Truckee Fire Protection District Community Wildfire Protection Plan Final

Prepared by: Wildland Rx and Deer Creek Resources
11-8-2016

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The Community Wildfire Protection Plan (CWPP) was developed for the Truckee Fire Protection District:

- This CWPP was collaboratively developed. Interested parties and federal land management agencies managing land in the vicinity of the plan have been consulted.
- This plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will help protect the communities.

The following entities mutually agree with the contents of this Community Wildfire Protection Plan:

Title: _____

Truckee Fire Protection District **Date:**

Title: _____

Nevada County **Date:**

Title: _____

Placer County **Date:**

Title: _____

Nevada Yuba Placer Unit, California Department of Forestry and Fire Protection **Date:**

Title: _____

Tahoe National Forest, U. S. Forest Service, USDA **Date:**

Title: _____

Town of Truckee **Date:**

Title: _____

Fire Safe Council of Nevada County **Date:**

Prepared By:

Wildland Rx, Inc. and Deer Creek Resources

Chapter 1: Executive Summary

CWPP Objective

The purpose of this document is to provide a comprehensive, scientifically based assessment of the wildfire hazards and risks within the Truckee Fire Protection District which includes:

- Truckee* Town limits

The Communities Of:

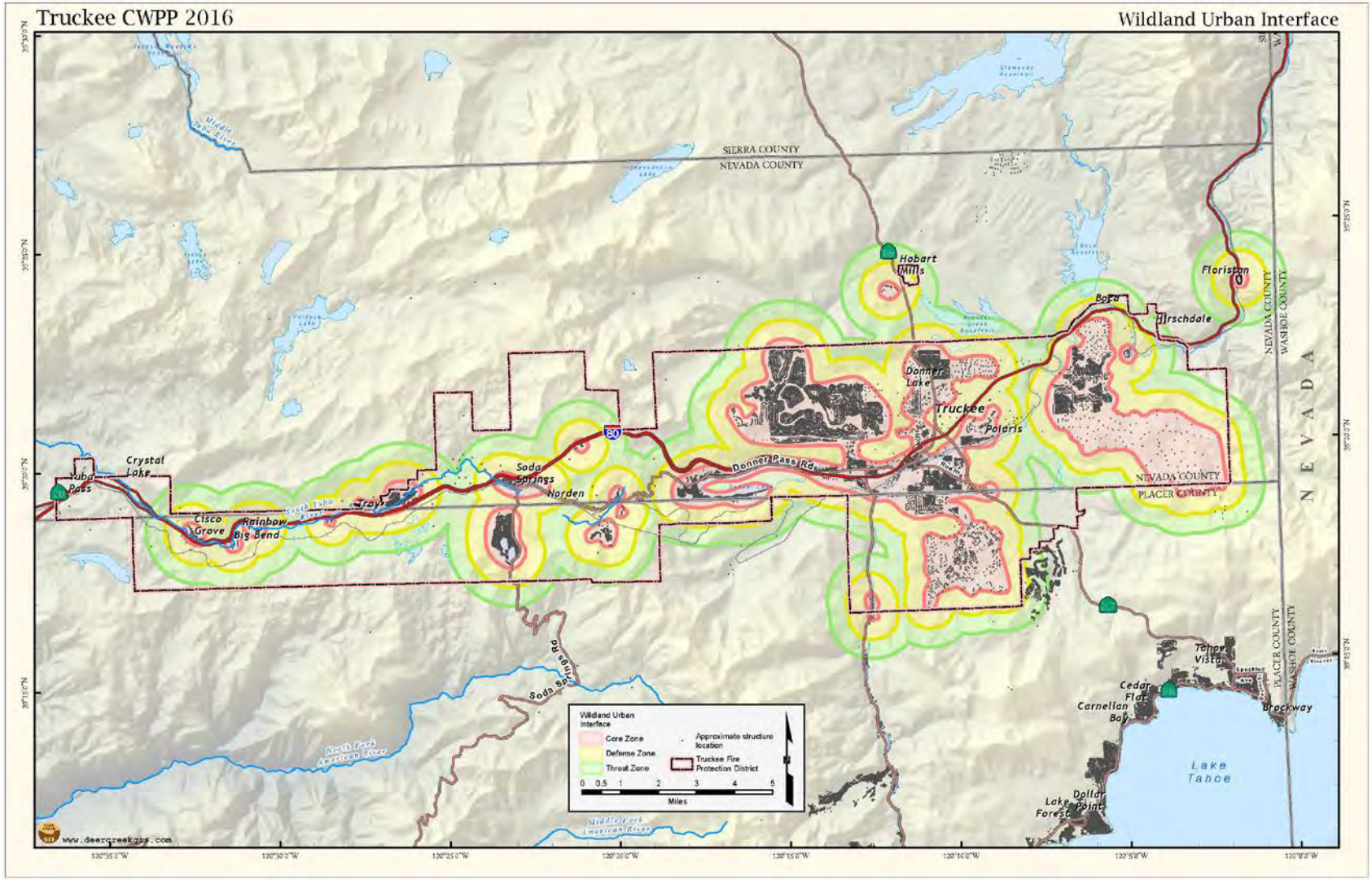
- Floriston*,
- Hirschdale*,
- Donner*
- Hobart Mills*
- Kingvale*
- Prosser Lakeview Estates*
- Glenshire/Devonshire*
- Soda Springs*
- Norden
- Big Bend
- Cisco Grove
- Serene Lakes

An asterisk * designates the Communities at Risk, as identified in the Federal Register in 2001

The content of this assessment will aid stakeholders in developing short-term and long-term strategies for:

- Hazardous fuel treatment projects and priorities for those projects
- Community wildfire safety education opportunities
- Assisting public agencies in making valid and timely decisions for wildfires and evacuations.
- Estimating the hazards associated with wildland fire in proximity to communities. The hazard information, in conjunction with values-at-risk information, defines "areas of concern" for the community and allows prioritization of mitigation efforts.
- Providing communities with opportunities to make a difference in wildfire losses with little cost to the taxpayers and the communities themselves.

Figure 1: Truckee Fire Protection District WUI



Requirements of a Community Wildfire Protection Plan (CWPP)

The requirements of a CWPP have evolved over the past decade. The following is a list of how those requirements have evolved by the different agencies:

Federal

The CWPP is required to be consistent with and tiered to the following federal acts, and policies. The two acts most associated with fuels reduction policy are: *The 2010 Federal Land Assistance Management and Enhancement (FLAME) Act* (the most recent congressional act a summary is located at http://www.wflccenter.org/news_pdf/344_pdf) (U. S. House of Represetnatives and Senate, 2009), and *The Healthy Forest Restoration Act (HFRA) of 2003*. The federal agencies' policies that implement these acts are the 10 Year Implementation Plan for HFRA and the *Cohesive Strategy*. These are a national collaborative effort between wildland fire organizations, land managers, and policymaking officials representing federal, state and local governments, tribal interests, and non-governmental organizations that will address the nation's wildfire problems. *The Healthy Forest Restoration Act (HFRA) (U.S. Congress, 2003)* has requirements for a CWPP, which allow communities[1] to:

- Identify Fuel-reduction projects in an approved CWPP to receive priority for funding requests from the California Fire Safe Council Clearinghouse (HFRA sec 103 [d1]).
- Attain federal agency consideration on recommendations identified in CWPPs (HFRA sec. 103[b]) and implement those projects on federal lands (HFRA sec. 102[a]).

The FLAME Act effort has spawned collaborative consideration and examination of wide-ranging but pertinent elements in creating a synergistic move forward. This report presents those elements in two parts:

- Part one addresses the specific elements requested by Congress in the *FLAME Act*.
- Part two expands upon those elements and goes further in providing a roadmap for the future *Cohesive Wildland Fire Management Strategy*. As a living document, part two provides a foundation from which to build local and regional actions and direction.

Together, the two parts of this report address the elements requested by Congress and represent the next stage in an evolving world of wildland fire management, all with the goal of achieving even safer, more efficient, cost-effective, realistic public and resource protection, and more resilient landscapes.

[1] Communities are defined as at-risk communities or a group of homes and other structures with basic infrastructure and services (utilities, transportation) within or adjacent to federal lands (HFRA sec. 101 [1]).

Fire-Adapted Communities

Despite the challenges of assessing and countering risks, progress is being made to address the threats. One approach is the concept of "fire-adapted communities," one of the three primary elements of the *Cohesive Strategy*.

A fire-adapted community is one consisting of informed and prepared citizens collaboratively taking action to safely co-exist with wildland fire. An inherent part of becoming a fire-adapted community is to assess the community and the threat posed to it by wildland fire. A fire-adapted community generally has achieved or is working toward the following:

- Implementing "Firewise" principles to safeguard homes and "Ready, Set, Go!" principles to prepare for fire and evacuation
- Developing adequate local fire suppression capacity to meet community protection needs
- Designing, constructing, retrofitting and maintaining structures and landscaping in a manner that is resistant to ignition
- Adopting and enforcing local codes that require fire-resistant home design and building materials
- Raising the awareness of, and creating incentives for, growth planning and management that reduces, rather than increases, fire-prone development
- Properly spacing, sequencing and maintaining fuel treatments across the landscape
- Developing and implementing a CWPP or equivalent
- Establishing interagency mutual aid agreements

http://www.fireadapted.org/ is a website that is a result of the Cohesive Strategy.

State of California

This analysis is consistent and supported by the findings in the ***2010 Forest and Range Assessment of California***. (California Department of Forestry and Fire Protection, Fire and Resource Assessment Program, 2010)
California's Forests and Rangelands: 2010 Assessment, California Department of Forestry and Fire Protection, Fire and Resource Assessment Program, June, 2010

Current Status and Trends

- California's long history of wildfire and population growth has led to a set of state laws, regulations and programs that address community wildfire safety. These include state and local planning laws, Fire Hazard Severity Zones and related building standards, defensible space requirements, various fuel reduction programs, the California Fire Plan and CAL FIRE Unit Fire Plans, and the State Hazard Mitigation Plan.

- Community fire protection is also addressed by federal laws and programs such as the Disaster Mitigation Act, National Fire Plan, Healthy Forests Restoration Act, and Firewise Communities Program.

- Local agencies and non-profits play a key role in community fire protection planning. This is accomplished through county fire plans, county general plan safety elements, and through involvement of local Fire Districts, Fire Safe Councils, and the California Fire Alliance. It also includes local groups such as the Forest Area Safety Taskforce (FAST) and Mountain Area Safety Taskforce (MAST) in San Diego, Riverside, and San Bernardino Counties.

- Community planning is a collaborative effort that typically includes various federal, state and local agencies, CAL FIRE units, Resource Conservation Districts, local Fire Districts and private organizations.

http://frap.cdf.ca.gov/assessment2010/pdfs/california_forest_assessment_nov22.pdf
The new state wide fire plan, 2010 Strategic Fire Plan for California, State Board of Forestry and California Department of Forestry and Fire Protection, November 2010, states for its vision: "…a natural environment that is more resilient and man-made assets which are more resistant to the occurrence and effects of wildland fire through local, state, federal and private partnerships." (California State Board of Forestry and Fire Protection, November 2010)

The California Fire Plan is the state's road map for reducing the risk of wildfire. By placing the emphasis on what needs to be done long before a fire starts, the plan looks to reduce firefighting costs and property losses, increase firefighter safety, and contribute to ecosystem health. The plan was a cooperative effort between the State Board of Forestry and the California Department of Forestry and Fire Protection (CAL FIRE). The basic principles of the fire plan are as follows:

- Involve the community by encouraging community involvement to ensure that fire protection solutions meet individual community needs

- Assess community risk by identifying community assets at risk of wildfire damage (community assets at risk are public and private resources, natural and manmade, that could be damaged by wildfire).

- Develop solutions and implement projects by developing pre-fire management solutions and implement cooperative projects to reduce a community's potential wildfire losses

California Fire Plan
http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf668.pdf
Nevada Yuba Placer Ranger Unit, California Department of Forestry and Fire Protection Fire Plan
http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf1483.pdf

Community Wildfire Protection Plans (CWPPs) and Local Jurisdiction

On the local level, CWPPs are a product of a collaborative process among local stakeholders to prepare for and deal successfully with a wildland fire emergency. CWPPs provide a specific risk-assessment to a community, identify areas needing specific treatments, and include roles and responsibilities, evacuation routes, resources and other pertinent information a community needs in times of emergency. CWPPs are comprehensive wildfire planning tools for a community or a county. CWPPs also include the opportunity to educate homeowners, target fuels reduction projects to set priorities and schedule fuels treatments, and build response capability. Working together to create a CWPP is an important first step in bringing the awareness of shared wildfire risk home to the community.

Local authorities such as fire departments, fire protection associations, county planning and zoning departments and other authorities conduct risk assessments that help them determine their local needs for fuel treatments, equipment, personnel, training, mitigation needs, local ordinances or code adoption and enforcement. Local assessments also can identify which mitigation programs are best for a given community, such as NFPA's "Firewise" and the International Association of Fire Chiefs (IAFC) "Ready, Set, Go!"

Regulation through codes and ordinances and subsequent enforcement is a major challenge for communities-at-risk since most of those communities are small. Even if they have authority to adopt codes, many communities do not have the resources to enforce them.

The communities-at-risk are served by the Truckee Fire Protection District. The District has the resources but needs additional funding to support the projects and needs of the communities within the Fire District. The Fire District has a very strong prevention program but needs more funding to adequately address the problems of project development and hazard reduction needs.

The CWPP is only a plan—it will not reduce the threat of a wildfire or increase protection for any community. Reducing the threat of a wildfire to a community can only be achieved by the local residents of the community. Federal, state, and local agencies may provide assistance, but ultimately, actions that modify fire behavior or increase structural resistance to a wildfire are the responsibility of the local residents.

For more information on CWPPs in California go to the following websites:
http://www.preventwildfireca.org/California-Fire-Alliance/
http://www.firesafecouncil.org/

II. Planning Process

Collaboration

Primary Collaborators

Government

- United State Forest Service, Tahoe National Forest Truckee Ranger District
- California State Parks

Non-Government Agency Involvement

- Tahoe Donner Association
- Fire Safe Council of Nevada County

Fire Department Involvement

- Truckee Fire Protection District
- CAL FIRE (State protection responsibility)
- US Forest Service (direct protection responsibility)

Primary CWPP Development Team Members and Responsibilities

Truckee Fire Protection District, and its contractor, Wildland Rx as the lead representatives in the collaborative process and development of the CWPP:

- Serve on the CWPP development team
- Facilitate and coordinate the over-all CWPP process with federal agencies, and other key stakeholders.
- Conduct a landscape-scale Hazard, Values and Risk Assessment for all lands within the designated CWPP area.
- Assist fire departments in providing general discussions and assessments of their departments.
- Provide technical expertise in developing prescriptions for wildfire mitigation treatments.
- Assemble and maintain the final CWPP document.
- Assist in public education efforts for the CWPP.
- Provide a general description of the fire department and District including its history, size, structure, response statistics, equipment, stations, services, water systems, ignition sources, and any other pertinent information.
- Provide an objective assessment of the department's wildland fire program (including training, prevention, suppression, etc.), identify its adequacies, future goals, and areas for improvement (training, personnel, equipment, etc.), and assist in recommending areas where grant funding can be utilized.

CALFIRE

- Serve on CWPP development team.
- Provide oversight of the CWPP process.
- Provide guidance and technical expertise for CWPP development.
- Provide information on past, current, and future mitigation efforts around county.

USDA Forest Service

- Serve on CWPP development team.
- Provide information to past, current, and future mitigation work being conducted on Forest Service properties within or adjacent to the CWPP area.
- Provide a general discussion on Forest Service Wildfire Program (suppression, mitigation, training, prevention, etc.).

Joint Tasks

All team members should work in concert to accomplish the following tasks:

- Identify appropriate landscape-scale hazard reduction areas throughout the CWPP area.
- Identify WUI boundaries throughout CWPP area.
- Develop an Implementation Plan for this project.
- Facilitate and/or participate in community meetings that will allow the public and other stakeholders to provide input and stay informed about this process.
- Outreach and work to create bottom-up interest in WUI communities to develop smaller-scale CWPPs and project-specific implementation plans.
- Assist interested WUI communities in executing project-specific implementation plans.

Public Education Effort

Public education is a key component to the successful implementation of any CWPP. The Truckee Fire Protection District, Fire Safe Council of Nevada County, law enforcement officers, CAL FIRE and federal agencies can and have used small-organized groups and homeowner associations to establish key contacts for road standards needed for emergency equipment, residential clearance standards and evacuation, as well as planning prior to an incident. These organized groups are key components to the information in this CWPP. It's important to remind the communities that residential clearance and roadside clearances are the responsibilities of the community, not the fire protection District. Communities may have to schedule their own work days to clear the roadsides so that equipment can safely travel the roads. Road associations may need to widen the roads and put in turn-arounds to allow fire equipment space to maneuver. These are only a few of the responsibilities of the communities to keep their community safe from a wildfire.

The job of the fire protection District, and the fire safe councils or Firewise councils is to educate the community to what needs to be done to provide for safe ingress-egress for residents and fire equipment. The Fire District is also responsible for keeping the community informed of projects, to provide input into project priorities and to assist in the preparation of grant proposals.

CWPP Planning Process

Planning Area Boundaries

The Planning area boundary was established within the Truckee Fire Protection District boundary, and additional areas were added based on the analysis of the Wildland Urban Interface, WUI, urban core, defense zone and the threat zone. This was presented to the stakeholders at the first and second stakeholders meeting and the final area was then identified for the CWPP. Figure 1.

Process and Plan Development

Stakeholder meetings

Meetings were held in Truckee California and were attended by CALFIRE, the US Forest Service, Local Fire protection District, Fire Safe Council of Nevada County, a county Supervisor, Department of Transportation, and the director of the county Office of Emergency Services, Town of Truckee mayor, home owner associations, state parks, Truckee Donner Land Trust, County Deputy Sheriff, town manager, and the Truckee Airport Authority. A complete list of stakeholders can be found in Appendix A.

Community Meetings

Meetings were held in the Truckee town hall to discuss concerns and the CWPP process as well as to promote input to the CWPP. A questionnaire was distributed to the attendees; the results of the questionnaire can be found in Appendix D

1.1 Core Team

Name	Title	Organization
Bill Seline	Fire Chief	Truckee Fire
Robert Belden	Prevention officer	Truckee Fire
Barry Callenberger	Author	Wildland RX
Jeff Dowling	Forester	CALFIRE

1.2 Community and Agency Involvement

1.21 Stakeholders and Public Meetings

Meeting Focus	Meeting Date	Meeting Location	Number of People In Attendance
Stakeholder Kick-off Meeting	July 8, 2015	Truckee Main Fire Station, Truckee CA	22
Stakeholder Second Meeting	September 3, 2015	Truckee Main Fire Station, Truckee CA	20
Community Meeting	January 14, 2016	Truckee Town Hall, Truckee CA	25
Project meeting with Core Team to evaluate project maps	March 25,2016	Truckee Fire Station	5
Project priority meeting with Core Team	August 3, 2016	Truckee	4

Chapter 2: Truckee Fire Protection District Characteristics and Demographics

2.1 Geographic Area

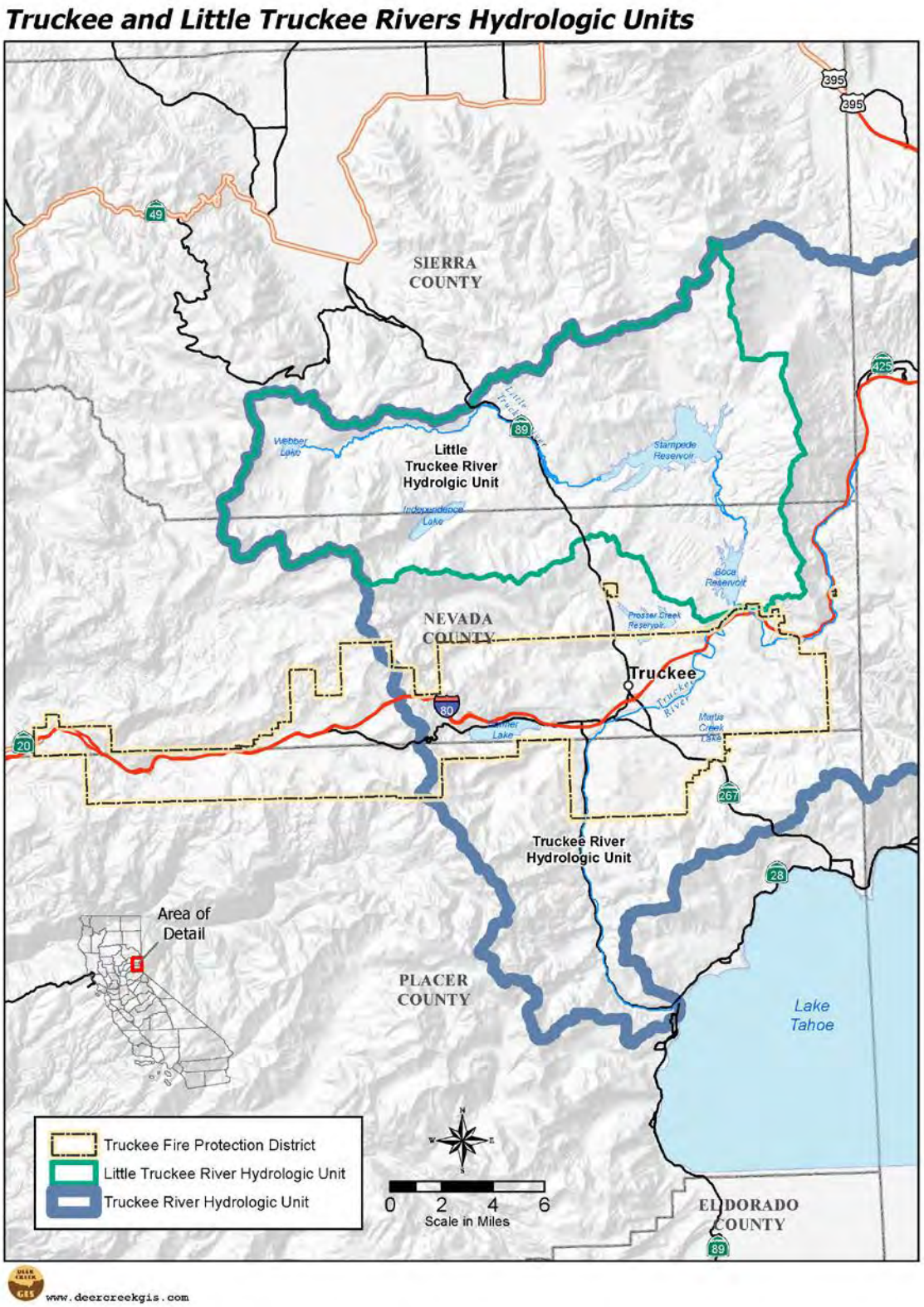
The District is located primarily on the east side of the Sierra Nevada Mountains and goes from Yuba Pass almost to the California-Nevada line along the major east-west Interstate 80, from an elevation of 5426 feet at Floriston to 7239 feet at Donner Summit. The area actually can be considered to include the top of the Sierra Nevada Mountain range. The area has one of only two major Highways that cross the Sierra Nevada, Interstate 80, which was also a European settler trail during the mid-1800s and is a primary interstate roadway through the Sierra Nevada Mountains today. The Town of Truckee is the center of the Truckee Fire Protection District.

2.2 Hydrology and Watershed

The area has two primary Hydrological units: the Truckee River Hydrological area, which contains the largest stream the Truckee River, and is the only outlet for Lake Tahoe, Donner Lake and Prosser Reservoir, and the Little Truckee River, along with Boca Reservoir and Webber Lake, all of which eventually flow into the Truckee River. These hydrological units provide a large amount of the water for the Truckee River Basin, which covers 4,700 square miles and straddles the California-Nevada border. The Truckee River Basin is the primary water provider for the major communities of Truckee, California, and Reno and Sparks, Nevada. Figure 2 on the following page shows the watersheds within the Truckee District.

The health of the vegetation along the part of the watershed that flows through the Truckee Fire Protection District is extremely important to the water quality throughout the community as well as to the communities downstream of the Truckee Fire District, making fire suppression extremely important to the communities within the District and downstream of the District.

Figure 2 Hydrology Map



2.3 Vegetation

2.31 Upper Montane Sub Alpine Forests

The higher elevations (above 6500 feet) are heavy with red fir as some stands have relatively low levels of brush species, but throughout the zone at least some of the Montane Chaparral species are present (Figure 2). This zone also contains lodge pole pine and some large meadow complexes.[2]

Upper Montane Sub Alpine Forest

[2] *Fire in California's Ecosystems*, Neil Suguhara, Jan W. Van Wagtendonk, Kevin Shaffer, Jo Ann Fites-Kaufman, Adrea E. Thode, University Press 2006

2.32 Eastside Forest

This area ranges from 5,500 to 6,500 feet consisting of Jeffrey pine, White fir and mixed conifer with fir and pine. Many of the understories contain shrubs that vary from mountain snowberry and tobacco bush to sage brush and bitterbrush cover.[3]

Typical Eastside Forest around Truckee

[3] *An Island Called California*, Elna S. Bakker, University of California Press second addition 1984

2.4 Weather Patterns and Micro Climates

Primary precipitation occurs during the winter months, usually between November and April. During non-drought years the amount of precipitation can be very low, with El Niño weather years such as the winter of 2015-16 precipitation rates much higher than normal. The normal annual precipitation for Lake Tahoe Truckee is roughly 79 inches, much of which falls in the form of snow during the months of January, February and March. During the past several years the area has been under severe drought with very low rainfall and snow totals. These drought and El Niño years have come in to play over the last several decades and more low precipitation winters have been the norm. Summertime precipitation occurs in the form of afternoon thunder storms; along with these storms often comes dry lightning with very little precipitation. The Truckee FPD received 34-40/year/100kilometers squared between 1985 and 2000.[4]

2.5 Demographics and Population Centers

2.51 Communities at Risk within the CWPP Planning Area

The highest at-risk communities are located in the lower elevations from the west shore of Donner Lake to the eastern edge of the fire protection District boundary. A better discussion on risk is found in the fire behavior section (Ch 3).

