STATION FIRE RESTORATION STRATEGY

ANGELES NATIONAL FOREST

PRODUCED WITH ASSISTANCE FROM THE NATIONAL FOREST FOUNDATION
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1. INTRODUCTION

The Station Fire Restoration Strategy was developed on the Angeles National Forest (ANF) between April and July of 2010 in response to the August 2009 Station Fire. It was developed in partnership with the National Forest Foundation, and supported through a grant from Southern California Edison.

1.1 PURPOSE OF THE SFRS

The Station Fire Restoration Strategy (SFRS) was developed for the following purposes:

- To provide a comprehensive road map for ecological and infrastructure restoration.
- To assess the Station Fire's impact on management actions and direction intended to achieve the long-term desired conditions[1] described in the ANF's Land Management Plan (LMP).
- To establish criteria to determine, prioritize, and schedule restoration treatments and actions within the burn area that would put the Forest back on track toward achieving the LMP desired conditions.
- To set the stage for the design of treatments and actions.
- To establish a method to measure and monitor the effectiveness of treatments and actions.
- To enable the ANF to communicate and explain its restoration strategy internally, and to the public, partners, and other external entities.
- To generate funding and staffing resources in support of the restoration effort.

1.2 PROJECT LOCATION AND CONTEXT

The Angeles National Forest is located in the Pacific Southwest Region (California) of the USDA Forest Service and is characterized by the following:

- One of the most urban National Forests in the Nation.
- Established in 1892 by President Harrison under the Timber Land Reserve Act to reduce wildfire threat and protect watershed and timber resources decimated during establishment of the City/Pueblo of Los Angeles. First reserve in California, 8th in the nation. Became a National Forest in 1905 when the USDA Forest Service was established.
- 650,000 acres of land in 4 major watersheds: Los Angeles River, San Gabriel River, Mojave River, and Santa Clara River.
- Provides 72% of all open space in Los Angeles County.
- Source for 33% of all down-stream water in the Los Angeles basin.
- 17 million people living and working within 1 hour drive.
- 3.5 million visitors per year. 50% of visitors come from within a 50-mile radius of the Forest.
- 9 federally listed Threatened/Endangered plant and animal species and more than 50 Forest Service sensitive species.

Figure 1: Pacific Southwest Region

Figure 2: Angeles National Forest

[1] The LMP desired conditions describe the ecological, economic and social attributes that characterize or exemplify the outcome of land management. In short, this means how the Forest is expected to look and function in the future when the LMP direction has been successfully implemented. Desired conditions can be measured over time through monitoring.

- Recreational opportunities include: hiking, biking, winter sports, fishing, boating, water-play, off-highway vehicle use, picnicking, camping, horseback riding, etc.
- Major infrastructure for Los Angeles basin located on Forest: power lines, water conveyances, telecommunications, natural gas and oil pipelines, flood control facilities, (over 2000 Special Use Permits, which is more than any National Forest in the nation).

1.3 PROJECT BACKGROUND AND HISTORY

The Station Fire began on Wednesday, August 26th, 2009 from human causes, an act of arson. By the time this fuel and topography driven fire was contained on Friday, October 26th, 2009:

- It burned nearly 252 square miles (almost 3 ½ times the size of Catalina Island shown in Figure 3).
- It burned a total of 161,189 acres.
- It was the largest fire in Los Angeles County's recorded history.
- Tax payers spent over 95 million dollars on the firefighting effort.
- It affected 35 local communities.
- It caused significant impacts to air, water, land, biotic, cultural resources, and major infrastructure within Los Angeles County.

Figure 3: Catalina Island

1.4 DESIGN PROCESS FOR THE SFRS

An SFRS Leadership Team, Core Team, lead planner and a project assistant to the lead planner were assigned to develop the SFRS. Figure 4 shows the process they used to design the restoration strategy.

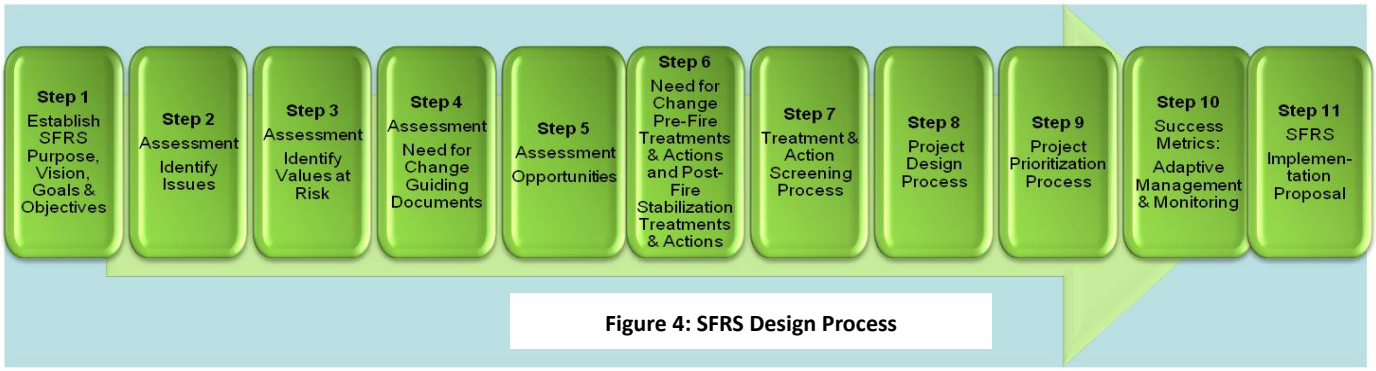


Figure 4: SFRS Design Process

1.5 PRINCIPAL SOURCES OF DATA FOR THE SFRS

Multiple data sources were used to develop the SFRS. Forest sources included tabular and spatial data (GIS) from program areas and previous projects. Staff knowledge, in particular post-fire field review, was a fundamental driver. A major information source was the work of the Burned Area Emergency Response (BAER) team, comprised of 52 subject matter specialists from across the Forest Service and agencies such as the USGS, USFWS, ACOE, and ANF local staff. The preliminary and final BAER reports and additional information on data sources are located in the References Section.

1.6 SFRS CONTEXT: NATIONAL, REGIONAL, AND FOREST VISIONS

The SFRS is grounded on the vision, goals, and management direction of the ANF Land Management Plan (LMP). The LMP envisions a National Forest that provides a balanced and sustainable flow of goods and services for a growing diverse population while ensuring long-term ecosystem health, biological diversity, and species recovery. The plan has a strong emphasis on strengthening community involvement and connection to the land. The Forest is seen as providing much-needed open space for recreation opportunities, and serving as "an outdoor classroom, a 'living laboratory,' for learning about our natural and cultural heritage and the importance of conservation" (LMP, Part 1, p. 6). LMP direction is strategically aimed at realizing this vision by developing management activities that achieve specific long-term desired conditions.

The SFRS also reflects the common vision for national forest management expressed by USDA Secretary Tom Vilsack, as well as regional and national Forest Service leaders. At all administrative levels, leadership is committed to the goal of restoring and retaining the ecological resilience of the forests for current and future generations. All are agreed that healthy, resilient forests are vital to ensuring sustainable supplies of fresh water, wildlife habitat, and all of the many ecosystem-based goods and services that are valued and used by people. They are also increasingly aware that healthy forests are vitally important in helping to mitigate and adapt to climate change. Collaborative management that engages the public in conserving and restoring the national forests is also a shared emphasis.

> "Declining forest health and the effects of our changing climate have resulted in an increasing number of catastrophic wildfires and insect outbreaks. It is time for a change in the way we view and manage America's forestlands with an eye towards the future.
>
> "This will require a new approach that engages the American people and stakeholders in conserving and restoring both our National Forests and our privately owned forests. It is essential that we reconnect Americans across the nation with the natural resources and landscapes that sustain us."
>
> USDA Secretary of Agriculture Tom Vilsak, August 14, 2009

All of these national, regional, and forest-level themes can be traced throughout the SFRS vision, goals, and project design.

