



United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
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San Francisco, California 94104-2828



IN REPLY REFER TO:

L7617 (PWRO-PP)

03 JUN 2016

Memorandum

To: Superintendent, Pinnacles National Park

From: Regional Director, Pacific West

Subject: Environmental Compliance for Constructing West Side Trail

The *Finding of No Significant Impact* (FONSI) for construction of the accessible loop and connector segments of the long anticipated West Side Trail is approved. Based on approval of Alternative B for implementation, park staff can now complete the final Minimum Requirements documentation.

At the time when the park announces the decision to construct the Westside Trail, the FONSI should be made available to all persons and organizations that received or commented on the Environmental Assessment.

Laura E. Joss

Attachment



FINDING OF NO SIGNIFICANT IMPACT

West Side Trail Construction Environmental Assessment

PMIS 159539

May 2016

Introduction

This Finding of No Significant Impact (FONSI) has been prepared in accordance with the National Environmental Policy Act (NEPA) for the project, West Side Trail Construction project in Pinnacles National Park, in San Benito County, CA. The FONSI documents the decision of the National Park Service (NPS) to adopt the preferred alternative presented in the West Side Trail Construction Environmental Assessment (EA), describes the selected action and provides an explanation of why it will have no significant effects on the human environment. Mitigation measures designed to avoid or minimize impacts to park resources and a summary of agency coordination and public comment are also provided. A determination of non-impairment, is attached as Appendix A; an Errata, which provides clarification on language in the EA and a response to public comments, is attached as Appendix B; and the final Minimum Requirements Decision Guide, as required by the Wilderness Act of 1964, is attached as Appendix C. This FONSI, along with its appendices and the EA, constitute the record of the environmental impact analysis and decision-making process for the project.

Purpose and Need

The purpose of the proposed action is to enhance the overall visitor experience on the west side of Pinnacles National Park by providing trail connections in accordance with the GMP. The project will also provide safe and increased visitor services, sustainable trails as well as interpretative opportunities about the park's wide range of physical, natural, and cultural resources.

The project is needed because there are currently no trails in the vicinity of the recently built VCS, which detracts from the visitor experience and results in resource damage. Without a formalized trail, visitors hike around the VCS and create their own 'social' trails, which results in damage to native vegetation, contributes to erosion, and threatens the cultural landscape of nearby historic sites. Visitors that park at the VCS currently cannot reach the other trails within the park by foot unless they walk along a one lane, winding, and shoulder-less road to the Chaparral Area. This road was not designed to accommodate pedestrian use and is unsafe for hiking. Additionally, there are limited opportunities for an accessible visitor experience. Providing an accessible trail with informational panels will open up the visual, cultural and natural resources to those unable to negotiate the more strenuous trails.

Additionally, the GMP and other planning documents direct the park to develop new trail connections on the west side of the park, particularly a trail to link the new visitor contact station with the existing trail system.

Selection of the Preferred Alternative

Of the two action alternatives evaluated in the EA, the NPS will select and implement Alternative B. This alternative was identified in the EA as the Preferred Alternative. The proposed action includes two primary

actions: 1) construct an accessible trail at the West Side VCS; and 2) construct a connector trail from the accessible trail to the Chaparral area and trailheads. Interpretive waysides and directional signage will also be installed.

As a result of the planning process, minor changes were made to the design of the accessible trail. In the EA, the accessible trail is referred to as a loop trail. Although the intent is to construct an accessible loop, the amount of available funding could limit or delay completion of a full loop trail. At the time of this writing, the accessible trail will be completed in phases. Phase 1 will extend from the West Side VCS to an overlook with a view of the High Peaks and include a junction for the future connector trail. If funding allows, a Phase 2 will complete the accessible loop. The possibility also exists that the continuation of the loop may be constructed as a non-accessible hiking trail. In these scenarios, the ground disturbance and vegetation removal would be less than disclosed in the EA; as such, there is no increase in environmental impact.

No additional reasonable alternatives were suggested during the public review process. One additional mitigation measure regarding parking has been included and is listed in the table below.

Accessible Trail

The accessible trail will be completed in phases. Phase 1 will be approximately .4 mile (2,150 feet) long. It will extend from the existing interpretive plaza adjacent to the West Side VCS and follow the contour of the landscape to an overlook with a view of the High Peaks. The trail will be designed to meet the Architectural Barriers Act Accessibility Standards (ABAAS) for Outdoor Developed Areas. It will maintain a maximum 10% running slope (the slope of the direction that people travel when walking on the trail), although the average running slope is about 3-5%. The maximum cross slope (perpendicular to the running slope – the slope across the trail) will be 2%. If funding allows, Phase 2 of the accessible trail will extend another 1,250 feet to form a loop (see Figures 3 and 9 in the EA). The possibility also exists that this section of trail could be constructed as a non-accessible hiking trail.

From the VCS to the overlook, the accessible trail will have a firm and stable surface and a width of up to 60 inches (five feet) for the entire trail, with one foot shoulders. The 1,250 foot long loop extension trail will most likely be three feet wide. If that portion is built to ABAAS standards, passing spaces will be provided at intervals of less than 1,000 feet. The surface will be a similar color to existing soil to blend into the landscape. It will be hardened but not paved with asphalt as it is a trail, not a service or access road. One rest area and an overlook are proposed. The overlook will be up to 25 x 15 feet and provide one or two benches. Some cut slopes could be 5-6 feet high, and cut slopes over 40% will require a rock retaining wall. The walls will be contoured into the hillside and constructed of local rock or rough-hewn wood to match the existing landscape.

Vegetation slated for removal includes shrubs, forbs, and both native and non-native grasses. Oak trees, juniper trees and rock scree will be avoided to the greatest extent possible. Removed shrubs will be used as vertical mulch in disturbed areas. Revegetation and erosion control measures will be implemented. Jute netting will be installed on the cut slopes. Locally sourced seeds will be broadcast under the jute or the jute will be covered with a layer of topsoil that was cut from the hillside (or both). Seeds from native shrub species may be collected, grown into seedlings at a local nursery, and transplanted on the hillside (although the park may opt to let the area revegetate naturally). A layer of topsoil will be salvaged from the cut areas and spread on the cut slope or other disturbed areas to facilitate revegetation from onsite seeds. Soil will be staged in the west side overflow parking lot and will be re-used by the park. If the park determines there is no on-site use for the soil, it will be hauled away.

Current social trails visible from the new accessible trail will be obliterated and restored. The soil will be de-compacted. Similar to the treatment of the cut slopes, either local seeds will be broadcast or the trail will be covered by a layer of topsoil that was cut from the hillside. Some of the removed shrubs will be laid on top of the trail for mulch.

Construction methods will likely include a combination of heavy equipment and hand tools. Large excavators, bobcats, loaders, dumpers and haulers could be used. Staging of materials and equipment will occur at the overflow parking lot and the west maintenance office and housing area. Directional signs will be installed in various locations as appropriate. Approximately four interpretive wayside panels and two information panels will be installed along the accessible route to provide educational information on the natural, cultural, and physical resources on the west side of Pinnacles National Park, particularly as seen from the new trail.

Connector Trail

The connector trail will be approximately one mile long and three feet wide, and connect the VCS to the existing trailheads at the Chaparral area. It extends down the southern portion of Jawbone Canyon and traverses 1500 feet of the Hain Wilderness. The connector trail will start on the accessible trail and descend approximately 600 feet in elevation through Jawbone Canyon to the overflow parking lot. A crosswalk will be painted on the road that leads hikers through the overflow parking lot along a 670 foot section of trail. This trail will connect to the existing trailhead in the overflow parking lot, leading hikers to an existing .3 mile trail to the Chaparral Area. Some improvements are needed to this existing trail as there is a steep 70 foot section with a 30% grade. This section of trail will be rerouted to be more sustainable for heavy visitor use. Parking in the overflow lot may be reorganized to accommodate the trail but a loss of parking spaces is not anticipated.

The connector trail provides users with a full array of terrain and impressive views of Pinnacles' rock formations and the surrounding landscape. It is tucked into the landscape on a north facing slope, providing summer shade, and lower than "The Fingers" formations for a substantial portion of the route, which will screen the trail from the view of visitors in the Hain Wilderness. For part of its length, the trail will take advantage of an old road bed.

There are several short steep sections of trail (10-15% grade), but the majority of the trail is comprised of gradual grades which allows for a curvilinear layout to lose elevation. The route will likely require a small number of widely spaced switchback turns with ample visual screening. The trail includes two stream crossings, one of which is in the Hain Wilderness. Bridges will be constructed to cross the streams. Each bridge will span the entire width of the streambed, with the footings on the banks, well above the mean high water mark. There will not be any bridge structures placed in the stream bed. This work will not occur when there is running water in the stream, will not involve removal of vegetation, and will not place fill onto wetland vegetation.

This trail will be constructed by hand crews which will allow the trail to accommodate environmental considerations such as avoiding trees or rock outcroppings and minimizing erosion. Staging will occur in the disturbed trail corridor.

Mitigation Measures

To minimize potential adverse impacts associated with the selected alternative, the following mitigation measures will be implemented as part of the selected alternative.

General Construction Measures	
General-1	All protection measures will be clearly stated in the construction contract documents.
General-2	Construction limits will be clearly marked with stakes prior to the beginning of ground disturbing activities. No disturbance will occur beyond these limits other than protection measures for erosion/sediment control.
General-3	Staging and stockpiling areas will be located in previously disturbed areas to minimize new disturbance of area soils and vegetation.
General-4	Trail construction zones will be identified and signs or fencing will be placed to prevent visitors from entering the area.
Noise and Air Quality	
Air-1	Both contractors and park staff will minimize noise from use of construction equipment (i.e. mufflers) and equipment will not be allowed to idle longer than necessary when not in use.
Air-2	Dust control (i.e., use of water as a dust suppressant) will occur, as needed, on active work areas where dirt or fine particles are exposed.
Vegetation	
Veg-1	Only certified weed-free hay, straw or mulch will be used in order to minimize the potential spread of exotic plants.
Veg-2	Native soils will be used whenever possible. Any fill material brought into the park will be acquired from an NPS-approved source.
Veg-3	All vehicles and construction equipment must be pressure or steam-washed before entering the park and will be inspected for the presence of dirt, mud, or plant/animal matter. Cleaning will consist of the removal of all dirt, grease, debris, and materials that may harbor noxious weeds, their seeds, sudden oak death or other plant pathogens. Cleaning shall occur outside of the park. Park staff will inspect all equipment upon arrival at the park and any equipment in unacceptable condition will need to be immediately removed from the park and cleaned before returning.
Veg-4	To the greatest extent possible, trails will not be constructed within the drip line of any tree in order to prevent damage to tree roots.
Veg-5	The park will survey the project area twice a year, for three years after construction, to monitor for recently introduced species. If any invasive species is detected, the park will take immediate action to control the population.
Veg-6	The trail will be routed around the marble rock outcrops to avoid trampling the vegetation and damage the substrate.
Veg-7	In areas where trail construction passes through populations of rare plants, prior to the initiation of brushing and construction a biologist will install stakes or fences to delineate sensitive habitat. All foot traffic and disturbance will be limited to the immediate trail corridor. No dirt, brush, materials, or tools will be placed in the sensitive habitat areas.
Wildlife	
Wildlife-1	Construction personnel will be trained in the biology and conservation of the California red-legged frog, California condor and California tiger salamander. If one of these animals enters the work site, construction staff will halt activity and contact a qualified NPS biologist who will determine when work can proceed.
Wildlife-2	The use of plastic netting or plastic covered erosion control wattles, which could trap small

	animals, will not be permitted.
Wildlife-3	Vegetation clearing and trail construction should be completed between July 7 and January 31 to the greatest extent possible to reduce and avoid impact to nesting birds. If this is not possible, then vegetation within the trail corridor will be cleared during that timeframe so that construction will occur within nesting season. If work is to occur in a cleared corridor, then work (i.e. noise) should proceed simultaneously along the whole trail alignment until the work is completed or the breeding season ends so that the noise and activity related to the construction will deter birds from starting their nests in the project area. If this is not possible, bird surveys will be completed before construction, and the park will take precautions to protect nesting birds while work occurs.
Water Quality/Soils	
Water-1	Best Management Practices for drainage and sediment control will be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation.
Water-2	A Hazardous Spill Plan or Spill Prevention, Control and Countermeasures Plan will be in place prior to construction. This plan will state what actions will be taken in the event of a spill, notification measures, and preventative measures to be implemented, such as the placement of refueling facilities, storage, and handling of hazardous materials, etc. The plan must be submitted at least two days before beginning construction work.
Cultural Resources	
Cultural-1	In the event that a previously unidentified archeological resource is discovered during ground disturbing activities, all construction work involving subsurface disturbance will be halted in the area of the resource and in the surrounding area where further subsurface remains can be reasonably expected to occur. An archeologist meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR 61) will immediately inspect the work site and determine the area and nature of the affected archeological feature. Construction work may then continue in the project area outside the defined area of the resource. Within 48 hours of the discovery, the NPS will notify the California State Historic Preservation Office and such notification will describe the NPS' assessment of the eligibility of the feature for listing on the National Register of Historic Places and proposed actions to resolve potential adverse effects. The CA SHPO will respond within 48 hours of the notification and the NPS shall take into account the CA SHPO's recommendation regarding National Register eligibility and proposed actions, and then carry out appropriate actions.
Cultural-2	The boundary of the archeological site will be flagged so that it can be protected during construction.
Visitor Resources	
Visitor-1	Information will be posted at the West Side VCS and park's website alerting visitors to the dates and times of trail construction.
Visitor-2	The park will monitor visitor use of the parking lot and mark additional parking spaces as accessible if necessary.
Visitor-3	The park would monitor use of the parking lot after the trail(s) construction. If the park finds that the existing VCS parking lot is inadequate, additional planning will be conducted to determine if (and where) more parking is warranted. Additional environmental compliance would be required and completed for the construction of new parking spaces or changes to existing parking.

