LANDSMART™ FOR VINEYARDS
FARM PLAN
[FACILITY NAME]

Prepared for: [landowner name]

Prepared by: _____ Resource Conservation District

[Date]

Version 1.5

SONOMA RESOURCE CONSERVATION DISTRICT

NAPA COUNTY RCD Resource Conservation District

LandSmart Productive lands. Thriving streams.

CONTENTS

INTRODUCTION

This LandSmart ™ Farm Plan template, in conjunction with workshops and one-on-one assistance (as needed), is intended to guide you through the process of inventorying vineyards, roads, and waterways, documenting conservation practices that you currently use, and helping you to select additional conservation practices, when needed, to protect water quality and other natural resources. The resulting plan is intended to be a working document to record your decisions and your progress. The plan will help you to identify locations where photo monitoring should be conducted to document your use of conservation practices. These photos, along with records you keep, can help you evaluate how various conservation practices work within your vineyard and, if needed, they can help you demonstrate to others the steps you have taken to protect and improve natural resources. Lastly, the plan will provide you with an easy to reference summary of conservation practices that you use and that you intend to implement (identified in earlier plan sections).

The LandSmart ™ Farm Plan Template consists of several worksheets that you will complete. The top of each worksheet has information and/or directions, and as you work your way through the worksheet additional instructions may be provided based upon your responses to some questions. The questions and follow-up instructions are designed to help you identify which areas of your property could receive the most benefit from implementation of additional conservation practices. The worksheets also include tables to help you document existing and planned practices. You will be able to complete some of the worksheets quite easily. Other worksheets will take more time and will involve some field assessment, perhaps even some assistance from a resource professional (NRCS, RCD, or other professional). The LandSmart™ for Vineyards Reference Guide is also available to you and may assist in completing the worksheets. The Reference Guide contains chapters that correspond with each of the chapters in this Template, and is referenced throughout the Template.

This farm plan template purposefully covers topics of interest to most vineyard managers and has been developed to be consistent with water quality regulations. You may have additional conservation and land management interests beyond water quality regulations. The LandSmart™ program is intended to help you with those interests as well. If you need assistance to meet your agricultural and conservation goals, whether or not the topic is covered in this farm plan template, please do not hesitate to contact your local Natural Resources Conservation Service (NRCS) or Resource Conservation District (RCD) office.

Contact Information

NRCS Napa Field Office: 707-252-4189
NRCS Petaluma Field Office: 707-794-1242

Napa County RCD: 707-252-4188
Sonoma RCD : 707-569-1448
Mendocino County RCD: 707-462-3664

PROPERTY DESCRIPTION

VINEYARD FACILITY

Vineyard Facility Name			
Name of Plan Preparer			**Plan Date:**
Preparer's Affiliation			
Mailing Address			
City, State & Zip Code			
Email		**Phone:**	**Fax:**

Vineyard Facility Location

See Chapter 2 of the Reference Guide for how to obtain the below information

County			
Assessor's Parcel Number(s)			
Township		**Range**	
Latitude		**Longitude**	
Watershed and Sub-watershed			

Owner/Lessee (if different from above)

Name(s)			
Mailing Address			
City, State & Zip Code		**Phone (hm)**	
Email		**Phone (cell)**	

Land/Vineyard Manager (if different from above)

Name(s)			
Mailing Address			
City, State & Zip Code		**Phone (hm)**	
Email		**Phone (cell)**	

Technical Assistance Advisors (if applicable)

Name(s)			
Mailing Address			
City, State & Zip Code		**Phone (hm)**	
Email		**Phone (cell)**	

OPERATIONS AND LAND USE

Land Use Activity	*Area/Length*		*Notes*
Vineyard Blocks and Avenues		Acres	
Grazing/Rangeland		Acres	
Grape Processing Facilities		Acres	
Roads (paved)		Feet/ Miles	
Roads (unpaved)		Feet/ Miles	
Other paved areas and buildings		Acres	
Forest/Woodland/Chaparral		Acres	
Open Space/Fallow/Undeveloped		Acres	
Reservoir/Pond (footprint)		Acres	
Stream/River/Creek/Riparian (delineated as blue-line on USGS topographic maps)		Feet/ Miles	
Stream/River/Creek/Riparian (not delineated as blue-line on USGS topographic maps)		Feet/ Miles	
Drainage Ditch/Canal		Feet/ Miles	
Other Vineyard/Farming Facilities		Acres	
Other Land uses		Acres	

EXISTING PLANS, PERMITS & CERTIFICATIONS

Plan Type	*Plan/ Permit Year*	*Plan/ Permit Area (ac)*	*Plan/Permit Number(s) and/or Notes (including status, e.g. permit pending/final or certification pending/complete)*
Napa County Erosion Control Plan			
Sonoma County Erosion Control Plan (VESCO)			
NRCS Conservation Plan			
Fire Management Plan			
Grazing/Rangeland Management Plan			
Grazing Lands Water Quality Plan			
Organic Certification (indicate if in transition)			
Timber Harvest Management Plan			
Napa Green Land/Fish Friendly Farming Certification			
The Code of Sustainable Winegrowing (note if Self Assessment or Certified)			
Industrial Stormwater Permit for Wineries			
Sustainability in Practice (SIP)			
Engineered pond including water rights (if applicable)			
Permits for stream-related projects: Department of Fish and Wildlife, Corps of Engineers, etc.			
Other:			
Other:			

OFF-SITE CONDITIONS OUTSIDE OF LANDOWNER CONTROL

If there are any upslope and/or upstream land uses or conditions within the watershed that are out of your control that may influence your ability to effectively implement conservation practices to control erosion, reduce sediment delivery, or otherwise protect water quality on your property, please describe them below.

Describe as needed:

VINEYARD FACLITY MAP SUMMARY

Maps will be an important part of your LandSmart™ Plan and will serve as an easy reference for you. Maps should be prepared on a topographic map, an aerial photograph, or a Google Earth image (minimum 1" = 1,000' or 1:12,000 scales). More than one map may be used to display the information needed to complete your plan. A more detailed map (scale of 1" = 500' or 1:6,000' may be needed to accurately depict stream channels, riparian corridors, or other small scale features. Each map should have a legend and should clearly display the features that are identified in your Farm Plan.

You may already have maps of the property to meet the mapping needs identified below (for example, erosion control plan maps). In this case, you may wish to include (or reference) existing maps in your Farm Plan and alleviate the need to prepare new maps. In other cases, you may generate maps as you work your way through the Farm Plan process and assess the various features on your property.

See Chapter 3 of the Reference Guide for further information on map scale, map symbols, and other information that may be helpful in completing your maps. If you need assistance with mapping, NRCS and/or RCD staff is available to assist you.

This table provides a summary of suggested features to map for inclusion in your Farm Plan. Please indicate below which features are displayed on your Farm Plan map(s) by checking the box on the left. Maps should be kept with the Farm Plan.

Mark X if mapped	**Boundaries**	**Notes**
	Property & plan boundaries	
	Parcel boundaries	
	Topography *(identify area with slope <5% and areas with slope >30%)*	
	Existing vineyards block boundaries *(indicate row direction, slope and block ID)*	
	Areas under consideration for new vineyard development or replant	
	Non-vineyard land uses (grazing, winery, other)	
Buildings/Facilities		
	Barns/shops/outbuildings/greenhouses	
	Agrichemical (pesticide/fertilizer/petroleum) handling site(s)	
	Agrichemical (pesticide/fertilizer/petroleum) storage facility(s)	
	Winery/post-harvest handling/storage facility(s)	
	Equipment yards and/or staging areas	
	Other:	
Vineyard Soils, Erosion Control, Management & Structures – *Give each area/feature a name or number for easy reference.*		
	Soil type(s) with erosion rating(s) (map from http://websoilsurvey.nrcs.usda.gov)	

	Vineyard drainage system (diversion ditches, storm drains, and underground outlets with inlets and outlets)	
	Sediment/attenuation/energy dissipation basin(s)	
	Vineyard Avenue(s)	
	Erosion features (i.e. gullies, rills, landslides, mudflows, rock falls)	
	Other:	
Waterways – *Give each feature a name or number for easy reference.*		
	Ephemeral Stream (those that flow only during and shortly after a storm, also known as Class III streams)	
	Seasonal/Intermittent Stream (those that flow for part of the year and generally stop flowing in the late spring, also known as Class III streams)	
	Year Round Stream (those that generally flow year round also known as Class I or II streams, depending on other factors)	
	Human-made waterways (ditches, also known as Class IV streams)	
	Swale(s) – shallow trough-like depressions that carries water mainly during storms – no defined channel or bank	
	Spring(s), Seep(s), and Wetland Area(s)	
	Reservoir/Pond/lake(s) (indicate pipe or open channel spillway location)	
	Known in-stream structures	
	Erosion features in waterways (i.e. streambank erosion, channel erosion)	
	Wells,with notation of their use (agricultural, residential, not in use, other)	
	Other:	
Roads - *Identify with a name and indicate if public, private and/or easements.*		
	Surfaced roads (paved, graveled, etc.)	
	Unsurfaced roads (dirt, vegetated etc. – do not include vineyard avenues)	
	Abandoned roads (trails or roads that are not used)	
	Waterway crossings (indicate whether freespan bridge, culvert, ford, etc.)	
	Roadside ditches	
	Road drainage structures (ditch relief culverts, waterbars, rolling dips, etc.)	
	Erosion features on land associated with roads (i.e. gullies, rills, landslides, mudflows, rock falls)	
	Other:	
Photo Monitoring Points – *Sites you have selected for annual photo monitoring. Give each point a number for easy reference.*		
	Photo-points to demonstrate winter readiness	
	Photo-points to demonstrate annual maintenance and practice implementation	
	Photo-points to demonstrate condition of discharge points	