"Listen to the Land"

The intent of the SFRS is to "listen to the land." This means focusing on ecosystem recovery actions that facilitate the natural recovery process to the greatest extent possible. The intent is to use field-based science and adaptive management to understand what the natural recovery cycle is, and then to use that information in designing, scheduling and monitoring recovery projects that work *with* nature.

A "Living Learning Laboratory" is proposed in the SFRS as an opportunity to further enhance this restoration approach (see Appendix A). Using the Station Fire burned area as a "laboratory," the SFRS proposes building partnerships with higher education institutions and others to research the recovery process and the effectiveness of the treatments and actions. The data gathered through this research would be used in adaptive-management decisions, and in furthering our understanding of post-fire recovery throughout the western United States. The laboratory would also help to achieve LMP interpretive/conservation education goals by increasing the Forest visitors' awareness of fire safety, their understanding of ecosystem recovery processes, and their commitment to land stewardship ethics.

1.7 SFRS VISION, GOALS & OBJECTIVES

The ANF staff, the SFRS Leadership Team, and the SFRS Core Team worked together to develop a Vision, Goals and Objectives that would guide the development of the SFRS. While some of the goals and objectives are long-term or ongoing, others are short-term or were achieved in the development of the SFRS.

SFRS Vision

An improved ecological landscape; safe, ecologically sustainable public use consistent with the Forest Plan; and a broad community of stewardship (the "Forest Community") comprised of volunteers and partners actively working with ANF staff in the stewardship of the Angeles National Forest.

SFRS GOALS

- Conduct a consistency review of the Forest Plan and other guiding documents to determine if changes to desired conditions are warranted as a result of the fire. [Done. See Subsection 2.1]
- Amend the Forest Plan and guiding document direction where irreconcilable changes have occurred to existing conditions. [Note: Since no irreconcilable changes were identified during SFRS analysis, no amendments are necessary. See Subsection 2.1.]
- Improve "inherited" (i.e., pre-fire) ecological conditions and infrastructure where such changes would achieve Forest Plan goals and objectives by significantly improving the ecological integrity of the landscape (watersheds as barometer) and public use and enjoyment of the land.
- Renew the landscape through passive and active restoration actions, in accordance with Forest Plan goals and desired conditions.
- Encourage and support the creation of a "Forest Community" and associated culture built on volunteerism, partnerships, and shared stewardship of the Angeles National Forest.
- Capitalize on Volunteers, Interpretation, and Partnerships stewardship (VIPS) opportunities.

OBJECTIVES

- Determine where the Station Fire has generated opportunities to achieve Forest Plan goals and desired conditions by correcting pre-fire ecological conditions and infrastructure. Specifically identify opportunities that would result in significant improvement to ecological conditions in the four key watersheds of the ANF and/or enhanced recreation opportunities.
- Develop criteria to identify, design, prioritize, and schedule restoration projects/efforts from 2010-2015 [Done. See Section 3]. Use spatial and tabular modeling technologies (e.g., GIS) that allow for efficient and effective analysis, strategy execution and project implementation and monitoring.
- Develop a Volunteer, Interpretation, and Partnership Stewardship (VIPS) Program to facilitate and encourage individuals and groups in the Los Angeles area and beyond to participate in the fire recovery and the stewardship of the ANF.
- Support the formation of a "Friends of the Angeles" organization that would help to engage the Forest Community in the fire recovery effort as well as in stewardship of the Forest through fundraising, fostering relationships with new and existing partners, coordinating a larger, more diversified volunteer base, and developing expanded interpretive/conservation education programs.
- Develop a web-based interface to aid in acquiring donor funding and to streamline management of volunteer service offerings and project implementation ("CommunityMatch.com").

2. SFRS STRATEGY DEVELOPMENT

ANF staff and SFRS Team members conducted consistency reviews of the Forest's guiding documents, and identified key issues and values that would need to be considered in developing restoration treatments and actions. This section describes this analysis, and the process which resulted in lists of potential treatments and actions. Additional information and documents describing the planning steps involved in the development of the strategy may be found in the References section.

2.1 GUIDING DOCUMENT REVIEW & CONSISTENCY DETERMINATIONS

ANF staff conducted a consistency review to determine if the Station Fire generated a need to change the Forest's guiding documents (see Figure 5). The review determined that no guiding documents required amendment as a result of the Station Fire. The goals and desired conditions in the LMP were determined to be valid, and will continue to serve as the primary direction guiding the development and prioritization of treatments and actions within the Station Fire burn area. Additional information on the consistency review and determinations may be found in the References section.

2.2 ISSUE IDENTIFICATION

The SFRS Leadership Team and the SFRS Core Team identified the following five issues that need to be addressed in developing recovery treatments and actions:

- Infrastructure Loss & Replacement
- Improved Landscape Scale Ecological Integrity & Resiliency
- Public Access
- Staffing & Funding Resources
- Volunteers, Interpretation, Partnerships & Stewardship (VIPS)

2.3 VALUE IDENTIFICATION: PRIMARY VALUES AT RISK

Based on the work of the BAER Team and ANF staff, the following primary values or resources were determined to be at risk from post-fire effects such as increased runoff and debris flows, vandalism, hazardous materials, habitat loss, and weed introduction[2]:

- Life & Safety
- Infrastructure
- Ecosystem Structure & Function[3]
    - Water Quality
    - Soil Productivity
    - Plant Communities
    - Wildlife & Fisheries Resources
- Heritage Resources

[2] The 2009 BAER report discusses these primary values in detail, including specific hazards and risks affecting each value (see the BAER report in the References section).

[3] Ecosystem Structure & Function at the landscape scale is a value at risk as a result of the Station Fire. Within this value at risk hydrology, soils, botany and wildlife and fisheries resources were also identified as values at risk.

2.4 POSSIBLE RECOVERY TREATMENTS AND ACTIONS

Each of the primary values was analyzed to determine a suite of possible recovery treatments and actions that would address the SFRS issues, advance the SFRS vision, goals and objectives, and achieve the long-term desired conditions described in the LMP. Two general categories were developed (Ecological and Infrastructure) to simplify communication about the restoration needs of the burned area (see Figure 6).

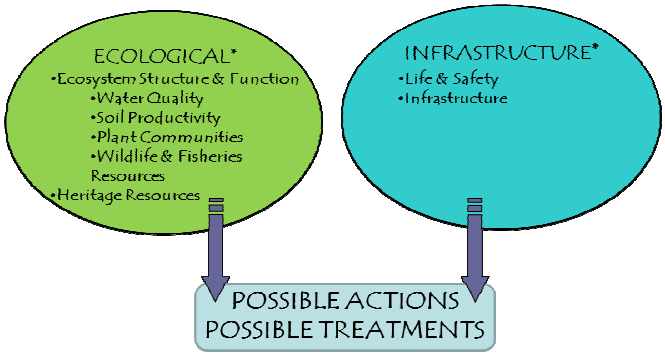
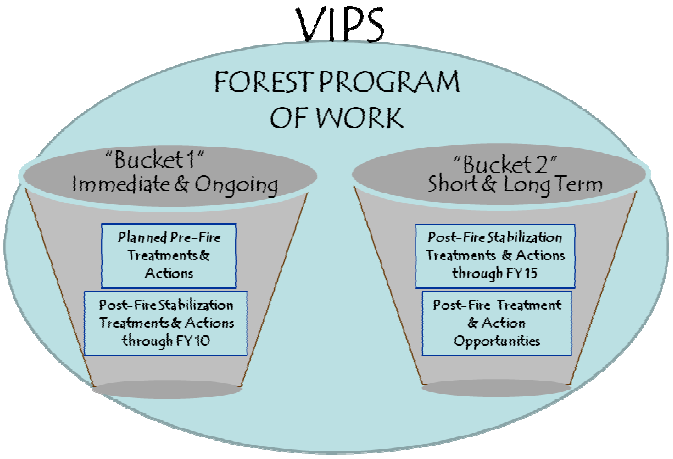


Figure 6: Possible SFRS Treatments & Actions



A "Bucket" system was developed to describe and analyze potential treatments and actions. "Bucket 1" contains all immediate stabilization treatments and actions (through the end of FY10) and ongoing projects (planned pre-fire treatments and actions). "Bucket 2" contains all short-term post-fire stabilization treatments and actions (through FY 15) that may be necessary in response to winter storm cycles, and all potential long-term post-fire restoration treatments and actions.

