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## Amendment to the 2014 Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy

April 28, 2017

Federal, state, and local leadership recognize and support the mutual benefits of working collaboratively to reduce fuels in order to restore resilient forest landscapes and create fire adapted communities throughout the Lake Tahoe Basin. We reaffirm the wide-ranging benefits of community protection work already completed, while recognizing the needed commitment to landscape-scale planning as the next strategic step forward. Therefore, we the undersigned resolve to support and implement this amendment to the 2014 Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy.

  
Jeff Marsolais, Forest Supervisor  
US Forest Service – LTBMU

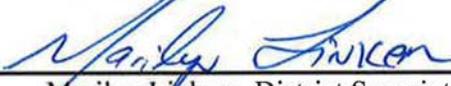
  
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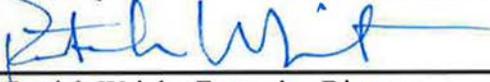
  
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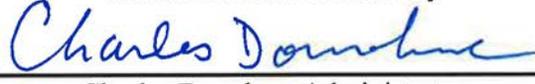
  
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**Amendment to the 2014**

***Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy***

April 28, 2017

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**1. Purpose of this Amendment**

The purpose of this amendment is two-fold: first, to ensure the 2014 *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy (2014 Strategy)* meets the intent of the original 2007 Strategy to include all lands throughout the Lake Tahoe Basin (Basin); and second, to ensure that the 2014 Strategy addresses general forest analysis through collaboratively developed, landscape-scale fuels reduction and forest restoration planning efforts, encompassing the Wildland Urban Interface (WUI) as well as general forest of the Basin.

**2. Need for an Amendment**

Sixteen public agencies and fire departments developed the 2007 *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy (2007 Strategy)* to reduce the probability of catastrophic fire in the Basin, and to comply with the White Pine County Conservation, Recreation, and Development Act of 2006 (White Pine Act). A critical component of the 2007 Strategy required that “accumulations of vegetative hazardous fuels surrounding the Community Defensible Space should be reduced in the general forest,” which acknowledged the important relationship between the WUI and surrounding landscape.

Seven years later, the agencies and departments updated the Strategy to reflect new policies and treatment strategies, including the 2011 *National Cohesive Wildland Fire Management Strategy*. Accordingly, the goals of the updated 2014 Strategy included restoring and maintaining fire-resilient landscapes, creating fire-adapted communities, and providing effective and efficient wildfire response. Despite the goal of restoring and maintaining fire-resilient landscapes, however, the 2014 Strategy unintentionally omitted the general forest as a

key component of the 2007 Strategy and compliance with the White Pine Act. The same is true of the 2015 *Lake Tahoe Basin Community Wildfire Protection Plan (CWPP)* that implements and has the same goals as the 2014 Strategy. This discrepancy between the goal of restoring fire-resilient landscapes and the lack of general forest prescriptions is the primary reason for this amendment.

### **3. Goals of Landscape-Scale Fuels Reduction and Forest Restoration**

Fire districts throughout the Basin have achieved national recognition for their success in implementing fuel treatments and safeguarding their communities. However, three trends in the Basin make it urgent to shift from assessing, planning, and implementing treatments at the scale of individual projects to the scale of entire landscapes.

- First, the number of recreational visitors to the Basin continues to increase each year, meaning that more people are out and about in the general forest, both heightening the chance of accidental ignitions and placing more people at risk during a wildfire.
- Second, the natural growth of vegetation and commensurate hazardous fuels is steadily outpacing the ability of land management agencies to complete project-by-project environmental review and treatment for the general forest. This can amplify fire behavior and also reduces the effectiveness of previous investments.
- Third, the changing climate is increasing the frequency of uncharacteristically large high-severity fires in the Sierra Nevada. Mean and maximum fire size, and the total area burned annually have risen substantially since the early 1980s (Miller et al. 2012). Annual fire reports issued by the National Interagency Fire Center (NIFC) show a substantial increase in the number of wildfires greater than 100,000 acres in size that have occurred in a given year since the early 1980s (NIFC). Furthermore, the costs of controlling wildfires continue to show a drastic increase (Thompson et al. 2013).

While historical fuel treatments have focused on the lands within and immediately surrounding communities, the three aforementioned trends require adopting a landscape-scale approach to future fuel treatments. This modification will not compromise WUI fuel treatments currently being planned or implemented, nor future treatments that will be needed to maintain and enhance fuels reduction efforts and other resource conditions in the WUI. Rather, adopting a more cohesive and comprehensive approach will demonstrate that ensuring public safety within the WUI is not only compatible with, but enhanced by treating fuels and restoring the general forest at the landscape scale.

