

LEAD: Jason Beatty, City of Petaluma
PARTNERS: SCWA
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Recreational facilities, Education

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DESCRIPTION: Construct a linear flood detention channel along the west side of highway 101 from Corona Road to Capri Creek confluence with the Petaluma River. The channel would reduce flood risk in the adjacent areas by creating additional peak storm flow storage and redirecting storm flows. In addition, it will improve water quality by providing contaminant filtration and sediment/debris settling for storm flows entering the Petaluma River, as well as infiltration into an aquifer. Bike and pedestrian paths would be constructed along the linear channel. The vacant land is privately owned, but the owner would benefit from the project as it would likely alleviate repeated flooding of their developed parcels.

The linear channel would run approximately 4,200 feet, with up to a 30 foot width and up to 6 feet depth, providing up to 10 acre-feet of flood water detention. This trapezoidal channel could have a low flow meandering channel in the bottom segment. The channel could be revegetated with native grasses and wetland plants in the channel bottom and sides for biotechnical erosion control and filtration and trees could be planted along the channel banks.

A bike and pedestrian trail could be constructed adjacent to the linear channel for community access and education of storm water resources, flood control, and water quality. The trail would provide bike and pedestrian access to the Petaluma Outlet malls from Corona Road, and ultimately connect to other trails in the City of Petaluma's General Plan. The land owner of the project site is the owner of the Outlet Mall. The project would need to be coordinated with CALTRANS because of its adjacency to highway 101, the neighboring property owners, and the SCWA. Additional channel improvements will need to be made at the confluence of Capri Creek and the Petaluma River to address the additional storm flows. A feasibility study of this project is approved for funding by SCWA Zone 2A and is to be executed by the City of Petaluma.

LAT: 38 15 36.6 **LONG:** -122 39 11.8
LOCATION DESCRIPTION: 0
APN: 48080033

SOURCE: City of Petaluma
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jason Beatty

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2. Washington Creek Enhancement

LEAD: Jason Beatty, City of Petaluma
PARTNERS: SCWA
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Channel modification or creation
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Recreational facilities

---

DESCRIPTION: Enhance Washington Creek from Sonoma Mountain Parkway to confluence of East Washington Creek completing cross-sectional modifications to increase storage volume in the channel, planting native tree species at top of bank to create riparian habitat and shade for creek waters, and add a bike and pedestrian path along the corridor.

During storm events the modifications to the channel could increase available volume in the channel. This project could increase filtration and treatment of low flow run-off with creation of low flow meandering channel in bottom of trapezoidal channel planted with native grasses. The riparian habitat could be enhanced in areas of sparse canopy coverage and coverage. The enhancement of this urban creek segment including the construction of a bike and pedestrian trail along is supported by the City of Petaluma's General Plan. SCWA and the City of Petaluma own the parcels on which this project would take place. Funding for a feasibility study is being sought from SCWA Zone 2A.

LAT: 38 15 10.7 **LONG:** -122 37 22.1
LOCATION DESCRIPTION: 0
APN: 007337015, 007454008, 149155007, 149142021, 149142043

SOURCE: City of Petaluma
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jason Beatty

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3. Kelly Creek Enhancements

LEAD: Jason Beatty, City of Petaluma
PARTNERS: SCWA
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES: Channel modification or creation

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DESCRIPTION: Construct a storm water detention facility to improve water quality, reduce storm run-off volumes, and increase groundwater recharge through infiltration. Provide additional channels to carry improved water from the detention facility to the Petaluma river without degradation of water quality.

SCWA Zone 2A funds have been allocated to conduct a feasibility study for this project, which is to be executed by the City of Petaluma. This project would likely require acquisition of privately held property and the establishment of easements on other privately held property.

LAT: 38 13 19.8 **LONG:** -122 28 26.2
LOCATION DESCRIPTION: not supplied
APN: not supplied

SOURCE: City of Petaluma
CURRENT OWNERSHIP: Mixed Public/Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jason Beatty

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4. Willow Brook Flood Detention Basin

LEAD: Jason Beatty, City of Petaluma
PARTNERS: SCWA
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES: Recreational facilities

DESCRIPTION: Create a flood detention basin to catch overflow from Willowbrook to reduce impacts to adjacent Redwood Business Park and other properties further downstream. Basin will be designed to have multiple benefits of flood management, improving water quality, improving water supply through groundwater recharge infiltration, and creating an area of public use with walking trails and creek front access. The parcel is currently for sale by a private owner.

Proposed project site is a currently privately held 12.4 acre parcel that is for sale just outside city limits. A feasibility study would need to be completed to analyze flood benefits downstream.

LAT: 38 16 41.9 **LONG:** -122 39 57.8
LOCATION DESCRIPTION: not supplied
APN: 47213017

SOURCE: City of Petaluma
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jason Beatty

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5. Adobe Creek Floodplain Management and Sediment Study

LEAD: Sonoma Resource Conservation District
PARTNERS: Environmental Science Associates
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Study
ADDITIONAL MANAGEMENT ACTION TYPES: Basin, Channel modification or creation, Revegetation

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DESCRIPTION: The purpose of the Adobe Creek Floodplain Management and Sediment Study is to provide a comprehensive approach to manage the sediment regime that will assist in alleviating flood conditions that result from storm events and enhance riparian and instream habitat for salmonids. The study will identify high sedimentation delivery areas and develop 3-5 concept designs for reducing sediments from entering the stream.

The creek has locations in a geomorphically dynamic and generally depositional environment; at the intersection of an alluvial fan and the flatter Petaluma valley plain. Phase I, "Existing Conditions and Problem Identification" will focus on an analysis and characterization of the creek including ongoing physical processes that have resulted in the generation and accumulation of sediment and concomitant flooding. This phase will include an estimate of the Adobe Creek sediment budget, evaluation of sediment transport through the reach, and development of a hydraulic model to quantify baseline hydraulics. From this data, 3-5 sites will be determined as high priority sites.

Phase II will develop further the 3-5 high priority sites into concept designs. Physical constraints, including location of utilities, property boundaries, and other on-the-ground features will be determined for the available footprint of the project as well as regulatory constraints. Projects will be developed with the goal to improve function, conveyance, and alleviate flooding associated with ongoing sediment transport processes. The projects will be designed to reduce or eliminate annual maintenance activities. The 3-5 high priority sites will be ranked due to anticipated performance, implementation costs, and to meet other identified project constraints.

Phase III will look at the rankings and choose 1-2 of the high priority sites to design to 100% designs. These designs will be for shovel-ready projects that implementation funding can be sought for. These projects will be designed to reduce sediment related flood impacts, increase groundwater recharge, and establish points of access to facilitate future sediment maintenance efforts.

LAT: 38 15 06.63 **LONG:** -122 35 19.61
LOCATION DESCRIPTION: not supplied
APN: N/A

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Mixed Public/Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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6. Lichau Creek Rainwater Catchment and Wildlife Pond

LEAD: Sonoma Resource Conservation District
PARTNERS: Landowner
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Capture for use
ADDITIONAL MANAGEMENT ACTION TYPES: Basin, Revegetation

DESCRIPTION: The project will consist of installing a rainwater catchment system and creating a wildlife pond. The objective of the project is to reduce groundwater extraction and capture stormwater for use around a horse barn, water conservation, and to enhance wildlife habitat with the creation of the pond.

The project site drains to Lichau Creek, a steelhead bearing stream, in the Petaluma River watershed. The property is used for 'retired' horses and the landowner is committed to enhancing natural habitat for wildlife on the property. The purpose of the project is to install a rainwater catchment system, utilizing an existing roof on the structure covering a compost area, to draw rainwater into a tank. The captured rainwater will allow the landowner to conserve water by reducing groundwater extraction while meeting water use needs around the horse barn. The project will also install a pond surrounded by native vegetation to attract wildlife and increase wildlife habitat as well as capture stormwater, increase groundwater infiltration, and alleviate downstream flooding.

LAT: 38 18 45.75 **LONG:** -122 39 08.21
LOCATION DESCRIPTION: not supplied
APN: 047-202-034

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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7. King Creek Wetland Development and Riparian Enhancement

LEAD: Sonoma Resource Conservation District
PARTNERS: Permaculture Artisans; Natural Resources Conservation Service
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation

DESCRIPTION: The purpose of the project is to slow the storm surge during the rainy season along King Creek, a tributary to San Antonio Creek, by creating a wetland area to increase groundwater infiltration and recharge potential, and enhancing the riparian corridor with native riparian plants.

The goal of the project is to design and create a complex wetland system which will minimize downstream flow peaks and velocities, as well as increase groundwater infiltration and enhance habitat for wildlife. The wetland will help reduce nutrients from the upstream field full of livestock from reaching San Antonio Creek. The project would serve as a demonstration project for the Slow It, Spread It, Sink It, Store it method for managing stormwater. Native vegetation would be planted along the creek for increased wildlife habitat and corridors, as well as serve as a wind break.

This project takes place on a farm and the landowners have worked with Permaculture Artisans and the Natural Resources Conservation Service to plant hedgerows, wind breaks that support wildlife corridors, plant different crop areas, and utilizing rotational grazing for their cattle to enhance pasture management. The landowners are committed to enhancing King Creek.
This project has potential to be a great educational project for volunteers and/or students to plant the wetland using programs such as Point Blue Conservation Science's Students and Teachers Restoring a Watershed (STRAW).

LAT: 38 12 57.83 **LONG:** -122 42 45.39
LOCATION DESCRIPTION: King Creek, a tributary to San Antonio Creek in the Petaluma River Watershed
APN: not supplied

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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8. Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity

LEAD: Sonoma Resource Conservation District
PARTNERS: Landowner
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Land management alteration
ADDITIONAL MANAGEMENT ACTION TYPES: Capture for use, Revegetation, Basin

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DESCRIPTION: This project is in the pre-planning phase with the concept not fully planned, so the project description is not complete. The purpose of the project is to implement practices identified in a conservation plan in order to address water quality, water quantity, and carbon sequestration improvement goals.

Practices identified in a conservation plan for the property include the following:

- Installation of fencing and additional water development to allow for rotational grazing of livestock that will not only improve water quality by protecting pastures from overgrazing but also improve soil water holding capacity and carbon sequestration by allowing more residual dry matter to remain in pastures year round.
- Collection of rainwater from onsite buildings. This water will be used for livestock usage and irrigation usage that usually comes from well water. The collection of rainwater from onsite buildings will prevent an estimated 130,000 gallons annually of water from discharging to adjacent drainages and eventually into Sonoma Creek. The use of the collected rainwater will allow the water to infiltrate back into the ground as opposed to running off.
- Implementation of riparian restoration activities along approximately 400 feet of creek that will include planting of native trees, grasses, and shrubs to assist in slowing stormwater flows, filtration of stormwater, and enhanced wildlife habitat.
- Feasibility to use off-channel water storage ponds to slow stormwater for a period of time before discharging to Sonoma Creek.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Identification of location may be too sensitive at this time. The general area is the southern Sonoma Creek watershed, along Arnold Drive (Hwy 121).
APN: not supplied

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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9. Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project

LEAD: Sonoma Resource Conservation District
PARTNERS: San Francisco Estuary Institute; Landowners
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Landscape alteration
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation

DESCRIPTION: This project will build off of a current historical hydrology study in the Petaluma River Watershed that will identify watershed areas with the greatest potential for restoration and enhancement projects leading to the most optimal benefits. The proposed project will consist of locating sites within identified areas within the Petaluma River Watershed where a multi-benefit restoration project will support flood alleviation, stormwater retention, groundwater infiltration, and/or wetland restoration goals. This project will also include implementation of restoration designed for each site.

A significant amount of stream modification has occurred through time within the Petaluma River Watershed due to urbanization, development, land reclamation, and re-routing creeks to alleviate flooding. These changes have changed the way water flows through this system and using historical records can help to guide future restoration opportunities to locate projects in areas where they are most likely to succeed.

The goal of this proposed work is to use findings from the Petaluma Historical Hydrology Study (in production) to identify up to two multi-benefit restoration project locations within the Petaluma River Watershed. Funding would be used to design, permit, and implement the proposed multi-benefit project to address some or all of the following system benefits: flood alleviation, groundwater recharge, stormwater retention, and/or wetland and riparian habitat restoration.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Exact project locations are to be determined. Project location(s) will be identified within the Petaluma River Watershed for the development of multi-benefit restoration projects to provide flood alleviation, stormwater retention, groundwater recharge, an
APN: not supplied

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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10. Circle Bar Ranch Groundwater Recharge

LEAD: Sonoma Resource Conservation District
PARTNERS: Sue Smith, Circle Bar Ranch
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES: Landscape alteration, Education

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DESCRIPTION: This project would divert freshwater flow from a small un-named tributary of Sonoma Creek into an agricultural field for groundwater recharge. The agricultural field would be modified by creating berms along the open portions of the perimeter to create storage capacity. This project captures and infiltrates winter rains on roughly 25 acres adjacent to vineyards using short berms to contain water. The project will reduce high winter flows and velocity in Sonoma Creek, which borders the site, while recharging groundwater for future use and/or seepage into the creek during low flow dry season periods when needed for fish and other wildlife. Additionally, it will help provide a greater buffer to saltwater intrusion. Once implemented, the site will be used for tours and demonstrations for other vineyard operators, agriculturists, landowners, and agency personnel to discuss findings, lessons learned, and how to implement this practice on other properties.

LAT: 38 12 30.3 **LONG:** 122 26 38.8
LOCATION DESCRIPTION: Circle Bar Ranch
APN: 142-122-001

SOURCE: Sonoma Resource Conservation District and ESA with Sue Smith
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber and Melissa Carter

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11. Increasing Groundwater Recharge on Rangelands

LEAD: Sonoma Resource Conservation District
PARTNERS: Landowner
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Landscape alteration, Education

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DESCRIPTION: Mulch berms will be installed on a rangeland property to infiltrate increased amounts of water into the aquifer and reduce downstream impacts from high flows. Once implemented, the site can be used for tours and demonstrations for other rangeland producers, agriculturists, landowners, and agency personnel to discuss findings, lessons learned, and how to implement this practice on other properties.

By placing mulch berms on the hillside of a rangeland property, water can be slowed down and infiltrated into the ground. Porous mulch berms will help to slow down and filter water, while allowing more of it to move directly down into the soil in lieu of sheet flowing or collecting in waterways as it moves downslope. As rangeland typically consists of large acreages, generally without grazing in the winter, largescale infiltration is possible with this simple approach.

LAT: 38 13 1.4 **LONG:** 122 42 31.5
LOCATION DESCRIPTION: 2245 Spring Hill Road, Petaluma, CA 94952
APN: 020-010-009

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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12. Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands

LEAD: Sonoma Resource Conservation District
PARTNERS: Landowner
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Landscape alteration

DESCRIPTION: Vegetative filter strips will be installed adjacent to and upland of waterways in large plantings on a rangeland property. The filter strips will improve water quality, protect waterways, and increase water infiltration into the soil as water flows downslope

Vegetative buffer strips planted on slopes can filter water and increase groundwater infiltration. This project will identify significantly sized areas and plant filter strips on a rangeland property near Petaluma, where water flows to nearby San Antonio Creek. Filter strips are effective at improving water quality, as well as slowing the movement of stormwater upland of waterways, thus increasing groundwater infiltration potential, alleviating downstream flooding, and improving base streamflows during dry periods.

LAT: 38 13 1.4 **LONG:** 122 42 31.5
LOCATION DESCRIPTION: 2245 Spring Hill Road, Petaluma, CA 94952
APN: 020-010-009

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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13. Keyline Ploughing to Increase Groundwater Infiltration on Ranches

LEAD: Sonoma Resource Conservation District
PARTNERS: Landowner
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Landscape alteration, Education

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DESCRIPTION: Keyline ploughing will be implemented as a practice on a rangeland property to increase water infiltration into the soil and diminish downstream flows. The producer will be assisted to implement this practice, and then demonstrate the technique to other producers.

The purpose of this project is to infiltrate more water into the ground using a keyline plough. This specialized plough is widely used in Australia to increase water movement into the soil. As water flows downhill, more of it drains into the small furrows formed on contours by the plough, instead of sheeting downhill where it collects and runs off. This technique has been successfully used in areas with similar and drier climates than that of the Petaluma River and Sonoma Creek Watersheds, where very few agriculturists have implemented the practice. There are potentially significant benefits to be gained from the use of a keyline plough, but growers need to be introduced to this practice for those benefits to be realized. Sonoma Resource Conservation District will work with the landowner to provide technical assistance and implement the use of a keyline plough to optimize groundwater infiltration. Once implemented, others can be introduced to the concept and how to implement it via tours and field days at the site.

LAT: 38 13 1.4 **LONG:** 122 42 31.5
LOCATION DESCRIPTION: 2245 Spring Hill Road, Petaluma, CA 94952
APN: 020-010-009

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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14. Tolay Lake Restoration

LEAD: Sonoma County Regional Parks
PARTNERS: Federated Indians of the Graton Rancheria, Sonoma County Agricultural Preservation and Open Space District
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Channel modification or creation
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Basin

DESCRIPTION: Historically, Tolay Lake was the largest freshwater wetland in Sonoma County. Drained and ditched to facilitate agriculture, the hydrology has been significantly altered. Now under public ownership, restoration of the area is a priority of Sonoma County Regional Parks.

The lush valley lakebed that forms Tolay Lake is the central and dominant landscape feature of the new and soon to open Tolay Lake Regional Park. Restoration of the hydrological and ecological function of the lake from a degraded, agricultural feature to a diverse wetland and water body that reflects the varied history of uses. The following goals for restoration are identified in the Tolay Lake Regional Park Master Plan:

- Goal #H1: Enhance the frequency and duration of inundation
- Goal #H2: Identify and reduce artificial constrictions to flow within and to and from the lake.
- Goal #H3: Cost effectively minimize artificial water control structures including drainage ditches, culverts, levees, dams.
- Goal #H4: Enhance habitat for migratory water fowl as feasible.
- Goal #H5: Cost effectively restore and improve quality of seasonal wet meadow habitat.
- Goal #H6: Cost effectively restore and improve quality habitat in upland drainages that direct water to the lake.
- Goal #H7: Create habitat for red-legged frogs and western pond turtles.
- Goal #H8: Maintain passive hydraulic systems with minimal to no reliance on pumping or other mechanized systems.
- Goal #H9: Increase the amount and quality of habitat for small mammals – prey species for raptors and burrowing owls- such as ground squirrels, rabbits, voles, and mice.
- Goal #H10: Enhance/restore/create habitat for raptors.
- Goal #H11: Enhance/restore/create habitat for red-legged frogs as feasible.
- Goal #H12: Enhance/restore/create habitat for western pond turtles as feasible.
- Goal #H13: Enhance/restore/create habitat for burrowing owls as feasible.
- Goal #H14: Enhance/restore/create habitat for song birds.

LAT: 38 12 36.9 **LONG:** -122 31 11.6
LOCATION DESCRIPTION: 5869 Cannon Lane, Petaluma, CA 94954
APN: 068-070-005, 068-070-004, 068-060-057

SOURCE: Sonoma County Regional Parks
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Hattie Brown

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15. Lower Petaluma River Valley Conservation Strategy

LEAD: Sonoma Land Trust
PARTNERS: Sonoma Resource Conservation District, San Pablo Bay National Wildlife Refuge
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Study
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: The diked baylands of the Lower Petaluma River valley are located largely below sea level and are vulnerable to catastrophic flooding from both tide water and stormwater. Current methods to reduce flooding include levees and storm water pumps. Land uses in the area include a marina, agriculture, rural ranchettes, and transportation infrastructure, among other uses. Land ownership is a mix of public and private. This project would provide a comprehensive assessment of opportunities to restore tidal wetlands and connect upland habitat to the river and San Pablo Bay. Planning would include outreach to landowners and would be coordinated with planning for changes to State Route 37 and possibly Lakeville Highway and the SMART rail line.

LAT: 38° 6'54.90"N **LONG:** 122°30'18.33"W
LOCATION DESCRIPTION: This includes the diked baylands associated tributaries within and adjacent to the diked baylands of the Lower Petaluma River.
APN: not supplied

SOURCE: Sonoma Land Trust
CURRENT OWNERSHIP: Mixed Public/Private
COMMUNICATION WITH PROJECT LEAD: Yes
SUBMITTER: Julian Meisler

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16. Erosion Control, Habitat Restoration, Stormwater Capture, and Trash Removal along Sonoma County Roads

LEAD: Sonoma Ecology Center
PARTNERS: Sonoma County Transportation and Public Works (TPW), and Permit Sonoma
WATERSHED: Both/Either

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation

DESCRIPTION: In collaboration with Sonoma County TPW road maintenance and repair programs and Permit Sonoma, Sonoma Ecology Center (SEC) will conduct supplemental projects to address stormwater and garbage pollution management, as well as erosion control and revegetation. The goal of this project is to prevent erosion and stream sedimentation, and enhance riparian habitat.

SEC has partnered with Sonoma County PRMD and TPW to address short- and long-term impacts of stormdrain outfalls on local streams through the current SFBWQIF project (EM-00T34101-0 to San Francisco Estuary Partnership). Through this projects SEC has installed stormwater management BMPs, including erosion control methods and sediment filter strips using native plants. SEC has also designed a Detention-Basin Energy Dissipator (D-BED) that prevents erosion below outfalls and minimizes hydrologic disturbance including both sheet and gully erosion. This small detention basin below an outfall that dissipates the energy of the runoff and allows it to sheet-flow over a vegetated berm. The D-BED collects sediments and other pollutants treated as the water flows through the biological filter. The sheet flow over the level berm prevents scouring of the bank, thereby reducing sediment delivery to the creek and preventing bank failure and property loss.

SEC proposes to install additional BMPs, erosion control, and native vegetation restoration to control runoff and stabilize the ground surface along Sonoma County roads. Revegetation can be completed using locally genetic plant stock from SEC's plant nursery. Additional work may include multibenefit, combined trash capture and stormwater infiltration basins in road medians and stream bank stabiliazion along roads.

LAT: multiple locations **LONG:** multiple locations
LOCATION DESCRIPTION: Various locations throughout Southern Sonoma County on TPW right-of-way and adjacent areas.
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: Yes
SUBMITTER: Minona Heaviland

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17. Stormwater Capture and Groundwater Recharge in Upper Nathanson Creek

LEAD: SCWA
PARTNERS: Sonoma Ecology Center
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Study
ADDITIONAL MANAGEMENT ACTION TYPES: Basin, Landscape alteration, Land management alteration

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DESCRIPTION: Sonoma Ecology Center (SEC) will identify sites for large and small scale stormwater management projects that provide flood reduction and groundwater recharge benefits in the upper Nathanson Creek watershed. This project will expand on current analysis and landowner outreach to develop stormwater retention projects with local landowners along upper Nathanson Creek.

SEC is currently working on a GIS landscape analysis to find suitable sites for stormwater capture and groundwater recharge projects in the upper Nathanson Creek watershed. This project will build on completed analysis to locate and design storm water management projects that slow runoff and increase groundwater recharge during storm events to alleviate flooding in the lower Nathanson Creek watershed and the City of Sonoma. The proposed project will expand on the development of small scale stormwater projects that can be implemented by SEC with landowner participation. The goal is to create a measurable cumulative impact of stormwater management and flood reduction benefits for the City of Sonoma through the implementation of small, medium and large scale projects.

LAT: multiple locations **LONG:** multiple locations
LOCATION DESCRIPTION: Nathanson Creek North of City of Sonoma
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: no
SUBMITTER: Minona Heaviland

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18. Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks

LEAD: California Department of Parks & Recreation
PARTNERS: Sonoma Ecology Center, Sonoma County Regional Parks, Team Sugarloaf, Jack London Park Partners
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Channel modification or creation, Revegetation

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DESCRIPTION: This project will repair and modify drainage features associated with roads and trails at three State Parks located in the headwaters of Sonoma Valley creeks, in order to detain stormwater, increase infiltration, reduce runoff, and improve water quality.

Multiple needed repairs and alterations to State Parks' roads and trails appear on park infrastructure database (PID) lists. For example, for Sugarloaf, of the top 25 priority projects, 11 involve road and trail repair. Project partners will replace culverts, rebuild waterbars, recontour trails, reconstruct drainage features above and below crossings, construct and vegetate small detention basins, install rock and vegetation, and re-route key trail segments. Partial road and trail plans exist for some portions of these Parks. Outcomes include reduced soil loss, improved water quality, reduced volume and velocity of runoff, reduced future maintenance costs, improved riparian and aquatic habitat quality, and increased replenishment of soil water and groundwater.

LAT: multiple locations **LONG:** multiple locations
LOCATION DESCRIPTION: Sugarloaf Ridge State Park, Jack London State Historic Park, Annadel State Park
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: Yes
SUBMITTER: Minona Heaviland

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19. Middle & Lower Nathanson Creek Flood Management and Habitat Restoration

LEAD: SCWA
PARTNERS: Sonoma Ecology Center, Sonoma Valley Unified School District (SVUSD)
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Basin, Channel modification or creation, Revegetation

DESCRIPTION: This project will build on watershed scale planning, flood reduction, and habitat enhancement designs completed with funding from the Urban Streams Restoration Program (USRP). This project will implement a stream improvement project that was previously designed and permitted in the upstream reach of Nathanson Creek Preserve by Prunuske Chatham to create a braded channel and improved riparian habitat. This project would include installing bioengineered erosion control, debris removal, and continue native plant restoration on the Nathanson Creek Preserve. It also includes interpretive elements featuring innovative stormwater management in a riparian zone within an urban area. This project could also include design development and implementation of conceptual designs for flood management at the SVUSD property adjacent to Nathanson Creek Preserve.

In additon to the implementation project, flood flow modeling needs to be conducted to complete analysis for existing designs related to downstream flood reduction. The downstream modeling will determine if modifications based on the concept designs will significantly increase the risk of flooding downstream. This feasibility analysis will be accomplished by updating and using the 2-D hydraulic model developed by the City of Sonoma and extending it downstream to the Carneros region. The downstream modeling will determine the feasibility of existing concept designs and the potential for future stream enhancement and flood reduction projects in the lower watershed. The implementation project includes bank modification designed to alleviate flooding directly downstream of a road culvert. This flood reduction and habitat enhancement project will include an inset floodplain, high flow refugia alcove for anadromous fish, native plant revegetation, riprap removal, and installation of interpretive signage.

LAT: 38.284354 **LONG:** -122.456471
LOCATION DESCRIPTION: Nathanson Creek Preserve, modeling to below Napa Rd
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: yes
SUBMITTER: Minona Heaviland

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20. QWEL Rainwater Harvesting Training Module

LEAD: Sonoma County Water Agency
PARTNERS: Sonoma-Marin Saving Water Partnership and these 15 QWEL adopting organizations: http://www.qwel.net/qwel-locations
WATERSHED: Both/Either

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Education

DESCRIPTION: The Qualified Water Efficient Landscaper (QWEL) training presents an affordable proactive local approach to reducing landscape water demand.
The QWEL Rainwater Harvesting Specialty Module would provide (up to 10) additional training hours to educate landscapers on the benefits of rainwater capture, sizing a system, codes, standards of system installation and the future of both rainwater harvesting and stormwater management. Certificates will be issued to participants after completion of the course and an exam, resulting in certified local professionals.

The Qualified Water Efficient Landscaper (QWEL) training presents an affordable, proactive, local approach to reducing landscape water demand. QWEL offers graduates with knowledge in water efficient and sustainable landscape practices including water management and preservation of other valuable resources.

The QWEL Rainwater Harvesting Specialty Module would provide (up to 10) additional training hours to educate landscapers on a the benefits of rainwater capture, sizing a system, codes, standards of system installation and the future of both rainwater harvesting and stormwater management. Certificates will be issued to participants after completion of the course and an exam, resulting in certified local professionals.QWEL is currently offered in over 15 locations, primarily in California but also across the US. These locations are committed to the expansion of the specialty modules and will provide funding match for the development of a rainwater harvesting module.

The QWEL Rainwater Harvesting Specialty Module will be used to educate landscape contractors and aid neighborhoods that were impacted by the Northern California wildfires. Training contractors will help ensure water efficiency standards are met, while promoting a sustainable approach to both passive and active rainwater capture and reuse for residential landscapes. These features will result in water, energy and GHG emission reductions due to a decrease in potable water demands. The module also promotes groundwater recharge by promoting a sustainable landscape approach to the interception, storage, and management of stormwater at individual homes.

If 255 homes utilize rainwater capture systems, either active or passive systems, each system will require 1-2 trained installers to construct. As a result of the training, installers will continue to promote the installation of rainwater capture to their customers, resulting in increased

implementation and an increase in demand of such systems. The Water Agency will offer their training module at least twice each year for 5 years after development of the module.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: not supplied
APN: not supplied

SOURCE: Sonoma-Marin Saving Water Partnership
CURRENT OWNERSHIP: not supplied
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Carrie Pollard

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21. Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair

LEAD: California Department of Parks & Recreation
PARTNERS: Sonoma Ecology Center
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Infrastructure
ADDITIONAL MANAGEMENT ACTION TYPES: Channel modification or creation

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DESCRIPTION: This project is to build a new bridge over Sonoma Creek along the Gray Pine Trail and restore habitat along Sonoma Creek to reduce erosion of the stream banks and sediment entering the creek at this popular stream crossing location.

Working with California State Parks, Sonoma Ecology Center will install an erosion-preventing stream crossing, sedimentation-preventing buffer of native vegetation, and educational panels at sediment priority sites in Sugarloaf Ridge State Park on upper Sonoma Creek. The 2006 Sonoma Creek Sediment Source Analysis (SSA) found that 79% of the suspended sediment and bed load in Sonoma Valley streams is from the beds and banks of stream channels. The SSA's assessment of road-related sediment sources is the basis for prioritizing runoff control measures related to roads.

This projet will result in an improved stream crossing, stream bank stabilization, riparian restoration, and educational signage reaching 13,000 visitors per year. Outcomes will include a hydrologically correct stream crossing installed in the upper Sonoma Creek watershed preventing surface erosion on 1.25 acres of approach road (1 ton/year), streambank erosion on 50 linear feet of stream (52 tons/yr reduction), installing at least 150 locally native plants on 2.5 acres, and buffering 2 tons/year fine sediment from Sonoma Creek.

LAT: 38.44019 **LONG:** -122.49692
LOCATION DESCRIPTION: Sugarloaf Ridge State Park
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: Cyndy Shafer and Christina Freeman have reviewed this project.
SUBMITTER: Minona Heaviland

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22. Stormwater Management and Habitat Enhancement at Maxwell Farms Regional Park

LEAD: Sonoma County Regional Parks
PARTNERS: Sonoma Ecology Center
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Infrastructure, Channel modification or creation, Basin

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DESCRIPTION: This project will incorporate stormwater managment features to existing and proposed improvements to facilities, ball fields and recreational areas, as well as riparian habitat restoration. Sonoma Ecology Center (SEC) will work with Regional Parks to develop Low Impact Design (LID) elements, such as stormwater infiltration basins and vegetated swales to capture and treat stormwater runoff. SEC will assist Regional Parks in implementing stream restoration projects that include invasive plant control, native plant revegetation, bank stabilization, sediment reduction and fish habitat improvements. As a component of the riparian habitat enhancement project, plans for inset flood plain and high flow refugia will be developed for a phased reach scale habitat enhancement project.

Sonoma County Regional Parks is undergoing a master plan update for Maxwell Farms Regional Park, including new recreational areas, ball fields, parking areas and other facilities requiring increased access to developed areas within the Park. These improvements provide an opportunity to incorporate LID features that manage stormwater and mitigate the impacts of increased runoff from impervious surfaces. This project includes the development of implementation plans and the installation of several stormwater management features that filter, capture, and infiltrate runoff. Features may include permeable pavement, cut curbs and infiltration trenches around parking areas, vegetated swales, detention basins and rain gardens. This project will be a publicly visible demonstration of appropriate stormwater management with interpretive elements describing the LID concepts used.

The reach-based stream restoration component of this project includes an implementation phase to address priority riparian habitat needs, coupled with a planning component to address in-stream channel geometry needed to improve fish habitat. The implementation project will include vegetation managment to remove invasive weeds and replace them with native plant species. Restoration will also include sediment reduction and bank stabilization using biodegradable erosion control fabric and native plant seeding. Designated paths to the creek will be improved by planting filtration strips adjacent to pathways. Rogue trails will be regraded and planted to discourage use. Eroding banks will be planted with woody species to help stabilize the slope, prevent undercutting and reduce sediment pollution. This project includes planning to develop in-stream channel modifications for fisheries habitat enhancement. Stream analysis will determine the potential for fish habitat improvements, and concept design will include elements such as inset flood plains, streamside alcove inlets or side-channels to provide high

flow refugia for anadromous fish; bio-engineered bank stabilization to reduce erosion and control sediment production; large woody debris and boulder wiers for in-stream habitat and pool formation; and targeted planting for increased vegetative cover for shade and water quality improvements.

LAT: 38.30085 **LONG:** -122.48026
LOCATION DESCRIPTION: Maxwell Farms Regional Park
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: yes
SUBMITTER: Minona Heaviland

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23. Creek Restoration and Spillway Replacement or Dam Modification at Larson Park

LEAD: Sonoma County Regional Parks
PARTNERS: Sonoma Ecology Center
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Study
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation

DESCRIPTION: This project will improve riparian habitat and hydrologic function on Sonoma Creek and Pequeno Creek at Larson Park. SEC will coordinate with Regional Parks to enhance riparian habitat through riparian vegetation management, controlling invasive weeds and reestablishing native plants to improve an urban multi-use park. The project will also include an analysis of the dam in Sonoma Creek and spillway on Pequeno Creek, both of which are fish barriers and an attractive nuisance. Concept plans and estimates will be developed for next phase implementation to modify the dam and/or alter the spillway.

The project will create or enhance riparian habitat to improve an urban multi-use park and river corridor along Sonoma Creek in and near Larson Park in Fetters Hot Springs, an unincorporated disadvantaged community in Sonoma Valley. Sonoma Creek is an anchor watershed for steelhead recovery in the Bay Area, and also supports chinook salmon and several other protected species. SEC will coordinate with Regional Parks and neighborhood groups to implement a community based riparian restoration project. The project will remove invasive weeds; install native plant species, plant vegetated filter strips to filter stormwater runoff from parking areas and ballfields, improve canopy shade along creek banks and increase the complexity and diversity of plant species within the riparian corridor. Habitat enhancements will be interpreted with educational signage in English and Spanish. Planning and analysis will include the development of plans to address an abandoned dam and concrete spillway on site that attract vandalism and create barriers to fish passage. Potential repairs include dam and spillway removal or modification to eliminate hazards and allow fish passage and other habitat improvements to be implemented.

LAT: 38.31746 **LONG:** -122.48885
LOCATION DESCRIPTION: Larson Regional Park
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: yes
SUBMITTER: Minona Heaviland

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24. Restoration of Natural Hydrology and Salmonid Habitat at Alder Park

LEAD: Sonoma County Regional Parks
PARTNERS: Sonoma Ecology Center
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Channel modification or creation
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Education

DESCRIPTION: This project will include the restoration of riparian habitat, bank modification and installation of in-stream fish habitat structures at Alder Park, an undeveloped Sonoma County Regional Park in Kenwood. This small undeveloped park is ideal for interpretive elements to demonstrate several riparian and fish habitat enhancements.

Alder Park is a prime location for riparian restoration and fisheries habitat enhancement that provides a public, demonstration project site. This undeveloped park is located on Sonoma Creek in a reach identified as critical salmonid rearing habitat. This riparian or in-stream habitat enhancement project may include bank modification to establish an inset floodplain and/or alcove for high flow refugia for fish, native plant restoration to reestablish tree canopy for wildlife habitat, instream log and boulder structures for deep pool formation and instream habitat for aquatic species, including salmonids. In addition to fish and wildlife improvements, plans will be developed to create public/ADA access, interpretive elements, and volunteer participation in the ongoing care and maintenance of this community park.

LAT: 38.41134 **LONG:** -122.55315
LOCATION DESCRIPTION: Alder Park
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: yes
SUBMITTER: Minona Heaviland

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25. Stormwater Management at Sonoma Valley Regional Park

LEAD: Sonoma County Regional Parks
PARTNERS: Sonoma Ecology Center
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Swales/Filter strips
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Basin

DESCRIPTION: This project includes restoration of riparian habitat along Sonoma Creek's riparian corridor through Sonoma Valley Regional Park and improved management of stormwater runoff from paved paths and parking lots. Stormwater improvements will include vegetated filter strips, small scale detention basins, vegetated swales and infiltration structures to treat parking lot and other paved area runoff. Native habitatat restoration may also be part of the project. Riparian restoration will include invasive weed removal, native plant restoration, and erosion control using biological bank stabilization techniques and biodegradable erosion control fabric and native plant seeding. This project will improve water quality and riparian habitat in central Sonoma Valley.

LAT: 38.36089 **LONG:** -122.5108
LOCATION DESCRIPTION: Sonoma Valley Regional Park
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: yes
SUBMITTER: Minona Heaviland

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26. Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve

LEAD: Sonoma County Agricultural and Open Space District (SCAPOSD)
PARTNERS: Sonoma Ecology Center
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Channel modification or creation
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Landscape alteration, Education

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DESCRIPTION: This project would repair active head cuts that are threatening rare plant species habitat, and enhance riparian corridors through native species revegetation along Ash Creek. Repair of the active head cuts would reduce sedimentation in Ash Creek, an actively incising stream channel, and slow stream flows to allow for groundwater recharge. Gullies and head cuts will use a combination of appropriately sized boulders, native vegetation and using boulders to establish vortex weirs and step pools to establish grade control and maintain hydrologic function.

This is a multi-benefit project that would reduce creek erosion, prevent sediment pollution, improve fish habitat, protect rare plant species, and provide volunteer and educational opportunities. The project would repair active head cuts that are threatening rare plant species habitat, and enhance riparian corridors through native species revegetation along Ash Creek. Repair of the active head cuts would reduce sedimentation in Ash Creek, an actively incising stream channel, and slow stream flows to allow for groundwater recharge. Gullies and head cuts will use a combination of appropriately sized boulders, native vegetation and using boulders to establish vortex weirs and step pools to establish grade control and maintain hydrologic function. Some pasture gullies are suitable for establishing small basins to slow and capture runoff and prevent further erosion. This would reduce sedimentation to Carriger Creek, an important steelhead-bearing stream, and increase groundwater availability for plants, and prolong stream flow for fish and wildlife. The project would also revegetate the Ash Creek riparian corridor with a diversity of native vegetation that had been denuded through decades of cattle grazing on the property. The restoration of riparian natives would improve canopy coverage, increase species diversity, and reinforce the bank in areas with erosion problems. All plantings would occur at repair sites, in bare areas, and where needed to establish canopy shade for the creek and improve overall fish and wildlife habitat.