Figure 7 illustrates the contents of each bucket, and how the treatments and actions reside within the overall ANF program of work. The figure also communicates the network of support services that the ANF Volunteer/Interpretive/Partnership Stewardship program (VIPS) is envisioned to provide to these treatments (see Subsection 4.2).

2.41 Bucket 1: Immediate and Ongoing Treatments/Actions/Projects

All planned pre-fire administrative and recreation facilities projects in Bucket 1 were re-assessed using a scale to determine the degree of damage (25%, 50%, 75%, and 100%), and then reprocessed through the current regional and national analysis methods (i.e., ANF Facilities Master Plan and Recreation Facilities Analysis) to determine the need for change or re-design. The assessment showed that most planned pre-fire facilities projects required modification or re-prioritization, depending on the percentage of fire severity impacts.

All planned pre-fire ecosystem services treatments and actions in Bucket 1 such as vegetation treatments, fuels reduction projects, and habitat improvement projects were analyzed on a case-by-case basis. In some instances, such as fuels reduction projects, the fire resolved the project need but generated the need for project redesign to address post-fire burned biomass reduction. In others, such as habitat improvement, projects required redesign due to changed conditions in the landscape.

Post-fire stabilization treatments and actions in Bucket 1 were analyzed through field verification by ANF staff and a re-visit and assessment report by the original BAER team in May 2010. Most immediate stabilization treatments and actions were effective and not recommended for change.

Figure 8 provides an overview of the screening process used to determine the need for change for Bucket 1 projects and treatments. This assessment of projects has led to an ongoing workload for ANF staff to re-design some treatments and actions, and eventually to take all of these projects through the Project Screening, Design, Prioritization and Implementation Process described in Chapter 3.

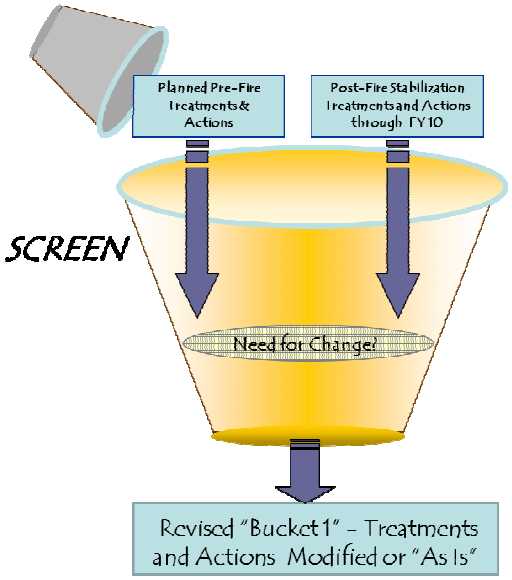


Figure 8: Revised Bucket 1 Treatments

2.42 Bucket 2: Short- and Long-Term Treatments & Actions

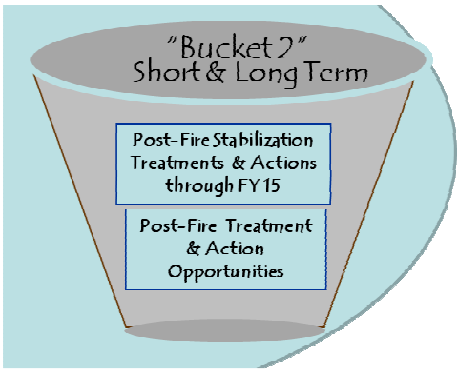


Figure 9: Bucket 2 Treatments

Short-term Post-fire Stabilization Treatments

The SFRS assumes that additional damage to the environment within the burned area will continue to occur for as long as five years, due in part to erosion, flooding, and debris flows caused by winter storms. This will necessitate continued stabilization treatments and actions through FY 2015. These treatments/actions are included in Bucket 2 (see Figure 9). ANF staff will conduct ongoing monitoring of the burned area to determine if, when, and what type of additional stabilization treatments are needed.

Long-Term Treatments and Actions

Bucket 2 also contains potential long-term treatments and actions intended to achieve significantly improved ecological conditions and enhanced opportunities for sustainable public use and enjoyment, as envisioned in the SFRS and the Forest Plan. Using the Forest Plan goals and desired conditions as a framework, ANF staff generated an initial list of long-term treatments and actions and then grouped these under the ecological and infrastructure categories shown in Figure 10.

One example of a long-term ecological restoration treatment in Bucket 2 is the Station Fire reforestation project, in which up to 11,000 acres of burned forest land will be replanted over the next 3 to 5 years. Most of the acreage to be reforested will be planted by contractors, funded in part through a carbon demonstration project. A portion of the acreage to be reforested will be planted by volunteers.

Figure 10: Bucket 2 Categories of Long-Term Treatments and Actions

Ecological Resource Recovery

- Plant Communities
  - Invasive Species Treatments
  - Reforestation Projects
  - Vegetative Treatments
- Wildlife and Fisheries Resources
  - Threatened/Endangered/Sensitive Species Management
  - Habitat Improvement
- Soils and Hydrologic Function
- Heritage Resources

Infrastructure Restoration

- Roads
- Trails
- Recreation Facilities
- Administrative Facilities
- Special Uses (Utilities, Organizational Camps, Recreation Residences, etc.)

2.43 Recreation Enhancement Opportunities

The Station Fire generated opportunities to improve ecological conditions and public use/enjoyment of the land by correcting conditions that existed prior to the fire (i.e., "inherited" conditions). For example, in areas where recreation facilities sustained considerable damage, the opportunity now exists to redesign these facilities to achieve the LMP goal of providing for enhanced recreation while better protecting natural resources (see LMP, Part 1, Goal 3.1).

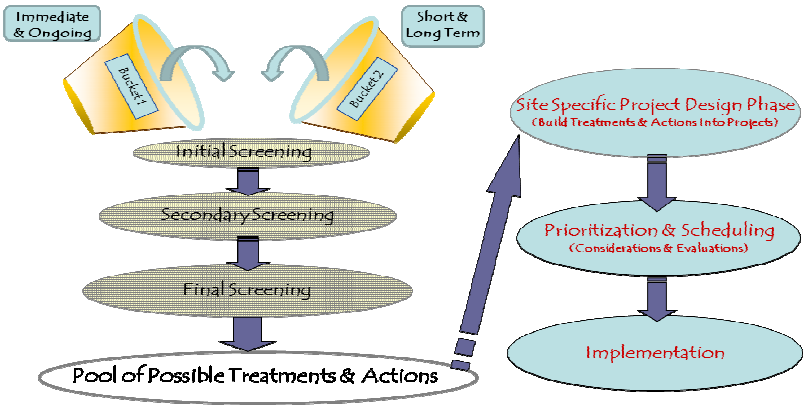
This will require further planning and analysis before specific treatments and actions can be identified and added to the Bucket 2 treatments list. The SFRS Team and ANF staff proposed the following developed recreation planning efforts which could occur as funding becomes available:

- Big Tujunga Canyon Recreation Master Strategy
- Highway 2 Scenic Byway Corridor Management Plan
- Front Country Developed Camping Strategy
- Santa Clara Divide Recreation Strategy (OHV route opportunity)
- Charlton Chilao Recreation Strategy
- Forest-Wide Trails Strategy

It is understood that the long-term recovery of the Station Fire burned area will be an ongoing, iterative process spanning many years. As conditions continue to change and as additional opportunities are identified through these and other planning initiatives, more treatments will be added to the Bucket 2 long-term restoration list.

