2016
SHASTA COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN

STILLWATER-CHURN CREEK PLANNING AREA

Covering the communities of:

- Bella Vista (west)
- City of Redding (east)
- City of Shasta Lake

STILLWATER-CHURN CREEK PLANNING AREA
(2016)

I. PROPOSED PROJECTS

A. THE PLANNING AREA

The planning area of the Stillwater-Churn Creek watershed is located in southwestern Shasta County. The planning area includes the Stillwater and Churn Creek drainages, and in order to help facilitate wildfire logistics planning, includes adjacent fringes of land outside of the drainages' northern boundary. The planning area covers approximately 94,096 acres and includes the eastern and northern suburbs of Redding, most of Shasta Lake City, and many rural homes and subdivisions outside of the cities' boundaries.

The Study Area contains a population of approximately 75,000 people, a significant portion of the population of Shasta County (176,000) and contains many "bedroom communities" for the City of Redding (WSRCD, 2007). While portions of the cities of Redding and Shasta Lake are densely populated large areas of rural subdivisions and scattered rural home sites exist in the study area. Many portions of the Study Area contain scattered residences, rural subdivisions, or mixes of commercial and residential properties.

The headwaters of both the Stillwater and Churn Creek watersheds begin in the hills between Redding and Shasta Lake and flow in a north to south direction, entering the Sacramento River south of Redding. The steep, hilly headwaters do not exceed 2,500 feet in elevation, but constitute a heavy precipitation zone that receives over 60 inches of rain annually. Annual precipitation tapers down from north to south, with the southern fringe of the Study Area receiving about 30 inches of annual rainfall.

Snowfall is rare in the southern half of the Study Area, but more common above 1,000' elevations along the northern portions. Even so, a snowpack does not form and, consequently, rainfall and to a much lesser extent spring discharge, is responsible for stream flows. Because of this, both streams were originally ephemeral, with no flows during the summers, but during the past century irrigation runoff from fields and urban areas results in portions of Stillwater and Churn Creeks flowing perennially.

Transportation Facilities—Redding Municipal Airport; Interstate 5; Highway 299; and Highway 44
Community Welfare Facilities—Police and Fire Stations; Powerlines; Waterlines; and Sewage Treatment Sites
Miscellaneous—Public and Private School; City and Community Parks

B. PROJECT PRIORITIES

STILLWATER-CHURN CREEK PLANNING AREA FUEL REDUCTION PROJECTS				
PROPOSED PROJECT	**MAP NUMBER[1]**	**TYPE**	**AREA (acres)**	**ESTIMATED COST[2]**
North Shasta Lake City	1	Fuelbreak	66	$342,938
North East Shasta Lake City	2	Fuelbreak	33	$170,836
Fawndale Community	3	Fuelbreak	41	$215,127
Elk Trail West	4	Fuelbreak	51	$265,745
Dry Creek Road	5	Fuelbreak	133	$696,000
Old Oregon Trail North	6	Fuelbreak	80	$417,600
Akrich	7	Fuelbreak	29	$151,855
Pine Grove	8	Fuelbreak	63	$329,018
Quartz Hill Rd/Benton	9	Fuelbreak	39	$202,473
Quartz Hill Rd near River Ridge Rd	10	Fuelbreak	15	$75,927
Intermountain Rd	11	Fuelbreak	75	$392,291
Highway 44 near Stillwater Rd	12	Fuelbreak	36	$189,818
Creek Trl	13	Fuelbreak	41	$215,127
Highway 299E near Shasta College	14	Fuelbreak	46	$240,436
Keswick Dam Rd East	15	Fuelbreak	24	$126,545

The identified fuel reduction projects fall into two categories:

1. defensible space for homes and structures, and
2. roadside and ridgeline shaded fuelbreaks intended to create safe ingress and egress for fire personnel and escape routes for residents.

Projects were prioritized based on need and factors such as the following:

- Protection of private residences and properties;
- Access or escape route for the public and fire suppression forces;

[1] Proposed projects are numbered on the map according to priority.

[2] Estimated costs of the projects are for planning only. More accurate costs will be determined for the preparation of project proposals.

- Identification of staging areas in conjunction with the fuelbreak development to provide fire suppression forces strategic locations for planning fire management and suppression actions.
- Connections to other fuelbreaks or areas of lower risk.

