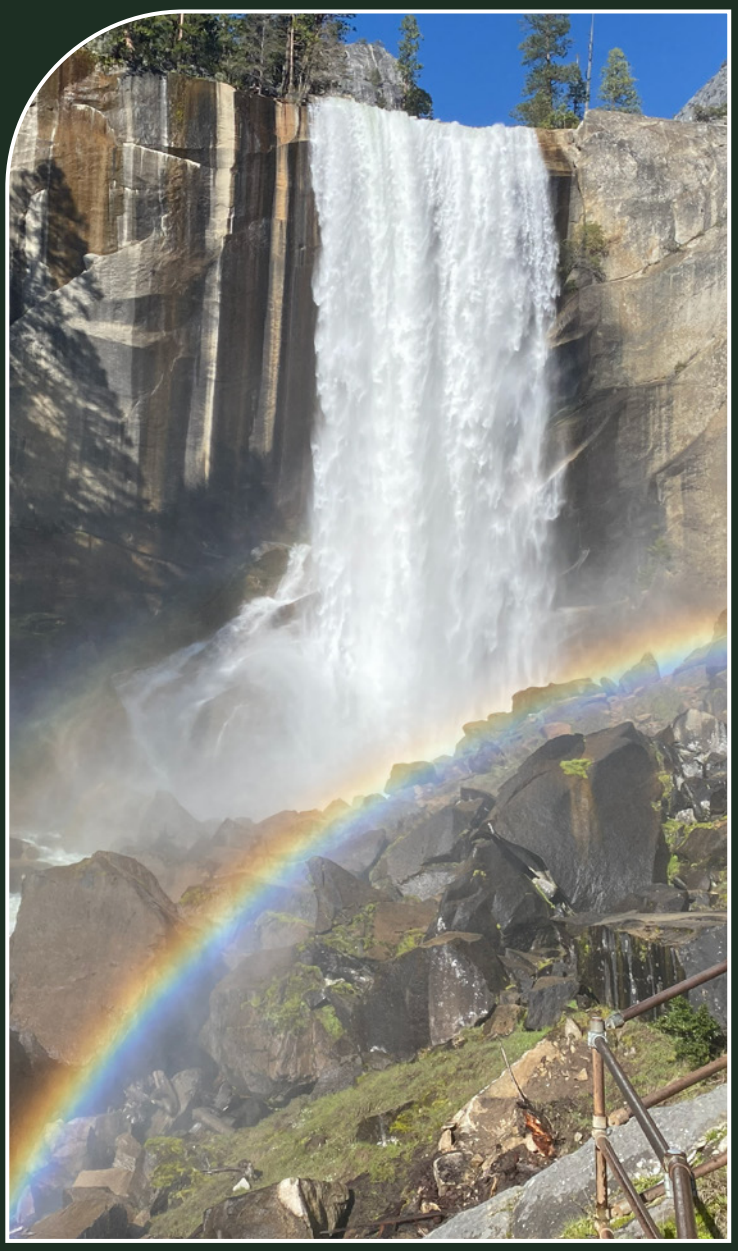
Yosemite National Park
California

National Park Service
U.S. Department of the Interior







Mist Trail Corridor Project Environmental Assessment

May 2026

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ACRONYMS AND ABBREVIATIONS

AICMC	American Indian Council of Mariposa County, Inc.
BMP	best management practice
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CLI	Cultural Landscape Inventory
CNDDB	California Natural Diversity Database
EA	environmental assessment
ESA	Endangered Species Act of 1973
HDTCCL	Half Dome Trail Corridor Cultural Landscape
IPaC	Information for Planning and Consultation
JMT	John Muir Trail
MRP	Merced Wild and Scenic River Comprehensive Management Plan
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NPS	National Park Service
NRHP	National Register of Historic Places
NRIS	National Register Information System
park	Yosemite National Park
PEPC	Planning, Environment and Public Comment
project	Mist Trail Corridor Project
POS	period of significance
SAR	search and rescue
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOUS	waters of the United States
WSR	Wild and Scenic River
WSRA	Wild and Scenic Rivers Act of 1968
YVAD	Yosemite Valley Archeological District
YVHD	Yosemite Valley Historic District

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CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

The National Park Service (NPS), with support from the Yosemite Conservancy, is proposing improvements to the Mist Trail Corridor in Yosemite National Park (or "park") to improve visitor circulation and orientation, enhance the visitor experience, and support safety and resource stewardship.

The Mist Trail Corridor is one of the most heavily visited trail systems in the park, providing access to destinations including the John Muir Trail (JMT), Mist Trail, Clark Point Cutoff Trail, Half Dome Trail, Vernal Fall, and Nevada Fall (Figure 1-1). At Happy Isles, the JMT–Mist Trail trailhead serves as the primary access point, with an average of approximately 85,000 visitors per summer month from 2010 through 2025.

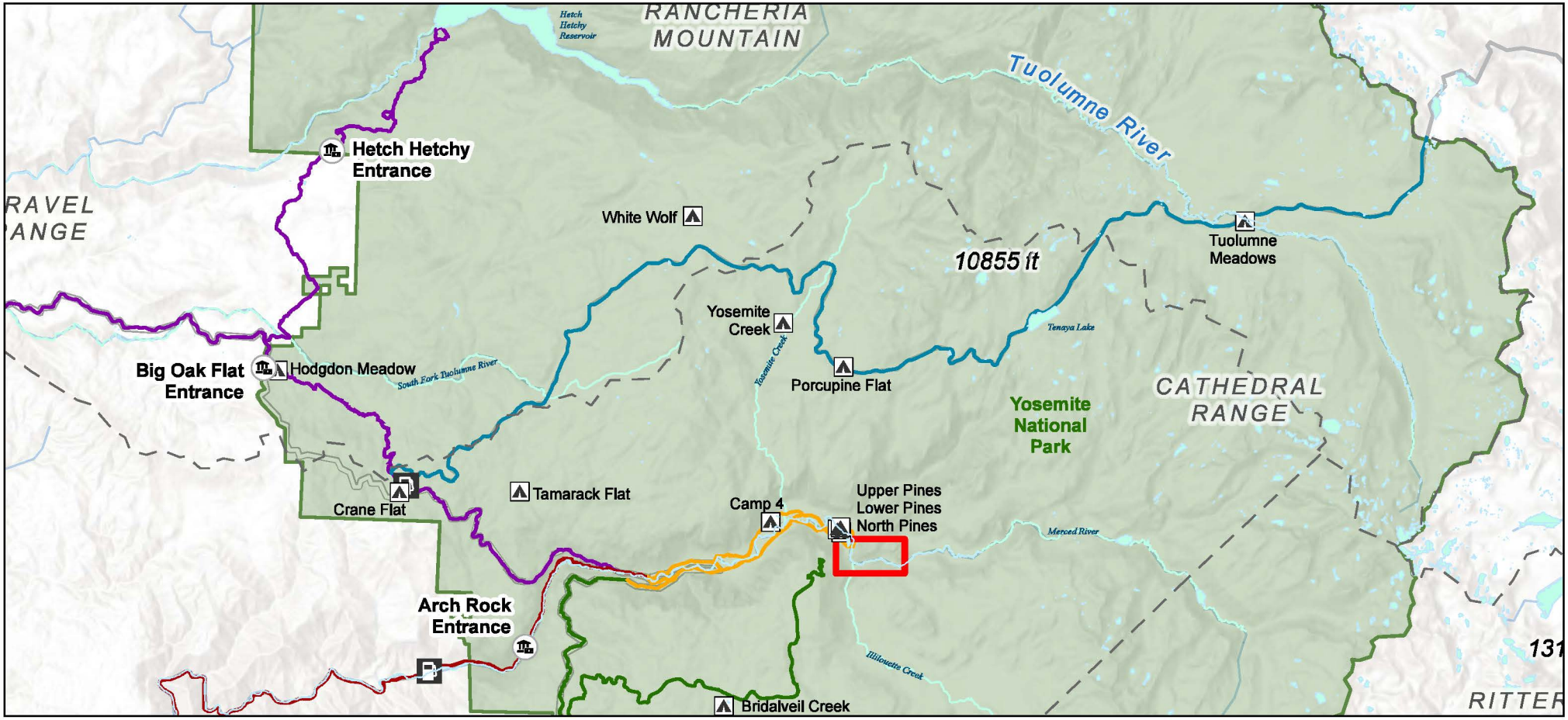
High visitation, combined with a complex trail network and physically demanding terrain, requires visitors to make informed decisions about route selection, timing, and preparedness. Clear access, intuitive circulation, and effective trip planning information at the trail corridor point-of-entry are essential to supporting a safe and high-quality visitor experience.

Project Background

The historic Happy Isles Footbridge, which formerly spanned the Merced River and provided direct access to the Mist Trail Corridor, was removed in 2001 following damage from rockfall and flooding in 1996 and 1997. Since that time, visitors have been routed across the nearby Happy Isles vehicle bridge to reach the JMT–Mist Trail trailhead on the east side of the river. This rerouted access was not designed to function as the primary entry point to one of the most heavily used trail systems in the park. As a result, visitors arrive via an indirect path with limited wayfinding, minimal orientation space, and few opportunities to access trip planning information prior to beginning their Mist Trail Corridor journey. Many visitors start their hikes without a clear understanding of route options, distances, elevation gain, trail conditions, or expected levels of use.

The Mist Trail Corridor traverses steep, rugged terrain, including extended sections of uneven and often wet stone steps that require physical preparedness and informed decision-making. The park has implemented improvements over the past decade, such as railings, stonework, step corrections, and localized widening, to address specific safety concerns along the trail corridor. While these efforts have improved conditions in targeted areas, they do not address how visitors access, orient to, and move through the corridor as a whole.

Search and rescue (SAR) incidents remain concentrated in the Mist Trail Corridor, reflecting the combined effects of high visitation, complex terrain, and limited visitor preparation. In 2025, 239 SAR incidents occurred park-wide, with 69 (approximately 29 percent) occurring within the trail corridor. From 2001 to 2025, the park responded to 4,661 incidents, including 58 unintentional deaths.





- Project Area
- Entrance Station
- Campground
- Gas Station
- Crane Flat & Hetch Hetchy
- El Portal
- Glacier Point & Badger Pass Ski Area
- Tioga Road & Tuolumne Meadows
- Yosemite Valley

0 3.25 6.5 Miles

(At original document size of 8.5x11)
1:411,840

N

National Park Service
U.S. Department of Interior

Project Location
Yosemite National Park,
Madera, Mariposa, and Tuolumne County, California

Mist Trail Corridor Project
Environmental Assessment

Figure No.
1-1

Title
Project Location

Notes
1. Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: Stantec 2025. NPS 2025.
3. Background: Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, USGS

Scoping with park staff, partners, and the public identified a consistent need to improve circulation, wayfinding, and visitor orientation at Happy Isles, as well as to expand trip planning and educational resources. These needs form the basis for a more comprehensive approach to managing visitor access and experience within the Mist Trail Corridor. This Environmental Assessment (EA) has been prepared to evaluate the potential environmental effects of the proposed actions and a reasonable range of alternatives in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [USC] 4321 et seq.); Department of the Interior NEPA regulations (43 Code of Federal Regulations [CFR] Part 46); *516 DM 1 - U.S. Department of Interior Handbook of National Environmental Policy Act Implementing Procedures* (issued February 24, 2026); and Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*.

The NPS is preparing a separate assessment of effects to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 USC 306108) and its implementing regulations (36 CFR Part 800).

The NPS also is consulting with other applicable laws and authorities, including Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 USC 1536), including coordination with the United States (US) Fish and Wildlife Service (USFWS), as appropriate, and Section 7 of the Wild and Scenic Rivers Act (WSRA) of 1968, including review for consistency with designated values of the Merced Wild and Scenic River and coordination with NPS Wild and Scenic Rivers (WSR) specialists.

Project Area

The project area is located in Yosemite Valley and includes three primary subareas: 1) Happy Isles Loop Road, the 0.6-mile segment of Happy Isles Loop Road, extending from the Valley Trailhead Parking Lot, also known locally as the Wilderness Lot, to the JMT–Mist Trail trailhead; 2) the Happy Isles area, the primary entrance for visitors venturing to destinations within the Mist Trail Corridor, including the trailhead and associated visitor facilities; and 3) the Mist Trail Corridor, including segments of the JMT, Mist Trail, Clark Point Cutoff Trail, Stock Trail. Although referred to as the "Mist Trail Corridor Project" (or "project"), the project area begins along the JMT, which provides access to the Mist Trail. Table 1-1 summarizes these subareas. Appendix A—*Project Area Detailed Figures*, Figures A-1 and A-2 illustrate these areas in greater detail.

Table 1-1. Project Area Description

Project Subarea	Description
Happy Isles Loop Road	Includes a 0.6-mile section of the Happy Isles Loop Road and adjacent pedestrian path (Valley Loop Trail) from the Valley Trailhead Parking Lot[1] to Happy Isles. This segment travels across the Happy Isles vehicle bridge spanning the Merced River east of Happy Isles Shuttle Stop at Happy Isles to the existing John Muir Trail (JMT)-Mist Trail trailhead.

Project Subarea	Description
Happy Isles Area	Includes the Happy Isles Shuttle Stop; a small fully-accessible parking area; Happy Isles vehicle bridge; existing Happy Isles visitor facilities and services, including the restroom facility next to the shuttle stop; the Art and Nature Center; North and South Happy Isles nature trails; and the JMT-Mist Trail trailhead east of the Merced River.
Mist Trail Corridor	**John Muir Trail.** The section of the JMT included in the project area begins at the JMT-Mist Trail trailhead, terminating at the Upper JMT-Mist Trail Junction past Nevada Fall. The JMT, between Happy Isles and the Vernal Fall Footbridge, climbs approximately 400 feet in 0.8 miles with an average incline of 9.5%. The section of the JMT from the Vernal Fall Footbridge to the Upper JMT-Mist Trail Junction climbs approximately 1,500 feet in three miles. **Mist Trail.** The Mist Trail exists between the lower and upper JMT-Mist Trail junctions. This trail includes important landmarks and popular viewpoints, such as the Mist Trail steps (steep and slippery steps beginning at the base of Vernal Fall leading up to the brink of Vernal Fall), Illilouette Fall, the brink of Vernal Fall, Emerald Pool, Silver Apron, Clark Point, and Nevada Fall. From the brink of Vernal Fall to the Nevada Fall Footbridge, the Mist Trail gains approximately 2,000 feet in elevation over 1.5 miles. **Clark Point Cutoff Trail.** The Clark Point Cutoff Trail is approximately 0.4 miles long and connects the JMT to the Mist Trail at Clark Point between Vernal Fall and Silver Apron Footbridge. **Stock Trail.** The Stock Trail begins at the Happy Isles Art and Nature Center and runs approximately 1.1 miles to an intersection with the JMT near the Lower JMT-Mist Trail Junction. The Stock Trail is designated for stock (i.e., horses and mules) and other park operations use and is not included on official park maps. **Existing Project Area Trail Loop Network.** There are two existing trail loops[2] above Vernal Fall Footbridge. The first and shorter of the two loops (Vernal Fall Loop) begins at Vernal Fall Footbridge and continues uphill along the JMT to the Mist Trail up to the brink of Vernal Fall. The Vernal Fall Loop then follows the Clark Point Cutoff Trail to connect back with the JMT to return to Vernal Fall Footbridge. This loop is approximately 2.5 miles in length. The second, longer loop (Nevada Fall Loop) begins at the Vernal Fall Footbridge continuing uphill along the JMT to the Mist Trail past the brink of Nevada Fall. At this point, the Nevada Fall Loop then connects back with the JMT to return to the Vernal Fall Footbridge. This loop is approximately 4.4 miles in length.

[1] Also known locally as Wilderness Lot.

[2] The existing trail loop network is described in this table as one-way for illustrative purposes; however, the trail loops can be travelled bidirectionally.

PURPOSE OF AND NEED FOR THE PROJECT

The purpose of the project is to enhance the visitor experience in Happy Isles and the Mist Trail Corridor by addressing safety, wayfinding, stewardship and education, as well as improving facilities and services to accommodate current levels of visitor use. The purpose is not to eliminate risk inherent to wilderness travel, but to improve visitor orientation, circulation, and preparedness at the primary access point to the corridor.

The need for the project stems from the following issues at Happy Isles and along the Mist Trail Corridor:

- **Safety.** The project is needed to increase safety awareness along the Mist Trail Corridor, as some visitors do not recognize the danger of navigating steep trails and the presence of nearby swift water, resulting in injuries, fatalities, and dangerous rescue and recovery operations. From 2001 to 2025, the park responded to 4,661 incidents, with 58 unintentional deaths. The proportion of SAR incidents in the Mist Trail Corridor is higher than anywhere else in the park.
- **Wayfinding/Orientation.** The project is needed to address the current shortcomings with wayfinding and orientation within Happy Isles and the Mist Trail Corridor. As a result of the historic Happy Isles Footbridge removal, there is a substantial disconnect between the Happy Isles Shuttle Stop on the west side of the river and the actual trailhead on the east side of the river. Due to this configuration and lack of informational resources, hikers often miss the opportunity to plan their route and assess the difficulty of the trail system. Many set out on their journeys without the necessary information, unaware of the challenges that lie ahead. Moreover, wayfinding along the Mist Trail Corridor is minimal and existing signage is outdated or unclear.
- **Visitor Facilities and Services.** The project is needed to address the current level of visitor use and aging infrastructure at Happy Isles and along the Mist Trail Corridor. Existing visitor facilities and services, such as signage, seating, restrooms, and water-filling stations, do not effectively support the volume of Happy Isles visitors and Mist Trail Corridor users. During busy summer months, visitors often spend extra time queuing for restrooms and at the Happy Isles Shuttle Stop without a space to rest. Likewise, existing Happy Isles facilities and services are not spatially coordinated, do not support intuitive visitor flow from arrival to trailhead, and are limited in information on site for visitor wayfinding and trip planning. There also is a lack of trail pullouts along the corridor, which limits opportunities for visitors to pause, rest, or safely step aside from the main trail.
- **Stewardship/Education.** The project is needed to increase visitor exposure to and education on the natural and cultural features of the Mist Trail Corridor, which would ultimately contribute to developing a greater appreciation and respect for these unique places. In turn, visitors are more likely to invest their experience in stewardship and protection of resources. The park is home to unique and protected wildlife and their habitats. The park will work in partnership with the seven traditionally associated Tribes to steward and share stories of their history and their ongoing relationships to Yosemite National Park, including their continued roles in living, working, and caring for these lands.

RELATIONSHIPS TO OTHER LAWS, PLANS AND POLICIES

Current laws, plans and policies are in place related to the management of park resources which guide and inform this EA. The NPS has several sources of detailed guidance to help managers make day-to-day decisions. The primary sources of guidance are *516 DM 1 - U.S. Department of Interior Handbook of National Environmental Policy Act Implementing*

Procedures (issued February 24, 2026) and the 2006 NPS Management Policies, which include NPS Director's Orders, handbooks, and reference manuals. These policies were put in place for the preservation, management, and use of park resources and facilities park-wide. The most relevant laws, plans, or policies related to this EA are detailed in Appendix B—*Laws, Plans, and Policies with a Relationship to the Mist Trail Corridor Project*.

The *Merced Wild and Scenic River Comprehensive Management Plan* (MRP; NPS 2014a) provides management direction for protection of the Merced WSR, including guidance on development within the river corridor and management of visitor use in Yosemite Valley. The MRP discourages new development near the river while allowing for the replacement or rehabilitation of facilities in previously developed areas where such actions improve visitor use and resource protection. The Happy Isles area is a developed segment of the river corridor, and the alternatives considered in this EA have been developed to minimize effects to the river corridor and avoid disturbance to the bed and banks, to the extent practicable. The alternatives have been developed to be consistent with the MRP by focusing improvements within previously disturbed areas, minimizing new development within the river corridor, and avoiding impacts to the bed and banks of the river. As a result, the project is consistent with MRP management direction for this segment.

IMPACT TOPICS

An interdisciplinary team of NPS staff, including natural and cultural resource experts, identified the impact topics considered in this document through a series of internal meetings, site visits, and civic engagement, as well as through an analysis of site conditions, federal laws, regulations, Executive Orders, and NPS Director's Orders. Impact topics are the resources or issues of concern that could be impacted by the range of alternatives. Identifying impact topics facilitates the analysis of environmental consequences and allows for a comparison between alternatives based on the most relevant information. The NPS determined implementation of the project could have short- and long-term adverse and beneficial impacts on the resources listed in Table 1-2, which have been retained as impact topics for further analysis in this EA. Table 1-2 provides a high-level summary of potential impacts associated with each of these resource topics. A detailed analysis on each of these impact topics is included in Chapter 3 of this EA. Although park operations are not classified as an environmental, cultural, or historic resource subject to NEPA analysis, they remain integral to the proposal, ensuring its feasibility and implementation. Accordingly, Appendix C—*Project Impacts to Park Operations*, provides a description of park operations within the project area and examines the potential effects of the project alternatives on those operations.

Table 1-2. Summary of Potential Project Impacts by Resource Topic

Resource Topic	Summary of Potential Project Impacts
Visitor use and experience, including visitor safety	Short-term impacts would include temporary trail closures or detours and reduced visitor experience during construction and from changed circulation. Long-term, the project would improve visitor experience and safety with better signage, orientation, and facilities. Enhanced infrastructure and information would offer a safer and more consistent experience in a heavily used and challenging trail environment.

Resource Topic	Summary of Potential Project Impacts
Biological resources, including vegetation, wildlife, and special status species	Short-term impacts would include temporary disruption to vegetation, soil, and wildlife during construction, with limited duration and extent. Although some alternative actions could cause localized habitat displacement, long-term, improved visitor education would reduce disturbance and food habituation and better manage impacts in high-use areas, leading to overall habitat improvements.
Water resources, including floodplains and surface waters	Short-term effects would include temporary sedimentation and localized water quality issues from construction, minimized by best management practices. Long-term, clearer pedestrian routes and reduced off-trail travel would minimize disturbance to riparian zones. Improved infrastructure and management would lessen unmanaged impacts and benefit water resources overall.
Cultural landscapes	Short-term effects would include temporary visual and physical disruptions from construction and equipment staging. Long-term impacts would be mostly positive, as the project would direct visitors to designated paths, reducing resource degradation. Some changes in landscape character may occur where new infrastructure or routes are added, but historical integrity and key features would remain unaffected. Protection measures, staff oversight, and Tribal input during design would minimize adverse effects.
Historic properties, including historic structures and archeological and ethnographic resources	Short-term impacts may include disturbance to unidentified archeological resources during ground work, addressed through Section 106 compliance and mitigation. Long-term, improved visitor management would protect historic properties and reduce resource degradation. Although some alternatives could cause localized adverse effects on historic access or features, these would be minimized with thoughtful design and mitigation. Overall, the project would promote preservation and interpretation of corridor historic resources.
Visual resources	Short-term impacts would include temporarily reduced scenic quality due to equipment and work zones. Long-term visual effects are expected to be neutral or positive. New infrastructure like seating, signage, trail pullouts, and a possible footbridge would change the landscape locally but, if well-designed, would not diminish the overall corridor's character. Select tree clearing would enhance views along the trail, making long-term impacts minor and generally beneficial.

Several impact topics were not carried forward for analysis in this EA because they do not exist in the project area; they would not be affected by the proposal; the likelihood of impacts is low; or, through the application of mitigations measures, there would be no potential for significant impacts. These topics were not a subject of contention among the public and other agencies. Detailed rationale for dismissal of these impact topics is provided in Appendix D—*Impact Topics Considered but Dismissed from Further Analysis*.

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CHAPTER 2: ALTERNATIVES

To support agency decision making, the NPS has developed alternatives that represent different approaches to addressing circulation, orientation, and visitor experience within the Mist Trail Corridor. Alternative B focuses on improving and formalizing the existing circulation route using the current Happy Isles vehicle bridge and avoids introducing new structures within the Merced WSR corridor. In contrast, Alternative C includes construction of a new pedestrian footbridge at the historic Merced River crossing location to provide more direct access to the trailhead. These alternatives reflect a range of approaches from modification of existing infrastructure to introduction of a new crossing structure.

This chapter includes a description of project alternatives, which includes the future without the proposed action (i.e., no-action alternative [Alternative A]) and two action alternatives (alternatives B and C). Table 2-1 presents a comparison between alternatives B and C, as well as actions that are common to both alternatives.

Table 2-1. Mist Trail Corridor Project Action Alternatives Summary

Alternative B: Use Existing Vehicle Bridge for Pedestrian Access with Associated Promenade and Trailhead	Alternative C: Construct New Pedestrian Footbridge with Associated Promenade and Trailhead (Proposed Action)
• Maintain and formalize existing access across the Happy Isles vehicle bridge. Continue to route visitors to the Mist Trail Corridor via the existing vehicle bridge and implement design features, such as physical barriers, to clearly separate pedestrian and vehicle circulation. • Develop a pedestrian promenade along the existing vehicle bridge alignment. Implement a defined pedestrian pathway with seating, signage, and gathering areas between the Happy Isles Shuttle Stop and the existing trailhead to improve visitor flow, comfort, and orientation. • Enhance the existing trailhead to support visitor orientation and preparedness. Provide wayfinding signage, trip-planning and interpretive elements, shaded seating, and potential water-filling station(s) to support informed decision-making prior to entering the trail corridor. • Implement a pilot program to adaptively manage the Stock Trail Loop. Formalize and manage use of the Stock Trail to create a loop route below the Vernal Fall Footbridge, improving circulation options and distributing visitor use within the trail corridor.	• Construct a new pedestrian footbridge at the historic location of the former Happy Isles Footbridge to re-establish the original access alignment to the Mist Trail Corridor. • Create a new trailhead on the west side of the Merced River adjacent to the new footbridge. Provide wayfinding signage, trip-planning and interpretive elements, shaded seating, and potential water-filling infrastructure to support informed decision-making prior to entering the trail corridor. • Create a new pedestrian promenade with seating and signage from the Happy Isles Shuttle Stop to the new trailhead and footbridge. Implement a defined pedestrian pathway with seating, signage, and gathering areas between the Happy Isles Shuttle Stop and the new trailhead to improve visitor flow, comfort, and orientation. • Decommission, restore, and revegetate a portion of the existing trailhead area on the east side of the Merced River that sits within the floodplain, while retaining the existing horse trail that continues downstream to the Happy Isles vehicle bridge.
Actions Common to Alternatives B and C	

- Revise visitor messaging and signage within the project area via a new signage and messaging plan that includes a comprehensive communication strategy incorporating technology for trip planning and preparedness. Advertise the existing trail loops above Vernal Fall Footbridge via signage.
- Provide trip-planning and wayfinding resources throughout the project area, where appropriate.
- Clearly delineate pedestrian access to Happy Isles by changing the two-way Happy Isles Loop Road into a multi-modal roadway with one shared-use lane for pedestrians, cyclists, and authorized electric mobility devices adjacent to a one-way vehicular lane, starting from the Valley Trailhead Parking Lot[1] to the Happy Isles area.
- Improve the Happy Isles Shuttle Stop as an arrival space and embarkation point to adequately orient and prepare visitors for the Mist Trail Corridor.
- Improve the existing Happy Isles restroom facilities by upgrading the interior, increasing stall capacity, and/or modifying the exterior building footprint.
- Increase trail pullouts where existing shoulders can accommodate wider areas to rest, including near Vernal Fall Footbridge.
- Perform selective vegetation clearing outside of Yosemite Wilderness to restore scenic vistas.

[1] Also known locally as Wilderness Lot.

Compared to Alternative B, rerouted access under Alternative C would create a more centralized and cohesive visitor experience within the Happy Isles area. Visitor safety could improve by reducing the need for visitors to share the vehicle bridge with bicycles, shuttles, and authorized vehicles. In addition, river viewing would be focused at the proposed footbridge, reducing potential pedestrian-vehicle conflict on the vehicle bridge[1].

ALTERNATIVE A: NO ACTION

The no-action alternative consists of a continuation of reasonably foreseeable environmental trends and planned actions as they would occur without implementation of the proposed action or other action alternatives.

Under the no-action alternative, the NPS would continue to maintain the Happy Isles Loop Road, Happy Isles area, and the Mist Trail Corridor without substantial changes to existing infrastructure (i.e., no new construction). Management actions would include minimal rehabilitation and repairs necessary to maintain trail infrastructure, signage, facilities, and other existing visitor services. The NPS would continue to make small scale site-specific safety improvements, such as safety railings and added tread on steps, as part of its ongoing maintenance of the Mist Trail Corridor.

The existing vehicle bridge over the Merced River would continue to provide access to the Mist Trail Corridor from Happy Isles. The vehicle bridge has a narrow sidewalk, and visitors frequently walk within the two-lane roadway, which is shared by shuttle buses operating approximately every 15 minutes in the summer, as well as administrative and other authorized vehicles. Limited wayfinding and orientation information would continue to serve as the primary source of Mist Trail Corridor trip planning information for visitors.

[1] While the traffic pattern change would continue over the vehicle bridge under both alternatives B and C, no formal upgrades to separate pedestrians from vehicles would be made to the vehicle bridge under Alternative C, and pedestrians would be discouraged from using the vehicle bridge through signage and messaging.

The existing trail network, which currently includes two trail loops above Vernal Fall Footbridge, would remain available to visitors. The Stock Trail, currently not marked for public use, would continue to be used by packers and for other park administrative purposes, with minimal visitor conflicts.

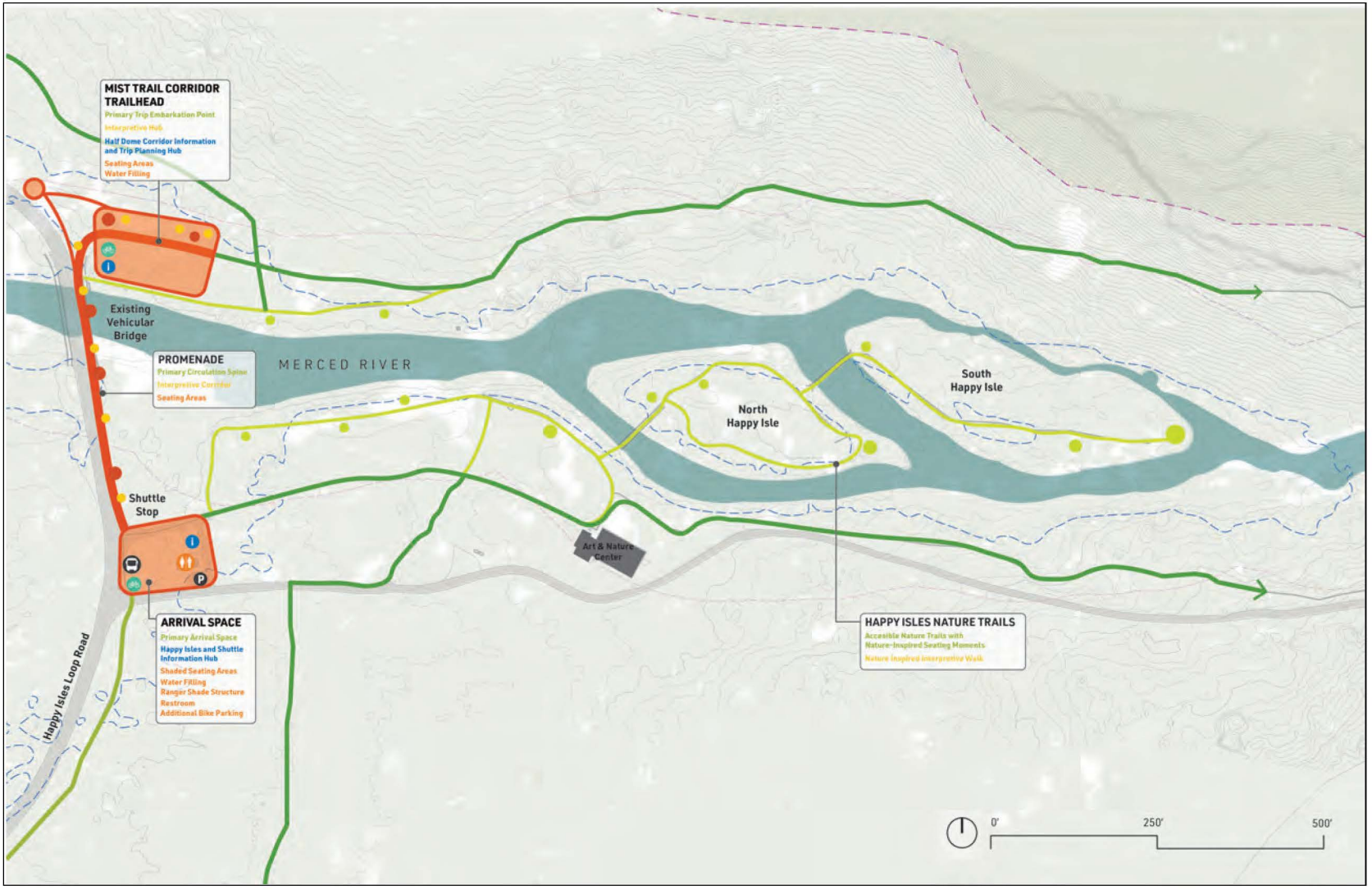
ALTERNATIVE B: USE EXISTING VEHICLE BRIDGE FOR PEDESTRIAN ACCESS WITH ASSOCIATED PROMENADE AND TRAILHEAD

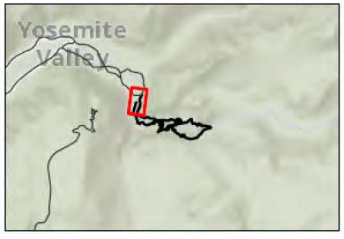
Under Alternative B, existing visitor access to the Mist Trail Corridor via the Happy Isles vehicle bridge would be maintained. Improvements to the vehicle bridge would include a pedestrian promenade with seating and signage and installation of a barrier to separate pedestrians from vehicles. Alternative B also would develop the existing trailhead with new visitor facilities and services, including wayfinding signage, trip-planning and interpretive elements, shaded seating, and potential water-filling infrastructure, on the east side of the river. In addition, the NPS would implement an adaptive management pilot program to formalize use of the Stock Trail, creating a loop route below the Vernal Fall Footbridge. Figure 2-1 illustrates a concept-level depiction of the improvements proposed to the Happy Isles Loop Road and Happy Isles area under this alternative. The following sections describe the proposed actions under Alternative B.

Use the Existing Happy Isles Vehicle Bridge for Pedestrian Access

Under Alternative B, visitor access to the Mist Trail Corridor would continue to be directed across the Happy Isles vehicle bridge, toward the existing trailhead on the east side of the Merced River. The existing trailhead would continue to function as the gateway and primary pedestrian access point to the Mist Trail Corridor.

To support continued pedestrian access across the vehicle bridge, safety improvements would be made to the vehicle bridge, such as separation of pedestrians and vehicles through installation of barriers, such as elevated curbs or bollards, as shown in Appendix E—*Preliminary Conceptual Designs*, Figure E-1. Additional details regarding the proposed traffic pattern change to the Happy Isles Loop Road leading into Happy Isles are discussed in the *Clearly Delineate Pedestrian Access to Happy Isles* section under *Actions Common to Alternatives B and C*.





National Park Service
U.S. Department of Interior

N

Notes
1. Data Sources: National Park Service 2026.

Project Location
Yosemite National Park,
Madera, Mariposa, and Tuolumne County, California

Client/Project
Mist Trail Corridor Project
Environmental Assessment

Figure No.
2-1

Title
Proposed Alternative B
Happy Isles Area Overview

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Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge

Under Alternative B, a pedestrian promenade would be formed using the proposed shared-use lane along Happy Isles Loop Road starting from the Happy Isles Shuttle Stop to the existing trailhead over the Happy Isles vehicle bridge (Figure 2-1). A detailed description of the proposed shared-use lane is in the *Clearly Delineate Pedestrian Access to Happy Isles* section under *Actions Common to Alternatives B and C*. The promenade segment on the vehicle bridge would include seating, wayfinding, and interpretive signage as visitors cross the vehicle bridge to the existing trailhead. Refer to Appendix E, Figures E-1 and E-2 for a depiction of the proposed promenade over the vehicle bridge.

Enhance the Existing Trailhead

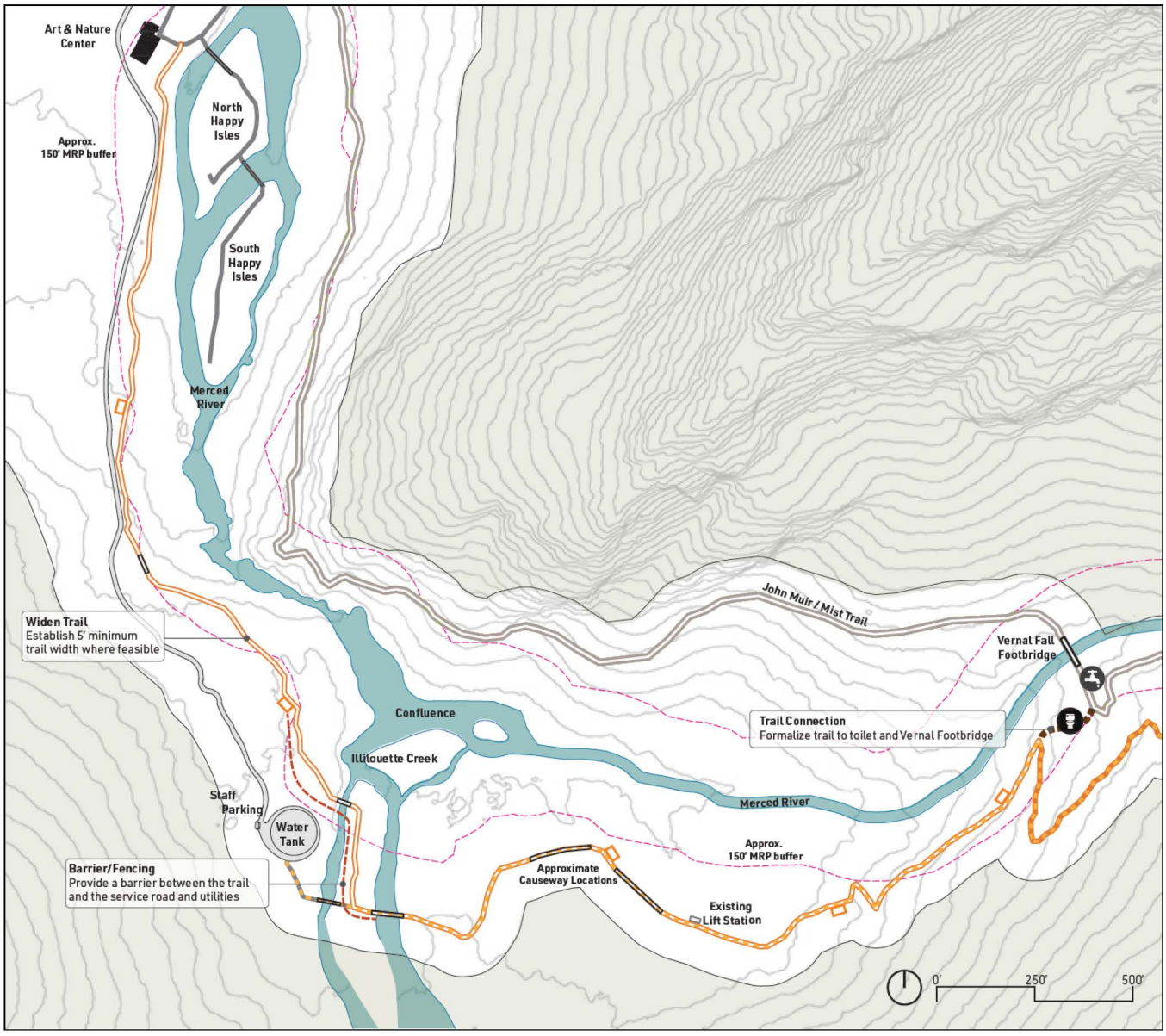
Under Alternative B, the existing trailhead on the east side of the Merced River would be enhanced with new wayfinding signage, trip-planning and interpretive elements, shaded seating, and potential water-filling infrastructure (Figure 2-1). The enhanced trailhead area would function as the primary gathering space for visitors embarking along the Mist Trail Corridor with orientation signage and focused messaging on visitor preparedness, safety, and visitor experience to educate visitors on the trail corridor requirements. Current trail conditions would also be communicated at the trailhead. A water-filling station on the east side of the Merced River would require bringing a waterline across the vehicle bridge, if feasible, given existing infrastructure. A conceptual point-of-view rendering of the proposed enhancements at the existing trailhead is included as Appendix E, Figure E-3.