LAT: 38.29713 **LONG:** -122.52717
LOCATION DESCRIPTION: Van Hoosear Wildflower Preserve, Carriger Creek
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: not supplied
COMMUNICATION WITH PROJECT LEAD: yes, but not recently
SUBMITTER: Minona Heaviland

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27. Stormwater Management and Water Conservation along Rodgers Creek

LEAD: Creekside Village Homeowners Association and Sonoma Ecology Center
PARTNERS: SCWA
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Land management alteration
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Basin, Recreational facilities

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DESCRIPTION: Sonoma Ecology Center and Creekside Village Homeowners Association will work on developing a project to address flooding, water conservation, stormwater infiltration, and habitat enhancement. Rodgers Creek and its riparian and floodplain areas pass through the communities of Creekside, Temelec, and Seven Flags, which have been mapped by the state as disadvantaged communities. These communities have the following water management issues: dewatered Rodgers Creek (formerly a steelhead supporting stream), substantial water use for irrigated landscaping, a large pond at Creekside that was designed for flood control but is not being managed as such, flooding concerns, unstable streambanks, water supply concerns related to groundwater and well usage, landscape maintenance practices that encroach on riparian vegetation, and invasive plant species. The Creekside Village Homeowners Association has authority over all front yards, including landscaping and water use, as well as large common areas that are landscaped. Engaged leadership within the association is interested in improvements. SCWA has recently investigated doing physical channel work in Rodgers Creek.

Project components will include all or some of the following: outreach to residents and other stakeholders; alternatives development including conceptual designs, initial costs, evaluation by residents and stakeholders; construction of phased elements such as vegetation removal and replacement in front yards and common areas; invasive weed removal and revegetation in riparian areas; irrigation overhaul in front yards and common areas; revision of landscape maintenance protocols; enhancement and alteration of large pond in Creekside; interpretive signage and improvements to trails and other recreational amenities.

LAT: 38.26325 **LONG:** -122.4953
LOCATION DESCRIPTION: Rodgers Creek by Creekside Village
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: not supplied
SUBMITTER: Minona Heaviland

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28. Carriger Creek Stormwater Capture and Groundwater Recharge

LEAD: Sonoma Ecology Center
PARTNERS: Private landowners, Sonoma County Transportation and Public Works (TPW)
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES: Landscape alteration, Swales/Filter strips

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DESCRIPTION: Projects will be designed to slow runoff and increase groundwater recharge during storm events to alleviate flooding in the lower Carriger Creek watershed. Project components may include GIS landscape analysis to find suitable sites for stormwater capture and groundwater recharge projects in the Calabazas watershed. Implementation projects will be designed to slow runoff and increase groundwater recharge during storm events to alleviate flooding in the lower Carriger Creek watershed. Based on input from SCWA and local stakeholders as to the type and scope of projects they are interested in, SEC will assist in identifying sites for large-scale projets for SCWA to implement and develop a list of smaller BMP implentation project sites for SEC to work on with local landowners.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Carriger Creek
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: not supplied
SUBMITTER: Minona Heaviland

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29. Stormwater Management at Sonoma Valley School Campuses

LEAD: Sonoma Valley Unified School District
PARTNERS: Sonoma Ecology Center
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Basin, Swales/Filter strips, Education

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DESCRIPTION: Sonoma Valley Unified School District, Sonoma Ecology Center, school-site communities, and others will work collaboratively to identify, plan, and install BMPs on school campuses that would reduce water quality impairments, reduce runoff, enhance infiltration, and enhance the educational experience of students.

Most school sites in Sonoma Valley are almost entirely impervious. Several are adjacent to salmonid streams. A handful flood on a regular basis during storms. Multiple curricular mandates could be met by using onsite stormwater management projects as learning opportunities. School Districts are now facing mandated stormwater requirements under new MS4 rules. Several schools serve a largely disadvantaged population.

This project will increase effective perviousness, plant vegetation, revise drainage patterns, and increase infiltration on school sites, through a workflow that engages teachers, students, and parents.

LAT: multiple locations **LONG:** multiple locations
LOCATION DESCRIPTION: Sonoma Valley school campuses
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: yes
SUBMITTER: Minona Heaviland

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30. Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach

LEAD: Sonoma Ecology Center
PARTNERS: California Department of General Services
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Revegetation
ADDITIONAL MANAGEMENT ACTION TYPES: Channel modification or creation, Infrastructure, Education

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DESCRIPTION: This project will conduct stream restoration, invasive weed control, storm drain system upgrades, volunteer engagement, and stream monitoring within the 1-mile of Sonoma Creek channel on Sonoma Developmental Center (SDC) property. The project might include deisgn and installation of an instream restoration restoration project such as expansion benches, secondary channels, or laying back of stream banks to improve stabilization, reduce erosion, and improve salmonid habitat.

This project will enhance habitat for salmonids and other stream-dependent species, improve stormwater quality entering Sonoma Creek, prepare for future restoration projects, and engage the community. The project's components include: modify storm drain outfalls to reduce pollutants entering the stream; enhance riparian streambank habitat by removing invasive non-native vegetation and planting and maintaining locally native vegetation; complete assessments, plans, and designs for future stream enhancement projects at previously identified high-priority sites, including assessing terrestrial wildlife use of the riparian corridor of SDC; offer events for the community to come to SDC and contribute hands-on volunteer labor and learn about Sonoma Creek, SDC, and the wildlife corridor.

LAT: 38.34607 **LONG:** -122.51008
LOCATION DESCRIPTION: Sonoma Developmental Center Reach of Sonoma Creek
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: yes
SUBMITTER: Minona Heaviland

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31. Willow Brook Creek Groundwater Recharge

LEAD: Sonoma Resource Conservation District
PARTNERS: Landowner
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Channel modification or creation
ADDITIONAL MANAGEMENT ACTION TYPES: Capture for use, Education

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DESCRIPTION: The project will manage stormwater through floodplain enhancement, groundwater infiltration, and rainwater harvesting. The project will also function as a demonstration of stormwater management for the public. The site includes new storefronts for craftspeople making goods. This shopping area will also become self-sufficient with solar panels as well as organic garden beds irrigated by harvested rainwater. The landowner is interested in a potable rainwater catchment system to further make this property self-sufficient. Floodplain enhancement in Willow Brook Creek will alleviate downstream flooding while improving groundwater infiltration potential. A co-benefit will be salmonid habitat enhancement.

The Willow Brook Creek Groundwater Recharge project will enhance the floodplain and thereby increase groundwater recharge along Willow Brook Creek through slowing the velocity of high flows and opening the site banks to flooding. Habitat enhancement structures, such as large woody debris (LWD), may be installed in the creek, which would further slow high flow velocities while improving habitat complexity for threatened steelhead trout. Groundwater infiltration will raise the water table and promote dry season seepage of cold subsurface groundwater to Willow Brook Creek during dry season low flow conditions.

Rainwater catchment systems will capture rainwater off store rooves and will irrigate the site's organic gardens during the hot and dry summer months as well as provide potable water for the stores. The project site will be open to the public and will provide for project demonstrations that will include educational signs about stormwater management. Native riparian plants will be planted and enhance urban greening. The project necessitates an initial study and design component to determine the best solution for groundwater recharge, floodplain enhancement, and instream habitat enhancement.

Designs for rainwater catchment will need to be conducted to determine space, location, and volumetric rainwater harvesting capacity and need.

LAT: 38 27 98.92 **LONG:** 122 66 74.92
LOCATION DESCRIPTION: Willow Brook Creek, Petaluma River Watershed
APN: 047-213-017

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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32. Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction

LEAD: Sonoma Resource Conservation District
PARTNERS: Point Blue Conservation Science – Students and Teachers Restoring a Watershed; Natural Resources Conservation Service
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Capture for use
ADDITIONAL MANAGEMENT ACTION TYPES: Programmatic, Swales/Filter strips, Revegetation

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DESCRIPTION: This project would provide between 100,000 and 200,000 gallons of rainwater catchment that would be used for irrigation, livestock water, and equine facility maintenance. Capturing this water would reduce runoff from impervious surfaces and reduce peak high flows in Washington Creek of the Petaluma River Watershed.

This project would provide between 100,000 and 200,000 gallons of rainwater storage that would be used for irrigation, livestock water, and equine facility maintenance. There are several large structures around the property including barns and horse arenas that already have gutters and downspouts in place and would be capable of providing projected storage volume. Capturing this water reduces stormwater runoff to Washington Creek. The current peak flows that leave the property have caused significant erosion along the channels of Washington Creek. In addition to stormwater management benefits, there are also water security issues for the property. The current water system comes from two wells that have very limited capacity. The water quality is so poor that a reverse osmosis treatment system is required and for every gallon of treated water generated, two gallons of water needs to be pulled from the aquifer. Therefore, by providing water storage for 200,000 gallons, 400,000 gallons of water is actually being conserved in the aquifer.

The project will also restore native plants on the property, with vegetated swales designed for stormwater management. Stored rainwater will be used to irrigate and establish the plants, which will promote groundwater infiltration benefits. The landowner has historically worked with Point Blue Conservation Science's Students and Teachers Restoring a Watershed (STRAW) program and this project has potential to be a great education project for volunteers and/or students to plant native vegetation on the property.

LAT: 122 36 08.09 **LONG:** 38 17 33.60
LOCATION DESCRIPTION: Sonoma Mountain Road, Petaluma
APN: 136-140-013

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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33. Kenwood Marsh Restoration

LEAD: Sonoma Ecology Center
PARTNERS: Kenwood landowners, SCAPOSD and/or SLT, SCWA
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES: Channel modification or creation,

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DESCRIPTION: This project would identify areas within the historic marsh that can be restored as wetland and possible reconnection to Sonoma Creek or augmented for groundwater recharge. Additional benefits of reestablishing the marsh-stream connection could include significant restoration of hydrologic function, flood control, erosion control, groundwater recharge and increased dry season flows.

Kenwood marsh historically provided a very large, habitat rich wetland area that also served as significant groundwater recharge site in Sonoma Valley. The proximity to Sonoma Creek and other tributaries suggests that it also served as important off-stream refugia for Steelhead trout, other fish and aquatic species. The Sonoma Creek alluvial fan was once a highly diverse wetland complex with multiple distributary channels, wetlands and critical groundwater recharge areas that are now hydrologically isolated and/or impaired.

This project would identify areas within the historic marsh and alluvial fan that can be restored as wetland and possible reconnection to Sonoma Creek or augmented for groundwater recharge. Additional benefits of reestablishing the marsh/alluvial fan/stream connection could include significant restoration of hydrologic function, flood control, erosion control, groundwater recharge and increased dry season flows.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Historic extent of Kenwood Marsh, including hydrologic connections to adjacent streams
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: No
SUBMITTER: Caitlin Cornwall

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34. Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project

LEAD: Sonoma Resource Conservation District
PARTNERS: San Francisco Estuary Institute; Landowners
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Landscape alteration
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation

DESCRIPTION: This project will build off of a current historical hydrology study in the Petaluma River Watershed that will identify watershed areas with the greatest potential for restoration and enhancement projects leading to the most optimal benefits. The proposed project will consist of locating an upland site within identified areas in the Petaluma River Watershed where a multi-benefit restoration project will support flood alleviation, stormwater retention, groundwater infiltration, and/or wetland restoration goals. This project will also include implementation of restoration designed for the site.

A significant amount of stream modification has occurred through time within the Petaluma River Watershed due to urbanization, development, land reclamation, and re-routing creeks to alleviate flooding. These changes have changed the way water flows through this system and using historical records can help to guide future restoration opportunities to locate projects in areas where they are most likely to succeed.

The goal of this proposed work is to use findings from the Petaluma Historical Hydrology Study (in production) to identify a multi-benefit restoration project location within the Petaluma River Watershed. Funding would be used to design, permit, and implement the proposed multi-benefit project to address some or all of the following system benefits: flood alleviation, groundwater recharge, stormwater retention, and/or wetland and riparian habitat restoration.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Exact project locations are to be determined. Project location(s) will be identified within the Petaluma River Watershed for the development of multi-benefit restoration projects to provide flood alleviation, stormwater retention, groundwater recharge, an
APN: not supplied

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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35. Lower Watershed Flood Plain Restoration in Freshwater Streams

LEAD: Not identified.
PARTNERS: RCD, SLT, SCWA, SEC, TPW
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Channel modification or creation, Revegetation

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DESCRIPTION: This project would plan and implement reconnecting streams to the flood plain, restore vegetation, and reestablish hydrologic function of the creek and tideland complex between the City of Sonoma and Highway 121.

Streams in the lower watershed have been straightened and devegetated, and are now incised and disconnected from their historic flood plain and the tideland/estuary complex, resulting in habitat loss and increased flooding upstream and downstream. This project would plan and implement the most appropriate means to reconnect streams to the flood plain, restore vegetation, and reestablish hydrologic function of the creek/tideland/estuary complex between the City of Sonoma and Highway 121. This would restore natural hydrology and reduce flooding near properties in this area.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Parcels within 10 feet of streams, between City of Sonoma and 121
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Mixed Public/Private
COMMUNICATION WITH PROJECT LEAD: No
SUBMITTER: Caitlin Cornwall

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36. Upper Sonoma Creek Flood Management and Habitat Restoration

LEAD: Sonoma Ecology Center
PARTNERS: Kenwood Homeowners
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Channel modification or creation, Basin, Revegetation

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DESCRIPTION: Sonoma Ecology Center and Upper Kenwood homeowners will work on developing projects to address flood management solutions, water conservation, stormwater infiltration, and habitat enhancement along this reach of Sonoma Creek.

Upper Sonoma Creek and its riparian areas pass through a series of residential properties that have experienced increased flooding since the channel was fixed along its alluvial fan and sediment buildup removal was stopped. Also in this area, and downstream of the fan, residential and agricultural development has encroached on riparian areas, adjacent floodplain, and historic wetland and marsh, and has increased demand for surface and groundwater, which has reduced its availability for salmon, steelhead, and other listed species that occupy the area for one or more of their life stages. SEC conviened interested local residents to explore options to improve these conditions, and with partners including SCWA, developed studies that reviewed and analyzed historic and current data to identify options to reduce flooding and related property damage, improve and restore habitat, and increase infiltration and recharge. One option to reduce flooding was prioritized for further analysis and design and was found to be unworkable due to potential downstream impacts. Other options remain and require further development and designs. Numerous small scale projects could be developed and implemented to cumulatively improve habitat and attenuate flood flows.

Project components will include all or some of the following: continued outreach to residents and other stakeholders; alternatives development including conceptual designs, initial costs, evaluation by residents and stakeholders; construction of phased elements such as detention basins, expanding channel and floodplain width, winter stormwater occupation of ag lands, vegetation removal and replacement; and invasive weed removal and revegetation of riparian areas.

LAT: 38.4375 **LONG:** -122.54663
LOCATION DESCRIPTION: Sonoma Creek and floodplain, between Kenwood Marsh and Sugarloaf Ridge State Park
APN: not supplied

SOURCE: Sonoma Ecology Center
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: no
SUBMITTER: Minona Heaviland

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37. Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project

LEAD: Sonoma Resource Conservation District
PARTNERS: Landowner
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Capture for use
ADDITIONAL MANAGEMENT ACTION TYPES: Basin, Swales/Filter strips, Revegetation

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DESCRIPTION: The first component of this multi-benefit project will implement a rainwater catchment system to offset well water use and reduce the local hydrograph peak. The second component is a vegetated swale or detention basin to capture and temporarily store stormwater, enhancing groundwater infiltration while also reducing the peak of the hydrograph.

This project is located on a squab farm that uses approximately 200,000 gallons of water per year. The existing squab barns will be retrofitted with gutters and underground plumbing to allow the capture of approximately 83,263 gallons of rainwater per year. The rainwater will be stored in a tank(s) located adjacent to the squab barns.

To the south of the squab barns is a large open area that will be configured to detain stormwater in either a series of vegetated bio-swales or a detention basin. The size and gradient of the property limits the size of the detention basin, however there is room to accommodate a 228,000 gallon detention basin on the south end of the property. By slowing the stormwater, the bio-swale or detention basin will allow infiltration of stormwater into the ground and reduce the peak of the hydrograph. The vegetated swale or detention basin will be vegetated with native grasses, tree, and shrub species which will provide habitat for birds and small mammals.

LAT: 38 24 24.51 **LONG:** 122 41 88.80
LOCATION DESCRIPTION: Acacia Avenue, Sonoma
APN: 135-042-004

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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38. Sonoma Mountain Institute Rainwater Catchment Project

LEAD: Sonoma Resource Conservation District
PARTNERS: Sonoma Mountain Institute
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Capture for use
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: Rainwater will be captured from the roof of a utility building to provide water for cattle on the property. This will reduce the amount of groundwater pumped from a nearby well.

This project is located on a cattle ranch operated by Sonoma Mountain Institute (SMI). SMI currently uses a water trailer to haul about 1,000 gallons of water per day in the dry season for the cattle. The potential for capturing rainwater from the roof of the building is 218,161 gallons in a dry year with 18" of rain. The preferred site for the rainwater tank is constrained by slope and vegetation project, however, with minimal grading the site can accommodate a 61' diameter water tank that is capable of holding 210,000 gallons of rainwater. This project would reduce the amount of groundwater that is extracted by replacing it with stored rainwater. The project will also reduce the peak of the local hydrograph by capturing rainwater from an impervious surface and storing it in a tank. Overflow from the system will be directed to an underground infiltration sump that will allow the overflow rainwater to percolate into the soil.

LAT: 38 16 03.64 **LONG:** 122 33 41.30
LOCATION DESCRIPTION: Manor Lane, Petaluma
APN: not supplied

SOURCE: Sonoma Resource Conservation District
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jeff Schreiber

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39. Olsen Park Detention and Trash Capture

LEAD: City of Sonoma
PARTNERS:
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES: Infrastructure, Channel modification or creation

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DESCRIPTION: This project reduces flooding in Sonoma while improving water quality in Fryer Creek and Sonoma Creek. This project diverts stormwater from the existing municipal separate storm sewer system into an underground detention basin beneath Olsen Park. Pretreatment of the diverted flows using a baffle-style flow-through filter will capture trash and settle out sediment, improving water quality in Fryer Creek and Sonoma Creek. Underground detention will provide peak flow reduction upstream of modeled flooding areas along the Fryer Creek channel north of West MacArthur Street in Sonoma.

This project provides flood reduction, water quality protection, and enhanced recreation opportunities within the Sonoma Creek and Fryer Creek watersheds.
The project reduces flooding by diverting peak flows into an underground stormwater detention basin beneath Olsen Park in northwest Sonoma. The underground detention basin would be situated upstream of flood areas along Fryer Creek modeled in the City of Sonoma Storm Drain Master Plan.

The project protects water quality by providing trash capture for a 154-acre watershed which spans urbanized areas known to generate trash in stormwater runoff across City of Sonoma and County of Sonoma jurisdictions.

The underground detention proposed by this project would be covered by City park land. The existing Olsen Park turf and basketball courts would be temporarily removed to facilitate construction of the underground detention basin; however, the Olsen Park facilities would subsequently be replaced with new and improved facilities designed with extensive public input.

LAT: 38 17 55.60 **LONG:** 122 28 9.55
LOCATION DESCRIPTION: not supplied
APN: 127-670-057

SOURCE: City of Sonoma
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Chris Pegg

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40. First Street West Green Street and Flood Reduction Project

LEAD: City of Sonoma
PARTNERS:
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Infrastructure
ADDITIONAL MANAGEMENT ACTION TYPES: Swales/Filter strips, Basin, Revegetation

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DESCRIPTION: The project reduces flooding along First Street West, improves water quality in Fryer Creek, and enhances bicycle and pedestrian safety along the primary road connecting Sonoma's two largest parks. These benefits are achieved by: providing high-flow bypass for a flood-prone roadside ditch, enhancing the habitat and pollution-reduction capacity of the road-side ditch by re-configuring it as a bio-swale, providing underground stormwater detention, and replacing non-native trees in the project area that shed large bark pieces that obstruct drainage.

The project provides benefits in three areas: flood reduction, water quality improvement, and enhanced recreation opportunities.

This project reduces flooding by providing 3 acre-feet of underground stormwater detention with potential recharge under City-owned property at or near Depot Park. This underground detention would be designed to reduce peak flows downstream. Flood reduction would also be accomplished by providing a high-flow bypass for a small road-side ditch along First Street West. The high-flow bypass would allow low flows to continue through the roadside ditch to preserve vegetation and habitat therein, while shunting high flows into an underground conduit, protecting the surrounding neighborhood and roadway from overbank flooding and preventing high flows from causing erosion and damage to vegetation in the road-side ditch. The project also removes non-native Eucalyptus trees in the project which shed bark and other organic matter which reduces the capacity of the downstream storm drain system and future trash capture devices, and replaces them with a native species without bark-shedding qualities.
The project would enhance water quality by reconfiguring the existing roadside ditch that captures runoff from First Street West into a bioswale with both detention and treatment strata and additional resistance to surface erosion than the existing road-side ditch. The bioswale footprint would be approximately 3600 square feet.

This project provides a community recreation benefit by enhancing the bicycle and pedestrian connection between Depot Park and The Plaza. The existing conditions provide no shoulder for pedestrians or cyclists to use along the northbound lane. The project also enhances pedestrian, cyclist, and motorist safety during storms when existing over-bank flows along the roadside ditch obscure the road edge. These conditions would not occur with the installation of a high-flow bypass.

LAT: 38 17 44.14 **LONG:** 122 27 29.55
LOCATION DESCRIPTION: not supplied
APN: not supplied

SOURCE: City of Sonoma
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Chris Pegg

41. Broadway and Leveroni Road Flood Reduction and Trash Capture Project

LEAD: City of Sonoma
PARTNERS: The project would likely involve heavy collaboration with CalTrans.
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Infrastructure
ADDITIONAL MANAGEMENT ACTION TYPES: Swales/Filter strips

DESCRIPTION: This project addresses flooding along the Broadway corridor in Sonoma and captures and removes trash in stormwater runoff from the heaviest trash generating areas in the City. The project reduces flooding along Broadway and surrounding areas by eliminating a constriction in the existing storm drain conduit just north of the Broadway/Leveroni Road intersection in Sonoma. The project removes trash from a large high-trash-generation urban sub-watershed through installation of a large hydro-dynamic separator just south of the Broadway/Leveroni Road intersection. The project would also include minor frontage improvements, including Low-Impact-Development features on the northeast and southeast corners of the intersection. These improvements would enhance pedestrian safety and provide treatment for runoff from the adjacent roadways.

The project provides flood reduction and water quality protection.
The project provides flood reductions along the Broadway corridor by eliminating a hydraulic constriction in the existing storm drain system just north of the Broadway/Leveroni Road intersection. The flood reduction resulting from this project would alleviate overbank flooding along the Broadway frontages of Sonoma Valley High School and Adele Harrison Middle School, providing additional safety to pedestrians and motorists accessing these facilities.
The project protects water quality by capturing trash in stormwater runoff from the highest-priority trash-generating subwatershed in Sonoma. This trash capture benefit would be accomplished by installing a large hydrodynamic separator (HDS) just south of the Broadway/Leveroni Road intersection.

The HDS and the flood-reducing storm drain improvements upstream would work synergistically. The reduction of overbank releases from upstream channels would prevent trash in stormwater runoff from bypassing the hydrodynamic separator during very large storms while simultaneously increasing hydraulic head upstream of the hydrodynamic separator, improving it's performance.

Additional water quality benefits would be realized by this project where green street frontage improvements at the Broadway/Leveroni intersection captured polluted stormwater runoff from the adjoining roadway. The public right-of-way currently features wide, unimproved shoulders. This project would improve these shoulders through installation of sidewalks and bio-retention areas, protecting pedestrian safety and receiving water quality simultaneously.

LAT: 38 16 32.92 **LONG:** 122 27 39.97
LOCATION DESCRIPTION: not supplied
APN: not supplied

SOURCE: City of Sonoma
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Chris Pegg

42. Lichau Creek Flood Mitigation and Detention Basin

LEAD: City of Petaluma
PARTNERS: SCWA, City of Rohnert Park, City of Penngrove
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Study, Basin

DESCRIPTION: This project will capture run-off from agricultural lands in either the Cold Springs Creek or Lichau Creek drainage areas, and provide additional flood detention volume from these drainage areas.

The Petaluma River is impaired by bacteria, in part, from run-off from agricultural lands. This project would improve water quality, ground water supply, and flood control benefits through use of an extended detention basin. Copeland Creek overflows in significant rain events >25 year storms, and an overfow volume, estimated between 300cfs and 1700cfs flows into Cold Springs Creek, and adds to the flooding experienced along Lichau, Willow Brook, and the Petaluma River down stream. This project would capture some of the peak volume and alleviate flooding downstream.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: The best location for this project would have to be determined from hydrological/hydraulic analysis and available land. It would be in the Lichau Creek or Cold Springs Creek drainage areas.
APN: not supplied

SOURCE: City of Petaluma
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jason Beatty

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43. City of Petaluma trash capture device pilot project

LEAD: City of Petaluma
PARTNERS:
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Infrastructure
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: This project would be a pilot project to install a large trash capture device in the storm drainage system. The main benefit would be to water quality.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: City of Petaluma
APN: not supplied

SOURCE: City of Petaluma
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jason Beatty

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44. Cougar Mountain Creek Riparian Restoration

LEAD: Sonoma Land Trust
PARTNERS: Caltrans, United States Fish and Wildlife Service San Pablo Bay National Wildlife Refuge
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Channel modification or creation
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Land management alteration

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DESCRIPTION: Riparian restoration along 975 feet of a creek located along State Route 37 at the base of Cougar Mountain. The creek is severely incised and devoid of vegetation. Project will fence, repair and potentially reroute creek.

Cougar Mountain Creek originates from springs and seeps on the flanks of Cougar Mountain to the north of State Route 37. Geographically, this area represents the southern flank of Sonoma Mountain and is part of an increasingly connected corridor extending from Sonoma Mountain to San Pablo Bay. A 2017 geomorphic and hydrologic analysis of the upper reaches of Cougar Mountain Creek concluded that major reconstruction/stabilization is inadvisable at this time due to active erosion, fault activity, and difficult access. However, restoration of the lower reach and reconfiguration of its route under State Route 37 would yield significant benefit to this stream, improve sediment delivery to the Baylands, and potentially provide greater access to wildlife seeking to pass under State Route 37.

Streamflow under SR- 37 is severely hampered by an undersized culvert that is 90% clogged with sediment due to its setting below the stream grade. Adjacent to the culvert is a large underpass through which water flows during storm events. This underpass is one of the few along the entirety of SR-37.

This restoration project would stabilize 975 feet of the lower reach of Cougar Mountain Creek to halt incision, route the creek away from the culvert and through the underpass. Consultation with Caltrans will be necessary if the stream is routed through the underpass. If Caltrans does not approve rerouting the stream, the project will simply stabilize the stream in the same manner and allow it to continue to flow toward the existing culvert. Cattle would be excluded from the lower reach and two upstream headcuts on an important tributary would be repaired. Sonoma Land Trust seeks funding for project management, final design, permitting, and project implementation.

LAT: 38° 8'42.67"N **LONG:** 122°27'32.46"W
LOCATION DESCRIPTION: not supplied
APN: not supplied

SOURCE: Sonoma Land Trust
CURRENT OWNERSHIP: Mixed Public/Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Julian Meisler

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45. Lakeville Creek Riparian Restoration

LEAD: Sonoma Land Trust
PARTNERS:
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Channel modification or creation
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Land management alteration

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DESCRIPTION: Restore 2/3 mile of Lakeville Creek, a tributary to the Petaluma River by reducing erosion, removing cattle, repairing headcuts, and bringing up channel bed.

Lakeville Creek meanders 2/3 of a mile across the open pasture of western Sears Point Ranch before crossing under Lakeville Highway and ultimately entering the Petaluma River-San Pablo Bay Estuary. Unrestricted cattle access has contributed to the absence of riparian vegetation, a deeply incised channel bed, unstable banks and active headcutting. Strong storms in recent years have resulted in rapid erosion of channel banks leaving the steam increasingly vulnerable to further failure.

Despite its current condition, Lakeville Creek has strong potential for restoration of both its channel and adjacent floodplain. A site analysis in winter 2017 yielded preliminary plans to raise the channel bed, stabilize the banks and restrict cattle access. The creek's headwaters originate to the north where lack of cattle grazing in recent decades has led to rapid colonization of riparian vegetation and provides a basis to formulate goals for Lakeville Creek. Sonoma Land Trust seeks funding for project management, final design, permitting, and project implementation.

LAT: 38° 8'51.81"N **LONG:** 122°28'55.87"W
LOCATION DESCRIPTION: Lower Petaluma RIver Watershed
APN: not supplied

SOURCE: Sonoma Land Trust
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: Yes
SUBMITTER: Julian Meisler

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46. Frog Creek Riparian Restoration

LEAD: Sonoma Land Trust
PARTNERS:
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Channel modification or creation
ADDITIONAL MANAGEMENT ACTION TYPES: Revegetation, Land management alteration

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DESCRIPTION: THis project will restore and enhance up to 6,000 feet of stream lacking any riparian vegetation and eroding and headcutting in multiple locations.

Frog Creek drains the largest sub-watershed on the Sears Point Ranch and, with its tributary streams, provides outstanding opportunities for relatively inexpensive enhancement of more than 6,000 feet of degraded creek. Sonoma Land Trust has already invested considerable funding for cattle exclusionary fencing, design and construction of three breeding ponds for the CA red-legged frog, and riparian planting within the primary drainage. However, most of the channel lacks riparian vegetation and head cutting threatens one of the frog ponds. CA red-legged frogs have been documented in this drainage.

In 2017, SLT completed a restoration plan outlining the most important actions for non-construction restoration work within this drainage (bio-engineering, fencing, irrigation, planting) and separately completed preliminary engineering plans to restore the primary headcut that currently threatens to reclaim the southern boundary of one of the frog breeding ponds. The accessibility of this site by vehicle, access to water, presence of existing fencing, and the relatively flat terrain of this site makes it a highly implementable project with a very strong likelihood of success.

LAT: 38° 8'48.62"N **LONG:** 122°28'27.99"W
LOCATION DESCRIPTION: Sears Point Ranch, Petaluma River Watershed
APN: not supplied

SOURCE: Sonoma Land Trust
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Julian Meisler

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47. Land Acquisition from willing seller in Lower Sonoma Creek

LEAD: Sonoma Land Trust
PARTNERS: U.S. Fish and Wildlife Service, Natural Resource Conservation Service, Sonoma RCD, Ducks Unlimited
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Land management alteration

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DESCRIPTION: SLT is working with willing landowners to acquire properties in Lower SOnoma Creek that will help alleviate flooding in Schellville and diked agricultural baylands to the south.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Lower Sonoma Creek
APN: not supplied

SOURCE: Sonoma Land Trust
CURRENT OWNERSHIP: not supplied
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Julian Meisler

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48. Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites

LEAD: City of Petaluma - Chelsea Thompson
PARTNERS: McKinley Elementary School, McDowell Elementary, Loma Vista Immersion Academy, McNear Elementary, Crossroads Day School, Petaluma Junior High, Casa Grande High School, Petaluma High School, Churches, Community Centers, Boys & Girls Clubs, Public Sites, et
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Capture for use, Swales/Filter strips, Education

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DESCRIPTION: Our intent is to convert under-utilized lawn at Petaluma City Schools, Churches, Community Centers and other public sites into multi-functional, educational landscapes where students can learn and interact with nature. These landscape transformations where appropriate, will include LID features to slow, spread and sink the rain, including rank tanks, swales and rain gardens. Daily Acts will complete these projects through hands-on community workdays with support from the City of Petaluma for materials costs and staff time. The objective is to educate residents on simple LID practices they can implement in their own landscapes to help reduce stormwater runoff. The ideal project site would be between 2,500-5,000 square feet, be located near a roofline or accessible downspout, experience flooding or runoff and/or be adjacent to a creek.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: No exact location has been identified for this project, but there are a number of potential partners listed below.
APN: not supplied

SOURCE: City of Petaluma & Daily Acts
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: Yes
SUBMITTER: Brianna Schaefer

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49. Santa Rosa Junior College Rain Gardens

LEAD: Teacher - David Kratzmann
PARTNERS: SRJC and City of Petaluma
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Capture for use
ADDITIONAL MANAGEMENT ACTION TYPES: Swales/Filter strips, Land management alteration, Education

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DESCRIPTION: The intention is to convert 7,000 square feet of lawn at the Petaluma SRJC campus into a multi-functional landscape that is harvesting rain, growing food and expanding habitat. This project will include the installation of above ground rain catchment, including rain gardens as overflow and a complete sheet mulching of the lawn, building the natural sponge. Daily Acts will complete this project through a series of hands-on community workdays with support from the City of Petaluma for materials costs and staff time. The objective is to educate residents, students and faculty on simple LID practices they can implement in their own landscapes to help reduce stormwater runoff. Educational signage will also be designed and installed to help inform the public of the many project components and benefits.

LAT: 38°16'10.5"N 122°38'05.3"W **LONG:** 122°38'05.3"W
LOCATION DESCRIPTION: Santa Rosa Junior College, Petaluma campus - the backside of the Physical Fitness Center closest to Campus Circle
APN: not supplied

SOURCE: SRJC & Daily Acts
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: Yes
SUBMITTER: Brianna Schaefer

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50. Rodgers Creeks Stormwater Detention

LEAD: Sonoma County Water Agency
PARTNERS:
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: The project objective is to detain storm water for flood protection and water quality benefits utilizing localized BMPS including those for vineyard management.

LAT: 38 15 58.3 **LONG:** -122 29 43.5
LOCATION DESCRIPTION: Temelec Area
APN: not supplied

SOURCE: Sonoma County Water Agency
CURRENT OWNERSHIP: Mixed Public/Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Susan Haydon

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52. Stormwater Detention on Multiuse Areas in Nathanson Creek

LEAD: Sonoma County Water Agency
PARTNERS: Sonoma Ecology Center, Sonoma Valley Unified School District
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Basin

DESCRIPTION: Project purpose is stormwater detention for flood control while providing multiple community and environmental benefits. The candidate sites are school fields.

LAT: 38 16 52.6 **LONG:** -122 27 24.3
LOCATION DESCRIPTION: Nathanson Creek
APN:

SOURCE: Sonoma County Water Agency
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Susan Haydon

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53. El Verano Area Stormwater Detention

LEAD: Sonoma County Water Agency
PARTNERS: Potential partner- So Co Regional Parks
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: Project goal is distributed scaled stormwater detention for flood control while providing multiple community and environmental benefits on public and private land.

LAT: 38 18 9.3 **LONG:** -122 29 36.1
LOCATION DESCRIPTION: not supplied
APN: not supplied

SOURCE: Sonoma County Water Agency
CURRENT OWNERSHIP: Mixed Public/Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Susan Haydon

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55. Equine Water Stewardship

LEAD: Michael Murphy, Equine Environmental Management Consulting
PARTNERS: San Francisco Regional Water Quality Control Board, Sonoma County Farm Bureau, + horse facility landowners and managers
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Programmatic
ADDITIONAL MANAGEMENT ACTION TYPES: Land management alteration

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DESCRIPTION: The project will build a team of equine water stewards to identify, prioritize and implement storm water improvements on their property in the Petaluma River Watershed. At least 24 horse facilities were identified as possible non-point sources of pollution by the Regional Water Quality Control Board. In the tradition of providing technical assistance to meet watershed management objectives, we will conduct workshops to provide educational assistance and material to teach conservation and best management practices resulting in an on-going ranch planning document. This process will consider diverse options to improve water quality and increase groundwater recharge while maintaining healthy and happy horses.

The project will begin a long-term program of stewardship assistance for equine managers and horse boarding landowners. Storm water management and riparian restoration will be critical to water quality compliance and groundwater sustainability in the Petaluma River basin. The proposed project components rapidly builds community awareness towards conservation practice implementation.

First, we will outreach and contact the 24+ equine facilities through direct mail. Additionally, broader notifications via an article in local horse journals and newsletters will utilize horse councils and clubs to educate managers and invite them to an introductory workshop. Previously completed project sites will be visited to assess effectiveness and help each participant start their ranch planning process. As managers become more familiar with storm water improvement practices, we will help landowners evaluate their properties and consider stewardship options for each site. Ranch plans will be completed for each equine facility with a list of future projects – partial design and conceptual agreement. Some storm water improvements may begin immediately depending upon the facility's resources, while others will take time and financial assistance.

Second, we will collaborate with the participating landowners and managers to setup an organized community network of equine environmental stewards. Many partnering organizations will assist, including the San Francisco Regional Water Quality Control Board and Sonoma County Farm Bureau. The group will be able to provide quality assurance and conduct self-monitoring of ranch plan priorities, project effectiveness and stream water quality and quantity. As future issues or concerns arise, the group will collaborate with knowledge gained from the workshop and writing of individual ranch plans. This newly formed group will be available to provide assistance to maintain and provide other equine facilities diverse options to

manage storm water and restore habitat while balancing manure management, erosion, sediment control, ranch drainage, recreation and healthy horses with the ultimate goal of keeping clean water clean.

To complete the project we will assemble an intricate database of best management practices implemented during this process and show future storm water improvement projects that will assist the recovery of the Petaluma River Watershed. The ranch planning approach ensures landowner participation and this interest and involvement by the landowner or manager will produce high quality restoration projects. We estimate about 20 completed or planned conservation practices from each facility that will yield approximately 500 documented total implementation and maintenance needs in our final storm water resource plan.

LAT: availble for 24+ horse boarding facilities in Petaluma River Watershed **LONG:** availble for 24+ horse boarding facilities in Petaluma River Watershed
LOCATION DESCRIPTION: Petaluma River Watershed
APN: 24+ horse boarding facilities in Petaluma River Watershed

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SOURCE: Equine Environmental Management
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: Yes
SUBMITTER: Michael Murphy

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56. Upper Lichau Creek Stormwater Detention

LEAD: Sonoma County Water Agency
PARTNERS: Coyote Family Farm, City of Rohnert Park, City of Petaluma, County of Sonoma TPW, Sonoma State University
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: The proposed detention basin would provide stormwater detention and groundwater recharge on a parcel in the upper Lichau Creek watershed. The basin would primarily detain peak flows from the upper watershed flowing into Lichau Creek. As a secondary benefit, the project could potentially help to alleviate excess outflow from Copeland Creek into the Petaluma River Watershed during a major storm event.

LAT: 38 20 2.8 **LONG:** -122 38 28.6
LOCATION DESCRIPTION: not supplied
APN: not supplied

SOURCE: Sonoma County Water Agency
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Susan Haydon

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57. Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed

LEAD:
PARTNERS: City of Petaluma, Petaluma High School, Casa Grande High School, McNear Elementary School, Grant Elementary School, Petaluma Junior High School, Kenilworth Junior High School, Cherry Valley Elementary School, McDowell Elementary School, McKinley Elementary
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Education
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: The purpose of this project is to educate students in the Petaluma Watershed regarding the indicators, causes and solutions to pollution in the Petaluma Watershed. As part of this project students will map and monitor storm drains in the City of Petaluma and participate in an effort to put placards on unmarked stormdrains; test and monitor water quality at multiple locations within the City and educate students about how their actions affect the Petaluma Watershed.