Building on the 2014 Strategy, working collaboratively at the landscape scale to reduce fuels and restore forests will allow fire districts and land management agencies to achieve the following goals:

1. Reduce the risk posed to communities by large and damaging wildfires in the general forest.
2. Simultaneously restore the range of social and ecological values inherent in the general forest, including resilience to fire disturbances.
3. Regularly anticipate and plan for multiple years into the future, including beyond the time when initial entry into today's priority WUI fuels treatments are implemented.
4. Better integrate the planning and implementation of work across the WUI and the general forest, and thus allocate staff and resources more efficiently.
5. Obtain greater certainty about future workloads, and thus consistently maintain the appropriate level of staff capacity necessary to complete and maintain fuel and restoration treatments.
6. Provide greater certainty to contractors about future workloads, and thus build the supply chains and infrastructure necessary to achieve economies of scale.
7. Increase community understanding and acceptance of how both the WUI and the general forest contribute to fire safety in fire-resilient landscapes.
8. Strengthen the relationships between communities, departments, and agencies necessary to respond to crises and adapt to basin-wide changes with minimal disruption.

#### **4. How Working at the Landscape Scale Improves Community Wildfire Protection**

Fuel treatment efforts are primarily applied to reducing wildfire risk within the WUI defense zone, which includes areas within the community and generally extends for 0.25 miles beyond the edge of a community, as well as the threat zone which is an extension of the defense zone. This strategy follows logic as these areas are within and immediately adjacent to communities where lives, property, and infrastructure are concentrated. Fuel treatments in these areas are designed to reduce fire behavior to allow firefighters to operate in a more safe and effective suppression environment. However, landscape-level wildfire risk analysis may identify untreated areas outside the WUI which pose a significant risk to communities. Such areas may show elevated risk to a community due to many factors including a high density of historic fire ignitions, hazardous fuel accumulation, and topographic and/or dominant wind direction alignments. Treating areas of high risk in the general forest will increase the ability to stop or slow potential future fires before they reach WUI treatments that serve as the last line of defense to communities. Strategically placed large area treatments (SPLATS) implemented at a landscape scale in the general forest are effective at interrupting fire spread and reduce spread rates and fireline intensity (Finney 2001, Schmidt et al. 2008, Collins et al. 2010, Hudak et al. 2011, Fry et al. 2015).

In addition to reducing spread rates and fireline intensity, fuel treatments outside the WUI reduce crown fire activity. Reducing crown fire activity decreases ember production that can lead to spot fires or the direct ignition of structures at great distances downwind from the fire front. Spot fire distances in the Angora fire were estimated at ¼ mile downwind (Murphy et al. 2007). Under extreme fire weather conditions spotting distances of over ½ mile are common. Spotting ignitions ahead of the fire can break established defense lines, which can result in unpredictable fire spread (Koo et al. 2010). Additionally, embers landing on and adjacent to homes and other structures can be a direct source of ignition resulting in damage or loss. The Angora Fire Assessment (Murphy et al. 2007) states that fuel treatment units effectively reduced the fire to a surface fire, and reduced the number of embers impacting houses. “Without the fuel treatment, the ember impact zone would have been several hundred yards further into the subdivisions” (Murphy et al. 2007, page 15).

## **5. How Working at the Landscape Scale Improves Fire Resilience and Forest Health**

Meeting the Strategy goal of restoring and maintaining fire resilient landscapes includes addressing forest health and resilience at the landscape scale, including the general forest. Forest ecosystems in the Lake Tahoe Basin were shaped by frequent natural disturbances including mostly fire, insects, and drought. It is well established that vegetation conditions in the Basin have been degraded by past management activities, including timber harvesting that occurred in the mid- to late 1800’s, and the aggressive fire suppression policy that has existed for the past 100 years. Forest structure in the Basin is considerably more homogenous and dense than what existed during pre-European times (Beaty and Taylor 2008, Maxwell et al 2014). Restoration efforts through reduction of forest fuels, understory vegetation, and tree densities to more natural levels has been found to increase forest resilience to wildfire, and other stressors such as drought (van Mantgem et al. 2013) and bark beetle outbreak (Hood et al. 2016). Restoration for reduction of fire risk and improved forest health must also be tailored to meet the goal of maintaining wildlife habitat by achieving targeted levels of heterogeneity in tree density, age, and species composition which meets the known requirements of local wildlife (North et al. 2009). As fuel loads continue to increase, and with the projected increases in fire frequency and severity, the current scale and implementation rate for fuel treatment projects is well below what will be necessary to make a meaningful difference across the Lake Tahoe landscapes (North et al. 2012). Increasing the pace and scale of treatments is desirable in order to fully protect communities and other values at risk identified in the 2014 Strategy.