Wildland Urban Interface

"…the Wildland-Urban Interface (WUI) is the area where houses meet or intermingle with undeveloped wildland vegetation" (USDA and USDI 2001)[5]. This national definition came from the Federal Register 66 of 2001. Many changes have occurred to the terminology that surrounds the definition of a WUI area, but the basic definition is unchanged. The WUI today is broken into two distinct areas, the **defense zone** is the area within .5 miles of the urban core and the **threat zone** is the area within 1.25 miles of the defense zone. Figure 1 shows the WUI areas around the communities within the Truckee Fire Protection District

Defense Zone

The defense zone is the area surrounding the communities up to .5 miles outside the community. This area should have priority when it comes to fuels reduction; specifically fuels reduction projects and CPRC 4291 enforcement. The intent of treatment of the fuels in the defense zone is to reduce the fire behavior under extreme weather conditions so that suppression resources can adequately engage the fire before it reaches the homes and other important community

[4] Ibid *Fire in California's Ecosystem*

[5] USDA and USDI. 2001. *Urban Wildland Interface Communities Within Vicinity of Federal Lands that are at High Risk from Wildfire.* Federal Register 66:75 1-777.

infrastructure. This means that the fire behavior should be such that the flame lengths are less than 4 feet and the rates of spread are slow enough for ground resources to suppress the fire.

Threat Zone
The Threat zone is an extension of the defense zone is an area with a lower priority for treatments with the exception of those areas where fires are known to start or the fire start could spread rapidly into the community. Evacuation routes within the threat zone are another exception to the treatment priorities; in the case of evacuation routes they are considered part of the defense zone and therefor treated as high priority.

The public often expects fire and land management agencies to take action to reduce the potential for catastrophic fires such as the Cottonwood and Martis Fires, but is not willing to take some of the responsibility on itself. Mechanical removal of understory vegetation and the use of prescribed fire are the most important treatments that can be applied.

Land managers have the responsibility to design and apply different defense and threat zone distances based on local fuel, weather, topographic and historic fire behavior. The 2004 Sierra Nevada Forest Plan Amendment (2004 Framework), has done this, and states the following additional detail in regards to defense and threat zones:

"Wildland Urban Intermix: Defense Zones

"Designation

"The wildland urban intermix zone (WUI) is an area where human habitation is mixed with areas of flammable wildland vegetation. It extends out from the edge of developed private land into Federal, private, and State jurisdictions. The WUI is comprised of two zones: the defense zone and the threat zone.

"The WUI defense zone is the buffer in closest proximity to communities, areas with higher densities of residences, commercial buildings, and/or administrative sites with facilities. Defense zones generally extend roughly ¼ mile out from these areas; however, actual defense zone boundaries are determined at the project level following national, regional and forest policy. In particular, the Healthy Forest Restoration Act of 2003 identifies areas to be included in the WUI. Local fire management specialists determine the extent, treatment orientation, and prescriptions for the WUI based on historical fire spread and intensity, historical weather patterns, topography, access. Defense zones should be of sufficient extent that fuel treatments within them will reduce wildland fire spread and intensity sufficiently for suppression forces to succeed in protecting human life and property.

"Desired Conditions

- Stands in defense zones are open and dominated primarily by larger, fire tolerant trees.
- Surface and ladder fuel conditions are such that crown fire ignition is highly unlikely.
- The openness and discontinuity of crown fuels, both horizontally and vertically, result in very low probability of sustained crown fire.

“Wildland Urban Intermix Threat Zones

“Designation

“The WUI threat zone typically buffers the defense zone; however, a threat zone may be delineated in the absence of a defense zone under certain conditions, including situations where the structure density and location do not provide a reasonable opportunity for direct suppression on public land, but suppression on the private land would be enhanced by fire behavior modification on the adjacent public land.

“Threat zone boundaries are determined at the project level following national, regional and forest policy. Threat zones generally extend approximately 1¼ miles out from the defense zone boundary; however, actual extents of threat zones are based on fire history, local fuel conditions, weather, topography, existing and proposed fuel treatments, and natural barriers to fire. Fuels treatments in these zones are designed to reduce wildfire spread and intensity. Strategic landscape features, such as roads, changes in fuels types, and topography may be used in delineating the physical boundary of the threat zone.

“Desired Conditions

“Under high fire weather conditions, wildland fire behavior in treated areas within the threat zone is characterized as follows: (1) flame lengths at the head of the fire are less than 4 feet; (2) the rate of spread at the head of the fire is reduced to at least 50 percent of pre-treatment levels; (3) hazards to firefighters are reduced by managing snag levels in locations likely to be used for control of prescribed fire and fire suppression consistent with safe practices guidelines; (4) production rates for fire line construction are doubled from pre-treatment levels; and (5) tree density has been reduced to a level consistent with the site’s ability to sustain forest health during drought conditions.”[6]

“The HFRA builds on existing efforts to restore healthy forest conditions near communities and essential community infrastructure by authorizing expedited environmental assessment, administrative appeals, and legal review for hazardous fuels projects on federal land. The act emphasizes the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects, and it places priority on treatment areas identified by communities themselves in a CWPP.

“Role of Community Wildfire Protection Plans

“The HFRA provides communities with a tremendous opportunity to influence where and how federal agencies implement fuel reduction projects on federal lands and how additional federal

[6] *Sierra Nevada Forest Plan Amendment, Final Supplemental Environmental Impact Statement, Record of Decision, USDA, Forest Service Pacific Southwest Region*, R5-MB-046, January, 2004

funds may be distributed for projects on nonfederal lands. A CWPP is the most effective way to take advantage of this opportunity."[7]

Although there are differences in defense zone and threat zone distances within USFS documents, the key is that land managers, fire experts and the community work together on a project by project basis to collaborate and decide on appropriate application of defense and threat zone distances based on all of the factors influencing fire, which include topography, fuels, climate and fire history. This allows the community to influence Forest Service projects, as they may impact the communities in and around Forest Service managed lands.

[7] *Preparing a Community Wildfire Protection Plan, Handbook for Wildland Urban Interface Communities,* March 2004

Chapter 3 Community Hazard and Risk Assessment

3.1 Current Fire Behavior Modeling Assessment

3.1.1 Fire Behavior Modeling

Wildland Fire Behavior
The wildland fire behavior analysis developed for this CWPP was designed to meet two objectives. The first was to examine the existing fire hazard and potential losses in the event of a wildfire, the second to establish the best treatment locations and priority for those treatments based on expected fire behavior with input from the firefighting agencies and local community members. The 2010 version of the California Statewide Fuels Data for the Truckee Fire Protection District and Area was used in this assessment. The fuels data is the most current inventory of California vegetation that interagency fire experts use to develop the spatial fuels layers for fire planning and decision support in California. The data set was made available from the US Forest Service regional office at McClellan, California. Weather data from the Stampede Remote Automated Weather Station (RAWS) was used to model fire behavior. There were several models used to assist in the fire behavior modeling FlamMap, and FireFamily Plus. The models are described in Appendix A.

Three important fire behavior outputs are derived from FlamMap and were used in designing the resistance to control maps and tables for the analysis:

Flame Length - used to determine suppression tactics based on how close you can get to the fire

Rate of Spread - used to determine fire spread, direction, and to develop triggers points for decisions

Fire Type - based on the flame length and availability of ladder fuels, the fire can be a surface, torching, or actively crowning wildfire

Crown Fire Activity
Fire type or Crown fire activity, is an important output from FlamMap. It considers multiple factors to determine if the fire is surface, passively crowning (torching) or actively crowning in any particular cell of the fuels grid.

- Fire type 1 is a surface fire; the fire is generally on the ground, high likelihood of initial attack success.
- Fire type 2 is a passive crown fire, (torching and short range spotting).
- Fire type 3 is an active crown fire, (fire actively moving in the crowns of trees with mid to long range spotting).

The other Fire Behavior indicator flame length is useful in determining resistance to control flame lengths greater than 4 feet, which are very difficult to control. Again, using the same parameters for the weather and the FlamMap model to determine flame length, a fire behavior specialist can develop the areas that are resistant to control. Fire type, flame length and rate of spread modeling output maps can be found in Appendix C.

The following figure (Figure 3) depicts the modeling inputs and outputs for each 30 by 30 meter cell in the spatial grid (approximate every quarter acre). The surface fuel data and mapping done for this document used spatial input data that was randomly ground verified. This allows decision makers to have the best information possible on potential fire behavior and expected losses in the CWPP area.

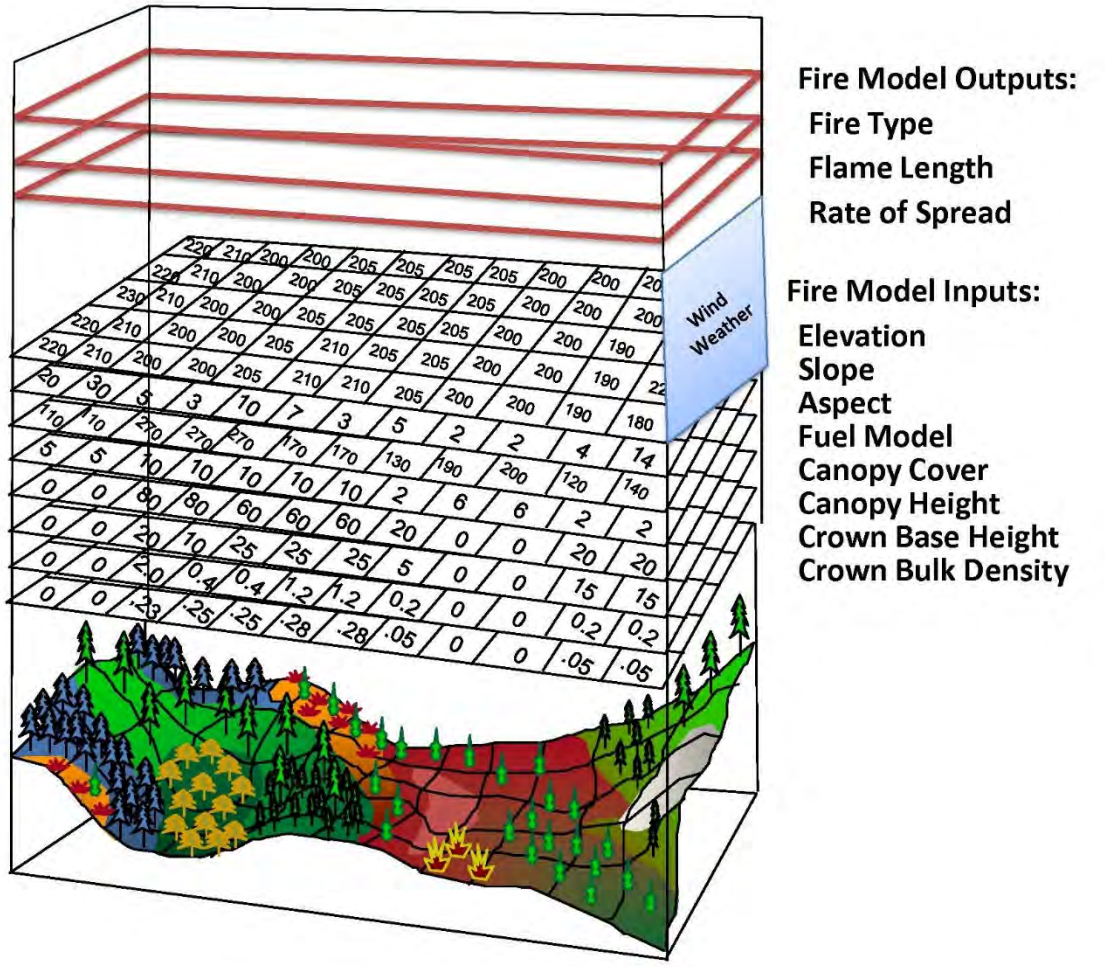


Figure 2: Fire Behavior Modeling

The outputs were used to evaluate fire effects, determine the likelihood of potential loss and to determine potential suppression tactics. Further refinement and calibration of the analysis parameters in the matrix were completed after consulting with local fire officials and researching historical fire records. Weather data is required to bring local conditions into the analysis to complete this assessment. Weather from the four US Forest Service Remote Automated Weather Stations (RAWS), Stampede, Saddleback, Dog Valley and Rice Canyon, were evaluated for weather trends; the Stampede station was determined to be the most representative of the Truckee Fire Protection District. Descriptive weather parameters such as temperature and relative humidity are used to determine the fuel moistures required to burn the vegetation. When the vegetation burns it releases energy. This energy can be measured and used to determine fire danger; it is called the Energy Release Component (ERC).

The fire behavior measurement used for this assessment was Energy Release Component (ERC), a NFDRS (National Fire Danger Rating System) index, related to how hot a fire can burn. It is directly related to the 24-hour potential worst-case total available energy (BTUs) per unit area (in square feet) within the flaming front at the head of a fire.

The ERC can serve as a good characterization of fire season, as it tracks seasonal fire danger trends well. The ERC is a function of the fuel model and the live and dead fuel moistures. Fuel loading, woody fuel moistures, and larger fuel moistures all have an influence on the ERC, while the lighter fuels have less influence and wind speed has none. ERC has low variability and is the best fire danger component for indicating the effects of intermediate to long-term drying on fire behavior (if it is a significant factor), although it is not intended for use as a drought index. (Northern California Predictive Service Center, http://gacc.nifc.gov/oncc/predictive/fuels_fire-danger/psac/erc/index.htm).

The ERC graph (Figure 5) for the Stampede station indicates when conditions in the CWPP area will support fires that are likely to escape initial attack. Fires which are likely to escape initial attack occur when the conditions for ERC reach above 90%. The graph records the average ERC, the maximum historic ERC, the minimum historic ERC, as well as the forecasted and actual 2009 ERCs for the Stampede Weather station. As indicated by the graph, the period that a wildfire is most likely to escape initial attack begins around July 15 and lasts well into October during an average year, recognizing that each year can be slightly different.

Figure 3 ERC The Year of The Cottonwood Fire

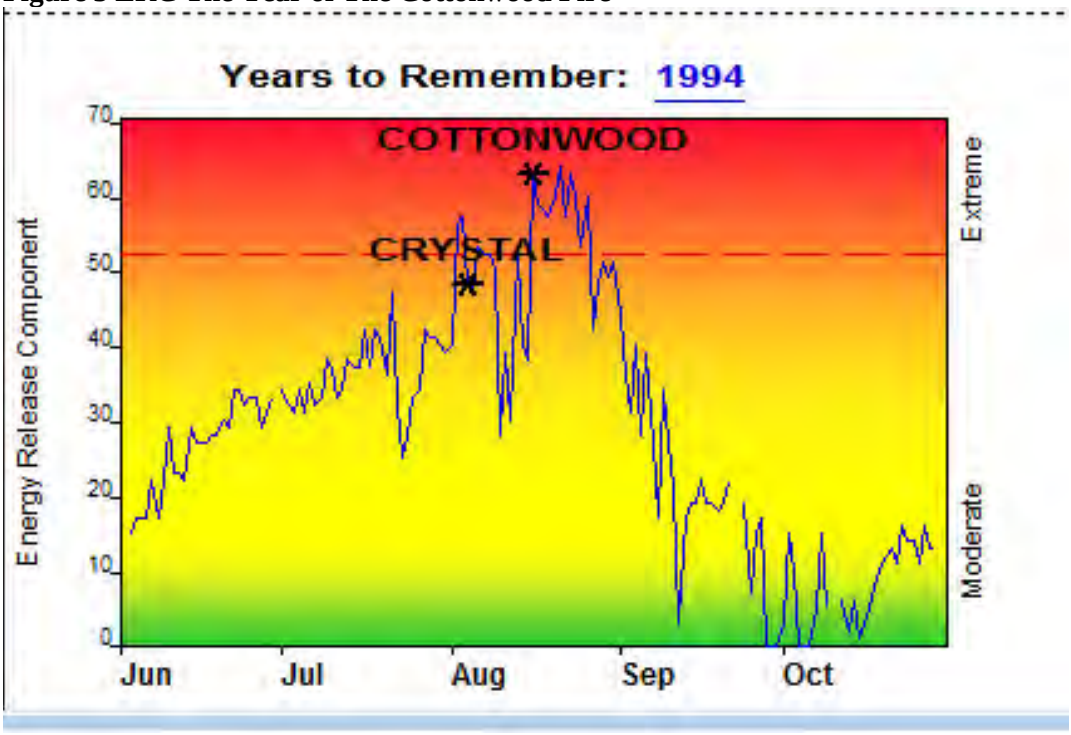
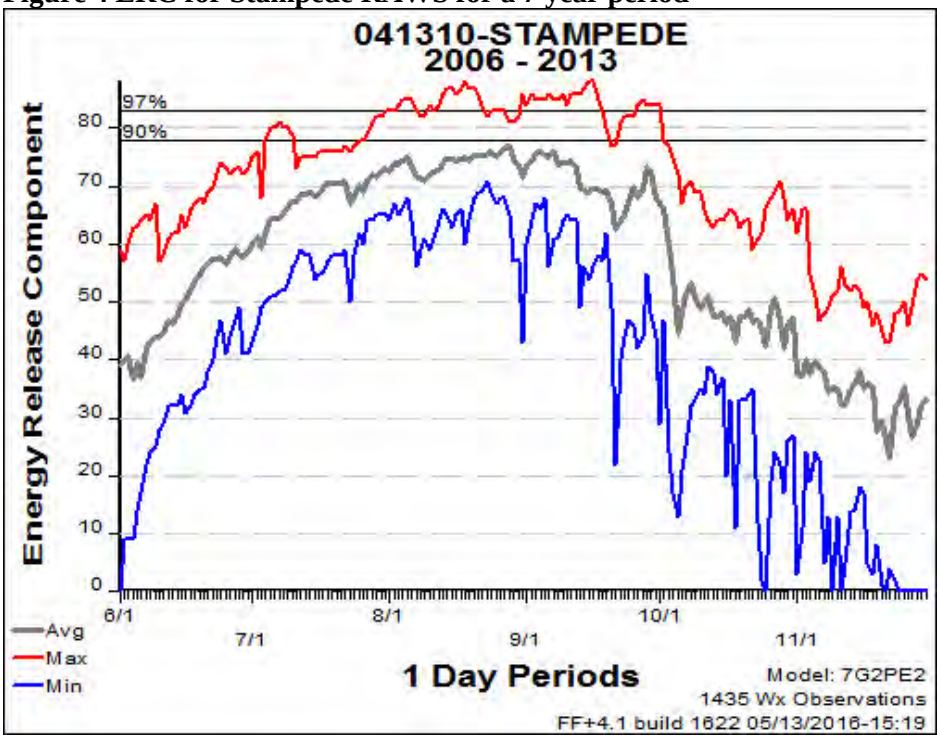


Figure 4 ERC for Stampede RAWS for a 7 year period



The rule of thumb is when the grass cures, the chaparral vegetation and conifer trees will begin to carry fire. Moisture content continues to drop and the vegetation goes into a dormant state usually by mid-August. At this point, wildfires will generally move rapidly through the vegetation, living or dead, in the CWPP area.

Another important factor in rapid fire spread is wind direction and speed. To analyze the 2013 hourly wind data from the Stampede RAWS, the Wind Rose Tool was used from the weather station climate data. The Wind Rose in Figure 6 graphically illustrates 1 year of hourly wind speed and direction collected from the RAWS. The Wind Rose clearly shows that for most of the "fire season", the wind comes from the south-southwest direction across the CWPP area. During the months of September and October winds often become erratic due to the passage of cold fronts. The winds during those months can also be very dry winds from the east and northeast adding to the difficulty in controlling wildfires.

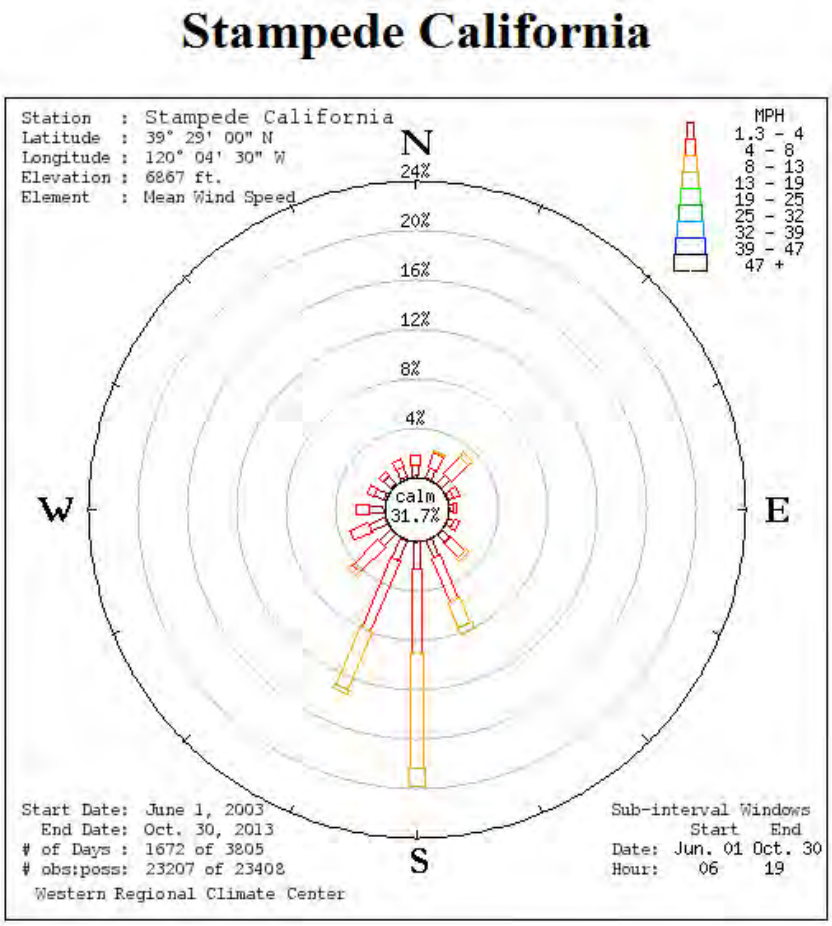


Figure 5: Weather Wind Rose

Wind direction and speed is also influenced by vegetation type and terrain (slope and aspect) features on the landscape. Terrain is a landform feature that does not change, nor can it be changed.

Current Risk Analysis

The CAL FIRE, 2010 Forest and Range Assessment, chapter 2.1 *Wildfire Threat to Ecosystem Health and Communities*, defines key terms for assessing risk. Consistency in understanding these terms and definitions is critical to understanding this analysis. These terms are also important to interpreting the results and rankings, which are used to identify areas that are best suited for projects and to set project priorities. The following are the key terms and their definitions (the 2010 Forest and Range Assessment can be found at the following website: http://frap.fire.ca.gov/assessment2010.html):

Risk: A measure of the expected damage that a fire may have on assets that hold value to society. In some cases, fire effects may be viewed as beneficial, in which case a negative risk value would be applied. It is important to recognize that a given fire threat will have a varying impact on different assets, and that differing fire threats have different impacts on individual and collective assets. (Chapter 2.1 page 101, 2010 Assessment)

Fire Threat: A measure of fire hazard that includes components for the probability (chance of burning) and the nature of the fire (fire behavior). Taken collectively, these two features assess the basic threat features of periodic wildfires and their capacity to drive fire effects. It is important to understand that fire threat carries no direct measure of fire effects or associated value change associated with fire risk.

The current risk to property loss from wildland fires has been classified as very high in much of the CWPP area. This has to some extent, been caused by human intervention or lack of intervention in the accumulation of flammable vegetation in the urban interface. Years of successful initial attack from local suppression resources have created an environment of complex fuels. Some homeowners continue to be complacent, and the desire not to change the vegetation surrounding the community has allowed hazard fuel to accumulate. Other human impacts that add to the problem of homeowner complacency are: the increase in absentee ownership, the rising number of renters and most recently, the increase in home foreclosures within the predominantly residential communities of the CWPP area. These properties are not likely to receive any fire hazard mitigation treatments. Historically, within the Truckee CWPP area, grazing, logging and other agricultural uses have played a large role in managing fuels and interrupting the continuity of vegetation across the area.

An analysis of the current fire behavior within the Truckee CWPP area was done using the FlamMap Fire Behavior Model. The weather conditions used in the model were derived from Stampede RAWS data and are typical of late summer conditions:

- Temperature 85-95 degrees
- Humidity 10-15 %
- Eye level wind speed 5-7 mph

When evaluating the maps you can see that much of the CWPP area rates out to an analysis score of 50 to 80, giving it a high to very high resistance to control in many areas of the CWPP.

3.2.2 Resistance to Control

The Resistance to Control (RTC) analysis uses the fire behavior outputs from FlamMap to create a single value for a pre-fire condition. Historically this term was used to help fire managers during an ongoing fire, articulating a number of factors that determine the difficulty to control a wildfire. **In this case, the analysis is used to anticipate a pre-fire environment where managers would invest in constructing fuel breaks before a fire actually happens**. Models such as FARSITE can be used to map possible future fires on the landscape; this was done based on both historical ignitions and actual places where fire officials believe there was a problem in their District. A matrix was then developed with those models and wildland fire experience to assist in project ranking. We'll call the matrix the Resistance to Control Matrix, or RTC Matrix.

The RTC Matrix includes three conditions derived from the modeling: flame length, rate of spread, and fire type. Figure 6 illustrates the range of flame lengths and the type of effective suppression efforts required. Much of the CWPP area modeling has flame lengths greater than 4 feet and requires a combination of direct and indirect suppression tactics during much of the fire season. Dozers and aircraft are often part of the initial attack suppression effort and generally can go direct on flame lengths up to 8 feet.

The Resistance to Control (RTC) matrix Figure 7 was developed for this CWPP analysis using raw fire behavior output data generated by FlamMap. This data includes fire characteristics, specifically: flame length, rate of spread and fire type. The analysis score is the additive value of each cell in the grid stack and is classified into a RTC code of 1 through 5.