Other Alternatives Considered

No Action Alternative. Under the No Action alternative, current management practices will continue and neither an accessible trail nor a connector trail will be constructed. Visitors will access information about park resources and trails at the VCS as they do currently. Signage could be added that directs visitors not to walk in areas without formal trails, but visitors will most likely continue to create ‘social’ trails around the VCS area. Visitors to the West Side VCS will not be able to hike that area of the park or connect to the existing trailheads without driving another two miles to the Chaparral Area. There will be no changes to the park road, so safety hazards of visitors walking the narrow road will persist. Because much of the park's terrain is steep and rocky, trail access for visitors with mobility impairments will continue to be limited to three options; the Bench Trail and Peaks View Picnic Area near the east entrance of the park and the Chaparral area picnic area and parking lot on the west side.

Alternative C – Accessible Trail and Non-Wilderness Connector. This alternative includes construction of the accessible trail as described in Alternative B. The Alternative C connector trail alignment will be approximately one mile long and three feet wide, and connect to the overflow parking lot and existing trailheads at the Chaparral area in the same manner as described for Alternative B. This alignment extends down the northern portion of Jawbone Canyon and is located outside of designated Wilderness.

Similar to the Proposed Action, the non-wilderness connector trail provides users with impressive views of Pinnacles’ rock formations and the surrounding landscape. Located on the south facing slope, the trail will be fully exposed to summer sun and highly visible from the High Peaks area of the Hain Wilderness. The trail corridor will be consistently steep for the majority of its length and require numerous consecutive switchbacks down the hillside to the canyon bottom. Steep areas will be avoided when possible; however several sections will require traversing through very steep areas. Erosion control measures will be more intrusive and prevalent; multiple retaining walls, check steps, and other measures will be required along the majority of the trail. The trail corridor contains many rock outcroppings that could require micro-blasting or extensive rock drilling. This trail will be constructed by hand crews which will allow the trail to accommodate environmental considerations such as avoiding trees or rock outcroppings and minimizing erosion. No stream crossings are encountered on this route. Staging will occur in the disturbed trail corridor.

Alternatives Considered and Dismissed

Terminating the Connector Trail at the Chaparral Area. The route will have a section with a cross slope in excess of 30 degrees, requiring large effort to cut and remove soil to construct the trail tread bench. A large amount of soil will need to be cut from the hillside and it will require numerous retaining walls. This option will also require crossing a large stream with significant riparian and wetland vegetation. Further, the GMP called for eventual removal and replacement of the Chaparral parking lot if it is washed out by a flood. It was deemed imprudent to create a trail in an area that might wash out in the future.

Improvements at Chaparral Area. During public scoping, the NPS included improvements at the Chaparral Area as part of the proposed action. These actions included obliterating redundant sections of trail, improving wayfinding, and consolidating signage under a new shade structure. Orientation around the Chaparral Area is confusing for visitors, but this issue could be addressed in the short-term by improving signage, an action that does not require analysis in an EA. Improvements to the Chaparral trails are an independent action and can be completed at a later time with additional environmental compliance.

Northern Jawbone Canyon Connector. During scoping, a second connector alignment was discussed. The majority of this trail was the same as the Alternative C alignment but it traversed through the Hain Wilderness for approximately 600 feet. Other impacts are similar to those described for Alternative C. This alignment had

one stream crossing and will have the greatest impacts to an archeological site. Because this alignment was similar to the other actions alternatives, and had similar or greater impacts, it was dismissed from further analysis.

Scout Peak to High Peaks. During scoping, a commenter suggested that a trail from Scout Peak to the High Peaks will be used more than a connector trail through Jawbone Canyon. This trail could be valuable to add in the future, but it was not added to this project because it does not meet the purpose and need of the project; it will not create a safe option to reach the other trailheads at the Chaparral Area or reduce resource damage. This trail could be considered in the future.

Rock Stream Crossings. There are several options to cross the streams. One method is to place rocks on the sides of the stream and within the streambed to use as stepping stones. Another option is to clear the streambed down to bedrock and either place rocks on the sides or have visitors climb out of the stream on the earthen side banks. The park weighed the potential impacts to vegetation, water quality (from erosion), and wilderness. The NPS planning team determined that in-stream crossings will result in far more environmental impacts than a bridge crossing. The Regional Water Quality Control Board felt that clearing the streambed to bedrock will cause fill to be released in the streambed and result in unnecessary impacts to water quality. Water quality impacts could also occur during placement of rocks in the streambed. The park determined that climbing in and out of a streambed inevitably causes a much greater amount of damage. The area where visitors climb in and out of the stream tends to become larger over time, and even greater amount of area will become denuded of vegetation and subject to erosion. Because the impacts will be greater, this option was dismissed. Additionally, this trail will be used by stock animals and rock crossings are more difficult and hazardous for them to navigate.

Rationale for the Selected Alternative and Environmentally Preferable Alternative

The proposed action (preferred alternative) was selected for implementation because it meets the purpose and need of the project while preserving park resources to a greater degree than both No Action and Alternative C. The rationale for the selected alternative is noted below in the discussion of how it meets the criteria in the Council on Environmental Quality (CEQ) NEPA regulations.

These guidelines require that the “agency in reaching its decision [specify] the alternative or alternatives which were considered to be environmentally preferable” (CEQ Regulations, section 1505.2). The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources (40 CFR 1505.2(b)).

In accordance with the criteria outlined in NEPA and DO-12, an Environmentally Preferable Alternative meets the following criteria: (1) Fulfills the responsibilities of each generation as trustee of the environment for succeeding generations; (2) Ensures for all Americans, safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) Attains the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences; (4) Preserves important historic, cultural, and natural aspects of national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice; (5) Achieves a balance between population and resource use that will permit high standards of living and wide sharing of life’s amenities; and (6) Enhances the quality of renewable resources and approach the maximum attainable recycling of resources.

Alternative B, the selected alternative is the environmentally preferable alternative as it meets all of the criteria above, with limited impacts to the biological and physical environment. Both the accessible and connector trails will create public access opportunities that minimize impacts while providing sustainable hiking opportunities for future generations (criteria 1 and 5). Alternative B creates a safer hiking alternative than No Action and has been routed specifically to create an aesthetically pleasing hiking experience for visitors on the trail and those in the trail's viewshed (criteria 2). The route of the selected alternative reduces steep grades, switchbacks and the potential consequences of shortcutting trails (such as erosion and trampling of vegetation); protects important wilderness viewsheds; and minimizes negative effects to both natural and cultural resources (criteria 3 and 4).

The No Action alternative does not address any of these criteria and harms the environment by allowing unsafe conditions and resource damage to continue. Alternative C meets these criteria to a lesser degree than Alternative B because the steep connector trail less sustainable in the long-term, and will result in resource damage from erosion. The connector alignment will be less pleasing to visitors due to its steepness and exposure, and will impact viewsheds from Wilderness areas.

NPS policy generally discourages intrusions in Wilderness where non-Wilderness options exist; however, NPS Management Policies 6.3.10.2, Trails in Wilderness, states that "Trails will be permitted within wilderness when they are determined to be necessary for resource protection and/or for providing for visitor use for the purposes of wilderness." Alternative B was selected instead of Alternative C (non-Wilderness connector) because it protects both natural and scenic resources to a greater degree.

Several design components will be integrated into the project to reduce the impact on the scenic viewshed as seen from that location, including: 1) keeping the size of the overlook small, 2) using native colored rocks for the retaining wall at the overlook, 3) keeping the hardened trail tread the color of the natural soil, 4) concealing the trail in vegetation to the greatest extent feasible, and 5) siting the connector trail lower than "The Fingers" formations for a large portion of the route, screening it from the view of visitors in designated wilderness. The portion of trail in wilderness would be constructed with hand tools. The Alternative C alignment is almost entirely within the viewshed of the High Peaks area of the Hain Wilderness. The ridge and open meadow provide little to no opportunity to conceal the trail, which would have a large impact on the High Peaks integral vista described above. Further, the trail corridor has extensive rock outcroppings which would require blasting or drilling; this unnaturally broken rock would further impact the viewshed. Alternative C is also very steep and would require numerous switchbacks, which would lead to shortcutting and erosion (See Geology analysis in the EA).

Why the Selected Alternative will not have a Significant Effect on the Human Environment

Using the ten significance criteria as defined in the Council on Environmental Quality's NEPA regulations (Section 1508.27), the NPS has determined that the selected alternative can be implemented with no significant adverse impacts. The following criteria were used to determine the significance of each impact.

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect may be beneficial.

All potential impacts were identified in the EA and none rise to the level of significance. The selected alternative has a large number of benefits to visitor access, recreation and safety. The negative effects to wildlife, vegetation, cultural resources, geology and wilderness are minimal, and adverse effects will be far below the level of significance, especially with mitigation and best management practices.

2. The degree to which the Selected Alternative affects public health and safety.

The selected action will improve the safety of visitors by creating a trail connection from the West Side Visitor

Contact Station to the other park trails at the Chaparral Day Use Area. This will eliminate the need for visitors to access this area by walking the two mile, winding, shoulder-less road. Portions of the selected connector alignment are tucked into the hillside, providing a shaded hiking experience in the summer when temperatures can reach over 100 degrees. The addition of trails also provides a long-term beneficial impact on the health of visitors by promoting a healthy living style through outdoor exercise.

3. Unique characteristics of the area (proximity to historic or cultural resources, wild and scenic rivers, ecologically critical areas, wetlands or floodplains, and so forth).

The west side of Pinnacles National Park contains the Lyons Homestead, an area proposed as an historic archeological district to highlight the homesteading history of the area. The trails will avoid sensitive portions of this proposed district while providing an opportunity for visitors to view and learn about the area's homesteading history. Construction of a formal trail will protect the proposed district by keeping recreation to a defined trail, thereby reducing potential damage from visitors who wander and create social trails. Unique marble outcrops and a sensitive archeological site will be avoided. No wetland, floodplains, wild and scenic rivers, unique animal habitat or vegetation communities are present. Although the area passes through 1500 feet of the larger 16,048 acre Hain Wilderness, the effect to wilderness is small and insignificant.

4. Degree to which impacts are likely to be highly controversial.

Neither the project nor its effects are highly controversial. During both public scoping and public review of the EA, the public were supportive of the trail construction, and there were no issues that were highly controversial. During public scoping, some members of the public were concerned about the effect on west side parking availability, but this effect is not inherently controversial. Only four comment letters were received on the EA, all of which supported the project. The small effects on Wilderness are also not controversial; see *Review of the EA* section for outreach to wilderness organizations.

5. Degree to which impacts are highly uncertain or involve unique or unknown risks.

It is difficult to anticipate the future use of the new trails and therefore it is difficult to predict if additional parking is needed, or the quantity of such parking. While the full effect on parking is unknown, the risk is small and not considered highly uncertain. The park determined that a visitation increase would not result in significant parking impacts because:

- Existing visitation on the west side of the park is very low except for three holiday weekends (historically, 85% of the visitors enter from the east side of the park, and the remaining 15% enter the park from the west side)
- Other than the holiday weekends, the VCS parking lot is rarely, if ever, full.
- People generally visit Pinnacles National Park to hike, and usually select the trail once they arrive
- If the VCS lot is full, the other west side lots would likely have spaces available
- The park would monitor use of the parking lot after the trail(s) construction. If the park finds that the existing VCS parking lot is inadequate, additional planning will be conducted to determine if (and where) more parking is warranted. Additional environmental compliance would be required and completed for the construction of new parking spaces or changes to existing parking.

There were no highly uncertain, unique, or unknown risks identified for other park resources.

6. Whether the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.

The selected alternative neither establishes a precedent for future actions with significant effects, nor represents a decision in principle about a future consideration.

7. Whether the action is related to other actions that may have individual insignificant impacts but cumulatively significant effects.

The impacts of the selected alternative on each impact topic were identified in the EA. Cumulative impacts to each resource were also identified and none will have cumulatively significant effects.

8. Degree to which the action may adversely affect historic properties in or eligible for listing in the National Register of Historic Places, or other significant scientific, archeological, or cultural resources.

The project area was surveyed for potential historic resources. The Proposed Lyons Homestead Historical Archeological District and a potentially significant archeological site are within the area of potential effect for cultural resources. Sensitive areas will be avoided and mitigations will be place for the treatment of unanticipated discoveries. On May 25, 2016, the California State Historic Preservation Officer concurred with the NPS that the project will not result in an adverse effect to historic resources.

9. Degree to which an action may adversely affect an endangered or threatened species or its habitat.

There are three federally listed species that are found within Pinnacles National Park: the federally threatened California red- legged frog (*Rana draytonii*), federally and state threatened California condor (*Gymnogyps californianus*), and the federally and state threatened tiger salamander (*Ambystoma californiense*). These species are not known to exist in the project area, which provides inadequate habitat for all three species. On May 23, 2016, the U.S. Fish and Wildlife Service concurred with the NPS determination that the project may effect, but is not likely to adversely affect these threatened or endangered species.

10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The selected alternative does not violate any federal, state, or local law, or requirements imposed for protection of the environment.

Public Involvement

Scoping

A list of issues and concerns related to improvements to the project were identified through park internal scoping and through the public scoping process. The public scoping period was from June 25 to July 25, 2015. A project newsletter was emailed and mailed to a list of approximately 500 interested parties and a press release was sent to media outlets. Copies of the newsletter were available at the park visitor centers. The newsletter was posted on the park's project website, <http://parkplanning.nps.gov/westsidetrails>. The park hosted a public scoping meeting on Wednesday, July 8, 2015. Twelve people were in attendance. The majority of comments at the public meeting were about parking, the lack of available parking spaces at the Chaparral lot, and the need for a shuttle system. Most felt that the existing parking is inadequate, the Chaparral lot is essential and should not be removed (as directed by the GMP), that visitors need to park as close as possible to the trailheads, and the parking at the overflow lot was too far from the trails. Overall, meeting participants seemed to express general support for construction of the trails.