The mission of the Watershed Classroom is to support the implementation of exceptionally engaging curriculum about the Petaluma River and Watershed to educate youth in Petaluma about their place in our environment, how their decisions and actions affect their environment and inspire youth to conserve and celebrate the Petaluma Watershed. Now in its fifth year of implementation the program involves 35 teachers and approximately 1500 students ranging from 1st grade through high school. This project will focus on developing resources and curriculum directly related to storm water and pollution education and monitoring and mitigation.

The purpose of this project is to educate students about the causes of pollution in the Petaluma River and its tributaries, collect data to contribute to the understanding of these causes and undertake actions to mitigate pollution due to storm water. Education will consist of curriculum based on how a watershed works, how the City of Petaluma impacts the Petaluma Watershed through storm water run-off with a look at two of the most high-risk pollutants: trash and bacteria; and a look at what the indicators for pollution are.

The project will utilize monitoring to better understand how storm water pollution impacts the Petaluma River. Students will monitor water quality through testing at 12 locations throughout the City of Petaluma, including tributaries of the Petaluma River and the main river channel. Students will also work with the City of Petaluma to map all storm drains that are unmarked, and monitor trash entering the waterway through storm drains in order to improve trash capture. Water Quality data will be tracked and made available to the public through our Watershed Atlas.

Storm water pollution mitigation will focus on the development of a placard for storm drains to educate the community. Students will work with the City of Petaluma to put placards on all unmarked storm drains and create campaigns to educate their communities about storm water pollution. Students will also work to design trash capture devices and work with the City to monitor trash storm drain outfalls.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Petaluma Watershed, primarily within Petaluma City limits
APN: not supplied

SOURCE: Friends of the Petaluma River
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: Yes
SUBMITTER: Stephanie Bastianon

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58. Carriger Creek Stormwater Detention

LEAD: Sonoma County Water Agency
PARTNERS: Sonoma Ecology Center
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: Project objective is to detain stormwater for flood protection and erosion prevention while providing water quality and community benefits.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: not supplied
APN: not supplied

SOURCE: Sonoma County Water Agency
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Susan Haydon

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59. Storm Water Capture & Re-Use at Steamer Landing Park

LEAD:
PARTNERS: City of Petaluma, Daily Acts, Weaving Earth
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Capture for use
ADDITIONAL MANAGEMENT ACTION TYPES: Swales/Filter strips, Education,

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DESCRIPTION: This is a demonstration project to educate the community about Slow It, Spread It, Sink It while practicing stormwater BMPs. The project will create a storm water capture system for irrigation re-use and a storage system around the David Yearsley River Heritage Center at Steamer Landing Park and incorporate biodynamic swales on the property to direct stormwater for beneficial re-use.

The purpose of this project is to re-use stormwater and create retention features at Steamer Landing Park to benefit the community of Petaluma, its people and wildlife. This project has three objectives: Re-use stormwater for irrigation purposes, retain stormwater to improve water quality in the Petaluma River, and educate the community about the importance of stormwater BMPs by creating a demonstration project at a public park with informational displays.

Friends will create a system to capture stormwater as it runs off the David Yearsley River Heritage Center. The system will irrigate native plants on the property and water educational gardens around the structure. Excess stormwater will be funneled into enhanced drainage areas with layers of filter materials to slow the spread of stormwater.

The second part of this project will focus on managing stormwater throughout the Park. This will be done with the use of biodynamic swales in order to funnel stormwater into vegetated areas to benefit native habitat and slow the runoff into the River.

The finished product will include an informational display outlining how the system works, why it is beneficial for local water quality and conservation, and how community members can do similar projects.

LAT: 38 15 2.1 **LONG:** 122 37 56.3
LOCATION DESCRIPTION: Steamer Landing Park, 6 Copeland Avenue, Petaluma, CA 94952
APN: not supplied

SOURCE: Friends of the Petaluma River
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: not supplied
SUBMITTER: Stephanie Bastianon

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60. Sonoma Creek Stormwater Capture Project

LEAD: North Bay Agriculture Alliance
PARTNERS: State of California (landowner); Kiser Brothers (Landowner); SCWA/SVCSD; North Bay Water District.
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES: Capture for use, Study,

DESCRIPTION: Capture and store up to 10,000 AF of stormwater, and distribute it to agricultural reservoirs and groundwater recharge fields, and release some as a flood control measure when appropriate.

A unique opportunity exists where as much as 10,000 AF (almost equivalent of the annual total groundwater extraction in the watershed) of winter storm runoff can be captured and released for irrigation, groundwater recharge, and flood control, without affecting the upstream environment. Camp Two (APN 128-491-050/051/03/04), owned by the State of California and operated by the State Fish & Wildlife, has an total area of 886 acres, most of which could be used for this project if the State agrees. Camp Three (APN 128-491-013/014/015) is a private hay and grazing field owned by Kiser Brothers. It has a diked area of 1456 acres, and all of which could be used to take water up to about 8-ft. high (The levee height is about 12 ft.) The owner is willing to negotiate any reasonable deal.

The storm runoff down to Camp Two and Camp Three is observed to be fresh (sweet) water untainted by the saline Bay water. Either location is less than 4 miles from the Sonoma Valley County Sanitation District's treatment plant, or only about a mile from its Ramal Road holding ponds. These facilities could serve as the distribution hubs for irrigation and recharge destinations.

This is still in a "Pre-planning" stage, requiring engineering, economic, and legal feasibility studies before proceeding to planning. However, the potential merits are enormous. It could be the only sure way to guarantee the groundwater sustainability for the Sonoma Creek watershed.

LAT: Between 38 13 35 N and 38 11 18 N **LONG:** Between 122 26 40 W and 122 23 25 W
LOCATION DESCRIPTION: Camp Two or Camp Three
APN: Camp Two: APN 128-491-050/051/03 and possibly 04; Capm Three: APN 128-491-013/014/015

SOURCE: North Bay Agriculture Alliance
CURRENT OWNERSHIP: Mixed Public/Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Tito Sasaki, President, NBAA

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61. Adopt A Creek Project

LEAD:
PARTNERS: Sonoma County Water Agency, City of Petaluma, Petaluma High School, Petaluma Poultry, Petaluma Rotary Club, McNear Elementary, McDowell Elementary School, Kenilworth Junior High School, McKinley Elementary School, World Centric.
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Study
ADDITIONAL MANAGEMENT ACTION TYPES: Education

DESCRIPTION: This purpose of this project is to improve water quality by involving citizen groups in the stewardship of local creeks and educating the larger community about stormwater and pollution prevention BMPs. The objective is to have approximately 10 sites in the watershed that are adopted to facilitate creek cleanups, monitoring and volunteer projects to enhance riparian habitat.

This purpose of this project is to improve water quality by involving citizen groups in the stewardship of local creeks and to educate the community about they can initiate household actions to improve local water quality. The objective is to create 10 sites that include a public access point and at least .5 miles of creek bed which will be adopted by local business, schools, and civic groups. Participants will engage in activities to improve water quality and awareness of stormwater BMPs.

Participating entities will be paired with a creek that is pre-designated based on past River Cleanup data. Friends has been tracking trash removed from at least 16 sites within the Watershed and will work with SCWA and the City of Petaluma to designate approximately 10 sites for 'adoption'. Friends will then work with the 'adopters' to facilitate at least two annual cleanups, monitoring, and volunteer projects to enhance riparian habitat.

This project will result in better water quality in the Petaluma River by removing trash and debris from its tributaries and will help in the long range planning for restoration and habitat enhancement projects by collecting data and monitoring creek conditions. Monitoring activities will include water testing, surveying plant and animal life, recording water levels and flows and highlighting any obstructions, barriers or other issues affecting water quality and habitat health.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Petaluma Watershed
APN: not supplied

SOURCE: Friends of the Petaluma River
CURRENT OWNERSHIP: Public
COMMUNICATION WITH PROJECT LEAD: not supplied
SUBMITTER: Stephanie Bastianon

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62. Petaluma River Dredging and Beneficial Re-use of dredge material

LEAD:
PARTNERS: USACE, Ducks Unlimited, Petaluma Wetlands Alliance, SCWA, City of Petaluma Downtown Business association, Petaluma Yacht Club, local businesses using river for commerce, Petaluma Small Craft Association.
WATERSHED: Petaluma

MAIN MANAGEMENT ACTION TYPE: Channel modification or creation
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: This project would fund a partnership with the USACE for dredging of the Petaluma River, which reduces flood risk, and the benificial re-use of the dredge spoils to create or enhance wetland habitat in Sonoma County.

While the USACE is responsible for dredging the Petaluma River under federal mandates, the funding for this action is inconsistent. This leaves the City of Petaluma at risk for increased flooding as the river has less capacity when not dredged. The City of Petaluma is responsible for maintaining the Shollenberger dredge spoils disposal site, removing decanted spoils materials, as well as dredging the Petaluma Marina. The Payran Reach Flood Control project which will need future sediment removal to maintain flood capacity. The dredged material from these areas can be beneficially re-used in the watershed to enhance subsided tidal wetlands and address sea-level rise impacts on the Sonoma County tidal marshes, such as Skaggs Island. The economic impacts of dredging the Petaluma River and the marina are well documented. The impacts from flooding if the dredge depth is not maintained can be documented as well.

LAT: not supplied **LONG:** not supplied
LOCATION DESCRIPTION: Petaluma River, Shollenberger dredge disposal site, and tidal wetland enhancement site to be determined.
APN: not supplied

SOURCE: City of Petaluma
CURRENT OWNERSHIP: Mixed Public/Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Jason Beatty

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63. Circle Bar Ranch Groundwater Recharge

LEAD: Sue Smith, Circle Bar Ranch
PARTNERS:
WATERSHED: Sonoma

MAIN MANAGEMENT ACTION TYPE: Basin
ADDITIONAL MANAGEMENT ACTION TYPES:

DESCRIPTION: This project would divert freshwater flow from a small un-named tributary of Sonoma Creek into an agricultural field for groundwater recharge. The agricultural field would be modified by creating berms along the open portions of the perimeter to create storage capacity.

LAT: 38.207451 **LONG:** -122.443334
LOCATION DESCRIPTION: Circle Bar Ranch
APN: not supplied

SOURCE: ESA with Sue Smith
CURRENT OWNERSHIP: Private
COMMUNICATION WITH PROJECT LEAD: I represent the project proponent and can speak on its behalf.
SUBMITTER: Melissa Carter

Scoring Details

The following tables provide the scoring details for the initial and detailed quantification results. Results are organized by quantification level, watershed, and benefit criteria.

Initial Quantification

Initial quantification of each project was completed for each benefit using the answers provided by the project proponent. Initial quantification answers were reviewed by the project team for completeness and reasonableness using the project descriptions provided.

A project received two (2) points for each main benefit addressed and one (1) point for each additional benefit addressed. The total points received for each benefit category were then summed and used to calculate the fraction of total possible points achieved. The total fraction was then multiplied by a benefit weighting factor of 10 to normalize values across the benefit categories. The adjusted values were then summed to produce a total initial score. The maximum possible initial quantification score is fifty (50) points. Additional details can be found in Section 5.3.

Detailed Quantification

Detailed quantification was completed using a combination of applicant-submitted information and results derived by analysis. Project data and information submitted by the applicants for detailed quantification was reviewed by the project team for agreement with initial quantification answers, completeness and reasonableness using the project descriptions provided, and consistency across projects.

In order to translate the quantified values into a numeric score, scoring parameters were established for each criteria based on a combination of results calculated and best judgement. Detailed quantification scoring of each project was completed for each benefit using adopted parameters and thresholds. A project received between one and three (1-3) points depending on the quantified values, or zero (0) points if detailed quantification was not possible. The total points received for each benefit were then summed. The maximum possible detailed quantification score is eighty-one (81) points. Additional details can be found in Section 5.4.

				Water Quality Benefit								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**2.2 Does the project address one or more of the constituents covered under a TMDL or 303(d) listing for either Sonoma Creek or Petaluma River through increased filtration and/or treatment? (Main Benefit)**	2.2 Does the project divert stormwater through infiltration and/or evapotranspiration?	2.3 Does the project enhance groundwater quality?	2.4 Does the project reduce non-point source pollution?	2.5 Does the project reestablish natural water drainage and treatment?	2.6 Does the project incorporate a strategy(ies) or BMP(s) previously identified in current TMDL, Basin Plan, Salt and Nutrient Management Plan, NPDES MS4 permit, or other locally-relevant water quality planning document or guidance manual?	2.7 Does the project address water quality through source reduction or treatment in a high priority drainage area based on prior assessment?	2.8 Does the project result in reduced mixing of stormwater and wastewater?	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	2	1	1	1	1	1	0	0	7	7.8
2	Petaluma	Washington Creek Enhancement	City of Petaluma	2	1	0	1	1	0	0	0	5	5.6
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	2	1	0	0	1	0	0	0	4	4.4
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	2	1	0	1	1	0	0	0	5	5.6
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	2	1	1	1	1	1	1	0	8	8.9
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	2	1	0	0	0	0	0	0	3	3.3
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	2	1	1	1	1	0	0	0	6	6.7
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	2	1	0	1	1	1	1	0	7	7.8
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	0	1	1	1	0	0	0	0	3	3.3
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	2	1	1	1	0	0	0	0	5	5.6
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	0	1	1	1	0	0	0	0	3	3.3
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	2	0	0	1	1	0	0	0	4	4.4
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	2	1	0	1	1	1	0	0	6	6.7
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	1	1	0	0	1	3	3.3
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	2	1	1	1	0	0	1	0	6	6.7
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	2	1	1	1	0	1	0	0	6	6.7
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	2	1	1	1	1	1	1	0	8	8.9
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	0	0	0	1	0	1	0	0	2	2.2

				Water Quality Benefit								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**2.2 Does the project address one or more of the constituents covered under a TMDL or 303(d) listing for either Sonoma Creek or Petaluma River through increased filtration and/or treatment? (Main Benefit)**	2.2 Does the project divert stormwater through infiltration and/or evapotranspiration?	2.3 Does the project enhance groundwater quality?	2.4 Does the project reduce non-point source pollution?	2.5 Does the project reestablish natural water drainage and treatment?	2.6 Does the project incorporate a strategy(ies) or BMP(s) previously identified in current TMDL, Basin Plan, Salt and Nutrient Management Plan, NPDES MS4 permit, or other locally-relevant water quality planning document or guidance manual?	2.7 Does the project address water quality through source reduction or treatment in a high priority drainage area based on prior assessment?	2.8 Does the project result in reduced mixing of stormwater and wastewater?	Points	Score
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	2	1	0	1	1	1	0	0	6	6.7
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	2	0	0	1	0	1	1	0	5	5.6
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	0	1	0	1	1	1	0	0	4	4.4
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	2	1	0	1	1	0	0	0	5	5.6
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	2	1	0	1	1	1	0	0	6	6.7
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	0	1	0	0	0	0	0	0	1	1.1
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	0	0	0	0	0	0	0	0	0	0.0
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	2	1	1	1	1	1	1	1	9	10.0
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	2	1	0	0	1	1	1	0	6	6.7
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	2	0	1	1	0	1	1	0	6	6.7
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	2	1	0	1	0	1	0	0	5	5.6
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	0	0	0	1	1	0	1	0	3	3.3
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	0	0	0	0	0	0	0	0	0	0.0

				Water Supply							Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**3.2 Does the project collect and store or divert stormwater above ground for potable or non-potable use? (Main Benefit)**	**3.2 Does the project infiltrate stormwater into a water supply aquifer? (Main Benefit)**	**3.3 Does the project infiltrate stormwater into a non-water supply aquifer?(Main Benefit)**	**3.4 Does the project enhance water supply reliability through means other than storage, diversion, or infiltration of stormwater (e.g., water conservation)? (Main Benefit)**	**3.5 Does the project further conjunctive use management through means other than direct recharge of stormwater? (Main Benefit)**	3.6 Has the project been previously identified as a water supply/conservation project in any watershed planning document?	3.7 Does the project produce increased water use efficiency (i.e., water conservation)?	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	0	2	0	0	0	0	0	2	1.7
2	Petaluma	Washington Creek Enhancement	City of Petaluma	0	2	0	0	0	0	0	2	1.7
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	0	0	2	0	0	0	0	2	1.7
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	0	2	0	0	0	0	0	2	1.7
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	2	2	2	0	0	0	0	6	5.0
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	2	0	0	0	2	0	1	5	4.2
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	0	2	2	0	0	0	0	4	3.3
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	2	0	0	0	0	2	1.7
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	0	2	2	0	0	0	0	4	3.3
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	0	2	2	0	0	0	0	4	3.3
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	0	2	2	0	0	0	0	4	3.3
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	0	0	2	0	0	0	0	2	1.7
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0.0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	2	2	2	2	0	0	1	9	7.5
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	2	0	2	2	2	0	1	9	7.5
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	2	0	2	0	0	0	0	4	3.3
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0.0

Initial Qualifications Results - Petaluma Watershed - Scoring Details

				Water Supply							Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**3.2 Does the project collect and store or divert stormwater above ground for potable or non-potable use? (Main Benefit)**	**3.2 Does the project infiltrate stormwater into a water supply aquifer? (Main Benefit)**	**3.3 Does the project infiltrate stormwater into a non-water supply aquifer?(Main Benefit)**	**3.4 Does the project enhance water supply reliability through means other than storage, diversion, or infiltration of stormwater (e.g., water conservation)? (Main Benefit)**	**3.5 Does the project further conjunctive use management through means other than direct recharge of stormwater? (Main Benefit)**	3.6 Has the project been previously identified as a water supply/conservation project in any watershed planning document?	3.7 Does the project produce increased water use efficiency (i.e., water conservation)?	Points	Score
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	2	0	0	0	0	0	0	2	1.7
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	0	0	2	0	0	0	0	2	1.7
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	0	0	0	0	0	0	0	0	0.0
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	0	0	2	0	0	0	0	2	1.7
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	0	0	2	0	0	0	0	2	1.7
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	0	0	2	0	0	1	0	3	2.5
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	2	2	0	0	0	0	0	4	3.3
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	2	2	0	0	0	0	1	5	4.2
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	2	2	2	2	2	1	1	12	10.0
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	0	2	0	0	0	0	0	2	1.7
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	0	0	0	0	0	0	0	0	0.0
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	2	0	0	2	0	0	1	5	4.2
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	0	0	0	0	0	0	1	1	0.8
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	0	0	0	0	0	0	0	0	0.0

Initial Qualifications Results - Petaluma Watershed - Scoring Details

				Flood Management				Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**4.2 Does the project provide peak flood flow and/or volume reduction? (Main Benefit)**	4.2 Has modeling been completed to ensure detention will not result in increased flooding due to timing considerations?	4.3 Does the project reduce a flooding problem known or anticipated to occur locally?	4.4 Was the project previously identified to reduce flood risk in a local flood management plan, master plan, or watershed plan?	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	2	0	1	0	3	6
2	Petaluma	Washington Creek Enhancement	City of Petaluma	2	0	1	0	3	6
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	2	0	1	1	4	8
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	2	0	1	1	4	8
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	2	0	1	0	3	6
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	2	0	0	0	2	4
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	2	0	0	0	2	4
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	2	0	1	1	4	8
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	2	0	0	0	2	4
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	2	0	0	0	2	4
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	2	0	0	0	2	4
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	2	0	1	0	3	6
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	2	0	0	0	2	4
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	2	0	1	0	3	6
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	2	0	0	0	2	4

Initial Qualifications Results - Petaluma Watershed - Scoring Details

				Flood Management				Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**4.2 Does the project provide peak flood flow and/or volume reduction? (Main Benefit)**	4.2 Has modeling been completed to ensure detention will not result in increased flooding due to timing considerations?	4.3 Does the project reduce a flooding problem known or anticipated to occur locally?	4.4 Was the project previously identified to reduce flood risk in a local flood management plan, master plan, or watershed plan?	Points	Score
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	2	0	1	1	4	8
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	2	0	0	0	2	4
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	2	0	1	1	4	8
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	0	0	0	0	0	0
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	2	0	0	0	2	4
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	2	0	0	0	2	4
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	2	0	0	0	2	4
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	0	0	0	0	0	0
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	0	0	0	0	0	0
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	2	1	1	1	5	10
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	2	0	0	1	3	6
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	2	0	0	0	2	4
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	2	0	0	0	2	4
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	0	0	0	0	0	0
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	2	0	1	1	4	8

				Environmental							Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**5.2 Does the project conserve, create, or enhance wetlands, aquatic, and/or riparian habitat? (Main Benefit)**	**5.2 Does the project increase streamflow during low flow season for benefit of habitats and endangered/threatened species? (Main Benefit)**	**5.3 Does the project create urban green space? (Main Benefit)**	5.4 Does the project re-establish the natural hydrograph (e.g., slowing in timing of peak flow, conversion of impervious area to pervious)?	5.5 Does the project improve water temperature for the benefit of habitats and endangered /threatened species?	5.6 Does the project reduce energy use or GHG emissions, or increase carbon sinks?	5.7 Was the project previously identified in conservation, restoration, watershed management, urban greening and/or other watershed-based plan?	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	2	2	2	1	0	0	0	7	7
2	Petaluma	Washington Creek Enhancement	City of Petaluma	2	2	2	1	1	0	0	8	8
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	2	0	2	1	0	0	0	5	5
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	2	0	2	1	0	0	0	5	5
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	2	2	2	1	1	1	1	10	10
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	2	0	0	0	0	1	0	3	3
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	2	2	0	1	1	1	1	8	8
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	2	0	0	1	0	1	1	5	5
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	0	0	0	1	0	0	1	2	2
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	0	0	0	1	0	0	1	2	2
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	0	0	0	1	0	0	1	2	2
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	2	2	0	0	1	1	1	7	7
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	2	0	0	0	0	0	0	2	2
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0	0	0	0	0	0
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	2	2	2	1	1	1	1	10	10
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	2	2	0	1	0	1	0	6	6

Initial Qualifications Results - Petaluma Watershed - Scoring Details

				Environmental							Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**5.2 Does the project conserve, create, or enhance wetlands, aquatic, and/or riparian habitat? (Main Benefit)**	**5.2 Does the project increase streamflow during low flow season for benefit of habitats and endangered/threatened species? (Main Benefit)**	**5.3 Does the project create urban green space? (Main Benefit)**	5.4 Does the project re-establish the natural hydrograph (e.g., slowing in timing of peak flow, conversion of impervious area to pervious)?	5.5 Does the project improve water temperature for the benefit of habitats and endangered /threatened species?	5.6 Does the project reduce energy use or GHG emissions, or increase carbon sinks?	5.7 Was the project previously identified in conservation, restoration, watershed management, urban greening and/or other watershed-based plan?	Points	Score
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	2	0	0	1	1	1	1	6	6
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	0	2	0	1	0	1	0	4	4
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	2	0	0	1	0	0	0	3	3
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	0	0	0	0	0	0	0	0	0
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	2	0	0	0	0	0	0	2	2
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	2	0	0	1	0	0	1	4	4
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	2	0	0	1	0	1	1	5	5
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	0	0	0	0	0	1	0	1	1
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	2	0	0	0	0	1	0	3	3
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	2	2	0	1	1	1	1	8	8
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	0	0	0	1	0	0	0	1	1
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	2	0	0	0	1	0	0	3	3
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	2	0	2	0	1	1	0	6	6
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	2	0	0	0	0	1	0	3	3
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	2	0	0	0	0	0	0	2	2

Initial Qualifications Results - Petaluma Watershed - Scoring Details

				Community								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**6.2 Does the project create jobs? (Main Benefit)**	**6.2 Does the project provide public education opportunities and/or incorporate a public education element? (Main Benefit)**	6.3 Does the project enhance or create recreational and public use areas?	6.4 Does the project include community involvement and/or volunteer opportunities?	6.5 Is the project, or project benefits, located in or adjacent to a disadvantaged community? (Assume "adjacent to" is within a one-mile radius.)	6.6 Does the project incentivize behavior or actions that are consistent with the SWRP goals?	6.6 Does the project incentivize behavior or actions that are consistent with the SWRP goals?	6.7 Was the project previously identified in a community, recreational, education, development, active transportation, job opportunity and/or another watershed-based plan?	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	2	2	1	1	1	1	0	0	8	8
2	Petaluma	Washington Creek Enhancement	City of Petaluma	0	2	1	1	1	1	0	0	6	6
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	0	2	1	1	0	1	0	0	5	5
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	2	2	1	1	1	1	0	0	8	8
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	0	2	0	1	0	1	0	0	4	4
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	0	2	0	0	0	1	0	0	3	3
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	0	2	0	1	0	1	0	0	4	4
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	2	2	0	1	0	1	0	1	7	7
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	0	2	0	0	0	1	0	0	3	3
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	0	2	0	0	0	1	0	0	3	3
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	0	2	0	0	0	1	0	0	3	3
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	2	2	1	1	0	0	0	1	7	7
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	1	0	0	0	0	1	1
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	2	2	0	1	1	1	0	0	7	7
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	0	2	1	1	0	1	0	0	5	5
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	0	2	0	1	0	1	0	0	4	4

Initial Qualifications Results - Petaluma Watershed - Scoring Details

				Community								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**6.2 Does the project create jobs? (Main Benefit)**	**6.2 Does the project provide public education opportunities and/or incorporate a public education element? (Main Benefit)**	6.3 Does the project enhance or create recreational and public use areas?	6.4 Does the project include community involvement and/or volunteer opportunities?	6.5 Is the project, or project benefits, located in or adjacent to a disadvantaged community? (Assume "adjacent to" is within a one-mile radius.)	6.6 Does the project incentivize behavior or actions that are consistent with the SWRP goals?	6.6 Does the project incentivize behavior or actions that are consistent with the SWRP goals?	6.7 Was the project previously identified in a community, recreational, education, development, active transportation, job opportunity and/or another watershed-based plan?	Points	Score
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	2	2	0	1	0	1	0	1	7	7
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	0	0	0	0	0	1	0	0	1	1
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	2	2	1	1	0	1	0	0	7	7
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	2	2	0	1	0	1	0	0	6	6
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	2	2	0	1	0	0	0	0	5	5
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	0	2	0	1	0	0	0	0	3	3
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	0	2	0	1	0	0	0	0	3	3
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	0	2	1	1	1	1	0	0	6	6
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	0	2	1	1	1	1	0	0	6	6
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	2	2	1	1	0	1	0	1	8	8
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	2	2	0	0	0	1	0	0	5	5
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	0	2	0	1	0	1	0	0	4	4
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	2	2	1	1	0	0	0	0	6	6
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	2	2	1	1	1	0	0	0	7	7
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	2	2	0	0	0	1	0	1	6	6

				Water Quality Benefit								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**2.2 Does the project address one or more of the constituents covered under a TMDL or 303(d) listing for either Sonoma Creek or Petaluma River through increased filtration and/or treatment? (Main Benefit)**	2.2 Does the project divert stormwater through infiltration and/or evapotranspiration?	2.3 Does the project enhance groundwater quality?	2.4 Does the project reduce non-point source pollution?	2.5 Does the project reestablish natural water drainage and treatment?	2.6 Does the project incorporate a strategy(ies) or BMP(s) previously identified in current TMDL, Basin Plan, Salt and Nutrient Management Plan, NPDES MS4 permit, or other locally-relevant water quality planning document or guidance manual?	2.7 Does the project address water quality through source reduction or treatment in a high priority drainage area based on prior assessment?	2.8 Does the project result in reduced mixing of stormwater and wastewater?	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	2	1	1	1	1	1	1	0	8	8.9
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	2	1	1	0	1	1	0	0	6	6.7
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	2	1	1	1	1	1	0	0	7	7.8
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	2	1	0	1	1	1	0	0	6	6.7
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	2	1	0	0	1	1	0	0	5	5.6
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	2	1	0	1	1	1	0	0	6	6.7
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	2	1	0	1	1	1	0	0	6	6.7
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	1	1	0	0	1	3	3.3
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	2	0	0	1	0	1	0	0	4	4.4
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	2	1	0	0	1	1	0	0	5	5.6
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	2	1	0	1	1	1	0	0	6	6.7
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0.0
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	2	1	0	0	1	1	0	0	5	5.6
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	2	1	0	1	0	0	0	0	4	4.4
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	2	1	1	1	1	1	0	0	7	7.8
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	2	1	1	1	1	1	0	0	7	7.8
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	2	1	0	1	0	1	0	0	5	5.6
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	2	1	1	1	1	1	0	0	7	7.8

Initial Qualifications Results - Sonoma Watershed - Scoring Details

				Water Quality Benefit								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**2.2 Does the project address one or more of the constituents covered under a TMDL or 303(d) listing for either Sonoma Creek or Petaluma River through increased filtration and/or treatment? (Main Benefit)**	2.2 Does the project divert stormwater through infiltration and/or evapotranspiration?	2.3 Does the project enhance groundwater quality?	2.4 Does the project reduce non-point source pollution?	2.5 Does the project reestablish natural water drainage and treatment?	2.6 Does the project incorporate a strategy(ies) or BMP(s) previously identified in current TMDL, Basin Plan, Salt and Nutrient Management Plan, NPDES MS4 permit, or other locally-relevant water quality planning document or guidance manual?	2.7 Does the project address water quality through source reduction or treatment in a high priority drainage area based on prior assessment?	2.8 Does the project result in reduced mixing of stormwater and wastewater?	Points	Score
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	2	1	1	1	1	1	0	0	7	7.8
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	0	1	0	0	1	0	0	0	2	2.2
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	2	1	1	1	1	1	0	0	7	7.8
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	2	1	1	0	0	0	0	0	4	4.4
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	2	1	0	0	1	1	1	0	6	6.7
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	2	1	0	0	1	1	1	0	6	6.7
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	2	1	0	0	0	1	1	0	5	5.6
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	0	0	0	0	1	0	0	0	1	1.1
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	2	1	0	0	1	1	1	0	6	6.7
51	Sonoma	Stormwater detention-Southern Fryer Creek watershed	Sonoma County Water Agency	2	0	0	0	0	1	0	0	3	3.3
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	2	1	0	0	1	1	0	0	5	5.6
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	2	1	0	0	1	1	0	0	5	5.6
54	Sonoma	Lower Sonoma Creek Stormwater Capture Project	Tito Sasaki	0	0	0	0	0	0	0	0	0	0.0
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	2	1	0	0	1	1	1	0	6	6.7
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	0	1	1	1	1	1	0	0	5	5.6
63	Sonoma	Circle Bar Ranch Groundwater Recharge	ESA with Sue Smith	2	1	1	0	1	1	0	0	6	6.7

				Water Supply							Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**3.2 Does the project collect and store or divert stormwater above ground for potable or non-potable use? (Main Benefit)**	**3.2 Does the project infiltrate stormwater into a water supply aquifer? (Main Benefit)**	**3.3 Does the project infiltrate stormwater into a non-water supply aquifer?(Main Benefit)**	**3.4 Does the project enhance water supply reliability through means other than storage, diversion, or infiltration of stormwater (e.g., water conservation)? (Main Benefit)**	**3.5 Does the project further conjunctive use management through means other than direct recharge of stormwater? (Main Benefit)**	3.6 Has the project been previously identified as a water supply/conservation project in any watershed planning document?	3.7 Does the project produce increased water use efficiency (i.e., water conservation)?	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	2	0	2	0	2	0	1	7	5.8
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	0	0	2	0	2	0	1	5	4.2
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	0	0	0	0	0	0	0	0	0.0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0.0
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	2	0	0	0	0	0	0	2	1.7
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0.0
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0.0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	2	2	2	2	0	0	1	9	7.5
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0.0
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	2	0	0	0	0	0	1	3	2.5
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	2	0	0	0	0	0	0	2	1.7
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0.0
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	2	0	0	0	0	0	0	2	1.7
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0.0
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	2	2	2	0	0	0	0	6	5.0
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	2	2	0	0	0	0	0	4	3.3
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	2	0	0	0	0	0	0	2	1.7
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	2	0	0	0	0	0	0	2	1.7

Initial Qualifications Results - Sonoma Watershed - Scoring Details

				Water Supply							Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**3.2 Does the project collect and store or divert stormwater above ground for potable or non-potable use? (Main Benefit)**	**3.2 Does the project infiltrate stormwater into a water supply aquifer? (Main Benefit)**	**3.3 Does the project infiltrate stormwater into a non-water supply aquifer?(Main Benefit)**	**3.4 Does the project enhance water supply reliability through means other than storage, diversion, or infiltration of stormwater (e.g., water conservation)? (Main Benefit)**	**3.5 Does the project further conjunctive use management through means other than direct recharge of stormwater? (Main Benefit)**	3.6 Has the project been previously identified as a water supply/conservation project in any watershed planning document?	3.7 Does the project produce increased water use efficiency (i.e., water conservation)?	Points	Score
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	2	2	2	2	0	1	0	9	7.5
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0.0
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	2	2	2	0	0	1	0	7	5.8
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	2	2	0	0	0	0	0	4	3.3
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	0	2	0	0	0	0	0	2	1.7
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	0	2	0	0	0	0	0	2	1.7
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	0	0	0	0	0	0	0	0	0.0
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	0	0	0	0	0	0	0	0	0.0
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	0	2	0	0	0	0	0	2	1.7
51	Sonoma	Stormwater detention-Southern Fryer Creek watershed	Sonoma County Water Agency	0	0	0	0	0	0	1	1	0.8
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	0	2	0	0	0	1	0	3	2.5
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	0	2	0	0	0	0	0	2	1.7
54	Sonoma	Lower Sonoma Creek Stormwater Capture Project	Tito Sasaki	2	0	0	0	2	0	0	4	3.3
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	0	2	0	0	0	0	0	2	1.7
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	2	2	2	2	2	0	1	11	9.2
63	Sonoma	Circle Bar Ranch Groundwater Recharge	ESA with Sue Smith	0	0	2	0	0	0	0	2	1.7

				Flood Management				Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**4.2 Does the project provide peak flood flow and/or volume reduction? (Main Benefit)**	4.2 Has modeling been completed to ensure detention will not result in increased flooding due to timing considerations?	4.3 Does the project reduce a flooding problem known or anticipated to occur locally?	4.4 Was the project previously identified to reduce flood risk in a local flood management plan, master plan, or watershed plan?	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	2	0	1	0	3	6
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	2	0	0	0	2	4
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	0	0	0	0	0	0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0	0
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	2	0	1	0	3	6
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	2	0	0	0	2	4
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	2	0	1	0	3	6
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	2	0	0	0	2	4
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	0	0	0	0	0	0
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	2	0	1	0	3	6
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	0	0	0	0	0	0
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	0	0	0	0	0	0
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	2	0	0	0	2	4
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	2	0	0	0	2	4
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	2	0	0	0	2	4

Initial Qualifications Results - Sonoma Watershed - Scoring Details

				Flood Management				Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**4.2 Does the project provide peak flood flow and/or volume reduction? (Main Benefit)**	4.2 Has modeling been completed to ensure detention will not result in increased flooding due to timing considerations?	4.3 Does the project reduce a flooding problem known or anticipated to occur locally?	4.4 Was the project previously identified to reduce flood risk in a local flood management plan, master plan, or watershed plan?	Points	Score
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	2	0	0	0	2	4
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	2	0	1	0	3	6
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	2	0	0	0	2	4
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	2	0	1	0	3	6
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	2	0	1	0	3	6
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	2	0	1	1	4	8
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	2	0	0	0	2	4
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	2	0	1	0	3	6
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	2	0	1	0	3	6
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	2	0	1	1	4	8
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	2	0	0	1	3	6
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	2	0	1	1	4	8
51	Sonoma	Stormwater detention-Southern Fryer Creek watershed	Sonoma County Water Agency	2	0	1	0	3	6
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	2	0	1	1	4	8
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	0	0	0	1	1	2
54	Sonoma	Lower Sonoma Creek Stormwater Capture Project	Tito Sasaki	2	0	1	0	3	6
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	0	0	1	1	2	4
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	2	0	1	0	3	6
63	Sonoma	Circle Bar Ranch Groundwater Recharge	ESA with Sue Smith	2	0	0	0	2	4

				Environmental							Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**5.2 Does the project conserve, create, or enhance wetlands, aquatic, and/or riparian habitat? (Main Benefit)**	**5.2 Does the project increase streamflow during low flow season for benefit of habitats and endangered/threatened species? (Main Benefit)**	**5.3 Does the project create urban green space? (Main Benefit)**	5.4 Does the project re-establish the natural hydrograph (e.g., slowing in timing of peak flow, conversion of impervious area to pervious)?	5.5 Does the project improve water temperature for the benefit of habitats and endangered /threatened species?	5.6 Does the project reduce energy use or GHG emissions, or increase carbon sinks?	5.7 Was the project previously identified in conservation, restoration, watershed management, urban greening and/or other watershed-based plan?	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	2	2	0	1	1	1	0	7	7
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	2	0	0	1	0	1	0	4	4
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	2	2	0	0	1	1	1	7	7
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	2	0	0	0	0	0	0	2	2
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	2	0	0	0	0	0	0	2	2
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	2	0	0	0	0	0	0	2	2
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	2	0	0	1	0	1	0	4	4
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0	0	0	0	0	0
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	2	0	0	0	0	0	0	2	2
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	2	0	0	1	0	0	0	3	3
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	2	2	0	0	0	0	0	4	4
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	2	0	0	1	0	0	0	3	3
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	2	0	0	0	0	0	0	2	2
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	2	0	0	1	0	0	0	3	3
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	2	2	0	0	0	0	0	4	4

				Environmental							Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**5.2 Does the project conserve, create, or enhance wetlands, aquatic, and/or riparian habitat? (Main Benefit)**	**5.2 Does the project increase streamflow during low flow season for benefit of habitats and endangered/threatened species? (Main Benefit)**	**5.3 Does the project create urban green space? (Main Benefit)**	5.4 Does the project re-establish the natural hydrograph (e.g., slowing in timing of peak flow, conversion of impervious area to pervious)?	5.5 Does the project improve water temperature for the benefit of habitats and endangered /threatened species?	5.6 Does the project reduce energy use or GHG emissions, or increase carbon sinks?	5.7 Was the project previously identified in conservation, restoration, watershed management, urban greening and/or other watershed-based plan?	Points	Score
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	2	0	0	0	0	0	0	2	2
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	0	0	2	1	0	1	0	4	4
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	2	0	0	0	0	0	0	2	2
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	2	0	0	0	0	0	1	3	3
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	2	0	0	1	0	0	0	3	3
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	2	0	0	1	0	0	0	3	3
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	2	0	0	1	0	1	0	4	4
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	0	0	0	1	0	0	0	1	1
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	2	0	0	1	0	1	0	4	4
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	0	0	0	0	0	0	0	0	0
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	2	0	0	0	0	0	1	3	3
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	2	0	2	1	0	0	1	6	6
51	Sonoma	Stormwater detention-Southern Fryer Creek watershed	Sonoma County Water Agency	0	0	0	1	0	0	0	1	1
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	0	0	0	1	0	0	1	2	2
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	2	0	0	1	0	0	0	3	3
54	Sonoma	Lower Sonoma Creek Stormwater Capture Project	Tito Sasaki	0	0	0	0	0	0	0	0	0
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	2	0	0	1	0	0	0	3	3
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	2	2	2	1	1	1	0	9	9
63	Sonoma	Circle Bar Ranch Groundwater Recharge	ESA with Sue Smith	2	0	0	1	0	0	0	3	3

