NORTH SAN JUAN FIRE PROTECTION DISTRICT

COMMUNITY FIRE PLAN

A FRAMEWORK COORDINATED WITH THE FIRE SAFE COUNCIL FIRE PLAN FOR NEVADA COUNTY TO REDUCE POTENTIAL LOSSES TO LIFE AND PROPERTY FROM WILDFIRE IN THIS DISTRICT

2ND EDITION
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PREFACE TO THE SECOND EDITION

The planning process that led to the original North San Juan Fire Protection District (NSJFPD) Community Fire Plan, accepted by the Board and published in 2005, is described in Section 4. Clearly an immense amount of work was carried out by the Fire Plan Committee at that time. In many ways, very little has changed since then. Population growth in the District, and in Nevada County in general, has been minimal. Therefore, revisions to bring numbers up to date have been made throughout the document, but most changes are to be found in Sections 8 and 9.

This update, though long overdue, is happening at a most propitious time. Several actions have taken place in recent years that affect this Plan, several of them very recently. These include:

- Imposition in 2011 by CAL FIRE of a Fire Prevention Fee on all parcels in the State Responsibility Area (SRA). While this Fee is controversial, and is still being contested in the courts, it represents an additional funding source for fuel reduction grants.

- Recognition that the current drought is likely to persist, with the resulting wide-spread tree mortality due to bark beetles and other causes. Realizing that this is a crisis is likely to result is heightened levels of activity by several State and Federal agencies.

- Update by the Fire Safe Council of Nevada County of its Community Wildfire Protection Plan (CWPP) in April of 2016. This CWPP was accepted by the Nevada County Board of Supervisors (BOS) in June, and is the foundation upon which many of the firefighting , prevention and fuels reduction projects in Nevada County are built, including this NSJ Fire Plan.

- Advances in NSJ Fire Department fire-fighting capabilities and reduced response times led earlier this year to ISO ratings improving from 8 for Central NSJ and 9 for the rest of the District, to 6Y for the District proper, and 6 for the Ananda community.

- Completion of an engineering study funded by a Community Development Block Grant awarded to Nevada County. This study showed that a pressurized hydrant system, fed by an elevated water storage facility, is feasible, and could be installed in the central NSJ core for about $1.2 million. This would clearly revolutionize firefighting in NSJ, and probably lead to further improvements in ISO ratings, perhaps lowering insurance rates. Construction funds are being sought.

- Adoption by the BOS in June, 2016, of Ordinance 2411, amending Article 7 of Chapter IV of the Nevada County General Code. Among other features, this amendment gives local Fire Chiefs considerably more power to enforce brush clearance along District roadways, to the great benefit of evacuation routes.

It is important to remember that this Plan has two purposes. One is to provide a database of District information for inclusion in grant proposals or for other uses. The second is to satisfy the requirement for priority funding of grants under the Healthy Forests Restoration Act of 2003 that a Fire Plan exist giving “background information about a project area, a discussion of community values at risk, community base maps, a fire risk assessment, and recommendations that identify treatment areas for reducing fuels and promoting education and awareness about wildland fires.”

Ed Beckenbach
January, 2017

1.0 EXECUTIVE SUMMARY

1.1 PROBLEM OVERVIEW

The NSJFPD faces a severe risk of wildland fire. Years of fire suppression, soil disturbance, vegetation regrowth, rural development and road construction, often not to current specifications, have created the potential for severe fires and reduced fire-fighting capabilities. During the summer fire season our dense mixed forest understory composed of ladder fuels reduces fire suppression capabilities. Many of our buildings lack defensible space and some bridges, culverts and roads cannot safely accommodate fire suppression apparatus. Water supplies are often inadequate for fire protection and many citizens are unaware of actions they can take independently to improve their personal safety and protect their property. The size of our District, 70 square miles, and its location north of Nevada City and Grass Valley, magnify these challenges and present a risk to Nevada County's major population areas.

1.2 PROCESS OVERVIEW AND HISTORY

In 2004 CAL FIRE asked the District to draft a community fire plan to coordinate with the County Fire Plan, a document on which work was begun in 2003. The NSJFPD Board formed a committee, including citizen volunteers, which began work late in 2004. Data from the county, large-scale maps from CDF, other fire plans, state documents and consultants provided information. Sections were drafted by committee members, reviewed by the committee and revised. The plan was further revised through input from institutions, government agencies, businesses and the general public, all in open meetings previously announced. The final version of the NSJFPD Fire Plan was presented to the District Board and adopted in 2005.

In 2006 the Nevada County Board of Supervisors (BOS) decided that rather than stand alone, a County Fire Plan would best be presented as part of the Safety Element of the Nevada County General Plan, the position it occupies today. In 2006, the Fire Safe Council of Nevada County (FSC) prepared its own Community Fire Plan to satisfy Federal requirements for grant submission. The NSJFPD Fire Plan was included in the FSC Fire Plan as Appendix H. Subsequently, the Nevada County BOS accepted the FSC Plan as part of the overall County wildland firefighting effort. The FSC Fire Plan was updated earlier this year, 2016, and similarly accepted by the BOS.

1.3 OVERALL GOAL

As defined by the Fire Safe Council of Nevada County (FSCNC), the primary goal of a Community Fire plan is to protect human life, private property, essential infrastructure and natural resources through the implementation of fire prevention projects that work to increase public awareness, improve forest health, sustain local wildlife and preserve the natural beauty of the area through a shared responsibility concept.

1.4 PRIORITY PROJECTS SUMMARY

1) Assess hazards, infrastructure and home safety in neighborhoods which volunteer for this service, also educate citizen groups in self-protection, first aid, creation of defensible space and neighborhood safety measures they can take independently, stressing that they share the responsibility to prepare for an emergency;

2) Thin and maintain fuels on each side of critical evacuation routes to form shaded fuel breaks, dividing the District into more defensible sections;

3) Establish Safe Zones;

4) Reduce understory fuel loads in each neighborhood.

1.5 ACKNOWLEDGEMENTS

The following contributed significantly to the original plan, and most of their work remains valid and is contained in this Edition:

Community Fire Plan Committee: Bill Aufiero, Sharon Beckenbach, Carol Chadima, JoAnn Fites-Kaufman, Peter Goering, Boyd Johnson, Nancy Lorenz, Jean Nilsson, Rob Paulus, Bruce Sturm.

Agencies: CAL FIRE, Fire Safe Council, Nevada County GIS,

Emergency Preparedness Consultants: Steve Beckwitt, Tony Clarabut, Sean Griffis, Rich Reader.

In addition, the Second Edition is indebted to SR Jones, Executive Officer of Nevada County LAFCo for producing the Appendix maps based on GIS data provided courtesy of Nevada County, and to Joanne Drummond, Executive Director of the Fire Safe Council of Nevada County, and her staff for their invaluable editing of, and additions to, early versions of this plan.

2.0 INTRODUCTION

2.1 A BRIEF HISTORY

The North San Juan Fire Protection District is considered by CAL FIRE to be a very high fire hazard zone. Twice in the past half century the District has been the point of origin for major wildland fire: the North San Juan Fire in 1960, that burned 5,840 acres, and the 49er Fire beginning in September 1988–which consumed hundreds of structures in the Penn Valley and Rough And Ready areas and is considered one of California's most destructive fires.

Over the past thirty years the District has grown from a volunteer fire department to a taxpayer-supported fire district still staffed mainly by volunteers. The District has worked to be proactive in areas of wildfire prevention as well as successful firefighting. We were founding members of the Yuba Watershed Council and were instrumental in bringing the public benefits of a Proposition 204 grant to western Nevada County, which included substantial public education and fuels reduction components. We recognize the importance of public safety awareness and education regarding wildland fire. The NSJFPD was one of the first fire agencies in Nevada County to adopt CAFS (Compressed Air Foam System) technology to increase our versatility and effectiveness in fighting wildland fires and protecting structures.

2.2 MISSION STATEMENT, STRATEGIC PLAN

As committed volunteers, we are dedicated to serving and protecting our community through the delivery of professional firefighting and emergency medical services.

The NSJ Fire Protection District residents and visitors stand to gain a substantial benefit from reducing the risk of wildland fire and its potential impact to life, property and natural resources. As a large territory with a small population and small tax base we have a substantial challenge in implementing any such program.

A Strategic Plan for the District is under development.

2.3 METHODOLOGY

The Nevada County GIS system, CAL FIRE large scale topographical maps showing fuels/fire history/population density etc., and the knowledge of fire ecologists were the major sources of information used to analyze problem areas and develop an action plan.

3.0 WHAT IS FIRE SAFETY? HOW TO BE READY WHEN FIRE COMES

3.1 BEFORE THE FIRE

Defensible Space

Defensible space is the area between a structure and the oncoming wildfire, where vegetation has been modified to change fire behavior and reduce fire intensity and provide the opportunity for firefighters to defend structures safely and effectively. Studies show that establishing defensible space around your home is far and away the best defense against its damage or loss due to wildfire. Sometimes defensible space can be as simple as a well-maintained back yard. Specific advice on improving defensible space around your property is available from a number of sources including the NSJFPD's "How to Protect Your Property from a Catastrophic Wildfire," and various publications of the FSCNC and the California Department of Forestry and Fire Protection.

In California PRC 4291 (http://www.mcfsc.org/Documents/PRC_Section_4291_Prev.pdf) is the law regarding defensible space around homes. CAL FIRE, NSJFPD, and the Fire Safe Council are happy to do 4291 inspections or provide advice and consultation regarding compliance with this law.

Fire-Resistant Landscaping

Many plants that are less likely to burn can be used around homes. Fire resistant plants have moist, supple leaves, little dead wood and tend not to accumulate dry, dead material. Their sap is water-like and does not have a strong odor. Fire-wise plant books are available from the NSJFPD office, or can be downloaded from the NSJFire.com website.

Relocation of Flammable Materials

Simple actions that homeowners can take include removing wood piles and other combustibles from around homes. Decks and the materials that accumulate on and underneath them are an area of special vulnerability during a fire. Wood piles should be a minimum of thirty feet away from any structures. Fuels, solvents and other volatiles should be stored well away from homes when possible, since their presence in any structure puts the structure at far greater risk during a wildfire.

Fire-Wise Construction

Even if at some distance from a fire, structures can be damaged by wind-driven embers and fire brands. Use fire resistant materials whenever possible in construction or remodeling, such as metal or tile roofing and fireproof siding materials. Decks, soffits and openings where fire could enter a structure should be enclosed and kept to a minimum.

