California Cooperative Forest Management Plan

Property Name: Santa's Village

Property Location Address: 28950 Highway 18, SkyForest, CA

Owner Name (s): Bill and Michelle Johnson, Sky Park, Santa's Village, LLC

Plan Author: Tim Morin

Signature: Tim Morin

Phone: 909-332-0534 RPF# 2505

This management plan outlines the conditions and capability of property resources, documents the landowner's objectives and decisions, and identifies potential resource improvement projects. It is meant to be a flexible and educational document that considers a planning horizon of at least 5 years but may include objectives that require a much longer time period.

This management plan template meets management plan requirements for grant agreements and other provisions available through CAL FIRE, NRCS, USFS and the American Tree Farm Association. Signature Pages are provided to document acceptance of this management plan in meeting those requirements.

This management plan is a tool for and belongs to the landowner. Signatures are only required for that entity providing funding as requested by the landowner.

NRCS Natural Resources Conservation Service

SIGNATURES AND APPROVALS

This Forest Management Plan is provided as a guide to help you accomplish the objectives that you have for your forest. This Forest Management Plan will guide you in achieving the benefits of managing your forest and forest related resources. With this Forest Management Plan, you are eligible to participate in the California Department of Forestry and Fire Protections California Forest Improvement Program (CFIP), US Forest Service's Forest Stewardship Program (USFS), the American Forest Foundation's American Tree Farm System (ATFS) and The Natural Resources Conservation Service (NRCS) programs. This plan will need to be reviewed and approved by representatives for each of the programs that are providing funding.

I have reviewed this plan and approve its content.

_____ _____

Landowner (s) **Date**

USFS Forest Stewardship Program

I certify that this Forest Management Plan meets the requirements of the federal Forest Stewardship Program.

_____ _____

Plan Preparer Date

I certify that this Forest Management Plan meets the requirements of the federal Forest Stewardship Program.

_____ _____

Stewardship Forester Date

Forest Stewardship Tracking Number: _____

NRCS Cost Share Programs including EQIP

I certify that this Forest Management Plan meets the requirements of the USDA-NRCS Programs and/or the Quality Criteria for forest activity plans in Section III of the USDA NRCS Field Office Technical Guide.

Tim Morin 2505 12/16/2014

Technical Service Provider RPF Number Date

I certify that this Forest Management Plan meets the requirements of the USDA-NRCS Programs and/or the Quality Criteria for forest activity plans in Section III of the USDA NRCS Field Office Technical Guide.

Kimberly Fary 12-18-14

District Conservationist Date

ATFS Program

I certify that this Forest Management Plan meets the requirements of the American Forest Foundation's American Tree Farm System.

_____ _____ _____

ATFS Inspecting Forester Number Date

Certified Tree Farm Number: (e.g. AL 1234) _____ Date of ATFS Certification: _____

CAL FIRE CFIP MANAGEMENT PLAN CERTIFICATION PAGE

California Registered Professional Forester (RPF) Certification: I certify that I, or my supervised designee, personally inspected this California Forest Improvement Program (CFIP) plan area, and that the plan fully complies with the CFIP and Professional Foresters Law, and meets Federal Forest Stewardship Management Plan Standards. I further certify that this plan is based upon the best available site and landowner information, and if followed, will not be detrimental to the productivity of the natural resources associated with this property.

Name (Print or type): _____

Signature: _____ **date** _____

Organization/Company: _____

Address: _____

_____

Phone: _____ **RPF** _____

CAL FIRE Unit Certification: I certify that I, or my supervised designee, personally inspected this California Forest Improvement Program (CFIP) plan area, and that the plan fully complies with the CFIP and Professional Foresters Law, and meets Federal Forest Stewardship Management Plan Standards.

Name (Print or type): HENRY HERRERA **RPF** 2936

Signature: [signature] **date** 12/16/14

California Department of Forestry and Fire Protection

Unit: BDU

Address: 3800 N. Sierra Way

San Bernardino, CA 92405

CAL FIRE STATE OR REGION CFIP COORDINATOR: I certify that the plan fully complies with the CFIP and Professional Foresters Law, and meets Federal Forest Stewardship Management Plan Standards.

Name (Print or type): _____ **RPF**

Signature: _____ **date**

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This Multi-Agency Cooperative Forest Management Plan was developed for use in California by CAL FIRE, the US Forest Service and Natural Resources Conservation Service using information from a national joint Forest Stewardship, American Tree Farm System, NRCS Planning Process and the California Forest Improvement Act.

Landowner Information

Landowner(s) Sky Park, Santa's Village, LLC

Mailing Address P.O. Box 369,

SkyForest, Ca 92385

Phone _____ **E-Mail** _____

Landowner's Representative (if applicable) Bill Johnson, Owner

Mailing Address P.O. Box 369, SkyForest, CA 92385

Phone 951-288-8762 **E-Mail** bill@mcrla.com

Management Plan History

Does a Management Plan exist for this property? **Yes_X___** **No_____**

If Yes: 1990 Forest/Land Management Plan by James Bridges

Type of Plan: (CFIP, EQIP, NTMP, FSP, CAP, Other) _____

Date of Original Plan Completion 12/1990 **Revision Dates** _____

NOTE: Past Plans and Current Amendments are appended to this Document.

PROPERTY DESCRIPTION

Legal Property Description Sec 23, 26 & 27, T2N, R3W, SBBM

Nearest city or Town SkyForest, CA **County** San Bernardino

Assessor's Parcel Number : 003-221-102 033-125-124 033-220-107
-104
-202

GPS Coordinates @ Santa's Village 34° 13' 56.8"N 117° 10' 7.5" W

Total ownership acreage 235 **Total forested acreage** 220*

*A large portion of the property south of State HWY 18 has been burned several times and is in a current state of recovery from these past fires. However, it is evident that these acres have been forested in the past.

Does Landowner reside on the property? ☐ Yes ☒ No

Describe the overall topography including slope, aspect and elevation: The portions of the property south of HWY 18 are steep, south facing slopes that have experience reoccurring fire. The property north of HWY 18 shows little indication of fire and ranges from level ground to slope over 60% in the northern portion of the property and adjacent to Hook Creek. The elevation ranges from 4800 – 5900 feet above mean sea level.

Estimate percent of total acreage that is:

Complex topography (many steep ravines and aspects) 60 %
Simple topography (few ravines and changes of aspect) 40 %
Percent of Land: Flat (<5% grade) 10 Gentle (< 20% grade 20 Steep (> 35% grade) 70

Transportation System:

Vehicle Access (check): ☐ Excellent (80% accessible) ☐ Good (at least 50%)

☒ Fair (at least 25%) ☐ Poor (less than 10%)

Estimated improved road length (paved surface) 0.5 miles

Estimated unimproved road length 1.6 miles

Watershed Information:

CALWATER 2.2 planning watershed: Bunker Hill, 4801.520000; Upper Mojave, 9628.200000 Acres

within this watershed: Bunker Hill: 124,790.5 ac; Upper Mojave: 556,821.1 ac

Is there a 303d listing on watershed? Yes, Upper Mojave

what are the factors? Fluoride, natural sources

Tract and Farm number (if suitable): _____

PROPERTY HISTORY

History of Santa's Village

In the late 1800's, the property was established as a family farm and sawmill operation. Portions of the present timber stand were cleared and agricultural crops planted. The sawmill was in operation in 1885 at the present site of the pond. The Henck family gained ownership of the property in 1918 and continued Santa's Village closed in 1999. The property was purchased by the Skyforest Company in 2000 and was used primarily to store logs and as a grinding site following the bark beetle outbreak in 2002. These log storage and grinding activities continued until the current owners, Sky Park, Santa's Village, LLC purchased the property in 2014. The current landowners are in the process of refurbishing and opening Santa's Village in 2015.

Fire History

According to the 1990 Forest Management Plan by Mr. James Bridger, "the entire property was burned over in 1919 and the portion south of HWY 18 was re-burned in 1956." The 2003 "Old Fire" also burned the area south of HWY 18 and it appears that the fire burned through the forested areas north of HWY 18. However, it is clear that the portions of the property on the north side did not burn as hot as on the south side as very little scorching is evident on the residual trees. The areas south of the highway are still covered with brush and burned trees from the Old Fire.

A more detailed history of the creation of Santa's Village written by Joe Henck can be found in Appendix 3.

CURRENT PROPERTY CONDITIONS

Property Infrastructure

Gates, Access
The main entrance to the property is located on the north side of HWY 18 and does have a gate. Additional entrances on the south side of HWY 18 are also gated.

Water Supplies
The property has six wells, four are located on the located on the southern portion of the property and two are located on the north portion. Three of the wells on the southern portion are used to supply water for municipal purposes, while the fourth well is currently not in use. However, the landowner plans to use this fourth well to supply water to a 20,000 gallon tank located near the south parking lot.

Structures
Since the opening in 1955, Santa's Village amusement park has built dozens of structures, including an aerial tram and a small gauge train track. The current landowner is in the process of remodeling and rebuilding the park with an opening date in the 2015.

Forest Infrastructure

Forest Structure
The existing forest structure consists of an two storied timber stand due primarily to logging operations in the late 1800's, followed by partial harvests occurring from the 1930's through the 1960's. Many large second growth, incense cedar (*Calocedrus decurrens*), and white fir (*Abies concolor*) are evident throughout the property, as well as significant third growth cedar and fir. In addition, dozens of apple trees (*Malus spp.)*are scattered throughout the property, many of which have been alive since the late 1800's. With proper management and the exclusion of fire, the forests of this property could reflect more unevenaged characteristics in the coming decades.

A chaparral/brush component exists on the southern portion of the property and on the south side of HWY 18. These areas are recovering from the 2003 Old Fire and are composed of manzanita (*Arctostaphylos spp*.), black oak sprouts (*Quercus kellogii*) and ceanothus (*Ceanothus spp*.).

The riparian areas within the property comprise a small percentage of the total area but are extremely important for watershed quality and wildlife habitat. The meadow area located to the north of Santa's Village is the headwaters of Hook Creek, a tributary to the Mojave River.

Topography
The topography of the property can be defined as moderate to steep, mountainous terrain. Elevation of the property ranges from approximately 4,200-5,900 feet above mean sea level. The property is located in the Upper Mojave and Bunker Hill watersheds.

Regeneration Levels and Current Silvicultural Practices
According to the California Forest Practice Rules, silviculture is defined as the theory and practice of controlling the establishment, composition and growth of forests. The Forest Practice Rules further define silvicultural systems as the planned program of forest stand treatments during the life of a stand. Treatments generally consist of a number of integrated steps conducted in logical sequence leading to maintaining a forest stand in a distinctive form for the level of management intensity desired. Timber production is not an objective of this forest management plan; rather,

the primary objective is fuel management and forest restoration so the use of an un-even aged silvicultural system best suits the objectives of the camp. The goal of uneven-aged management is to maintain a diverse forest with trees throughout three or more diameter classes by selectively harvesting to maintain vigor of the remaining trees.

Natural regeneration of conifers on this property is high, to the extent that a number of "dog hair" type of young cedar and white fir stands exist on the property. This Forest Management Plan will encourage the thinning of these dense stands to improve forest health and more fire safe stocking levels. The landowner primarily intends to use the property for recreational purposes, but also as a sustainable natural resource, promoting overall water and air quality.

Current Conservation Practices for Forest Lands, Insect and Disease Issues

As a result of the recent past and current drought conditions, there have been several major site-altering changes to the property:

- An increase in the level of dominating shrub species inhabiting some areas, affecting the natural regeneration of the forested areas
- Increased stress of the remaining trees, causing them to be more susceptible to insects and disease.

Discussion on insect/disease issues on the property

Starting in 2002, the San Bernardino Mountains area, including the Santa's Village property, experienced significant tree mortality due to an extended drought and a subsequent bark beetle population explosion. The primary agent of mortality was by bark beetle. The Western pine beetle, (Dendroctonus brevicomis), and pine engraver bark beetles, (Ips spp.), were the most prominent bark beetles found to be active. In many areas of the Lake Arrowhead area, 70% mortality among the pines could be found. Current bark beetle populations have returned to normal and the conifers in the area are better able to defend themselves. However, it appears that 2014 will likely be another dry year and that can lead to increased bark beetle populations during the next one or more years, unless substantial precipitation is received.

Current Recreational Uses and Aesthetic Values

The property's main land use is for recreational purposes for the amusement park, for hiking, mountain biking, land-based education, etc. The property provides excellent aesthetic value, exhibiting a beautiful forested landscape for children and adults alike to enjoy, escaping the more typical urban landscapes that they may be used to.

Current Markets

There are very few markets for wood products in Southern California. The only two markets available to any timberland owner is a pallet mill, located in Beaumont and Chino, CA, and the local firewood market. Currently, the pallet mill pays approximately $1000 per load for conifer species, delivered. The firewood market, while being moderately strong, is still limited to the smaller logging companies that are local to the San Bernardino and San Jacinto Mountains. Currently, a cord of seasoned oak can range from $250-$350/cord. Seasoned conifer typically sells for $150-$200/cord.

Unfortunately, there is still plenty of material that gets fed into chippers and the chips are broadcast onto the surface of the ground. Until there is a sustainable volume of timber products that can be harvested from the National Forest, no investment in the wood product markets will likely occur.

Roads and Access
The property currently has one main access route providing ingress and egress to the property, and several seasonal roads located on the northern side of HWY 18. The main access to the south parking lot and to Santa's Village are directly off of HWY 18. The main roads within the property are paved and secondary roads throughout the property are seasonal/dirt roads.

The overall road conditions of the dirt roads are moderate and provide adequate ingress and egress. The relative moderate condition of the road system is a direct result of recent storms that have cause several erosion issues. Increased erosion reduction throughout this dirt road system can be achieved by re-assessing proper in-slope and out-slope drainage structures, installing rolling dips, and in site specific areas, the application of gravel to reduce loss of road surface material.

Road Maintenance for Erosion Reduction
According to the landowner there is not a written road maintenance plan other than spot maintenance as required. After heavy rains and snow melt, there have been instances of erosion along the road system such as:

- Sediments carried along inside ditches,
- Rills running down the slope of the road,
- Disintegrating waterbars, and
- Ponding

The overall road conditions are moderate and several areas will require annual and spot maintenance following storm events.

Stream Crossings/Drainage Improvements
There are two stream crossings located on the property. One crossing is located on the south side of HWY 18 and consists of a class III watercourse crossing. Currently, this crossing has not been maintained as the road has not been used in several years. However, it is likely that the landowner will reopen this road for equipment access for mastication and reforestation efforts.