				Community								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**6.2 Does the project create jobs? (Main Benefit)**	**6.2 Does the project provide public education opportunities and/or incorporate a public education element? (Main Benefit)**	6.3 Does the project enhance or create recreational and public use areas?	6.4 Does the project include community involvement and/or volunteer opportunities?	6.5 Is the project, or project benefits, located in or adjacent to a disadvantaged community? (Assume "adjacent to" is within a one-mile radius.)	6.6 Does the project incentivize behavior or actions that are consistent with the SWRP goals?	6.6 Does the project incentivize behavior or actions that are consistent with the SWRP goals?	6.7 Was the project previously identified in a community, recreational, education, development, active transportation, job opportunity and/or another watershed-based plan?	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	2	2	0	1	0	1	0	0	6	6
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	0	2	0	0	0	1	0	0	3	3
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	0	2	1	1	0	1	0	1	6	6
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	1	0	0	0	0	1	1
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	0	2	1	1	0	0	0	0	4	4
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	2	1	1	0	0	0	0	4	4
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	2	2	0	1	1	1	0	0	7	7
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	0	2	1	1	0	0	0	0	4	4
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	0	2	1	1	0	0	0	0	4	4
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	0	2	1	1	0	0	0	0	4	4
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	0	2	0	1	0	0	0	0	3	3
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	0	2	1	1	0	0	0	0	4	4
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	0	2	0	1	0	0	0	0	3	3
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	0	2	1	1	0	0	0	0	4	4

				Community								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	**6.2 Does the project create jobs? (Main Benefit)**	**6.2 Does the project provide public education opportunities and/or incorporate a public education element? (Main Benefit)**	6.3 Does the project enhance or create recreational and public use areas?	6.4 Does the project include community involvement and/or volunteer opportunities?	6.5 Is the project, or project benefits, located in or adjacent to a disadvantaged community? (Assume "adjacent to" is within a one-mile radius.)	6.6 Does the project incentivize behavior or actions that are consistent with the SWRP goals?	6.6 Does the project incentivize behavior or actions that are consistent with the SWRP goals?	6.7 Was the project previously identified in a community, recreational, education, development, active transportation, job opportunity and/or another watershed-based plan?	Points	Score
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	0	0	0	1	0	0	0	0	1	1
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	0	2	1	1	0	1	0	0	5	5
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	0	2	0	1	0	0	0	0	3	3
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	0	0	0	1	0	0	0	0	1	1
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	0	2	0	1	1	0	0	0	4	4
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	2	0	1	0	1	0	0	4	4
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	0	0	0	0	0	1	0	0	1	1
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	0	0	1	0	0	0	0	0	1	1
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	0	0	1	0	0	0	0	0	1	1
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	0	0	0	0	0	0	0	0	0	0
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	0	0	0	0	1	0	0	1	2	2
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	2	2	1	1	1	1	0	0	8	8
51	Sonoma	Stormwater detention-Southern Fryer Creek watershed	Sonoma County Water Agency	2	2	0	0	0	1	0	0	5	5
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	2	2	1	1	1	0	0	0	7	7
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	2	2	1	1	1	1	0	0	8	8
54	Sonoma	Lower Sonoma Creek Stormwater Capture Project	Tito Sasaki	0	0	0	0	0	0	0	0	0	0
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	2	0	0	0	0	1	0	0	3	3
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	2	2	0	1	0	1	0	0	6	6
63	Sonoma	Circle Bar Ranch Groundwater Recharge	ESA with Sue Smith	0	0	0	0	0	1	0	0	1	1

Detailed Qualifications Results - Petaluma Watershed - Scoring Details

				Water Quality										Totals	
				Pollutant Load Reduction											
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	2.1 Sediment (lb/yr)	2.1 Pathogens (MPN/yr)	2.1 Nutients (lb/yr)	2.1 Trash (gal/yr)	2.1 Nickel (lb/yr)	2.1 Diazinon (lb/yr)	2.1 Mercury (lb/yr)	2.1 PCB's (lb/yr)	2.2 Volume of stormwater diverted (acre-feet/yr)	2.4 Non-point Source Pollutant Load Reduction	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	2	3	2	3	0	1	1	1	1	0	14	14
2	Petaluma	Washington Creek Enhancement	City of Petaluma	0	0	0	3	0	0	0	0	2	0	5	5
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	0	0	0	0	0	0	0	0	0	0	0	0
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	3	3	3	2	0	2	2	1	1	0	17	17
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0	0	0	0
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0	0	0	0
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0	0	0	0
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0	0	0	0
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	1	0	1	1
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	1	3	1	1	1	1	1	1	1	0	11	11
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	1	0	1	1
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	0	0	0	0	0	0	0	0	0	0	0	0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0	0	0	0	0	0	0	0	0
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0	0	0	0
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0	0	0	0
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0	0	0	0
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0	0	0	0
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	0	0	0	0	0	0	0	0	0	0	0	0
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	0	0	0	0	0	0	0	0	0	3	3	3
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0	0	0	0	0	0	0	0	0
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0	0	0	0	0	0	0	0	0
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0	0	0	0	0	0	0	0	0
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	0	0	0	0	0	0	0	0	0	0	0	0
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	0	0	0	0	0	0	0	0	0	0	0	0
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	0	0	0	0	0	0	0	0	0	0	0	0
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	2	3	2	1	0	1	1	1	1	0	12	12
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	0	0	0	0	0	0	0	0	0	0	0	0
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	0	0	0	0	0	0	0	0	0	0	0	0
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	0	0	0	0	0	0	0	0	0	0	0	0
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	0	0	0	0	0	0	0	0	0	0	0	0

Detailed Qualifications Results - Petaluma Watershed - Scoring Details

				Water Supply			Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	3.1 Volume of water collected, stored, or diverted to offset irrigation use (gal/yr)	3.2 Volume of water infiltrated into a water supply aquifer (acre-ft/yr)	3.3 Volume of water infiltrated into a non-water supply acquifer (acre-ft/yr)	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	0	1	0	1	1
2	Petaluma	Washington Creek Enhancement	City of Petaluma	0	2	0	2	2
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	0	0	0	0	0
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	0	1	0	1	1
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	0	0	0	0	0
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	1	0	0	1	1
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	0	0	0	0	0
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	0	0	0
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	0	0	1	1	1
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	0	0	1	1	1
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	0	0	1	1	1
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	0	0	0	0	0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0	0
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	0	0	0	0	0
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	3	0	0	3	3
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	0	0	0
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	2	0	0	2	2
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	0	0	0	0	0
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	0	0	0	0	0
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0	0
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0	0
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0	0
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	0	0	0	0	0
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	0	0	0	0	0
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	0	0	0	0	0
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	0	1	0	1	1
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	0	0	0	0	0
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	0	0	0	0	0
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	0	0	0	0	0
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	0	0	0	0	0

Detailed Qualifications Results - Petaluma Watershed - Scoring Details

				Flood Management		Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	4.1 Peak Flow Reduction (cfs)	4.1 Flood Volume Reduction (acre-feet/yr)	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	2	1	3	3
2	Petaluma	Washington Creek Enhancement	City of Petaluma	3	1	4	4
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	0	0	0	0
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	2	1	3	3
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	0	0	0	0
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	0	0	0	0
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	0	0	0	0
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	0	0
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	1	1	2	2
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	1	1	2	2
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	1	1	2	2
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	0	0	0	0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	0	0	0	0
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	1	1	2	2
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	0	0
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	1	1	2	2
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	0	0	0	0
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	0	0	0	0
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	0	0	0	0
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	0	0	0	0
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	0	0	0	0
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	1	2	3	3
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	0	0	0	0
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	0	0	0	0
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	0	0	0	0
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	0	0	0	0

Detailed Qualifications Results - Petaluma Watershed - Scoring Details

				Environmental								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	5.1 Area of wetlands and/or riparian created or enhanced (acres)	5.2 Magnitude of Increase in Streamflows During Low Flow Season (%)	5.3 Area of Urban Green Space Created (acres)	5.4 Magnitude of Slowing in Timing of Peak Flow (% of lag time)	5.5 Magnitude of Water Temperature Improvement (linear feet of riparian canopy)	5.6 Magnitude in Reduction of Energy Use (kwH/yr)	5.6 Magnitude in Reduction in GHG emission (lbs/yr)	5.6 Magnitude of Increase in Carbon Sequestration (kwH/yr)	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	2		2	0	0	0	0		4	4
2	Petaluma	Washington Creek Enhancement	City of Petaluma	1		0	0	2	0	0		3	3
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	0		0	0	0	0	0		0	0
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	1		1	0	0	0	0		2	2
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	0		3	0	2	0	0		5	5
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	1		0	0	0	0	0		1	1
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	3		0	0	2	0	0		5	5
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0		0	0	0	0	0		0	0
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	0		0	1	0	0	0		1	1
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	0		0	1	0	0	0		1	1
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	0		0	1	0	0	0		1	1
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	0		0	0	0	0	0		0	0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0		0	0	0	0	0		0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0		0	0	0	0	0		0	0
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	1		1	0	1	0	0		3	3
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	1		0	1	0	3	3		8	8
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0		0	0	0	0	0		0	0
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	0		0	1	0	3	3		7	7
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	0		0	0	0	0	0		0	0
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	0		0	0	0	0	0		0	0
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	0		0	0	0	0	0		0	0
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	0		0	0	0	0	0		0	0
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	0		0	0	0	0	0		0	0
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	0		0	0	0	0	0		0	0
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	0		0	0	0	0	0		0	0
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	3		0	0	1	0	0		4	4
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	0		0	1	0	0	0		1	1
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	0		0	0	0	0	0		0	0
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	0		0	0	0	0	0		0	0
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	0		0	0	0	0	0		0	0
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	0		0	0	0	0	0		0	0

Detailed Qualifications Results - Petaluma Watershed - Scoring Details

				Community				Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	6.1 Number of Full Time Jobs Created	6.3 Area of Enhanced or Created Recreational and Public Use Areas (acres)	6.3 Length of Enhanced or Created Recreational and Public Use Areas (miles of trail)	6.4 Number of Volunteer Opportunities (people/yr)	Points	Score
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	1	2	2	1	6	6
2	Petaluma	Washington Creek Enhancement	City of Petaluma	0	1	2	1	4	4
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	0	0	0	0	0	0
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	1	1	1	1	4	4
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	0	0	0	3	3	3
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	0	0	0	0	0	0
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	0	0	0	2	2	2
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	0	2	2	2
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	0	0	0	0	0	0
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	0	0	0	0	0	0
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	0	0	0	0	0	0
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	0	0	0	0	0	0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0	0	0
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	0	3	1	3	7	7
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	0	0	0	2	2	2
34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	0	0	0	2	2	2
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	0	0	0	0	0	0
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	0	0	0	0	0	0
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	1	0	0	1	2	2
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0	0	0
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0	0	0
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	0	0	0	0	0	0
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	0	0	0	0	0	0
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	0	0	0	0	0	0
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	3	0	0	2	5	5
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	1	0	0	0	1	1
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	0	0	0	0	0	0
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	0	0	0	0	0	0
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	0	0	0	0	0	0
62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	0	0	0	0	0	0

Detailed Qualifications Results - Sonoma Watershed - Scoring Details

				Water Quality										Totals	
				Pollutant Load Reduction											
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	2.1 Sediment (lb/yr)	2.1 Pathogens (MPN/yr)	2.1 Nutients (lb/yr)	2.1 Trash (gal/yr)	2.1 Nickel (lb/yr)	2.1 Diazinon (lb/yr)	2.1 Mercury (lb/yr)	2.1 PCB's (lb/yr)	2.2 Volume of stormwater diverted (acre-feet/yr)	2.4 Non-point Source Pollutant Load Reduction	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	0	0	0	0	0	0	0	0	0	0	0	0
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	2	3	0	0	0	1	1	1	1	0	9	9
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	0	0	0	0	0	0	0	0	0	0	0	0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0	0	0	0	0	0	0	0	0
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	0	0	0	0	0	0	0	0	0	0	0
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	1	3	0	0	0	1	1	1	1	0	8	8
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	2	3	0	0	0	1	1	1	0	0	8	8
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	1	3	0	0	0	1	1	1	1	0	8	8
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	0	0	0	0	0	0	0	0	0	0	0	0
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	0	0	0	0	0	0	0	0	0	0	0	0
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	3	3	0	0	0	2	3	1	2	0	14	14
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	3	3	0	0	0	2	3	2	2	0	15	15
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	2	3	0	0	0	1	1	1	1	0	9	9
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	3	3	0	0	0	2	3	1	3	0	15	15
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	0	0	0	0	0	0	0	0	0	0	0	0

Detailed Qualifications Results - Sonoma Watershed - Scoring Details

				Water Supply			Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	3.1 Volume of water collected, stored, or diverted to offset irrigation use (gal/yr)	3.2 Volume of water infiltrated into a water supply aquifer (acre-ft/yr)	3.3 Volume of water infiltrated into a non-water supply acquifer (acre-ft/yr)	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	0	0	0	0	0
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	0	0	1	1	1
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	0	0	0	0	0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	0	0	0	0	0
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	0	0	0	0	0
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	0	0	0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0	0
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	0	0	0	0	0
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	0	0	0	0	0
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	0	0	0	0	0
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	0	0	0	0	0
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	0	0	0	0	0
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	0	0	0	0	0
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	0	0	0	0	0
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	0	0	0	0	0
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	0	0	0	0	0
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	0	0	0	0	0
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	0	0	0	0	0
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	0	0	0	0	0
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	0	0	0	0
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	2	1	0	3	3
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	0	0	0	0	0
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	0	0	0	0	0
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	0	0	0	0	0
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	0	0	0	0	0
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	0	2	0	2	2
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	0	2	0	2	2
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	0	1	0	1	1
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	0	3	0	3	3
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	0	0	0	0	0

Detailed Qualifications Results - Sonoma Watershed - Scoring Details

				Flood Management		Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	4.1 Peak Flow Reduction (cfs)	4.1 Flood Volume Reduction (acre-feet/yr)	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	0	0	0	0
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	1	1	2	2
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	0	0	0	0
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	0	0	0	0
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	0	0	0	0
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	0	0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	0	0	0	0
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	0	0	0	0
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	0	0	0	0
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	0	0	0	0
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	0	0	0	0
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	0	0	0	0
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	0	0	0	0
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	0	0	0	0
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	0	0	0	0
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	0	0	0	0
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	0	0	0	0
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	0	0	0	0
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	0	0	0
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	1	1	2	2
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	1	1	2	2
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	1	1	2	2
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	0	0	0	0
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	0	0	0	0
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	1	1	2	2
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	1	1	2	2
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	0	0	0	0
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	0	0	0	0
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	0	0	0	0

Detailed Qualifications Results - Sonoma Watershed - Scoring Details

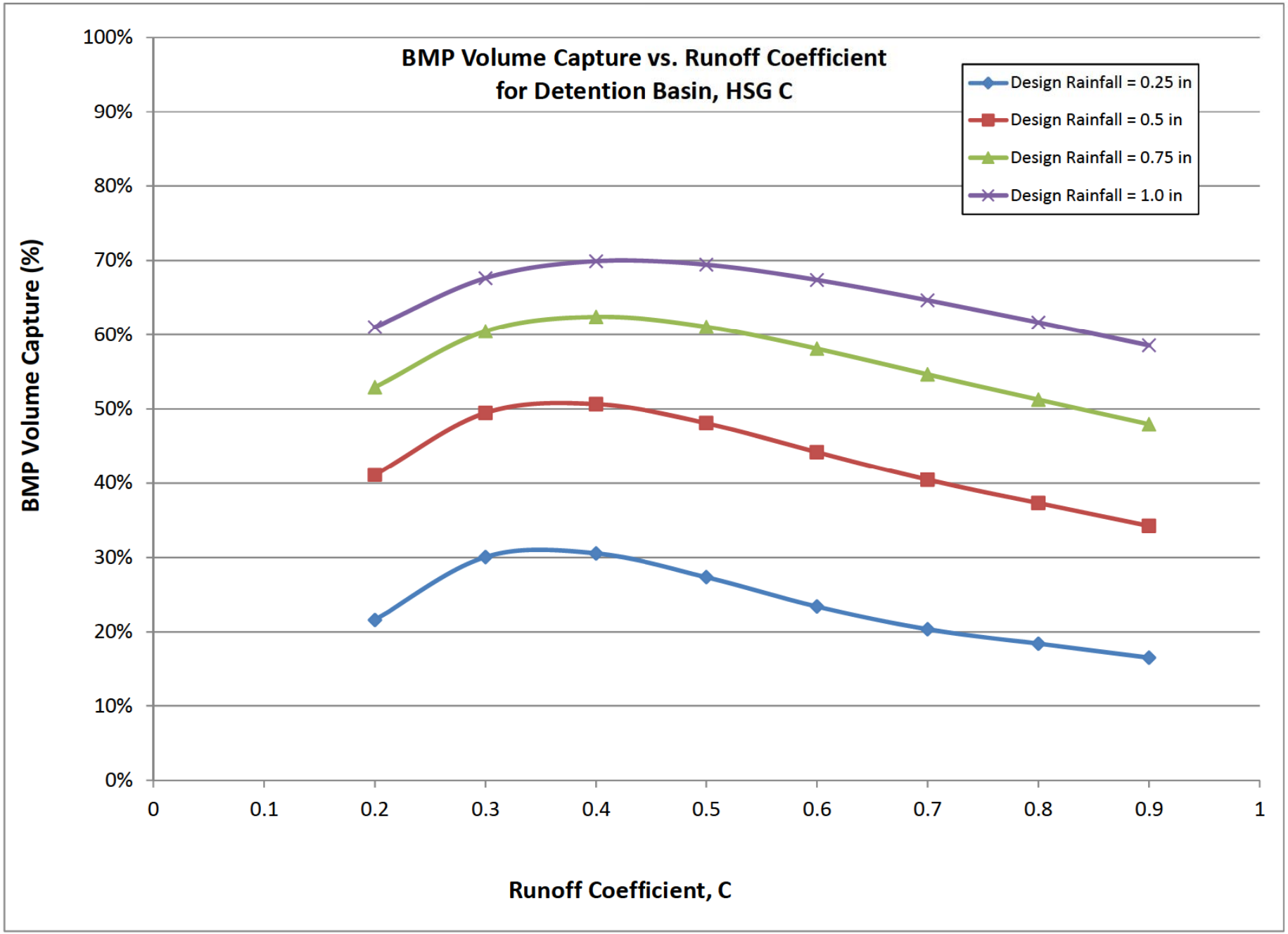
				Environmental								Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	5.1 Area of wetlands and/or riparian created or enhanced (acres)	5.2 Magnitude of Increase in Streamflows During Low Flow Season (%)	5.3 Area of Urban Green Space Created (acres)	5.4 Magnitude of Slowing in Timing of Peak Flow (% of lag time)	5.5 Magnitude of Water Temperature Improvement (linear feet of riparian canopy)	5.6 Magnitude in Reduction of Energy Use (kwH/yr)	5.6 Magnitude in Reduction in GHG emission (lbs/yr)	5.6 Magnitude of Increase in Carbon Sequestration (kwH/yr)	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	0		0	0	0	0	0		0	0
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	0		0	1	0	3	3		7	7
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	3		0	0	0	0	0		3	3
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0		0	0	0	0	0		0	0
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	0		0	0	0	0	0		0	0
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	0		0	0	0	0	0		0	0
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0		0	0	0	0	0		0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0		0	0	0	0	0		0	0
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	0		0	0	0	0	0		0	0
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	0		0	0	0	0	0		0	0
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	0		0	0	0	0	0		0	0
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	0		0	0	0	0	0		0	0
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	0		0	0	0	0	0		0	0
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	0		0	0	0	0	0		0	0
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	0		0	0	0	0	0		0	0
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	0		0	0	0	0	0		0	0
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	0		0	0	0	0	0		0	0
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	0		0	0	0	0	0		0	0
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	0		0	0	0	0	0		0	0
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	0		0	0	0	0	0		0	0
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0		0	0	0	0	0		0	0
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	1		0	1	0	1	1		4	4
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	0		0	0	0	0	0		0	0
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	0		0	0	0	0	0		0	0
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	0		0	0	0	0	0		0	0
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	0		0	0	0	0	0		0	0
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	1		1	1	0	0	0		3	3
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	0		0	1	0	0	0		1	1
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	2		0	1	0	0	0		3	3
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	2		0	1	0	0	0		3	3
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	0		0	0	0	0	0		0	0

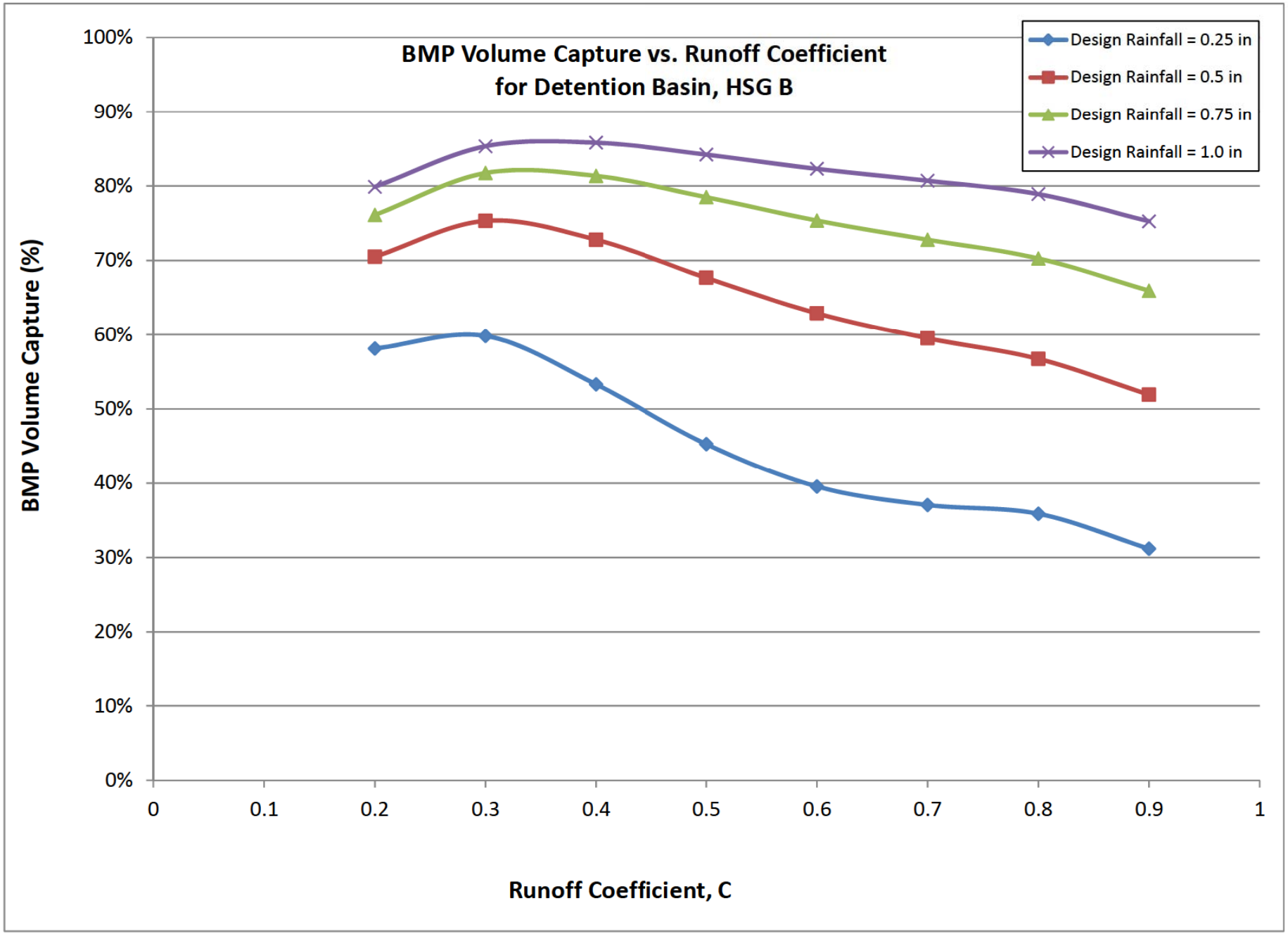
Detailed Qualifications Results - Sonoma Watershed - Scoring Details

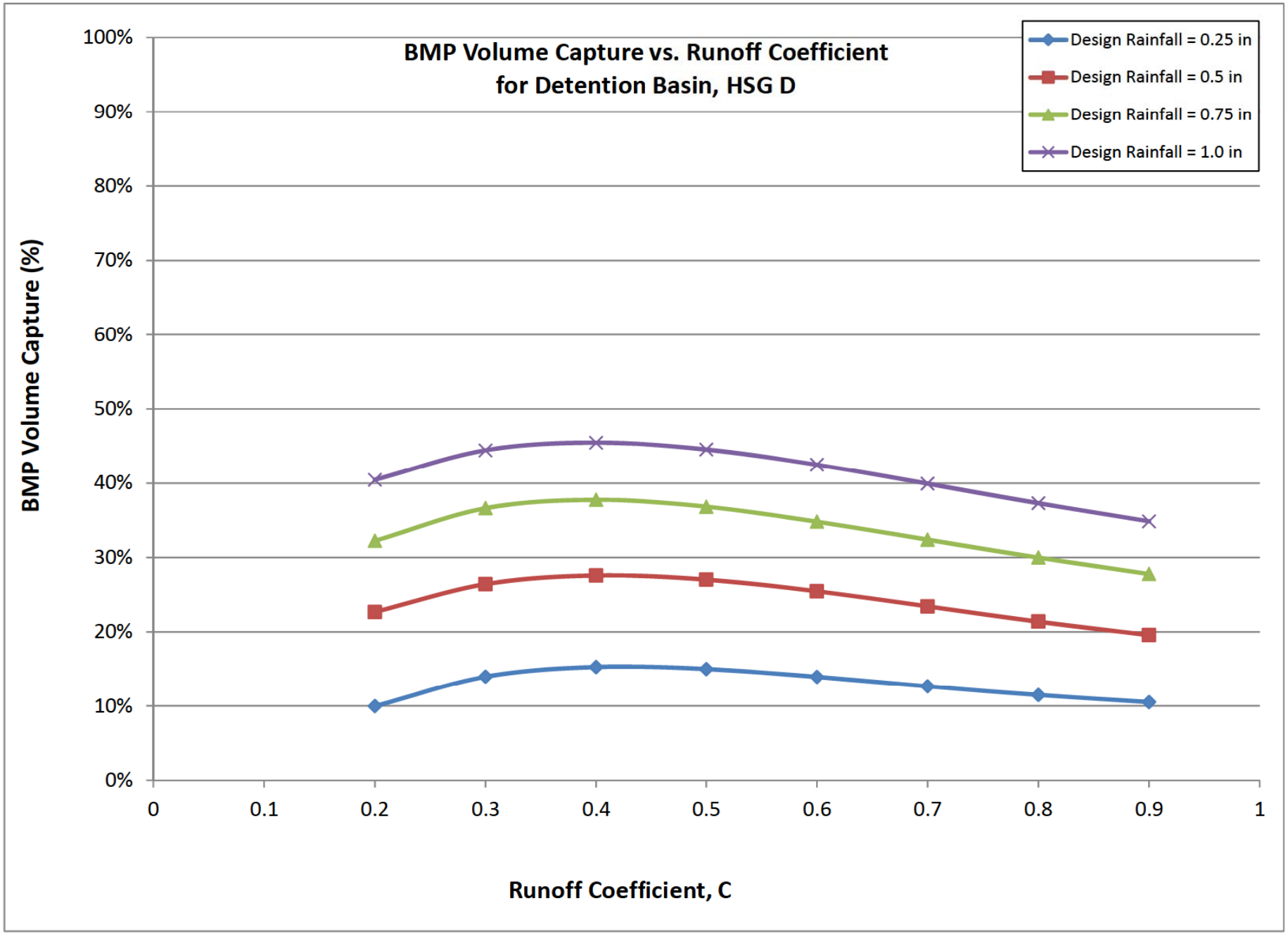
				Community				Totals	
Proj ID	Main Watershed	Name of Recommended Project	Source of Project	6.1 Number of Full Time Jobs Created	6.3 Area of Enhanced or Created Recreational and Public Use Areas (acres)	6.3 Length of Enhanced or Created Recreational and Public Use Areas (miles of trail)	6.4 Number of Volunteer Opportunities (people/yr)	Points	Score
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	0	0	0	0	0	0
10	Sonoma	Circle Bar Ranch Groundwater Recharge	Sonoma Resource Conservation District and ESA with Sue Smith	0	0	0	0	0	0
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	0	3	2	2	7	7
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	0	0	0	0	0	0
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	0	0	0	0	0	0
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	0	0	0	0	0	0
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	0	0	0	0	0
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	0	0	0	0	0	0
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	0	0	0	0	0	0
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	0	0	0	0	0	0
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	0	0	0	0	0	0
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	0	0	0	0	0	0
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	0	0	0	0	0	0
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	0	0	0	0	0	0
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	0	0	0	0	0	0
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	0	0	0	0	0	0
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	0	0	0	0	0	0
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	0	0	0	0	0	0
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	0	0	0	0	0	0
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	0	0	0	0	0	0
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	0	0	0	0	0	0
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	0	0	0	0	0	0
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	0	1	1	0	2	2
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	0	0	0	0	0	0
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	0	0	0	0	0	0
47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	0	0	0	0	0	0
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	1	1	1	1	4	4
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	1	2	1	2	6	6
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	1	2	2	1	6	6
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	1	0	0	0	1	1
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	2	0	0	0	2	2

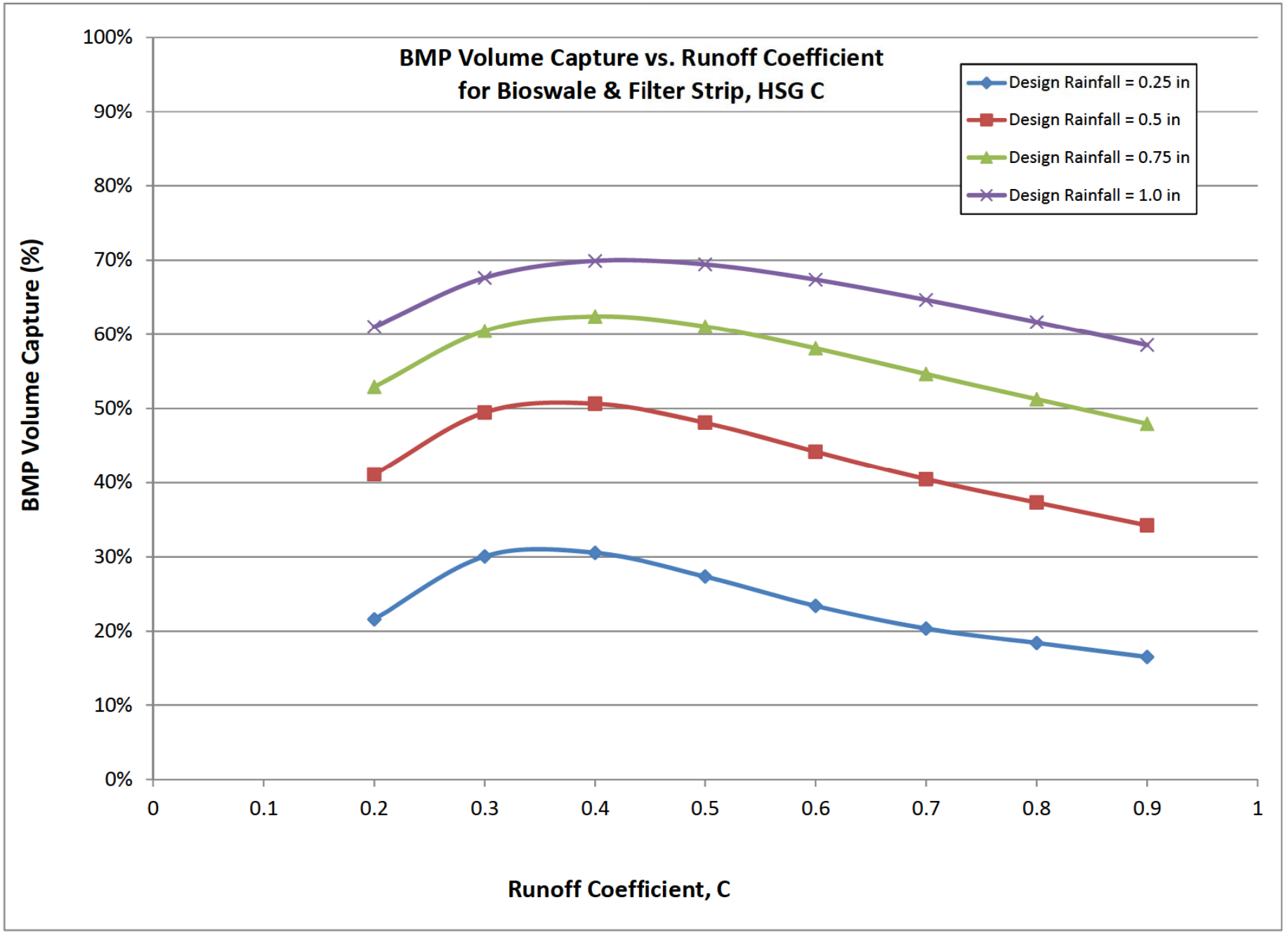
Appendix D
Volume Reduction Curves

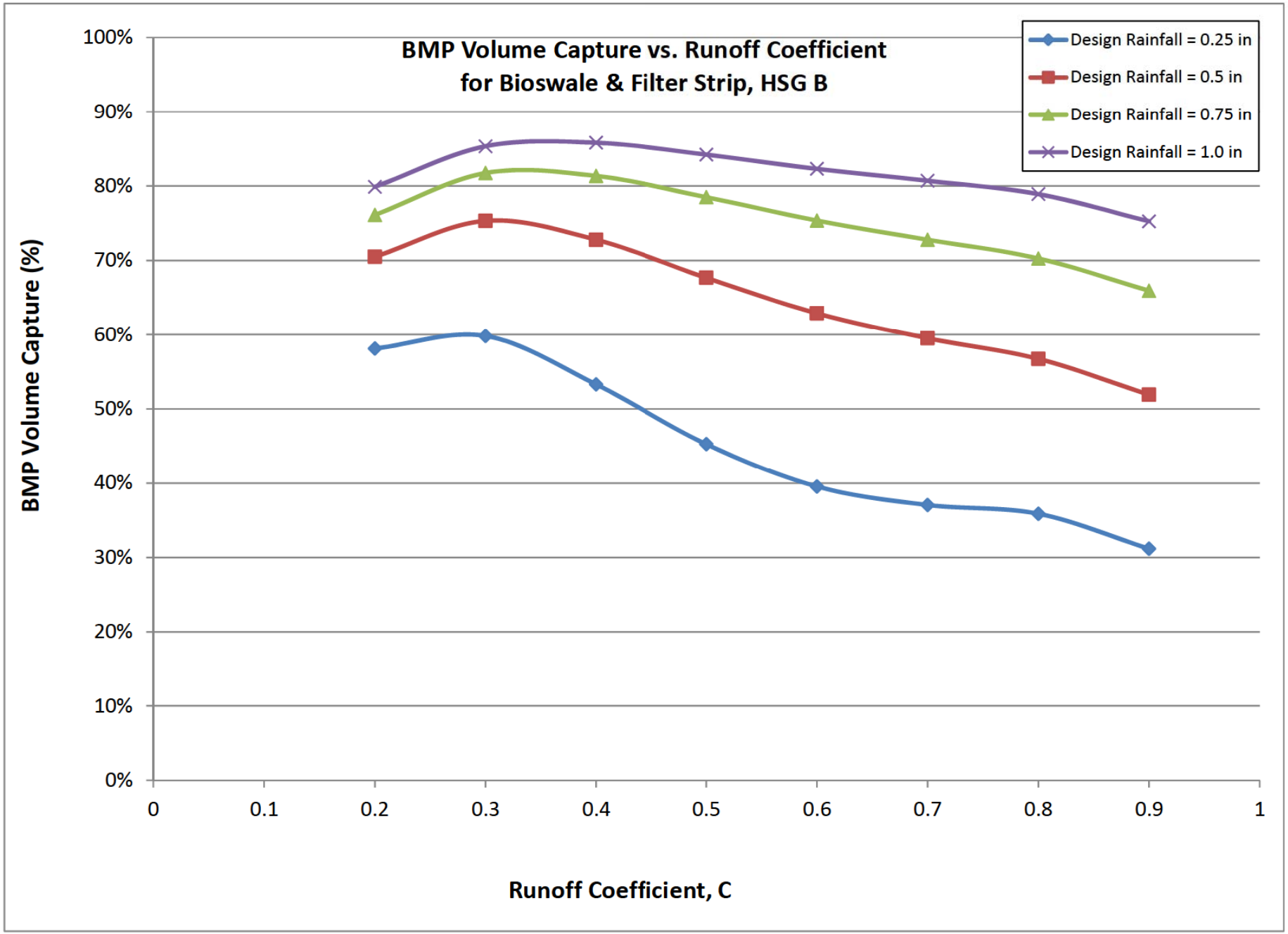
ESA

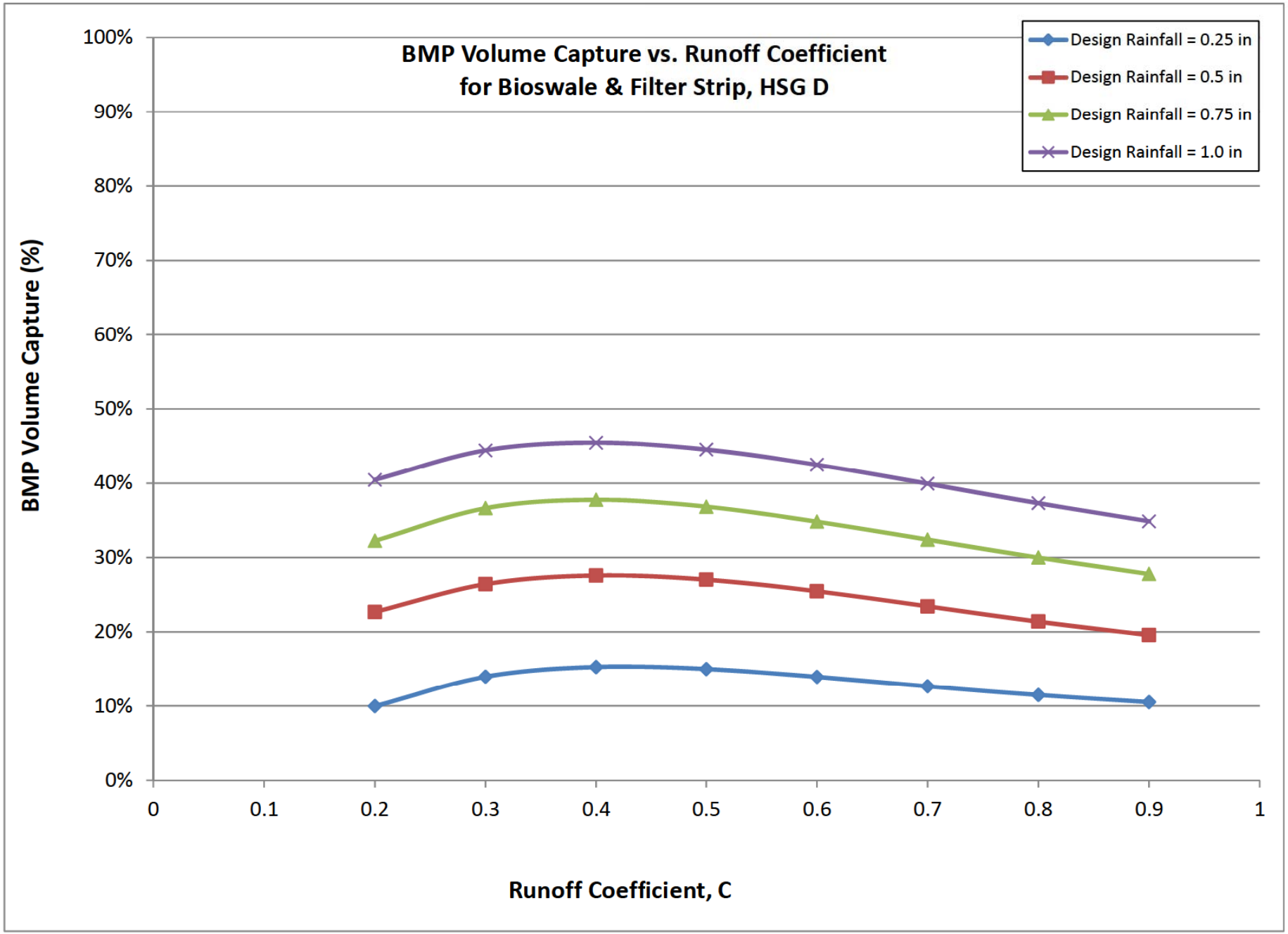

BMP Volume Capture vs. Runoff Coefficient for Detention Basin, HSG C
Design Rainfall = 0.25 in
Design Rainfall = 0.5 in
Design Rainfall = 0.75 in
Design Rainfall = 1.0 in
BMP Volume Capture (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Runoff Coefficient, C