Figure 6: Resistance to Control Matrix

Flame Length (feet)	Rate of Spread (Chains / hour)*	Fire Type X 10	Analysis Score	Resistance to Control
0 to 3.9	0 to 4.9	1x10=10	Less than 18.8	Low (1)
3.9 to 7.9	4.9 to 9.9	10	18.9 to 27.8	Moderate (2)
7.9 to 10.9	9.9 to 19.9	2x10=20	27.9 to 50.8	High (3)
10.9 to 19.9	19.9 to 39.9	20	50.9 to 79.8	Very High (4)
20 +	40 +	3x10=30	79.9 and greater	Extreme (5)

*One chain equals 66 feet. 40 chains per hour equals ½ mile per hour rate of spread

Formula example: Flame Length + Rate of Spread + Fire Type = Analysis Score = RTC.

Ex: 3.4 + 4.8 + 10 = 18.2 = 1 (Low)

The analysis score is the sum of flame length, rate of spread, and fire type. That score is then given a rating of Resistance to Control. The analysis score is validated by local fire behavior knowledge and experience gained on fires in the CWPP area, as well as comparison to CAL FIRE fire hazard rating. The final product is displayed as a map. The RTC map is then used to locate places in the CWPP area where ignitions are likely to escape initial attack, where asset loss could be the greatest and where investment in treatments might have the greatest impact on fire spread and suppression effectiveness.

In modeling the fire behavior potential for the CWPP area, several additional factors are incorporated into the spatial landscape. FlamMap utilizes spatial data themes at the 30 by 30 meter cell. This means that roughly every 1/4 of an acre has new information. Terrain features

come from the Digital Elevation Model (DEM), which provides the slope, aspect, and elevation themes.

Figure 7: Effective Fire Suppression Efforts

Resistance to Control		Interpretation
Low 1		• Fire can generally be attacked at the head or flanks by persons with hand tools and or engines • Handlines should hold the fire
Moderate 2		• Fire is too intense for direct attack on the head by persons using hand tools • Handlines cannot be relied on to hold the fire • Equipment such as dozers, fire engines, and retardant aircraft can be effective
High 3		• Fire may present serious control problems --torching out, crowning and spotting • Control efforts at the fire head will probably be ineffective
Very High 4		• Crowning, spotting and major fire runs are probable • Control efforts at the head of the fire are ineffective
Extreme 5		

A Resistance to Control Rating above moderate (2) makes suppression efforts extremely difficult unless there is a break in the vegetation or change in the weather. Using the above tables and the previous FlamMap runs it is easy to calculate how difficult it will be to control a wildfire under late summer weather conditions and that the resistance to control will be high (3) to very high (4) in many of the areas of the CWPP.

The Resistance to Control map in Figure 8 will make the process of establishing priorities easier. This map has the following adjective ratings for Resistance to Control:

Low	39.08%
Moderate	6.71%
High	31.53%
Very High	8.15%
Extreme	14.53%

The Fire District is comprised of 45.79% low to moderate, and 54.21% high to extreme areas. The extreme areas in the lower elevations around the Town of Truckee and areas east.

Figure 8: Resistance to Control Map

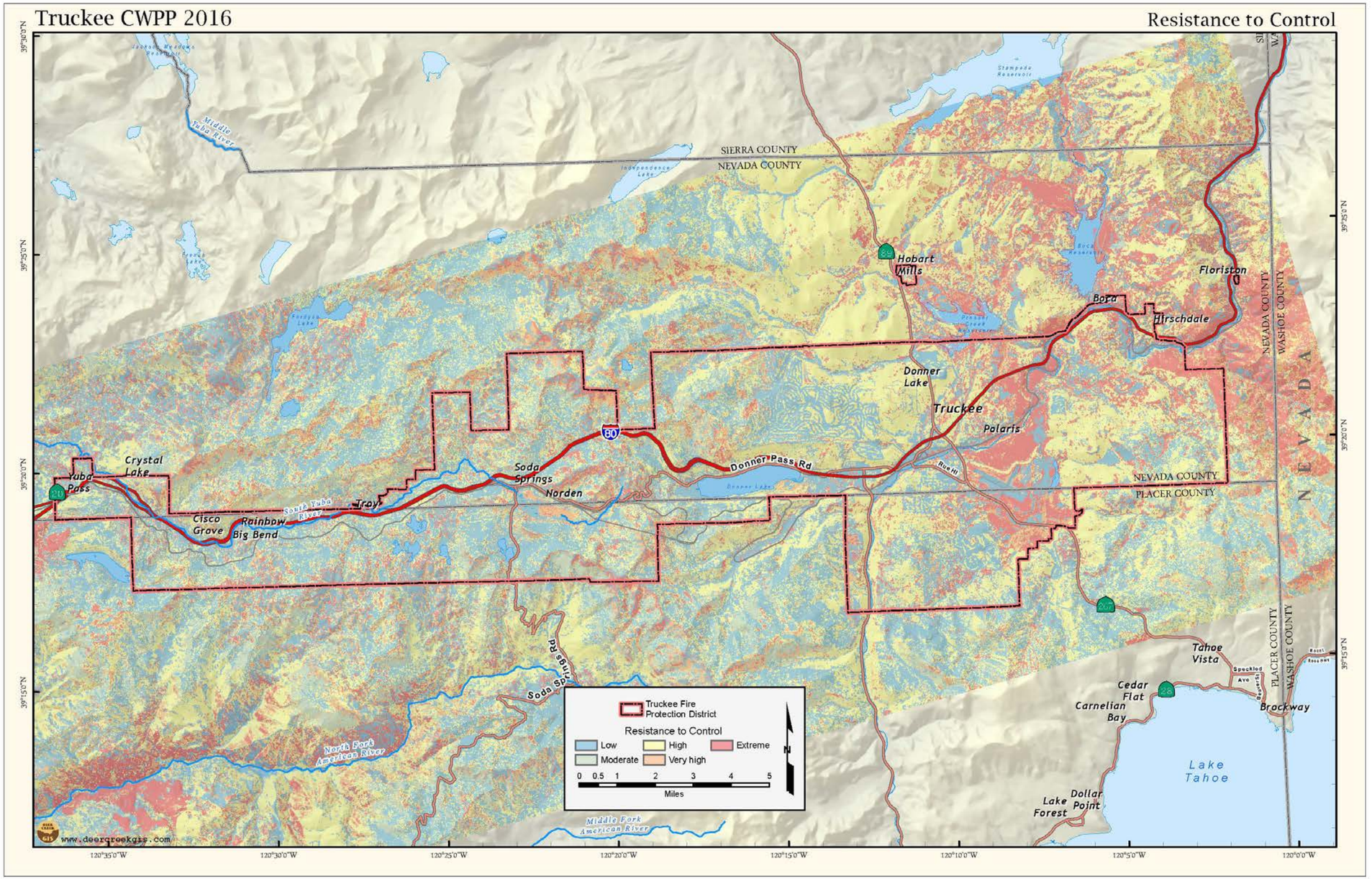


Figure 9: Large Fire History Map (1997-2013) (>300 Acres)

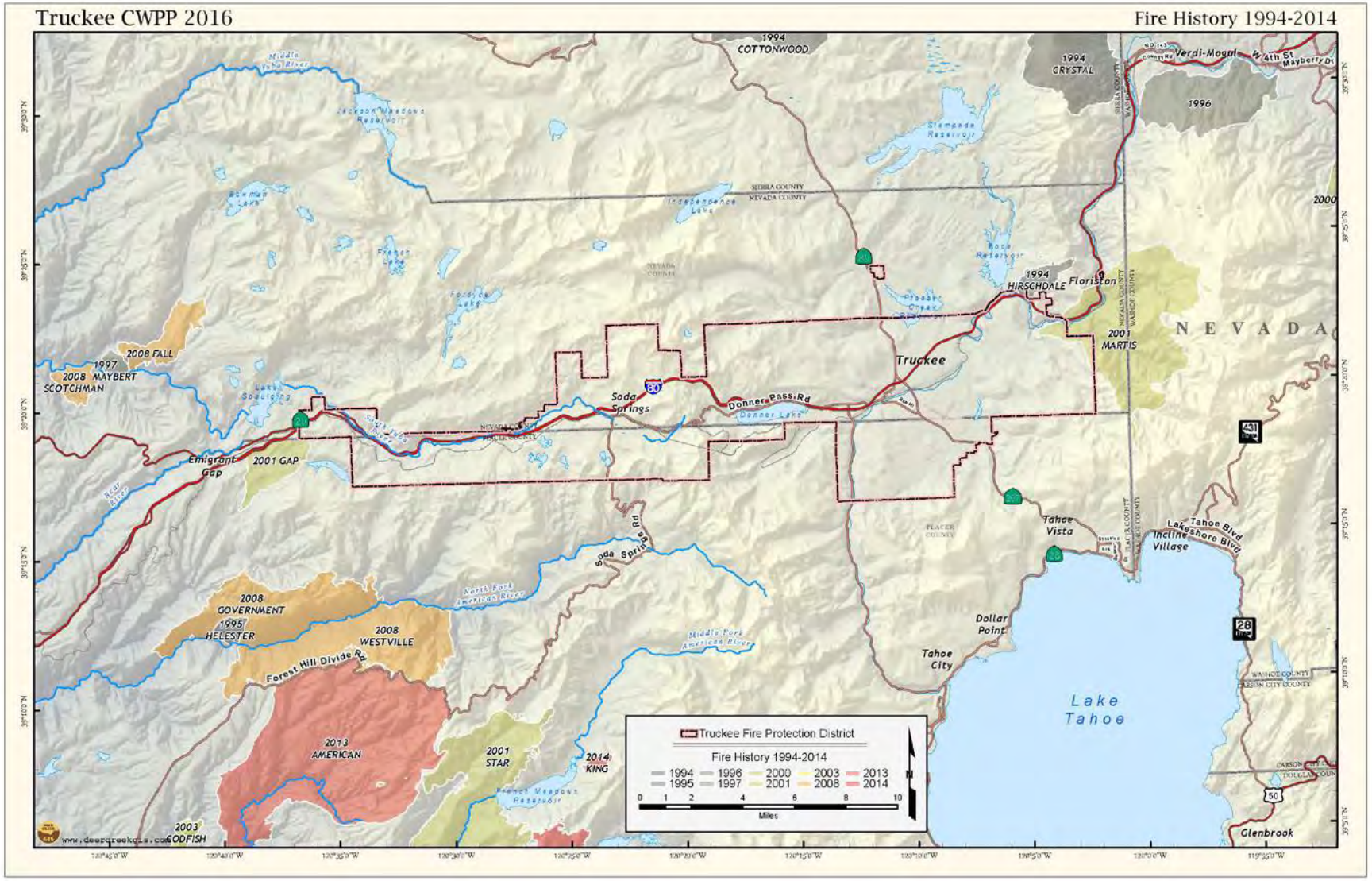
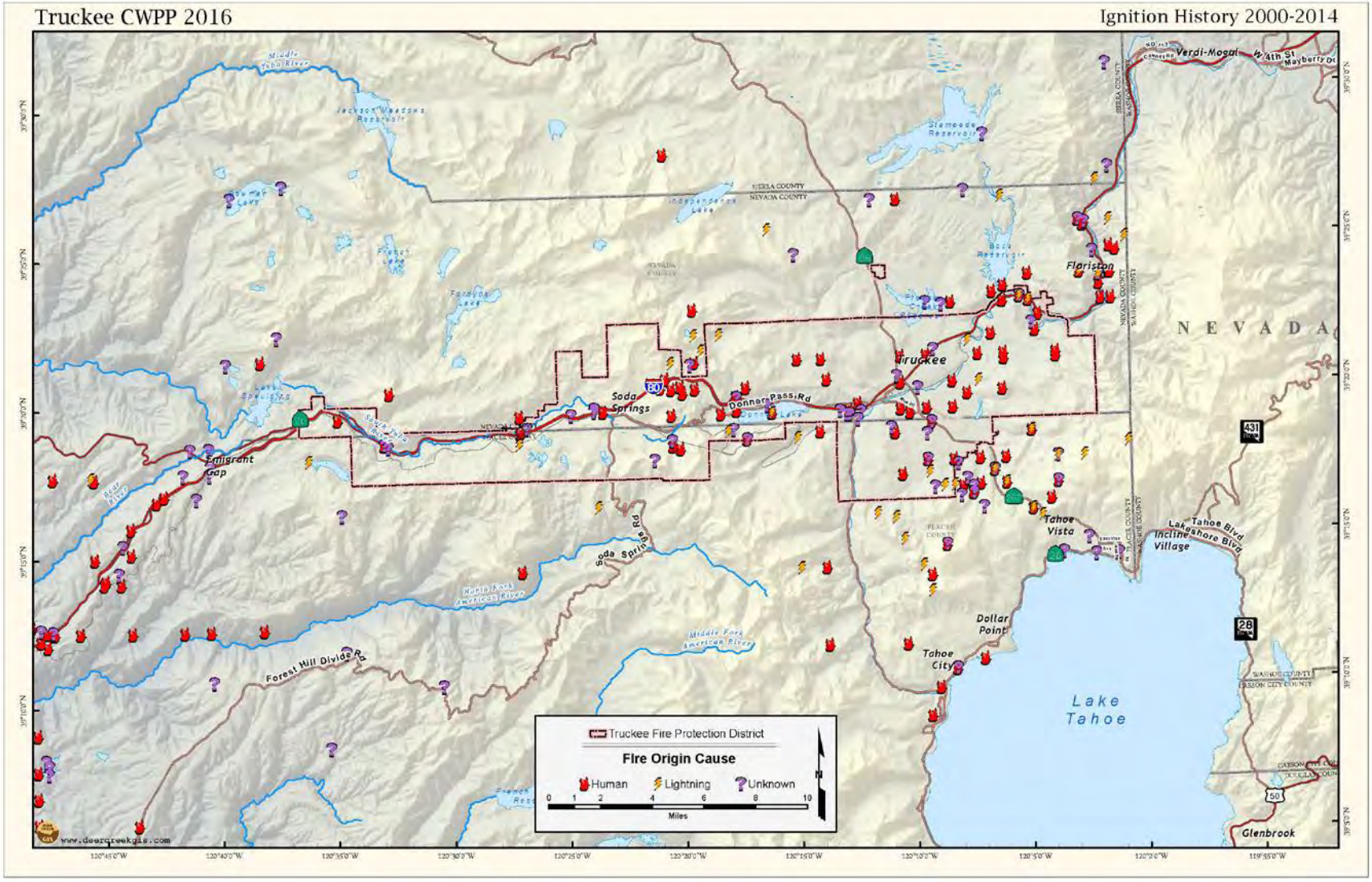


Figure 10: Ignition Map 2005-2012

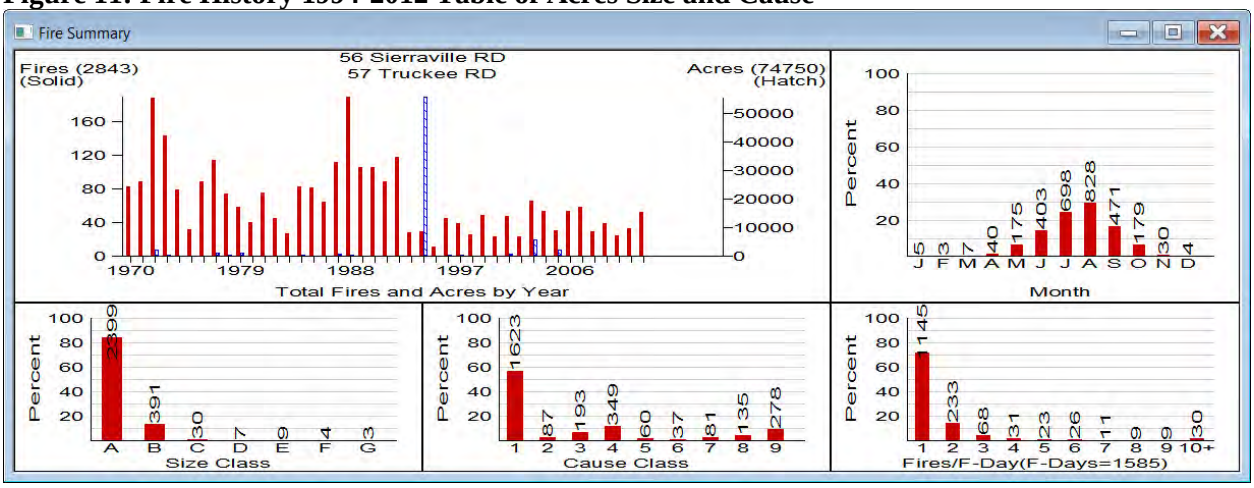


3.2 Large Fire and Wildfire Ignition History Within the CWPP Area

Fire history plays a major role in assessing the potential for a wildfire to affect a community. The following table 3 shows the number of fires reported since 1994, including the time of year, those fires most likely to occur as well as the cause. Cause class 1 is lightning, and cause class 9 is misc.; the other causes are human cause. The fire size class is designated by letters and is described as follows:

- **A** ¼ acre or less
- **B** 1/4 acre to 10 acres
- **C** 10 acres, but less than 100
- **D** 100 acres or more, but less than 300
- **E** 300 acres, but less than 1000
- **F** 1000 acres or more, but less than 5000
- **G** a fire of 5000 acres or more

Figure 11: Fire History 1994-2012 Table of Acres Size and Cause



Chapter 4 Local Agencies Wildfire Response Capabilities

Truckee Fire Protection District Capability

Truckee Fire Protection District				
Administrative Address:	10049 Donner Pass Road, Truckee CA			
Primary Service Area:	Map			
Primary Service Population:	Approximately 20k residents / 50k + visitors annually			
Number of Habitable Structures:	15000 Homes	200 Commercial		
FY2016 Adopted Budget:	2015/16 $10,639,824			
Emergency Medical Service:	8 Ambulances 37 Full-time Paramedics, 8 Part-Time Medics			
SERVICES PROVIDED:				
Specific Services (Yes or No)	**Self**	**Contract**	**Contractor (If Contracted)**	
1. Dispatch		X	CAL FIRE	
2. Fire Suppression	X			
3. Basic Rescue	X			
4. Advanced Rescue	X			
5. Vegetation Mgmt.	None			
6. Fire Code Permit/Enforcement	X	X	Fire Sprinkler Inspections-Contracted	
7. Haz Mat Response	X			
8. Construction Plan Check	X	X	Town and County	
9. Fire Investigation	X			
10. Prevention/Community Outreach/Defensible Space Inspections	X			

Fire Stations: Full or Part Time	EMS and Suppression Equip.	Equipment Call No.	Location
Station 91, Administrative Offices	Admin		10049 Pass Rd, Truckee, CA
Station 92, Main Station Full Time	2 Medics, 1 Type 1, 1 Type 3, 1 WT, 1 Quint 75', 1 Medium Rescue, Dive Rescue, Air Boat, BC, Utilities		11473 Donner Pass Rd, Truckee
Station 93, Donner Resident Station	1 Type 1		11572 Donner Pass Road
Station 94, Tahoe Donner Resident station	1 Type 1		12986 Northwoods Blvd
Station 95 Glennshire, Full Time	1 Type 1, 2 Medics, 1 Type 3		10900 Manchester Dr
Station 96, Airport Full Time	Type 1 with ARFF, 2 Medics and OES Hazmat		10277 Truckee Tahoe Airport Road
Station 97, Soda Springs Exit, Full Time	1 Type 1, 2 Medics, 1 Type 3, 1 Light Rescue		53823 Sherrit Lane
Station 98, Serene Lakes Resident station	1 Type 1		7305 Short St

Personnel:	**Number**	**Position**
Paid Staff:	43 Full Time	39 Safety, 3 Admin, 1 Fleet/Facilities Manager
Reserve-Volunteers:	10 PT Paid	FF/Medics & EMTs
Support Vehicles	3 Daily 4 More Fleet	
SERVICE PROFILE:		
Service Calls (CY 2015)*	**Count**	**Average Response Time**
Structure Fire	25	8:34
Wildland Fire	32	15:13
EMS/Rescue	1473 / 17	09:30 / 15:11
Hazardous Conditions	82	8:13
Service Call	189	8:45
Estimated Number of Defensible Space Inspections	1100	**Number of Violations:**
All Others		
Totals		
ISO (Insurance Service Office) Class Rating: 5 in most water supplied areas and 9 in the rural and semi-rural areas that lack a hydrant system. (Where 1 is the best and 10 the worst)		

Truckee Fire has mutual aid agreements with the U S Forest Service and CALFIRE for assistance in the event of a wildfire. The Town of Truckee local responsibility area does contract with CALFIRE for wildland fire protection on approximately 7000 acres. Truckee Fire responds to all wildfires within its District and with mutual aid requests.

The following are the response times within 30 minutes and capabilities of the local wildland fire agencies. Remember these may not be available if they are assigned to another incident.

CALFIRE Wildland Capability

Resource (Hand Crew, Engine, Aircraft, etc.)	Type	Location	Travel time to Truckee	Number of persons
Engine 2374	III	Truckee	N/A	3/4
Engine 2361	III	Truckee	N/A	3/4
Engine 2380	III	Carnelian Bay	20 minutes	3/4
Engine 2381	III	Truckee	N/A	Reserve
Air Tactical	OV-10A	Grass Valley	17 minutes	2
Tanker	S2-T	Grass Valley	20 minutes	
Tanker	S2-T	Grass Valley	20 minutes	

U. S. Forest Service Wildland Capabilities

Resource (Hand Crew, Engine, Aircraft, etc.)	Type	Location	Travel time to Truckee	Number of persons
Helicopter	II	White cloud	15 min	5-10
Helicopter	I	Truckee	5 min	1
Hotshot Crew	I	Hobart Work Center	10 min	20
Engine	III	Truckee	2 min	5
Engine	III	Truckee	2 min	5
Engine	III	Stampede	20 min	5
Engine	III	Big Bend	30 min	5
Engine	III	Sierraville	30 min	5

Chapter 5 Community Preparedness for a Wildfire Emergency and Action Plan to improve Preparedness

5.1 Compliance with California Defensible Space Regulations

Truckee Fire does have a schedule of inspections and inspects many areas every year. The following website describes information provided to the community on defensible space:

http://www.truckeefire.org/residents/defensible_space

5.2 Communications and Warnings in the Event of a Wildfire in or Near the Community

The Truckee Fire Protection District has created a document, "Greater Truckee Area Emergency Preparedness and Evacuation Guide", which can be found in the Appendix. This document was prepared by the Truckee Fire Protection District, the Town of Truckee, and the Fire Safe Council of Nevada County, and is an excellent document that describes to the public what is important to understand in the event of an emergency, whether it be a wildfire or other emergency requiring evacuation. Truckee Fire Protection District has also on its website identified what needs to be done by the public and the resources required for implementing evacuation and what must be done for a smooth evacuation plan.

http://www.truckeefire.org/residents/evacuation_guidelines

Another place to find information for evacuation preparation is on the website sponsored by CALFIRE:

http://www.readyforwildfire.org/

Nevada County has transitioned to a mass notification system known as Code Red. This system, once a community member has registered, will allow that person or persons to receive information about a wildfire in their community and notify them of evacuation. This transition was done in June of 2016. The Nevada County Office of Emergency Services website provides information on how to register:

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

Placer County has a similar system called Placer Alert that residents of Placer County can sign up for in order to be notified of evacuations and emergencies near them:

https://www.placer.ca.gov/departments/sheriff/citizenalert

Truckee Fire along with Truckee Police have implemented a community wide emergency notification system called Nixle. Members of the community can sign up at nixle.com to receive

emergency evacuation information and other important emergency preparedness tips from local fire and police departments.