Water Sources

Provide access to water for firefighting, such as ponds and buried or above-ground tanks. Provide standard fire department connections and close access to hydrants for fire trucks. Marking domestic water supplies can also make them available for firefighting. Provide clear access to firefighters including Knox key boxes and provide information on water sources and alternative power sources for wells and pumps in case of power failure.

Neighborhood Emergency Response Teams

Some neighborhood groups will opt for emergency training in addition to assessment of the local infrastructure. In such cases, Red Cross certified trainers are available to provide C.E.R.T. (Community Emergency Response Team) training. The NSJ Fire Department has instructors able to teach CPR, First Aid and other classes to the public.

Know Your Evacuation Procedures

Identify your evacuation routes and near-by Safe Zones. See Section 8.3 for a further discussion of evacuation routes and Safe Zones. Decide what few items you will try to save in an emergency, but remember that time may be of the essence in an evacuation, so be physically and mentally prepared to take nothing.

3.2 DURING THE FIRE

Evacuation

Be ready to evacuate on a moment's notice using previously identified evacuation routes and Safe Zones as required.

Fighting the fire yourself is an option that contains substantial risk, especially if your property is adjacent to heavy fuels or has not been well cleared and maintained. Fire departments and law enforcement agencies encourage early voluntary evacuation and may indeed order it in an effort to reduce risk to life and increase firefighter safety and effectiveness. Individuals hoping to stay and fight a fire must plan ahead and listen to advice from fire officials. The NSJFPD has a home emergency preparedness plan available on its website.

Emergency Communications

The District has established an emergency "hot line" with a frequently updated and time-marked phone message for public information during emergencies. The phone number for this service, 530-470-9713, is conveniently listed on the NSJFire.com website.

The county rapid notification telephone system, CodeRED, may also be used in the event of evacuation. To ensure that both your landline and cellphone numbers are included in the CodeRED database, please visit the Nevada County OES website at

http://www.mynevadacounty.com/nc/igs/oes/Pages/Home.aspx

and click on the **CodeRED** logo.

In addition, the Nevada County Sheriff's Office has joined the Nixle Community Notification System. This allows residents to sign up to receive text messages concerning events in their community. For details on use of this system, see the website at www.nixle.com.

Preparing Pets and Livestock for Emergencies & Evacuation

Plans for evacuation and shelter of pets and livestock should be developed by animal owners. Information and assistance may be available from animal rescue organizations, the American Red Cross and Nevada County Sheriff. In addition, literature explaining necessary preparation and evacuation procedures which is currently available will be distributed to citizens during public education sessions, when new residents enter the community, or by request.

3.3 AFTER THE FIRE

First Provide Help

After a serious wildfire, the first order of business would be the immediate provision of assistance by the District and every other stakeholder agency to those affected. The community's need for help would be long-lasting and far too complicated to be addressed in this document.

Plan to Do Better Next Time (There Will Be One)

Following a return to something resembling normal life, the local Community Fire Plan Committee would be reconstituted and meet with local, state, and federal officials to reevaluate

the plan and recommend any changes based on lessons learned to the Board and County government.

4.0 PLANNING PROCESS

4.1 PLANNING AREA BOUNDARIES

Planning Area Boundaries are contiguous with those of the NSJFPD itself, which is a rural area in the Sierra Nevada foothills covering 70 square miles bounded by the South Yuba River to the south, by the Middle Yuba River to the north, and by the Yuba River itself to the west. Elevation ranges from approximately 600 to 4500 feet. Private land use is rural and residential with some agriculture, mining, and small commercial enterprises. We are zoned rural according to the county general plan. District population is approximately 2500 with about 700 housing units. Public lands include those of the Tahoe National Forest (TNF), California's South Yuba River State Park, Bureau of Land Management (BLM) parcels and a jointly-managed BLM and community project called the '*Inimim Forest*. The resulting mosaic of public and private land ownership (*See Appendix, Figure 1*) offers both opportunities to share resources for effective fire management and difficulties in coordinating rules and regulations of divers land owners.

4.2 PROCESS AND PLAN DEVELOPMENT

An interim Community Fire Plan Committee began meeting on October 13, 2004. The Board created an ad hoc Fire Plan Committee in December, 2004; the committee began compiling, consolidating and analyzing relevant information and identifying stakeholders. Two public meetings were held to provide institutional and citizen input to the plan.

4.3 STAKEHOLDERS: WHO, WHAT, WHEN, WHY

A Stakeholder meeting was held on May 10, 2005, for institutions and large (>100 acres) landowners; a draft of the plan was reviewed at this meeting. Comments and suggestions were then incorporated into a second draft.

At that time, Stakeholders and their representatives invited were:

California State Parks	Ray Patton
U.S. Forest Service	Gary Fildes, Forest Fuels Mgm't. Officer Jeanne Masquelier, District Ranger
Yuba Watershed Institute	Bob Erickson
Bureau of Land Management	Ken Hood, Ed Bollinger
South Yuba River Citizens' League	Jason Rainey, Exec. Dir.
CAL FIRE	Rob Paulus, Battalion Chief
Calif. Dep't. Of Fish & Game	Jeff Finn
USDA, NRCS	Mike Brenner, Dan Taverner
Fire Safe Council of Nevada County	Michelle Phillips
Northern Sierra Air Quality Board	Joe Fish
Yuba Watershed Council	Eric Jorgensen, Don & Barbara Rivenes
Siller Bros. (logging company)	
Sierra Pacific Industries (logging company)	

These stakeholders have a direct relationship to land use in the District, to implementation of this plan, or to environmental issues which the plan raises.

A public meeting for residents and others interested was held on May 21, 2005, with a similar process resulting in the final draft of the plan, presented to the District Board of Directors on June 21, 2005 for adoption.

4.4 2016 PLAN REVISION

Following completion of a draft 2016 Fire Plan, it will be distributed to current representatives of the above stakeholders for review and comment. Upon satisfactory consideration of these comments, and inclusion of any changes agreed upon, a final draft plan will be submitted to the Board for adoption.

The final adopted updated Plan will be included in the County-Wide CWPP as an Appendix.

5.0 COMMUNITY DESCRIPTION

5.1 GENERAL ENVIRONMENTAL CONDITIONS

The 70 square miles of the North San Juan Ridge are typical of the rich biological diversity and range of landscapes found in the Sierra Nevada foothills. Situated between the watersheds of the Middle and South Yuba Rivers, the terrain changes from the rolling grasslands, pastures and chaparral of the warmer lower altitudes starting at about 600 feet, to the steeper creek ravines and mixed conifer and hardwood forests of the foothills, where altitudes vary from about 2000 to 3500 feet; dominant species are Incense Cedar, Douglas fir, Ponderosa Pine, Black Oak, Madrone, and Manzanita. An evergreen forest of cedar and fir with sparser meadows dominates the landscape from about 3500 feet to the eastern end of the District at about 4500 feet, where snow and rainfall are heavier. Summers are dry and warm with prevailing westerly daytime breezes shifting to easterlies at night. Autumns bring some northerly winds and the most serious wildfire threats, until about mid-October, when the rainy winter season usually begins.

Access

Access to our District is provided by four bridges over the South Yuba River; bridges at Pleasant Valley Rd and SR 49 with the capacity to handle vehicles of all weights, and bridges at Purdon and Edwards Crossings with weight limits of 5 tons, permitting access by light vehicles only. To the north access is provided by a bridge on SR 49 over the Middle Yuba River and, within the District, at Tyler Foote Crossing by a 5-ton bridge.

Hydrology

In addition to the South Yuba River, the Middle Yuba River, and the Yuba River, Oregon Creek flows into the Middle Yuba River at the District's northern boundary. The South Yuba River has been declared a Wild and Scenic river by the State of California. The Middle Yuba River is dammed at "Our House," forming a reservoir suitable for helicopter water reloading. A scattering of ponds fed by springs or seasonal creeks can also provide some water for firefighting, though many are inaccessible to helicopters.

Ecosystem Types

Lower elevations in the District are characterized by dry chaparral, grasses and Gray Pine. Most of the region above about 2200 feet consists of mixed conifer/hardwood forest, the predominate species being Douglas fir, Ponderosa, some Sugar Pine, Incense Cedar, Madrone, Manzanita and Black Oak. Above 3500 feet, hardwoods decrease in number, with fir and cedar prevailing.

Threatened and Endangered Habitat Types

Wildlife is diverse and typical of California Sierra foothills. Spotted Owls and Goshawks are the only rare or endangered species, both at higher altitudes.

5.2 POPULATION, DEMOGRAPHICS

Some 2500 people live here. Many are self-employed; others commute to jobs in nearby towns. Most residents live below 3500 ft., within ten miles of North San Juan. Summer visitors, estimated to be as many as 500,000 person-visits per year, use park facilities at Bridgeport, North Columbia, Oregon Creek and numerous swimming and fishing sites along both rivers. In addition, up to 200 students per week visit Shady Creek Outdoor School on Tyler Foote, an environmental science school that offers residential and day program for grades one through six. The school is owned and operated by Sutter County Superintendent of Schools Office.

Population growth has been low, changing by fewer than 200 between the 1990 and 2000 census. Construction has increased, but no firm evidence confirms a corresponding population change. Nevada City and Grass Valley have experienced rapid growth over the same period; population pressures in town may shift growth to the District, but no current data confirm that. The 30-minute commute time to Nevada City and County zoning restrictions will inhibit growth. Redevelopment of North San Juan is possible but still an unknown. Population will probably grow slowly here for at least ten years.

5.3 COMMUNITY LEGAL STRUCTURE

The District is an unincorporated part of Nevada County Supervisorial District 4 and falls within the jurisdiction of the Nevada County Sheriff, California Highway Patrol and CAL FIRE. Portions of the District are also areas of responsibility of the California State Parks Department, the US Forest Service (Tahoe National Forest), and the Federal Bureau of Land Management. Thus, there are Local, State, and Federal Responsibility Areas, known as LRA, SRA, AND FRA, within the District (*See Appendix, Figure 2*), and corresponding sets of laws and regulations governing forest management and fire suppression.

5.4 LAND USE/DEVELOPMENT TRENDS

The Ridge was extensively logged in the nineteenth and early twentieth centuries, leaving few old growth trees. The area includes several historic communities with “Western Colonial” architecture, such as French Corral, North San Juan, North Columbia and other former town sites. These communities have a small number of cottage industries, retail stores, ranches and truck farms, a medical and dental clinic, two schools and a relatively large religious community with facilities for visitors and residents. Development, its attendant fire suppression and lower levels of annual rainfall have resulted in a volatile, relatively dense forest with extensive “ladder” fuels in the understory.