BMP Volume Capture vs. Runoff Coefficient
for Detention Basin, HSG B
Design Rainfall = 0.25 in
Design Rainfall = 0.5 in
Design Rainfall = 0.75 in
Design Rainfall = 1.0 in
BMP Volume Capture (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Runoff Coefficient, C


BMP Volume Capture vs. Runoff Coefficient
for Detention Basin, HSG D
Design Rainfall = 0.25 in
Design Rainfall = 0.5 in
Design Rainfall = 0.75 in
Design Rainfall = 1.0 in
BMP Volume Capture (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Runoff Coefficient, C


BMP Volume Capture vs. Runoff Coefficient
for Bioswale & Filter Strip, HSG C
Design Rainfall = 0.25 in
Design Rainfall = 0.5 in
Design Rainfall = 0.75 in
Design Rainfall = 1.0 in
BMP Volume Capture (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Runoff Coefficient, C


BMP Volume Capture vs. Runoff Coefficient
for Bioswale & Filter Strip, HSG B
Design Rainfall = 0.25 in
Design Rainfall = 0.5 in
Design Rainfall = 0.75 in
Design Rainfall = 1.0 in
BMP Volume Capture (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Runoff Coefficient, C


BMP Volume Capture vs. Runoff Coefficient
for Bioswale & Filter Strip, HSG D
Design Rainfall = 0.25 in
Design Rainfall = 0.5 in
Design Rainfall = 0.75 in
Design Rainfall = 1.0 in
BMP Volume Capture (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
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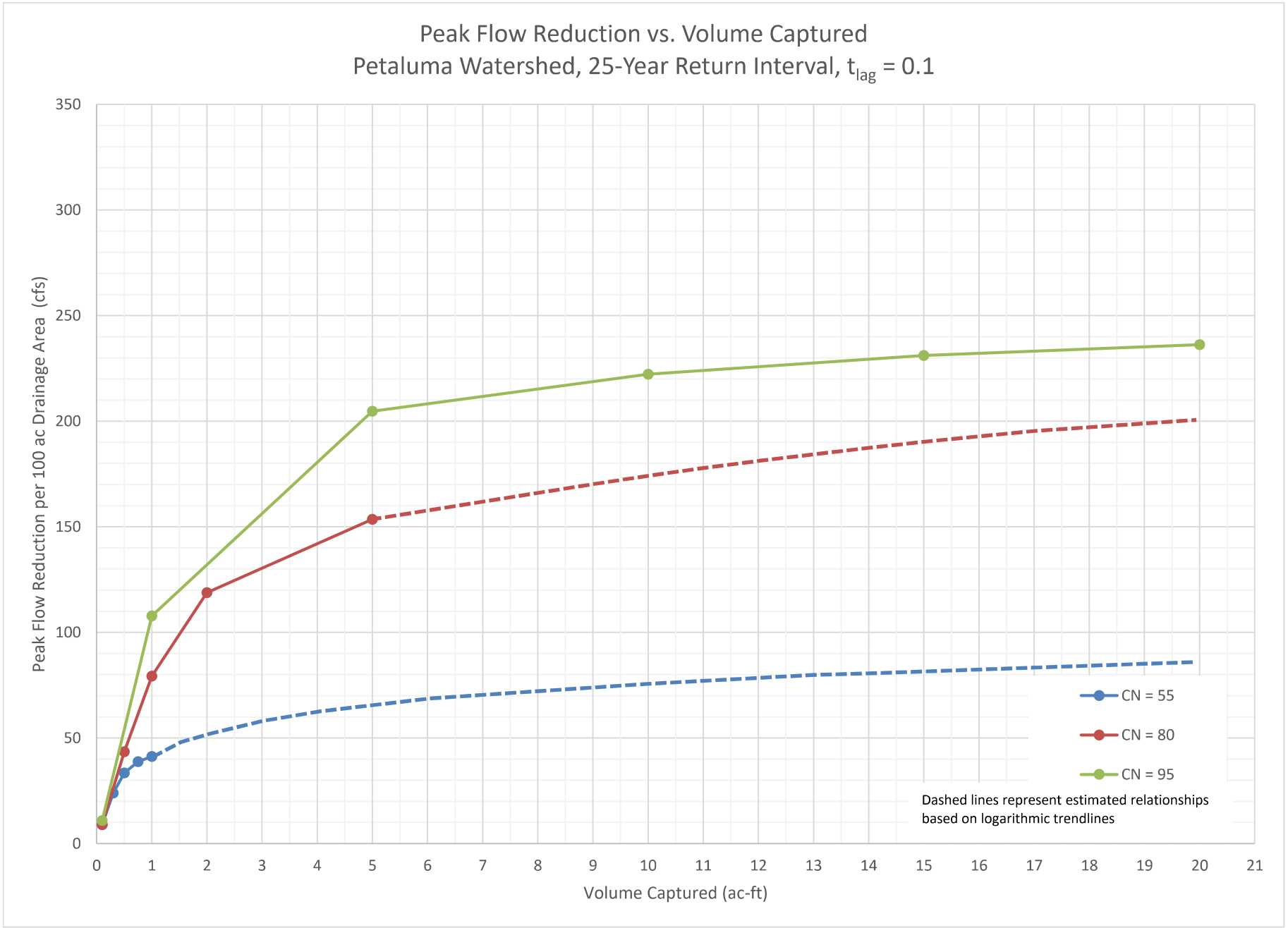
0.8
0.9
1
Runoff Coefficient, C

