

# **FRANKLIN TRAIL**

## **Trail Assessment, Analysis And Plan of Work Phases I and III**



Report Prepared For:  
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and  
UNITED STATES FOREST SERVICE  
Los Padres National Forest  
Santa Barbara Ranger District  
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December 1, 2018



Upper Franklin Trail. December 15. 2018

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## PART 1 PROJECT OVERVIEW

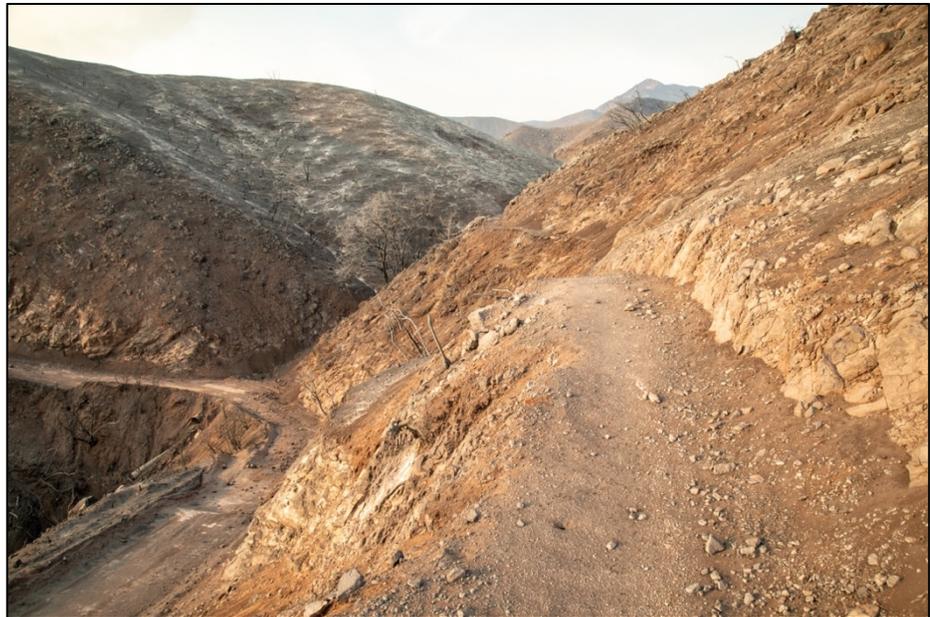
### I. INTRODUCTION

On Monday night December 4, 2017 the Thomas Fire began nearly 40 miles away near the town of Santa Paula. Within two days the fire moved rapidly towards the city of Ventura and also spread west, crossing Highway 33 in a number of locations and within the next two days moved further west towards Santa Barbara County.

Three days later on the evening of December 7 a massive fire front blew through Matilija Canyon, quickly rushed over Murietta Divide and then ran down the upper part of the Santa Ynez watershed, burning the brush on both sides of Jameson Reservoir and consuming everything below the dam to the Camuesa jeepway, including the Dam Caretaker's cottage.

Sundowner winds then pushed the fire south towards the ocean, burning most of the Alder Creek drainage and then the front side of the mountains, reducing everything behind Carpinteria, including the Santa Monica, Sutton and Carpinteria creek watersheds to mineral soil.

As a result of this destruction, arguably, the Franklin Trail has been impacted more by the Thomas Fire than any other within the burn area.



*Pict 1. Traverse directly above the trailhead road has been completely stripped of vegetation, leaving a 30-50 foot drop with no protection should you go off the trail.*

- Almost 100% of the vegetation along the entire length of the Franklin Trail has been completely burned away.
- Lack of brush on the downhill side of the trail has made a large portion of the trail dangerous, if not life threatening, with tumbles up to 200-300 feet on the steepest sections possible.
- The tread width has been reduced by as much as 50%, with the average width less than 18". Uphill slumping has caused part of the problem but without vegetation to hold it in place the outside berm has eroded away or is very fragile along more than 50% of the trail.

- Widening the trail will be difficult in place due to the embedded rock. Along a large portion of the trail crib walls or armoring will be required to secure the outside edge of the trail.



*View of Santa Ynez Mountains along which the Franklin Trail leads to the crest prior to the Thomas Fire.*



*Picts 2-3. The upper image along a nice long section with a canopy of chaparral to walk through. Below only scattered sticks remain from the thick brush shown above. The entire 2.9 miles of trail and surrounding brush have been burned to mineral soil in similar fashion.*



*Pict 4. Kim Fly surveys the damage to the Lower Franklin Trail a few days after the Thomas Fire passed over it. Almost all of the vegetation on the lower part of the trail was burned to mineral soil.*

## II. MANAGING THE RESTORATION EFFORT

Restoring the Franklin Trail to safe and sustainable use presents many challenges. The most seriously impacted by the Thomas Fire has been the upper part of the trail, known as the Phase 3 section. The topography is extremely steep, the trail constructed along the side of a long narrow ridgeline that has numerous dangerous dropoffs. Complicating the restoration process, the trail was constructed at a grade — averaging 15% with many sections ranging from 20-30% — that far exceeds sustainability standards.

Prior to the Thomas Fire, the key feature maintaining the trail stability was the thick chaparral canopy, whose root structures held the soil in place and overstory broke the rain's fall, lessening its ability to erode the hillsides and providing protection from a long fall should a trail user fall off the trail. Without that protective layer of brush in place, almost all of the 2.69 miles of the Franklin Trail are prone to erosion, are dangerous for all users and without both short and long-term management efforts, could be damaged to the point that portions of the trail may be lost.

Key to the management effort (short or long term) is developing a restoration plan that focuses on dealing with hillside instability, erosion control and maintenance of the trail tread over the next 1-2 years until the vegetation begins to recover sufficiently and a

longer-term plan to improve sustainability to the point that the trail can be maintained over time and is safe for multiple use.

### III. FACTORS IN PLAY

For the short-term restoration effort, the following should be taken into account in understanding what is needed and what it will cost to minimize impacts while conditions are relatively unstable.

1. The majority (60%+) of the tread on the Phase 3 part of the Franklin Trail as noted above is less than 18" in width, with much of this littered with rock or other debris. This has been caused by the slumping of ravel material down onto the tread and the loss of the outside edge of the trail due to erosion caused by the storm which created the massive debris flow in the Montecito area.

Most of the tread edge is now extremely fragile, prone to failure if stepped on and will most likely erode further without armoring to protect it. While the slump material can be removed, complicating the need to widen the tread is the amount of rock that will need to be chipped away on the backslope to accomplish this and length of trail edging that will need to be armored.

Project Focus: Widening the tread to a minimum width of 36" where possible and up to 42" to provide space for users to pass one another and account for additional slumping; armoring the outside edge of the tread with rock; addition of crib walls where needed to create a 36" wide tread and along locations where the downslope exceeds 80% or rock is not available for edge armoring.

2. While the argument can be made that the slump material will continue to move down onto the trail for several more years and it might be better to wait at least another year to consider tread work, without an immediate effort to widen the tread, stabilize it and armor the outside edge, users will be forced to the outside edge of the trail where the tread is most fragile and the danger of falling off the greatest.

Project Focus: Removing slump material now while it is easy to move; clearing the backslope and area immediately above of rock and other loose material to prevent more slumping.

3. Along with protecting the tread from further damage, restoration of existing water control features and adding new ones as needed is critical to stabilizing the trail as soon as possible. In addition to these features, there are also numerous side gullies and spots where the trail has washed out that will require construction of crib walls or other protective measures and these should be dealt with as soon as possible.

Project Focus: addition of well-designed dips in the appropriate locations to check the flow of water off the trail; and outsloping to sheet it off in between the dips.

4. It is important to restate that presently; the Phase 3 section of the Franklin Trail is too dangerous for either equestrian or mountain bike use. Without a serious effort to widen the tread, armor the trail edge and increase the number of spots where users

can pass one another safely this analysis indicates that the trail will be extremely dangerous for either equestrians or mountain bikers to use it.

Project Focus: focus the work on providing as safe as possible use of the Franklin Trail for those traveling by foot; removing the existing slump minimizing additional slump coming down from above; armoring the outside edge of the tread; and creating well designed dips at regular intervals and the most appropriate locations



*Pict 5. November 2018, just 11 months later, light brush is beginning to cover parts of the hillsides and start the stabilization process. Restoration now will help sustain this process.*

#### IV. HISTORICAL OVERVIEW

The Franklin Trail is one of our area's oldest trails, having been constructed in 1913 by the Forest Service and support from the Carpinteria community. For many years the trail was one of the most popular ways to access the backcountry, climbing over the crest of the Santa Ynez Mountains and dropping down Alder Creek to an area known as Billiard Flats, not too far from the present site of Jameson Reservoir.

The Franklin Trail provided access for decades for many an outdoor adventurer, hunter, fisherman and backcountry explorer for many decades until things began to change after World War II, especially as avocado ranching became more and more prominent.