	Photo-points to demonstrate condition downstream of discharge points	
	Photo-points to track “areas to watch” – e.g. areas with erosion or invasive weeds that you want to track over time	
	Other:	

MANAGING AGRICHEMICALS

Background: Agrichemicals (organic and/or synthetic nutrients and/or pesticides, including herbicides and sulfur) that move from the site of application into surface water, and other unintended places, can affect water quality by negatively impacting human, animal and/or non-target organism health. Nutrient sources associated with agricultural production practices may include organic and inorganic fertilizers, biodegraded crop residues, and agricultural wastes (grape pomace and waste directly generated by animals). Wind and water erosion of soil or aerial drift from agrichemical applications may contribute to pesticide movement away from the target area. Agrichemicals may enter surface waters during overland runoff and tile drainage either as water-soluble residuals or adsorbed to sediments. Nutrients from these sources become pollutants when they are transported off-site into nearby streams and lakes or percolate in excessive amounts of groundwater. Nitrates and phosphates in surface water bodies contribute to increases in aquatic plants and algal blooms that deplete dissolved oxygen and impact aquatic organisms.

Purpose: Identify practices, currently in use or intended for implementation, to ensure that agrichemicals (fertilizers, soil nutrients, compost and pesticides) are stored, mixed and applied in a manner consistent with all applicable regulations, including those required by the California Department of Pesticide Regulation (DPR) and the County Agricultural Commissioner, and in a manner that prevents excess agrichemicals from reaching surface and groundwater.

AGRICHEMICAL HANDLING AND STORAGE

A1. Agrichemicals are stored properly (per the label) on-site.

☐ Yes

☐ No (Implement practice # 2, listed in Table A1 below, consult a professional if needed)

☐ Agrichemicals are not stored on-site.

Describe as needed:

A2. Agrichemical mixing, loading, and rinsing are conducted in an area where agrichemicals are contained.

☐ Yes

☐ No (Consider practices # 3 through 6, listed in Table A1 below)

☐ No mixing, loading, or rinsing on-site.

Describe as needed:

A3. Agrichemicals not handled on a containment facility are mixed, loaded and rinsed away from aquatic habitat and wells.

☐ Yes

☐ No (Consider practices # 3 through 6, listed in Table A1 below)

☐ Agrichemicals are not stored on-site.

Describe as needed:

Table A1: Conservation Practices for Agrichemical Handling and Storage

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See Chapter 4 of the Reference Guide for information on these conservation practices.*

Conservation Practice	*NRCS Practice Title*	*Implementation Date*	*Location*
1. Consult a Professional			
2. Read agrichemical labels and store them according to directions.			
3. Use an impervious containment pad for agrichemical handling	Agrichemical Handling Facility (309)		
4. Provide securable agrichemical handling	Agrichemical Handling Facility (309)		
5. Move agrichemical handling away from aquatic habitat and wells			
6. Train employees on safe agrichemical handling			
Other:			

PEST MANAGEMENT

A4. The facility operates under a current Pesticide Use Permit filed with the County Agricultural Commissioner.

☐ Yes

☐ No (Implement practice # 2, listed in Table A2 below. Consult a professional if needed)

☐ No pesticides are used at the facility.

Describe as needed:

A5. UC-IPM guidelines are followed (http://www.ipm.ucdavis.edu/PMG/selectnewpest.grapes.html)

☐ Yes

☐ Some

☐ No (Consider practices # 3 through 6, listed in Table A2 below)

Describe as needed:

A6. Alternative, non-chemical pest control methods are used when and where practical.

☐ Yes

☐ No (Consider practices # 10, 11 and 12 in Table A2 below)

Describe as needed:

Table A2: Conservation Practices for Pest Management

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See Chapter 4 of the Reference Guide for information on these conservation practices.*

Practice	*NRCS Practice Title*	*Implementation Date*	*Location*
1. Consult a Professional			
2. Apply pesticides under a Pesticide Use Permit			
3. UC-IPM: Implement appropriate guidelines for grapes	Integrated Pest Management (595)		
4. UC-IPM: Scout for pests	Integrated Pest Management (595)		

5.UC-IPM: Maintain pest management records	Integrated Pest Management (595)		
6. UC-IPM: Use chemicals that are lowest risk to water quality	Integrated Pest Management (595)		
7. Calibrate application equipment (sprayers and injectors) regularly			
8. Dispose of containers properly			
9. Train employees per OSHA & MSDS			
10. Install raptor roosts, owl boxes, and/or bat boxes	Upland Wildlife Habitat Management (645)		
11. Replace Pierce's Disease host trees & shrubs with native plants	Brush Management (314) Riparian Forest Buffer (391)		
12. Replace Pierce's Disease host forbs with native plants	Herbaceous Weed Control (603_ Riparian Herbaceous Cover (390)		
Other:			

NUTRIENT SOURCES USED ON THE VINEYARD FACILITY

Check all that apply:

☐ Synthetic Fertilizer ☐ Organic Fertilizer ☐ Compost (vegetative)

☐ Green Manure (nitrogen fixing) Cover Crop

☐ Animal Manure (is it composted? ____)

☐ Grape Pomace (is it composted?_____)

☐ Other

List:

NUTRIENT AND/OR COMPOST MANAGEMENT

A7. Fertilizer amount and application timing is prescribed based on crop needs, identified by field inspection and/or testing.

☐ Yes

☐ No (Consider practices # 1 through 6, listed in Table A3 below)

Describe as needed:

A8. Fertilizer(s) are applied and timed to reduce runoff and leaching.

☐ Yes

☐ No (Consider practices # 5 and 6, listed in Table A3 below)

Describe as needed:

A9. Fertilizer(s) are applied with calibrated equipment.

☐ Yes

☐ No (Consider practice #7, listed in Table A3 below)

Describe as needed:

A10. On-site composting takes place on a containment facility that collects any leachate.

☐ Yes

☐ No (Consider practice # 8, listed in Table A3 below)

☐ No on-site composting

Describe as needed:

A11. Compost is monitored to reach temperatures necessary to eliminate pathogens (131°F for a minimum of 3 days enclosed or 15 days if windrowed).

☐ Yes

☐ No (Consider practice # 9, listed in Table A3 below)

☐ No on-site composting

Describe as needed:

Table A3: Conservation Practices for Nutrient Sources and Application Rates & Timing

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See Chapter 4 of the Reference Guide for information on these conservation practices.*

Practices	*NRCS Practice Title*	*Implementation Date*	*Location*
1. Consult a Professional			
2. Perform visual or infrared crop assessment	Nutrient Management (590)		
3. Take petiole and/or leaf samples to assess plant nutrient content	Nutrient Management (590)		
4. Time fertilizer application to meet crop requirements	Nutrient Management (590)		
5. Time fertilizer application to reduce runoff and leaching	Nutrient Management (590)		
6. Apply nutrients through fertigation (directly to root zone)	Nutrient Management (590)		
7. Calibrate application equipment (fertigation, spreaders) regularly	Nutrient Management (590)		
8. Provide a containment facility or area for composting	Composting Facility (317)		
9. Monitor compost and ensure that required conditions are met			
Other:			

MANAGING EROSION IN VINEYARD BLOCKS AND AVENUES

Background: When soil erodes and excessive amounts of sediment are allowed to enter waterways, water quality is impacted. In areas with ground disturbance, erosion rates can be relatively high and, hence, major contributors of sediment to water bodies. The risk of soil erosion increases based on factors of slope, soil type, and precipitation rates and timing. Vineyard operations on slopes over 5% must pay particular attention to erosion control practices.

Practices to reduce the risk of erosion generally aim to **slow** the rate of water running off of the land, **spread** water across the land, and allow for water to **sink** or percolate into the soil (i.e., Slow It, Spread It, Sink It). Where there are opportunities to safely disperse water across the land rather than concentrate it into a lined waterway or pipeline, please consider doing so.

See Chapter 5 of the Reference Guide for further information on soil erosion and sedimentation, and soil quality.

Purpose: Identify practices currently in use and that are intended for implementation, to protect soil from erosion (slow and spread storm runoff), attenuate significant storm runoff flows, promote on-site water infiltration (sinking storm runoff), prevent excessive rates of sediment delivery to receiving waters, and reduce the impacts of storm runoff from the vineyard floor.

PREVENTING EROSION AND FLOW CONCENTRATION IN VINEYARD BLOCKS AND AVENUES

V1. Vineyard blocks are covered by a fully implemented County-Approved Erosion Control Plan (ECP).