5.5 INFRASTRUCTURE

Roads

Seven major paved roads serve these areas, while well over 100 private, unpaved roads provide access to the more remote regions of the District. Most roads, both paved and unpaved, pass through forested areas and are threatened by dense forest and understory close to their shoulders. Some alternate escape routes for residents are blocked by fallen trees and vegetation or traverse private property and are blocked by locked gates; some road easements have fallen into disuse and are similarly blocked. Bridges at Edwards and Purdon Crossings of the South Yuba River are inadequate and dangerous for evacuation.

Utilities

French Corral, North San Juan, North Columbia and the surrounding businesses and residences below 3500 feet receive electrical power from the Colgate-Allegany 60 KV power line which crosses the spine of the Ridge at about the 3000 ft. level, then crosses the Middle Yuba River, and heads north into Sierra County. An electric sub-station is located along Tyler Foote Crossing Rd. near its intersection with State Highway 49. A relatively small number of residences and business beyond North Columbia generate their own electrical power. Telephone service exists throughout the region; one microwave relay station is located in North Columbia. Cell phone service is limited, with reception being affected by terrain. Radio communication between emergency service vehicles is usually reliable but can also be adversely affected in canyons and ravines

Water Availability

Steep, rocky canyons make the rivers poor water sources for firefighting, and relatively few homeowners have water storage facilities. A small number of ponds and lakes are available, and Ananda, the religious community, has extensive water storage and distribution facilities. In the event of wildfire, water supplies would be overtaxed, although a CAL FIRE air attack station with water and fire retardant reloading facilities is only two minutes' actual flight time away, in Grass Valley.

Miscellaneous

No aircraft runway near a water supply exists in the District, but several landing sites and water refilling sites are available to helicopters. Water storage facilities are also available to fill tenders, but not in sufficient number to make vehicle travel times acceptable. Water storage sites are more numerous in populated areas below 3300 feet and sparse elsewhere. There are no hospitals on the Ridge; a private medical clinic near the Cherokee town site serves local residents. Twin Ridges School District operates one elementary school near North Columbia and has its central office in a currently vacant school site on Oak Tree Rd. Ananda operates another school. High school and private school students must travel to Nevada City or Grass Valley.

5.6 EMERGENCY SERVICES

Fire protection and emergency medical service are provided by the North San Juan Fire Protection District, a volunteer service available for immediate response at any time. In summer months, similar service is provided by a CAL FIRE facility at about the 3500-foot level. Emergency medical transport is provided by ground ambulance from Grass Valley or by AirMedCare Network, a helicopter air ambulance provider serving our area from Auburn, Marysville, and Sacramento. Ground ambulance takes about 25 minutes; helicopter about five minutes, but service can be delayed by the need to transport victims by ground ambulance to helicopter landing zones. Police service is sporadic, with unscheduled patrols provided by the California Highway Patrol and Nevada County Sheriff. The Sheriff's office provides service and implements evacuation during a wildfire emergency.

5.7 INSURANCE RATINGS

Until recently, the rural areas of the community have had an ISO rating of 9, and the central portion of the District including the town of North San Juan an 8. In a 2016 reevaluation, improvements in fire-fighting capabilities and reduced response times resulted in an improvement for the whole district to a rating of 6Y, and a rating of 6 for the Ananda Community. On completion of the pressurized hydrant system in central NSJ discussed below in Section 9.2 further improvement in ISO ratings can be expected.

5.8 ORGANIZATIONS AFFECTING THE DISTRICT

The Fire Safe Council of Nevada County is the only such entity serving the District. NGO's include the Yuba Watershed Council, a coordinating group monitoring environmental protection and watershed preservation or restoration efforts in the county, and the Yuba Watershed Institute, which operates in partnership with BLM to manage specified tracts of watershed lands to preserve old-growth forests and habitat.

Several Road Associations control maintenance on local roads. Although no official listing of them is known, local title companies do have some lists of Road Associations for escrow transactions. Also, no known record of Homeowner Associations exists. Both road and

homeowners' associations can play a vital role as instigators for grant submissions to improve conditions in their areas. Parts of any neighborhood assessments to be done for this plan should include compiling information on such groups.

6.0 CURRENT FIRE ENVIRONMENT

Fire has played an integral part in creating the forest environment of the Sierra Foothills and is a significant factor in shaping plant communities in the District. Historically, the District was a fire-dependent ecosystem with numerous fire-adapted species of plants and animals dependent on fire to recycle nutrients, regulate plant succession and wildlife habitat, maintain biological diversity, reduce biomass, and control insects and diseases. In recent decades, however, due to fire exclusion, grazing, timber harvest and mining, the ecosystems have changed dramatically. We now have a fire-prone ecosystem dominated by hot-burning fuels composed of dense brush and ladder fuels which contribute to increased crown fire conditions. A goal of this plan must be to restore the historic role of fire, where flame lengths are limited to 2-4 feet through effective vegetation management, while allowing and protecting a human presence in the forest.

6.1 WILDFIRE VEGETATION PROBLEM

Vegetation directly influences fire rate of spread, flame length, intensity, heat per unit area and other elements affecting fire suppression. A hillside with lots of fire-prone Manzanita, for instance, has a higher hazard rating than one with more fire-resilient species such as Madrone or Douglas fir. The fuel density in this area has increased the potential for wildfires burning entire stands of trees. Fire-prone species such as Manzanita and Scotch Broom are widespread.

6.2 LOCAL FIRE ECOLOGY

Historically, wildland fire frequently burned in 10 – 20 year cycles throughout most areas of the District. But the fire ecology is no longer a healthy system with small ground fires. In recent decades fire exclusion, grazing, timber harvest and mining have changed the ecosystems dramatically. Fire exclusion would have less impact on the ecology of an area characterized by infrequent crown fires and severe surface fires than on an area that typically experienced light surface fires every one- to twenty-five years. Our aggressive fire suppression for the last seventy years or so has created a dense understory with ladder fuels. Inevitably this eventually will lead to catastrophic wildfires with extensive crowning and devastating ground fires unless major mitigation steps are taken soon. Fire Districts, other government agencies, and residents must share the responsibility for this mitigation.

6.3 FIRE HISTORY

From 1900-1919 there were 6 fires, all in remote areas and sized one square mile or less. Between 1920 and 1939 there were 4 fires in remote areas of similar size. Between 1940 and 1979 only one major fire burned 16 square miles. Between 1980 and 1999 one major fire burned 6 square miles and had its ignition point within the District. This was the 49er Fire, one of California's historically most destructive, burned hundreds of structures south of the Yuba River in the Penn Valley and Rough & Ready Fire Districts. In 2004 numerous fires ignited but only one structure was lost. In the past decade there have been no major wildfires in the District, however, a few homes and other isolated buildings have been lost to structure fire.

6.4 FIRE WEATHER

Summer brings dry weather with minimal precipitation to the District. Dry lightning is common in the higher elevations. In the fall, a dry wind from the north brings our highest fire danger when fuel moisture content drops to dangerously low levels. The frequency is difficult to predict but occurrence is definite. Up slope and down slope wind is a daily occurrence during the fire season, with prevailing winds shifting from westerly during the day to easterly at night. The District, and indeed all of Northern California, is in the fifth year of a severe drought. If, as seems likely, this is indicative of a continuing climate change, with hotter summers and less

precipitation in the winter, the nature of firefighting in rural wildland areas will undergo a dramatic transformation.

Fire behavior during conditions of high or very high fire weather will be active with high rates of spread and flame lengths often exceeding the limits that allow direct attack with hand tools, about 4 feet. In the dominant fuel types (shrub and heavy conifer forest), flame lengths will exceed 12 feet on steeper slopes. In forested fuels crown fires will be common; the proportion of the canopy consumed will be high.

6.5 HAZARDOUS FUELS

The District's most fire-prone fuels are Manzanita and Scotch Broom. Manzanita is a native plant, but Scotch Broom is not. Because our forests are dense with vegetation, crown fires are common. This in turn makes all fuel within the forest hazardous. Fire suppression has created extensive tracts of dense forest with increased fuel loadings of dead material, fallen trees, ladder fuels and brush. In addition, the drought mentioned above has resulted in seriously weakened pine trees of various species. This has allowed bark beetles to overcome the trees' natural defenses, resulting in millions of dead and dying Ponderosa and other pines, thus adding to the hazardous fuel load within the District and surrounding areas.

Fuel loadings in the District are mostly moderate to high. The greatest concentrations are in dense conifer forest (35%), tall chaparral (11%), or heavy brush (21%). These fuel types characterize the surface fuels.

In forested areas, crown conditions are dense and moderate to high severity fire conditions exist due to high vertical and horizontal continuity. Canopy base heights are most often less than 3 to 5 feet and canopy bulk densities most often exceed 0.2 kg/m^3. Where canopies are higher off the ground, such as in mid-aged or older pine stands, there is often a tall layer of shrubs below, increasing the likelihood of crown fire.

Distribution of fuel types across the District. Data from the state database: *Surface Fuels Maps & Data http://frap.cdf.ca.gov/data/fire_data/fuels/fuelsfr.html*

Fuel model	Description	Acres	percent
1	grass	878	1
2	pine/grass	11,358	12
4	tall chaparral	10,014	11
5	medium-light brush	10,807	12
6	heavy brush	19,093	21
8	hardwood/conifer light	966	1
9	hardwood/conifer medium	1,840	2
10	conifer heavy	32,295	35
28	urban	934	1
98	water	737	1
99	rock barren	2,569	3

Fuel Hazard Ranking

The fuel loadings and conditions rank extreme to severe for much of the District, in CAL FIRE Hazard Class 3, or “Very High”. Fire regimes have significantly changed from their historical range and fire frequency differs greatly from its historical pattern. Roughly 75% of the District currently fits into Hazard Class 3, mostly due to fire exclusion and bark beetle damage (*See Appendix, Figure 3*). Fire exclusion has created vegetation and fuel conditions for large fires that are more difficult to suppress than smaller fires, while drought and beetles have added huge amounts of fuel to the potential fires.