3. PROJECT SCREENING, DESIGN/PRIORITIZATION, & IMPLEMENTATION

Section 3 describes how ANF decision makers evaluate the lists of potential treatments/ actions in Buckets 1 and 2 to determine which of these should be implemented and when. This evaluation includes deciding which treatments/actions would best achieve the SFRS vision, goals, and objectives. Figure 11 illustrates the screening process. Figure 15 provides a more detailed description, including screening criteria.



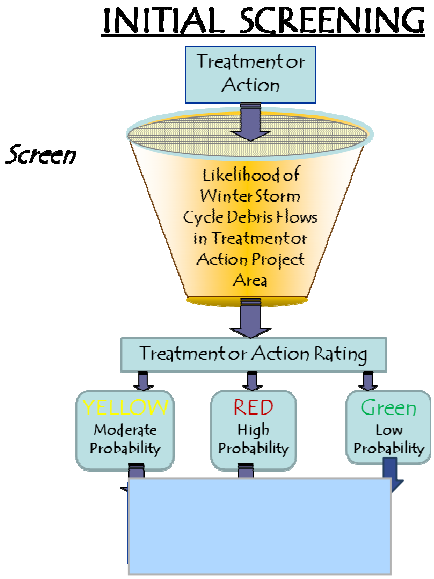
Section 3 also discusses how the effectiveness of the treatments/actions will be measured (see Subsection 3.4).

3.1 TREATMENT & ACTION SCREENING PROCESS

The SFRS team developed a screening process for all potential treatments and actions in Bucket 1 and Bucket 2, to determine which of these would be best suited to proceed to project design and implementation. Three screening stages (initial, secondary, and final screening) were developed from the Forest Plan and the SFRS purpose, issues, and values (see Figure 11 and Figure 15).

3.11 Initial Screening

The initial screen was developed from the BAER team's geological assessment, initially done in the fall of 2009. Based on the events of winter 2009-2010, the modeling methodology used in the assessment was validated by the BAER team in a return assessment in the spring of 2010. As a result of this analysis, the potential for damage from winter storm cycles and associated debris flows within the first five years following the fire became the first screen in considering whether a potential treatment or action listed in Buckets 1 or 2 should be implemented.



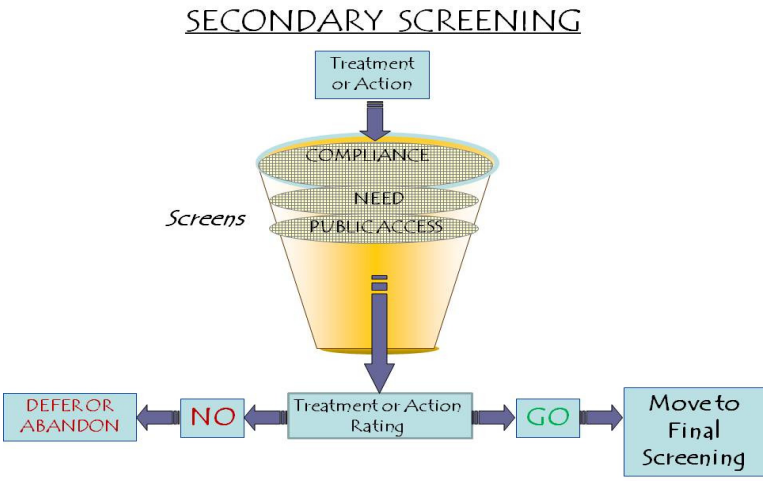
The BAER team's geological assessment provided a spatial layer of information in geographical information systems (GIS) that analyzes the probability of debris flows of a magnitude that could threaten life and safety, infrastructure, and ecological function. The GIS model identifies three categories of debris-flow probability: high, moderate, and low. These data are used to geospatially locate and give ratings to potential treatments or actions. As shown in Figure 12, a rating of

"Red" denotes a high probability of debris flows that could affect the investment of resources. "Yellow" ratings denote a moderate probability of debris flows, and "Green" a low probability of debris flows.

All potential treatments and actions are then moved to a secondary set of screening criteria, where the debris flow ratings identified in the initial screen are weighed against other feasibility considerations (see Subsection 3.12 and Figure 15).

3.12 Secondary Screening

The secondary screen evaluates potential treatments/actions against three criteria: compliance, need, and public access (see Figure 13 and Figure 15). The screen consists of a series of questions for each criterion. A Go/No-go decision for a given treatment/ action is based on an assessment of overall benefits, impacts, risks and feasibility considerations identified in the answers to these questions.



- **COMPLIANCE with existing law, regulation, and policy** – The following questions for this criterion help identify major compliance requirements that have the potential to substantially impact overall project feasibility or implementation timelines. *[Note: It is a given that all potential treatments/ actions passing the secondary screen will comply with existing law, regulation, and policy.]*
  - Is the treatment/action consistent with the Forest Plan? If not, would a Forest Plan amendment likely be required?
  - What is the likely level of NEPA analysis required? (e.g., Categorical Exclusion, EA, EIS)
  - Would the treatment/action be subject to Notice/Comment/Appeal procedures (36 CFR 215)?
  - What regulatory steps would be required? (Circle all that apply.)
    - Endangered Species Act: USFWS concurrence/consultation/Biological Opinion; BE/BA
    - National Historic Preservation Act : Section 106 Clearance; SHPO consultation
    - Other permits or legal requirements: _____

- **NEED or urgency of the treatment/action –** This criterion considers the relationship (gaps) between the existing condition and the desired condition in order to answer the question, "Why consider taking any action?" For treatments that were rated Yellow or Red in the initial screen (moderate to high probability of winter storm impacts), this criterion serves as a risk assessment used to identify the critical need for immediately proceeding with a given treatment/action; answers to the questions help to weigh the risks and benefits of taking action immediately vs. delaying treatment until after the 5-year storm cycle.
  - What LMP desired conditions would the treatment/action help to achieve? (Examples: recovery of federally listed species; provision of recreation opportunities; fostering of traditional and contemporary cultural uses of the Forest, etc.) Are these achievements critical within the 5-year storm cycle?

- Would the treatment improve pre-fire ecological conditions or correct a previous infrastructure problem?
- What further damage to primary values or other critical resources would be averted by implementing the treatment immediately rather than waiting? (Examples: Would immediate treatment protect existing infrastructure from winter storm cycles? Would it reduce the risk of further degradation of water quality in critical biological areas?)

- **PUBLIC ACCESS**[4] – This criterion considers when and where public use should be allowed within the Station Fire recovery area. The questions weigh the benefits of public access against the adverse impacts of such access to primary values at risk (e.g., life and safety, ecological recovery, etc.)[5].

  PUBLIC ACCESS BENEFITS
  - Would the treatment/action help to restore or enhance recreation opportunities, activities, or services (including roads, trails, facilities) that are high quality, environmentally sustainable, efficient to manage/maintain, safe, accessible, and that result in increased visitor satisfaction?
  - Would the treatment/action help to meet unique recreation capacity needs?
  - Would the treatment/action foster traditional or contemporary cultural uses of the Forest by Native American groups or individuals?
  - Would the treatment/action help to achieve LMP Interpretive/Conservation education goals? (Briefly state specific benefits.)
  - Road/trail system: Would the treatment/action help to integrate the system with state, county, or local public roads and trails?
  - Wilderness: Would the treatment/action help to restore or provide outstanding primitive and unconfined recreation opportunities for solitude, inspiration, and challenge?