The park received nine comment letters during the scoping period. Some of these letters also expressed dissatisfaction with the availability of existing parking and future removal of the Chaparral parking lot and desire for a shuttle system and additional visitor services on the west side to complement the trails. Other concerns focused on the need for analysis of impacts from invasive plants, to wilderness and water quality, and to the visitor experience. Some called for more details in the project description regarding elevations, distance, and level of hiking difficulty. Other commenters expressed disappointment that a larger trail network was not being

proposed at this time and questioned the utility of the connector trail in the absence of a trail network. There were concerns that the public will not use the connector trail as a starting point for hikes on the west side and that visitors need to park at the Chaparral Area to get as close as possible to the other west side trailheads. Others noted that bringing more people into the park and increased visitation will result in resource and visitor impacts (i.e. parking). The topic of interpretation was discussed in numerous letters, and commenters suggested interpretive themes for the trails and stressed the importance of the interpretive components of the project. There were several positive comment letters about the importance of new west side trails, the potential socioeconomic benefits to the city of Soledad and the ability of the accessible trail to serve a wide range of visitors (from babies to boomers). The NPS received a comment letter from the Regional Water Quality Control Board about permitting requirements, and an initial letter from the State Historic Preservation Officer concurring with the area of potential effect (APE) for the project. Scoping comments were considered in the development of the alternatives and analysis in this EA.

Review of the EA

The formal public review period for the EA began on April 1, 2016 and extended through April 30, 2016. The NPS announced the public release of the EA and invited public comment through a press release, notice on the project website (<http://parkplanning.nps.gov/westwidetrails>) as well as via a mailing to approximately 530 people (email and hard copies). The EA and an updated newsletter were available at the park visitor centers and the EA was available for review at the Soledad Branch Library, King City Library, and San Benito County Library and the park visitor centers. The park held one public meeting on April 11, 2016; no members of the public attended. The project was also discussed at the Hollister City Council meeting on April 11, 2016. Throughout the public review period, the public was invited to submit comments by regular mail or online on the project website on PEPC.

Letters and copies of the EA were sent to Wilderness Watch, Wilderness Land Trust, and California Wilderness Coalition. After the public comment period ended, the NPS followed with phone messages and emails to all three organizations. One response was received from California Wilderness Coalition stating that the organization did not have any comments on the project. No comment letters or concerns were received from Wilderness Watch or the Wilderness Land Trust.

During the EA public review period, the NPS received four comment letters on the project. All four commenters supported the construction of the trails and one specifically endorsed Alternative B. One commenter wanted to ensure that the trails were appropriately signed so that visitors are aware of their hiking and parking options. Another suggested that benches be installed on the connector trail. There was also a concern that the new trails could impact current parking capacity and cause parking on road shoulders with resulting habitat degradation. This concern has been addressed by inclusion of a new mitigation measure and is discussed in the Errata.

Consultation and Coordination

State Historic Preservation Office (SHPO)

A letter was sent to the CA SHPO on June 24, 2015 initiating consultation. SHPO responded in a letter on July 17, 2015 requesting additional clarification of the project's APE; this additional information was sent on January 25, 2015. In a letter dated April 1, 2016, the SHPO: 1) agreed NPS identification efforts are sufficient, 2) concurred with the determinations of eligibility and 3) concurred that the undertaking has the potential to affect historic properties. A May 25, 2016 letter from the agency stated that "the SHPO has no objection to the proposed finding of No Adverse Effects for this undertaking."

US Fish and Wildlife Service

The NPS made the determination that the project will be unlikely to adversely affect federally listed species

because 1) none are known to inhabit the area; 2) the project does not contain critical habitat; and 3) contractors will receive training on protocols if a listed species is encountered during construction. The NPS sent the USFWS a letter on February 18, 2016 with a request for concurrence with this determination. On May 23, 2016, the USFWS concurred with the NPS determination.

Army Corps of Engineers

Under Section 404 of the Clean Water Act (33U.S.C. 1344), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material to Waters of the U.S., including wetlands. The NPS consulted with the Army Corps of Engineers, San Francisco District at the project site on October 14, 2015. Construction of bridges, with all structures above the mean high water mark, will be outside of the USACE jurisdiction. Rock/armored bank crossings would require Section 404 and 401 permits. Since the project proposes bridge crossings, no further consultation or permitting with the USACE is needed. No comments were received on the EA.

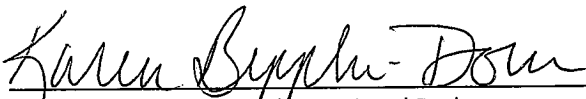
Regional Water Quality Control Board (RWQCB)

The RWQCB regulates all surface and groundwater in the state of California. The NPS also consulted with the Central Coast RWQCB, and the parties had a conference call on the project on November 2, 2015. As a result of this conversation (and the park proposing a bridge instead of rock crossing), it was determined that no further consultation or permitting with the RWQCB was needed. No comments were received on the EA.

Conclusion

Based on the environmental impact analysis contained in the Environmental Assessment, the mitigation measures designed to avoid, reduce, or eliminate potential impacts, and the results of public review and agency coordination, the National Park Service has determined that the selected alternative does not constitute a major federal action that will significantly affect the quality of the human environment. The selected alternative is not without precedent, nor is it similar to an action which normally requires an environmental impact statement. No connected actions with potential significant impacts were identified. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality, an Environmental Impact Statement will not be prepared.

RECOMMENDED:

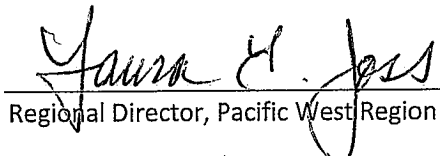


Superintendent, Pinnacles National Park

5/27/16

Date

APPROVED:



Regional Director, Pacific West Region

6/3/2016

Date

Appendix A: Determination of Non-Impairment

The Prohibition on Impairment of Park Resources and Values

NPS *Management Policies 2006*, §1.4.4, explains the prohibition on impairment of park resources and values: “While Congress has given the Service management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the 1916 Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them. The impairment of park resources and values may not be allowed by the Service unless directly and specifically provided for by the legislation or by the proclamation establishing the park. The relevant legislation or proclamation must provide explicitly (not by implication or inference) for the activity, in terms that keep the Service from having the authority to manage the activity so as to avoid the impairment.”

What is Impairment?

NPS *Management Policies 2006*, §1.4.5, What Constitutes Impairment of Park Resources and Values, and §1.4.6, What Constitutes Park Resources and Values, provide an explanation of impairment. “Impairment is an impact that, in the professional judgment of the responsible NPS manager, will harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values.” §1.4.5 of *Management Policies 2006* states:

“An impact to any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- Identified as a goal in the park’s general management plan or other relevant NPS planning documents as being of significance.”

An impact would be less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated. An impact that may, but would not necessarily lead to impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park.”

Per §1.4.6 of *Management Policies 2006*, park resources and values at risk for being impaired include:

- “the park's scenery, natural and historic objects, and wildlife, and the processes and condition that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structure, and objects; museum collections; and native plants and animals;

- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.”

A Foundation Document for Pinnacles National Park was completed in January 2015. This document identified the significance statements have been identified for the park:

- Pinnacles National Park contains a remnant of an ancient volcanic field that was split and offset approximately 200 miles by the movement of two continental plates and provided key evidence for the theory of plate tectonics.
- Pinnacles National Park contains the most extensive assemblage of accessible, rare talus caves within the national park system and cares for the natural processes and ecosystems within.
- The Hain Wilderness protects the natural character of central California’s native ecosystems and provides opportunities to experience wildness in a region of expanding urban development.
- Intact ecological processes and communities of Pinnacles National Park, including oak savanna, rocky cliffs, and riparian and chaparral ecosystems, provide a refuge for the diverse native flora and fauna within the Gabilan ecoregion.
- The American Indian archeological and ethnographically significant resources of Pinnacles National Park are preserved within their ecological context and provide opportunities to study and continue traditional practices and resource management.
- Historic properties associated with early pastoral, resource extraction, and agricultural economies of the region are preserved within their rural context and provide opportunities for understanding aspects of life and land use practices from the early period of American settlement in California.
- The history of Pinnacles National Park includes significant grassroots conservation efforts by local residents and the work of federal unemployment relief programs such as the Civilian Conservation Corps.
- Pinnacles National Park plays a key role as a reintroduction site for the California condor, fostering public understanding and scientific research with the goal to one day remove this species from the federal Endangered Species List for the benefit of future generations.

The following fundamental resources and values have been identified the park:

- Landforms and Geologic Faults Reflecting Past and Present Tectonic Forces
- Scenic Views and Wild Character
- Talus Caves
- Opportunities for Research and Study
- Native Species and Ecological Processes

Impairment Determination for the Selected Alternative

Based on the evaluation of potential impacts identified in the EA, the topics evaluated for impairment include geology, vegetation, special status wildlife, cultural resources and wilderness. Non-resource topics such as visitor use and access are not subject to impairment determinations.

Geology

The selected alternative will not impair the geologic features and resources of Pinnacles National Park. The

West Side Trail Construction Finding of No Significant Impact

Appendix A – Determination of Non-Impairment

Page 2 of 4

trails would disturb and displace soil as part of construction, but this is a very small impact to the park's soil resources. No notable geologic resources would be affected. One marble outcropping is in the vicinity of the accessible trail; the trail will be routed around the feature to avoid impacts. The trails will not be constructed on any of the park's significant geologic landforms, and would not inhibit or degrade the park's ability to accurately interpret geologic history.

Vegetation

Up to four acres of vegetation could be removed for the construction of the two trails which includes small juniper trees, chaparral shrubs, annual native grasses and non-native grasses. The loss of this vegetation would not result in any substantial long-term changes to quality or quantity of vegetation populations due to the small amount of removal compared to the abundance of vegetation in the area. All of the vegetation to be removed is common in California and the park, except for two CNPS listed species, Douglas' spineflower (*Chorizanthe douglasii*) and virgate eriastrum (*Eriastrum virgatum*). Although these two species are uncommon throughout California, they are not uncommon in Pinnacles National Park and elsewhere in San Benito County. Where trail construction passes through populations of these rare plants, disturbance will be limited to the immediate trail corridor. No dirt, brush, or construction materials would be placed there, and foot traffic will be confined to the trail only. Removal of individual plants for trail construction would result in small, insignificant impacts to these plant populations. Therefore, the selected alternative will not result in impairment of vegetation at Pinnacles National Park.

Wildlife

The general area surrounding the proposed trail corridor may provide habitat for wildlife species. Generally, animals would most likely leave the area when vegetation removal and trail construction is underway so those effects are expected to be minimal. Mitigation will be implemented to protect migratory birds. Special status species are not expected to be present in the project area, and mitigation will be employed to protect listed species if they were to unexpectedly enter the project area during construction. Therefore, the selected alternative will not result in impairment of wildlife at Pinnacles National Park.

Cultural Resources

The selected alternative will not remove or destroy historic, ethnographic resources or other cultural resources significant to the purpose of the park. The connector trail will be routed to avoid the most intact areas of an archeological site and the proposed Lyons Homestead Historical Archeological District. Planning ensured that the historic homestead will be preserved in its rural context and the accessible trail will provide opportunities for understanding aspects of life from the homesteading area in California. This project not only protects resources but help to fulfill one of the park's significance statements. As such, the selected alternative will not result in impairment of cultural resources at Pinnacles National Park.

Wilderness

The project will occur within and adjacent to Wilderness. Trail alignments would be either constructed to blend into the landscape or tucked into the hillside to avoid visual impacts from the High Peaks area of the Hain Wilderness. In this way, the project would protect Scenic View and Wild Character, a fundamental park value. Concealing the trail from high quality viewshed helps maintain Wilderness attributes. The trails also

provide the public with wonderful opportunities to view the dramatic Pinnacles Rocks formation and surrounding geologic landscapes – another fundamental resource.

A section of the connector trail that passes through 1500 feet of Wilderness will provide visitors with an opportunity to experience the natural character of central California's native ecosystems and Wilderness. Construction of the trail and stream crossing within Wilderness will be completed with hand tools and have minimal impacts on wild setting. Therefore, the selected alternative will not result in impairment to Wilderness or Wilderness values.

Summary

As described above, adverse effects and environmental impacts anticipated as a result of implementing the selected alternative on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or identified as significant in the park's general management plan or other relevant NPS planning documents, will not rise to levels that will constitute impairment of park values and resources in Pinnacles National Park.

Appendix B: Errata for West Side Trail Construction Environmental Assessment

Introduction

The West Side Trail Construction Environmental Assessment was released for public review from April 1 to April 30, 2016. Four correspondences were received during the public review period. This Errata is a record of changes to the text of the EA as a result of public comment and agency consultation. The edits correct, clarify, or modify original text based on public comments and correct other inaccuracies in the environmental assessment (EA). These corrections do not change the project activities or increase the degree of impact described in the EA.

Substantive comments received on the EA require responses. Only one of the comments was substantive and discussed below in both the edits to the EA and response to comments.

The Errata should be attached to the EA to complete the environmental impact analysis. The environmental assessment, Errata, and Finding of No Significant Impact (and its appendices) comprise the full and complete record of the environmental impact analysis.

Edits to the Environmental Assessment

Note: Text to be removed is in strikethrough. Added text is underlined. Existing text to remain is in regular font.