Throughout the District, our forests present a continuous fuel supply both vertically, in small, thin trees and dead branches (ladder fuels), and horizontally, in an abundance of dead and downed material. Disruption of this fuel continuity, limiting the potential for fire to advance, is very difficult. The community of Ananda, mentioned elsewhere in this plan as poised to become our District’s first FireWise Community, has done an exceptional job of it.

Natural Fire Breaks

The District is bordered by two rivers which afford some natural fire break. Hwy 49 bisects the District north to south and Tyler Foote Rd. runs east to west. Pleasant Valley Rd. and Oak Tree Road run east to west. Four other fire breaks are formed by the Badger Hill, Columbia Hill, Malakoff diggings and the gravel beds of Shady Creek.

6.6 IGNITION HISTORY

Most of the fires in the District are human caused. However, lightning plays a role in the late summer and early fall. According to CAL FIRE records for the District, over 50% of the ignition points are near or next to roadways. Given this fact we would expect future fires to ignite in the mid to late summer and near populated areas within the District.

7.0 RISK ASSESSMENT: IDENTIFYING & EVALUATING ASSETS AT RISK

7.1 STRUCTURE DENSITY

The population is concentrated in the center of the District in the area bounded by Highway 49, Oak Tree Road and Tyler Foote Road. Major population concentrations within or adjacent to this area include North San Juan, the Ponderosa subdivision along Blind Shady, Ananda Village and the old Cherokee town site. Other population clusters include French Corral, North Columbia and lots bordering Cruzon Grade at the east end of the District. The densest population is the town of North San Juan. Outside of North San Juan the most densely settled areas have a density of approximately one unit per 3-5 acres.

7.2 INFRASTRUCTURE

Key infrastructure that would require priority protection in case of fire includes the telephone exchange in North San Juan and the electric substation on Tyler Foote Rd. near Ivy Lane. The Colgate-Allegany transmission line also crosses the District through the dense vegetation of the Middle Yuba River canyon. While this and other electrical transmission lines are maintained by the Pacific Gas and Electric Company, their ability to sustain the system is limited, rendering our electric infrastructure vulnerable to fire damage. The Birchville reservoir and attendant ditches and pipes are another area of concern.

7.3 BUSINESS AND COMMERCIAL

A concentration of commercial establishments in North San Juan includes churches, transfer station, gas station, grocery, restaurant, bar, gift shop, recreation center, auto repair, fire hall/community meeting hall, bicycle parts distribution and a senior center. Ananda Village includes a market, jewelry shop, thrift store and chiropractic and massage offices. The industrial zone at Ananda Village currently holds construction, architectural design, publishing, financial consulting, graphic design, distance learning and herbal essences. Other commercial areas include: Peterson's Corner (bar/restaurant, motel), the corner of Oak Tree and Tyler Foote (market, fire station), Milhous on Highway 49 (farm supply store, center for troubled youth) Cherokee (medical clinic, jewelry manufacture, car parts fabrication, metal working) the North Columbia area (architect, market, community center). Several camps and retreat centers are located in the District, including Shady Creek Outdoor School, The Expanding Light retreat at Ananda Village, The Ananda Meditation Retreat off Jackass Flats Road, and the Ring of Bone Zendo off of Jackass Flats. Many home-based businesses scattered throughout the District include farms, ranches, nurseries, a winery and various art studios. Also of note to protect in a fire are two public schools: Oak Tree School on Oak Tree Rd. and Grizzly Hill School on Grizzly Hill Rd., and the private Milhous School and Ananda Living Wisdom School.

7.4 CULTURAL AND HISTORIC SITES

Various Maidu Indian sites have been found throughout the District, including artifacts and grinding rocks. Because of the multitude of past fires and the short-lived nature of artifacts that could be damaged by fire, it is unlikely that any of the existing Maidu remains would be further damaged by wildfire. However, fire suppression efforts involving heavy equipment could be a danger to these sites.

A number of buildings and facades of buildings have survived from the Gold Rush era of last century. Of particular importance to protect from fire is the North Columbia School House, a building dating from 1875, which now houses a cultural center, an architect's office, and often holds collections of art work on display. The Methodist Church in North San Juan is of similar vintage and is of architectural and historic value. Also of importance to the community is the Community Center in North San Juan. There are several other 19th Century buildings in the

North Columbia area. The Wells Fargo building on Pleasant Valley Rd. in French Corral and several of the buildings along Highway 49 in North San Juan are of historical significance. Lastly, the restored covered bridge at the South Yuba River State Park headquarters in Bridgeport would merit special protection from fire.

7.5 ECOLOGICAL HEALTH

The northern part of the District has nesting sites for goshawks, an endangered species. Remnants of old growth forest provide special habitat for threatened species such as the spotted owl. Other key habitat areas include Montezuma Hill (a winter migration area for the Nevada City deer herd), the upper reaches of Grizzly Creek, and the 'Inimim Forest' parcels administered by BLM in conjunction with the Yuba Watershed Institute.

The District spans over two thousand feet in elevation and several ecosystems. Approximately 8% of the forested area still exhibits old growth characteristics, but much of the forest has unhealthy fuel density with younger trees and large concentrations of brush species. The low human population density allows a large and diverse population of wildlife.

7.6 WATER QUALITY AND WATERSHEDS

The various rivers flow largely unimpeded through this area until the North Yuba River is dammed to form the Bullard's Bar Reservoir. A significant portion of the flow of the Middle Yuba River during certain seasons is diverted into the North Yuba River and then Bullard's Bar Reservoir via a small dam and diversion tunnel at Our House. Otherwise, the Middle Yuba River joins the North Yuba River just south of Bullard's bar to form the Yuba River itself. The South Yuba River then joins the Yuba River at Point Defiance, just west of Bridgeport. Finally, the Yuba River forms the Lake Englebright Reservoir.

These rivers are important for recreational and habitat areas. Secondary streams flow off the ridge into the major rivers, dropping steeply into the river canyons. Shady Creek has a longer watercourse and parallels the South Yuba River before dropping into the river canyon. Spring Creek and Bloody Run are other major secondary streams. The steep drainages leading into the river could act as chimneys during wildfires. Large wildfires in the canyons would likely strip existing vegetation and increase winter erosion. Water quality in the Yuba River and its tributaries would decline, affecting aquatic populations, damaging popular recreation resources, and increasing sedimentation in the Bullard's Bar and Lake Englebright reservoirs.

Also a threat to water quality are increasingly large water thefts and creek diversions for irrigation of illegal marijuana grows. Not only does the lack of water downstream from such diversions threaten the local stream ecology, but chemicals, fertilizers, and their residues are routinely and casually released into the environment, with potentially devastating long-term effects on both animal and plant life. State and local legislation passed in 2016, with more to come, expanding legal use of pot, along with more rigid controls on grows, may allow greater control of the market by conscientious growers, and a concomitant reduction of damaging practices by those operating outside the law.

7.7 AIR QUALITY

This region is part of the greater Sacramento air basin because westerly winds regularly bring ozone and other pollutants from the large metropolitan areas to the west. Ozone concentrations at ground level have at times reached unhealthy levels. Air pollution levels may be affecting forest health and could lead to increased hazardous fuel load if trees begin to die from this cause in addition to the drought and beetle threats mentioned earlier. The Northern Sierra Air Quality Management District restricts open burning on some days because of poor dispersion

characteristics in the atmosphere. Landowners are constrained as to when they can burn debris created by thinning and brushing for fire protection. These restrictions and the obvious advantage of preventing air pollution favor chipping for disposal of cleared vegetation. To encourage chipping, the FSCNC offers a free chipping service to County residents. For details, visit their website at “areyoufiresafe.com”.

Air quality also makes the scheduling of controlled burning of large acreage more problematic. The smoke from any large wildfire in or near the District combines with the already unhealthy air to create air pollution levels that exceed acceptable standards and can lead to health ‘advisories.’ The effect of this air pollution is greater on children and older people. District personnel must be prepared to give prompt medical aid at Schools and the Community Center if smoke reaches dangerous levels.

7.8 RECREATION

The Middle and South Yuba Rivers provide major recreation areas for District residents and visitors. The State Park system owns land along the South Yuba River including a headquarters at Bridgeport and access points at Purdon and Edwards Crossings, including the nearby South Yuba River Campground. Malakoff Diggins State park, on the eastern boundary of the District, attracts visitors to the historic Gold Rush era town, hydraulic mining pit, trails and campgrounds. Many tourists move through the District on Highway 49 to access recreation sites in Yuba, Sierra counties and beyond. Traffic on summer weekends increases by an estimated 40% or more along Highway 49. Dramatic vistas of forested hills and mountains are present at many places in the District. Wildfire would significantly degrade these scenic views. Other recreation areas include facilities associated with Oak Tree and Grizzly Hill Schools, the North San Juan Park District adjacent to Oak Tree School, and facilities at Ananda Village.

7.9 NATURAL RESOURCE MANAGEMENT AREAS

Special resource management areas are maintained on public land administered by the U.S. Forest Service, The Bureau of Land Management and California State Parks. The ‘Inimim’ forest cooperative management initiative developed with BLM, the Yuba Watershed Institute and the timber framers guild guides forest practices on a group of BLM parcels in the District. The plan seeks to return the forests to healthy old growth while managing for fire protection, wildlife habitat and recreation. BLM has thinned trees and masticated understory fuels on hundreds of acres. The State Parks system manages on-going programs at the South Yuba River State Park and Malakoff Diggins State Park to reduce fuels and mitigate wildfire danger. A number of large privately-owned parcels zoned for timber production are managed by Siller Brothers and other private individuals. Owners of several large tracts of private land are working with CAL FIRE through their VMP program. Several growers operate commercial agricultural concerns in the District. Both CAL FIRE and Ananda Village maintain a network of shaded fuel breaks.

8.0 MITIGATION STRATEGY: THE ACTION PLAN

8.1 DESIRED FUTURE CONDITIONS

In general, our long term goal is to reduce fuel loads to a point where wildfire would burn at an intensity low enough (2 to 4-foot flame lengths) to be controlled without posing a serious threat to life or infrastructure. The plan calls not only for fuels reduction, but for safe evacuation and citizen protection in the event of catastrophic wildfire, on-going education and training of cooperative citizen teams serving in small neighborhoods during public safety emergencies and assessment of infrastructure improvement needs throughout the District.

8.2 AGENCY INVOLVEMENT

All of these agencies were involved in public review and revision of this plan. CAL FIRE was involved in the entire process from its inception. Each has a vital role to play in the successful completion of projects within this Plan, according to the areas of responsibility with which each agency has been tasked.