  PUBLIC ACCESS IMPACTS [6]
  - Would the public access resulting from this treatment/action conflict with ecological recovery? (State specific impacts, e.g., spread of invasive plant species, vandalism of cultural resources, etc.)
  - Would the public access resulting from this treatment/action pose risks to human life and safety (e.g., threats from increased debris flows; rock and debris falls; erosion, sedimentation, and landslides; hazard trees in or near recreation facilities; exposed abandoned mines; other hazardous materials) during the 5-year winter storm cycle or beyond? If so, how would these risks be mitigated?

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[4] Public access is one of the key issues identified by ANF staff and the SFRS team (see Subsection 2.2). Closure of the Station Fire burned area to the public is a stabilization treatment recommended by the BAER team and implemented by the Forest Service.

[5] These questions are derived from LMP goals and desired conditions relevant to public use and enjoyment and resource protection (see LMP Part 1, "Forest Goals and Desired Conditions," p. 19 ff).

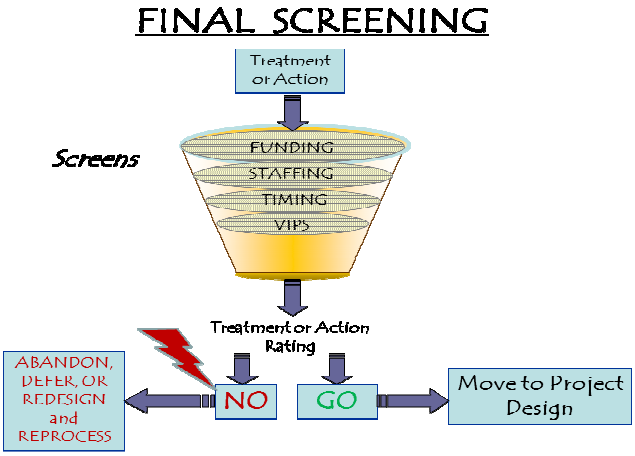
[6] Impact analysis and mitigations should consider LMP guidelines addressing conflicts between public use and resource protection needs (see LMP, Part 3, Appendix D, "Adaptive Mitigation for Recreation Uses."). Note that the LMP recommends that corrective management actions be implemented in the following order unless analysis of the conflict clearly indicates that a stronger measure is immediately necessary: education; perimeter control; management presence; redirection of use.

- Would the public access resulting from this treatment/action jeopardize protection or recovery of habitats for federally listed species, sensitive species and other species of concern (as indicated by the status of management indicator species)? If so, how could these impacts be mitigated?
- Would the treatment/action reduce the effectiveness of short-term stabilization treatments?

Treatments and actions receiving a "No" rating in the secondary screening analysis would be redesigned, abandoned, or deferred (see Figure 13 and Figure 15). All potential treatments receiving a "Go" rating are moved to the final screening (see Subsection 3.13).

3.13 Final Screening

The final screen considers four criteria: timing, funding, staffing, and volunteer/partnership opportunities (see Figure 14 and Figure 15). These criteria were developed to help maximize efficiencies in project design and implementation, as well as to identify opportunities to involve the Forest Community (i.e., partners and volunteers) in the Station Fire restoration effort (see Section 4).



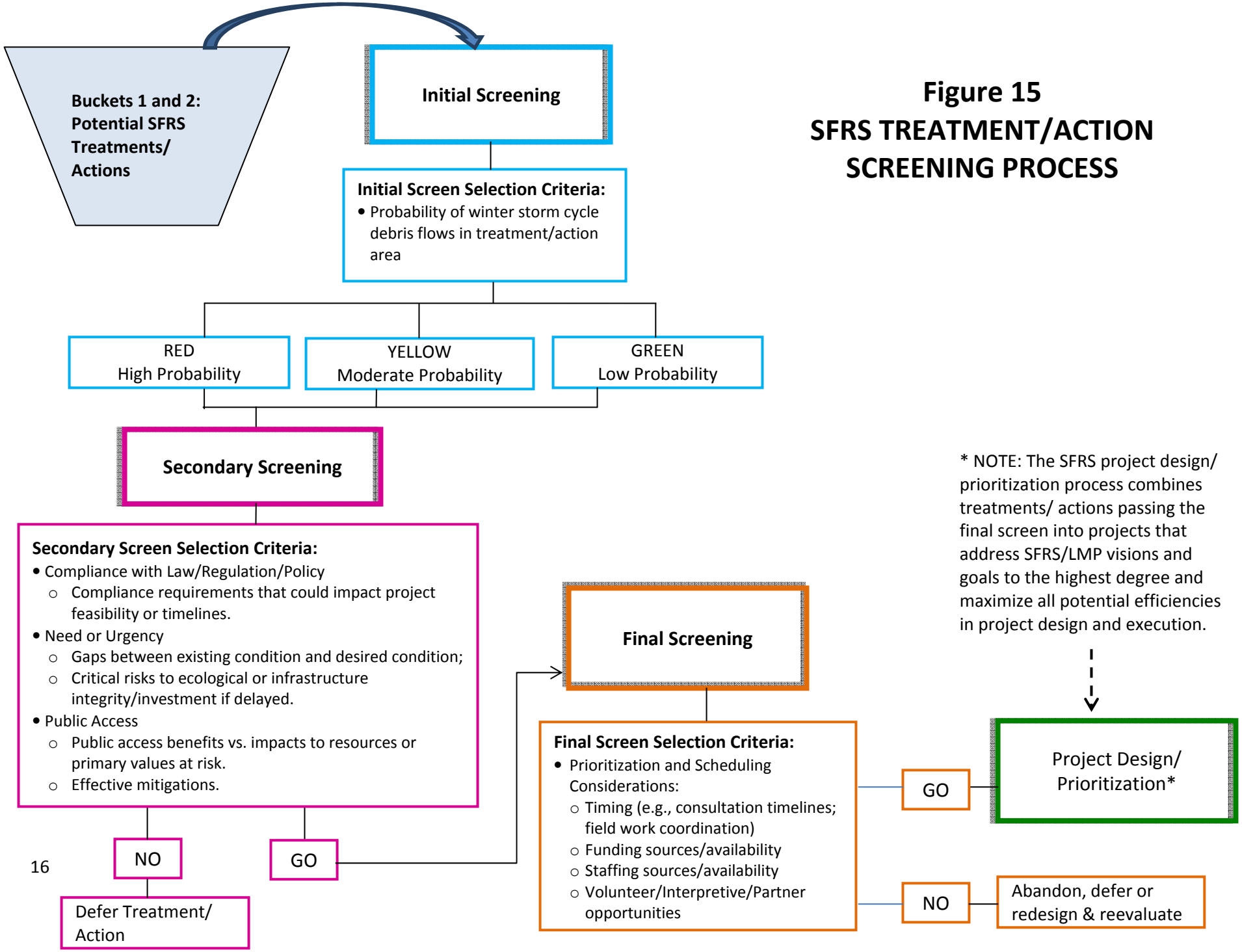
- TIMING – This criterion considers the "start-to-finish" time needed to complete all phases of the treatment/action, including planning (NEPA analysis and consultation), design, construction, etc. Providing the following information helps to identify timing compatibilities between individual treatments/actions, in building the overall SFRS implementation timeline:
  - Project phases of this treatment/action (circle all that apply): Planning, Design/Survey, Contract Preparation, Construction, Maintenance, Other _____.
  - Total estimated time needed for all phases: _____ months.
  - Estimated earliest possible start date for construction/maintenance: _____.
  - Other timing constraints (e.g., timing of field work, consultation timelines, etc.): _____ _____.
- FUNDING – This criterion considers treatment/action costs, and helps to identify funding shortfalls and possible funding sources.
  - Estimated cost of treatment/action (rough, conceptual estimate): _____.
  - Amount funded and funding source: _____.
  - Could this treatment/action be designed or combined with other treatments to be eligible for consideration/funding under the Collaborative Landscape Restoration Program (CFLRP)?
- STAFFING –
  - Are current Forest Service staffing levels adequate to implement this treatment/action?
  - Is contracting a viable and cost-efficient option? If so, are Forest Service staffing levels adequate for contract administration?