☐ All Blocks

☐ Some Blocks (Use appropriate ECP practices in all blocks, including those not covered by an ECP)

☐ No Blocks (If slopes are over 5% or if there is erosion, consider practice # 1, listed in Table V1 below)

☐ NA, a County ECP is not required.

ECP File #:	Approval Date:
Describe as needed:	

V2. Mulch and/or vegetative cover is maintained in vineyard blocks during rainy months.

☐ All Blocks

☐ Some Blocks (Consider a combination of practices # 2 through 12, listed in Table V1 below)

☐ No Blocks (Consider a combination of practices # 2 through 12, listed in Table V1 below)

Describe as needed:

V3. Mulch and/or vegetative cover is maintained on unsurfaced vineyard avenues during rainy months.

☐ All avenues

☐ Some avenues (Consider practices # 4, 9 through 14 listed in Table V1 below)

☐ No avenues (Consider practices # 4, 9 through 14, listed in Table V1 below)

Describe as needed:

V4. Vineyard blocks and avenues are inspected before and after major storm events and problem areas are treated.

☐ All Blocks

☐ Some Blocks (Implement practice # 17 and consider all practices listed in Table V1 below)

☐ No Blocks (Implement practice # 17 and consider all practices listed in Table V1 below)

Describe as needed:

V5. Emergency erosion control materials are readily available and field staff are trained in their proper use.

☐ Yes

☐ No (Practices # 18 and 19, listed in Table V1 below are suggested)

Describe as needed:

Table V1: Conservation Practices to Reduce Soil Erosion and Runoff Concentration on the Vineyard

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See Chapter 5 of the Reference Guide for information on these conservation practices.*

Practices	*NRCS Practice Title*	*Implementation Date*	*Location*
1. Consult a Professional			
2. Plant a non-tilled, permanent vegetative cover crop to minimize soil disturbance	Conservation Cover (327)		
3. Till every other middle (alternate row cultivation) and ensure that disturbed soil is protected during the rainy season. Avoid tilling in the avenue.	Cover Crop (340)		
4. Plant an annually seeded and/or disked cover crop (generally not appropriate for vineyards on slopes >5%)	Cover Crop (340)		
5. Mow (or string-trim) under the vinerows	Conservation Cover (327)		
6. Spot-spray under vinerows using post-emergent product – protect disturbed soils during rainy season			
7. Apply post-emergent spray in late spring – protect disturbed soils during rainy season			
8. Mulch under vinerows and/or in middles (between vinerows) to protect disturbed soils	Mulching (484)		
9. Install temporary straw or coir fiber structures to protect vulnerable areas	Stormwater Runoff Control (570)		
10. Plant/maintain a vegetative buffer along the block perimeter	Field Border (386) Conservation Cover (327) Filter Strip (393)		
11. Plant/maintain a vegetative buffer to filter runoff	Filter Strip (393) Vegetated Barrier (601)		
12. Plant/maintain a vegetative swale to filter runoff	Grassed Waterway (412)		
13. Apply seed and straw mulch to avenues in the fall			
14. Install and/or maintain waterbars in the avenues in			

the fall to disperse runoff			
15. Install a mid-slope runoff conveyance ditch with a protected outlet	Diversion (362)		
16. Install drop inlet pipe (storm drain) to convey runoff to a protected or safe outlet location	Underground Outlet (620)		
17. Conduct pre- and post-storm maintenance and monitoring; address erosion concerns as necessary			
18. Keep emergency erosion control materials readily available			
19. Provide erosion control trainings for field staff			
Other:			

MANAGING CONCENTRATED STORM RUNOFF AND SEDIMENT DELIVERY FROM VINEYARD BLOCKS

V6.Rainfall runoff from the vineyard is dispersed and/or infiltrated in the vineyard and does not run off as concentrated flow. (Note, this will not generally be the case as it is nearly impossible to contain all runoff. If you are on flat ground, consider how you get water out of your vineyard in the spring. If in doubt, mark "No" and complete the section.)

☐ Yes (Describe dispersal/infiltration methods below and skip the remainder of this section)

☐ No (Consider practices # 1 through 7 and 11, listed in Table V2 below)

Describe as needed:

V7.Concentrated flow is conveyed in a way that prevents erosion and flow acceleration.

☐ Yes

☐ In Some Places (Consider practices # 2 through 9 and # 11, listed in Table V2 below)

☐ No (Consider practices # 2 through 9 and # 11, listed in Table V2 below)

Describe as needed:

V8.Concentrated flows that are conveyed into a basin or pond are released slowly and outlet to a stable location.

☐ Yes

☐ No (Consider practices # 6 through 10, listed in Table V2 below)

☐ Not Applicable

Describe as needed:

Table V2: Conservation Practices to Slow and Remove Sediment From Concentrated Runoff From the Vineyard

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See Chapter 5 of the Reference Guide for information on these conservation practices.*

Practices	*NRCS Practice Title*	*Implementation Date*	*Location*
1.Consult a Professional			
2. Plant a vegetative buffer or swale to filter runoff	Filter Strip (393) Grassed Waterway (412) Vegetated Barrier (601)		
3. Install a basin to collect sediment and/or attenuate flows	Sediment Basin (350)		
4. Install a level rock bench or tee spreader to disperse concentrated runoff	Underground Outlet (620)		
5. Install a diversion ditch – look for opportunities to disperse concentrated flows and ensure that outlet is protected	Lined waterway or outlet (468)		
6. Line an eroding swale or diversion ditch – look for opportunities to disperse concentrated flows and ensure that outlet is protected	Lined waterway or outlet (468)		
7. Install a piped storm drain - – look for opportunities to disperse concentrated flows and ensure that outlet is protected	Underground outlet (620)		
8. Install an energy dissipater at pipe/waterway outlet – look for opportunities to disperse concentrated runoff prior to outlet	Lined waterway or outlet (468)		
9. Install temporary straw or coir structures	Stormwater Runoff		

	Control (570)		
10. Install a rock weir spillway from a sediment basin – look for opportunities to disperse concentrated flow	Structure for Water Control (587)		
11. Set back vineyard upon replant and seed bare areas	Critical Area Planting (342) Conservation Cover (327)		
Other:			

MANAGING NATURAL WATERWAYS, DITCHES, AND SPILLWAYS

Background: Waterways, channels, streams, swales, and ditches act as a conduit from upstream to downstream areas and they are sensitive to land use activities and practices. Healthy riparian zones and/or adequate space between land use activities and waterways may provide a number of environmental benefits and may protect streambanks from erosion. Riparian areas also buffer waterways from the effects of potential nutrient, pesticide, pathogen and sediment runoff.

See Chapter 6 of the Reference Guide for further information on waterways and riparian areas.

Purpose: Describe the condition of natural stream channels, riparian areas, and human-made waterways (ditches and pond/basin spillways) on the property including the rate of bed and/or bank erosion, channel incision, head-cutting, and the condition of human-made structures in the channel. Describe the conservation practices being implemented to protect waterways from water quality degradation.

W1.The waterways on the property that are on or adjacent to the vineyard facility are:

☐ All natural

☐ Mixed

☐ All ditches and spillways

☐ No Waterways (You do not have to complete this section of the LandSmart Plan.)

W2. Complete this inventory of waterways on or adjacent to the Vineyard facility

Waterway Name (As labeled on Map)	**Channel width at top of bank (ft)** 0-10, 11-25, 26-50, 51-100, 101-200, 200+	**Channel Condition** Stable, incising, head cutting, widening, aggrading, bank slough	**Riparian Corridor Width** 0-10, 11-25, 26-50, 51-100, 101-200, 200+	**Riparian Corridor Condition** Minimal, sparse vegetation, dense veg, overgrown

W3.Vineyard blocks are set back from waterways by the minimum distance required by County regulations (or greater).

☐ Yes

☐ Some waterways (Consider practice #6, listed in Table W1 below)

☐ No (Consider practice #6, listed in Table W1 below)

Describe as needed:

W4. Other vineyard-related activities and/or features (e.g. vegetation removal, equipment turnarounds) within County-required setbacks are in compliance with County requirements.

☐ Yes

☐ No

Describe as needed:

MANAGING EROSION AND WATER QUALITY IN NATURAL WATERWAYS

W5.Riparian Areas have vegetative cover that reduces the likelihood of erosion. (Native vegetation is preferred. Some vegetation such as vinca, blackberry, Arundo can conceal erosion issues.)

☐ All banks

☐ Some banks (Consider practices # 1 through 4, listed in Table W1 below)

☐ No banks (Consider practices # 1 through 4, listed in Table W1 below)

☐ Not Applicable

Describe as needed:

W6.The riparian canopy along natural waterways provides shade to the waterway.

- ☐ All banks
- ☐ Some banks (Consider practices # 1 through 4, listed in Table W1 below)
- ☐ No banks (Consider practices # 1 through 4, listed in Table W1 below)
- ☐ Not Applicable

Describe as needed:

W7. Erosion sites along waterway banks are being treated and/or managed to restore and/or maintain natural channel function.