California Department of Forestry and Fire Protection

CAL FIRE has provided extensive leadership and service in formulating this plan. Its continued assistance will be essential to coordinating work on shaded fuel breaks, supervising evacuation drills and planning for service to citizens in safe areas. Depending on community response, help may also be required from CAL FIRE in public education.

Fire Safe Council of Nevada County

The California Fire Safe Council (CFSC), originally created in 1993 as a committee within the California Department of Forestry and Fire Protection (now called Cal Fire), became a 501(c)(3) non-profit, tax-exempt corporation in 2002.

Its primary program is to “develop and maintain an on line, one stop shop, grant clearinghouse where the four primary Federal agencies, the U.S. Forest Service (Department of Agriculture), Bureau of Land Management, National Park Service and Fish & Wildlife Services (Department of the Interior) could provide large master grants to CFSC to conduct, select , manage and monitor sub grants to local community groups such as fire safe councils and homeowner associations, local government, fire departments, and other entities focused on wildfire prevention activities such as defensible space, community fire planning, and education.” The CSFC also provides technical assistance to the entities, especially the community groups and local fire safe councils on using Federal grant funds.

Local Fire Safe Councils are in general associated with communities or other limited areas, not specifically counties. Placer County has four, El Dorado County has an even dozen, and San Diego County has the record with 29.

Nevada County has only one such organization, the Fire Safe Council of Nevada County (FSCNC). However, the FSCNC is one of the most productive in the State. For example, we have well over 20 Firewise Communities, local areas that have satisfied demanding requirements established by the National Fire Protection Association as to fire-safe conditions in their communities. Within the District, Ananda is in the process of becoming the latest Firewise Community in Nevada County.

Given the NSJFPD’s limited resources and the District’s high exposure to fire, it is necessary that the FSCNC be heavily involved in any grant process involving our District. Individuals or groups within the District should recognize a need and take the lead in the grant process.

NSJFPD's role will be limited to consultation, providing an interface between the hopeful grantee and the FSCNC, and adding its imprimatur to the grant request.

The Council has been the major provider of services involving fuels reduction and the establishment of shaded fuel breaks in the District in the past. They will continue to play a vital role in the success of this plan for the foreseeable future.

Bureau of Land Management

BLM properties comprise a large portion of lands in the District, and BLM provides major funding to current county fuels reduction programs. Beyond that assistance, however, it is essential that BLM provide funding for fuels reduction on BLM parcels:

- to comply with the Nevada County General Plan,
- to permit citizens safe access through or along BLM properties to identified evacuation routes, and
- to maintain these properties, once desired fuel levels have been reached.

California State Department of Parks

Two major evacuation routes (Pleasant Valley Rd., Highway 49) traverse park properties. Park employees may need training to assist with evacuation in the event of a catastrophic fire.

U.S. Dep't. of Agriculture, Natural Resources Conservation Service

May provide help with fuels reduction through its Environmental Quality Incentives Program (EQIP). This agency also provides technical advice and help to landowners on land improvement for agricultural development; they have helped the District in past efforts at watershed protection and fuels reduction under a NSJFPD-managed Proposition 204 grant.

U.S. Forest Service

Much of the District is part of the Tahoe National Forest. Federal fuels reduction programs will significantly affect the safety of District citizens.

8.3 MITIGATION GOALS AND PRIORITIES

Evacuation Routes

Creation and maintenance of evacuation routes, both major and neighborhood, and Safe Zones are the highest priority projects. Major evacuation routes (*See Appendix, Figure 4*) will also serve as shaded fuel breaks. With this in mind, major evacuation routes will be thinned/brushed as far back on each side of the road as is practical to conform with Forest Service shaded fuel break standards. Neighborhood evacuation routes must be thinned/brushed far enough back on each side of the road to allow unhindered passage for all fire apparatus, ambulances, and other emergency vehicles.

Article 7 of Chapter IV of the Nevada County General Code, as amended by the BOS on June 10, 2016, sets forth clearance requirements for roadways, and provides local Fire Chiefs with the authority to enforce these limits, if necessary through liens on the parcels. This is a Draconian measure, and would be used only if more gentle persuasion fails. This procedure is complicated, both physically and legally, and has not been attempted by any fire district as of this writing.

Major Evacuation Routes:

- Highway 49 between District boundaries;
- Tyler Foote Road northwest to Hwy. 49 ;
- Oak Tree Road from Tyler Foote to Hwy. 49;

- Pleasant Valley Road from Hwy. 49 to Bridgeport.

Neighborhood Evacuation Routes:

In addition to the major routes, there are many of the 150 or so local roads in the District that must serve as evacuation routes. As part of your preparation for an emergency, you must locate those roads that can best allow you to get to one of the major routes or Safe Zones. In addition, you must judge their condition to be adequate for your use. For example, bridges crossing the South Yuba River at Purdon and Edwards' crossings are inadequate in the event of an evacuation. These bridges, which would be essential in the event of a fire blocking Tyler Foote Road (as occurred in 2005) could be blocked by either an accident or stalled vehicle, as is true of the immediate approaches on either side. Nevada County should take responsibility for upgrading these structures and their approaches on county roads to make them suitable for evacuation.

Safe Zones

Safe Zones, also called Fire Safety Zones, are identified in the firefighting community as locations where firefighters could survive in case of a sudden fire flare-up or wind shift. Clearly, if civilians are to seek refuge in a Safe Zone, they will not be equipped as well as firefighters, and so would need a more extensive area in which to seek safety. Theoretical methods for determining the size of Safe Zones are reasonable well determined, but in terrain such as the District, these methods yield results that are for the most part impractical. Our Safe Zones will consist of as much cleared area as is possible, surrounded by as much defensible space as can be maintained. Examples of locations suitable for such areas are:

- Oak Tree School;
- NSJ Community Center;
- Ananda Village Center;
- North Columbia Schoolhouse Cultural Center.

Fuels Reduction

An ideal sustainable fuels reduction plan would reduce all 'very high' and 'high' density fuel areas to moderate or low density (CAL FIRE Nevada County data) and maintain these levels of fuel load. This ideal is cost prohibitive and unattainable, but as resources allow, thinning, brushing, burning, logging, chipping and prescribed burning will be used on high priority areas to reduce fuel loads and to maintain the lower levels in compliance with the Nevada County General Plan. Work will be performed by property owners and private contractors, with assistance from the NSJFPD, CAL FIRE, U.S. Forest Service, California State Parks, BLM, NRCS and the Fire Safe Council of Nevada County or other agencies. Article 7 of Chapter IV of the Nevada County General Code, mentioned above relative to evacuation route clearance, may also be of help in these efforts.

Neighborhood Group Formation

On a voluntary basis, citizens are encouraged to form groups associated by neighborhood or other common interest. These groups will be responsible for initiating grant proposals to carry out projects under this plan. They may be assisted by NSJFPD personnel and resources of the Fire Safe Council and other agencies.

The size of the groups based on neighborhood will depend on population density, terrain and road access but would generally not exceed about two square miles. As resources permit, firefighters with appropriate certification (NSJF, CAL FIRE, USFS, NC Fire Planner) will serve as assessment personnel. They will be available to meet with each neighborhood group both

pre- and post-grant proposal and, hopefully, funding, to assess such areas as fire hazards, bridge and culvert capacities, fuel loads, water supplies and communication needs in each neighborhood, with the goal of helping produce a grant application worthy of funding.

Education

A community education program will be implemented to inform citizens of details of this plan, including provisions for evacuation, shelter-in-place, Safe Zones, fuels reduction and the neighborhood provisions for fire safety and prevention and public safety. The education program will include a District library of fire safety, fire-wise landscaping, defensible space, first aid and other literature for distribution to citizens on request. Copies of these materials and of this fire plan will also be available on the District web site. New residents will be identified through voter registration rolls, building permit applications and parcel ownership changes so that these materials may be made available to them. Education will be an ongoing project for the life of this plan.

8.4 RECENT AND CURRENT PROJECTS

Fuels reduction projects have been in progress for several years, funded by various agencies and often coordinated by the Fire Safe Council of Nevada County.

Four shaded fuel breaks exist in the District, all developed by CAL FIRE and Nevada County: the Montezuma Break (Jackass Flat over Montezuma Hill to Miller Road and Bunker Hill); the North Columbia Break (N. Columbia to the northern boundary of the District along Tyler Foote Road to Cruzon Grade Road); the North Columbia Fuel Break Expansion (still in progress); and the Snow Tent Break (from the end of the North Columbia Break to Graniteville.)

8.5 PRIORITIZATION RATIONALE

Biological, Economic, Community, Safety

As discussed earlier, creating defensible space around every home is the most effective way to avoid fire damage. Beyond that, for community safety, the paramount needs are fuels reduction along evacuation routes and the establishment of Safe Zones.

The most devastating fire to begin in our District, the “49er Fire”, spread south and west from its ignition point near the intersection of State Highway 49 and Birchville Road, threatening Nevada City and Rough and Ready, and doing extensive damage to homes and businesses around Newtown Road and northern areas of Lake Wildwood before being extinguished. Northerly winds typical of early fall, the height of the fire season, mean that any District fire threatens Nevada City and Grass Valley, beyond the threats to North San Juan and North Bloomfield. Fuels reduction, therefore, across the San Juan Ridge is the next priority, to protect District homes, businesses and the towns south of us.

Several small businesses employ local residents and are under proximate threat from dense understory and unmanaged forest. In addition, several large ranches conduct business in the District.

Fuels reduction is also essential to protect wildlife habitat. The south side of Shady Creek is a major migration route for Black-tailed Deer. The District is habitat for two rare or endangered species, Goshawks and Spotted Owls.

Resources Available, Project Readiness

CAL FIRE, the Fire Safe Council and District assessment and training personnel are available to begin to carry out their respective roles immediately. Funding is the only prerequisite.

Project Prescription

Fuels reduction projects have been conducted extensively in the past in this District and local districts by CAL FIRE, the Fire Safe Council and local contractors. No special preparations are needed; these projects, as funded, will fit into the on-going efforts of these and other agencies to reduce fire hazards.

Prescriptions for major projects will be written by registered professional foresters as required for environmental compliance and permitting.

9.0 FUTURE ACTIONS/PROJECTS

9.1 VEGETATION MANAGEMENT/FUEL MODIFICATION PROJECTS

Thinning and Brushing

Thinning and brushing will be used by parcel owners in very high and high fuel density areas where roads or driveways provide close access. When weather and air quality allow, the slash will be piled for burning by property owners. Preferably, the slash will be chipped. The Fire Safe Council of Nevada County offers a free grant-supported chipping service to property owners. For details, visit their website at “areyoufiresafe.com”.