The changing climate is an additional factor that is affecting forested ecosystems of the Lake Tahoe Basin and associated disturbance regimes. The increasing temperature trend has resulted in an increase in the length of wildfire season in the Western U.S. (Westerling et al. 2006), and increasing area burning at uncharacteristically high severities (Miller et al 2012, Steel et al. 2015). Increases in the frequency, size, and severity of wildfires burning in forested ecosystems leads to further releases of carbon into the atmosphere, contributing to a feedback

loop that further propagates the trend (North and Hurteau 2011). In addition to the goals of community protection and promoting ecosystem resilience, increasing the pace and scale of restoration on all-lands within the Basin is needed to meet goals for maintaining air quality, and improving future carbon sequestration capacity of the forest (Hurteau and North 2009, Krofcheck et al. 2017).

## **6. Incorporating Landscape Plans by Reference Into the 2014 Strategy**

This section describes the process for including landscape-scale fuels reduction and restoration plans, including the general forest, into the 2014 Strategy, as well as the next anticipated Strategy update in 2024.

- Upon completion of a landscape-scale plan, the series of projects endorsed by the agencies, departments, communities, and associated stakeholders will be incorporated by reference into the Strategy. This will include a formal ratification process by all signatories to the 2014 Strategy and any new stakeholders approved to be signatories to the strategy.
- Each initiative will encompass both the WUI and general forest, improve the health and safety of communities, and improve forest health and resilience.

The map and timeline on the following pages provide examples of the potential timing, duration, and sequencing of project planning and project implementation for four landscape-scale plans. Actual timing, duration, number of plans, and sequencing will be determined in the future. Similarly, the boundary lines provided illustrative examples only; actual boundaries will require careful development based on a combination of ecological, social, and jurisdictional considerations.

Consistent with the 2007 Strategy and 2014 Strategy, each initiative will place a premium on interagency and stakeholder collaboration. This is because working at the landscape scale crosses multiple land management and regulatory agency jurisdictions, includes a patchwork of private lands, and involves diverse public resources that a wide variety of people care about (for example, recreation facilities and various types of trails). Although it takes significant investment up front to build relationships and consensus, collaborative efforts involving multiple agencies and stakeholders are the key to treating fuels and restoring ecosystems across entire forest landscapes.