Landowners and residents are strongly encouraged to develop defensible space or maintain the fuels reduction projects on their properties to keep the integrity of the work done and to show project sustainability which could lead to additional future projects.

STILLWATER-CHURN CREEK PLANNING AREA BASIC ASSUMPTIONS[3]	
Estimated cost of fuelbreak (roadside)	$5,220 per acre
Estimated cost of fuelbreak (ridgetop or off-road)	$7,310 per acre
Estimated cost of defensible space (hand labor)	$600 per dwelling (<1 acre)
Standard fuelbreak width	200 feet
Right-Of-Way (ROW) width	< 100 feet
Population	2.6 per dwelling
Property Value (~ $201,250 - $475,000 per dwelling)	$260,000
Schools	$145,000,000
Commercial Structures Value[4]	$415,500 – $23,900,000

#1 – North Shasta Lake City

- Prevents wildland fires from progressing south into the City of Shasta Lake.

Proposed Solution:
Construct shaded fuelbreaks along the north perimeter of the City of Shasta Lake:
2.7 miles long x 200 feet across = 66 acress

[3] Estimated costs of the projects are for planning only. More accurate costs will be determined for the preparation of project proposals.
[4] County assessed values, 2010

#2 – North East Shasta Lake City

- Prevents wildland fires from progressing southwest into the City of Shasta Lake.
- Protects Grand Oak Elementary School.

Proposed Solution:
Maintain shaded fuelbreak along the northeast perimeter of the City of Shasta Lake:
1.4 miles long x 200 feet across = 33 acres

#3 – Fawndale Community

- Densely vegetated and in close-proximity to Interstate-5.
- Prevents wildland fires from progressing south and west into Interstate-5.
- Protects the community along Fawndale Road and Mountain Gate.

Proposed Solution:
Construct shaded fuelbreaks around the community on Fawndale Road:
1.7 miles long x 200 feet across = 41 acres

#4 – Elk Trail West

- Densely vegetated.
- Allows emergency ingress/egress for rural areas in Bella Vista (west) to Dry Creek Road.
- Protects the communities between Bear Mountain Road and Dry Creek Road.

Proposed Solution:
Construct shaded fuelbreaks near Elk Trail West:
2.1 miles long x 200 feet across = 51 acres

#5 – Dry Creek Road

- Densely vegetated and in close-proximity to HWY-299E.
- Allows emergency ingress/egress for rural areas north of Bella Vista.
- Protects the communities between Bear Mountain Road and Dry Creek Road.

Proposed Solution:
Construct shaded fuelbreaks near Dry Creek Road:
5.5 miles long x 200 feet across = 133 acres

#6 – Old Oregon Trail North

- Densely vegetated and in close-proximity to HWY-299E.
- Allows emergency ingress/egress for rural areas north of Bella Vista.
- Protects the communities between Bear Mountain Road and Dry Creek Road.

Proposed Solution:
Construct shaded fuelbreaks up to the right-of-way along Old Oregon Trail:
3.3 miles long x 100 feet across = 40 acres

#7 – Akrich Street

- Densely vegetated and in close-proximity to Interstate-5.
- Allows emergency ingress/egress for rural areas in northeast Redding.
- Protects the communities north of Oasis Road to Interstate-5 and high-voltage powerlines.
- Prevent fires wildland fires from moving west into subdivision.

Proposed Solution:
Construct shaded fuelbreaks near Akrich Street:
1.2 miles long x 200 feet across = 29 acres

#8 – Pine Grove Avenue

- Densely vegetated and in close-proximity to Interstate-5.
- Connects Interstate-5 to Lake Blvd, allowing emergency ingress/egress for rural areas between the City of Shasta Lake and northwest Redding.

Proposed Solution:
Construct shaded fuelbreaks near Pine Grove Avenue:
2.6 miles long x 200 feet across = 63 acres

#9 – Quartz Hill Road / Benton

- Highly populated area within Redding city limits.
- Protects multiple subdivisions and high-voltage power lines.
- Up-slope terrain provides high-risk for fire spread.
- Emergency egress/ingress for rural areas S of Lake Blvd./Fuelbreak

Proposed Solution:
Construct shaded fuelbreaks near Quartz Hill Road and Benton Drive:
1.6 miles long x 200 feet across = 39 acres

#10 – Quartz Hill Road near River Ridge Drive

- Highly populated area north of the Sacramento River.
- Protects multiple subdivisions and high-voltage power lines.
- Densely vegetated and uneven terrain.

