



# Report to Nevada State Legislature-AB75

## Fire-Fuels-Forest Restoration Activities and Accomplishment at Lake Tahoe, NV.



Compiled and Prepared by  
Nevada Division of Forestry  
2011

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## Summary

This report is in accordance with Assembly Bill 75 and is a recommendation of the Bi-State Fire Commission.

Forest restoration and wildfire hazard reduction/prevention activities are ongoing activities carried out by several entities at Lake Tahoe. On the Nevada side of the Lake Tahoe Basin those entities are Nevada Division of Forestry(NDF), Nevada Division of State Lands (NDSL), Nevada Division of State Parks (NDSP), USDA Forest Service - Lake Tahoe Basin Management Unit (USFS/LTBMU), North Lake Tahoe Fire Protection District (NLTFPD), Tahoe-Douglas Fire Protection District (TDFPD), Nevada Fire Safe Council (NVFSC) and the Tahoe Regional Planning Agency (TRPA). Following passage of the White Pine County Conservation, Recreation, and Development Act of 2006, a 10-year Multi-jurisdictional Basin wide plan was developed by the agencies listed above along with several California Agencies to direct fuel reduction planning and implementation. Availability of federal funds through direct Forest Service Grants, the California Grant Clearing house, and the Southern Nevada Public Land Management Act (SNPLMA) since has lead to increases in annual accomplishments in wildfire hazard reduction/prevention by responsible agencies. Accomplishments by the agencies and non-profits include coordinated planning for wildfire hazard reduction/prevention, fuel reduction on thousands of acres since 2007, coordinated public information campaigns, electronic tracking of progress, and modifying and streamlining the regulatory environment.

NOTE: The original report was produced in 2009 and is presented here in its entirety for reader background. Agency accomplishments for 2010 are contained Table 2 on page 2 and in greater detail in an addendum beginning on page 28.

### Fire Protection/Prevention Organizations

There are many government agencies responsible for forest management and fire prevention/suppression within the Lake Tahoe Basin. All are actively involved in protecting visitors and residents at Lake Tahoe through their mandated activities. The USFS/LTBMU is responsible for forest management and fire suppression on the National Forest System lands at Lake Tahoe. This accounts for approximately 29,100 acres on the Nevada side of the Lake Tahoe basin. The two fire districts on the Nevada side of the basin, TDFPD and NLTFPD have responsibility for fire suppression on the private and local government-owned lands within Douglas and Washoe counties, which accounts for 5,331 acres and 10,442 acres respectively. NDF and NDSL have responsibility for forest management on state lands in the Basin which include approximately 8,000 acres of state parks and 214 acres of Tahoe Bond Act parcels. Wildfire suppression on these lands is NDF's responsibility.

Prior to the Angora Fire in 2007 and the subsequent Bi-State Fire Commission recommendations, all the agencies listed above were actively engaged in wildfire hazard reduction. Each land management agency and fire protection district was working relatively independently on managing the wildfire hazard on lands within their jurisdiction. Both fire districts in Nevada, TDFPD and NLTFPD had active defensible space and curbside chipping programs and NLTFPD had their own 20 person hand crew for hazardous fuel reduction and suppression. The Nevada Division of Forestry was assisting residents with forestry management issues, silvicultural practices to improve forest health, marking trees for removal on private residential lots and issuing TRPA Tree Removal permits. NLTFPD began a prescribed burning program on greenbelt properties within their district in the early 1990s. The NDF forester attached to the Nevada Tahoe Resource Team was actively managing fuels on Lake Tahoe State Park lands and the Division of State Lands forester was managing fuels on Tahoe Bond Act parcels. The LTBMU had been conducting vegetation projects on their lands for several years with the East Shore Project in the mid 1990s being one of the earlier, larger projects on the Nevada side of the Basin. Table 1 gives an indication of the agencies and their respective fuel reduction accomplishments back to 2000.

**Table 1. Acres of fuel reduction projects completed by Lake Tahoe Basin agencies since 2000**

Year	USDA Forest Service LTBMU*	North Lake Tahoe FPD**	Nevada State Parks	Nevada State Lands	Total
2000	677	151	50	26	904
2001	691	215	55	24	985
2002	1,260	240	100	23	1,623
2003	1,254	145	270	32	1,701
2004	1,918	178	253	12	2,361
2005	1,913	377	101	17	2,408
2006	2,160		171	20	3,009
<b>Total</b>	<b>9,873</b>	<b>1,306</b>	<b>1,000</b>	<b>154</b>	<b>12,991</b>

\*Includes lands in Nevada and California

\*\*North Lake Tahoe FPD includes projects on federal lands, which were also reported by the USFS/LTBMU; therefore, the NLTFPD accomplishments were reduced by 42%, the amount of federal land in the fire district. Source: TRPA Fuel Reduction Plan prepared by Steve Holl Consulting (2007), NDSL, USFS/LTBMU.

**Table 2. Acres of Fuel Reduction Completed Since the Bi-State Fire Commission in 2007**

	2007 thru 2009	2010	TOTAL
NDF for State Parks	1,362	210	1,572
NV State Lands	149	108	257
NLTFPD	591	305	896
TDFPD	432	164	596
USFS-LTBMU	3,031	108	3,139
<b>TOTAL</b>	<b>5,565</b>	<b>895</b>	<b>6,460</b>

### Wildfire Hazard Mitigation Plans at Lake Tahoe

SNPLMA funding became available to the Tahoe Basin fire agencies through the White Pine County Conservation, Recreation, and Development Act of 2006 (Act). A requirement of the Act was that the federal and state land managers, local agencies, and regulators were required to create a “Multi-Jurisdiction Fuels Reduction and Fire Prevention Strategy – 10 Year Plan” to be eligible for SNPLMA funding. The agencies in Nevada that participated in the plan development were the NDF, NDSL, NDSP, the Nevada Tahoe Resource Team, NLTFPD, USFS/LTBMU, TDFPD and TRPA.

The plan comprehensively combined existing wildfire hazard reduction plans prepared by the federal, state and local government agencies, and fire protection districts, including the Community Wildfire Protection Plans (CWPP), within the Basin, and provided a framework for participating agencies to identify priority areas and a strategy to work collaboratively on accomplishing those priorities. Figures 1 and 2 show the proposed treatment areas by 5 year planning periods and Figure 3 shows the annual schedule for proposed treatment areas.

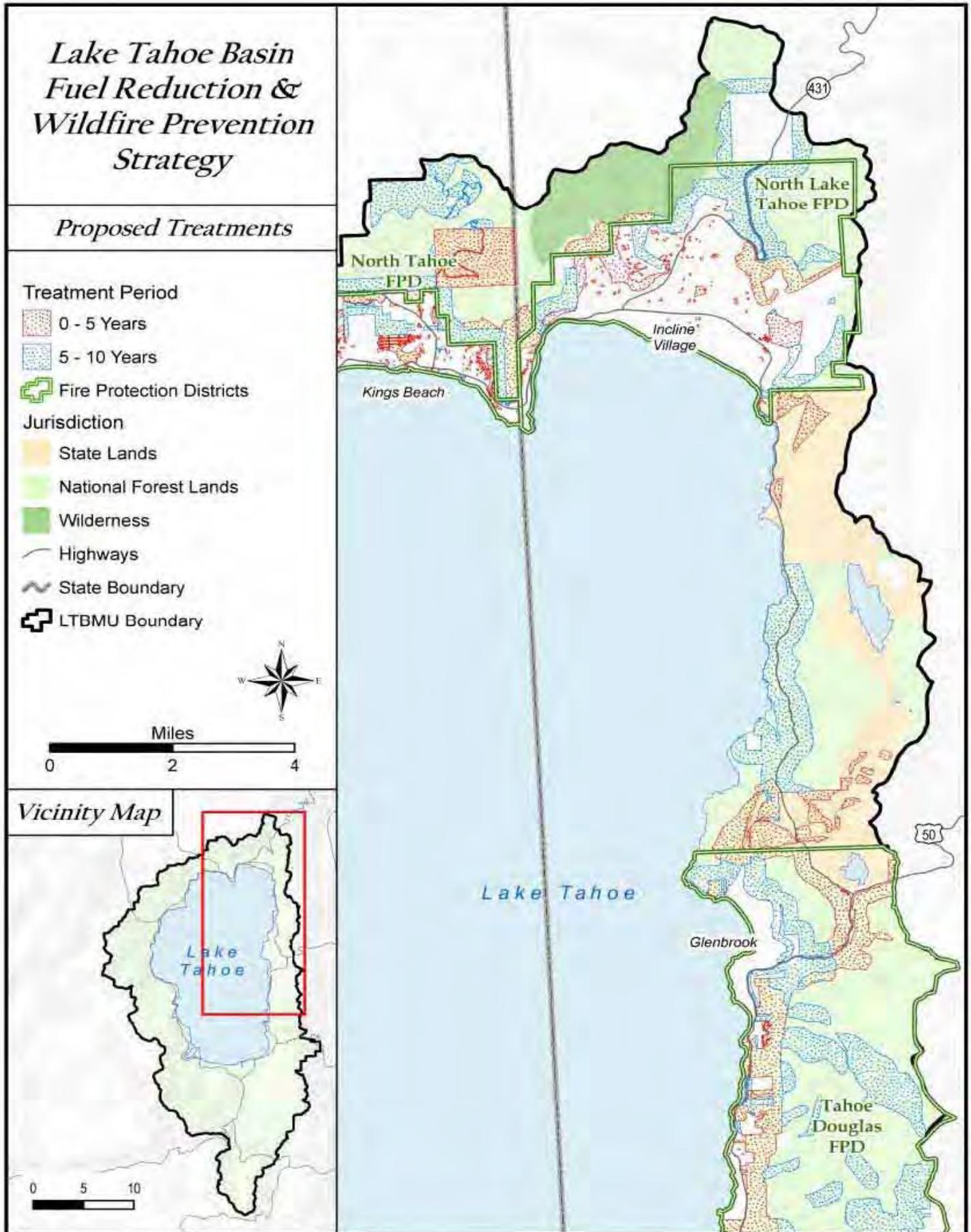
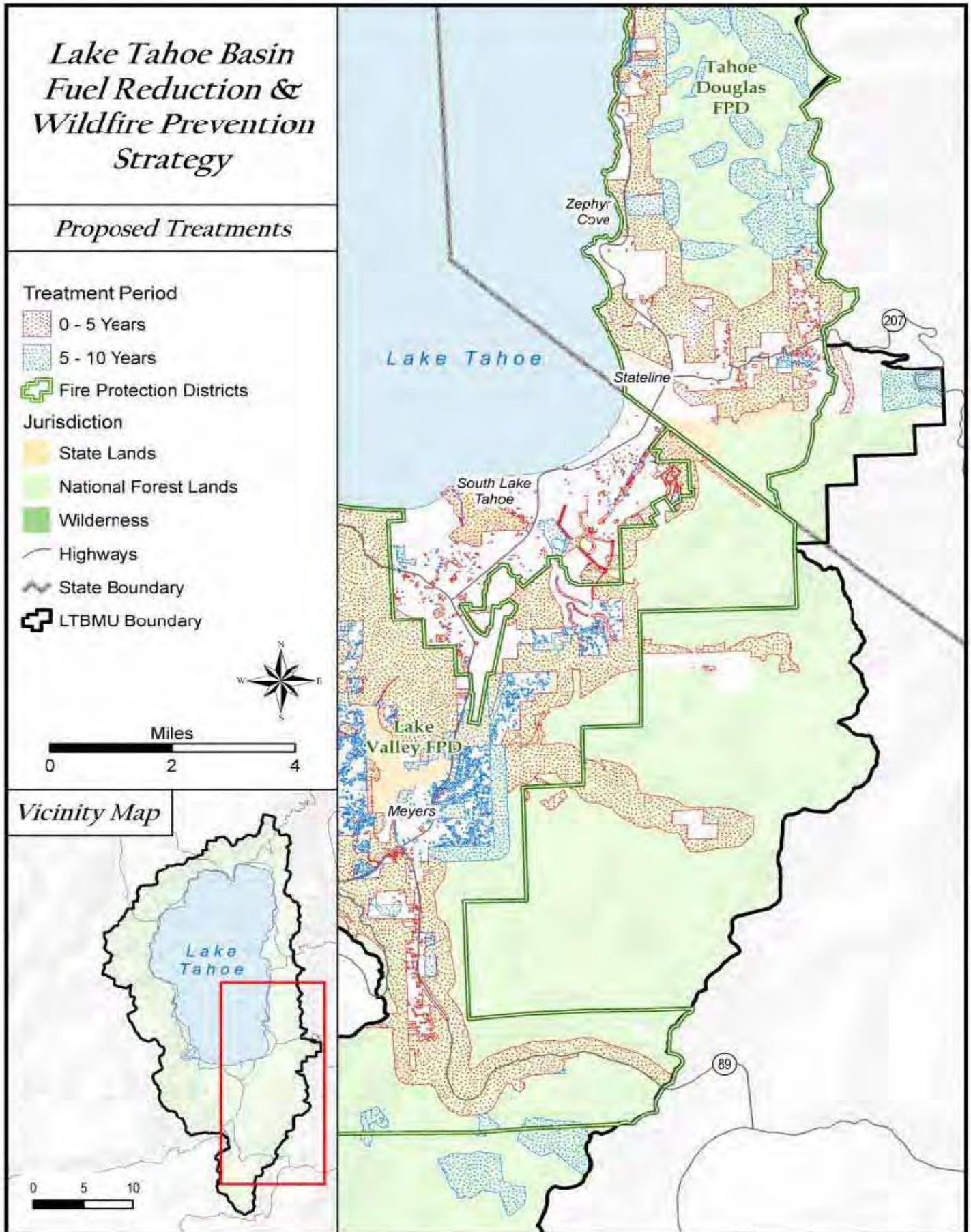


Figure 1. Proposed Treatment Areas for the North East Part of the Lake Tahoe Basin.



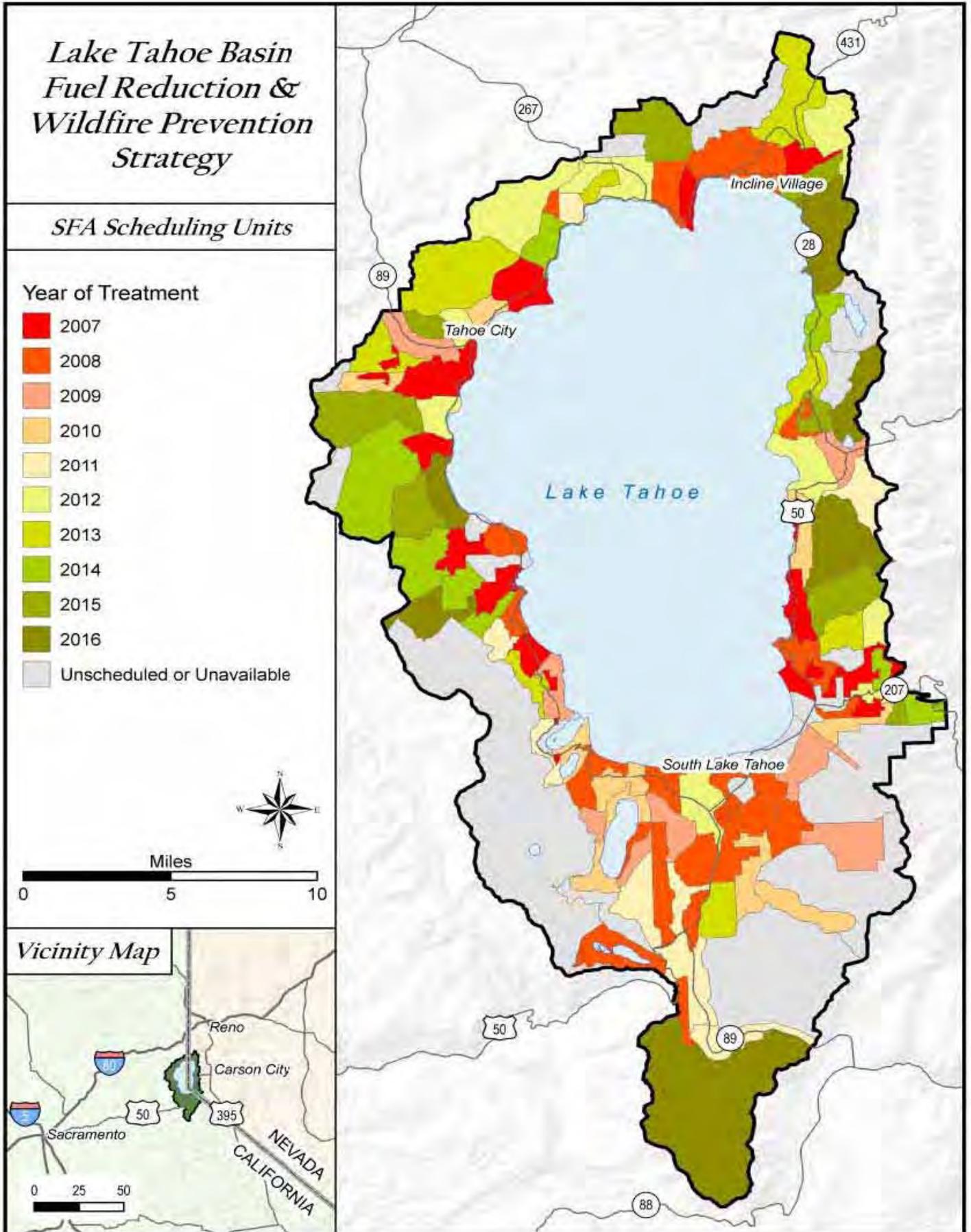


Figure 3. Proposed Schedule for Treatment Areas

The 10-Year Plan created an oversight body composed of the chief executive officers of the federal and state land management agencies and the local fire agencies. This group, called the Multi-Agency Coordinating Group (MAC) is the principal group that monitors the implementation of the 10-Year Plan. The MAC is charged with strategic management of fuels reduction in Lake Tahoe.