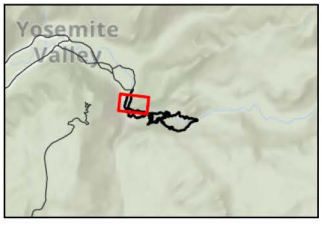
Formalize Stock Trail Loop

Stock Trail Loop Adaptive Management

Under Alternative B, the NPS would implement an adaptive management pilot program to formalize use of the Stock Trail, creating a loop route below the Vernal Fall Footbridge ("Stock Trail Loop;" Figure 2-2). The Stock Trail Loop begins at the existing trailhead, then follows the JMT to the Vernal Fall Footbridge, and returns via the Stock Trail on the south and west side of the Merced River, passing an NPS administrative area (including a water tank) and crossing Illilouette Creek[2].

[2] The Stock Trail Loop is described as one-way for illustrative purposes; however, the loop could be travelled bidirectionally.





Notes

1. Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: Stantec 2025. NPS 2025.
3. Background: National Park Service, 2026.

Proposed

- Improved Stock Trail
- Rest Area *(minimum 5' x 5' adjacent to trail every 1,000' or when space allows)*
- Formalized Trail

Existing

- Stock Trail
- Stock Use
- Restroom
- Water Filling Station
- Wilderness
- Bridge/Water Crossing
- Approximate Merced River Plan (MRP) 150' Buffer

N

National Park Service
U.S. Department of Interior

Project Location
Yosemite National Park,
Madera, Mariposa, and Tuolumne County, California

Mist Trail Corridor Project
Environmental Assessment

Figure No.
2-2

Title
Stock Trail Loop (Alternative B)

The loop would provide an alternative route within the corridor for visitors who may be unable or unwilling to continue farther up the trail, reducing pressure to ascend the steep and slippery Mist Trail steps. It would also offer a loop experience for visitors seeking a distinct route rather than an out-and-back hike, which many find less desirable, as well as potentially reduce the number of people on the busiest section of the JMT between Happy Isles and Vernal Fall Footbridge. Encouraging a loop option may help reduce instances of visitors exceeding their abilities by encouraging turnaround at a logical point in the corridor. The loop would be approximately 1.7 miles in length.

The pilot program would advertise the use of the Stock Trail to visitors during the dry season for a limited duration (two to four months) when spring flooding does not overtop the causeway crossing Illilouette Creek. The pilot program would implement short-term (10- to 15-minute) operational closures occurring while stock trains (groups of mules and/or horses used for park operations to manage supplies and carry waste) are passing through the narrowest section(s) of the trail. Prior to implementation, evaluation criteria would be established to determine success or failure of the pilot program, which would incorporate metrics of 1) visitor safety, 2) visitor use, 3) stock/human conflict, and 4) other operational conflict. The results of the pilot program based on the evaluation criteria would inform the next step in adaptive management to either maintain the Stock Trail as currently used or formalize the Stock Trail Loop and manage visitor and stock use with operational controls. Prior to pilot program implementation, formalization of a social trail near the existing restroom facility at Vernal Fall Footbridge would be required to connect the Stock Trail to the Vernal Fall Footbridge (Figure 2-2). Trail improvements, such as widening, constructing passing locations, upgrades to improve drainage at the causeway, installing appropriate signage, and installing railings would be implemented, as necessary, upon a successful pilot program implementation, once a decision is made. Improvements to the trail also would require an existing utility line being buried or moved, which is a pre-existing project that would be analyzed separately from this EA. The final decision for action would be informed by the conclusions of the pilot program designed to evaluate the safety, experience, and operations of visitors and the NPS.

Post-Pilot Program Stock Trail Loop Improvements

As described in the previous subsection, the following improvements would occur after the implementation of the pilot program. Any staging areas necessary for trail materials and equipment would be selected to protect park resources, to meet the needs of the contractor based on the construction phasing plan, and to minimize disruptions to visitor use and experience.

Trail Widening and Passing Locations. Select locations along the existing Stock Trail would be expanded to a minimum of five feet, where feasible, depending on environmental and physical constraints, to allow space for visitors and stock to pass each other. Passing locations would be installed by widening the existing trail and would be approximately five feet by five feet in size, spaced at intervals of no less than 1,000 feet. Exact locations of trail widening and/or passing locations would be determined upon further design and after a final decision is made on Stock Trail Loop formalization. Appendix E, Figure E-4 includes a graphic representation of a widened trail design and associated area of disturbance. For this EA, and analyzing the potential for

construction-related disturbance, it is assumed up to four feet on either side of the existing trail would be temporarily disturbed for equipment access during construction.

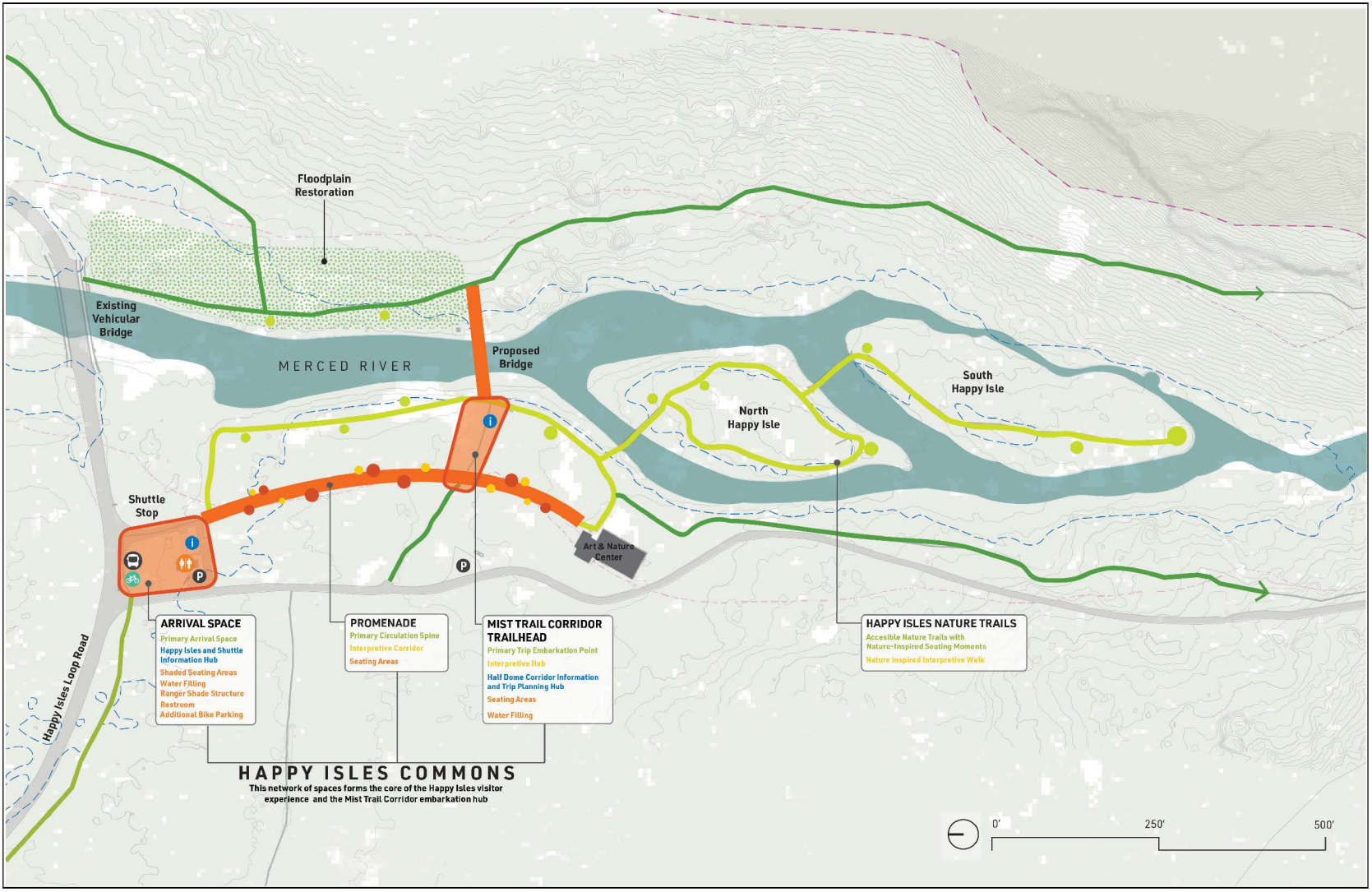
Trail Barriers and Signage. Along sections of the Stock Trail with steep drop-offs or swift water, railings or other barriers, such as rock walls, edging, boulders, would be installed for resource protection and visitor safety (Appendix E, Figure E-5). Interpretive signage could also be installed to enhance visitor experiences. Exact locations of these Stock Trail improvements would be determined upon further design and after a final decision is made on Stock Trail Loop formalization, as well as in accordance with the signage and messaging plan being developed, as described in the *Revise Visitor Messaging and Signage* section under *Actions Common to Alternatives B and C*.

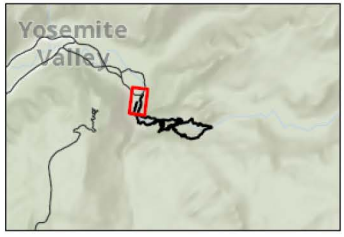
Causeway Upgrades. The existing causeway over Illilouette Creek along the Stock Trail, approximately five to six feet-wide, regularly overtops (i.e., floods) annually during the spring snow melt. To address this issue and to provide for more flow conveyance, two sections along the causeway, totaling approximately 290 linear feet, would be upgraded. Specific upgrades would be determined upon further design, and after a final decision is made on Stock Trail Loop formalization, but could include installation of railings, utility containment, and potential culvert upgrades and/or repairs. It is assumed that any upgrades would remain within the existing width of the causeway structure.

Figure 2-2 depicts the approximate locations of the causeway segments. A conceptual rendering of the upgraded causeway is provided in Appendix E, Figure E-6. Box culverts or other types of water conveyance could be considered to upgrade the existing metal culverts.

ALTERNATIVE C: CONSTRUCT NEW PEDESTRIAN FOOTBRIDGE WITH ASSOCIATED PROMENADE AND TRAILHEAD (PROPOSED ACTION)

Under Alternative C, the project would involve constructing a new footbridge over the Merced River to serve as the primary pedestrian access point to the Mist Trail Corridor; developing a new trailhead on the west side of the Merced River adjacent to the new footbridge; removing and restoring the existing trailhead area; and implementing a visitor promenade with seating and signage from the Happy Isles Shuttle Stop to the new trailhead. Figure 2-3 illustrates a concept-level depiction of the improvements proposed to the Happy Isles area. The following sections describe the proposed actions under Alternative C, the NPS proposed action.





National Park Service
U.S. Department of Interior

N

Notes
1. Data Sources: National Park Service 2026.

Project Location
Yosemite National Park,
Madera, Mariposa, and Tuolumne County, California

Client/Project
Mist Trail Corridor Project
Environmental Assessment

Figure No.
2-3

Title
Proposed Alternative C
Happy Isles Area Overview

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Construct a New Pedestrian Footbridge at the Historic Location of the Happy Isles Footbridge

Under Alternative C, visitor access to the Mist Trail Corridor would be directed into Happy Isles to cross a new pedestrian footbridge proposed for construction at the historic location of the former Happy Isles Footbridge over the Merced River, thereby re-establishing the original access alignment to the Mist Trail Corridor (Figure 2-3). This footbridge would serve as the primary pedestrian access point to the Mist Trail Corridor. Appendix E, Figure E-7 presents a conceptual illustration of the rustic character and architectural style of the proposed footbridge.

The design of the new footbridge would retain the historic east abutment that remained in place after the 2001 footbridge demolition to protect the historic gage station immediately downstream on the east side of the Merced River, which still exists today. The design would also be fully accessible and in compliance with federal accessibility standards (Architectural Barriers Act of 1968).

Appendix E, Figures E-8 and E-9 depict a preliminary design concept and associated limits of construction and grading disturbance, respectively, for the proposed footbridge based on existing topographical and hydrological conditions. Final design and construction details would be determined during the detailed design phase of the project.

Based on conceptual designs, the NPS has determined that construction of the pedestrian footbridge would require no work within the bed or banks of the Merced River. Footbridge foundations would be located in upland areas, and the structure would be erected using a crane or other means to span the river. Construction would involve near-water activities, including ground disturbance and vegetation clearing, as well as the pruning or removal of select trees. Based on the preliminary footbridge design concept, it is anticipated that up to five trees (two multi-stemmed live oaks, two incense cedars, and one ponderosa pine) could be impacted through removal or pruning. Final tree impact estimates would be confirmed during the detailed design phase.

Footbridge construction is anticipated to occur over 10 to 14 months, starting in the dry season to avoid any weather concerns. Construction of the footbridge could require area closures, which would likely extend beyond the immediate vicinity of work sites to include vehicular access routes between the sites and the Happy Isles Loop Road. Detours would be used, as necessary, during footbridge construction to maintain visitor access to Happy Isles and the Mist Trail Corridor.

Demolition and construction would require the use of vehicles, tools, and heavy equipment, the types and numbers of which would be determined during the detailed design phase. Activities would include demolition, off-hauling, foundation drilling, delivery and placement of footbridge materials and components, footbridge field assembly and erection, and earthwork.

Construction staging areas and specifics on construction would be identified in the later design phases. The staging areas would be selected to protect park resources, to meet the needs of the contractor based on the construction phasing plan, and to minimize disruptions to visitor

use and experience. Upon final design, any additional site-specific compliance would be completed, as needed.

Create a New Pedestrian Promenade

Under Alternative C, a pedestrian promenade would be formed using the existing paved utility road from the Happy Isles Shuttle Stop to its junction with the new trailhead and footbridge. Unlike Alternative B, the centrally located promenade would facilitate access to other Happy Isles destinations, including the Art and Nature Center and the North and South Happy Isles nature trails (Figure 2-3). Under Alternative C, the promenade would function as both the primary circulation route to the Mist Trail Corridor and a distinct visitor experience, incorporating seating, safety messaging, and interpretive opportunities.

Create a New Trailhead

Under Alternative C, a new trailhead with wayfinding signage, trip-planning and interpretive elements, shaded seating, and water-filling infrastructure would be constructed at or near the newly constructed footbridge at its former location to provide visitor access to the Mist Trail Corridor (Figure 2-3). The new trailhead area would function as the primary gathering space for visitors embarking along the Mist Trail Corridor with orientation signage with focused messaging on visitor preparedness, safety, and visitor experience to educate visitors on the trail corridor requirements. Current trail conditions would also be communicated at the new trailhead. A conceptual point-of-view rendering of the new trailhead area is included in Appendix E, Figure E-10.

With the construction of a new trailhead under Alternative C, the existing trailhead area on the east side of the Happy Isles vehicle bridge would be decommissioned and land restored and revegetated, while retaining the existing horse trail that continues downstream to the Happy Isles vehicle bridge (Figure 2-3). Restoration activities would include decompaction, revegetation, and stabilization.

ACTIONS COMMON TO ALTERNATIVES B AND C

Under both alternatives B and C, the project would involve revising visitor messaging and signage throughout the project area; providing additional trip-planning and wayfinding resources; clearly delineating pedestrian access into Happy Isles; improving the Happy Isles Shuttle Stop as an arrival space and embarkation point to adequately orient and prepare visitors for the Mist Trail Corridor; rehabilitating the existing Happy Isles restroom facilities; installing trail pullouts where existing shoulders accommodate; and performing selective vegetation clearing outside of Yosemite Wilderness to restore scenic vistas. The following sections provide additional detail on each of these proposed actions.

In general, improvements proposed as part of the project would be implemented in a manner consistent with a gradient concept, which involves increasing hiker independence by incrementally reducing infrastructure and signage as visitors move away from front country areas and into the backcountry of the Mist Trail Corridor. Happy Isles would offer accessible walking paths, water, restrooms, exhibits, and ample resting spaces. Visitor facilities and

services would be more limited as hikers travel along the Mist Trail Corridor and eventually approach Yosemite Wilderness after reaching the brink of Nevada Fall.

Revise Visitor Messaging and Signage

Under alternatives B and C, the NPS would develop a signage and messaging plan with a comprehensive communication strategy to implement within the project area. This plan would address all wayfinding, trip planning, rules and regulations, NPS services, and interpretive messaging within the project area. The placement of new signage along the Mist Trail Corridor would be minimized, with the majority of improvements entailing the revision or replacement of older signs and installing signage in more strategic locations to capture a higher level of visitor use.

The signage and messaging plan would be developed and designed in more detail, and would be guided by the following principles:

- Create signage that is designed to be minimal in presence, maximally effective and consistent throughout the project area. Signage shall adhere to the Yosemite Design Guidelines (NPS 2012) and NPS Visual Resources Program Visual Quality Best Practices.
- Collaborate with the seven traditionally associated Tribes to incorporate messages about Tribes and Tribal perspectives related to locations, placenames, wildlife, plants, and the experience of being in the project area.

As part of the effort to reduce visitor density along the Mist Trail Corridor, the existing trail loop network above Vernal Fall Footbridge would be identified via signage, maps, and technology as the Vernal Fall Loop and Nevada Fall Loop to inform visitors of the availability of the two alternative loop networks. The trail loops are detailed in Table 1-1 and depicted in Appendix A, Figure A-2. Loop trails have been shown to generally decrease visitor density and increase safety as fewer hikers are required to pass on narrower sections (Creany et al. 2021; NPS 1983a; NPS 2004). No new disturbance or construction, outside of minimal disturbance associated with signage installation, would be required for this action.

Provide Trip-planning and Wayfinding Resources

Under alternatives B and C, the NPS would improve visitor preparation and wayfinding by providing enhanced trip planning tools, including updated website content and real-time trail condition information, helping visitors to better plan and navigate their experience. The trailhead would serve as the primary location for on-site visitor preparedness resources to educate visitors on trail corridor requirements and provide current trail conditions prior to embarking on the Mist Trail Corridor. Other strategic locations at which physical trip preparedness resources (such as kiosks) would be installed would be determined in conjunction with the signage and messaging plan action, as described in the *Revise Visitor Messaging and Signage* section.

Clearly Delineate Pedestrian Access to Happy Isles

Under alternatives B and C, the existing two-way Happy Isles Loop Road would be changed into a multi-modal roadway starting at the Valley Trailhead Parking Lot (also known locally as the Wilderness Lot), where visitors park and walk to Happy Isles, to clearly delineate pedestrian and vehicle flow into the Happy Isles area. This concept would be accomplished by establishing a designated two-way shared-use lane for pedestrians, cyclists, and authorized electric mobility devices adjacent to a one-way vehicular lane, both within the existing roadway footprint (Appendix E, Figure E-11). A single pullout would be installed at the Happy Isles Shuttle Stop for safe pedestrian embarking or disembarking from shuttle buses to reduce conflict with passing bicyclists. There would be no physical changes to the existing Happy Isles Loop Road footprint, other than re-striping the surface of the road to delineate the vehicular lane from the shared-use lane, outside of the proposed vehicle bridge improvements under Alternative B as previously described under the *Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge* section. Pedestrians also would be directed via signage to use the existing adjacent Valley Loop Trail, which is separated from the road. Appendix E, Figure E-11 depicts the existing pedestrian Valley Loop Trail and proposed Happy Isles Loop Road multi-modal concept.

Under both alternatives B and C, the one-way vehicular lane would begin at the Valley Trailhead Parking Lot and continue across the Happy Isles vehicle bridge all the way to the intersection of Happy Isles Loop Road and North Pines Campground Road near Clarks Bridge[3]. However, the terminus of the designated two-way shared-use lane would differ between alternatives:

- Under Alternative B, the shared-use lane would extend from the Valley Trailhead Parking Lot to the Happy Isles Shuttle Stop and continue across the Happy Isles vehicle bridge to the existing trailhead.
- Under Alternative C, the shared-use lane would terminate at the Happy Isles Shuttle Stop. From that point, visitors would be directed to the new trailhead and new pedestrian footbridge crossing the Merced River to access the Mist Trail Corridor. No modifications to the existing vehicle bridge would be required under Alternative C.

Additional signage would be installed along Happy Isles Loop Road, from the Valley Trailhead Parking Lot and Upper Pines Campgrounds to the Happy Isles Shuttle Stop, to improve visitor navigation. Specific messaging and sign locations would be defined in the signage and messaging plan described under the *Revise Visitor Messaging and Signage* section.

Happy Isles Shuttle Stop

Under alternatives B and C, the Happy Isles Shuttle Stop would be enhanced to better support arrival, waiting, and departure. To accommodate current use levels, trip planning and

[3] In order to maintain two-way visitor access to the Yosemite Valley Stable located near Clarks Bridge off of North Pines Campground Road, the existing two-way traffic pattern would remain along the segment of Happy Isles Loop Road from its intersection with North Pines Campground Road back around the loop road to the Valley Trailhead Parking Lot.

preparation information, water-filling stations, shaded seating, a shade structure for park staff and Yosemite Conservancy volunteers, and bicycle racks would be added or upgraded. A conceptual rendering of the improved Happy Isles Shuttle Stop is provided in Appendix E, Figure E-12.

Wayfinding signage would also be added to direct visitors from the Happy Isles Shuttle Stop to nearby destinations within the Happy Isles area, including the Art and Nature Center and existing nature trails on North and South Happy Isles (Appendix A, Figure A-1).

Rehabilitate Happy Isles Restroom Facilities

Under alternatives B and C, the current restroom facility adjacent to the Happy Isles Shuttle Stop would be rehabilitated to accommodate a greater number of restroom stalls to reduce wait times during busy months. No new facility would be built but the interior configuration and exterior building footprint could be modified or expanded. The number of restrooms stalls to be added and modifications to the exterior footprint would be finalized during the detailed design phase of the project.

Increase Trail Pullouts

Under alternatives B and C, proposed improvements along the Mist Trail Corridor would include trail pullouts where existing shoulders are wide enough to accommodate seating and provide additional opportunities for an area to rest. If a trail pullout is installed adjacent to potential river access, barriers would be installed to deter visitors from accessing the river or hiking off-trail. For seating elements, use of on-site granite would be preferred over wood benches, whenever possible, to increase durability, longevity, reduced future maintenance, and to maintain historic building materials and character of the trail corridor. No rock blasting would be performed to create trail pullouts. In locations where bench construction is not an option, standing-room-only trail pullouts could be implemented.

The Vernal Fall Footbridge has been identified as a potential location for additional seating, as the footbridge is an already existing major gathering point and area to rest within the corridor. Appendix E, Figure E-13 includes a depiction of a potential concept for formalizing places to rest and sit on both sides of the Vernal Fall Footbridge. Stepped seating using natural materials would be installed near the existing Vernal Fall restroom facility. Additional specific trail pullout locations would be identified during the detailed project design phase and as supported by visitor use data.

Restore Scenic Vistas

Under alternatives B and C, selective vegetation trimming and/or clearing would be performed outside of Yosemite Wilderness to improve scenic vistas. To date, there is only one view of Yosemite Falls along the JMT, and visitor experience would, therefore, benefit from additional views (#29 Vernal Fall Footbridge, #30 Illilouette Falls view, and #14 Happy Isles Bridge; NPS 2011a). Selective removal of conifer trees at existing potential vistas would create established viewpoints, promoting a more enjoyable hiking experience. Specific locations and number of trees to be cut or removed would be determined during the future, detailed design phase.

NPS PROPOSED ACTION

Alternative C is the NPS proposed action. The proposed action was identified through early planning, interdisciplinary team scoping, and civic engagement, and best meets project objectives for providing a high-quality visitor experience while protecting park resources and values.

Alternative B also was developed through planning and civic engagement and is carried forward for analysis to support informed decision-making.

ALTERNATIVES CONSIDERED BUT DISMISSED

The planning team considered other potential alternatives (e.g., alternative footbridge designs, trail and alternate viewing area construction, etc.), including those identified through civic engagement that were determined unfeasible and/or not responsive to the purpose and need for action. These alternatives and the rationale for not carrying them forward for further analysis are summarized in Appendix F—*Alternative Actions Considered but Dismissed from Further Analysis*.

MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

To minimize resource impacts related to the proposed action, the NPS would implement mitigation measures and best management practices (BMPs), where feasible. These measures are presented in Appendix G—*Mitigation Measures and Best Management Practices*, are considered part of the NPS proposed action, and would be implemented to avoid or reduce impacts on park resources and values. Protective measures included in Appendix G are subject to the final design and approval of plans by relevant agencies.

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CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing condition of the resources (or impact topics) retained for analysis, as described in Chapter 1, as well as the potential impacts on those resources from implementing the action alternatives. Reasonably foreseeable future impacts are detailed in Appendix H—*Reasonably Foreseeable Future Impacts Analysis*. The no-action alternative (Alternative A) would result in a continuation of existing conditions and trends, which are described in the *Affected Environment* section for each resource. Therefore, no impact analysis is carried forward in this EA beyond a description of baseline conditions.

Mitigation measures are part of the proposed actions and are discussed in more detail in Appendix G. Where appropriate, mitigation measures, protection measures, and BMPs have been incorporated into the evaluation to prevent or lessen adverse impacts.

METHODOLOGY

The analysis of impacts follows *516 DM 1 - U.S. Department of Interior Handbook of National Environmental Policy Act Implementing Procedures* (issued February 24, 2026) and NPS Director's Order 12 procedures (NPS 2011b). The intensity of impacts is assessed in the context of the park's purpose and significance and any resource-specific context that could be applicable. The methods used to assess impacts vary depending on the resource being considered but generally are based on a review of pertinent literature and studies, information provided by on-site experts and other agencies, professional judgment, and park staff knowledge and insight. All reference materials used to develop the following analyses are cited in Appendix I—*References*.

Area of Analysis for Impacts

Area of analysis refers to the geographic setting within which an impact could occur within the project area. For the purposes of this project, most impacts are local to the immediate project area unless otherwise noted. The area of analysis is based on conceptual design information and reasonable assumptions. Therefore, the approximate disturbance calculations are subject to change during subsequent design phases. Changes that are not addressed by the range of impacts covered in this document could require additional NEPA compliance.

Type of Impact

The potential impacts of the alternatives are described using the following terminology:

- **Short term**: Impacts that would occur as a result of the construction activities. Depending on impact topic, impacts could be intermittent (days or weeks) or continuous during construction.
- **Long term**: Impacts that would continue to occur after construction is complete and could continue for years or decades.

- **Beneficial**: A favorable change in the condition or appearance of the resource, or a change that moves the resource toward a desired condition.
- **Adverse**: A change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.

VISITOR USE AND EXPERIENCE – INCLUDING VISITOR SAFETY

Affected Environment

Happy Isles

Happy Isles is a unique Yosemite Valley visitor destination and includes the Art and Nature Center, the Happy Isles nature trails, the Fen, and the JMT-Mist Trail trailhead (Appendix A, Figure A-1). Over 3,000 hikers embark from the existing trailhead daily, increasing to 4,000 hikers on Saturdays (NPS 2014b). While SAR incidents occur at a lower rate at the trailhead as compared to the steeper terrain in the trail corridor, the trailhead remains the single most critical area to provide safety and trip planning information.

The Happy Isles Loop Road serves as the main arrival route for visitors into Happy Isles and is open to shuttles, bicycles, NPS staff and other authorized vehicles. The Valley Loop Trail, a pedestrian path paralleling Happy Isles Loop Road, serves as the main pedestrian access route from the Valley Trailhead Parking Lot into Happy Isles. The space between the Valley Loop Trail and Happy Isles Loop Road is heavily impacted by visitors that frequently move between the path and the roadway. Visitors frequently walk on the road, causing conflicts with vehicles, bicycles, and shuttles.

The Happy Isles Shuttle Stop contains the majority of visitor facilities and services available within Happy Isles, including a water-filling station, bike parking, seating, and a shade structure. The restroom facility, located adjacent to the shuttle stop, is heavily used during the summer season and, on the busiest days, is insufficient to handle the high volume of Happy Isles visitors. The shade structure does not provide enough coverage for the number of visitors queuing for the shuttle, with groups often standing in the shade of the nearby tree canopy while waiting. Signage at the Happy Isles Shuttle Stop is limited and does not provide adequate information for visitor wayfinding to or trip-planning for the Mist Trail Corridor.

As described in Chapter 1, a previous flooding and rockfall event resulted in removal of the historic Happy Isles Footbridge, at which time, visitor access to the Mist Trail Corridor was rerouted over the Happy Isles vehicle bridge. As such, there is currently a disconnect between the Happy Isles Shuttle Stop on the west side of the Merced River and the trailhead on the east side. The result of this configuration is that visitors disembark from the shuttle bus and proceed directly east, across the vehicle bridge to the trailhead, missing facilities and trip planning opportunities, as well as other experiences that Happy Isles has to offer. Likewise, visitors heading into Happy Isles looking for the trailhead find that they are on the wrong side of the river and are forced to backtrack to the east side of the river.

Happy Isles offers interpretive exhibits, accessible paths, and resting spaces. The Art and Nature Center serves as an interpretive hub and workshop space. The center receives a high volume of

visitors and is accessed by an asphalt trail but can be difficult to find. The Happy Isles nature trails provide visitor access to the Merced River along the North and South Happy Isles and are generally the most accessible of all outdoor experiences within the project area. Visitors with a variety of needs and capabilities can use these trails to access the natural landscape of Happy Isles. A boardwalk and platform provide visitor access to view the Fen, an ecologically rich and fragile landscape west of the main Happy Isles area.

Overall, visitor experience within Happy Isles lacks clarity, definition, and hierarchy. Visitors frequently walk on the Happy Isles Loop Road, creating conflicts with NPS staff vehicles, bicycles, and shuttles. These circulation issues lead to confusion for visitors.

Mist Trail Corridor

The trails within the project area include: 1) JMT from Happy Isles to the Upper JMT-Mist Trail Junction; 2) the Mist Trail; 3) Clark Point Cutoff Trail; and 4) the Stock Trail. There are two existing trail loops above Vernal Fall Footbridge, using various sections of the JMT, Mist Trail, and the Clark Point Cutoff Trail:

- Vernal Fall Loop: Travels up the Mist Trail to the top of Vernal Fall, then returns on the Clark Point Cutoff Trail along the JMT back to Happy Isles.
- Nevada Fall Loop: Travels up the Mist Trail to the top of Nevada Fall, then returns on the JMT back to Happy Isles.

Additional trail details, including approximate length, elevation gain, and loop descriptions, are provided in Table 1-1.

The JMT, between Happy Isles and the Vernal Fall Footbridge, is one of the busiest sections of the corridor and has very few formalized trail pullouts. This section is paved and approximately six feet wide. The Vernal Fall Footbridge, which spans the Merced River, is the first major area to rest in the trail corridor since embarking from the trailhead; it has a bathroom, a water-filling station, several large boulders for seating, and a distant view of Vernal Fall from the center of the footbridge. Visitor congestion is common in this area with large groups of people waiting for their party to catch up, resting in the shade with minimal formalized seating. The Vernal Fall Footbridge also is the first river access point since the trailhead; as such, many hikers venture to the water's edge not knowing the dangers of swift water.

The Stock Trail consists of a mix of paved surfaces and crushed gravel or compacted road base and is as narrow as three feet wide in some sections, compared to the six-foot-wide paved JMT below the Vernal Fall Footbridge. The trail includes two switchbacks and a narrow straightaway with a steep drop-off, which presents ongoing challenges for packers and mules. The Stock Trail is signed for stock use only and is not shown on official park maps. However, the first 0.4 miles of the trail is frequently used by visitors who inadvertently meander onto it from the Art and Nature Center.

Above Vernal Fall Footbridge, infrastructure and signage begin to decrease as the trail becomes substantially steeper and more challenging than below the footbridge. The Mist Trail is generally five to six feet wide, with a crushed gravel surface and exposed granite in places.

Approaching Vernal Fall, visitors encounter a steep granite stairway of more than 600 steps (Mist Trail steps), which frequently become slippery due to waterfall spray.

The brink of Vernal Fall is a popular visitor destination with areas available to sit and a vault toilet. From the brink of Vernal Fall to the Nevada Fall Footbridge, there are numerous exposed, rocky switchbacks. There also are a few river sections easily accessible from the trail, including Emerald Pool, Silver Apron, and approaching the brink of Nevada Fall, where—although prohibited—visitors frequently wade and swim there due to the limited barriers and signage that exist.

The Clark Point Cutoff Trail is a 0.4-mile connector trail that links the Mist Trail and JMT near Vernal Fall and Nevada Fall. This trail is short but moderately steep in sections due to the granite terrain.

The Upper JMT-Mist Trail Junction is a critical point for visitors and stock team alike. Visitor infrastructure at the Upper JMT-Mist Trail Junction area include a bathroom and small seating area, which are frequently used during high visitation periods. Large crowds can obscure existing signage and contribute to wayfinding confusion.

High numbers of SAR incidents have historically occurred along the Mist Trail with multiple fatalities due to falling from steep terrain as well as cardiac emergencies. This area of the corridor is also difficult for SAR personnel as they must maneuver in the steep narrow sections while also carrying patients.

Environmental Consequences

Impact Analysis Methodology

To analyze the impacts of each alternative on park visitors, the NPS considered short-term construction-related disruptions that are likely to occur and the long-term adverse impacts and benefits of implementing the project. The analysis considered the existing visitor use patterns and visitor use data, including SAR operations, collected to support project planning efforts. The analysis of potential impacts was performed using data provided by technical experts, professional judgement, information provided by park staff, public comments, and experience with similar past projects.

Alternative B: Use Existing Vehicle Bridge for Pedestrian Access with Associated Promenade and Trailhead

Use the Existing Happy Isles Vehicle Bridge for Pedestrian Access

Vehicle bridge improvements would provide a more clearly defined passage for visitors traveling over the vehicle bridge from the Happy Isles Shuttle Stop to the existing trailhead, resulting in long-term beneficial impacts to visitor experience and safety. Construction activities associated with vehicle bridge improvements could result in temporary access restrictions to the existing trailhead via the vehicle bridge and cause temporary disruption of the visitors' enjoyment of this area, resulting in short-term adverse impacts to visitor use and experience. However, these disruptions would only occur during construction and would not be permanent.

Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge

The new pedestrian promenade would provide a more formalized and educational route linking the Happy Isles Shuttle Stop with the existing trailhead as compared to current conditions. The promenade also would serve as its own experience providing seating and interpretive opportunities throughout its length. Signage and wayfinding along the promenade would be installed to minimize visitor confusion or backtracking over the Merced River. Overall, the pedestrian promenade would result in long-term beneficial impacts to visitor experience as compared to current conditions.

Enhance the Existing Trailhead

Enhancements to the existing trailhead would better aid and inform visitors on their Mist Trail Corridor journey, as well as eliminate the need for visitors backtracking to Happy Isles for any preparedness information and/or other services not currently provided at the trailhead. Increased visitor preparedness along the Mist Trail Corridor also could contribute to a more informed and self-aware visitor population, thereby increasing visitor safety along the trail corridor. Overall, enhancements to the existing trailhead would provide a long-term benefit to visitor experience and safety.

Improved visitor facilities and services at the existing trailhead would support increased access to information and resting opportunities as compared to the current conditions, which would provide a long-term benefit to visitor experience. Proposed enhancements would prompt temporary access restrictions to the existing trailhead, which would result in short-term adverse impacts to visitor use and experience. However, during construction, an alternative, temporary access point to the Mist Trail Corridor would be provided, minimizing impacts to visitors.

Formalize Stock Trail Loop

A piloted (and potentially long-term) formalization of the Stock Trail Loop would offer a new and rewarding experience for visitors, as the Stock Trail has views of the Illilouette Creek delta and unique riparian habitat. In addition, formalizing the Stock Trail Loop could reduce traffic along the JMT below Vernal Fall by providing an alternative route. One-way directional flow would improve the visitor experience, as loop trails decrease visitor density and the sense of crowding, and promote a safer condition as fewer hikers would need to pass on narrow JMT stretches (Creany et al. 2021; NPS 1983a; NPS 2004). Forming the Stock Trail Loop also could indirectly decrease visitor density along trails above Vernal Fall Footbridge, as visitors could choose to return to Happy Isles along the Stock Trail rather than continuing up the trail corridor to experience other destinations and more difficult terrain. Therefore, forming a lower trail loop including the Stock Trail would result in long-term beneficial impacts to visitor use and experience as compared to the existing trail network.

Under the piloted (and potential long-term) formalization, there could be potential for new conflicts between visitors and stock (mules or horses), resulting in an adverse impact to visitor use and experience, as well as visitor and stock safety. Stock Trail use would be managed by implementing short-term (10 to 15 minutes) operational closures twice per day while stock

trains are passing through this section of the trail. Visitors could feel inconvenienced by needing to wait for stock to pass or could be dissatisfied with droppings along the trail associated with stock use.

Construction activities related to potential post-pilot program Stock Trail improvements would have a short-term minor impact on visitor use and experience through the presence of construction equipment and noise, which could distract from the park aesthetics and natural soundscape on the JMT, particularly near Vernal Fall Footbridge. Stock teams could also be required to take alternate trips along the JMT during trail improvement implementation on the Stock Trail. Impacts related to stock teams and other park operations from Stock Trail construction activities are detailed in Appendix C.

Alternative C: Construct New Pedestrian Footbridge with Associated Promenade and Trailhead (Proposed Action)

Construct a New Pedestrian Footbridge at the Historic Location of the Happy Isles Footbridge

Implementation of Alternative C has the potential to result in short-term, low-intensity visitor disorientation associated with changes in circulation patterns and access to the Mist Trail Corridor relative to existing conditions. This impact would be limited in duration and primarily affect visitors familiar with the current configuration during the initial transition period. Proposed changes do not restrict access or reduce available visitor facilities or services in the long term. Clear signage and enhanced wayfinding at the Happy Isles Shuttle Stop, along Happy Isles Loop Road, and throughout the pedestrian promenade would further reduce confusion and facilitate visitor orientation. Over the long term, Alternative C would result in beneficial effects providing a more intuitive, cohesive, and connected visitor experience compared to Alternative B.

Construction activities associated with the footbridge would result in temporary access restrictions to Happy Isles destinations and temporarily disrupt visitors' enjoyment of this area, resulting in short-term adverse impacts to visitor use and experience. These impacts would be temporary and would occur only during construction; no permanent disruptions are anticipated. During construction, access to the Mist Trail Corridor would be maintained via the existing trailhead on the east side of the Merced River.

Create a New Pedestrian Promenade

The new pedestrian promenade would provide a more formalized and educational route linking together the Happy Isles Shuttle Stop, the new trailhead, and footbridge. Similar to impacts described under the *Construct a New Pedestrian Footbridge at the Historic Location of the Happy Isles Footbridge* section, the pedestrian promenade would result in long-term benefits to visitor experience as compared to current conditions.

Compared to Alternative B, the pedestrian promenade under Alternative C would better support direct visitor circulation and access to other Happy Isles destinations due to its proximity to the new trailhead. This configuration would eliminate the need for signage

intended to discourage visitor backtracking across the vehicle bridge. As a result, Alternative C would provide greater long-term beneficial impacts to visitor experience than Alternative B.

Create a New Trailhead

Installation of a new trailhead would increase foot traffic into Happy Isles, which is currently a relatively quiet area as compared to the existing trailhead. With infrastructure in this area that supports information gathering and potential resting, those visitors looking for a quieter space could experience a diminished sense of solitude within Happy Isles as compared to the current conditions.

A new trailhead with signage, seating, and preparedness focused messaging would improve visitor orientation and readiness as compared to existing conditions. Increased visitor preparedness could reduce unsafe behaviors and contribute to improved safety along the Mist Trail Corridor. Overall, the new trailhead adjacent to the proposed footbridge would provide a long-term benefit to visitor experience and safety.

Trailhead construction could temporarily limit access to Happy Isles destinations, causing short-term impacts to visitor experience that would cease once construction is complete.

Actions Common to Alternatives B and C

Revise Visitor Messaging and Signage

The proposed actions related to messaging and signage would reduce existing wayfinding and orientation challenges. Improved wayfinding would support a more prepared and informed visitor population along the Mist Trail Corridor and could indirectly reduce the frequency of SAR incidents, resulting in beneficial effects on visitor safety and the safety of park and volunteer SAR personnel. Expanded opportunities for timely “live” information on trail conditions and safety would further enhance visitor preparedness. Overall, implementation of a signage and messaging plan would result in short- and long-term beneficial impacts on visitor use and experience.