The second watercourse crossing is located on the very northern property boundary where a utility road crosses Hook Creek, a Class II watercourse. There is no structure at this point and this low watercourse crossing appears to be functional and without repair requirements.

Access and Security
Presently there is one main entrance to the property directly from HWY 18. This access is gated and the landowner provides 24 hour security for the property.

Trespass Issues
Prior to the current landowner taking ownership of the Santa's Village property, the property was subject to significant looting and vandalism. The new owners claim that much of the copper was stolen from the property, as well as significant amount of trash dumped. However, the property now has locked gates and 24 hour security to prevent these types of adverse activity.

Recreational Uses
The property's main land use is for recreational purposes for the amusement park, for hiking, mountain biking, land-based education, etc.

Invasive Species
A small number of invasive species were identified in the field surveys. However, large scale disturbances, like a wildfire, can bring invasive species like Cheat grass and several brome species onto the property. Invasive species can be difficult to manage as they typically are quick to dominate the once forested sites. The presence of invasive species inhibits natural regeneration through water and nutrient competition and creates shade that inhibits the germination of shade intolerant tree species, thereby reducing the local production of seedlings. Because of the size of the area and limited resources including funding and equipment, eradication efforts would be slow and cumbersome. Eradication by hand would not keep up with the pace of species invasion. Eradication through mastication will be introduced, but again, is very cumbersome and needs to be reintroduced on a frequent recurring basis to keep up with the pace of the species invasion. Chemical treatment can continue to be used to assist in controlling invasive species, as well as native chaparral that are overtaking previous forested areas.

Climate
The climate in the Skyforest area can be characterized with mild summers, with temperatures in the 70's (Fahrenheit), and cold winters, with temperatures in the 40's (Fahrenheit). Extremes in temperature can be as low as 0 degrees Fahrenheit in the winter months and as high as 90 degrees Fahrenheit during the summer months. Annual precipitation comes in the form of rain and snow depending on elevation, with average annual precipitation at approximately 35 inches. In addition, this area is commonly subject to fog and the moisture from fog drip can add as much as 50% more moisture to the soil. Santa Ana conditions, which can be described as high northern or easterly winds with very low humidity, often occur in this area late fall/early winter, although can occur any time throughout the year.

Forests naturally sequester carbon, but massive fires release all carbon that was previously sequestered by the forest, into the atmosphere. Therefore, a FMP which addresses fire reduction and manages the land for fire hazards can assist in improving the amount of carbon sequestered and retained on the land. In addition, existing trees on the property sequester carbon; however, the amount of carbon sequestration occurring on the property has not been assessed on this property.

Soils
Soils on the Santa's Village property were identified and mapped by the USDA Natural Resources Conservation Service Web Soil Survey. The maps depicting soil types were taken from ESRI shape files. The primary soil series underlying the camp are comprised of the Morical-Wind River families complex (30-50% slopes)and Springdale family-Lithic Xerorthents association (50-75% slopes).

"The Springdale family-Lithic Xerorthents association consists of excessively drained, moderate depth, very gravelly course sand that formed from residuum weathered from granite. These soils are on mountainous uplands and have slopes of 50 to 75%. The elevation ranges from 3000 to 7000 feet. Mean annual precipitation is between 15 and 25 inches and the mean annual air temperature is between 46 and 54 degrees F. The current vegetation is chiefly, grass and shrubs, namely ceanothus and black oak sprouts. The Springdale family-Lithic Xerorthents association soils are used mainly for range, watershed, and wildlife habitat."

"Morical-Wind River families complex consists of well-drained, moderately deep sandy loam that formed from residuum weathered from granite. These soils are on mountainous uplands and have slopes of 15 to 50%. The elevation ranges from 4500 to 6000 feet. The mean annual precipitation is between 20 and 35 inches, and the mean annual air temperature is between 46 and 54 degrees F. The vegetation is chiefly semi-dense to open stands of timber, grass and shrubs. The dominant species are Incense Cedar (*Calocedrus decurrens*) and white fire (*Abies concolor*). Morical-Wind River family's complex soils are used for limited range, wildlife habitat, recreation and watershed."

Table 1: Soil Mapping Units Camp Osito							
Mapping Unit	**Map Symbol**	**Average Depth (inches)**	**Surface Texture**	**Surface Runoff**	**Erosion Hazard Rating**	**H_2O Holding Capacity (inches)**	**Suitability for Forest Management**
Springdale-Lithic Xerothents	FLG	45-49	Very Gravelly Course Sand	High	High	2.5	Poor
Morical-Wind River 30-50%%	MbF	50-54	Sandy Loam	Medium	Moderate	7.5	Good

Streams, Wetlands, Ponds and Water Resources

California Forest Practice Rules defines a watercourse as any well-defined channel with distinguishable bed and bank showing evidence of having contained flowing water indicated by deposit of rock, sand, gravel, or soil, including but not limited to streams as defined in PRC 4528(f). More specifically, it defines watercourse classifications as follows (Table 3): Class II waters are defined as 1) fish always or seasonally present off-site within 1000 feet downstream and/or 2) aquatic habitat for non-fish aquatic species. Aquatic habitat indicators for Class II watercourses include free water, aquatic plants, water-dependent stages of aquatic insects and the physical condition of the channel and its position in the landscape. Class III watercourses do not have aquatic life present, and are capable of sediment transport to Class I and II waters under normal high water flow conditions.

The watercourses located within the property include Class I, Class II and Class III watercourses. Based on five mile radius California Natural Diversity Database (CNDDB) search associated with the property, listed or sensitive aquatic species that have potential to be in this area include: California red-legged frog (*Rana draytonii*), southern mountain yellow-legged frog (*Rana muscosa*), and the Santa Ana sucker (*Catostomus santaanae*) Please see the Threatened and Endangered Species section for more detail. None of the creeks on the property are on the State Water Quality Control Board 303(d) list for impaired waterbodies. The property is located in the Upper Mojave Watershed.

Other water resources on the property consist of six wells and one water tanks. This study did not measure the flow, however it is adequate to be used for several purposes including but not limited to drinking, watering plants and animals and drafting in event of fire.

Air Resources

Vegetation Treatment and Removal
Currently, the scope of the majority of vegetation removal work on the property is small-scale, including hand removal, mastication, and limited chemical treatment. The debris treatment is of a mastication method, keeping the height of the debris to a minimum to reduce fuel load and allow quicker decomposition for nutrient recycling. Pile burning, broadcast burning and prescribed fire are not options to reduce the fuel load on the property because of the fire risk.

Any equipment used to conduct work on the property would be temporary and minimal in nature. Therefore, no cumulative effect on air resources is expected.

Climate Amelioration and Carbon Sequestration
Forests naturally sequester carbon, but massive fires release all carbon that was previously sequestered by the forest, into the atmosphere. Therefore, a FMP which addresses fire reduction and manages the land for fire hazards can assist in improving the amount of carbon sequestered and retained on the land. In addition, existing trees on the property sequester carbon; however, the amount of carbon sequestration occurring on the property has not been assessed on this property.

Fish and Aquatic Species

The property's elevation ranges from 4,200 to 5,900 feet, and contain Class I, II and III watercourses. The Class I watercourse on the property is a reservoir that does contain fish. Below the reservoir is the beginning of Hook Creek, a Class II watercourse. In addition, the meadow/riparian area above the reservoir will also be provided Class II watercourse protection measures. All of the watercourses on the property eventually drain into the East Fork of the West Fork Mojave River, which is a Class II watercourse, according to the definition of the California Forest Practice Rules. This creek has the potential to serve as habitat for non-fish, aquatic species.

Depending on adjacent slope percent's, the California Forest practice Rules contain specific requirements to help protect these riparian areas and channel migration zones.

These areas can be protected through:

- Shade cover percent standards
- Minimum width filter strips
- Measures to control erosion to reduce sediment deposition to downstream waters.

Additional habitat improvements are not planned at this time, however, a portion of the meadow area located to the south of the reservoir was used for log storage and has been damaged. The removal of woody debris (bark) from this area would help in the natural recovery process of this meadow.

Upland Wildlife

Observed or Known Wildlife Present
Upland wildlife observed included deer, quail, and various species of birds such as finch and sparrow. Mountain lion, bobcat and bear are also known to occur in the SkyForest area. There was nothing notable from our observations or conversations with the local, knowledgeable people of the area. A CNDDB search revealed various species of plant and animal that could potentially be in the area (Appendix 2), including one California Species of Special Concern (Table 2) that has previous known occurrences on the property.

Because of a history fire incidents on the property, the habitat has changed significantly in some areas. On the northern portion of the property, much of what used to be open forest is now a mix of overstocked forest stands with species of incense cedar and white fir. In the absence of a disturbance such as fire, more shade tolerant species like incense cedar and white fir will continue to thrive and become more abundant. In other areas south of HWY 18, recent stand replacing fires (2003) have created a shrub/brush covered landscape with abundant dead snags. In these areas, a significant effort will be required to return these burned over lands to a forested landscape.

Since more and more people are living in these fire prone areas, it is important to reduce these overstocked areas through methods other than fire. Mechanically removing individual and/or groups of trees to promote a more healthy and fire resilient forest is the goal of this management plan.

Threatened or Endangered Species – Plants or Animals

According to the CNDDB inventory, one listed animal species has the potential to occur on the property: the southern rubber boa (*Charina umbratica*).

The CNDDB search for the California Native Plant Society (CNPS) ranked species listed no potential occurrence of plants on the property. However, there is suitable habitat on the property for several of the species listed within the five mile radius of the property (See Appendix 2 for more details on these species).

In those areas within the property that have suitable habitat, some general mitigation measures may be required for projects associated with this FMP.

Special Status Species

A five mile radius query within the California Natural Diversity Database (CNDDB) system depicted 17 special status plant species, 12 special status animal species and 1 special status insect species with the potential to occur in or around the project area. Each of these species is considered either federally or state threatened or endangered or a Species of Special Concern in California.

Plants

The CNDDB report depicted that 17 perennial or annual herb species have been recorded within the five mile radius CNDDB search, with none listed with known occurrences on the property. Each of these species is considered “rare, threatened and endangered in California” by the California Native Plant Society. None of these or any other special status plant or animal species was observed within the study area, and none are expected to be impacted by the project. Focused surveys were not completed, but may be implemented prior to active operations. More details on these species can be found in Appendix 2.

Animals

The CNDDB report depicted 12 State or federally listed Wildlife species or California Species of Special Concern within the five mile radius of the property. None of these or any other special status plant or animal species was observed within the study area, and none are expected to be impacted by the project. Should focused surveys indicate the presence of listed species, the area will be marked for complete avoidance. More details on these 12 species can be found in Appendix 2.

Table 2. Habitat Associations and Survey Results for State and Federally Listed Wildlife Species with Observed Occurrences in the Project Area

Common Name	Scientific Name	Listing Status	Habitat Association	Survey Results
southern rubber boa	*Charina umbratica*	S2S3	Oak-conifer and mixed-conifer forests at elevations between roughly 5,000 to 8,200 ft. where rocks and logs or other debris provide shelter	Not observed during field surveys. CNDDB lists known occurrences of this species on the property.

The information in this table was obtained from the CNDDB (2013).

California Department of Fish and Game Listing Codes

CSC	California Species of Special Concern
ST	State Threatened
SE	State Endangered
S2S3	State imperiled/vulnerable

Federal Listing Codes

FT	Federally Threatened
FE	Federally Endangered
FSC	Federal Species of Concern

LANDOWNER MANAGEMENT OBJECTIVES

Silvics

Desired Forest Condition

Fire Protection Objectives

The objectives of the landowners are to increase their forest's defense against fire, as well as maintain a healthy forest for recreational purposes. They want to manage those areas overgrown with chaparral and shade tolerant trees and create sheltered fuel breaks along roads and near structures for future fire prevention or spread.

As funding becomes available, it is the goal of the camp to reduce the fuel load throughout the forested areas so that when a fire does occur on the property, a stand replacing, uncontrollable fire can be avoided creating a more low intensity fire that can be controlled and perhaps be beneficial to the overall forest health.

Forest Health Objectives

Returning the forest to a more fire resilient state and potentially reducing the threat of insect and disease introduced by the stress caused by drought and the fire events is a primary objective of the camp.

The Gold Spotted Oak Borer (GSOB) is of potential future concern to the camp. GSOB has been observed near Idyllwild, CA and it's transport into the San Bernardino Mountains is a potential threat. The GSOB does affect black oaks (*Quercus kelloggii*) and, therefore, it remains a concern for the area.

Invasive Plant and Animal Concerns

Although not technically "invasive" plants, the growth of various species of shrub such as Ceanothus (*Ceanothus spp*.) and manzanita (*Arctostaphylos spp*.) is a concern for the camp. The change in vegetative community due to these species dominating sites previously occupied for forested land could potentially cause a change in the type of wildlife species inhabiting the area. Most species seeking thermal cover, high perches for nesting, high perches for pouncing/feeding and the general food stores provided by a forest would be altered to a point where a new wildlife habitat relationship would be created.

Trespass Concerns

Access on foot to the property is limited by rugged terrain and only one entrance to prohibit vehicular traffic. Most, if not all, trespass concerns with regard to human trespass have been mitigated with improved locked gates and 24 hour security.

Fire trespass is a concern of the current landowner. With plan implementation, addressing fuel load, shaded fuel breaks, the goal is to reduce the probability of fire trespass.

MANAGEMENT PLAN IMPLEMENTATION

Constraints and Proposed Alternatives

Land Use Alternatives to Current Use and Landowner Objectives
The landowners currently uses the property for recreation, and preservation of the watersheds.

The Desired Alternatives
With the alternatives prescribed in the plan, the forest can continue to be restored, enhanced and maintained. Creating a more fire resilient forest is the first step to protect the property and to protect the gains to be achieved by implementing this plan. Reducing the competition of the chaparral and tree species will accomplish the desired objectives of the landowners. Once established, a routine maintenance schedule is important to sustain the changes. Yearly assessments to determine the timing to reduce competition of weeds and brush by mechanical or chemical treatments and an entry to thin trees for to improve forest health are all necessary steps in restoration efforts.