- Volunteer/Interpretive/Partnership Stewardship Opportunities (see Section 4) –
  - What aspects of this treatment/action could be accomplished or supported by volunteers or partners (e.g., funding, staffing, or other needed resources)?
  - Is this treatment/action a viable option for the "Living, Learning Laboratory" (see Subsection 1.6 and Appendix A)?

Those treatments and actions receiving a rating of "Go" in the final screening process are moved to the project design/prioritization phase (see Subsection 3.2). Treatments/actions with a "No" rating are abandoned, deferred, or re-designed and rerun through the screening process (see Figure 14 and Figure 15).

The analysis and "Go/No-go" decisions made during the screening process are documented in a project review sheet (see Appendix D). The sheet includes the criteria screening questions, answers, and other analysis in support of the decisions. All of this information is considered in subsequent project design, prioritization, and implementation phases.

Figure 15
SFRS TREATMENT/ACTION SCREENING PROCESS

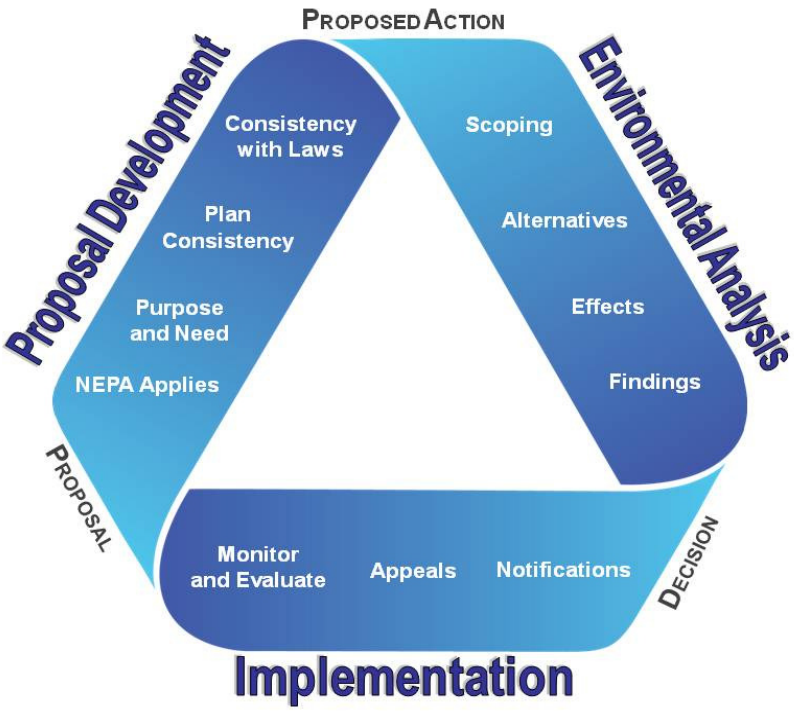


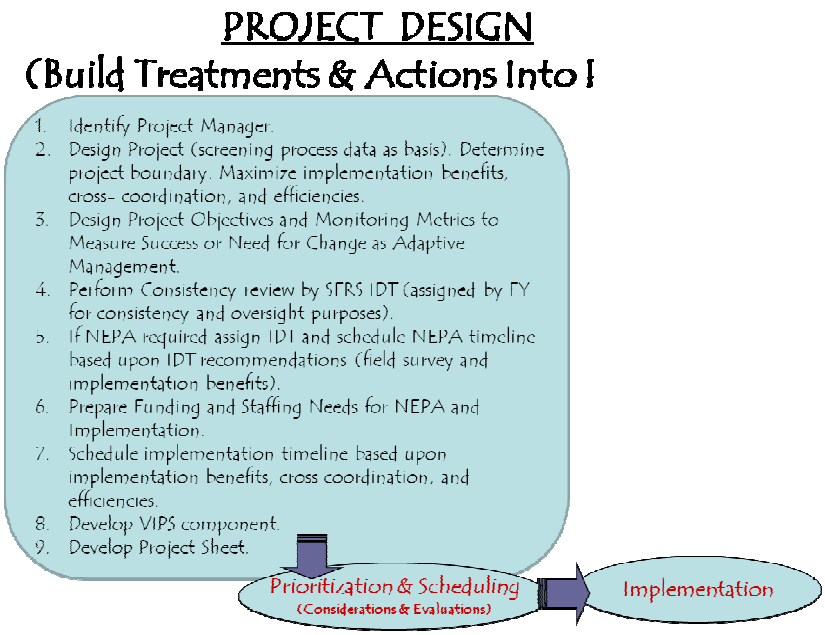
3.2 PROJECT DESIGN/PRIORITIZATION PROCESS

In the project design/prioritization phase, the treatments and actions that receive a "Go" rating in the screening process (Subsection 3.1) are combined into proposed projects. The intent is to develop integrated project proposals that address the SFRS vision/issues, LMP goals, and regional and national policy to the highest degree, while maximizing all potential efficiencies in project design and implementation.

In deciding how to combine various treatments/actions, ANF staff consider common geographical locations, common or related issues, timing constraints, and available partnership/volunteer support. All data generated in the screening phase and documented in the project review sheet are factored into the decision. When available, GIS-generated data are used to identify and map logical groupings of treatments.

Once the decision is made as to which treatments/actions to combine into a single project proposal, the project is developed, analyzed, and implemented in accordance with the Forest Service planning model, as required by NEPA (see Figure 16).





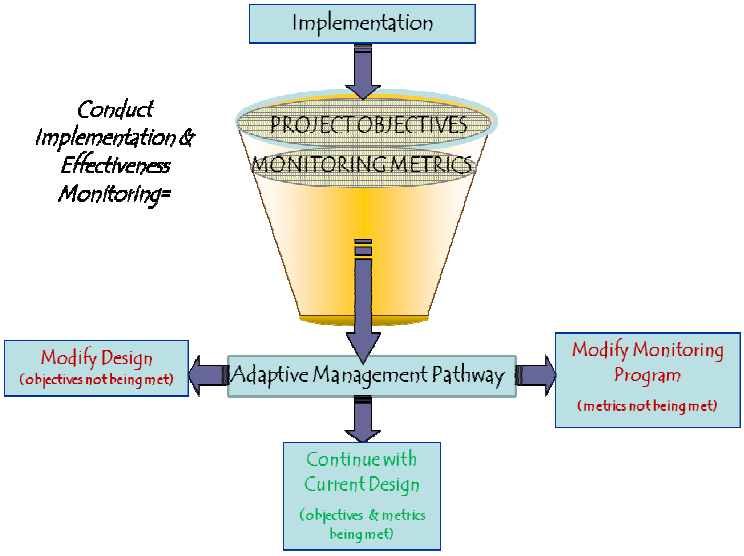
SFRS projects are prioritized and scheduled for implementation through ANF leadership project leveling processes, and incorporated into the Forest's overall program of work. The schedule is flexible, to allow for changed conditions, new opportunities, staffing availabilities, partnership support, and other variables affecting the Forest's mission accomplishment.

Figure 17 displays the detailed steps of a typical SFRS project design. These steps may vary, depending on specific project requirements, coordination with other projects and initiatives, fluctuating priorities, and other unforeseen factors.

3.3 SUCCESS METRICS: PROJECT MONITORING AND ADAPTIVE MANAGEMENT

The ANF Land Management Plan (LMP) is outcome based, meaning that its focus is the condition of the land after project completion, and on the achievement of desired conditions in the long term. The LMP establishes an adaptive management framework and approach to management in which specific data are gathered over time and periodically evaluated to determine if progress is being made toward achieving desired conditions, or if changes in management direction are needed. Actual trends in key environmental indicators are determined through monitoring.