Other ways to find out emergency information is through the local radio and TV stations listed below

Local Radio Stations:

West of the Sierra and Donner Summit	East of the Sierra and Donner Summit
KAHI AM 950	KOH AM 780
KFBK AM 1530	KTKE 101.5
KGBY FM 92.5	KOWL AM 1490
KNCO AM 830	KRLT FM 93.9

Local TV Stations:

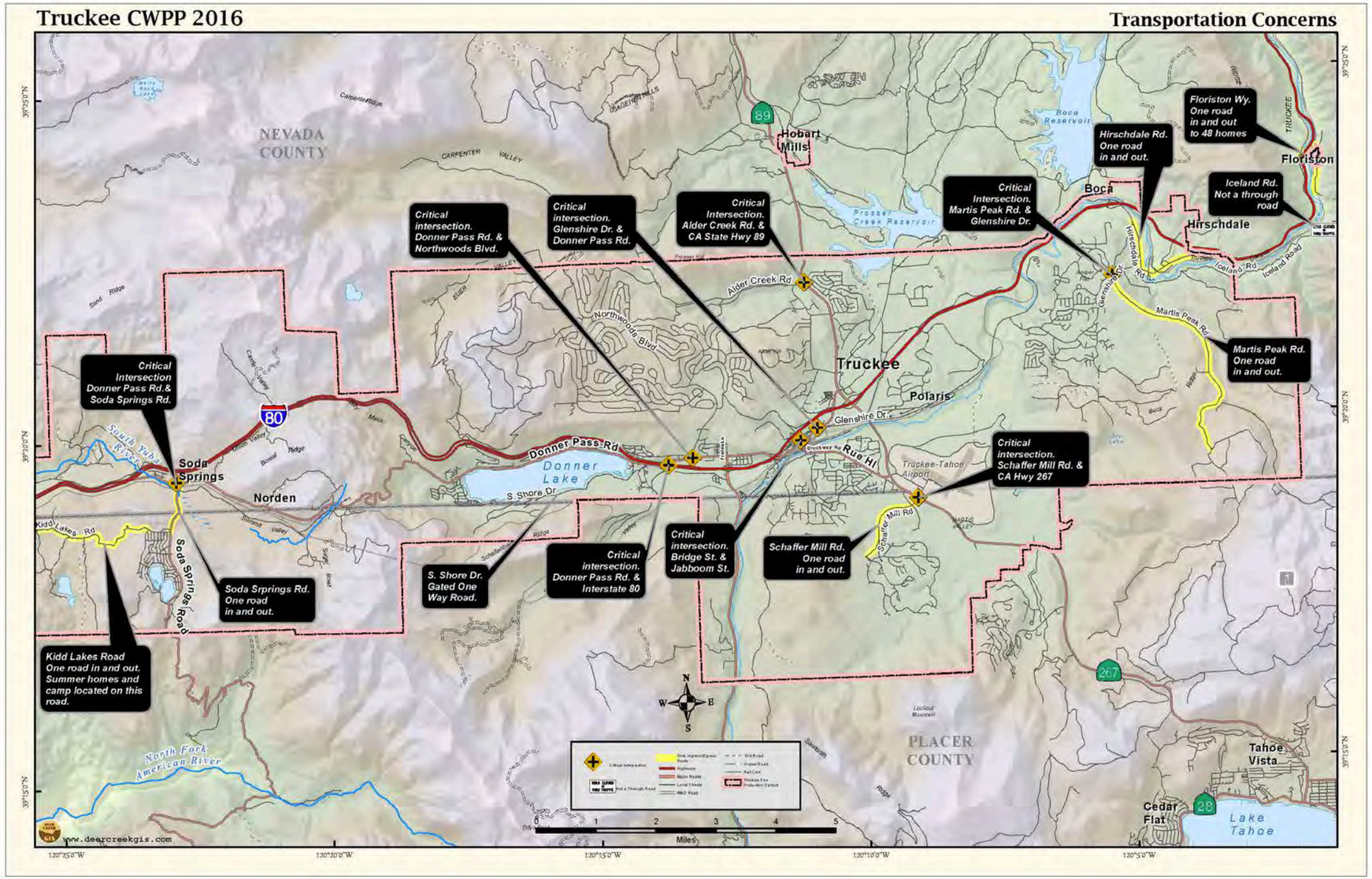
West of the Sierra and Donner Summit	East of the Sierra and Donner Summit
KCRA Channel 3	
KOVR Channel 13	
KXTV Channel 10	
KTXL Channel 40	KOLO Channel 8
KMAX Channel 31	KTVN Channel 2
KQCA Channel 58	KRNV Channel 4

5.3 Road Issues That Could Prevent Easy Evacuation.

The map on the next page is a list of areas of concern by representatives of the Placer and Nevada County Sheriff's Departments, the Truckee Fire Protection District, Town of Truckee Police, and local citizens.

Many of the roads in older communities can be difficult for fire equipment to traverse, but those roads are increasingly rare, since much of the new developments in the Truckee area have been updated as per standard road specifications.

Figure 12: Transportation Issues



5.4 Water Sources or Availability of Water for Suppression

Over 4000 fire hydrants, numerous lakes and ponds exist within the CWPP area giving the communities good sources of water for fire suppression.

The community with the greatest concern is Floriston, located on the eastern edge of the CWPP. The water tank, which supplies the community fire hydrants and drinking water supply is in need of replacement, the tank being too small to service the community. The Floriston water tank often runs out of water during the summer months. During the Martis Fire the water tank could not supply the needs of the fire equipment providing structure protection. The water tank needs to be replaced with one larger and better able to supply the needs of the community

5.5 Wildfire Public Education

The Truckee Fire Protection District uses the typical methods of public education including meeting with various homeowners associations to provide information about defensible space and project activities that the Fire District has going on near them. During the summer months, Truckee Fire has a booth set up during the Truckee Thursdays event in downtown Truckee. Truckee Fire Protection District handles almost all of the public education for wildfire preparedness in its District; they have a website with a lot of information on defensible space and what to do in the event of a wildfire. The Fire District has a Fire Prevention Office and a Public Information Officer whose responsibility is to provide the wildfire public education. They work closely with the US Forest Service and CALFIRE to educate the public about wildfire prevention and home defense.

http://www.truckeefire.org/

They also have a very active and maintained Facebook page with information on what is happening in the community as it relates to fire prevention, in both wild and structure fires.

The fire prevention team of Truckee Fire Protection District works very hard at keeping in contact with the Home Owner Associations every year and giving them a wildfire prevention message either through the association meetings or mailings to the association leadership. The following is a list of those Associations:

1. Glenshire
2. Tahoe Donner
3. Martis Camp
4. Lahonton
5. Shaffers Mill
6. Serene Lakes
7. Plavada
8. Greys Crossing
9. Kingvale
10. Old Greenwood
11. Martis Woods Estates
12. Donner Tract

Chapter 6 Fuel Treatments Completed and Recommended Projects

This section is devoted to treatments that have been done in the past 10 years and treatments that are recommended through evaluation of the fire behavior and local fire experience. The priorities have been established by the CWPP Core Team made up of representatives from Truckee Fire Protection District and reviewed by CALFIRE.

The following is a worksheet (Figure 14) that has been submitted for use by the project managers to better understand the needs when applying for a grant to treat a particular area. The worksheet is made up of items that are typically asked when applying for a grant. Once a priority is set the project manager should gather the information requested in the worksheet. This worksheet was used by the Tahoe Donner Association to describe their highest priority projects for the CWPP.

Figure 13: CWPP Project Data Sheet

CWPP PROJECT DEFINITION DATA SHEET	
Grantee:	
Project Title:	Project Coordinates:
Project Number:	Priority:
CEQA Status:	Project Status:
Project Type:	
Number of Acres:	
Fuel Type:	Treatment:
Parcels Requiring Right of Entry:	
Habitable Structures Protected by Project:	
Estimated Cost per Acre:	Total Estimated Cost:
Funding Source:	
Insert Project Map (Standard GIS Format)	
And a “Current” Photo	

6.1 US Forest Service Projects, Completed and Planned, In the Wildland Urban Interface

The Tahoe National Forest Truckee Ranger District has been proactive with treatments on their land in and near communities. The community has had concerns about the treatments and has been involved with communicating to and influencing the Forest Service in implementing treatments that will provide the best possible protection. The community stakeholders identified the Urban Core, the Defense and the Threat zones during two of the stakeholder meetings and those areas have been shared with the Truckee Ranger District representatives at the stakeholder meetings, as well as relevant map data and information. The table below is a breakdown of the acreages within the communities of the Wildland Urban Interface Zones and as shown in Figure 1, the Truckee Fire Protection District WUI.

Zone	Owner	Acres	Total WUI Acres	% of WUI that is FS
Core	USDA Forest Service	1082.97233	23895.19014	4.53%
Defense	USDA Forest Service	10419.16336	34952.27615	29.81%
Threat	USDA Forest Service	15030.14292	34127.72624	44.04%

The Forest Service has a responsibility to work with the local communities when developing treatments to reduce fire hazards within these zones. The identified zones also help the communities establish priorities for projects adjacent to where the Forest has determined the need for treatment. This kind of synergy between community and U.S. Forest Service will improve protection and increase fuel hazard reduction treatment effectiveness. The Fire Protection District has been proactive in its participation with the USFS and will continue to be so in the future. It is important that the community and the Forest Service continue to work together to create a Fire Adaptive Truckee area.

The map in Figure 14 shows the current Forest Service projects within the Truckee CWWP area (to be treated as of this document date the treatments are unknown). Figure 15 shows the Forest Service projects completed in the past 10 years.

Figure 14: Forest Service Future Projects

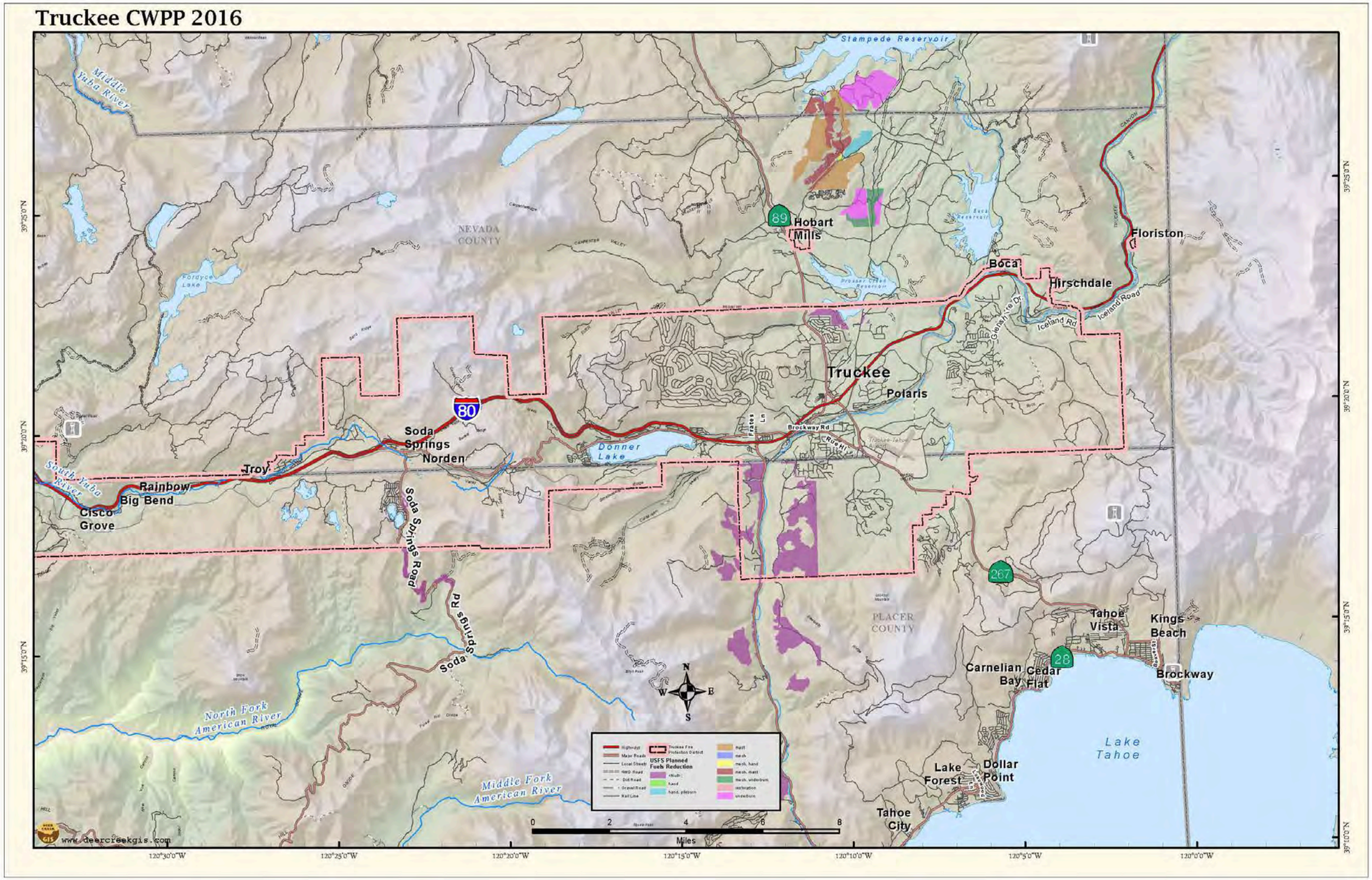
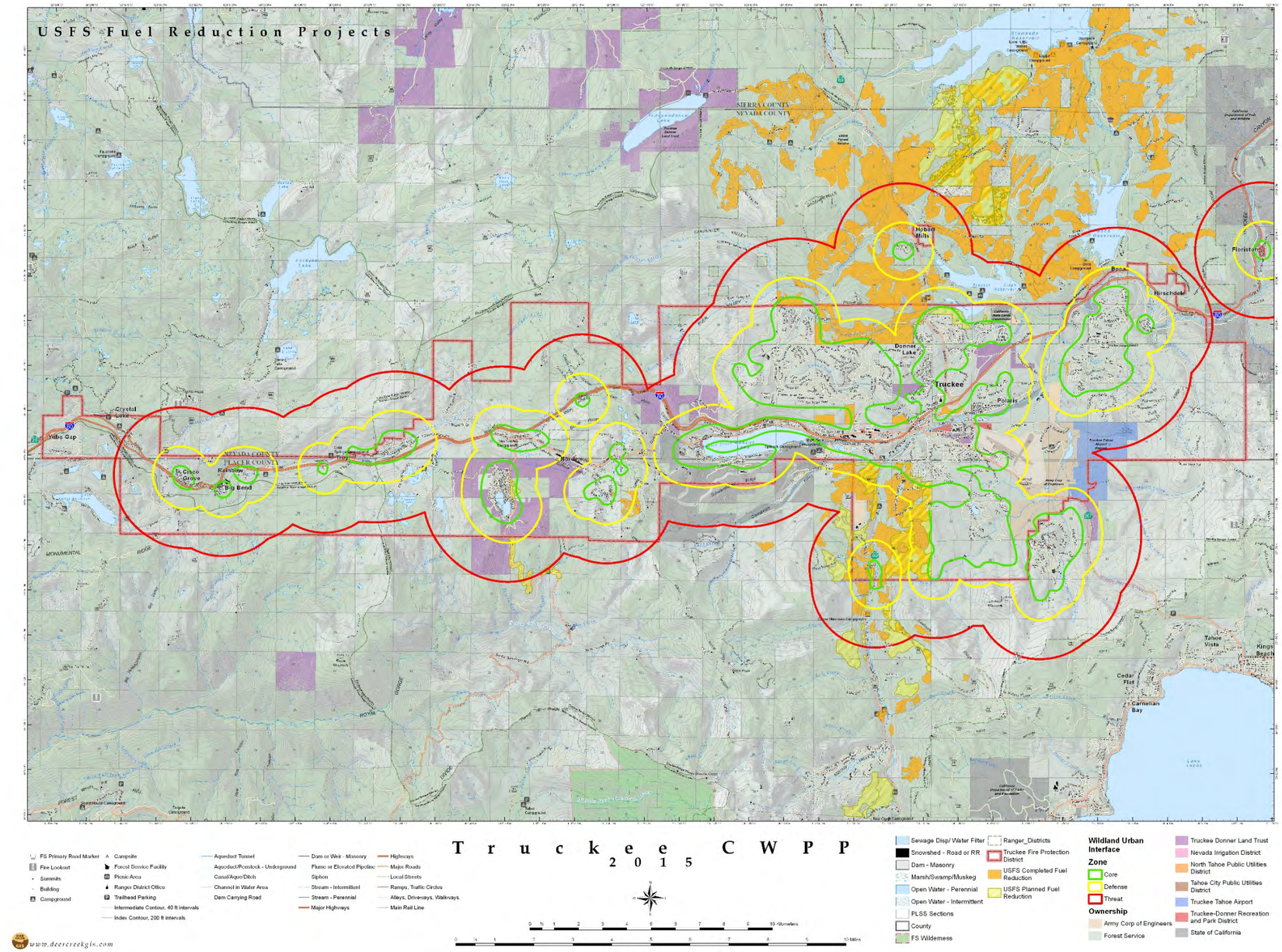


Figure 15 Forest Service Treated Projects in the Past 10 Years



6.2 Community Projects

6.2.1 Homeowner Associations

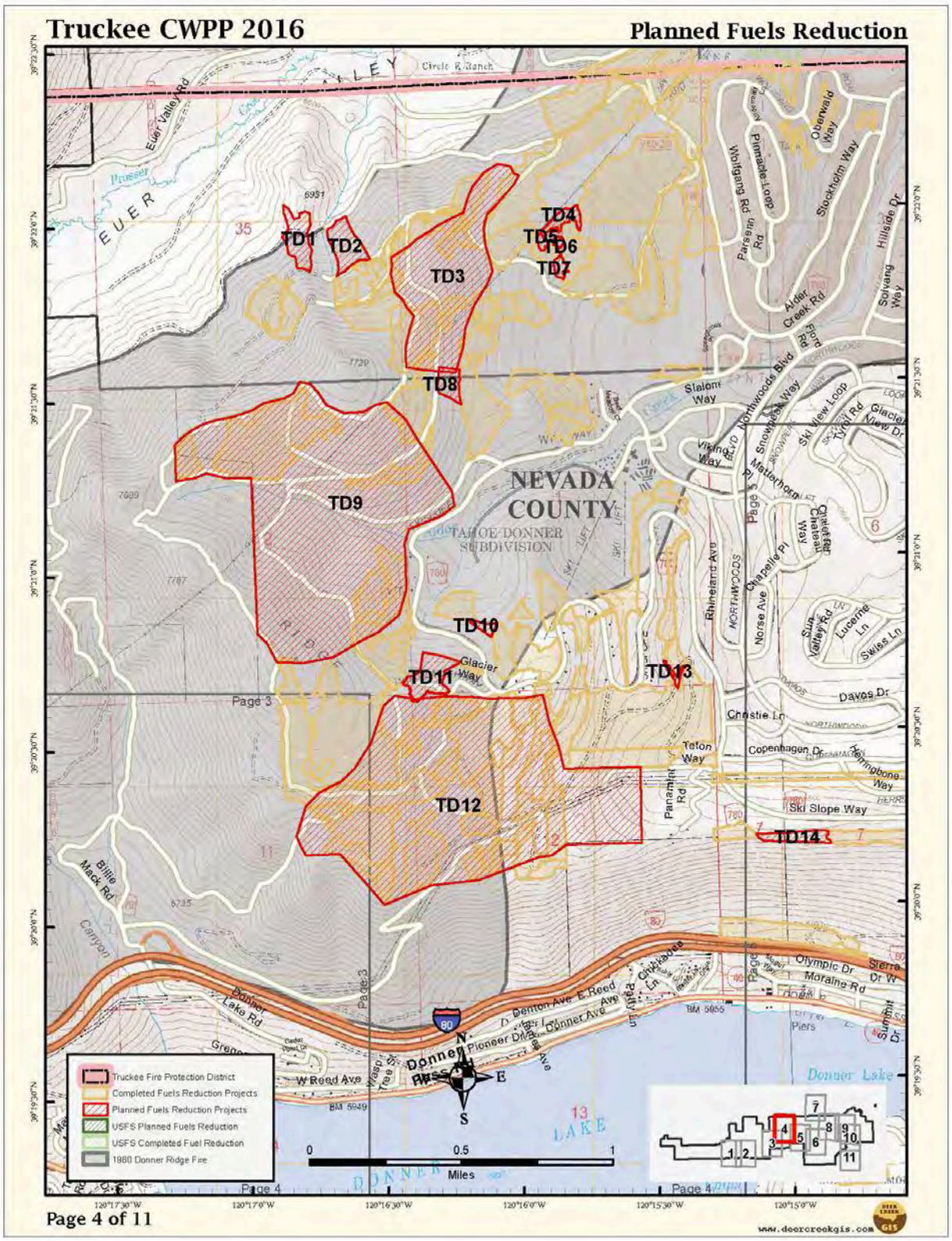
Tahoe Donner Association

The Tahoe Donner Association has been one of the most proactive fuel hazard reduction groups in the Truckee area. The location of the development and the fact that a large wildfire had burned through the Western side of the development in 1960 have contributed to this effort. The Donner Ridge Fire, which originated along Highway 80, burned 44,812 acres. It is along that fire eastern edge that the association has put a lot of its fuel reduction efforts and revegetation efforts.

Completed Projects

The Map Figure 16 shows both completed projects and projects in the planning stages. It also shows the eastern perimeter of the Donner Ridge Fire of 1960 that burned through the western edge of the Tahoe Donner subdivision and has driven the projects in that area over the past 56 years (and continues to drive the projects today).

Figure 16: Tahoe Donner Completed and Planned Projects



Tahoe Donner Planned Projects

These are five of the many planned projects:

Project title: TDA #1	Priority: TDA priority 2, TFPD ?
Project general location: Tahoe Donner Association 2 miles NW of Truckee CA.	Year planned start: when funding is available
Project manager: Bill Houdyschell Tahoe Donner Association	CEQA: not started, cost ?
Project type: expanding a fuel break	Fuel type: brush
Parcels for right of entry: none	Structures within ¼ mile: 250
Estimated cost per acre: $1,500	Potential match: dollar per dollar
Potential funding source: Tahoe Donner Association – land owner	Project description: All hand work with use of a tracked chipper, thin brush, with chips blown over site.

Project title: TDA #2	Priority: TDA priority 4, TFPD ?
Project general location: Tahoe Donner Association 2 miles NW of Truckee CA.	Year planned start: when funding is available
Project manager: Bill Houdyschell Tahoe Donner Association	CEQA: not started, cost $3,500
Project type: expanding a fuel reduction zone	Fuel type: brush field/timber with brush understory
Parcels for right of entry: none	Structures within ¼ mile: 250
Estimated cost per acre: $2,600	Potential match: dollar per dollar
Potential funding source: Tahoe Donner Association – land owner	Project description: 11.2 acres of site preparation by mastication to create a future fuel break @ $900/acre. And 30.2 acres of understory limb and thin with mastication of all brush @ $2,000/acre limb and thin and $700/acre mastication. The limb and thin will be completed by hand crews with material chipped by a tracked chipper, with chips blown over site
	Acres: 41.4 acres
Total cost: $91,620, not including CEQA	

Project title: TDA #3	Priority: TDA priority 5, TFPD ?
Project general location: Tahoe Donner Association 2 miles NW of Truckee CA	Year planned start: when funding is available
Project manager: Bill Houdyschell Tahoe Donner Association	CEQA: not started, cost $3,500
Project type: creating a fuel reduction zone along an access road	Fuel type: timber with brush understory
Parcels for right of entry: none	Structures within ¼ mile: 250
Estimated cost per acre: $2,600	Potential match: dollar per dollar
Potential funding source: Tahoe Donner Association – land owner	Project description: 50 acres of understory limb and thin with mastication of all brush @ $2,000/acre limb and thin and $600/acre mastication. The limb and thin will be completed by hand crews with material chipped by a tracked chipper, with chips blown over site.
	Acres: 50 acres
Total cost: $130,000, not including CEQA	

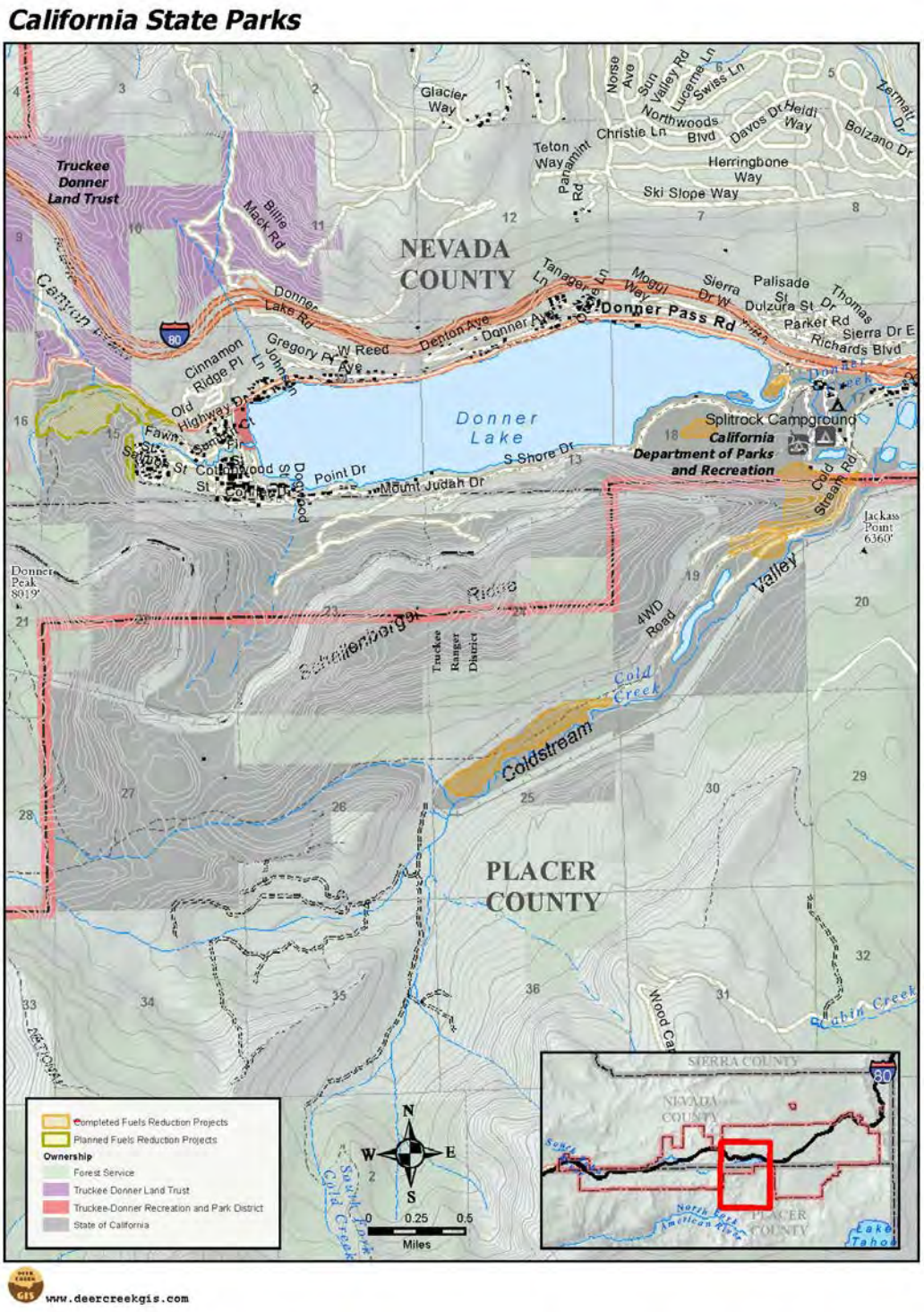
Project title: TDA #4	Priority: TDA priority 3, TFPD ?
Project general location: Tahoe Donner Association 2 miles NW of Truckee CA	Year planned start: when funding is available
Project manager: Bill Houdyschell Tahoe Donner Association	CEQA: not started, cost $3,500
Project type: expanding a fuel reduction zone	Fuel type: brush field/small timber with brush understory/timber with brush understory
Parcels for right of entry: none	Structures within ¼ mile: 50
Estimated cost per acre: $2,600	Potential match: dollar per dollar
Potential funding source: Tahoe Donner Association – land owner	Project description: 2.7 acres of site preparation by mastication to create a future fuel break @ $900/acre. Treat 45 acres of mature timber with brush understory. Thin and limb the understory and prune residual trees. Mastication of small trees, slash and brush with mastication @ $1,400/acre and hand crew to limb and chip slash @ $1,000/acre. 55 acres of young timber with brush understory. Thin small trees, slash and brush with mastication @ $1,200/acre and hand crew to limb and chip slash @ $800/acre. Hand

	crews will be assisted with a tracked chipper with chips blown over site.
Acres: 102 acres	Total cost: $220,430, not including CEQA

Project title: TDA #5	Priority: TDA priority 1, TFPD ?
Project general location: Tahoe Donner Association 2 miles NW of Truckee CA	Year planned start: when funding is available
Project manager: Bill Houdyschell Tahoe Donner Association	CEQA: not started, cost $3,500
Project type: expanding a fuel break system	Fuel type: brush field/ timber with brush understory
Parcels for right of entry: none	Structures within ¼ mile: 250
Estimated Cost per acre: $2,600	Potential match: dollar per dollar
Potential funding source: Tahoe Donner Association – land owner	Project description: 6.2 acres of site preparation by mastication to create a future fuel break @ $800/acre. Treat 7.2 acres of young timber with brush understory. Thin small trees, slash and brush with mastication @ $1,200/acre and hand crew to limb and chip slash @ $800/acre. Hand crews will be assisted with a tracked chipper with chips blown over site. Create 62.5 acres of fuel break to expand the system. Thin trees, remove lower limbs pile and burn slash and masticate any brush @ $2,500/acre.
Acres: 75.9 acres	Total cost: $175,610, not including CEQA

6.2.2 State Parks

Figure 17: Completed and Planned State Park Projects



6.2.3 Other Local Agency Projects

6.2.3.1Truckee Donner Land Trust

The Truckee Donner Land Trust, a very respected organization in the Truckee area, whose work is summed up in the following information about its mission and history (from their website):

OUR MISSION

To preserve and protect scenic, historic and recreational lands with high natural resource values in the greater Truckee Donner region and manage recreational activities on these lands in a sustainable manner.