In Carpinteria, ranches such as those owned by the Franklin families and others began to change hands and this shift in ownership accelerated in the early 1960s when the Carpinteria Valley became a mecca for commercial flower growing. Over time a wide swath of valley land stretching along the base of the mountains from Santa Monica Canyon east to the County were developed either for avocados or nursery related businesses. By the mid 1970s, public access to the mountains ground to a halt.

By the 1980s, fate of the Franklin Trail was held in the hands of three property owners: Johannes Flowers, the Horton Ranch and a large 3,000+ acre holding above known as Rancho Monte Alegre, owned by RMA Partners VI (RMA). The question was whether easements through the three properties might ever be established. Of these, the Monte Alegre property was the first that the County and its Riding and Hiking Trails Advisory Committee (CRAHTAC) began to look at since it stretched from the top of the first knoll behind the high school to national forest owned land further inland.

Eventually after a number of battles, both in court and in the political arena, an easement was confirmed through the property but only under the condition that it be fenced on both sides for its entire length. Clearly that was not a practical option and for the 1980s and 1990s, there was little progress in re-opening the trail.

However, things changed in the early 2000s when the Land Trust for Santa Barbara was able to reach agreements with all three of the above-mentioned property owners to establish easements through which the trail could pass, though it would be several years before all of the easements were secured and restoration of the trail could begin.

##### Re-opening the Franklin Trail

To facilitate re-opening the trail, the effort was divided into three phases with the goal of getting the first mile of the trail opened as soon as possible, to work on updating the easement through the RMA property so it could be opened and working with the Forest Service to obtain permission to restore the upper part of the trail on their property.

##### Phase 1

This phase focused on securing easements around the perimeter of Carpinteria High School and Johannes Persoon Flowers properties and identifying an agreeable route on Horton Ranch for construction of approximately a mile of single track trail. The goal was to provide the Carpinteria community with access to a portion of the trail while the other two phases

were being negotiated. Funds for the construction were secured by a local non-profit, *Friends of the Franklin Trail*, work on the trail was begin in late May 2013 and the Phase I section of the Franklin Trail was opened in July 2013.

#### Phase 2

The Phase 2 section of the Franklin Trail winds through parts of several jeep roads for 3.2 miles, constructed in part by Rancho Monte Alegre and part by Southern California Edison for access to a number of their powerlines. While already in reasonably good condition, public access could not be granted by RMA until the fencing requirement required by the previous court settlement, was removed and a new agreement established.

With the opening of the Phase 1 section of the trail, the overwhelming popularity of the trail and increased interest from the public in opening the Phase II section, discussions relating to the easement were re-started between RMA and the County of Santa Barbara. The main hindrance in finalizing the agreement was the requirement to fence the trail along the entire portion of the RMA property. Eventually this and other issues were resolved and in April 2015 the Phase II section was opened as well.

#### Phase 3

Concurrently with work on the Phase 2 part of the trail, in early 2014 the Santa Barbara County Trails Council (SBCTC) received permission from the Santa Barbara District Ranger, Pancho Smith, to cut a p-line along the historic route and proceed with environmental review needed to get permission for the final restoration.

Work began in early 2014 on the p-line, continued through late spring 2014, and was completed on January 31, 2015. The "Minimum Negative Declaration" (MND) required for work to proceed on the 2.9-mile Phase 3 part of the trail was granted in December 2016. Restoration of the trail began in January 2017 and was completed later that Spring.

## V. FRANKLIN TRAIL OVERVIEW

The Franklin Trail is composed of three segments that lead from the northwest corner of Carpinteria High School. The trail is 7.9 miles long, and ranges in elevation from 35 feet at the high school to 3,718 at the crest of the Santa Ynez Mountains.

### A. Trail Name (& USFS#)

- Franklin Trail — 25W09

### B. Trail Phases

#### 1. Phase One

This segment is 2.08 miles long. The trail begins at the southwest corner of Carpinteria High School and follows the west and north perimeters around the school for .43 miles. It then continues across a bridge and around the west and north perimeter of the Persoon Flower buildings for an additional .22 miles to the point that it transitions from a 6-foot-wide path to single track. From this point the trail winds its way up a long, thin ridge to the beginning of the RMA property and the beginning of a jeepway road.

#### Trail Details

- Trail Manager — Santa Barbara County Parks & Recreation
- Length, Elevation Gain/Loss — the trail segment begins at an elevation of 35 feet at the high school and ends at an elevation of 636 feet where it intersects the Edison jeepway. The lower half of the trail is relatively level with an average grade of less than 5%. The upper single-track portion of the segment is steeper, averaging close to 15%, with the middle part of the trail over 20%.
- Classification — Multiuse. The trail is open for all non-motorized use, including hiking, trail running, equestrian riding and mountain biking.
- Ownership
  - All of the land within the Phase One segment cross private land. Easements through the properties are held by Santa Barbara County.
  - Private Ownership
    - Carpinteria Unified School District  
1400 Linden Avenue, Carpinteria CA 93013  
004-004-031
    - Johannes Persoon  
Parcel APNs 004-004-042, 004-004-043, 155-260-026 and 155-260-027

# Franklin Trail Phases



## 2. Phase Two

The Phase 2 segment is 3.34 miles long. The trail begins at the point where the Phase 1 single track trail intersects the Edison jeepway and continues along the jeepway to a point where the Phase 3 section of the trail begins. The jeepway is maintained by Southern California Edison, but the County has the responsibility for several benches and trail markers along the way.

### Trail Details

- Trail Manager — Santa Barbara County Parks & Recreation. The jeepway is maintained by Southern California Edison. Currently, local Carpinteria volunteers maintain the signs and benches on behalf of County Parks.
- Length, Elevation Gain/Loss — the trail segment begins at an elevation of 636 feet where the Phase 1 single track intersects the Edison jeepway and ends at an elevation of 1,705 feet where the upper Forest Section part of the trail begins. Though the gain is slightly over 1,000 feet, this is deceptive because the jeepway traverses across a series of small drainages and crosses Sutton Creek, in each adding several hundred more feet of elevation gain.
- Classification — Multiuse. The trail is open for all non-motorized use, including hiking, trail running, equestrian riding and mountain biking. The jeepway is also used by RMA, Edison and others authorized to so by RMA.
- Ownership
  - All of the land within the Phase Two segment cross Rancho Monte Alegre land. Easements through the RMA parcels are held by Santa Barbara County.
  - Private Ownership — RMA is composed of multiple parcels and the trail crosses through several of them.
    - RMA is owned by Garrison Rancho LLC.  
1350 Avenue of the Americas  
New York, New York 10019
    - Maxinet Hopkins (owns a small parcel near the top of Phase 2 segment)  
Parcel APN 155-190-053  
C/O Michael Olyon, 3423 Carpinteria Avenue C, Carpinteria CA 93013

## 3. Phase Three

This segment is 2.69 miles long. The trail begins along an upper part of a jeepway spur that ends at one of Edison's power towers and a nearby County Flood Control automated rain gauge. This segment is entirely on property owned by the Forest Service. This segment is also the only remaining part of the original trail constructed in the early 1900s.

The first 2 miles of the trail traverses the side of a narrow, thin ridgeline to the point where it reaches a steep headwall. Beyond this point the trail zig zags back and forth up a set of seven switchbacks to the crest.

#### Trail Details

- Trail Manager — Los Padres National Forest, Santa Barbara Ranger District
- Length, Elevation Gain/Loss — elevation at the beginning of the segment is 1,705 feet and 3,718 where it intersects the crest of the Santa Ynez Mountains, a gain of slightly more than 2,000 feet.
- Classification — Multiuse single track. The trail is open for all non-motorized use, including hiking, trail running, equestrian riding and mountain biking.
- Ownership
  - All of the land within the Phase Three segment is located on Forest Service property.

## VI. GENERAL ENVIRONMENTAL/TRAIL OVERVIEW

- Watershed Information — The third of the Franklin Trail is located within the Franklin Creek watershed, then once it climbs over the high escarpment located behind Carpinteria, the trail (jeepway at this point) continues north and down across a series of small drainages that flow into Sutton Creek and eventually crosses Sutton Creek itself. Other than these locations, all of the Franklin Trail are outside the riparian areas.
- The trail follows a long ridgeline between Sutton and Carpinteria creeks running predominantly along the western and northwestern edge of the ridge for the first two miles. The trail ranges from 50 to 150 feet in elevation below the ridgetop.
- Unlike most other front country trails, until the final last 700-foot climb to the crest, where there are numerous switchbacks, there is only one other switchback along the first 2.4 miles of the Phase III trail.
- Partly this may be due to desire of those constructing the trail to reach the rest in as short a distance as possible, but primarily it is due to the sharpness of the ridge and the steepness of the side slope — often in excess of 60%, makes addition of switchbacks almost impossible to construct or maintain.

## VII. HISTORIC EASEMENT INFORMATION (*Trail Right of Ways*, 1993)

The following information was compiled by Kerry Kellogg, then Recreation Tech for the Santa Barbara Ranger District. While the information is now out-of-date, the court battle mentioned below helped define the conditions under which the County might obtain a legal easement for the trail and served to delay that possibility for several decades until new owners and new conditions made it possible to resolve the situation.