Advertising the existing loops above Vernal Fall Footbridge could reduce traffic by encouraging (but not requiring) a one-way flow, which would improve the visitor experience, as loop trails decrease both visitor density and the sense of crowding and increase safety as fewer hikers would need to pass on narrow stretches (Creany et al. 2021; NPS 1983a; NPS 2004). Therefore, this action likely would result in long-term, beneficial impacts to visitor use and experience as compared to current conditions.

Advertising the existing upper trail loops also could enhance visitor decision-making by offering alternate route options and providing clear and achievable “turnaround” points. Increased use of loop options also could reduce SAR incidents along the upper trail corridor, resulting in long-term beneficial effects for both visitors and park operations staff. In addition, education and signage would inform visitors of alternatives to backtracking down the steep Mist Trail steps, which are among the areas with the highest occurrence of SAR incidents. Conversely, formalizing the existing trail loop network could disperse visitor use to less-traveled routes

within the corridor, such as the Clark Point Cutoff Trail, potentially resulting in long-term adverse effects on visitor experience for those seeking solitude.

Provide Trip-planning and Wayfinding Resources

Providing trip-planning and wayfinding resources would improve visitor access to timely and relevant information, resulting in a more informed and better prepared visitor population. Strategically placed kiosks in high-use locations would further reduce wayfinding and orientation challenges encountered along the trail corridor. Collectively, these trip-planning and wayfinding tools would result in long-term beneficial impacts on visitor use and experience.

Clearly Delineate Pedestrian Access to Happy Isles

The proposed Happy Isles Loop Road traffic pattern change could contribute to a clearer and safer visitor arrival sequence as compared to the no-action alternative, reducing visitor confusion, lost time, and mental fatigue. The change in traffic pattern, including the pullout for the shuttle bus to unload passengers directly at the Happy Isles Shuttle Stop, would promote a decrease in vehicle-pedestrian related conflicts, thereby improving visitor safety and providing long-term beneficial impacts.

Temporary lane closures associated with this action would potentially disrupt traffic and visitor access to Happy Isles, likely resulting in short-term adverse impacts to visitor use and experience. However, these temporary disruptions would cease upon construction completion. The NPS would notify park visitors in advance of any closures or detours, thereby minimizing construction impacts to visitor use, experience, and safety.

Improve Happy Isles Shuttle Stop

Happy Isles Shuttle Stop improvements would more adequately meet the existing capacity of visitors arriving and departing on shuttles as well as provide information to visitors related to various destinations in the Happy Isles area and along the Mist Trail Corridor. In addition, signage and messaging implemented at the Happy Isles Shuttle Stop could potentially disperse visitors to alternate Happy Isles destinations, which could ultimately reduce pedestrian traffic along the Mist Trail Corridor. As a result, proposed shuttle stop improvements would beneficially impact visitor use and experience in the long term both in Happy Isles and along the Mist Trail Corridor.

Construction activities could result in temporary closures of the Happy Isles Shuttle Stop area or disruptions to the shuttle service, resulting in short-term impacts to visitor use and experience. However, these temporary disruptions would cease upon construction completion. The NPS would notify park visitors in advance of any closures or detours, thereby minimizing construction impacts to visitor use, experience, and safety.

Rehabilitate Happy Isles Restroom Facilities

Adding restroom stalls to the existing restroom facility would reduce visitor wait times, which would provide a long-term benefit to visitor use and experience. During construction activities, temporary closures could be necessary, causing short-term adverse impacts to visitors. However, the NPS would provide an alternative solution for restrooms (i.e., portable

restrooms) during this period. Once operational, the upgraded and expanded restrooms would also require additional time for regular cleaning and maintenance, as detailed in Appendix C. Despite these anticipated short-term and long-term adverse impacts, the rehabilitated restroom facilities would provide an overall long-term benefit to visitor use and experience.

Increase Trail Pullouts

An increase in trail pullouts at strategic locations, including at Vernal Fall Footbridge, would better accommodate the existing volume and variety of trail user groups, enhance safety along the trail by providing opportunities to rest or pull off in crowded sections, and improve the overall experience of visitors. Alternatively, by adding more trail pullouts above Vernal Fall Footbridge, there is a potential long-term impact that visitors could experience a false expectation of available visitor facilities and services at a point where the trail, in reality, becomes more, not less, difficult. However, overall, it is anticipated that there would be a long-term benefit to visitor experience and safety as a result of this action.

Installation of trail pullouts could require temporary trail closures during construction, causing short-term adverse impacts to the overall visitor experience due to noise and presence of construction equipment. However, the NPS would maintain pedestrian access for the duration of construction by providing temporary detours or alternative routes around closed trail sections, if any. The NPS would ensure that trail detours are clearly marked and would provide advance notice of trail closures on the park website. Detour routes would be determined during the detailed design phase. Once construction is complete, the trail corridor would be open to visitors in its entirety, eliminating any further disruptions to visitors.

Restore Scenic Vistas

Selective tree clearing is anticipated to improve the visitor experience by providing new recreational "destinations" along the trail corridor. Therefore, it is anticipated that there would be long-term beneficial impacts as a result of this action. Short-term impacts related to vegetating clearing activities would be similar to those described under the *Increase Trail Pullouts* section. Any tree clearing completed near swift water would be accompanied with safety barrier installation to deter unsafe water access.

BIOLOGICAL RESOURCES – INCLUDING VEGETATION, WILDLIFE, AND SPECIAL STATUS SPECIES

Affected Environment

Vegetation

Yosemite has five different vegetation zones within its elevation range, including: foothill-woodland, lower montane forest, upper montane forest, subalpine forest, and alpine (NPS 2023a). Within the park, most of the project area is located within the foothill-woodland and the lower montane forest zones. More information on specific vegetative communities in the project area, including non-native plants, can be found in Appendix J—*Biological Resources Analysis Supporting Information*.

The NPS has determined that, although the potential for invasive species exists in the project area, there are no high-priority populations within the project area, and BMPs, such as those listed in Appendix G, would reduce the already minimal potential for impacts associated with invasive species. As such, invasive species are not discussed further within this EA.

Wetlands and non-vegetated exposed rock and talus fields are also present within the project area. Wetlands are discussed further in the *Water Resources* section.

Happy Isles

The vegetative community at the existing trailhead and adjacent areas along the east side of the Merced River is characterized by a lush deciduous understory dominated by tree and shrub species such as Pacific dogwood (*Cornus nuttallii*), white alder (*Alnus rhombifolia*), big-leaf maple (*Acer macrophyllum*), and arroyo willow (*Salix lasiolepis*) (OTL Environmental LLC 2024). This community occurs at approximately 4,000 feet above mean sea level and is subject to periodic inundation during spring snowmelt.

Both within and immediately west of Happy Isles, a variety of wetland habitats are present, including a rare and fragile peat-forming wetland known as the Fen. The structure and composition of the riparian understory have been influenced by long-term fire suppression, which has contributed to overgrowth within the Lower Montane Forest.

In contrast, Happy Isles Loop Road between the Valley Trailhead Parking Lot and Happy Isles, the Happy Isles vehicle bridge leading to the existing trailhead, and developed areas of Happy Isles on the west side of the Merced River consist primarily of paved or compacted dirt surfaces and trails and with areas that are largely devoid of vegetation.

Mist Trail Corridor

The JMT and Stock Trail ascend from Happy Isles to the Vernal Fall Footbridge, gaining approximately 495 feet in elevation. Vegetation within this reach is dominated by Lower Montane Forest. This community is characterized by montane chaparral and coniferous forest species, including California black oak (*Quercus kelloggii*), ponderosa pine (*Pinus ponderosa*), incense-cedar (*Calocedrus decurrens*), and white fir (*Abies concolor*).

From the Vernal Fall Footbridge to the Upper JMT–Mist Trail Junction at approximately 5,900 feet above mean sea level, including the Mist Trail, the JMT, and the Clark Point Cutoff Trail, the vegetation community remains Lower Montane Forest, with species composition consistent with that found below the Vernal Fall Footbridge.

Wildlife

The park supports more than 400 species of vertebrates, including mammals, birds, bats, fish, amphibians, and reptiles, as well as a wide variety of invertebrates such as insects (NPS 2017a). This high species diversity reflects the wide range of habitats present within the park. The relatively mild climate of Yosemite Valley also supports a greater concentration of wildlife, with generally fewer species occurring at higher elevations (NPS 2017a). Wildlife known to occur within the park, and therefore with the potential to occur within the project area, includes black bear (*Ursus americanus*), mountain lion (*Puma concolor*), coyote (*Canis latrans lestes*),

mule deer (*Odocoileus hemionus*), marmot (*Marmota flaviventris*), bobcat (*Lynx rufus*), and a variety of birds, bats, other mammals, amphibians, reptiles, fish, and invertebrates (NPS 2017a, 2024a).

Although no invasive animal species of concern have been documented within the park, the New Zealand mud snail (*Potamopyrgus antipodarum*) has been recorded in waterways south of Mono Lake, adjacent to the park's eastern boundary (NPS 2023b). While this species has not been documented within the park, there is potential for future introduction via park waterways if not effectively monitored (NPS 2023b). The park also identifies several designated "forest pests," defined as insects or diseases introduced to an ecosystem that could result in environmental or economic damage (NPS 2025a). Forest pests could be inadvertently introduced through transported firewood; therefore, the use of outside firewood is prohibited within the park (NPS 2025a). Although 16 forest pest species are known to threaten ecosystems within the park, the NPS has confirmed that forest pests are not a concern within the project area and are not analyzed further in this EA.

Happy Isles

Both the Fen and riparian corridor areas are known to provide habitat for a variety of wildlife species, including those previously listed. There are also 17 species of bat known to be present within the park (NPS 2018), some of which could be present in Happy Isles, either for nighttime foraging or summer roosting. However, the Happy Isles Loop Road between the Valley Trailhead Parking Lot to Happy Isles, the Happy Isles vehicle bridge to the existing trailhead, and the Happy Isles area (specifically located on the west side of the Merced River) are either paved or dirt surfaces and/or trails, devoid of vegetation.

A wetland is present within the Happy Isles area, which provides habitat for wildlife and serves as an important wildlife corridor; however, it is located in an area with typically high visitor concentrations. As such, wildlife likely uses the habitat as a corridor when traveling from one area to another.

Mist Trail Corridor

Wildlife species that could occur along the Mist Trail Corridor typically include black bear, fisher, Northwestern pond turtle, California red-legged frog, California spotted owl, great gray owl, peregrine falcon (*Falco peregrinus*), Mount Lyell salamander, Sierra newt (*Taricha sierrae*), Pacific tree frog (*Pseudacris regilla*), and various other bat and bird species (NPS 2025b).

Special Status Species

For the purposes of this analysis, *special status species* are defined as wildlife and plant species that are either federally listed under the ESA or managed for conservation and protection by the NPS. To evaluate the potential presence of special status species within the project area, the California state list of endangered and threatened species was reviewed (California Department of Fish and Wildlife [CDFW] 2025a), along with records from the California Natural Diversity Database (CNDDB). The CNDDB was queried for the United States Geological Survey (USGS) 7.5-minute Half Dome, California quadrangle and five surrounding quadrangles encompassing the project area (CDFW 2025b). In addition, a species list was obtained from the

USFWS Information for Planning and Consultation (IPaC) system on August 11, 2025, identifying federally listed species with the potential to occur in the project area (USFWS 2025a). Copies of the IPaC and CNDDB results are provided in Appendix K—*USFWS IPaC and CNDDB Results*. Coordination with NPS staff resulted in the inclusion of two additional species managed by the park for conservation purposes, reflecting ongoing NPS management priorities.

In addition to database reviews, NPS staff conducted a focused plant survey over four days in July 2025 within approximately 9.61 acres of the project area (NPS 2025c). The survey targeted rare and special status plant species with documented historic occurrence in the park. Prior to fieldwork, biologists reviewed previously mapped population polygons near the Mist Trail and the Fen to familiarize themselves with target species characteristics. Target species included sugarstick (*Allotropa virgata*), Yosemite rockcress (*Boechera repanda*), Sierra false coolwort (*Bolandra californica*), clustered-flower cryptantha (*Cryptantha glomeriflora*), mountain lady's slipper (*Cypripedium montanum*), stream orchid (*Epipactis gigantea*), purple fawn lily (*Erythronium purpurascens*), and wood saxifrage (*Saxifraga mertensiana*).

Although several of these species have been documented in previous survey efforts, only Yosemite rockcress was identified within the project area during the 2025 survey (NPS 2025c). Survey results are summarized in Table J-1 of Appendix J—*Biological Resources Analysis Supporting Information* and discussed further in the *Biological Resources, Environmental Consequences* section.

Based on federal and state resource reviews, a total of 14 special status species have the potential to occur within the project area. These species are listed in Appendix J, Table J-1, along with their listing status, habitat preferences, and an assessment of likelihood of occurrence. Following coordination with park staff, it was determined that nesting migratory birds and seven species—or their suitable habitat—are likely to occur within the project area and could be affected by the proposed action: fisher, California spotted owl, northwestern pond turtle, California red-legged frog, Mount Lyell salamander, monarch butterfly, and Yosemite rockcress. Accordingly, impact analysis in this EA focuses on these seven species.

Although some federally listed species included in Appendix J, Table J-1 have federally designated critical habitat, no critical habitats overlap with the project area; therefore, critical habitats are not analyzed further in this EA.

Environmental Consequences

Impact Analysis Methodology

The analysis of impacts to biological resources focuses on potential effects to vegetation, wildlife, and habitats supporting special status and other sensitive species described in the *Biological Resources, Affected Environment* section. Impact analysis is based on existing biological data, evaluation of potential interactions with the proposed actions, professional judgment, information provided by NPS staff, public comments, and experience from similar past projects. For each action alternative, the impact analysis assumes that the NPS would implement the mitigation and avoidance measures and BMPs outlined in Appendix G.

Alternative B: Use Existing Vehicle Bridge for Pedestrian Access with Associated Promenade and Trailhead

Use the Existing Happy Isles Vehicle Bridge for Pedestrian Access

Vegetation. The existing vehicle bridge does not support vegetation; therefore, vegetation would not be affected by the proposed vehicle bridge improvements.

Wildlife. Although the vehicle bridge does not provide habitat, some wildlife, such as black bears, could use the area at night when traffic is minimal. Impacts to wildlife would be minor, as nighttime use patterns and noise levels would remain similar to existing conditions.

Special Status Species. Fishers and California spotted owls can be sensitive to changes in vehicle activity, particularly during dawn and dusk when individuals are more likely to cross or forage near roadways. Vehicle collisions have been identified as a mortality factor for these species at a park-wide scale, including documented fisher mortality over the past two decades (NPS 2024a). However, vehicle traffic at the Happy Isles vehicle bridge consists primarily of shuttle buses and occasional park staff vehicles, operating at low speeds, and would not increase in frequency from the existing condition.

Similarly, while some studies have found that Northern spotted owls—and by extension, California spotted owls—could experience reduced reproductive success in areas with consistently high traffic noise, other research has found no measurable stress response in California spotted owls associated with road or chainsaw noise (Temple and Gutiérrez 2003, 2004; NPS 2024a). Because Alternative B would not result in increased traffic volumes or substantially altered noise conditions at the vehicle bridge, effects on these species would be unlikely and would not exceed existing conditions.

Special status species could experience minor, short-term impacts during construction activities under this alternative due to increased human presence and construction-related noise. Such noise could temporarily deter species such as the fisher and California spotted owl from transiting or using areas near active work zones; however, these effects would be localized and temporary, as construction activities would be confined to the immediate project footprint, and these species can use adjacent areas to move through the project area. No long-term impacts are anticipated, as the project would not substantially alter habitat conditions or movement corridors.

Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge

Vegetation. As noted previously, the vehicle bridge does not support vegetation, and proposed improvements would not impact vegetation.

Wildlife. Wildlife use of the vehicle bridge area is limited, typically occurring during nighttime when human activity is low. During construction, wildlife movement may be temporarily disrupted if the area is inaccessible, and construction noise could deter wildlife from the immediate vicinity. These impacts would be short term and minor, as wildlife can use adjacent areas to cross the Merced River.

Special Status Species. As described previously, fishers and California spotted owls are sensitive to vehicle collisions and traffic changes and would continue to experience impacts from existing traffic (NPS 2024a). Therefore, impacts related to use of the vehicle bridge for pedestrian access would be minimal.

Enhance the Existing Trailhead

Vegetation. Ground disturbance, including vegetation clearing, and limited expansion of the developed footprint would occur, contributing to short-term and long-term adverse impacts on vegetation. Construction of new infrastructure in the existing trailhead area would require minimal removal of shrub and herbaceous vegetation, with some areas restored following construction and others permanently converted.

Wildlife. Ground disturbance and construction noise could temporarily affect wildlife in the existing trailhead area. Some wildlife species, such as black bears, could use the area as a habitat corridor, and depending on the timing of construction, birds could nest and bats could roost in the vicinity. Increased noise and human presence would likely result in temporary avoidance of the area by mobile wildlife species. Species that are nesting or roosting during construction could experience greater disturbance because they could be less able to relocate. To minimize these effects, BMPs outlined in Appendix G, such as pre-construction surveys and seasonal restrictions to avoid peak nesting or roosting periods, would be implemented.

Improvements at the existing trailhead could also result in indirect adverse effects associated with improper disposal of food waste or trash. Improperly managed waste could degrade soil or water quality and attract wildlife such as black bears, increasing the potential for human–wildlife interactions and injury. These effects would be minimized through visitor messaging and signage, as well as additional measures outlined in Appendix G. Following construction, no long-term changes to wildlife movement patterns or habitat use are expected.

Special Status Species. Special status wildlife species, such as California spotted owls, and monarch butterflies, could use the area as a habitat corridor, occasionally crossing the road (with the California spotted owls potentially nesting in the vicinity). As described previously, minor, short-term impacts could occur during construction due to increased noise and human presence, but these would be temporary and confined to the immediate project footprint, with no anticipated long-term effects on wildlife movement patterns. Pre-construction surveys would be conducted to confirm the presence or absence of the California spotted owl, and additional measures outlined in Appendix G would be implemented to avoid or minimize impacts to California spotted owls and monarch butterflies (through avoidance of impacts to sensitive plant species and communities).

Formalize Stock Trail Loop

Vegetation. Post-pilot program Stock Trail improvements would require limited widening of the trail prism which currently is three to four feet in width along most of the Stock Trail. Trail widening would be sited to minimize vegetation disturbance and avoid tree removal to the extent practicable. Where widening occurs, trailside vegetation clearing would result in permanent (long-term) impacts confined to the immediate project footprint and would not

extend to the broader resource area. BMPs, including measures for sensitive natural communities and special status plants described in Appendix G, would be implemented to avoid and minimize impacts. Additional trail improvements, such as drainage features or causeway upgrades, could also result in minor vegetation removal adjacent to the trail for construction. Overall, adverse impacts to vegetation would be minor when considered in the context of existing vegetation conditions within the Mist Trail Corridor.

Wildlife. During trail improvement construction, impacts would include short-term wildlife displacement or avoidance of disturbed areas due to construction noise and increased human presence. These effects would be temporary confined to the immediate project footprint, with wildlife expected to resume use of adjacent areas following completion of construction activities.

Over the long term, formalizing the Stock Trail Loop could result in avoidance by some wildlife species within the immediate trail corridor. As such, adverse impacts to wildlife would be anticipated, as visitor presence could increase substantially, as compared to current Stock Trail use primarily by packers with stock trains and park operational and maintenance personnel accessing areas above Vernal Fall. Increased visitor presence could also result in indirect adverse impacts related to improper disposal of human trash or waste. Improperly discarded trash could degrade soil and water quality over time and could attract wildlife to food remnants, increasing the potential for injury.

Special Status Species. Depending on the timing of project implementation, California spotted owls could nest within suitable habitat near the Stock Trail, and fishers could occur within habitats overlapping the trail corridor. Short-term construction-related noise and limited vegetation clearing could temporarily disturb nesting birds or denning fishers.

Sensitive species found in talus areas—including California red-legged frog, Mount Lyell salamander, and the plant species, Yosemite rockcress—could be adversely impacted by proposed causeway improvements if near-water disturbances or movement of large boulders within rock talus habitats were to occur. Such activities could result in direct injury to individuals, temporary increases in turbidity from suspended sediments, or short-term behavioral avoidance by aquatic species due to underwater noise. Boulder relocation could also disturb Yosemite rockcress populations or Mount Lyell salamander habitat. Surveys conducted in July 2025 confirmed that both Mount Lyell salamander and Yosemite rockcress occupy rocky talus habitats that overlap areas proposed for disturbance (NPS 2025c, d).

Pre-construction surveys would be conducted to confirm the presence or absence of sensitive species within work areas prior to ground disturbance, as detailed in Appendix G. Known Yosemite rockcress populations have been mapped for avoidance and future reference (NPS 2025c). Additional measures, such as improved trail definition and targeted signage, would further reduce the potential for disturbance and support long-term conservation of these populations. If avoidance of known populations is not feasible, additional mitigation measures would be developed by the NPS.

Impacts to special status species as a result of increased visitor use along the Stock Trail would be similar to those described under the *Enhance the Existing Trailhead* section.

Alternative C: Construct New Pedestrian Footbridge with Associated Promenade and Trailhead (Proposed Action)

Construct a New Pedestrian Footbridge at the Historic Location of the Happy Isles Footbridge

Vegetation. The selective removal and pruning of existing vegetation associated with new footbridge construction would have long-term adverse impacts on vegetation. In the context of the existing vegetation in the Happy Isle area, the impacts of the removal or pruning of few individuals species would be minor. Based on the conceptual design, it is anticipated that up to five trees would be impacted through removal or pruning (two multi-stemmed live oaks, two incense cedar, and one ponderosa pine).

Wildlife. Depending on the timing of project implementation, black bears, nesting birds, or roosting bats, could be present. Construction activities would increase noise and human presence in the immediate vicinity of work areas and could result in temporary displacement or behavioral avoidance by wildlife near active construction zones. As described in the *Vegetation* subsection, limited long-term vegetation disturbance would result in a small reduction in available habitat. However, given the extent and continuity of similar habitat within the surrounding corridor, these effects would be localized to the immediate project area and minor in context.

Following construction, visitor use of the new footbridge would alter circulation patterns relative to existing conditions. Changes in visitor movement could result in localized shifts in wildlife use near the footbridge and adjacent trails; however, overall levels of human activity in the area would remain comparable to existing conditions under the no-action alternative. Accordingly, the proposed footbridge could result in short-term adverse effects to wildlife during construction and minor, localized long-term effects following project implementation.

Special Status Species. Potentially sensitive species, such as fishers, that could use the Merced River as a water source could experience temporary disturbance during near-water construction activities associated with installation of the new footbridge. Increased noise and human presence could result in short-term displacement from the immediate area. Although Yosemite rockcress populations could occur in this vicinity, impacts to this species would be avoided to the extent practicable. Pre-construction surveys would be conducted to confirm the presence or absence of sensitive species, and mitigation measures identified in Appendix G would be implemented to avoid or minimize potential impacts to fishers and Yosemite rockcress.

Create a New Pedestrian Promenade

Impacts under Alternative C would be like those associated with trailhead enhancements under *Alternative B, Enhance the Existing Trailhead* section as this area is already largely devoid of vegetation. Construction of the promenade would, therefore, be expected to result in minimal impacts to wildlife and special status species.

Create a New Trailhead

Impacts from the new trailhead under Alternative C would be like those associated with the existing trailhead enhancements under *Alternative B, Enhance the Existing Trailhead* section. The restoration of the existing trailhead area under Alternative C would result in a long-term beneficial impact on vegetation by allowing natural revegetation toward preexisting conditions. Vegetation restoration would improve the quality of available wildlife habitat by increasing forage and refuge opportunities. Potential floodplain restoration would further enhance habitat conditions east of the Merced River. In addition, the reduction in human use in this area could encourage increased wildlife movement through the area due to reduced noise and overall disturbance.

Actions Common to Alternatives B and C

Revise Visitor Messaging and Signage

Vegetation. As previously noted, signage upgrades would occur in existing disturbed areas, with minimal new installations and little to no vegetation impact. New messaging and signage related to resource protection could have a beneficial impact on vegetation as visitor education could lead to less off-trail trampling of vegetation in natural areas.

Wildlife. As described previously, short-term adverse impacts to wildlife present could occur during ground disturbing activities due to noise and increased human presence. Depending on the timing of project implementation, there is potential for birds to nest and/or bats to roost in the vicinity of Happy Isles. With the implementation of BMPs, minimal adverse effects to sensitive biological resources would be expected.

"Pack-in/pack-out" messaging would also be included within the new signage, including education regarding the impacts of approaching and/or feeding wildlife and minimizing visitor impacts. These efforts would provide a long-term beneficial impact on existing wildlife and associated habitats.

Special Status Species. Special status species are not expected to be adversely impacted from implementation of a signage and messaging plan beyond impacts discussed previously for general wildlife.

Provide Trip-planning and Wayfinding Resources

Impacts to biological resources from proposed trip-planning and wayfinding resources would be similar to those described in the previous *Revise Visitor Messaging and Signage* section.

Clearly Delineate Pedestrian Access to Happy Isles

Vegetation. The existing roadway is devoid of vegetation and as such, vegetation would not be adversely impacted by the proposed actions along the road to divide traffic from pedestrians. The roadway traffic pattern change could minimize the use of the space between the Valley Loop Trail and Happy Isles Loop Road, which would potentially result in beneficial impacts to vegetation, by reducing vegetation trampling, soil compaction, and overall ground disturbance that occurs in existing conditions.

Wildlife. Wildlife would be temporarily impacted during construction activities under alternatives B and C, as Happy Isles Loop Road could be temporarily blocked to transiting individuals. Additionally, noise generated during construction activities could temporarily deter wildlife from using this area as they could opt to flee or detour to avoid the disturbances. However, as described previously, impacts are expected to be minimal as wildlife can use other nearby areas to cross and construction activities would be temporary.

Special Status Species. Impacts to special status species would be similar to those described under *Alternative B, Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge* section.

Improve Happy Isles Shuttle Stop

Vegetation. Proposed Happy Isles Shuttle Stop improvements would occur within previously disturbed areas. As such, impacts to existing vegetation are expected to be minimal.

Wildlife. Impacts to general wildlife as a result of Happy Isles Shuttle Stop improvements would be similar to those described under *Alternative B, Enhance the Existing Trailhead* section.

Special Status Species. Impacts to special status species as a result of Happy Isles Shuttle Stop improvements would be similar to those described under *Alternative B, Enhance the Existing Trailhead* section.

Rehabilitate Happy Isles Restroom Facilities

General construction noise and increased presence of construction equipment and workers associated with this action would temporarily cause an adverse impact to sensitive species that could be nearby as they would likely avoid the area of disturbance. As such, impacts on biological resources and associated protective measures are expected to be the same, or similar to, those previously described for the *Improve Happy Isles Shuttle Stop* section.

Increase Trail Pullouts

Vegetation. Selective tree clearing could be required to widen pre-existing compacted areas to accommodate new trail pullouts. The NPS would site each pullout within previously disturbed areas or locations devoid of sensitive resources to the extent practicable. As a result, only a very limited number of trees and shrubs would be removed or pruned. Some low-growing vegetation could be permanently affected where wooden or granite benches are installed. Overall, vegetation disturbance would be minimal, and BMPs, including those for sensitive natural communities and special status plants, would be implemented to avoid and minimize potential impacts.

Wildlife. As previously described, noise could cause wildlife in the surrounding areas to relocate elsewhere until construction efforts are complete. New trail pullouts would also increase human presence, causing a potential long-term, adverse impact of displacing and/or interacting negatively with wildlife.

Although there is the potential for wildlife displacement, wildlife injury, and/or increased interaction with visitors, the existing trails are in previously disturbed areas with compacted dirt surfaces, devoid of vegetation, and with a regular human presence. The addition of pullouts

could lead visitors to linger in areas longer than previously, which could cause an increase in human-wildlife conflicts; however, the proposed improvements to the corridor are not expected to pose a substantial change in existing use.

Special Status Species. If boulders/talus areas are disturbed, the Mount Lyell salamander and Yosemite rockcress plant species could be directly impacted—injured, killed, or in the case of the salamander, displaced—if either species is present during construction activities. Additionally, special status species could experience the same impacts as previously described for general wildlife, such as displacement, injury, and/or increased potential for human-wildlife conflicts.

Restore Scenic Vistas

Vegetation. Impacts to vegetation as a result of vegetation pruning and tree clearing are anticipated. A key objective of this action is to encourage visitors to use designated viewing areas and reduce off-trail travel, which can result in the creation of social paths to view waterfalls or other features along the trail corridor. Specific locations and number of trees to be cut or removed would be determined during the future, detailed design phase. All tree clearing would occur outside Yosemite Wilderness.

Wildlife. Impacts to wildlife from activities associated with restoring scenic vistas would be the same as those described in the *Increase Trail Pullouts* section.

Special Status Species. Impacts to special status species associated with restoring scenic vistas would be the same as those described in the *Increase Trail Pullouts* section.

WATER RESOURCES

Affected Environment

The Merced River is a prominent feature within the project area; it originates in the park at the crest of the Sierra Nevada and flows freely from its headwaters downstream, descending almost 10,000 feet in elevation, on its 81-mile journey through the park (NPS 2014a). In 1987, US Congress designated the Merced River within the park as a component of the National WSR Systems. The NPS is the managing agency for the portions of the Merced WSR in the park, and in 2014, the NPS adopted the MRP (NPS 2014a) as the guiding document for long-term management and public use of the river corridor. According to the MRP, the Merced River is also managed under the provisions of the laws, policies, and regulations applicable to all units of the National Park System (NPS 2014a). Section 2 of the WSRA further details that the river must be classified and administered as “wild,” “scenic,” or “recreational” for each river segment, based on the condition of the river corridor at the time of designation. Designated river segments are classified in one of these three categories depending on the extent of development and accessibility along each section (NPS 2014a). The portion of the Merced River within the project area (Segment 2A) is designated as “recreational.” Recreational WSR are defined as “rivers or sections of rivers readily accessible by road or railroad, that could have some development along their shorelines and could have undergone some impoundment or diversion in the past” (NPS 2014a).

A portion of Illilouette Creek, namely Illilouette Gorge, also exists within the project area where it flows across the Stock Trail and continues north downstream where it meets the Merced River. Both the Merced River and Illilouette Creek are jurisdictional waters of the United States (WOUS). Any activity that involves discharge of dredged or fill material into a WOUS, including wetlands, is subject to regulation by the US Army Corps of Engineers (USACE) and are protected under Section 404 of the Clean Water Act. WOUS are currently defined as territorial seas and traditional navigable waters; perennial and intermittent tributaries to those waters; certain lakes, ponds and impoundments; and wetlands adjacent to jurisdictional waters. Furthermore, WOUS are classified as wetlands per NPS guidance found in Procedural Manual 77-1 and are, thus, subject to NPS protection in accordance with Director's Order 77-1: *Wetland Protection*. However, given the very small potential impact area to WOUS, which are described in this section, wetlands were not retained for detailed analysis.

Happy Isles

Floodplains

A portion of the existing trailhead area on the east side of the Merced River, as well as portions of the Happy Isles Loop Road and the restroom facilities are situated within both the 100-year and 500-year floodplain (Sherwood Design Engineers 2024). A 100-year floodplain is an area with a 1% chance of experiencing a flood equal to, or exceeding, the "base flood" in any single year. Similarly, a 500-year floodplain is an area with a 0.2% chance of being inundated by floodwaters in any given year. NPS policy is to preserve floodplain functions and values and minimize potential flood hazards. As portions of the project area are within known 100-year and 500-year floodplains, Floodplain Statement of Findings may be required in accordance with Director's Order 77-2: *Floodplain Management* (NPS 2003) and its manual when more detailed design information is available.

Surface Waters, including Wild and Scenic Rivers

There are two distinct isles within the Merced River corridor (i.e., North Happy Isle and South Happy Isle), which gives the Happy Isles area its name. The Merced River flows north under the existing Happy Isles vehicle bridge then generally meanders to the west after leaving the project area. Several built features associated with the Merced River exist at Happy Isles, including a USGS gage station (11264500) and an abutment from the historic Happy Isles Footbridge. The historic footbridge was demolished in 2001, after it partially collapsed due to rockfall and subsequent flooding that took place in 1996 and 1997, respectively. The gage station is adjacent to the location of the historic Happy Isles Footbridge, on the west side of the river. This gage station is currently operative and collects data on gage height and discharge. As discussed in Chapter 2, there is a historic gage station located immediately downstream of the historic Happy Isles Footbridge, on the east side of the river; the historic gage station was operable from 1916 to 2010 (NPS 2010).

Along the west side of the Merced River within the Happy Isles area, the natural grade adjacent to the historic footbridge alignment is generally flat beyond the crest of the riverbank which rises steeply from the channel-bottom. The immediate area is less wooded than that upstream or downstream, and paved trails intersect at the location of the historic footbridge. Conversely,

at the east side of the river, the natural grade slopes up gradually from the channel-bottom past the 1997 flood extent then abruptly sharpens where the trail begins to climb. This area is more heavily wooded. Large boulders exist along and upstream of the former alignment.

Mist Trail Corridor

Floodplains

Small areas of the Stock Trail and Stock Trail shoulder are situated within the 500-year floodplain of the Merced River (Sherwood Design Engineers 2024).

Surface Waters, including Wild and Scenic Rivers

Between the Happy Isles vehicle bridge and the Vernal Fall Footbridge, the Merced River flows generally north to south and then west to east, between the JMT and the Stock Trail. Through this section of the John Muir Trail, the Merced River is a rare, mid-elevation alluvial river (NPS 2014a). Vernal and Nevada Falls are often referred to as the "Giant Staircase" due to their stair-step river morphology and are managed as river-related outstanding remarkable values rather than as separate river features (NPS 2014). Above the Vernal Fall Footbridge, the Merced River generally follows the JMT and crosses from the west to east of the trail and the Silver Apron Footbridge. Delineated not-wetland waters overlapping with the Stock Trail exist directly west and east of the area just upstream of where Illilouette Creek meets the Merced River (OTL Environmental LLC 2024). These areas are associated with the perennial and intermittent stream channels and are considered three-parameter features with partial ordinary high-water marks.

Illilouette Creek crosses over the Stock Trail and merges with the Merced River where the flow direction changes. This portion of Illilouette Creek exhibits signs of disturbance, both from use by stock and hikers, in the form water quality degradation, likely due to vegetation trampling and erosion. The Illilouette Creek forms an alluvial fan as it transitions from confined bedrock gorge to its confluence with the Merced River. Alluvial fans are geologic features that occur where a fast-moving stream loses energy and deposits sediment (alluvium) as the stream transitions to flatter areas, branching into several smaller creeks. Alluvial fans can dictate the vegetative communities of an area and often cause variations in stream flows and volumes. Illilouette Creek is a tributary of Merced River and is known for its 370-foot waterfall, considered peaceful and secluded as it is lesser known to the public. Most of the creek flows through wild and rugged terrain with trails running alongside it.

Environmental Consequences

Impact Analysis Methodology

A qualitative analysis of potential impacts to water resources within the project area was conducted. The analysis considered potential effects on surface waters, including the free-flowing condition of the Merced River corridor and Illilouette Creek per the WSRA, as well as effects on natural flowlines and bank and channel features within existing floodplains. The assessment was informed by review of relevant technical reports and planning documents including the Happy Isles Hydraulic Modeling Report (Sherwood Design Engineers 2024), and

the MRP (NPS 2014a), aerial imagery (Google Earth 2025), park-specific scientific research, and the professional judgment of NPS staff. For each action alternative, the impact analysis assumes that the NPS would implement the mitigation and avoidance measures and BMPs outlined in Appendix G.

Alternative B: Use Existing Vehicle Bridge for Pedestrian Access with Associated Promenade and Trailhead

Use the Existing Happy Isles Vehicle Bridge for Pedestrian Access

Continued use to the Happy Isles vehicle bridge to access the existing trailhead would not involve new ground disturbance; therefore, no impacts to water resources would occur.

Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge

The new pedestrian promenade and associated vehicle bridge improvements would have no impact on water resources as the construction would not result in new ground disturbance.

Enhance the Existing Trailhead

Floodplains. The proposed existing trailhead enhancements would result in minor vegetation clearing and small new development footprints. Improvements could result in localized soil compaction, vegetation removal, and a minor increase in impermeable surfaces, all of which would occur within the floodplain. The addition of impermeable surfaces could reduce floodplain infiltration; however, in the context of the Merced River floodplain, these effects would be limited in extent.

Surface Waters, including Wild and Scenic Rivers. Ground disturbing activities occurring adjacent to the Merced River have the potential to alter drainage patterns, concentrate flow, and increase sedimentation causing direct adverse impacts to water quality. An increase in foot traffic adjacent to the Merced River would also have the potential to destabilize the riverbanks and create erosion and sloughing of the banks into the channel, causing direct adverse impacts to water quality. The creation of additional impermeable surfaces could also cause increased runoff intensity, indirectly impacting water quality. The potential impacts to surface waters would not result in a measurable change to the values for which the river was designated as a WSR.

Formalize Stock Trail Loop

Floodplains. Similar to the potential impacts from enhancing the existing trailhead, the creation of additional impermeable surfaces post-pilot program implementation could adversely impact the existing floodplain, reducing long-term infiltration of the surrounding area. However, the overall footprint of added impermeable surfaces would be minimal.

Surface Waters, including Wild and Scenic Rivers. Potential post-pilot program ground disturbing activities occurring adjacent to the Merced River and Illilouette Creek have the potential to alter drainage patterns, concentrate flow, and increase sedimentation that could cause short-term adverse impacts to water quality. An increase in foot traffic adjacent to

Illilouette Creek would also have the potential to destabilize the riverbanks and create erosion and sloughing of the banks into the channel, causing direct adverse impacts to water quality.

The creation of additional impermeable surfaces could also indirectly cause runoff channelization and headcutting, impacting water quality and trail widening efforts could result in channelization of sheet flow runoff from the valley walls and from drainage into Illilouette Creek, which could create new headcuts and increase erosion. However, the overall footprint of added impermeable surfaces would be minimal.

The proposed post-pilot program upgrades to the existing causeway at the intersection of the Stock Trail with Illilouette Creek would be designed to provide an overall long-term benefit to water resources by adequately accommodating flow conveyance. During construction, there would be direct impacts to surface waters from the replacement of the existing converts and would require a Clean Water Act Section 404 permit. The short-term impacts to surface waters would be adverse.

Alternative C: Construct New Pedestrian Footbridge with Associated Promenade and Trailhead (Proposed Action)

Construct a New Pedestrian Footbridge at the Historic Location of the Happy Isles Footbridge

Floodplains. Under normal and 100-year flood conditions, the proposed footbridge would not be overtopped and would maintain hydraulic conveyance consistent with regulatory design criteria. During a rare 500-year flood event, however, floodwaters could overtop the footbridge deck and approaches. Overtopping could temporarily alter local hydraulic conditions, including increased backwater upstream of the structure and changes in flow distribution across the floodplain. These effects would be short term and limited to the duration of the extreme flood event. Flood-related impacts associated with the 500-year event would be low in frequency and short in duration. The footbridge is not intended to remain fully operational during extreme flood events, and functional disruption during such events is consistent with accepted risk-based infrastructure design practices.

Surface Waters, including Wild and Scenic Rivers. Given the proximity of the Merced River, near-water work could alter drainage patterns, concentrate flow, and increase sedimentation causing direct adverse impacts to water quality. NPS would employ erosion and sediment control measures in addition to BMPs outlined in Appendix G, to reduce potential impacts to surface waters to the extent feasible and as such, only temporary impacts are expected. Proposed activities would be implemented in accordance with Section 7 of the WSRA; therefore, the NPS would coordinate with the NPS WSR Program to implement any necessary conditions and complete a Section 7 determination analysis.

Construction of abutments and footbridge approaches within 150 feet of the river channel could also result in a slight increase impermeable surface, potentially leading to an increase in runoff. This impact would be minor as an abutment and permeable trail surfaces already exist from the previous structure. The footbridge would be constructed within the 2A segment of the Merced River, which is designated recreational in the MRP, with existing infrastructure

described as “lodges, campgrounds, administrative facilities, and other developments typical of a heavily visited destination” (NPS 2014a). As such, the proposed action of installing a new footbridge would not change the description or use of this segment of the Merced River.

A preliminary design concept and associated limits of construction and grading disturbance for the footbridge have been developed, as depicted in Appendix E, Figures E-7 and E-8, respectively. Final design and construction details would be determined during the detailed design phase of the project.