Proposed Solution:
Construct shaded fuelbreaks north of Quartz Hill Road and River Ridge Drive:
0.6 miles long x 200 feet across = 15 acres

#11 – Intermountain Road

- Densely vegetated and uneven terrain
- Protects high-voltage power lines.
- Allows emergency ingress/egress for rural areas in northeast Redding, between HWY-299E and Bear Mountain Road.

Proposed Solution:
Construct shaded fuelbreaks near Intermountain Road:
3.1 miles long x 200 feet across = 75 acres

#12 – HWY-44 near Stillwater Road

- Densely vegetated and uneven terrain
- Protects high-voltage power lines, industrial parks, and residences.
- Allows emergency ingress/egress for rural areas in northeast Redding, near HWY-44E.

Proposed Solution:
Construct shaded fuelbreaks near HWY-44E:
1.5 miles long x 200 feet across = 36 acres

#13 – Creek Trail ROW

- Densely vegetated and uneven terrain
- Protects high-voltage power lines and rural residences.
- Allows emergency ingress/egress for rural areas in northeast Redding, near HWY-299E.

Proposed Solution:
Construct shaded fuelbreaks up to the right-of-way along Creek Trail:
1.7 miles long x 100 feet across = 21 acres

#14 – HWY-299E near Shasta College

- Main transportation route.
- Protects schools, farms, and rural residences.
- Allows emergency ingress/egress for rural areas in northeast Redding, near HWY-299E.

Proposed Solution:
Construct shaded fuelbreaks near HWY-299E and Shasta College:
1.9 miles long x 200 feet across = 46 acres

#15 – Keswick Dam Road East

- Close proximity to railroad.
- Protects schools and multiple subdivisions.
- Allows emergency ingress/egress for rural areas in northeast Redding, near HWY-299E.

Proposed Solution:
Construct shaded fuelbreak near Keswick Dam Road between Quartz Hill Rd and Lake Blvd.
1.0 miles long x 200 feet across = 24 acres

II. COMMUNITY PRIORITIES

A. OVERALL COMMUNITY WILDFIRE RISK ASSESSMENT

STILLWATER-CHURN CREEK PLANNING AREA OVERALL COMMUNITY WILDFIRE RISK ASSESSMENT								
Community, structure or area at risk	**Map Number**	**Fuel Hazard**	**Wildfire Occurrence Risk**	**Structural Ignitability**	**Preparedness Capability**	**Overall Risk**	**Fire Hazard Severity Zone Rating**	**WUI**
North Shasta Lake City	1	High	High	High	Low	High	Very High	Yes
North East Shasta Lake City	2	High	High	High	Low	High	Very High	Yes
Fawndale Community	3	High	High	High	Low	High	Very High	Yes
Elk Trail West	4	High	High	High	Low	High	Very High	Yes
Dry Creek Road	5	High	High	High	Low	High	Very High	Yes
Old Oregon Trail North	6	High	High	High	Low	High	Very High	Yes
Akrich	7	High	High	High	Low	High	Very High	Yes
Pine Grove	8	High	High	High	Low	High	Very High	Yes
Quartz Hill Rd / Benton	9	High	High	High	Low	High	Very High	Yes
Quartz Hill Rd near River Ridge Rd	10	High	High	High	Low	High	Very High	Yes
Intermountain Rd	11	High	High	High	Low	High	Very High	Yes
HWY-44 near Stillwater Rd	12	High	High	High	Low	High	Very High	Yes
Creek Trail	13	High	High	High	Low	High	Very High	Yes
HWY-299E near Shasta College	14	High	High	High	Low	High	Very High	Yes
Keswick Dam Rd East	15	High	High	High	Low	High	Very High	Yes