- Santa Barbara County won a court decision (4/90) for a trail R/W on approximately 2.5 miles on the existing Edison access road (Stegal property then, now RMA). The County must construct a fence on both sides of the road as a condition to the decision.
- The R/W still is needed for remainder of Edison road from the Stegal property line to Foothill public road. There are three additional properties south of the Stegal property. Easement deeds are needed from property owner Horton and Carpinteria High School to complete public access needs. The school owns 36 acres that could act as the trailhead for this trail. Santa Barbara County is involved in discussion with the school at this time (9/15/91).
- Santa Barbara County has a deeded easement with property owner Persoon. The maintenance of the northern portion of the trail (Alder Creek) is ongoing, last maintenance to south side 15+ years.
- Status: The Forest Service does not want maintenance responsibility of the chain link fence and section of trail located outside the Forest Boundary. This trail portion is a road and added maintenance is expected. Forest Service does not want the R/W on this section.

## VIII. MULTIUSE POTENTIAL

For both short and long-range planning, serious consideration needs to be given to matching the level of work proposed with the expected future uses of the trail, especially given the impacts created by the fire and flooding.

Currently, both Phase 1 and Phase 2 of the Franklin Trail are minimally accessible for mountain bike and equestrian use. The work proposed for the Lower Trail will provide increased accessibility once, the tread damage has been repaired, the slump material removed and the numerous switchbacks widened and extended.

However, the Phase 3 segment of the Franklin Trail currently is at best minimally (and not safely) accessible for foot traffic. The impacts noted above to the majority of the upper trail make it extremely difficult if not completely unsafe for mountain bike or equestrian use.

After conducting extensive surveys of all three of the trail segments, this report recommends the following:

- Phase 1 and 2 segments. Focus restoration on improving trail conditions this year and maintaining them over time for foot travel, equestrian use and mountain biking.
- Phase 3 segment. Focus restoration on improvements for foot travel this year (2018-19) and begin more intensive restoration in Year 2 (2019-2020) to expand use to include equestrians and mountain bikers, with the goal of providing access for all groups in Years 3-4.
- Years 4+. Transition to a regular maintenance program for all three phases.<sup>1</sup>



*Pict 6. Mountain biker at the beginning of the single track looking at the trail damage a few days after the Thomas Fire burned this part of the trail.*

*Because the lower trail was not damaged as significantly as the upper trail, the lower trail should be able to be restored for multiple use in early Winter 2019.*

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<sup>1</sup> Plan of work in Years 2-4 will be dependent on obtaining funding for the restoration. Currently, sufficient funding is in hand for a large portion of the work required for the 2018-2019 season.

## IX. PERMITS & APPROVALS

Conducting restoration and maintenance on all three phases of the Franklin trail requires both approved access by the private property owners through which the trail passes, most probably approval by Southern California Edison for access through over their easements and permit approval by Los Padres Forest and Santa Barbara County Parks for restoration work or follow up maintenance.

### Permits

1. Los Padres Forest, Santa Barbara Ranger District  
Contact: Pancho Smith, District Ranger  
Cell: (805) 448-0276  
Email: jsmith03@fs.fed.us  
District Ranger Office: (805) 967-3481
2. Santa Barbara Parks & Recreation  
Contact:  
Cell: (805) xxx-xxxx  
Email:  
Office:

### Approvals

- Southern California Edison  
Contact:  
Cell: (805) xxx-xxxx  
Email:  
Office:
- Rancho Monte Alegre  
Contact: Stewart Welch, Ranch Manager  
Cell: (805) xxx-xxxx Email: stewart.welch@gmail.com  
Office:
- Johannes Persoon Flowers  
Contact:  
Cell: (805) xxx-xxxx Email:  
Office

## X. TRAIL CREW & EQUIPMENT

Depending on funding, the project envisions use of a wide range of equipment and crew capabilities to meet the challenges posed by the Franklin Trail restoration work. These include crews experienced in sustainable trail practices and heavy equipment to deal with the movement of large amounts of soil, rock work and the like.

Trail Crew Leader. Is experienced in leading basic trail maintenance projects as defined by USFS Trail Management Objectives; trail restoration projects that may include conversion of waterbars to knicks or dips, adding new erosion control features as needed and other trail management practices as recommended in this report; and new trail construction that use sustainable trail design methodologies.

Trail Crew Members. Are experienced in use of the techniques described above and are capable of using them without continual direct oversight. Are experienced in use of power equipment such as chain saws, hammer drills, portable generators and winching equipment.

Equipment Operator. Is experienced in the use of small trail-type tractors for use maintenance, restoration and new trail construction work using the trail management practices recommended in this report.

Equipment and Materials. The equipment list for maintenance and restoration for the project include:

- Hand Tools
  - McCleod
  - Pulaski
  - Shovel
  - Loppers
  - Rock Bars
  - Hand Saws
  - Grip Hoist (winch)
- Power Tools/Equipment
  - Chain Saw<sup>2</sup>
  - Portable Generator
  - Hammer Drill
  - Cutoff Saw

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<sup>2</sup> LPFA sawyers are certified through FS training. Certification is required to operate chain saws on LPFA project work.

- Chipper
- Heavy Equipment
  - Kubota K-018 Excavator or equivalent
  - Canycom or equivalent track loader
  - Vibrating Plate Compactor (Mikasa or equivalent)



*Pict 7. A section of the upper trail on February 18, 2108, two months after the Thomas Fire burned this area. There are hundreds of cubic yards of slump material that will need to be removed. Here the trail is extremely steep (grade from 24-32%) and from several inches to a foot of the outside part of the trail has been washed away, with nothing to hold it in place.*

## PART 2 PROPOSED ACTIONS

### I. Franklin Trail Survey & Analysis

A survey of the lower and upper single-track portions of the Franklin Trail were surveyed in September and October, 2018 to evaluate current conditions and to develop proscriptions for restoration of the Franklin Trail.

Analysis was done to gather information relating to trail grade, tread width, entrenchment, side slope and general overall condition. Due to variation in topography, geography and degree of damage caused by the fire and debris plows, the lower and upper trail segments were divided into smaller segments and data was collected for each.

This data was used along with visual examination of each segment to guide development of the restoration and long-term management plans for the Franklin Trail.

In general, the project proposes focusing on short term goals for Years 1-2 and transitioning to a longer more sustainable set of goals beginning in Year 2 and completing in Years 3-5. Funding and weather will be major determinants in how much of the short-term work can be done this winter and next.

### II. Lower Franklin Trail (Phase 1)

The work proposed for the lower part of the trail is primarily maintenance work and can be completed this winter. Baseline data should be collected again after completion of the work proposed below and used as a guide for future projects and to gauge the success of the project work.

The project proposes to complete work to mitigate the minor issues relating to the Thomas Fire and flooding and to do basic restoration work to bring the lower trail to multiuse capabilities. These include:

- Removing slump material to widen the trail to a minimum width of 36”.
- Removal of stumps and other impediments on or near the trail that may create unsafe conditions.
- Rework existing dips and add new ones as needed to minimize erosion.
- Widen and extend the switchbacks lessen trail grade and reduce trail damage.
- Remove exposed rock in the tread.
- Armor the outside trail edging where it has been damaged or lost due to fire and flood damage.

### III. Upper Franklin Trail (Phase 3)

The upper Franklin Trail on Forest Service property was much more seriously damaged during the Thomas Fire and subsequent debris flow. Exacerbating this is the fact that the upper trail is extremely steep, is located on a narrow ridgeline that has dangerous dropoffs and will be susceptible to further damage if work is not done this winter to stabilize the trail.

The project proposes to focus on short-term goals this winter for the Phase 3 segment to stabilize the trail as much as possible and protect it against further damage, with a major emphasis during Year 1 of the restoration effort geared towards accessibility for foot travel:

- Removing all existing slump material to the extent possible.
- Clearing loose materials on the slopes above the trail.
- Chipping into the uphill edge of the trail to widen it as much as possible to widen the trail, especially where there are dangerous dropoffs.
- Adding crib walls and/or rock armoring to create additional tread width or protect the trail edging.
- Rebuild dips and other erosion control features and construct new ones where needed to protect against damage this winter and be effective in moving water off the trail for Years 1-3.