As Resources allow, thinning and brushing will also be done along major evacuation routes, the work and slash chipping to be done by the Fire Safe Council or other agency.

Neighborhood Groups will also use thinning and brushing as recommended by this plan to improve residential safety or to provide safer access to evacuation routes. The work will be done by neighborhood members; slash chipping will be done by the Fire Safe Council or other agency.

Prescribed Burning

In some ‘very high’ and ‘high’ fuel density areas inaccessible to chipping equipment, controlled burns may be necessary. Such burns would be conducted in conformity with Air District Burn Permits issued by the Northern Sierra Air Quality Management District and any permits required by the statutory fire agency in charge.

Industrial Resource Management

Siller Brothers plan no logging operations on their own holdings in the District for over 20 years. Sierra Pacific Industries, a timber harvesting concern, has no holdings within the District boundaries but does in areas contiguous with the District, as does Tahoe National Forest. Siskon Mining lands are currently on the market for sale. We will work with these or any industrial concerns, as appropriate, to achieve the goals of this plan.

Slash/Biomass Disposal

Debris removal from evacuation routes, Neighborhood Group thinning/brushing projects and brush and ladder fuel removal in ‘very high’ and ‘high’ fuel density areas accessible to roads and driveways will be done with assistance from the Fire Safe Council, private parties or other agency.

Forest Products Utilization

In cases where fuels reduction projects involve felling of large trees with commercial value, the Fire Safe Council will provide the logging service under prior agreement with the land owners for appropriate compensation.

PRC Section 4291 Education and Compliance

Minimum standards for vegetation management around structures can be found in Section 4291 of the Public Resources Code. These standards are meant to prevent structure fires from escaping to the wildland, and vice versa. This information is available on the NSJFire.org website. Personnel from NSJ Fire and the Fire Safe Council are available for further education on 4291 compliance.

9.2 INFRASTRUCTURE IMPROVEMENTS

Water Supply

Water supplies currently available for firefighting are identified on maps in the county GIS system, and are available to all NSJVFD fire apparatus on a laptop computer. This plan calls for additional on-site assessment of the 70 square miles of the District in small neighborhoods. These assessments are likely to lead to the identification of neighborhoods where water supplies are inadequate and to grant requests to fund or assist with the installation of ponds, reserve water tanks or small hydrant systems.

In 2015, Nevada County was awarded a Community Development Block Grant to fund a feasibility study for a fire flow system in downtown NSJ consisting of an elevated water storage facility and pressurized hydrants meeting the requirements of the National Fire Protection Standards and the California Fire Code. This study found a feasible engineering solution that would satisfy all requirements at a cost of $1.2 million. The study was presented to the Nevada County Board of Supervisors on August 24, 2016. Grant proposals have been submitted by the County seeking construction funds. Clearly, when this system is completed it will have a revolutionary impact on the ability to fight fires in the commercial core of NSJ and the immediately surrounding areas.

Roads/Access

Ladder fuels and brush will be removed along key roads as detailed above, using county prescriptions. However, most roads in the District are privately constructed and maintained. Safe access for emergency vehicles over culverts, bridges and through forested areas during a fire is, for the most part, unknown but likely problematic. The scope of this problem and the District's size require that we assess small areas in person, using trained staff. Once infrastructure needs are identified, neighborhood teams will resolve any issues using private funds for private property or grant assistance for major or neighborhood evacuation routes.

9.3 EMERGENCY RESPONSE

Fire Protection Response/Readiness

Clearing of vegetation along key roads and neighborhood evacuation routes and the assessment and improvement of neighborhoods will both contribute to improved fire protection response.

Equipment

NSJFPD has two water tenders and compressed air foam capabilities on its other apparatus. CAL FIRE provides both water-bearing helicopters and air tankers with fire suppression chemicals during fire season. Recommendation 19 of the Nevada County Fire Plan calls for a system of strategically located fire protection water storage tanks, which would be essential in some areas of the District to resupply water tenders. An additional tender may also be necessary for the District to comply with the Nevada County Fire Plan and to maintain its ISO rating.

Firefighter and Public Training, Certification and Qualification

Both NSJFPD and CAL FIRE meet or exceed current training standards; NSJFPD volunteers participate in over fifty training and re-certification sessions annually. This plan calls for public training by certified trainers (NSJFPD and CAL FIRE) provided to the public on a voluntary basis. This plan would extend C.E.R.T. training (already done in some areas) to all volunteering neighborhoods, in addition to providing training in property protection and mutual assistance during emergencies.

Shaded Fuel Breaks

This plan would add each Major Evacuation Route (see section 8.3 above) as a primary shaded fuel break cleared to the same standards as the Expanded North Columbia Break. Each Neighborhood Evacuation Route will also become an operational fuel break, effectively dividing the most populated areas of the Ridge into zones more easily defended against wildfire. The geographical position of the San Juan Ridge immediately north of the more heavily populated communities of Nevada City and Grass Valley vastly increases the value of these fuel breaks in protecting those areas against the historically more dangerous wildfires capable of destroying entire stands of trees, those driven by northerly winds. In addition, several areas of sparse vegetation, such as areas of the Ananda community and several gold-rush era hydraulic diggings, form natural defensible fuel profile zones and are identified as back-up Safe Zones

9.4 DEFENSIBLE SPACE

Available literature explaining defensible space has been used extensively in community training and information; it will be used in education efforts for this plan. As mentioned above, having your home surrounded by defensible space is by far the most effective means of protecting against wildfire.

9.5 EVACUATION PLAN

Evacuation is a central part of this plan. Removal of brush and ladder fuels from evacuation routes is the first priority listed for implementation and a central component of the neighborhood assessment and training proposed.

Emergency Communication System

The Nevada County Office of Emergency Services and the District have agreed to use the county's rapid notification system, CodeRED, to inform residents of any evacuation.

Also available is text messaging from the Sheriff's office through the Nixle Community Notification System. In addition, the District has established an emergency "hot line" with personnel responsible for updating its time-stamped recording to inform residents of the status of any emergency or of the need to evacuate. See Section 3.2 for details of these systems.

Safe Zones

Several Safe Zones, as defined in Section 8.3, are called for in this plan. They will serve as base camps for firefighting forces and as temporary areas of refuge during citizen evacuation.

Escape Routes

Although major and neighborhood evacuation routes as discussed above will be the primary avenues of escape during an emergency, some alternate escape routes for residents may be blocked by fallen trees and vegetation or cross private property and blocked by gates; some road easements have fallen into disuse and are similarly blocked. Neighborhood assessments called for in this plan will identify such situations and resolve them with assistance from the County or through the necessary fuels elimination.

Shelter-In-Place Procedure

Training in shelter-in-place procedures will be done in training sessions, but should be implemented only as a last resort. When at all possible, evacuation is the correct choice.

9.6 EDUCATION

Education is a major component of this plan. The plan calls for its implementation in two ways:

provided by certified instructors to neighborhoods, on a voluntary basis, including American Red Cross C.E.R.T. training, and provided in community meetings and through educational literature, the District web site, and new resident education done when mitigation fees are paid for new construction.

9.7 WATERSHED PROTECTION

No grading is anticipated as part of this plan; if any becomes necessary, it will be done in accordance with county regulations. Sensitive soils and grading in sensitive areas where erosion could be problematic will be avoided. All work will be done to comply with state and local regulations and to protect secondary and tertiary water sources as well as to prevent erosion of tailings or soils from former mining operations.

9.8 PRIORITIZED ACTION AREAS

1) Of highest priority is community education in the contents of this plan, which can begin immediately. District personnel and representatives of the Fire Safe Council, the Nevada County Office of Emergency, CALFIRE, and other agencies will be available for this purpose. Individuals and groups will be urged to assess their property and neighborhoods to determine the need for remedial action.

Community members will be made aware of all actions and projects identified in this plan as important in case of an emergency. Topics will include, but are not limited to, family preparedness for emergency situations, the importance of creating and maintaining defensible space around dwellings, and locations of Evacuation Routes and Safe Zones.

Education, and training necessary to implement lessons learned, must be ongoing for the life of this plan.

2) Conditions of Evacuation Routes, both major and minor, and Safe Zones will be assessed and resources identified to bring them up to standards as set by county and other prescriptions, and to maintain them. Good progress should be possible within five years.

3) A sustainable plan will be put in place with the goal of reducing very high and high density fuel areas to moderate or low density and to maintain these fuel load levels. Thinning, brushing, burning, logging, chipping, and prescribed burning all will have their place in efforts to reduce fuel levels in the district, and to maintain the lower levels in compliance with the Nevada County General Plan. Work will be performed by property owners and private contractors, with assistance, as resources allow, from District personnel, CAL FIRE, the Fire Safe Council, and other agencies.

Clearly, assessments of local fuel conditions, and efforts to reduce and maintain them at acceptable levels, will continue for the life of this plan.

9.9 MONITORING AND EVALUATION

A Community Fire Plan Committee, or the equivalent, will review this Plan every five years, as required by the Disaster Mitigation Act of 2000, and recommend any changes to the District Board.

This review will evaluate data to determine the extent to which the Fire Plan needs to be updated. This evaluation will broadly consider process oriented questions such as:

1. Were the mitigation measures implemented as planned?
2. What went right and what went wrong?

3. Are there opportunities for improvement?
4. Were objectives met?
5. How did this project affect residents' attitudes and behavior regarding fire danger and hazardous fuels?
6. Did the Plan place undue burdens on participants, thereby reducing community involvement?

Questions more results-oriented will also be considered, such as:

1. Status of evacuation routes and Safe Zones identified in the Action Plan;
2. Number of private acres treated;
3. Number of publicly-managed acres treated;
4. Number of private and public acres maintained after initial treatment in order to determine what updates need to be made to the Action Plan.

10.0 SUMMARY AND CONCLUSIONS

10.1 ANALYSIS AND FINDINGS

Action items were developed using three primary methods:

1) Consulting topographical maps of the District showing fuels density, ignition and fire history, slope and aspect, developed parcels, population densities, water sources and roads;
2) Discussion among committee members and with CAL FIRE and District officers, and;
3) Suggestions from stakeholders and the public.