Appendix E
Flood Management Curves

ESA


Peak Flow Reduction vs. Volume Captured
Petaluma Watershed, 25-Year Return Interval, t_{lag} = 0.1
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
0
50
100
150
200
250
300
350
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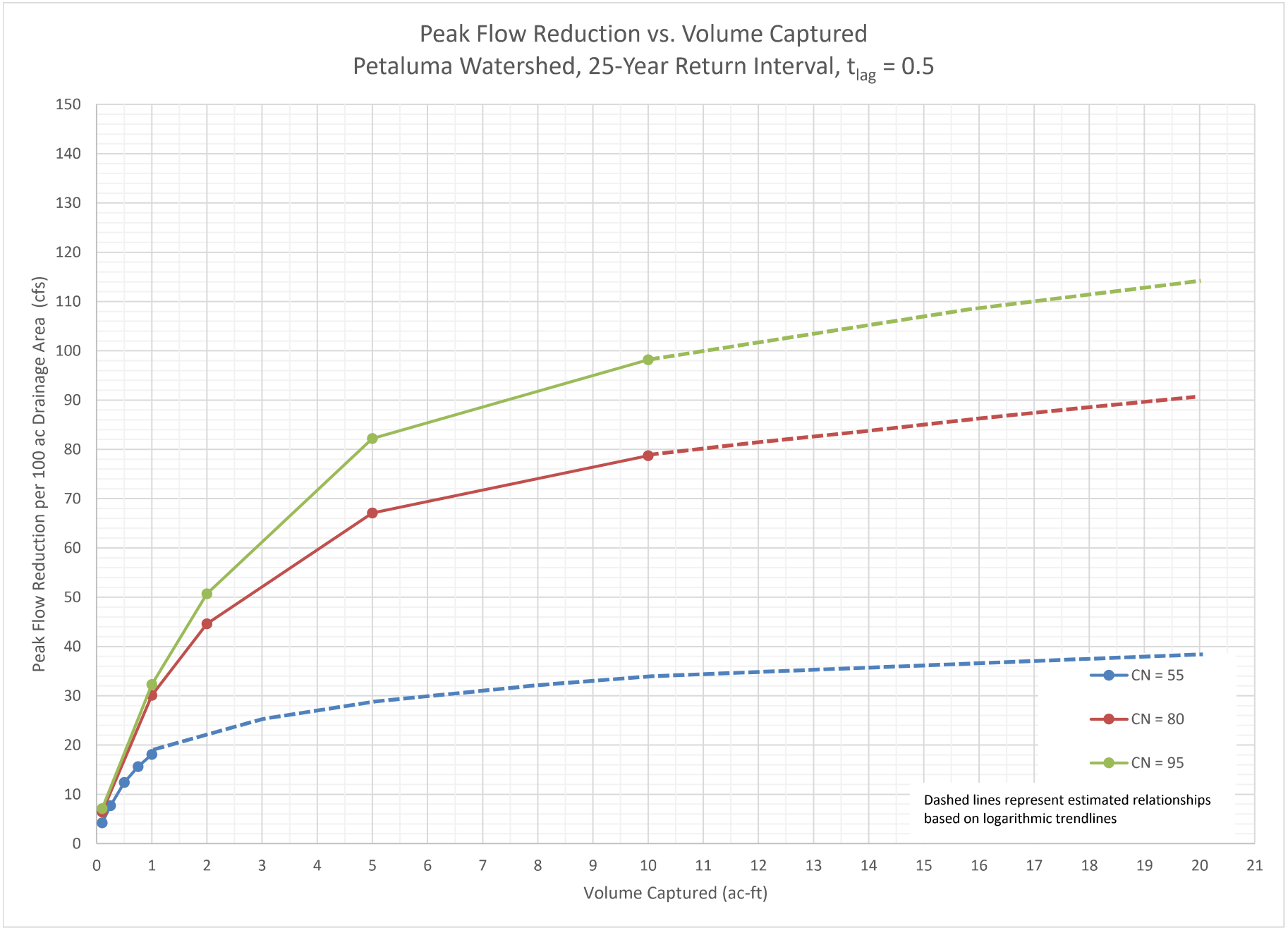
21
CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Petaluma Watershed, 25-Year Return Interval, t_{lag} = 0.5
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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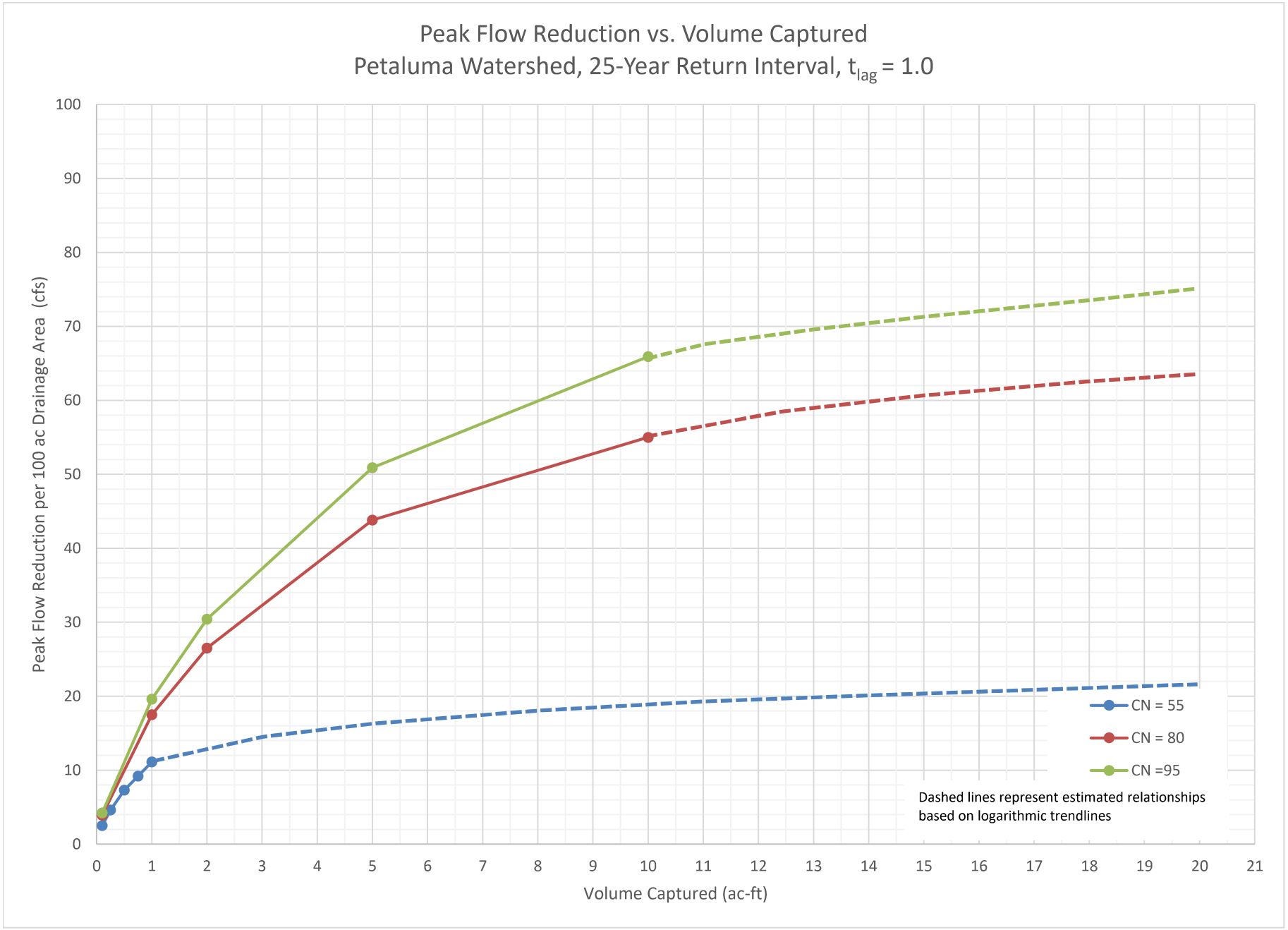
CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Petaluma Watershed, 25-Year Return Interval, t_{lag} = 1.0
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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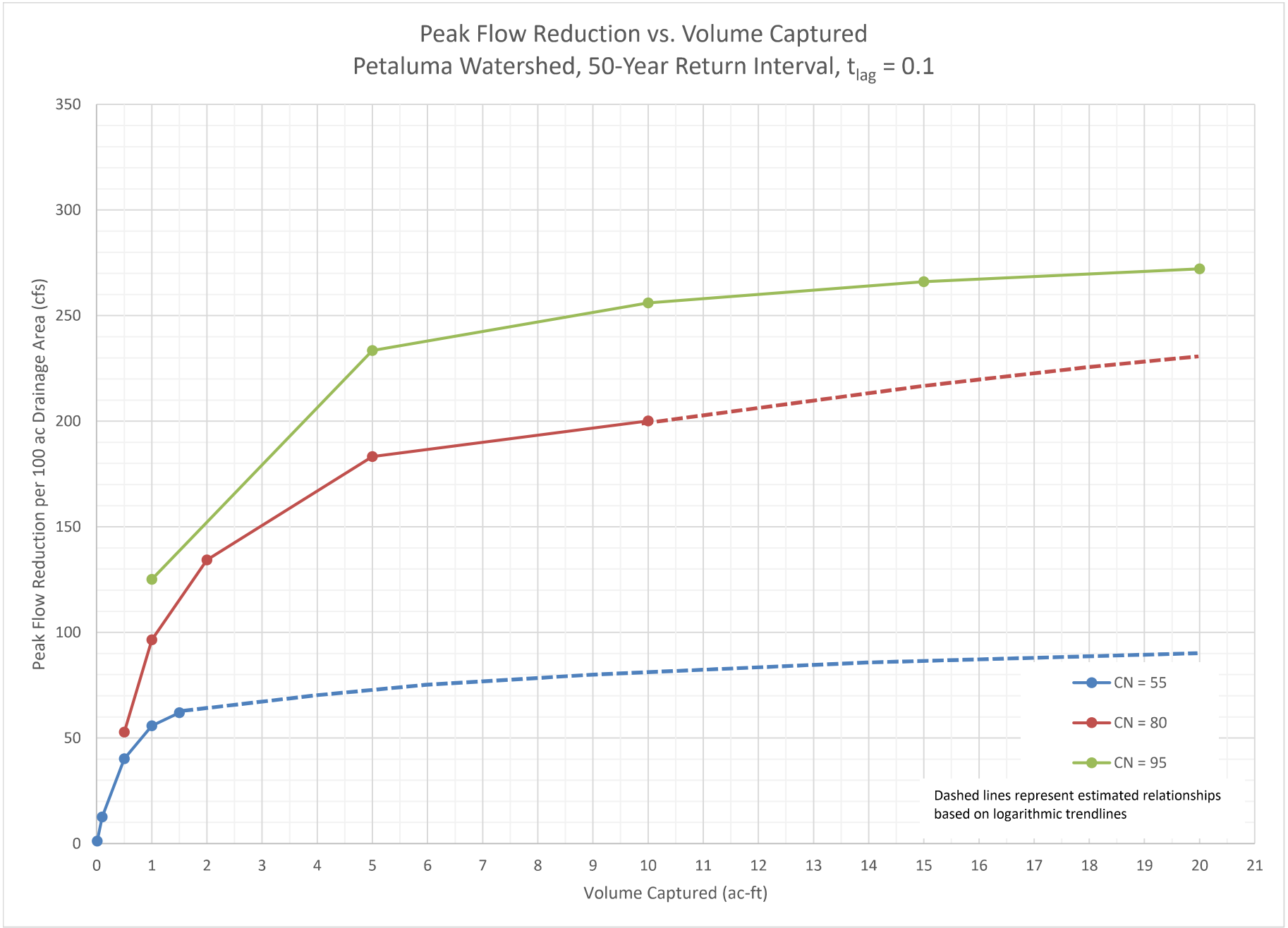
CN = 55
CN = 80
CN =95
Dashed lines represent estimated relationships
based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Petaluma Watershed, 50-Year Return Interval, t_{lag} = 0.1
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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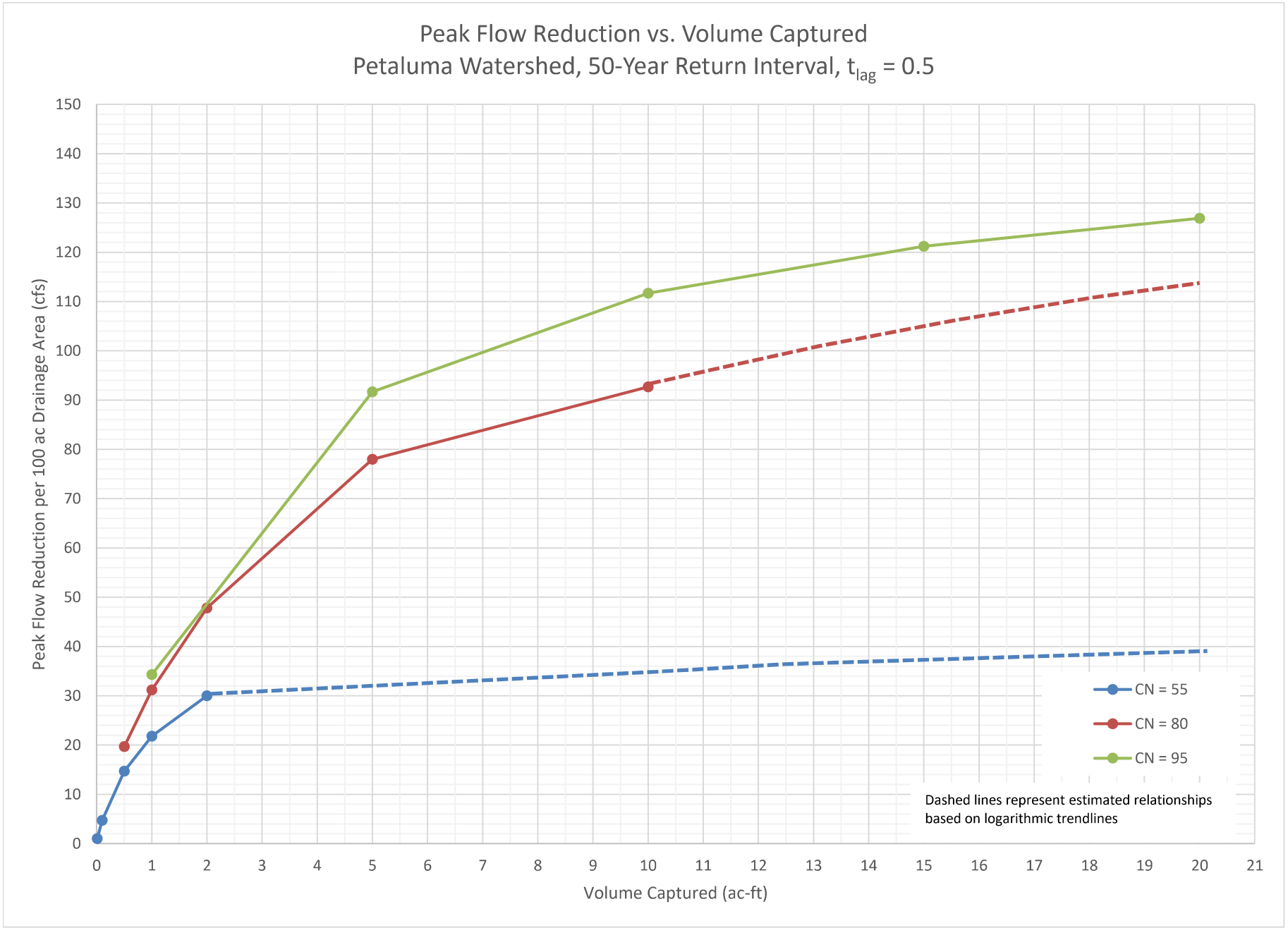
CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Petaluma Watershed, 50-Year Return Interval, t_{lag} = 0.5
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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CN = 55
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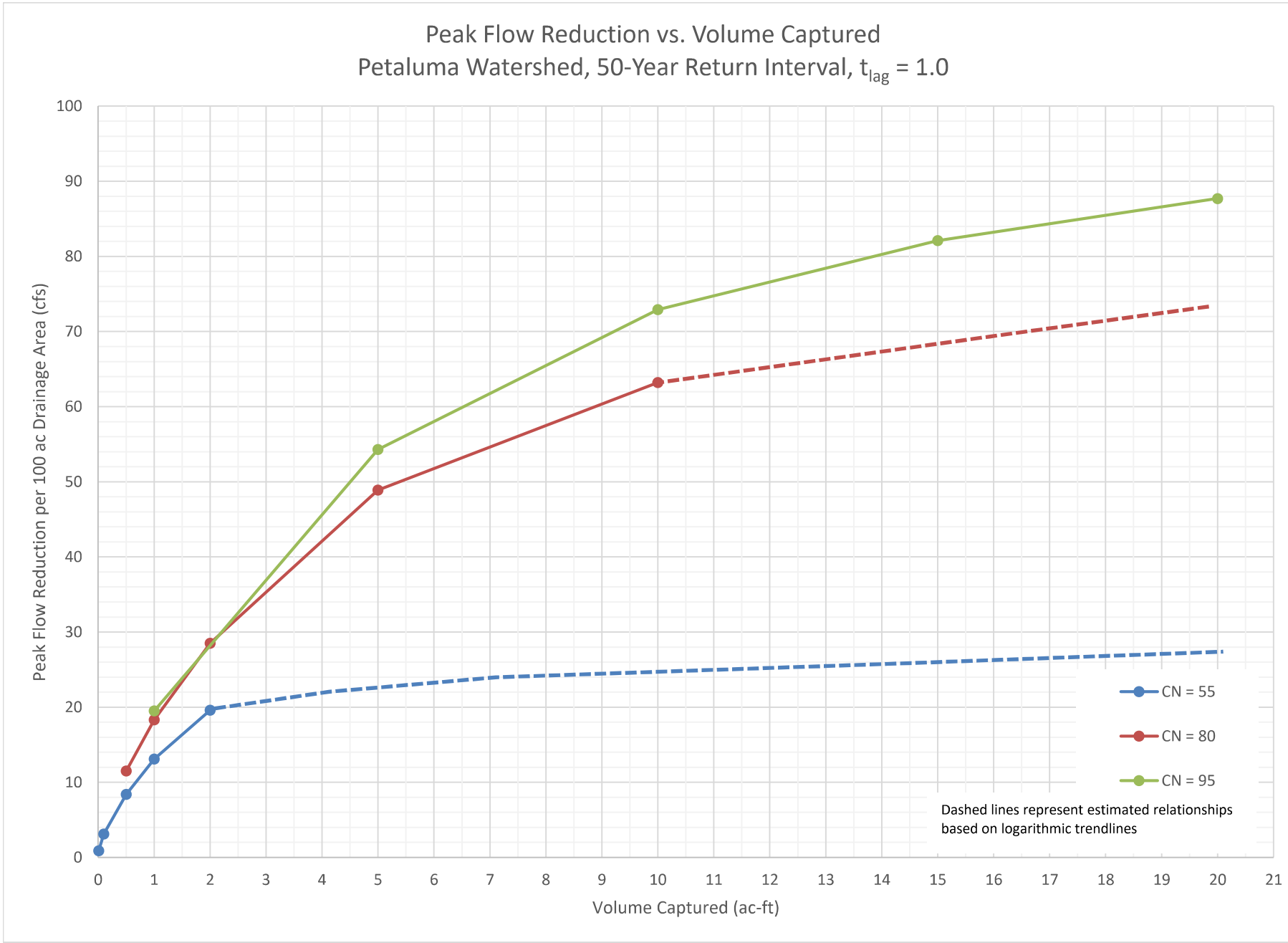
Dashed lines represent estimated relationships based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Petaluma Watershed, 50-Year Return Interval, t_{lag} = 1.0
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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CN = 55
CN = 80
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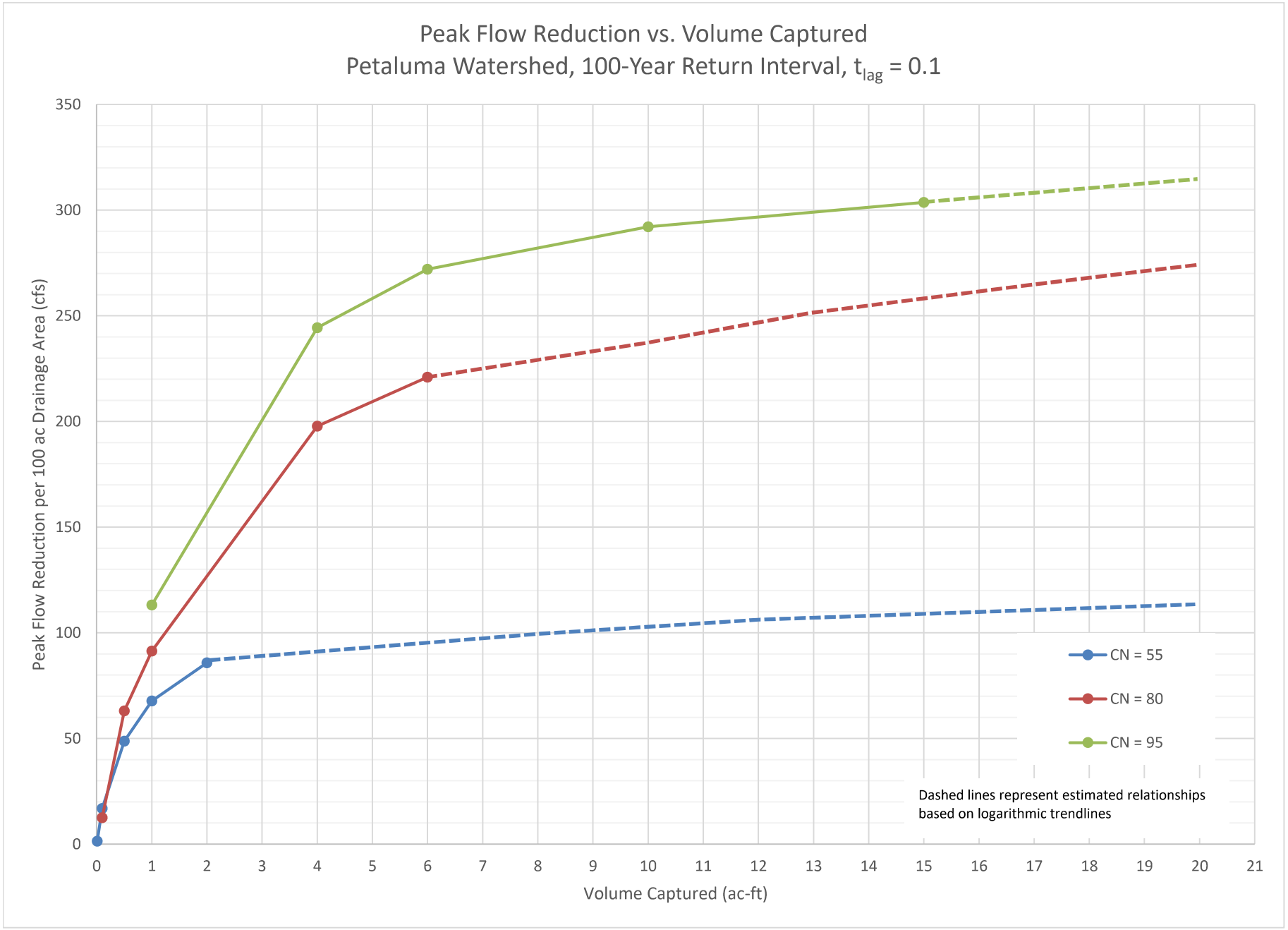
Dashed lines represent estimated relationships
based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Petaluma Watershed, 100-Year Return Interval, t_{lag} = 0.1
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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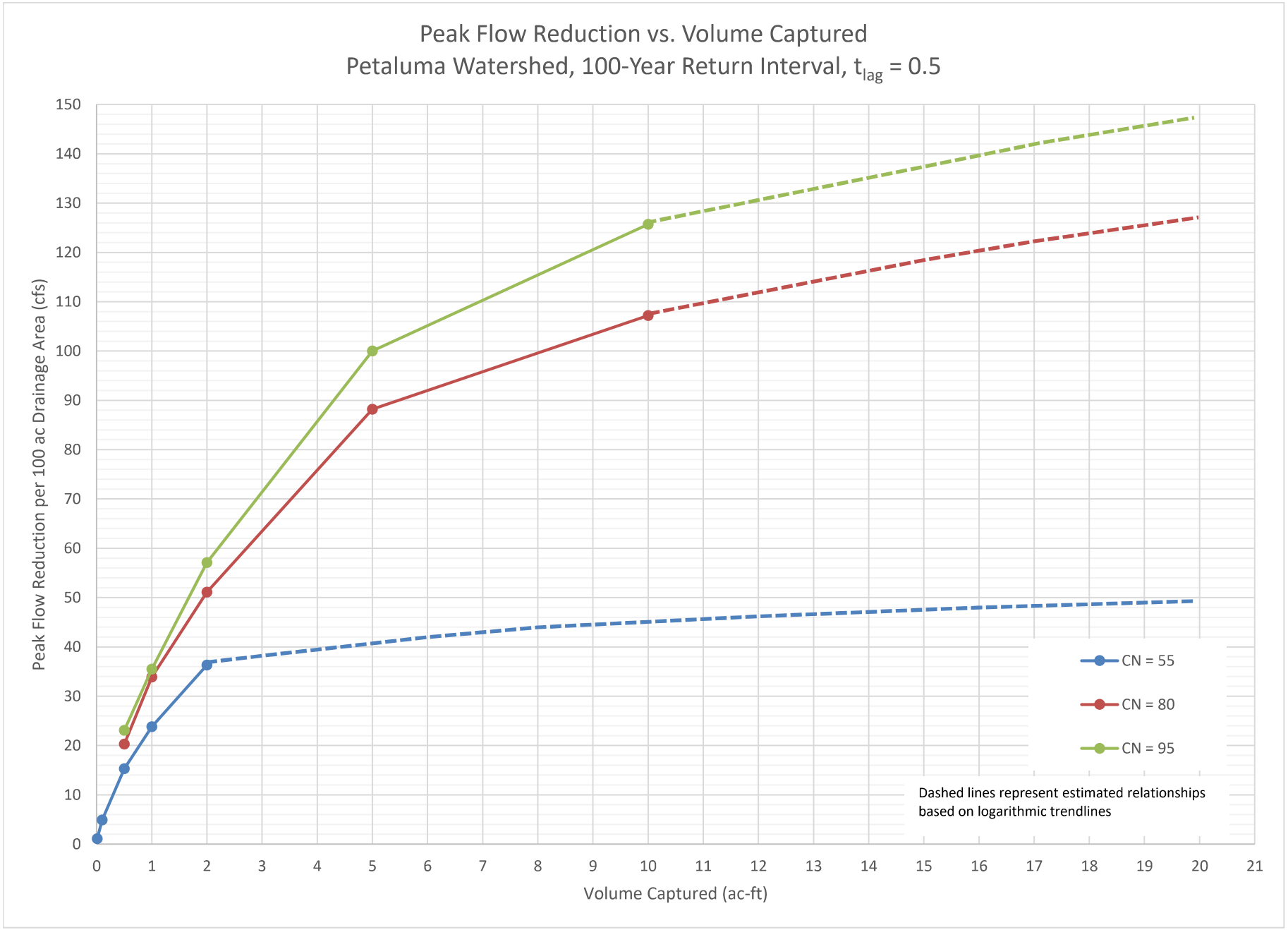
Peak Flow Reduction vs. Volume Captured
Petaluma Watershed, 100-Year Return Interval, t_{lag} = 0.5
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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CN = 55
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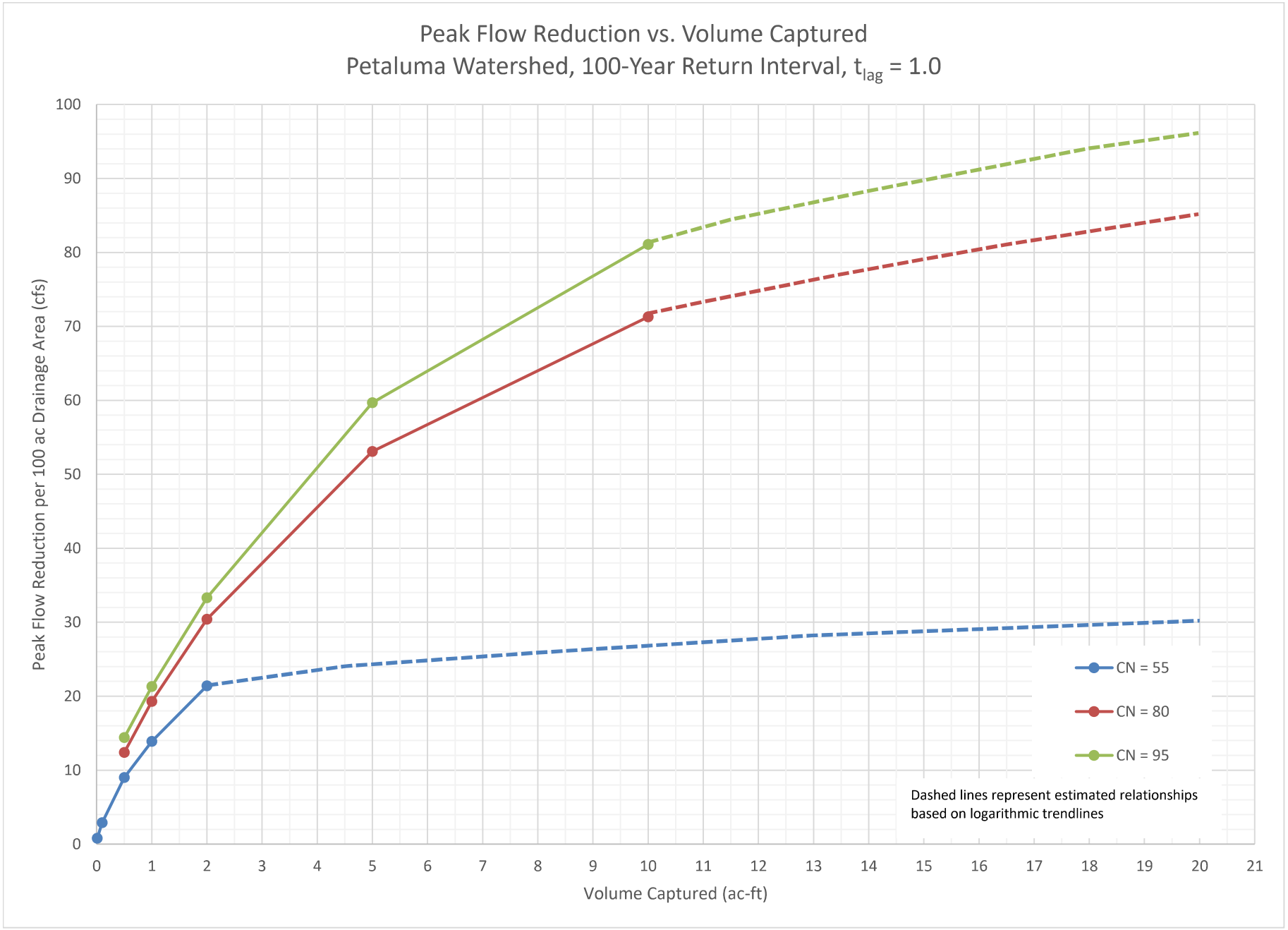
Dashed lines represent estimated relationships based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Petaluma Watershed, 100-Year Return Interval, t_{lag} = 1.0
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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CN = 55
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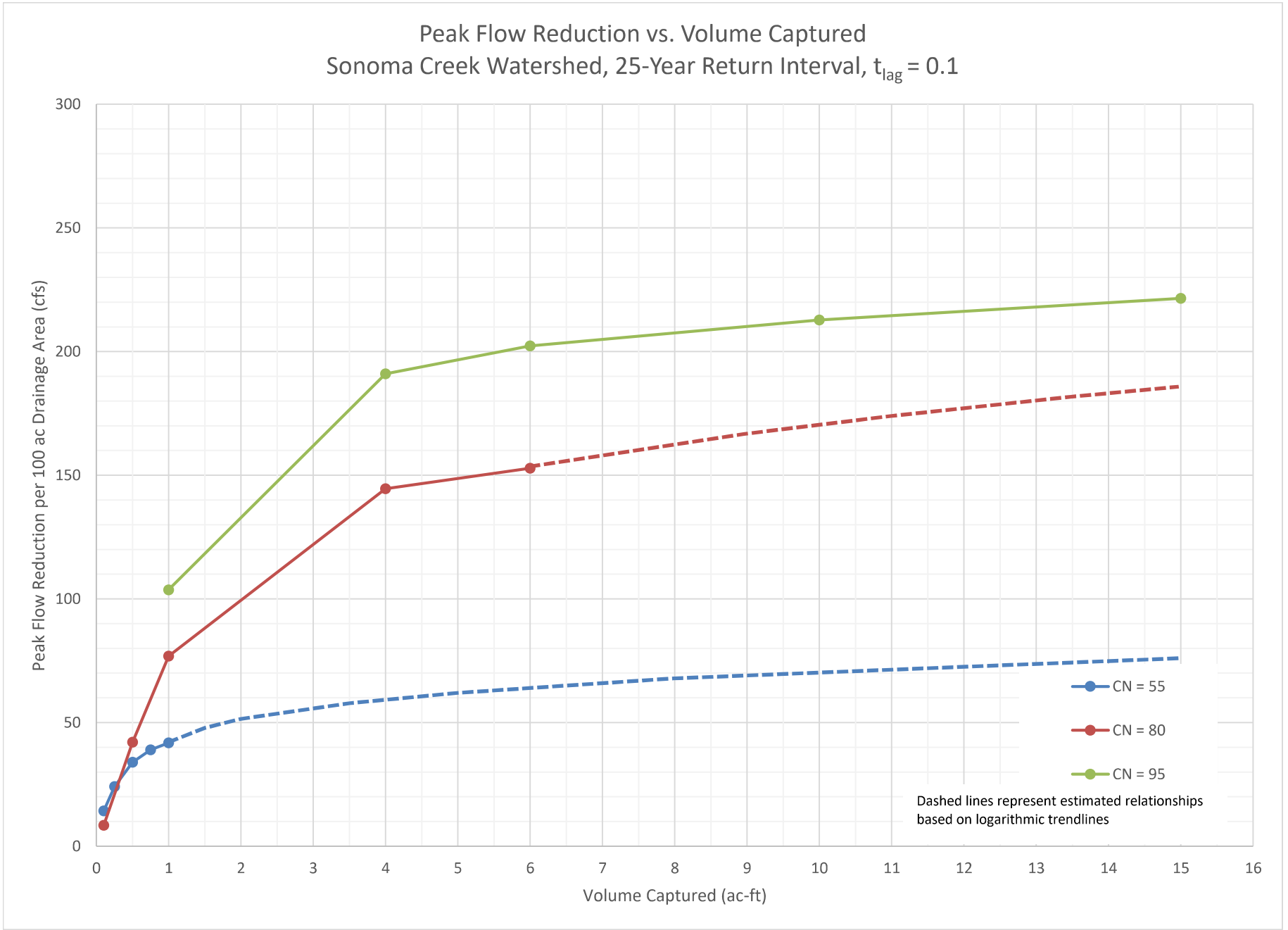
CN = 95
Dashed lines represent estimated relationships
based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Sonoma Creek Watershed, 25-Year Return Interval, t_{lag} = 0.1
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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CN = 55
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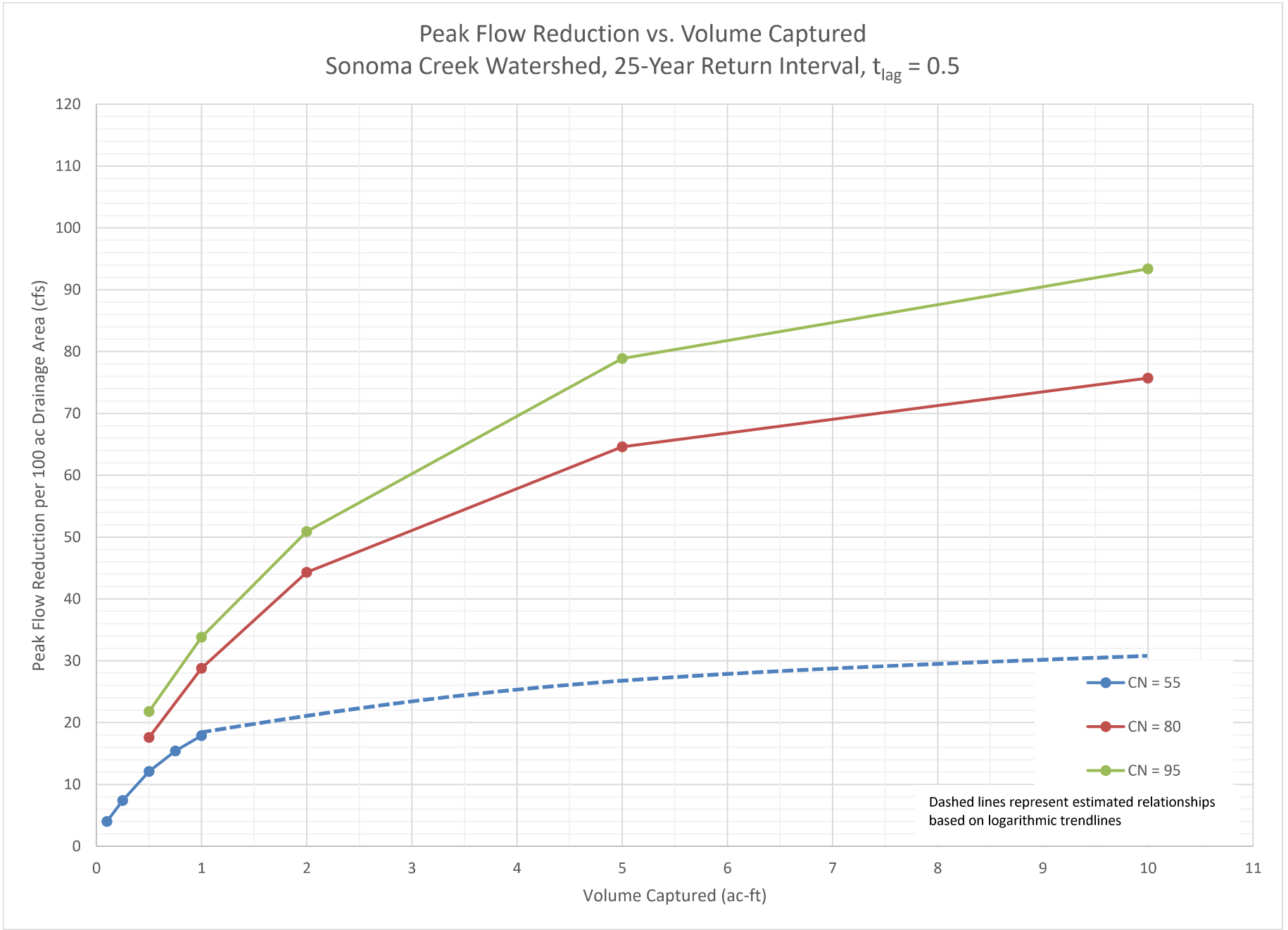
Dashed lines represent estimated relationships based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Sonoma Creek Watershed, 25-Year Return Interval, t_{lag} = 0.5
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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CN = 55
CN = 80
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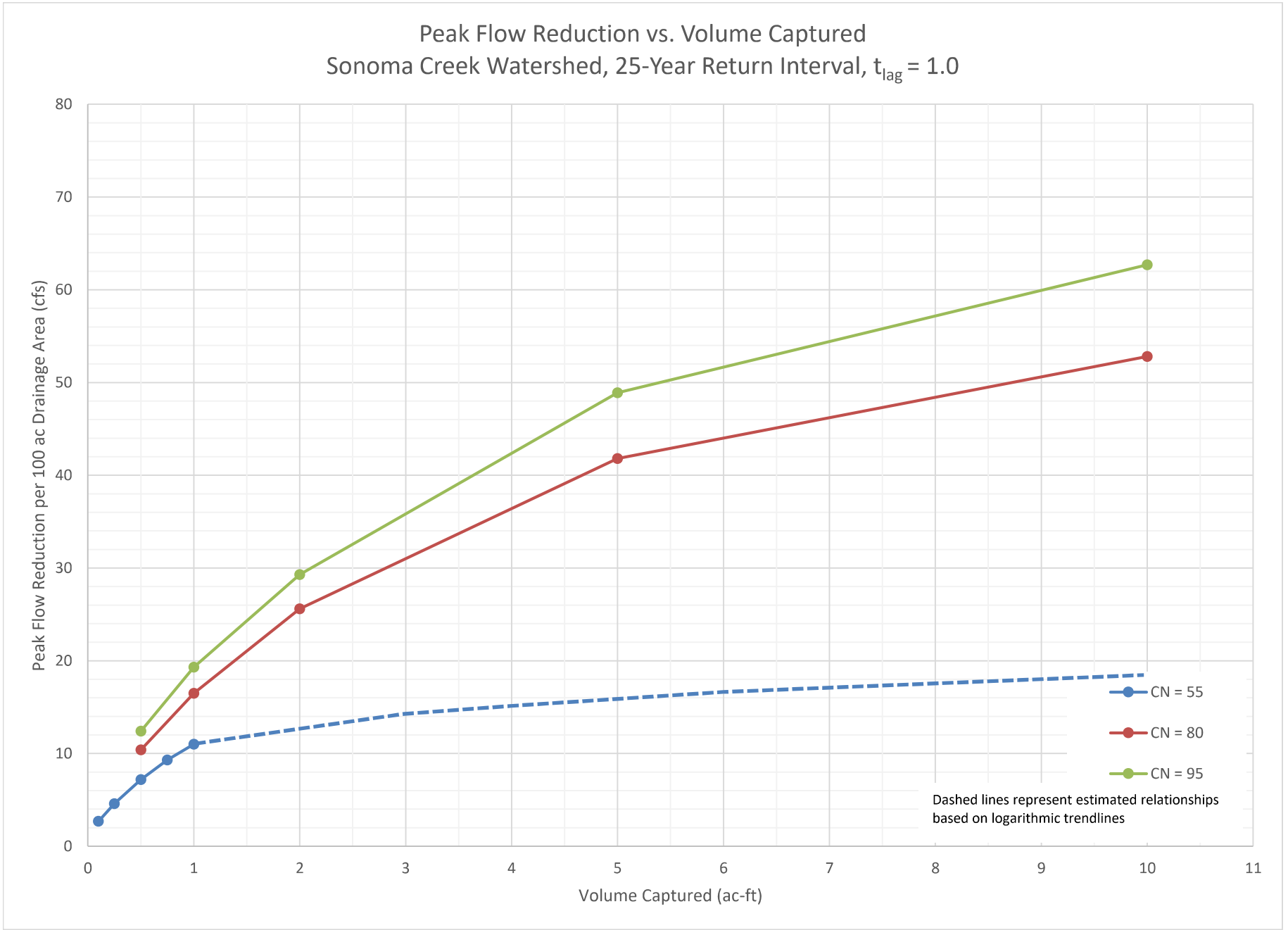
Dashed lines represent estimated relationships
based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Sonoma Creek Watershed, 25-Year Return Interval, t_{lag} = 1.0
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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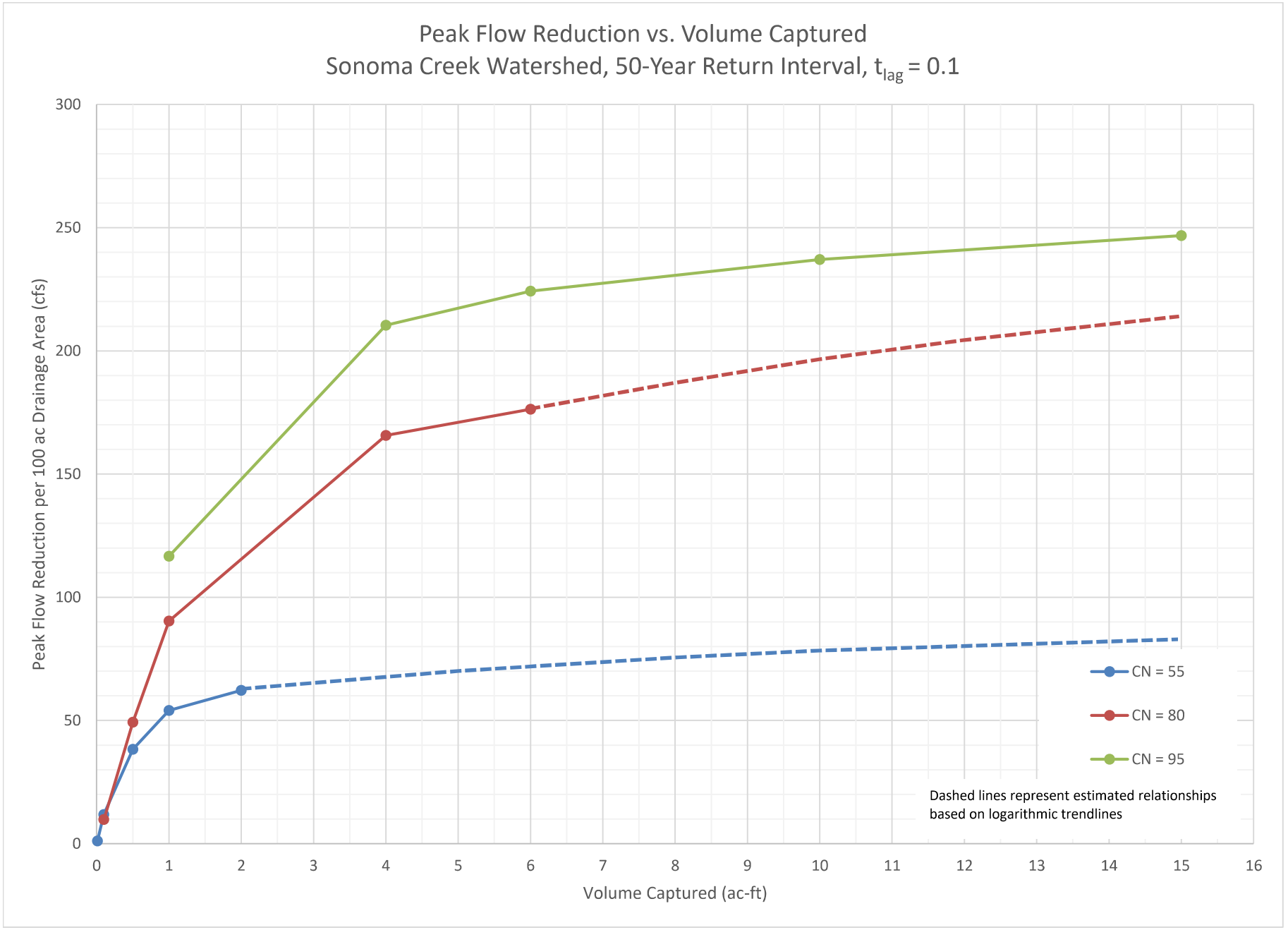
CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships
based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Sonoma Creek Watershed, 50-Year Return Interval, t_{lag} = 0.1
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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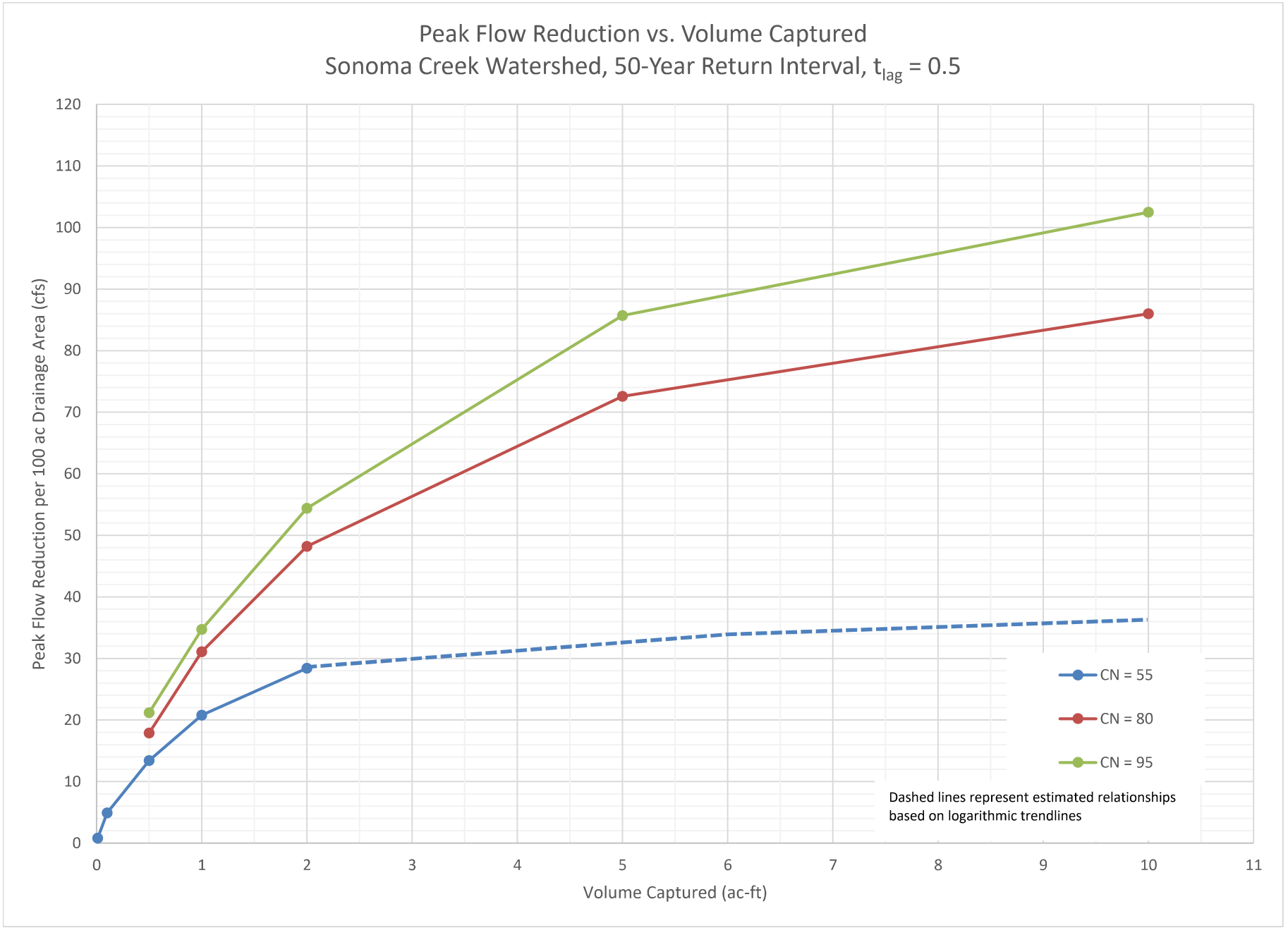
CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships
based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Sonoma Creek Watershed, 50-Year Return Interval, t_{lag} = 0.5
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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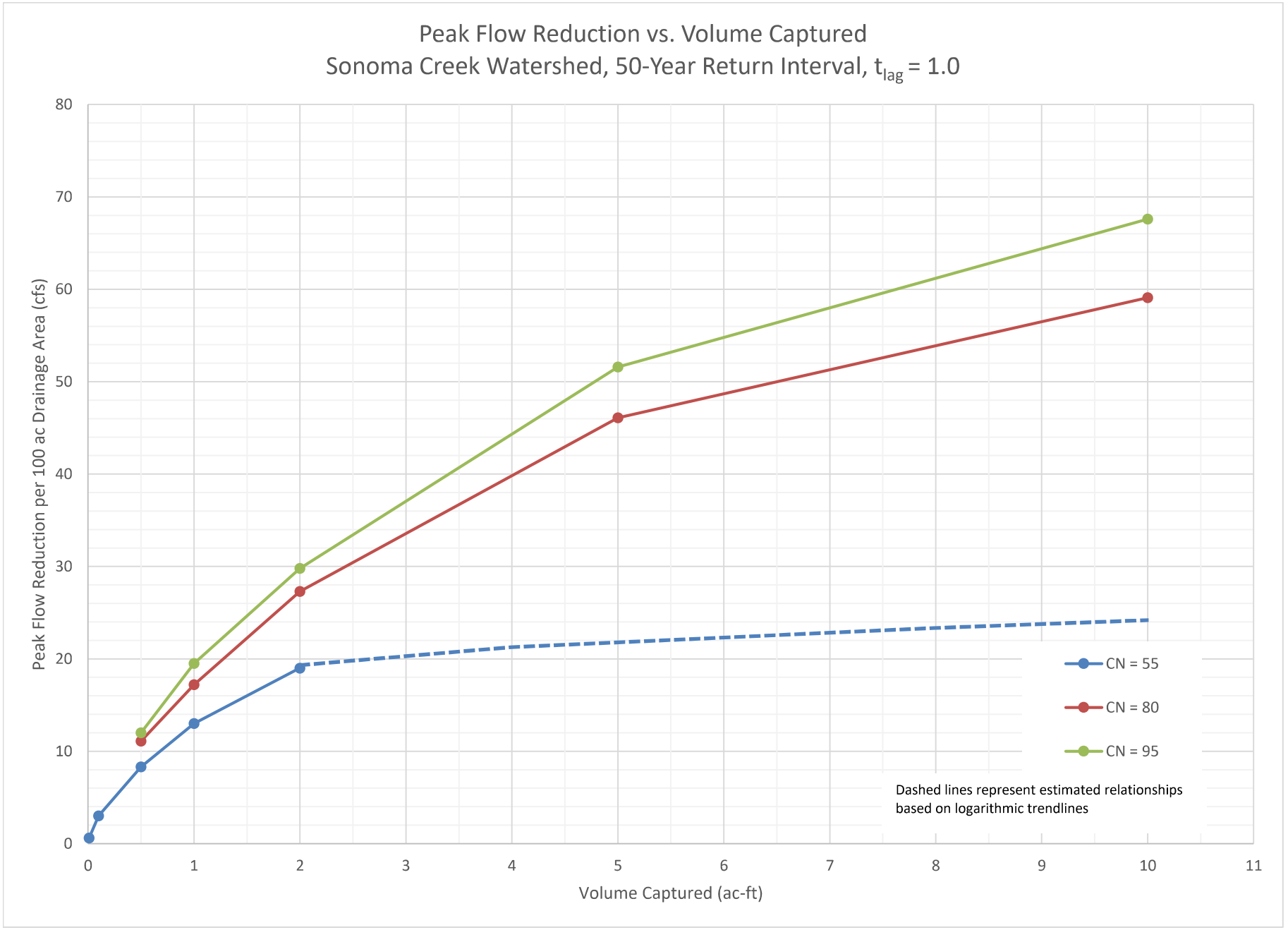
CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships
based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Sonoma Creek Watershed, 50-Year Return Interval, t_{lag} = 1.0
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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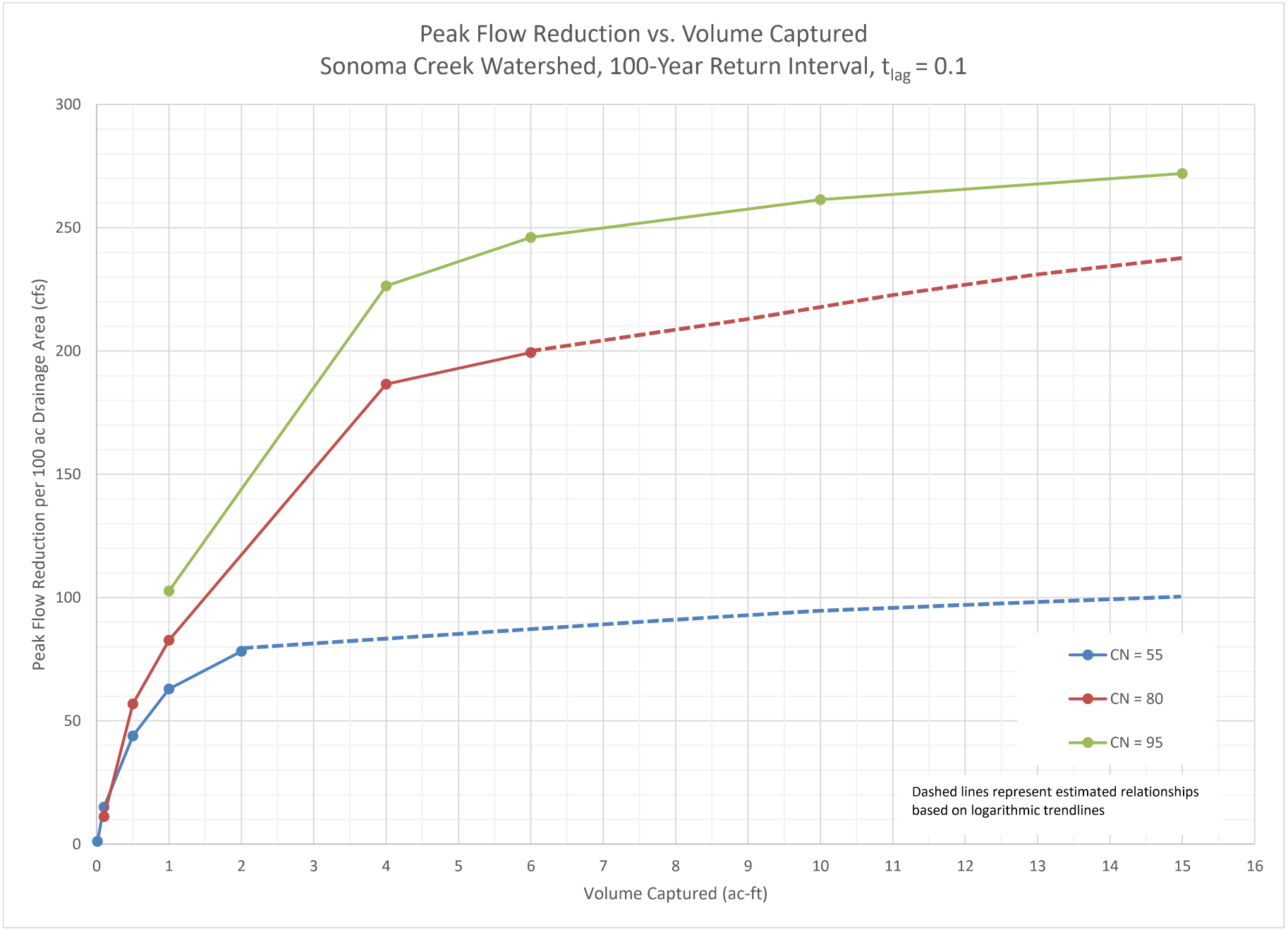
CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships
based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Sonoma Creek Watershed, 100-Year Return Interval, t_{lag} = 0.1
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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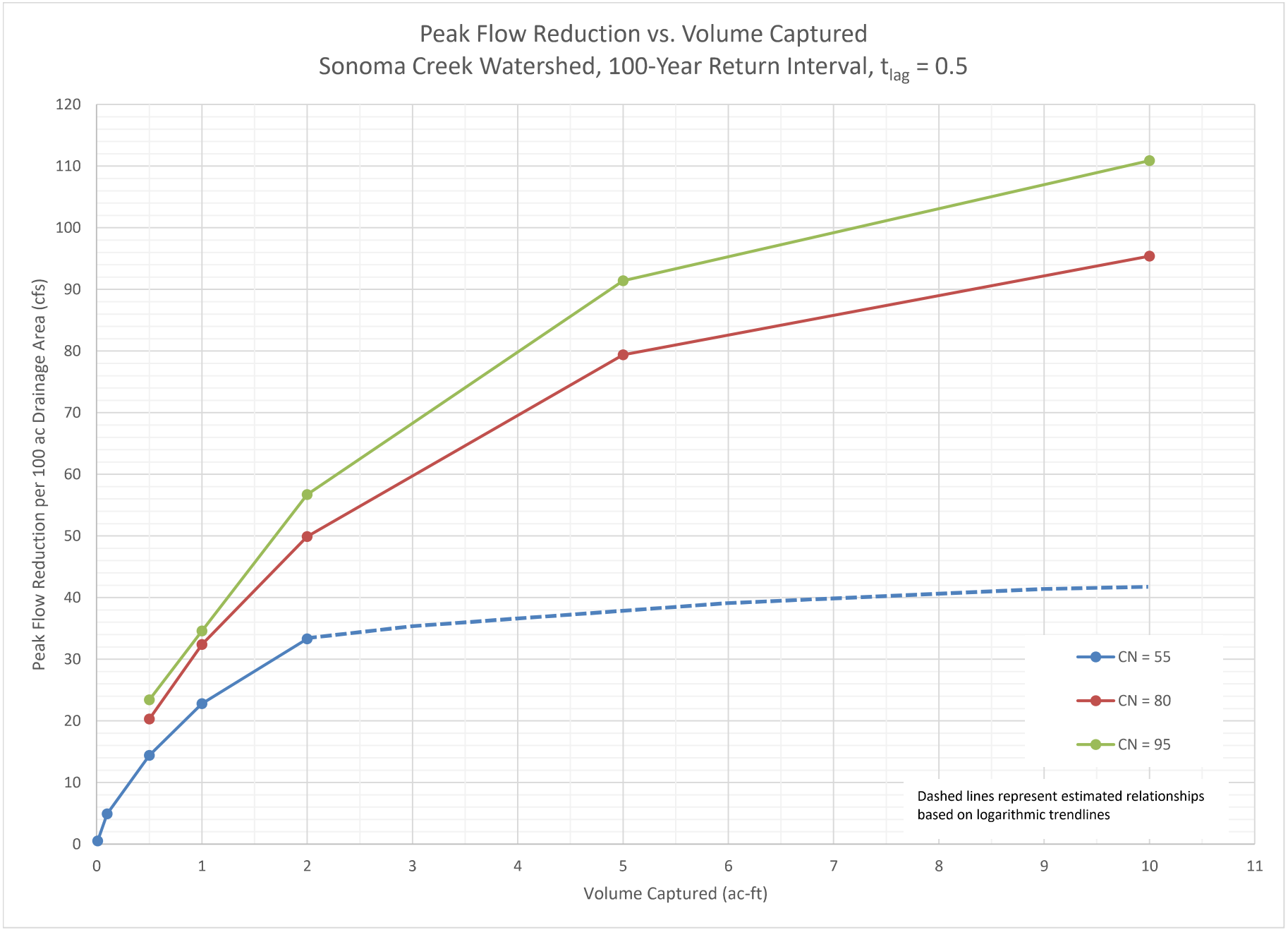
CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships
based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Sonoma Creek Watershed, 100-Year Return Interval, t_{lag} = 0.5
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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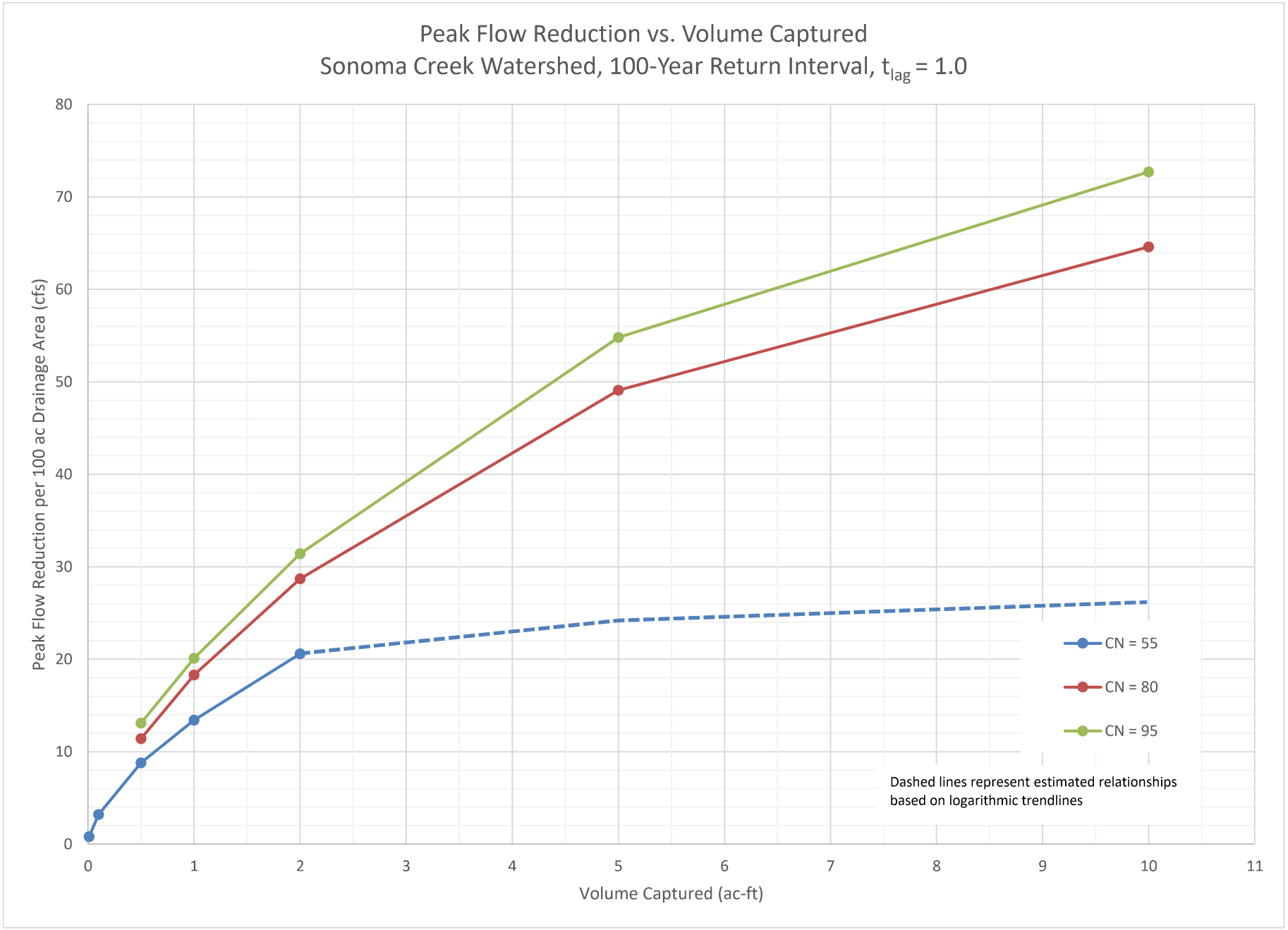
CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships based on logarithmic trendlines


Peak Flow Reduction vs. Volume Captured
Sonoma Creek Watershed, 100-Year Return Interval, t_{lag} = 1.0
Peak Flow Reduction per 100 ac Drainage Area (cfs)
Volume Captured (ac-ft)
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CN = 55
CN = 80
CN = 95
Dashed lines represent estimated relationships
based on logarithmic trendlines

Appendix F
Groundwater Field Investigation Summary

ESA

5.1 Field Investigation Summary of Results

Background and Purpose

For the development of the Southern Sonoma County Storm Water Resource Plan (SWRP), a limited field investigation task was included to inform our understanding of opportunities for groundwater recharge and groundwater conditions for selected sites in the Petaluma River watershed and Sonoma Creek watershed. The purpose of this report is to summarize the work performed and results of the investigation.

Field investigations were conducted as an important assessment element in implementing the Water Agency's Storm Water Management/Groundwater Recharge Initiative. The initiative addresses opportunities for flood protection, storm water management, and water supply in keeping with water quality objectives. Pursuant to the Sustainability Groundwater Management Act (SGMA), a Groundwater Sustainability Agency (GSA) was established in June 2017 for each of the high priority basins, Petaluma Valley groundwater basin and Sonoma Valley groundwater basin. The Petaluma Valley GSA and the Sonoma Valley GSA were formed to develop policy and determine natural resource priorities for the local community to manage water efficiently. In addition to consistency with SGMA, the Water Agency's Storm Water Management/Groundwater Recharge Initiative is also consistent with other State initiatives such as Flood-Managed Aquifer Recharge (Flood MAR).

The first step in implementing the Storm Water Management/Groundwater Recharge Initiative was to conduct scoping studies for each watershed to identify critical areas within the watershed that could provide flood protection and promote groundwater recharge and other watershed benefits, including ecosystem, water quality, water supply, agricultural, open space, and other community benefits. The Sonoma Valley Storm Water Management and Groundwater Recharge Scoping Study (ESA et. al., 2012) and the Upper Petaluma Flood Control Project (RMC, 2012) provide foundational information to guide and frame future feasibility studies.

To help further our understanding of potential groundwater recharge/storage benefits, the Water Agency contracted with Environmental Science Associates (ESA) and subcontractor, Todd Groundwater, to identify preferred SWRP projects for groundwater recharge, develop work plans for focused field investigations, and coordinate and implement field activities. Findings from the Phase 1 investigation were used to guide the development of a subsequent Phase 2 field investigation, which included exploratory drilling at one site in each watershed to confirm subsurface geophysical interpretations.

This summary describes the Phase 1 and Phase 2 field investigation methodology, as well as the site considerations and results for the locations chosen in the Petaluma River and Sonoma Creek watersheds.

Phase 1 Field Investigation

Local stakeholders, collaborating entities and the public were invited to submit project concepts that optimize storm water management in the Sonoma Creek and Petaluma River watersheds (Figures 1 and 2). A total of 60 project concepts were received by the initial submittal deadline of December 8, 2017. Projects were mapped and prioritized based on potential benefits (including, but not limited to groundwater recharge) using a scoring matrix and quantification process developed by the Water

Agency and consultants in accordance with guidance provided by the SWRP Technical Advisory Committee (TAC).

Todd Groundwater conducted an initial desktop screening evaluation that selected two projects in each watershed with favorable recharge potential for further subsurface evaluation as part of an initial (Phase 1) field investigation. Proposed SWRP project sites were evaluated through a GIS analysis based on individual and composite hydrogeologic conditions, which included soil permeability, topographic slope, aquifer permeability, groundwater occurrence and flow direction, and land use (Figures 3 through 11). Spatial datasets were provided directly by the Water Agency or obtained from publicly available data sources, including a desktop study completed to map favorable areas for groundwater recharge in the Sonoma Valley (SEC and SWCA, 2011).