- ☐ All banks
- ☐ Some banks (Consider practices # 1 through 5, listed in Table W1 below)
- ☐ No banks (Consider practices # 1 through 5, listed in Table W1 below)
- ☐ Not Applicable

Describe:

W8.Agricultural supplies (heaters, trellis parts, irrigation supplies, machinery, etc.) are stored outside of the required waterway setback during winter months.

- ☐ All supplies
- ☐ Some supplies
- ☐ No supplies (Consider practice #7, listed in Table W1 below)

Describe as needed:

Table W1: Conservation Practices to Reduce Erosion in Natural Waterways

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See Chapter 6 of the Reference Guide for information on these conservation practices.*

Please note that some practices

	NRCS Practice Title	*Implementation Date*	*Location*
1. Consult a Professional			
2. Remove invasive riparian plants and establish native riparian cover (permit may be needed)	Restoration & Management of Declining Habitats (643) Weed Control (315) Brush Management (314)		
3. Establish native riparian trees and shrubs	Riparian Forest Buffer (391)		
4. Establish native riparian grasses and forbs	Riparian Herbaceous Cover (390)		
5. Promote natural restoration (let the bank erode and as it becomes stable encourage native vegetation)			
6. Stabilize and protect streambanks through layback, bioengineering, and/or rock installation	Streambank and Shoreline Protection (580)		
6. Provide more space to the stream by setting back vines			
7. Establish an agricultural supply yard away from the waterway			
Other:			

ENHANCING NATIVE VEGETATION, FISH AND WILDLIFE HABITAT IN NATURAL WATERWAYS AND RIPARIAN AREAS (OPTIONAL)

W9. Riparian areas have a variety of native vegetation that includes grasses, forbs, trees and shrubs. *See Chapter 6 of the Reference Guide for native plant lists.*

- ☐ All banks
- ☐ Some banks (Consider practices # 3 and 4, listed in Table W2 below)
- ☐ No banks (Consider practices # 3 and 4, listed in Table W2 below)
- ☐ Not Applicable

Describe as needed:

W10. Riparian areas have non-native/invasive plants.

- ☐ All banks (Consider practices # 1 through 4, listed in Table W2 below)
- ☐ Some banks (Consider practices # 1 through 4, listed in Table W2 below)
- ☐ No Banks
- ☐ Not Applicable

Describe as needed:

W11. There are structures within waterways known or suspected to cause obstruction to fish passage. *See Chapter 6 of the Reference Guide for information on fish passage.*

- ☐ Yes (Consider practices # 1 and 5, listed in Table W2 below)
- ☐ No
- ☐ Not Applicable

Describe:

W12. There is habitat complexity with the stream channel, including deep pools that stay wet even if/when the rest of the stream channel is dry and structures such as wood, boulders, and over-hanging roots that slow down fast-moving water in high flows and provide shelter in pools when flows are lower. *See Chapter 6 of the Reference Guide for information on instream habitat.*

☐ All waterways

☐ Some waterways

☐ No waterways (Consider practices # 1 and 6, listed in Table W2 below)

☐ Not Applicable

Describe as needed:

Table W2: Conservation Practices to Enhance Native Vegetation, Fish and Wildlife Habitat in Natural Waterways and Riparian Areas

The following table provides an assortment of management practices that are intended to enhance waterways and riparian areas. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality, enhance habitat, and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See Chapter 6 of the Reference Guide for information on these conservation practices.*

	NRCS Practice Title	*Implementation Date*	*Location*
1.Consult a Professional			
2.Remove invasive riparian plants	Restoration & Management of Declining Habitats (643)		
3.Establish native riparian trees and shrubs	Riparian Forest Buffer (391)		
4.Establish native riparian grasses and forbs	Riparian Herbaceous Cover (390)		
5.Modify instream structures to improve fish passage	Stream Habitat Improvement and Management		

	(395)		
6. Install in-stream structures to enhance habitat	Stream Habitat Improvement and Management (395)		
7. Provide more space to the stream by setting back vines			
Other:			

MANAGING EROSION AND WATER QUALITY IN DITCHES

W13. Ditch beds are stable (not sloughing, downcutting, or eroding).

☐ All banks

☐ Some banks (Consider practices # 1 through 6, listed in Table W3 below)

☐ No Banks (Consider practices # 1 through 6, listed in Table W3 below)

☐ Not Applicable.

Describe as needed:

Table W3: Conservation Practices to Reduce Erosion and Manage Stability and Conveyance in Non-Roadside Ditches

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See Chapter 6 of the Reference Guide for information on these conservation practices.*

	NRCS Practice Title	*Implementation Date*	*Location*
1. Consult a Professional			
2. Establish native grasses and forbs	Conservation Cover (327) Critical Area Planting (342)		
3. Provide more space to the ditch by setting back vines			

4. Line an eroding swale or diversion ditch – seek opportunities to disperse water and ensure that outlet is protected and well maintained	Lined Waterway or Outlet (468)		
5. Install rock check structures to dissipate hydraulic energy	Structure for Water Control (587)		
6. Plant a vegetative filter waterway	Grassed Waterway (412)		
Other:			

MANAGING EROSION FROM ON-FARM POND/BASIN SPILLWAYS

W14.There is an on-farm pond or basin (including sediment and attenuation basins) on the property.

☐ Yes

☐ No (Skip this section)

Describe as needed:

W15.Open channel spillways are stable (not eroding) and/or properly armored to prevent erosion.

☐ All Spillways

☐ Some spillways (Consider practices # 1 through 5, listed in Table W4 below)

☐ No spillways (Consider practices # 1 through 5, listed in Table W4 below)

☐ Not applicable, all spillways are piped

Describe as needed:

W16. Piped and open channel spillways from on-farm ponds contain pond overflows.

☐ All Spillways

☐ Some spillways (Consider practices # 3, 6 and 7, listed in Table W4 below)

☐ No spillways (Consider practices # 3, 6 and 7, listed in Table W4 below)

Describe:

W17.The alignments of spillway outlets, both piped and open channel, are in line with the downstream waterway (i.e., flow from the spillway outlet enters the waterway in-line with flow of the natural waterway).

☐ All Spillways

☐ Some spillways (Consider practice # 8, listed in Table W4 below)

☐ No spillways (Consider practice # 8, listed in Table W4 below)

☐ Not Applicable

Describe as needed:

W18. Spillways, pipe and open channel, from on-farm ponds have energy dissipaters prior to re-entering the downstream waterway.

☐ All Spillways

☐ Some spillways (Consider practices # 5 through 7, listed in Table W4 below)

☐ No spillways (Consider practices # 5 through 7, listed in Table W4 below)

☐ Not Applicable

Describe as needed:

Table W4: Conservation Practices to Reduce Erosion and Manage Stability and Conveyance in On-farm Pond/Basin Spillways

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis and an assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See Chapter 6 of the Reference Guide for information on these conservation practices.*

Practices	*NRCS Practice Title*	*Implementation Date*	*Location*
1. Consult a Professional			
2. Install a rock weir to control and slow in-channel flow	Grade Stabilization Structure (410)		

3. Widen/enlarge the spillway	Pond (378)		
4. Stabilize the open channel spillway	Pond (378)		
5. Plant a vegetative filter waterway	Grassed Waterway (412)		
6. Install a rock lined plunge basin	Structure for Water Control (587)		
7. Install an energy dissipater at the spillway outlet to reduce streambank erosion	Streambank and Shoreline Protection (580)		
8. Realign the existing spillway with the downstream waterway	Pond (378)		
Other:			

ROADS AND CROSSINGS

Background: Roads that drain toward waterways can be major contributors of sediment. Roads must be safe to travel while having a minimal effect on waterways in the watershed. Practices to address erosion from roads aim to reduce the concentration of flow from roads, slowing the rate of water running off the land and discharging accumulated waters more frequently to areas away from waterways.

See Chapter 7 of the Reference Guide for further information on roads and crossings.

Purpose: To identify practices, currently in use and intended for implementation, to slow, spread and sink runoff from roads, particularly unpaved roads. Identify priority road reaches that may discharge directly to waterways so that no more than 25% of roads are connected in 20 years.

ROADS ON THE PROPERTY

R1. Roads on the property are included in an implemented County approved Erosion Control Plan.

☐ All roads.

☐ Some roads.

☐ No roads.

Describe as needed:

R2. Roads on the vineyard property cross waterways.

☐ Yes (Please complete the Road Stream Crossing Data Form that follows. Make a copy of the data form for each crossing. Consider practices in Table R1 below, as appropriate.)

☐ No

R3. Road surfaces, fills, and cutbanks on the property appear to be stable (i.e., they do not show signs of excessive erosion (riling, cut-bank failures, slumping)

☐ Yes

☐ No (Consider practices listed in Table R2 below)

R4. All roads on the property are necessary and utilized.

☐ Yes

☐ No (Consider practice #14, listed in Table R2 below)

DATA FORM R1. ROAD STREAM CROSSING DATA FORM

Complete this data form for each place that roads cross a waterway. The instructions and definitions following the form may be helpful. Make a copy of the form, including treatment options if applicable, for each crossing.