STILLWATER-CHURN CREEK PLANNING AREA OVERALL COMMUNITY HAZARD REDUCTION ASSESSMENT					
Community, structure or area at risk	**Map Number**	**Overall Risk**	**Cultural Value**	**Treatment Type**	**Treatment Method**
North Shasta Lake City	1	High	High	Fuelbreak	Brush and tree removal, pruning
North East Shasta Lake City	2	High	High	Fuelbreak	Brush and tree removal, pruning
Fawndale Community	3	High	High	Fuelbreak	Brush and tree removal, pruning
Elk Trail West	4	High	High	Fuelbreak	Brush and tree removal, pruning
Dry Creek Road	5	High	High	Fuelbreak	Brush and tree removal, pruning
Old Oregon Trail North	6	High	High	Fuelbreak	Brush and tree removal, pruning
Akrich	7	High	High	Fuelbreak	Brush and tree removal, pruning
Pine Grove	8	High	High	Fuelbreak	Brush and tree removal, pruning
Quartz Hill Rd / Benton	9	High	High	Fuelbreak	Brush and tree removal, pruning
Quartz Hill Rd near River Ridge Rd	10	High	High	Fuelbreak	Brush and tree removal, pruning
Intermountain Rd	11	High	High	Fuelbreak	Brush and tree removal, pruning
HWY-44 near Stillwater Rd	12	High	High	Fuelbreak	Brush and tree removal, pruning
Creek Trail	13	High	High	Fuelbreak	Brush and tree removal, pruning
HWY-299E near Shasta College	14	High	High	Fuelbreak	Brush and tree removal, pruning
Keswick Dam Rd East	15	High	High	Fuelbreak	Brush and tree removal, pruning

III. COMMUNITY VALUES

RESIDENCES & MAJOR STRUCTURES

The Stillwater-Churn Creek planning area is heavily urbanized and surrounded by natural landscapes. The planning area encompasses the main commercial businesses, such as multiple malls and shopping complexes.
The landscapes of residential settlements are a particularly sensitive aesthetic resource. Research has demonstrated that as many as one in five residents in the wildland-urban intermix feel a lush landscape today is more important than saving their home from a wildfire that may or may not occur. Comments in focus groups and public meetings reinforce the notion that rich vegetation across the landscape is essential to the quality of life they experience as part of living in a forest landscape. The following are common structures in this planning area:

- Mt. Shasta Mall
- Shopping complexes
- Shasta College
- Industrial parks
- Turtle Bay/Sundial Bridge