The local fire agencies also formed a basin wide implementation group called the Tahoe Fire and Fuels Team (TFFT). The TFFT includes members from the TRPA, Lahontan Regional Water Quality Control Board, Cal Fire and the local fire agencies. The TFFT is an organization responsible for implementing projects on non-federal lands that are consistent with the CWPP. And while the CWPP are a base document, final project locations are planned by the foresters for the fire district or state agency. In this respect, the TFFT is responsible for final treatment planning. The USDA-FS is responsible for planning and implementing projects on federal property within the Tahoe Basin.

**Table 3. Summary of roles and responsibilities of agencies and individuals to implement the Strategy**

Agency	Land Management	Regulatory	Lead Agency for Environmental Compliance	Funding	Programmatic Oversight
Individual Landowners	X			X	
TRPA		X	X	X	X
Nevada Fire Safe Council				X	X
USDA-FS LTBMU	X	X	X	X	X
Fire Protection districts	X		X		X
Nevada Division of Forestry	X	X		X	
Nevada Division of State Parks	X			X	
Nevada Division of State Lands	X			X	X

## Accomplishments Since 2007

### Nevada Tahoe Resource Team (Lake Tahoe State Park)

The Nevada Tahoe Resource Team (NTRT) is responsible for managing lands owned by the State of Nevada within the Lake Tahoe Basin. These lands consist of Lake Tahoe Nevada State Park and the smaller urban inter-mix parcels acquired through the Tahoe Bond Act.

The NTRT is funded through the Tahoe Bond Act and implements the Environmental Improvement Plan (EIP) developed in 1997 for the properties. Phase Two of the EIP is nearly finalized and is expected to be adopted by the TRPA Governing board in the spring, 2010. The plan includes a focus on wildfire hazard reduc-



**Before Treatment**



**After Treatment**

**Figure 4. Before and after fuel reduction at Tunnel Creek, Lake Tahoe State Park.**

tion, forest health and wildlife habitat improvement. Projects have been located in Slaughterhouse Canyon, North Canyon, Spooner Meadow, Van Sickle, Sand Harbor and Tunnel Creek (Figure 4). The majority of the work has been accomplished using NDF conservation crews. Some crew work has been contracted out and there have been two commercial timber harvests. There has been 840 acres of thinning and brush removal and 522 acres of pile burning completed on State Park lands since 2007. NDF's biomass transportation system hauled 885 tons of material to the powerplant at Northern Nevada Correctional Center in Carson City. Fuel treatments are currently in progress on 400 additional acres and plans have been completed for 300 more. See Appendix maps 1-4 for project locations. The NTRT also received Round 8, 9, and 10 funding from SNPLMA for fuel reduction projects in the wildland-urban-interface (WUI). The NTRT is expected to complete fuel treatments identified in the 10-year strategy on time or ahead of schedule.

The NDSL forester is responsible for managing the vegetation on the Tahoe Bond Act parcels in the Tahoe Basin. SNPLMA Round 8, 9, and 10 funds have been received for treatment on these lands as well. Since January 2007, NDSL has treated 221 Tahoe Bond Act parcels. Treatments included thinning of over-stocked forest stands and brush reduction. In addition, 23 acres of piles were burned. Tahoe Bond Act expenditures totaled \$34,000 and SNPLMA funds expended to date are \$111,550. SNPLMA funds are from Round 8 and the treatment portion is 75% complete. Total dollars spent on hand-thinning and pile burning is \$146,500. Parcels treated are located in Douglas and Washoe Counties and the goal is to complete Round 8 thinning treatments in

the early 2010 field season. The largest remaining treatment area for Round 8 is Rocky Point which will tie in with State Parks treatment work.

Crews performing treatment and pile burning are NDF, TDFPD, and NLTFPD. Round 8 treatments began in Douglas County October 2008 and continued during the 2009 field season in Washoe County focusing on Crystal Bay and Incline Village. Douglas County parcel treatments continued into the 2009 season with the largest parcel on Daggett Summit (14 acres of initial entry work) completed by TDFPD.

NDSL anticipates burning 52 acres/71 urban lots comprising 2450 cubic yards of biomass and 530 piles beginning fall 2009 and into spring 2010. These piles were generated by SNPLMA funded hazardous fuels reduction treatment dollars.

Round 9 SNPLMA treatments are scheduled to commence in the 2010 field season. Seven parcels have been initially identified for entry in the Glenbrook/Hwy 50 corridor. Appendix maps 5 and 6 show the Tahoe Bond Act parcels and the treatment schedule for each.

### Tahoe Douglas Fire Protection District

The availability of funds through Forest Service grants through the NVFSC, SNPLMA funds, and a district wide property tax override allowed TDFPD to expand their wildfire hazard reduction activities beyond defensible space inspections and curbside chipping. With the additional funds the District formed a 20-person fire crew, hired a forester and expanded fuel reduction efforts to larger acreages on lands identified in the CWPP within the district.



**Figure 5. Before and after fuel reduction on private lands, Eastshore Lake Tahoe Basin.**

The TDFPD hand crew has been extensively involved in fuel reduction projects on privately owned as well as on local-, state- and federal government-owned lands (Figure 5). The TDFPD forester has led the fuel reduction planning and implementation efforts on 432 acres of private and local government lands identified in the CWPP for the Fire District. See Appendix maps 7-9 for the locations of treatment areas. The fire crew has also contracted with the USFS and the State of Nevada to conduct fuel reduction work on 137 acres of state and federally-owned lands.

## **North Lake Tahoe Fire Protection District**

NLTFPD has been actively working to reduce the wildfire threat in their district for many years. Their efforts in public education and proactive fuel management efforts have become a model for communities nationally. The Fire District has completed most of the non-federal areas surrounding their communities identified in the 2004 CWPP and current efforts are focused on high fire hazard areas in the urban core, as well as treating stream environment zones that have been difficult to access due to environmental regulations and high treatment costs.

Funding for work on private and local government-owned lands within the Fire District has come from SNPLMA, the Incline Village General Improvement District and USFS grants through the NVFSC. Using these funding sources, the NLTFPD has conducted fuel reduction treatments on 591 acres of private and local government-owned lands since 2007. Treatments have included hand thinning and pile burning, mechanical and prescribed burning (Appendix map 10).

The NLTFPD hand crews have been treating between 50 and 100 acres of LTBMU lands annually in their district through thinning and pile burning.

### **USDA-Forest Service, Lake Tahoe Basin Management Unit**

The LTBMU manages the largest acreage at in the Lake Tahoe Basin. The 10-year plan prioritizes USFS owned lands for fuel and vegetation treatments. Those areas are largely located adjacent to the Communities at Risk identified in the 10-year Plan. In Nevada those lands with highest priority are identified as WUI lands located in the Kingsbury corridor, along Highway 50 from Roundhill to Logan Shoals, Glenbrook, Slaughterhouse Canyon and perimeter areas around Incline Village and Crystal Bay.

The USFS/LTBMU has completed, or nearly so, fuel reduction projects and treatments on approximately 600 acres of USFS/LTBMU urban lots in Incline Village, 950 acres in the Kingsbury corridor, 956 acres along Highway 50 from Roundhill to Zephyr Cove, and 525 acres in Slaughterhouse Canyon, near Glenbrook (see Appendix maps 11, 12 & 13). Treatments have been accomplished using hand crews and mechanical equipment contractors.

Project planning is underway, (or has been completed) for 3,800 acres of fuel and vegetation treatment projects running north from Zephyr Cove to Marlette Lake (USFS Spooner Project) and approximately 4,200 acres around Incline Village/Crystal Bay and Northwest along the Mt. Rose corridor (USFS Incline Project).

### **Nevada Fire Safe Council**

The NVFSC has been working closely with TRPA and Fire Protection Districts to promote wildfire hazard awareness and defensible space. To encourage compliance with Nevada Revised Statutes 472.120 and recommendations in Living with Fire, the NVFSC developed a rebate program for residents who voluntarily implement defensible space measures on private property. As of December 2009, 456 residents have completed defensible space recommendations and received a rebate. Currently, the average rebate received by participating homeowners is \$827. Because the rebate amount is capped at \$1000, homeowners on average incur 63% of the defensible space costs. The rebate program has been funded with SNPLMA grant funds.

Additionally, the NVFSC has secured California Clearinghouse grants and direct grants from the USFS for defensible space treatment on residential lots throughout all the Nevada neighborhoods resulting in defensible space treatments on 147 lots.

## **Forest Restoration and Rehabilitation**

Although the focus of much of the work described above is on fuel and wildfire hazard reduction, restoration of the forest ecosystem is often accomplished by the same projects. The history of forest settlement and use over the past 150 years has significantly changed the Lake Tahoe Basin forest ecosystem, making it more prone to catastrophic wildfires. Generally speaking, the forests contain a greater number of trees, the distribution of tree species is less fire tolerant, the forest is even-aged and there is more biomass (fuel) available to burn. The vegetation management and wildfire hazard reduction efforts conducted by forest land managers and fire protection districts typically address these changes in the forest through selective thinning of the understory and overstory trees, cutting openings for new age classes of trees to establish, and burning of biomass. Consequently, in addition to reducing the fire hazard, these treatments help restore sustainable conditions our forests.

The east shore of Lake Tahoe has not experienced a significant wildfire since the Gondola fire in 2002. Consequently the need for fire rehabilitation since then has been minimal and largely confined to the rehabilitation of fire lines around burn piles.

### **Public Education**

Public education is a critical component of the effort to reduce the threat of catastrophic wildfire at Lake Tahoe. Because public information is a distinct function in the incident command system, the Tahoe Fire and Fuels Team formed a sub-committee to address this important issue.

This sub-committee, the Fire Public Information Team (Fire PIT), is comprised of public education and communications professionals who implemented a comprehensive outreach strategy throughout 2008 and 2009 to raise awareness of wildfire issues at Tahoe and to increase defensible space practices on private properties. Members of the Fire PIT include NVFSC, TRPA, USFS/LTBMU, NLTFPD, the South Tahoe Public Utility District, the Tahoe Resource Conservation District, the Nevada Tahoe Conservation District, as well as the Cooperative Extensions of both the University of Nevada and the University of California, Davis. TRPA provided leadership and oversight for the execution of the outreach campaign, which resulted in development of a clear, concise message for the public. The team created the umbrella message “Healthy Forest-Healthy Lake” as part of a campaign to clear up confusion among property owners about the implementation of fire defensible space and erosion-control measures. Lessons learned from the Angora wildfire pointed to the urgent need for this clarification.

The team is responsible for the successful distribution of 10 press releases and five opinion columns in local and regional newspapers and advertisements in multiple publications. Community events and a host of other activities spread key messages about fire safety and fuels reduction projects at Lake Tahoe. Additional highlights of the Fire PIT’s projects include:

- Coordination to disseminate clear, concise, and consistent messaging with the Living with Fire publication. The team provided fire agencies and the NVFSC with enough copies of the publication to reach every homeowner in the Tahoe Basin. All environmental, land management and fire agencies agreed to use this publication as the message vehicle for the public.
- Developed the “Get Defensive” (see Figure 6) campaign for distribution via billboards and publications.
- Developed and placed print advertisements with “Healthy Forest-Healthy Lake” theme to promote integration of fire safety and Best Management Practices (BMPs).
- Coordinated Tahoe Basin Season-Long Events: block parties, demonstration garden events, Fire Fest, walking tours of fuels projects.
- Organized media tours in the field throughout the season to showcase fuels reduction work underway by the Tahoe Fire and Fuels Team.



Brian Arington  
North Lake Tahoe  
Resident

Travis Grant  
North Lake Tahoe  
Fire District

Jill Andersen  
North Lake Tahoe  
Fire District

# GET DEFENSIVE

**GET UP TO \$1000 BACK BY CREATING DEFENSIBLE SPACE NOW.**

Your efforts at hacking, whacking and trimming away defensible space around your home goes a long way toward winning the battle against wildfires. It also makes you an MVP to your neighbors and your lake. Plus, by doing it now you can score up to \$1000 back in rebates.

Go to [tahoefiresafe.com](http://tahoefiresafe.com) for information.

**TAHOE  
FIRE &  
FUELS  
TEAM**

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Figure 6. Defensible Space Public Education Program Flyer.

## Tahoe Regional Planning Agency

The TRPA is increasingly active in addressing wildfire hazard and forest health issues in the Lake Tahoe Basin. The agency is involved in several wildfire hazard planning efforts and has modified its own regulations in an effort to further the wildfire hazard reduction and forest health improvement programs of the land management agencies at Lake Tahoe.

The Bi-State Fire Commission Report contains 30 Recommendations and 55 individual actions that are TRPA specific. Of the 55 actions items, TRPA has fully implemented 34 items, partially implemented 9 items and has 12 action items either under development with partners or is in need of funding to complete. Some of the highlights of those actions are as follows:

### *TRPA Code Changes:*

- Increased diameter of trees requiring a permit for removal to 14 inches DBH
- Added a “Defensible Space Assessor” definition to TRPA Code to allow FPD’s to get more Defensible Space inspections completed with trained personnel.
- TRPA accepted the recommendations in the Basin Fire Chiefs’ “Nine-Point Letter”.
- TRPA Advisory Planning Commission (APC)
- TRPA added representation of the Basin Fire Chiefs to the APC in 2007.
- Basin Fire Protection District (FPD) Plan Review
- TRPA has added FPD review of building projects in order to get their input on fire issues during the planning process.
- TFFT Fire Public Information Team (Fire PIT)

### *Permit Streamlining*

- TRPA and the USFS created a Memorandum of Understanding with the USFS to streamline permitting of vegetation management activities.
- Defensible Space/Erosion Control BMP Integration
- Updated Erosion Control BMP requirements to integrate defensible space requirements.

### *Defensible Space Database Development*

TRPA has utilized staff resources to create a defensible space database for the Tahoe Basin Fire Districts. This database is still under construction and Nevada recently awarded TRPA with \$110,500 to continue the effort.

TRPA continues to lead the Fire PIT as a communication and outreach sub-team of the TFFT. TRPA prompted the TFFT to allocate funding to the Fire PIT for an integrated media and communication campaign to raise awareness of wildfire issues at Lake Tahoe and to increase defensible space practices on private properties. The campaign includes:

- A series of columns running in local newspapers educating readers on fire services, defensible space and fire behavior.
- “Get Defensive” advertisements in publications and billboards
- Direct mail to all Nevada and California property owners
- Website and social media.

TRPA has represented the TFFT at numerous, high-profile community events to promote forest fuel reduction and defensible space. TRPA coordinated the design and layout of an oversized, portable display panel for events. The panel debuted at the annual Lake Tahoe Forum in Roundhill, NV in August, 2009.

TRPA communications staff regularly assists Nevada fire districts such as TDFPD to publicize fuel reduction projects by writing and disseminating press releases and assisting in design of project signage and flyers. The Zephyr Cove Park, Friday's Station, and Stateline fuel reduction projects received this type of assistance from TRPA.