General edit

Delete all instances of accessible loop trail, and replace with accessible trail

Description of Accessible Trail, Page 12 -13

The accessible trail will be completed in phases. Phase 1 ~~The accessible loop trail~~ would be approximately .4 mile (2,150 feet) long ~~two-thirds of a mile in length, in a lollipop design (Figure 3), for a total of approximately two acres of ground disturbance.~~ The trail would begin from the existing interpretive plaza adjacent to the West Side VCS to an overlook with a view of the High Peaks. ~~and~~ It would be designed to meet the Architectural Barriers Act Accessibility Standards (ABAAS) for Outdoor Developed Areas. It would follow the contour of the landscape to maintain a maximum 10% running slope (the slope of the direction that people travel when walking on the trail), although the average running slope is about 3-5%. The maximum cross slope (perpendicular to the running slope – the slope across the trail) would be 2%. See Figure 4 for the general area of the loop trail. If funding allows, Phase 2 of the accessible trail will extend another 1,250 feet to form a loop (see map in the EA). The possibility also exists that this section of trail could be constructed as a non-accessible hiking trail.

From the VCS to the overlook, ~~the~~ trail would have a firm and stable surface and a width of up to 60 inches (five feet) for the entire trail, with one foot shoulders. The trail 1,250 loop extension will most likely be three feet wide. ~~If that portion is built to ABAAS standards, if the trail is less than 60 inches,~~ passing spaces would be provided at intervals of less than 1,000 feet. The surface would be a similar color to existing soil to blend into the landscape. It would be hardened but not paved with asphalt as it is a trail, not a service or access

road. Two overlooks are proposed- one at the beginning of the loop, and another along the loop with a view of the High Peaks. Figure 5 shows the scenic view from one of the proposed overlooks. The overlooks would be up to 25 x 15 feet and provide one or two benches. Some cut slopes could be 5-6 feet high, and cut slopes over 40% would require a rock retaining wall. The walls would be contoured into the hillside and constructed of local rock or rough-hewn wood to match the existing landscape.

The trail would have a firm and stable surface and a width of up to 60 inches (five feet) for the entire trail, with one foot shoulders. If the trail is less than 60 inches, passing spaces would be provided at intervals of 1,000 feet. The surface would be a similar color to existing soil to blend into the landscape. It would be hardened but not paved with asphalt as it is a trail, not a service or access road. Two overlooks are proposed- one at the beginning of the loop, and another along the loop with a view of the High Peaks. Figure 5 shows the scenic view from one of the proposed overlooks. The overlooks would be up to 25 x 15 feet and provide one or two benches. Some cut slopes could be 5-6 feet high, and cut slopes over 40% would require a rock retaining wall. The walls would be contoured into the hillside and constructed of local rock to match the existing landscape.

From the VCS to the overlook, the trail would have a firm and stable surface and a width of up to 60 inches (five feet) for the entire trail, with one foot shoulders. The trail 1,250 loop extension will most likely be three feet wide. If that portion is accessible, passing spaces will be provided at intervals of 1,000 feet. If the trail is less than 60 inches, If that portion is accessible, passing spaces would be provided at intervals of 1,000 feet. The surface would be a similar color to existing soil to blend into the landscape. It would be hardened but not paved with asphalt as it is a trail, not a service or access road. Two overlooks are proposed- one at the beginning of the loop, and another along the loop with a view of the High Peaks. Figure 5 shows the scenic view from one of the proposed overlooks. The overlooks would be up to 25 x 15 feet and provide one or two benches. Some cut slopes could be 5-6 feet high, and cut slopes over 40% would require a rock retaining wall. The walls would be contoured into the hillside and constructed of local rock to match the existing landscape.

Approximately ~~six~~ four interpretive wayside panels and two information panels will be installed along the accessible route to provide educational information on the natural, cultural, and physical resources on the west side of Pinnacles National Park, particularly as seen from the new trail.

Mitigation Table, page 22

Add new mitigation: Visitor-3 - The park will monitor the use of the new trails and West Side VCS parking lot to determine if more parking is needed. If the park determines that the existing VCS parking lot is inadequate, the park will plan and construct additional parking spaces in the vicinity of the West Side VCS.

Mitigation

~~Veg-8 Where trail construction passes through populations of these rare plants, disturbance will be limited to the immediate trail corridor. No dirt, brush, or construction materials would be placed there, and foot traffic will be confined to the trail only. (reason: repetitive with Veg -7)~~

Introduction to Environmental Consequences, page 22

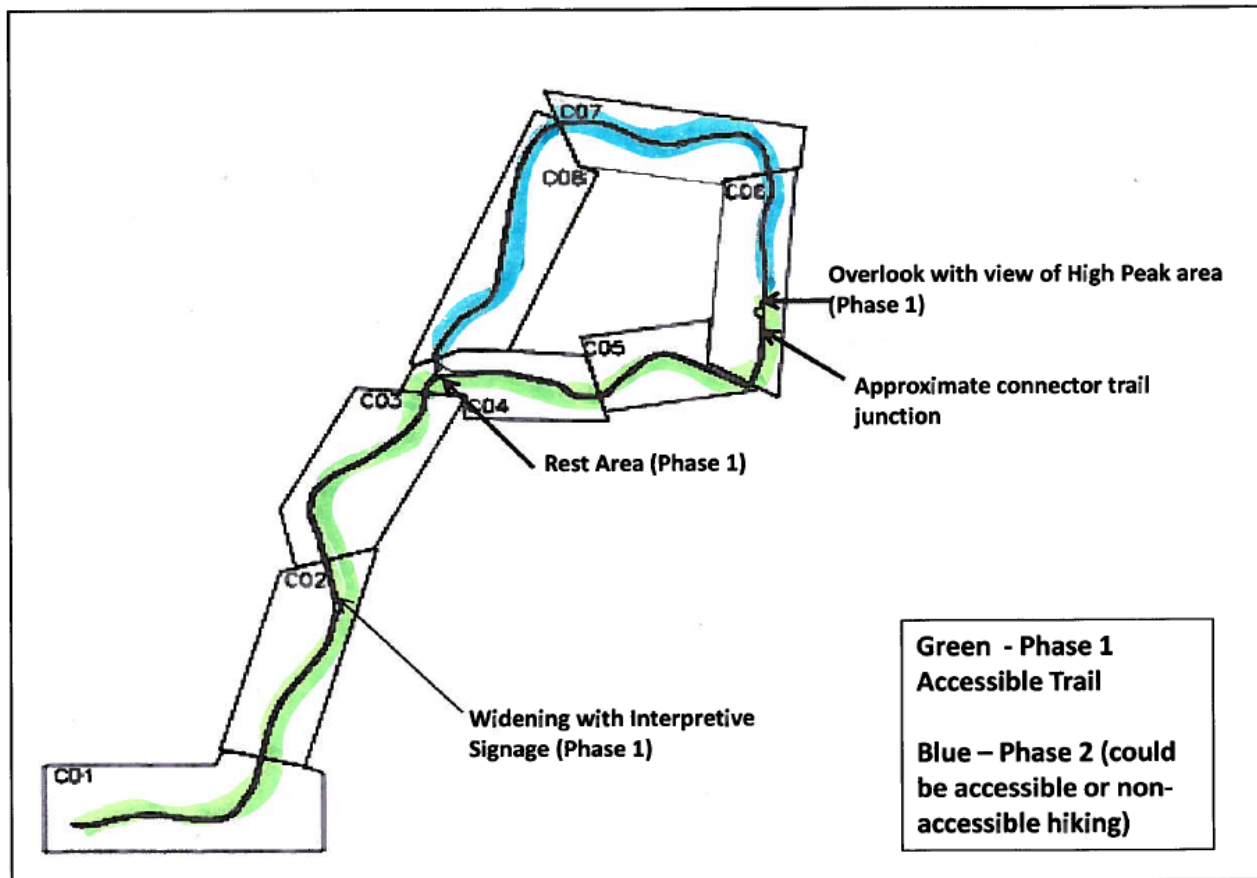
Add text: Environmental impacts have been disclosed for the maximum length of trail and possible disturbance. Funding may limit the length of the accessible trail, rendering it a one way trail (.4 mile) instead of a loop trail (.6 mile). If funding allows, the accessible trail would be extend into a loop (as shown

in Figure 9). The possibility exists that this 1250 foot extension could be constructed as a non-accessible hiking trail.

Maps, page 16

Add new map, Figure 3-1, Phasing of Accessible Trail

Figure 3-1. Phasing of Accessible Trail



Visitor Use and Access, Environmental Consequences, page 45-46

The project could result in some noticeable adverse impacts to parking availability in the VCS lot, throughout the year. ~~Other than the holiday weekends, the VCS is rarely, if ever, full. Currently, vehicle turnover in the VCS lot is high, since visitors usually spend a short amount of time in the lot and then proceed to the Chaparral Area. With the addition of the new trails, visitors would spend a longer time hiking in the VCS area, leading to less vehicle turnover, which could make the parking lot fuller, more often. The park does not expect that this situation would result in a serious parking issue since the addition of these two trails is not expected to dramatically increase the existing low levels of west side park visitation.~~

Although the future use of the trails is difficult to project, the potential exists for use of the new trails to result in some level of increase in visitation on the west side of the park. The actual number of future users is difficult to project and the impacts are somewhat speculative. However, a visitation increase would not result in significant parking impacts because:

- Existing visitation on the west side of the park does not reach capacity except for three holiday weekends
- Other than the holiday weekends, the VCS is rarely, if ever, full.
- People generally visit Pinnacles National Park to hike, and usually select the trail once they arrive
- If the VCS lot is full, the other west side lots would likely have spaces available
- The park would monitor use of the parking lot after the trail(s) construction. If the park finds that the existing VCS parking lot is inadequate, additional planning will be conducted to determine if (and where) more parking is warranted. Additional environmental compliance would be required and completed for the construction of new parking spaces or changes to existing parking.

Further, visitation counts have not shown that the addition of services in any area of the park has resulted in any sharp spikes in visitation. Park staff estimate that visitation grew only slightly with the change of designation from national park to national park. The addition of the accessible trail may attract a different population of user, but it is not expected to be a substantial increase. The park would also monitor use of the accessible spaces, and mark additional spaces as accessible if needed. ~~Overall, people visit Pinnacles National Park to hike, and usually select the trail once they arrive. If the VCS lot is full, the other west side lots may still have spaces available.~~

Response to Comments

Substantive Comment: “In considering the future population growth of California, plus the increase in visitors to the West side that we project long-term, I am concerned that we could put excess pressure on our current parking capacity at the trailheads of the new trails. This could possibly cause encroachment parking at the margins, with habitat degradation. I suggest that we project ahead long-term and design an option of an enlarged parking area at the West Visitor Center.”

Response: The EA text has been revised to reflect this potential impact. It is difficult to anticipate the future use of the new trails and therefore it is difficult to predict if additional parking is needed, or the quantity of such parking. As mitigation, the park would monitor use of the parking lot after the trail(s) construction. If the park finds that the existing VCS parking lot is inadequate, additional planning will be conducted to determine if (and where) more parking is warranted. Additional environmental compliance would be required and completed for the construction of new parking spaces or changes to existing parking.

Non-substantive comment: “My only suggestion would be to perhaps provide a few benches, etc. on the longer extension trail to help those of us who are older, slower hikers who still like to get out and enjoy what Pinnacles has to offer.”

Response: The park does not typically add benches to longer hiking trails. The accessible trail will have two benches at different locations for hikers who may need to rest. Benches could be added on the connector trail in the future if there is a need, but not on the portion of trail within the Hain Wilderness.

Appendix C: Final Minimum Requirements Decision Guide (MRDG)

MRDG begins on the next page.



ARTHUR CARHART NATIONAL WILDERNESS TRAINING CENTER

MINIMUM REQUIREMENTS DECISION GUIDE WORKBOOK

"...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act..."

-- The Wilderness Act of 1964

Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 1: Determination

Determine if Administrative Action is Necessary

Description of the Situation

What is the situation that may prompt administrative action?

Hiking access from the new visitor contact station needs to be provided in order to connect the visitor contact station to the Chaparral trailheads per the 2013 General Management Plan.

Action is needed now because there are no formal trails that start from the recently constructed West Side VCS. The absence of trails impacts both the visitor experience and park resources. Without a formalized trail, visitors hike around the VCS and create their own 'social' trails, which results in damage to native vegetation, contributes to erosion, and threatens the cultural landscape of nearby historic sites. There is, however, a trailhead constructed as part of the interpretive plaza at the VCS that inadvertently leads hikers to a social trail, exacerbating the problem. The 2001 EA for the project to Relocate West Side Maintenance Facility and Visitor Contact Station (VCS) disclosed potential impacts to cultural resources since a trails were not included in the project, and stated "public visitation would not be encouraged until a plan for the site is developed." Further, when the park road is closed, visitors have no way to reach Chaparral and the other park trailheads. The connector would provide a safe trail to that area.

In addition to causing resource damage, a lack of trails at the VCS is also frustrating and potentially dangerous for park visitors. From the VCS, there is no safe way to access the hiking trails within the park by foot. The road that connects the visitor contact station and Chaparral Area is a one-lane curvy road without shoulders or sidewalks that is unsafe for hiking. However, some visitors opt to walk down this dangerous road anyway, particularly if the Chaparral and overflow lots are full. A connector trail is needed to provide a safe, scenic and enjoyable trail for visitors to hike to existing park trailheads.

Options Outside of Wilderness

Can action be taken outside of wilderness that adequately addresses the situation?

☐ YES

☒ NO

EXPLAIN & COMPLETE STEP 1 OF THE MRDG

Explain:

There is an option outside of wilderness, but it does not adequately address the situation. Options for trail corridors are limited due to the area's steep topography, and are located on opposite sides of Jawbone Canyon. The alignment within wilderness minimizes impacts to the views as seen from the Hain Wilderness, particularly the High Peaks integral vista. The non-wilderness alternative, although not constructed within designated wilderness, would be almost entirely within the viewshed of the High Peaks area of the Hain Wilderness. The ridge and open meadow provide little to no opportunity to conceal the trail, which would have a large impact on the High Peaks integral vista.

Criteria for Determining Necessity

Is action necessary to meet any of the criteria below?