The "No Action" Alternative
The "no action" alternative, while feasible, would not be the best choice for this property. The forested areas of the property are typically overstocked to take no action would mean leaving these areas overstocked and at risk for wild fire for the next decade or more and increasing fuel loads as the shrub and brush continue to dominate the additional sites. The no action alternative would more than likely change the wildlife habitat relationships now in place. A no action alternative could potentially have a negative impact on the beneficial uses of water through degradation of the quality of the watersheds. A no action alternative could also potentially have a negative impact on the air quality through increased wildfire incidents: doing nothing decreases the fire resiliency of the forest.

Economic Sustainability
Fuel hazard reduction is the main focus for the next several decades. To consider the property as a business entity to achieve economic sustainability through timber production, many obstacles would need to be worked out for that to be successful, if it can. To commit the resources needed to produce and manage timber on a sustained yield basis, considering the soil types, Site Class and tree species on the property, economic sustainability would be difficult to achieve. The current potential lies in restoration of the forest which will create a benefit to the community at large, not measured as a cost per unit produced, but rather as a benefit in wildlife enhancement, watershed quality, air quality and keep it as a recreational property to maintain its aesthetic, environmental and educational opportunities for the landowners and their guests.

Discuss Tax Liability and Tax Saving Opportunities
Not applicable at this time as the Sky Park, Santa's Village, LLC has no intention to harvest their trees on a commercial basis.

Desired Forest Condition
As mentioned throughout this plan, it is desirable to restore the property a more healthy and fire resilient state. As prescribed in the project units to follow, it is suggested that each unit be thinned mechanically. To do this it will be necessary to remove competing vegetation to increase the vertical and horizontal spacing between tree and brush species.

Pests
At this time, the vegetation dominating the northern portion of the property is a conifer and mixed conifer type. The southern portion is dominated by chaparral species. Mitigation is prescribed through the individual project units to mechanically and/or chemically reduce the total amount of brush and to selectively thin the forested areas.

Other pest occurrences on the property have been evidenced by the dying of several trees from bark beetles. The Western pine beetle (*Dendroctonus brevicomis),* pine engraver bark beetles (*Ips spp.)* and fir engraver beetles (*Scolytus ventralis*) are the most prominent bark beetle species that could be active on the property. Tree mortality is generally restricted to scattered saplings and poles that are suppressed, diseased or injured. Trees may also be predisposed to beetle attacks by storms, lightening, fire, and mechanical injury and by severe competition for light, minerals and water, common in overstocked stands. Trees top killed by Ips are often attacked and subsequently killed by Dendroctonus beetles. Outbreaks generally last only one season but can persist during long periods of drought.

The Dendroctonus beetle has an aggressive form of attack. Once successfully in the tree, the beetle releases a pheromone which attracts other beetles causing multiple mass attacks on the tree which depletes the tree's defensive resources to fend off the attacking beetles, weakening the tree to the point of dying. The tree releases sap in an attempt to keep the insect out, multiple attacks depletes the trees ability to produce more defensive sap, ultimately killing the tree. The beetle can also act as a vector by introducing the blue stain fungus (*Ophiostoma minus)* which interrupts the trees water conducting systems, again aiding in the stress and ultimate death of the tree.

Generally, mitigation lies in eliminating the causes of stress in the tree and promoting silvicultural practices that maintain a healthy forest by reducing competition for light, nutrients and water and protecting the forest from injury.

Air Resources and Quality
Fire will not be used as a source of vegetation control on this property.

Soils:
Understory vegetation, such as conifer saplings and brush species, will be masticated with a skidsteer type equipment. This practice will leave an even chip/mulch layer that will not exceed 3 inches in depth. This mulch layer will provide effective erosion control throughout the project areas. All project areas have slopes less than 40% and the Erosion Hazard Rating is Moderate.

Roads:
The overall road conditions are moderate as they both paved/rocked and seasonal roads. Any maintenance on these roads will be carried out by the landowner. There is no new watercourse crossing proposed during this project. No new skid trails are planned for this project.

Fire Protection:
The proposed project is considered "maintenance" of past fuel reduction efforts. The regeneration of small diameter trees and brush will be removed in an effort to create vertical and horizontal separation between the ground and the lowest branches.

Security:
Presently there is one main entrance to the properties, which is gated and locked. The property owner has indicated that they have acquired a security service for their property.

Wildlife:
There is one year round reservoir on the property that will not be disturbed by the proposed project. No additional habitat improvements are planned at this time.

Upland wildlife observed included deer, quail, and various species of birds such as finch and sparrow. Mountain lion, bobcat and bear are also known to occur in the area. There was nothing notable from our observations or conversations with the local, knowledgeable people of the area. The landowner has no plans to change or improve wildlife habitat at this time.

Recreation and Aesthetics:
The common areas main land use is for recreational, wildlife habitat, and watershed protection purposes for the landowners and their guests. These values will not significantly change as a result of this project.

Climate Considerations and Carbon Sequestration:
Forests naturally sequester carbon, but massive fires release all carbon that was previously sequestered by the forest, into the atmosphere. Therefore, a FMP which addresses fire reduction and manages the land for fire hazards can assist in improving the amount of carbon sequestered and retained on the land. In addition, existing trees on the property sequester carbon; however, the amount of carbon sequestration occurring on the property has not been assessed on this property.

Family Legacy:
It is unknown what the landowner's intentions are regarding "family legacy". The landowners purchased the property in an effort to restore the Santa's Village amusement park and, therefore, the success of that business may determine any long term legacy.

FOREST MANAGEMENT UNIT INFORMATION:

Unit Management Resource Concerns and Recommendations

Management Units

Based on landowner objectives, stand condition (health, stocking, species composition, etc.) topography, and proximity of infrastructure, five (5) management units have been developed for 2014-2015. These units have been mapped and may be managed in subsequent years as funding becomes available. The map, located in the map section, shows the location of the management units that are outlined below.

Title 14, CCR, Article 4, 1060, Site Classification, from the California Forest Practice Rules defines the site classifications based on species and the average height of the dominant trees, at 100 years of age. This classification system is used as an indication of the timber site's productive potential. Currently, the forested areas exhibits the Site Class II and III type of growth, depending on the slope location.

To determine an appropriate rotation age for these units would be difficult without a more intensive timber cruise which would be outside the scope of this management plan. As it is, the camp is not interested in managing their lands for timber production, but rather watershed enhancement and protection, for aesthetics, wildlife and recreation. The areas selected for management includes those with the highest capacity to grow trees and where equipment access is feasible. Basal area within these stands range from 0 $ft^{2/ac}$ in brush covered areas to a high of about 300 $ft^{2/ac}$ in overstocked areas.

The long term goal of the landowner is to eventually bring the forest back to represent a more historical stand composition. Brush species have captured the southern portion of the property and will require repeated control. An additional goal of the landowner is to have several age classes, thereby creating improved wildlife habitat and recreation potential. However, based on the fire history of San Bernardino Mountains, an uneven-aged stand may not be attainable throughout the entire forested portion of the property.

For the Sky Park, Santa's Village property, the following treatments are proposed for use within the next decade:

Fuels Modification Unit Prescriptions

For the project area, continued evaluation as to the degree of success that mastication and forest thinning will be necessary. Additional mechanical, chemical and thinning treatments will likely be required to achieve healthy and fire safe stocking levels, as funding becomes available.

Criteria for Vegetative Material to be Harvested or Retained

Within all current and future fuel modification units, the prescription will seek to target and reduce ladder fuels; specifically, no trees greater than 24 inches stump diameter shall be removed (per the California Forest Practice Rules, Title 14, CCR 1038(i)(8)(A)(see **Appendix 1**). The fuel modification shall decrease fuel continuity and increase available growing space for residual trees. Surface and ladder fuels in the treatment area, including logging slash and debris, brush, small trees, and deadwood that could promote the spread of wildfire, shall be treated to achieve standards for vertical and horizontal spacing between fuels, maximum depth of dead ground surface fuels, and treatment of standing dead fuels within the boundaries of the fuel break, as follows:

(1) **50-70% brush and slash shall be masticated or removed and chipped**. In addition, a portion of the small trees, 12" or less DBH, may be masticated or removed to achieve a

residual tree density of approximately 100 trees per acre (20-foot spacing) of all diameters. Target trees, 12" DBH or less, shall possess poorly developed crowns and be located in an intermediate or suppressed crown position. The LTO shall target the removal of all trees with a DBH of 12" or less that are within the drip-line of overstory trees.

(2) **Dead surface fuel depth shall be less than three (3) inches**. This shall be achieved by mechanical mastication, mulching, or chipping where possible. Lop-and-scatter methods may be used within areas inaccessible to heavy equipment with a maximum depth of 9 inches and upon approval of CAL FIRE, NRCS and/or the project RPF.

(3) **Standing dead trees shall be left unless marked for removal by an RPF**. Such material, along with live vegetation associated with the dead vegetation, may be retained for wildlife habitat when isolated from other vegetation and where structures are not threatened.

(4) **Dominant and co-dominant trees shall be retained, except where removal of co-dominant trees is need to improve forest health and fire safety and as determined by an RPF**. Dominant and co-dominant trees are those extending above the general level of the canopy and receiving full sunlight from above and full/partial from the side. Where feasible, residual tree canopy shall be pruned to an average height of 8 feet, but will not be more than 50% of the live canopy.

Watercourses

Within the management plan area, there are Class I, II and III watercourses that will require site specific protection. The required protection measures are summarized below:

Table 3. CA FPR 956.5: Procedures for Determining Watercourse and Lake Protection Zone Widths and Protective Measures[1]

Water Class Characteristics or Key Indicator Beneficial Use	1) Domestic supplies, including springs, on site and/or within 100 feet downstream of the operations area and/or 2) Fish always or seasonally present onsite, includes habitat to sustain fish migration and spawning.		1) Fish always or seasonally present offsite within 1000 feet downstream and/or 2) Aquatic habitat for nonfish aquatic species. 3) Excludes Class III waters that are tributary to Class I waters.		No aquatic life present, watercourse showing evidence of being capable of sediment transport to Class I and II waters under normal high water flow conditions after completion of timber operations.		Man-made watercourses, usually downstream, established domestic, agricultural, hydroelectric supply or other beneficial use.	
Water Class	Class I		Class II		Class III		Class IV	
Slope Class (%)	Width Feet	Protection Measure	Width Feet	Protection Measure	Width Feet	Protection Measure	Width Feet	Protection Measure
					[see 916.4(c)] [see 936.4(c)] [see 956.4(c)]		[see 916.4(c)] [see 936.4(c)] [see 956.4(c)]	
<30	75	BDG	50	BEI	See CFH		See CFI	
30-50	100	BDG	75	BEI	See CFH		See CFI	
>50	150[2]	ADG	100[3]	BEI	See CFH		See CFI	
1 – See Section 916.5(e) for letter designations application to this table. 2 – Subtract 50 feet width for cable yarding operations. 3 – Subtract 25 feet width for cable yarding operations.								

Steep Slopes and Special Treatment Areas
Ground based equipment shall not operate on slopes over 40% or on unstable ground (as identified on maps). During the course of operations, if any slopes over 40% are encountered, the material shall be hand cut and removed to areas where slopes are less than 40%. Unstable areas shall be identified by an RPF with orange and white striped flagging bearing "Special Treatment Area" in bold, black letters. No vegetation modification is to occur within these zones.

Wet Weather Operations
Heavy equipment shall not operate under saturated soil conditions. Saturated soil conditions defined by the California Forest Practice Rules *"means that soil and or surface material pore spaces are filled with water to such an extent that runoff is likely to occur. Indications of saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing material during timber operations, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning or tracks that produces a wet slurry, or (5) inadequate traction without blading wet soil or surfacing materials."*

The following NRCS practices are intermixed within each of the fuels modification Units: The Fuel Break areas are proposed for Forest Stand Improvement, Woody Residue Treatment and Tree Pruning. Each of these practices coincide with one another and are located in areas where the protection of the structures is important.

MANAGEMENT ACTIVITY DECISIONS, SCHEDULE AND TRACKING

(Copy additional pages if needed)

Management Unit	Acres/ feet	NRCS Practice Code (optional)	Treatment Activity Short Description	Dates		Cost Share Used? Type?	Net Cash Flow	
				Planned	Completed		Cost	Income
All 2014 – 2015 Units	135 ac	666, 660, 384	Forest Stand Improvement, Tree Pruning, Woody Residue Treatment	2014	2015	EQIP/Ac	$1000-1400/ac	0

PLANNED MANAGEMENT ACTIVITIES AND REQUIRED PERMITS

Management Recommendations

It is recommended:

- Prior to vegetation work during spring and summer a survey of the project area is conducted to identify bird nesting locations.
- A yearly assessment of encroachment of competing vegetation in the project area is conducted to determine if a re-entry is necessary to reduce the competition.
- A frequent assessment of road conditions and scheduled maintenance is conducted especially prior to seasons of storm events and immediately after the events to maintain erosion control structures.

Archaeological

The landowner indicated no cultural sites are located on the property. Prior to the start of operations on all projects, an archaeological review will be conducted and submitted to CAL FIRE for review.

California Environmental Quality Act and National Environmental Protection Act information

Forest management activities including conservation practices may impact special environmental and/or cultural values. These values are often kept private for protection. Landowners need to know where they are and what they can do to protect them. When a project is proposed and a permit and/or government assistance is part of the project, environmental and cultural reviews by concerned agencies are necessary. Conservation projects using public incentives will require the following environmental and archaeological documentation and should be added as an addendum.

Environmental

- Map the location of known geological, biological or ecological values sites. See Sections above.
- With any project a signed CAL FIRE CFIP Environmental Checklist (CEQA) or NRCS CPA-52 (NEPA). Checklist must be filled out by an RPF or certified planner.

Archaeology

- On a map note the location of known archaeological, cultural, or historical sites and with it, attach existing record checks or surveys in a separate addendum entitled Confidential Archaeological Report.
- With any project, an Archaeological Report must be requested by an RPF or Archaeologist.

Any future ground practice to implement this plan using public entity reimbursement funds requires a signed CAL FIRE CFIP Environmental Checklist (CEQA) or an NRCS CPA-52 (NEPA) Checklist. Along with this checklist a process of "discovery" or survey for unknown values along with a discussion of possible mitigations is required. Additionally the checklist must be filled out by an RPF or Certified Planner. Archaeological values require an Archaeological Records Check, an entity Archaeologist review and Native American notification for the practice area.