OUR HISTORY

In 1990, the beautiful Coldstream Valley near Donner Lake was about to be lost to logging. A small group of passionate hikers founded the Truckee Donner Land Trust and raised $150,000 to purchase 160 acres in the valley.

Over the years, The Truckee Donner Land Trust has protected over 33,000 acres, ensuring continued recreational access and protecting lands for future generations. We are determined to protect another 24,500 acres in the coming years with a value of over $40 million.

Today, the mountains, canyons, meadows, lakes and rivers that make the Truckee Donner region a great place to live, work, and play continues to face threats from unwise growth and development spilling over onto our treasured natural areas.

With support from our neighbors, members, and partners, we can protect what we love today to enjoy forever.

OUR STRATEGY

The Land Trust works with landowners, federal, state and local governments, and the public-at-large, to create win-win situations for private and public interests. We carry out our mission by negotiating land acquisitions, easements and land exchanges.

Our conservation strategy is three pronged. We work to protect:

1. Critical open spaces and greenbelts in the greater Truckee Donner region.
2. Natural areas that aren't yet threatened by imminent development and therefore are more affordable.
3. Large open spaces that are threatened by immediate development and therefore expensive, but also of great value to the community.[8]

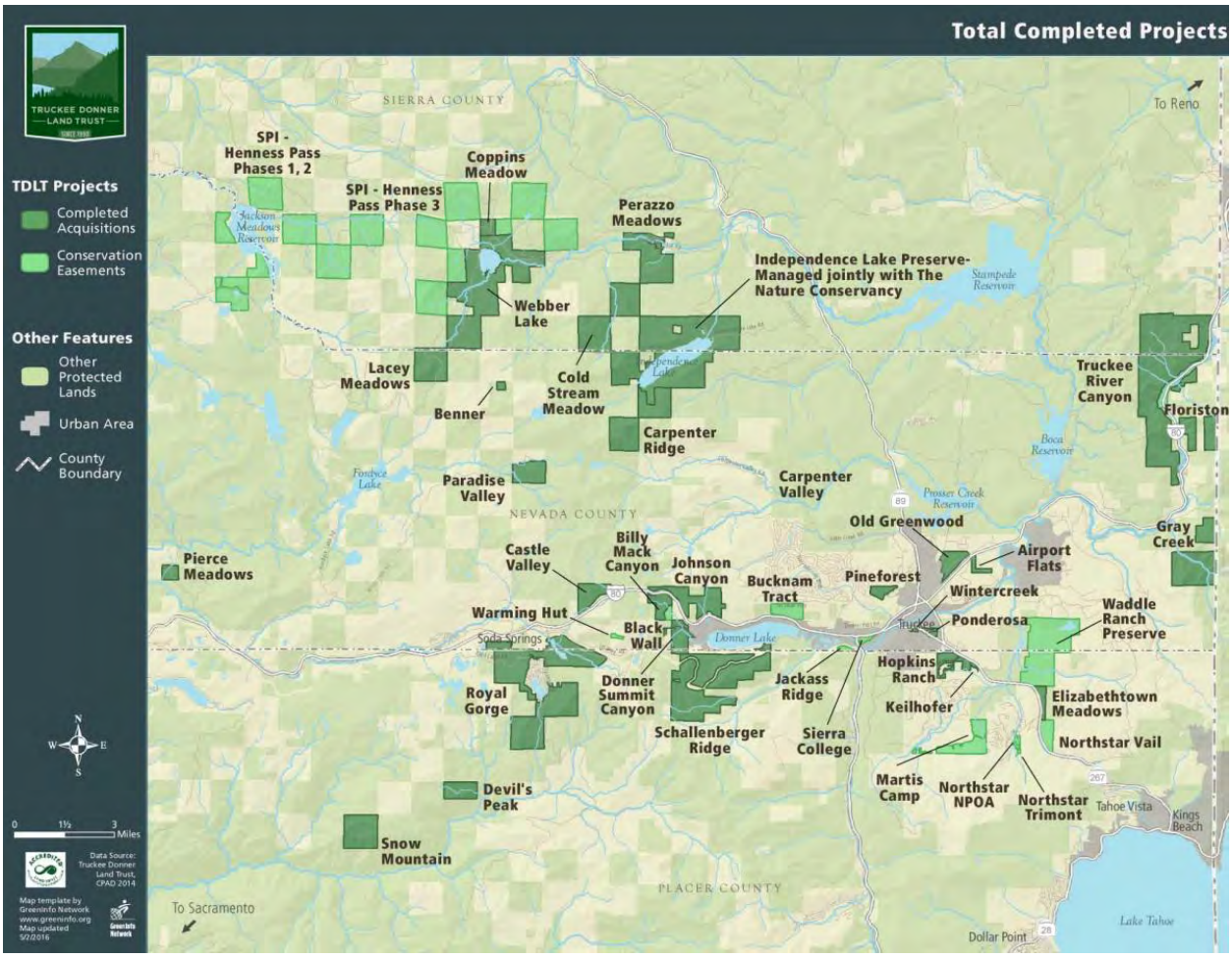
[8] Truckee Donner Land Trust Website, July 2016

Figure 18: Truckee Donner Land Trust Planned Projects

Truckee/Donner Land Trust		**Treatment Type**						
Treatment Name and Identifier	**Project Type** *(ie Fuels Treatment, Thinning, etc.)*	**Mechanical** *Yes or No*	**Hand** *Yes or No*	**Rx Fire** *Yes or No*	**Acres** *By Treatment Type*	**Est. Cost**	**Priority**	**Year to Implement**
Royal Gorge Upper Serene Creek Canyon	Thinning	Yes	No	No	Unsure, Up To 300	Up To 600K	Medium	2017?
Royal Gorge Serene Lakes perimeter TDLT 1	Fuels Treatment	Yes	Yes	No	Unsure, Up To 200	Up To 500K	Medium	2016-17
Old Greenwood Open Space PE 2	Fuels Treatment	Unknown @ This Time	Unknown @ This Time	Unknown @ This Time	Unknown @ This Time	N/A	Up To Truckee Fire	Up To Truckee Fire

Documentation for the Royal Gorge project is found in the CWPP supporting document file.

Figure 19 Truckee Donner Land Trust Lands



6.2.3.2 The Truckee Tahoe Airport District

The Truckee Tahoe Airport District has played a major role in wildfire protection projects and has completed some very large projects to the South of the Airport on land that the District owns and manages. The map Figure 20 shows the completed and identified projects for the Airport District. The following pictures are before and after pictures of the Airports projects Waddle Ranch and Martis:

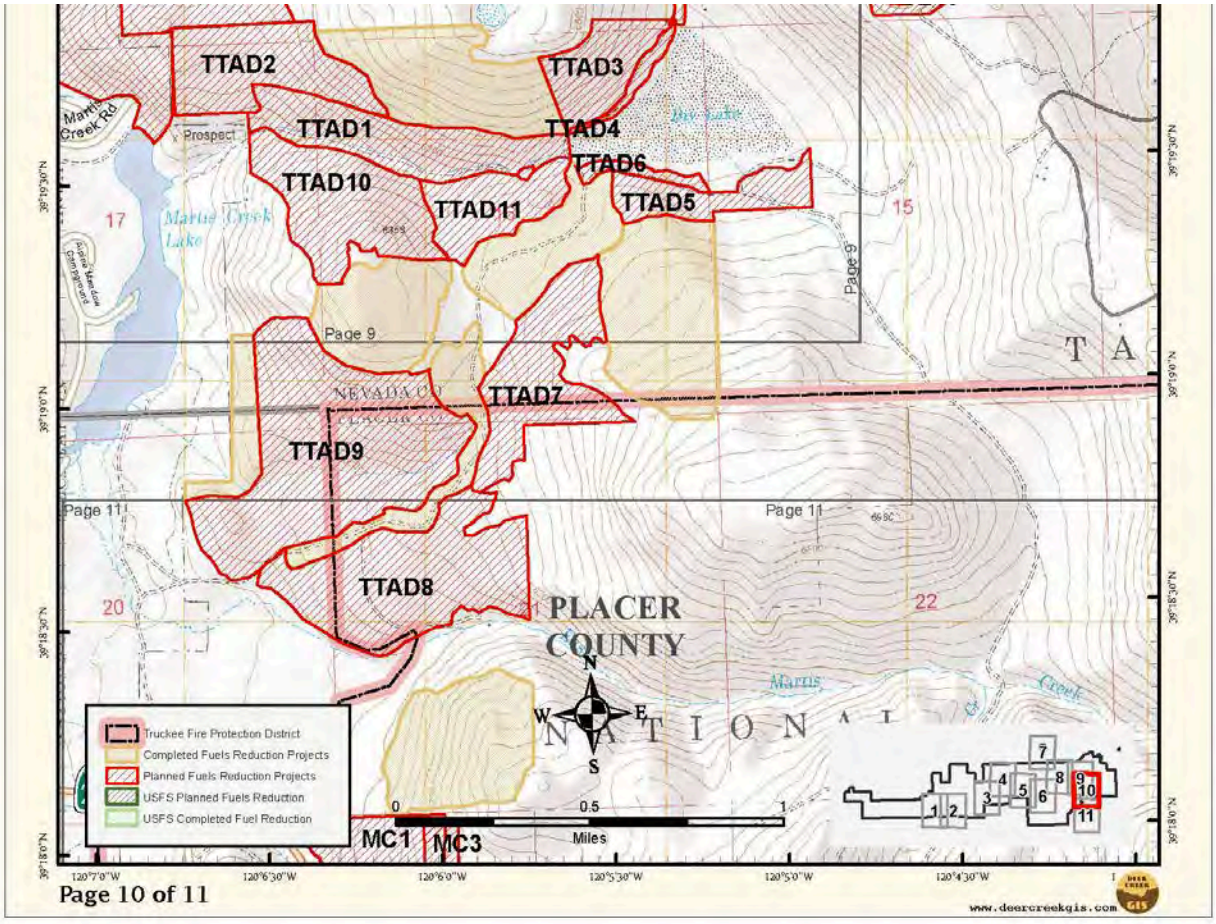
Before Treatment

After

Before Treatment

After

Figure 20 Truckee Tahoe Airport (TTAD) Completed and Planned Projects



6.3 Future Project Recommendations

The following tables and maps identify projects that are recommended within the Truckee Fire Protection District. Many of them are in the concept phase and will need to be further analyzed for treatment type and costs.

Project ID	Acres	Title	General Location	Priority	Project Manager	Project Type(Mastication, Hand Cut, Chip, Thin, or Prescribed Fire)	#of Structures Protected	Treatment Cost/Acre	Total/Cost Including Environmental Doc	Agencies	LAT	Long
DL1	63	Donner Lake 1	Donner Lake	1	California State Parks		0	0	0	California State Parks	39.32316246350	-120.30458353000
DL2	4	Donner Lake 2	Donner Lake	1	California State Parks		0	0	0	California State Parks	39.31960169300	-120.30082362200
GL1	22		Glenshire	2			0	0	0		39.37050433010	-120.10217072600
GL10	39		Glenshire	2			0	0	0		39.34095855960	-120.08091201600
GL11	25		Glenshire	1			0	0	0		39.34198377630	-120.07268984400
GL12	14		Glenshire	1			0	0	0		39.33857615020	-120.10588611700
GL13	20		Glenshire	1			0	0	0		39.33530836650	-120.09772393300
GL14	35		Glenshire	1			0	0	0		39.33669730880	-120.07865719000
GL15	11		Glenshire	1			0	0	0		39.33379634820	-120.08921499900
GL16	26		Glenshire	1			0	0	0		39.33261620930	-120.07483351100

Project ID	Acres	Title	General Location	Priority	Project Manager	Project Type(Mastication, Hand Cut, Chip, Thin, or Prescribed Fire)	#of Structures Protected	Treatment Cost/Acre	Total/Cost Including Environmental Doc	Agencies	LAT	Long
GL17	4		Glenshire	1			0	0	0		39.33586031060	-120.10429290700
GL2	79		Glenshire	2			0	0	0		39.35928332870	-120.11005687500
GL3	40		Glenshire	3			0	0	0		39.35726789850	-120.10753399600
GL4	175		Glenshire	2			0	0	0		39.33866996830	-120.11538769200
GL5	228		Glenshire	2			0	0	0		39.33642027660	-120.11079806800
GL6	5		Glenshire	3			0	0	0		39.34689086240	-120.10690103700
GL7	1		Glenshire	4			0	0	0		39.34804447330	-120.10481294900
GL8	15		Glenshire	3			0	0	0		39.34482842510	-120.09031210000
GL9	19		Glenshire	1			0	0	0		39.34131380760	-120.09729293000
HM1	42		Hobart Mills	0			0	0	0		39.39785117040	-120.18325143500
MC1	48		Martis Creek	2			0	0	0		39.29926296470	-120.10285217000

MC2	28		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.29303534660	-120.10141350900
MC3	157		Martis Creek	1			0	0	0		39.28171084460	-120.09434746400
PE1	172		Polaris	2			0	0	0		39.35235736830	-120.13547072300
PE2	86		Polaris	1	Truckee Donner Land Trust		0	0	0		39.35548314940	-120.15406816200
PE3	153		Polaris	2			0	0	0		39.37017891810	-120.14628223500
PL1	399		Palasades Lake	3			0	0	0		39.29827000780	-120.41508772500
ST1	117		South Truckee	2			0	0	0		39.32074665440	-120.18777380000
ST2	73		South Truckee	2			0	0	0		39.32250200810	-120.18044653600
TD1	8		Tahoe Donner	1	Tahoe Donner Assoc.		0	0	0		39.36585681380	-120.27880098200
TD10	1		Tahoe Donner	2	Tahoe Donner Assoc.		0	0	0		39.34702694550	-120.26803640500
TD11	10		Tahoe Donner	1	Tahoe Donner Assoc.		0	0	0		39.34476129940	-120.27153973400

TD12	315		Tahoe Donner	2	Tahoe Donner Assoc.		0	0	0		39.33896835750	-120.26960077700
TD13	1		Tahoe Donner	3	Tahoe Donner Assoc.		0	0	0		39.34451014900	-120.25646297300
TD14	5		Tahoe Donner	3	Tahoe Donner Assoc.		0	0	0		39.33657529250	-120.24920705400
TD15	122		Tahoe Donner	2	Tahoe Donner Assoc.		0	0	0		39.33362382340	-120.22725462100
TD2	9		Tahoe Donner	3	Tahoe Donner Assoc.		0	0	0		39.36547060980	-120.27591989600
TD3	86		Tahoe Donner	2	Tahoe Donner Assoc.		0	0	0		39.36383320830	-120.26967526300
TD4	3		Tahoe Donner	3	Tahoe Donner Assoc.		0	0	0		39.36640652870	-120.26241186900
TD5	1		Tahoe Donner	3	Tahoe Donner Assoc.		0	0	0		39.36533570260	-120.26384443300
TD6	1		Tahoe Donner	3	Tahoe Donner Assoc.		0	0	0		39.36533174820	-120.26280607400
TD7	1		Tahoe Donner	3	Tahoe Donner Assoc.		0	0	0		39.36411256280	-120.26276497800

TD8	4		Tahoe Donner	3	Tahoe Donner Assoc.		0	0	0		39.35873078390	-120.26979542100
TD9	307		Tahoe Donner	2	Tahoe Donner Assoc.		0	0	0		39.35265148230	-120.27781048300
TDLT1	46		Donner Lake	1	Truckee Donner Land Trust		0	0	0		39.29709902610	-120.37545915800
TTAD1	61		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32636708500	-120.10100290900
TTAD1	61		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32636708500	-120.10100290900
TTAD10	70		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32396627300	-120.10376365700
TTAD10	70		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32396627300	-120.10376365700
TTAD11	36		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32376274870	-120.09665467100
TTAD11	36		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32376274870	-120.09665467100

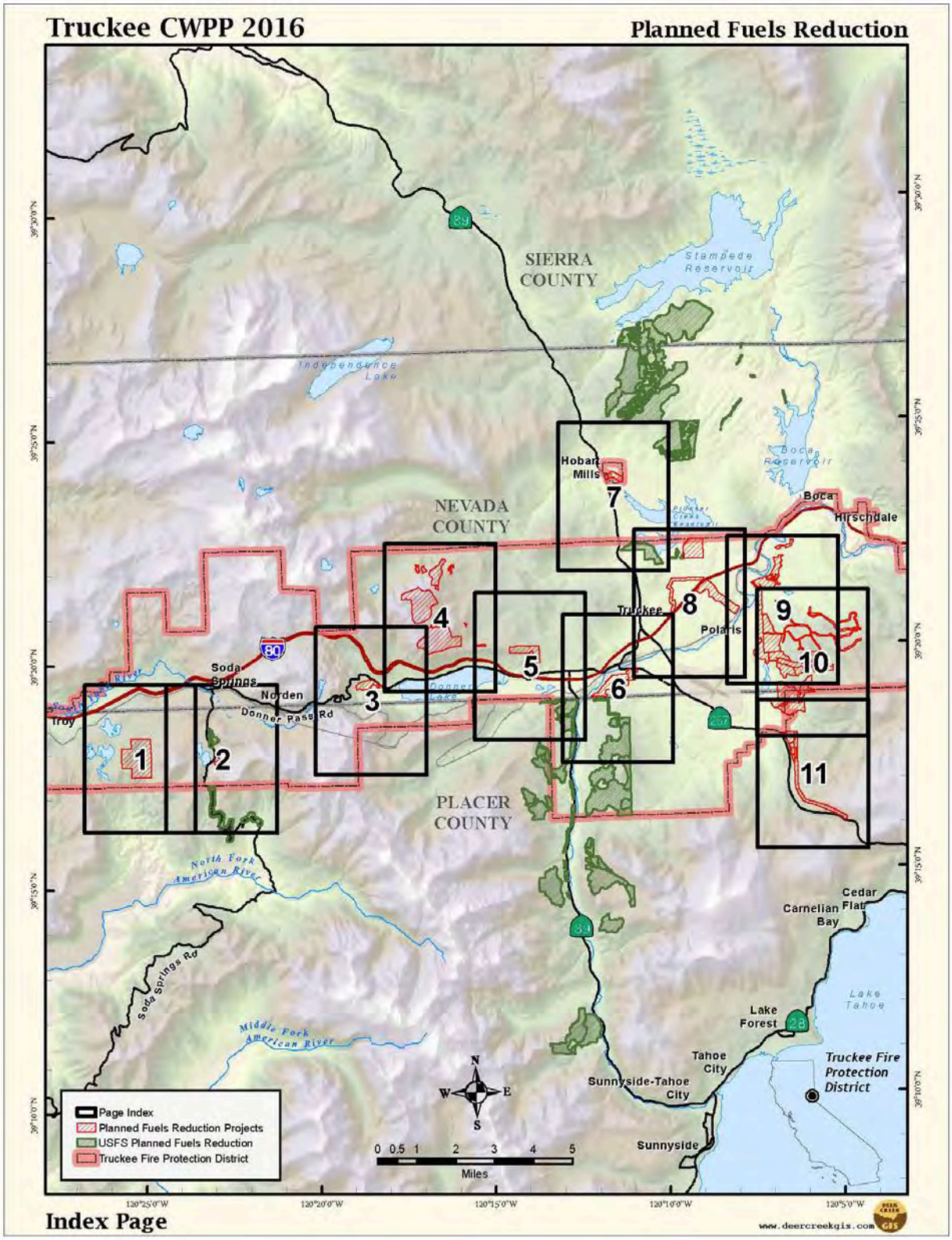
TTAD2	59		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32915647100	-120.10758116100
TTAD2	59		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32915647100	-120.10758116100
TTAD3	33		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32876730460	-120.09124874400
TTAD3	33		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32876730460	-120.09124874400
TTAD4	6		Truckee Tahoe Airport	3	Airport Authority		0	0	0		39.32842226270	-120.08942899900
TTAD4	6		Truckee Tahoe Airport	3	Airport Authority		0	0	0		39.32842226270	-120.08942899900
TTAD5	30		Truckee Tahoe Airport	3	Airport Authority		0	0	0		39.32389269740	-120.08601183100
TTAD5	30		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32389269740	-120.08601183100
TTAD6	7		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.32476389310	-120.08948738400
TTAD6	7		Truckee Tahoe Airport	3	Airport Authority		0	0	0		39.32476389310	-120.08948738400

TTAD7	66		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.31746058190	-120.09442927100
TTAD7	66		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.31746058190	-120.09442927100
TTAD8	105		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.30995200070	-120.10114571300
TTAD8	105		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.30995200070	-120.10114571300
TTAD9	163		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.31477594780	-120.10491693100
TTAD9	163		Truckee Tahoe Airport	2	Airport Authority		0	0	0		39.31477594780	-120.10491693100

Figure 21: Treatment Priorities for Truckee Fire Protection District

Truckee Fire Protection District		**Treatment Type**					
Treatment Name and Identifier	**Project Type** *(ie: Fuels Treatment Type)*	**Mechanical** *Yes or No*	**Hand** *Yes or No*	**Rx Fire** *Yes or no*	**Acres** *By Treatment Type*	**Est. Cost**	**Priority**
AS 1, Armstrong 1	Thinning & Mastication	Yes	No	No	90	Up To $125K	1
PE 2 Old Greenwood Open Space	Thinning & Mastication	Yes	No	No	86	Up To $125K	1
Glenshire Roadside Hazard Reduction GL9 through 17	Roadside Hazard Reduction		Yes (Cut and Chip)	No	193		1
MC 3 Martis Creek	Shaded Fuel Break	Yes			157		1

The table in Figure 21 is a list of projects that the Core team, made up of individuals from CALFIRE, and Truckee Fire Protection District. Determined were the highest priority for treatment in the near future. This list was established for the Fire District to work on getting projects done over the next year. The Core Team also recognizes that project priorities will change for various reasons from year to year. Some of those reasons could be tree mortality due to drought, federal project priorities, grant awards, resident of commercial development proposals, fire and other changes to the physical environment. It is important that participants in the CWPP annual review look at the project priorities and change them as may be necessary to meet changing needs of the communities.