Create a New Pedestrian Promenade

Construction activities associated with installation of signage, interpretive elements, and seating along the new promenade under Alternative C would result in similar impacts as those described for Alternative B in the *Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge* section.

Create a New Trailhead

Floodplains. Proposed construction activities associated with the new trailhead at the south end of Happy Isles would occur within previously disturbed areas (e.g., areas that are already paved or cleared); therefore, minimal adverse effects on floodplains are expected. Impacts to floodplains associated with construction would be similar to, or less than, those described for Alternative B in the *Enhance the Existing Trailhead* section.

Under Alternative C, the existing trailhead area restoration would result in a beneficial impact by restoring 1.25 acres of the floodplain, including riparian habitat, thereby improving floodplain function through reduced runoff and enhanced water quality as compared to Alternative B.

Surface Waters, including Wild and Scenic Rivers. Ground disturbing activities occurring adjacent to the Merced River have the potential to alter drainage patterns, concentrate flow, and increase sedimentation causing direct adverse impacts to water quality. An increase in foot traffic adjacent to the Merced River would also have the potential to destabilize the riverbanks and create erosion and sloughing of the banks into the channel, causing direct adverse impacts to water quality.

The creation of any additional impermeable surfaces could also intensify runoff, indirectly impacting water quality. The potential impacts to surface waters would not likely change the values for which the river was designated as a WSR.

Actions Common to Alternatives B and C

Revise Visitor Messaging and Signage

Although some signage could be located within areas that overlap floodplains—such as within the existing trailhead enhancements footprint under Alternative B or near the Happy Isles restroom facilities under alternatives B and C—implementation of the signage and messaging plan is not expected to result in adverse impacts to water resources. In most cases, existing signs would be replaced in similar locations. Any new signage would be small in scale and sited

to avoid surface waters and to minimize placement within floodplains, to the extent practicable.

Provide Trip-planning and Wayfinding Resources

Proposed trip-planning and wayfinding resources would not occur in areas where water resources are present; therefore, this action is not expected to cause adverse impacts to water resources.

Clearly Delineate Pedestrian Access to Happy Isles

Changing the Happy Isles Loop Road traffic pattern and, therefore, aiming to minimize visitor use of the space between the Valley Loop Trail and the Happy Isles Loop Road, has the potential to result in beneficial impacts to water resources, by reducing vegetation trampling, soil compaction, and ground disturbance within the floodplain.

Improve Happy Isles Shuttle Stop

Floodplains. Proposed Happy Isles Shuttle Stop improvements would involve an increase in impermeable surfaces, which would have adverse impact on the existing floodplain by reducing infiltration. However, the overall footprint of added impermeable surfaces would be very small in the context of the floodplain for the Merced River.

Surface Waters, including Wild and Scenic Rivers. Ground disturbing activities have the potential to alter surface drainage patterns along the Merced River. To reduce potential impacts on water resources, the NPS would implement erosion and sediment control measures in work areas near surface waters. The addition of impermeable surfaces could also indirectly intensify runoff channelization and headcutting, thereby affecting water quality from sedimentation into the surface water. However, the overall footprint of added impermeable surfaces would be small. Minor potential impacts to surface waters would not likely change the values for which the river was designated under the WSR.

Rehabilitate Happy Isles Restroom Facilities

Floodplains. Because the Happy Isles restroom facility is located within the 100-year floodplain, rehabilitation activities have the potential to affect floodplain resources and introduce a small increase in impervious surface. In the context of the existing floodplain, any expansion would be limited in scale and would not measurably affect floodplain storage capacity or other floodplain functions or values. Consistent with NPS policy to preserve floodplain functions and values and to minimize potentially hazardous conditions associated with flooding, a Floodplain Statement of Findings would be completed during the detailed design phase in accordance with Director's Order 77-2 and in coordination with the NPS Water Resources Division.

Surface Waters, including Wild and Scenic Rivers. No adverse impacts to surface waters would occur from the rehabilitation of the Happy Isles restroom facilities, as this action would involve minimal ground disturbance and would be located away from surface waters.

Increase Trail Pullouts

The addition of impermeable surfaces as part of trail pullout installation could alter drainage patterns, concentrate flow, and increase sedimentation in adjacent waterways. However, the overall footprint of added impermeable surfaces would be small and would occur in existing disturbed areas. Furthermore, the NPS would implement erosion and sediment control measures in work areas near waterways to reduce any potential indirect impacts.

Restore Scenic Vistas

No adverse impacts to water resources are expected to occur as a result of restoring scenic vistas because this activity is outside of the floodplain and surface waters. Barriers would be installed, as appropriate, to deter unauthorized access to the Merced River.

CULTURAL LANDSCAPES

Affected Environment

The NHPA of 1966, as amended, requires federal agencies to take into account the effects of undertakings on historic properties[4] and to provide the Advisory Council on Historic Preservation with a reasonable opportunity to comment on those undertakings. The proposed project is considered an undertaking pursuant to 36 CFR Part 800.16(y). An undertaking could have an adverse effect on historic properties when it directly or indirectly alters any of the characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places (NRHP) through diminishing of integrity. For more information on how the NPS evaluates effects to cultural resources, refer to Appendix L—*Cultural Resources Analysis Supporting Information*.

There are three cultural landscapes/historic districts within the proposed construction limits: Half Dome Trail Corridor Cultural Landscape (HDTCCL), which resulted from the recent *Half Dome Trail Corridor Cultural Landscape Inventory* (CLI; Quinn Evans 2026), Yosemite Valley National Register of Historic Places Historic District (National Register Information System [NRIS] 04001159, listed December 14, 2006), and the Yosemite Valley Archeological District (YVAD). The three cultural landscapes/historic districts are summarized in this section. Additional detail related to the HDTCCL is provided in Appendix L.

Half Dome Trail Corridor Cultural Landscape

The HDTCCL is inclusive of archeological (precontact and historic-era), ethnographic and historic built environment resources along 11.5 miles of trail, extending 10 meters (33 feet) on either side of segments of the John Muir, Mist, and Half Dome Trails, and includes use areas at Happy Isles and Little Yosemite Valley Campground.

[4] As defined in the NHPA (54 US Code 300308), a historic property or historic resource is "any prehistoric [precontact] or historic district, site, building, structure, or object included on, or eligible for inclusion on, the [NRHP], including artifacts, records, and material remains relating to the district [cultural landscape], site, building, structure, or object."

The HDTCCL retains a high degree of integrity in relation to its continued significance as the homeland of the seven traditionally affiliated Tribes (Bishop Paiute Tribe, Bridgeport Indian Colony, Mono Lake Kootzaduka'a Tribe, North Fork Rancheria of Mono Indians of California, Picayune Rancheria of Chukchansi Indians, Southern Sierra Miwuk Nation, and Tuolumne Band of Me-Wuk Indians). The HDTCCL also retains a high degree of integrity and embodies the ongoing cultural and spiritual practices of Indigenous peoples, as well as its historic recreational use from 1855 to 1972.

Major natural features and landmarks along the corridor remain in their original locations, supporting traditional knowledge and practices. The HDTCCL also reflects its development for recreation, with historic workmanship evident in stonework and construction features.

The period of significance (POS) for the HDTCCL under Criterion A extends from deep time to the present, capturing both ancestral presence and ongoing Indigenous connections. The period from 1855 to 1972 covers Euroamerican development and NPS transformation of the trail system. Key landscape characteristics as detailed by Quinn Evans (2026) are summarized in Appendix L.

Yosemite Valley Historic District

Yosemite Valley Historic District (YVHD; NRIS 04001159, listed December 14, 2006) is composed of 923 contributing buildings, sites, and structures. Some of these resources were previously listed in National Register designations in the 1970s and 1980s. The 2006 listing was the first to include the trail corridor. The district is generally within the Yosemite Valley floor from the Pohono Bridge to Happy Isles. The POS extends from 1855 to 1942.

Yosemite Valley Archeological District

The YVAD is composed of over 100 ancestral sites and historic sites that encompass the entire Yosemite Valley from Pulpit Rock in the west to Happy Isles and Mirror Lake in the east. The southeastern edge of the YVAD overlaps with the HDTCCL just north of Happy Isles, with four ancestral sites in this area. These known sites contribute to the understanding of Indigenous use and occupation of Yosemite Valley.

For details regarding individual historic properties, see the *Affected Environment, Historic Properties* section.

Environmental Consequences

Impact Analysis Methodology

The following effects analysis covers proposed actions within construction limits that have the potential to affect NRHP-eligible cultural landscapes, characteristics of the landscape, and contributing features.

The analysis of potential effects is based on the criteria of adverse effects under Section 106 of the NHPA and guidelines stated within the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b). An adverse effect is defined in the regulations implementing Section 106 (36 CFR Part 800.5(a)(1)). Pursuant to that definition, an adverse

effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. For the purposes of this analysis, a resource that has not yet been evaluated for the NRHP is assumed eligible for listing and treated as historic property until determined otherwise. In this analysis, an adverse effect constitutes an adverse impact under NEPA. Information for this analysis was collected from sources listed previously in the *Cultural Landscapes, Affected Environment* section. The historic conditions, existing conditions, and characteristics of contributing features of the HDTCCL are identified in the CLI (Quinn Evans 2026). As design becomes more fully developed, the NPS would conduct a project-specific effects analysis for the HDTCCL and cultural landscapes in compliance with Section 106 of the NHPA. This EA provides a more general assessment.

Alternative B: Use Existing Vehicle Bridge for Pedestrian Access with Associated Promenade and Trailhead

Landscape characteristics such as land use, circulation and views would not significantly change as a result of Alternative B. Ground disturbance associated with Happy Isles improvements has the potential to adversely affect characteristics of the HDTCCL including archeological sites and plant communities of the HDTCCL that are tied to cultural traditions, and the YVAD. It is recommended that vegetation that contributes to the historic character of the landscape be protected using appropriate methods in consultation with affiliated Tribes. Additionally, if deemed appropriate by Tribal representatives, consider interpretation or education related to Indigenous use of plant species and management of vegetation. Park cultural resources staff review, Tribal consultation, and implementation of standard protection measures are recommended during the design phase to avoid potential adverse effects to these characteristics of the HDTCCL. The following impact analysis focuses on the built environment components of the HDTCCL for proposed actions under Alternative B.

Use the Existing Happy Isles Vehicle Bridge for Pedestrian Access

The Happy Isles vehicle bridge is a contributing feature of the HDTCCL from the recreation POS. Whereas the proposed implementation of traffic pattern changes to turn the vehicle bridge into a one-way road and separate pedestrians and bicyclists from vehicles would change the circulation patterns of the vehicle bridge and its relationship to roads and trails, it would be reversible according to *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b) and would be consistent with the Yosemite Design Guidelines (NPS 2012). Therefore, these actions would not constitute an adverse effect on the Happy Isles vehicle bridge. The Happy Isles vehicle bridge retains integrity of location, design, materials, and workmanship, and contributes to the historic character of the Mist Trail Corridor. This action would not preclude the vehicle bridge from contributing to the historic character of the HDTCCL, nor alter the architectural features, massing, or function of the vehicle bridge in a way that would diminish the integrity of location, design, or the materials or workmanship of the vehicle bridge. Elevated curbs or bollards would be low-profile, minimizing the visibility of changes, and reversible, and would be consistent with the Yosemite Design Guidelines (NPS

2012). Therefore, the improvements would not adversely affect character-defining features of the vehicle bridge or any other contributing features or characteristics of the HDTCCL.

Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge

The new pedestrian promenade would span the Happy Isles vehicle bridge which is a contributing feature of the HDTCCL. The promenade would be designed to protect landscape characteristics of the HDTCCL including land use, circulation, buildings and structures, and the views. The vehicle bridge already serves as the primary circulation route for visitors accessing the existing trailhead, and as such, these improvements would formalize this existing condition. Therefore, the improvements would not adversely affect character-defining features of the vehicle bridge or characteristics of the HDTCCL.

Enhance the Existing Trailhead

The JMT-Mist Trail trailhead is a contributing feature of the HDTCCL for its location and function as part of the HDTCCL including characteristics regarding land use and circulation. The existing Lower JMT from the trailhead to the Mist Trail continues to follow the route of the 1882–1883 Anderson trail and retains historic trail features including its stone edges and retaining walls. Similarly, the western end of the trail segment continues to follow the route of the 1885 trail extension to connect the route to the earlier Vernal Fall trail. The entire trail segment contributes to the historic character of the corridor (Quinn Evans 2026:121). Proposed enhancements to the existing trailhead would not change the function, location or characteristics that add to the historic character of the corridor, and design would be consistent with the Yosemite Design Guidelines (NPS 2012). Construction of the water-filling station at the existing trailhead would require bringing a waterline across the Happy Isles vehicle bridge, which is a contributing feature of the HDTCCL. The addition of a waterline would be reversible according to *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b) and, therefore, would not constitute an adverse effect to the Happy Isles vehicle bridge or characteristics of the HDTCCL.

All improvements are proposed within existing disturbed areas. Any new ground disturbance associated with enhancement to the existing trailhead has the potential to adversely affect characteristics of the HDTCCL including archeological sites and plant communities of the HDTCCL that are tied to cultural traditions, and the YVAD. It is recommended that vegetation that contributes to the historic character of the landscape be protected using methods developed in consultation with affiliated Tribes. Park cultural resources staff review, Tribal consultation, and prescribed standard protection measures are recommended during the design phase to avoid potential adverse effects to these characteristics of the HDTCCL. In addition, cultural resource interpretation and language protecting cultural resources (developed in consultation with park staff and affiliated Tribes) would be added to exhibits and signage, where appropriate, which would result in a long-term beneficial effect to the HDTCCL through increased visitor education and resource appreciation.

Increased foot traffic at the existing trailhead and vicinity may affect the integrity and significance of contributing features of the HDTCCL through additional physical disturbance.

However, with park standard protection measures in place, characteristics of the HDTCCL would be protected and not adversely affected.

Formalize Stock Trail Loop

According to Quinn Evans (2026:124):

> The Stock Trail contributes to the historic character of the landscape under Criterion A as part of the recreational trail system. Due to modifications to the trail after the end of the period of significance to address drainage issues and incorporate a connection to the water tank, the trail is no longer representative of Criterion C in the area of Engineering as original materials and workmanship are no longer extant. In addition, the existing Stock Trail follows a route similar to the ancestral Mono Trail along the south side of the Merced River, and it may have importance to associated tribes. The Access Road was constructed after the end of the period of significance and does not contribute to the historic character of the trail corridor.

The potential implementation of Stock Trail improvements after the conclusion of the pilot program has the potential to adversely affect the Stock Trail's integrity and character-defining features. Ground disturbing activities have the potential to adversely affect the integrity of archeological resources and other historic properties. Potential effects may be minimized by implementing the Secretary of the Interior's Standards for the Treatment of Historic Properties (NPS 2017b), Yosemite Design Guidelines (NPS 2012), and other park standard protection measures.

Formalization of the existing social trail between the Stock Trail and Vernal Fall Footbridge restroom facility (referred to as Vernal Fall Footbridge comfort station in the CLI) would have no adverse effect to the restroom facility, which is a contributing feature of the HDTCCL. The Vernal Fall Footbridge restroom facility is already accessed by visitors using the existing social trail, and continued use of this trail would not affect the integrity or significance of the restroom facility.

Ground disturbance and vegetation removal needed for post-pilot program Stock Trail improvements, construction, and formalization of the existing social trail may adversely affect characteristics of the HDTCCL including archeological sites and plant communities of the HDTCCL that are tied to cultural traditions and the ancestral Mono Trail. It is recommended that vegetation that contributes to the historic character of the landscape be protected using methods that are sensitive to its significance. Additionally, if deemed appropriate by Tribal representatives, the NPS would consider interpretation or education related to Indigenous use of plant species and management of vegetation. Park cultural resources staff review, Tribal consultation, and standard protection measures are recommended during the design phase to avoid potential adverse effects to these characteristics of the HDTCCL under Alternative B.

Alternative C: Construct New Pedestrian Footbridge with Associated Promenade and Trailhead (Proposed Action)

Ground disturbance and vegetation removal associated with Happy Isles improvements under Alternative C may adversely affect characteristics of the HDTCCL including archeological sites

and plant communities of the HDTCCL that are tied to cultural traditions, the ancestral Mono Trail and the YVAD. Park cultural resources staff review, Tribal consultation, and prescribed standard protection measures are recommended during the design phase to avoid potential adverse effects to these characteristics of the HDTCCL. It is recommended that vegetation that contributes to the historic character of the landscape is protected using methods developed in consultation with affiliated Tribes. Cultural resource interpretation and language developed for protection of cultural resources (in consultation with park staff and affiliated Tribes) would be added to exhibits and signage, where appropriate, which would result in a long-term beneficial effect for the HDTCCL through increased visitor education and resource appreciation. The following impact analysis focuses on the built environment components of the HDTCCL for proposed actions under Alternative C.

Construct a New Pedestrian Footbridge at the Historic Location of the Happy Isles Footbridge

The new footbridge would use an existing abutment and be in a location where the Happy Isles Footbridge existed historically. The historic footbridge abutments and gaging station within the construction footprint are contributing to the HDTCCL. Reinstatement of a footbridge in this location would have a beneficial effect on the HDTCCL because it would restore landscape characteristics such as land use, circulation, existing trail alignments, historic viewsheds and connectivity to buildings and structures such as the Happy Isles area. The design of the footbridge would retain the historic gaging station and abutments and would not destroy historic materials that characterize the property. The new work would be differentiated from the old and would be compatible with the massing, size, scale, and architectural features consistent with the Yosemite Design Guidelines (NPS 2012) and *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b). The new footbridge would be visible from the Happy Isles vehicle bridge which is a contributing feature of the HDTCCL. However, the visual intrusion would not alter the characteristics of the Happy Isles vehicle bridge. The Happy Isles vehicle bridge would retain integrity of location, design, materials, and workmanship (Quinn Evans 2026). The setting of the vehicle bridge is not identified as an aspect of integrity that conveys significance. The setting of the vehicle bridge has already been altered since it was constructed. Construction of a footbridge in this location would not have an adverse effect on the Happy Isles vehicle bridge, historic gaging station and abutments, or any other features that contribute to the significance of the HDTCCL. To minimize potential impacts to the integrity of the HDTCCL, the proposed action should follow the Yosemite Design Guidelines (NPS 2012) and *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b). Regardless of the construction of a new footbridge, the HDTCCL would continue to convey its significance under Criteria A, B, and C.

The proposed signage improvements along the walkways, new footbridge, and new access point to the Mist Trail Corridor would be reversible and would not adversely affect the HDTCCL. Cultural resource interpretation and language protecting cultural resources (developed in consultation with park staff and affiliated Tribes) is recommended, where appropriate.

Create a New Pedestrian Promenade

According to Quinn Evans (2026:119):

> The contributing status of the trails and walkways at Happy Isles is undetermined, but potentially significant. The majority of trails and walkways within the Happy Isles area appear to have been established as part of redevelopment of the Art and Nature Center after hatchery operations ceased in 1956. Trails on the two isles have been present since 1910, but research to date has not determined if the existing trails follow the alignment and retain historic retaining walls and edges. As this area is within the vicinity of ancestral villages and a branch of the Mono Trail, it may have importance to associated tribes.

For the purposes of effects analysis, the Happy Isles asphalt walkways are assumed to be contributing to the significance of the HDTCCL under the historic themes regarding early recreational trail systems and recreation in the park. Improvements have already been made to the walkways outside the POS when the park developed the Art and Nature Center. Widening the existing paved walkway and providing seating and interpretive opportunities along its length would be consistent with the Yosemite Design Guidelines (NPS 2012) and would not adversely affect the Happy Isles asphalt walkways or contributing features of the HDTCCL. The proposed improvements would not change the integrity of location, design, or association of the walkways or any contributing features of the HDTCCL. The proposed changes would not alter the use of the trails and would still be in keeping with recreation as a significant historic theme of the HDTCCL.

Create a New Trailhead

The contributing status of Happy Isles asphalt walkways to the significance of the HDTCCL is undetermined. For the purposes of impact analysis, the Happy Isles asphalt walkways are assumed to be contributing to the significance of the HDTCCL. Portions of the area proposed for the new trailhead are currently paved and developed with small-scale improvements such as benches and bike racks, and water-filling stations, which are modern installations outside of the POS. Installation of additional small-scale improvements would be in keeping with the current use and would be consistent with the Yosemite Design Guidelines (NPS 2012). The walkways are currently sparsely signed. The installation of interpretive opportunities would not adversely affect features of the HDTCCL. Cultural resource interpretation and language protecting cultural resources (developed in consultation with park staff and affiliated Tribes) is recommended, where appropriate.

Actions Common to Alternatives B and C

Revise Visitor Messaging and Signage

Development and implementation of a signage and messaging plan throughout the Happy Isles area and the Mist Trail Corridor would have a long-term beneficial effect to the HDTCCL as long as installation of signage avoids ground disturbance and other potential effects to characteristics of the HDTCCL including archeological sites and plant communities of the HDTCCL that are tied to cultural traditions, the ancestral Mono Trail and the YVAD. Cultural

resource interpretation and language protecting cultural resources (developed in consultation with park staff and affiliated Tribes) is recommended, where appropriate. The current wayfinding and interpretive signs within the HDTCCL are non-contributing features of the cultural landscape. Per the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b), the proposed improvements would be reversible Effects of the action would be minimized by using existing sign locations for new signage when possible and reducing the number of signs through strategic placement in high traffic locations, and would be consistent with the Yosemite Design Guidelines (NPS 2012). Signage and messaging would not adversely affect the integrity of the contributing features of the HDTCCL. With park standard protection measures in place, alternatives B and C implementation of a signage and messaging plan would have no adverse effect to the HDTCCL with added beneficial effects from interpretation and education about the HDTCCL.

Provide Trip-planning and Wayfinding Resources

Providing additional trip-planning and wayfinding resources to improve visitor experience would not adversely affect the integrity of the contributing features of the HDTCCL and would have added beneficial effects from interpretation and education about the HDTCCL. Any ground disturbance and vegetation clearing associated with the installation of trip resources, such as kiosks, may adversely affect characteristics of the HDTCCL including archeological sites and plant communities of the HDTCCL that are tied to cultural traditions, the ancestral Mono Trail and the YVAD and would need to be reviewed by the park archeologist and affiliated Tribes to incorporate resource protection measures into the design to avoid adverse effects. Effects of the installation of kiosks would be minimized by reducing the number of kiosk locations through strategic placement in high traffic locations and would be consistent with the Yosemite Design Guidelines (NPS 2012). With park standard protection measures in place, alternatives B and C implementation of trip-planning and wayfinding resources would have no adverse effect to the HDTCCL with added beneficial effects from interpretation and education.

Clearly Delineate Pedestrian Access to Happy Isles

The Happy Isles Loop Road traffic pattern change would result in alterations to the road and vehicle bridge. The Happy Isles vehicle bridge is a contributing feature of the HDTCCL from the recreation POS. Whereas the proposed improvement would change the circulation patterns of the vehicle bridge and its relationship to roads and trails, it would be reversible according to *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b) and would be consistent with the Yosemite Design Guidelines (NPS 2012). Therefore, these actions would not constitute an adverse effect on the Happy Isles vehicle bridge. Whereas these installments would slightly affect the Happy Isles vehicle bridge's integrity of setting, materials and feeling, they would not affect the overall location, design, function, and association of the vehicle bridge within the HDTCCL. All improvements are proposed within existing disturbed areas and therefore no effects to archeological sites and cultural plant communities or other Tribal resources contributing to the HDTCCL are anticipated from the proposed improvements. Cultural resource interpretation and language protecting cultural resources (developed in consultation with park staff and affiliated Tribes) is recommended, where appropriate.

Improve Happy Isles Shuttle Stop

The Happy Isles Shuttle Stop shelter is a non-contributing feature of the HDTCCL. The proposed shuttle stop improvements would be constructed within a previously disturbed area that is currently used for arriving visitors. All work would be consistent with the Yosemite Design Guidelines (NPS 2012). Therefore, construction of new infrastructure at the Happy Isles Shuttle Stop would not adversely affect any contributing features of the HDTCCL.

Rehabilitate Happy Isles Restroom Facilities

The existing Happy Isles restroom facility is a non-contributing feature of the HDTCCL and, therefore, changes to the building would not be considered an adverse effect. The proposed improvements do not have the potential to cause adverse visual or setting effects to the HDTCCL because they would be consistent with the Yosemite Design Guidelines (NPS 2012).

Increase Trail Pullouts

Trail pullouts would be consistent with the Yosemite Design Guidelines (NPS 2012).

Restore Scenic Vistas

Selective vegetation clearing has the potential to adversely affect characteristics of the HDTCCL related to views, vistas and vegetations. It is recommended that vegetation that contributes to the historic character of the landscape is protected using methods that are sensitive to its significance. Additionally, if deemed appropriate by Tribal representatives, consider interpretation or education related to Indigenous use of plant species and management of vegetation.

HISTORIC PROPERTIES – INCLUDING HISTORIC STRUCTURES AND ARCHEOLOGICAL AND ETHNOGRAPHIC RESOURCES

Affected Environment

As discussed in the previous section, the NHPA requires federal agencies to take into account the effects of undertakings on historic properties which is defined as “any prehistoric [precontact] or historic district, site, building, structure, or object included on, or eligible for inclusion on, the [NRHP], including artifacts, records, and material remains relating to the district, site, building, structure, or object” (36 CFR Part 800.16[l]). The proposed project is considered an undertaking pursuant to 36 CFR Part 800.16(y). An undertaking may have an adverse effect on historic properties when it directly or indirectly alters any of the characteristics of a historic property that qualify it for inclusion in the NRHP through diminishing of integrity. See the previous section for definitions of the four NRHP criteria and seven aspects of integrity.

The following affected environment describes the existing condition of historic properties that could be adversely affected by implementing any of the alternatives. The project area is located at the southeast end of Yosemite Valley and played an important role in the lives of Indigenous communities who dwelled in the valley and maintained a trail system for hunting and trade for

several thousand years. The trail corridor is part of the homeland of the seven traditionally associated Tribes, who maintain strong cultural connections to the landscape today. People have occupied the project area and Mist Trail Corridor for millennia due to its ease of access to the Merced River, a prime trading and settlement location in the Little Yosemite Valley, which is located east of the project area. The rare flat landforms scattered along the Mist Trail were useful for various purposes, ranging from seasonal pre-contact Native American habitation to historical and modern recreational tourism. Ethnographic and historic documentation supports the prolonged use of Little Yosemite Valley and its link to Yosemite Valley into the historic periods. The northern edge of the Happy Isles portion of the project area within the Half Dome Trail Corridor is part of the YVAD, with four precontact sites in this area. These known sites contribute to the understanding of Indigenous use and occupation of Yosemite Valley and Indigenous trail systems throughout Yosemite and beyond (Huizinga et al. 2025; Quinn Evans 2026).

An archeological survey and literature review was conducted in support of the project in 2024 by park cultural resources staff (Huizinga et al. 2025). Survey methods included linear survey of a 60-foot corridor with the existing trail as the centerline along the existing Mist Trail Corridor between Vernal and Nevada Falls, overlapping the La Casa Nevada Hotel site. Subsurface shovel probe testing was conducted at sites that had not previously been subject to testing or that were determined to be unique even though they had been subject to limited testing in the past. A total of eight precontact and historic-era archeological sites have been identified within or adjacent to the proposed project construction limits.

Historic use within the Yosemite Valley began in 1851 when the Mariposa Battalion became the first Euroamericans to explore the valley. Five distinct periods of historic use and development have been identified: The First People, Early Tourism and Trail Development from 1855–1889, Establishment of Yosemite National Park and Early Development under US Army Administration from 1890–1917, Yosemite between the Wars from 1918–1942, and Rockfalls and Repairs: the Corridor from 1943–Present (Quinn Evans 2026). See the *Cultural Landscapes, Affected Environment* section and Appendix L for additional historic context. Ten historic-era properties associated with the built environment have been identified within or adjacent to the proposed project construction limits.

For a brief overview of the historical and ancestral ethnographic development within the park, see the *Cultural Landscapes, Affected Environment* section of this EA. The HDTCCL is also summarized in the *Cultural Landscapes* section of this EA with more detail provided in Appendix L. Historic properties within the project construction limits are further described by Quinn Evans (2026), Wilson (1976), and Carr et al. (2006). For archeological properties see Huizinga et al. (2025).

Specifically, the following historic properties including archeological resources, built environment resources and historic districts have been identified within or adjacent to each of the proposed project construction limits.

Happy Isles

- YVHD (NRHP listed 2006, NRIS 04001159; contributing to the HDTCCL) inclusive of:

  - Eastern Portion of Loop Road (contributing to the YVHD)
  - Happy Isles Art and Nature Center (contributing to the YVHD; contributing to the HDTCCL)
  - Happy Isles Bridge (vehicular) (contributing to the YVHD; NRHP listed as part of the Yosemite Valley Bridges listing; contributing to the HDTCCL)
  - Happy Isles Middle Bridge (contributing to the YVHD; contributing to the HDTCCL)
  - Happy Isles West Bridge (contributing to the YVHD; contributing to the HDTCCL)
  - CA-MRP-1425H, historic-era archeological site (listed in the NRHP as contributor to YVHD)
- JMT (NRHP eligible – draft nomination prepared 1989; contributing to the HDTCCL)
- YVAD (NRHP listed 1976) (contributing to CLI)
- Three historic-era archeological sites

Mist Trail Corridor

- YVHD (NRHP listed 2006, NRIS 04001159) inclusive of:
  - Vernal Fall Footbridge restroom facility[5] (contributing to the YVHD; contributing to the HDTCCL)
  - Mist Trail and Nevada Falls Corridor Trails (contributing to the YVHD; individually NRHP eligible – draft nomination prepared 1989)
- JMT (NRHP eligible – draft nomination prepared 1989; contributing to the HDTCCL)
- Stock Trail (unevaluated)[6]
- Seven archeological sites: four precontact and three historic-era

For additional detail regarding the HDTCCL, see *Cultural Landscapes, Affected Environment* section and Appendix L.

Environmental Consequences

Impact Analysis Methodology

The following effects analysis covers proposed actions within construction limits that have the potential to affect NRHP-eligible historic properties. The effects analysis followed the same impact analysis methodology as used in the above *Cultural Landscapes* section of this document. Information for this analysis was collected from sources listed above in the *Historic Properties, Affected Environment* section. As design becomes more fully developed, NPS would conduct a project-specific effects analysis for historic properties including historic structures and archeological resources in compliance with Section 106 of the NHPA. This EA provides a more general assessment.

[5] The Vernal Fall Footbridge restroom facility is referred to as Vernal Fall Footbridge comfort station in the CLI.

Alternative B: Use Existing Vehicle Bridge for Pedestrian Access with Associated Promenade and Trailhead

Ground disturbance associated with Happy Isles improvements under Alternative B has the potential to adversely affect archeological resources and other historic properties. Review by park cultural resources staff, Tribal consultation and implementation of standard protection measures are recommended during the design phase to avoid potential adverse effects to archeological resources and other historic properties under Alternative B. In addition, cultural resource interpretation and protection language (developed in consultation with park staff and affiliated Tribes) would be added to exhibits and signage, where appropriate, which would result in a long-term beneficial effect on historic properties. The following effects analysis generally focuses on built environment historic properties for proposed actions under Alternative B.

Use the Existing Happy Isles Vehicle Bridge for Pedestrian Access

The Happy Isles vehicle bridge is an NRHP-listed historic property as part of the Yosemite Valley Bridges listing. Proposed implementation of traffic pattern changes to turn the vehicle bridge into a one-way road and separate pedestrians and bicyclists from vehicles would be reversible according to *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b). Elevated curbs or bollards would be low-profile, minimizing the visibility of changes, and reversible, and would be consistent with the Yosemite Design Guidelines (NPS 2012). Therefore, these actions would not constitute an adverse effect to the Happy Isles vehicle bridge or any other historic properties.

Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge

The new pedestrian promenade would span the Happy Isles vehicle bridge which is a historic property. The vehicle bridge already serves as the current primary circulation route for visitors accessing the existing trailhead, and as such, these improvements would formalize this existing condition. Therefore, the improvements would not adversely affect character-defining features of the vehicle bridge or any other historic properties.

Enhance the Existing Trailhead

The Mist Trail and Nevada Falls Corridor is an individually eligible historic property and contributing to the YVHD. Proposed enhancements to the existing trailhead would not change the characteristics of the trailhead that make it eligible for the NRHP including the generally unaltered alignment of the route and the historic character of the trail corridor, and would be consistent with the Yosemite Design Guidelines (NPS 2012; Quinn Evans 2026). The potential addition of a waterline across the vehicle bridge would be reversible according to *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b) and, therefore, would not constitute an adverse effect to the Happy Isles vehicle bridge.

Increased foot traffic at the existing trailhead area has the potential to adversely affect the integrity and significance of contributing features of the HDTCCL through physical disturbance. However, with park standard protection measures in place, characteristics of the HDTCCL would be protected and the district would not be adversely affected. In addition, cultural resource

interpretation and protection language (developed in consultation with park staff and affiliated Tribes) would be added to exhibits and signage, where appropriate, which would result in a long-term beneficial effect for the resources contributing to the HDTCCL through increased visitor education and resource appreciation.

Formalize Stock Trail Loop

For the purposes of this effects analysis, the Stock Trail is assumed to be eligible for listing in the NRHP. The potential implementation of Stock Trail improvements after the conclusion of the pilot program has the potential to adversely affect the Stock Trail's integrity and historic alignment. Ground disturbing activities and vegetation removal have the potential to adversely affect the integrity of archeological sites within the proposed construction limits. Potential effects may be minimized and avoided through review by the park archeologist, Tribal consultation, and implementation of the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b), Yosemite Design Guidelines (NPS 2012), and other park standard protection measures.

After the pilot program, Stock Trail use may be managed with operational controls. Adaptive management actions have the potential to adversely affect the integrity of the Stock Trail and archeological resources and other historic properties within the proposed construction limits due to increased visitor use and physical disturbance. These potential effects would need to be analyzed once the pilot program is complete and final designs are determined.

Formalization of the existing social trail between the Stock Trail and Vernal Fall Footbridge restroom facility (referred to as Vernal Fall Footbridge comfort station in the CLI) would have no adverse effect on the restroom facility. The Vernal Fall Footbridge restroom facility is already accessed by visitors using the existing social trail and continued use of this trail would not affect the integrity or significance of the restroom facility.

Formalization of the existing social trail, including any ground disturbance to formalize or maintain this trail may adversely affect archeological resources and other historic properties through physical disturbance and erosion. Implementation of park standard protection measures would avoid potential adverse effects to historic properties.

Proposed Stock Trail construction and staging could include trail widening and passing locations, causeway upgrades, and staging areas. Implementation of the Stock Trail construction has the potential to adversely affect the Stock Trail's integrity and character-defining features. Ground disturbing activities have the potential to adversely affect the integrity of archeological resources and other historic properties. Potential effects may be minimized by implementing the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b), Yosemite Design Guidelines (NPS 2012), and other park standard protection measures.

Alternative C: Construct New Pedestrian Footbridge with Associated Promenade and Trailhead (Proposed Action)

Ground disturbance associated with Happy Isles improvements under Alternative C has the potential to adversely affect the integrity of archeological resources and other historic

properties. Park cultural resources staff review, Tribal consultation, and implementation of standard protection measures are recommended during the design phase to avoid potential adverse effects on archeological resources and other historic properties under Alternative C. In addition, cultural resource interpretation and protection language (developed in consultation with park staff and affiliated Tribes) would be added to exhibits and signage, where appropriate, which would result in a long-term beneficial effect on historic properties. The following effects analysis generally focuses on built environment historic properties for proposed actions under Alternative C.

Construct a New Pedestrian Footbridge at the Historic Location of the Happy Isles Footbridge

The new footbridge would use an existing abutment and be in a location where the Happy Isles Footbridge existed historically. The historic footbridge abutments and gaging station within the construction footprint are unevaluated historic properties. Reinstatement of a footbridge in this location would have a beneficial effect on the footbridge abutment and gaging station and other historic properties because it would restore historic viewsheds, circulation patterns between trail corridors, the setting of the gaging station as closely associated with a pedestrian footbridge, and design of the Happy Isles area. The design of the footbridge would retain the historic gaging station and abutments and would not destroy historic materials that characterize the property. The new work would be differentiated from the old and would be compatible with the massing, size, scale, and architectural features so as to protect the historic integrity of the property and its environment per the Yosemite Design Guidelines (NPS 2012) and *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b). The new footbridge would be visible from the Happy Isles vehicle bridge, which is an NRHP-listed historic property. However, the visual intrusion would not alter the characteristics of the Happy Isles vehicle bridge. The Happy Isles vehicle bridge would retain integrity of location, design, materials, and workmanship (Quinn Evans 2026). The setting of the vehicle bridge is not identified as an aspect of integrity that conveys significance and has already been altered since it was constructed. Construction of a footbridge in this location would not have an adverse effect on the Happy Isles vehicle bridge, historic gaging station and abutments, or any other historic properties. To minimize potential impacts, the proposed action should follow the Yosemite Design Guidelines (NPS 2012) and *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b).

The proposed signage improvements along the walkways, new footbridge, and new access point to the Mist Trail from the new footbridge would be reversible and would not adversely affect historic properties.

The proposed construction of a new footbridge would involve ground disturbance and vegetation removal that may adversely affect archeological resources. All proposed ground disturbance associated with the new footbridge construction, staging areas and new trail access from the new footbridge to the Mist Trail Corridor would need to be reviewed by the park archeologist and affiliated Tribes to incorporate resource protection measures to avoid adverse effects.

Create a New Pedestrian Promenade

The existing paved surfaces that would be used to create a new promenade are not individual historic properties but may be contributing features of the HDTCCL (see *Cultural Landscapes* section for additional analysis).

Create a New Trailhead

Portions of the area proposed for the new trailhead are currently paved and developed with small-scale improvements such as benches, bike racks, and water-filling stations. Installation of additional small-scale improvements would be in keeping with the current use. The walkways are currently sparsely signed. The installation of interpretive opportunities and small-scale improvements would not alter the characteristics of the YVHD and would be consistent with the Yosemite Design Guidelines (NPS 2012). With park standard protection measures in place, it is assumed that all potential adverse effects can be avoided for archeological sites. Therefore, the new trailhead would have no adverse effect to historic properties.

Any ground disturbance, vegetation clearing, and revegetation associated with the new trailhead adjacent to the new footbridge may adversely affect archeological and ethnographic historic properties and would need to be reviewed by the park archeologist and affiliated Tribes to incorporate resource protection measures into the design to avoid adverse effects.

Actions Common to Alternatives B and C

Revise Visitor Messaging and Signage

Development and implementation of a signage and messaging plan throughout the Happy Isles area and Mist Trail Corridor would have a long-term beneficial impact to historic properties as long as installation of signage avoids ground disturbance and other potential effects to historic properties. Inclusion of ethnographic and historic significance of the trail system (in consultation with the park cultural resources staff and affiliated Tribes) may increase public awareness for the cultural significance of the historic properties. The current wayfinding and interpretive signs are non-contributing resources within the YVHD. Per the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b), the proposed improvements would be reversible. Effects of the action would be minimized by using existing sign locations for new signage when possible and reducing the number of signs through strategic placement in high traffic locations, and would be consistent with the Yosemite Design Guidelines (NPS 2012). With park standard protection measures in place, alternatives B and C implementation of a signage and messaging plan would have no adverse effect on historic properties with potential added beneficial effects from interpretation and education about the cultural significance of the area.

Provide Trip-planning and Wayfinding Resources

Providing additional trip-planning and wayfinding resources to improve visitor experience would not adversely affect the integrity of any known historic properties and would have added beneficial effects from interpretation and education. Any ground disturbance and vegetation clearing associated with the installation of trip resources, such as kiosks, may adversely affect

archeological resources and would need to be reviewed by the park archeologist and affiliated Tribes to incorporate resource protection measures into the design to avoid adverse effects. With park standard protection measures in place, it is assumed that all potential adverse effects can be avoided for archeological sites. Effects of the installation of kiosks would be minimized by reducing the number of kiosk locations through strategic placement in high traffic locations, and would be consistent with the Yosemite Design Guidelines (NPS 2012). With park standard protection measures in place, alternatives B and C implementation of trip-planning and wayfinding resources would have no adverse effect to historic properties with added beneficial effects from interpretation and education.