ROAD STREAM CROSSING DATA FORM (2014)						
GENERAL	Site #:	Mapped (Y/N):	Road ID/Name:	Landowner:	Date:	Site located up-stream of pond/reservoir (Y,N):

CROSSING TYPE	Bridge (go to Bridge, Arch, Box info section)	Bottomless Arch (go to Bridge, Arch, Box info section)	Box culvert (go to Bridge, Arch, Box info section)		
	Culvert (go to Culvert info section)	Oval culvert (go to Culvert info section)			
	Ford (go to Ford or Armored Fill info section)	Armored Fill (go to Ford or Armored Fill info section)			
	Fill (if so then go to Fill or Pulled info section)	Pulled crossing (if so then go to Fill or Pulled info section)			
	Photos taken (Y, N):				
BRIDGE, ARCH, BOX INFO	Bridge/Arch/Box/ height (ft):	Bridge/Arch/Box/ width (ft):	Wing walls (90^0&15^0, 30^0-75^0, 0 extension up ch.)		
CULVERT INFO	Circular culvert diameter (in):	Oval culvert height (in):	Oval culvert width (in):	Culvert type (P, S, A, C):	Trash rack type (none, SP, MP, Screen): (If none or Screen see treatment options 11, 12 in Table R1)
	Headwall height (ft):	Rust/silt line at inlet (in): (If greater than 50% of diameter see treatment options 4, 5, 8 in Table R1).	Culvert grade (%): (If significantly shallower than stream grade see treatment option 8 in Table R1).	Inlet (O, C, P, R): (If C, P, or R see treatment options 3, 7, 8 in Table R1).	
	Plug potential (H, M, L) (If M or H see treatment options 4, 5, 6, 8, 12 in Table R1)	Interior (O, C, R, or S): (If C, R, or S see treatment options 3, 7, 8 in Table R1)	Are fill slopes actively eroding (Y, N): (If yes see treatment option 3, 13 in Table R1)	Outlet (O, C, P, R): (If C, p or R see treatment options 3, 7, 8 in Table R1)	
	Does the stream channel below outlet appear to be scoured (Y, N): (If yes see treatment option 13 in Table R1).	Is culvert in line with stream channel (Y, N): (If no see treatment option 8, 13 in Table R1)	Diversion potential (Y, N, Critical dip present): (If yes see treatment options 9, 10 in Table R1)		

Ford or Armored Fill info	Is crossing dipped wide enough to keep flows within natural stream channel (Y, N): (If no see treatment option 3 in Table R1)	At Armored Fill crossing, is armor adequate enough to prevent fill material from eroding (Y, N): (If no see treatment option 13 in Table R1)
Fill or Pulled Crossing info	Does crossing look to be actively eroding (Y, N): (If yes see treatment options 3, 13 in Table R1)	

STREAM INFO	Avg. stream grade (%):	Avg. stream channel width (ft):	Average steam channel depth (ft):

ROAD DRAINAGE TO STREAM CROSSING	**Left** road length(s) draining down to site (ft): (If greater than 150ft see treatments options in Table R2)	Road length ends at (WB, RD, DB):	Avg. width (ft):	Road Surface (paved, rocked, native):	Road use (Year round, Dry weather, No recent use):
	Left vineyard avenue length(s) draining down to site (ft): (If greater than 150ft see treatments options in Table R2)	Ave. length ends at (WB, RD, DB):	Avg. width (ft):	Ave Surface (rocked, grassed, native):	Ave use (Year round, Seasonal, turn around):
	Right road length(s) draining down to site (ft): (If greater than 150ft see treatments options in Table R2)	Road length ends at (WB, RD, DB):	Avg. width (ft):	Road Surface (native , rocked, paved):	Road use (Year round, Seasonal, No recent use):
	Right vineyard avenue length(s) draining down to site (ft): (If greater than 150ft see treatments options in Table R2)	Ave. length ends at (WB, RD, DB):	Avg. width (ft):	Ave Surface (rocked, grassed, native):	Ave use (Year round, Seasonal, turn around):

COMMENT ON STREAM CROSING AND ASSOCIATED ROAD LENGTH(S):

COMMENT ON OTHER ROAD RELATED ISSUES THAT YOU WOULD LIKE ADDRESSED:

ROAD STREAM CROSSING DATA FORM INSTRUCTIONS AND DEFINITIONS

GENERAL

Site#: Please assign a number to each site

Sites are defined as features that may deliver sediment to a stream channel. A ***Stream crossing*** (or crossing) is where a road crosses a natural drainage channel or unchanneled swale. In this data form the term *site* refers to a *stream crossing* or *crossing*.

Mapped: has the site location been identified on a map? (Yes or No):

Road ID/Name: give each road on the property an individual name or numeric identifier so that sites can be grouped for future treatment.

Landowner: give the name of the landowner or public agency so that sites can be grouped for future treatment.

Date: Record the date that this site was assessed (mm/dd/yy).

Site located up-stream of a pond/reservoir: is the site located on a stream channel that drains down into a pond or reservoir (Yes, No)

CROSSING TYPE

Please circle the type of crossing at the site. If there are different types of drainage features at a crossing then check each. Definitions of each crossing type follow.

Bridge is a bottomless structure that has abutments built on both of the stream banks or uses the natural stream banks as abutments.

Bottomless Arch culvert is a bottomless structure that has abutments built down by the active stream cannel. The difference of this structure from a bridge is that it is usually a continuous arch from the active channel up to its apex.

Box culvert functions much like a bridge except that it has a bottom built into it. Most box culverts do not have abutments associated with them. They are usually placed in the stream channel and have fill material compacted around them.

Culvert is a circular pipe or structure that is placed in the stream channel to convey flows under fill material that is compacted around it.

Oval culvert is the same as above but is an oval shape.

Ford crossing (wet crossing) is designed so that the vehicle travels across the stream bed. No fill or armor material is placed in the stream bed to accommodate the crossing.

Armored fill usually constructed on streams with high stream banks that would require the excavation of substantial ramps to get vehicles down to the streambed. An armored fill crossing (wet crossing) is designed so that the stream flow travels across the road prism but the road fill is armored with rock, concrete or other hardened materials so that the fill material cannot be eroded by the stream flows.

Fill crossing (wet crossing) is a stream crossing where the road crosses a stream and no drainage structure has been constructed. This definition may also apply to stream crossings that have drainage structures but they have failed or washed out to the point that the drainage structure is no longer functioning. These crossing types are assumed to be actively eroding.

Pulled crossing is a stream crossing that has been decommissioned in the past. Decommissioned stream crossings are crossings whose drainage structure and fill materials have been excavated (pulled) from the stream channel, allowing for the stream to flow through the area as it had before the road was constructed. These crossings may need to be evaluated to determine if adverse 'adjustments' are occurring at the site and further treatment would be needed to reduce sediment delivery.

Photos taken (Y, N): photos can be very helpful in describing current conditions of a site and can also be used to document changes over time. It is usually helpful if there is a photo of the up-stream and down-stream sides of the crossing as well as the road approaches to the crossing. There is a section in the LandSmart plan that allows for photo descriptions. Descriptions should include what is in the photo (ex. inlet, outlet, left road, right road, etc.) and at what location the photo was taken (ex. up-stream of the inlet, on right bank, in center of crossing on the road, etc.). The use of a GPS or marking on a map the locations of the photo points can help in re-occupying these locations.

BRIDGE, ARCH, BOX INFO

Bridge/Arch/Box/ height (ft): is a measurement in feet from the stream channel to the bottom of the structure. If the structure is an arch then give the maximum height. The purpose of this measurement is to determine capacity of the crossing.

Bridge/Arch/Box/ width (ft): is a measurement in feet of the width of void space of the structure, usually the side walls or the abutments. If the abutments are sloping then give the average width. If the crossing is an arch then give the max width. The purpose of this measurement is to determine capacity

of the crossing.

Wing walls (90°&15°, 30°-75°, 0 extension up channel): some of these stream crossings may have concrete or rock walls projecting beyond the inlet. How these walls are constructed influence the capacity of the stream crossing. The angle of the wall you are asked to describe are relative to stream flow. So a 90° wall would be perpendicular to stream flow and a 0° wall would be parallel.

CULVERT INFO

Circular culvert diameter: is measured in inches. Circular culverts usually come in sizes of 6" increments. The diameter should be given as it was constructed and not the diameter relative to how crushed or buried it may be. If there are multiple culverts at the crossing give the diameter of each.

Oval culvert height: is measured in inches. Give the maximum height as the culvert was constructed and not relative to how crushed or buried it may be. If there are multiple culverts at the crossing give the height of each.

Oval culvert width: is measured in inches. Give the maximum width as the culvert was constructed and not relative to how crushed or buried it may be. If there are multiple culverts at the crossing give the width of each.

Culvert type: give the type of material the culvert is made of; plastic, steel, aluminum, or concrete. If there are multiple types of culverts at the site then check each type.