*Pict 8. Gordon Jenkins uses a portable jackhammer and generator to widen a part of the upper Franklin Trail in 2016 as a part of our initial restoration of the trail. Equipment like this will be used to remove slump material and chip into the hillside to widen the trail.*

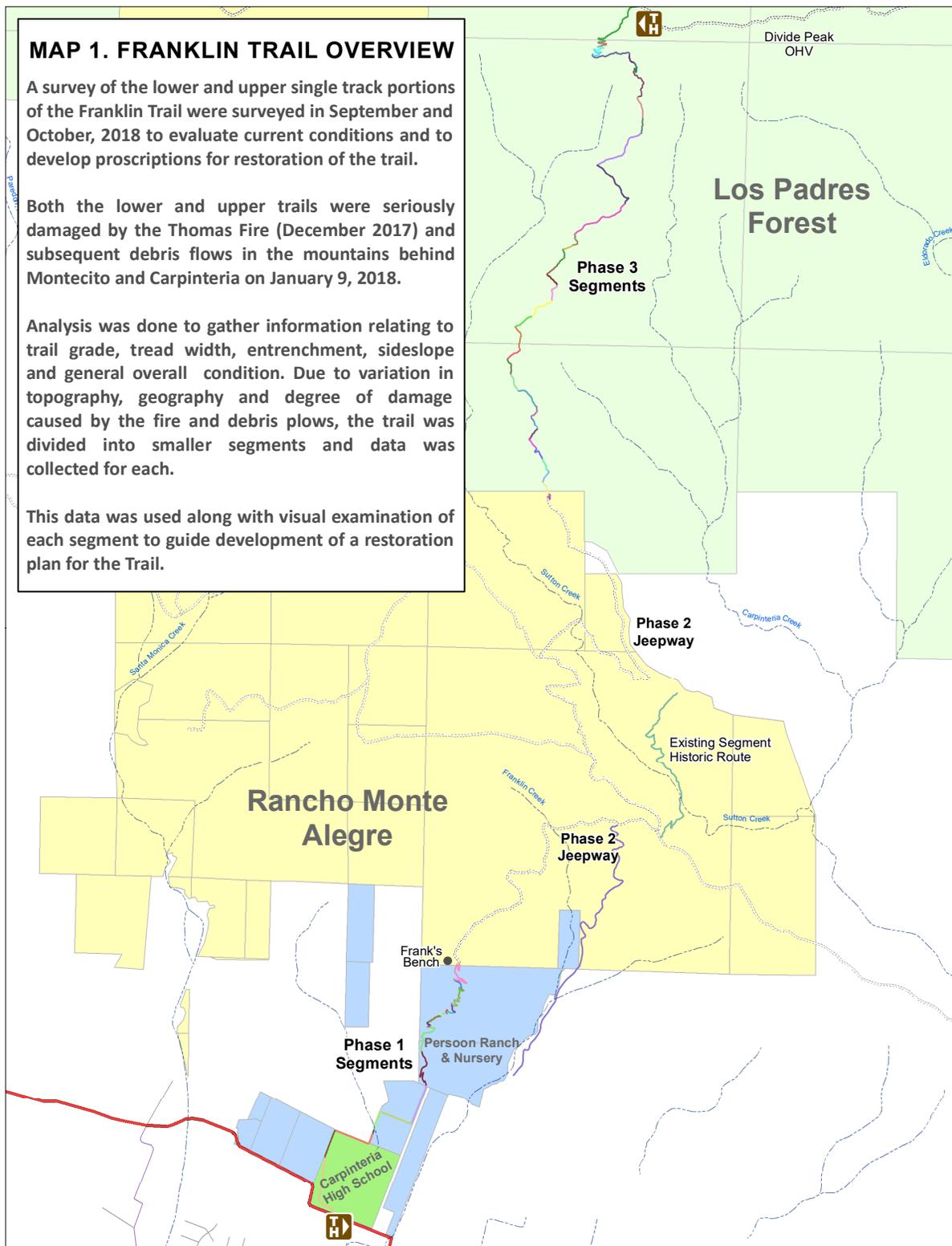
## MAP 1. FRANKLIN TRAIL OVERVIEW

A survey of the lower and upper single track portions of the Franklin Trail were surveyed in September and October, 2018 to evaluate current conditions and to develop proscriptions for restoration of the trail.

Both the lower and upper trails were seriously damaged by the Thomas Fire (December 2017) and subsequent debris flows in the mountains behind Montecito and Carpinteria on January 9, 2018.

Analysis was done to gather information relating to trail grade, tread width, entrenchment, sideslope and general overall condition. Due to variation in topography, geography and degree of damage caused by the fire and debris plows, the trail was divided into smaller segments and data was collected for each.

This data was used along with visual examination of each segment to guide development of a restoration plan for the Trail.





*Picts 9-10. Above, the completed restoration work in 2016 and below the same spot on Dec. 15, 2017, two days after the area burned. Much of the upper trail is in similar condition.*



*Picts 11-12. Above original restoration work needed to widen the trail for multiuse. Below, widening the trail is much more difficult when rock is encountered. In many locations the trail edge has been lost and the tread is now very narrow. Armoring the trail edge to protect it will be critical as well as cutting into the hillside to add width.*

### PART 3 - LOWER FRANKLIN TRAIL (Phase 1) ANALYSIS

This segment is 2.08 miles long and extends from the southwest corner of Carpinteria High School to its intersection with the Edison jeepway where the Rancho Monte Alegre property begins.

The elevation gain from the trailhead (35') to the end of the segment (636') is 601 feet, with an average grade of 5.8%. However, that grade is deceptive since the gain is between 1-3% over the first half of that distance and over 15% along the second half, with grades up to 22% in the middle part of the segment.

Approximately 60-70% of the trail was burned by the Thomas Fire and in one spot dozers cut through the trail and did some damage to it. However, despite the large amount of vegetation loss, impact to the trail from the fire has been relatively minimal to date, though this may change when winter rain comes.

The project recommends approximately 5 days of maintenance work to address the points listed below at a time when the ground has sufficient moisture for soil compaction. Estimates for the work and time required are included in each segment description below.



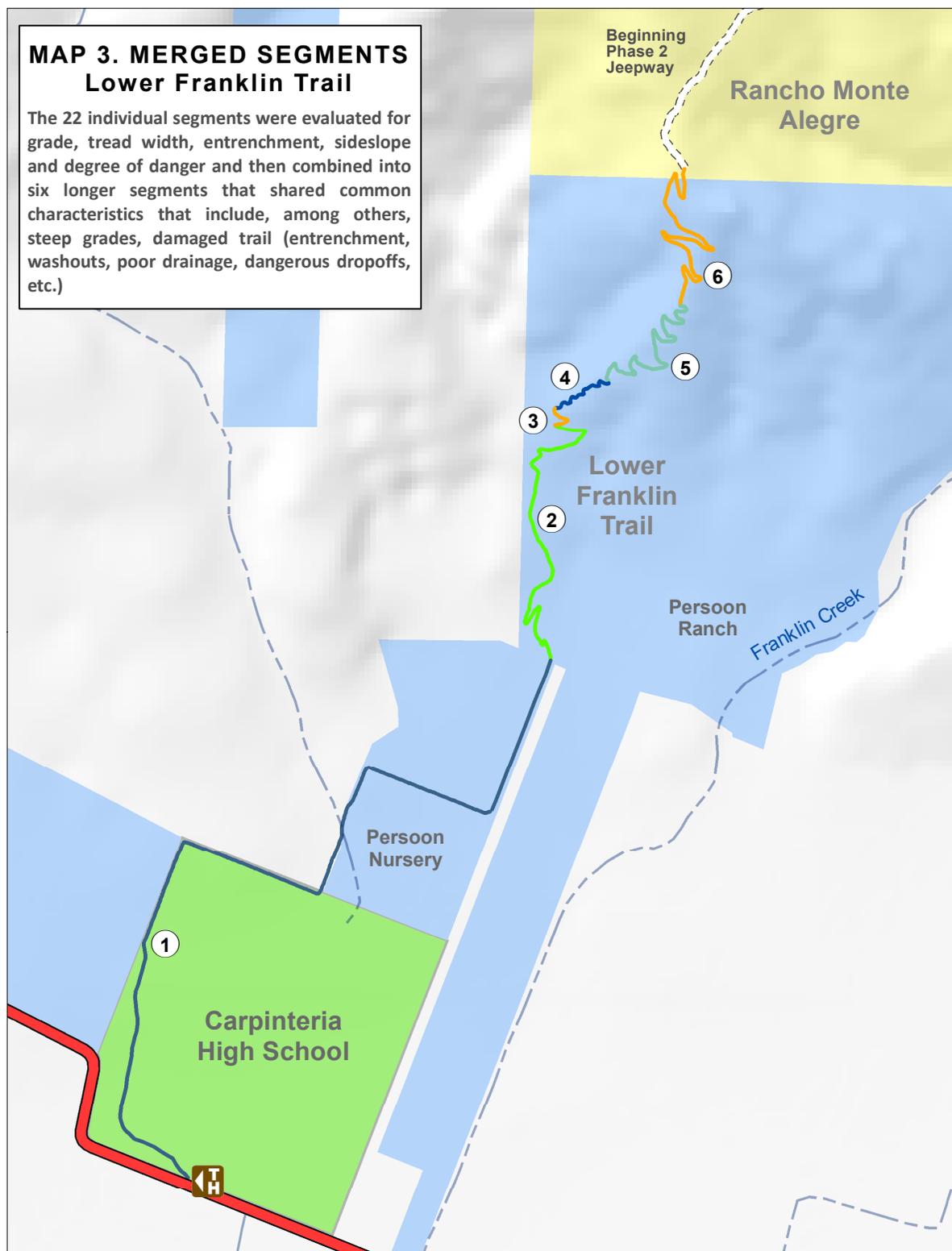
*Pict 13. November 2018, just 11 months later, light brush is beginning to cover parts of the hillsides and start the stabilization process. Restoration this winter and spring will compliment this process.*