PROVIDE A PROJECT NOTIFICATION TO THE FOLLOWING AGENCIES:

- California Department of Forestry and Fire Protection
- If the project adjoins public land (for example, the US Forest Service, US Fish and Wildlife Service, BLM, National, State, or local parks, etc.) notify that agency
- If the project adjoins a State Highway, contact Caltrans

FOR GROUND-DISTRUBING PROJECTS, PROVIDE A PROJECT NOTIFICATION TO:

- Native American Heritage Commission
- Tribal contacts
- Local Historical Society

PROPERTY AND PLAN MAPS

The map(s) shall contain the following elements as a minimum:

- **On a recent USGS Topographical or GIS map include property and management unit boundaries at a scale of 4 inches = 1 mile (1 inch = 1320 feet minimum).**
- **Title, north arrow, scale, legend (including road layout, water resources, infrastructure identification, timber land, other land uses, unit boundaries, and etc as necessary to show activities).**

Maps Required:

1. **Property Location Map: Delineate property boundaries, access roads, nearest town or well known land mark.**
2. **Parcel Map including property boundaries, road layout, water resources, infrastructure identification,**
3. **Management Unit map showing location of forest type and management unit boundaries.**
4. **Soil Types Map: Show name and location of soil types present. Soil maps are available from NRCS Web Soil Survey: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm , or from your local NRCS office.**
5. **Water Resources Map: Show name, location and classification of streams and other water resources.**
6. **Road Assessment Map: Show locations of roads and major skid trails. Indicate map points where projects such as road rehabilitation and culvert replacement are proposed**
7. **Project Map: Show location of proposed management activities**
8. **Other maps: As needed, other areas, including threatened and endangered species and archeological sites may be noted on a separate, confidential map.**

Aerial Photos may be used in addition to the Main Management Plan Map.

Sky Park LLC

Legend

Santas Village Boundary

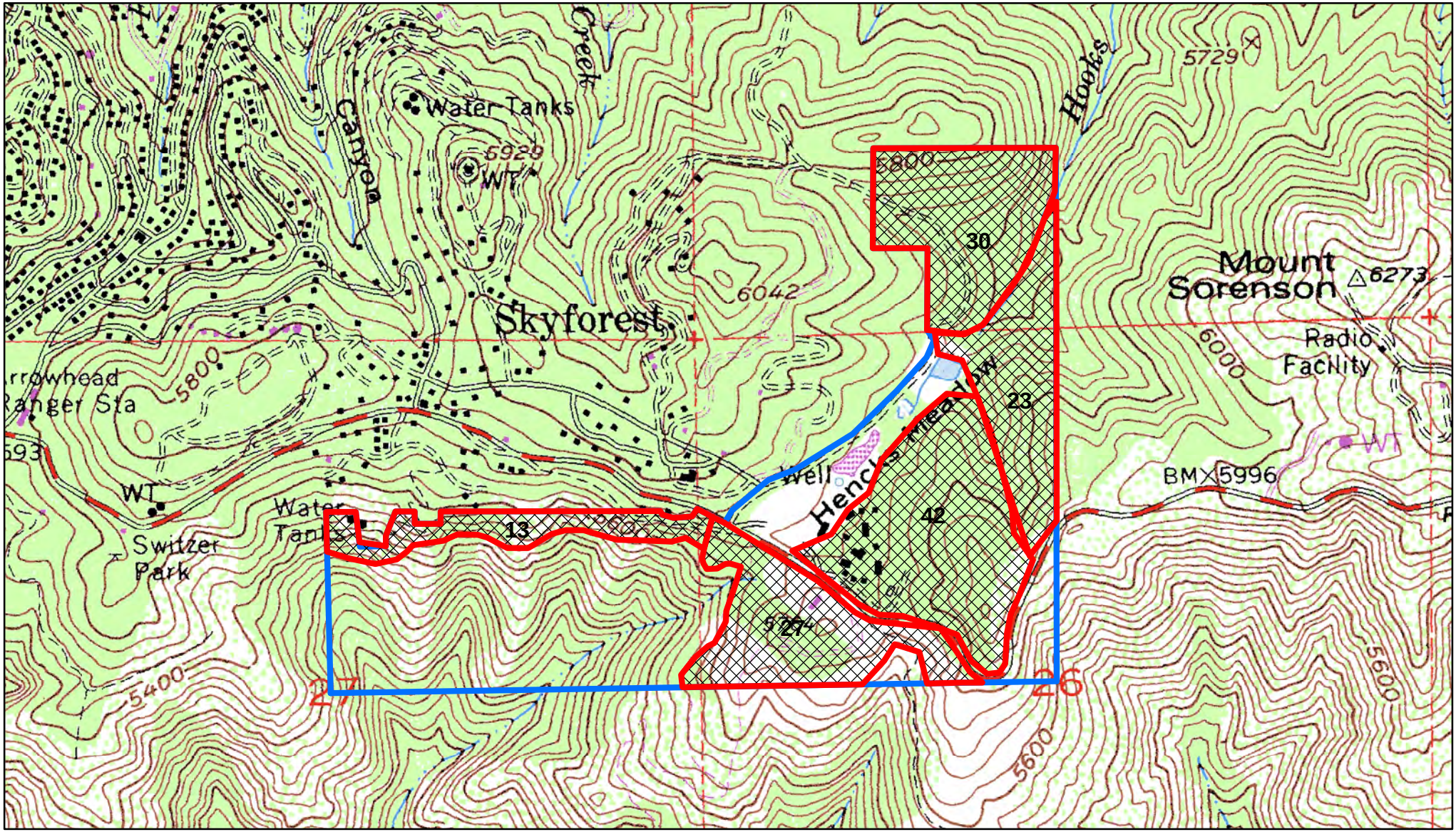
0 8,000 16,000 32,000 Feet

1 inch = 8,333 feet

Sec. 23, 26, 27, T2N, R3W, SBBM

Project Location

Sky Park LLC



0 1,000 2,000 4,000 Feet

N
W E
S

Legend

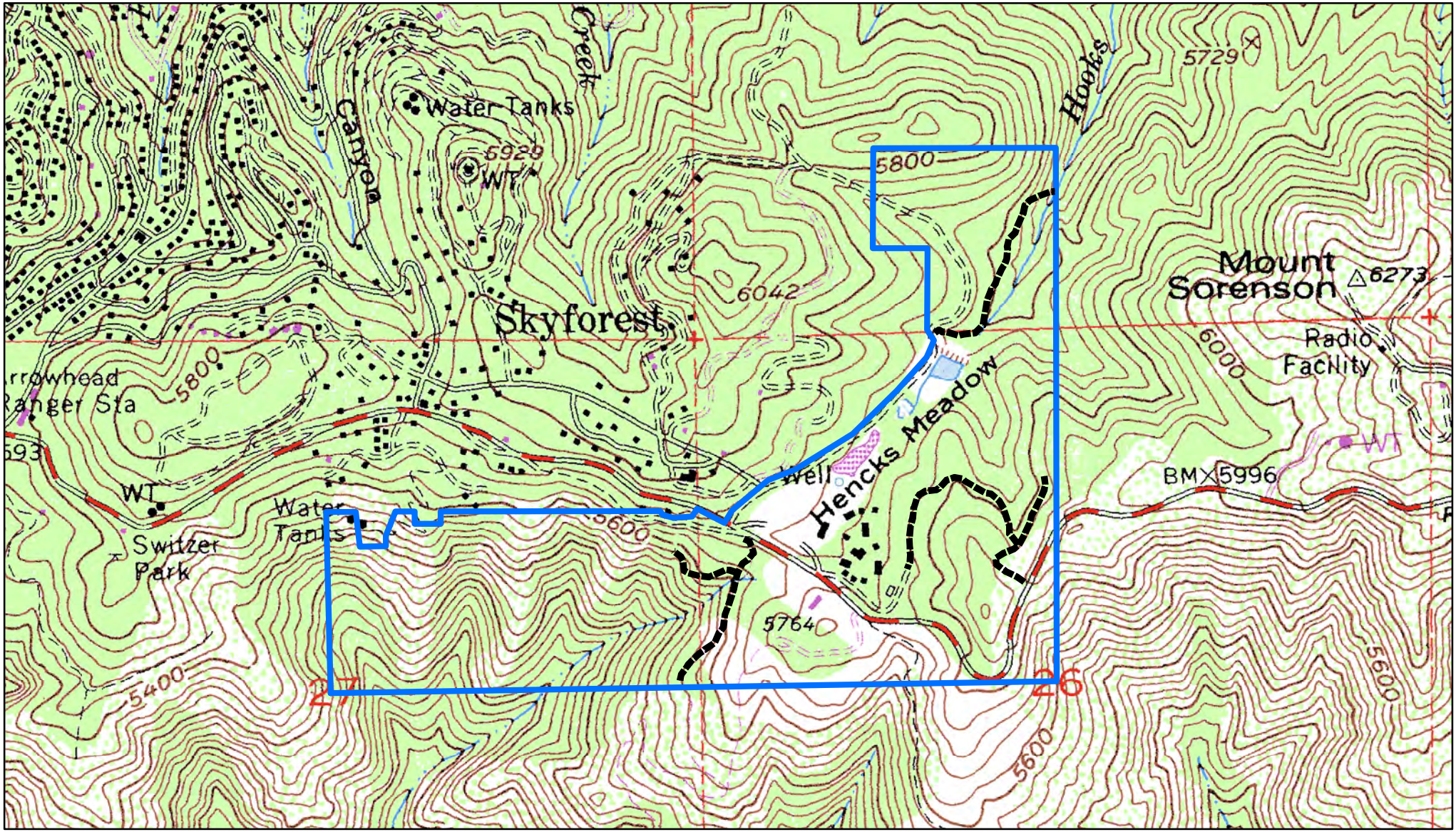
- 2014-2015 FM
- Santas Village Boundary