Trash rack type: (none present, single post, multiple post, screen). A ***trash rack*** is placed above the inlet of the culvert and is used to reduce plugging of the culvert by debris. Also see *plug potential* below.

Headwall height: is given in vertical feet, to the nearest ½ foot increment. The headwall height is measured from the bottom of the culvert inlet/stream bed to the location where, if the crossing were to flood, the flow would exit into the inboard ditch or onto the road surface. This location may or may not be directly above the culvert inlet, this is dependent on how the road travels through the crossing. This measurement can be achieved by using a measuring tape and clinometer. Take the slope angle (degrees) and the length (feet).

Slope *sin*(length) = vertical height

Rust or silt line at inlet: The height of the rust/silt line at the inlet gives an indication of the average flow depth that the crossing receives. A rust/silt line greater than 50% of the diameter of the culvert may be an indicator that the crossing is undersized. Though rust/silt line height may also be a result of how shallow the culvert is relative to stream channel grade.

Culvert grade: measured in percent grade. Use a hand held clinometer and look through the inlet or outlet of the culvert to determine its grade. The reason for collecting this data is to see if the culvert is significantly shallower than the stream grade. Culverts that are significantly shallower tend to have greater plug potential.

Inlet: is it open, crushed, plugged and/or rusted? For the inlet to be defined as *crushed* or *plugged* it should be greater than 20%. For the inlet to be defined as *rusted* you should observe rust holes through the culvert.

Plug potential: at the inlet. Culverted stream crossings tend to have a higher plug potential than other sites because their void space is usually narrower than the stream channel. Another way to think of a culverted stream crossing is as an 'earthen dam with a hole at the bottom'. It is important to remember that stream channels do not just transport water but also carry woody debris and sediments. Some of the factors to consider when determining plug potential are:

1) *Setting*. Is the crossing in a forested, chaparral, or grassland setting? The more woody material in the stream channel above the crossing the greater the plug potential.
2) *Culvert grade relative to stream grade*. The shallower the culvert grade is relative to stream grade the more likely woody debris and sediments are to settle out at the inlet.
3) *Trash rack at inlet*. If there is no trash rack above the inlet and the culvert diameter is smaller than the stream channel width you have an increased likelihood of plugging. A single post trash rack above the inlet can greatly reduce the likelihood of woody material plugging the inlet of a culvert. Multiple posts above the inlet can also reduce plug potential but they may also initiate scour around the outer posts as material collects along the posts. Having a screen across the inlet of your culvert can actually increase plug potential because you are preventing any material to pass through the culvert.

Interior: is it open, crushed, plugged, rusted, and/or separated? For the interior to be defined as *crushed* or *plugged* it should be greater than 20%. For the interior to be defined as *rusted* you should observe rust holes through the culvert bottom. *Separation*: culverts usually come in 20' lengths, over time these sections can become uncoupled and allow flow to exit the culvert. If the interior of the culvert cannot be observed from either the inlet or outlet due to the condition of either of these locations than assume the same condition for the interior as either of the openings.

Are fill slopes actively eroding: Yes or No. Based upon observations of the fill slopes around the culvert inlet and outlet are they:

1) Showing signs of rilling or Gullying?
2) Do you see tension cracks or slumps?

3) Or are the fillslopes well protected with vegetation, rock armor, concrete or other hardscape?

Outlet: is it open, crushed, plugged and/or rusted? For the outlet to be defined as *crushed* or *plugged* it should be greater than 20%. For the outlet to be defined as *rusted* you should observe rust holes through the culvert.

Does the stream channel below outlet appear to be scoured: Yes or No. This is usually the case when the outlet of the culvert is a substantial vertical distance above the stream channel, often referred to as 'shot-gunned'. When the culvert outlet is shot-gunned the water coming out of it can scour out the channel below and cause the surrounding stream banks to fail.

Is culvert in line with stream channel: Yes or No. above inlet does the stream have to make a sharp turn to enter the culvert? Is the outlet pointed at either of the stream banks? These situations will help you to determine whether or not the culvert is aligned with the stream channel.

Diversion potential: Yes, No or Critical dip present.Usually only exists at culverted stream crossings. You would answer *Yes* there is diversion potential if the crossing floods at the inlet, water would flow down the road or inboard ditch beyond the stream crossing's hinge line, even if it would re-enter the same natural stream channel at some distance downslope. You would answer there is *No* diversion potential if the water would flow straight across the road and spill back into the same stream channel. The presence of a critical dip to reduce diversion potential would allow you to answer *No* to diversion potential. See section of 'Road lengths draining down to site for further check.

STREAM INFO

Average stream grade: is given in % slope and is an average of the overall grade. Enter the average slope of the stream channel upstream from the site beyond any aggraded sediments that may exist near the inlet of the crossing.

Average stream channel width (ft): is given in feet. This measurement is achieved by walking up-channel from the stream crossing, beyond any aggraded sediments. The average width is determined by measuring the channel bottom width, the top of bank width and dividing by 2 (W^1+W^2/2). In smaller stream channels there may be only one width observable.

Average stream channel depth (ft): is given in feet. This measurement is calculated at the same location as the previous section. Measure the height from the channel bottom to the top of bank (bank full).

ROAD DRAINAGE TO STREAM CROSSING

If you are using a map that can be written on it may be helpful to map all road/avenue lengths draining down to each site. This can be done by using a bracket ([ ]) symbol to indicate start of road length with

an arrow symbol (→) pointing toward the site. Ex. [→ → site# ← ←]

Road/vineyard avenue lengths draining down to the site: Standing on the road surface, above the stream crossing and looking down stream, record the total distance of road length(s) draining down to the site. *Left* road length and *Right* road length are relative to looking down stream. Include road intersections and spur road lengths. If the road continues downhill through the site then cut-off your road length at the site and count the road length draining away as 0ft. Road surface drainage features that effectively end the road length include functional waterbars, rolling dips, and natural drainage break (divides and dips). If a culverted stream crossing has 0 Left or Right road length s draining to the site then the crossing has *Diversion potential*.
Vineyard avenue lengths should be assessed the same way as described in the roads section above. Vineyard avenues are separated in this data form because they may fall under the treatment recommendations of an erosion control plan for the vineyard block and they tend to receive different traffic use (tractor turn-arounds and so forth).

Average width: of the road length(s) draining down to the site, measured in feet. Take a represented measurement of the width of the road from the cutbank to the outside edge of the road prism. For vineyard avenues, take a represented measurement of the width of the avenue from the end of the vinerow to the outside edge of the vineyard block.

Road/Ave surface: ***Paved*** roads have either asphalt or concrete surface and is adequately covered to protect against rain-drop impact and allows for wet-season use. ***Rocked*** roads/avenues have a surface that is adequately covered with road-base rock to protect against rain-drop impact and allows wet-season use. ***Grassed*** avenues are adequately covered (during rainy season) with vegetation to protect against rain drop impact. ***Native*** roads/avenues are unsurfaced or dirt, with minimal vegetative cover, even though they may contain some natural rock.

Road/Ave use: ***Year round*** use means roads/avenues are driven when they are wet. ***Dry weather*** use means the roads/avenues are not driven when they are wet. ***Turn around*** use means that the avenue is not driven but rather used as a tractor turn around between vine rows. ***No recent use*** is for roads that have not been driven in at least the past 5 years.

COMMENTS ON PROBLEM
This is an optional field. This section is available for you to describe in more detail characteristics of the site that may or may not have been covered earlier in the data form. The summary comments for each site generally describe the nature of the erosion problem as well as other important site characteristics. Remember there is a real difference between the cause and the symptom of many erosion problems. Wherever feasible, it is important to treat the cause of the problem rather than the symptom. You may

want to refer to specific photos of the site in this section as well. A discussion on the historical maintenance needs of the site may help in determining treatment options and prioritization.

COMMENTS ON OTHER ROAD RELATED ISSUES

This is an optional field. This section is available for you to describe other road related issues that you have been experiencing but were not covered in this data form. These issues may be transportation concerns or chronic maintenance site that may or may not have impacts to water quality.

RCD use only	Fish barrier (NA, N, P, D):	Q:	Undersized (Y, N, Site requires further engineering to determine capacity):	Recommended size:	Site requires further engineering to determine capacity and or fish passage.
	Total chronic erosion vol. (yds^3):	Eposodic future volume (yds^3):	Episodic Erosion Potential (H, M, L)		Total future erosion vol. (yds^3):
	Treat Priority. (H, M, L, No treat):	ASAP (Y, N):	Upgrade		Decommission See typical drawing 14

RCD Use Only Instruction and Definitions

Fish barrier if anadromy is known or likely on the section of the stream that the site is located then a fisheries biologist should be consulted to determine if the crossing is a barrier to fish passage. *Non-applicable* would be selected to identify that the site is not located on an anadromous stream. *No* means that the structure does not inhibit fish passage for all life stages of anadromous fish species. *Partial* means a barrier to anadromous fish species at some or all life stages or at certain flow events. *Definite* means a complete barrier to anadromous fish migration.

Q is the discharge at the stream crossing for a given storm event. This value can be derived by using a variety of methods such as the Rational Method or USGS Regional Regression Equations.