## **Individual Landowners**

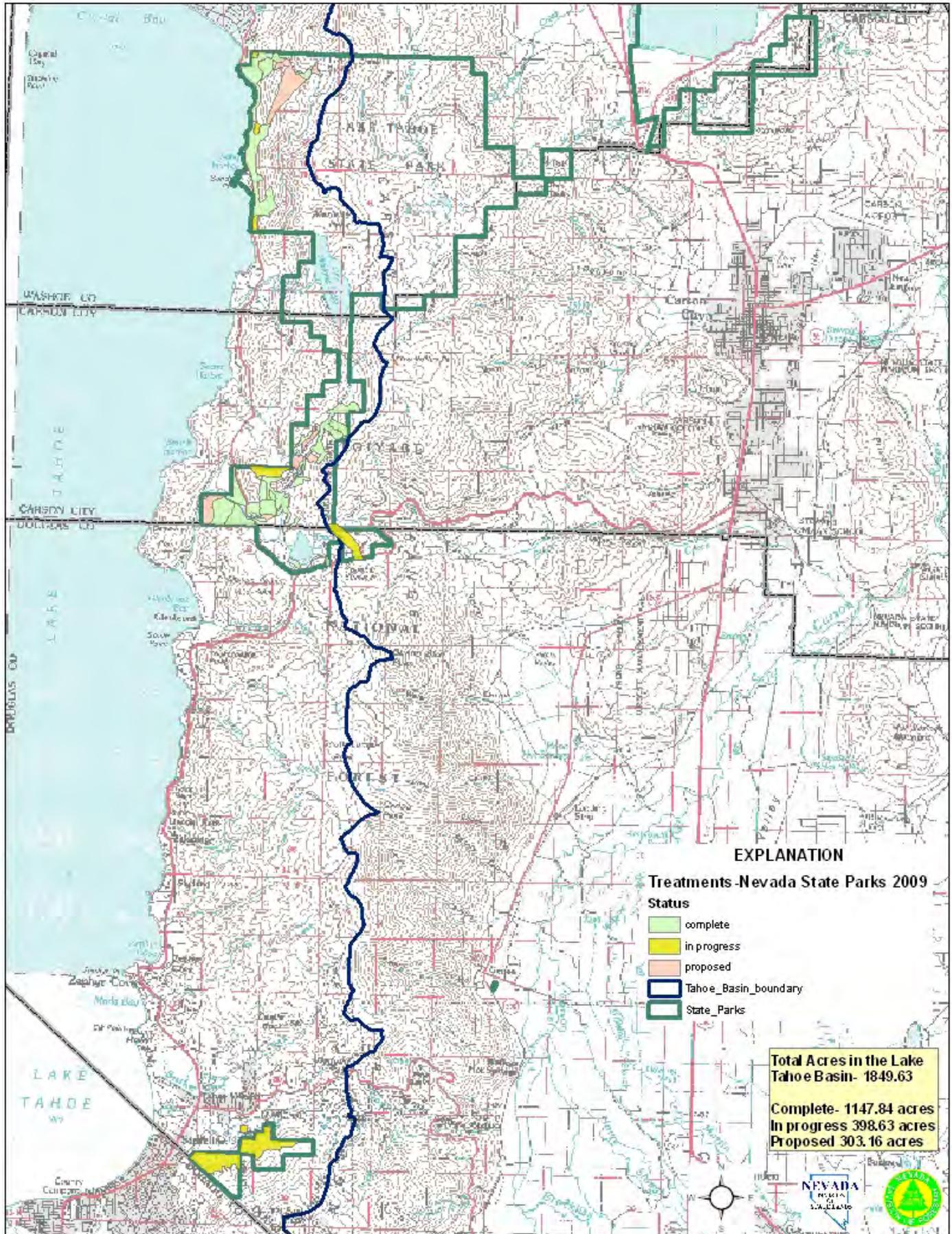
There is no up to date or comprehensive information source which can provide the cumulative actions of Lake Tahoe landowners have taken to provide wildfire protection on their properties. The Defensible Space database under development by the TRPA will be a useful tool for tracking the percent of properties within the Basin that have defensible space. The fire protection districts will populate the database once it's completed with data from their defensible space inspections.

## **Utilization**

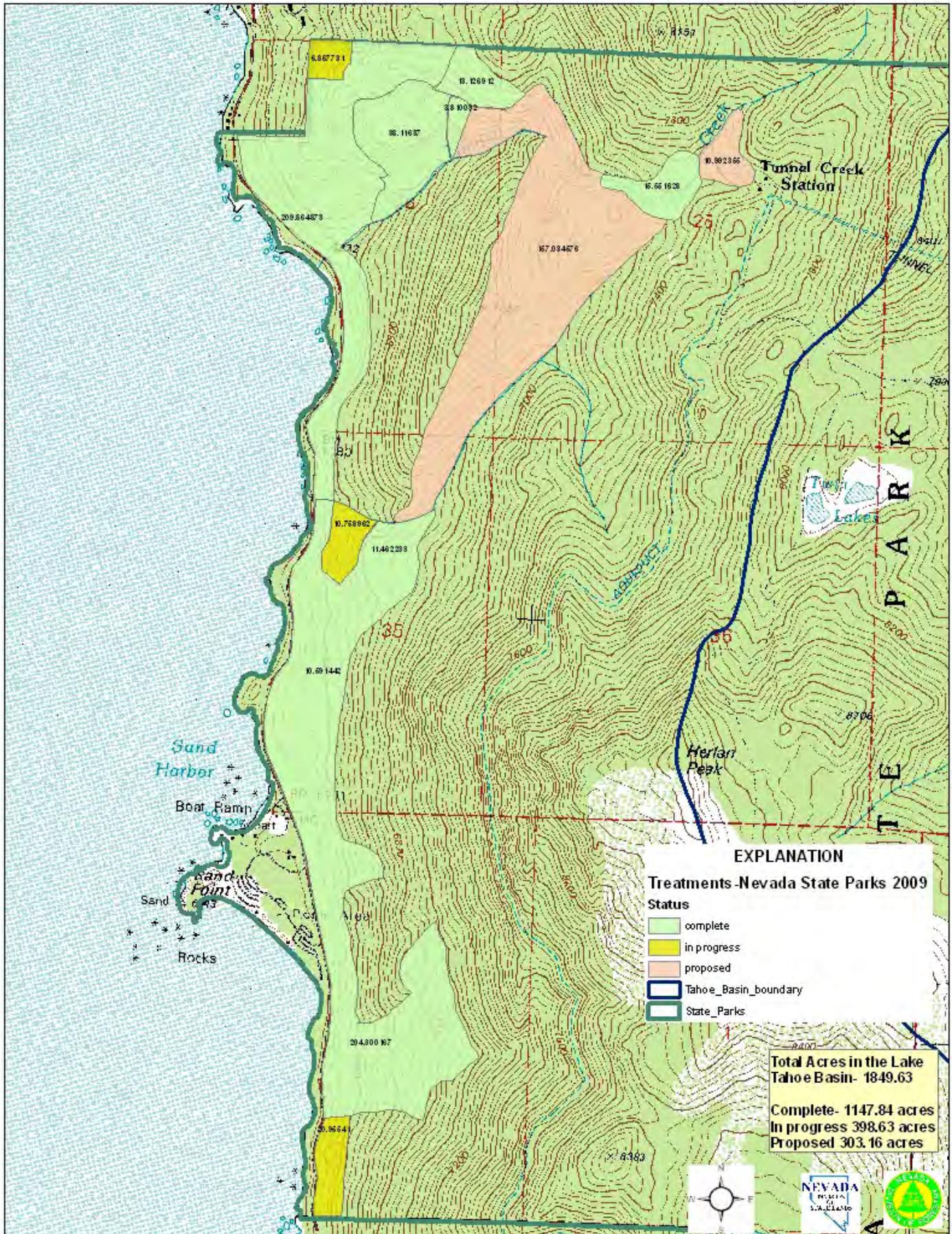
While much of the raw material resulting from fuel reduction and forest restoration treatments is broadcast on the forest floor or piled for burning, when it is feasible, the material is removed and transported to an end user. The nearest end user to the Lake Tahoe Basin is the co-generation facility at the Northern Nevada Correctional Center. Since 2007 approximately 26,588 tons of biomass has been delivered from the Lake Tahoe Basin to the plant. Other uses for cut material have been:

- Chips/mulch for on-site erosion control projects
- Firewood
- Sawlogs
- Co-generation at Loyalton, California
- High quality chips to the Rocklin Chipboard manufacturer, Rocklin, California

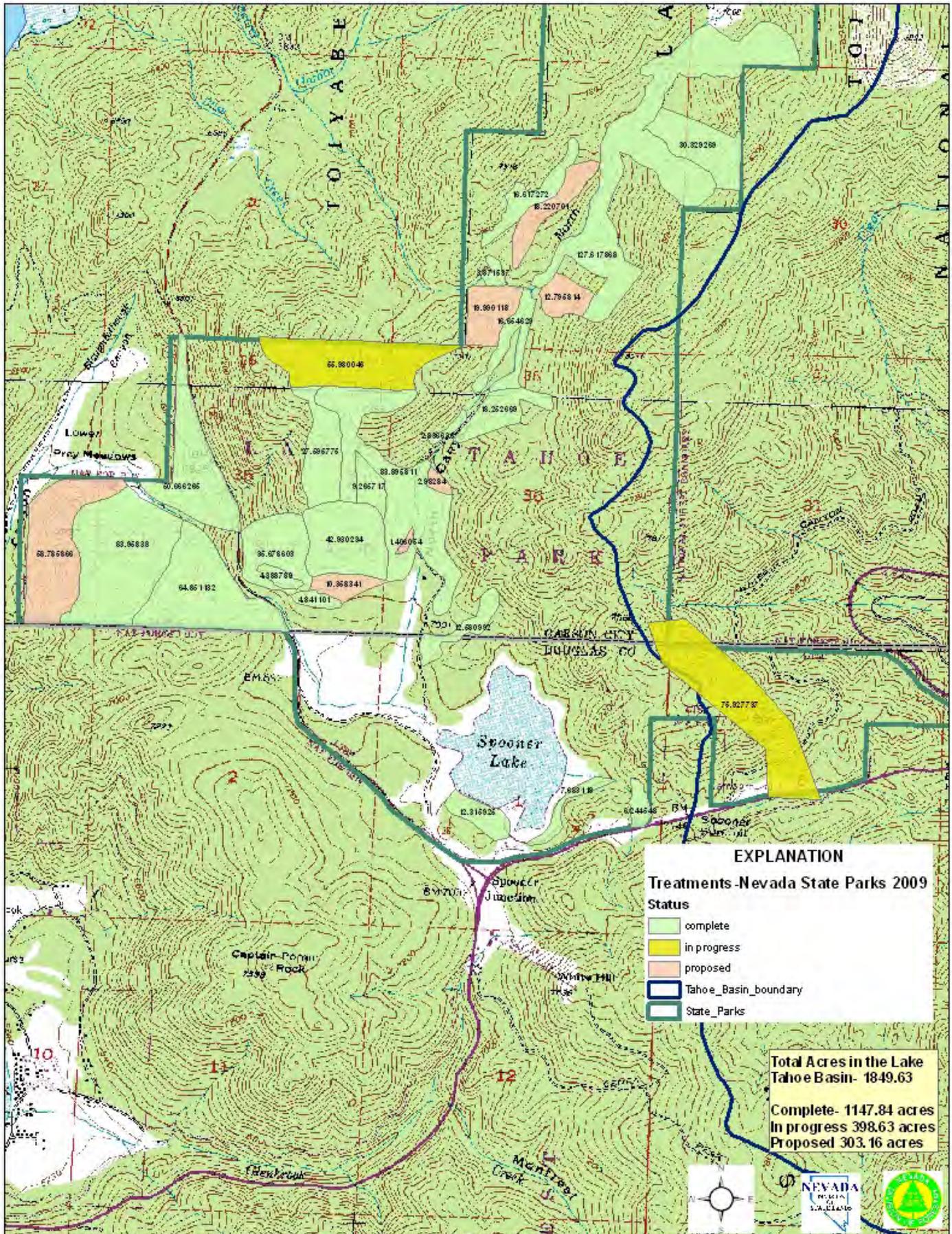
## **Appendix**



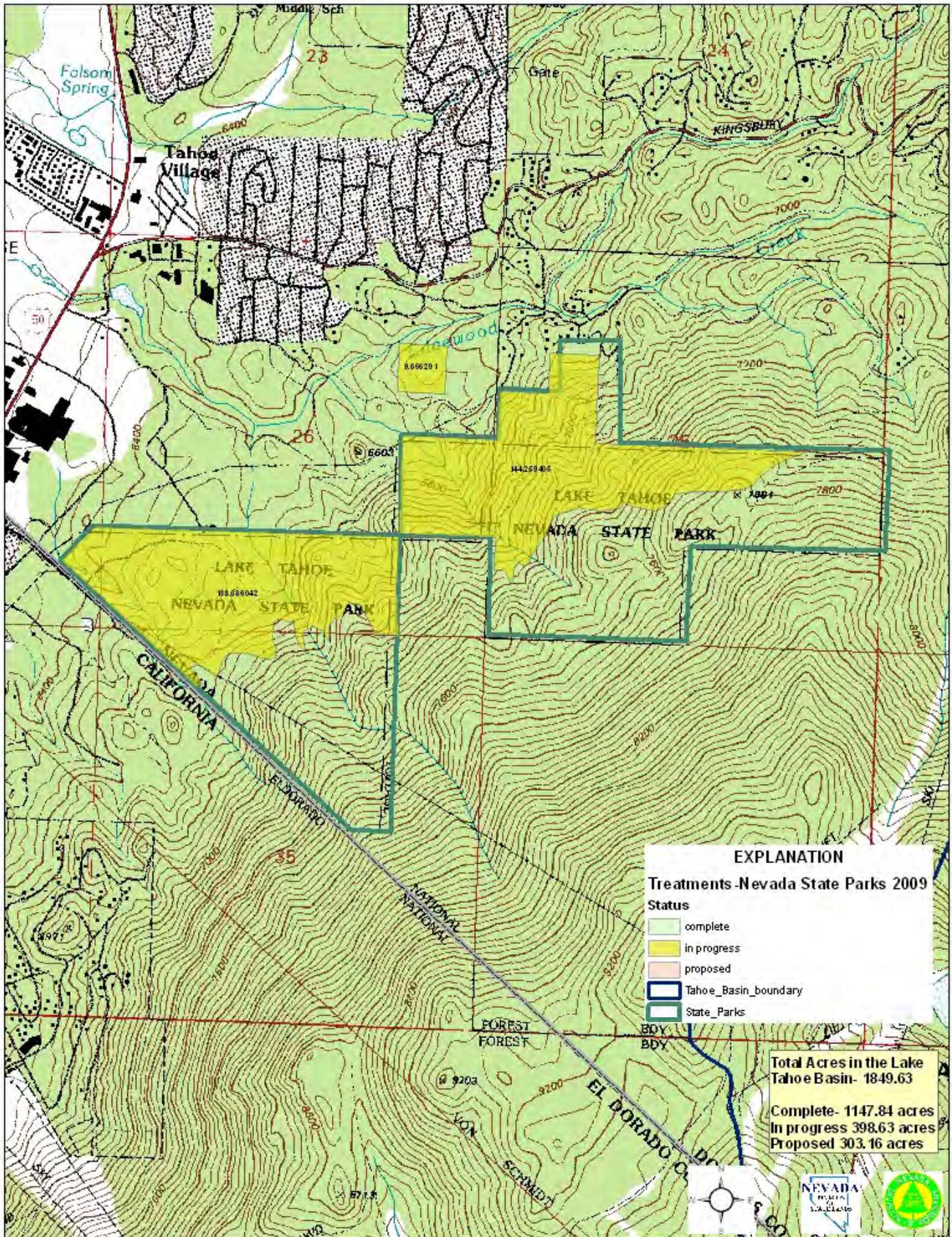
Map 1. Overview Map of Treatment Areas Done by the NTRT and NDF at Lake Tahoe State Park



Map 2. Sand Harbor/Tunnel Creek Treatment Areas.



Map 3. Spooner Lake Treatment Areas



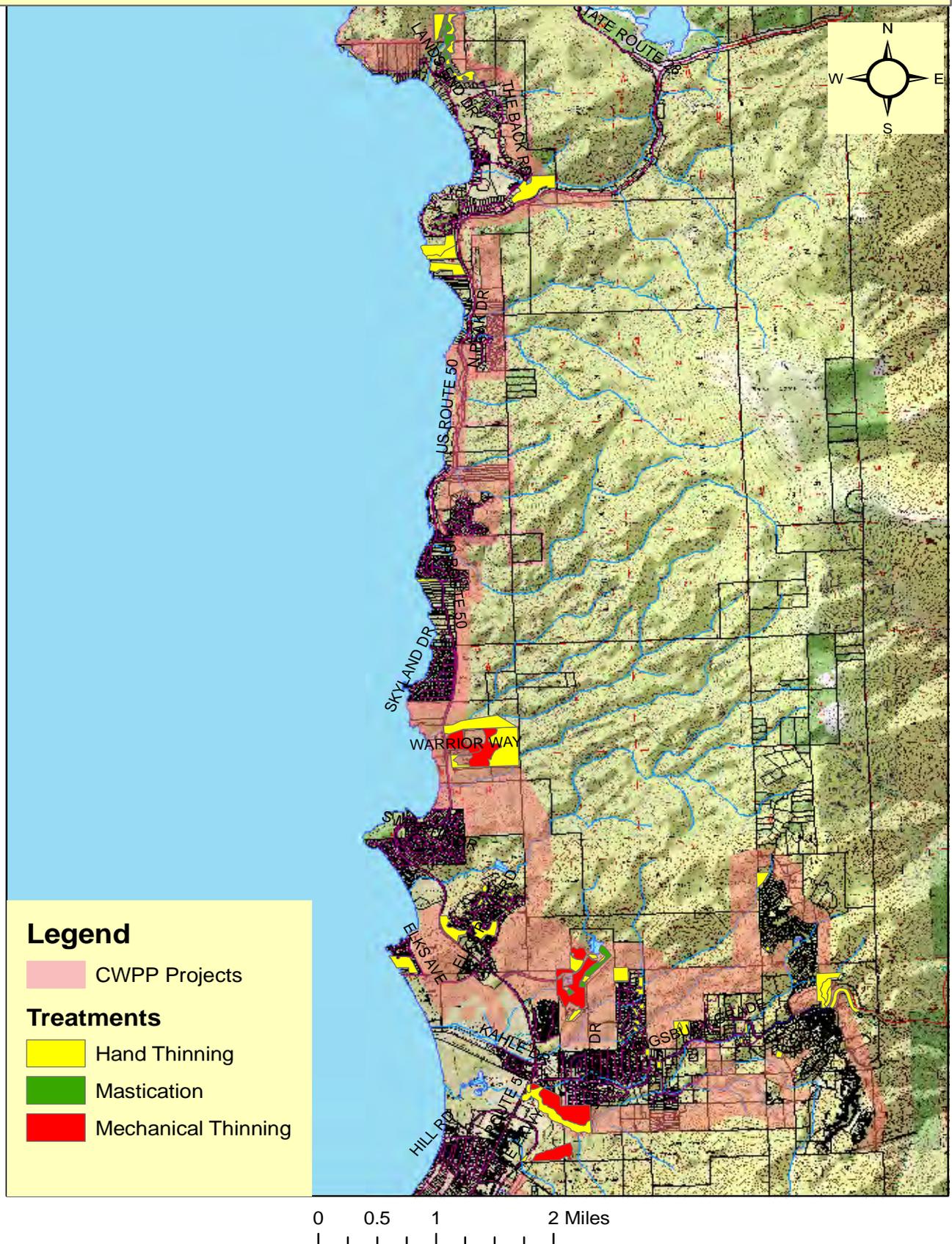
Map 4. Van Sickle Treatment Areas.