1 inch = 1,000 feet

Sec. 23, 26, 27, T2N, R3W, SBBM

Fuel Modification Project Units

Sky Park LLC



0 1,000 2,000 4,000 Feet

N
W E
S

1 inch = 1,000 feet

Sec. 23, 26, 27, T2N, R3W, SBBM

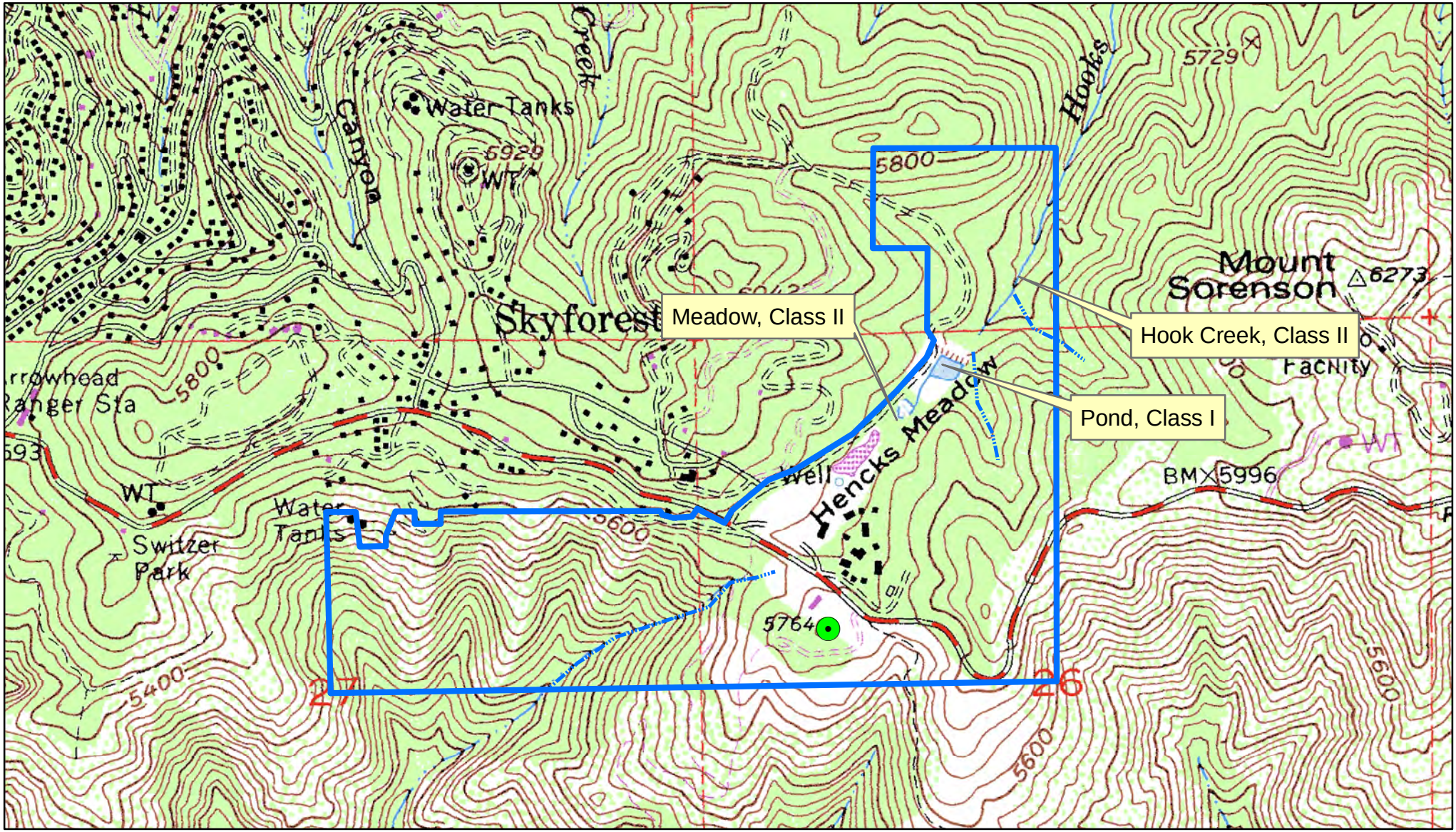
Roads Map

Legend

Roads

Santas Village Boundary

Sky Park LLC



Legend

- Water Tank
- Class III
- Santas Village Boundary

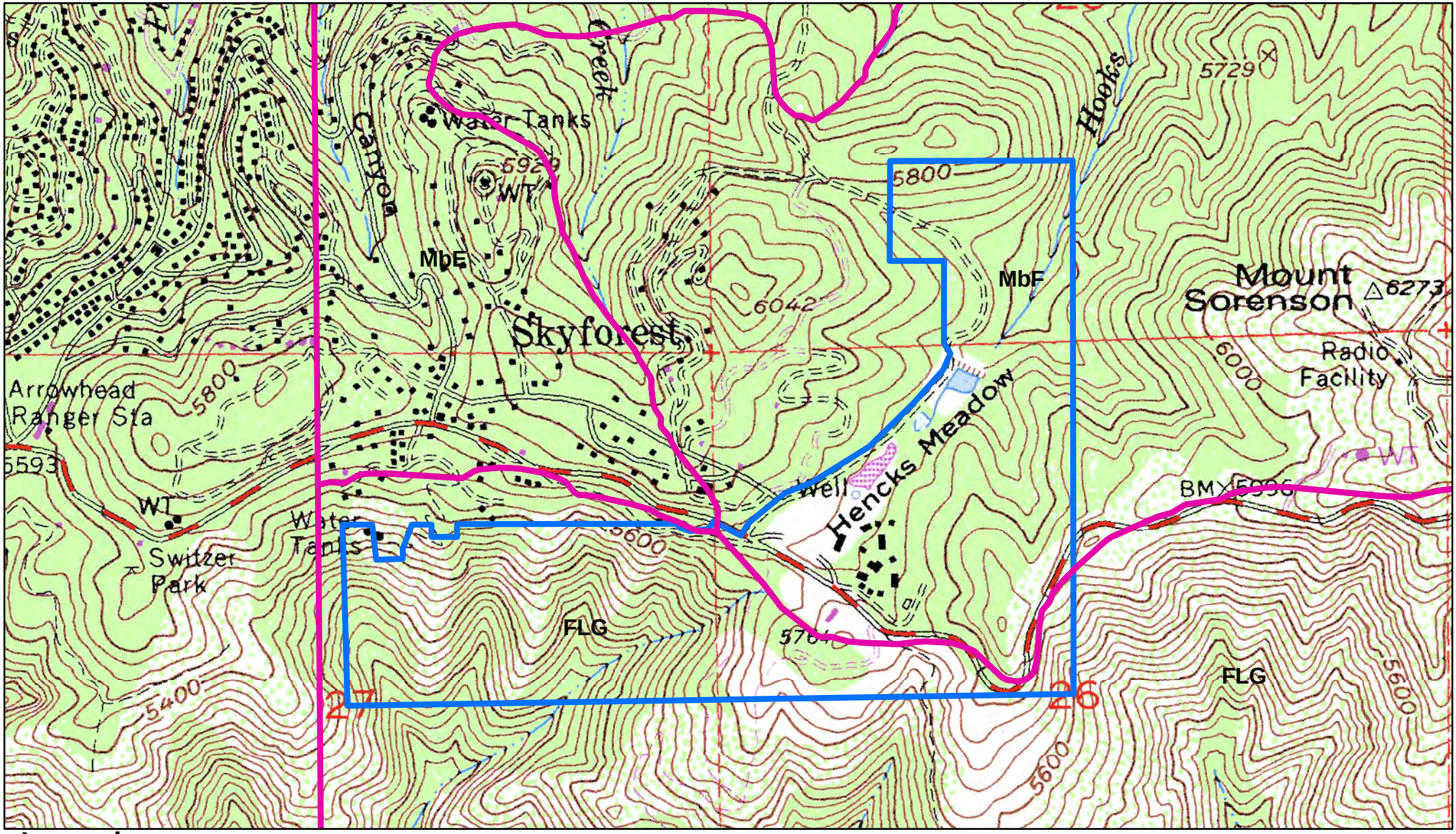
0 1,000 2,000 4,000 Feet

1 inch = 1,000 feet

Sec. 23, 26, 27, T2N, R3W, SBBM

Water Resources

Sky Park LLC



Legend

- soilmu_a_aoi
- Santas Village Boundary

0 1,000 2,000 4,000 Feet

1 inch = 1,000 feet

Sec. 23, 26, 27, T2N, R3W, SBBM

Soils Map

Appendix 1

Selected Standards and Specifications

Title 14, CCR 1038(i), Forest Fire Prevention Exemption

(i) The harvesting of trees in compliance with PRC **§** 4584(k), Forest Fire Prevention Exemption, limited to those trees that eliminate the vertical continuity of vegetative fuels and the horizontal continuity of tree crowns, for the purpose of reducing the rate of fire spread, duration and intensity, fuel ignitability, or ignition of tree crowns, when the following conditions are met:
(1) The logging area does not exceed 300 acres in size.
(2) The tree harvesting will decrease fuel continuity and increase the quadratic mean diameter of the stand.
(3) The Notice of Exemption, Form RM-73(1038i)(1/01/08), is prepared, signed and submitted by an RPF to the Director. The RPF shall provide current address and telephone number on the form.
(4) The RPF preparing the Notice of Exemption shall, upon submission of the Notice of Exemption, provide a map of the area of timber operations that complies with 14 CCR § 1034(x)(1), (3), (4), (7), (8), (9), (10), (11), (12) and (14). This map shall be submitted in place of the map required by 14 CCR § 1038.2(d).
(5) The RPF shall, upon submission of the Notice of Exemption, include a description of the preharvest stand structure and a statement of the postharvest stand stocking levels. The level of residual stocking shall be consistent with maximum sustained production of high quality timber products. The residual stand shall consist primarily of healthy and vigorous dominant and codominant trees from the preharvest stand. Trees retained to meet the basal area stocking standards shall be selected from the largest trees available on the project area prior to harvest. In no case shall stocking be reduced below the following standards:
(A) Where the preharvest dominant and codominant crown canopy is occupied primarily by trees greater than 14 in. dbh:
[Coast]:
1. On Site I lands, at least 125 sq. ft. per acre of basal area shall be left.
2. On Site II and III lands, at least 100 sq. ft. per acre of basal area shall be left.
3. On Site IV lands, at least 75 sq. ft. per acre of basal area shall be left.
4. On Site V lands, at least 50 sq. ft. per acre of basal area shall be left.
[Northern, Southern]:
1. On Site I mixed conifer lands, at least 125 sq. ft. per acre of basal area shall be left, and on Site I land where greater than 50% of the basal area is pine, at least 100 sq. ft. per acre of basal area shall be left.
2. On Site II mixed conifer lands, at least 100 sq.ft. per acre of basal area shall be left, and on Site II lands where greater than 50% of the basal area is pine, at least 75 sq. ft. per acre of basal area shall be left.
3. On Site III mixed conifer lands, at least 75 sq. ft. per acre of basal area shall be left, and on Site III lands where greater than 50% of the basal area is pine, at least 75 sq. ft. per acre of basal area shall be left.
4. On Site IV and V mixed conifer lands, at least 50 sq. ft. per acre of basal area shall be left, and on Site IV and V lands where greater than 50% of the basal area is pine, at least 50 sq. ft. per acre of basal area shall be left.
(B) Where the preharvest dominant and codominant crown canopy is occupied by trees less than 14 in. dbh, a minimum of 100 trees per acre over 4 in. dbh shall be retained for site I, II, and III. For site IV and V – 75 trees per acre over 4 in. dbh shall be retained.
(6) The RPF shall, upon submission of the Notice of Exemption, provide the selection criteria for the trees to be removed or the trees to be retained. In the development of these criteria, and the fuel reduction prescriptions, the RPF should consider retaining habitat elements, where feasible, including, but not limited to, ground level cover necessary for the long-term management of local wildlife populations. The selection criteria shall specify how the trees to be removed, or how the trees to be retained, will be designated. All trees to be harvested or all trees to be retained shall be marked or sample marked by, or under the supervision of, an RPF prior to felling operations. Sample marking shall be limited to homogeneous forest stand conditions typical of plantations. When trees are sample marked, the

designation prescription for unmarked areas shall be in writing and the sample mark area shall include at least 10% of the harvest area to a maximum of 20 acres per stand type which is representative of the range of conditions present in the area.
(7) The RPF shall, upon submission of the Notice of Exemption, provide a Confidential Archaeological Letter which contains all the information required for plans and Emergency Notices in 14 CCR § 929.1(c)(2), (7), (8), (9), (10) and (11), [949.1(c)(2), (7), (8), (9), (10) and (11), 969.1(c)(2), (7), (8), (9), (10) and (11)] including site records as required pursuant to 14 CCR §§ 929.1 (g) [949.1(g), 969.1(g)] and 929.5 [949.5 and 969.5]. The Director shall submit a complete copy of the Confidential Archaeological Letter, and two copies of any required archaeological or historical site records, to the appropriate Information Center of the California Historical Resource Information System, within 30 days from the date of Notice of Exemption submittal to the Director. Before submitting the Notice of Exemption to the Director, the RPF shall send a copy of the Notice of Exemption to Native Americans defined in 14 CCR § 895.1.
(8) Only trees less than 18 inches outside bark stump diameter, measured at eight inches above ground level, may be removed except as follows:
(A) Within 500 feet of a legally permitted structure that complies with the California Building Code, or in an area prioritized as a shaded fuel break in a community wildfire protection plan approved by a public fire agency, if the goal of fuel reduction cannot be achieved by removing trees less than 18 inches outside bark stump diameter, trees less than 24 inches outside bark stump diameter may be removed if that removal complies with this section.
(9) Post harvest stand conditions shall not violate the following canopy closure requirements:
(A) Minimum post treatment canopy closure of dominant and codominant trees shall be 40 percent for east side pine forest types;
(B) Minimum post treatment canopy closure of dominant and codominant trees shall be 50 percent for coastal redwood and Douglas–fir forest types within ¼ mile from approved and legally permitted structures that comply with the California Building Code (legal structure). Such legal structures shall be within or adjacent to a community listed in the "California Fire Alliance list of Communities at Risk" (copyright date 2003 on file in the official rulemaking file and incorporated by reference) and have densities greater than 1 structure per 20 acres;
(C) Minimum post treatment canopy closure of dominant and codominant trees shall be 50 percent for coastal redwood and Douglas–fir forest types within 500 feet of a legal structures outside the area referenced in 14 CCR § 1038(i)(9)(B);
(D) Minimum post treatment canopy closure of dominant and codominant trees shall be 60 percent for coastal redwood and Douglas–fir forest types outside areas referenced in 14 CCR § 1038(i)(9)(B) and (C);
(E) Minimum post treatment canopy closure of dominant and codominant trees shall be 50 percent for mixed conifer and all other forest types.
(10) (A) This subsection applies to areas described in 14 CCR § 1038(i)(8)(A). Surface and ladder fuels in the harvest area, including logging slash and debris, brush, small trees, and deadwood, that could promote the spread of wildfire, shall be treated to achieve standards for vertical spacing between fuels, horizontal spacing between fuels, maximum depth of dead ground surface fuels, and treatment of standing dead fuels, as follows:
(i) Ladder and surface fuels, excluding residual stand dominant and codominant trees, shall be spaced to achieve a vertical clearance distance of eight feet or three times the height of the post harvest fuels, whichever is the greater distance, measured from the base of the live crown of the post harvest dominant and codominant trees to the top of the ladder or surface fuels, whichever is taller.
(ii) Ladder fuels, excluding residual stand dominant and codominant trees, shall be spaced to achieve horizontal clearance distance of two to six times the height of the post harvest fuels measured from the outside branch edges of the fuels. On ground slopes of zero percent to 20 percent horizontal clearance distance shall be two times the height of post harvest fuels; on ground slopes of greater than 20 percent to 40 percent horizontal clearance distance shall be four times the height of post
harvest fuels; on ground slopes of greater than 40 percent horizontal clearance distance shall be six times the height of post harvest fuels.
(iii) Dead surface fuel depth shall be less than 9 inches.

(iv) Standing dead or dying trees and brush shall generally be removed. Such material, along with live vegetation associated with the dead vegetation, may be retained for wildlife habitat when isolated from other vegetation.
(B) This subsection applies to all other areas outside those described in 14 CCR § 1038(i)(8)(A).
(i) Post treatment stand shall contain no more than 200 trees per acre over 3 inches in dbh, when consistent with 14 CCR § 1038*[(i)]*(9)(A)-(E).
(ii) Vertical spacing shall be achieved by treating dead fuels, excluding dead branches on the trees retained for stocking, to a minimum clearance distance of 8 feet measured from the base of the live crown of the post harvest dominant and codominant trees to the top of the dead surface or ladder fuels, whichever is taller.
(iii) All logging slash created by the timber operations shall be treated to achieve a maximum post harvest depth of 9 inches above the ground.
(C) The requirements of this subsection shall not supersede the requirements of PRC § 4291.
(11) Treatments for fuels shall include chipping, removing, piling, burning or other methods necessary to achieve the standards. Treatments for any portion of the exemption area where timber operations have occurred, except for burning operations, shall be done within 120 days from the start of timber operations on that portion of the exemption area. Burning operations shall be completed by April 1 of the year following surface fuel creation. Treatment of surface fuels by burning shall be exempt from the one year time limitations described under 14 CCR § 1038.1.
(12) Fuel treatments conducted under 14 CCR § 1038(i)(8), (9), (10) and (11) shall be achieved on at least 80 percent of the treated area.
(13) Timber operations shall comply with the limits established in 14 CCR § 1038, subsections (b)(1) through (10). Timber operations in the Lake Tahoe Region shall comply with the requirements of paragraphs (1) to (16), inclusive of subdivision (f) of Section 1038 of Title 14 of the California Code of Regulations.
(14) At least one inspection conducted by the Director shall be made after completion of operations.
(15) 14 CCR § 1038(i) shall expire on January 1, 2013. *[The sunset clause contained in this paragraph has been repealed from the Public Resources Code by Stats. 2012. c. 312 (SB 1541), § 1. CAL FIRE will notify the Board that this needs to be deleted from the rules.]*