Clearly Delineate Pedestrian Access to Happy Isles

The improvements to Happy Isles Loop Road would result in alterations to the road and vehicle bridge. The Happy Isles vehicle bridge is an NRHP-listed historic property as part of the Yosemite Valley Bridges listing. Proposed improvements would occur within the existing roadway, additional signage for wayfinding and safety, plus installation of elevated curbs or would all be reversible according to *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b) and would be consistent with the Yosemite Design Guidelines (NPS 2012) and, therefore, would not constitute an adverse effect to the Happy Isles vehicle bridge. Whereas these installments would slightly affect the Happy Isles vehicle bridge's integrity of setting, materials and feeling, they would not affect the overall location, design, function and association of the vehicle bridge.

Improve Happy Isles Shuttle Stop

The Happy Isles Shuttle Stop shelter is a non-contributing resource of the YVHD. The proposed shuttle stop improvements would be constructed within a previously disturbed area that is currently used for arriving visitors. All work would be consistent with the Yosemite Design Guidelines (NPS 2012). Construction of new infrastructure at the Happy Isles Shuttle Stop would not adversely affect historic properties.

Rehabilitate Happy Isles Restroom Facilities

The Happy Isles restroom facility is a non-contributing resource within the YVHD. Changes to the interior and exterior of the building would not have an adverse effect on historic properties as long as the changes are consistent with the Yosemite Design Guidelines (NPS 2012). Although the improvements would occur within previously disturbed areas, any new ground disturbance and vegetation clearing associated with the rehabilitation of the restroom facilities may adversely affect known and unknown archeological and ethnographic resources and would need to be reviewed by the park archeologist and affiliated Tribes to incorporate resource protection measures into the design to avoid adverse effects.

Increase Trail Pullouts

Trail pullouts would be consistent with the Yosemite Design Guidelines (NPS 2012). Proposed ground disturbance from construction of pullouts and vegetation clearing has the potential to adversely affect archeological resources and other historic properties. However, with review by the park archeologist and Tribes, implementation of the *Secretary of the Interior's Standards for*

the Treatment of Historic Properties (NPS 2017b) and other park standard protection measures, the proposed action would avoid adverse effects to historic properties.

Restore Scenic Vistas

Selective vegetation clearing has the potential to adversely affect archeological and ethnographic resources. However, with review by the park archeologist and Tribes, implementation of the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and other park standard protection measures, the proposed action would avoid adverse effects to historic properties.

VISUAL RESOURCES

Affected Environment

The NPS is responsible for preserving important natural, cultural, and historic views for current and future generations. The park is renowned for its many iconic scenic views and dramatic scenery. The Mist Trail Corridor, including Vernal and Nevada Falls, is visible from numerous vantage points throughout Yosemite Valley. The 2016 Yosemite National Park Foundation Statement details dramatic and inspirational scenery as one of the fundamental resources and values of the park (NPS 2016).

As described in the *Water Resources* section, the Merced River is a designated WSR and runs through the project area. One of its stated outstanding remarkable values includes its scenic resources and importance. The following section describes the visual characteristics present within the project area, as well as important views along the Mist Trail Corridor.

Happy Isles

The built environment in the Happy Isles area primarily includes the Happy Isles Shuttle Stop and infrastructure (water-filling stations, bike parking, seating, and a shade structure), restroom facilities, the Happy Isles vehicle bridge, and the Art and Nature Center. The Yosemite Design Guidelines (NPS 2012) describes the natural landscape as the primary character-defining element within the Happy Isles area. Happy Isles provides one of the best opportunities to observe the dynamic geology of Yosemite Valley, which includes the downed trees and scree (a collection of broken rock fragments at the base of a cliff) resulting from the 1996 rockfall (NPS 2012). The visual character of the developed area can be described as rustic with dispersed small-scale structures along an asphalt paved pedestrian route from the Happy Isles Shuttle Stop to the Art and Nature Center. The Art and Nature Center, which serves as an interpretive hub, was originally constructed as a Fish Hatchery in 1927. The Yosemite Design Guidelines (NPS 2012) states that new designs should be compatible with the architectural character of the historic Art and Nature Center building.

The nearby Merced River is a defining feature of the Happy Isles area where the rapids and waterfalls along the Mist Trail Corridor subside to become the peaceful and meandering flow through Yosemite Valley. At the Happy Isle Area, visitors get filtered views of the granite cliffs in the background that were formed by glacial erosion.

Mist Trail Corridor

The visible elements along the Mist Trail Corridor include a variety of trails, footbridges, waterways, and riparian habitat. The JMT between Happy Isles and the Vernal Fall Footbridge climbs 400 feet in 0.8 miles and offers visitors views of the surrounding landscape with dense vegetation with the trail in the foreground and granite cliffs and rock formations in the background. A notable scenic vista of Vernal Fall exists at the Vernal Fall Footbridge, a common gathering location and area to rest along the trail, which spans the Merced River. As previously described, the Merced River is a defining feature of the Yosemite Valley, and after its transition point in the Happy Isles area, the granite walls of the valley begin to close-in as visitors move up the Lower Mist Trail Corridor; as the width of the valley narrows, visitors begin to experience the valley as a canyon. There is one vista point of Yosemite Falls along the portion of the JMT below Vernal Fall Footbridge. There are a handful of additional locations with the potential for views of multiple waterfalls (of Illilouette Creek), but vegetation currently obstructs those views.

The views along the Stock Trail differ from those along the JMT. The Stock Trail is comparatively more densely vegetated and has a footprint as narrow as three feet compared to the six-foot-wide JMT. The Stock Trail also has fewer signs as compared to the JMT. In general, as the Stock Trail transverses dense forest, it has limiting expansive views of Yosemite Valley. The Stock Trail crosses Illilouette Creek, offering a close-up view of the creek and alluvial fan, but a majority of the viewshed is blocked by dense forest.

As described in Table 1-1, the Mist Trail contains important landmarks and popular scenic viewpoints, such as the Mist Trail steps section at the base of Vernal Fall, the brink of Vernal Fall, Emerald Pool, Silver Apron Footbridge, Clark Point, Nevada Fall (including the falls, footbridge, and approach), and the Upper JMT-Mist Trail Junction. The two existing trail loops above the Vernal Fall Footbridge offer trail users with a wide range of views of the scenic landscape. Infrastructure, visitor services, and signage decrease as the Mist Trail continues upward in elevation, and naturally stepped granite slabs act as gathering places for visitors. There are currently two visible barriers in this portion of the trail—one on the northeast side of the Nevada Fall Footbridge and one at the edge of the precipice area. The precipice area barriers are old and have several gaps; however, the area itself is considered a dramatic overlook of Nevada Fall. Shortly after the Nevada Fall Footbridge, visitors enter Yosemite Wilderness and approach the Upper JMT-Mist Trail Junction.

Environmental Consequences

Impact Analysis Methodology

To evaluate the impacts of each alternative on visual resources, the NPS assessed actions that could alter the visual character of the project area. The analysis focused on actions of sufficient scale or mass to be observable at a distance and that could affect visual quality within the project area, including new signage throughout the Mist Trail Corridor, improvements to the Stock Trail, and construction of a new pedestrian footbridge over the Merced River. Given the limited scale of the proposed improvements within an already developed setting, impacts were

evaluated using existing park planning documents, including the MRP and Yosemite Design Guidelines (NPS 2012), along with professional expertise. The analysis focuses on whether or not proposed changes would alter the visual character, key views, or landscape integrity within the project area.

Alternative B: Use Existing Vehicle Bridge for Pedestrian Access with Associated Promenade and Trailhead

Use the Existing Happy Isles Vehicle Bridge for Pedestrian Access and Create New Pedestrian Promenade Over the Happy Isles Vehicle Bridge

Proposed vehicle bridge improvements would result in a localized adverse effect by introducing new visual elements to the existing bridge; however, the features would be low-profile, visually compatible, and largely screened from key viewpoints. As a result, the project would not alter the overall visual character or scenic quality of the trail corridor. The proposed improvements would be designed in accordance with the Yosemite Design Guidelines (2012), including the use of appropriate materials, scale, and reversible features, thereby minimizing visual contrast with the historic and natural landscape.

Construction activities associated with vehicle bridge improvements would result in a temporary increased presence of vehicles and construction equipment, causing short-term adverse impacts to the viewshed. However, these disruptions would not be permanent and would cease after construction is complete. Visitors wishing to enjoy the natural scenic vista of the Merced River from the vehicle bridge would ultimately experience a long-term benefit of an established shared-use lane on the vehicle bridge to enjoy views of the Merced River.

Enhance the Existing Trailhead

Enhancements to the existing trailhead would establish a new element on the landscape as compared to current conditions resulting in a slight change to the visual character. The existing trailhead is located adjacent to the historic vehicle bridge but offset so as to not affect any significant views of the vehicle bridge or other parts of the YVHD. The proposed enhancements would be designed consistent with the park setting and design guidelines (Yosemite Design Guidelines [NPS 2012]) and other NPS standards, such as the NPS Visual Resources Program Visual Quality Best Practices, for the Happy Isles area. Furthermore, the existing trailhead enhancements would offer interpretive opportunities to learn about the natural, cultural, and historic landscapes at Happy Isles.

Formalize Stock Trail Loop

Post-pilot program Stock Trail improvements, such as widening the trail and adding railings or barriers to accommodate increased visitor use on the Stock Trail, would make the trail more pronounced on the landscape, though relatively less as compared to the existing JMT below Vernal Fall Footbridge. Some visitors may view newly installed signs, railings, or barriers as visual clutter affecting the visual quality in comparison to today's more secluded, rustic experience. Barriers and railings would be comprised of native cobbles, boulders, and other park-sourced materials, such as cedar, to maintain the rustic character of the project area (NPS

2012). Selective minor vegetation clearing associated with trail widening would give the trail a slightly more open appearance when compared to today's condition.

Potential new culverts and upgrades to the causeway through the Illilouette Creek delta area would result in added infrastructure on the landscape and, thus, would have minor changes to the visual quality and viewshed. However, the infrastructure would be designed to be light on the landscape and consistent with other park trail infrastructure. Furthermore, the potential repairing of damaged trail surfaces would provide a more visually appealing trail from some users' perspectives and, although not part of this project, relocation of utilities to be placed underground in conjunction with the Stock Trail upgrades would improve the visual quality along the trail.

Construction activities associated with the proposed post-pilot program trail improvements would be expected to have short-term adverse impacts to the visual quality of the area because of increased human presence and construction equipment detracting from the otherwise natural setting along park trails. To minimize the temporary adverse impacts of construction, equipment would be contained within designated staging areas offset or shielded from trails to allow hikers continued passage while minimizing equipment visibility.

Alternative C: Construct New Pedestrian Footbridge with Associated Promenade and Trailhead (Proposed Action)

Construct a New Pedestrian Footbridge at the Historic Location of the Happy Isles Footbridge

Construction of a new footbridge would result in a noticeable change to the existing viewshed. Located upstream of the historic Happy Isles vehicle bridge and adjacent to the existing USGS gaging station, the footbridge would introduce a modest new visual element to the landscape that reflects both historic circulation patterns and contemporary visitor use. The Happy Isles area is heavily wooded and characterized by large boulders adjacent to and upstream of the former footbridge alignment (see Chapter 2 for additional detail). As described in the *Water Resources* section, this reach of the Merced River is designated as a recreational segment of a WSR and includes existing infrastructure typical of a heavily visited destination (NPS 2014a).

Visitor perceptions of the visual change would vary. Some visitors may perceive an adverse effect due to the introduction of new infrastructure within a largely natural viewshed, while others may perceive the new footbridge as visually compatible on the landscape given a footbridge existing in this location in the past. The new footbridge would provide visitors with additional opportunities to view the river and the historic Happy Isles vehicle bridge downstream. To minimize visual contrast, the footbridge would be designed to limit mass and scale and to confine construction and grading disturbance to the smallest practicable area. The design would be consistent with other park bridges and with the design character of the Happy Isles area as outlined in the Yosemite Design Guidelines (NPS 2012) and other NPS standards, such as the NPS Visual Resources Program Visual Quality Best Practices. Overall, Alternative C would result in a long-term visual change to the viewshed at Happy Isles.

Create a New Pedestrian Promenade

Development of a pedestrian promenade would result in a long-term beneficial impact to visual resources. Clearer signage, more intuitive routes, and other thoughtfully integrated services, such as interpretive signs for resources in the area, informational and wayfinding signs for trip planning, and infrastructure providing updated trail conditions and weather forecasts, would reduce visual clutter associated with confusion and backtracking and would enhance the overall visitor experience.

Short-term adverse impacts to the viewshed would occur during construction due to the presence of construction equipment, vehicles, and temporary disturbances. These impacts would be temporary and limited to the construction period. Detours would be provided as necessary to maintain continuous visitor access to the Mist Trail Corridor and other facilities and services, and designated staging areas would be used to minimize disruptions to visitor circulation and visual quality during construction.

Create a New Trailhead

Development of a new trailhead would introduce a new element to the landscape compared to current conditions. The new trailhead and associated improvements would be designed to be consistent with the park setting and the design character of the Happy Isles area, in accordance with the Yosemite Design Guidelines (NPS 2012) and other NPS standards, such as the NPS Visual Resources Program Visual Quality Best Practices. As a result, visual impacts associated with installation of new visitor infrastructure at the new trailhead location (i.e., adjacent to the proposed footbridge) would be small in scale and have minor impacts on the visual quality of the landscape. Furthermore, new trailhead infrastructure would be designed and arranged to recognize and maximize views to existing scenic resources, such as the Merced River (NPS 2012).

Revegetation of the existing trailhead area under Alternative C would likely result in a long-term beneficial visual impact, as visitors generally prefer naturalistic scenery over the currently disturbed setting.

Actions Common to Alternatives B and C

Revise Visitor Messaging and Signage

Overall, strategic placement and design of new signage would improve the viewer experience by enhancing the visual quality of signage on the landscape and providing expanded interpretive opportunities related to the natural, cultural, and historic features of the Mist Trail Corridor.

As described in the *Historic Properties* section, signage and messaging upgrades would not diminish the integrity of the YVHD or views to other historic properties. New signage and messaging would be carefully sited to avoid impacts to notable scenic vistas, as described in the *Visual Resources, Affected Environment* section.

Installation of new signs has the potential to introduce visual clutter, which could detract from scenic vistas and the more rustic and solitary character of the Mist Trail Corridor. To minimize

this potential adverse effect, new signage would be limited primarily to replacement of existing signs and strategically placed in locations with high visitor visibility and outside of scenic vistas, to the extent practicable. All new or replacement signage would be designed in accordance with Yosemite Design Guidelines (NPS 2012) to maintain visual consistency throughout the park.

Provide Trip-planning and Wayfinding Resources

Installation of physical trip-planning and wayfinding services, such as kiosks, at Happy Isles and along the Mist Trail Corridor would have similar visual impacts to those described for installation of signs, under the *Revise Visitor Messaging and Signage* section.

Clearly Delineate Pedestrian Access to Happy Isles

The visual character of the arrival route into Happy Isles would be largely unchanged, as improvements to Happy Isles Loop Road traffic patterns would still result in a mix of existing traffic including vehicles, pedestrians, and bicyclists. Temporary lane closures and equipment during construction activities would cause short-term adverse visual impacts from added visual elements to surrounding landscapes. However, designated staging areas would be used to minimize disruptions to visitor passage and visual experience during construction.

Improve Happy Isles Shuttle Stop

Happy Isles Shuttle Stop improvements would lead to a long-term change in the visual aesthetics of visitor arrival into Happy Isles. These small-scale features would have little to no effect on the visual quality of the area because the proposed improvements are consistent with existing infrastructure and would not detract from the larger setting and scenery of the Happy Isles area.

Rehabilitate Happy Isles Restroom Facilities

Rehabilitation of the Happy Isles restroom facilities could impact the visual character of the existing structure and viewshed. Changes to the building interior and exterior would be designed consistent with the existing setting and in accordance with the Yosemite Design Guidelines (NPS 2012) and other NPS standards, such as the NPS Visual Resources Program Visual Quality Best Practices, to maintain the visual quality of the Happy Isles area. Temporary facility closures and equipment usage during construction activities would cause short-term adverse visual impacts from added visual elements to surrounding landscapes. However, it is anticipated that rehabilitation of the restroom facilities would not have a long-term impact on the viewshed in the context of the larger setting and scenery of the Happy Isles area.

Increase Trail Pullouts

Installation of additional trail pullouts would add new visual elements to the landscape. The pullouts would be designed consistent with the existing setting to avoid impacts to notable scenic vistas and in accordance with Yosemite Design Guidelines (NPS 2012) to maintain the visual quality of the Mist Trail Corridor. Log benches, boulders, or downfall logs would be used for seating elements, as practicable (NPS 2012). As a result, no long-term adverse impacts to visual resources are anticipated.

Restore Scenic Vistas

Small-scale, selective vegetation removal to restore scenic vistas would result in minor changes to the visual landscape. Tree clearing would be conducted in strategic locations and to blend with adjacent natural vegetation patterns to open views to waterfalls and other prominent landscape features, resulting in a long-term beneficial impact to the viewshed. Where necessary, barriers would be installed along the Mist Trail Corridor to discourage visitors from traveling off trail following vegetation removal. These barriers would introduce a small-scale element to the landscape but would not have a measurable adverse effect on visual quality and would be offset by the enhanced scenic views.

CHAPTER 4: CONSULTATION AND COORDINATION

The NPS provided opportunities for the public to comment on the proposed project during the early project planning phase. The NPS also conducted consultation and coordination activities with federal and California agencies, American Indian Tribes, and other interested parties. This chapter provides a summary of the public involvement and agency consultation and coordination that occurred during project planning to inform the project and the EA.

PUBLIC INVOLVEMENT

Civic Engagement

The NPS held a 30-day civic engagement period from October 24, 2024 to November 23, 2024. The NPS provided information to the public in the following forms: 1) electronic newsletter; 2) press release; 3) project details posted to the NPS Planning, Environment, and Public Comment (PEPC) website; and 4) virtual public meeting.

The public was encouraged to provide the NPS with their feedback during this early stage of planning. Specifically, the NPS requested input on the following:

- *Could you share your experiences and challenges related to safely accessing and navigating the Mist Trail Corridor?*
- *What improvements could enhance the visitor experience along the Mist Trail Corridor?*
- *Share what resources you value in this area and what you think the park needs to preserve and protect.*

A summary of public feedback related to improvements visitors feel would enhance the visitor experience along the Mist Trail Corridor is provided in Appendix M—*Mist Trail Corridor Project Civic Engagement Comment Summary Report*.

During the civic engagement period, a total of 205 pieces of correspondence were received. Of these, 203 correspondences were received electronically from the public; one correspondence was received via email from The Sierra Club, Yosemite Committee; and one correspondence was documented via meeting notes from co-stewardship meeting with Tribal representatives held on October 18, 2024.

Public Comment on the EA

The EA will be available for formal public and agency review for 30 days. Interested individuals, agencies, and organizations will be notified of its availability. The EA will be available for public review at: https://parkplanning.nps.gov/MistTrailEA.

AGENCY CONSULTATION AND COORDINATION

Section 106 of the National Historic Preservation Act

California State Historic Preservation Officer

Federal agencies are required to consider the effects of their undertakings on historic properties in accordance with Section 106 of the NHPA of 1966 (54 USC 306108) as amended, and its implementing regulations in 36 CFR Part 800. The NPS will share a copy of the final EA and consult with the California State Historic Preservation Officer on the NPS proposed action once site-specific designs are available.

Tribal Nations

As required by Section 106 of the NHPA, the NPS is consulting with seven traditionally associated Tribes. On October 18, 2024, the NPS presented early proposed planning concepts during the park's biweekly co-stewardship meeting held with Tribal representatives from American Indian Council of Mariposa County, Inc. ([AICMC] or Southern Sierra Miwuk Nation) and Mono Lake Kootzaduka'a. Invitations were extended to all associated Tribes of Yosemite National Park: AICMC/Southern Sierra Miwuk Nation, Bishop Paiute Tribe, Bridgeport Indian Colony, Mono Lake Kootzaduka'a Tribe of California and Nevada, North Fork Rancheria of Mono Indians of California, Picayune Rancheria of the Chukchansi Indians, and Tuolumne Band of Me-Wuk Indians. Feedback received during the co-stewardship meeting was input into the PEPC system as part of the official civic engagement record.

Section 106 consultation with Tribes that are culturally or historically affiliated with the park is ongoing. The NPS completed a CLI as part of the project to document the cultural landscape and archeological resources within the project area, as detailed in Chapter 3. The CLI was completed collaboratively with the Tribes and was used to inform the assessment of effect. Furthermore, if the Tribes provide additional information on ethnographic resources or traditional uses, the NPS will work with concerned parties to resolve any potential impacts associated with the project.

Section 7 of the Endangered Species Act

Section 7(a)(2) of the ESA, as amended (16 USC 1531 et seq.), requires that federal agencies consult with the USFWS to ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of critical habitat of those species. The park has concluded that the project is not likely to adversely affect the California Red-Legged Frog and that the proposed action falls within the scope of the *Biological Opinion on the Management Activities Related to the California Red-legged Frog Reintroduction Project, Yosemite National Park, California* (2023-0118651-S7-001). Additionally, the park has determined that the project will have no effect on other threatened or endangered species that have the potential to occur with the project area and will not require consultation with the USFWS.

Section 7 of the Wild and Scenic Rivers Act

The preliminary proposed action was presented at a nationwide WSRA Section 7 workshop to identify potential WSR-related concerns; no substantive issues were identified at that time. The Merced River was designated as a WSR in 1987, when the historic Happy Isles Footbridge was

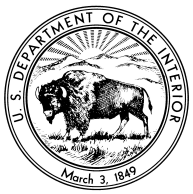
present at this location. The proposed action would reestablish a pedestrian crossing at that historic location using a modern footbridge design that fully spans the bed and banks of the river and avoids in-water work or channel disturbance. The footbridge also has been designed to span beyond the 100-year floodplain and to minimize the potential for debris accumulation during high flow events.

A draft Section 7 determination has been prepared and is included in this EA as Appendix N—*Draft Mist Trail Corridor Project Wild and Scenic Rivers Act Section 7 Determination*. Coordination with the NPS WSR Program has been conducted and will continue, as needed, through final design and permitting to ensure consistency with the WSRA.

Executive Order 11988, Floodplain Management

Executive Order 11988, *Floodplain Management*, and Departmental Manual 520 (520 DM 1 and 2) require the NPS and other federal agencies to evaluate the likely impacts of actions in floodplains. The objective of Executive Order 11988 is to avoid, to the extent possible, the long-term and short-term adverse impacts associated with occupancy, modification, or destruction of floodplains and to avoid indirect support of development and new construction in such areas wherever there is a practicable alternative. The park is in coordination with the NPS Floodplain Management Program to finalize analysis upon schematic design.

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under US administration.

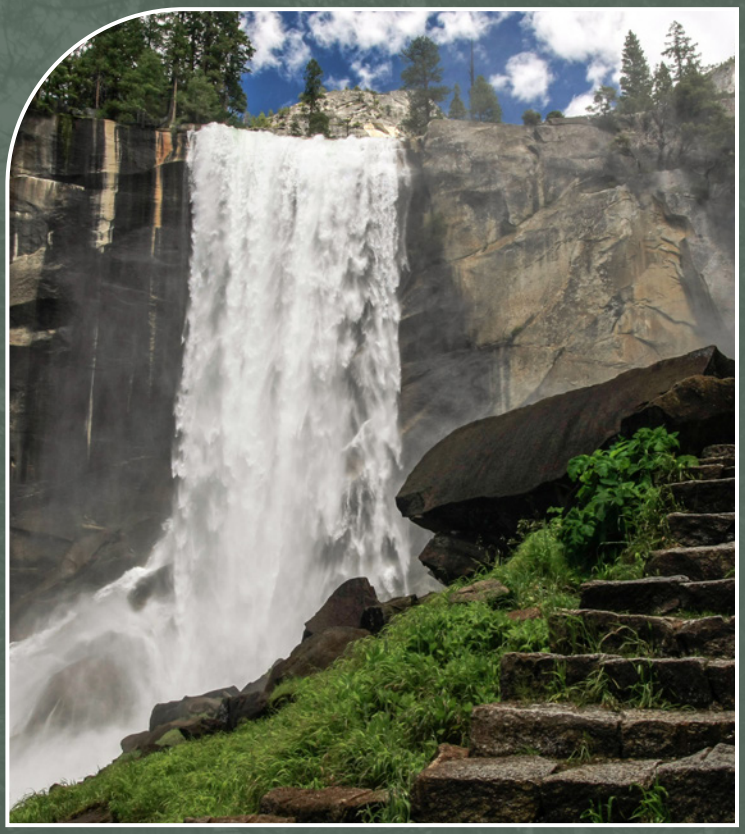
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May 2026

National Park Service
U.S. Department of the Interior



Yosemite National Park Mist Trail Corridor Project Environmental Assessment | May 2026

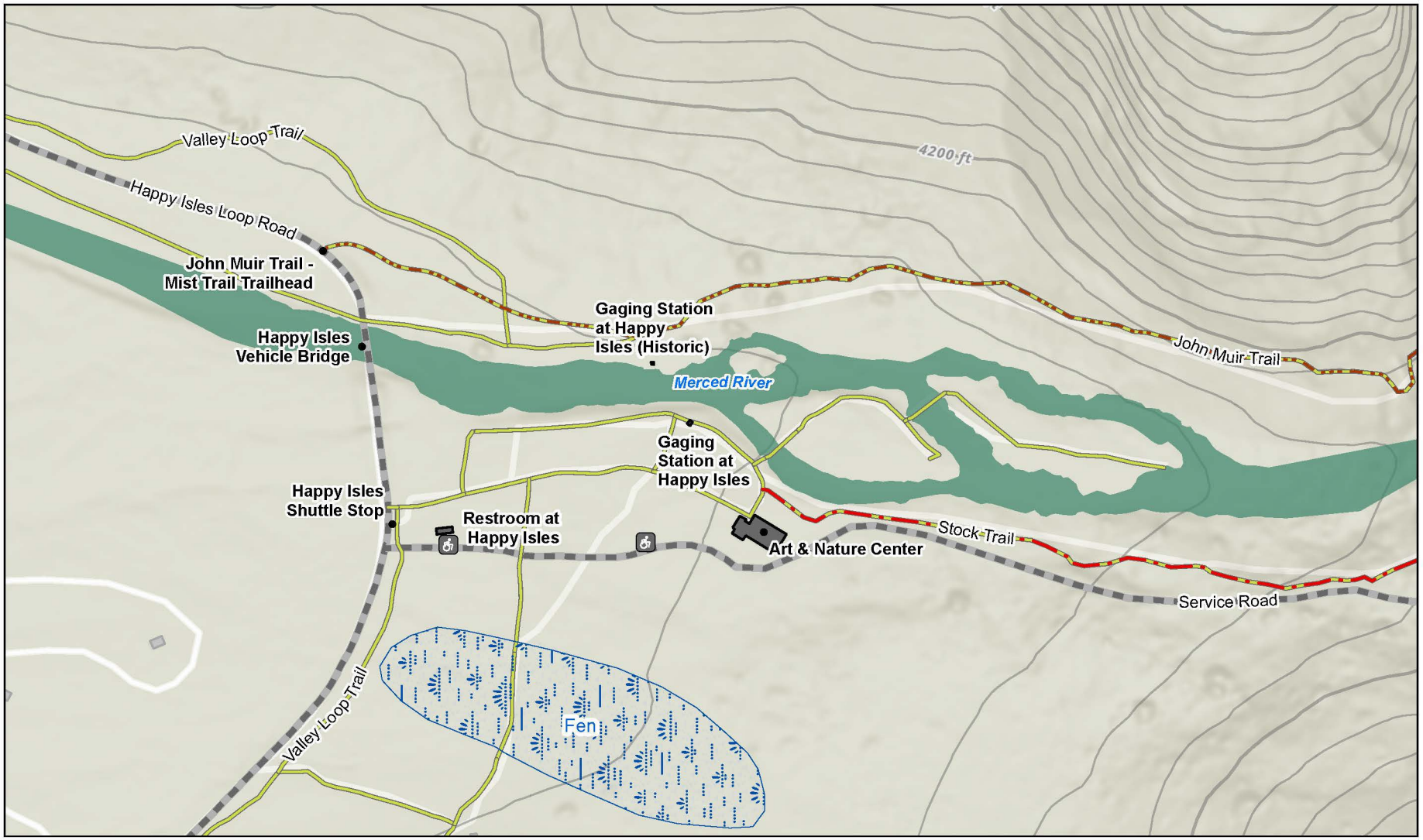


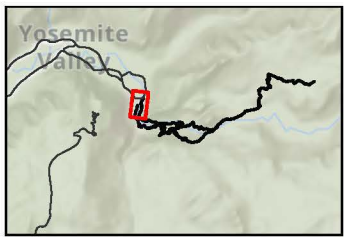
Appendices



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APPENDIX A: PROJECT AREA DETAILED FIGURES





- Existing Road
- Existing Trail
- John Muir Trail
- Stock Trail
- Existing Buildings
- Merced River
- Fen
- Accessible Parking Lot

N

0 150 300 Feet

(At original document size of 8.5x11)
1:3,600

Notes

1. Coordinate System:
Name: NAD 1983 UTM Zone 11N

2. Data Sources: Stantec 2025. NPS 2025.

3. Background: Sources: Esri, Vantor, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community, Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Sources: Esri, © World Wildlife Fund, Inc.

National Park Service
U.S. Department of Interior

Project Location
Yosemite National Park,
Madera, Mariposa, and Tuolumne County, California

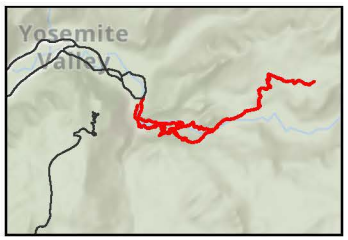
Mist Trail Corridor Project
Environmental Assessment

Figure No.
A-1

Title
Happy Isles Area

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- Existing Road
- Existing Trail
- Clark Point Cutoff Trail
- John Muir Trail
- Mist Trail
- Stock Trail
- Waterway

N

0 500 1,000 Feet

(At original document size of 8.5x11)
1:12,000

Notes

1. Coordinate System:
Name: NAD 1983 UTM Zone 11N

2. Data Sources: Stantec 2025. NPS 2025.

3. Background: Esri, NASA, NGA, USGS, FEMA, Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Sources: Esri, © World Wildlife Fund, Inc.

National Park Service
U.S. Department of Interior

Project Location
Yosemite National Park,
Madera, Mariposa, and Tuolumne County, California

Mist Trail Corridor Project
Environmental Assessment

Figure No.
A-2

Title
Mist Trail Corridor

APPENDIX B: LAWS, PLANS, AND POLICIES WITH A RELATIONSHIP TO THE MIST TRAIL CORRIDOR PROJECT

Current laws, plans and policies are in place related to the management of park resources which guide and inform this Environmental Assessment. The National Park Service (NPS) has several sources of detailed guidance to help managers make day-to-day decisions. The primary sources of guidance are *516 DM 1 - U.S. Department of Interior Handbook of National Environmental Policy Act Implementing Procedures* (issued February 24, 2026) and the 2006 NPS Management Policies, which include NPS Director's Orders, handbooks, and reference manuals. These policies were put in place for the preservation, management, and use of park resources and facilities park-wide. The most relevant laws, plans, or policies related to the Mist Trail Corridor Project are detailed in Table B-1.

Table B-1. Relationship of the Project to Other Laws, Plans, and Policies

Law, Plan, or Policy	Relationship to Project
Laws	
National Park Service (NPS) Organic Act of 1916 [Title 54 of the USC, Subtitle 1]	Directs the NPS to "promote and regulate the use of the National Park System by means and measures that conform to the fundamental purpose of the System units, which purpose is to conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as would leave them unimpaired for the enjoyment of future generations."
Wild and Scenic Rivers Act of 1968 [Public Law 90-542; Title of 16 of the USC, §§ 1271–1287]	Establishes the National Wild and Scenic Rivers System to preserve selected rivers in their free-flowing condition and protect their outstandingly remarkable values for present and future generations. In 1987, US Congress designated 122 miles of the Merced River, 81 of which are managed by the NPS in Yosemite National Park.
Plans	
General Management Plan (GMP; 1980)	Establishes the long-term vision, management objectives, land-use zoning, and development framework for Yosemite National Park. The GMP guides decisions related to resource protection, visitor use, transportation, facilities, and operational development, and serves as the baseline planning document against which subsequent programmatic and project-level plans must be consistent. The GMP is supplemented and implemented through later plans, such as the 2011 *Scenic Vista Management Plan* and the 2014 *Merced Wild and Scenic River Comprehensive Management Plan*.
Scenic Vista Management Plan (SVMP; 2011a)	Developed to systematically identify, prioritize, restore, and maintain Yosemite's iconic scenic viewsheds that had become partially or fully obscured by vegetation growth over time. Among the SWMP's core objectives are to 1) re-establish and maintain historic and iconic views; 2) develop a process to evaluate and rank vistas; 3) define desired scenic conditions; and 4) identify appropriate vegetation management techniques consistent with natural and cultural processes.

Law, Plan, or Policy	Relationship to Project
Merced Wild and Scenic River Comprehensive Management Plan (MRP; 2014)	Guides the management of the Merced Wild and Scenic River within the boundaries of Yosemite National Park for the next 20 or more years. The MRP, among other management and resource protection goals, identifies management objectives for the river and specific actions and/or programs that could be implemented to achieve the objectives, and commits to a program of ongoing studies and monitoring to ensure that river values are protected and enhanced over the life of the plan.
Policies and Guidance	
Executive Order 11988-Floodplain Management	Requires federal agencies to avoid direct or indirect support of development within the 100-year floodplain whenever there is a practicable alternative. A floodplain is defined as the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to a 1% or greater chance of flooding in any given year (US Environmental Protection Agency 2011).
Director's Order 77-2: *Floodplain Management*	Applies to all proposed NPS actions that could adversely affect the natural resources and functions of floodplains or increase flood risks. This includes those proposed actions that are functionally dependent upon locations in proximity to the water and for which non-floodplain sites are not practicable alternatives (NPS 2003).
Director's Order 28: *Cultural Resource Management*	Directs the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in NPS Management Policies (NPS 2002; NPS 2006a). This order also directs the NPS to comply with the substantive and procedural requirements described in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (NPS 1983b); the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Treatment of Cultural Landscapes (NPS 1996); and the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Building (NPS 2017b).

APPENDIX C: PROJECT IMPACTS TO PARK OPERATIONS

Although Yosemite National Park (or "park") operations are not classified as an environmental, cultural, or historic resource subject to analysis under the National Environmental Policy Act, they remain integral to the proposal, ensuring its feasibility and implementation. Accordingly, this appendix provides a description of park operations within the project area, as defined in the Mist Trail Corridor Project Environmental Assessment, and examines the potential effects of the project alternatives (B and C) on those operations.

AFFECTED ENVIRONMENT

Happy Isles

Happy Isles is accessible year-round via the Yosemite Valley shuttle system, bicycles, and vehicles. The National Park Service (NPS) is responsible for the maintenance and operation of Happy Isles Loop Road, including snow removal during winter months. Within the Happy Isles area there is a restroom facility (operated by the NPS) and the Art and Nature Center (operated by Yosemite Conservancy). These facilities are typically open April through October. The current restroom facility adjacent to the Happy Isles Shuttle Stop is heavily used by visitors and, on the busiest days, is insufficient to handle the high volume of people. The Art and Nature Center is typically less crowded than the Happy Isles Shuttle Stop as visitors are often unaware of its location due to lack of signage; the center is operated by Yosemite Conservancy staff from 9:00 a.m. to 4:00 p.m. daily during operating season.

Mist Trail Corridor

The Mist Trail Corridor is maintained by the NPS. Typical maintenance activities along the trail include (but are not limited to) routine trail maintenance and surface repair, rock removal, footbridge repair, and inspection and repair of trail structures, barriers and guardrails, and signage. During winter months, the Mist Trail along Vernal Fall closes due to risk of falling ice and rock. Likewise, the John Muir Trail (JMT) between Clark Point and the top of Nevada Fall is closed in winter due to icy conditions. Park rangers regularly patrol the trails and associated infrastructure (trail pullouts, footbridges, and other areas to rest) to assess safety conditions and potential trail maintenance needs. Park staff and volunteers also are stationed along the trails to help provide information and guidance to visitors.

Stock use is permitted along certain trails within the Mist Trail Corridor, including the JMT and Stock Trail. The Stock Trail is primarily used by backcountry utilities staff and stock teams servicing the composting toilets at Emerald Pool, the Upper JMT-Mist Trail Junction, and Little Yosemite Valley between approximately April and October each year. Stock teams consist of packers and one to two trains of animals with five to six animals per train. The composting toilets are serviced by the stock teams approximately once per week. Other park staff, including search and rescue (SAR) and the trail maintenance teams, use this route to avoid congestion on the JMT and Mist Trail. Active use of the Stock Trail by park staff typically begins at a park administrative area inclusive of staff parking and a water tank, approximately 0.4-miles up the Stock Trail from the Art and Nature Center.

The Upper JMT-Mist Trail Junction is a critical point for park operations. The existing restroom is a destination for the stock teams that service this location. The layout of hitching posts requires the majority of the stock team to be left unattended while one animal is loaded at a time and also creates conflict between the stock team and the hikers, as both groups are crossing through a small area.

SAR incidents are common within the Mist Trail Corridor and make up a substantial portion of the rescue operations workload throughout the park. The most common issues visitors experience in the trail corridor are extremity injuries, dehydration, and fatigue. More serious incidents involve drownings, cardiac emergencies, and traumatic injuries from falls. Because of the complexity and frequency of emergencies within the park, highly trained supplemental staff are required by the NPS Division of Visitor and Resource Protection to assist during the peak summer seasons (NPS 2022). On average, the park fields 200 to 250 emergency calls per year ranging from on-trail litter carries to complex vertical technical rescues (NPS 2022). SAR staff could also be used for transportation assignments, ambulance duties, or logistical operations.

ENVIRONMENTAL CONSEQUENCES

Impact Analysis Methodology

Impacts on park operations were evaluated to determine how each alternative would affect park management strategies and operational requirements. For purposes of this analysis, adverse impacts are defined as increases in operating costs, staffing needs, or management activities, while beneficial impacts are defined as reductions in those requirements. This analysis is informed by existing park maintenance and SAR data, program information, professional judgment of the interdisciplinary study team and park staff, and experience with similar projects.

Alternative B: Use Existing Vehicle Bridge for Pedestrian Access with Associated Promenade and Trailhead

Use the Existing Happy Isles Vehicle Bridge for Pedestrian Access

Vehicle bridge improvements would result in a long-term beneficial impact to shuttle bus operations by reducing pedestrian conflicts and operational delays. Improved separation would increase efficiency and reliability of shuttle movements through the Happy Isles area. However, narrowing the vehicular lane and installing physical barriers or bollards could reduce maneuverability for large emergency response vehicles and snow-plowing equipment during winter operations. These constraints could increase operational complexity during emergency responses or seasonal maintenance activities.

Overall, Alternative B would result in both long-term beneficial and adverse impacts to park operations, reflecting improved day-to-day shuttle efficiency balanced against potential challenges for emergency access and winter maintenance.

Create a New Pedestrian Promenade Over the Happy Isles Vehicle Bridge

Additional seating installed along the promenade could result in increased generation of visitor trash, requiring additional park staff time and resources for trash collection and receptacle servicing. This would result in a minor long-term adverse impact to park operations. The NPS would implement "pack-in/pack-out" messaging through signage to promote visitor awareness and reduce improper disposal of waste, which would help minimize these operational demands.

Enhance the Existing Trailhead

Like the new pedestrian promenade, enhancements to the existing trailhead would likely increase localized visitor use and associated trash generation. This use could require additional park staff time and resources for maintenance, resulting in a minor long-term adverse impact to park operations. The NPS would implement "pack-in/pack-out" messaging through signage to increase visitor awareness and reduce improper disposal of waste.

Installation of a water-filling station and associated waterline over the vehicle bridge would result in short-term adverse impacts to park operations due to increased project costs, a longer construction timeframe, and associated vehicle and pedestrian detours. In addition, the water-filling station would increase long-term maintenance requirements at the existing trailhead. These impacts would be minor in the context of overall park operations.

Formalize Stock Trail Loop

A piloted (and potentially long-term) formalization of the Stock Trail Loop could increase visitor use along a route that is currently used primarily for park operational purposes. During the pilot program, increased visitor use could result in a limited need for additional trail maintenance and periodic staff presence (including law enforcement and/or SAR) along this portion of the Mist Trail Corridor. Any operational effects would be evaluated through adaptive management, with monitoring used to inform whether adjustments to staffing, operations, or visitor management measures are warranted.