A. Valid Existing Rights or Special Provisions of Wilderness Legislation

Is action necessary to satisfy valid existing rights or a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that **requires** action? Cite law and section.

☐ YES

☒ NO

Explain:

No special provision is included for the construction of trails or trail structures in Section 4d of the Wilderness Act.

B. Requirements of Other Legislation

Is action necessary to meet the requirements of other federal laws? Cite law and section.

☒ YES☐ NO

Explain:

H.R. 3641 December 30, 2012 To establish Pinnacles National Park in the State of California as a unit of the National Park System, and for other purposes

Sec. 3 Establishment of Pinnacles National Park

(a) Establishment and purpose

There is hereby established Pinnacles National Park in the State of California for the purposes of—
(1) preserving and interpreting for the benefit of future generations the chaparral, grasslands, blue oak woodlands, and majestic valley oak savanna ecosystems of the area, the area's geomorphology, riparian watersheds, unique flora and fauna, and the ancestral and cultural history of native Americans, settlers and explorers

C. Wilderness Character

Is action necessary to preserve one or more of the qualities of wilderness character including: Untrammeled, Undeveloped, Natural, Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation, or Other Features of Value?

UNTRAMMELED

☐ YES☒ NO

Explain:

Not applicable.

UNDEVELOPED

☐ YES☒ NO

Explain:

If no action is taken in wilderness, the wilderness will remain natural. Because the trail would be almost entirely within the viewshed of the High Peaks area of the Hain Wilderness, it greatly affects the High Peaks integral vista. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide undeveloped views in all directions. The scientific value of this vista is associated with the geologic story of the monument. Further, the trail corridor has extensive rock outcroppings which would require blasting or drilling; this unnaturally broken rock would further impact the viewshed.

NATURAL

☐ YES☒ NO

Explain:

No action is taken in wilderness, the wilderness will remain natural. Because the trail would be almost entirely within the viewshed of the High Peaks area of the Hain Wilderness, it greatly affects the natural character of the High Peaks integral vista. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument. Further, the trail corridor has extensive rock outcroppings which would require blasting or drilling; this unnaturally broken rock would further impact the viewshed.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

☐ YES

☒ NO

Explain:

Not applicable.

OTHER FEATURES OF VALUE

☒ YES

☐ NO

Explain:

The trail alignment will avoid preserve the viewshed from the High Peaks area of the Hain Wilderness and provide a safe method for visitors to hike from the VCS to Chaparral on a trail that allows for the least resource damage.

Step 1 Determination

Is administrative action necessary in wilderness?

Decision Criteria

- A. Existing Rights or Special Provisions
- B. Requirements of Other Legislation
- C. Wilderness Character
 - Untrammeled
 - Undeveloped
 - Natural
 - Outstanding Opportunities
 - Other Features of Value

Summary Responses

Action IS NOT necessary to meet this criterion.

Action IS necessary to meet this criterion.

Action IS NOT necessary to meet this criterion.

Action IS NOT necessary to meet this criterion.

Action IS NOT necessary to meet this criterion.

Action IS NOT necessary to meet this criterion.

Action IS necessary to meet this criterion.

Is administrative action necessary in wilderness?

☒ YES

EXPLAIN & PROCEED TO STEP 2 OF THE MRDG

☐ NO

Explain:

Administrative action is necessary to satisfy the 2013 General Management Plan by providing access from the new visitor contact station with the existing trail system.

Alternative trail alignments would negatively affect the viewshed from the High Peaks and cause greater resource damage due to construction in steeper terrain. They would put the trail through heavy brush on a hillside that is not shaded and very hot for hiking.

Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2

Determine the Minimum Activity

Other Direction

*Is there "special provisions" language in legislation (or other Congressional direction) that explicitly **allows** consideration of a use otherwise prohibited by Section 4(c)?*

AND/OR

Has the issue been addressed in agency policy, management plans, species recovery plans, or agreements with other agencies or partners?

☒ YES

DESCRIBE OTHER DIRECTION BELOW

☐ NO

Describe Other Direction:

"2006 Management Policies, The Guide to Managing the National Park Service" (2006):
Trails will be permitted within wilderness when they are determined necessary for resource protection and/or for providing for visitor use for the purpose of wilderness. p.84, 6.3.10.2

Trail maintenance structures (such as water bars, gabions) may be provided, under minimum requirement protocols, where they are essential for resource preservation or where significant safety hazards exist during normal periods. p. 85, 6.3.10.2

Draft General Management Plan and Environmental Assessment October 2012 (p.80):
New trail connections would be developed, including a trail to link the visitor contact station with the existing trail system.

Time Constraints

What, if any, are the time constraints that may affect the action?

No time constraints affect the action at this time.

Components of the Action

What are the discrete components or phases of the action?

Component X	<i>Example: Transportation of personnel to the project site</i>
Component 1	Brushing of trail alignment
Component 2	Benching of trail alignment
Component 3	Construction of erosion control and other trail features
Component 4	Construct Bridge(s)
Component 5	Construct Armored Wash Crossing
Component 6	
Component 7	
Component 8	
Component 9	

Proceed to the alternatives.

Refer to the [MRDG Instructions](#) regarding alternatives and the effects to each of the comparison criteria.

Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Alternatives

Alternative 1: No action alternative

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

No trail will be constructed between the West Visitor Contact Station and Chaparral Trailhead Area. The area between the West Visitor Contact Station and the Chaparral Trails will remain available for guest to navigate independently. This would create a safety hazard to visitors. Visitors creating their own trails through the canyon will inevitably cause unnecessary resource damage.

Component Activities

How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	<i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1	Brushing of trail alignment	No brushing will take place
2	Benching of trail alignment	No benching will take place
3	Construction of erosion control and other trail features	No construction will take place
4	Construct Bridge(s)	No bridges
5	Construct Armored Wash Crossing	No armored crossing
6		
7		
8		
9		

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No brushing will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	No benching will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	No construction will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	No bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No armored crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Untrammeled Total Rating		0		

Explain:

No action is taken, the area will remain untrammeled.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No brushing will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	No benching will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	No construction will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	No bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No armored crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Undeveloped Total Rating		0		

Explain:

No action is taken, the area will remain undeveloped.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No brushing will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	No benching will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	No construction will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	No bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No armored crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Natural Total Rating		0		

Explain:

No action is taken, the area will remain natural

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No brushing will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	No benching will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	No construction will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	No bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No armored crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Solitude or Primitive & Unconfined Recreation Total Rating		0		

Explain:

No action is taken however the area will remain available to guest for solitude or primitive and unconfined recreation.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No brushing will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	No benching will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	No construction will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	No bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No armored crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Other Features of Value Total Rating		0		

Explain:

No action is taken

Traditional Skills

What is the effect of each component activity on traditional skills?

TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	No brushing will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	No benching will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	No construction will take place	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	No bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No armored crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Traditional Skills Total Rating		0		

Explain:

No trail will be constructed.

Economics

What is estimated cost of each component activity?

COST

Component Activity for this Alternative		Estimated Cost
X	<i>Example: Personnel will travel by horseback</i>	\$1,900
1	No brushing will take place	\$0
2	No benching will take place	\$0
3	No construction will take place	\$0
4	No bridges	\$0
5	No armored crossing	
6		
7		
8		
9		
Total Estimated Cost		\$0

Explain:

Safety of Visitors & Workers

What is the risk of this alternative to the safety of visitors and workers? What mitigation measures will be taken?

RISK ASSESSMENT Severity of Accident	Probability of Accident				
	Frequent	Likely	Common	Unlikely	Rare
Catastrophic: Death or permanent disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical: Permanent partial disability or temporary total disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marginal: Compensable injury or illness, treatment, lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Negligible: Superficial injury or illness, first aid only, no lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risk Assessment	Low Risk				

Explain:

No trail will be constructed. Cuts, scratches and scrapes may be frequent to guest navigating the brush. Sprains and strains may occur to some guest on the steep terrain between the West Side Visitor Contact Station and the Chaparral Trail Heads.

Summary Ratings for Alternative 1

Wilderness Character

Untrammeled	0
Undeveloped	0
Natural	0
Solitude or Primitive & Unconfined Recreation	0
Other Features of Value	0
Wilderness Character Summary Rating	0

Traditional Skills

Traditional Skills	0
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Economics

Cost	\$0
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Safety of Visitors & Workers

Risk Assessment	Low Risk
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Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Alternatives

Alternative 2: Construct west side connector trail with erosion controls and armored stream bank crossings

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

Construct the connector trail utilizing hand tools such as loppers, saws and pick-mattocks to brush the trail alignment. Bench the trail route using hand tools such as pick-mattocks, mcclouds, rock bars and shovels. Construct erosion control features where needed along the entire connector trail using traditional tools such as single jack hammers, double jack hammers, chisels, grip hoist, rock bars, shovels, pick mattocks, blocks, mccloud's and other hand tools. Erosion control features will include water bars, check steps, dry stone walls, switchbacks and trail drains. Construct stream crossings using armored drain pans and armor the stream banks to prevent erosion. Install check steps into and out of the stream crossing to ensure visitors can utilize the crossings safely.

This option will exclusively utilize the use of primitive hand tools, which are approved in the Wilderness Act and is included in the MRA due to the erosion control features being installed along the trail alignment and wash crossings.

The connector trail would be sited lower than "The Fingers" formations for a large portion of the route, screening it from the view of visitors in designated wilderness. This trail location would provides protection for one of Pinnacles National Park two designated integral vistas. "Integral vistas" are views from inside a mandatory Class I airshed area looking outward to specific important panoramas or landmarks beyond the class I area's boundaries, where views have scenic, scientific, or cultural importance to the class I area. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument.

Component Activities

How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	<i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1	Brushing of trail alignment	Loppers, saws, pick-mattocks
2	Benching of trail alignment	Pick-mattocks, mcclouds, rock bars and shovels
3	Construction of erosion control and other trail features	Hand tools and construct features of stone
4	Construct Bridge(s)	N/A
5	Construct Armored Wash Crossing	Hand tools and construct features of stone
6		
7		
8		
9		

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Untrammeled Total Rating		-4		

Explain:

The trail corridor and associated structures will compromise the untrammeled character of the Hain Wilderness.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Undeveloped Total Rating		-4		

Explain:

The trail corridor and associated structures will be compromising the undeveloped character of the Hain Wilderness.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Natural Total Rating		-4		

Explain:

The trail corridor and associated structures will be compromising the natural character of the Hain Wilderness.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Solitude or Primitive & Unconfined Recreation Total Rating		-4		

Explain:

The trail corridor and associated structures will allow more access to the wilderness and compromise solitude or primitive and unconfined recreation.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	1	NE
Other Features of Value Total Rating		-1		

Explain:

Historic armoring is located at the location of the upper stream crossing. This historic armoring will be altered by the construction of new armoring for the purpose of the stream crossing.

The contextual information we know about the road is that it was being used at least up through the 1920's. A reliable end date for its use might be the construction of the dam beginning in 1934, since the road leads right into the reservoir. The road is mentioned by the first monument custodian Herman Hermansen in the 1920's and appears to be a feature that existed prior to his arrival.

The road segment was surveyed and documented by the Sonoma State archeologists in 2014 when they surveyed the Lyons Homestead and Melville Mine sites for the Jawbone trail project. They determined that it is a non-contributing feature to those historic sites, but the park should manage the road as a historically significant feature even though it has no formal status.

Information provided by Timothy Babalis, Environmental Historian

Traditional Skills

What is the effect of each component activity on traditional skills?

TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand tools and construct features of stone	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		4	0	NE
Traditional Skills Total Rating		4		

Explain:

Traditional tools, skills and techniques will be utilized in the construction of the connector trail.

Economics

What is estimated cost of each component activity?

COST

Component Activity for this Alternative		Estimated Cost
X	<i>Example: Personnel will travel by horseback</i>	\$1,900
1	Loppers, saws, pick-mattocks	x
2	Pick-mattocks, mcclouds, rock bars and shovels	y
3	Hand tools and construct features of stone	z
4	N/A	
5	Hand tools and construct features of stone	\$16,000
6		
7		
8		
9		
Total Estimated Cost		\$16,000

Explain:

Throughout this MRDG the options stay the same for brushing, benching and constructing erosion control features. No alternative was assessed to construct the trail without erosion control features as the trail would be unsustainable, become a location for erosion and cause resource damage. Those cost are represented by X,Y and Z and will be weighted with either a static, postive or negative value depending on the alternative.

The stream crossings differ in construction techniques and cost and are estimated on labor and material.

Armored stream crossings = 4 weeks construction per crossing (Gathering and installing stone)

Safety of Visitors & Workers

What is the risk of this alternative to the safety of visitors and workers? What mitigation measures will be taken?

RISK ASSESSMENT Severity of Accident	Probability of Accident				
	Frequent	Likely	Common	Unlikely	Rare
Catastrophic: Death or permanent disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical: Permanent partial disability or temporary total disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marginal: Compensable injury or illness, treatment, lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Negligible: Superficial injury or illness, first aid only, no lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risk Assessment	Low Risk				

Explain:

Trail construction has a negligible risk due to the nature of the work. Greater than negligible risk will be avoided through proper tool use and the use of required personal protective equipment.

Summary Ratings for Alternative 2

Wilderness Character

Untrammeled	-4
Undeveloped	-4
Natural	-4
Solitude or Primitive & Unconfined Recreation	-4
Other Features of Value	-1
Wilderness Character Summary Rating	-17

Traditional Skills

Traditional Skills	4
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Economics

Cost	\$16,000
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Safety of Visitors & Workers

Risk Assessment	Low Risk
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Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Alternatives

Alternative 3: Construct west side connector trail with erosion controls and bridges at stream crossings

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

Construct the connector trail utilizing hand tools such as loppers, saws, pick-mattocks etc. to brush the trail alignment. Bench the trail route using hand tools such as pick-mattocks, rock bars and shovels. Construct erosion control features where needed along the entire connector trail using traditional tools such as single jack hammers, double jack hammers, chisels, grip hoist, rock bars, shovels, pick mattocks, blocks, McLeod's and other hand tools. Erosion control features will include water bars, check steps, dry stone walls, switchbacks and trail drains. Construct bridges to span the stream/wash crossings. Bridge abutments will be constructed outside of the stream level under normal conditions.