Appendix 2

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: BIOS selection

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
Andrew's marble butterfly *Euchloe hyantis andrewsi*	IILEPA5032	None	None	G3G4T1	S1	
bald eagle *Haliaeetus leucocephalus*	ABNKC10010	Delisted	Endangered	G5	S2	FP
Bear Valley checkerbloom *Sidalcea malviflora ssp. dolosa*	PDMAL110FH	None	None	G5T2T3	S2S3	1B.2
bird-foot checkerbloom *Sidalcea pedata*	PDMAL110L0	Endangered	Endangered	G1	S1	1B.1
California red-legged frog *Rana draytonii*	AAABH01022	Threatened	None	G2G3	S2S3	SSC
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G3G4	S3S4	SSC
Hall's monardella *Monardella macrantha ssp. hallii*	PDLAM180E1	None	None	G5T3	S3	1B.3
Laguna Mountains jewelflower *Streptanthus bernardinus*	PDBRA2G060	None	None	G3	S3	4.3
lemon lily *Lilium parryi*	PMLIL1A0J0	None	None	G3	S3	1B.2
lodgepole chipmunk *Neotamias speciosus speciosus*	AMAFB02172	None	None	G4T2T3	S2S3	
Nevin's barberry *Berberis nevinii*	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
Palmer's mariposa-lily *Calochortus palmeri var. palmeri*	PMLIL0D122	None	None	G3T3?	S3?	1B.2
Parish's alumroot *Heuchera parishii*	PDSAX0E0S0	None	None	G3	S3	1B.3
Parish's gooseberry *Ribes divaricatum var. parishii*	PDGRO020F3	None	None	G4TH	SH	1A
Parish's yampah *Perideridia parishii ssp. parishii*	PDAPI1N0C2	None	None	G4T3T4	S2	2B.2
Plummer's mariposa-lily *Calochortus plummerae*	PMLIL0D150	None	None	G4	S4	4.2
San Bernardino flying squirrel *Glaucomys sabrinus californicus*	AMAFB09021	None	None	G5T2T3	S2S3	SSC
San Bernardino Mountains dudleya *Dudleya abramsii ssp. affinis*	PDCRA04013	None	None	G4T2	S2	1B.2
San Bernardino Mountains owl's-clover *Castilleja lasiorhyncha*	PDSCR0D410	None	None	G2	S2	1B.2

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Santa Ana sucker *Catostomus santaanae*	AFCJC02190	Threatened	None	G1	S1	SSC
silver-haired ivesia *Ivesia argyrocoma var. argyrocoma*	PDROS0X021	None	None	G2T2	S2	1B.2
southern jewelflower *Streptanthus campestris*	PDBRA2G0B0	None	None	G3	S3	1B.3
Southern Mixed Riparian Forest *Southern Mixed Riparian Forest*	CTT61340CA	None	None	G2	S2.1	
southern mountain yellow-legged frog *Rana muscosa*	AAABH01330	Endangered	Endangered	G1	S1	SSC
southern rubber boa *Charina umbratica*	ARADA01011	None	Threatened	G2G3	S2S3	
Southern Sycamore Alder Riparian Woodland *Southern Sycamore Alder Riparian Woodland*	CTT62400CA	None	None	G4	S4	
two-striped garter snake *Thamnophis hammondii*	ARADB36160	None	None	G4	S3S4	SSC
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G5T4	S3S4	SSC
white-eared pocket mouse *Perognathus alticolus alticolus*	AMAFD01081	None	None	G1G2TH	SH	SSC

Record Count: 30

Appendix 3

Past Plans, Amendments and Updates

HISTORY OF SANTA'S VILLAGE

The idea for Santa's Village came from an article in the Saturday Evening Post about a place called North Pole, which still operates in upstate New York.

The Henck family first heard about it in 1949, when a couple of sales executives for the Talon Zipper Co. came to Joe and Mary Henck with the idea and asked if we had a spot that might work. Joe showed them our meadow area. These people went so far as to produce a prospectus with conceptual drawings, etc. However, that's as far as it went and the whole thing was forgotten about.

Then, in 1953, Glenn Holland and Leonard Ray came to Joe and Mary with the Santa theme idea. They too had read the article about North Pole, New York. Imagine their surprise when the original prospectus was shown to them, and the right site was already picked out.

Both Glenn Holland and Leonard Ray were from the Crestline area. Glenn was involved with the promotion of the San Moritz Club and the surrounding area, and Leonard was an accountant in the area. When they ascertained that Joe and Mary would be interested in working with them, they proceeded to put a whole package together so that the construction could be started in the spring of 1954, heading for an opening date of the Memorial Day weekend in 1955.

Glenn Holland was the creative idea man and Leonard Ray was the creative accountant guiding the business end. They first commissioned the firm of Booz, Allan and Hamilton to do a feasibility study for them. It turned out quite positive.

Glenn had been involved with the Van De Camp Advertising Agency, so he drew upon their creative artists to produce artist renderings of the various buildings. He also had a verty talented brother-in-law, Mr. Wyatt, who helped with the artistic planning. Then the challenge was to get structural drawings to fit the artists' concepts. Glenn got ahold of an architect named Roy Hatch who drew all the structural drawings that we could apply the artistic values to. Then Glenn and I spent many hours laying out the sight plan to take the best advantage of the terrain.

While the development plans were proceeding, Leonard Ray was helping to put together the Santa's Village Corporation and to sell stock to raise money to finance the project.

In early 1954 when we were very involved in putting the Santa's Village project together we heard about Walt Disney planning Disneyland. We were worried, but as it turned out, when there is one good park it makes people want to go to another good park. We opened Memborial Day weekend, 1955, and Disneyland opened July 12, 1955.

Because I was a general contractor and because the family owned enough land and trees with which to cut logs for the project, I became the contractor. My contract for the job was $148,000 +/- . Many local subcontractors were involved. Each of us took our profits out in stock in Santa's Village, Inc.

One of the key decisions in building the park was to accept an offer by Burke Malcom and Warren Schafe to put in the Train Ride and Christmas Tree Ride. Also the

recruitment of Grady Corruthers to put in the animal rides: the Pumpkin Coach, Sleigh pulled by reindeer, and the Burro Ride.

As it turned out, this decision was a fatal mistake. You see, the real money in any amusement park is in the operation of the rides. For some reason management felt they could make lots of money on merchandise. In reality the profit areas in amusement parks are as follows: Gate - Rides - Food - Games - Merchandise, in that order. Of course Schafe/Malcom did all right. They had a good team; Burke was the builder and Schafe was the detail man.

The actual building of the park was really a fun thing to do. All my crew got into the spirit of the Storybook theme. My superintendent on the job was Ray Mallott, who lived in the Crestline area. Another key person on the job was an artist from the Crestline area named Ellen Koger. She would come on the job and draw sketches and make them fit with the actual construction. Our plastering contractor was Fay Smith, whose wife was the Lake Arrowhead postmaster for years. Fay's son Harvey was a very talented artist, a lathe and plasterer. He looked up all about mushrooms and toadstools and designed the framework and the plastering to build them. Of course, we had to get all the infrastructure put in - water, power, gas, parking, etc.

In the beginning it was contemplated that most of the business would be done in the summertime. However, with the Santa theme it quickly developed that 60-70% of the business would be in November and December. One of our decisions was to open daily all year long and only close Christmas Day. This turned out to be a mistake as there were too many loss days.

During this time, with the success of Disneyland, there was a rash of amusement parks built nationwide. Many of them went bankrupt within a few years. Santa's Village was not immune to this phenomenom. In 1957 we opened a park in the Santa Cruz area, and in 1959 we opened a park in East Dundee, Illinois, near Chicago. Each one had a positive feasibility study. Each park was successful its first year or two.

In 1961 it was evident that the Skyforest Village was not large enough. So we expanded the park into what is now the Bakery area. We added onto the Pixie Pantry, Candy Kitchen, the warehouse, and we built the Bakery building. Schafe/Malcom added the Antique Car Ride, the Bobsled and the Alice in Wonderland Walk-through. We moved the Pumpkin Coach and the Burro Ride to the back of the park so that the Antique Car Ride would be down front.

During this time period there was a world-wide fascination with monorails. So Glenn Holland worked with American Crane and Hoist of Los Angeles to design one for Santa's Village. It turned out to be the prototype for the L.A. County Fair monorail and also for one at the New York World's Fair in 1969.

All of the above was in place for our 1962 season. Sometime in the late 1950's the parking lot was put in across the street. In the mid '60's Ray Seilheimer built the building that now contains the Pebble Mine. He used it as a craft shop. Also during this time period, Jack Kendrick put in the Old 99 Ride, which he ran for a number of years.

Another interesting addition to the park was the old hook and ladder fire engine. Somehow or other Glenn Holland found out that this particular engine was available from one of the local small cities near Los Angeles. Glenn was able to drive it up here and it was put on display in various areas of the park.

All through the '60's the Santa Cruz and Dundee parks were either just breaking even or losing money. Skyforest was not doing much better. The reason, in the cases of Santa Cruz and Dundee, being absentee management and unfamiliarity with the area. Financial experts recommended that we declare bankruptcy. With this development, all of the top management bailed out and went to other things, as there was no money to pay their salaries. As the Henck family was the largest stockholder group, I became the president of the company by default, and at no salary.

At this junction, because he had a large amount of money tied up in the rides in Skyforest and Santa Cruz, Burke Malcom proposed that he lease the two California parks from Santa's Village, Inc. This offer came at a most opportune time and a lease was entered into which gave Santa's Village, Inc. a little income and kept the Henck family's rent paid. The whole Malcom family became involved. Eve Malcom oversaw the merchandise buying, Larry Malcom designed the Pebble Mine. The income from it put him through a university. Jeff Malcom performed almost every job in the park, including assistant manager. Their daughter also worked every job. During this time Doug Monninger managed the park for a year or two. Dick Butcher, who had worked here during high school and had graduated from San Diego State in business administration, became manager of the Santa Cruz park.

During all this time the Dundee, Illinois park was going from bad to worse, so the park was sold to a man named Everding, who owned a profitable park in the Chicago area. The Santa's Village Dundee park is still operating today.

Burke operated the two California parks until his untimely death in 1976. The 1970's were a trying time economically. There was a down-turn in the economy, then rampant inflation. Both parks were just hanging on. There was no money for upkeep so they both slowly went downhill maintenance-wise.

Santa's Village, Inc. had to take back the management of the two parks. Neither park was profitable and because both parks were on leased land, the corporation could not borrow money to keep going. Therefore, it became evident in 1978 that bankruptcy would have to be declared. Part of each lease was that in the event of bankruptcy the land and buildings would revert to the owner. So the Henck family bought the quick assets out of bankruptcy court. The Santa Cruz owner did the same thing.

The Santa Cruz park lasted for two or three years and then closed.

The Skyforest park, however, was able to get credit at the bank to provide money for operating capital, because every member of the family gave their financial backing. A corporation was formed called Skyforest PACE, from Putnam, Ann, Catherine, and Ethel. (Myself and my three sisters.) So Skyforest PACE, Inc. dba Santa's Village, became the operating entity.

At this juncture in the lives of Pamela and Putnam Henck, the three kids were out on their own or in college, so the San Bernardino house was empty and Putnam was

winding down his construction company. It was therefore agreed by the family that Pam and Putnam would live in the apartment on the Santa's Village property, and manage Santa's Village.

Pam took over public relations and merchandise buying while Putnam managed the business end and daily operations. Neither one of us had had any experience running an amusement park. Pam had been in the theatre and had played on Broadway, and Putnam had had only a wide experience in the construction industry.

In 1980 we realized that there had been nothing new in the way of rides or attractions added to the park for at least 15 years. We heard that Frontier Village, which had been operating in the San José area since 1960, was going to close down due to zoning changes. They had a pre-sale on their rides to gain operating capital. So we borrowed money at the bank and bought the carousel and the ferris wheel, as well as strollers and a snack bar. We were to let them use the rides until they closed in September. Incidentally, it was from their experience that I got the idea to advertise our final year. You see they advertised their final year and more than doubled their business.

The area over by the Doll House, Chapel and Mill Wheel was a dead area of the park. There was an aviary where the Pony Ride is. We tore down the aviary and put in the Pony Ride. We sold the old fire engine to a collector, put in the Merry-Go-Round building and the foundation for the Ferris Wheel, so all would be ready when we picked up the rides in the fall. We had everything ready for the November-December season. Then the big Panorama fire hit, so we lost the whole Thanksgiving week, which meant losing $100,000.00 in profits. The good thing that these rides did was give us something to show when we made our good commercial.

In 1988 we realized that the old sleigh that had been pulled by reindeer in the beginning, but was now mechanical, was more bother that it was worth. So we took it out, redesigned the area and put in the mechanical Stage Coach Ride and the Elephant and Dragon Ride and the Tiltin' Hilton Snack Bar. We also realized that our power supply to the Village was very short, so we bit the bullet and put in a new 1000 amp. power supply center.

In 1996 we put in the Skittle Bug Ride.

When Pam and I took over, Santa's Village had a very bad reputation as a place to work. It was known as the "pit." Our priority was to overcome that image. We decided to start a policy of letting local adults in free if they had a local address on their driver's license. Right away this gave us quite a lift. Along this line we later picked out one week a year where the mountain kids and adults got in free. Also, one of the better decisions was to go to the pay-one-price system. In about 1983 most of the amusement parks were doing this.

Another thing we did was have all kinds of special events. Pam came up with some very creative ideas. She would work tirelessly on photo shoots, art festivals and flower displays. Incidentally, Richard Lowe was very helpful in telling us how to set up an art festival. We had Irish dances, Mexican dances, Scottish bagpipes, Indian programs, music festivals, blacksmithing contests, and various dance studios putting on shows on our weekends.

Then, of course, there was the Rainbow Man in the person of Will Clausen, who in his day had performed worldwide. To complement him, Pam became the Lollipop Lady and together they entertained the kids daily.

I'm sure there are many things I have left out.

On another front we tried horseback riding, which didn't pan out. Also, there were hayrides, which were great. Everybody loved them. But they required a lot of time and effort, and on an average were just a break-even proposition.

Pam and I both had a lot to learn, therefore we lost a considerable amount of money for the first 3-4 years and got in hock to the bank. Interest rates were 15-20%, so we were again at a critical point in the saga of Santa's Village.

In 1983, Pam and I did some deep soul searching and decided to give it one last try to make things come around. We spent several winter months learning all we could about marketing, even to hiring a consultant. Sister Kaki was very helpful in getting us an introduction to some very successful advertising people. The upshot was that we fired all our advertising people and contracted with one of the premier TV buying sevices to buy TV spots for us at 7 1/2% instead of the 15% charged by the advertising firms. We also realized that we needed a first class television commercial.

The buying service had a subsidiary that made commercials. It was headed by David Nelson of the Ozzie & Harriet Nelson family. David produced a first class commercial for us. Everytime that commercial ran, Santa's Village got a flurry of phone calls asking about our park.

Another thing that made things easier was that Pam received a windfall from an inheritance. We both pooled our resources and loaned Santa's Village enough money to pay off the bank. You see, the bank loans were at +/- 18%. We charged 10%.