Mt. Shasta Mall

Sundial Bridge at Turtle Bay crossing the

MAPS OF STILLWATER-CHURN CREEK PLANNING AREA

1. STILLWATER-CHURN CREEK PLANNING AREA
2. FIRE SEVERITY RATING
3. VEGETATION
4. SPECIAL STATUS SPECIES AND HABITAT

Stillwater/Churn Creek CWPP Fuels Projects

Legend

Projects

- Proposed
- Complete

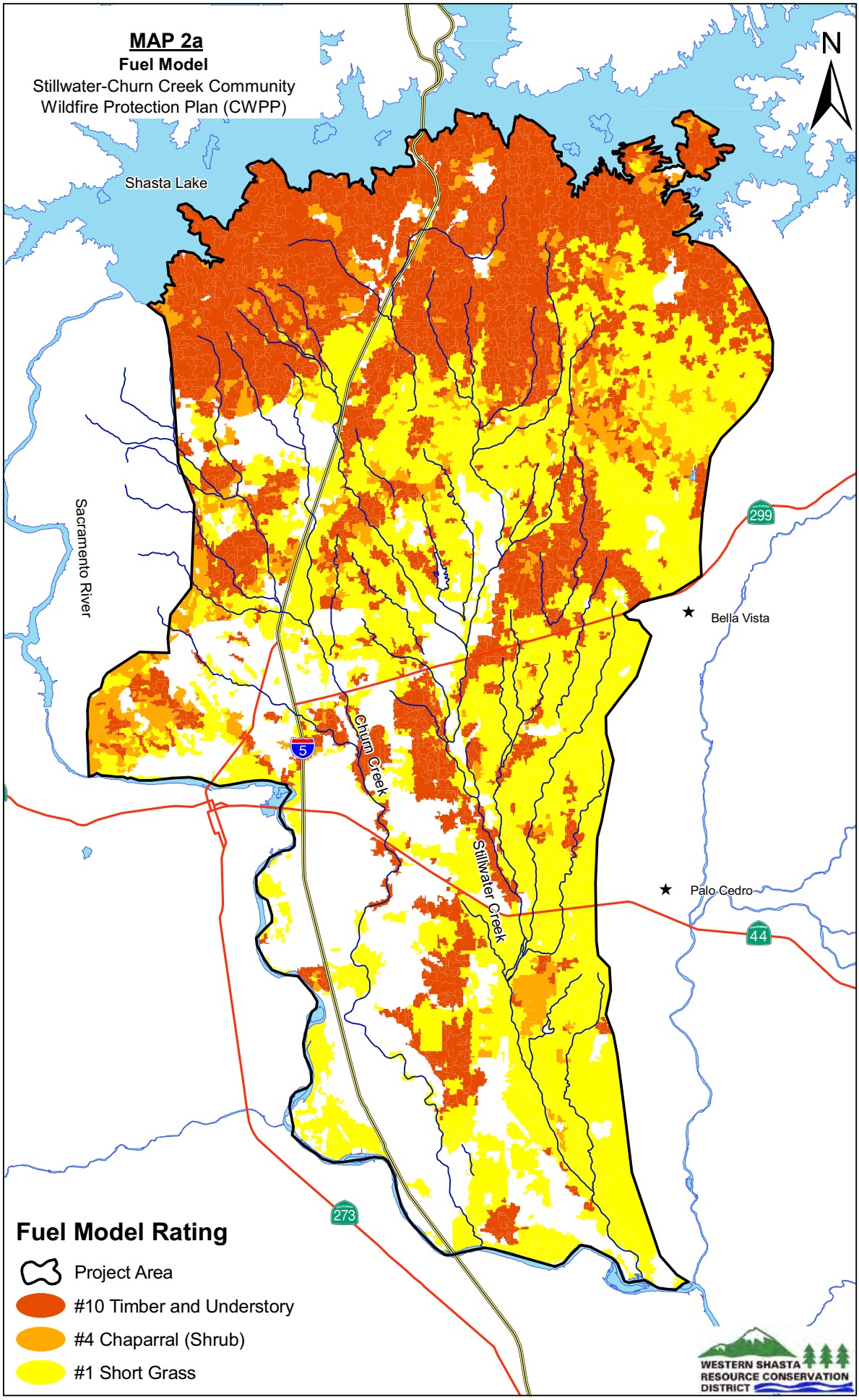
#1 - North Shasta Lake City - Sect B West FB
#2 - North East Shasta Lake City FB
#3 - Fawndale Community FB
#4 - Elk Trail West FB
#5 - Dry Creek Rd FB
#6 - Old Oregon Trail North FB
#7 - Akrich FB
#8 - Pine Grove FB
#9 - Quartz Hill Rd/Benton FB
#10 - Quartz Hill Rd near River Ridge Dr.
#11 - Intermountain Rd FB
#12 - Highway 44 near Stillwater Rd FB
#13 - Creek Trl FB
#14 - Highway 299E near Shasta College
#15 - Keswick Dam Rd East FB
#16 - Centimudi FB