## I. KEY POINTS

- **Heavy Use.** The Phase 1 section of the trail is extremely popular, averaging several hundred users every day of the week. Use is primarily by foot (hiking, running) with some mountain bike use and occasional equestrian use.
- **Varying grade.** The segment is almost level and it winds its way around the high school and nurseries, gradually begins to climb where it turns to single track, gets very steep where the ridge narrows and the trail begins a series of switchbacks, then climbs moderately over the last part to its intersection with the jeepway.
- **Erosion control.** The dips and other erosion control features are well worn and can use improving though they seem to be working reasonably well.
- **Tread Damage.** Due to the hard rock lying beneath the trail, the inside edges where the rock is closer to the surface is much higher than the outside edge, creating excessively steep outsloping in places and hi/low tread in others. Some isolated areas (especially below the switchback turns) need armoring to protect the tread.
- **Edge protection.** More emphasis should be placed on armoring the outside edge of the trail given the heavy use to protect against tread loss.
- **Climbing Turn/Switchback Improvements.** A number of the switchbacks, especially in the mid-part of the trail where the grade is the steepest should be extended as much as possible to reduce the grade above and below the turns.
- **Trail Cutting.** Due to the loss of brush when the fire came through the area, users are cutting some switchbacks. Emphasis should be placed on reducing their ability to go off trail in these spots.
- **Timing of Work.** As noted above, the project recommends the proposed work be done during the winter and early spring at times when the soil is moist and can be compacted easily. Given the heavy trail use, the goal is to do the work when the crew can compact the soil and have it hardened by the following day.

### MAP 3. MERGED SEGMENTS Lower Franklin Trail

The 22 individual segments were evaluated for grade, tread width, entrenchment, sideslope and degree of danger and then combined into six longer segments that shared common characteristics that include, among others, steep grades, damaged trail (entrenchment, washouts, poor drainage, dangerous dropoffs, etc.)





*Pict 14. Kim Fly surveys the damage to the Lower Franklin Trail a few days after the Thomas Fire passed over it. Almost all of the vegetation on the lower part of the trail was burned to mineral soil.*



*Pict 15. Kim Fly surveys the damage to the Lower Franklin Trail a few days after the Thomas Fire passed over it. Almost all of the vegetation on the lower part of the trail was burned to mineral soil.*



*Pict 16. Kim Fly surveys the damage to the Lower Franklin Trail a few days after the Thomas Fire passed over it. Almost all of the vegetation on the lower part of the trail was burned to mineral soil.*



*Picts 17-18. Kim Fly surveys the damage to the Lower Franklin Trail a few days after the Thomas Fire passed over it. Almost all of the vegetation on the lower part of the trail was burned to mineral soil.*



*Pict 19. Kim Fly surveys the damage to the Lower Franklin Trail a few days after the Thomas Fire passed over it. Almost all of the vegetation on the lower part of the trail was burned to mineral*



*Pict 20. Kim Fly surveys the damage to the Lower Franklin Trail a few days after the Thomas Fire passed over it. Almost all of the vegetation on the lower part of the trail was burned to mineral*

## II. LOWER FRANKLIN TRAIL SEGMENTS

### 1. Perimeter Walk

*Length: 4,052 feet; Grade: 3% with short 18% grade at the upper end; Tread Width: 6-8 feet; Downslope: 0%; Danger Level: 1.*

The segment is just over .75 miles in length, beginning from the southwest corner of the high school and following the west and north perimeters of the high school and Persoon nurseries to the point where the single track begins. The trail is 6-8 feet wide and can be described more as a path than a single track, given it is wide enough for ATV access.

With the exception of a few short rises and falls the trail is almost level until the last 100 yards of the segment where the trail begins a steep climb (up to 20%) along the north edge of the Persoon property.

Minimal work other than light brushing is needed for this segment though dips could be added in several places where ruts are beginning to appear. Much better erosion control should be considered for the last steep section to reduce the potential for erosion.

Proposed Work. Improve erosion control on the last steep section, add dips in locations where gullying is beginning to occur.

- Estimated Time: 3-4 hours
- Goal: Make the section more sustainable
- Equipment Needed: Hand tools, Excavator (Kubota); Trail plate compactor

### 2. Climb to Ridgeline

*Length: 1,579 feet; Grade: 8% along the first half and 14% along the upper part; Tread Width: 36-42 inches; Downslope: 20%; Danger Level: 1.*

Just beyond the last steep hill at the end of the Persoon property, the single-track begins. There are several short switchbacks, followed by a long traverse past a section of prickly pear cactus up onto a flat ridgeline. The trail has another short switchback and then a last longer traverse that leads up to a series of steps that are carved through a section of reddish Sespe sandstone.

The segment is .3 miles long and is in reasonably good condition though work could be done to improve the erosion control, remove a few stumps and add materials at the inside corners of the switchbacks to keep people from cutting them.

Proposed Work. Attention should be paid to improving (widening and angling) the existing dips and adding new ones in places where gullying is beginning to occur. Focus should also be placed on widening and improving the switchbacks to reduce impacts by mountain bikes and to minimize erosion.

- Estimated Time: 6 hours
- Goal: Make the section more sustainable by improving existing dips, adding new ones and widening and improving the switchbacks. Light brushing as needed.

- Equipment Needed: Hand tools, chain saw/pole saw, Excavator (Kubota), Trail plate compactor

### 3. Sespe Staircase

Length: 143 feet; Grade: 24%; Tread Width: 24-36 inches; Downslope: 40%; Danger Level: 2.

At the end of the long traverse, the trail comes to a band of Sespe sandstone. A series of steps have been added for the short steep climb through the rock (24% grade) then the trail switches back to the west and climbs steeply up onto a narrow ridgeline and the beginning of what has been called the Franklin Wiggles.

Due to the steepness of the grade, erosion measures should be improved and the inside corner of the switchback above the steps armored to keep users from cutting into the corner and damaging the trail.

Proposed Work. Improve erosion control above the steps, armor the switchbacks and reinforce the steps.

- Estimated Time: 4 hours
- Goal: Make the section more sustainable, protect inside corners of the switchbacks, armor the Sespe steps.
- Equipment Needed: Hand tools, Excavator (Kubota), Trail plate compactor

### 4. Franklin Wiggles

Length: 318 feet; Grade: 14%; Tread Width: 36 inches; Downslope: 5%; Danger Level: 1.

The Franklin Wiggles is composed of a series of short climbing turns that lead up a relatively narrow ridgeline. The erosion control features in between the corners and at the corners themselves need to be improved due to assist water flow off the trail. Where possible, this can be done by extending the corners out further to the point where the slope is greater and it will be easier to sheet water off the trail on either side of the ridge.

Proposed Work. Widen and extend the turns, improve erosion control.

- Estimated Time: 6 hours
- Goal: Make the section more sustainable, reduce impacts of downhill mountain bikes
- Equipment Needed: Hand tools, Excavator (Kubota), Trail plate compactor

### 5. Middle Switchbacks

*Length: 1,141 feet; Grade: Averages 22% with grades up to 24%; Tread Width: 36 inches; Downslope: 50%; Danger Level: 2.*

Beyond the wiggles section, the ridgeline broadens a bit but also enters a much steeper part of the hillside at the midpoint of the Lower Franklin Trail. To stay within the relatively

narrow corridor along which the trail was required to be constructed, a series of switchbacks lead back and forth up the ridge, averaging from 20-22% grade.

As a result, the section is prone to erosion and in places after the Thomas Fire burned through, has made it easy for hikers to cut the switchbacks. In places the tread is also wearing unevenly where the underlying rock is becoming exposed.

Proposed Work. Improve erosion control on the last steep section, add dips in locations where gullying is beginning to occur.

- Estimated Time: 1.5 days
- Goal: Make the section more sustainable, repair tread damage, extend the corners of the switchbacks and widen them to reduce the grade, armor the inside corners of the switchbacks to protect them from damage and reduce trail cutting and slow down mountain bikers
- Equipment Needed: Hand tools, Excavator (Kubota), Trail plate compactor

#### 6. Upper Switchbacks

*Length: 1,490 feet; Grade: averages 11-14%; Tread Width: 36 inches; Downslope: 55%; Danger Level: 2.*

The upper .2 mile section of the trail includes several long traverses and switchbacks made possible by a more gentle slope that allowed for longer runouts between the switchbacks. However, underlying rock has contributed to uneven tread in places and looser soils has caused damage to the outside edge of the tread, especially below the switchbacks.