The action items include: fuels reduction; creation of major and neighborhood evacuation routes and safe areas; assessment of fire and safety-related infrastructure by neighborhoods, the assessments done by trained personnel; training of citizens by neighborhoods in personal safety, first aid, fire defense and evacuation, the training done by certified instructors; establishment of remote water sources for firefighting; consideration of additional mobile water sources for firefighting; assistance to neighborhoods in infrastructure improvement through grant requests.

10.2 PLAN UPDATE PROCESS

Public Meetings

Following evaluation of the Fire Plan as discussed above, an initial draft copy of the updated Plan will be prepared. Public meetings will be held as required. These meetings will be opportunities to inform citizens about proposed changes to the Fire Plan and to encourage them to take an active role in the continued development of the Community Fire Plan by helping to identify additional needs, strategies and solutions to wildfire risk. The Committee will evaluate what it learns from the above process to update the initial draft of the Fire Plan.

Distribution of Draft Fire Plan

The final draft of the Fire Plan will then be distributed as many of the stakeholders identified in Section 4 above as possible to solicit their input for incorporation into the proposed changes.

Incorporation into Local Jurisdictional Plans

The final updated NSJFPD Community Fire Plan will be presented to the Board of Directors of NSJFPD for discussion and adoption. Copies will be provided to the stakeholders. An information copy will be sent to the County Board of Supervisors.

10.3 PLAN REQUIREMENTS SATISFIED

Finally, this Fire Plan satisfies the requirements of the Healthy Forests Restoration Act mentioned in Section 1.1. It accomplishes this by:

1) Having been developed collaboratively with multiple local and State agencies in consultation with Federal agencies and other interested parties;
2) Identifying and prioritizing fuel reduction projects and recommending methods of treatment to protect at-risk communities and infrastructure;
3) Recommending multi-party mitigation, monitoring, and education;
4) Defining measures that individuals and community groups can take to reduce the probability of structure and wildland fires, and;
5) Describing public information meetings to educate and involve the public in maximizing fire-safe behavior and in contributing to future improvements to this Plan.

APPENDIX

FIGURE 1 – LAND OWNERSHIP

FIGURE 2 – FIRE RESPONSIBILITY AREAS

FIGURE 3 –FIRE HAZARD SEVERITY ZONES

FIGURE 4 – MAJOR EVACUATION ROUTES

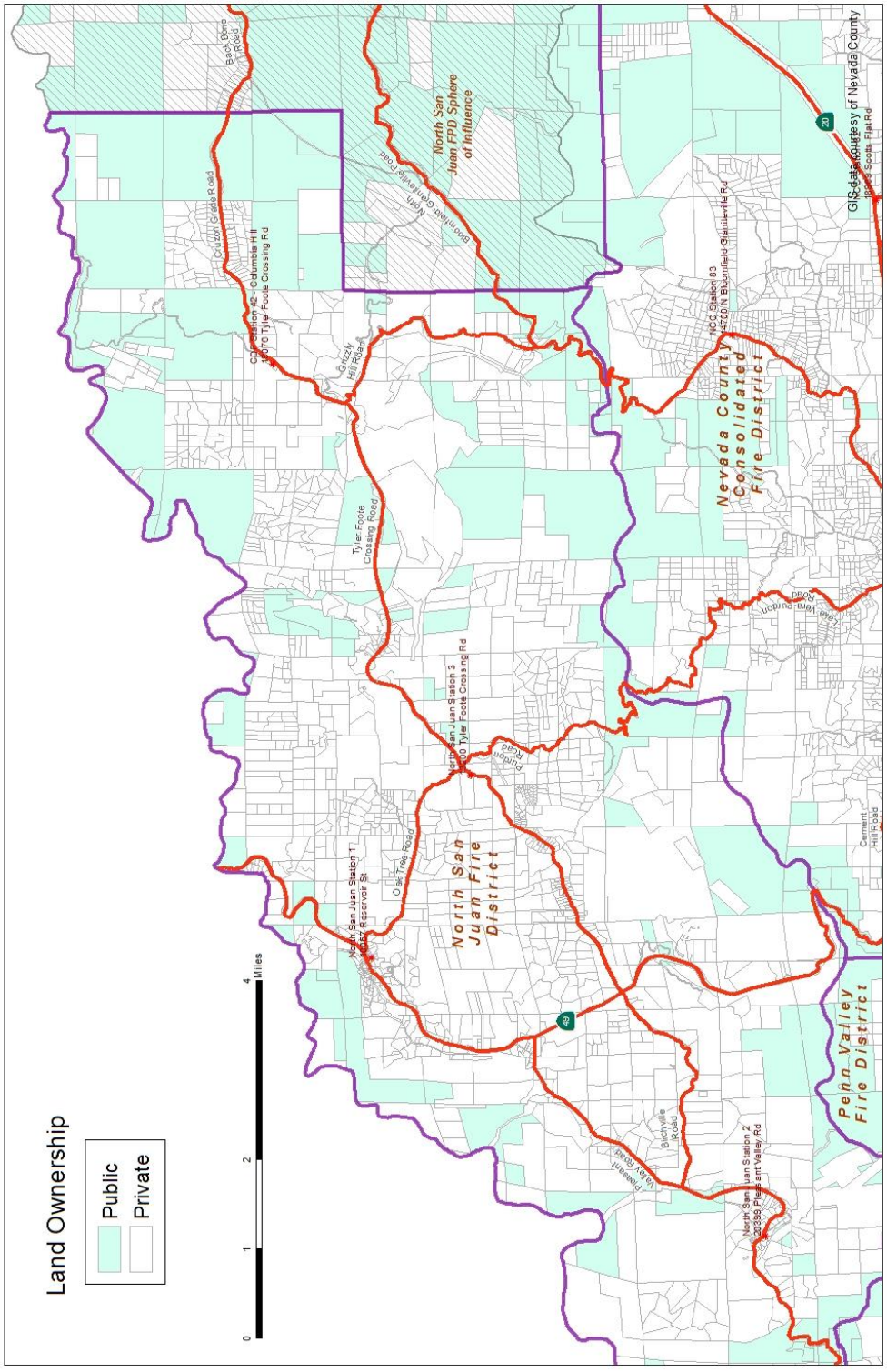
Land Ownership
Public
Private
0
1
2
4
Miles
North San Juan FPD Sphere of Influence
North San Juan Fire District
Nevada County Consolidated Fire District
Penn Valley Fire District
GIS data courtesy of Nevada County
Tyler Foote Crossing Road
Grizzly Hill Road
Cruzon Grade Road
Back Bone Road
Oak Tree Road
Cement Hill Road
Birch Hill Road
Pleasant Valley Road
North San Juan Station 1
North San Juan Station 2
North San Juan Station 3
49
20

FIGURE 1

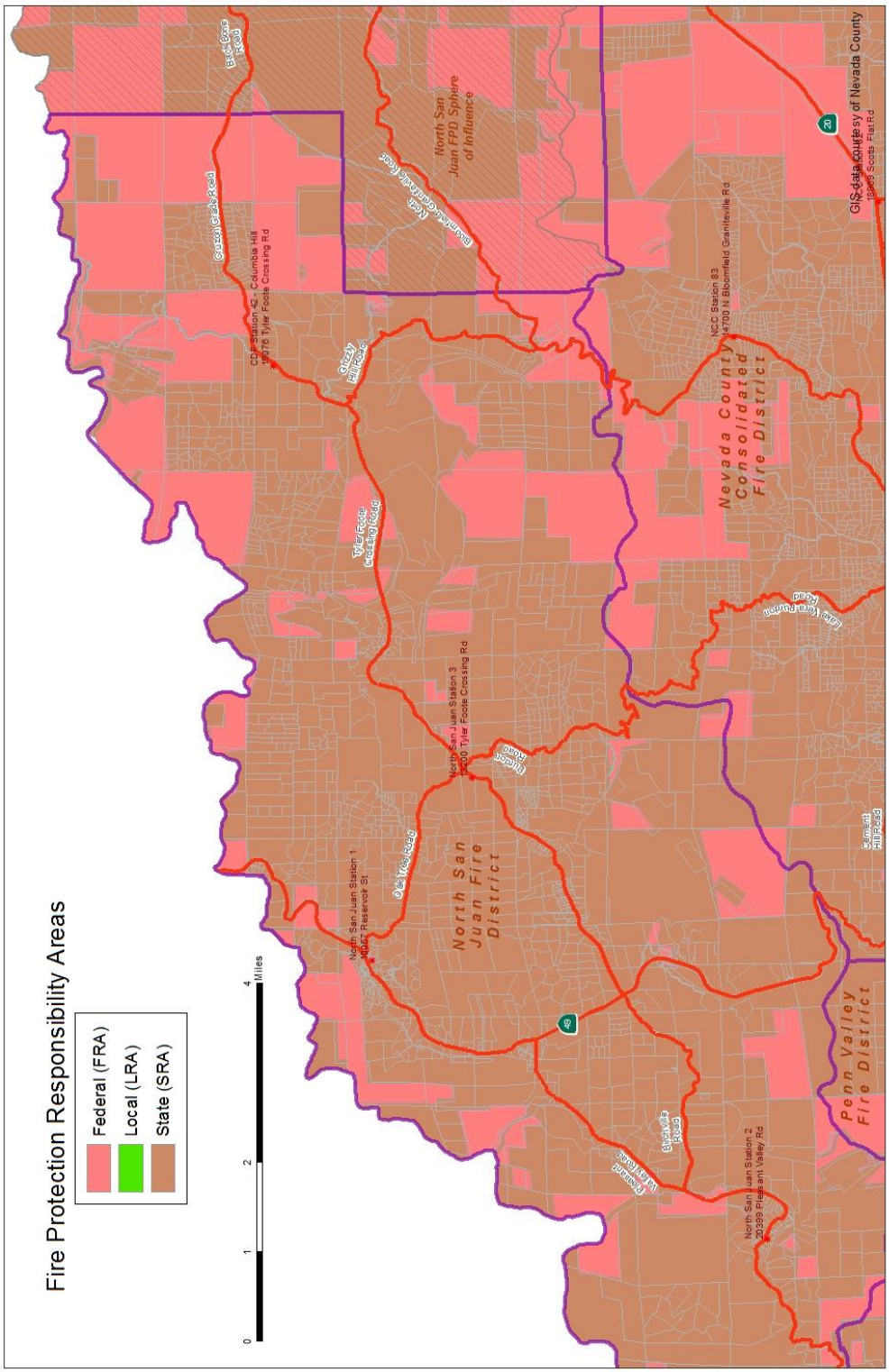
Fire Protection Responsibility Areas
Federal (FRA)
Local (LRA)
State (SRA)
0
1
2
4
Miles
North San Juan Station 1
10077 Reservoir St
North San Juan Station 3
15200 Tyler Foote Crossing Rd
CDF Station 42 - Columbia Hill
18076 Tyler Foote Crossing Rd
NCC Station 83
14700 N Bloomfield Graniteville Rd
North San Juan Station 2
20399 Pleasant Valley Rd
North San Juan Fire District
Nevada County Consolidated Fire District
Penn Valley Fire District
North San Juan FPD Sphere of Influence
Local Responsibility Area
Tyler Foote Crossing Road
Cement Hill Road
Lake Vera Road
Graniteville Road
Pleasant Valley Road
Old Tree Road
Bitney Springs Road
Dog Bar Road
Grizzly Hill Road
Cement Hill Road
GIS data courtesy of Nevada County
49
20