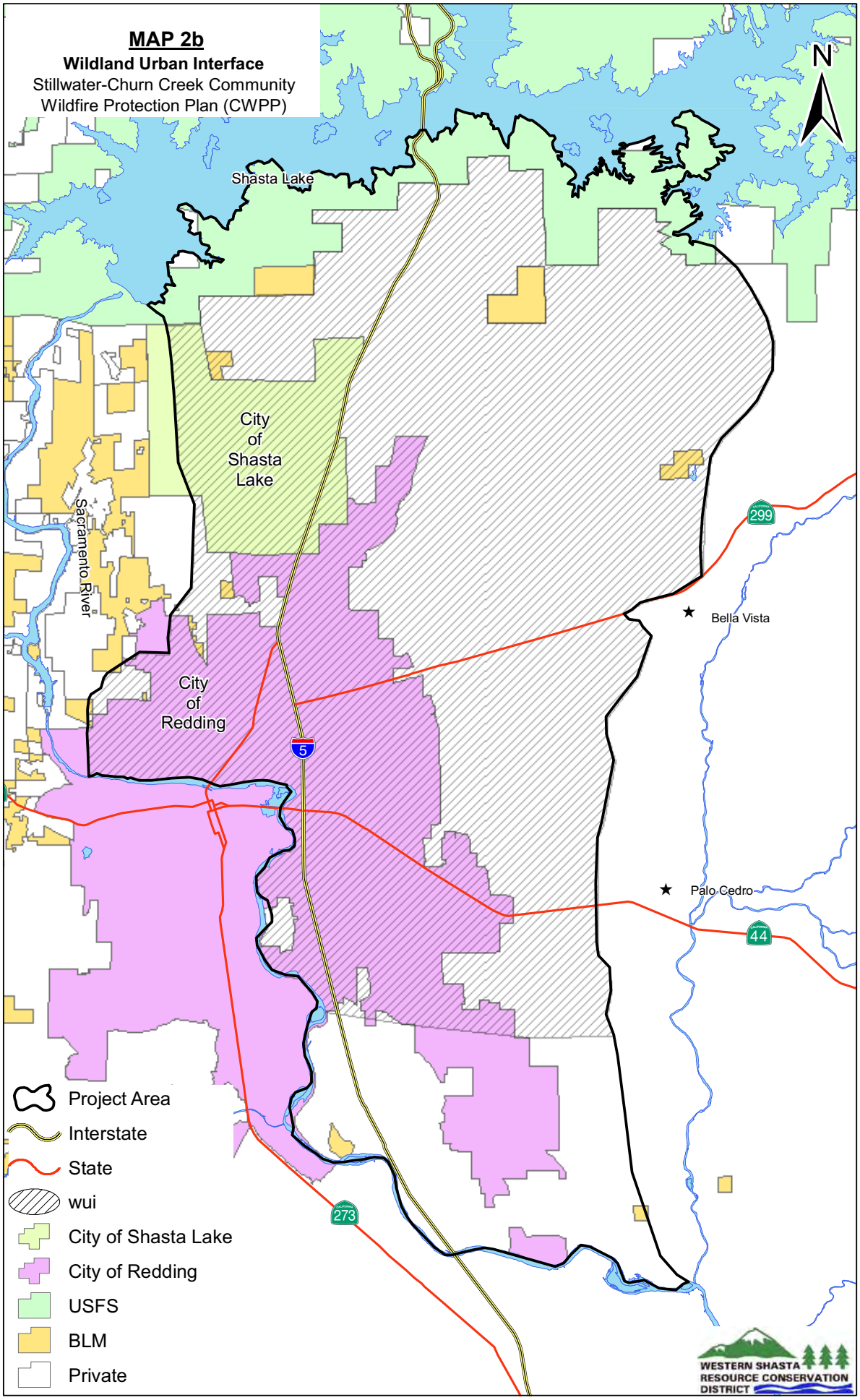
Priority	Project Name
1	North Shasta Lake City - Sect B East FB
2	North East Shasta Lake City FB
3	Fawndale Community FB
4	Elk Trail West FB
5	Dry Creek Rd FB
6	Old Oregon Trail North FB
7	Akrich FB
8	Pine Grove FB
9	Quartz Hill Rd/Benton FB
10	Quartz Hill Rd near River Ridge Dr.
11	Intermountain Rd FB
12	Highway 44 near Stillwater Rd FB
13	Creek Trl FB
14	Highway 299E near Shasta College
15	Keswick Dam Rd East FB
16	Centimudi FB