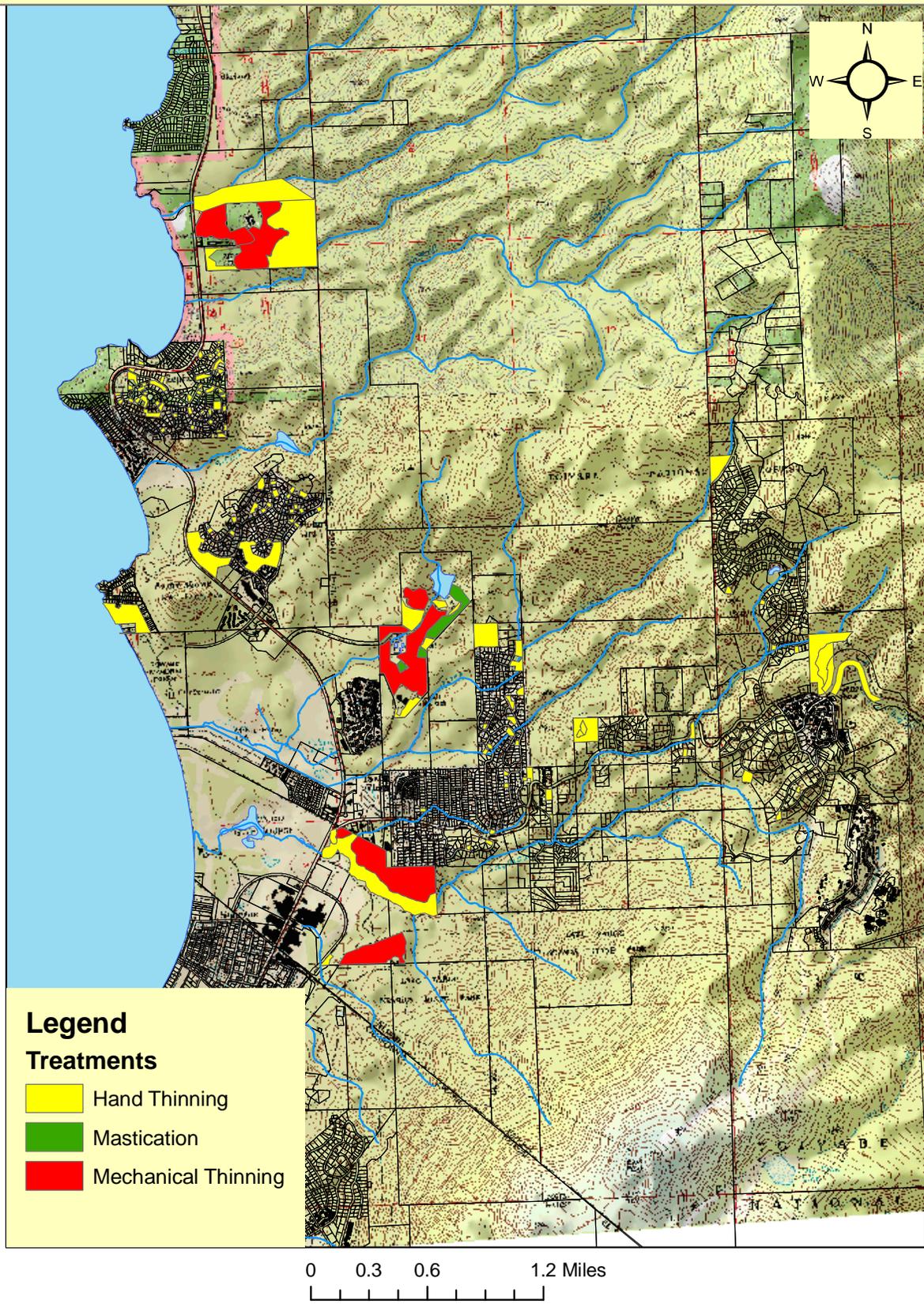
Map 6. Treatment Areas Tahoe Bond Act Parcels-South Lake Tahoe.

# TDFPD CWPP Projects and 2008 and 2009 Field Season Accomplishments



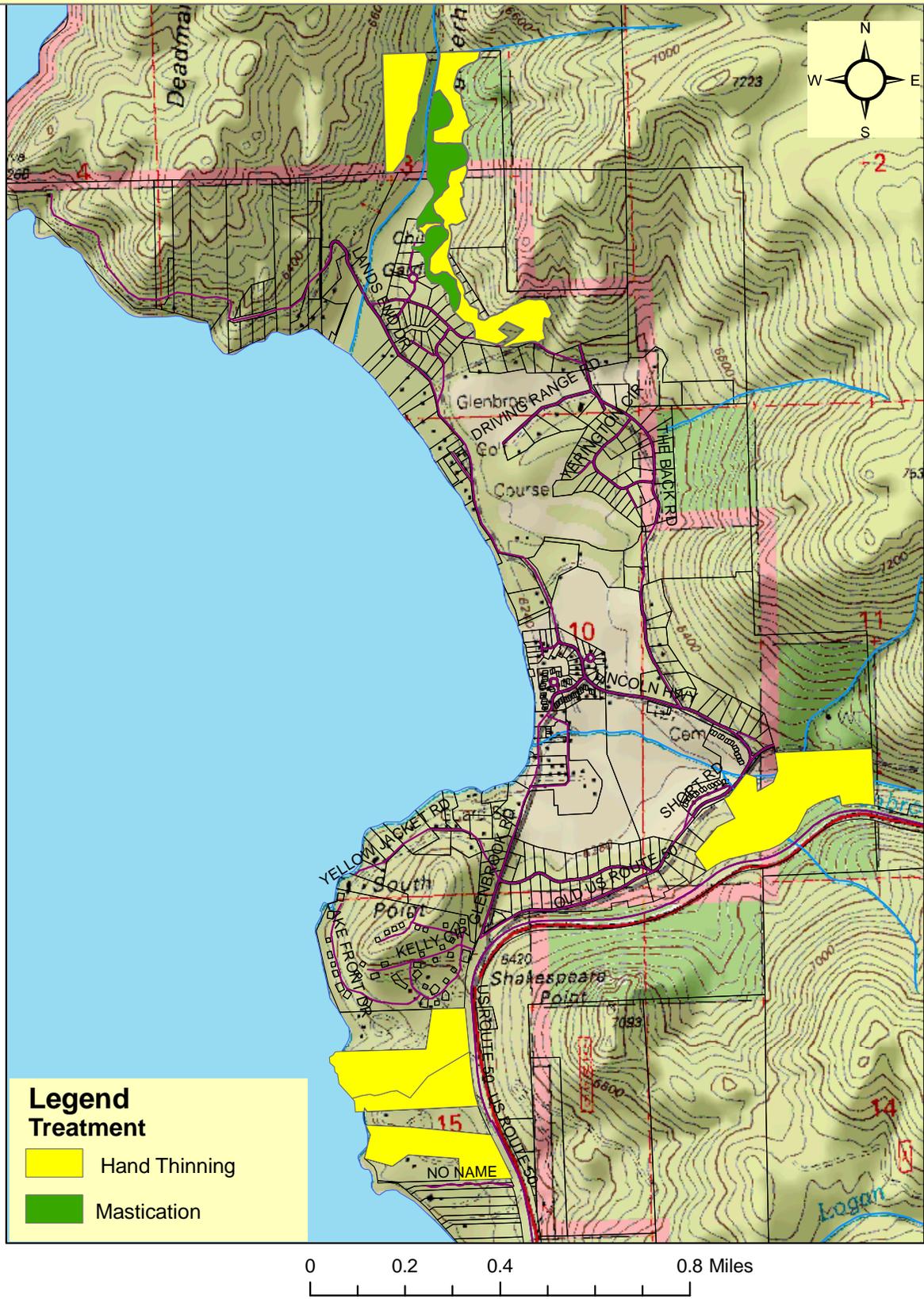
Map 7. TDFPD Projects-Overview.

# TDFPD Kingsbury Region Fuels Reduction Projects 2008 and 2009 Field Season

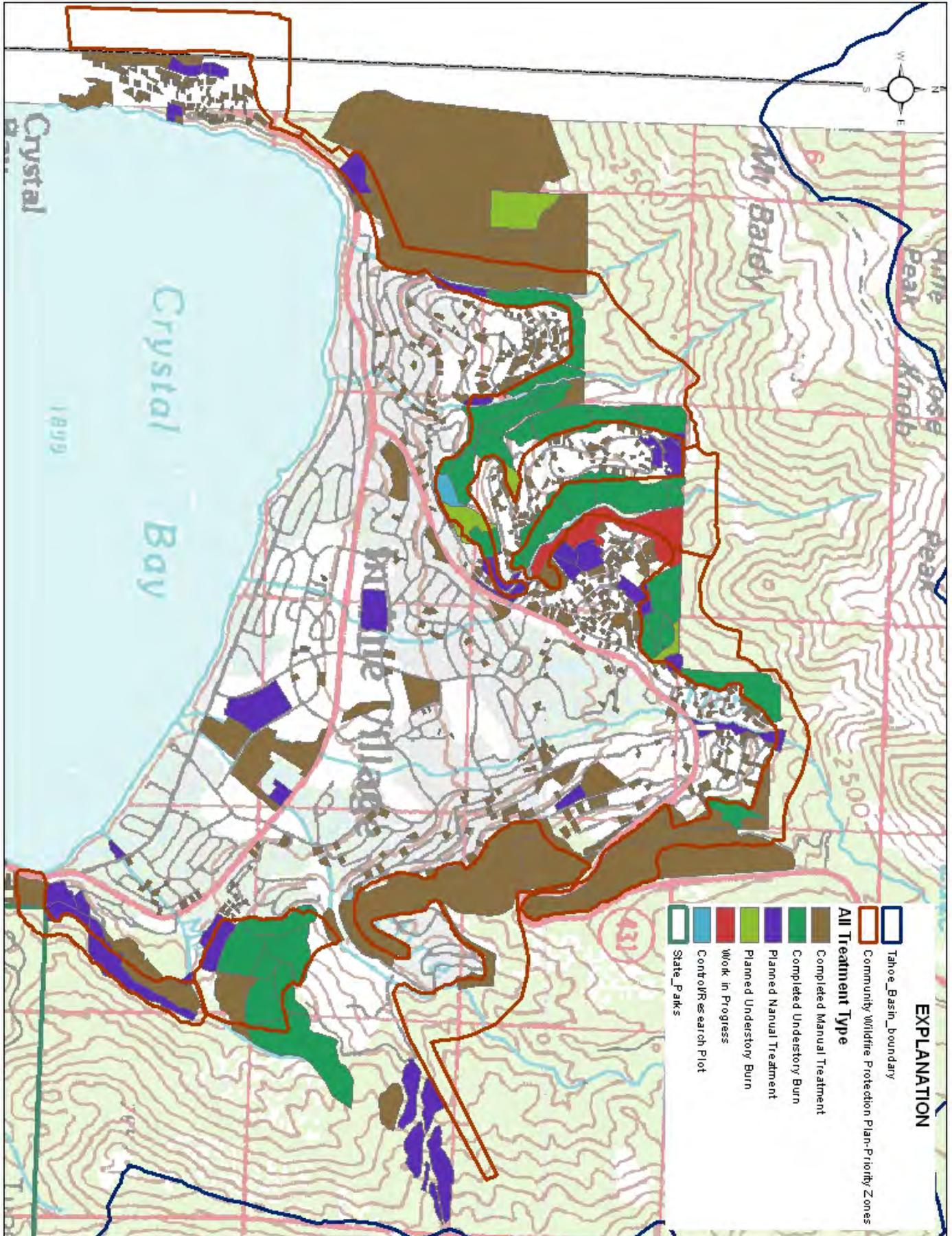


Map 8. TDFPD Projects-Kingsbury.

# TDFPD Glenbrook Region Fuels Reduction Projects 2008 and 2009 Field Season

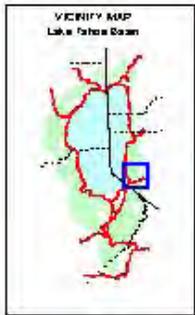
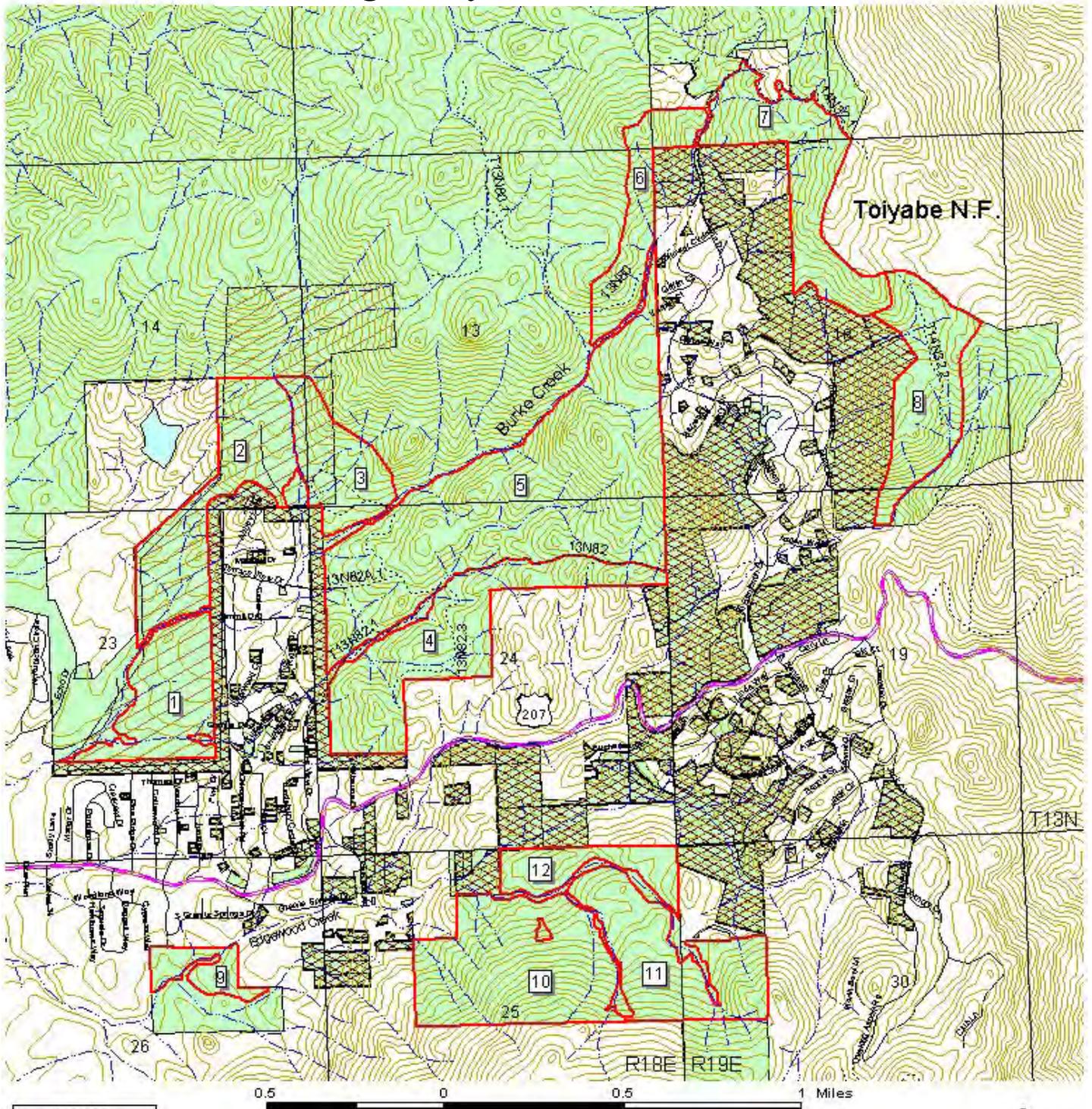


Map 9. TDFPD Projects-Glenbrook.