Undersized once you have determined the discharge at the site you can now look at the existing capacity of the crossing and determine if it is undersized. Answer *Yes, No* or *need further engineering*. Stream crossings draining larger watershed areas may require engineering beyond the abilities of the RCD to determine the best design. See Cost effectiveness in *Treatment priority* section.

Recommended size if the crossing is undersized then based upon the discharge of the site what is the recommended size or void space to adequately drain the stream.

Site requires further engineering for fish passage design. Stream crossings draining larger watershed areas or that are along anadromous stretches of streams may require engineering beyond the abilities of the RCD to determine the best design. See Cost effectiveness in *Treatment priority* section.

Chronic erosion volume is measured in cubic yard on either an annual or decadal timeline. Chronic erosion is sediment production from road surfaces and cutbanks during storm events that produce runoff. This erosional process is termed chronic because it occurs annually. Chronic erosion is

calculated by taking the road length and multiplying that by a width and surface lowering rate. This erosion will occur through a combination of:

1) Cutbank erosion (i.e., dry ravel, rainfall, freeze-thaw processes, cutbank failures).
2) Inboard ditch erosion and sediment transport.
3) Mechanical pulverizing and wearing down of unpaved road surface.
4) Erosion of unpaved road surface if driven during wet weather periods.

Episodic erosion volume is measured in cubic yards. Stream crossing wash-out is termed ***episodic*** because it occurs in response to storm events or other triggers. This erosion may occur once, or in pulses over an indeterminate time period. The volume of fill material with the stream crossing will need to be determined by doing a volume calculation. The fill volume within the stream crossing is always assumed to be 100% delivery to the stream system.

If a stream crossing is identified as being adequately sized and looked to be structurally intact, then it is considered 'storm-proofed'. Therefore no future ***episodic*** erosion volume will be assigned to that site.

Stream crossings with diversion potential make it difficult to accurately determine episodic erosion volume. When this occurs the roadbed, hillslope, and/or stream channel that receive the diverted flow may become deeply gullied or destabilized. Road and hillslope gullies can develop and enlarge quickly and deliver large quantities of sediment to stream channels. Stream flow that is diverted onto steep unstable slopes may also trigger hillslope landslides and large debris flows. Because of the variability of erosion that can occur due to diverted stream flows it is difficult to accurately determine the future erosion volume at these sites. For the purpose of this data form, the episodic erosion volume at stream crossings with diversion potential will be quantified the same way as stream crossings without diversion potential.

Episodic erosion potential only applies to the ***episodic*** erosion volume because the ***chronic*** erosion volume is assumed to be occurring annually. Episodic erosion potential is a qualitative evaluation of the likelihood of the stream crossing to wash-out, during a given storm event(s), based on surficial observations. It is a subjective probability estimate, expressed as "low," "moderate," or "high," and not an estimate of how much erosion is likely to occur. More than one erosional process may be occurring at a site, therefore the erosion potential should reflect the most important erosional feature or mechanism. Factors to observe in determining erosion potential are:

1) Gullying or eroding fillslopes.
2) Tension cracks or slumps observed on the fillslopes or road surface.
3) Are the fillslopes well protected with rock armor, concrete or other hardscape?
4) How undersized a crossing is for a given storm event.
5) At culverted crossings, how significantly; crushed, plugged, separated, or rusted through is the culvert.

6) Erosion potential is also a function of stream power relative to the amount of fill in the stream crossing. But don't underestimate stream power for large storm events.
7) Road use. If the road is unused then it is assumed that erosional processes are occurring unchecked. Therefore given enough time, even low erosion potential factors can completely wash-out a stream crossing.

Total future erosion volume is the sum of the episodic and chronic erosion volumes for each site.

Treatment priority is a professional evaluation of how important it is to quickly perform erosion control or erosion prevention work at a site. It is an integral part of an assessment because it is the basis for prioritizing treatment sites prior to implementation. Treatment priority is designated as "high," "moderate," or "low," indicating the relative degree of urgency to treat the site before it erodes or fails. Sites that require further engineering to determine capacity will not be given a treatment priority until such work has been done. Criteria for evaluating treatment priority include:

1) *Erosion potential*, or whether there is a low, moderate, or high likelihood for future ***episodic*** erosion at a site. Remember that only the ***episodic*** erosion volume has an erosion potential whereas the ***chronic*** erosion volume is assumed to be occurring on an annual basis.
2) *Sediment delivery volume*, which is an estimate of the sediment volume projected to be eroded from the site and the associated road lengths. It is entirely possible to have large ***episodic*** erosion volumes but because it has a *low* erosion potential, the site may be classified with a low (L), moderate-low (ML) or moderate (M) treatment priority.
3) *Diversion potential* at culverted stream crossings. These sites should be given a higher treatment priority than sites with similar characteristics but without diversion potential.
4) *Stream crossing capacity*, weather it us undersized or not for a given storm event (example the 100-year peak storm flow). This should be looked at on a magnitude basis, i.e. 'how much is the crossing undersized for a given storm event. Crossing sizing not only determines its capacity to carry water during peak flows but also influences plug potential.
5) *Evaluation of the sites for fish passage* on anadromous streams. If the site poses a barrier to salmonid fish migration then the site should receive a "High" treatment priority regardless of its erosion volume or potential. Also take into consideration the amount and quality of habitat that would be made available.
6) The *value or sensitivity of downstream resources* being protected. In general, all sites located up stream of an instream pond or reservoir are identified as 'disconnected' and should be given a *Low* treatment priority. These sites are deemed 'disconnected' from the anadromous portions of the watershed because these instream structures act as sediment basins for upstream erosional process and are barriers to anadromous fish species.
7) C*ost effectiveness* may be analyzed, along with transportation needs, to prioritize treatment sites or locations for implementation. Cost effectiveness is not only a necessary consideration for

environmental protection and restoration projects for which funding may be limited, but is also an accepted and well-documented tool for prioritizing potential treatment sites in an area. A quantitative estimate for cost effectiveness is determined by dividing the cost of accessing and treating a site by the volume of sediment prevented from being delivered to local stream channels (the sediment savings). The resulting value provides a comparison of cost-effectiveness among sites, and an average for the entire project area. For example, if the cost to develop access and treat an eroding stream crossing is projected to be $5,000, and the treatment will potentially prevent 500 yd^3 of sediment from reaching the stream channel, the predicted cost effectiveness for that site would be $5,000/500$yd^3$, or $10/$yd^3$. At sites that pose barriers to anadromous fish passage, cost effectiveness could be looked at from the standpoint of amount and quality of upstream habitats that would be made available to the species.

ASAP treat as soon as possible (Yes or NO). This would exceed a 'High' treatment priority and would suggest an emergency fix.

Upgrade would indicate that the treatment recommended for storm proofing would incorporate continued vehicle use and maintenance of drainage features.

Decommission could be a suggestion made if the landowner indicated that the road had not been used in the last 5 years. This would indicate that the treatment recommended for storm proofing would incorporate the idea of long term winterization where vehicles would no longer travel these sections. Road decommissioning is a cost effective way to storm proof a road because it does not require regular maintenance of drainage features. It should be noted that road decommissioning, like road upgrading, does require monitoring for the first couple of years and after large storm events to ensure no significant adjustments have occurred in the treatment areas. Road decommissioning should not be thought of a *permanent* closure because the road prism still exists and the stream crossings could have new drainage features installed if the road were needed again. See typical drawing 14.

Table R1: Treatment Options to Reduce Erosion and Manage Stability at Stream Crossings

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See chapter 7 of the reference guide for information on these conservation practices.*

Practices *(at stream crossing)*	*NRCS Practice Title*	*Implementation Date*	*Location* *Site#*
1. No treatment at site	--	--	
2. Consult a Professional			
3. Excavate soil	Earthfill (903)		
4. Install bridge	Stream Crossing (578)		
5. Construct Armored-fill crossing *(See typical drawings 5a, 5b, 6, 7)*	Stream Crossing (578)		
6. Construct a Ford crossing *(See typical drawing 5a)*	Stream Crossing (578)		
7. Repair culvert	Access Road (560)		
8. Install or replace culvert *(See typical drawing 2, 4)*	Access Road (560)		
9. Construct critical dip *(See typical drawing 1c)*	Access Road (560)		
10. Install critical culvert	Access Road (560)		
11. Remove screen from culvert inlet	Access Road (560)		
12. Install trash rack (SB, GP, I-B)	Access Road (560)		

(See typical drawing 3)			
13. Armor fill face *(See typical drawing 1b, 4)*	Lined Waterway or Outlet (468) and Rock Riprap (907)		
14. Armor below outlet *(See typical drawing 1b)*	Lined Waterway or Outlet (468) and Rock Riprap (907)		
15. Other			

Table R2: Treatment Options to Reduce Erosion from Road Surfaces

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance. *See chapter 7 of the reference guide for information on these conservation practices.*