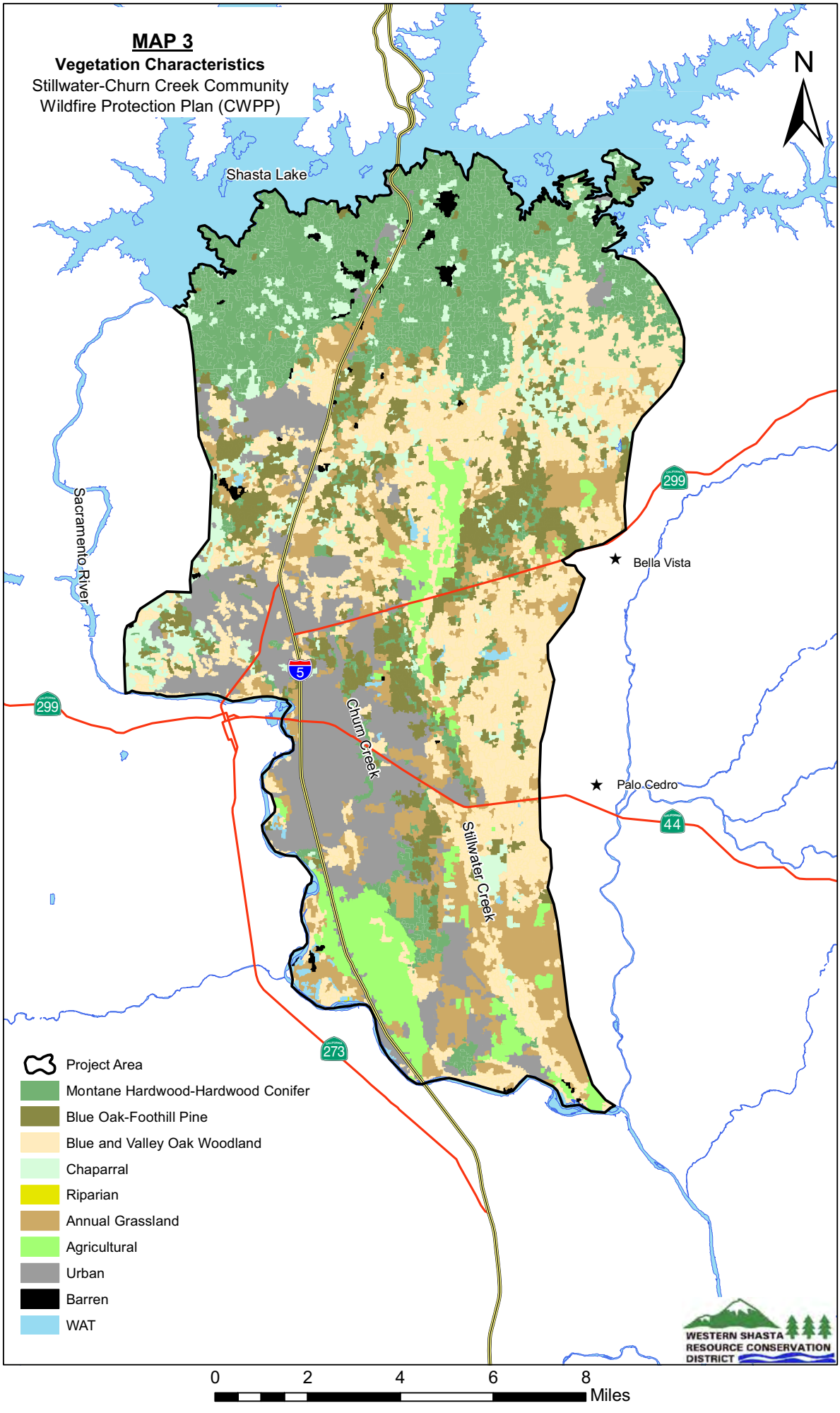
0 1 2 3 4 Miles

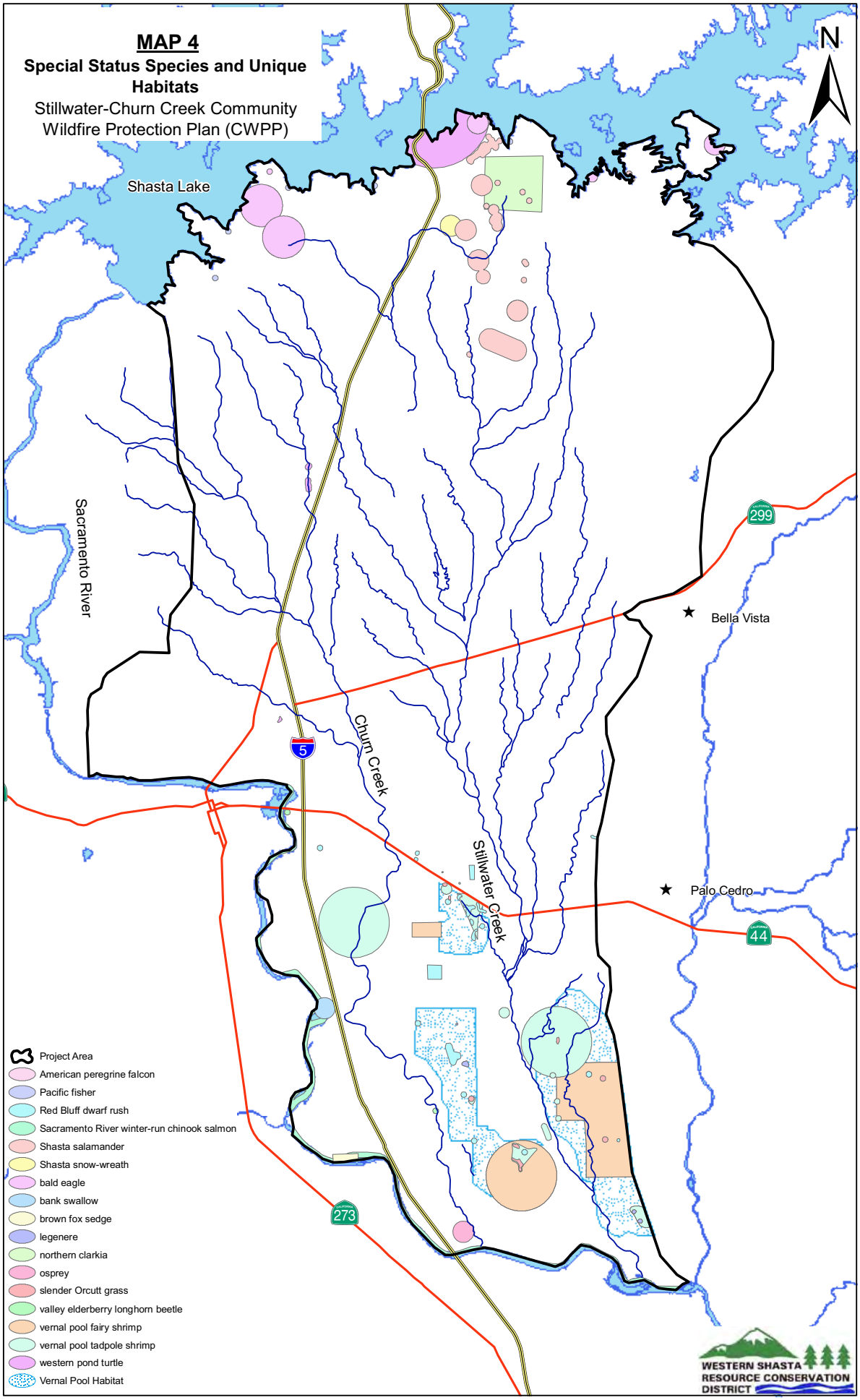
N

WESTERN SHASTA RESOURCE CONSERVATION DISTRICT


MAP 2a
Fuel Model
Stillwater-Churn Creek Community
Wildfire Protection Plan (CWPP)
N
Shasta Lake
Sacramento River
Churn Creek
Stillwater Creek
Bella Vista
Palo Cedro
299
44
5
273
Fuel Model Rating
Project Area
#10 Timber and Understory
#4 Chaparral (Shrub)
#1 Short Grass
WESTERN SHASTA RESOURCE CONSERVATION DISTRICT
0
2
4
6
8
Miles


MAP 2b
Wildland Urban Interface
Stillwater-Churn Creek Community
Wildfire Protection Plan (CWPP)
N
Shasta Lake
City of Shasta Lake
Sacramento River
City of Redding
Bella Vista
Palo Cedro
299
5
44
273
Project Area
Interstate
State
wui
City of Shasta Lake
City of Redding
USFS
BLM
Private
WESTERN SHASTA RESOURCE CONSERVATION DISTRICT
0
2
4
6
8
Miles


MAP 3
Vegetation Characteristics
Stillwater-Churn Creek Community
Wildfire Protection Plan (CWPP)
N
Shasta Lake
Sacramento River
Churn Creek
Stillwater Creek
Bella Vista