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

- Estimated Time: 8 hours
- Goal: Make the section more sustainable, slow down mountain bikers
- Equipment Needed: Hand tools, Excavator (Kubota), Trail plate compactor

## PART 4 - UPPER FRANKLIN TRAIL (Phase 3) ANALYSIS

This segment is 2.69 miles long and extends from the Edison spur road located on a ridgeline between the Sutton and Carpinteria Creek watersheds. The elevation at the lower trailhead is

The elevation gain from the trailhead (1,706') to the crest of the Santa Ynez Mountains (3,718') is just over 2,000 feet, with an average grade of 15%. However, that grade is deceptive since it has numerous sections ranging from 300-500 feet in excess of 20% and some as much as 30%.

Close to 100% of the upper trail was burned to mineral soil by the Thomas Fire and is extremely susceptible to rock slides, trail slump and tread failure as a result. While it is critical that protective work be done this winter to counter some of these conditions, it can be expected that conditions will be unstable for several years.

The project recommends a minimum of 30 days of restoration work to address the points listed below and more if funding becomes available.

### I. KEY POINTS

- **Loss of Vegetation.** Having been subjected to extremely intense fire behavior, not only the trail corridor but watersheds on either side of the trail lost almost all of its vegetative cover. This has led to rockfall, slides, washouts and hundreds of cubic yards of slump material moving down onto the trail.
- **Removal of Protective Cover.** Though the vegetation is slowly beginning to fill in, along more than 50% of the trail, a fall off the trail more-than-likely will result in a serious fall that could lead to serious injury or death.
- **Danger Zones.** Numerous sections of the trail have downslope grades in excess of 90-100% (45 degree or more). Securing/armoring the outside edge of the trail is critical to maintaining the trail width and also to prevent users from an accidental fall should the edge give way.
- **Steep Grades.** With unstable slopes and grades that 2-to-3 times steeper than acceptable standards, it is critical that dips and other erosion control features be improved.
- **Erosion Control Critical Priority.** Currently, slump material has covered many of the dips that were constructed in 2016 during the initial restoration project. These need to be cleaned out and improved as soon as possible to prevent more serious damage from upcoming winter storms along with adding new ones, especially where trail grades exceed 20%.
- **Tread Damage.** Almost all of the 2.69 miles of the upper trail tread has been damaged to some extent by the Thomas Fire impacts and subsequent debris flows. This includes loss of from several inches to a foot of the outside trail edge, rock, boulders and other debris that has either covered the trail in places or caused damage to the tread.

- **Narrow Tread.** As a result of the above, from 60-70% of the trail is less than 36" wide (the standard for multiuse pack-and-saddle trails), with more than half of the trail less than 24" wide. Many sections are much less, with hundreds of feet less than 10" wide.
- **Edge protection.** Given the narrow tread widths, emphasis should be placed on armoring the outside edge of the trail to help maintain the tread width and improve safe use of the trail.
- **Trail Slump.** Almost all of the entire length of the trail has some degree of trail slump and along more than 50% of the trail there is sufficient slump to create narrow tread with excessive offslope that make walking on the trail less safe.

The slump material is already beginning to compact, the result of several storms in spring 2018 and recent ones in fall 2018. Compacted soil is much more difficult to remove than the dry ravel that initially came down from the slopes above the trail. Along with

- **Trail Widening.** While widening the tread to 36" or more where crossing danger zones, that may not be practical this year. The goal should be to make the trail safe for foot traffic this year by removing slump material and protecting the trail edging. A reasonable goal would be to increase tread width to 24" this winter and to 36" in Year 2.

## II. PROJECT RECOMMENDATIONS

After conducting detailed surveys of both the lower (Phase 1) and upper (Phase 3) sections of the Franklin Trail, this report recommends the following:

1. Focus work in the winter and spring 2018-19 on restoration that will widen and stabilize the tread, improve erosion control and improve safety for foot travel.
2. Removal of all existing slump material.
3. Clearance of loose materials on the slopes above the trail.
4. Identification and flagging of all tread edging that is unstable, damaged or in danger of being damaged this winter and armoring or adding crib walls to the most critical areas first and the rest as time and funding permits.
5. Addition of crib walls and/or rock armoring to the extent possible to create additional tread width or protect the trail edging.
6. Construction of erosion control features designed to protect against damage this winter and be effective in moving water off the trail for Years 1-3. \*

\* Highest Priority

III. VISUAL IMPACTS

Note the narrow trail width and sharp dropoffs. Sections like illustrate the need to stabilize the trail as soon as possible before more damage occurs. This may include construction of crib walls, rock armoring to keep the trail from eroding away removal of slump material and cutting into the rock on the slopes above the trail to widen it. The recent trail survey indicates that as much as 50% of the 2.69 miles of trail will require edge protection.



*Pict 21. Typical of the damage over much of the upper part of the Phase 3 trail.*



*Picts 22-23. This and the following images show the amount of damage caused by the Thomas Fire and subsequent debris flow in December 2017 and January 2018. Though the vegetation is returning, it may require several more years to stabilize the hillsides.*



*Pict 24. While the majority of the trail averages 18" or less, much of it is actually much narrower and combined with slumping and rock litter, is on the verge of being completely erased. Plant growth this winter along with additional erosion will certainly make this section impassable in the next few months without extensive restoration efforts.*



*Pict 25. Many sections of the trail have similar grades (approximately 20%) and widths. Note how difficult it is to navigate when almost no tread remains to walk on. This and the images above show why the trail currently is unsafe for equestrian or mountain bike use and dangerous for foot travel.*



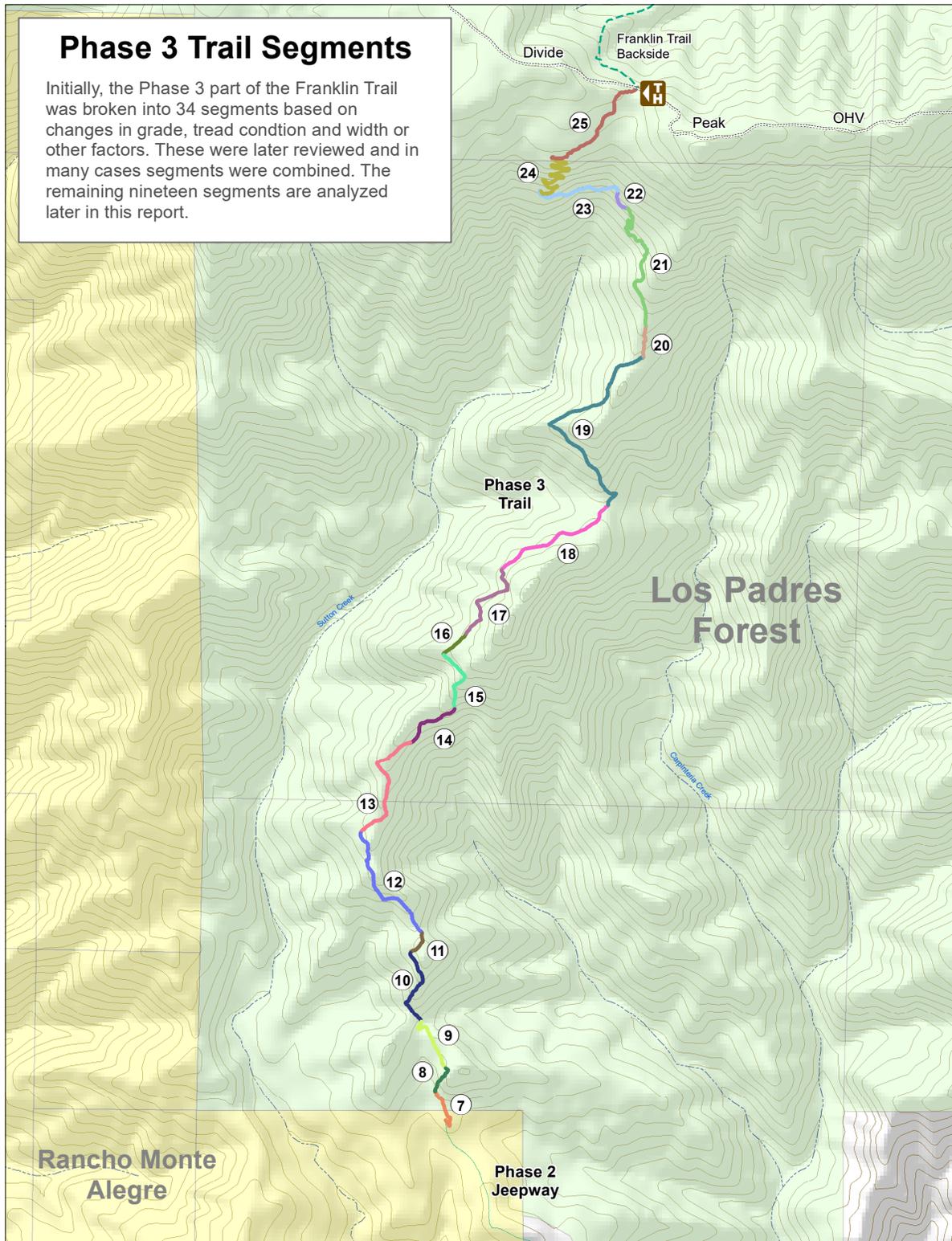
*Pict 26. This section of the trail follows a long traverse that is almost level but the hill slope is extremely steep. The trail here averages about 14" in width and the downslope is approximately 110% (slightly over a 45-degree angle). A fall off this part of the trail could result in a serious injury .*