Truckee CWPP 2016
Planned Fuels Reduction
SIERRA COUNTY
NEVADA COUNTY
PLACER COUNTY
Stampede Reservoir
Independence Lake
Boca Reservoir
Hobart Mills
Boca
Hirschdale
Truckee
Polaris
Soda Springs
Norden
Donner Pass Rd
Donner Lake
Troy
North Fork American River
Middle Fork American River
Soda Springs Rd
Cedar Flat
Carnelian Bay
Lake Tahoe
Lake Forest
Tahoe City
Sunnyside-Tahoe City
Sunnyside
Truckee Fire Protection District
1
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4
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7
8
9
10
11
Page Index
Planned Fuels Reduction Projects
USFS Planned Fuels Reduction
Truckee Fire Protection District
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Miles
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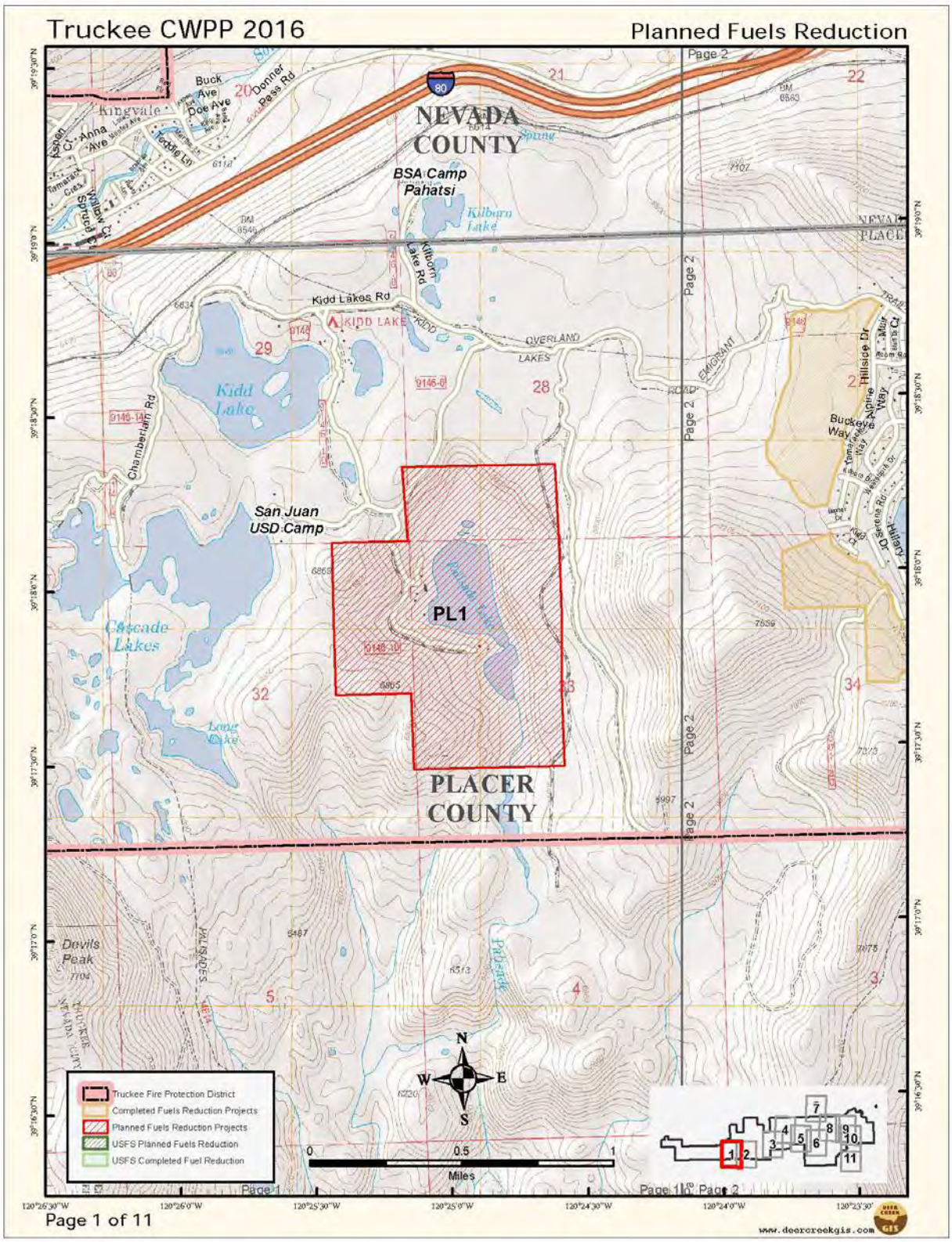
120°20'0"W
120°15'0"W
120°10'0"W
120°5'0"W
Index Page
www.deercreekgis.com


Truckee CWPP 2016
Planned Fuels Reduction
NEVADA COUNTY
PLACER COUNTY
BSA Camp Pahatsi
San Juan USD Camp
PL1
Kidd Lakes Rd
Kidd Lake
Cascade Lakes
Long Lake
Kilborn Lake
Kilborn Lake Rd
Chamberlain Rd
Overland Lakes
Emigrant Road
Hillside Dr
Alpine Way
Buckeye Way
Hillary Dr
Serena Rd
Ringvale
Buck Ave
Doe Ave
Donner Pass Rd
Teddie Ln
Anna Ave
Spruce Ct
Willow Ct
Devils Peak
Palisades
Truckee Fire Protection District
Completed Fuels Reduction Projects
Planned Fuels Reduction Projects
USFS Planned Fuels Reduction
USFS Completed Fuel Reduction
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Miles
Page 1
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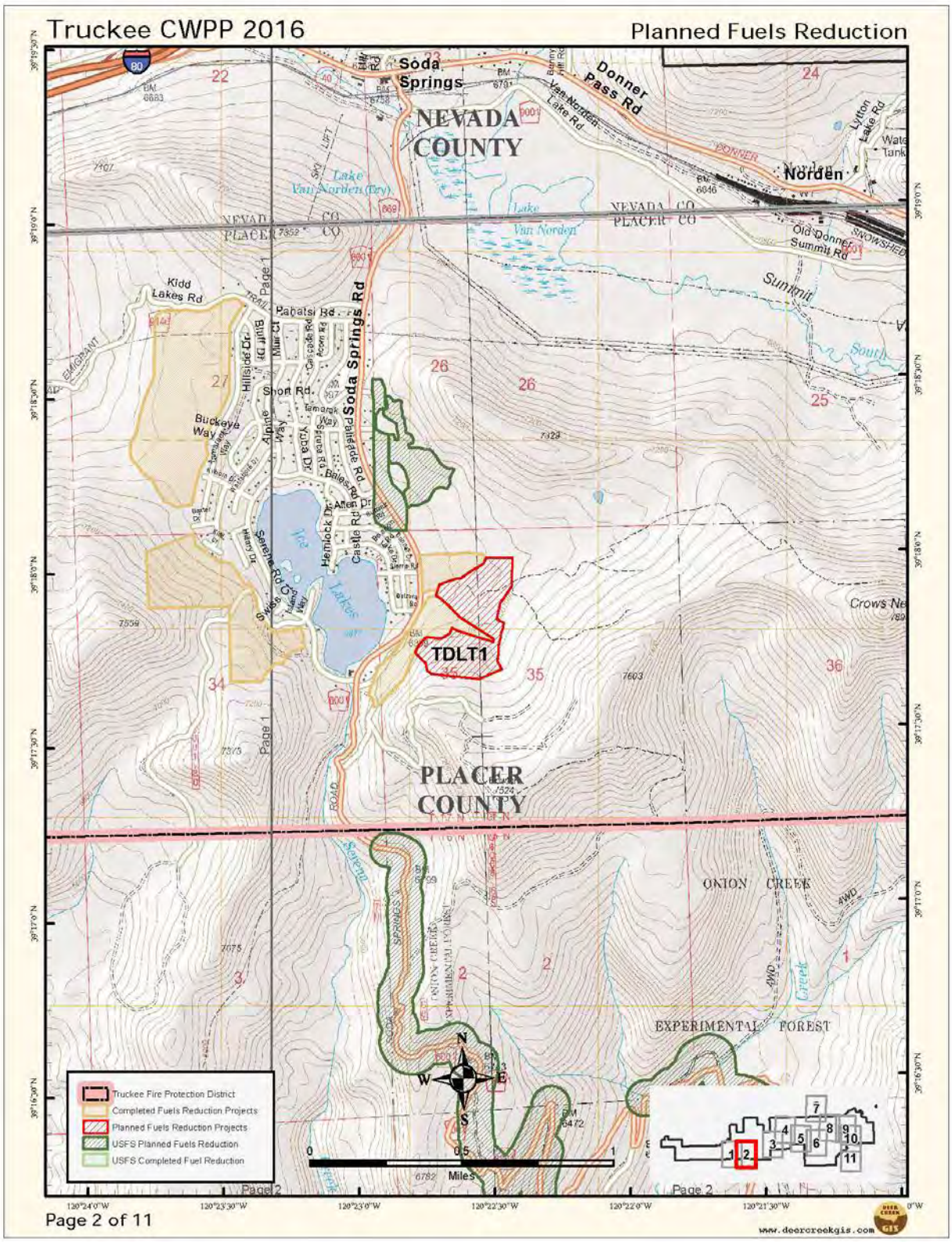
Truckee CWPP 2016
Planned Fuels Reduction
NEVADA COUNTY
PLACER COUNTY
Soda Springs
Donner Pass Rd
Norden
Lake Van Norden (Dry)
Lake Van Norden
Kidd Lakes Rd
Pahatsi Rd.
Soda Springs Rd
Short Rd.
Buckeye Way
Hillside Dr.
Castle Rd
Hemlock Dr.
Allen Dr.
Sierra Rd
Old Donner Summit Rd
Sunmit
South
Crows Ne
TDLT1
ONION CREEK
EXPERIMENTAL FOREST
Truckee Fire Protection District
Completed Fuels Reduction Projects
Planned Fuels Reduction Projects
USFS Planned Fuels Reduction
USFS Completed Fuel Reduction
Miles
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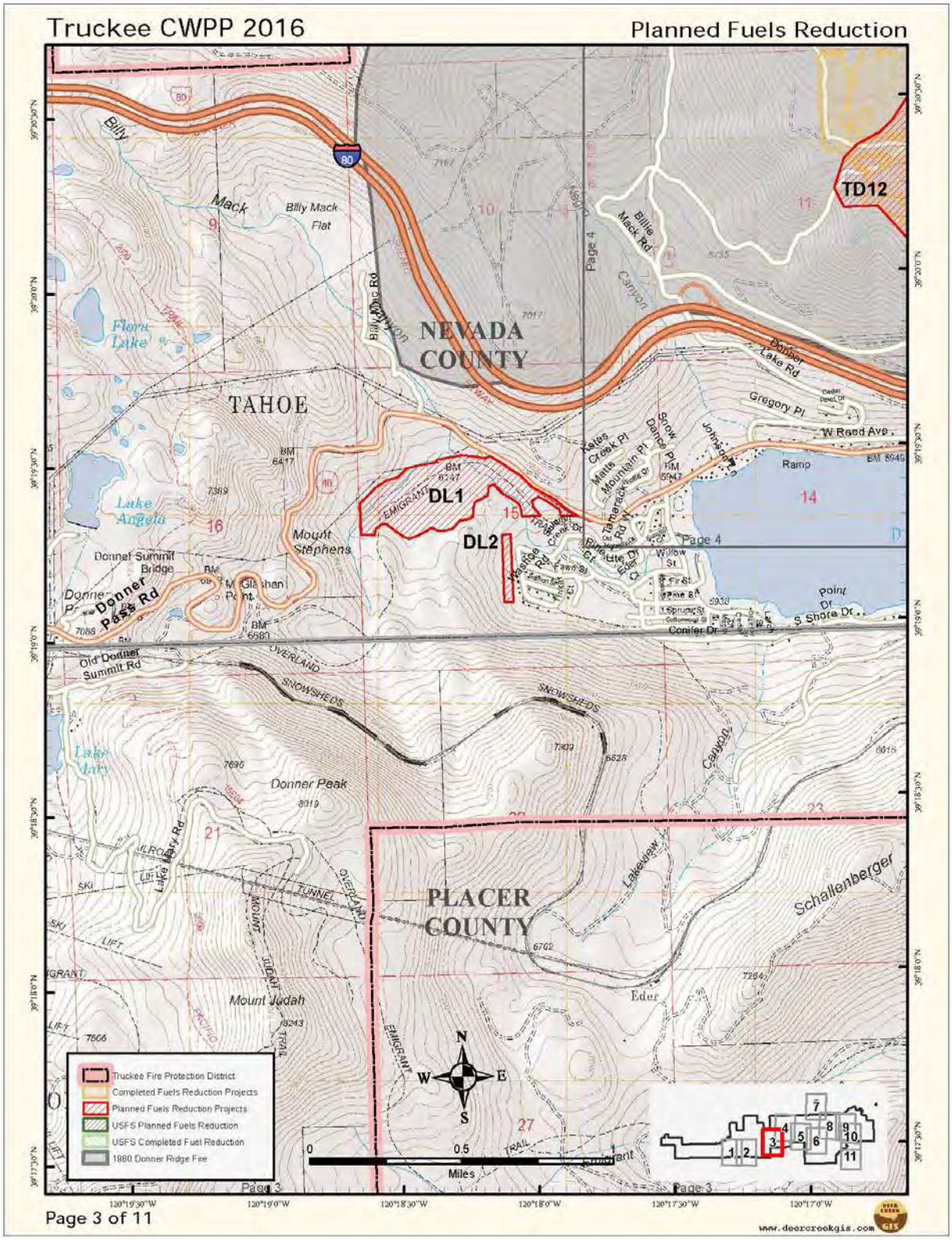
Truckee CWPP 2016
Planned Fuels Reduction
NEVADA COUNTY
PLACER COUNTY
TAHOE
TD12
DL1
DL2
Billy Mack Flat
Flora Lake
Lake Angela
Mount Stephens
Donner Peak
Mount Judah
Schallenberger
Eder
Donner Pass Rd
Old Donner Summit Rd
Truckee Fire Protection District
Completed Fuels Reduction Projects
Planned Fuels Reduction Projects
USFS Planned Fuels Reduction
USFS Completed Fuel Reduction
1960 Donner Ridge Fire
Miles
Page 3 of 11
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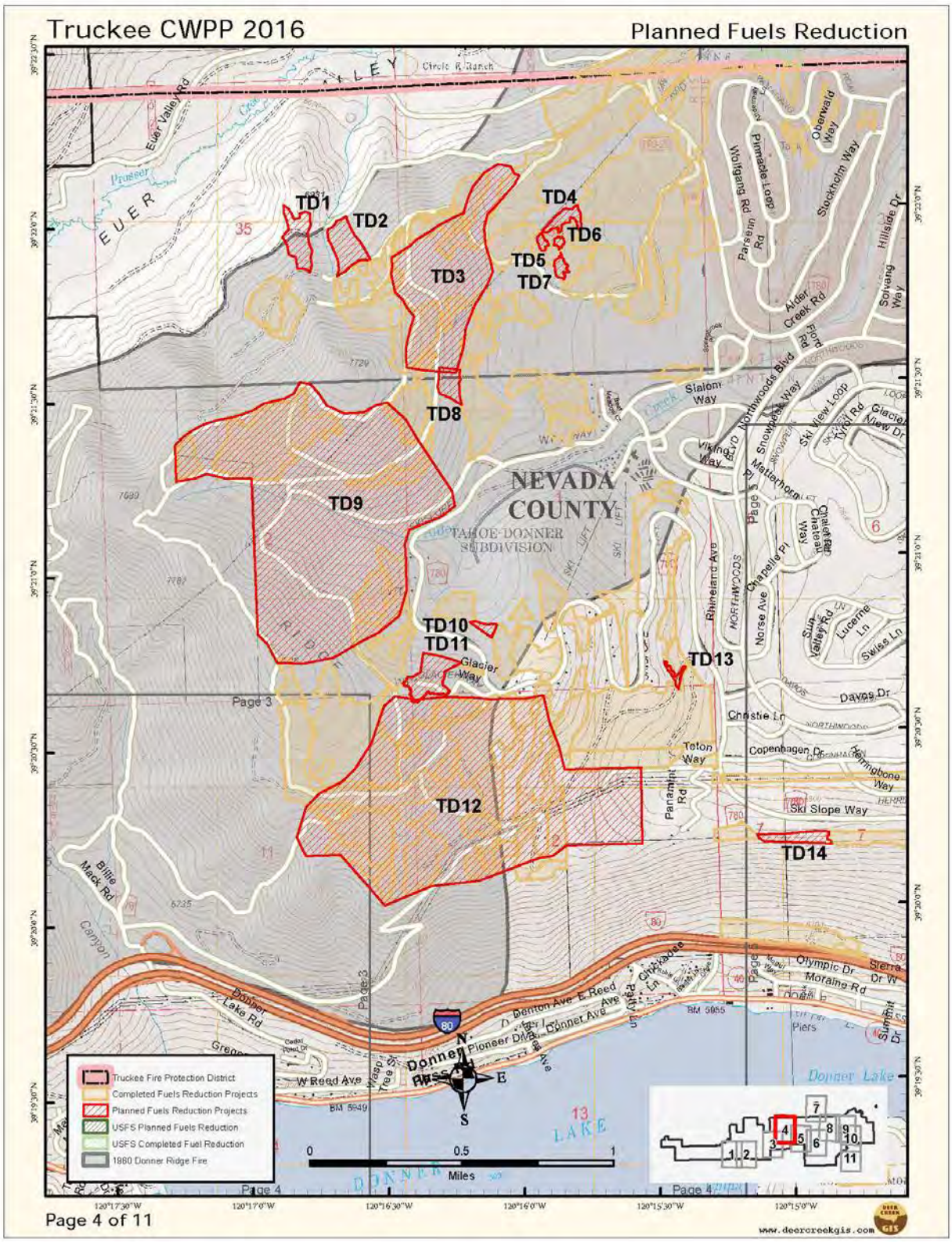
Truckee CWPP 2016
Planned Fuels Reduction
TD1
TD2
TD3
TD4
TD5
TD6
TD7
TD8
TD9
TD10
TD11
TD12
TD13
TD14
NEVADA COUNTY
TAHOE-DONNER SUBDIVISION
Truckee Fire Protection District
Completed Fuels Reduction Projects
Planned Fuels Reduction Projects
USFS Planned Fuels Reduction
USFS Completed Fuel Reduction
1960 Donner Ridge Fire
Miles
Donner Lake
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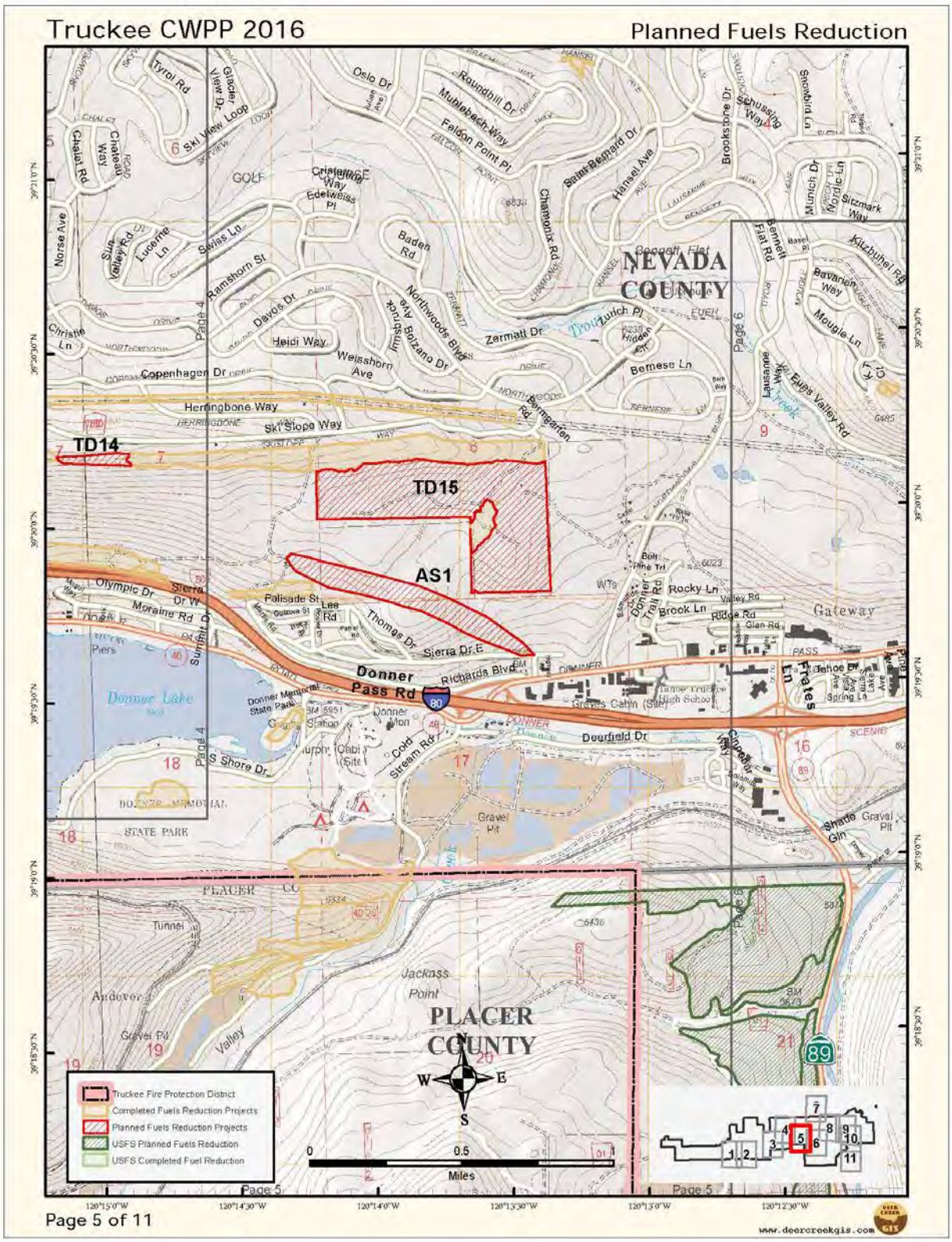
Truckee CWPP 2016
Planned Fuels Reduction
TD14
TD15
AS1
NEVADA COUNTY
PLACER COUNTY
Donner Pass Rd
Donner Lake
Truckee Fire Protection District
Completed Fuels Reduction Projects
Planned Fuels Reduction Projects
USFS Planned Fuels Reduction
USFS Completed Fuel Reduction
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Miles
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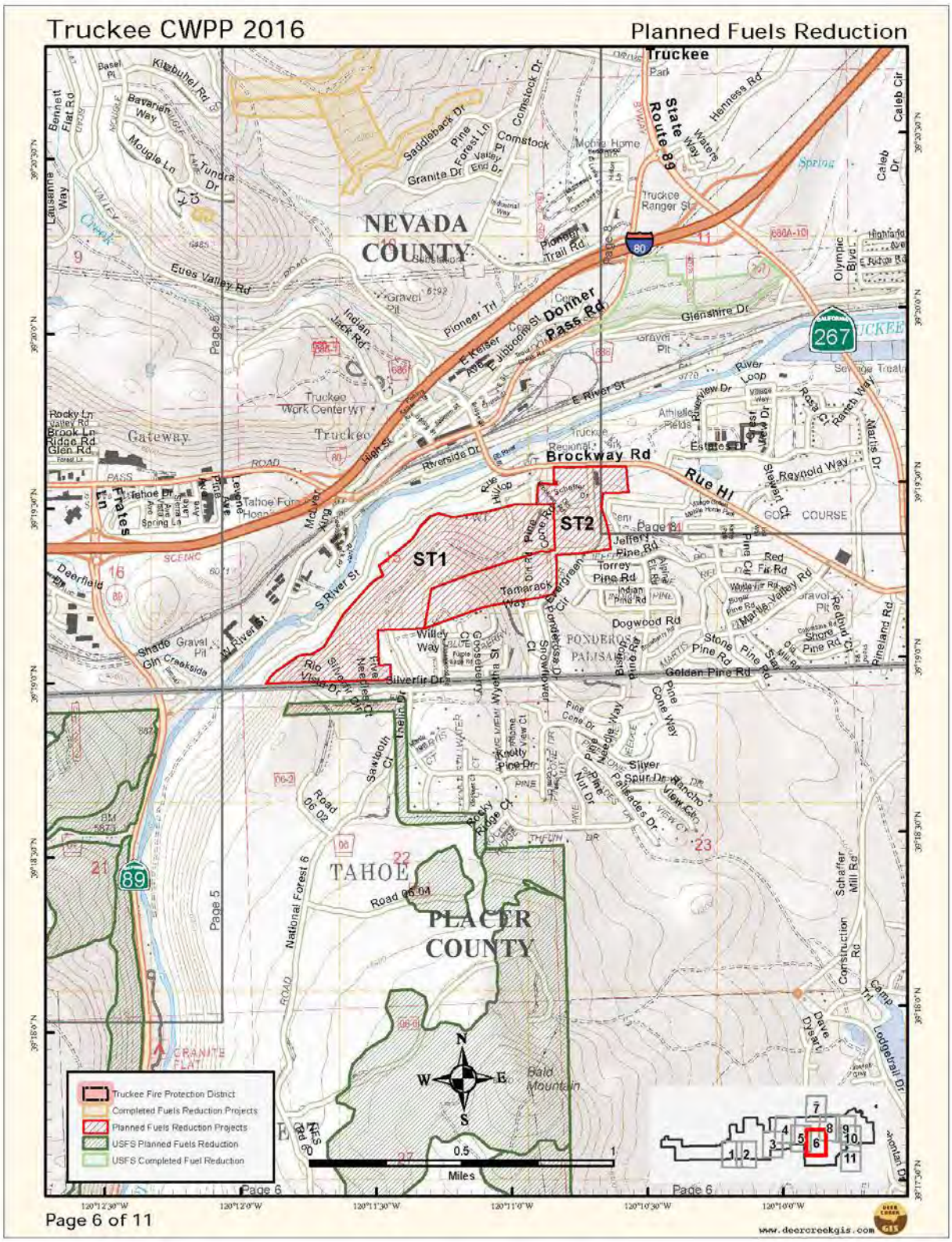
Truckee CWPP 2016
Planned Fuels Reduction
NEVADA COUNTY
PLACER COUNTY
ST1
ST2
Truckee
Gateway
TAHOE
Brockway Rd
Donner Pass Rd
Golden Pine Rd
Truckee Fire Protection District
Completed Fuels Reduction Projects
Planned Fuels Reduction Projects
USFS Planned Fuels Reduction
USFS Completed Fuel Reduction
0.5
1
Miles
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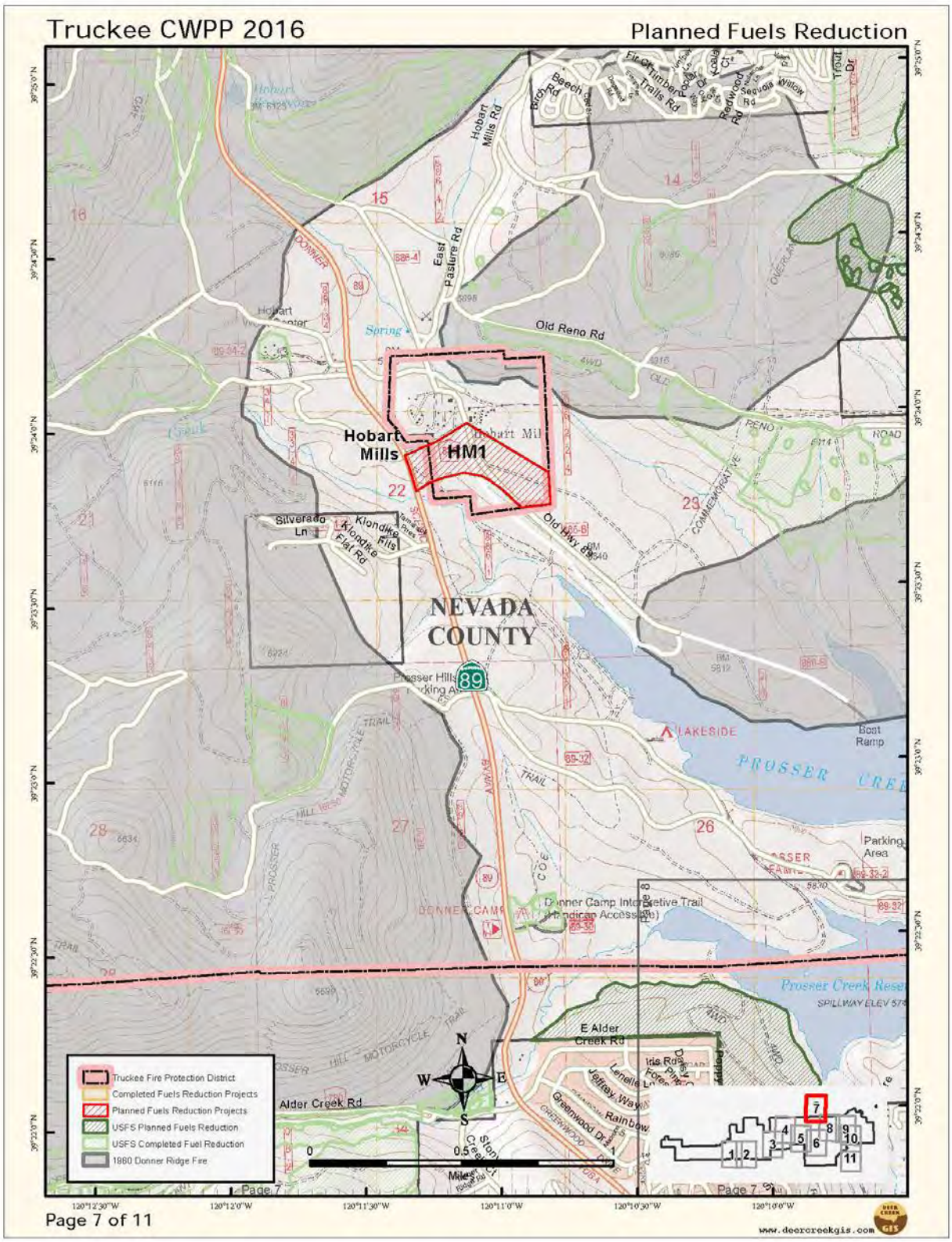
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Donner Pass Rd
Silverado Ln
Klondike Flat Rd
Klondike Rits
Old Hwy 89
Prosser Hill
LAKESIDE
Boat Ramp
PROSSER CREEK
Parking Area
Donner Camp Interpretive Trail
Prosser Creek Reservoir
SPILLWAY ELEV 57
E Alder Creek Rd
Alder Creek Rd
Iris Rd
Jeffrey Way
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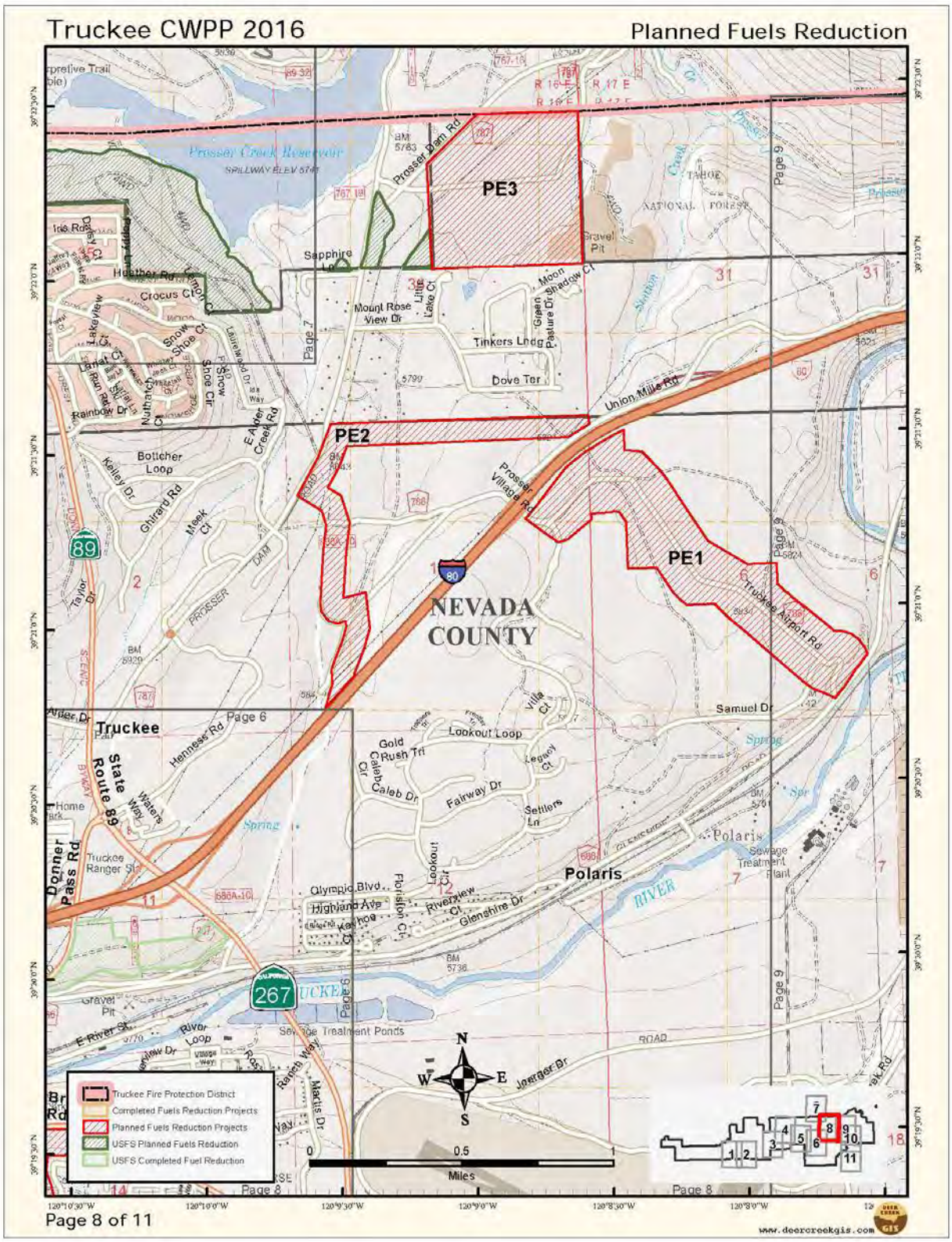
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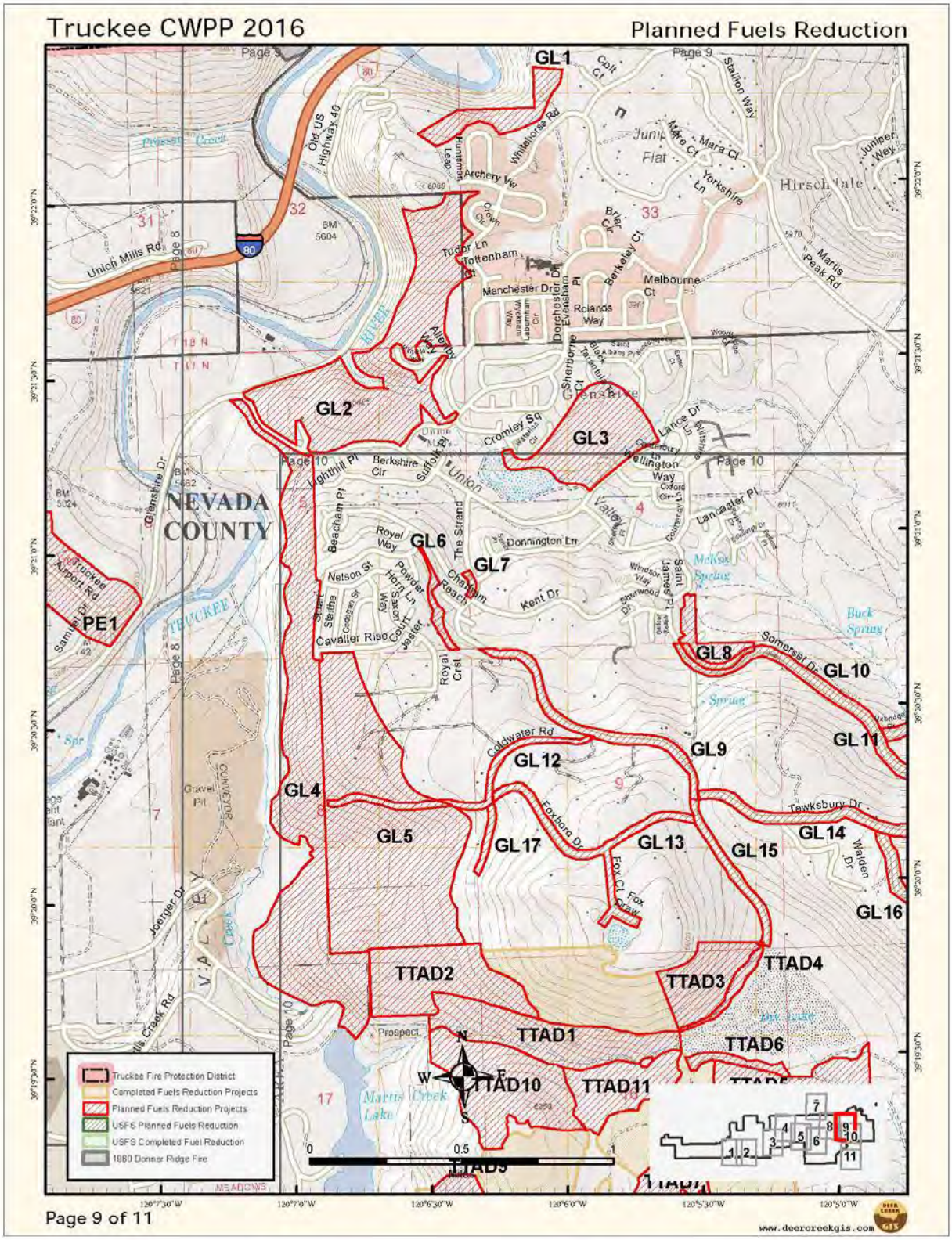
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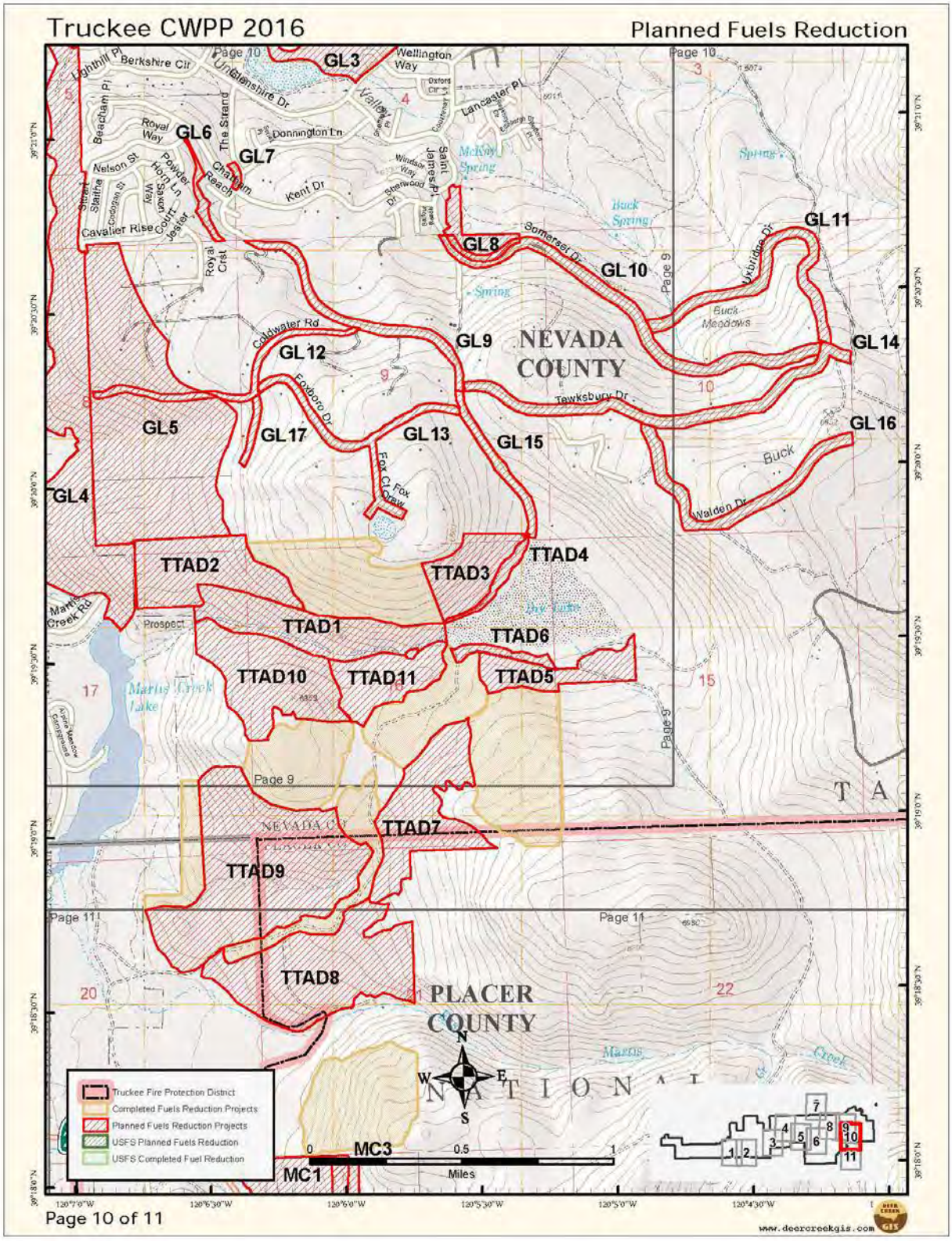
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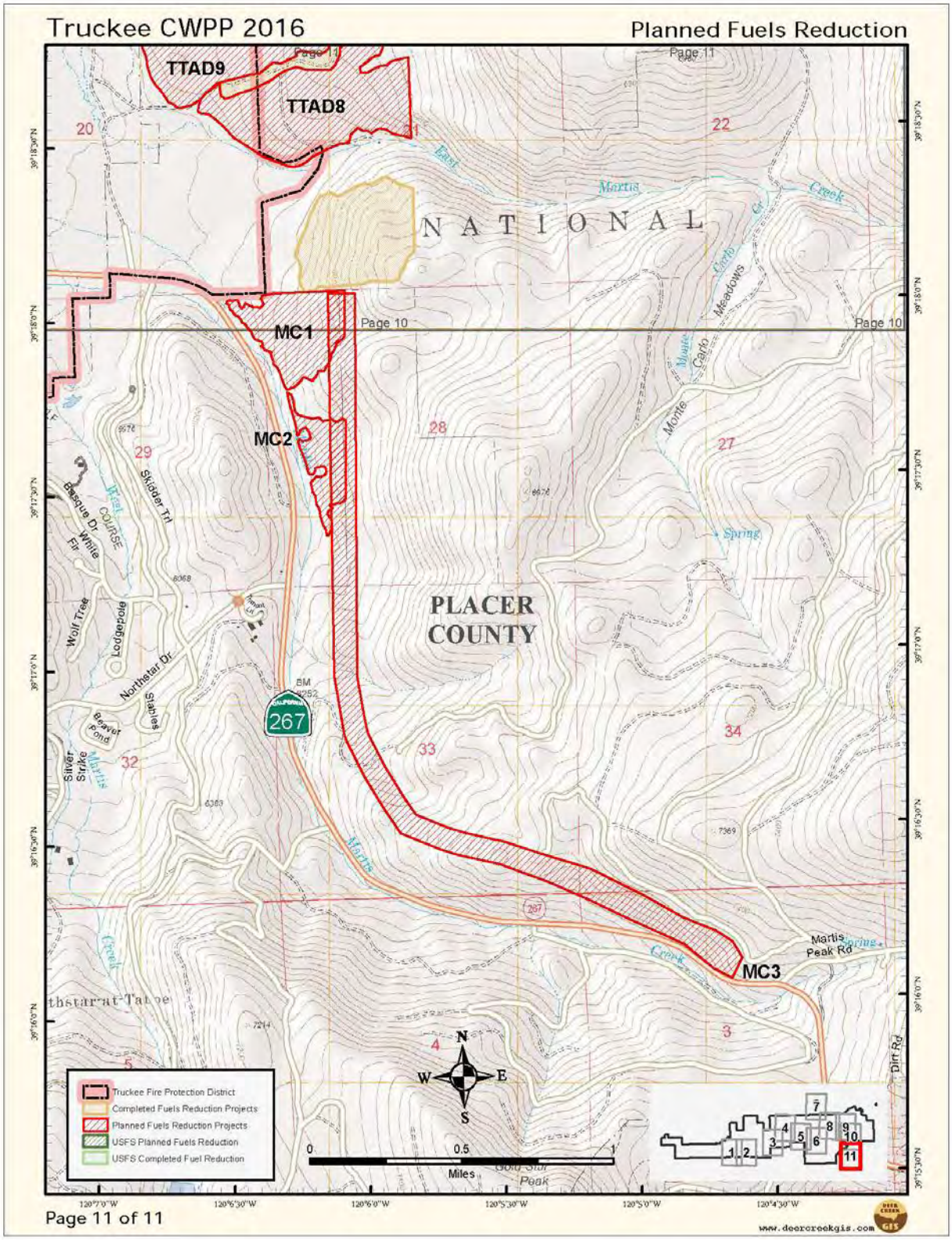
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Truckee Fire Protection District
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Chapter 7 Monitoring and Evaluating the CWPP Recommendations and Accomplishments