Palo Cedro
299
5
44
273
Project Area
Montane Hardwood-Hardwood Conifer
Blue Oak-Foothill Pine
Blue and Valley Oak Woodland
Chaparral
Riparian
Annual Grassland
Agricultural
Urban
Barren
WAT
WESTERN SHASTA RESOURCE CONSERVATION DISTRICT
0
2
4
6
8
Miles


MAP 4
Special Status Species and Unique Habitats
Stillwater-Churn Creek Community Wildfire Protection Plan (CWPP)
N
Shasta Lake
Sacramento River
Churn Creek
Stillwater Creek
Bella Vista
Palo Cedro
299
5
44
273
Project Area
American peregrine falcon
Pacific fisher
Red Bluff dwarf rush
Sacramento River winter-run chinook salmon
Shasta salamander
Shasta snow-wreath
bald eagle
bank swallow
brown fox sedge
legenere
northern clarkia
osprey
slender Orcutt grass
valley elderberry longhorn beetle
vernal pool fairy shrimp
vernal pool tadpole shrimp
western pond turtle
Vernal Pool Habitat
WESTERN SHASTA RESOURCE CONSERVATION DISTRICT
0
2
4
6
8
Miles

Department Name: Shasta County Board of Supervisors
Agreement Number: FAF-040020
Dollar Amount: $53,500