This option will only utilize the use of primitive hand tools which are approved in wilderness legislation and is included in the MRA due to the erosion control features being installed along the trail alignment as well as the bridges crossing the stream.

The connector trail would be sited lower than "The Fingers" formations for a large portion of the route, screening it from the view of visitors in designated wilderness. This trail location would provide protection for one of Pinnacles National Park two designated integral vistas. "Integral vistas" are views from inside a mandatory Class I airshed area looking outward to specific important panoramas or landmarks beyond the class I area's boundaries, where views have scenic, scientific, or cultural importance to the class I area. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument.

Component Activities

How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	<i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1	Brushing of trail alignment	Loppers, saws, pick-mattocks
2	Benching of trail alignment	Pick-mattocks, mcclouds, rock bars and shovels
3	Construction of erosion control and other trail features	Hand tools and construct features of stone
4	Construct Bridge(s)	construct bridges using hand tools
5	Construct Armored Wash Crossing	N/A
6		
7		
8		
9		

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Untrammeled Total Rating		-4		

Explain:

The trail corridor and associated structures will compromise the untrammeled character of the Hain Wilderness

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Undeveloped Total Rating		-4		

Explain:

The trail corridor and associated structures will be compromising the undeveloped character of the Hain Wilderness.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	3	NE
Natural Total Rating		-3		

Explain:

The trail corridor and associated structures will be compromising the natural character of the Hain Wilderness. The bridges will span the stream crossing and have no effect on the stream. Further, installation of a bridge would provide long term protection from erosion and water quality. The banks of the stream are highly erodable. If visitors were continuously climbing in and out of the stream bed, the trail would become wider, most likely causing loss of vegetation and soils, which could then affect water quality.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Solitude or Primitive & Unconfined Recreation Total Rating		-4		

Explain:

The trail corridor and associated structures will allow more access to the wilderness and compromise solitude or primitive and unconfined recreation.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Other Features of Value Total Rating		0		

Explain:

Bridge will not only span normal stream level but will also be constructed over historic armoring located along the road alignment that crossed in the same location. Spanning the historic armoring will have no effect on the historic structure.

The contextual information we know about the road is that it was being used at least up through the 1920's. A reliable end date for its use might be the construction of the dam beginning in 1934, since the road leads right into the reservoir. The road is mentioned by the first monument custodian Herman Hermansen in the 1920's and appears to be a feature that existed prior to his arrival.

The road segment was surveyed and documented by the Sonoma State archeologists in 2014 when they surveyed the Lyons Homestead and Melville Mine sites for the Jawbone trail project. They determined that it is a non-contributing feature to those historic sites, but the park should manage the road as a historically significant feature even though it has no formal status.

Information provided by Timothy Babalis, Environmental Historian

Traditional Skills

What is the effect of each component activity on traditional skills?

TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		4	0	NE
Traditional Skills Total Rating		4		

Explain:

Traditional tools, skills and techniques will be utilized in the construction of the connector trail. Any work requiring modern tools will be performed outside of wilderness.

Economics

What is estimated cost of each component activity?

COST

Component Activity for this Alternative		Estimated Cost
X	<i>Example: Personnel will travel by horseback</i>	\$1,900
1	Loppers, saws, pick-mattocks	x
2	Pick-mattocks, mcclouds, rock bars and shovels	y
3	Hand tools and construct features of stone	z
4	construct bridges using hand tools	\$20,000
5	N/A	
6		
7		
8		
9		
Total Estimated Cost		\$20,000

Explain:

Throughout this MRDG the options stay the same for brushing, benching and constructing erosion control features. No alternative was assessed to construct the trail without erosion control features as the trail would be unsustainable, become a location for erosion and cause resource damage. Those cost are represented by X,Y and Z and will be weighted with either a static, postive or negative value depending on the alternative.

The stream crossings differ in construction techniques and cost and are estimated on labor and material.

Bridges = 3 weeks construction per bridge x 2 people and additional labor for moving material when needed. (excavating abutments, pouring concrete, installing stringers and decking. Materials include; concrete, form material, bridge stringers, decking, associated hardware.

Safety of Visitors & Workers

What is the risk of this alternative to the safety of visitors and workers? What mitigation measures will be taken?

RISK ASSESSMENT Severity of Accident	Probability of Accident				
	Frequent	Likely	Common	Unlikely	Rare
Catastrophic: Death or permanent disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical: Permanent partial disability or temporary total disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marginal: Compensable injury or illness, treatment, lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Negligible: Superficial injury or illness, first aid only, no lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Risk Assessment	Low Risk				

Explain:

Trail construction has a negligible risk due to the nature of the work. Greater than negligible risk will be avoided through proper tool use and the use of required personal protective equipment. Bridge crossings will provide the safest year round access for visitors. A bridge would also allow for safer access for stock animals.

Summary Ratings for Alternative 3

Wilderness Character

Untrammeled	-4
Undeveloped	-4
Natural	-3
Solitude or Primitive & Unconfined Recreation	-4
Other Features of Value	0
Wilderness Character Summary Rating	-15

Traditional Skills

Traditional Skills	4
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Economics

Cost	\$20,000
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Safety of Visitors & Workers

Risk Assessment	Low Risk
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Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Alternatives

Alternative 4: Construct west side connector trail with erosion controls, one bridge and armored stream bank crossings

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

Construct the connector trail utilizing hand tools such as loppers, saws, pick-mattocks etc. to brush the trail alignment. Bench the trail route using hand tools such as pick-mattocks, rock bars and shovels. Construct erosion control features where needed along the entire connector trail using traditional tools such as single jack hammers, double jack hammers, chisels, grip hoist, rock bars, shovels, pick mattocks, blocks, McLeod's and other hand tools. Erosion control features will include water bars, check steps, dry stone walls, switchbacks and trail drains. Construct one bridge to span the stream/wash crossings at the upper crossing and armor the lower crossing. Bridge abutments will be constructed outside of the stream level under normal conditions.

This option will only utilize the use of primitive hand tools which are approved in wilderness legislation and is included in the MRA due to the erosion control features being installed along the trail alignment as well as the bridge and armored crossing at the stream.

This alternative is the result of a site visit and the determination that the historic armoring located at the upper crossing made that location best suited for a bridge and the terrain of the lower crossing is better suited for an armored crossing.

The connector trail would be sited lower than "The Fingers" formations for a large portion of the route, screening it from the view of visitors in designated wilderness. This trail location would provides protection for one of Pinnacles National Park two designated integral vistas. "Integral vistas" are views from inside a mandatory Class I airshed area looking outward to specific important panoramas or landmarks beyond the class I area's boundaries, where views have scenic, scientific, or cultural importance to the class I area. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument.

Component Activities

How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	<i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1	Brushing of trail alignment	Loppers, saws, pick-mattocks
2	Benching of trail alignment	Pick-mattocks, mcclouds, rock bars and shovels
3	Construction of erosion control and other trail features	Hand tools and construct features of stone
4	Construct Bridge(s)	construct bridges using hand tools
5	Construct Armored Wash Crossing	Hand tools and construct features of stone
6		
7		
8		
9		

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	5	NE
Untrammeled Total Rating		-5		

Explain:

The trail corridor and associated structures will compromise the untrammeled character of the Hain Wilderness

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	5	NE
Undeveloped Total Rating		-5		

Explain:

The trail corridor and associated structures will be compromising the undeveloped character of the Hain Wilderness.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Natural Total Rating		-4		

Explain:

The trail corridor and associated structures will be compromising the natural character of the Hain Wilderness.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	5	NE
Solitude or Primitive & Unconfined Recreation Total Rating		-5		

Explain:

The trail corridor and associated structures will allow more access to the wilderness and compromise solitude or primitive and unconfined recreation.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Hand tools and construct features of stone	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	construct bridges using hand tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand tools and construct features of stone	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Other Features of Value Total Rating		0		

Explain:

The bridge at the upper crossing will not only span normal stream level but will also be constructed over historic armoring located along the road alignment that crossed in the same location. Spanning the historic armoring will have no effect on the historic structure.

The contextual information we know about the road is that it was being used at least up through the 1920's. A reliable end date for its use might be the construction of the dam beginning in 1934, since the road leads right into the reservoir. The road is mentioned by the first monument custodian Herman Hermansen in the 1920's and appears to be a feature that existed prior to his arrival.

The road segment was surveyed and documented by the Sonoma State archeologists in 2014 when they surveyed the Lyons Homestead and Melville Mine sites for the Jawbone trail project. They determined that it is a non-contributing feature to those historic sites, but the park should manage the road as a historically significant feature even though it has no formal status.

Traditional Skills

What is the effect of each component activity on traditional skills?

TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	Loppers, saws, pick-mattocks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Hand tools and construct features of stone	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	construct bridges using hand tools	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Hand tools and construct features of stone	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		5	0	NE
Traditional Skills Total Rating		5		

Explain:

Traditional tools, skills and techniques will be utilized in the construction of the connector trail. Any work requiring modern tools will be performed outside of wilderness.

Economics

What is estimated cost of each component activity?

COST

Component Activity for this Alternative		Estimated Cost
X	<i>Example: Personnel will travel by horseback</i>	\$1,900
1	Loppers, saws, pick-mattocks	x
2	Pick-mattocks, mcclouds, rock bars and shovels	y
3	Hand tools and construct features of stone	z
4	construct bridges using hand tools	\$10,000
5	Hand tools and construct features of stone	\$8,000
6		
7		
8		
9		
Total Estimated Cost		\$18,000

Explain:

Throughout this MRDG the options stay the same for brushing, benching and constructing erosion control features. No alternative was assessed to construct the trail without erosion control features as the trail would be unsustainable, become a location for erosion and cause resource damage. Those cost are represented by X,Y and Z and will be weighted with either a static, postive or negative value depending on the alternative.

The stream crossings differ in construction techniques and cost and are estimated on labor and material.

Bridges = 3 weeks construction per bridge x 2 people and additional labor for moving material when needed. (excavating abutments, pouring concrete, installing stringers and decking. Materials include; concrete, form material, bridge stringers, decking, associated hardware.

Armored stream crossings = 4 weeks construction per crossing (Gathering and installing stone)

Safety of Visitors & Workers

What is the risk of this alternative to the safety of visitors and workers? What mitigation measures will be taken?

RISK ASSESSMENT Severity of Accident	Probability of Accident				
	Frequent	Likely	Common	Unlikely	Rare
Catastrophic: Death or permanent disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical: Permanent partial disability or temporary total disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marginal: Compensable injury or illness, treatment, lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Negligible: Superficial injury or illness, first aid only, no lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Risk Assessment	Low Risk				

Explain:

Trail construction has a negligible risk due to the nature of the work. Greater than negligible risk will be avoided through proper tool use and the use of required personal protective equipment.

Bridge crossings will provide the safest year round access for visitors and stick animals.

Summary Ratings for Alternative 4

Wilderness Character	
Untrammeled	-5
Undeveloped	-5
Natural	-4
Solitude or Primitive & Unconfined Recreation	-5
Other Features of Value	0
Wilderness Character Summary Rating	-19

Traditional Skills	
Traditional Skills	5

Economics	
Cost	\$18,000

Safety of Visitors & Workers	
Risk Assessment	Low Risk

Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Alternatives

Alternative 5: Construct west side connector trail with erosion controls and armored stream bank crossings

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

Construct the connector trail utilizing hand tools and power tools such as loppers, saws, chain saws, weed eaters, pick-mattocks etc. to brush the trail alignment. Bench the trail route using hand tools such as pick-mattocks, rock bars and shovels. Construct erosion control features where needed along the entire connector trail using traditional tools such as single jack hammers, double jack hammers, chisels, grip hoist, rock bars, shovels, pick mattocks, blocks, McLeod's, drills, generators and other hand and power tools. Erosion control features will include water bars, check steps, dry stone walls, switchbacks and trail drains. Construct stream/wash crossings using armored drain pans and armor the stream banks to prevent erosion. Install check steps into and out of the stream/wash crossing to ensure visitors can utilize the crossings safely.

The connector trail would be sited lower than "The Fingers" formations for a large portion of the route, screening it from the view of visitors in designated wilderness. This trail location would provide protection for one of Pinnacles National Park two designated integral vistas. "Integral vistas" are views from inside a mandatory Class I airshed area looking outward to specific important panoramas or landmarks beyond the class I area's boundaries, where views have scenic, scientific, or cultural importance to the class I area. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument.

Component Activities

How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	<i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1	Brushing of trail alignment	Loppers, saws, pick-mattocks, chain-saws, weed eaters
2	Benching of trail alignment	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks
3	Construction of erosion control and other trail features	Hand and power tools to construct features of stone
4	Construct Bridge(s)	N/A
5	Construct Armored Wash Crossing	Hand and power tools to construct features of stone
6		
7		
8		
9		

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Untrammeled Total Rating		-4		

Explain:

The trail corridor and associated structures will compromise the untrammeled character of the Hain Wilderness, the use of power tools during construction will negatively impact the wilderness during construction.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Undeveloped Total Rating		-4		

Explain:

The trail corridor and associated structures will be compromising the undeveloped character of the Hain Wilderness.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Natural Total Rating		-4		

Explain:

The trail corridor and associated structures will be compromising the natural character of the Hain Wilderness, the use of power tools during construction will negatively impact the natural character of the wilderness during construction.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Solitude or Primitive & Unconfined Recreation Total Rating		-4		

Explain:

The trail corridor and associated structures will allow more access to the wilderness and compromise solitude or primitive and unconfined recreation, the use of power tools during construction will negatively impact the solitude in the wilderness during construction.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weedeaters	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	1	NE
Other Features of Value Total Rating		-1		

Explain:

Historic armoring is located at the location of the upper stream crossing. This historic armoring will be altered by the construction of new armoring for the purpose of the trail stream crossing.