FIGURE 2

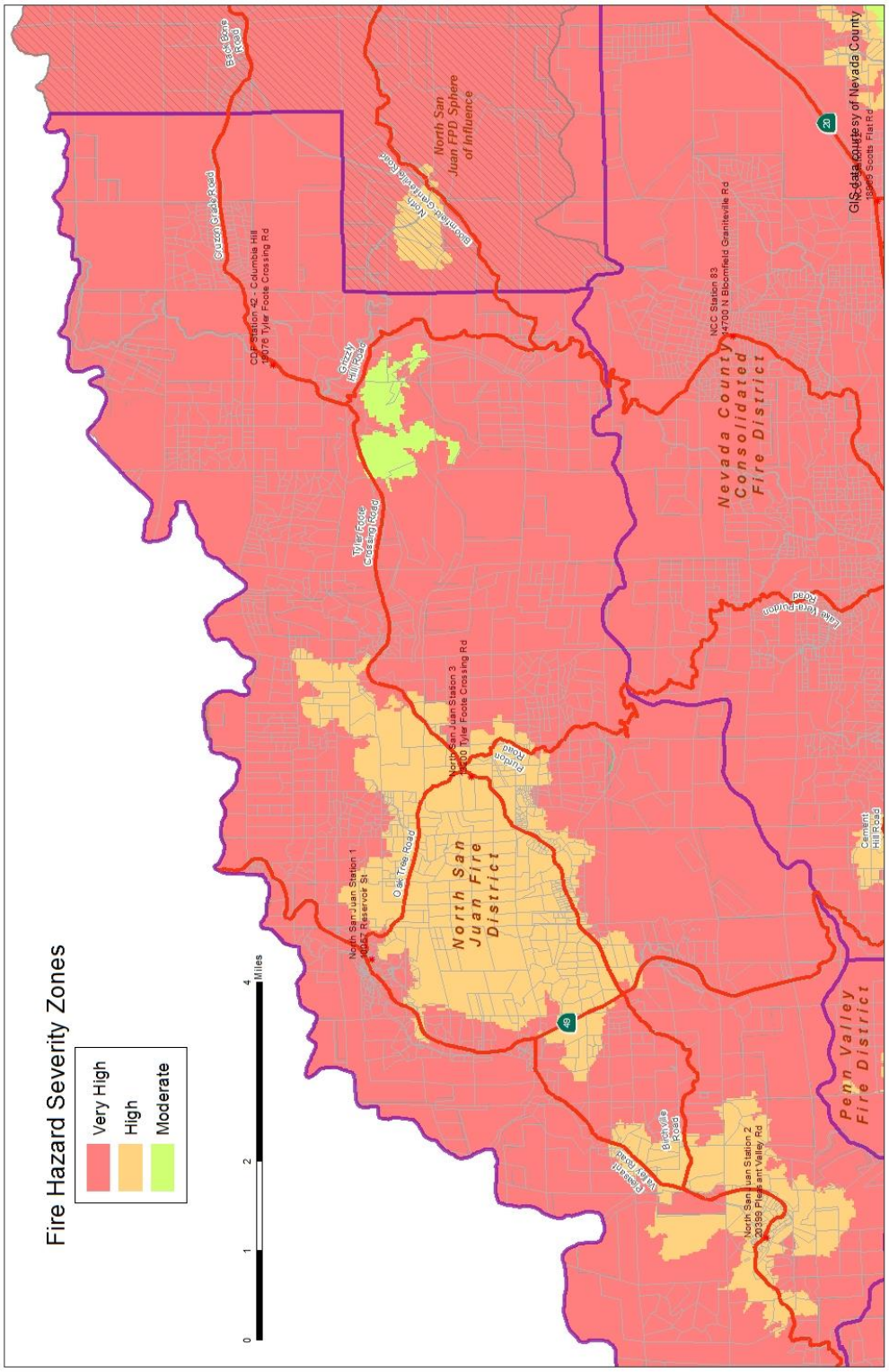
Fire Hazard Severity Zones
Very High
High
Moderate
0
1
2
4
Miles
North San Juan Fire District
Nevada County Consolidated Fire District
Penn Valley Fire District
North San Juan FPD Sphere of Influence
CDF Station 42 - Columbia Hill
13076 Tyler Foote Crossing Rd
North San Juan Station 3
13200 Tyler Foote Crossing Rd
North San Juan Station 1
10041 Reservoir St
North San Juan Station 2
20399 Pleasant Valley Rd
NCC Station 83
14700 N Bloomfield Graniteville Rd
Tyler Foote Crossing Road
Grizzly Hill Road
Oak Tree Road
Dorsey Drive
Cement Hill Road
Lake Vera Purdon Road
Penn Valley Drive
Pleasant Valley Road
Back Gone Road
Custer Grade Road
Scotts Flat Rd
GIS data courtesy of Nevada County

FIGURE 3

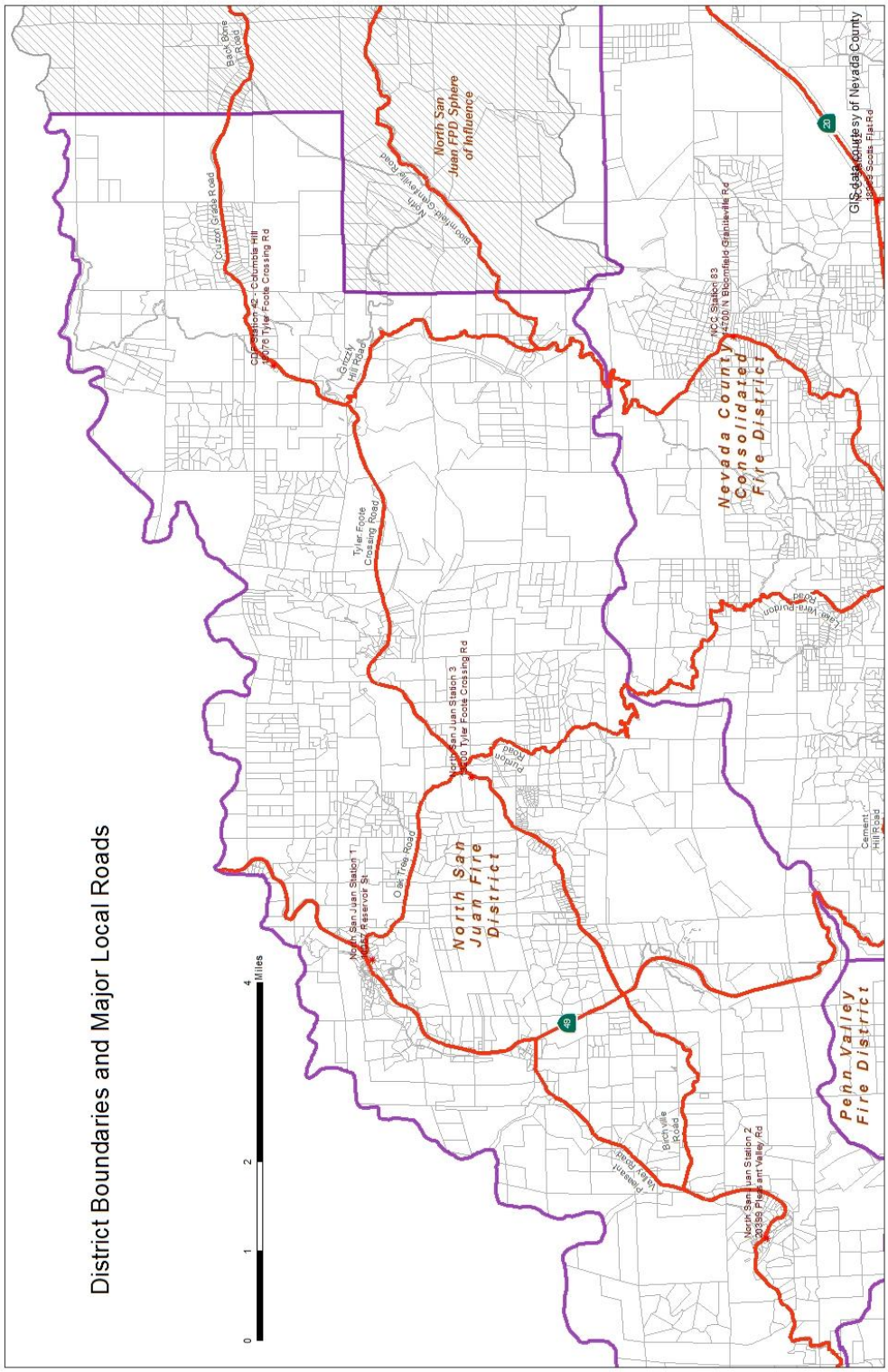
District Boundaries and Major Local Roads
North San Juan FPD Sphere of Influence
Nevada County Consolidated Fire District
North San Juan Fire District
Penn Valley Fire District
Colgate Station 42 - Columbia Hill 10076 Tyler Foote Crossing Rd
NCC Station 83 14700 N Bloomfield Stanisville Rd
North San Juan Station 3 13650 Tyler Foote Crossing Rd
North San Juan Station 1 Reservoir St
North San Juan Station 2 20399 Pleasant Valley Rd
Tyler Foote Crossing Road
Grizzly Hill Road
Oak Tree Road
Birchville Road
Pleasant Valley Road
Cement Hill Road
Colgate Grade Road
Back Bone Trail Road
Scotts Flat Rd
Lake Wildwood
Peoria
Miles
0
1
2
4
49
20
GIS data courtesy of Nevada County

FIGURE 4

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