For the Phase 1 field investigation, surface geophysical surveying (using the electrical resistivity method) was conducted to characterize vadose zone lithology. Geophysical surveys help estimate the horizontal extent and thickness of potential fine- and coarse-grained sediments, and identify the depth to possible perched water conditions and the regional water table. The electrical resistivity survey method allows for the development of high-resolution, two-dimensional vertical cross sections. This method injects electrical current into the ground which causes a potential difference that can be converted into an apparent resistivity value. The electrical resistivity method is highly sensitive to both lithology variations and water content, allowing for differentiation between fine-grained deposits (silt and clay) and coarse-grained deposits (sand and gravel), as well as mapping of perched water conditions and the local water table.

Petaluma River Watershed

Project sites located along the Petaluma River between Penngrove and City of Petaluma have relatively shallow depth to water (less than 10-15 feet below ground surface [feet-bgs]) and poor soil permeability and were excluded from further consideration. The project located along Highway 37 is located downgradient of the major groundwater users in the basin and thus does not provide a significant groundwater benefit.

Ultimately, two preferred projects were selected for the Phase 1 field investigation based on their favorable geology, soil, and depth to water conditions. The two sites correspond to the proposed SWRP projects as project number 6 “Lichau Creek Rainwater Catchment and Wildlife Pond” and project number 56 "Upper Lichau Storm Water Detention.” Both proposed projects are in the community of Penngrove. The Lichau Creek Rainwater Catchment and Wildlife Pond project is herein referred to as Penngrove Site 1, while the Upper Lichau Storm Water Detention project is herein referred to as Penngrove Site 2.

Two 830-foot geophysical resistivity surveys were completed on each site. Data were analyzed to develop cross sections depicting apparent resistivity with imaging depth to 109 feet below ground surface (feet-bgs) at Penngrove Site 1 and from 109 to 153 feet-bgs at Penngrove Site 2. Phase 1 results indicated generally more favorable lithology and available vadose zone storage at Penngrove Site 2.

Sonoma Creek Watershed

Selection of candidate sites were based on several factors. Sites were excluded from further screening consideration if they were found to be: a) located along Sonoma Creek where relatively shallow depth to

water (less than 10 feet-bgs) occurs; and b) located south of the City of the Sonoma, downgradient of the major groundwater users in the basin, providing less groundwater benefit.

Ultimately, two preferred projects were selected for the Phase 1 field investigation based on their favorable geology, soil, and depth to water conditions. The two sites correspond to the proposed SWRP projects listed as project number 53 "El Verano Area Storm Water Detention- Ernie Smith Regional Park" and project number 28 "Carriger Creek Storm Water Capture and Groundwater Recharge." The El Verano Area Storm Water Detention- Ernie Smith Regional Park project is herein referred to as Site 1, while the Carriger Creek Storm Water Capture and Groundwater Recharge project is herein referred to as Site 2. Following the completion of the Phase 1 investigation, an additional site (adjacent Sonoma County right-of-way) was identified along Carriger Creek for consideration in the Phase 2 investigation. This site is referred to herein as Site 3.

Two geophysical resistivity surveys were completed (510 and 830 feet long) across Site 1 and one 830-foot long resistivity survey was completed across Site 2. Data were analyzed to develop cross sections depicting apparent resistivity with imaging depth to 99 and 174 feet-bgs at Site 1 and to 109 feet-bgs at Site 2. Phase 1 survey results indicated generally favorable lithology and available vadose zone storage at both sites.

Phase 2 Field Investigation

In the Sonoma Creek watershed, Phase 1 resistivity surveys indicated that the permeability of vadose zone sediments and available vadose zone storage capacity are favorable at both Sites 1 and 2. In the Petaluma River watershed, Phase 1 resistivity surveys indicated that the permeability of vadose zone sediments and available vadose zone storage capacity are more favorable at Penngrove Site 2.

To satisfy the Phase 2 field investigation objectives, a series of soil borings and monitoring wells were drilled/constructed at one site in each watershed using the hollow stem auger (HSA) and sonic drilling methods. The HSA method utilizes a claw bit to advance hollow stem auger flights into the ground. Soil samples are typically collected in five foot intervals with a 1.5-foot long Standard Penetration Test (SPT) split spoon sampler. The sonic method uses a high-frequency vibratory drive head to advance an outer steel casing and inner steel core barrel. SPT samples (and formation cuttings from auger flights) from HSA drilling and continuous sediment cores from sonic drilling were logged in the field by a California Professional Geologist from Todd Groundwater. Physical properties, including color, lithology, texture, and moisture content, were recorded using the Unified Soil Classification System (USCS) and Munsell color chart. Water levels in the soil borings were identified when first encountered and upon stabilization after reaching the total drilling depth.

Petaluma River Watershed

An exploratory soil boring and a monitoring well cluster (adjacent independent wells with variable screen interval depths) were drilled at Penngrove Site 2 to characterize vadose zone conditions and confirm depth to shallow groundwater (if encountered). Drilling locations were selected to characterize subsurface conditions in areas considered most suitable for future storm water detention-groundwater recharge facilities based on Phase 1 results and discussions with the property owner about future development plans on the parcel. Two soil borings were completed as permanent monitoring wells (MW-1D and MW-1S).

Sonoma Creek Watershed

Site 2 was selected for subsurface investigation in Phase 2 based on existing and complementary available from existing well monitoring data and interest in further assessing potential for perched conditions in the area. Accordingly, Todd Groundwater designed a Phase 2 field investigation program involving exploratory drilling to confirm subsurface conditions at Site 2. The Sonoma County Right-of-Way site (Site 3) was also included in the Phase 2 drilling investigation to characterize shallow subsurface conditions at two locations along Carriger Creek. An exploratory soil boring at Site 2 and a nested monitoring well at Site 3 were drilled/installed using a combination of the hollow-stem auger (HSA) and sonic drilling methods.

Summary of Results

Based on the results of the Phase 1 and 2 field investigations, investigations conclude that electrical resistivity surveying is a cost-effective and reliable method for characterizing subsurface conditions pertinent to groundwater recharge potential, including identification of lithologic distribution and occurrence of perched and/or shallow groundwater. Likewise, the sonic method is a cost-effective, reliable, and clean exploratory drilling method for confirming interpretations based on resistivity surveying. For implementation of proposed SWRP projects, where subsurface characterization is warranted, a similar phased field investigation program is recommended.

Petaluma River Watershed

Results of desktop screening evaluation and field investigations indicate that opportunities to implement storm water detention-groundwater recharge projects in the Petaluma River watershed exist. Identifying groundwater recharge opportunities relies on identifying sites where available vadose zone storage is sufficient and permeable soils are underlain by permeable alluvial sediments with good hydraulic connection to the water table. Such conditions occur along the west-northwest margins of the Petaluma River watershed where permeable soils are underlain by coarse-grained sediments comprising the Wilson Grove Formation. Similar conditions occur further north (in the vicinity of Field Investigation Sites 1 and 2), where pockets of permeable soils are underlain by the relatively coarse-grained Petaluma Formation. Shallow depth to water and fine-grained soils/sediments in the central and western portions of the watershed, and steep topography along the southern and northwestern margins of the watershed provide less-than-favorable conditions. Depending on local storm runoff patterns, centralized and de-centralized storm water detention-groundwater recharge projects in these areas may be feasible and provide significant groundwater storage benefits in the groundwater basin.

At Penngrove Site 2, the infiltration properties of near-surface sediment and vadose zone storage capacity are variable, but the presence of coarse-grained sediments in the upper 50-60 feet appear to be favorable for a storm water-groundwater recharge project.

Should a project be pursued at these sites, the following recommendations apply:

- Install a pressure transducer and datalogger in both MW-1S and MW-1D to track the well responses to precipitation over the next wet season.
- If monitoring data indicate sufficient vadose zone storage capacity (e.g., water levels do not rise to near-ground surface), it is recommended to conduct a field-scale infiltration test to estimate site recharge capacity.

- Conduct a focused assessment of local storm runoff and overland flows across the site is recommended.

A better understanding of the storm runoff patterns combined with planning-level infiltration rates is critical to the reliable quantification of potential groundwater recharge benefits and successful design of a storm water capture-groundwater recharge facility.

Sonoma Creek Watershed

Results of the desktop screening evaluation and field investigations indicate that opportunities to implement storm water detention-groundwater recharge projects in the Sonoma Creek watershed exist. Identifying groundwater recharge opportunities relies on identifying sites where available vadose zone storage is sufficient and permeable soils are underlain by permeable alluvial sediments with good hydraulic connection to the water table. Such conditions are found across the western portion of the Sonoma Valley (generally north of Highway 12). Here, topography is generally flat, permeable soils are underlain by coarse-grained alluvial sediments (particularly along tributaries to Sonoma Creek), and depth to water is greater than approximately 40-50 feet-bgs. Potential constraints to a successful project includes local perched groundwater conditions associated with shallow clay layers and land availability along tributary drainages. Depending on local storm runoff patterns, centralized and de-centralized storm water detention-groundwater recharge projects in these areas may be feasible and provide significant groundwater storage benefits in the groundwater basin.

Overall, the results of Phase 1 geophysical resistivity profiling and Phase 2 exploratory drilling indicate that the infiltration properties of near-surface sediments underlying Site 1, 2 and 3 are generally favorable for a storm water capture-groundwater recharge project. However, available vadose zone storage along Carriger Creek near Arnold Drive (and perhaps further east) may be limited. The lateral extent of shallow clay lenses and perched water conditions along Carriger Creek are not well characterized.

Should a project be pursued at these sites, the following recommendations apply:

- At Site 1, perform exploratory drilling to confirm vadose zone lithology and depth to water
- At Site 3, install pressure transducer and datalogger to track water level response to precipitation over rainy season
- If sufficient vadose zone storage capacity is confirmed at a given site, conduct field-scale infiltration tests to estimate site recharge capacity. Infiltration testing should be conducted to allow for recharge mounding to develop beneath the test basin to evaluate the effect of shallow groundwater or low-permeability deposits, if any. Test design ideally involves the recharge of potable water or irrigation water in an excavated or bermed test basin with sufficient infiltrating area to minimize the effect of lateral spreading of recharge water (e.g., 25 feet x 25 feet). During the test, the discharge rate and ponded water level should be monitored and converted to a vertical infiltration rate.
- Perform a focused assessment of local storm runoff to understand likely pathways and durations of overland flow near Site 1 and along Carriger Creek.

A better understanding of the storm runoff patterns combined with planning-level infiltration rates is critical to the reliable quantification of potential groundwater recharge benefits and successful design of a storm water detention-groundwater recharge facility.

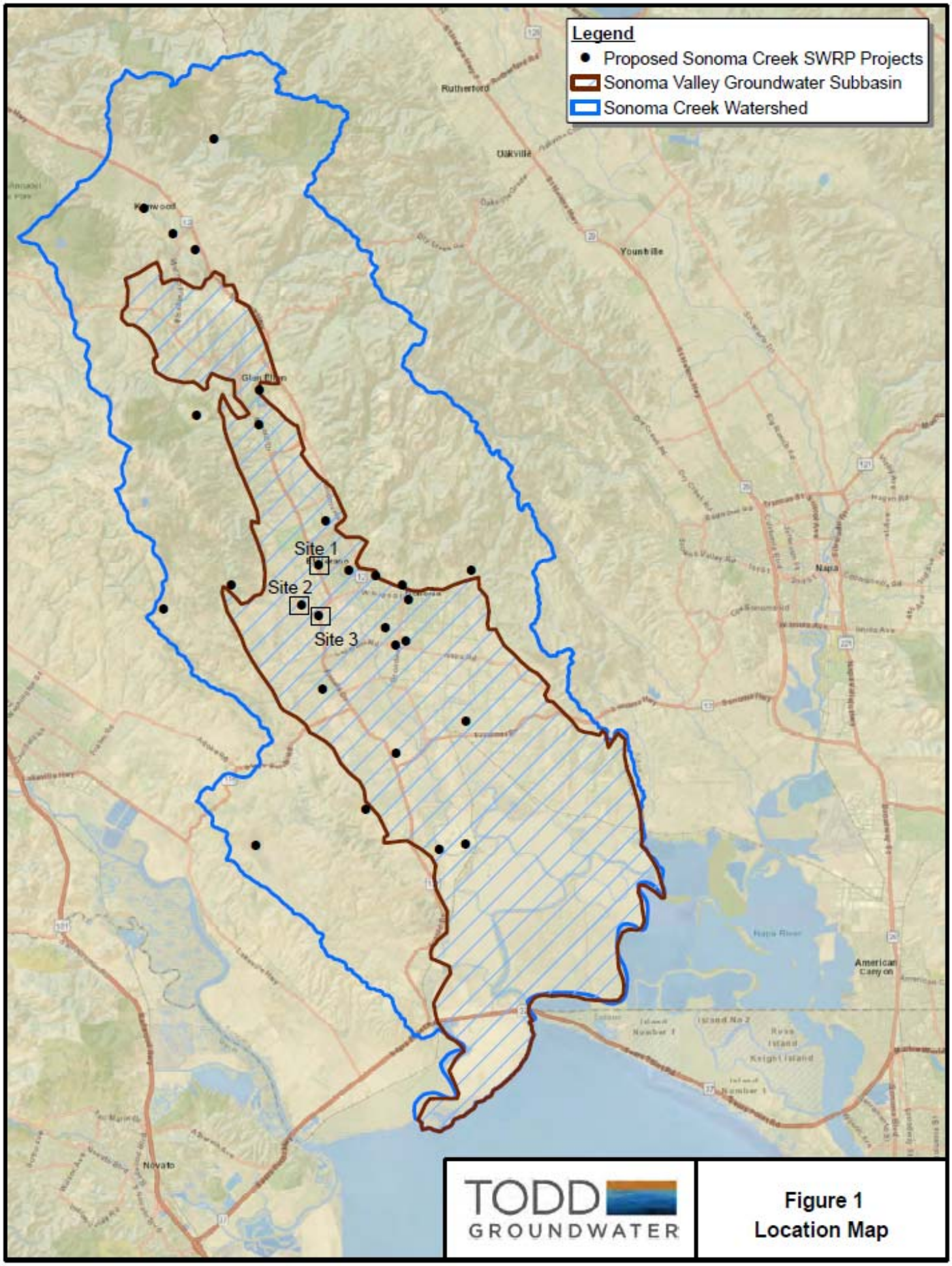
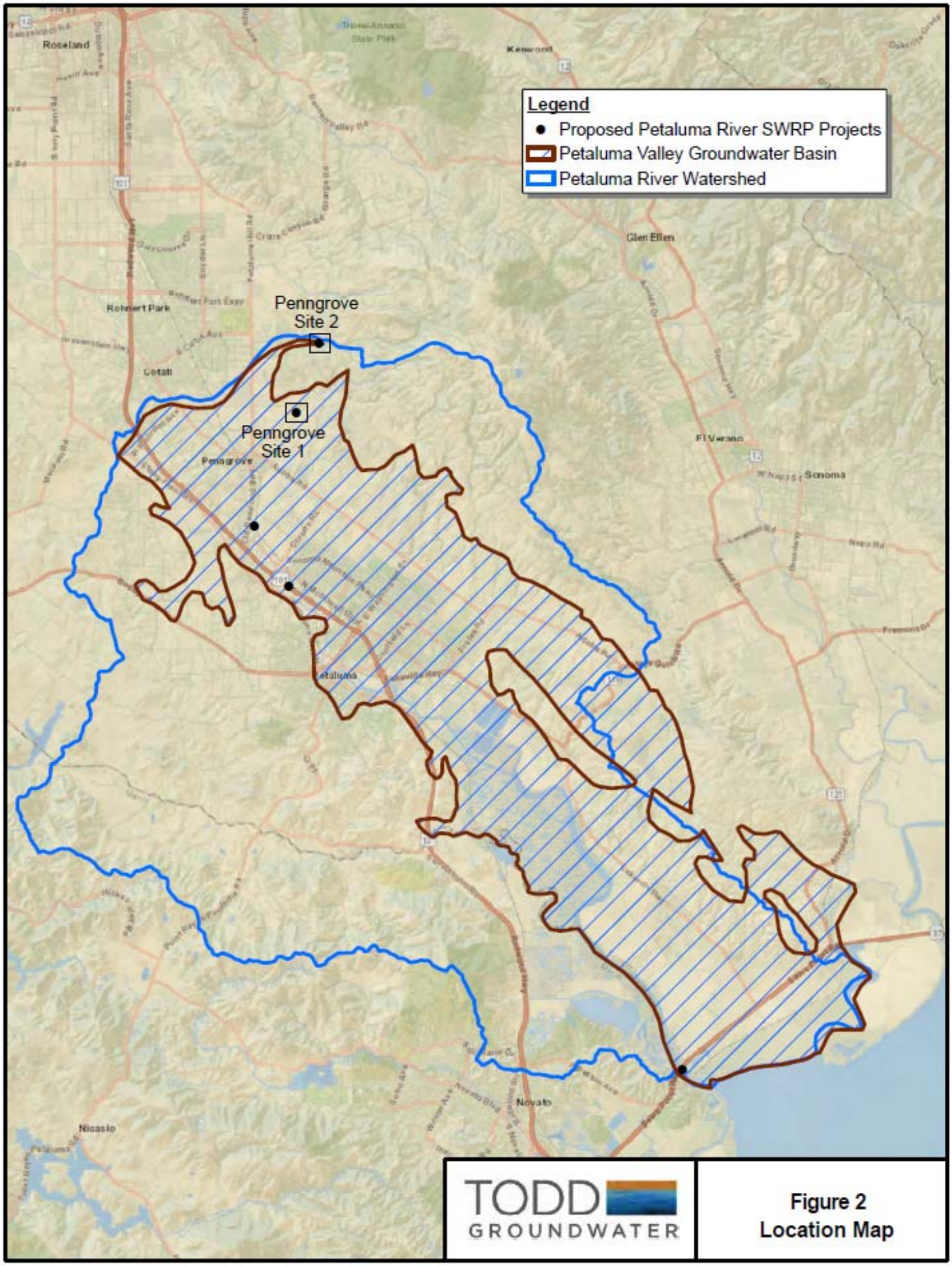
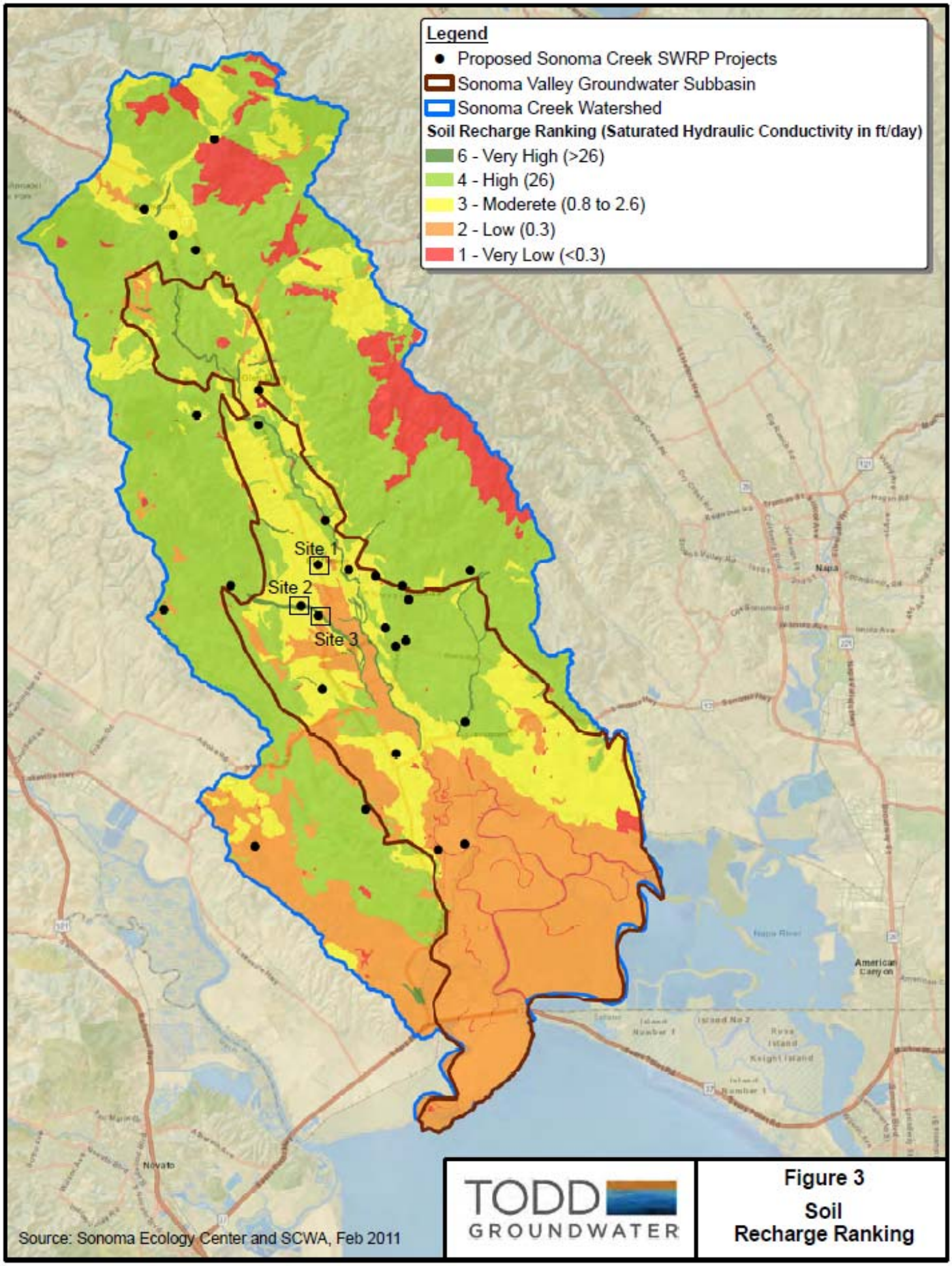


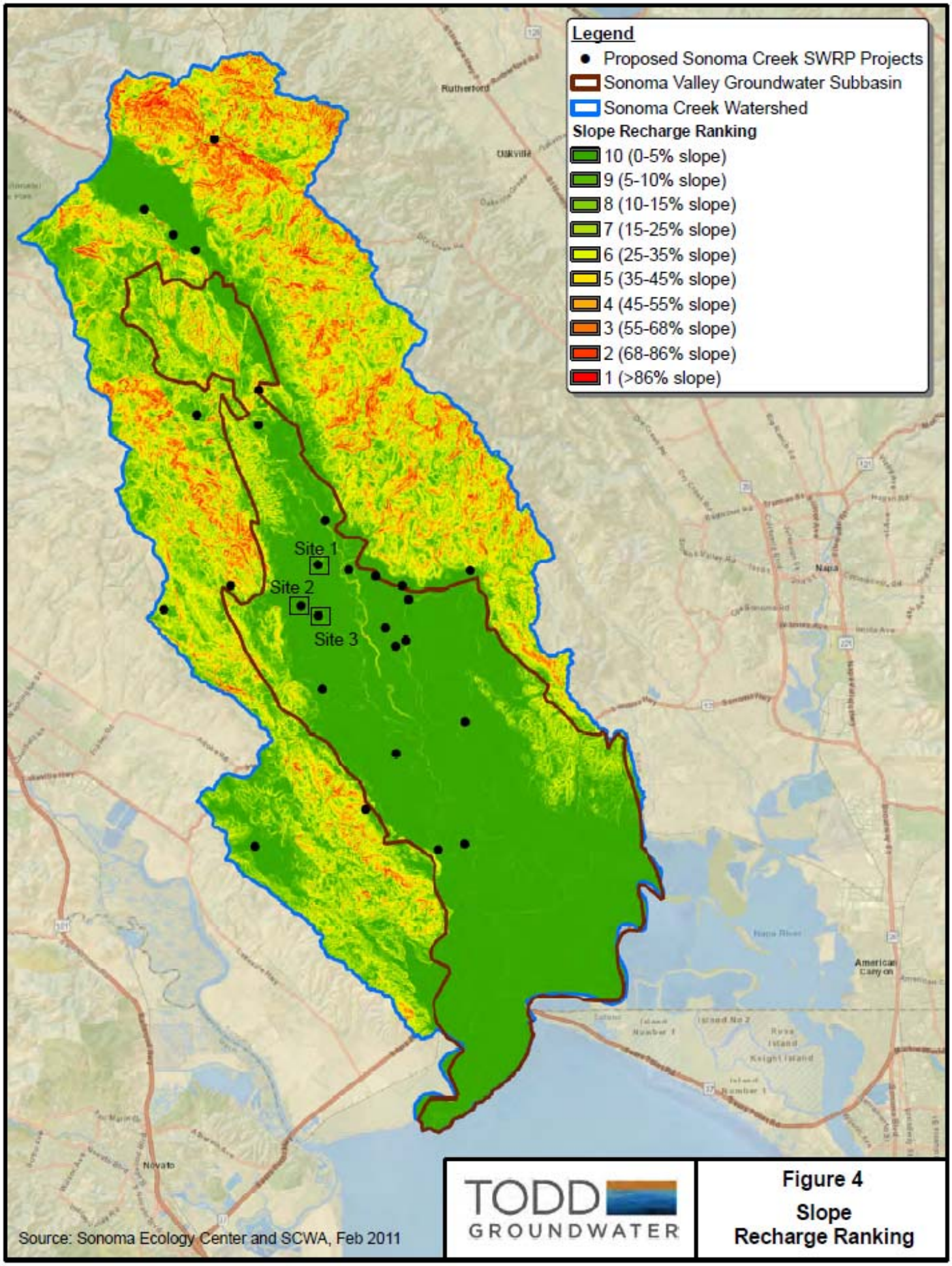
Figure 1
Location Map



TODD GROUNDWATER

Figure 2
Location Map


Legend
Proposed Sonoma Creek SWRP Projects
Sonoma Valley Groundwater Subbasin
Sonoma Creek Watershed
Soil Recharge Ranking (Saturated Hydraulic Conductivity in ft/day)
6 - Very High (>26)
4 - High (26)
3 - Moderete (0.8 to 2.6)
2 - Low (0.3)
1 - Very Low (<0.3)
Site 1
Site 2
Site 3
Napa
Novato
Source: Sonoma Ecology Center and SCWA, Feb 2011
TODD GROUNDWATER
Figure 3
Soil
Recharge Ranking


Legend
Proposed Sonoma Creek SWRP Projects
Sonoma Valley Groundwater Subbasin
Sonoma Creek Watershed
Slope Recharge Ranking
10 (0-5% slope)
9 (5-10% slope)
8 (10-15% slope)
7 (15-25% slope)
6 (25-35% slope)
5 (35-45% slope)
4 (45-55% slope)
3 (55-68% slope)
2 (68-86% slope)
1 (>86% slope)
Site 1
Site 2
Site 3
Rutherford
Oakville
Napa
Novato
American Canyon
Source: Sonoma Ecology Center and SCWA, Feb 2011
TODD GROUNDWATER
Figure 4
Slope Recharge Ranking

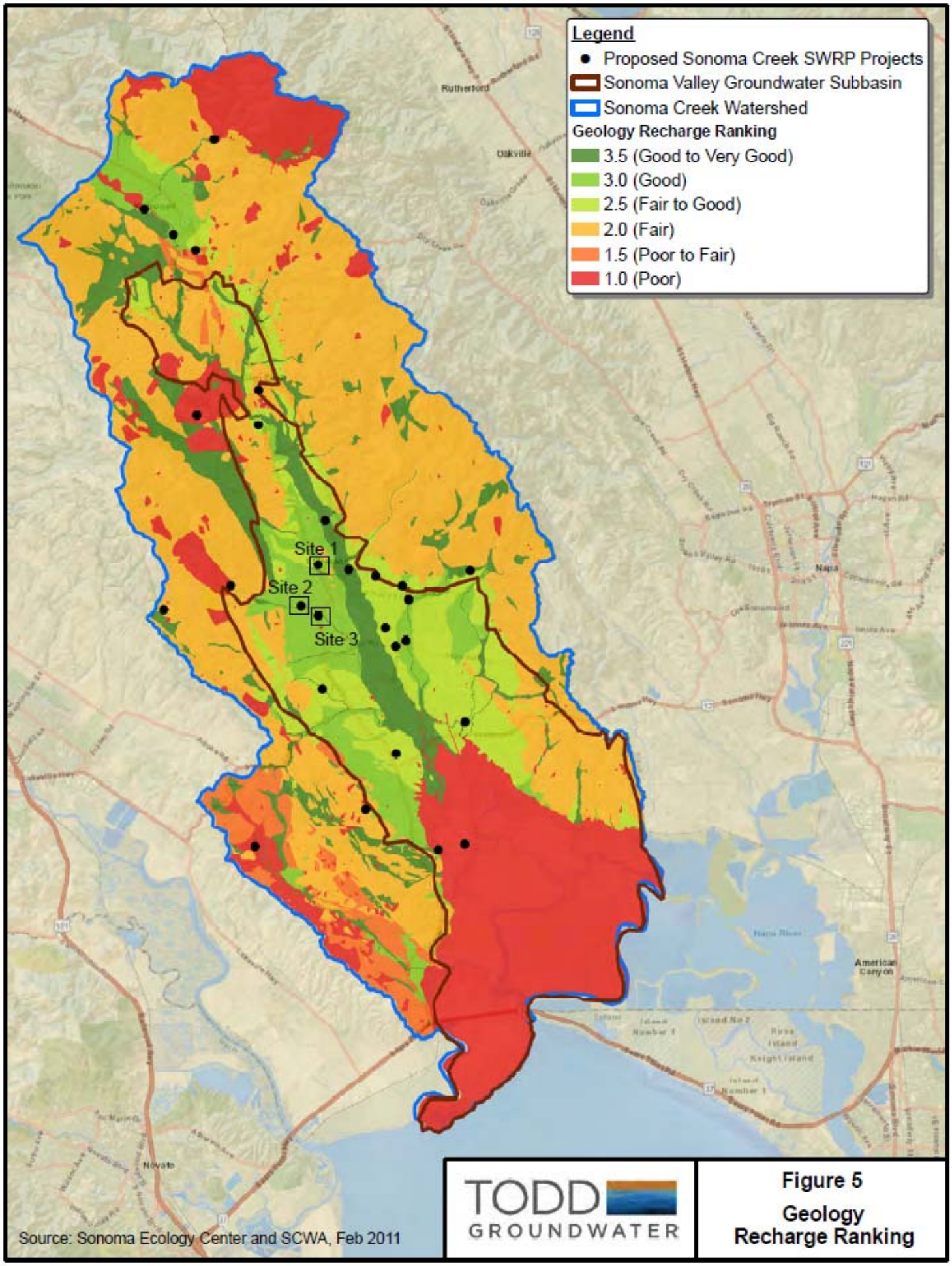
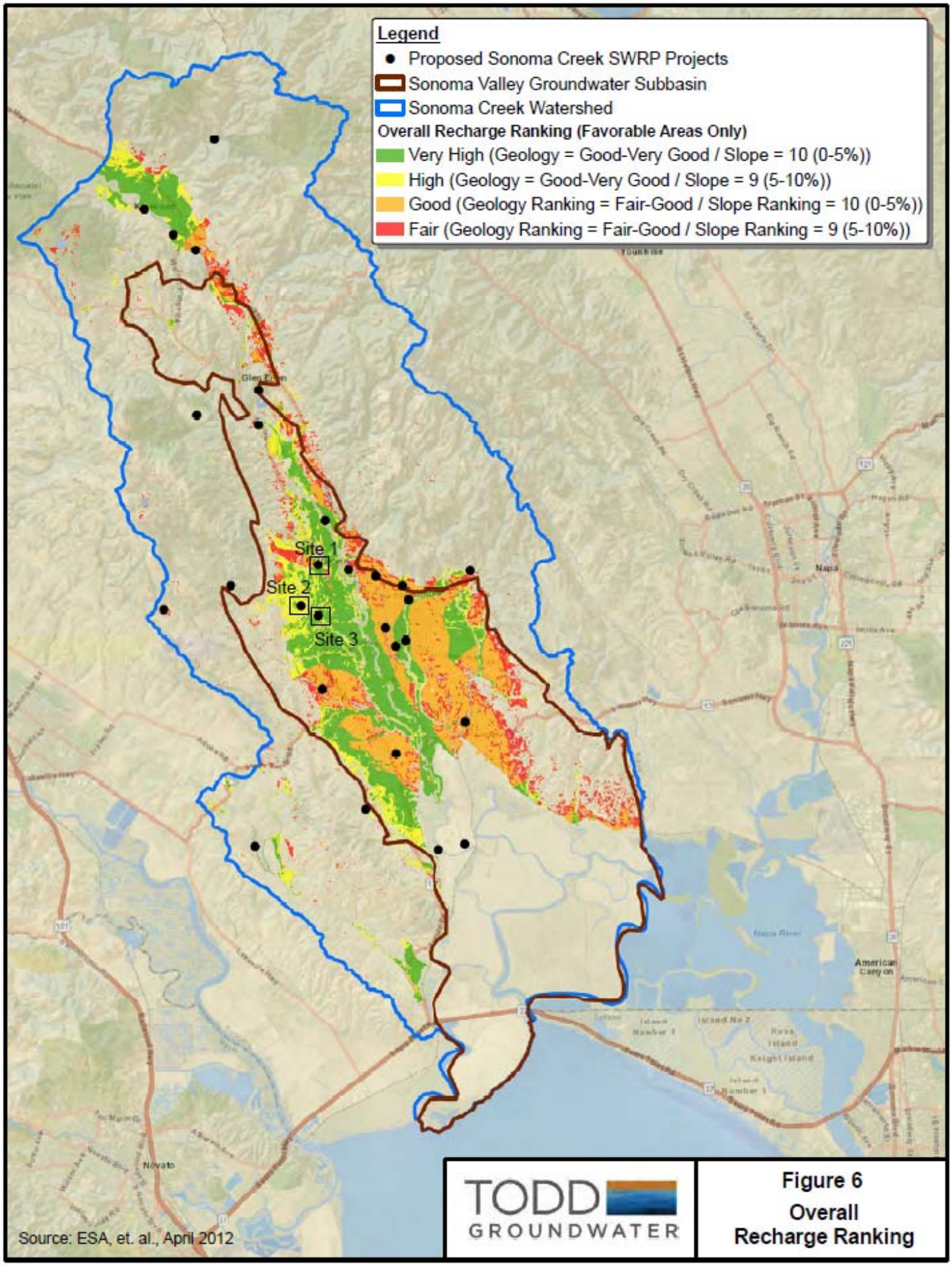


Figure 5

Geology Recharge Ranking


Legend
Proposed Sonoma Creek SWRP Projects
Sonoma Valley Groundwater Subbasin
Sonoma Creek Watershed
Overall Recharge Ranking (Favorable Areas Only)
Very High (Geology = Good-Very Good / Slope = 10 (0-5%))
High (Geology = Good-Very Good / Slope = 9 (5-10%))
Good (Geology Ranking = Fair-Good / Slope Ranking = 10 (0-5%))
Fair (Geology Ranking = Fair-Good / Slope Ranking = 9 (5-10%))
Site 1
Site 2
Site 3
Napa
American Canyon
Novato
Source: ESA, et. al., April 2012
TODD GROUNDWATER
Figure 6
Overall Recharge Ranking

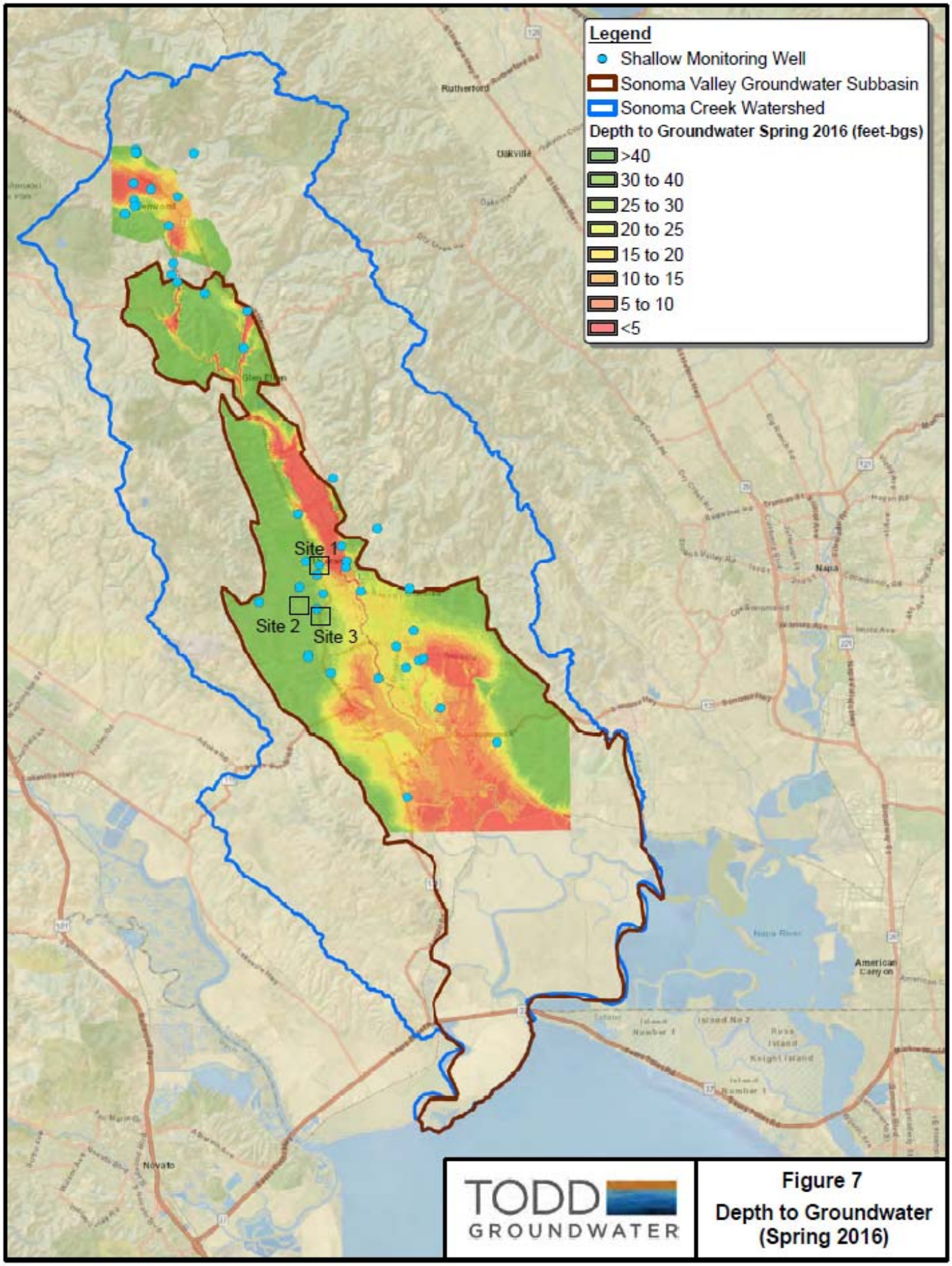
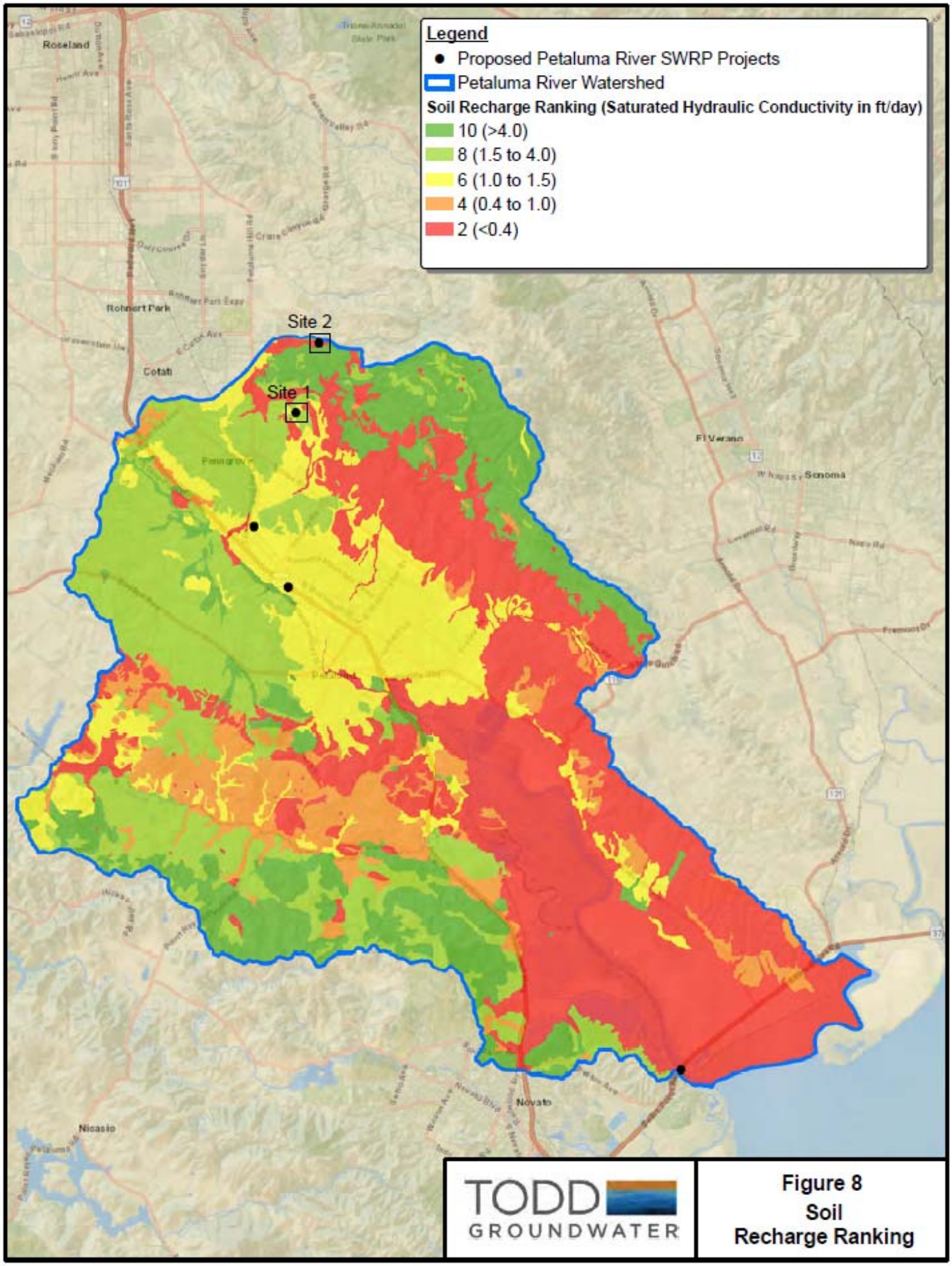