Map 10. NLTFPD Projects- All years.

# Kingsbury Treatment Units



- National Forest
- Other
- Planning Stands- 997 Acres
- Protected Activity Center
- Accomplished/Planned Urban Lot Treatments
- 5 Unit Number

Unit 1-60 Acres	Unit 7-79 Acres
Unit 2-84 Acres	Unit 8-71 Acres
Unit 3-48 Acres	Unit 9-19 Acres
Unit 4-103 Acres	Unit 10-115 Acres
Unit 5-259 Acres	Unit 11-82 Acres
Unit 6-45 Acres	Unit 12-32 Acres



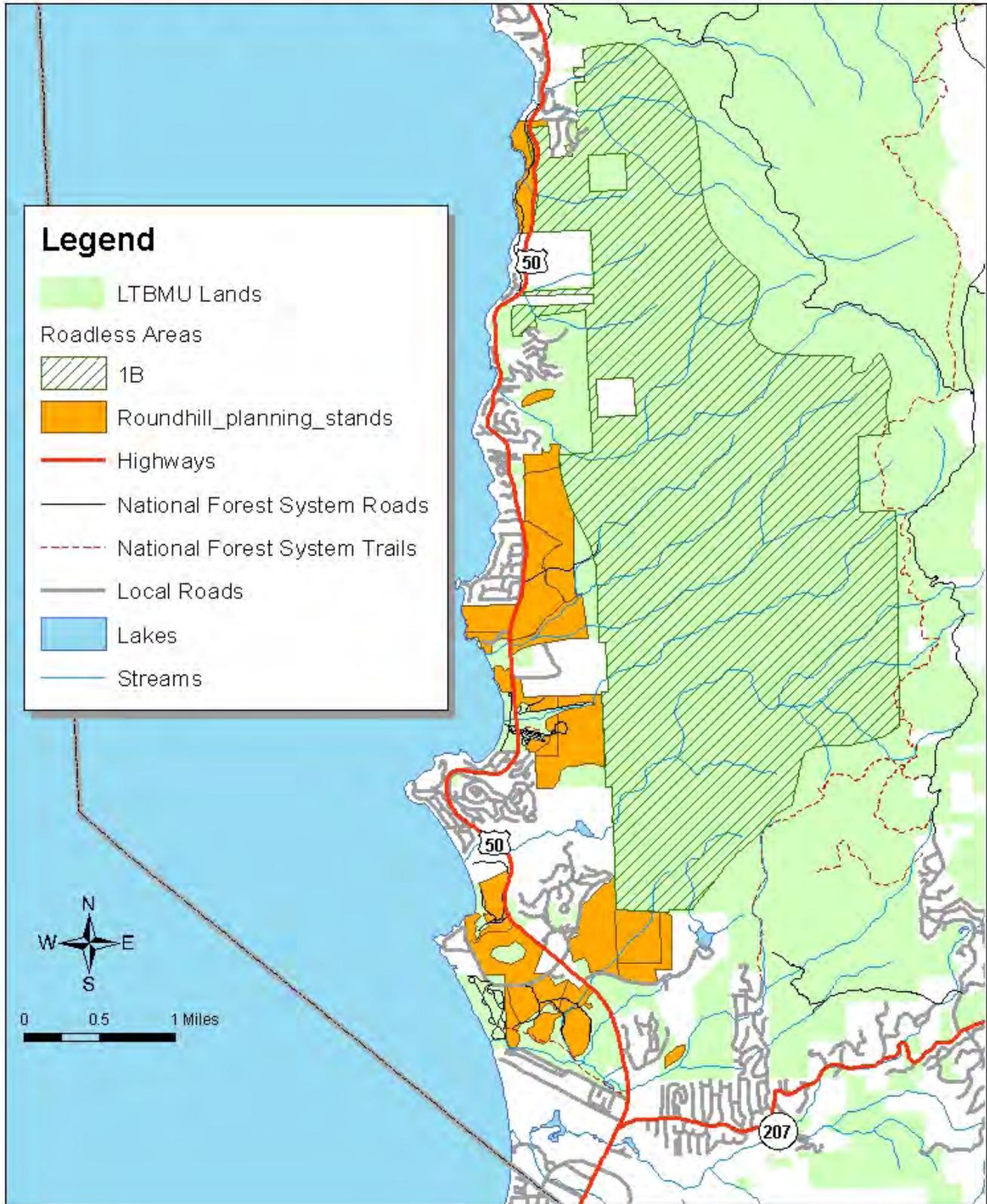


**USDA Forest Service**  
Lake Tahoe Basin Management Unit

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Map 11. USFS/LTBMU Projects- Kingsbury.

# Roundhill Fuels Reduction Project



Map 12. USFS/LTBMU Projects- Roundhill.

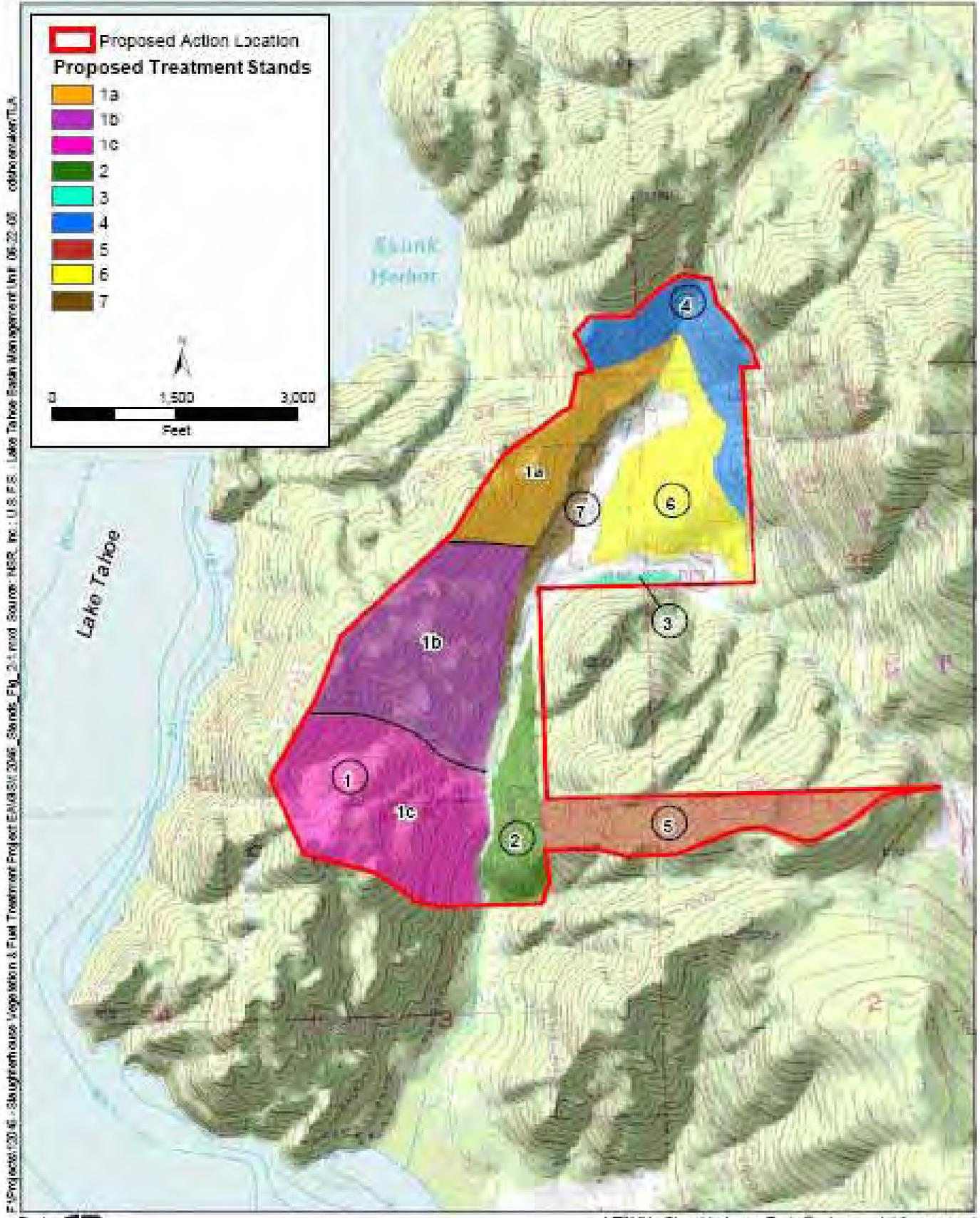


Figure 2-1  
Proposed Treatment Stands

Map 13. USFS/LTBMU- Slaughterhouse Treatment Units.

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## **Addendum**

### **2011 Accomplishments**

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This report is an addendum to the original “Report to Nevada State Legislature-AB75: Fire-Fuels-Forest Restoration Activities and Accomplishments at Lake Tahoe, NV”, and covers activities on the Nevada side of the Lake Tahoe Basin during calendar year 2011. The reader is referred to the original report for background and previous years’ activities and accomplishments dating to 2007 rather than repeating the information here.

The land management agencies, fire protection districts and Non-Governmental Organizations (NGO) involved in fire prevention and fire hazard reduction had another successful year. In total, approximately 2,360 acres were treated for fuel reduction. Treatments included thinning, slash chipping and both pile and broadcast burning.

Planning for future fuel reduction projects is underway or has been completed for large acreages of private, state and federal lands.

Fuel reduction work since the Blue Ribbon Commission has focused on areas identified in the Lake Tahoe Multi-jurisdictional 10-year plan. These areas are primarily located within the Wildland-Urban Interface and on relatively easily accessible ground, commonly referred to as the “low hanging fruit”. As this “low hanging fruit” is picked, the remaining terrain needing treatment is less accessible and consequently more expensive to treat. Cost per acre to treat the remaining areas will increase and funding will not go as far. Coupled with anticipated decreases in one of the primary funding sources, Southern Nevada Public Land Management Act (SNPLMA), annual accomplishments will likely begin to decrease in the near future.

The loss of the biomass co-generation power plant at the Northern Nevada Correctional Center in Carson City removed the primary repository for chipped material from fuel reduction treatments on the east shore of Lake Tahoe. This has reduced the amount of slash treatment using chippers and increased the reliance on burning. As the fuel treatment areas move further from easy access points and opportunities for utilization of the biomass remain minimal, the ability to use fire in accomplishing wildfire hazard reduction goals becomes increasingly important. A concern of forest managers at Lake Tahoe, and indeed across the western U.S., is the anticipated restriction on the use of fire as a management tool due to concerns about its impact on air quality. It is critical that this important tool is not removed from land manager’s treatment alternatives.

The Nevada Division of Forestry’s Biomass Utilization Program continues to work towards finding utilization opportunities for biomass generated from fuel reduction projects. Biomass (chips and cord wood) generated from several agency fuel reduction efforts has been used by the agency’s nursery program as mulch. Cord wood has been stored at agency property for sale to fire wood vendors. An experimental project is underway to produce biochar with some of the biomass; biochar is a fine-grained, highly porous charcoal that helps soils retain nutrients and water.

## **2011 Accomplishments**

### **Nevada Division of Forestry**

The Nevada Division of Forestry partnered with Nevada Tahoe Conservation District (NTCD), Tahoe Regional Planning Agency (TRPA), CAL-FIRE and the University of Nevada Cooperative Extension (Extension) to acquire a \$290,00 grant through the USFS State and Private Forestry Redesign Program to create and implement a Living with Fire (LWF) educational campaign with a uniform, consistent message on the wildfire hazard and water quality issues in the Lake Tahoe Basin (Basin) for delivery to homeowners by the land use

and natural resource planning agencies. The project has been managed by the Division of Forestry's Urban and Community Forestry Program Manager.

The educational campaign complements the numerous fuel reduction and water quality education projects taking place in the Basin. Over a 3-year period, activities have included:

- Two week-long Basin Wildland Fire Awareness Week events to disseminate Basin specific information and showcase past, present and future interagency efforts.
- Two Basin-wide Lake Tahoe Basin Wildfire Summits to gather community leaders, public officials, fire professionals, regulatory agencies and other stakeholders to discuss strategies for reducing fire risk and improving water quality, forest health and livability.
- Five Community Conservation seminars at various locations around the lake customized for the audience and presented by resource managers, agency professionals who issue permits for tree removal and defensible space prescriptions, foresters, tree care workers, homeowners, construction and development professionals.
- Seminars for private landowners to offer technical assistance and education on managing vegetation to reduce the risk of storm water runoff, improving forest health and reducing fire hazards, and
- Two self-guided demonstration projects and signage related to fuels reduction and fire-safe landscaping.

All projects have promoted Best Management Practices (BMPs) developed by the land use agencies for reducing water runoff, improving water quality and implementing defensible space practices. Outreach utilized media such as newspaper, TV, radio, handouts, informational packages, direct mailings and a LWF website.

### **Nevada Tahoe Resource Team - Lake Tahoe State Park**

The NDF forester assigned to the Nevada Tahoe Resource Team (NTRT) is responsible for wildfire hazard reduction and forest restoration in Lake Tahoe State Park (LTSP). This past year he focused on the Van Sickle property in Stateline, Slaughterhouse Canyon just north of Glenbrook, and Tunnel Creek and Sand Harbor on the north end of the park. Accomplishments include 247 acres of thinning and 113 acres of burning. For the first time NDF conducted 23 acres of broadcast burning on LTSP lands in the Tunnel Creek drainage. Plans are in place to burn an additional 77 acres over the next two seasons. Figures A-1,2 and 3 show completed and planned work areas.

Projects in North Canyon, Slaughterhouse Canyon and the Sand Harbor area are restoring stream environment zones, aspen trees and other forest community types across the park landscape to create a sustainable vegetation pattern on a large scale that will be more resilient to wildland fire and the effects of changing climate. In addition to affording more protection to natural resources and LTSP infrastructure, treatments are improving wildlife habitat and establishing a new age class of trees.

The primary source of funding for the work conducted in 2011 came from the Tahoe Bond Act, with supplemental funding from the Southern Nevada Public Land Management Act (SNPLMA).

### **Nevada Tahoe Resource Team - Tahoe Bond Act Urban Parcels**

The State Lands forester assigned to the NTRT is responsible for managing the vegetation and fuel on sensitive State-owned urban parcels purchased through the Tahoe Bond Act. Left unmanaged, these parcels represent a significant hazard to adjacent privately owned lands in urban areas. The important fuel reduction work conducted on 77 acres of urban parcels in 2011 was funded with SNPLMA rounds 8, 9 and 10. It is important to note that many of these parcels being treated tie in with other agency work such as NDF, USFS and the fire protection districts leading to greater cumulative impacts of treated area.

SNPLMA round eight funding was used to complete the pile burning on 21 acres in Kingsbury in Douglas County. Fuel reduction work using round nine funds focused on urban lots located along Highway 50, between Glenbrook and Round Hill. Sixteen acres were thinned and an additional 14 acres of piles were burned. Lots were located in Round Hill, Zephyr Heights, Cave Rock Estates, Logan Creek Estates and Lake Ridge Estates. Round 10 funds were used to begin work in Incline Village/Crystal Bay. Seven acres were thinned and piled for burning next year.

A Western States Fire grant from the USFS-State and Private Forestry provided supplemental funding that was used to treat 19 acres in Incline Village by thinning dense stands of trees. Figures A-4 and 5 show treatment areas on Tahoe Bond Act parcels

## **Tahoe Douglas Fire Protection District**

Funding for the Tahoe Douglas Fire Protection District (TDFPD) fuel reduction program has come from special taxes on residents in the district, as well as grant funding from SNPLMA, and the Federal Emergency Management Agency (FEMA) pre-disaster mitigation program.

During 2011 the District began inspecting every residential property in the District using fire engine companies to complete the inspections. Homeowners were then mailed the results of the blanket inspections. All inspections, blanket or special request, are tracked in a defensible space database for data tracking. The District completed almost 450 blanket inspections in 2011. The District staff also issues TRPA tree removal permits to homeowners who need to remove trees larger than 14 inches in diameter in order to create defensible space.

In 2010 the TDFPD implemented fuel reduction treatments on privately owned properties as well as state owned lands. This year all fuel reduction was conducted by hand and totaled 112 acres of thinning, 97 acres on private lands and 15 acres on state owned lands. Figure A-6 shows areas of work in 2011

The District's Zephyr Fire Crew responded to wildland fires in Arizona, New Mexico and Nevada in 2011. A tactical decision was made in 2011 to increase the number of fire assignments the crew responded to in order to preserve grant funding for the years when the fire hazard would be higher and there is a greater likelihood of fire in the Lake Tahoe Basin

## **North Lake Tahoe Fire Protection District**

The North Lake Tahoe Fire Protection District (NLTFPD) is responsible for implementing fuel reduction and forest restoration projects within the communities of Incline Village and Crystal Bay. Funding for this work in 2011 came from an NDF State Fire Assistance Grant, USFS grant through the Nevada Fire Safe Council, and SNPLMA.

The District attends several community events annually to provide information on its fuels reduction, curbside chipping, and defensible space programs. Defensible Space evaluations are provided free of charge on a voluntarily basis, but are required for new construction and major remodels. TRPA Tree Removal Permits were provided to remove fire hazard trees over 14" in diameter. The District completed 219 evaluations in 2011.