The LMP monitoring plan specifies performance measures to quantify changes over time, and uses these measures as the basis for determining when a need for change is indicated (see Figure 18). The monitoring plan includes evaluation/monitoring questions linked to each desired condition, which are designed to evaluate progress over time (see ANF Land Management Plan, Part 3, Appendix C, Monitoring Requirements).



Because the Station Fire recovery projects are intentionally designed to achieve the LMP desired conditions, the success and effectiveness of each project will be assessed using the performance measures established in the LMP. The LMP monitoring plan will be the basis for this assessment, and will be incorporated into project implementation.

Measuring success through monitoring is crucial to the adaptive management approach. Data gathered over time enables decision makers to make informed resource management decisions regarding future projects and mitigations. In the case of the Station Fire, where high intensity burns occurred that are well outside the natural fire regime, the opportunity to measure and detect data trends can have broad benefits in understanding the fire recovery process on the Angeles NF and elsewhere.

4. VOLUNTEER AND PARTNER STEWARDSHIP OPPORTUNITIES

ANF leaders face a significant challenge as they begin to implement the Station Fire recovery treatments and actions: substantial shortage of funds and lack of staff to do the work. This challenge brings an unprecedented opportunity to members of the greater Los Angeles community and beyond to support the fire recovery effort as well as participate in the overall stewardship of the Angeles National Forest. One goal of the SFRS is to create a clear pathway for these people to engage in caring for the Angeles as volunteers, partners, and supportive "friends."

4.1 BACKGROUND

Even before the Station Fire, the ANF experienced shortages of budget and staff, which has been mitigated in part through the invaluable contributions of volunteers and partners. Each year volunteers give thousands of hours to vitally important activities in the Forest, such as maintaining trails, hosting campgrounds, staffing visitor centers and interpretive activities, and improving wildlife habitat. Over the years, the ANF has partnered with a variety of individuals and groups to achieve mutually meaningful goals such as restoring habitat, conducting research, providing opportunities for recreation, and educating and engaging members of the public in caring for the land and resources of the Angeles National Forest.

But what has been lacking on the Angeles NF is a Forest-wide system to oversee, coordinate, and maximize the contributions of volunteers and partners. A Forest-wide, coordinated interpretive program and plan are also lacking. The need for strategies to address and resolve these issues was identified and articulated in the 2003 ANF Business Plan. The Business Plan identified a resource shortfall (lack of funds and staff to manage the volunteer, interpretive, and partnership programs), and proposed several corrective investment strategies.

The recommendations made in the ANF Business Plan were further developed in the 2005 Forest Plan Revision and incorporated into its vision, goals, and strategies. The ANF Recreation Facility Analysis, completed in 2005, made similar suggestions. The challenge since then has been how to implement the recommendations without having adequate funding and staffing in place to do so. Until the Station Fire, the ANF continued to operate without a consolidated, Forest-wide system in place to coordinate the volunteer, interpretive services, and partnership programs.

4.2 CURRENT SITUATION: THE STATION FIRE STEWARDSHIP VISION (VIPS)

In the wake of the Station Fire hundreds of individuals and organizations came forward with offers of money, equipment, and volunteer time to help in the fire recovery process. To respond effectively to these offers, ANF managers recognized that Forest-wide consolidation of the volunteer, interpretive, and partnership programs could no longer be delayed. Two part-time partnership coordinators were hired under contract to begin the consolidation process.

A working group consisting of the two partnership coordinators, the Ranger District Volunteer/ Partnership Coordinators, an Interpretive Program leader, a District Ranger, the SFRS Planner and NFF staff was formed to develop a Forest-wide volunteer/interpretive/partnership stewardship strategy, with a specific emphasis on support for the SFRS treatments and actions. The working group identified several critical gaps: volunteer administration and management capacity; a lack of mid- to high-level technical expertise and program support; a need for better integration of volunteers into the Forest-wide program areas and program of work; and professional development needs of ANF staff to support the volunteer/ partnership programs.

Out of their work, the vision emerged of a broadened community of stewardship (the "Forest Community") comprised of volunteers and partners in the greater Los Angeles area and beyond working together with ANF staff to achieve their mutual goals related to conservation ethics and public land stewardship.

In turn, this vision guided the development of what came to be called the Angeles VIP Stewardship Strategy. When fully staffed and implemented, the VIP Stewardship Strategy will consolidate and coordinate the efforts of three ANF program areas: the volunteer program, interpretation/ conservation education, and partnership development. The strategy is located in Appendix C.

Figure 19, on the following page, illustrates how various individuals and groups within the Forest Community relate to one another and to the work that needs to be done in the Station Fire recovery effort and in the overall stewardship of the Angeles National Forest.

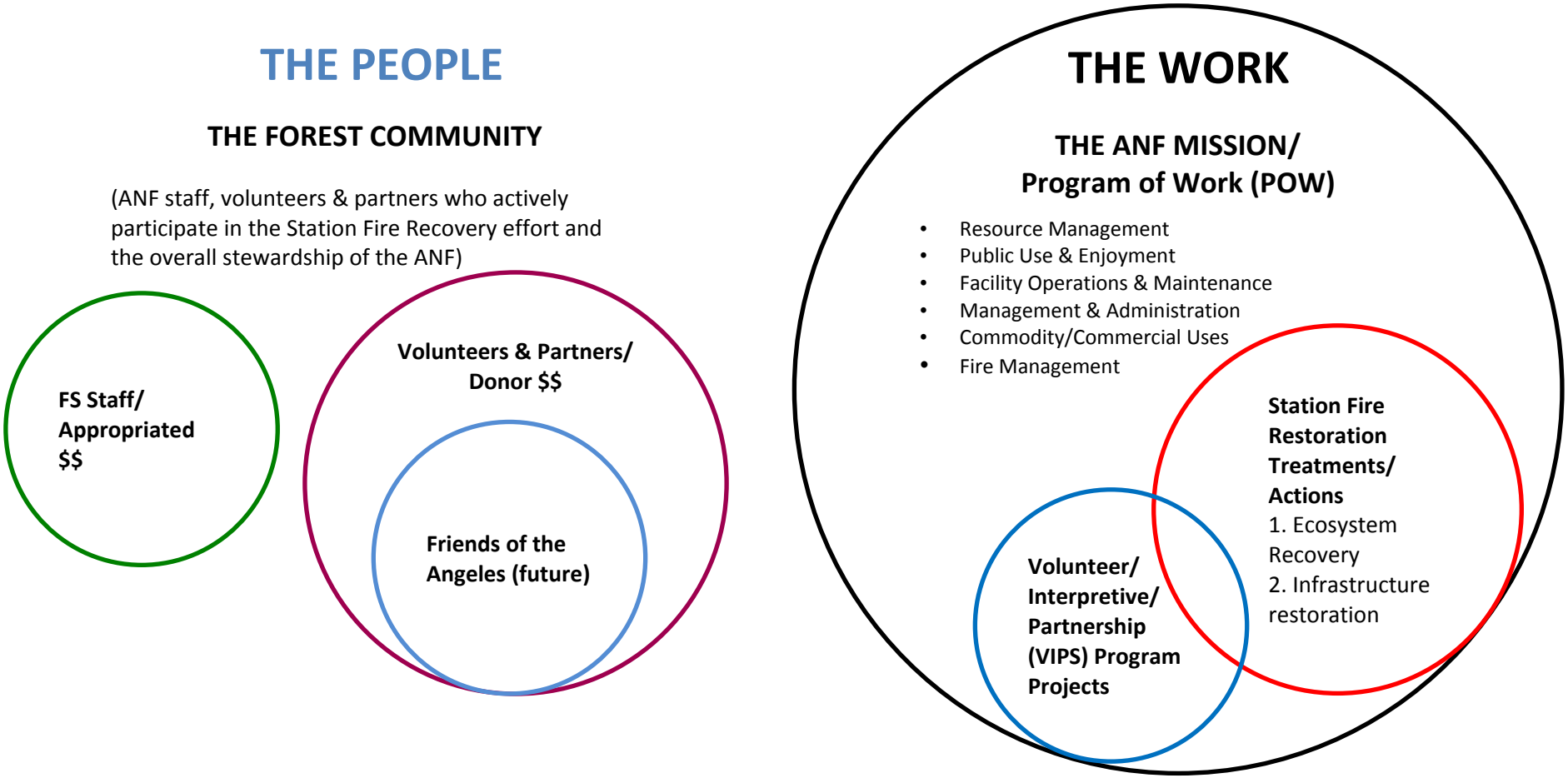
The VIP Stewardship strategy would create a centralized Forest-wide volunteer/interpretive services/ partnership program that supports ANF mission achievement and fosters public land stewardship by:

(1) Overseeing, coordinating, and maximizing the contributions (funding, staffing, and other needed resources) of volunteers and partners; and

(2) Fostering the development of a "Forest Community" comprised of ANF staff, volunteers & partners working together to actively participate in the Station Fire Recovery effort and the overall stewardship of the Angeles National Forest.

Figure 19

THE BIG PICTURE
Stewardship of the Angeles National Forest



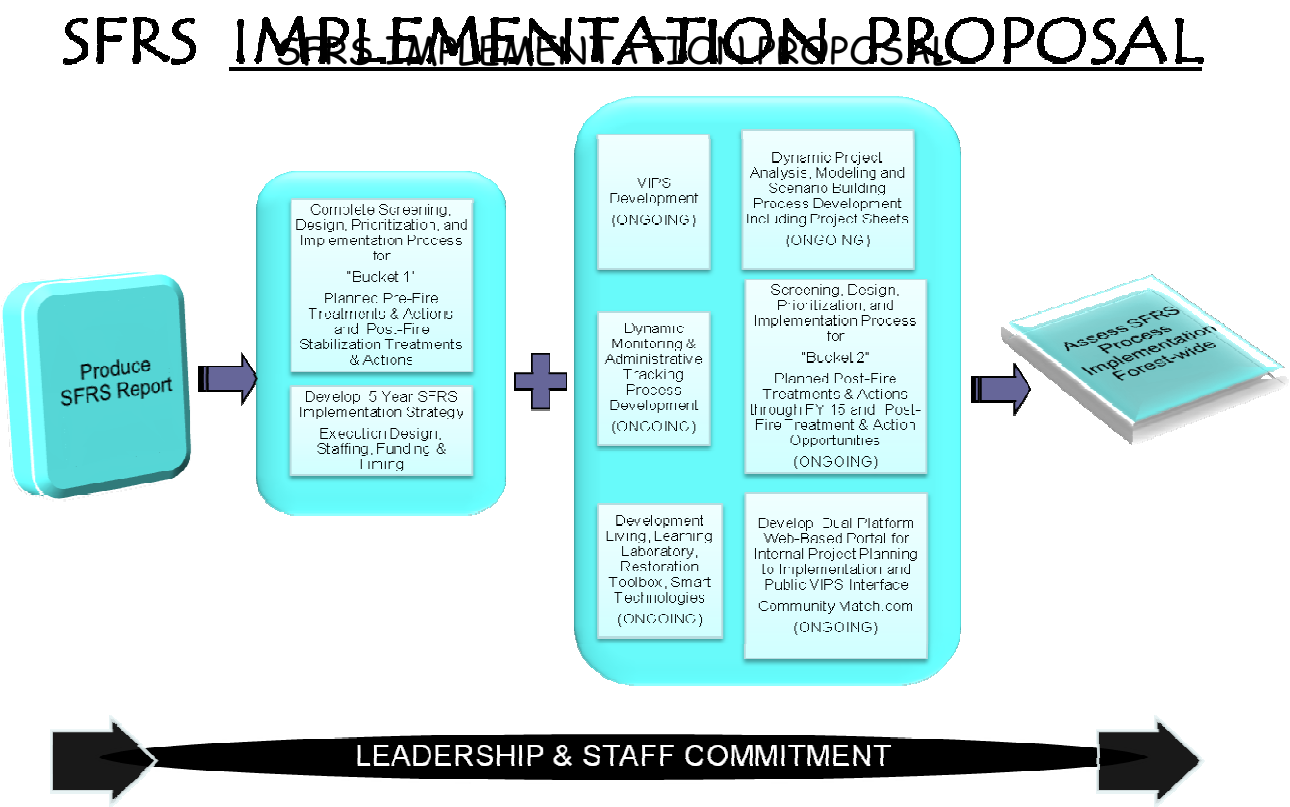
5. SFRS IMPLEMENTATION RECOMMENDATIONS

The SFRS is a long-term, comprehensive strategy, affecting the ANF program of work for years to come. Some aspects of the strategy will be implemented on an ongoing basis. Figure 20 illustrates the sequence of steps that the SFRS Core Team recommends ANF managers take as they begin to implement the strategy.

5.1 STAFFING ACTIONS

Successful implementation of the SFRS will require a firm commitment from the ANF leadership team, in terms of staffing and funding. To ensure success, the SFRS Core Team recommends the following staffing actions:

- Establish a Steering Committee, to include Forest Leadership Team members, to oversee, provide decision-making, and establish protocols for the treatments and actions undertaken under the SFRS.
- Assign a fulltime SFRS project manager, at the leadership level, for three to five years to coordinate and manage SFRS implementation.
- Hire a permanent Forest-wide VIP Stewardship program coordinator with the skills to increase partnership and volunteer contributions to the recovery effort and the stewardship of the Angeles National Forest.



5.2 FUNDING

Implementation of the SFRS will require considerable funds, beyond the annual ANF appropriated budget. Without significant partners and outside funding sources, the ANF will not be able to achieve the projects and opportunities described in this report. The SFRS Core Team recommends that the SFRS Steering Committee and VIP Stewardship program coordinator develop and implement a cost/funding strategy to optimize resource investments and secure funding for the fire recovery projects over the next three to five years. Following are funding opportunities, actions, and recommendations that the SFRS Core Team sees as being key to SFRS success:

- Identify SFRS projects that may be time sensitive. Invasive weed treatments, for example, can achieve greater results and greater cost efficiencies if implemented sooner.
- Evaluate the use of contractors (for NEPA and implementation) and volunteers for upfront costs and long-term outputs to see where the greatest economies lie.
- Other considerations, such as the ability to overlap and sequence projects, or elements of projects (hazard tree removal, installation of toilet facilities at multiple recreation sites), and contracting options (challenge cost share or stewardship contracting) should be investigated as part of overall SFRS execution and management.
- Encourage and support the development of a Friends of the Angeles Foundation, an adoption program for facilities and resources, and expansion of the ANF Volunteer/Interpretive/Partnerships stewardship program (VIPS). All of these measures will increase the economic capital and other resources available to the ANF exponentially.

6. CONCLUSION

The Station Fire Restoration Strategy (SFRS) provides a step-by-step road map to guide ANF decision makers in developing integrated recovery projects that will achieve their vision for ecosystem recovery, sustainable public use and enjoyment of the land, and unprecedented involvement of partners and volunteers in stewardship of the Angeles.

The SFRS vision takes into account key national and regional initiatives, goals, and values such as restoring ecological resilience and sustainability, climate change mitigation and adaptations, and collaborative management that engages the public in conserving and restoring the national forests. Because of this, and because many aspects of the strategy are reproducible, it has the potential to serve as a model for post-fire rehabilitation on public lands throughout the United States.