Installation of targeted signage and safety messaging at strategic locations, including within the Happy Isles area, would be intended to support visitor preparedness and self-navigation, thereby reducing the likelihood of additional staffing demands along the Stock Trail. Based on the adaptive nature of this action, long-term impacts to park operations are anticipated to be minor and manageable.

During the pilot program (and potential long-term formalization), there could be potential for new conflicts between visitors and stock, resulting in a long-term adverse impact to both parties. Stock teams are not accustomed to having to share the Stock Trail in this narrower section of trail, and visitors could feel inconvenienced by needing to wait for stock to pass or could be dissatisfied with droppings along the trail associated with stock use. However, potential post-pilot program improvements to the Stock Trail would provide a long-term benefit to existing Stock Trail users (e.g., stock use, SAR, other park operations) through improved trail conditions. Operational management of stock and visitor use of the Stock Trail would require park staff to actively manage stock and visitor use during stock operations to

avoid crowding or delay in stock operations, potentially resulting in an increase in operational costs, and therefore, a long-term adverse impact to park operations.

Potential post-pilot program upgrades to the existing causeway would result in short-term adverse impacts to park operations as temporary trail closures and/or reroutes for stock teams would be required during construction, and construction would be costly (both materials and labor). A long-term adverse impact to park operations would occur from the increased maintenance needs associated with new culverts, such as regular clearing of debris and ensuring the culverts are working properly to convey water.

Alternative C: Construct New Pedestrian Footbridge with Associated Promenade and Trailhead (Proposed Action)

Construct a New Pedestrian Footbridge at the Historic Location of the Happy Isles Footbridge

Constructing a new footbridge would reduce visitor density and pedestrian–vehicle conflicts on the existing vehicle bridge and along Happy Isles Loop Road, resulting in a long-term beneficial impact to shuttle bus operations. Compared to Alternative B, Alternative C would not introduce additional adverse effects to existing infrastructure related to emergency response or snow plowing.

Construction of a new footbridge would result in adverse operational impacts associated with increased capital costs and ongoing requirements for inspection, maintenance, and winter snow management. In addition, visitor use could increase along the existing service road that parallels the Stock Trail behind the Art and Nature Center and provides access to a park administrative area and water tank. Increased visitor presence along this route could adversely affect stock operations, emergency response access, and other administrative uses. These potential impacts would be minimized through clear signage and improved wayfinding along the pedestrian promenade and at the Art and Nature Center to discourage unsafe access and guide visitors along designated routes.

Create a New Pedestrian Promenade

Installation of additional seating along the new promenade could increase visitor use and associated trash generation, requiring additional park staff time and resources for trash collection and receptacle servicing. This use would result in a long-term, minor adverse impact to park operations. To minimize this impact, the NPS would implement “pack-in/pack-out” messaging through signage to encourage responsible waste disposal and increase visitor awareness of environmental stewardship.

Create a New Trailhead

Improvements at the new trailhead would be similar to those proposed at the existing trailhead under Alternative B; therefore, ongoing maintenance demands would be generally comparable. Under Alternative C, a water-filling station would not require new waterline installation. As a result, Alternative C would involve lower construction costs and reduced long-term operational and maintenance requirements associated with the new trailhead.

Actions Common to Alternatives B and C

Revise Visitor Messaging and Signage

Revisions to visitor messaging and signage would result in a short-term adverse impact on park operations by temporarily increasing workload and costs for media, interpretation, and communications staff as project-area signage and associated outreach materials (e.g., websites and publications) are updated for consistency. Over the long term, however, improved signage and messaging would likely result in beneficial operational effects by reducing demands on SAR, interpretation, and law enforcement staff in the Happy Isles area and Mist Trail Corridor, as visitors would be better informed and prepared.

Expanded signage and messaging related to existing trail loop options could initially increase staff presence requirements on previously less-traveled routes, resulting in minor adverse operational effects. However, formalizing loop use through targeted signage is expected to reduce two-way traffic on constrained trail segments, such as the Mist Trail steps, and decrease visitor congestion. Reduced visitor density could lower the frequency of visitor conflicts and SAR incidents, while dispersal of use could also alleviate conflicts between visitors and park staff, including stock teams, particularly at the Upper JMT–Mist Trail Junction. Overall, formalization of existing trail loops through signage is expected to result in a net long-term beneficial impact on park operations by improving operational efficiency and enhancing SAR personnel safety.

Provide Trip-planning and Wayfinding Resources

Providing trip-planning and wayfinding resources would result in short-term adverse impacts to park operations through increased operational costs. These impacts would be associated with development, coordination, and deployment of additional trip-planning media and on-site wayfinding tools.

Over the long term, expanded availability of trip-planning resources—including digital media and on-site wayfinding tools that provide "live" trail condition updates and safety-related information—would improve visitor preparedness and situational awareness. Improved visitor preparedness is expected to reduce demands on SAR, interpretation, and law enforcement staff, resulting in a net long-term beneficial impact to both visitors and park operations, consistent with the effects described in the *Revise Visitor Messaging and Signage* section.

Clearly Delineate Pedestrian Access to Happy Isles

The proposed traffic pattern change along Happy Isles Loop Road could contribute to a clearer arrival sequence with fewer pedestrian-shuttle conflicts, which would provide a long-term beneficial impact to shuttle bus operations[1] through fewer operational delays.

[1] Changes to the daily shuttle bus schedule are not proposed as a part of this project outside of potential temporary schedule changes during project construction activities.

Improve Happy Isles Shuttle Stop

Enhancing the Happy Isles Shuttle Stop with additional visitor facilities and services could increase the amount of visitor-generated trash, potentially requiring additional park staff time and resources for trash collection and receptacle servicing. This use would result in a minor, long-term adverse impact on park operations. To minimize this impact, the NPS would implement "pack-in/pack-out" messaging through signage to promote visitor awareness and responsible waste management.

Rehabilitate Happy Isles Restroom Facilities

Rehabilitation of the existing Happy Isles restroom facilities would result in both beneficial and adverse impacts on park operations. Under existing conditions, high visitor density and long wait times can lead to overflowing trash receptacles and plumbing backups that periodically require temporary restroom closures, increasing demands on park staff. Adding restroom stalls would help alleviate these conditions, resulting in a long-term beneficial impact to park operations. However, additional restroom stalls could also increase the frequency and cost of plumbing maintenance, resulting in a minor long-term adverse impact.

During construction, temporary closures of the Happy Isles restroom facilities could be necessary, and portable restrooms would be provided to maintain visitor access. The rental, servicing, and maintenance of portable restrooms would result in short-term adverse impacts to park operations. Following construction, the expanded facilities would require additional cleaning time and consumable supplies, leading to a minor long-term increase in operational demands. Overall, these impacts would be minimal and are expected to be less burdensome than the ongoing operational challenges associated with current conditions.

Increase Trail Pullouts

Increased trail pullouts would require limited additional maintenance and could be offset by reductions in SAR incidents associated with visitor fatigue and user conflicts in constrained trail segments. The NPS would install signage promoting "pack-in/pack-out" practices to increase visitor awareness of waste management and environmental stewardship. Overall, the addition of trail pullouts would result in a long-term beneficial impact to park operations.

Restore Scenic Vistas

Where appropriate, railings would be installed where tree clearing would occur to discourage off-trail travel and reduce visitor encroachment into sensitive areas. These measures would help limit the need for additional law enforcement presence associated with off-trail use. Overall, restoring scenic vistas and associated vegetation clearing is expected to have a negligible impact on park operations.

APPENDIX D: IMPACT TOPICS CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

The following impact topics were not carried forward for analysis in the Mist Trail Corridor Project Environmental Assessment (EA) because they do not exist in the project area; they would not be affected by the proposal; the likelihood of impacts is low; or, through the application of mitigations measures, there would be no potential for significant impacts. Additionally, these impact topics were not a subject of contention among the public and other agencies.

AIR QUALITY

The Clean Air Act of 1963 was established to promote the public health and welfare by protecting and enhancing the nation's air quality. The 2006 National Park Service (NPS) Management Policies direct parks to seek the best air quality possible to "preserve natural resources and systems; preserve cultural resources; and sustain visitor enjoyment, human health, and scenic vistas." Construction-related activities, including operating equipment and hauling materials, could result in temporary increases in vehicle exhaust and emissions, as well as inhalable particulate matter. However, their impact on air quality would not constitute violations of state or federal air quality regulations and would be rapidly dissipated through air movement, resulting in minimal and localized effects. Additionally, mitigation measures would be implemented during construction to minimize fugitive dust and other airborne particulate matter; therefore, air quality was dismissed from further analysis.

GEOLOGICAL RESOURCES

The proposed project would include construction activities, such as ground disturbance associated with Stock Trail improvements (e.g., trail widening and construction of pullouts) under Alternative B, as well as footbridge construction under Alternative C. Granite monoliths, which are prominent geological features in Yosemite National Park (or "park") and hold significant cultural value, would be avoided during construction to prevent any impact. Minor grading could be required for other proposed project elements; however, no disruption to geological resources is anticipated due to the limited scope of these activities. As a result, geological resources were dismissed from further analysis.

LIGHTSCAPES

In accordance with 2006 NPS Management Policies, the NPS strives to preserve natural ambient lightscapes, which are natural resources and values that exist in the absence of human-caused light. The park strives to limit the use of artificial outdoor lighting to what is necessary for building security and human safety. The park also strives to ensure that all outdoor lighting is shielded to the maximum extent possible to keep light on the intended subject and out of the night sky. The NPS proposed action would include construction-related activities associated with a new footbridge. Night construction could be allowed at select locations outside of suitable habitat or critical times of year for sensitive species. Night construction, if approved, would be subject to timing limitations for sensitive species, as described in Appendix G—

Mitigation Measures and Best Management Practices of the Mist Trail Corridor Project EA, and lights used for night construction activities would be shielded and directed downward to minimize impacts. The overall impact of these local night illuminations would have a negligible adverse effect on the night sky due to their short-term duration. As a result, lightscapes were dismissed from further analysis.

MUSEUM COLLECTIONS

The proposed alternatives would not have any direct effects upon recognized museum collections (historic artifacts, natural specimens, and archival and manuscript material); therefore, this impact topic was dismissed from further analysis.

NON-NATIVE OR EXOTIC SPECIES

Ground disturbance within natural areas could result in the introduction of non-native and/or invasive plant species. However, the NPS has determined that, although the potential for non-native and invasive species exists in the park as a whole, there are no substantial populations within the project area, and best management practices, as described in Appendix G of the Mist Trail Corridor Project EA, would heavily reduce any minimal potential for impacts associated with invasive species. As such, non-native and invasive species were dismissed from further analysis.

PALEONTOLOGICAL RESOURCES

There are no known paleontological resources present within the project area; therefore, this impact topic was dismissed from further analysis.

SOCIOECONOMICS

The National Environmental Policy Act of 1969 requires an analysis of impact to the human environment including an analysis of social, economic, and demographic elements in the project area. Construction of proposed project could provide a temporary benefit to the local economy with the hiring of construction workers and an increase in local revenue generated from the construction workers and activities. However, this beneficial effect is expected to be minimal and temporary. The no-action alternative and action alternatives are not expected to have any appreciable impact on socioeconomics of the surrounding area; therefore, this impact topic was dismissed from further analysis.

SOUNDSCAPES

In accordance with 2006 NPS Management Policies and Director's Order 47: *Sound Preservation and Noise Management*, the NPS strives to preserve natural soundscapes associated with national park system units. Ambient noise levels in the project area vary based on the time of year, time of day, and visitor levels and is typical of a park setting in a natural landscape. The soundscape within the project area is influenced primarily by the rushing water of the Merced River, talking from park visitors, and engine and tire noise from vehicle traffic including the shuttle buses. Park operations, maintenance, and administration activities also contribute to

the existing traffic and noise generated along roads and trails. Consideration of noise impacts from project construction activities special status species is included in the Mist Trail Corridor Project EA. Night construction, if authorized, would be limited by restrictions to protect species of concern as described in Appendix G of the Mist Trail Corridor Project EA. Construction noise would likely be buffered by natural terrain and distance, but noise levels would be monitored, and construction activities or schedules would be adjusted, as needed, to minimize visitor and resource impacts. Impacts on the existing soundscape from proposed construction activities would be local, short term, and minor. As a result, soundscapes were dismissed from further analysis.

WETLANDS

A wetland assessment was conducted in the park to assess potential wetland habitats within and surrounding the project area between July and October 2024 (OTL Environmental LLC [OTL] 2024). The assessment concluded that a likely United States Army Corps of Engineers and NPS jurisdictional palustrine, emergent, persistent, continuously saturated wetland overlaps with a portion of the proposed Happy Isles and Stock Trail areas of disturbance (OTL 2024). Any activity that involves discharge of dredged or fill material into a waters of the United States (WOUS), including wetlands, is subject to regulation by the USACE. Furthermore, WOUS are classified as wetlands per NPS guidance found in Procedural Manual 77-1 and are, thus, subject to NPS protection in accordance with Director's Order 77-1: *Wetland Protection*.

The delineated wetland features overlapping with the Happy Isles area is surrounded by white alder riparian forest and is associated with an above-ground section of a small perennial stream, which flows into the wetland from a culvert extending under the administrative access road to the Stock Trail from the northeastern-most edge of the Fen. This wetland is consistently saturated, with visible water on the soil surface in multiple places. However, given the very small potential impact area to WOUS, which are described in this section, this impact topic was dismissed from further analysis.

YOSEMITE WILDERNESS

The project area does not include those trails and destinations along the Mist Trail Corridor past the Upper John Muir Trail-Mist Trail Junction that are located within designated Yosemite Wilderness (as defined by the Wilderness Act of 1964), including Little Yosemite Valley, the Half Dome Trail, Subdome Steps, and Half Dome Cable Route. The scope of the project would not include any physical improvements within Yosemite Wilderness or would the activities affect from the wilderness values or functions; therefore, this impact topic was dismissed from further analysis.

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APPENDIX E: PRELIMINARY CONCEPTUAL DESIGNS



Figure E-1. Proposed Alternative B Vehicle Bridge Improvements

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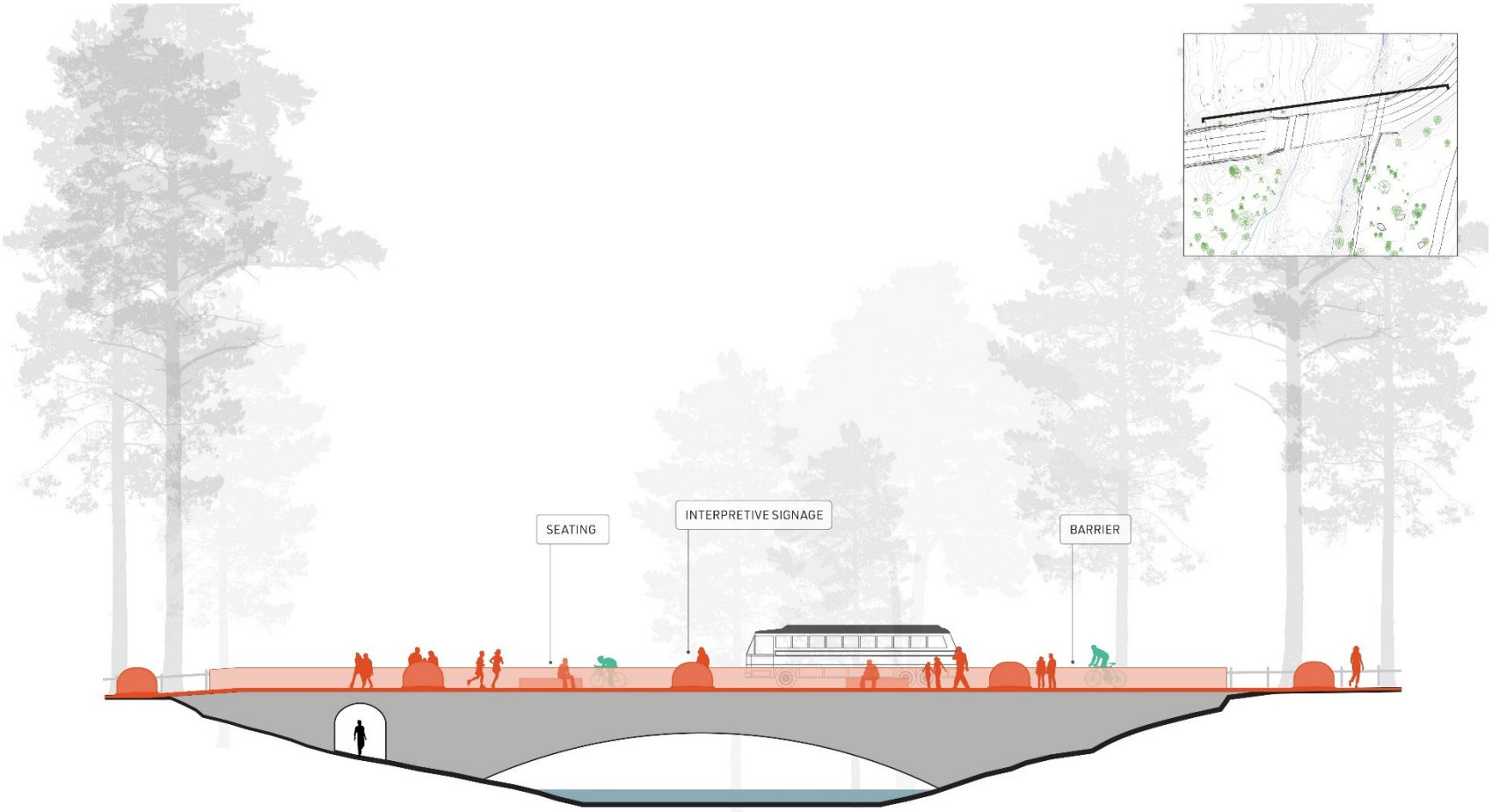


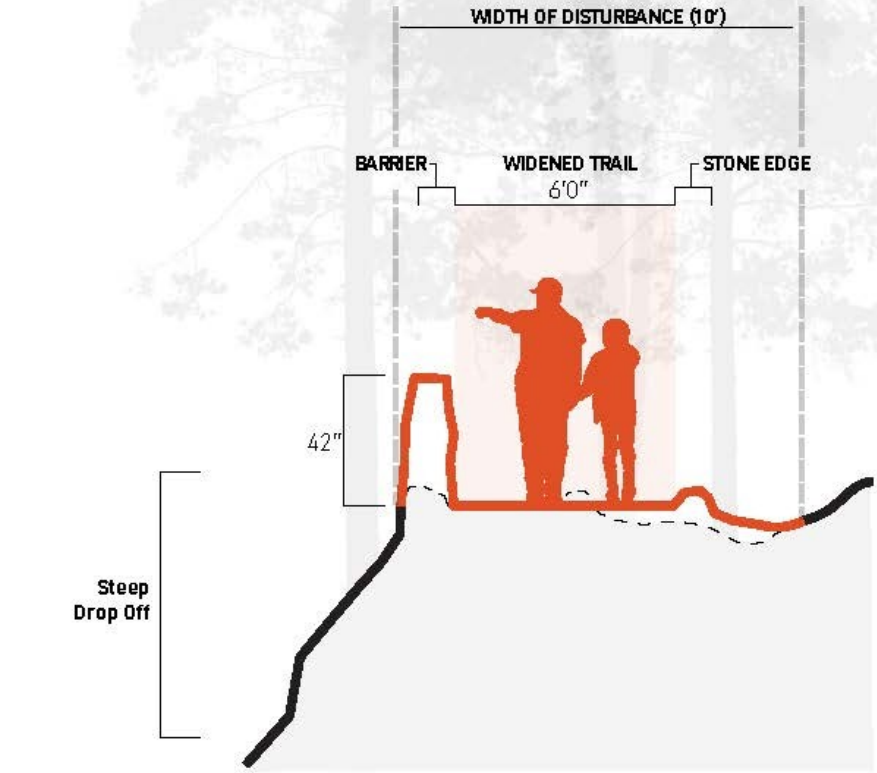
Figure E-2. Proposed Alternative B Adapted Vehicle Bridge Schematic

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Figure E-3. Proposed Alternative B Existing Trailhead Concept

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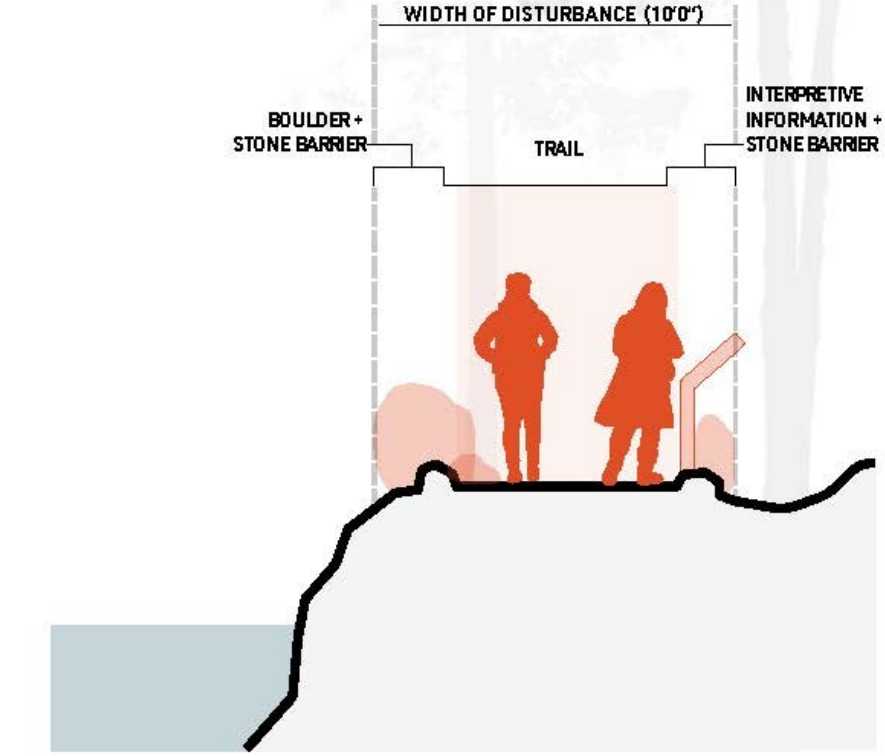
Widened Stock Trail with barrier

0' 5' 15'

1/4" = 1'

Figure E-4. Proposed Stock Trail Widening Concept

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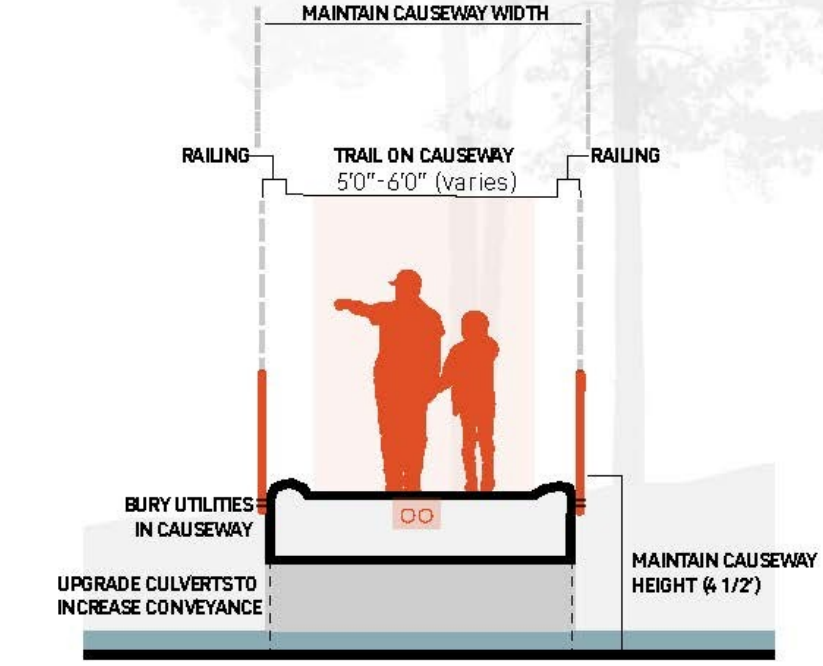
Trail Barriers Adjacent to Swift Water + Resource Protection

0' 5' 15'

1/4" = 1'

Figure E-5. Proposed Stock Trail Barriers and Signage Concept

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Illilouette Creek Causeway with Railing + Trenched Utilities

0' 5' 15'

1/4" = 1'

Figure E-6. Proposed Illilouette Creek Causeway Improvement Concept

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Figure E-7. Proposed Alternative C Happy Isles Footbridge

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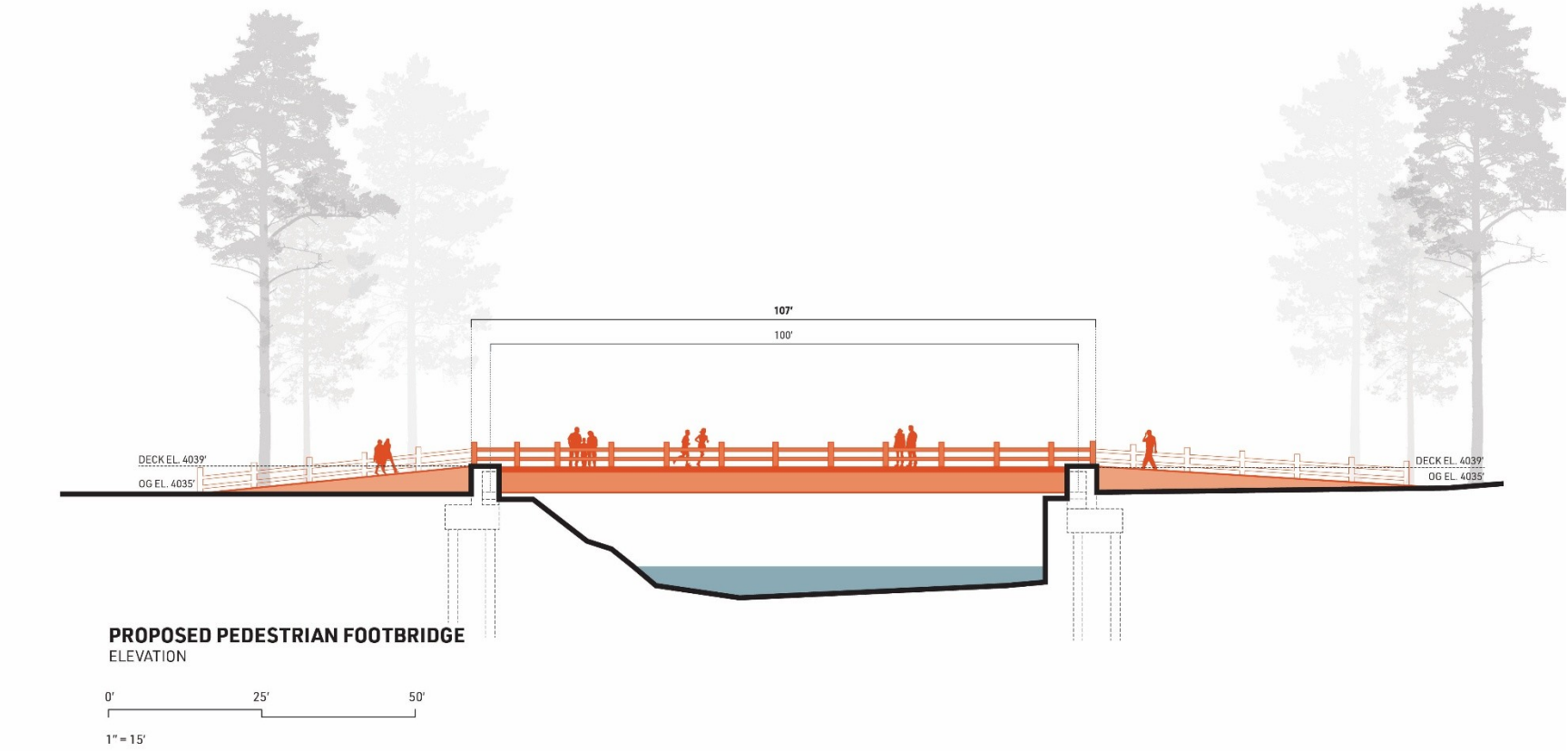


Figure E-8. Proposed Alternative C Happy Isles Footbridge Schematic

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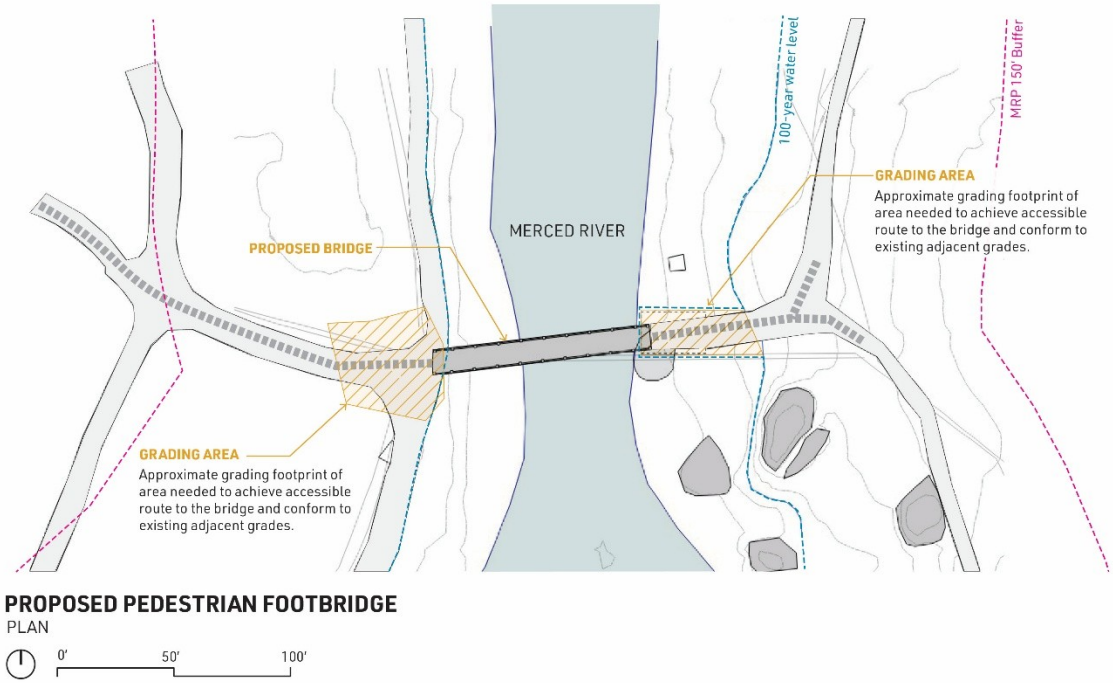


Figure E-9. Indicative Alternative C Happy Isles Footbridge Construction and Grading Areas

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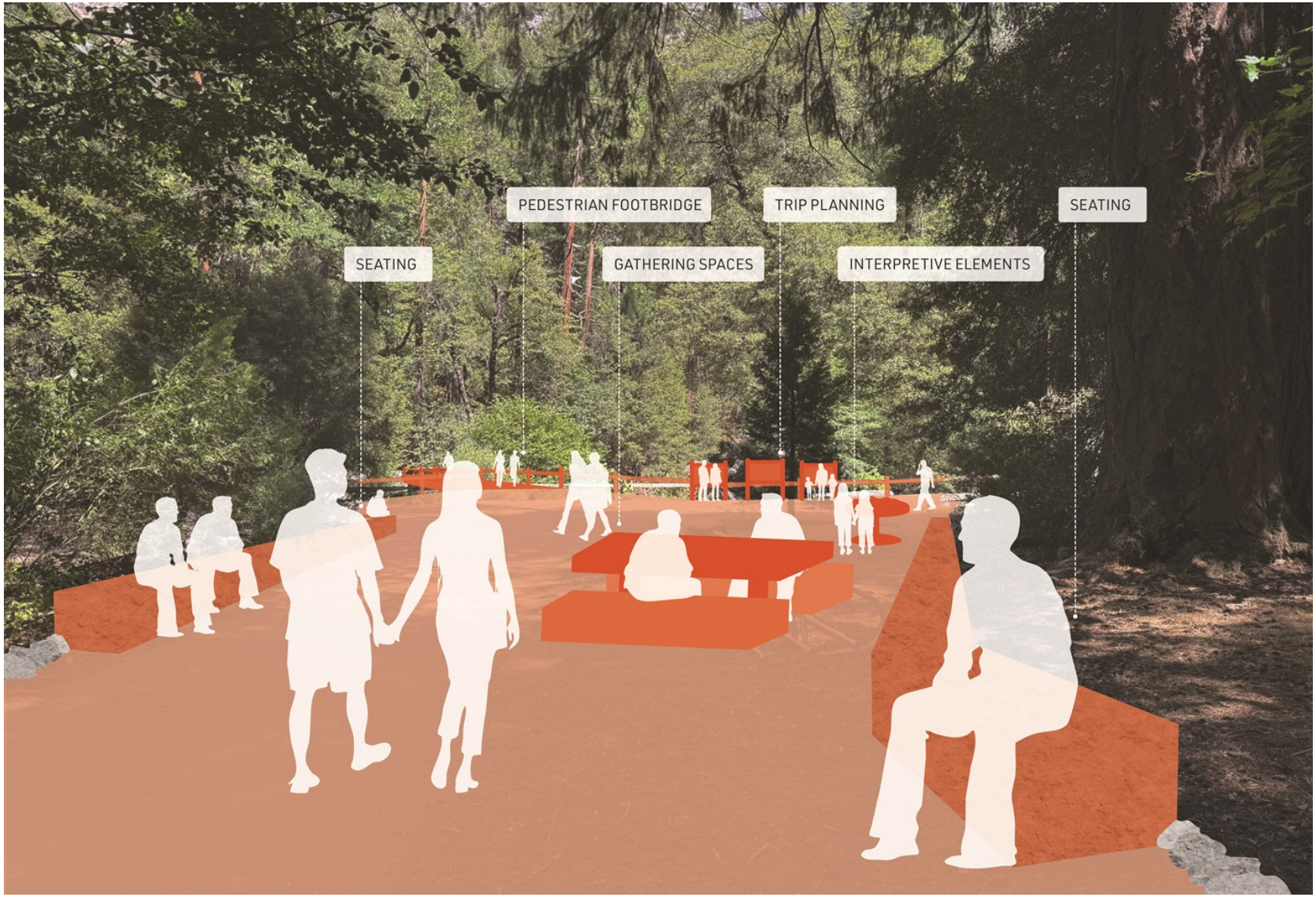


Figure E-10. Proposed Alternative C New Trailhead Concept

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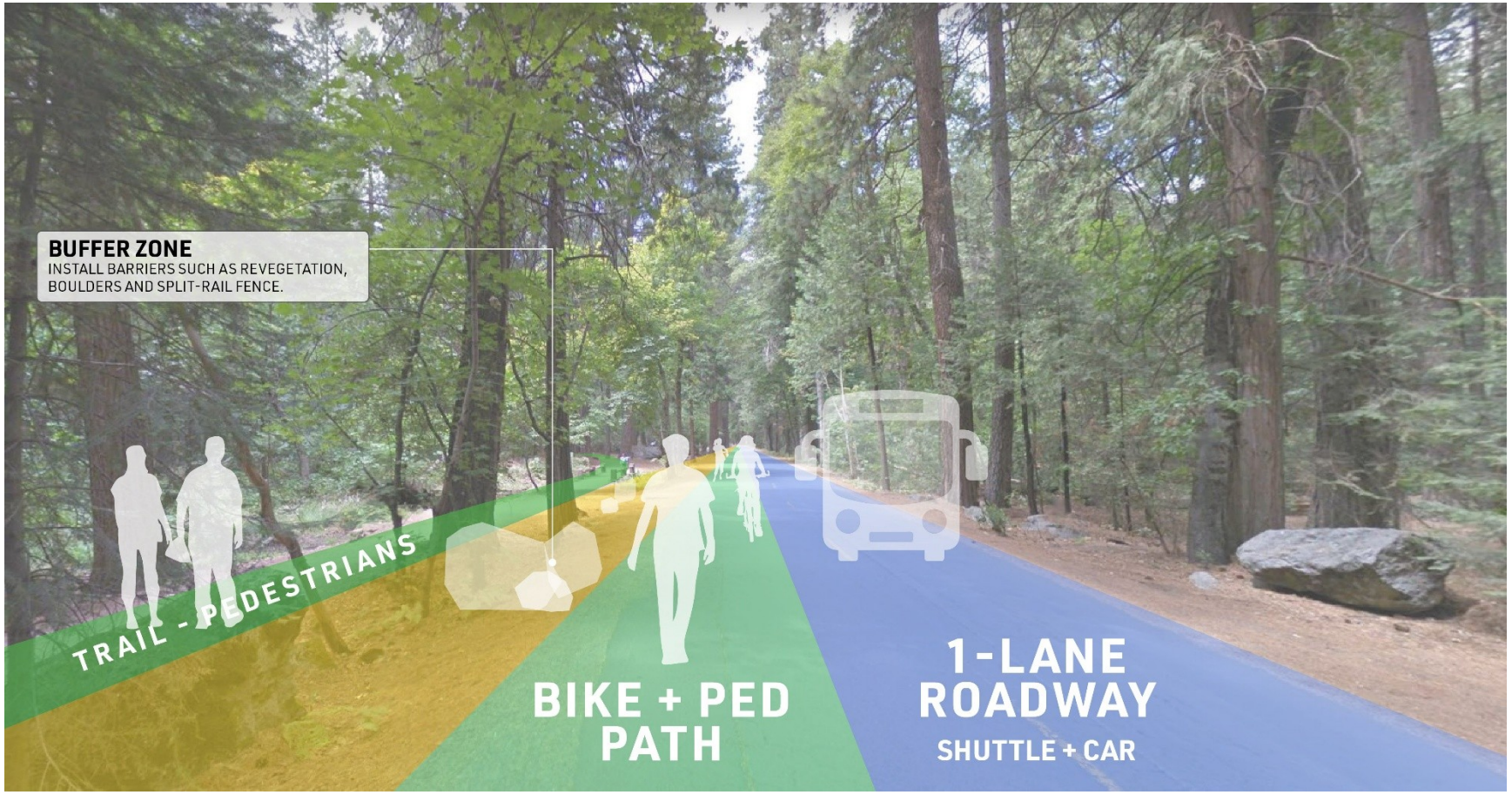


Figure E-11. Happy Isles Loop Road One-way Multi-modal Concept

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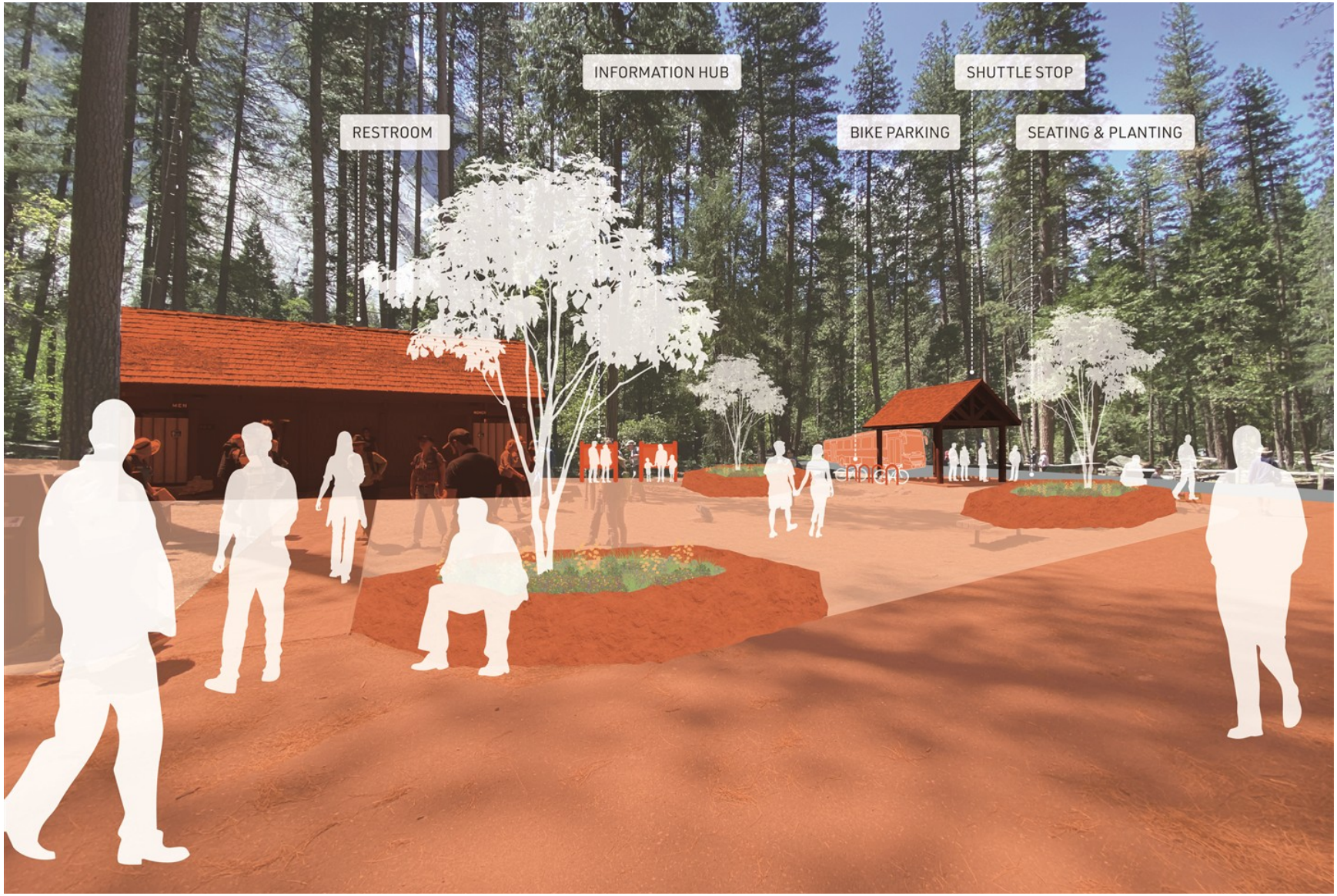


Figure E-12. Proposed Happy Isles Shuttle Stop Improvements (Alternatives B and C)

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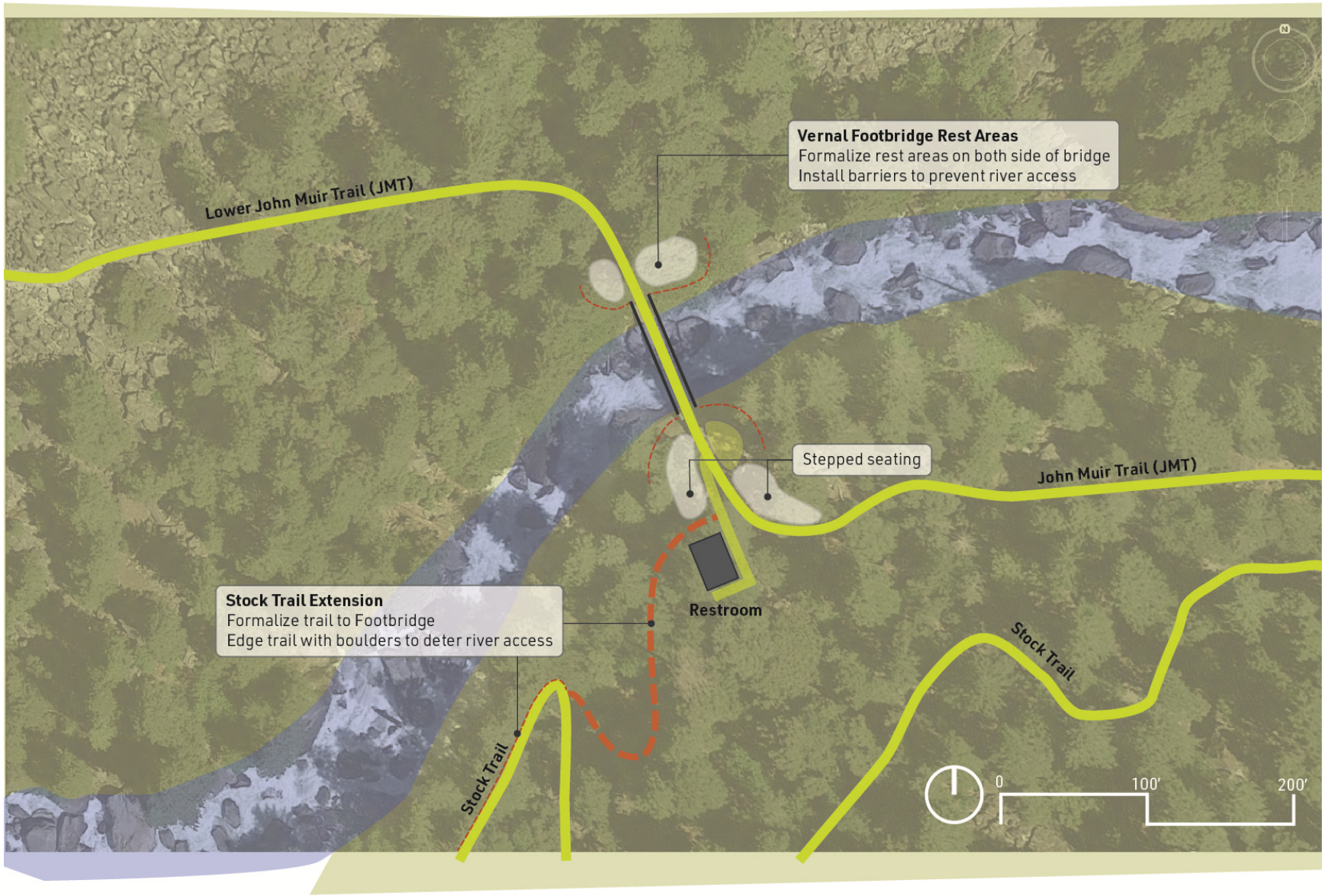


Figure E-13. Proposed Trail Pullouts/Seating Concept at Vernal Fall Footbridge

APPENDIX F: ALTERNATIVE ACTIONS CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

While developing each alternative, the National Park Service (NPS) planning team determined that certain alternative and design concepts or actions were not feasible and/or not responsive to the purpose and need for action. These actions were dismissed from further analysis in the Mist Trail Corridor Project Environmental Assessment (EA). Under each of the following actions, the rationale for dismissal is described.