The curbside chipping service is also provided free of charge to all Incline Village/Crystal Bay residents. Crews serviced 191 chipping requests in 2011, creating about 200 cubic yards/50 dry tons of woodchip. About 1/3 of the chipped material was left on site and the remainder was hauled and dumped at a transfer facility.

NDF worked with the Nevada Tahoe Conservation District in 2011 to develop and install a post-and-pamphlet interpretive trail in the Wood Creek drainage (see figure A-7a and A-7b). The pamphlet discusses the effects of fuels treatments and why they are implemented.

In 2011 the district hand-thinned 194 acres in preparation for pile and/or broadcast burning completed treatments on 119 acres of private and general improvement district lands. Additionally, 54 acres of understory, controlled burning was completed. Figure A-8 shows an overview of work in the District.

### **USDA-Forest Service, Lake Tahoe Basin Management Unit**

The US Forest Service’s fuel reduction and forest restoration work in 2011 was located along the Highway 50 corridor from Logan Shoals to the junction with Highway 28, and north along Highway 28 to the Thunderbird Lodge. The project area, called the Spooner Project, totals 3,560 acres. A total of 1,074 acres were thinned in 2011, including 155 of mechanical thinning. Thinning on urban lots totaled 3 acres, and burning was completed on 495 acres in the Roundhill and Kingsbury project areas, of which 186 acres were urban lots. Figures A-9 and A-10 show the locations of this years burning and the completed and planned work on the Spooner project respectively.

Approximately 2,240 acres of hand thinning treatment is left to do in the Spooner Project area. Seven hundred of those acres are scheduled to be thinned in 2012. The acreage treated in 2011 is planned to be burned in approximately two years.

Planning continues for 3,900 acres of treatment on the Incline Fuels Reduction Project, located on USFS lands surrounding Incline Village (see figure A-11). Treatments will include thinning, biomass removal, and prescribed burning with the wildland-urban interface. The NEPA planning should be completed in 2012.

**Table 1. Acres of Fuel Reduction Completed Since the Bi-State Fire Commission in 2007**

	2007 thru 2009	2010	2011	TOTAL
NDF for State Parks	1,362	210	247	1,819
NV State Lands	149	108	77	334
NLTFPD	591	305	367	973
TDFPD	432	164	97	693
USFS-LTBMU	3,031	108	1572	4,711
<b>TOTAL</b>	<b>5,565</b>	<b>895</b>	<b>2,360</b>	<b>8,820</b>

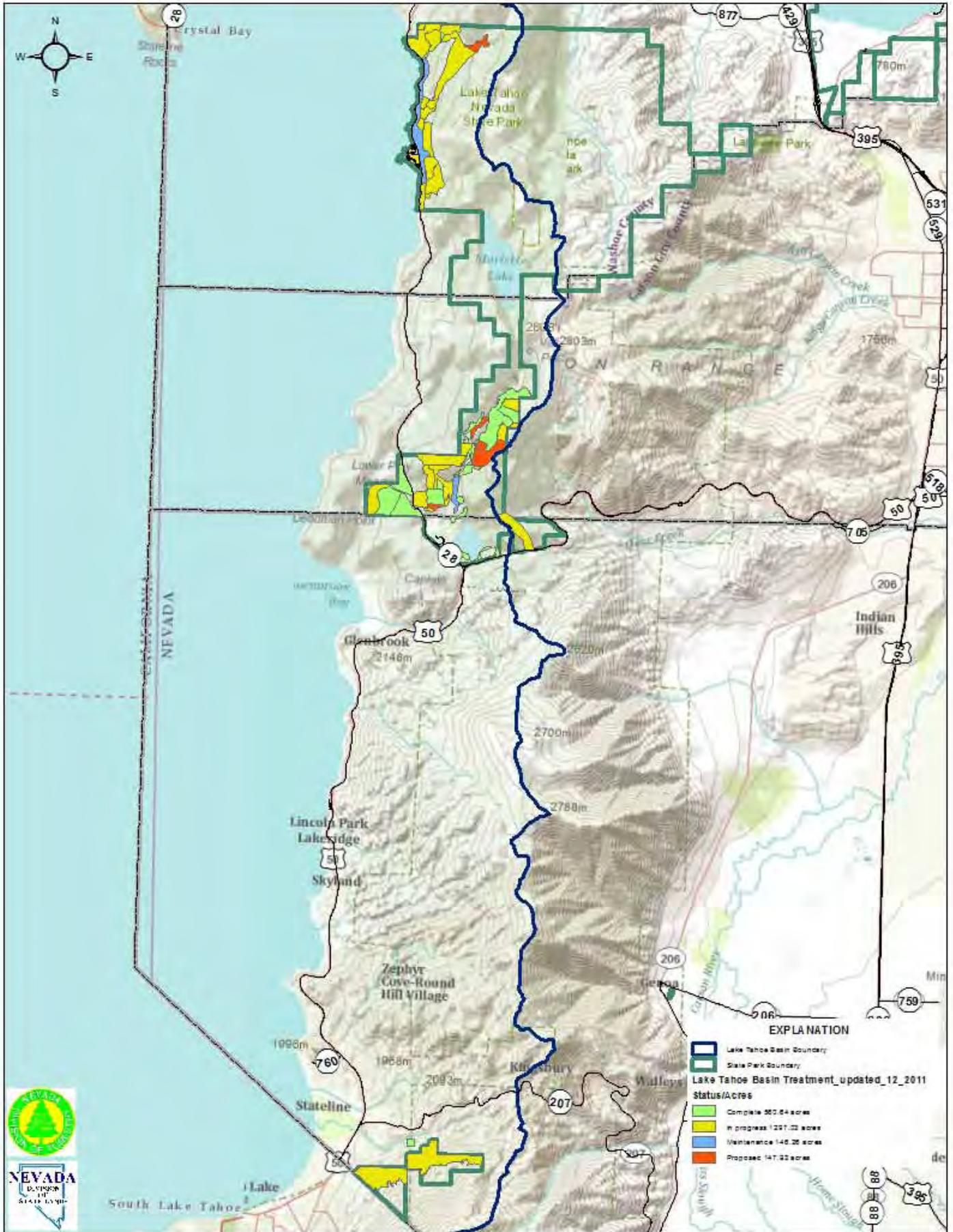


Figure A-1. Overview of work being done by the NDF Forester on the Tahoe Resource Team

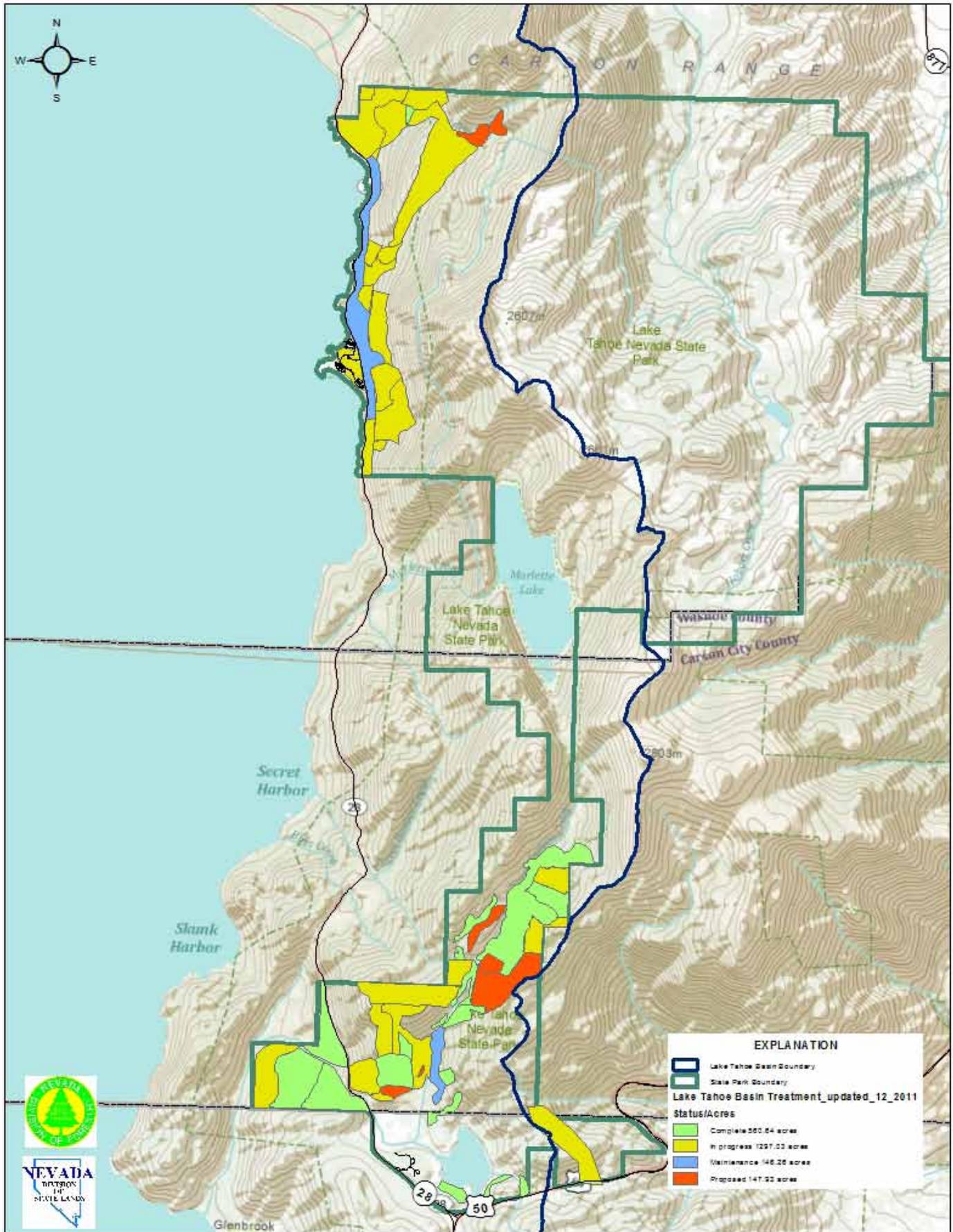


Figure A-2. Work being done by the NDF Forester on the Tahoe Resource Team in Lake Tahoe Nevada State Park

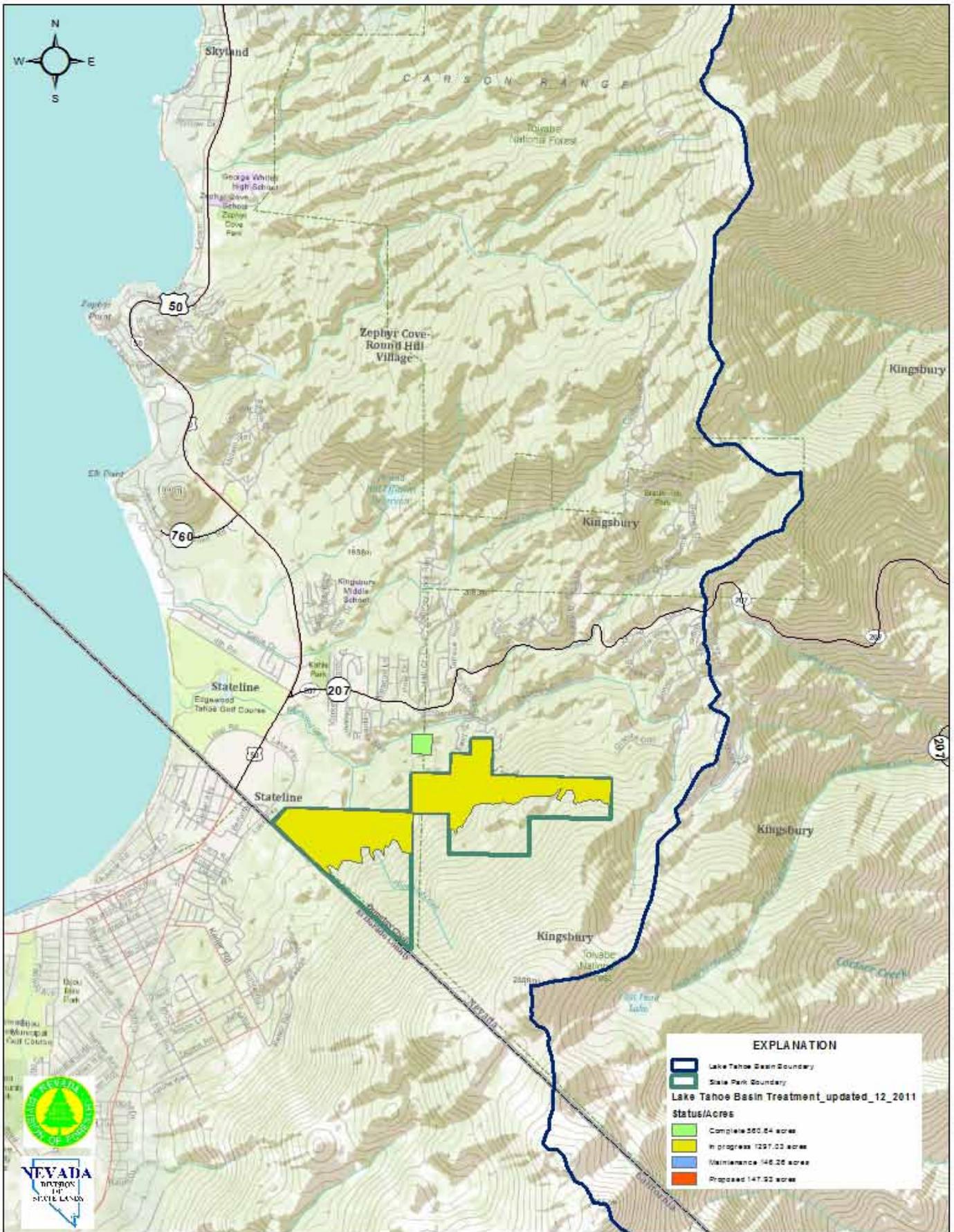


Figure A-3. Work being done by the NDF Forester on the Tahoe Resource Team at Van Sickle Bi-State Park

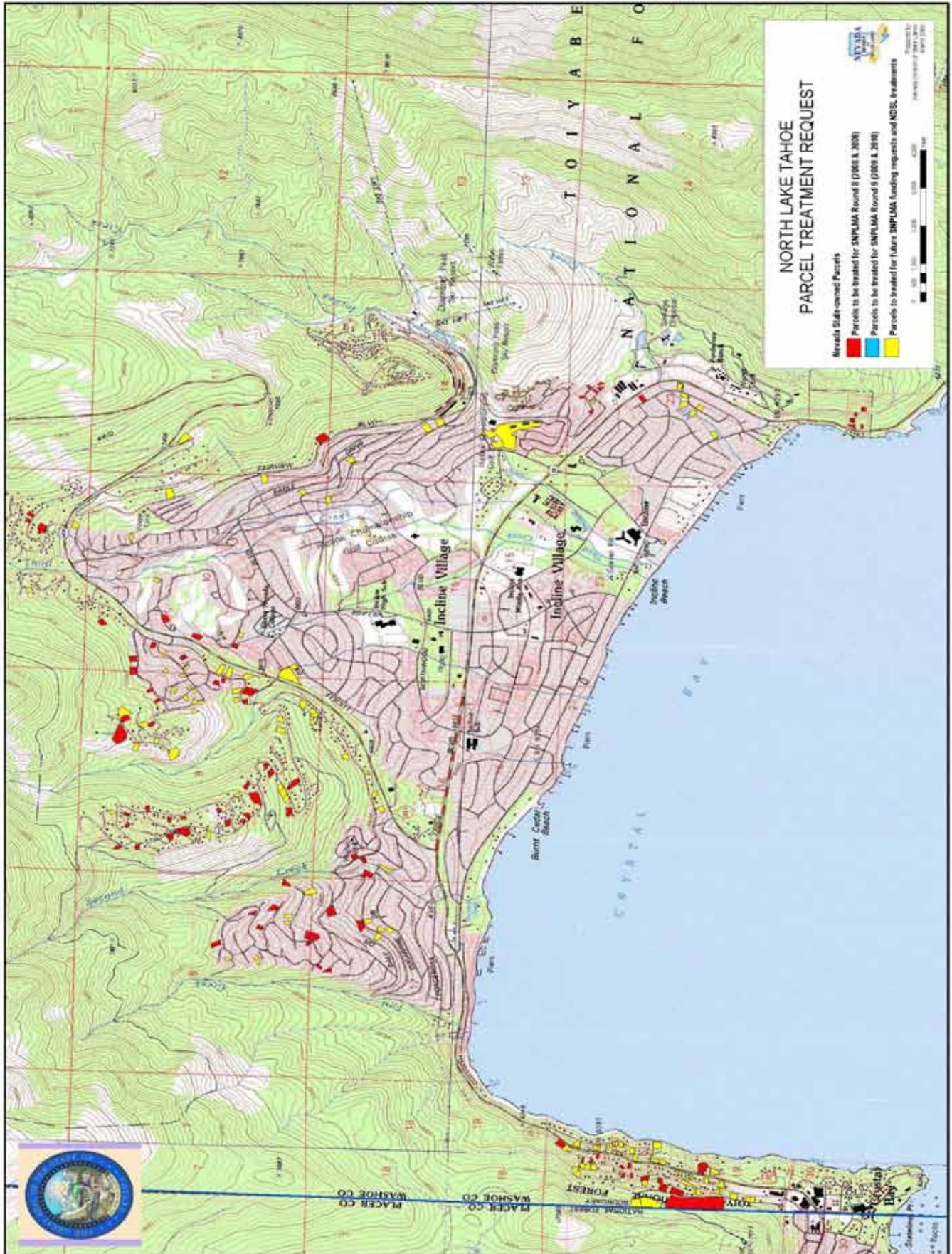


Figure A-4. Work being done on Tahoe Bond Act parcels, around Incline, Nevada.