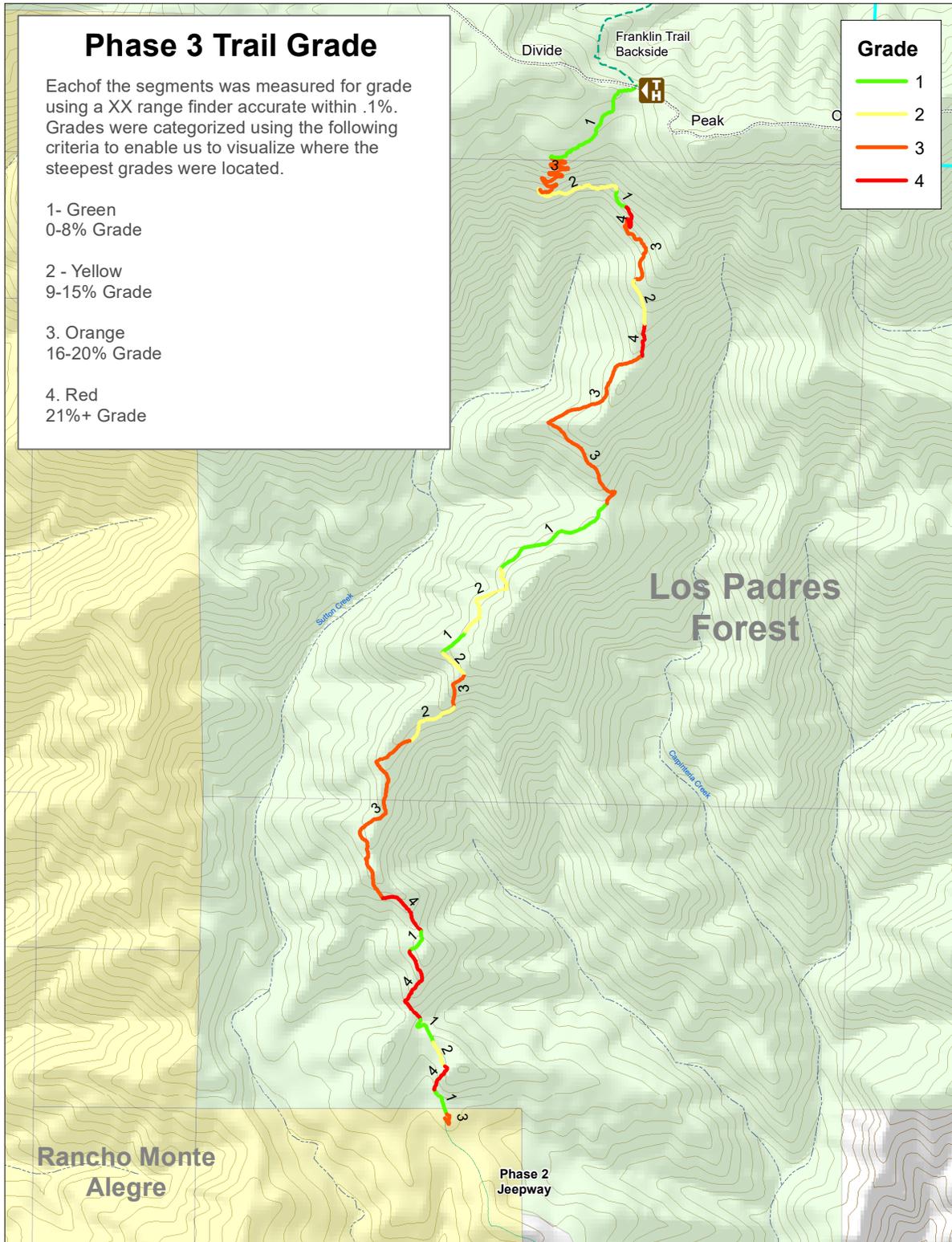
*Pict 27. Note the steepness of this part of the trail and its narrow width. Much of the upper mile of the trail is in similar condition to this and the images shown above. Tread work and addition of erosion control features are needed to keep this and other parts of the upper trail from disappearing.*

#### IV. MAP DATA

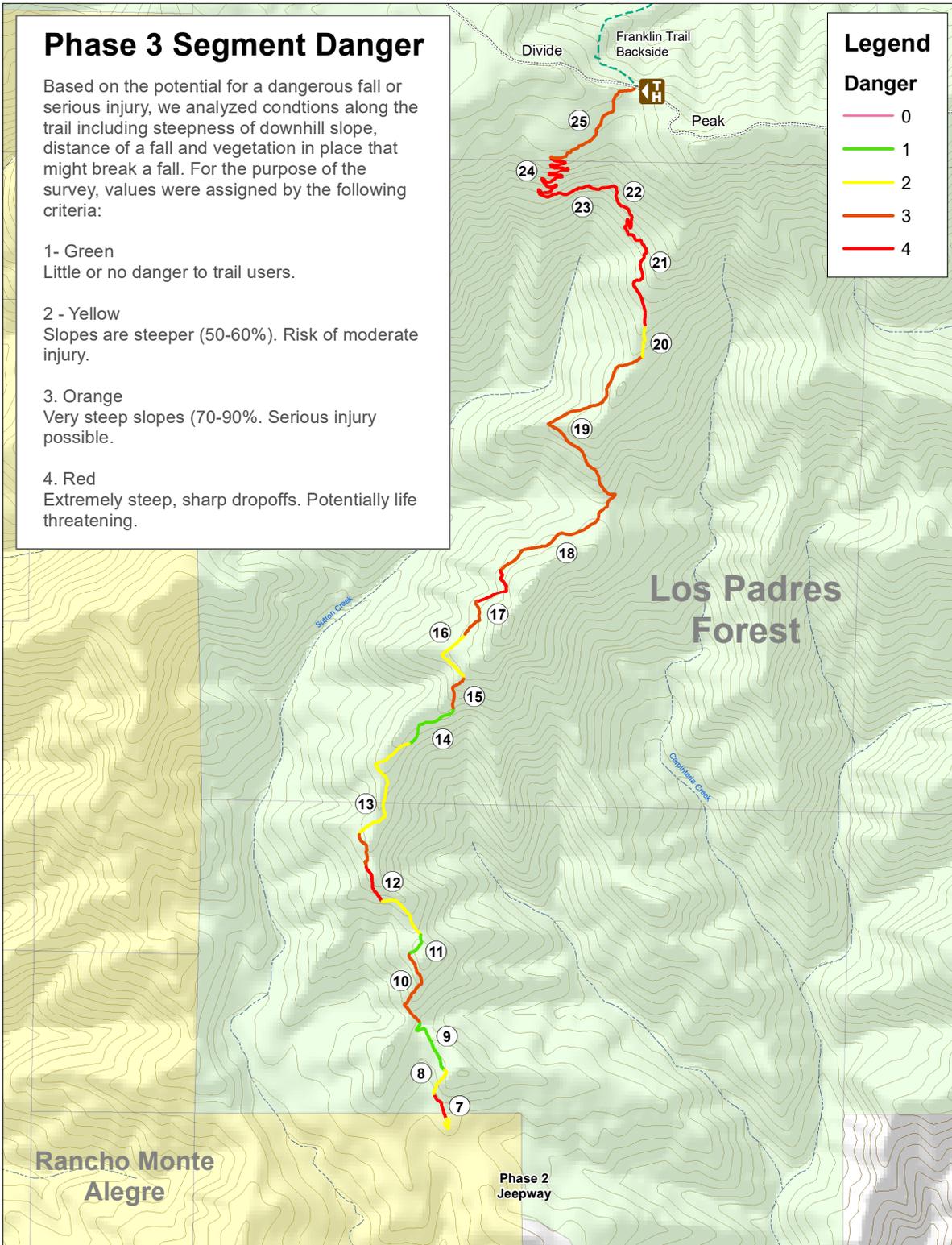
Trail Segments. The data collected during the surveys of the Upper Franklin Trail were broken into segments that would allow us to visualize a number of issues.