Until 1984 we had hired someone to manage the park. In 1984 we decided to manage the park ourselves. It worked well because Pam stayed out of the office and operation and I stayed out of the buying and merchandising end. Essentially we were running a Mom and Pop operation. It meant working 12 hours a day, 7 days a week during our busy seasons. We were able to build a good team to run Santa's Village. There are too many to name except for a few as follows:

Dick Butcher, Bruce Grow, Mary Craigie, Jeanie Edgecomb, Pat Basham, Edwina Kellner, and Sandy Eshom.

During the fiscal years 1984-1985 through 1991-1992, we had eight years straight that were profitable. From 1978 to 1992 we built the business up from $516,821 gross to a high of $2,083,360 gross.

At this time in their lives, Pam and Put were both near their mid-70's and could no longer work 12 hours a day, 7 days a week, and each had periods of ill health. Coincidentally there was a great change in the economy of the area and there was a downsizing of the area's space industries, so that California was in a deep recession. During this time, our son David was a great help running the park.

Another phenomenon was that many young families were over-programming their kids, so they only had a 4 hour window of opportunity to go to an amusement park. It

took an average of 8 hours to go to Santa's Village. Also, although the economy gradually got better, it was reaching only about 1/2 of the population. Competition was also a factor. Many pizza parlors, etc. had fun zones and then there were several new parks built.

All over the country, parks our size were having trouble.

A very crucial happening was the event of cable TV. Television was the mainstay of our advertising program. Just a few stations had had almost a hundred percent of the market. When cable came along the old line television share of the market dropped to 60%. Also the cost of TV advertising increased dramatically.

In retrospect, looking at our overall structure, we had had eight years of profits, so our overhead had gradually built up. In 1989 we more than doubled the size of our office. It made everything more convenient, but then we felt we had to fill the empty space, which added to our overhead. When the economy started to slow down we did not cut our overhead accordingly, but we added to our advertising budget. We hired marketing consultants, which was a big mistake. They didn't tell us anything we didn't already know.

On top of the foregoing problems we had a couple of bad years weather-wise, and then the straw that broke the camel's back: our public liability insurance company went bankrupt, just when we had had a series of incidents with a couple of hundred thousand dollars of claims.

We agonized whether we should declare bankruptcy or not. The upshot was that we scraped enough money together to keep going for one more season. By advertising that it was our final season, we almost doubled our income and were able to pay off all our creditors. Then by having an auction in mid-August, 1998, to get rid of all the rides, etc., we were able to pay back all of the money Pam and I had loaned the company and have a cushion to carry us through until we could completely close down the company March 31, 1999.

During these turbulant years, nephew Bill Grant did a tremendous job in working out all the details in making everything progress smoothly toward final resolution.

I might add that our three children, a grandson, and several of the nephews worked at one time or another at most of the jobs in the park. Colt met his wife Betsy here. Also 5,000 +/- mountain people have worked here over the 43 years of our existence. For many of them it was their first job. And many young people have learned to drive in our parking lots. The school district, the fire department and other organizations have set up training courses in our parking lots to teach their drivers how to drive. I have seen as many as three helicopters at once using our open space. You see, these lots are on the F.A.A. maps as a landing area.

We have had numerous craft fairs, swap meets, trailer clubs, ham radio meets, farmer's markets, and many more people use the parking lots for various activities.

PROPERTY

of
Putnam Henck
SANTA'S VILLAGE

San Bernardino County, California

FOREST/LAND MANAGEMENT PLAN

Prepared by

James F. Bridges

Registered Professional Forester

License No. 1534

1516 Lassen St.
Redlands, CA 92374

December 1990

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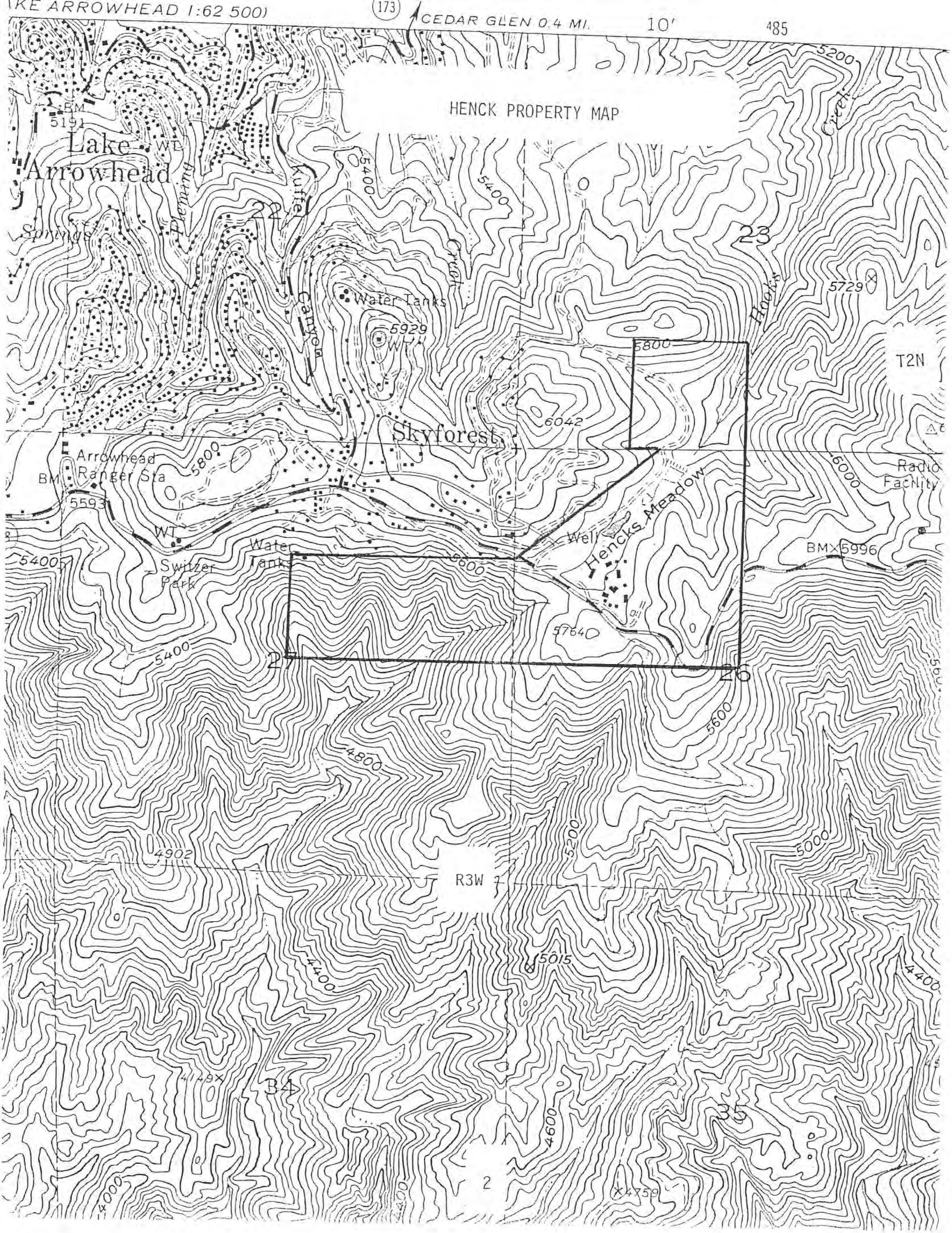
APPENDIX

GOALS and OBJECTIVES

The overall goal for the property is to maintain a productive stand of timber and enhance the aesthetic and recreational values of the forestland. These goals are planned for attainment through the initiation of a multiple use forest management program.

Specific objectives to meet these goals are:

1. Maintain an all age, all size, mixed species composition.
2. Maintain a minimum of 10% cover of old growth pine and 10% Black Oak.
3. Keep apple orchard and meadow land free of invasion by brush and conifer seedlings.
4. Improve stocking control by implementing a precommercial thinning program.
5. Reduce competition to conifer seedlings from brush encroachment.
6. Achieve a periodic yield of forest products by developing a long term harvest schedule.
7. Treat Santa's Village developed site trees on an individual basis to insure tree health and vigor.


(LAKE ARROWHEAD 1:62 500)
173
CEDAR GLEN 0.4 MI.
10′
485
HENCK PROPERTY MAP
Lake Arrowhead
BM 5191
WT
Fleming
Kuffel
Canyon
Creek
Springs
22
23
5200
5400
Creek
Hooks
5729
Water Tanks
5929
WT
5800
T2N
6042
Skyforest
Arrowhead Ranger Sta
BM
5593
5800
6000
Radio Facility
Hencks Meadow
Well
BMX 5996
WT
Switzer Park
Water Tanks
5600
5400
5764
27
26
5600
4800
4902
5200
5000
R3W
5015
4400
4149X
34
35
4600
4000
X4759

INTRODUCTION

In September 1990, James Bridges, RPF #1534 was hired by Mr. Putman Henck to complete a management plan for the Santas Village property near Sky Forest, California. The property comprises approximately 250 acres, including 8 acres of meadowland and pond, 15 acres of developed site (Santas Village & horse stables) and 2 acres of apple grove planted in 1890.

The plan includes and references current resource information and existing timber stand data. Field work was completed in November, 1990.

PROPERTY and SITE DESCRIPTION

The property is located in the NW1/4, Section 26, SW1/4 Section 23, T2N, R3W, SBBM. Access to the property from Lake Arrowhead is via Hwy 18. The property has been in the Henck family ownership since 1918. The current family ownership dates back to 1935. The property is completely forested, except for the meadow, pond, and portions of the developed site. Large expanses of chaparral brush cover the south facing slope south of Hwy 18. No known federally endangered plant species are known to occur on the property. However, the federally threatened and endangered Southern Rubber Boa (Charina bottae umbratica) is known to exist in this general area of the San Bernardino mountains. Natural habitat does occur on the property, but no sightings of the snake have been made.

Topographically the property lies at the between 4800 and 6000 feet in elevation along the ridge line between Lake Arrowhead and Running Springs. Slopes vary from less than 5% to 30% along and north of the ridgeline to over 70% on the south facing slopes.

Because of orographic lifting, normal westerly incoming storms are intensified and precipitation is increased. Average annual precipitation is 35 inches, but can be increased by as much as 50% from fog drip accumulation. The majority of the moisture occurs during the winter months in the form of rain or snow. Intense summer thunderstorms accompanied by heavy rain

and lightning are common.

U.S. Forest Service fire occurrence maps show several small lightning caused fires in the vicinity in the past 50 years. The entire property was burned over in 1919 and the portion south of Hwy 18 was reburned in 1956.

HISTORY of FOREST MANAGEMENT and USE

In the late 1800's, the property was established as a family farm and sawmill operation. Portions of the present timber stand were cleared and agricultural crops planted. The sawmill was in operation in 1885 at the present site of the pond.

During the 1930's, a selective harvest and removal of dead trees occurred on the property. Another selective cut of approximately 300 MBF in large trees was made in 1954, followed by a sanitation-salvage harvest in the mid 1960's, which removed approximately 200MBF. Reforestation and natural regeneration has occurred since 1930 on abandoned farmland. Minor amounts of both hardwoods and conifers have been removed as fuelwood during the last 20 years. The commercial development of Santas Village and adjacent parking was established in 1955.

SOILS

The majority of the soils on the property are classifed as belonging to the Morical-Wind River families (Ref. Soils Resource Inventory, San Bernardino National Forest, 1980). These soils are typified as being moderatly deep to deep, having an effective rooting depth of from 20 to 40 inches. Available water holding capacity is good, ranging from 2 to 3 inches. Soils are a brown sandy loam to loam with a granular structure. Surface soils pH is neutral, 7, lowering to a more acidic 5.5 in the deeper parent material. These soils are derived from highly weathered decomposed granite. Forest survey soil site class falls into the good range, with timber productivity potential of 50 to 85 cubic feet per acre per year. Erosion hazard is rated as moderate. Bracken fern is a rapid and aggressive invader on areas where soil has been disturbed or significant amounts of vegetation removed.

Soils on the steep south facing slopes, south of Hwy 18, are classifed as belonging to the Sprindale family-Lithic Xerothents Association. These soils are typified as being shallow, with an effective rooting depth of 5 to 20 inches. Available water holding capacity is low, averaging less than 1 inch per 20 inches of soil depth. Erosion hazard is rated as high to very high. Reforestation on these slopes has a low potential for survival unless supplemental water and partial shade are provided for seedlings. Forest survey soil site

class is poor with timber productivity potential of less than 20 cubic feet per acre per year. Mixed chaparral brush species rapidly reinvade areas where soil has been disturbed or vegetation burned.

SITE INDEX

Site index is a soils productive potential to grow a limited amount of vegetation. This vegetation can be trees, brush, grass, or a combination of all. Timber site index, the potential to grow trees is based upon two parameters: a trees height and age. It is normally determined by measuring a tree of high quality that is in a dominant or codominant position in the timber stand.

Site indexes on the property range from a low productivity Site Class 5 on the steep south facing slopes to high productivity Site Class 2 north of HWY 18. Average site class is 3 with a potential of growing 120 to 160 cubic feet (800 to 1100 board feet) per acre per year.(1) This is higher than the soils descriptions indicates, but it must be remembered that both are averages. Factors such as topography, micro-climate and inter-tree competition will all affect tree growth. The better sites occur on north facing slopes, north of Hwy 18, where moisture availability is greater.

FOREST COVER DESCRIPTION

Forest cover on the property is an all size, uneven age,

mixed conifer stand. Large old growth Ponderosa pine (Pinus ponderosa), White fir (Abies concolor), and Incense cedar (Libocedrus decurrens) dominate the site with a young 50 to 80 year old mixed conifer and California Black oak (Quercus kelloggii) as a mid level component. A few, scattered Sugar pine (Pinus lambertiana) also occur in this level. The understory sapling to small pole size trees are predominantly suppressed White fir and Incense cedar. The seedling component is 45% White fir, 26% Black oak, 23% Incense cedar, 4% Sugar pine and 3% Ponderosa pine.

The timber stand on the property was stratified into four different types for inventory purposes.

1. P51/Br - Scattered large old growth pine and fir growing in predominantly mixed chaparral brush cover. Few conifer seedlings, saplings and small pole size trees were found.
2. P41/M23 - Scattered large mature pine over topping a mid and lower level of dense mixed conifer and oak sapling to sawlog size (12" DBH) trees.
3. P33 - Young, adequately stocked to dense pine and oak, generally 12" to 20" DBH.
4. M41/M32 - Scattered large mature pine, fir and cedar, over topping a mid and lower level of adequately stocked mixed conifer and oak sapling to sawlog size trees.