Figure A-5. Work being done on Tahoe Bond Act parcels, from Glenbrook to Stateline, Nevada.

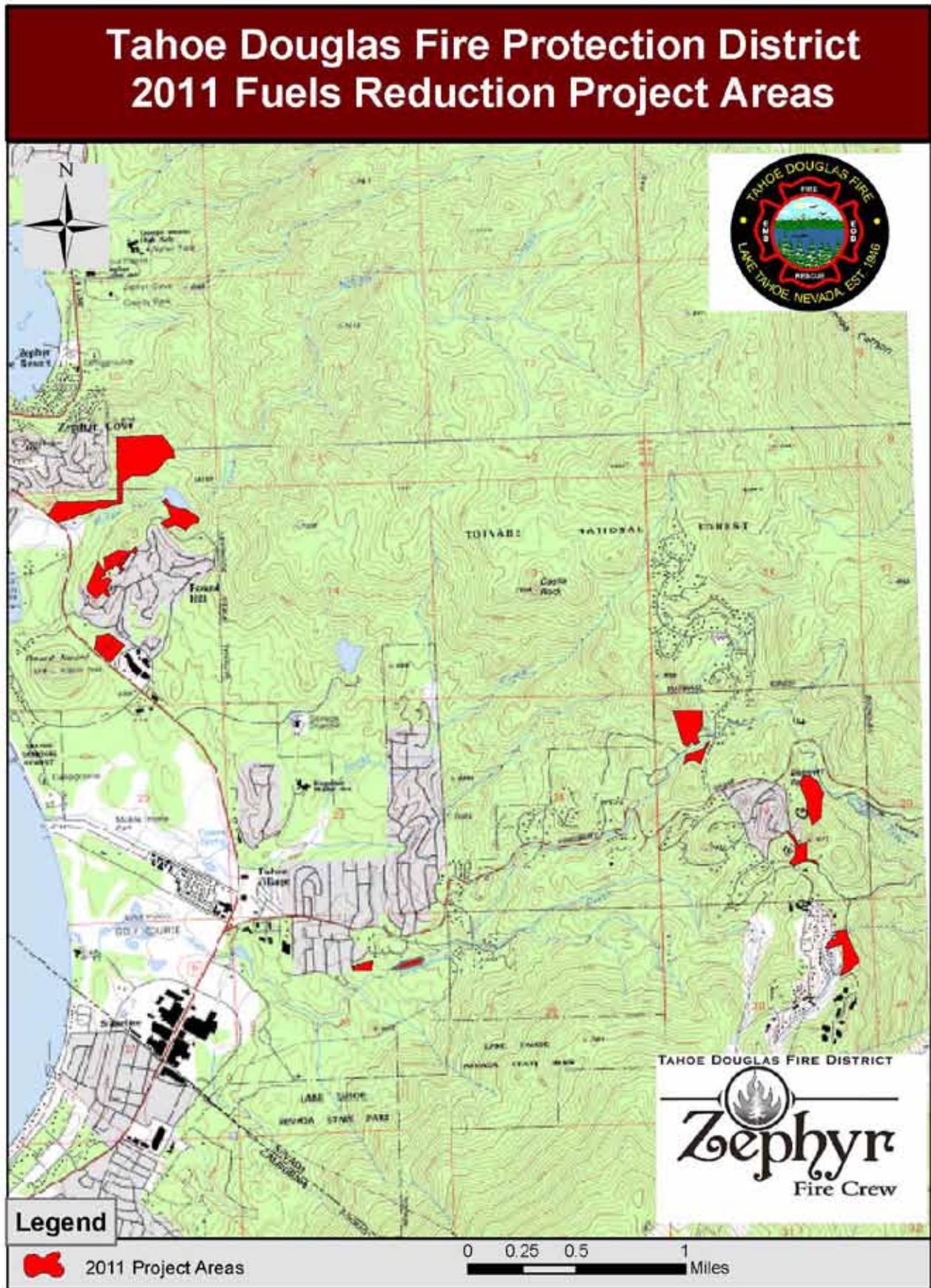


Figure A-6. Overview of work being done by the Tahoe Douglas Fire Protection District

## Forest Fuels Treatments

### 9. Riparian Conifer Encroachment

Look into the stream zone to see competition occurring between riparian vegetation and conifers. The pine and fir trees are shading the willows and alders and inhibiting their growth. Selective removal of conifers can improve the riparian plant community and species variability.



### 10. Hand Thinning

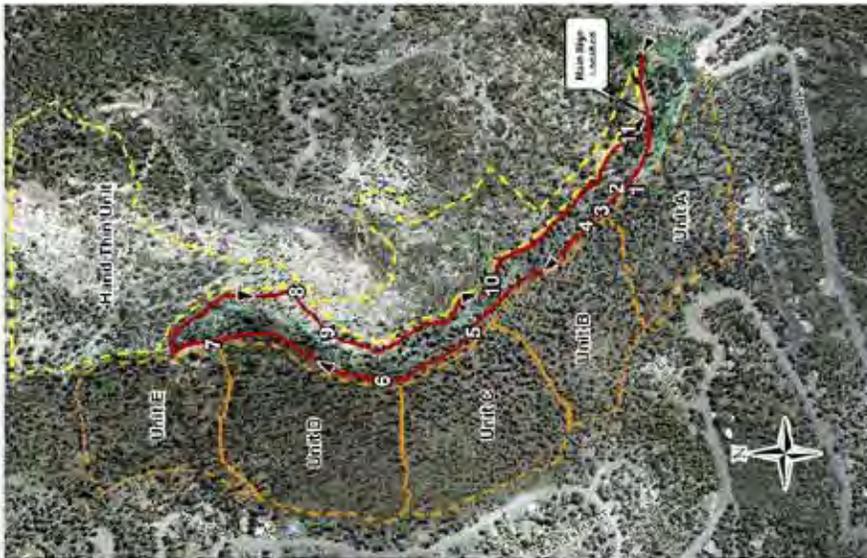
When forest fuels are too dense to safely burn, crews cut and stack vegetation into piles that can be burned during wet conditions. The ecological benefits are not as diverse as with understory burning, but allows for the targeting of dead and diseased vegetation, and reduces hazardous fuels so that understory burning may be used in the future.

### 11. Pine Regeneration Area

This forest opening is large enough to promote the regeneration of Jeffrey pine seedlings. The trees need ample sunlight to grow, unlike white fir and cedar which can grow in shade. Forest openings this size are rare in the Tahoe Basin and require some type of disturbance to form. Tahoe's even-aged forests need openings to restore diverse, uneven-aged tree stands with old-growth characteristics.



## MAP OF FUELS TREATMENT AREA



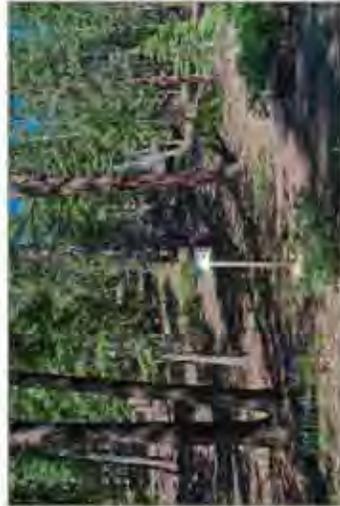
FUNDING FOR TREATMENTS PROVIDED BY THE SOUTHERN NEVADA PUBLIC LANDS MANAGEMENT ACT. FUNDING FOR PAMPHLET PROVIDED BY NEVADA DIVISION OF FORESTRY AND USDA FOREST SERVICE. THE LOGO IS AN EQUAL OPPORTUNITY EMPLOYER TRAIL. SIGN AND PAMPHLET CREATED BY JILTEPO AND THE NEVADA TAHOE CONSERVATION DISTRICT.

NORTH LAKE TAHOE  
FIRE PROTECTION DISTRICT  
*Fuels Management Division*

*"To reduce our community's wildfire risk and improve forest health by effective fuels management practices."*

966 Oriole Way, Incline Village, NV 89451  
775-831-0351, info@nhtfpd.net  
www.nhtfpd.net

HEALTHY FOREST.  
HEALTHY LAKE.



## WOOD CREEK INTERPRETIVE TRAIL

### FOREST FUELS TREATMENTS

Follow the trail from the junction of Barbara and Jennifer Streets into the Wood Creek treatment area. See and learn how forest fuels treatments are done, and how they reduce wildfire risk and restore healthy forests. This area is part of the Incline Village forest fuels reduction "halo" to protect our community.



Figure A-7a. Page 1 of the brochure from the Woods Creek Interpretive Trail.



**Interpretive Trail Stations**

The trail consists of numbered markers indicating stations of interest. This pamphlet provides information on each station, highlighting specific treatment areas (burn units), untreated areas, specific plants species, and various forest practices.

These ongoing treatments manage the fuel loads over time, while attempting to recreate a more natural forest.

**1. Burn Unit A**

The understory here was last burned in 2004. The low growing brushy fuels, pine needle layer, and lower tree limbs were greatly reduced. These prescribed fires are done in the fall, with the help of the North Lake Tahoe Fire Protection District hand crews, by igniting the low-growing vegetation and letting the fire slowly burn down the slope.



**2. Stream Zone**

Protection of riparian areas is important for maintaining water quality and preventing erosion. Deciduous riparian vegetation such as alders and willows serve to anchor the soil and hold stream banks in place. These areas are also important wildlife habitat.



**3. Burn Unit A and B Comparison**

This area was treated with understory burns in 2004 (on the left) and in 1998 (on the right). You can see more understory vegetation in the older burn area. Fire-adapted Tobacco brush is one of the first evergreen plant species to re-sprout after a fire, and the new leaves are an important food source for deer.



**4. Pre-treatment Control—Ladder Fuels**

This "control" area shows what the forest looked like before treatment. Some untreated areas are being retained for comparison and wildlife habitat, and to illustrate ladder fuel hazards and competition pressure on desired species. These trees could be thinned with a cable yarder, which can minimize disturbance by lifting vegetation out of the stream zone.



**5. Burn Unit C**

Prior to understory burning in 2002, there were many dead and dying trees. Many have fallen since then, and they fill an important ecological function. By providing habitat for microbes, fungi, and insects, the trees are recycled back into humus and nutrients that feed the forest soil so more trees can grow.

**6. Burn Unit C and D**

The evergreen Chinquapin at the post is another fire adapted native shrub that readily re-sprouts after a fire.



The Mahala mat that carpets the hillside nearby produces seeds that require fire to germinate, like other *Ceanothus* plants such as tobacco brush.

**7. Pre-treatment Control—Insect Effects**

Overcrowding of trees can lead to insect problems. Look around to find white fir with dead tops—this indicates stress due to competition for light, water, and nutrients, which reduces the trees defenses to insect attack.



**8. Comstock Stump**

The Tahoe Basin was logged during the late 1800's, with most of the trees used in the silver mines in Virginia City. The subsequent re-growth of the forest has produced many even-aged stands that do not represent what the original forest looked like. This stump is one of the few remaining relics of that era.

Figure A-7b. Page 2 of the brochure from the Woods Creek Interpretive Trail.

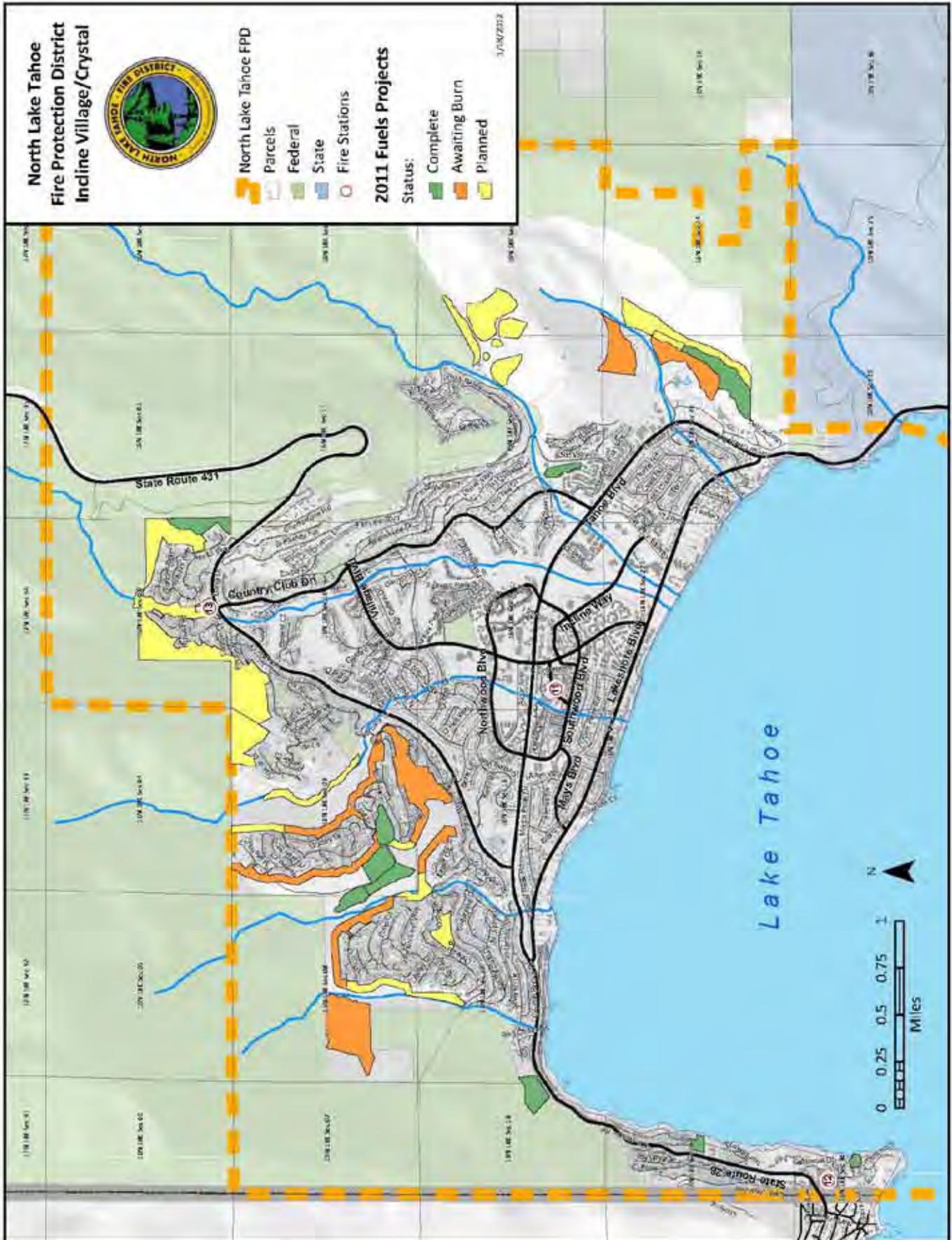


Figure A-8. Overview of work being done by the North Lake Tahoe Fire Protection District.