SHUTTLE STOP ON EAST SIDE OF MERCED RIVER

During early project planning, the team evaluated the possibility of adding a shuttle stop east of the Happy Isles vehicle bridge to provide direct access for visitors beginning their journeys along the Mist Trail Corridor. This concept would eliminate visitors having to walk across the vehicle bridge, thereby minimizing pedestrian-vehicle conflicts along the vehicle bridge. After consulting with NPS staff experienced in shuttle operations, it was determined that the proximity to the existing Happy Isles Shuttle Stop would create operational challenges, particularly during peak visitation periods due to offloading and onboarding constraints. As a result, this concept was deemed outside of the scope of the current project and was not advanced for further consideration.

ALTERNATE FOOTBRIDGE DESIGNS

The concept-level footbridge design analyzed in the EA was selected after evaluating multiple options, including steel stringer, suspension, and inclined box bridges. These alternatives were dismissed due to their greater impacts on vegetation and increased visual intrusion on the Yosemite Valley Historic District and scenic Merced River. As the project advances, the NPS will continue to refine the footbridge design to further minimize environmental impacts, following the mitigation measures outlined Appendix G—*Mitigation Measures and Best Management Practices* of the Mist Trail Corridor Project EA.

IMPROVE HAPPY ISLES NATURE TRAILS

The Happy Isles nature trails, located south of the Art and Nature Center along the North and South Happy Isles, offer visitors an easy paved trail through riparian habitat, granite boulders, and dynamic river scenery. The trails are flat, well-maintained, and feature two small footbridges. During project planning, the NPS considered enhancements to include expanding the trail on the north isle to form a loop, installation of additional seating, and small-scale pavement improvements. The site analysis determined that a loop would diminish the visitor experience because the distance and vegetation between trail segments is not sufficient to shield visitors from seeing each other on opposite loop segments. Furthermore, expanding the trail along the banks of the north isle to create the loop would have an adverse impact on the existing riparian habitat. As such, the NPS project team determined these improvements did not meet the purpose and need of the project.

CONSTRUCT PARALLEL STOCK TRAIL SEGMENT

Under the development of the proposed Stock Trail Loop Adaptive Management approach, the NPS planning team analyzed an alternative management option involving constructing an approximately 600-foot-long trail segment running parallel to the existing Stock Trail to separate stock use from visitor use. The proposed parallel trail would be up to six feet wide with a compacted road base and up to one-foot-wide sidewalls on either side. Stock Trail construction would also require blasting through talus areas, which is important habitat for the Mount Lyell salamander (*Hydromantes platycephalus*). However, this concept was dismissed because of potential impacts to vegetation, wildlife, special status species, and archeological resources.

FORMALIZE LADY FRANKLIN ROCK VIEWING AREA

The planning team evaluated the construction of a small viewing area near Lady Franklin Rock off of the Mist Trail to provide improved views of Vernal Fall, as well as to discourage visitors from leaving the established trail. This concept involved formalizing an existing social trail to the base of Vernal Fall, which could concentrate visitor use and potentially enhance safety in this high search and rescue incident area. However, this concept was dismissed because of potential impacts to Yosemite Wilderness. Furthermore, the NPS determined that selective tree thinning could achieve similar objectives without introducing a new trail closer to the Merced River, potentially encouraging unsafe visitor access to swift water.

HALF DOME CABLES ROUTE

During early project planning, the NPS evaluated potential actions related to improving visitor safety along the Half Dome Cables Route (the cables are Yosemite National Park-managed infrastructure), including several structural and non-structural design concepts. However, ultimately it was determined by the NPS that the scope of the Mist Trail Corridor Project would not include proposed actions within Yosemite Wilderness, as changes to infrastructure in designated Wilderness are best addressed through the Wilderness Stewardship Plan, which provides the appropriate and comprehensive framework for considering such modifications.

APPENDIX G: MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

The National Park Service (NPS) places a strong emphasis on avoiding, minimizing, and mitigating potential adverse impacts to resources under the jurisdiction of the NPS or because of an NPS decision. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following mitigation measures, protection measures, and best management practices (BMPs) would allow the NPS to meet its conservation mandates as required by the Organic Act [16 United States Code 1 et seq.] and as further detailed in 2006 NPS Management Policies, the Clean Water Act, the Endangered Species Act, the National Historic Preservation Act, and the Wild and Scenic River Act. The NPS would also implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are properly implemented and are achieving their intended results.

BIOLOGICAL RESOURCES

General Protection Measures for Biological Resources

- Worker Environmental Training: Yosemite National Park (or "park") staff would inform construction personnel of the occurrence and status of special status species within the project area, the potential impacts construction activities could have on the species, and the potential penalties for taking or harming a special status species.
- Pre-Construction Surveys: Qualified biologists would conduct studies to determine if rare, threatened, or endangered state or federally listed plant or wildlife species are present before the Project is implemented to avoid disturbance and ensure appropriate locations and design of facilities.
- Vehicle-Wildlife Collision Avoidance: Contractors are required to report any wildlife collisions they witness or are responsible for to park staff immediately. Construction vehicle speeds would not exceed construction zone posted speed limits to decrease wildlife/vehicular incidents. Speed limits outside the construction zone would default to the posted speed limit.
- Work Hours: All project work would begin at least 30 minutes after dawn and end at least 30 minutes before dusk unless special permission is given by the NPS biologist. If night work is approved, all lighting would follow NPS lighting guidelines. This would reduce the likelihood of roadkill and reduce disturbance of fishers that are moving through their habitat.

Minimize Impacts on Special Status Plants

The following protection measures shall be implemented to avoid and minimize impacts to special status plants:

- The project shall be redesigned or modified to avoid direct and indirect impacts on special status plants, if feasible.
- Special status plants within 10 feet of the project area shall be protected by installing environmentally sensitive area flagging around special status plant populations. The location of the flagging shall be shown on the construction drawings, and the construction specifications shall contain clear language that prohibits construction-related activities and other surface-disturbing activities within the flagged environmentally sensitive area.
- If avoidance of special status plants is not feasible, the park botanist shall propose mitigation to reduce impacts on the local population of the special status plant species. If individuals of a special status plant species occur within an area proposed for construction and take cannot be avoided, the plants shall be transplanted under the direction of the park botanist if transplantation of such species is deemed likely to succeed or seed shall be collected prior to destruction of the plants and dispersed in suitable habitats not impacted by construction, if such habitats exist and seed collection is deemed likely to be successful.
- The special status plant transplantation plan shall involve identifying a suitable transplant site; moving the plant material and seed bank to the transplant site; collecting seed material and propagating it in a nursery; and monitoring the transplant sites to document recruitment and survival rates.

Minimize Impacts on Sensitive Natural Communities

The following protection measures shall be implemented to avoid and minimize impacts to sensitive natural communities:

- The potential for long-term loss of riparian vegetation shall be minimized by trimming vegetation rather than removing the entire shrub. Shrub vegetation shall be cut at least one foot above ground level to leave the root systems intact and allow for more rapid regeneration of the species. Cutting shall be limited to a minimum area necessary within the construction zone.

Minimize the Spread of Invasive Species and Noxious Weeds

The NPS has a park-specific invasive plant management program with a comprehensive framework, which includes common techniques outlined for invasive plant control that would be implemented during construction activities. Elements of the plan include prevention, inventory/early detection, prioritization, treatment, monitoring, and education and outreach. The NPS would implement the following protection measures to minimize the spread of invasive species and noxious weeds:

- All earth moving equipment must enter the park free of dirt, dust, mud, seeds, or other potential contaminant. Examples of equipment that require inspection are excavators,

skid steers, or boring equipment. Passenger vehicles do not need inspection but should be clean prior to entering the park. Equipment exhibiting any dirt or other material attached to frame, tires, wheels, or other parts shall be thoroughly cleaned by the contractor before entering the park. Areas inspected shall include, but not be limited to, tracks, track guard/housings, belly pans/under covers, buckets, rippers, and other attachments. Equipment that does not pass inspection would be turned around to the nearest cleaning facility outside the park.

- The contractor shall notify the construction manager and NPS vegetation staff must be contacted at least two workdays (not including weekends) prior to bringing any equipment into the park to arrange for equipment inspections.
- Equipment found to have entered the park with potential contaminants would be removed from the park at the direction of the Contracting Officer at contractor's sole expense. All staff working on site shall be informed of and follow BMPs to prevent the introduction and spread of non-native, invasive species as described in Division 1 Specifications, Section 01 35 13.
- The source of imported project materials, such as fill, gravel, aggregate, or erosion control materials must be approved by the NPS staff. If use of in-park material is possible, coordination must occur with the NPS staff on source locations.
- If off-site soil sources are used (including those from other locations in the park), contractors must coordinate with Invasive Plant Manager at the park. Sources could require the NPS vegetation staff to conduct site visits to inspect for invasive species prior to movement in the park.
- Any known invasive plants shall be surveyed for and treated prior to, during, and post construction.
- Surveys for, and control of, invasive non-native vegetation shall be conducted once prior to project activities through at least one year after project activities, or through duration of project funding.

Minimize Impacts on Wildlife, Including Special Status and Protected Wildlife Species

The following protection measures shall be implemented to avoid and minimize impacts on special status and protected wildlife species:

Black Bear

- All food, toiletries, and scented items (i.e., bug spray) shall be placed in bear boxes at the construction site provided by the workers. Bear boxes must remain closed and latched at all times, unless items are being retrieved. No food, toiletries, or scented items shall be stored in vehicles or left out.
- All vehicles shall be checked daily to ensure that no items that could attract bears remain inside an unattended vehicle. Items that would not be left in vehicles include

canned food, drinks, soap, cosmetics, toiletries, domestic trash, recyclable food containers, ice chests, grocery bags, and unwashed items used for preparing or eating meals.

- All windows and doors in recreational vehicles or trailers used for lodging or office space would be closed and latched when not occupied.
- Workers shall walk the job site at the end of each day and check for trash, food, and food-related items remaining at the site and dispose of the items in a bear-proof receptacle.
- Workers shall call the Save-a-Bear hotline (209) 372-0322 to report overflowing trash containers, improperly stored food, or bear sightings.

Mount Lyell Salamander

- A pre-construction survey shall be conducted by a qualified biologist within one week prior to any project activities being conducted within suitable habitat. If Mount Lyell salamanders are observed within the project area, a park biologist would work with the contractor to develop the appropriate measures to avoid impacts to the species during construction.

Fisher

- To the extent feasible, maintain all high-quality trees (i.e., trees with broken tops, cavities, large branches, or other deformities that occur in high quality habitat, especially live hardwoods >20 inches in diameter at breast height (dbh), live conifers >30 inches in dbh, dead hardwoods >27 inches in dbh, and dead conifers >35 inches in dbh).To the extent feasible, maintain all potential natal and maternal den trees and resting sites.
- To the extent feasible, avoid habitat modifications or disturbance-causing activities within potential or high-quality denning habitat during the denning season.
- Food and anthropogenic garbage would be stored in park-approved containers so fishers could not obtain it.
- Ensure construction fencing allows for the safe passage of fishers and does not cause entrapment.
- As part of the proposed Worker Environmental Training, teach work crews how to identify a fisher and den trees before work begins. Instruct them to contact the park wildlife biologist immediately if a fisher is seen in or near the project site. If a fisher is spotted within a construction site, work will cease until the animal moves on without harassment. If a fisher is spotted in a potential den tree, work will cease, and the park wildlife biologist will be contacted. The wildlife biologist will contact the Service for further guidance.
- Where possible, leave down wood in open areas to create habitat structure. At a minimum, try to leave the thickest part of the trunk on site for ground cover.

- Avoid tree-cutting or vegetation management that involves habitat modification or disturbance and outdoor maintenance or construction of developments and infrastructure within potential or high-quality denning habitat from March 1 to May 31 or within den clusters from March 1 to June 30. This limited operation period (LOP) within den clusters can be lifted on June 1 if pre-project surveys document absence of fisher (Tucker et al. 2020). This LOP within den clusters could otherwise be waived or modified if the park biologist determines that the project is unlikely to result in breeding disturbance due to the intensity, duration, timing, and specific location of the activity (e.g., activities that will affect only ten acres of denning habitat along a high traffic road for a period of three days after May 1 and will not remove any large trees).
- Avoid expansion of footprints of existing development in suitable fisher habitat. Do not install new developments in high quality fisher habitat.
- All project staff will follow posted speed limits but will reduce their speed by an additional five mph during dawn and dusk.
- All project work will begin at least 30 minutes after dawn and end at least 30 minutes before dusk unless special permission is given by the park biologist. In the case night work is approved, all lighting will follow NPS lighting guidelines. This will reduce the likelihood of roadkill of fishers and reduce disturbance of fishers that are moving through their habitat.
- As feasible, rapidly remove road-killed wildlife from roads in suitable habitat so fishers are not killed while feeding.

Avoid creating noise of a higher decibel or distinctly different frequency than ambient noise (due to project activities or increased human presence) within potential denning or high-quality denning habitat from March 1 to June 30. This LOP can be lifted on June 1 if pre-project surveys document absence of fisher. This LOP could otherwise be waived or modified if the park biologist determines that the project is unlikely to result in breeding disturbance due to the intensity, duration, timing, and specific location of the activity (e.g., activities that will affect only ten acres of denning habitat along a high traffic road for a period of three days after May 1 and will not remove any large trees).:

California Spotted Owl

Designate activity centers and protected activity centers using the following guidelines:

- NPS biologists will survey areas that could elicit a response from a resident owl or pair of owls (e.g., nesting/roosting or foraging habitat) in advance of any management activities that would affect owls following United States Fish and Wildlife Service (USFWS)-approved survey methods.
- If surveys are not conducted or do not follow USFWS-approved methods, assume owls could be present in the project area (which is known to contain suitable nesting/roosting and foraging habitat).

- The biologist will designate owl activity centers and protected activity centers, where appropriate, based on survey results.

Project individual owls and active nesting through implementation of a limited operating period (LOP):

- Implement an LOP within 0.25 miles of an active nest or roost site (if known) or within a nest territory (if active nest/roost site is not known), or within 0.25 mile of nesting/roosting habitat (if surveys were not conducted in habitat). For activities that only generate noise or involve limited tree removal (e.g. hand thinning of small diameter trees <11 inches dbh) implement an LOP from March 1 through July 9.
- Limited operating periods could be discontinued in a given year if protocol-level surveys for determining reproductive status confirm owls are not nesting or fledglings have dispersed out of nest stand in that calendar year.
- Outside of the nest stand (or greater than 372 feet from either an active nest, or from unsurveyed nesting/roosting habitat of sufficient patch size to support nesting), transient, short-duration activities that take place over the course of one day or less do not require implementation of an limited operating period (e.g., bucking a few fallen logs from a trail, repairing potholes or clearing debris along a road). The NPS could coordinate with the USFWS to ensure proposed activities fit within this exception to the limited operating period.
- Outside the nest stand, or within the project area (i.e., unsurveyed suitable nesting/roosting habitat), short-duration activities with a small footprint lasting less than two hours (total) in duration do not need to follow the limited operating period (for example, clearing several downed trees in one location or within a 0.25 mile stretch of trail with a chainsaw, repairing potholes or clearing patches of debris along a side road). Nonmotorized equipment could be used if activities occur in less than one day. The NPS could coordinate with the USFWS to ensure proposed activities fit within this exception to the limiting operating period.
- Activities that are within high use developed areas (e.g., park “villages,” high-visitation parking lots) or immediately adjacent roadways (i.e., roads within 300 feet of high use developed areas) do not need to implement the limited operating period. The NPS could coordinate with the USFWS to ensure proposed activities fit within this exception to the limited operating period.
- Do not remove suitable owl habitat nor reduce habitat function in territories.
- Do not use rodenticides in suitable owl habitat (i.e., unsurveyed suitable nesting/roosting habitat).
- Limit the removal of large trees, snags, or logs to only those that are necessary to achieve project goals.

Nesting Migratory Birds

- If project work involved vegetation modification and occurred during the breeding season (May 1–July 31), park staff would reach out to terrestrial wildlife staff to arrange a survey for nesting migratory birds before removing or trimming to fulfill requirements of the Migratory Bird Treaty Act of 1918. Once surveyed, park staff would have one week to perform project work; if work were not completed within one week, trees must be resurveyed. If an active nest is discovered, project work could not occur within a 100-foot radius buffer of the nest until nestlings fledge.

CULTURAL RESOURCES

- **Subsurface Archeological Investigation**. In proposed areas of ground disturbance – Archeological resources are documented within the area of potential effects (APE). Past archeological surveys utilized pedestrian surface survey to identify archeological sites (Bennyhoff 1952-1956; Napton and Greathouse 1975). Yosemite cultural resources staff very recently encountered a pre-contact Native American component that was not previously detected or recorded (at CA-MRP-1196H, the El Capitan historic dump). This site was likely missed due to both vegetation and the thick cover of leaf litter on the ground surface, which obscure the visibility of artifacts. It requires subsurface archeological excavation to locate sites below the ground surface. Thus, while previous archeological investigations did identify some sites within the Mist Trail/ Half Dome Trail corridor, there is definitely the potential to find sites that were previously overlooked. Phase IB archeological investigations are required to be undertaken in any areas of proposed ground disturbance. For Alternative B, this includes proposed changes to the trailhead on the southeast side of Happy Isles Bridge. For Alternative C this includes proposed changes for a visitor reception area on the southwest side of the bridge, and approaches to the proposed footbridge on both sides of the Merced River. If archeological/cultural resources are encountered as a result, then the Section 106 assessment process is required to continue.
- **Cultural Resource Education.** All workers will receive cultural resource education information either in-person with a subject specialist, or with an informational brochure or video. This includes the criminal penalties (Archeological Resources and Protection Act) for illegally collecting artifacts or intentionally damaging any cultural/natural resources. Information also includes types of archeological materials that are likely present in the specific project area, how to identify archeological materials, and the procedures in the event that archeological materials are encountered during restoration/construction activities. New workers will receive or schedule resource education training within two weeks of onboarding.
- **Black Oaks.** Unplanned trimming and/or removal of black oak trees requires coordination with park Vegetation staff and park Tribal liaison.

- **Development Guidelines.** Follow park lighting and design guidelines (e.g., downshielding light). Follow *A Sense of Place: Design Guidelines for Yosemite National Park* (NPS 2012).
- **Use Of Fill.** When fill will be used, coordination is required between the project manager and the Branch of Anthropology to ensure the fill source is approved. Approval requires that the original location of fill is known, whether or not that location was within an archeological site, and if the fill contains cultural materials (e.g., artifacts, midden soils). The project manager must consult with Yosemite Branch of Anthropology staff prior to the selection and placement of artificial fill. If out of context cultural materials are within proposed fill sources, the project manager should coordinate with the Branch of Anthropology to consider burying that fill under a layer of natural soil and sod to reduce the likelihood of artifacts being exposed on the surface. The final location of the deposited fill must be tracked spatially and incorporated into any associated archeological site records and reporting.
- **Staging.** Ensure construction staging does not occur in or on archeological sites through consultation with Yosemite National Park Branch of Anthropology program managers.

VISITOR USE, EXPERIENCE, AND SAFETY

- Implement actions to reduce adverse impacts of construction and/or installation on visitor experience. Measures could include, but are not limited to, seasonality of improvements, noise abatement, visual screening, and signs so that visitors can avoid construction activities.
- Pedestrian, bicycle, and authorized electric mobility device access would be maintained during construction via the use of temporary detours or alternative routes around closed roadway or trail sections. Advanced notice of closures would be provided on the park website and detours would be clearly marked.
- During construction and/or installation activities, trails and roadways would be closed to users with signage and fences. After construction, NPS would follow established maintenance practices such as removal of debris and snow, and repairs to potholes and cracks to ensure trail safety for park visitors.
- Collaborate with partners that operate within and outside of the park to proactively communicate with visitors through appropriate and strategic signage.
- Install signage with “pack-in/pack-out” messaging to increase visitor education and awareness regarding the environmental impact of trash.

WATER RESOURCES

To limit the potential for adverse impacts and protect floodplain and surface water resources, the following protection measures are recommended:

- During construction, implement erosion control methods to delineate work area boundaries and reduced potential sedimentation in waterways adjacent to construction activities.
- During construction, measures would be employed to prevent or control spills of fuels, lubricants, or other contaminants from entering waterways or wetlands.
- If required, a stormwater pollution prevention plan, or equivalent best management practices, would be prepared by the contractor during the construction contract and would meet all statutory NPS standards. All National Pollutant Discharge Elimination System requirements would also be met.
- Avoid construction within 150 feet of the Merced River corridor, where feasible.

The following protection measures shall be implemented to avoid and minimize impacts to wetlands:

- The project shall avoid soil disturbing activities within the Happy Isles Fen to ensure that natural hydrologic conditions are maintained.
- Wetlands within 10 feet of the project area shall be protected by installed environmentally sensitive area flagging and showing the location of the wetlands on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities and other surface-disturbing activities within the flagged environmentally sensitive area.
- Heavy equipment use in wetlands must be avoided, if possible. Heavy equipment used in wetlands must be placed on mats, or other measures must be taken to minimize soil and plant root disturbance and to preconstruction elevations.
- The route of construction roads shall be selected so that heavy cut and fill, sharp curves, steep grades, ledges, wet areas and unnecessary stream crossings are avoided. Where practical, existing roads shall be utilized and/or upgraded as necessary to provide access to project locations.

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APPENDIX H: REASONABLY FORESEEABLE FUTURE IMPACTS ANALYSIS

In support of the Mist Trail Corridor Project Environmental Assessment (EA), the National Park Service (NPS) identified and considered present and reasonably foreseeable projects and planning actions with a relationship to the project area alongside the project alternatives (the no-action alternative [Alternative A] and action alternatives B and C, as described in the EA). "Reasonably foreseeable" actions include activities that are sufficiently likely to occur (for example, based on existing decisions, funding, or proposals), and exclude actions that are highly speculative or indefinite. The actions listed in Table H-1 are considered in the reasonably foreseeable impacts analysis for each retained resource topic.

Table H-1. Actions Considered for Reasonably Foreseeable Impacts Analysis

Project/Action	Project/Action Description	Status
Merced Wild and Scenic River Comprehensive Management Plan (MRP)	The MRP/Environmental Impact Statement is a legally binding National Park Service (NPS) framework for protecting the Merced River's free-flowing condition, water quality, and outstandingly remarkable values while managing visitor use, development, and restoration activities within the river corridor in Yosemite National Park, as required by the Wild and Scenic Rivers Act (WSRA). The plan also makes required revisions to the park's 1980 General Management Plan, ensuring that all development and use within the Merced River corridor is consistent with WSRA mandates.	Record of Decision signed in 2014; phased river restoration projects are ongoing.
Parkwide Trail Routine Maintenance and Repairs Recurring Categorical Exclusion (CE)	This recurring action CE allows Yosemite National Park to conduct routine and recurring trail maintenance and minor repairs across Yosemite National Park under a single National Environmental Policy Act approval, provided activities remain within defined limits and comply with cultural, wilderness, and river protection requirements.	Trail maintenance and repairs ongoing.
Curry Former Waste Disposal Area Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Response Project	The Curry Former Waste Disposal Area CERCLA Response Project is a federal cleanup action to remediate a former municipal waste disposal site east of Curry Village in Yosemite Valley, stabilizing and containing buried waste so the area can be safely managed and used as a wilderness trailhead parking facility consistent with the MRP. Consistent with the objectives for this project, the NPS has plans to rehabilitate the parking area (pavement repairs and restriping the lot), which is scheduled for construction in 2026.	Letter of Compliance Completion issued May 2022; rehabilitation of parking area scheduled for 2026-2027.

Project/Action	Project/Action Description	Status
Stock Trail Utility Line Project	The NPS has a project programmed for 2030 to bury existing exposed utilities underground along portions of the Stock Trail in Yosemite National Park. The project would relocate utilities beneath or immediately adjacent to the trail corridor, with final alignment and construction methods refined to minimize impacts to cultural resources, vegetation, wildlife, and hydrology.	Project programmed for 2030.
Happy Isles Loop Road Improvements	This project encompasses storm damage repairs in Yosemite National Park caused by the severe weather events during the winters of 2022-2023. The scope of work includes extensive repairs to damaged sections of roads and parking areas, cleaning and repairing or replacing culverts and headwalls, pavement patching, overlays and full depth reclamations, removing debris flows from roadways and ditches, stabilizing embankments, and regrading road shoulders. The damage is located on both the primary and secondary park roads, including the Wawona Road, Chilnualna Falls Road, Mariposa Grove Road, Southside Drive, Northside Drive Extension, Curry Drive, Happy Isles Loop Road, Big Oak Flat Road, Yosemite Creek Campground Road and May Lake Road.	Compliance is in process; Construction anticipated to commence in 2027.

VISITOR USE AND EXPERIENCE – INCLUDING VISITOR SAFETY

Present and reasonably foreseeable actions with a relationship to visitor use and experience (including safety) within the project area include those identified in Table H-1. Under current conditions, visitor circulation, wayfinding, and safety within Happy Isles and the Mist Trail Corridor are influenced by high visitation levels, existing infrastructure and circulation patterns, routine operations, ongoing maintenance, and implementation of other planned actions identified in Table H-1. In the absence of the project (the no-action alternative), these conditions and trends would be expected to continue. While actions identified in Table H-1, such as visitor use management planning and ongoing maintenance, could incrementally influence visitor experience over time, they would not substantially alter existing circulation constraints or address known wayfinding and safety challenges. When considered together, the no-action condition would contribute little to no beneficial incremental impact and could contribute a slight adverse incremental impact to overall reasonably foreseeable impacts on visitor use and experience by leaving existing visitor flow inefficiencies and safety issues unaddressed.

In contrast, the project would introduce a coordinated suite of visitor-oriented improvements within Happy Isles and the Mist Trail Corridor. When considered in combination with other ongoing and planned actions identified in Table H-1, these project elements would contribute short-term adverse incremental impacts to visitor use and experience during construction and installation due to temporary disruptions and changes in access. Over the long term, however, alternatives B and C would contribute beneficial incremental impacts by improving visitor

orientation, circulation, and safety in a high-use setting, resulting in an overall improvement to visitor experience relative to the no-action condition.

BIOLOGICAL RESOURCES – INCLUDING VEGETATION, WILDLIFE, AND SPECIAL STATUS SPECIES

Present and reasonably foreseeable actions with a relationship to biological resources within the project area include those foreseeable projects involving construction identified in Table H-1 such as the Stock Trail utility line undergrounding and the Curry Former Waste Disposal Area (Valley Trailhead Parking Lot; also known locally as Wilderness Lot) rehabilitation. Under current conditions, biological resources within Happy Isles and the Mist Trail Corridor are influenced by existing visitor use, routine operations at Yosemite National Park (or "park"), ongoing maintenance activities, and implementation of other planned actions identified in Table H-1. In the absence of the project (the no-action alternative), these activities and trends would be expected to continue, with other actions in Table H-1 occurring incrementally over time. While those actions could continue to influence localized conditions, they would not introduce new ground-disturbing activities beyond what is already anticipated under existing management frameworks. When considered together, the no-action condition would result in minimal incremental impacts to biological resources beyond those already occurring or reasonably foreseeable without the project.

In contrast, under alternatives B and C, the project would introduce construction and ground-disturbing activities to the immediate project footprints within Happy Isles and the Mist Trail Corridor. When considered in combination with ongoing maintenance and other reasonably foreseeable actions identified in Table H-1, these project elements would contribute short-term adverse incremental impacts to biological resources during construction. Over the long term, the project's incremental contribution to impacts on biological resources would be minimized and managed through avoidance, minimization, and resource protection measures, as described in Appendix G—*Mitigation Measures and Best Management Practices* of the Mist Trail Corridor Project EA.

WATER RESOURCES

Present and reasonably foreseeable actions with a relationship to water resources within the project area include project associated with the Merced Wild and Scenic River Comprehensive Management Plan (NPS 2014) identified in Table H-1. Under current conditions, water resources within Happy Isles and the Mist Trail Corridor are influenced by existing visitor use, routine park operations, ongoing maintenance activities, and implementation of other planned actions identified in Table H-1. In the absence of the project (the no action alternative), these activities and trends would be expected to continue, with other actions in Table H-1 occurring incrementally over time. While those actions could continue to shape localized conditions within the broader corridor, they would not introduce new construction related disturbance beyond what is already anticipated under existing management frameworks. When considered together, the no action condition would result in minimal incremental impacts to water resources beyond those already occurring or reasonably foreseeable without the project.

In contrast, under alternatives B and C, the project would introduce construction and installation-related disturbance to the immediate project footprint, including to visitor facilities in existing developed areas, Stock Trail improvements under Alternative B, and construction of a new footbridge under Alternative C. When considered in combination with other ongoing and reasonably foreseeable actions identified in Table H-1, these project elements would contribute short term adverse incremental impacts to water resources related to surface water proximity and floodplain adjacency during construction. Over the long term, incremental impacts would be minimized and managed through project design constraints, implementation of mitigation measures and best management practices (BMPs) identified in Appendix G of the Mist Trail Corridor Project EA, and compliance with applicable permitting and coordination requirements.

CULTURAL LANDSCAPES

Present and reasonably foreseeable actions with a relationship to cultural landscapes within the project area include the actions described in Table H-1. Under the no-action alternative, the project would not introduce new construction elements beyond ongoing maintenance and routine operations; therefore, when combined with the actions in Table H-1, the no-action alternative would contribute minimal incremental effects to reasonably foreseeable impacts on cultural landscapes.

Under alternatives B and C, the project has the potential to affect characteristics and character-defining features of the Half Dome Trail Corridor Cultural Landscape and Yosemite Valley Archeological District that make them eligible for the National Register of Historic Places. These potential and reasonably foreseeable effects/ impacts can likely be avoided or minimized by park cultural staff review during project design, Tribal consultation, following Yosemite Design Guidelines (NPS 2012), *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b), and mitigation measures and BMPs identified in Appendix G of the Mist Trail Corridor Project EA.

HISTORIC PROPERTIES – INCLUDING HISTORIC STRUCTURES AND ARCHEOLOGICAL AND ETHNOGRAPHIC RESOURCES

Present and reasonably foreseeable actions with a relationship to historic properties within the project area include the actions described in Table H-1. Under the no-action alternative, the project would not introduce new construction elements beyond ongoing maintenance and routine operations; therefore, the no-action alternative would contribute minimal incremental effects to reasonably foreseeable impacts to historic properties when combined with the other actions identified in Table H-1.

Under alternatives B and C, the project has the potential to effect/impact archeological sites and other historic properties. These potential and reasonably foreseeable effects/ impacts can likely be avoided or minimized by park cultural staff review during project design, Tribal consultation, following Yosemite Design Guidelines (2012), *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2017b), and mitigation measures and BMPs identified in Appendix G of the Mist Trail Corridor Project EA.

VISUAL RESOURCES

Present and reasonably foreseeable actions with a relationship to visual resources within the project area include those identified in Table H-1. Under current conditions, visual resources at Happy Isles and within the Mist Trail Corridor are shaped by existing visitor infrastructure, ongoing maintenance activities, high levels of visitor use and natural scenery. In the absence of the project (the no-action alternative), these visual conditions and trends would be expected to continue, with implementation of the other planned actions identified in Table H-1 occurring incrementally in the foreseeable future. While those actions may introduce minor localized changes to the visual setting within the immediate project footprint, they would not substantially alter the overall visual character of the project area beyond what is already anticipated under existing management frameworks. When considered together, the no-action condition would result in minimal incremental impacts to visual resources.

In contrast, under alternatives B and C, the project would introduce additional visitor-facing infrastructure improvements and selective vegetation removal within the project area, and, under Alternative C, construction of a footbridge. When considered in combination with other ongoing and reasonably foreseeable actions identified in Table H-1, these project elements would contribute short-term adverse incremental impacts to visual resources during construction due to the presence of construction activities, equipment, and temporary disturbance. Over the long term, Alternative C would contribute additional incremental visual impacts associated with the presence of a substantial new visitor-facing structure and modified circulation features, layered onto the effects of other reasonably foreseeable actions within the project area.

PARK OPERATIONS

Present and reasonably foreseeable actions affecting park operations within the project area include those identified in Table H-1. Under current conditions, park operations at Happy Isles and within the Mist Trail Corridor are managed through routine staffing, maintenance, and operational practices, alongside implementation of other ongoing and planned actions identified in Table H-1. In the absence of the project (the no-action alternative), these existing operational practices, visitation patterns, and planned actions would be expected to continue. While projects identified in Table H-1 would incrementally influence park operations over time, they would not substantially alter existing visitor circulation patterns or operational demands beyond those already anticipated under current management frameworks. When considered together, the no-action condition would result in minimal incremental impacts to park operations beyond those already occurring or reasonably foreseeable without the project.

In contrast, under alternatives B and C, the project would introduce new or modified visitor circulation patterns and facility elements within the Happy Isles area and the Mist Trail Corridor. When considered in combination with the ongoing and planned actions identified in Table H-1, these project elements would result in short-term adverse incremental impacts to park operations during construction, including increased staff demands, coordination needs, and temporary operational disruptions beyond those expected under the no-action condition. Over the long term, alternatives B and C would result in additional incremental operational

impacts associated with maintaining and managing enhanced visitor-facing infrastructure and circulation systems, layered on top of the operational demands associated with other reasonably foreseeable actions identified in Table H-1.

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APPENDIX J: BIOLOGICAL RESOURCES ANALYSIS SUPPORTING INFORMATION

VEGETATIVE COMMUNITIES WITHIN THE PROJECT AREA

Within Yosemite National Park (or "park"), most of the Mist Trail Corridor Project area is located within the foothill-woodland and the lower montane forest zones. More specifically, vegetative communities in the project area include the following (NPS 2006b):

- Douglas fir (white fir – incense cedar – ponderosa pine) forest
- Ponderosa pine – incense cedar forest alliance
- Douglas fir – canyon live oak forest association
- Ponderosa pine – incense cedar (California black oak – canyon live oak) forest superassociation
- White alder and big leaf maple forest superalliance
- Canyon live oak/whiteleaf manzanita forest association
- Canyon live oak (ponderosa pine – incense cedar) forest superassociation
- Canyon live oak/greenleaf manzanita forest association
- Jeffrey pine/huckleberry oak woodland association

The vegetative communities within the park also include non-native plant species. Currently, 275 non-native plants have been documented within the park (NPS 2024b). However, not all are considered invasive species, which are those species that demonstrate the ability to rapidly displace native plants or significantly alter ecosystem structures or functions. Invasive plant species that the park currently considers to be high-priority for treatment include yellow star-thistle (*Centaurea solstitialis*), Himalayan blackberry (*Rubus armeniacus*), common velvet grass (*Holcus lanatus*), Italian thistle (*Carduus pycnocephalus*), spotted knapweed (*Centaurea stoebe*), rush skeletonweed (*Chondrilla juncea*), Medusahead (*Taeniatherum caput-medusae*), and jointed goatgrass (*Aegilops cylindrica*) (NPS 2024b).