Practices *(along road lengths)*	*NRCS Practice Title*	*Implementation Date*	*Location Site#*
1. No treatment at site	--	--	
2.Consult a Professional			
3. Construct rolling dips *(See typical drawings 10, 11, 19a-c.)*	Access Road (560)		
4. Install Speed bumps on paved road	Access Road (560)		
5. Outslope road & remove ditch *(See typical drawings 9a-c)*	Access Road (560)		
6. Outslope road & retain ditch – ensure that outlet is located in a stable location *(See typical drawings 9a-c)*	Access Road (560)		
7. Inslope road – ensure that ditch outlets to a stable location *(See typical drawings 9a-c)*	Access Road (560)		
8. Crown road *(See typical drawings 9a-c)*	Access Road (560)		
9. Install/Replace ditch relief culvert – ensure that outlet is located in a stable location	Access Road (560)		

(See typical drawing 8)			
10. Cut/clean ditch	Diversion (362) and Access Road (560)		
11. Rock armor ditch – ensure that ditch outlets to a stable location	Lined Waterway or Outlet (468)		
12. Construct Water bars *(See typical drawing 20*)	Access Road (560)		
13. Construct cross road drains *(See typical drawing 17)*	Access Road (560)		
14. De-compact road surface *(See typical drawing 17)*	Road/Trail/Landing Closure and Treatment (654)		
15. Other			

MANAGING WATER USE FOR IRRIGATION AND FROST PROTECTION

Background: Efficient irrigation management maximizes water use for crop production and minimizes water losses caused by runoff, evaporation, and deep percolation. A portion of the water applied during irrigation benefits crop growth by providing moisture for transpiration, preventing the build-up of salts in the root zone, and moderating the air temperature around the crop. Irrigation water that forms runoff or percolates beyond the needs of the crop is inefficient and may utilize excess energy and/or contribute to surface water or groundwater pollution.

Purpose: Identify practices, currently in use or intended for implementation, to ensure that water is used efficiently.

Water Sources and Management

I1. Check all sources of water that are utilized.

- ☐ Surface Water
- ☐ Ground Water
- ☐ Municipal Water
- ☐ Reclaimed / Recycled Water (from off-site)
- ☐ Reclaimed / Recycled Water (from site)
- ☐ Harvested Rainwater
- ☐ Other (list)

Describe as needed:

I2. Check all systems that are utilized.

- ☐ Drip/micro irrigation system
- ☐ Sprinkler for irrigation (Implement practice # 2, listed in Table I1 below)
- ☐ Sprinkler for frost protection
- ☐ Other (list)

Describe as needed:

I3. Irrigation and/or frost protection systems were designed by an agricultural engineer, irrigation consultant, or other professional.

- ☐ Yes

☐ No (Consider practice # 3 in Table I1 below)

Describe as needed:

I4. Irrigation is scheduled and applied according to plant needs as determined by water monitoring and management tools (e.g., gypsum blocks, neutron probes, tensiometers, leaf pressure bombs, CIMIS, weather stations, etc.) and visual observations.

☐ Yes

☐ No (Consider practices # 4 and 5, in Table I1 below)

Describe as needed:

I5. Water management techniques such as delayed onset of irrigation, dry farming, deficit irrigation, and partial root-zone drying are considered and used to meet viticultural and conservation goals.

☐ Yes

☐ No (Consider practices # 4, 5 and 13, listed in Table I1 below)

Describe as needed:

I6. Irrigation and frost protection (if applicable) systems are monitored for leaks and performance, and maintained regularly.

☐ Yes

☐ No (Consider practices # 6 through 8, listed in Table I1 below)

Describe as needed:

I7. Water use is monitored with a flow meter and documented.

☐ Yes

☐ No (Consider practices # 9 and 10, listed in Table I1 below)

Describe as needed:

I8. Reclaimed, recycled and harvested water are utilized to the extent practicable and where appropriate, with consideration of the areas where agricultural irrigation with recycled water is shown to be safe for humans and ecosystems.

☐ Yes

☐ No (Consider practice # 11 and 12, listed in Table I1 below)

Describe as needed:

Table I1: Conservation Practices for Managing Irrigation

The following table provides an assortment of management practices that are intended to improve water use efficiency. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance.

Conservation Practice	*NRCS Practice Title*	*Implementation Date*	*Location*
1. Consult a Professional			
2. Convert to a drip irrigation system	Irrigation System, Micro-irrigation (441)		
3. Conduct an irrigation audit and implement system improvements accordingly (every 3 years recommended)	Irrigation Water Management (449)		
4. Install and utilize soil monitoring devices	Irrigation Water Management (449)		
5. Install and utilize a weather monitoring system or utilize a near-by CIMIS weather station	Irrigation Water Management (449)		
6. Conduct system test annually prior to frost and/or irrigation season.	Irrigation Water Management (449)		
7. Conduct periodic monitoring during the season of use and repair as necessary	Irrigation Water Management (449)		
8. Conduct end of season system	Irrigation Water		

maintenance to clear lines	Management (449)		
9. Install and utilize flow meters to monitor and record water use	Structure for Water Control (587), (449)		
10. Inspect and calibrate flow meters annually	Structure for Water Control (587), (449)		
11. Consider options for reclaimed / recycled water where conditions are appropriate, including possibility of recycled water from local treatment plants that may be available for trucking			
12. Consider rainwater harvesting and storage, particularly if there are large buildings on-site	Water Harvesting Catchment (636)		
13. Upon replant, consider rootstocks that are more drought tolerant			
Other:			

Water Management and Frost Protection

I9. Water is used for frost protection.

☐ Yes

☐ No (Consider practices # 2 through 7, 9, and 11 in table I2 below. Skip the remainder of section)

Describe as needed:

I10. Passive frost protection methods are utilized.

☐ Yes

☐ No (Consider practices # 3 through 5, 9, and 11 in table I2 below. Skip the remainder of section)

Describe as needed:

I11. Water, as a frost management tool, is utilized only in areas where alternative practices are not feasible.

☐ Yes

☐ No (Consider practices # 6 through 9 and 11 in table I2 below).

Describe as needed:

I12. The frost protection system is turned on based upon the factors of temperature and humidity (wet-bulb temperature or forecast dew point) and turned off as soon as danger has passed.

☐ Yes

☐ No (Consider practice # 10 in table I2 below).

Describe as needed:

Table I2: Conservation Practices for Frost Protection

The following table provides an assortment of management practices that are intended to improve water use efficiency. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance.

Conservation Practice	*NRCS Practice Title*	*Implementation Date*	*Location*
1. Consult a Professional			
2. Identify potential frost hazard areas			
3. Wet the top foot of soil to field capacity 2 to 3 days before a frost event			
4. If feasible, mow cover crop and keep it short during the frost season	Conservation Crop Rotation 328, 484		
5. Install or remove “air barriers” to optimize air drainage and prevent pooling of cold air in vineyard areas			
6. Install wind machines in areas where noise pollution is not a consideration			
7. Install towerless wind machines in low			

lying areas where cold air drains or pools			
8. Convert to a system of microsprayers	Irrigation System, Micro-irrigation (441)		
9. Upon replant, consider alternative frost protection methods, including planting varieties and rootstocks with later bud-break, to shorten frost hazard period			
10. Use available weather, temperature, and humidity information to make informed decision about the timing of frost protection.	Irrigation Water Management (449)		
11. Delay pruning, and/or prune in two stages, to delay vine growth and shorten frost hazard period			
Other:			

PHOTO MONITORING

Purpose: To document your visual monitoring and site inspections and record your monitoring notes and any actions needed and taken. Monitoring sites should be selected to 1) demonstrate winter readiness, 2) demonstrate annual maintenance and practice implementation, 3) demonstrate condition of outfall (discharge) points and associated receiving waters, and 5) track other areas of interest that you want to watch (e.g., areas of erosion, areas of invasive vegetation, etc.) Monitoring is conducted to document that sediment control practices outlined in the LandSmart™ Plan are implemented, that the practices are effective, and that they are properly maintained. Monitoring locations should be mapped and numbered. To the extent feasible, photos should be kept with the Farm Plan. In any case, photos should be readily available for reference.

Label on Map	**Purpose** Winter readiness; annual maintenance; practice implementation; outfall and receiving water point; other	**Date** (m/d/y)	**Photo Taken?** Y or N	**Condition** (performing properly, needs maintenance, needs consultation)	**Actions taken**

TRACKING IMPLEMENTATION OF YOUR FARM PLAN

Background: By tracking changes in land use and implementation of conservation or beneficial management practices (BMPs) on your agricultural operation, any water quality changes that may occur due to implementing practices are documented. Monitoring water quality changes can attribute those changes to implementation of practices or to other confounding influences such as regional geology or a source upslope or upstream of the operation.

Use this table to track implementation of the actions that you identified in the previous sections. You can also use this table to list additional conservation practices not identified in previous chapters that are part of your management goals for the property. You may make additional copies of this page as needed to adequately document all practices that are planned or have already been implemented.

Practice	**Applicable NRCS Practice Standard**	**Location** (show on map if possible)	**Date** (Implemented and/or Maintained)	**Details/Notes** (include reference to photos)

NRCS PRACTICE STANDARD SHEETS

MAPS

FACILITY DOCUMENTS

PHOTO PLATES