The contextual information we know about the road is that it was being used at least up through the 1920's. A reliable end date for its use might be the construction of the dam beginning in 1934, since the road leads right into the reservoir. The road is mentioned by the first monument custodian Herman Hermansen in the 1920's and appears to be a feature that existed prior to his arrival.

The road segment was surveyed and documented by the Sonoma State archeologists in 2014 when they surveyed the Lyons Homestead and Melville Mine sites for the Jawbone trail project. They determined that it is a non-contributing feature to those historic sites, but the park should manage the road as a historically significant feature even though it has no formal status.

Information provided by Timothy Babalis, Environmental Historian

Traditional Skills

What is the effect of each component activity on traditional skills?

TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Traditional Skills Total Rating		-4		

Explain:

The use of power tools diminishes the traditional skills utilized in the construction.

Economics

What is estimated cost of each component activity?

COST

Component Activity for this Alternative		Estimated Cost
X	<i>Example: Personnel will travel by horseback</i>	\$1,900
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	-\$1,000
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	y
3	Hand and power tools to construct features of stone	-\$2,000
4	N/A	
5	Hand and power tools to construct features of stone	\$15,000
6		
7		
8		
9		
Total Estimated Cost		\$12,000

Explain:

Throughout this MRDG the options stay the same for brushing, benching and constructing erosion control features. No alternative was assessed to construct the trail without erosion control features as the trail would be unsustainable, become a location for erosion and cause resource damage. Those cost are represented by X,Y and Z and will be weighted with either a static, postive or negative value depending on the alternative.

The stream crossings differ in construction techniques and cost and are estimated on labor and material.

Armored stream crossings = 4 weeks construction per crossing (Gathering and installing stone)

Brushing will be faster with the use of power tools, benching will remain the same and erosion contorl features/armored crossings will be completed in faster.

Safety of Visitors & Workers

What is the risk of this alternative to the safety of visitors and workers? What mitigation measures will be taken?

RISK ASSESSMENT Severity of Accident	Probability of Accident				
	Frequent	Likely	Common	Unlikely	Rare
Catastrophic: Death or permanent disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical: Permanent partial disability or temporary total disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marginal: Compensable injury or illness, treatment, lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Negligible: Superficial injury or illness, first aid only, no lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Risk Assessment	Low Risk				

Explain:

Trail construction has a negligible risk due to the nature of the work. Greater than negligible risk will be avoided through proper tool use and the use of required personal protective equipment.

Summary Ratings for Alternative 5

Wilderness Character

Untrammeled	-4
Undeveloped	-4
Natural	-4
Solitude or Primitive & Unconfined Recreation	-4
Other Features of Value	-1
Wilderness Character Summary Rating	-17

Traditional Skills

Traditional Skills	-4
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Economics

Cost	\$12,000
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Safety of Visitors & Workers

Risk Assessment	Low Risk
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Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Alternatives

Alternative 6: Construct west side connector trail with erosion controls and bridges at stream crossings

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

Construct the connector trail utilizing hand tools and power tools such as loppers, saws, chain saws, weed eaters, pick-mattocks etc. to brush the trail alignment. Bench the trail route using hand tools such as pick-mattocks, rock bars and shovels. Construct erosion control features where needed along the entire connector trail using traditional tools such as single jack hammers, double jack hammers, chisels, grip hoist, rock bars, shovels, pick mattocks, blocks, McLeod's, drills, generators and other hand and power tools. Erosion control features will include water bars, check steps, dry stone walls, switchbacks and trail drains. Construct bridges to span the stream/wash crossings. Bridge abutments will be constructed outside of the stream level under normal conditions.

The connector trail would be sited lower than "The Fingers" formations for a large portion of the route, screening it from the view of visitors in designated wilderness. This trail location would provide protection for one of Pinnacles National Park two designated integral vistas. "Integral vistas" are views from inside a mandatory Class I airshed area looking outward to specific important panoramas or landmarks beyond the class I area's boundaries, where views have scenic, scientific, or cultural importance to the class I area. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument.

Component Activities

How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	<i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1	Brushing of trail alignment	Loppers, saws, pick-mattocks, chain-saws, weed eaters
2	Benching of trail alignment	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks
3	Construction of erosion control and other trail features	Hand and power tools to construct features of stone
4	Construct Bridge(s)	Construct bridges using hand and power tools
5	Construct Armored Wash Crossing	N/A
6		
7		
8		
9		

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	Example: Personnel will travel by horseback	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Untrammeled Total Rating		-4		

Explain:

The trail corridor and associated structures will compromise the untrammeled character of the Hain Wilderness, the use of power tools during construction will negatively impact the wilderness during construction.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Undeveloped Total Rating		-4		

Explain:

The trail corridor and associated structures will be compromising the undeveloped character of the Hain Wilderness.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	3	NE
Natural Total Rating		-3		

Explain:

The trail corridor and associated structures will be compromising the natural character of the Hain Wilderness, the use of power tools during construction will negatively impact the natural character of the wilderness during construction.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Solitude or Primitive & Unconfined Recreation Total Rating		-4		

Explain:

The trail corridor and associated structures will allow more access to the wilderness and compromise solitude or primitive and unconfined recreation, the use of power tools during construction will negatively impact the solitude in the wilderness during construction.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Other Features of Value Total Rating		0		

Explain:

Bridge will not only span normal stream level but will also be constructed over historic armoring located along the road alignment that crossed in the same location. Spanning the historic armoring will have no effect on the historic structure.

The contextual information we know about the road is that it was being used at least up through the 1920's. A reliable end date for its use might be the construction of the dam beginning in 1934, since the road leads right into the reservoir. The road is mentioned by the first monument custodian Herman Hermansen in the 1920's and appears to be a feature that existed prior to his arrival.

The road segment was surveyed and documented by the Sonoma State archeologists in 2014 when they surveyed the Lyons Homestead and Melville Mine sites for the Jawbone trail project. They determined that it is a non-contributing feature to those historic sites, but the park should manage the road as a historically significant feature even though it has no formal status.

Traditional Skills

What is the effect of each component activity on traditional skills?

TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Traditional Skills Total Rating		-4		

Explain:

The use of power tools diminishes the traditional skills utilized in the construction.

Economics

What is estimated cost of each component activity?

COST

Component Activity for this Alternative		Estimated Cost
X	<i>Example: Personnel will travel by horseback</i>	\$1,900
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	-\$1,000
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	y
3	Hand and power tools to construct features of stone	-\$2,000
4	Construct bridges using hand and power tools	\$18,000
5	N/A	
6		
7		
8		
9		
Total Estimated Cost		\$15,000

Explain:

Throughout this MRDG the options stay the same for brushing, benching and constructing erosion control features. No alternative was assessed to construct the trail without erosion control features as the trail would be unsustainable, become a location for erosion and cause resource damage. Those cost are represented by X,Y and Z and will be weighted with either a static, postive or negative value depending on the alternative.

The stream crossings differ in construction techniques and cost and are estimated on labor and material.

Bridges = 3 weeks construction per bridge x 2 people and additional labor for moving material when needed. (excavating abutments, pouring concrete, installing stringers and decking. Materials include; concrete, form material, bridge stringers, decking, associated hardware.

Brushing will be faster with the use of power tools, benching will remain the same and erosion contorl features/armored crossings will be completed in faster.

Safety of Visitors & Workers

What is the risk of this alternative to the safety of visitors and workers? What mitigation measures will be taken?

RISK ASSESSMENT Severity of Accident	Probability of Accident				
	Frequent	Likely	Common	Unlikely	Rare
Catastrophic: Death or permanent disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical: Permanent partial disability or temporary total disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marginal: Compensable injury or illness, treatment, lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Negligible: Superficial injury or illness, first aid only, no lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Risk Assessment	Low Risk				

Explain:

Trail construction has a negligible risk due to the nature of the work. Greater than negligible risk will be avoided through proper tool use and the use of required personal protective equipment.

Summary Ratings for Alternative 6

Wilderness Character

Untrammeled	-4
Undeveloped	-4
Natural	-3
Solitude or Primitive & Unconfined Recreation	-4
Other Features of Value	0
Wilderness Character Summary Rating	-15

Traditional Skills

Traditional Skills	-4
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Economics

Cost	\$15,000
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Safety of Visitors & Workers

Risk Assessment	Low Risk
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Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Alternatives

Alternative 7: Construct west side connector trail with erosion controls, one bridge and armored stream bank crossings

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

Construct the connector trail utilizing hand tools and power tools such as loppers, saws, chain saws, weed eaters, pick-mattocks etc. to brush the trail alignment. Bench the trail route using hand tools such as pick-mattocks, rock bars and shovels. Construct erosion control features where needed along the entire connector trail using traditional tools such as single jack hammers, double jack hammers, chisels, grip hoist, rock bars, shovels, pick mattocks, blocks, McLeod's, drills, generators and other hand and power tools. Erosion control features will include water bars, check steps, dry stone walls, switchbacks and trail drains. Construct one bridge to span the stream/wash crossings at the upper crossing and armor the lower crossing. Bridge abutments will be constructed outside of the stream level under normal conditions.

This alternative is the result of a site visit and the determination that the historic armoring located at the upper crossing made that location best suited for a bridge and the terrain of the lower crossing is better suited for an armored crossing.

The connector trail would be sited lower than "The Fingers" formations for a large portion of the route, screening it from the view of visitors in designated wilderness. This trail location would provide protection for one of Pinnacles National Park two designated integral vistas. "Integral vistas" are views from inside a mandatory Class I airshed area looking outward to specific important panoramas or landmarks beyond the class I area's boundaries, where views have scenic, scientific, or cultural importance to the class I area. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument.

Component Activities

How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	<i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1	Brushing of trail alignment	Loppers, saws, pick-mattocks, chain-saws, weed eaters
2	Benching of trail alignment	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks
3	Construction of erosion control and other trail features	Hand and power tools to construct features of stone
4	Construct Bridge(s)	Construct bridges using hand and power tools
5	Construct Armored Wash Crossing	Hand and power tools to construct features of stone
6		
7		
8		
9		

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	5	NE
Untrammeled Total Rating		-5		

Explain:

The trail corridor and associated structures will compromise the untrammeled character of the Hain Wilderness, the use of power tools during construction will negatively impact the wilderness during construction.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	5	NE
Undeveloped Total Rating		-5		

Explain:

The trail corridor and associated structures will be compromising the undeveloped character of the Hain Wilderness.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	4	NE
Natural Total Rating		-4		

Explain:

The trail corridor and associated structures will be compromising the natural character of the Hain Wilderness, the use of power tools during construction will negatively impact the natural character of the wilderness during construction.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	5	NE
Solitude or Primitive & Unconfined Recreation Total Rating		-5		

Explain:

The trail corridor and associated structures will allow more access to the wilderness and compromise solitude or primitive and unconfined recreation, the use of power tools during construction will negatively impact the solitude in the wilderness during construction.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Other Features of Value Total Rating		0		

Explain:

The bridge at the upper crossing will not only span normal stream level but will also be constructed over historic armoring located along the road alignment that crossed in the same location. Spanning the historic armoring will have no effect on the historic structure.

The contextual information we know about the road is that it was being used at least up through the 1920's. A reliable end date for its use might be the construction of the dam beginning in 1934, since the road leads right into the reservoir. The road is mentioned by the first monument custodian Herman Hermansen in the 1920's and appears to be a feature that existed prior to his arrival.

The road segment was surveyed and documented by the Sonoma State archeologists in 2014 when they surveyed the Lyons Homestead and Melville Mine sites for the Jawbone trail project. They determined that it is a non-contributing feature to those historic sites, but the park should manage the road as a historically significant feature even though it has no formal status.

Traditional Skills

What is the effect of each component activity on traditional skills?

TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construct bridges using hand and power tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Hand and power tools to construct features of stone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	5	NE
Traditional Skills Total Rating		-5		

Explain:

The use of power tools diminishes the traditional skills utilized in the construction.

Economics

What is estimated cost of each component activity?

COST

Component Activity for this Alternative		Estimated Cost
X	<i>Example: Personnel will travel by horseback</i>	\$1,900
1	Loppers, saws, pick-mattocks, chain-saws, weed eaters	-\$1,000
2	Pick-mattocks, mcclouds, rock bars and shovels, muck trucks	y
3	Hand and power tools to construct features of stone	-\$2,000
4	Construct bridges using hand and power tools	\$9,000
5	Hand and power tools to construct features of stone	\$7,500
6		
7		
8		
9		
Total Estimated Cost		\$13,500

Explain:

Throughout this MRDG the options stay the same for brushing, benching and constructing erosion control features. No alternative was assessed to construct the trail without erosion control features as the trail would be unsustainable, become a location for erosion and cause resource damage. Those cost are represented by X,Y and Z and will be weighted with either a static, postive or negative value depending on the alternative.

Bridges = 3 weeks construction per bridge x 2 people and additional labor for moving material when needed. (excavating abutments, pouring concrete, installing stringers and decking. Materials include; concrete, form material, bridge stringers, decking, associated hardware.

Armored stream crossings = 4 weeks construction per crossing (Gathering and installing stone)

Brushing will be faster with the use of power tools, benching will remain the same and erosion contorl features/armored crossings and bridges will be completed in faster.

Safety of Visitors & Workers

What is the risk of this alternative to the safety of visitors and workers? What mitigation measures will be taken?