Basal areas within these timber sites ranged from 20 to

360 sq. ft. per acre. The area north of highway 18 averages 160 sq. ft. per acre, while the area south of the highway avreages 74 sq. ft. per acre. Both are adequately stocked for the particular sites capabilities.

Current species composition of measurable trees is: 44% Ponderosa pine, 22% White fir, 16% Incense cedar, 13% Black oak and 5% Sugar pine. Seedlings average 400 per acre.

CURRENT and POTENTIAL VOLUME and GROWTH

The concept of volume and growth may be more easily understood if viewed as existing capital value and interest received on that value. The volume of timber presently growing on the property, expressed in thousand board feet per acre (MBF/ac.) is the capital, and the growth which occurs on that timber represents the interest earned.

The current volume of timber growing on the property, including both hardwoods and conifers in sawlog and smaller fuelwood size material, is approximately 15 MBF per acre for a total property volume of 3,437 MBF. This is somewhat under the capability of the property. However, based on San Bernardino National Forest desirable stocking guidelines (2), the timber stand is within the preferred stocking levels. Size class distribution of trees does need adjustment (See Fig. 1 & 2).

The current conifer growth rate is 716 board feet per acre per year, realizing a gross annual rate of return of 5%. Assuming a more desirable growth rate of 7%, which can be

achieved under moderate intensity management, the property north of Hwy 18 is capable of growing 1065 board feet per acre per year. However, current diameter growth of measured trees in this management area is showing a decrease of 6% to 9% over the last 5 year period. Overstocking in the lower level, smaller diameter trees, which are providing heavy competition, is the primary factor in this decline. By correcting size class distribution through thinning of sapling to small pole size trees, the desired stand structure can be approximated within 10 years. At this time a gross inventory of 4,700 MBF of conifer and hardwood timber on the property will be growing 1,600 MBF every 10 years. This will be designated as the allowable harvest, leaving a permanent, non-diminishing inventory of 3,100 MBF.

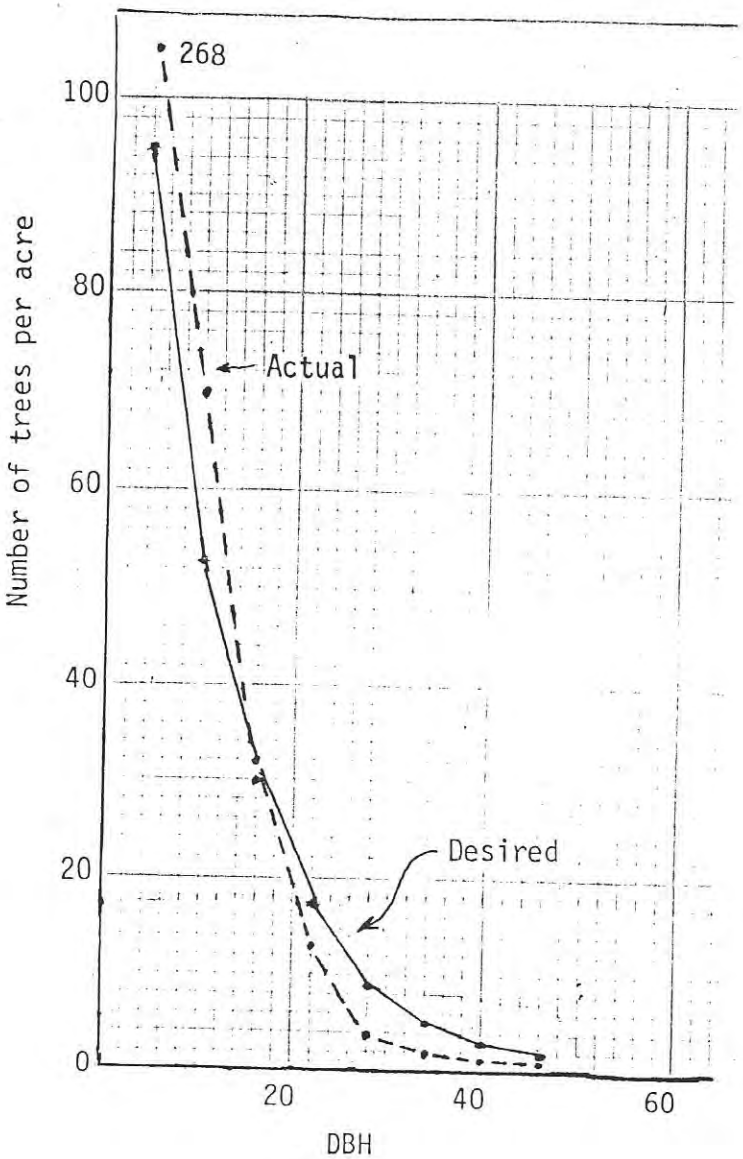

268
100
80
60
40
20
0
Number of trees per acre
Actual
Desired
20
40
60
DBH

Fig. 1

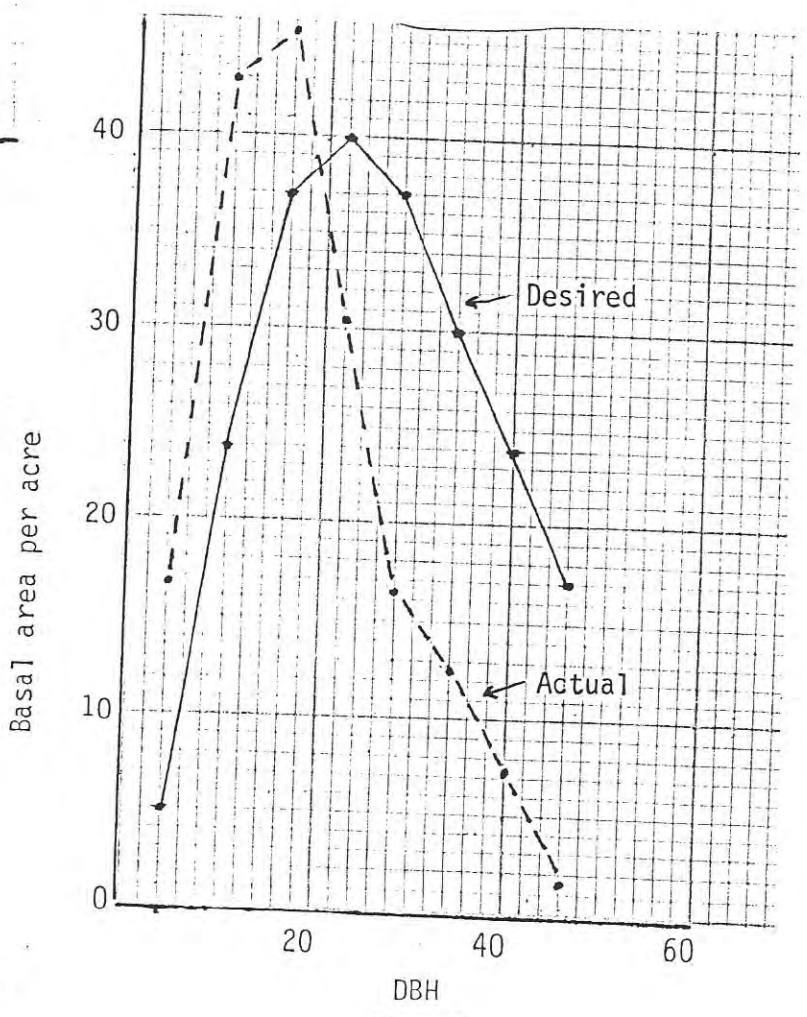

40
30
20
10
0
Basal area per acre
Desired
Actual
20
40
60
DBH

Fig. 2

HARVEST SCHEDULE

The property's sustained yield of 1,600 MBF should be removed every 10 years. This is often enough to maintain size distribution, salvage mortality, allow growth to accumulate and minimize disturbance to the site. It is anticipated that the first commercial harvest of trees 11" DBH and larger will occur in 10 years. Precommercial thinning of smaller trees should be completed at that time. Followup precommercial thinning should occur every 20 years. Each harvest, both commercial and precommercial, should be a selective removal to provide desirable residual species composition and size class distribution. Openings larger than 1/4 acre in size, created during harvest operations should be replanted. It is important to follow this forest improvement program in order to maintain the potential growth rates and returns from harvest volumes.

TIMBER MARKET

Current value of sawlog size material, based upon the most recent harvest information, shows Ponderosa pine worth $70.00 MBF and White fir at $60.00 MBF. Smaller size trees, such as those removed in precommercial thinnings have a potential value as fuelwood and Christmas trees. Current fuelwood value, based upon San Bernardino National Forest selling prices show some species worth $20.00 per cord. Christmas tree values range from $0.50 to $2.00 per foot.

FOREST IMPROVEMENT PROGRAM

Site Preparation

Site preparation should be done with a tractor equipped with a brushrake. This allows piling of logs and debris, ripping out brush, roots and minimum amounts of soil moved off site. Piles of debris should be placed perpendicular to the slope so that brushrake trails provide a series of check dams. This provides water accumulation furrows, reduces runoff and soil erosion. The ashes from piles of debris which are burned, should be scattered or those sites should not be planted.

Planting

All planting should be done with bare-root seedlings. Species such as pine and cedar should preferably be one year old seedlings. Redwood, Douglas fir, and White fir have better survival rates if two year old seedlings are planted. Average spacing of planted seedlings should be 10' X 10' (400 trees per acre). It is much more important to plant in the best microsite rather than adhering to a strict spacing criteria. Utilizing "dead" shade by planting on the north side of stumps, large limbs, logs, or rocks increases survival because of more soil moisture availability and less transpiration by seedlings.

Planting should be delayed until after March 1st when soil moisture capacity is at its maximum and soil temperatures are at least 50 degrees F. Conifer root growth is very minimal below 50 degrees F and seedling mortality can be high when they

are planted in cold soils. As part of the planting process, a 3 ft. diameter area should be lightly scalped for each tree to remove weed seed and dry top soil.

Follow-up Release

Grass, brush and ferns quickly re-invade disturbed site on this property. Therefore it is important to plan for removal or suppression of this herbaceous growth to enhance the survival of planted seedlings. This may be accomplished in several different ways:

1. Hand removal of competing vegetation by hoeing or digging.

2. Use of chemicals by spot spraying with Roundup, 2,4-D, or Asulox.

3. Applying weed control matting around seedlings.

No matter which method is used, a minimum diameter of 3 feet around each seedling should be kept free of competing vegetation.

Deer browsing on seedlings can be eliminated by placing Vexar tubes over each seedling. The tubes should be 3 inches in diameter and at least 18 inches in height and securely staked in place.

Precommercial Thinning

Precommercial thinning is the removal of undesirable trees up to 11 inches DBH. This generally occurs between 10 and 30 years of age. However, cost effectiveness of such thinning is substantially reduced when trees exceed 4 to 6 inches in

diameter, unless the larger trees removed can be sold for fuelwood. Reducing the number of trees per acre allows growth to accumulate more rapidly on fewer, but higher quality trees. "Leave" trees selected to remain should be free of disease and well formed with a minimum of 1/3 of the trees height in vigorous, live foliage. Most leave trees will be in a dominant or codominant position among their size class counter parts. Height growth on leave trees should range from an average of 3 to 6 inches per year, depending on species. White fir, for example, grows relatively slow in height for the first 20 to 30 years, whereas pine grows very rapidly after about 5 years of age. Spacing between leave trees should allow 3 to 4 feet of free growth area between tree crowns.

WILDLIFE

The diversity of vegetation on the property provides an excellent habitat for many species of birds, mammals, reptiles, and amphibians. Common resident species include Mule deer, Black bear, Grey squirrels and a variety of hawks, woodpeckers, and songbirds. The Southern Rubber Boa is found within the general area. Even with the existing diversity, wildlife habitat can be improved. The following recommendations are designed to increase both wildlife species and populations:

1. Construct brushpiles.

Although there are several small areas of brush scattered throughout the area north of Hwy 18, many are not dense enough to provide protective cover for birds and small mammals. Dead brush, tree limbs, and thinning slash piled around rotten logs or rocks make effective, inexpensive shelters. The piles need to be only 2 to 4 feet high and 6 to 8 feet in diameter. Meadow and pond edges should be considered as prime locations for shelter construction.

2. Snag retention.

There are very few dead trees on the property. Where snags (dead trees) do occur, they should be retained where fire and personal safety considerations permit. Snags can also be created by girdling cull or undesirable trees. The desired population of hard snags is 5 to 10 per 5 acres.(3) These may be scattered throughout the 5 acres or located in small groups.

Minimum desirable size is 12" DBH and 40ft. tall. Dead trees, especially rotten or partially hollow, provide ideal habitat for a variety of wildlife. Mammals utilize them for dens, birds roost or use them for perches while foraging for food, and still others use them as food storage or source areas.

3. Retain down logs.

Reptiles, amphibians, and small mammals utilize old down logs as both food sources and nesting areas. Wildlife value is proportional to log size, but the minimum desireable size is 12" diameter and 20ft. long.(4) These logs also serve as a prey source for predators which feed upon the smaller wildlife.

SUMMARY OF MANAGEMENT RECOMMENDATIONS

1. Initiate a forest improvement program.

    a. Plant Ponderosa pine in openings created during harvest activities.

    b. Precommercial thin sapling and small pole size trees to achieve desirable size class distribution. Sell or utilize cut trees for fuelwood to help offset the cost of thinning.

    c. Plan precommercial thinning every 20 years to enhance growth on desired leave trees.

2. Implement sustained yield forest management.

    a. Establish a 7% annual growth rate on permanent inventory of 3,100 MBF.

    b. Remove growth accumulation by harvesting every 10 years after the first 10 year interval to allow stand structure correction.

    c. Remove trees from all size classes during harvest to retain desired size distribution and species composition.

3. Wildlife improvement.

    a. Implement brush pile construction, snag and down log retention.

4. General.

    a. Maintain aesthetic quality by protecting trees

within the developed Santa's Village area from damage to root systems and tree boles. For instance: establish more protective fencing around bases of trees to prevent compaction from foot traffic, provide supplemental irrigation and fertilization because of asphalt pavement over root systems of trees.

REFERENCES

(1) Dunning and Reinike, Preliminary Yield Tables for Second Growth Stands in the California Pine Region, Tech. Bul. 354, June, 1933.

(2) SBNF Land Management Plan, 1988, Appendix H.

(3) SBNF Land Management Plan, 1988, Forestwide standards and guidelines, pg. SG-62

(4) Ibid, pg. SG-61.