Monitoring and Evaluation

A CWPP does not end when it is adopted; a thorough process should involve a continuous cycle of collaborative planning, implementation, monitoring and adapting strategies based on lessons learned. As communities learn from successes and challenges during the development and implementation of their CWPP, stakeholders may identify new actions, propose a shift in how decisions are made or actions are accomplished, and evaluate the resources necessary for successful CWPP implementation. Components of successful CWPP implementation include:

- Tracking accomplishments and identify the extent to which CWPP goals have been met.
- Examining collaborative relationships and their contributions to CWPP implementation, including existing participants and potential new partners.
- Identifying actions and priority fuels reduction projects that have not been implemented, and why; setting a course for subsequent actions and updating the plan as required.

Figure 22 is a framework that can help a community in monitoring and evaluating its CWPP. The table lists six CWPP goals and a series of questions to help communities monitor and evaluate accomplishments, challenges and how well goals have been met. Communities and agencies may want to work together to ensure that at a minimum, data are collected to evaluate the plan measures to gain consistency. The community must recognize that fire safety is rapidly changing. It is likely that new developments and new sources of money in fire safety will change from year to year. It is recommended that this plan be reviewed on an annual basis by the Fire Districts with updates every 5 years, or sooner, if necessary.

Responsibility for monitoring, evaluating and updating the CWPP falls to the Truckee Fire Protection District.

Figure 22: Monitoring and Evaluating a CWPP

1. Partnerships and Collaboration	**1.1** Who has been involved with CWPP development and implementation? How have relationships grown or changed through implementation? What resources did they bring to the table?
	1.2 Have partners involved in the planning process remained engaged in implementation? Have new partners become involved? How have the relationships established through the CWPP enhanced opportunities to address CWPP goals?
	1.3 How has the collaborative process assisted in implementing the CWPP and building

	capacity for the community to reduce wildfire risk?
	1.4 Has CWPP collaboration made a difference or had a positive impact on local organizations, neighborhoods and/or actions?
2. Risk Assessment	**2.1** How has population growth/change and development in your community affected wildfire risk?
	2.2 Are there new or updated data sources that may change the risk assessment and influence fuels priorities?
	2.3 Has the community enacted a wildfire-related ordinance? If so, county, state, or local?
	2.4 Has the community enforced local or CPR 4291 ordinances?
3. Reducing Hazardous Fuels	**3.1** How many acres have been treated for hazardous fuels reduction on public and private land that were identified as high-priority projects in the CWPP? What percentage of total acres treated does this constitute?
	3.2 How many fuels reduction projects have spanned ownership boundaries to include public and private land?
	3.3 What is the number and percent of residents that have participated in projects and completed defensible space on their land?
	3.4 How many hazardous fuels reduction projects have been implemented in connection with a forest restoration project?
	3.5 Economic development resulting from fuels reduction: how many local jobs have resulted because of fuels reduction or restoration activities?
	3.6 Have all CWPP fuels treatments during suppression been utilized for maximum effectiveness?
4. Reducing Structural Ignitability	**4.1** What kind of resource losses (homes, property, infra-structure, etc.) have occurred from wildfires?
	4.2 Are the current codes and regulations for wildfire hazard adequate? If not, are there efforts to change or update them? Are there action items in the CWPP to develop codes and recommendations?

	4.3 Has the public knowledge and understanding about structural ignitability been increased by strategies adopted in the CWPP? Have homeowners been educated on how to reduce home ignitability, and are they replacing flammable building components with non-flammable materials?
	4.4 How many Firewise Communities have been recognized? How many citizens, neighborhoods, or communities have taken action to increase the resilience of their structure to fire?
	4.5 How has the availability and capacity of local fire agencies to respond to wildland and structural fires improved or changed since the CWPP was developed?
5. Education and Outreach	**5.1** What kind of public involvement has the CWPP fostered? (Examples include public education, household visits, demonstration projects, etc.)
	5.2 Has a change in public awareness about wildfire resulted from the plan?
	5.3 What kinds of activities have citizens taken to reduce wildfire risk?
6. Emergency Management	**6.1** Is the CWPP integrated within the county or municipal Emergency Operations Plan?
	6.2 Does the CWPP include an evacuation plan? If yes, has it been tested or implemented since the CWPP adoption?
	6.3 Is the CWPP aligned with other hazard mitigation plans or efforts?
	6.4 Is the Evacuation Website operational, and has it been updated with new information?

This table identifies specific measures that relate to outcomes that can be evaluated at a national level and are associated with HFRA or identified within the 10-Year Implementation Plan.

Appendix A: List of Stakeholders

Name	Affiliation
Joanne Drummond	Fire Safe Council of Nevada County
Linda Ferguson	US Forest Service
Samuel Donahue	US Forest Service
Chief Troy Adamson	CALFIRE
Jeff Dowling	CALFIRE
Rich Adams	California State Parks
Paul Long	Placer County
Alex Terrazas	Town of Truckee
Chief Bill Seline	Truckee Fire Chief
Bob Belden	Truckee Fire
Craig Harvey	Truckee Fire
Richard Anderson	Nevada County Board of Supervisors
Jeff Pettitt	Nevada County Sheriff's Office
Vic Ferrera	Office of Emergency Services Nevada County
Alicia Barr	Town of Truckee
Tony Lashbrook	Town of Truckee
Bill Houdyschell	Tahoe Donner Association
Robert Womack	Truckee Police Department
Dan Warren	Glenshire Homeowners
John Svahn	Truckee Donner Land Trust
Phred Stoner	Truckee Tahoe Airport

Appendix B: Treatment Descriptions and Prescriptions

Fuel Treatment and Restoration Projects Strategy

These are a few landscape treatments designed to support wildland fire suppression, demonstration projects designed to educate the public, roadside treatments designed to facilitate safer evacuations, maintenance treatments and critical individual clearance zones that minimize structure-to-structure ignitions. (CPRC - 4291 and Open Space Treatments)

Treatment Prescriptions

The following treatment techniques are typical of those currently used by private forest landowners, the U. S. Forest Service, and are described in the Sierra Nevada Framework. It is assumed that no new roads would be constructed to implement the projects. The following is a brief description of potential treatment techniques that could be employed to accomplish fuels treatment:

Mechanical Thinning

Mechanical thinning utilizes heavy equipment with large hydraulically-driven saws to cut and remove trees (generally under 24 inches in diameter). The two major harvesting methods include "whole tree removal (WTR)" and "cut-to-length (CTL)". CTL machines use a "stroke delimber" to remove branches before automatically cutting a log to predetermined lengths (Figure 7). While whole tree removal is preferable from a fuels-reduction standpoint, CTL machines create a mat of slash on which they can operate, reducing impacts to the soil. The slash vs. soil disturbance tradeoff must be considered on a site-specific basis. It is possible to use an in-woods chipper to reduce surface fuels in concert with CTL. Mechanical thinning equipment is generally confined to slopes of less than 30%. WTR projects require large landings than can accommodate a skidder operation, a large chipper and semi-trucks. CTL operations require fewer and smaller landings.

Mechanical Thinning Using a Cut-to-Length Harvesting System

Mechanical thinning has the ability to create a more precisely targeted stand structure than prescribed fire (van Wagtendonk 1996, Weatherspoon and Skinner 1996, Stephens 1998, Agee and others 2000, Miller and Urban 2000). The net effect of removing ladder fuels is that surface fires burning through treated stands are less likely to ignite the overstory canopy fuels. By itself, mechanical thinning with machinery does little to beneficially affect surface fuel loading. The only exception is that some level of surface fuel compaction, crushing or mastication may occur during the thinning process. Depending on how it is accomplished, mechanical thinning may add to surface fuel loadings, thereby increasing surface fire intensity. It may be necessary to remove or treat fine fuels that result from thinning the stand (Alexander and Yancik 1977, Graham, 2004).