Figure 7
Depth to Groundwater (Spring 2016)


Legend
Proposed Petaluma River SWRP Projects
Petaluma River Watershed
Soil Recharge Ranking (Saturated Hydraulic Conductivity in ft/day)
10 (>4.0)
8 (1.5 to 4.0)
6 (1.0 to 1.5)
4 (0.4 to 1.0)
2 (<0.4)
Site 2
Site 1
Roseland
Rohnert Park
Cotati
Petaluma
Penngrove
Fl Verano
Sonoma
Novato
Nicasio
TODD GROUNDWATER
Figure 8
Soil
Recharge Ranking

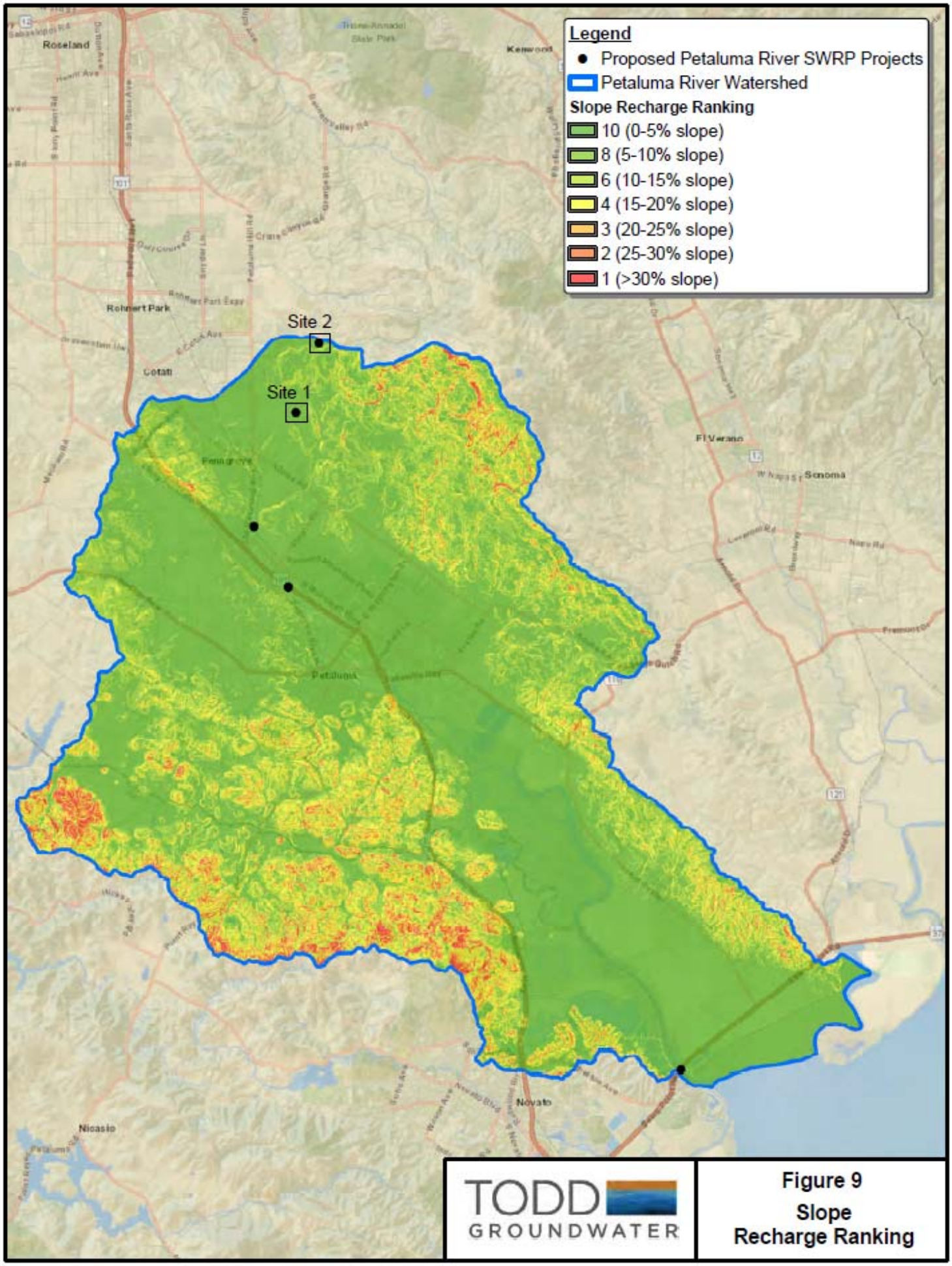
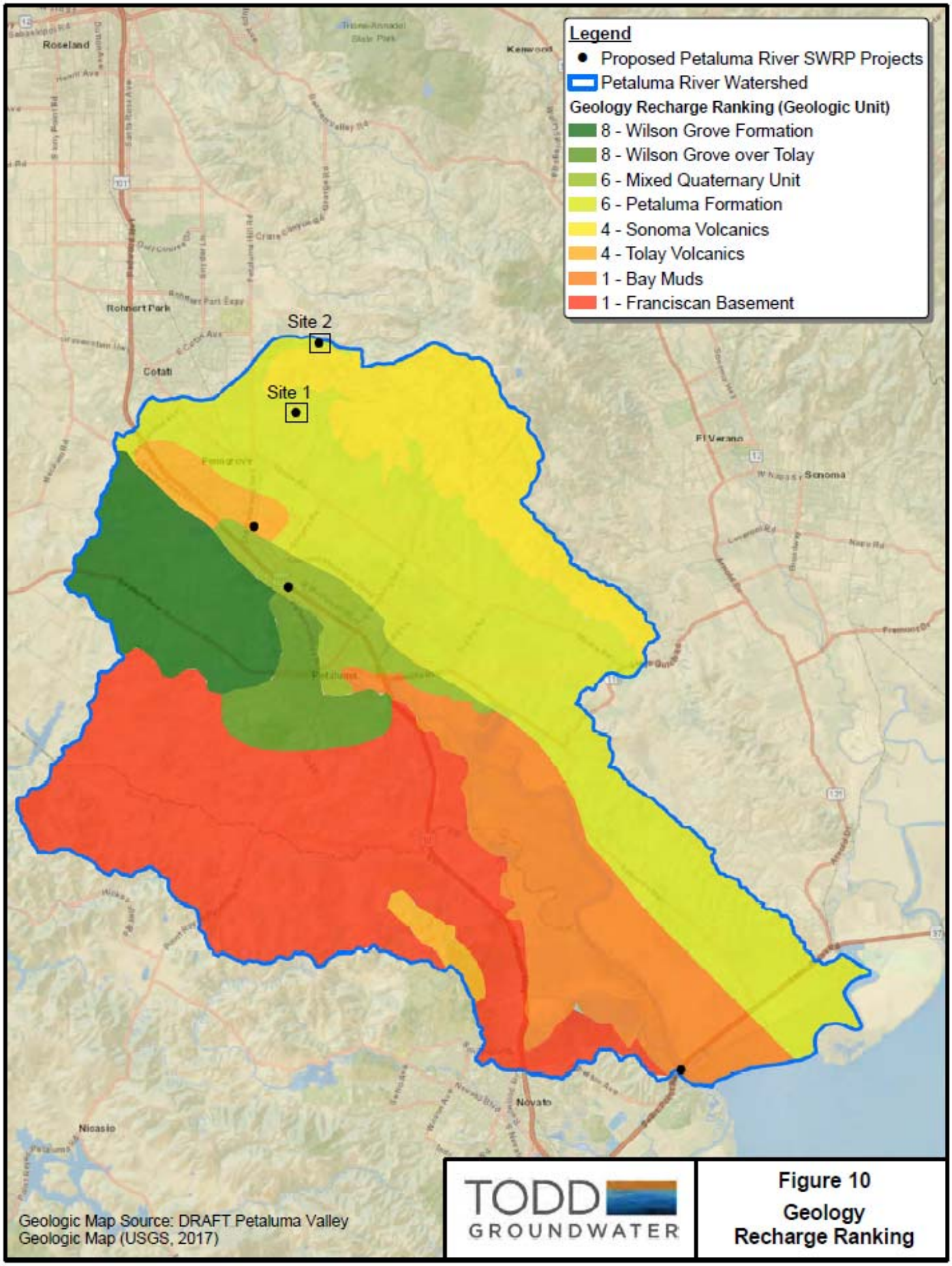
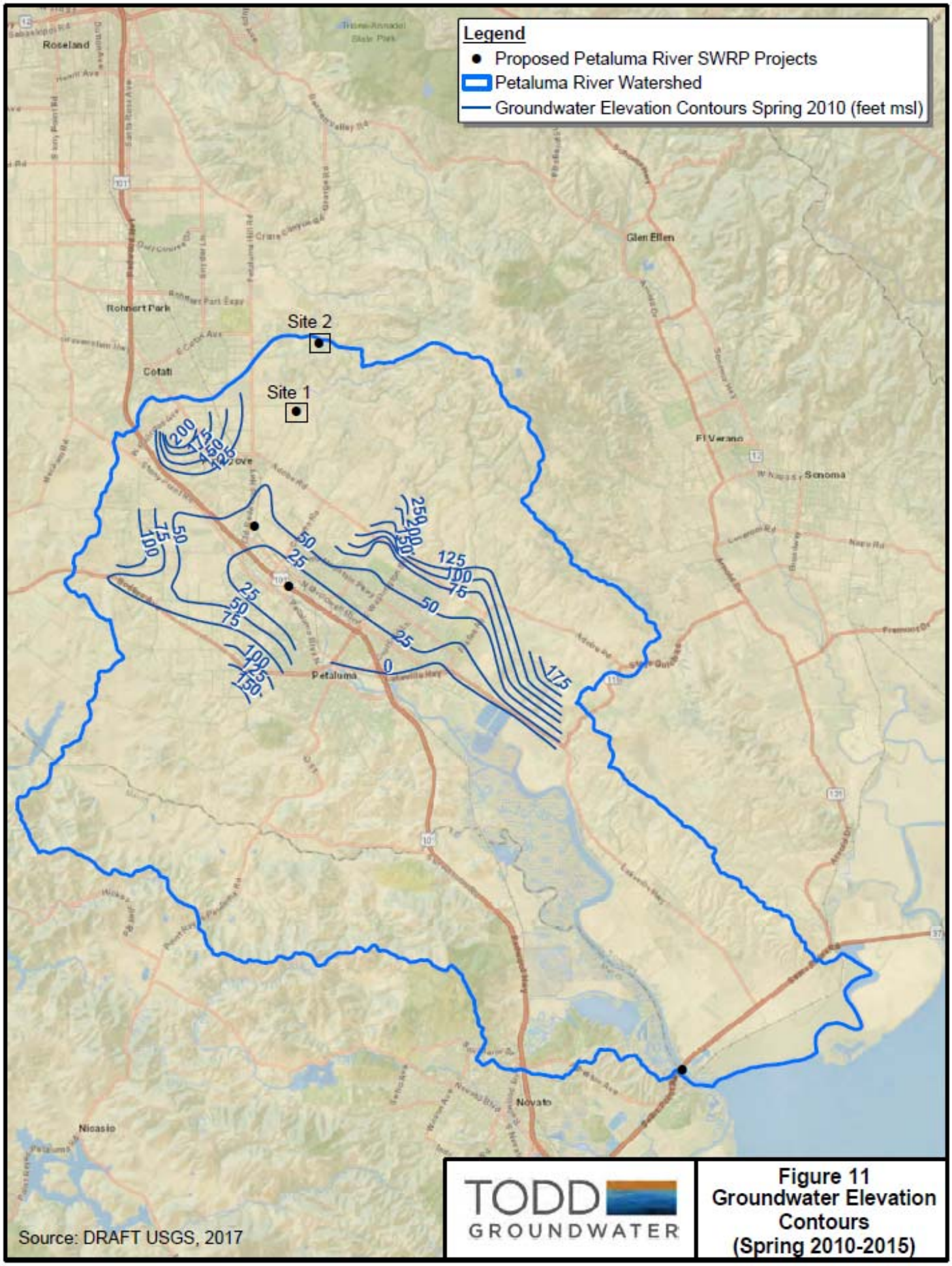


Figure 9
Slope Recharge Ranking


Legend
Proposed Petaluma River SWRP Projects
Petaluma River Watershed
Geology Recharge Ranking (Geologic Unit)
8 - Wilson Grove Formation
8 - Wilson Grove over Tolay
6 - Mixed Quaternary Unit
6 - Petaluma Formation
4 - Sonoma Volcanics
4 - Tolay Volcanics
1 - Bay Muds
1 - Franciscan Basement
Site 2
Site 1
Roseland
Kenwood
Rohnert Park
Cotati
Petaluma
Sonoma
El Verano
Novato
Nicasio
Geologic Map Source: DRAFT Petaluma Valley Geologic Map (USGS, 2017)
TODD GROUNDWATER
Figure 10
Geology Recharge Ranking


Legend
Proposed Petaluma River SWRP Projects
Petaluma River Watershed
Groundwater Elevation Contours Spring 2010 (feet msl)
Site 2
Site 1
Roseland
Rohnert Park
Cotati
Petaluma
Glen Ellen
Sonoma
Novato
Nicasio
Source: DRAFT USGS, 2017
TODD GROUNDWATER
Figure 11
Groundwater Elevation Contours
(Spring 2010-2015)

Appendix G

Recommended Approach for Site Assessment for Groundwater Recharge Potential

ESA

Recommended Approach for Site Assessment for Groundwater Recharge Potential

Groundwater is a critical, limited resource in the Sonoma Creek and Petaluma River watersheds. Groundwater recharge is recognized as a valuable approach to maintain or restore underground aquifers, increase freshwater supplies, and help manage high flows and floodwaters during storm events. Given the wide range of geology, soil types, land uses and other variables in these watersheds, it is essential to properly assess any specific areas or sites being considered for groundwater recharge potential. Sites can vary significantly from each other and specific properties under consideration may have notable variation in their ability to handle aquifer recharge.

Water resources in Sonoma County can be enhanced through projects and management that increases surface water infiltration and recharge to our aquifers. Opportunities exist to capture water during high flows, infiltrate into soils, deliver to underlying aquifers, and make more water available for people and the environment during the summer and times of drought. This document presents preliminary variables to investigate, and techniques available to assess a site for groundwater recharge potential, as well as to help identify sites that merit further investigation. It is intended to provide a low cost and iterative approach to assessing the suitability of a site, before making the decision to spend more significant funds on detailed field investigations, project design, and ultimately construction.

Categories in the document related to assessment include desktop review, modeling, preliminary field investigation and legal permissibility. More specific questions to consider and actions to take are included in each category. While this document in no way constitutes a comprehensive, in-depth approach for site assessment, it will be useful to resource managers looking to take the first steps to better understand a site's potential for recharge, and whether further investigation and investment is merited. A qualified expert should review the findings of any assessment before any decisions are made and/or changes are made to the physical environment.

- **Desktop Screening**

    - Review site slopes using available spatial data (e.g. GIS layers) or other tools. Sonoma Veg Map http://sonomavegmap.org/data-downloads/ is a good starting point
        - Relatively level terrain generally provides the best recharge potential, though not always

    - Review available soil information
        - Web Soil Survey provides information on texture and saturated hydraulic conductivity (Ksat). Loams, loam mixes, and coarse soils are best for recharge, clays are not. Ksat rates between 1 and 42 (micrometer per second) or 0.14 to 6 (inches per hour) are ideal.
        - Review information from soil pits, if available
        - Review information from percolation tests, if available

- Review geologic information for the site to understand permeability of formations below, depth to groundwater, historical changes in water table elevation, aquifer thickness, soil infiltration capacity (or recharge potential) and depth to and thickness of impermeable layers.
    - United States Geological Survey maps and reports
    - California Geological Survey maps and reports
    - Groundwater contour maps, if available
    - Well drilling logs, if available

- Determine rainfall rates for the site
- Review well yield test data for shallow wells, if available, to provide a screening level assessment of local aquifer properties
- Review any available groundwater-level and groundwater quality data (e.g., CASGEM and Geo Tracker data) to determine potential depths to groundwater and identify potential nearby groundwater quality issues.
- Review Land Use for the Site:
    - Land use must be compatible for recharge
    - Is there a source of water available for recharge?
    - Is site close to a riparian area that could be a source of recharge water, or recharges naturally without needing management
    - Water quality should be considered. Is site close to septic tanks, leach fields or known groundwater hazard
    - Is there infrastructure underground that might be of concern
    - Is there infrastructure that might help deliver water to recharge area
    - Water rights should be reviewed. What is the source of water that could be used for recharge? Streamflow, known flooding, pond, etc.

- Consider what type of recharge project would be available at the location being investigated
    - Infiltration basins including flooding of agricultural lands such as vineyards, or flooding of unused lands
    - Actively managed injection wells

- To determine if a site merits further investigation, the reviewer may wish to create a scale from 1-10 for each variable above, weight each variable for relative importance, and create a final score/threshold which must be met.

- **Modeling**

  Predictions of groundwater recharge from existing hydrologic models may be used for site assessment, depending on the specific site location. As each model provides varying predictions of annual recharge and flows, it is best to review as many models as possible that are available for the site. The following models are used in Sonoma County:

  - USGS GSFLOW/MODFLOW for Santa Rosa Plain GW basin
  - Flint & Flint Basin Characterization Model for Sonoma County
  - Soil-Water Balance Model for Sonoma County by OEI
  - MIKE SHE model for Green Valley/Atascadero and Dutch Bill

- **Field Investigation**

  If desktop screening and/or modeling indicate groundwater recharge potential for a site, further field investigations may be useful to provide additional information on site suitability.

  - Examine surface geophysics through resistivity tests, seismic refraction, ground penetrating radar, or others.
    - These tests provide more detailed information on underground geology and material composition.

  - Conduct percolation tests in winter
    - Testing as many spots as possible will provide the best information. Ideally a site will infiltrate 2-5 feet of water per day, or a minimum of 1 inch per hour

  - Complete soil borings or cone penetrometer soundings to provide more detailed information on vadose zone properties
  - Construct a monitoring well to provide more detailed information on depth to groundwater

- **Ensure Legal Permissibility**

  The following agencies may need to be contacted and permits secured to ensure groundwater recharge is an allowed activity**:**

  - California State Water Resources Control Board
  - California Department of Fish and Wildlife
  - United States Army Corps of Engineers (for larger projects)
  - CEQA compliance
  - California Regional Water Quality Control Boards
  - Sonoma County Permit and Resource Management Department

References

Flint, L.E. and Flint, A.L., 2014, California Basin Characterization Model: A Dataset of Historical and Future Hydrologic Response to Climate Change, (ver. 1.1, May 2017): U.S. Geological Survey Data Release, https://doi.org/10.5066/F76T0JPB.

O'Connor, M., 2017. Sonoma County Groundwater Recharge Analysis, O'Connor Environmental, Inc., Healdsburg, California.

Woolfenden, L.R., and Hevesi, J.A., 2014. Santa Rosa Plain Hydrologic Model Results, Chapter E in Simulation of Groundwater and Surface-Water Resources of the Santa Rosa Plain Watershed, Sonoma County, California, U.S. Geological Survey Scientific Investigations Report 2014-5052.

Appendix H
Public Comments on Draft Southern Sonoma County Storm Water Resources Plan

ESA

Public Comments on Draft Southern Sonoma County Storm Water Resources Plan

Date Received	ID	Organization	Reference	Comment	Response
8/29/2018	1	Marketing Premier Country Estates		Email in support of project #55	Received
8/31/2018	2	Sonoma Valley Stakeholder		Being a long time resident living next to Sonoma Creek, I'm interested in being part of this forum.	Received. Sonoma Water welcomes on-going participation in the SWRP process and connects stakeholders to Sonoma Ecology Center's outreach and project planning activities focused on Sonoma Valley stormwater management.
9/6/2018	3	County Homeowner		I still don't see any indication that this group is involved in stopping the huge drain of our groundwater by all of the cannabis operations (legal and/or illegal) and more being approved daily. This is just plain immoral...to give away our precious groundwater in the name of a quick buck! and for water purpose!	Thank you for your comment. The issue you bring up is being addressed through the new groundwater management planning process underway. The Storm Water Resource Plan primarily focuses on management of stormwater through various appropriate methods to slow, spread, sink and store water through capture and treatment of dry weather runoff. Three Groundwater Sustainability Agencies (GSA) were formed in 2017 covering three priority groundwater basins in Sonoma County with the intent to develop Groundwater Sustainability Plans for each basin by 2022. These plans will address groundwater use by all user types, including agricultural industry and cannabis operations. The GSA's and their associated advisory committees are aware of the industry, active in discussion, and seeking ways to address these issues in the Groundwater Sustainability Plans. For more info: http://sonomacountygroundwater.org/

9/10/2018	4	Sonoma County Horse Council		Letter of support for project #55	Received. Letter included as attachment
9/13/2018	5	City of Petaluma	Page 2-5, 2nd paragraph	Petaluma Valley GW basin proposed to be re-listed as High priority in 2018, but not yet finalized.	Revised sentence to include this information
9/13/2018	6	City of Petaluma	Page 2-5, 2nd paragraph	USGS study is a partnership of USGS, SCWA and City of Petaluma	Revised sentence to include this information
9/13/2018	7	City of Petaluma	Page 2-8, 1st paragraph	Update number of City of Petaluma customers and population with information from 2015 UWMP.	Population numbers are consistent with 2015 UWMP. Updated in text citation.
9/13/2018	8	City of Petaluma	Page 2-8, 1st paragraph	City of Petaluma also provides potable water service to Two Rock Coast Guard base.	Revised paragraph to include this information.
9/13/2018	9	City of Petaluma	Page 2-16, 2nd paragraph	missing word "...the Petaluma River watershed contains considerable undeveloped LAND and continues to provide..."	Edited sentence to include "land"
9/14/2018	10	SCAPOSD	Page 7-2	We're up to about 114,000 acres protected	Revised sentence to include this information
9/14/2018	11	SCAPOSD	Page 2-27	Ag + Open Space doesn't own Van Hoosear, but we do have an easement over it...	Revised sentence to include this information
9/14/2018	12	SCAPOSD		Thank you for the opportunity to review!	Received
9/14/2018	13	SRCD		At a general level, I think this is a very good document, and appreciate all the people and work that has gone into it. Where I originally thought its value would center around the list of projects and opportunity to fund, I am now seeing it as a valuable resource document. I will be referring to it when I have questions about different aspects of water quality and management in the future, and will be able to quickly access valuable information that I am looking for. The fact that it combines so many relevant aspects of water, rules and local and regional activities makes it especially useful. I look forward to the final version and think it is getting very close to being ready. Thank you for your efforts.	Received

9/15/2018	14	Sonoma Valley Stakeholder		An Extremely comprehensive identification of storm water management possibilities. Way beyond my ability for any technical comment, however, as a resident in proximity to Nathanson Creek I can't help but notice Project #52. It has a high ranking but I wonder about the probability any cooperation on the part of the School District. It seems to me their current plans for construction on the open fields at the high school are working in the opposite direction.	Thank you for taking time to review and comment. In recent years, Sonoma Water and Sonoma Ecology Center have been coordinating with School District on various water management topics, including stormwater management and stewardship of Nathanson Creek. The high school campus has served as site for various monitoring activities and ongoing restoration and creek maintenance along this reach of Nathanson Creek. We are aware of the District's master plan development and do recognize the potential challenges of integrating the District's plans with certain stormwater management objectives. The proposed project is a concept for detaining stormwater in the area and may not ultimately be determined feasible or fit in with District's plans.

9/18/2018	15	Sonoma County Farm Bureau		On behalf of the Sonoma County Farm Bureau, I would like to express our support of Proposal #55, Equine Water Stewardship. Our organization is no stranger to this type of project that brings several similar landowners together in a collaborative working relationship. For decades, we have been providing similar testing services for dairies required to submit waste management plans in both the Region 1 and Region 2 water districts. Complying with the requirements of the Storm Water Resource Plan will undoubtedly meet with confusion by our relatively small commercial and hobby horse facilities in southern Sonoma County. Having one firm work with these landowners to develop sound BMPs and testing programs will not only alleviate constituent frustration with the requirements, but it will be a more effective use of the Water Agency staffs' time. Rather than 24 people calling and asking the same question or needing guidance, there will be one representative working with the agency to ensure that horse ranches meet and understand the requirements of the plan. Thank you for the opportunity to comment and should you need additional information, please contact me.	Received

The Sonoma County Horse Council

September 10, 2018

Susan Haydon, Project Specialist
Sonoma County Water Agency
via email: susan.haydon@scwa.ca.gov

FUNDING FOR EQUINE MANURE MANAGEMENT & WATER QUALITY PROGRAMS

Dear Ms. Haydon,

The Sonoma County Horse Council is a 501(c)(3) non-profit agency representing the interests of the equine community. Specifically, our mission is to preserve and protect the health and well-being of horses and horse-related activities in Sonoma County. Based on an economic analysis we commissioned from SSU, *The Economic Impact of Equestrians Activities in Sonoma County 2014*, we know there are over 25,000 equines, mostly horses, in this County.

We frequently hear complaints from equine owners and ranch operators about the lack of options for disposal of manure and the struggle to understand and comply with land use regulations, including water run-off regulations. We know that, unlike cattle operations, most equine operations are quite small. The majority of equine facilities house under a dozen horses and smaller yet operations are ubiquitous throughout the county. These numerous "mom-and-pop" operators are largely unaware of evolving state regulations governing water run-off. And, if made aware, these small operators lack resources for the development and implementation of water run off plans to meet these expanding state regulations.

Thus, the Horse Council strongly supports assisting equine facility operators in understanding and following water quality regulations. For this reason, we support your efforts to fund programs and operations that provide education and operational resources to assist the equine community in complying with our responsibilities under the law. The Council is aware of the proposal from Michael Murphy that you've identified as number 55. We support that proposal in addition to any other proposals that likewise serve the needs of equine facility operators, again, in particular the "mom-and-pop" operations.

The Horse Council feels strongly about assisting our community in complying with these complicated regulatory issues and we stand ready to assist your Agency in any way we can to bring this to fruition. Please don't hesitate to contact me for assistance.

Very truly yours,

Elizabeth Palmer
President

Appendix I

Prop 1 Implementation Grant Eligible Project

ESA

Project Number	Watershed	Project Name	Project Source	Prop 1 Eligible Project Requirements - Implementation Grants[1]								Eligible Project
				Included in Adopted IRWMP	Included in SWRP	Respond to Climate Change	Contribute to Regional Water Security	Multi-Benefit[2]	Designed to infiltrate, filter, store, evaporate, treat or retain storm water or dry weather Runoff	Does not seek Eminent Domain	Does not consist of Education and Outreach only	
1	Petaluma	Petaluma River Corona Reach Linear Overflow Channel	City of Petaluma	X	X	X	X	X	X	X	X	YES
2	Petaluma	Washington Creek Enhancement	City of Petaluma	X	X	X	X	X	X	X	X	YES
3	Petaluma	Kelly Creek Enhancements	City of Petaluma	X	X	X	X	X	X	X	X	YES
4	Petaluma	Willow Brook Flood Detention Basin	City of Petaluma	X	X	X	X	X	X	X	X	YES
5	Petaluma	Adobe Creek Floodplain Management and Sediment Study	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
6	Petaluma	Lichau Creek Rainwater Catchment and Wildlife Pond	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
7	Petaluma	King Creek Wetland Development and Riparian Enhancement	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
8	Sonoma	Multi-Benefit Conservation Plan Implementation for Enhanced Water Quality and Quantity	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
9	Petaluma	Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
10	Sonoma	Groundwater Infiltration and Conservation BMP Demonstrations	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES

Project Number	Watershed	Project Name	Project Source	Prop 1 Eligible Project Requirements - Implementation Grants[1]								Eligible Project
				Included in Adopted IRWMP	Included in SWRP	Respond to Climate Change	Contribute to Regional Water Security	Multi-Benefit[2]	Designed to infiltrate, filter, store, evaporate, treat or retain storm water or dry weather Runoff	Does not seek Eminent Domain	Does not consist of Education and Outreach only	
11	Petaluma	Increasing Groundwater Recharge on Rangelands	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
12	Petaluma	Installing Vegetative Filter Strips to Clean and Infiltrate Water on Ranchlands	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
13	Petaluma	Keyline Ploughing to Increase Groundwater Infiltration on Ranches	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
14	Sonoma	Tolay Lake Restoration	Sonoma County Regional Parks	X	X	X	X	X	X	X	X	YES
15	Petaluma	Lower Petaluma River Valley Conservation Strategy	Sonoma Land Trust	X	X	X	X	X		X	X	NO
16	Both/Either	Erosion Control, Habitat Restoration, and Stormwater / Trash Capture along Roads in Sonoma County	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
17	Sonoma	Stormwater Capture & Groundwater Recharge in Upper Nathanson Creek	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
18	Sonoma	Stormwater Improvements to Roads and Trails in Sonoma Valley State Parks	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
19	Sonoma	Middle & Lower Nathanson Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
20	Both/Either	QWEL Rainwater Harvesting Training Module	Sonoma-Marin Saving Water Partnership	X	X	X	X	X		X		NO
21	Sonoma	Sugarloaf State Park Erosion Reduction, Habitat Restoration, and Bridge Repair	Sonoma Ecology Center	X	X	X	X	X		X	X	NO

Project Number	Watershed	Project Name	Project Source	Prop 1 Eligible Project Requirements - Implementation Grants[1]								Eligible Project
				Included in Adopted IRWMP	Included in SWRP	Respond to Climate Change	Contribute to Regional Water Security	Multi-Benefit[2]	Designed to infiltrate, filter, store, evaporate, treat or retain storm water or dry weather Runoff	Does not seek Eminent Domain	Does not consist of Education and Outreach only	
22	Sonoma	Stormwater Management & Habitat Enhancement at Maxwell Park	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
23	Sonoma	Creek Restoration and Spillway Replacement or Dam Modification at Larson Park	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
24	Sonoma	Restoration of Natural Hydrology and Salmonid Habitat at Alder Park	Sonoma Ecology Center	X	X	X	X	X		X	X	NO
25	Sonoma	Stormwater Management at Sonoma Valley Regional Park	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
26	Sonoma	Erosion Control and Riparian Restoration at Van Hoosear Wildflower Preserve	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
27	Sonoma	Stormwater Management and Water Conservation along Rodgers Creek	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
28	Sonoma	Carriger Creek Stormwater Capture and Groundwater Recharge	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
29	Sonoma	Stormwater Management at Sonoma Valley School Campuses	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
30	Sonoma	Sonoma Creek Watershed Stream Restoration: Sonoma Developmental Center Reach	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
31	Petaluma	Willow Brook Creek Groundwater Recharge	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
32	Petaluma	Sonoma Mountain Rainwater Storage and Forbearance of Groundwater Extraction	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
33	Sonoma	Kenwood Marsh Restoration	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES

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34	Petaluma	Upper Petaluma River Watershed Multi-Benefit Flood Alleviation, Groundwater Recharge, and Habitat Restoration Project	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
35	Sonoma	Lower Watershed Flood Plain Restoration in Freshwater Streams	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
36	Sonoma	Upper Sonoma Creek Flood Management and Habitat Restoration	Sonoma Ecology Center	X	X	X	X	X	X	X	X	YES
37	Sonoma	Lower Sonoma Creek Rainwater Catchment and Stormwater Infiltration Project	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
38	Petaluma	Sonoma Mountain Institute Rainwater Catchment Project	Sonoma Resource Conservation District	X	X	X	X	X	X	X	X	YES
39	Sonoma	Olsen Park Detention and Trash Capture	City of Sonoma	X	X	X	X	X	X	X	X	YES
40	Sonoma	First Street West Green Street and Flood Reduction Project	City of Sonoma	X	X	X	X	X	X	X	X	YES
41	Sonoma	Broadway and Leveroni Road Flood Reduction and Trash Capture Project	City of Sonoma	X	X	X	X	X	X	X	X	YES
42	Petaluma	Lichau Creek Flood Mitigation and Detention Basin	City of Petaluma	X	X	X	X	X	X	X	X	YES
43	Petaluma	City of Petaluma trash capture device pilot project	City of Petaluma	X	X	X	X	X	X	X	X	YES
44	Petaluma	Cougar Mountain Creek Riparian Restoration	Sonoma Land Trust	X	X	X	X	X	X	X	X	YES
45	Petaluma	Lakeville Creek Riparian Restoration	Sonoma Land Trust	X	X	X	X	X	X	X	X	YES
46	Petaluma	Frog Creek Riparian Restoration	Sonoma Land Trust	X	X	X	X	X	X	X	X	YES

Project Number	Watershed	Project Name	Project Source	Prop 1 Eligible Project Requirements - Implementation Grants[1]								Eligible Project
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47	Sonoma	Land Acquisition from willing seller in Lower Sonoma Creek	Sonoma Land Trust	X	X	X	X	X		X	X	NO
48	Petaluma	Stormwater-Friendly Landscape Transformations at Petaluma Schools, Churches, Community Centers and other Public Sites	City of Petaluma & Daily Acts	X	X	X	X	X	X	X	X	YES
49	Petaluma	Santa Rosa Junior College Rain Gardens	SRJC & Daily Acts	X	X	X	X	X	X	X	X	YES
50	Sonoma	Rodgers Creeks Stormwater Detention	Sonoma County Water Agency	X	X	X	X	X	X	X	X	YES
52	Sonoma	Stormwater Detention on Multiuse Areas in Nathanson Creek	Sonoma County Water Agency	X	X	X	X	X	X	X	X	YES
53	Sonoma	El Verano Area Stormwater Detention	Sonoma County Water Agency	X	X	X	X	X	X	X	X	YES
55	Petaluma	Equine Water Stewardship	Equine Environmental Management	X	X	X	X	X	X	X	X	YES
56	Petaluma	Upper Lichau Creek Stormwater Detention	Sonoma County Water Agency	X	X	X	X	X	X	X	X	YES
57	Petaluma	Watershed Classroom - Pollution Monitoring & Education in the Petaluma Watershed	Friends of the Petaluma River	X	X	X	X	X		X		NO
58	Sonoma	Carriger Creek Stormwater Detention	Sonoma County Water Agency	X	X	X	X	X	X	X	X	YES
59	Petaluma	Storm Water Capture & Re-Use at Steamer Landing Park	Friends of the Petaluma River	X	X	X	X	X	X	X	X	YES
60	Sonoma	Sonoma Creek Stormwater Capture Project	North Bay Agriculture Alliance	X	X	X	X	X	X	X	X	YES
61	Petaluma	Adopt A Creek Project	Friends of the Petaluma River	X	X	X	X	X		X		NO

Project Number	Watershed	Project Name	Project Source	Prop 1 Eligible Project Requirements - Implementation Grants[1]								Eligible Project
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62	Petaluma	Petaluma River Dredging and Beneficial Re-use of dredge material	City of Petaluma	X	X	X	X	X		X	X	NO
63	Sonoma	Circle Bar Ranch Groundwater Recharge	ESA with Sue Smith	X	X	X	X	X	X	X	X	YES

Notes

1 Eligibility criteria from Proposition 1 Storm Water Grant Program Guidelines (December 15, 2015) - Section III. Eligibility Requirements - B. Eligible Project Types - II Implementation

2 Projects must contain a minimum of two benefits as listed in Section III.G - Storm Water Management Benefits (Water Supply, Water Quality, Flood Management, Environmental,