Lake Tahoe North

Planning:  
2023-2025

Implementation:  
2026-2032

Lake Tahoe West

Planning:  
2016-2019

Implementation:  
2020-2026

Lake Tahoe East

Planning:  
2021-2023

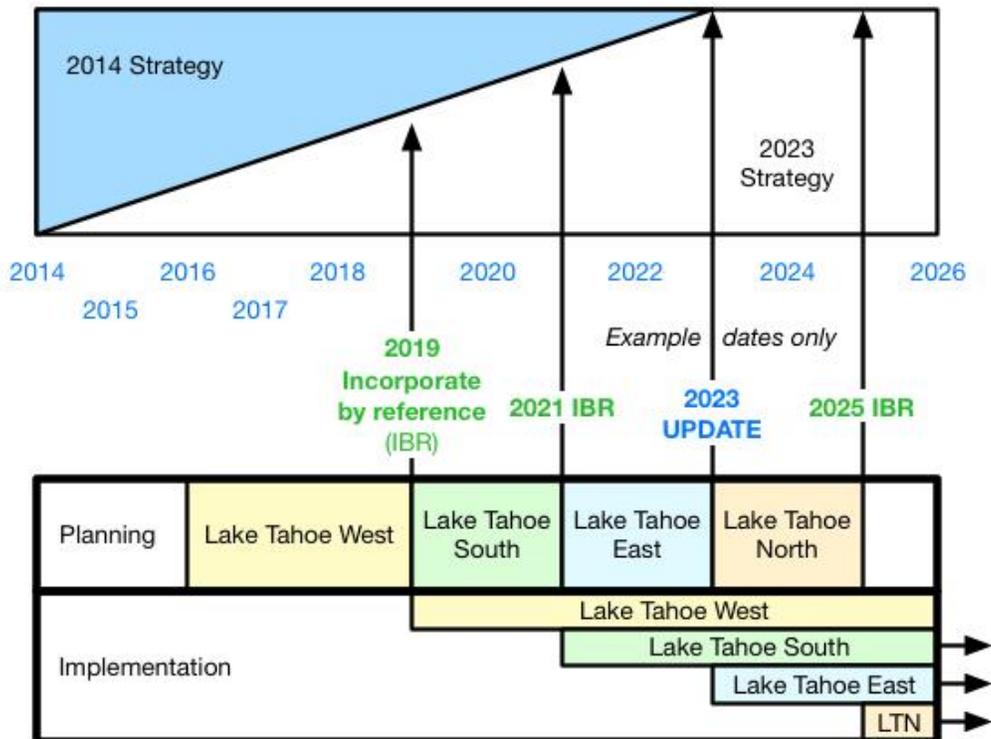
Implementation:  
2024-2030



Lake Tahoe South

Planning:  
2019-2021

Implementation:  
2022-2028



Partners will continue to implement projects within the WUI consistent with the 2014 Strategy, and, until such time as each regional landscape-scale initiative is completed, within the general forest as described in the 2007 Strategy. Additionally, agencies and departments may be required to continue planning and implementing other projects as necessary to meet internal needs and objectives or comply with policy and law. The collaborative planning process provides a framework to incorporate collective support and coordination needs across programs, informing the overall multi-jurisdictional program of work on the landscape-scale.

The Lake Tahoe West Restoration Partnership (*Lake Tahoe West*) is the first landscape-scale fuels reduction and restoration plan that will be incorporated by reference into the 2014 Strategy. Stakeholder engagement on the project is underway, with the expectation that agencies, departments, communities, and other associated stakeholders involved will endorse a restoration project or projects covering the west shore of the Basin, likely in the spring of 2019.

- Launched in the autumn of 2016, Lake Tahoe West is a five-agency effort involving over 30 additional stakeholders representing a wide range of interests, including the lead agencies signatory to the Strategy.
- The initiative involves assessing the resilience of the landscape (2017), developing a landscape restoration strategy (2017-18), and planning one large or possibly a series of forest restoration projects (2018-19) that all tier directly from the assessment and strategy.
- Fuels conditions and treatment options will be central components of the assessment and strategy. Projects will include fuels treatments in the general forest, and will complement – and when possible, enhance the resource values of – the existing WUI treatments within the project boundary.
- Implementation and monitoring is anticipated to begin in 2020 or 2021, and continue for several years.

Lake Tahoe West will serve as a pilot that develops frameworks, modeling results, and templates which subsequent initiatives can adapt to their unique circumstances. These tools should make it possible for the subsequent initiatives to proceed more rapidly through assessment, strategy, project planning and implementation, and monitoring.

Subsequent landscape-scale fuels reduction and restoration plans to be incorporated into the Strategy are anticipated at the conclusion of project planning for Lake Tahoe South (approximately 2021), Lake Tahoe East (approximately 2023), and Lake Tahoe North (approximately 2025).

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**Date:** MAY 02 2017

John Ruhs  
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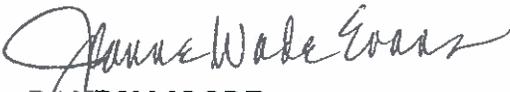
Dear Mr. Ruhs:

Enclosed is the April 2017 amendment to the 2014 Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy (the Strategy).

The Strategy was prepared to comply with the White Pine County Conservation, Recreation, and Development Act of 2006 (Public Law 109-432) [H.R. 6111], which amended the Southern Nevada Public Land Management Act of 1998 (Public Law 105-263). This amendment has been reviewed and approved by all 2014 Strategy signatory officials. On behalf of the US Forest Service Lake Tahoe Basin Management Unit (LTBMU), I am pleased to approve the April 2017 amendment to the 2014 Strategy.

If you have any questions about the Strategy or the amendment, please give me a call at (707) 562-9000.

Sincerely,

  
for RANDY MOORE  
Regional Forester Pacific Southwest Region

Enclosure

cc: Barnie Gyant, Jeff Marsolais