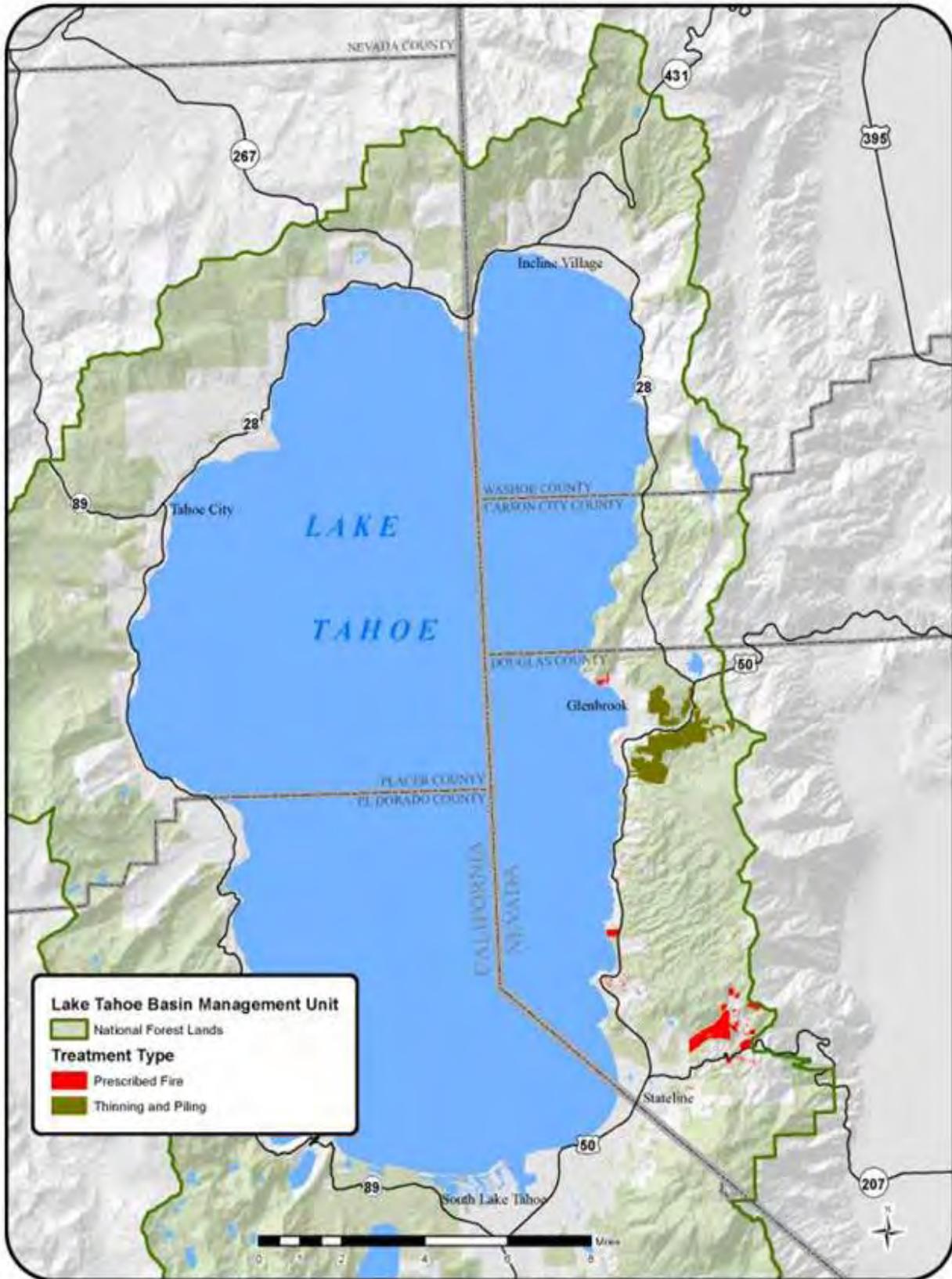


Figure A-9. Overview of work being done by the U.S. Forest Service-Lake Tahoe Basin Management Unit.

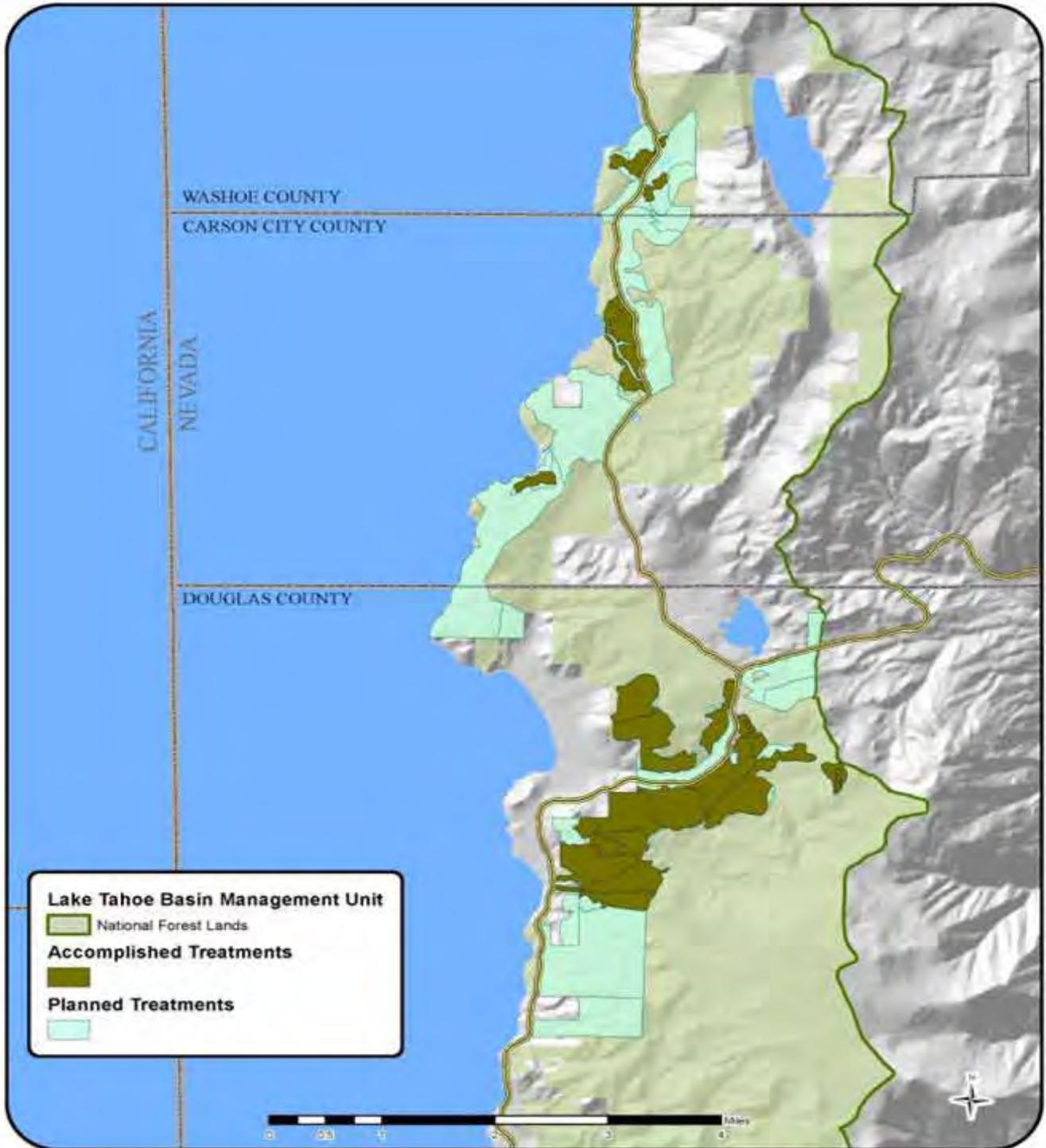


Figure A-10. Overview of completed and proposed work by the LTBMU's Spooner Project.

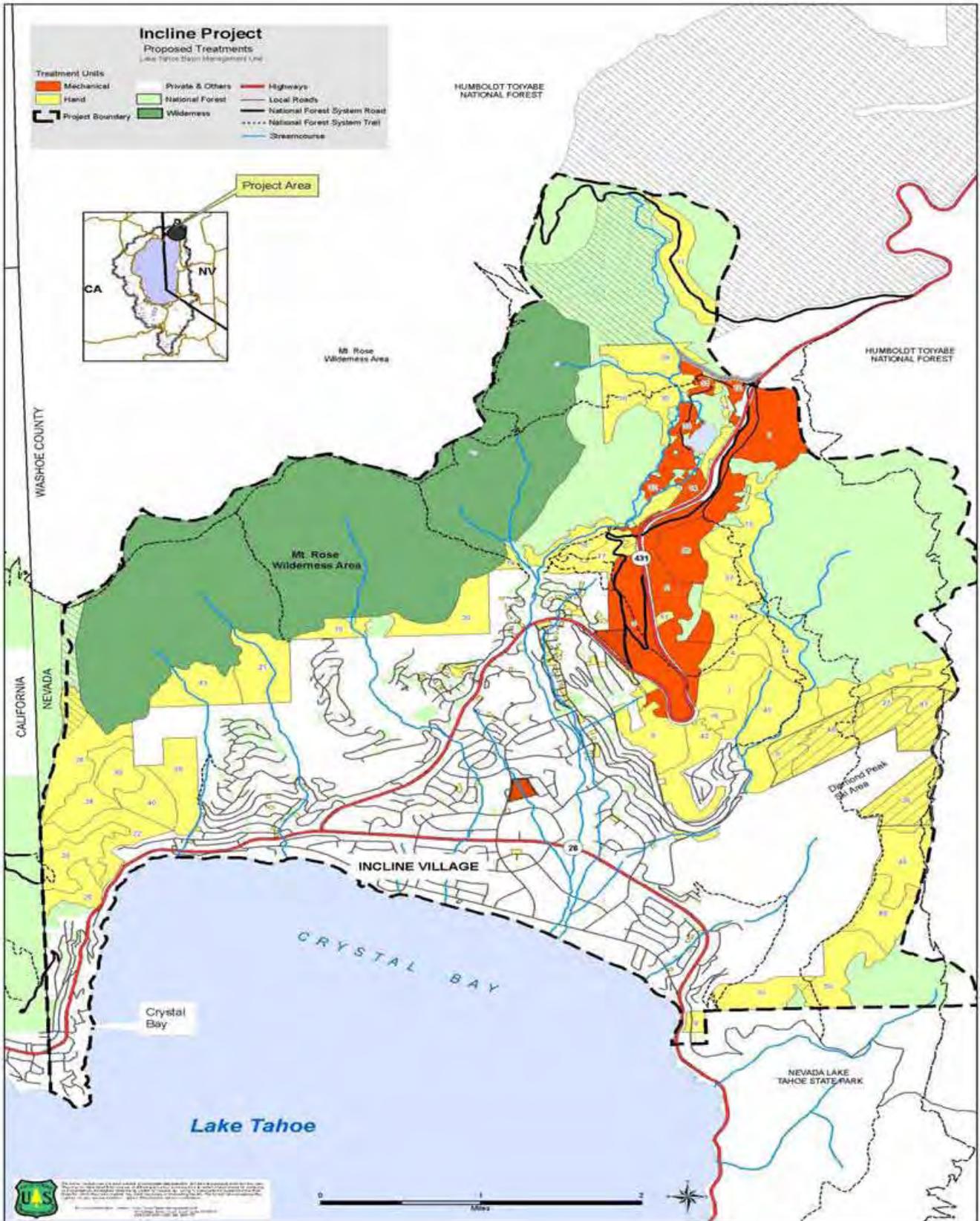


Figure A-11. Overview of planned work by the U.S. Forest Service-Lake Tahoe Basin Management Unit around Incline, NV.

## **Addendum**

### **2010 Accomplishments**

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This report is an addendum to the original “Report to Nevada State Legislature-AB75: Fire-Fuels-Forest Restoration Activities and Accomplishments at Lake Tahoe, NV”, and covers activities on the Nevada side of the Lake Tahoe Basin during calendar year 2010. The reader is referred to the original report for background and previous years’ activities and accomplishments dating to 2007 rather than repeating the information here.

The land management agencies, fire protection districts and NGOs involved in fire prevention and fire hazard reduction had another successful year. In total, approximately 900 acres were treated for fuel reduction. Treatments included thinning, slash chipping and burning.

Planning for future fuel reduction projects has been completed for large acreages of private, state and federal lands.

Both of the fire protection districts on Lake Tahoe’s east shore are using a Basin-wide data base developed by TFFT to input and track defensible space evaluations and compliance. This data-base is currently being populated by input from the fire district staff and will be ready for trials next spring.

Fuel reduction work since the Blue Ribbon Commission has focused on areas identified in the Multi-jurisdictional 10-year plan. These areas are primarily close to urbanized development and on relatively easily accessible ground, commonly referred to as the “low hanging fruit”. As this “low hanging fruit” is picked, the remaining terrain needing treatment is less accessible and consequently more expensive to treat. Cost per acre to treat the remaining areas will increase and funding will not go as far. Coupled with anticipated decreases in one of the primary funding sources, SNPLMA, annual accomplishments will likely begin to decrease in the near future.

The loss of the co-generation power plant at the Northern Nevada Correctional Center in Carson City removed the primary repository for chipped material from fuel reduction treatments on the east shore of Lake Tahoe. This has reduced the amount of slash treatment using chippers and increased the reliance on burning.

The increasing difficulty with site access combined with the loss of an end user for chipped material makes the ability to use fire in accomplishing wildfire hazard reduction goals increasingly important. A concern of forest managers at Lake Tahoe, and indeed across the western U.S., is the anticipated restriction on the use of fire as a management tool due to concerns about its impact on air quality. It is critical that this important tool is not removed from land manager’s tool kit.

## **2010 Accomplishments**

### **Nevada Tahoe Resource Team - Lake Tahoe State Park**

The NDF forester assigned to the NTRT is responsible for hazard reduction in Lake Tahoe State Park. This past year he focused on the Van Sickle property in Stateline, North Canyon at Spooner Lake, and Tunnel Creek and Sand Harbor on the north end of the park.

Funding for the work conducted in 2010 came from both the Tahoe Bond Act and the Southern Nevada Public Land Management Act (SNPLMA). Bond act funds were use to complete 165 acres of thinning and brush removal and 45 acres of pile burning. Fuel treatment is in progress on an additional 223 acres.

The focus of work funded by rounds 8, 9, 10 and 11 of SNPLMA has been in the wildland/urban interface. Three hundred forty five acres are being treated in the Van Sickle property, 100 acres and 80 acres are planned for burning in Tunnel Creek and Slaughterhouse canyon respectively. Additionally, 100 acres of fuel treatment

has been planned and approved for Sand Harbor.

## **Nevada Tahoe Resource Team - Tahoe Bond Act Urban Parcels**

The State Lands forester assigned to the NTRT is responsible for managing the vegetation and fuel on sensitive urban parcels purchased through the Tahoe Bond Act. Left unmanaged, these parcels represent a significant hazard to adjacent privately owned lands in urban areas. The important fuel reduction work conducted on 108 acres of urban parcels in 2010 was funded with SNPLMA rounds 8 and 9. It is important to note that many of these parcels being treated tie in with other agency work such as NDF, USFS and the fire protection districts adding to the eventual impact of treated area.

Round eight funding was used to complete the vegetation/fuel treatment on 28 parcels located in Incline Village/Crystal Bay and Upper Kingsbury at Dagget summit, and along Burke creek in Douglas county. Fuel reduction work using round nine funds focused on urban lots located along Highway 50, between Glenbrook and Round Hill. Fifty-seven parcels were treated during the 2010 field season. Lots were located in Round Hill Zephyr Heights, Cave Rock Estates, Logan Creek Estates and Lake Ridge Estates. Additionally, work began on five acres in Glenbrook which will be completed in 2011.

### **Tahoe Douglas Fire Protection District**

The TDFPD has been aggressively pursuing funding for its fire prevention and fuel reduction programs. Funding sources have come from special taxes on residents in the district, as well as grant funding from SNPLMA, and the FEMA pre-disaster mitigation program.

The district conducted over 200 free defensible space evaluations in 2010. The district is applying for funding to support a district-wide defensible inspection program. If successful, the program would employ two to three defensible space inspectors to blanket the entire district.

In 2010 the TDFPD implemented fuel reduction treatments on federal and state owned lands as well as on privately owned properties. This year all fuel reduction was conducted by hand and amounted to 163.5 acres of thinning on private, 28.5 acres of thinning on state and 2 acres of thinning on federally owned lands.

### **North Lake Tahoe Fire Protection District**

The NLTFPD is responsible for implementing fuel reduction and forest restoration projects within the communities of Incline Village and Crystal Bay. Funding for this work comes from several sources including local property taxes, State Fire Assistance Grants and SNPLMA.

In 2010 the district hand-thinned 165 acres and conducted pile burning on 110 acres within the district. Additionally, 30 acres of understory, controlled burning was completed. Ninety one additional acres were thinned in preparation for understory burning next season.

The district provides defensible space evaluation and curbside chipping services to district residents on request. In 2010 district staff performed 191 evaluations, issued 103 tree removal permits and chipped 142 curbside piles.

Prevention education programs in the district included a Fire Adapted Community workshop, an annual pancake breakfast and presentation to local associations and volunteer groups. The district also publicizes their fuel reduction programs through their website, an information board in a local market, mailbox stuffing campaigns and through frequent press releases. The district collaborated with the Nevada Fire Safe Council and the Nevada Tahoe Conservation District to host a Tahoe Wildfire Awareness Week event. Planning is in progress to install an interpretive trail along a popular walking trail in a local drainage that highlights hand thinning and under-story burning. Funding is provided by NDF and USFS.

### **USDA-Forest Service, Lake Tahoe Basin Management Unit**

The Forest Service focused on work in the Round Hill and Slaughterhouse Canyon areas, in addition to the urban lots they manage. They finished work on 10 acres of mechanical thinning in Round Hill and 15 acres of hand thinning in Slaughterhouse Canyon. Additionally, they completed three acres of initial thinning on urban lots and 45 acres of second entry thinning.

These figures represent what the Forest Service calls “foot print” acres. Although footprint acres report only an acre of treatment, several various treatments often occur on any given acre before it has been completed. This can lead to some confusion regarding reported numbers.

The Forest Service awarded two contracts for work on their “Spooner project” in 2011. One contract is for 95 acres of hand thinning and the other is for 164 acres of mechanical thinning..

Planning is ongoing for 3,500 acres of treatment on the “Incline project” which includes the pertinent areas around Incline Lake. Planning for this project should be completed in 2011. Planning for Aspen restoration has been completed. Aspen restoration projects are included in the Spooner and Incline projects. Others will be scheduled under the Aspen Restoration Categorical Exclusion.