Prescription Mechanical Thinning

Stands are thinned from below by removing trees up to 30 inches in diameter at breast height (DBH). The thinning is done by starting with the smallest diameter class; removing sufficient suppressed and intermediate trees to achieve an average crown base height (distance from the ground to the base of the leaf [needle] crown) of at least 20 feet and spacing of 10 feet between the crowns of residual trees. On drier sites and on southern aspects, the removal of white fir is to be favored over all other conifer species.

2-5 snags are to be retained per acre (minimum size of 24 inches DBH) and 3-7 large downed logs per acre (minimum size 14 inches DBH and 20 feet long). Trees are to be removed by whole tree yarding and/or disposing of slash in stands by hand piling and burning, or by chipping and scattering.

Mastication

Mastication requires machines to grind, rearrange, compact or otherwise change fire hazard without reducing fuel loads. These treatments tend to be relatively expensive, and are limited to relatively gentle slopes and areas of high values (near homes and communities). Rocky sites, sites with heavy down logs, and sites dominated by large trees are difficult places in which to operate mastication equipment. Additionally, sparks from mastication heads have the potential to start fires and, when working on public land, these machines are subject to the same activity-level restrictions that apply to most other logging equipment.

The ecological and fire effects of mastication treatments vary depending on the size, composition and location of the fuels left after treatment (Graham and others 2000). In many cases, mastication creates a window of 2-5 years in which surface fire intensity actually increases. While this may be offset by a decrease in crown fire potential, mastication tends to increase fuelbed continuity, and can increase fire rates of spread. Mastication is a useful tool in plantations and brushfields, and has applications in thinning small trees for fuelbreak maintenance.

Prescription Mastication

Rubber tired or low impact tracked vehicles are to be used to cut, chip and scatter all shrubs and small trees, up to 10 inches DBH on site. White fir should be the priority for tree removal.

Brush cover should be reduced by creating a mosaic of treated and untreated shrubs. Openings between shrubs should be twice the height of the shrubs and 50-70% of the shrubs should be treated. Brush that is treated should be cut to the maximum stump height of 6 inches. No individual pieces of cut material should be greater than 4 feet long. All masticated stumps should be cut to within 6 inches of the ground. Debris should not average more than two inches in thickness over the entire project area. All cut vegetation should be kept within the unit boundaries. Any cut vegetation falling into ditches, roads, road banks, trails, or adjacent units should be removed immediately.

Tractor Piling or Grapple Piling

Rubber tired or tracked machines are to be used to pile slash, brush and small trees. Where needed trees under 8 inches DBH will be thinned out to 20 foot spacing. Most trees over 8 inches DBH will not be piled. Live oak will be thinned out in most places. Generally, black oak will be left on site. Protection of desirable residual trees from skin ups and damage is very important. Slash piles should not be located near residual trees, so that when they are burned, the piles will not damage trees remaining onsite. The contractor should create clean piles that are free of dirt and no larger then 15 feet tall and 15 feet in diameter. The piles should be partly covered with a 6'x6' piece of water proof material to allow them to be burned after significant rain fall.

Mastication Soil Issues

Thin layers of wood chips spread on the forest floor tend to dry and rewet readily. Deep layers of both chips and chip piles may have insufficient air circulation, making poor conditions for decomposition. Moreover, when layers of small woody material are spread on the forest floor and decomposition does occur, the decomposing organisms utilize large amounts of nitrogen reducing its availability to plants. Therefore, the impact of any crushing, chipping, or mulching treatment on decomposition processes and their potential contribution to smoldering fires needs to be considered (Graham, 2004).

Prescribed Burning

Prescribed burning reduces the loading of fine fuels, duff, large woody fuels, rotten material, shrubs and other live surface fuels. These changes, together with increased fuel compactness and reduced fuel continuity, change the fuel energy stored on the site, reducing potential fire spread rate and intensity. Burning reduces horizontal fuel continuity (shrub, low vegetation, woody fuel strata), which disrupts growth of surface fires, limits build up of intensity, and reduces spot fire ignition probability (Graham, 2004).

Given current accumulations of fuels in some stands, multiple prescribed fires as the sole treatment or in combination with thinning may be needed initially, followed by long-term maintenance burning or other fuel reduction (for example, mowing), to reduce crown fire hazard and the likelihood of severe ecosystem impacts from high severity fires (Peterson and others in prep).

Prescription for Prescribed Burning

Low intensity broadcast burning should be used to reduce all 100-hour fuels (< 3 inches diameter) by 60-80%, the brush component by 50%, and trees less than 3 inches DBH by 75%. Fire is to be used to prune ladder fuels by scorching the lower 1/3 of branches on 100% of trees less than 8 inches DBH. Retain large down logs (20 inches in diameter or greater) to a maximum density of five per acre. 60% to 70% of ground cover is to be maintained on slopes of 35% or less. Additionally, acceptable standards for prescribed fires should include:

- 13 foot maximum scorch height
- less than 10% mortality in conifers > 12 inches DBH

Do not ignite fires in Steam Environmental Zones (SEZ). However, backing fires are to be allowed to enter SEZs affecting a maximum of 45% of the area in a mosaic pattern. No more than 50% of the 100-hour fuels (<3 inches diameter) should be consumed in SEZ's. Opportunities to use prescribed fire are limited for many reasons; a few of these are: smoke management concerns and smoke impacts to the public, potential for an escape with liability in the event of an escape, prescribed fire training and the public perception that all fire is bad.

Hand Thinning and Chipping

Hand thinning and chipping is usually accomplished by a crew of persons using chainsaws and pole saws to thin and clear undesirable vegetation. Hand thinning is conducted with crews of approximately 10 individuals who cut trees with chainsaws. Hand thinning is generally used to cut smaller trees (less than 14 inches DBH), on steep slopes where machines cannot operate, or in environmentally sensitive areas where machines would have a significant environmental impact. Removal of smaller trees is generally limited to younger stands where the trees are smaller. Because hand thinning can only effectively remove smaller material, silvicultural and

fuel management objectives may be more constrained than those achieved with mechanical thinning. Therefore, hand thinning may require more frequent treatments to maintain acceptable fuel loads than mechanical thinning, and hand thinning may not be cost effective in forest stands with excessive ground fuel loading, whereas mechanical thinning would remove or compact those fuels.

Prescription Hand Thinning and Pile Burning

Hand thinning and pile burning should be accomplished using a ten person hand crew with chainsaws. Starting with the smallest diameter trees, remove trees up to 6 inches DBH to achieve spacing of 20 feet between residual crowns . All dead and down material greater than 3 inches in diameter and up to 8 inches in diameter and all cut material regardless of size, should be piled for burning. Piles should be constructed compactly, beginning with a core of fine fuels and minimizing air spaces to facilitate complete combustion. Piles should be constructed away from trees to prevent damage when burning and should not be taller than 5 feet. If broadcast burning is not scheduled for the area, then a fire line should be surrounded around each pile. Piles will be covered with a 4x4 foot square of water resistant paper to cover the fine material in the center of the piles.

Chipping

Chipping may be used as an alternative to burning. It redistributes forest vegetation that is cut by mechanical thinning or hand thinning. The chips may be removed from the site and converted to energy for other products, or they may be scattered throughout the project area.

Grazing

Goats, sheep, horses or cows are to be used to reduce the small fuels such as grass, black berries and small brush.

Cost Estimates

Cost estimates developed as part of this planning effort are based on data for similar work in the Truckee area, El Dorado County and Sierra County. Cost estimates vary widely because of fuel loadings, operational constraints and crew capabilities. The costs are limited to the direct cost of project implementation. These cost estimates **do not include** offsetting revenue that may be generated by providing commercial products, costs associated with project planning or preparation of environmental compliance reports, or administrative overhead incurred during implementation.

Administrative cost are approximately 25% of the total project costs; if the project is estimated to be $100,000 for on the ground implementation, the administrative costs would be approximately $25,000. Administrative costs include environmental documentation, financial administration, project layout and contract administration. These administrative costs can vary depending on community involvement and the type of CEQA or NEPA requirements.

The costs in Figure 23 do not, as stated above, include offsetting revenue that may be generated by providing commercial products, costs associated with project planning or preparation of environmental compliance reports, or administrative overhead incurred during implementation. They include only treatment costs.

Figure 23: Treatment Costs Based on Current Treatment Only Costs

Fuel Reduction Treatment	Cost per acre
Mechanical Thinning (Urban Interface)	$1,000-$3,200
Mastication	$700 - $1,500
Prescribed Burning	$400-$900
Hand Thin and Chip	$1,350-$2300
Pile Burn	$300 - $700
Machine Pile	$185-$275

Appendix C: Fire Behavior

Fire Behavior Modeling Descriptions
(from http://www.fire.org/)

FLAMMAP

FlamMap is a fire behavior mapping and analysis program that computes potential fire behavior characteristics (spread rate, flame length, fireline intensity, etc.) over an entire FARSITE landscape for constant weather and fuel moisture conditions.

- FlamMap software creates raster maps of potential fire behavior characteristics (spread rate, flame length, crown fire activity, etc.) and environmental conditions (dead fuel moistures, mid-flame wind speeds, and solar irradiance) over an entire *FARSITE* landscape. These raster maps can be viewed in FlamMap or exported for use in a GIS, image, or word processor.
- FlamMap is not a replacement for *FARSITE* or a complete fire growth simulation model. There is no temporal component in FlamMap. It uses spatial information on topography and fuels to calculate fire behavior characteristics at one instant.
- FlamMap uses the same spatial and tabular data as *FARSITE*:
  - A Landscape (.LCP) File
  - Initial Fuel Moistures (.FMS) File
  - Optional Custom Fuel Model (.FMD)
  - Optional Conversion (.CNV)
  - Optional Weather (.WTR)
  - Optional Wind (.WND) Files
- FlamMap incorporates the following fire behavior models
  - Rothermel's 1972 surface fire model
  - Van Wagner's 1977 crown fire initiation model
  - Rothermel's 1991 crown fire spread model
  - Nelson's 2000 dead fuel moisture model
- FlamMap runs under Microsoft Windows operating systems (Windows 95, 98, me, NT, 2000, and XP) and features a graphical user interface.
- Users may need the support of a geographic information system (GIS) analyst to use FlamMap because it requires spatial coincident landscape raster information to run.

FlamMap is widely used by the USDI National Park Service, USDA Forest Service, and other federal and state land management agencies in support of fire management activities. It is designed for users familiar with fuels, weather, topography, wildfire situations, and the associated terminology. Because of its complexity, only users with the proper fire behavior training and experience should use FlamMap where the outputs are to be used for making fire and land management decisions.

Fire Behavior Indicators

- Fire type 1 is a surface fire; the fire is generally on the ground. High likelihood of initial attack success.
- Fire type 2 is a passive crown fire, (torching and short range spotting).
- Fire type 3 is an active crown fire, (fire actively moving in the crowns of trees with mid to long range spotting).

Figure 24 Crown Fire Activity

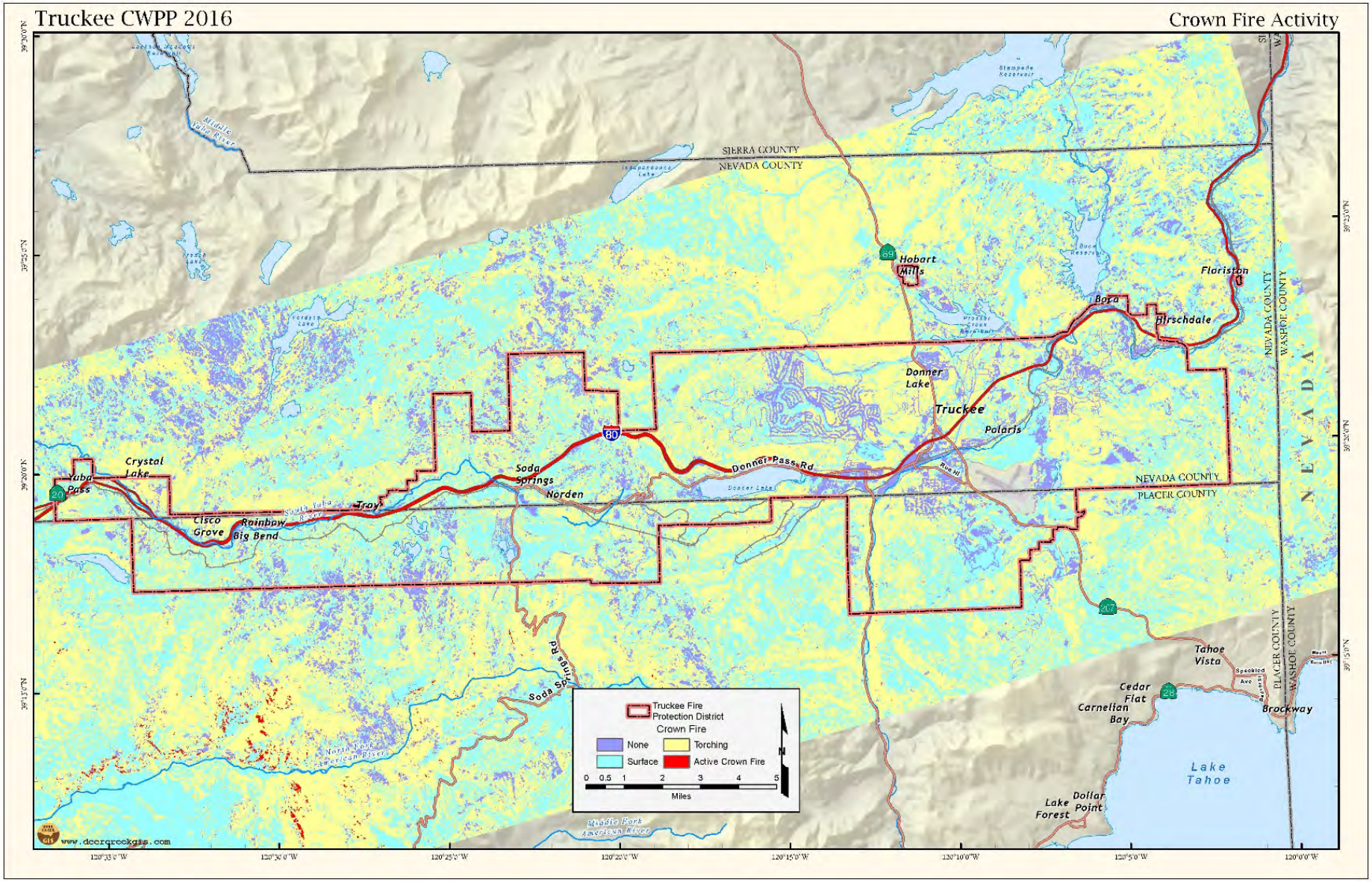
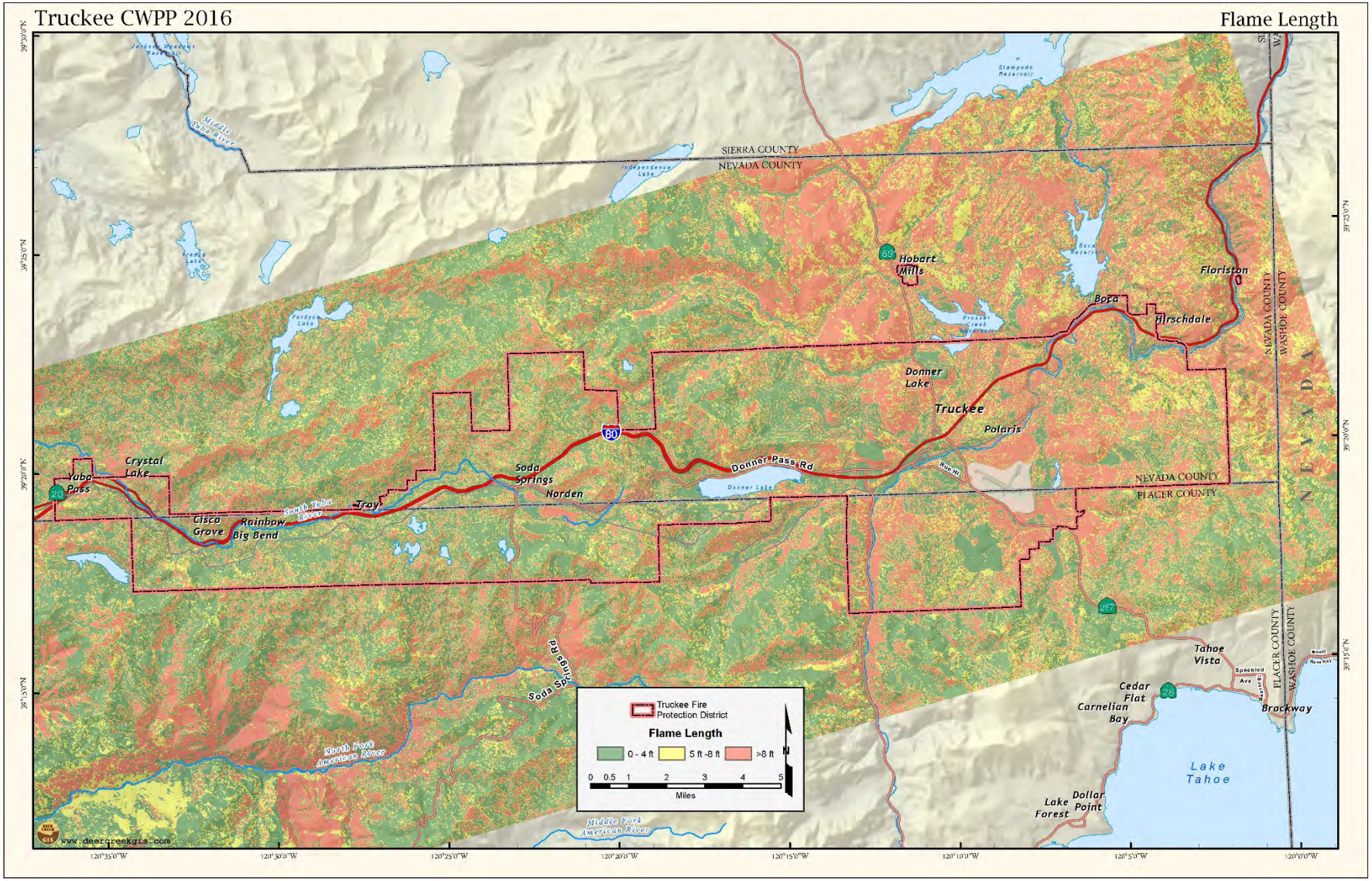


Figure 25: Flame Length



Appendix C: Useful Resources in Pre Fire and Emergency Planning

Useful Resources in Pre Fire and Emergency Planning

1. Get a Kit, 2. Make a Plan, 3. Be informed
   http://www.readyforwildfire.org/
2. Making your Family Disaster Plan
   http://www.ready.gov/america/makeaplan/index.html
3. Disaster Planning Guide Template
   http://ready.adcouncil.org/beprepared/fep/index.jsp
4. California Emergency Management Agency
   http://www.calema.ca.gov/
5. State of California
   http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_codes.php
6. Builders Wildfire Mitigation Guide
   http://firecenter.berkeley.edu/bwmg/
7. California Fire Safe Council
   http://www.firesafecouncil.org/
8. Red Cross - Sacramento/Sierra Chapter
   http://sacsierraredcross.org/
9. Fire Adapted Communities (Educational Resource)
   http://www.fireadapted.org/
10. Firewise Communities (Educational Resource)
    http://www.firewise.org/

Appendix D Truckee Emergency Evacuation Plan

NEVADA COUNTY EVACUATION GUIDE

TOWN OF TRUCKEE

EMERGENCY OPERATIONS PLAN

February 2008 2

U**NEVADA COUNTY**

Emergency Evacuation GuideTPF

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1. **Introduction**

Emergency planning addresses the entire spectrum of disasters from minor to large scale events. All emergencies share similar operational concepts including evacuation. This guide facilitates the coordination and implementation of all emergency services (Fire, Law, OES, etc.,) engaged in evacuation planning

The nature of how a disaster develops is dependent on several factors, such as: type of disaster, location, spreading directions, weather conditions, proximity to people, etc. Some disasters develop and expand more rapidly than others and indicated advance warning is conditional to the coordination and mobilization of the emergency response and preparedness of citizens. This guide provides the fundamental information for emergency responders to coordinate and implement evacuation of citizens from a hazardous area, and provides citizens with the basic information for developing community base preparedness guidelines.

2. **Types of Emergencies**

The types of emergencies that could potentially necessitate the evaluation of an affected area could include natural, technological, or human caused disasters.

3. **Roles and Responsibilities**

The following describes the roles and responsibilities of key participants during an evacuation.

a. Incident Commander (IC) - The incident commander is the person responsible for all aspects of an emergency response; including quickly developing incident objectives, managing all incident operations, application of resources as well as responsibility for all persons involved. The IC (normally a Fire or Law Enforcement representative) will order the evacuation.

b. Fire Agencies – charged with responsibility of containing the hazard within the

perimeter of the area being evacuated.

c. Law Enforcement (LE) Agencies – charged with the responsibility of civil order and traffic control during an evacuation

d. Office of Emergency Services (OES) – charged with the responsibility of coordinating with all supporting agencies (Red Cross, DOT, NID, etc.,) assisting the IC to implement the evacuation.

e. Joint Information Center (JIC) – single source for accurate information regarding evacuation information passed to the general public and the local media.

4. **Initiating an Evacuation**

The Incident Commander in coordination with the local law enforcement agency and the Office of Emergency Services orders an evacuation of a specific area.

5. **Evacuation Plan**

TP

1

PT This guide will supplement the Nevada County Operational Area Emergency Operations Plan dated December

2003. Insert as Part 7, attachment 9.

TOWN OF TRUCKEE

EMERGENCY OPERATIONS PLAN

February 2008 3

This plan is developed on-site dependent on the type of incident and the urgency of the impending threat.

a. Notification options

i. Door-to-Door (includes PA system on LE vehicles)

ii. Local Media (Radio and Television)

1. Including activation of the Emergency Alert System (EAS) for local media outlets

iii. If available

1. Special Assistance For Emergencies (SAFE) – Identification of persons requiring special assistance or unable to self evacuate

2. Mass Notification via telephone (land line and cellular) and e-mail

iv. **Evacuation Levels**

1. ULevel One -Shelter-in-PlaceU – Persons may remain at their location
2. ULevel Two -Recommended EvacuationU – The incident poses a threat to spread into the community. Notify residences to gather their family members, animals and belongings and depart to the sheltering location.
3. ULevel Three -Immediate EvacuationU – The situation requires immediate evacuation of all non-emergency personnel. Life safety is paramount and prompt action is required to gather family members and leave the area.
4. ULevel Four -Defensive Action U– There is no safe evacuation. First Responders will need to give survival directions to civilians.

v. **Evacuation Routes**

Routes designated on the Nevada County General Plan Land Use Maps as Interstates, freeways, highways, and other principle arterial routes shall be considered primary evacuation routes on a county-wide basis. Such routes provide the highest levels of capacity and contiguity and serve as the primary means of egress during an evacuation from the county.

Routes designated on the General Plan Land Use Maps as minor arterial and major collector routes shall be considered secondary evacuation routes on a county-wide basis. These routes supplement the primary evacuation routes, and provide egress from local neighborhood and communities.

vi. **Road Closures Levels**

During emergencies, the local Law Enforcement agency is the primary agency required to control the ingress and egress of traffic into the effected area.

1. Level One – The area is threatened by an emergency situation, the area has not been ordered closed or evacuated. Access will be restricted to emergency personnel, with proper identification; residents with picture identification; and relatives and friends who presence is necessary to assist local residents.
2. Level Two – The area is being used to mitigate the emergency

incident. Evacuations may or may not be in effect. Entry by nonemergency persons could pose danger to themselves, as well emergency personnel. Access will be restricted to "necessary" emergency personnel only. Residents and other non-emergency persons will not be allowed into the effected area.

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3. Level Three – The area is part of an emergency incident and eminent danger exists to anyone entering the area. Evacuations of all non-emergency persons will most likely occur. Access will be restricted to "essential" emergency personnel only. Residents, non essential emergency personnel, and all other persons will not be allowed.

vii. **County Emergency Operation Center** (when activated by the IC)

1. Identify initial Safe Area – temporary location where evacuees will be directed to go for further instructions

2. Identify short-term sheltering locations in the local area of the incident

a. The American Red Cross (ARC) will open shelters when requested to do so by local public safety or other governmental authority.

b. Nevada County is supported by two ARC Chapters. The Three Rivers Chapter (supports Western Nevada County) and the Sacramento-Sierra Chapter (supports Eastern Nevada County).

i. The ARC maintains shelter site information as well as shelter agreements with facilities appropriate for use as shelters including compliance with handicap accessibility and public accommodation in accordance with the Americans with Disabilities Act

(ADA).

3. Ensure Animal Evacuation procedures are initiated

a. The primary evacuation location for animals is the Nevada County fairgrounds. The utilization of the fairgrounds will be dependant on activities already in-process at this location. Additional locations have been identified and the use of these locations will be coordinated if necessary

4. Activate all volunteer agencies to support the evacuation (immediate and long-term)

5. Plan for long-term sheltering requirements

6. Coordinate safe-entry into the incident area once it is designated safe to do so

a. Safe-entry could be escorted or non-escorted. This will be determined by the IC in coordination with the local law enforcement agency

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6. Community Emergency Preparedness Guides (EPG)

The purpose of a Community EPG is to provide the components for developing a community based preparedness plan. The components provide the basic information for citizens to be prepared for potential disasters.

Local Communities may desire to develop an EPG specific to their area. If government funds are utilized to develop an EPG, it shall include the following components:

a. General Requirements:

i. Map of the Area identifying all interstates, freeways, highways and principal arterial routes

ii. Evacuation Levels

iii. Road Closure Levels

iv. Animal Evacuation Procedures

v. Important area phone numbers

vi. Family Emergency Plan

vii. Date of publication

b. Customized Information for the local area may be added.

Before publication of an EPG developed utilizing government funds, final approval is required by the Nevada County Emergency Services Co

Appendix E: Local and State Regulations

This appendix is located in a separate folder to be added to any paper copies of this document.