RISK ASSESSMENT Severity of Accident	Probability of Accident				
	Frequent	Likely	Common	Unlikely	Rare
Catastrophic: Death or permanent disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical: Permanent partial disability or temporary total disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marginal: Compensable injury or illness, treatment, lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Negligible: Superficial injury or illness, first aid only, no lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Risk Assessment	Low Risk				

Explain:

Trail construction has a negligible risk due to the nature of the work. Greater than negligible risk will be avoided through proper tool use and the use of required personal protective equipment.

Summary Ratings for Alternative 7

Wilderness Character	
Untrammeled	-5
Undeveloped	-5
Natural	-4
Solitude or Primitive & Unconfined Recreation	-5
Other Features of Value	0
Wilderness Character Summary Rating	-19

Traditional Skills	
Traditional Skills	-5

Economics	
Cost	\$13,500

Safety of Visitors & Workers	
Risk Assessment	Low Risk

Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Alternatives

Alternative 8: Constructing Trail outside of Wilderness

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

Connect the west side visitor contact station with the Chaparral trailhead without entering designated wilderness. Other impacts would occur if the trail was constructed completely outside of the wilderness boundary.

An alternative route, west of the proposed and preferred alternative, was examined. The non-wilderness connector trail provides users with impressive views of Pinnacles' rock formations and the surrounding landscape. The trail corridor would be consistently steep for the majority of its length and require numerous consecutive switchbacks down the hillside to the canyon bottom. These steep areas are generally unavoidable. Erosion control measures would be more intrusive and prevalent; multiple retaining walls, check steps, and other measures would be required along the majority of the trail. The trail corridor contains many rock outcroppings that could require micro-blasting or extensive rock drilling.

No stream crossings are encountered on this route. Staging would occur in the disturbed trail corridor.

Component Activities

How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	<i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1	Brushing of trail alignment	No activity in wilderness but would affect vistas from wilderness
2	Benching of trail alignment	No activity in wilderness but would affect vistas from wilderness
3	Construction of erosion control and other trail features	No activity in wilderness but would affect vistas from wilderness
4	Construct Bridge(s)	No activity in wilderness
5	Construct Armored Wash Crossing	No activity in wilderness
6		
7		
8		
9		

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	3	NE
Untrammeled Total Rating		-3		

Explain:

No action is taken in wilderness, the wilderness itself will remain untrammeled. However, located on the south facing slope, the trail would be fully exposed to summer sun and highly visible from the High Peaks area of the Hain Wilderness. With this alternative, there are no direct impacts from the construction, or ongoing use of a trail within the designated Wilderness. This alignment would be almost entirely within the viewshed of the High Peaks area of the Hain Wilderness. The ridge and open meadow provide little to no opportunity to conceal the trail, which would have a large impact on the High Peaks integral vista. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument. Further, the trail corridor has extensive rock outcroppings which would require blasting or drilling; this unnaturally broken rock would further impact the viewshed.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	3	NE
Undeveloped Total Rating		-3		

Explain:

This alignment would be almost entirely within the viewshed of the High Peaks area of the Hain Wilderness which greatly affects the undeveloped nature of the High Peaks integral vista. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument. Further, the trail corridor has extensive rock outcroppings which would require blasting or drilling; this unnaturally broken rock would further impact the viewshed.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	3	NE
Natural Total Rating		-3		

Explain:

No action is taken in wilderness, the wilderness will remain natural. Because the trail would be almost entirely within the viewshed of the High Peaks area of the Hain Wilderness, it greatly affects the natural character of the High Peaks integral vista. The High Peaks vista is integral to the visitor experience and has scientific value. The High Peaks area includes the most popular trails for visitors which provide views in all directions. The scientific value of this vista is associated with the geologic story of the monument. Further, the trail corridor has extensive rock outcroppings which would require blasting or drilling; this unnaturally broken rock would further impact the viewshed.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Solitude or Primitive & Unconfined Recreation Total Rating		0		

Explain:

No action is taken in wilderness, the wilderness will remain for solitude or primitive and unconfined recreation.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	3	NE
Other Features of Value Total Rating		-3		

Explain:

Brushing the trail : The brushing along the corridor will be visible from the High Peaks and negatively affect the viewshed from the High Peaks.

Benching the trail: The benching of the trail will be placed in a known archaeological site. While the extent of the archaeological site is not known, any impact to the site would be negative to this site associated with the larger cultural landscape of Pinnacles National Park.

Erosion Control Features: A greater number of erosion control features would need to be constructed if the trail is moved outside of the wilderness. All alternative routes are located in steeper terrain and would add more structures visible from the High Peaks and negatively affect the viewshed from the High Peaks.

If any stream crosses are needed they will be located outside of the wilderness and have no effect on the wilderness.

Traditional Skills

What is the effect of each component activity on traditional skills?

TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	No activity in wilderness but would affect vistas from wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	No activity in wilderness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals		0	0	NE
Traditional Skills Total Rating		0		

Explain:

No action is taken in wilderness and no consideration will be given towards the use of traditional skills.

Economics

What is estimated cost of each component activity?

COST

Component Activity for this Alternative		Estimated Cost
X	<i>Example: Personnel will travel by horseback</i>	\$1,900
1	No activity in wilderness but would affect vistas from wilderness	\$8,000
2	No activity in wilderness but would affect vistas from wilderness	\$10,000
3	No activity in wilderness but would affect vistas from wilderness	\$20,000
4	No activity in wilderness	\$0
5	No activity in wilderness	\$0
6		
7		
8		
9		
Total Estimated Cost		\$38,000

Explain:

Throughout this MRDG the options stay the same for brushing, benching and constructing erosion control features. No alternative was assessed to construct the trail without erosion control features as the trail would be unsustainable, become a location for erosion and cause resource damage. Those cost are represented by X,Y and Z and will be weighted with either a static, positive or negative value depending on the alternative.

Additional cost for this alternative take into account material and labor associated with constructing a longer trail through steeper terrain. No extra cost is considered for additional maintenance to the trail or rehabilitation of resources due to construction in steeper terrain.

More erosion control measures such as check steps, retaining walls, switchbacks, etc. would be required for this consistently steep trail (12% grade and above).

Safety of Visitors & Workers

What is the risk of this alternative to the safety of visitors and workers? What mitigation measures will be taken?

RISK ASSESSMENT Severity of Accident	Probability of Accident				
	Frequent	Likely	Common	Unlikely	Rare
Catastrophic: Death or permanent disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical: Permanent partial disability or temporary total disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marginal: Compensable injury or illness, treatment, lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Negligible: Superficial injury or illness, first aid only, no lost work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Risk Assessment	Low Risk				

Explain:

Trail construction has a negligible risk due to the nature of the work. Greater than negligible risk will be avoided through proper tool use and the use of required personal protective equipment.

Summary Ratings for Alternative 8

Wilderness Character

Untrammeled	-3
Undeveloped	-3
Natural	-3
Solitude or Primitive & Unconfined Recreation	0
Other Features of Value	-3
Wilderness Character Summary Rating	-12

Traditional Skills

Traditional Skills	0
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Economics

Cost	\$38,000
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Safety of Visitors & Workers

Risk Assessment	Low Risk
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MRDG Step 2: Alternatives Not Analyzed

Alternatives Not Analyzed

What alternatives were considered but not analyzed? Why were they not analyzed?

1) Not constructing structures on the trail:

The proposed trail is intended to provide a safe, sustainable and deliberate route from the west side visitor contact station to the Chaparral trail head. This alternative was not analyzed because the structures along the proposed trail are necessary to prevent erosion, provide visitor safety and limit maintenance to the trail. Without these structures, the proposed trail would not provide resource protection or provide for visitor safety.

Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Alternative Comparison

Alternative 1: No action alternative

Alternative 2: Construct west side connector trail with erosion controls and armored stream bank crossings

Alternative 3: Construct west side connector trail with erosion controls and bridges at stream crossings

Alternative 4: Construct west side connector trail with erosion controls, one bridge and armored stream bank crossings

Wilderness Character	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Untrammeled	0	0	0	4	0	4	0	5
Undeveloped	0	0	0	4	0	4	0	5
Natural	0	0	0	4	0	3	0	4
Solitude/Primitive/Unconfined	0	0	0	4	0	4	0	5
Other Features of Value	0	0	0	1	0	0	0	0
Totals	0	0	0	17	0	15	0	19
Wilderness Character Rating	0		-17		-15		-19	

Traditional Skills	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Traditional Skills	0	0	4	0	4	0	5	0
Traditional Skills Rating	0		4		4		5	

Economics	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Cost	\$0	\$16,000	\$20,000	\$18,000

Safety of Visitors & Workers	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Risk Assessment	Low Risk	Low Risk	Low Risk	Low Risk

- Alternative 5:** Construct west side connector trail with erosion controls and armored stream bank crossings
- Alternative 6:** Construct west side connector trail with erosion controls and bridges at stream crossings
- Alternative 7:** Construct west side connector trail with erosion controls, one bridge and armored stream bank crossings
- Alternative 8:** Constructing Trail outside of Wilderness

Wilderness Character	Alternative 5		Alternative 6		Alternative 7		Alternative 8	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Untrammeled	0	4	0	4	0	5	0	3
Undeveloped	0	4	0	4	0	5	0	3
Natural	0	4	0	3	0	4	0	3
Solitude or Primitive & Unconfined Rec.	0	4	0	4	0	5	0	0
Other Features of Value	0	1	0	0	0	0	0	3
Totals	0	17	0	15	0	19	0	12
Wilderness Character Rating	-17		-15		-19		-12	

Traditional Skills	Alternative 5		Alternative 6		Alternative 7		Alternative 8	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Traditional Skills	0	4	0	4	0	5	0	0
Traditional Skills Rating	-4		-4		-5		0	

Economics	Alternative 5	Alternative 6	Alternative 7	Alternative 8
Cost	\$12,000	\$15,000	\$13,500	\$38,000

Safety of Visitors & Workers	Alternative 5	Alternative 6	Alternative 7	Alternative 8
Risk Assessment	Low Risk	Low Risk	Low Risk	Low Risk

Project Title: Provide Hiking Access from West VCS to Chaparral Trailheads

MRDG Step 2: Determination

Refer to the [MRDG Instructions](#) before identifying the selected alternative and explaining the rationale for the selection.

Selected Alternative

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> | Alternative 1: No action alternative |
| <input type="checkbox"/> | Alternative 2: Construct west side connector trail with erosion controls and armored stream bank |
| <input checked="" type="checkbox"/> | Alternative 3: Construct west side connector trail with erosion controls and bridges at stream crossings |
| <input type="checkbox"/> | Alternative 4: Construct west side connector trail with erosion controls, one bridge and armored stream bank |
| <input type="checkbox"/> | Alternative 5: Construct west side connector trail with erosion controls and armored stream bank |
| <input type="checkbox"/> | Alternative 6: Construct west side connector trail with erosion controls and bridges at stream crossings |
| <input type="checkbox"/> | Alternative 7: Construct west side connector trail with erosion controls, one bridge and armored stream bank |
| <input type="checkbox"/> | Alternative 8: Constructing Trail outside of Wilderness |

Explain Rationale for Selection:

The National Park Service has a "commitment to the public's appropriate use and enjoyment, including education and interpretation, of park resources, while preventing unacceptable impacts." (2006 Management Policies 2006)

While this Minimum Resource Decision Guide addressed proposed work in the Hain Wilderness, the scope of the connector trail took in many considerations both inside and outside of wilderness. Resource protection is paramount, these considerations include impacts to integral vistas from Wilderness, impacts to archeologically sensitive areas, and the potential for erosion due to the steepness of the grade.

This selection was also influenced by the best practices of trail construction and will provide a safe and sustainable route that will accomplish the goal defined in the Pinnacles National Park General Management Plan of connecting the West Side visitor contact station with the greater Pinnacles trail system.

The alignment for the trail was selected for these reasons. It avoids culturally sensitive and historic areas, protects the viewshed from the High Peaks area and follows curvilinear trail design principles that will provide the safest most sustainable route between the West Side visitor contact station and the Chaparral trailhead.

Trail structures are necessary in trail construction. Trail structures prevent erosion, provide resource protection by defining the route and provide for visitor safety. An alternative without structures was

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Explain Rationale for Selection, Continued:

Bridges were selected due to their value in protecting the cultural resource of the historic armoring as well as protecting the stream itself by preventing erosion to the stream banks and sediment deposits associated with that erosion. While armored crossings could accomplish the goal of providing safe access from the West Side visitor contact station to the Chaparral trailhead, defining the stream bank through armoring would essentially control the stream bank and not offer the resource protection that bridges will accomplish.

All work will be accomplished utilizing hand tools and traditional skills. The work will take longer and the associated labor cost will be greater versus utilizing power tools, however, all work associated with this section of trail is practicable utilizing hand tools that are allowed in the Wilderness Act.

Alternative 3 accomplishes the task of providing hiking access from the West Side visitor contact station to the Chaparral trailheads with the least impact to the Hain Wilderness and the many other resources of Pinnacles National Park.

Describe Monitoring & Reporting Requirements:

Monitoring and reporting requirements are not applicable to this project.

Approvals

Which of the prohibited uses found in Section 4(c) of the Wilderness Act are approved in the selected alternative and for what quantity?

Prohibited Use	Quantity
<input type="checkbox"/> Mechanical Transport:	
<input type="checkbox"/> Motorized Equipment:	
<input type="checkbox"/> Motor Vehicles:	
<input type="checkbox"/> Motorboats:	
<input type="checkbox"/> Landing of Aircraft:	
<input type="checkbox"/> Temporary Roads:	
<input checked="" type="checkbox"/> Structures:	2 bridges and trail features as needed to prevent erosion and provide vis
<input type="checkbox"/> Installations:	

Record and report any authorizations of Wilderness Act Section 4(c) prohibited uses according to agency policies or guidance.

Refer to agency policies for the following review and decision authorities:

Prepared	Name		Position	
	Signature		Date	
Recommended	Name		Position	
	Signature		Date	
Recommended	Name		Position	
	Signature		Date	
Approved	Name		Position	
	Signature		Date	