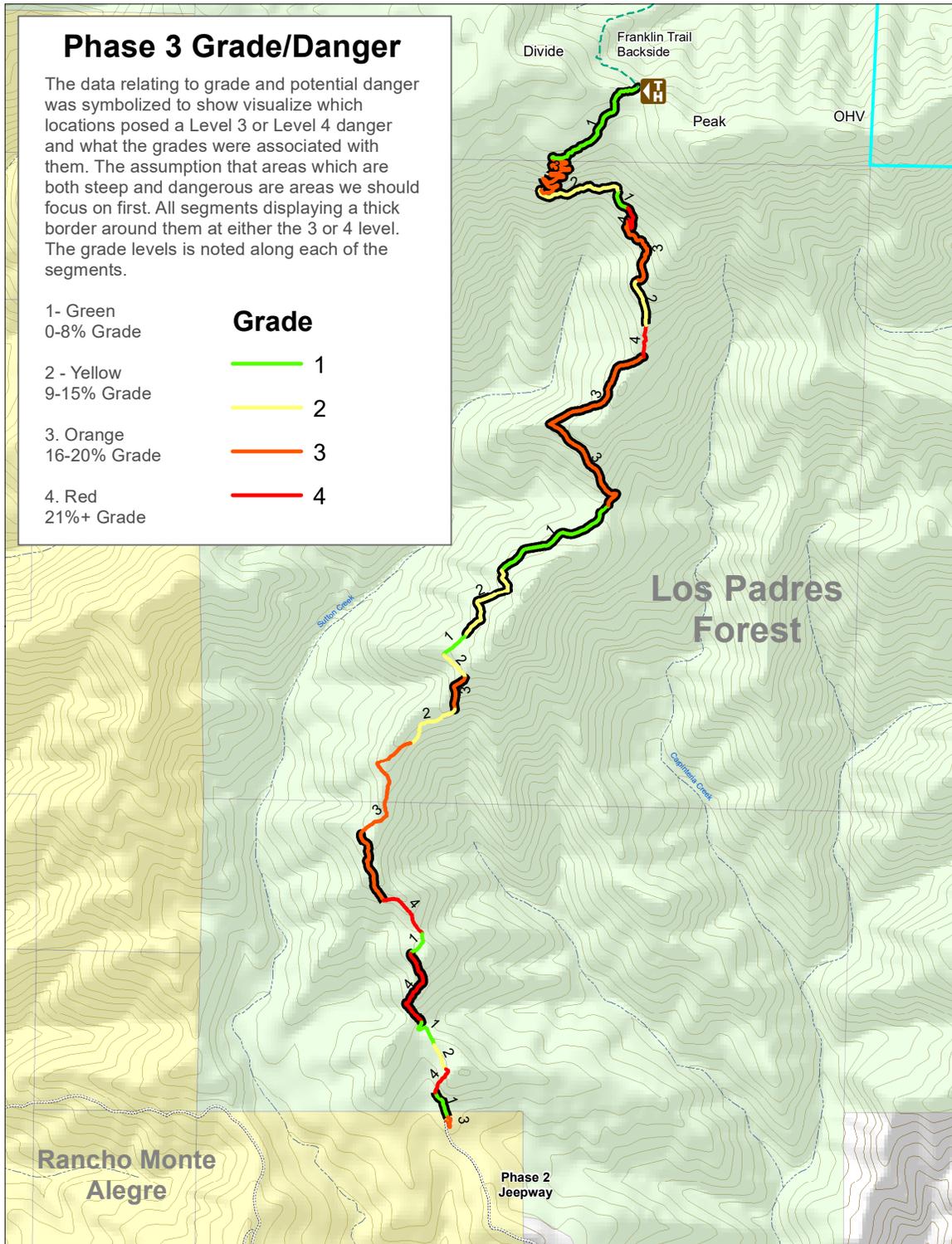
Trail Grade. Upper trail grades that exceeded 16% and 21% respectively were symbolized in orange and red. Note the steepest grades are located in the bottom and top of the trail.



Trail Danger. Based on the steepness of the slope below the trail and amount of exposure, the upper trail was rated on a scale ranging from 1-4, with those in the 3-4 category the most dangerous.



Trail Grade/Danger. The segments are symbolized in colors that represent trail grade. Those with thick black borders note trail segments that are both steep and cross through danger zones. The project will focus on restoration in those to reduce erosion and increase safety.



## IV. UPPER FRANKLIN TRAIL SEGMENTS

### 7. Trailhead Switchback & Perilous Traverse

*Length:* 404 feet; *Grade:* 16% up the switchback and 7% along the more dangerous traverse; *Tread Width:* 14-16 inches; *Downslope:* 60% along the switchback and 100-120% along the traverse; *Danger Level:* 4.

A short switchback leads up onto the ridge above the Edison jeepway. At the point where it cuts back to the north and traverses for a hundred yards above the jeepway the dropoff is almost vertical and a fall off the trail will almost certainly be 30-40 feet down to it.

The 6-8 inches of the outside edge of the trail was washed away as well, reducing the width quite a bit. In addition, what vegetation that was in place and served as a buffer against a long fall is completely burned away.

Proposed Work. Armor the outside edge of the trail and add crib wall where the dropoff is most serious. Cut into the slope above the tread to add as much width as possible.

### 8. Non-Sustainable Climb

*Length:* 236 feet; *Grade:* 24%; *Tread Width:* 18 inches; *Downslope:* 35%; *Danger Level:* 2.

After the traverse above the jeepway the trail turns to the north and begins to climb up to the ridgeline the trail will follow all the way to the crest. The trail follows the right side of a small gully, climbing steeply at a 24% grade before it levels out somewhat. The trail is narrow and prone to erosion being so close to the gully.

Water flowing down the gully from above seriously damaged the trail and washed away the dips that had been added in 2016. The best solution would be to add a short switchback to reduce the grade and move the trail away from the gully.

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning has occurred, repair the tread and add stepovers to force water off the trail. Explore the potential for a short switchback to avoid the problem area.

### 9. Traverse onto Ridgeline

*Length:* 511 feet; *Grade:* 6-8% average with a short section up to 13%; *Tread Width:* 14-16 inches; *Downslope:* 10-20%; *Danger Level:* 1.

The main

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

### 10. First Big Climb

*Length:* 701 feet; *Grade:* 24-32%; *Tread Width:* 24 inches; *Downslope:* parts 45-65% with extreme dropoffs along several sections ranging from 100 to 109%; *Danger Level:* 3-4.

The segment

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 11. First Saddle

*Length:* 208 feet; *Grade:* 2%; *Tread Width:* 14 inches; *Downslope:* 40%; *Danger Level:* 1.

Xx

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 12. Two Stage Climb

*Length:* 1,093 feet; *Grade:* 18-22%; *Tread Width:* varies with some sections as narrow as 11 inches and others from 22-34 inches; *Downslope:* 40%; *Danger Level:* 3-4.

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 13. Bear's Den Traverse

*Length:* 1,067 feet; *Grade:* 16-20%; *Tread Width:* About 60% of the trail from 14-16 inches wide and 40% 30 inches wide; *Downslope:* 20% at 45% downslope with the majority from 80-90% downslope; *Danger Level:* 3.

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 14. Rocky Saddle

*Length:* 504 feet; *Grade:* 2%; *Tread Width:* 36 inches; *Downslope:* 40%; *Danger Level:* 1.

The segment is xx miles long, beginning from the southwest corner of the high school, following the west and north perimeters of the high school and Persoon nurseries to the

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 15. Traverse to North Side

*Length:* 568 feet; *Grade:* 15-20%; *Tread Width:* 10-20 inches; *Downslope:* 95-100%; *Danger Level:* 2-3.

The segment is xx miles long, beginning from the southwest corner of the high school, following the

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 16. Lovely Levels

*Length:* 250 feet; *Grade:* 3%; *Tread Width:* 12 inches; *Downslope:* 55%; *Danger Level:* 2.

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 17. Deadly Dropoffs & Gullies

*Length: 781 feet; Grade: 10-13%; Tread Width: 14-24 inches; Downslope: 100-130%; Danger Level: 3-4.*

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 18. Downhill to Saddle

*Length: 1,088 feet; Grade: -3% (downhill); Tread Width: 16 inches; Downslope: 105%; Danger Level: 3.*

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 19. Two Big Climbs

*Length: 2,012 feet; Grade: 21%; Tread Width: 8-16 inches; Downslope: 100%; Danger Level: 3-4.*

Xx

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 20. Short Little Ridge Climb

*Length: 275 feet; Grade: 25%; Tread Width: 36 inches; Downslope: 25%; Danger Level: 2.*

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 21. Dangerous Traverse

*Length: 1.362 feet; Grade: 15-25%; Tread Width: 8-10 inches; Downslope: 110-120%; Danger Level: 4.*

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

#### 22. Big Rock

*Length: 180 feet; Grade: 5%; Tread Width: 36 inches; Downslope: 190%; Danger Level: 4.*

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

### 23. Hard Hit Traverse

*Length: 733 feet; Grade: 14%; Tread Width: 14 inches; Downslope: 100%; Danger Level: 3-4.*

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

### 24. Neverending Zig Zags

*Length: 1,236 feet; Grade: 15-17%; Tread Width: 14-18 inches; Downslope: 80-100%; Danger Level: 3-4.*

The

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.

### 25. The Final Traverse

*Length: 1,033 feet; Grade: 12%; Tread Width: 12 inches; Downslope: 60-90%; Danger Level: 3.*

The segment is

Proposed Work. Improve erosion control, add dips in locations where gullying is beginning to occur, repair the uneven tread and armor the trail edges as needed.