SPECIAL STATUS SPECIES THAT OCCUR OR HAVE THE POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Based on federal and state resource reviews, a total of 15 special status species have the potential to occur within the Mist Trail Corridor Project (project) area. These species are listed in Table J-1, along with their listing status, habitat preferences, and an assessment of likelihood of occurrence. Although some federally listed species included in Table J-1 have federally designated critical habitat, no critical habitats overlap with the project area; therefore, critical habitats are not analyzed in the Mist Trail Corridor Project Environmental Assessment.

Table J 1 Special Status Species that Occur or Have the Potential to Occur within the Project Area

Common name (*Scientific name*)	Status[1]	Habitat Type and Likelihood of Occurrence
Mammals		
Fisher – southern Sierra Nevada (*Pekania pennanti* pop. 2)	FE, ST	Fishers are typically found in late successional forests associated with high canopy closure, and in areas without frequent deep fluffy snow that has the potential to restrict movement. The species uses large live trees, snags, and logs for resting and denning. Fishers have been detected and collared in the park, and in 2011 the first known female fisher den was discovered within Yosemite National Park (park; National Park Service [NPS] 2023c). Motion-activated cameras have documented fishers using existing culverts to cross safely under the roadways, and in 2017, there was a detection north of the Merced River (NPS 2023c). GPS tracking efforts have documented fishers in the park from the southern boundary, east to the Sierra crest, and to the northern boundary of Yosemite with the Stanislaus National Forest. The fishers north of the Merced River are the estimated northernmost extent of the population and are particularly critical to the species' persistence (NPS 2024a). Furthermore, dens have been documented in the Wawona area, along the Highway 41 corridor, and in several areas north of the Merced River (NPS 2024a). Potential denning habitat includes greater than 60% canopy cover of the following vegetative communities: Douglas fir, eastside pine, Jeffrey pine, montane hardwood-conifer, montane hardwood, montane riparian, ponderosa pine, Sierran mixed conifer, or white fir, ranging from 3,300 to 8,000 feet in elevation (United States Fish and Wildlife Service [USFWS] 2020). Therefore, suitable habitat is known to be present within the project area, and fishers may use the area for foraging but are not known to den in the project area, per correspondence with NPS staff. As such, the species is likely to be present within the project area. Project work that has potential to disturb fisher behavior would be scheduled outside the denning period.
Gray wolf (*Canis lupus*)	FE, SE	Gray wolves are habitat generalists requiring large and contiguous habitats in forests, tundra, deserts, and grassland habitats. There are currently 10 confirmed gray wolf packs in California, none of which reside in Mariposa County (California Department of Fish and Wildlife [CDFW] 2025c). In the latest available "Approximate Area of Gray Wolf Activity" map from July 2025, no wolf activity was documented anywhere near the project area with all activity north of Sacramento or south of Fresno, California (CDFW 2025d). As such, this species is unlikely to be present in the project area.
North American wolverine (*Gulo gulo luscus*)	FT, ST	North American wolverines travel extensively across multi-state ranges and were once thought to be locally extinct; however, biologists believe they could be present in the Sierra Nevada mountains and Rocky Mountains (NPS 2025f). One sighting of the species was documented in Yosemite National Park in Tuolumne County in 2023 (CDFW 2023), and the species list reports the wolverine as "rare" within the park (NPS 2025e). While limited information is known about this species and their ranges, the species generally relies on persistent snowpack late into the warm season and, thus, are restricted to high elevations in the southern

Common name (*Scientific name*)	Status[1]	Habitat Type and Likelihood of Occurrence
		portion of their range. The limited range information on this species and limited documented sightings in the park make it unlikely that the species would be present in the project area.
Sierra Nevada red fox (*Vulpes vulpes necator*)	FE, ST	The Sierra Nevada red fox predominately occurs over 9,000 feet in elevation in alpine and subalpine habitat. The fox is one of two native fox species in Yosemite; however, sightings are rare. Multiple cameras have been placed in the Tioga Pass area covering a four square mile grid to document potential red fox activity (NPS 2025f). The species is listed as "rare" within the park (NPS 2025e) and, according to USFWS range map, the Mist Trail from Happy Isles to Nevada Falls is considered outside of the species range (USFWS n.d.). Furthermore, the red fox is known to avoid encounters with humans and encounters are uncommon. As such, the species is unlikely to be present in the project area.
Birds		
California spotted owl (*Strix occidentalis occidentalis*)	PT	California spotted owls inhabit mature forests in the mixed conifer forest within the park. This species nests in forests with high canopy cover and large-diameter trees (NPS 2024c). As detailed by Roberts (2017) and NPS (2024a), the park contains vital nesting habitat for the California spotted owl and could serve as an essential area for populations, with known nests on the western slope of the Sierran habitat in the park from 4,000 to 7,000 feet. Despite this species being reported by NPS (2025e) to have an "uncommon" presence within the park, suitable habitat is known to be present within the project area. Furthermore, park staff have noted the species is present within two miles of the project area; therefore, this species could be present within the project area. Project work that has the potential to disturb California spotted owls would be scheduled outside of the nesting season.
Great gray owl (*Strix nebulosa*)	SE	The park contains the southernmost range for great gray owls with approximately 65% of the state's population residing in the park (NPS 2025g). The species prefers to nest where forests and meadows intersect, hunting in open meadows and clearings. This species is reported by park staff to have a "rare" presence in the park and has not been documented in Yosemite Valley in over 50 years (NPS 2025e); therefore, this species is unlikely to be present in the project area.
Willow flycatcher (*Empidonax traillii*)	SE	Willow flycatchers are most often found in lower elevations at or below 8,000 feet in areas containing willows or other shrubs near standing or running water (Cornell Laboratory 2025). The species could also be found in pastures, woodland edges, or shrubby clearings near water, particularly in the winter. The number of meadows occupied by this species has decreased drastically in the last several decades, and research shows the species has stopped breeding in the park in recent decades (Institute for Bird Populations 2025). The species list reports that willow flycatchers have a "rare" presence in the park (NPS 2025e); however, park staff rarely detect migrants in Yosemite Valley and noted that breeding has not been detected in over 30 years. As such, the species is unlikely to be present in the project area.

Common name (*Scientific name*)	Status[1]	Habitat Type and Likelihood of Occurrence
Nesting migratory birds	MBTA	Tree, shrub, ground, and riparian vegetation. A total of 16 migratory bird species were included in the Information for Planning and Consultation search results for federally protected species in the project area. NPS biologists perform essential monitoring and research efforts to collect data on over 200 songbirds and often lead interpretive field trips for park visitors (Yosemite Conservancy [YC] 2025a). Migratory birds are likely present within the project area, particularly during nesting seasons.
Reptiles		
Northwestern pond turtle (*Actinemys marmorata*)	PT	Northwestern pond turtles prefer moist, temperate wetlands of the park and surrounding areas (NPS 2025d). A recent seven-year experimental study concluded that invasive American bullfrogs were significantly predating on this species in the park; after publication of the study, in 2019 a removal effort for American bullfrogs began, after which the juvenile northwestern pond turtle populations greatly increased (NPS 2025d). Biologists plan to continue monitoring the pond turtle with the goal of potentially reintroducing the species in coming years (YC 2025a). This species is reported to have an "uncommon" presence in the park (NPS 2025e), with the nearest known locations in El Portal, CA per correspondence with NPS staff, but has the potential to be present within the project area along the calmer edges and pools of Merced River and Illilouette Creek and potentially within the wetland detailed in the *Water Resources, Environmental Consequences* section of the Mist Trail Corridor Project Environmental Assessment (EA).
Amphibians		
California red-legged frog (*Rana draytonii*)	FT	The California red-legged frog prefers ponds, marshes, and creeks with relatively still waters 5,000 feet and below. Since 2016, over 4,000 California red-legged frog eggs and tadpoles and 700 adult frogs have been released in the park (NPS 2019). In 2025, the NPS plans to continue reintroductions of this species to native habitats within park meadows (YC 2025a). In May 2026, NPS biologists declared the Yosemite Valley population to be self-sustaining. The California red-legged frog could occur within the wetland habitat identified in the Happy Isles portion of the project area (detailed in the *Biological Resources, Environmental Consequences* section of the Mist Trail Corridor Project EA) and could also occur along the calmer edges and pools of Merced River and Illilouette Creek. One known individual was found near the Vernal Bathroom on the Stock Trail near the Mist Trail in April 2026.
Foothill yellow-legged frog (*Rana boylii*)	FE, SE	Foothill yellow-legged frogs are found in shallow, flowing streams and rivers in forested and woodland areas, particularly near riffles with rocks, rocky substrates, and sunny banks. The species can be found along the western slopes of the Sierra Nevada mountains, typically in up to 5,000-foot elevations (USFWS 2025b). The nearest known location of this species is in El Portal, CA where they have been recently (May 2026) reintroduced to lower sections of Crane Creek and Moss Creek, per correspondence with NPS staff. Although the foothill yellow-legged frog could potentially be found in the project area along Merced River and/or

Common name (*Scientific name*)	Status[1]	Habitat Type and Likelihood of Occurrence
		Illilouette Creek, the species' primary range does not overlap with the project area (USFWS 2025c). As such, this species is unlikely to be present in the project area.
Sierra Nevada yellow-legged frog (*Rana sierrae*)	FE, ST	This species prefers high-mountain lakes, ponds, tarns, and streams and is rarely found greater than three feet from water (NPS 2024d). The Sierra Nevada yellow-legged frog was historically the most prevalent amphibian in the park but declined by 95% in the Sierra Nevada, including within the park. The decline was due to introduced fish into previously fishless waters in the park and also from a chytrid fungal disease, and airborne contaminants (pesticides and other chemicals; NPS 2024d). The species is currently considered "uncommon" in the park (NPS 2025e). The nearest known population is in Hart Lake, approximately seven miles away in the headwaters of the Illilouette Creek Basin, per correspondence with NPS staff. Although the species has the potential to be present, there are no known occurrences within the project area, and suitable habitat is marginal for this species within the project area, as detailed in the *Biological Resources, Environmental Consequences* section of the Mist Trail Corridor Project EA. As such, this species is unlikely to be present in the project area.
Yosemite toad (*Anaxyrus canorus*)	PT	The park makes up one third of the species overall range as this toad is endemic to the Sierra Nevada (NPS 2023d). The Yosemite toad can be found in elevations ranging from 6,500 to 12,000 feet, inhabiting wet meadows, slow-moving streams, and shallow pooled water for breeding and conifer forests, mammal burrows, logs, and rock crevices in nearby upland areas (USFWS 2025d). The species can also be found in sunny meadows and patches of vegetation less than a few hundred feet from water. Yosemite toads are listed as "uncommon" in the park (NPS 2025e). The nearest known population of this species is in Westfall Meadow approximately six miles away in the headwaters of the Bridalveil Creek Basin, per correspondence with NPS staff. Although the species has the potential to be present, there are no known occurrences within the project area and critical habitat does not overlap within the project area. As such, this species is unlikely to be present in the project area.
Mount Lyell salamander (*Hydromantes platycephalus*)	WL	The Mount Lyell salamander is most often found at high elevations in damp, rocky habitats (YC 2025b). The species is endemic to the Sierra Nevada but is reported to be a "rare" species within the park (NPS 2025e). Based on NPS surveys conducted in July 2025 within the Mist Trail Corridor, this species could be present in the rocky talus areas along the JMT and the Stock Trail (NPS 2025h).

Common name (*Scientific name*)	Status[1]	Habitat Type and Likelihood of Occurrence
Insects		
Monarch butterfly (*Danaus Plexippus*)	PT	Monarch butterflies prefer open prairies with wet to dry soils, open woods, roadside ditches, swamps, and wet meadows where milkweed plant species could be found (Nature Serve 2025). Milkweed is a required plant for monarch reproduction, and Yosemite Valley meadows have a substantial amount of milkweed plants (NPS 2013). The park is considered a breeding ground for this species that is often seen in Yosemite Valley, Tuolumne Meadows, and Hetch Hetchy. Monarch butterflies are likely present within the project area; however, the project area does not overlap with proposed critical habitat for this species.
Plants		
Yosemite rockcress (*Boechera repanda*)	NA	This species prefers gravel, rock, talus, and dry slope habitats. Yosemite rockcress is often found under pines, in yellow pine forest, red fir forest, and lodgepole forest. The plant was previously documented across the water tank on the Happy Isles accessibility/service road and in the most recent survey (NPS 2025c)[2] was confirmed present in multiple locations within the project area. Thirteen populations were found within the project area, favoring talus habitats and soils within five meters of the trails. Four populations were mapped to the east of the Mist Trail and two populations were mapped below the Mist Trail on the western side nearing the riverbank. An additional six populations were found along the Stock Trail, with one additional population mapped south of the water tower, near the start of the Stock Trail.

Sources: CDFW 2023, 2025a,b,c,d; Cornell Laboratory 2025; Institute for Bird Populations 2025; Nature Serve 2025; NPS 2013, 2019, 2023c,d, 2024a,c,d, 2025c,d,e,f,g,h; Roberts 2017; USFWS 2025a,b,c,d; YC 2025a,b.

[1]Status Codes:
FE = Federally Endangered
FT = Federally Threatened
MBTA = Migratory Bird Treaty Act
NA = Not Applicable (No federal or state status)
PT = Proposed Federally Threatened
SE = California State Endangered
ST = California State Threatened
WL = Watch List

[2]Target species of the July 2025 focused plant survey included sugarstick (Allotropa virgata), Yosemite rockcress (Boechera repanda), Sierra false coolwort (Bolandra californica), clustered-flower cryptantha (Cryptantha glomeriflora), mountain lady's slipper (Cypripedium montanum), stream orchid (Epipactis gigantea), purple fawn lily (Erythronium purpurascens), and wood saxifrage (Saxifraga mertensiana) due to historic presence within the park. However, Yosemite rockcress was the only confirmed target species present within the project area.

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APPENDIX K: USFWS IPAC AND CNDDB RESULTS

This document cannot be remediated for Section 508 compliance. Please contact NPS for information regarding the IPaC and CNDDB results.

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Project information

NAME

Yosemite Mist Trail

LOCATION

Mariposa County, California



DESCRIPTION

Some(Visitor facilities and trail improvements.)

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

NOT FOR CONSULTATION

Mammals

NAME	STATUS
Fisher Pekania pennanti There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3651	Endangered
Gray Wolf Canis lupus There is **final** critical habitat for this species. https://ecos.fws.gov/ecp/species/4488	Endangered
North American Wolverine Gulo gulo luscus Wherever found This species only needs to be considered if the following condition applies: • Species may be present based on transient occurrence as it moves through or too suitable habitat. Effects should be considered to species and projects should consult with the Service, however, depending on the project, consultation may not be necessary. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5123	Threatened
Sierra Nevada Red Fox Vulpes vulpes necator No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4252	Endangered

Birds

NAME	STATUS
California Spotted Owl Strix occidentalis occidentalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7266	Proposed Threatened

Reptiles

NAME	STATUS
Northwestern Pond Turtle Actinemys marmorata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

NOT FOR CONSULTATION

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
Foothill Yellow-legged Frog Rana boylii There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5133	Endangered
Sierra Nevada Yellow-legged Frog Rana sierrae Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9529	Endangered
Yosemite Toad Anaxyrus canorus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7255	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

NOT FOR CONSULTATION

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete

NOT FOR CONSULTATION

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

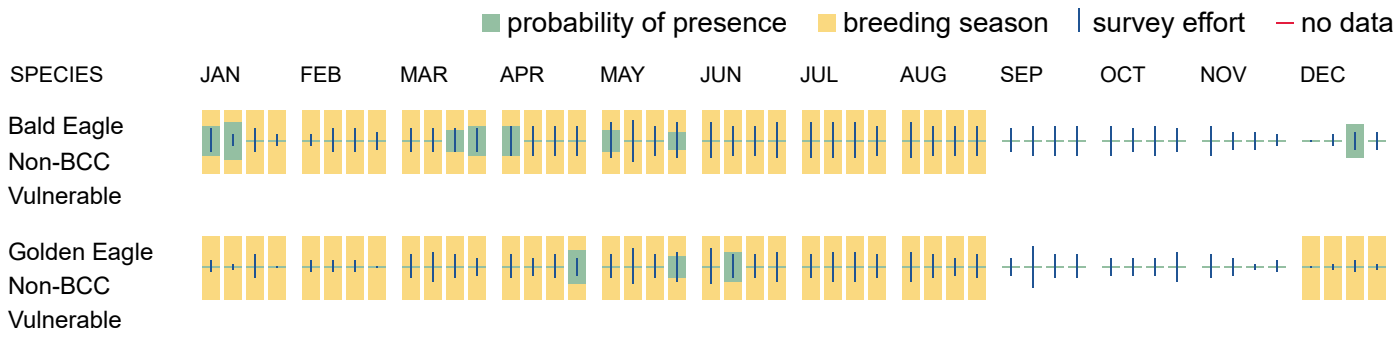
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

NOT FOR CONSULTATION

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
American Dipper Cinclus mexicanus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Aug 21
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black Swift Cypseloides niger This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black-throated Gray Warbler Setophaga nigrescens This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jul 20
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
California Spotted Owl Strix occidentalis occidentalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 10 to Jun 15

NOT FOR CONSULTATION

Calliope Hummingbird Selasphorus calliope — Breeds May 1 to Aug 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9526

Cassin's Finch Haemorhous cassinii — Breeds May 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9462

Evening Grosbeak Coccothraustes vespertinus — Breeds May 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Golden Eagle Aquila chrysaetos — Breeds Dec 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Hermit Warbler Setophaga occidentalis — Breeds May 5 to Jul 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Lawrence's Goldfinch Spinus lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

NOT FOR CONSULTATION

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

NOT FOR CONSULTATION

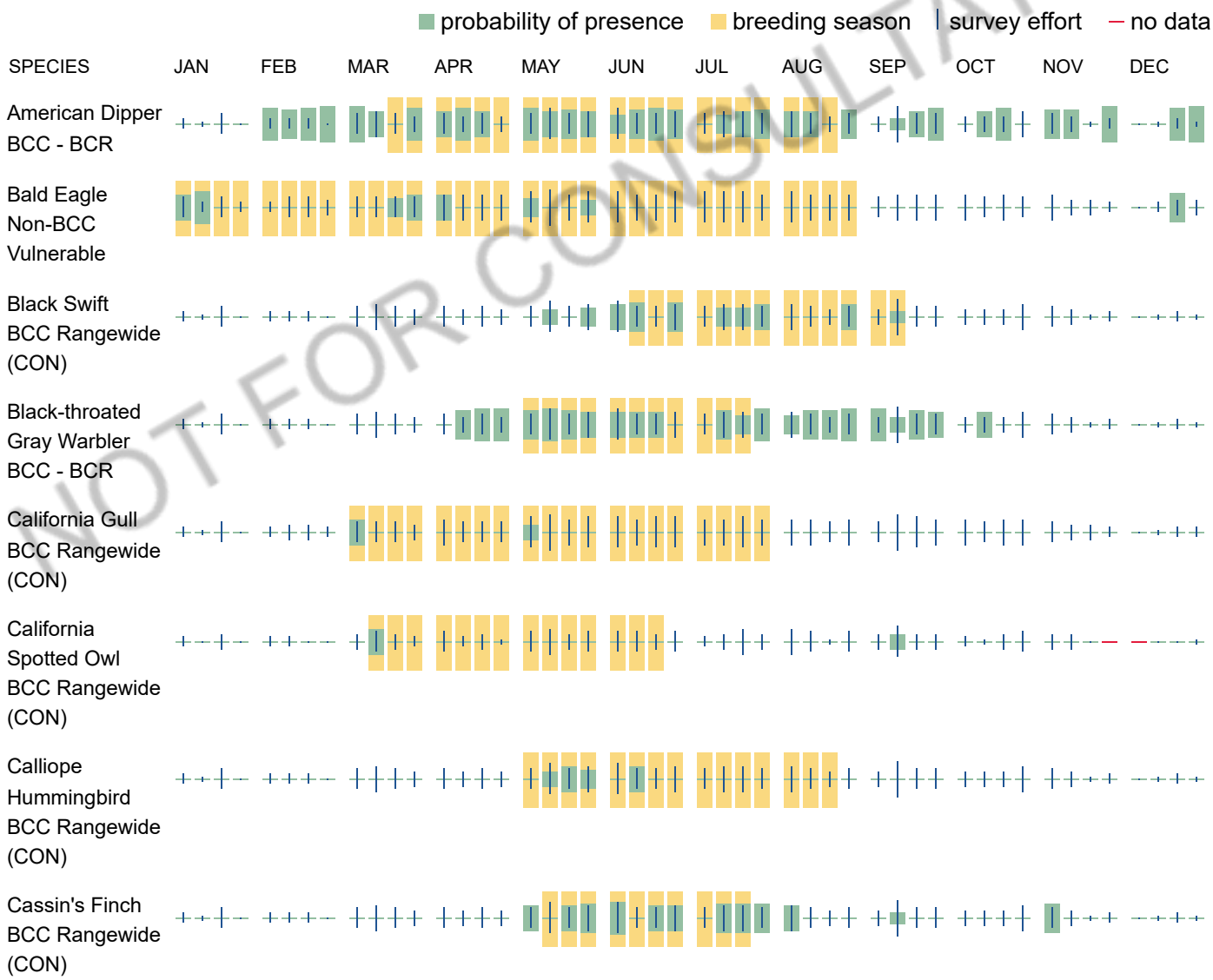
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION



NOT FOR CONSULTATION

Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as “Vulnerable”. See the FAQ “What are the

levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

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3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

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To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

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Facilities

Wildlife refuges and fish hatcheries

Refuge and fish hatchery information is not available at this time

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Yosemite Falls (3711975) OR El Capitan (3711966) OR Half Dome (3711965) OR Merced Peak (3711964) OR Tenaya Lake (3711974) OR Tamarack Flat (3711976))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Alpine chipmunk *Neotamias alpinus*	AMAFB02010	None	None	G4	S3	
American goshawk *Accipiter atricapillus*	ABNKC12061	None	None	G5	S3	SSC
black-backed woodpecker *Picoides arcticus*	ABNYF07090	None	None	G5	S2	
Bolander's bruchia *Bruchia bolanderi*	NBMUS13010	None	None	G3	S3	4.2
Bolander's clover *Trifolium bolanderi*	PDFAB400G0	None	None	G3	S3	1B.2
Bolander's woodreed *Cinna bolanderi*	PMPOA1H040	None	None	G2G3	S2S3	1B.2
fell-fields claytonia *Claytonia megarhiza*	PDPOR030A0	None	None	G5	S2	2B.3
Fisher *Pekania pennanti*	AMAJF01020	None	None	G5	S2S3	SSC
Fisher - southern Sierra Nevada ESU *Pekania pennanti pop. 2*	AMAJF01022	Endangered	Threatened	G5T1	S1	SSC
flat-leaved bladderwort *Utricularia intermedia*	PDLNT020A0	None	None	G5	S3	2B.2
foothill yellow-legged frog - south Sierra DPS *Rana boylii pop. 5*	AAABH01055	Endangered	Endangered	G3T2	S2	
fringed myotis *Myotis thysanodes*	AMACC01090	None	None	G4	S3	
grassland suncup *Camissonia lacustris*	PDONA030W0	None	None	G2	S2	1B.2
gray-headed pika *Ochotona princeps schisticeps*	AMAEA0102L	None	None	G5T4	S2S4	
great gray owl *Strix nebulosa*	ABNSB12040	None	Endangered	G5	S1	
hoary bat *Lasiurus cinereus*	AMACC05032	None	None	G3G4	S4	
long-eared myotis *Myotis evotis*	AMACC01070	None	None	G5	S3	
long-legged myotis *Myotis volans*	AMACC01110	None	None	G4G5	S3	
Mono Hot Springs evening-primrose *Camissonia sierrae ssp. alticola*	PDONA031H1	None	None	G3T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
moosewort *Botrychium tunux*	PPOPH01240	None	None	G3G4	S1	2B.1
Morrison bumble bee *Bombus morrisoni*	IIHYM24460	None	None	G3	S1S2	
Mount Lyell salamander *Hydromantes platycephalus*	AAAAD09020	None	None	G4	S4	WL
mountain bent grass *Agrostis humilis*	PMPOA040P0	None	None	G4Q	S2	2B.3
North American porcupine *Erethizon dorsatum*	AMAFJ01010	None	None	G5	S3	
northern slender pondweed *Stuckenia filiformis ssp. alpina*	PMPOT03091	None	None	G5T5	S2S3	2B.2
northwestern pond turtle *Actinemys marmorata*	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
Nuttall's ribbon-leaved pondweed *Potamogeton epihydrus*	PMPOT03080	None	None	G5	S2S3	2B.2
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G4	S3	SSC
Robbins' pondweed *Potamogeton robbinsii*	PMPOT030Z0	None	None	G5	S3	2B.3
short-leaved hulsea *Hulsea brevifolia*	PDAST4Z020	None	None	G3	S3	1B.2
Sierra Nevada mountain beaver *Aplodontia rufa californica*	AMAFA01013	None	None	G5T3T4	S2S3	SSC
Sierra Nevada red fox - Sierra Nevada DPS *Vulpes vulpes necator pop. 2*	AMAJA03017	Endangered	Threatened	G5TNR	S1	
Sierra Nevada yellow-legged frog *Rana sierrae*	AAABH01340	Endangered	Threatened	G2	S2	WL
silver-haired bat *Lasionycteris noctivagans*	AMACC02010	None	None	G4	S3S4	
slender lupine *Lupinus gracilentus*	PDFAB2B1R0	None	None	G3	S3	1B.3
slender silver moss *Anomobryum julaceum*	NBMUS80010	None	None	G5	S2	4.2
slender-stemmed monkeyflower *Erythranthe filicaulis*	PDPHR012H0	None	None	G2	S2	1B.2
Small's southern clarkia *Clarkia australis*	PDONA05040	None	None	G2	S2	1B.2
spotted bat *Euderma maculatum*	AMACC07010	None	None	G4	S3	SSC
Tompkins' sedge *Carex tompkinsii*	PMCYP03DR0	None	Rare	G3G4	S3S4	4.3

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010	None	None	G4	S2	SSC
Trinity Spot *Punctum hannai*	IMGAS47080	None	None	G2	S1S2	
Tulare rockcress *Boechera tularensis*	PDBRA40130	None	None	G3	S3	1B.3
Wawona riffle beetle *Atractelmis wawona*	IICOL58010	None	None	G3	S1S2	
western bumble bee *Bombus occidentalis*	IIHYM24252	None	Candidate Endangered	G3	S1	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G4G5T4	S3S4	SSC
western red bat *Lasiurus frantzii*	AMACC05080	None	None	G4	S3	SSC
western small-footed myotis *Myotis ciliolabrum*	AMACC01230	None	None	G5	S3	
white beaked-rush *Rhynchospora alba*	PMCYP0N010	None	None	G5	S2	2B.2
willow flycatcher *Empidonax traillii*	ABPAE33040	None	Endangered	G5	S3	
wolverine *Gulo gulo*	AMAJF03010	Threatened	Threatened	G4	S1	FP
yellow rail *Coturnicops noveboracensis*	ABNME01010	None	None	G4	S2	SSC
yellow-lip pansy monkeyflower *Diplacus pulchellus*	PDSCR1B280	None	None	G2	S2	1B.2
Yosemite bog orchid *Platanthera yosemitensis*	PMORC1Y1B0	None	None	G2	S2	1B.2
Yosemite ivesia *Ivesia unguiculata*	PDROS0X0N0	None	None	G3	S3	4.2
Yosemite lewisia *Lewisia disepala*	PDPOR04060	None	None	G2	S2	1B.2
Yosemite onion *Allium yosemitense*	PMLIL022L0	None	Rare	G3	S3	1B.3
Yosemite popcornflower *Plagiobothrys torreyi var. torreyi*	PDBOR0V152	None	None	G4T3Q	S3	1B.2
Yosemite sideband *Monadenia yosemitensis*	IMGASZ3010	None	None	G1	S1S2	
Yosemite toad *Anaxyrus canorus*	AAABB01040	Threatened	None	G2	S2	SSC
Yosemite woolly sunflower *Eriophyllum nubigenum*	PDAST3N0A0	None	None	G2	S2	1B.3

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Yuma myotis *Myotis yumanensis*	AMACC01020	None	None	G5	S4	

Record Count: 62

APPENDIX L: CULTURAL RESOURCES ANALYSIS SUPPORTING INFORMATION

NATIONAL HISTORIC PRESERVATION ACT SECTION 106 EFFECTS EVALUATION

The NPS bulletin *How to Apply the National Register Criteria for Evaluation* (NPS 1997) provides guidelines for determining eligibility of a historic property to qualify for listing on the NRHP. For a property to be considered for inclusion in the NRHP, it must normally be at least 50 years old and meet the criteria for evaluation set forth in 36 CFR Part 60.4, as follows:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history [36 CFR Part 60.4].

In addition to significance under one or more of the criteria listed above, a resource must also possess integrity, which is defined by seven aspects (NPS 1997):

- Location, the place where the historic property was constructed or the place where the historic event took place;
- Design, the composition of elements that constitute the form, plan, space, structure, and style of the property;
- Setting, the physical environment of the property that illustrates the character of the place;
- Materials, the physical elements combined in a particular pattern or configuration;
- Workmanship, the physical evidence of the crafts of a particular culture or people during any given period of history or prehistory;
- Feeling, the quality of the property in evoking the aesthetic or historic sense of a past period of time; and
- Association, a direct link between the property and the event or person from which the property derives its significance.

CULTURAL LANDSCAPES

The NPS defines a cultural landscape as “a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values (NPS 2024e). There are four general

types of cultural landscapes, not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes" (NPS 1996, 2024f). An ethnographic landscape is associated with contemporary groups who use and value the land in ways that continue long-established cultural practices. Cultural landscapes can be further defined as large-scale properties often consisting of multiple elements and features that when linked form an interconnected place. They are embedded with multigenerational cultural and historical meaning by the peoples who have traveled through and used them. In addition to the physical components such as archeological resources, plants, animals, rivers and streams, meadows, waterfalls, viewsheds, and mountain peaks, non-visible aspects of spirituality, story, memory, and audio or olfactory aspects of places are often important to how they are defined (**Advisory Council on Historic Preservation** 2016).

SUPPORTING INFORMATION FROM THE HALF DOME TRAIL CORRIDOR CULTURAL LANDSCAPE INVENTORY

This section summarizes supporting information specific to the Half Dome Trail Corridor Cultural Landscape (HDTCCL) from the *Half Dome Trail Corridor Cultural Landscape Inventory* (CLI; Quinn Evans 2026).

The CLI provides this summary of the project area:

> [The project area is] located at the southeast end of Yosemite Valley…The ancestors of the Bishop Paiute Tribe, Bridgeport Indian Colony, Mono Lake Kootzaduka'a Tribe, North Fork Rancheria of Mono Indians of California, Picayune Rancheria of Chukchansi Indians, Southern Sierra Miwuk Nation, and Tuolumne Band of Me-Wuk Indians, lived in the Yosemite Valley for millennia prior to the arrival of Europeans. The Tribes maintain strong cultural connections to the landscape today…
>
> Beginning in the mid-nineteenth century, Euroamerican visitors came to the valley to explore what they perceived to be sublime wilderness, despite thousands of years of use and management by Indigenous communities. Euroamericans began adapting Indigenous trails for tourism and transportation, with early developments such as the Mist Trail and routes to scenic overlooks built to facilitate foot and horse travel…
>
> Designated a national park in 1890 prior to the establishment of the National Park Service, Yosemite National Park was transferred [sic] from state to federal management by the United States after President Theodore Roosevelt signed the Antiquities Act in 1906. Under both state and federal control, Indigenous community ties to the land were marginalized (Quinn Evans 2026:1–3).

The HDTCCL is inclusive of archeological (precontact and historic-era), ethnographic and historic built environment resources along 11.5 miles of trail, extending 10 meters (33 feet) on either side of segments of the John Muir Trail (JMT), Mist Trail, and Half Dome Trail, and includes use areas at Happy Isles and Little Yosemite Valley Campground. The boundary of the HDTCCL encompasses the majority of the proposed construction limits and extends beyond the proposed construction limits to the east. The following description and characteristics of the HDTCCL is excerpted from the CLI (Quinn Evans 2026).

The HDTCCL retains a high degree of integrity in relation to its continued significance as the homeland of the seven traditionally affiliated Tribes, supporting its eligibility under Criterion A for Ethnic Heritage (Indigenous) from at least 10,000 BCE to the present. The landscape's major natural features, vegetation communities, and landmarks remain in their original locations, and continue to serve as physical anchors for traditional knowledge, oral histories, and spiritual practices. The trail corridor is part of a broader cultural landscape where Tribal members maintain relationships through place names, ceremonial use, plant gathering, and acts of stewardship that reinforce ancestral connections. The integrity of location, setting, association, feeling, and design collectively supports the continuity of cultural traditions and the reciprocal relationship between Indigenous people and the landscape.

The HDTCCL also retains integrity related to its historic use and development as a recreational landscape from 1855 to 1972, with significance under Criteria A, B, C, and D in the areas of Transportation, Entertainment/Recreation, Architecture, and Engineering. The overall trail alignment—including the Half Dome, Mist, and John Muir Trails—reflects its original design and continues to exhibit historic workmanship in its dry-laid stonework, cobble paving, and mortared stone and wood structures.

Key features such as the trail bridges, Vernal Fall Footbridge comfort station, and the former fish hatchery (now the Happy Isles Art and Nature Center) maintain their rustic design aesthetic. Trail segments retain visible evidence of early construction techniques, while modern repairs have preserved the original materials and craftsmanship. The corridor's setting, feeling, and association remain strong, with its continued use by hikers reinforcing its historic recreational function.

The period of significance (POS) for the HDTCCL under Criterion A Ethnic Heritage (Indigenous) spans from deep time through the present. It encompasses ancestral presence, land use, and stories, beginning with creation narratives, when Half Dome and other landmarks were shaped, to the lived experiences of contemporary Tribal members who maintain spiritual and cultural ties through oral traditions, place names, plant gathering, and ceremonial use to the present day.

The 1855 to 1972 POS begins with the early development of trails along the corridor by Euroamerican settlers and the Yosemite Park Commission from around 1855, many adapted from existing Indigenous trails. It encompasses the formalization and expansion of the corridor trail system under the administration of the US Army in the late nineteenth and early twentieth centuries and continues into the 1910s, 1920s, and 1930s, when the NPS transformed the trail corridor into its present form and character. The period ends in 1972 following trail improvements undertaken during the Mission 66 and Parkscape USA programs.

Landscape characteristics of the HDTCCL, as summarized by Quinn Evans (2026: 17-19), include:

- **Natural systems and features**, such as Half Dome, Liberty Cap, Mount Broderick, the Merced River, Vernal Fall, Nevada Fall, Illilouette Creek, Illilouette Falls, and the Happy Isles.
- **Land use** is tied to the ways that people use the landscape and is often related to patterns of spatial organization. Despite displacement and pressure to limit or remove

traditional land uses within the study area over the past 150 years, continuing uses such as visiting culturally significant places and plant gathering support the affiliated Tribes' connections to their ancestral homeland and reflect their continuing relationship with the cultural landscape. Existing uses such as hiking, camping, and recreation land uses within the study area are reflective of its nineteenth- and twentieth-century recreational development.

- **Circulation and spatial organization**, such existing trail routes along segments of the JMT, Clark Point Cutoff Trail, and Mist Trail occupy the general location of one branch of the Mono Trail (Indigenous travel corridor), although the precise route and grade have been modified by later trail construction processes. The ancestral route once present in areas now occupied by Happy Isles circulation and the Stock Trail is no longer extant, but the existing trail extending through these locations along the south side of the Merced River maintains overall historic spatial relationships between Yosemite Valley, the Merced River, and other segments of the Mono Trail.
- **Topography** is the three-dimensional configuration of the landscape surface. The trail corridor retains the areas of cut and fill, grades, and trail widths established by 1920s trail repair efforts, with the exception of relatively short sections of trails at the Stock Trail and Happy Isles. Modifications since the end of the recreation POS have maintained the topography associated with the historic trail design. Due to the extent of these later topographic changes, portions of the existing route that were part of the ancestral Mono Trail do not retain integrity.
- **Vegetation**, is indigenous or introduced trees, shrubs, vines, ground covers, herbaceous plants, and lawn. Vegetation communities are retained from the POS and reflect the period of recreational trail development. Overall, the study area's vegetation retains integrity related to the 1855-1972 POS. The plant communities of the HDTCCL are deeply tied to cultural traditions including food, medicine, ceremonies, crafts, and traditional structures. Activities such as gathering food or basket materials are steeped in reverence for place, ancestors, and the creator. The plant communities within the study area continue to support cultural connections to the landscape and are contributing.
- **Buildings and Structures** are three-dimensional built features such as bridges, comfort stations, and the Happy Isles Art and Nature Center. In the HDTCCL, these features create mass and scale and contribute to character through their style and appearance. The Happy Isles fish hatchery (art and nature center) and Vernal Fall Footbridge Comfort Station are retained from the recreation POS and contribute to the historic character of the landscape. The study area's bridges are contributing, despite alterations to superstructures.
- **Views** are groupings of features that create or allow a range of vision. Views can be natural or designed and controlled. The CLI identifies three types of views associated with the study area landscape: historic viewpoints at specific locations, scenic views

along sections of the trails, and views to Half Dome from outside the study area. All three types of views continue to reflect their historic appearance, despite some encroachment by vegetation that has a minor effect on selected views along the Merced River.

- **Constructed water features** are built features and elements that use water for aesthetic or utilitarian purposes. The one historic constructed water feature in the study area is a water trough that captures a spring along the Lower JMT. The feature remains intact and retains integrity from the 1855-1972 POS.
- **Small-Scale Features** are human-scaled landscape elements that provide specific functions within the study area, such as fences and guardrails, signs, and benches. There are no contributing small-scale features within the study area. Modern railings installed along the Mist Trail are compatible with the character of the historic landscape but were replaced after the end of the 1855-1972 POS.
- **Archeological sites** are locations containing surface and subsurface remnants related to previous land use. There are 27 previously recorded archeological sites within the HDTCCL. There are 13 ancestral sites, eight Euroamerican/Historic sites, and four multicomponent (both ancestral and Euroamerican) archeological sites. These are also discussed in the *Affected Environment, Historic Properties* section of the Mist Trail Corridor Project EA.

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APPENDIX M: MIST TRAIL CORRIDOR PROJECT CIVIC ENGAGEMENT COMMENT SUMMARY REPORT

National Park Service
U.S. Department of the Interior

Mist Trail Corridor Project Civic Engagement Comment Summary Report

Yosemite National Park

February 2025

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Introduction

The National Park Service (NPS) is initiating a planning process for the Mist Trail Corridor at Yosemite National Park (the park), one of the park's busiest and most popular trails, which attracts approximately 85,000 visitors annually. The park is considering a scope covering the route from Happy Isles, sections of the Mist Trail, John Muir Trail, the stock trail, Little Yosemite Valley, Half Dome trail, and the Half Dome cables. The park aims to address safety, wayfinding, stewardship, and education and to improve amenities to support sustainable visitor use. The NPS held a civic engagement period for this planning effort from October 24, 2024 to November 23, 2024 with a virtual public meeting on November 13, 2024 to explain the planning process, share its reasons for initiating the project, outline the planning area's scope, and discuss potential environmental concerns.

The public was encouraged to provide the NPS with their feedback during this early stage of planning. Specifically, the NPS requested input on the following, referring the public to the Planning, Environment, and Public Comment (PEPC) site for comment input:

- Could you share your experiences and challenges related to safely accessing and navigating the Mist Trail Corridor?
    - *This could involve aspects such as trail orientation, trip planning and expectations, shuttle services, parking availability, and the route from Happy Isles to the Half Dome Cables.*
- What improvements could enhance the visitor experience along the Mist Trail Corridor?
    - *These enhancements might include on-site orientation, amenities, wayfinding, or tools for trip planning.*
- Share what resources you value in this area and what you think the park needs to preserve and protect.

To prepare for the civic engagement public comment period, the NPS developed a newsletter and an online, interactive StoryMap[1] describing the planning process for the Mist Trail Corridor and outlining the purpose and need of the project. The newsletter and StoryMap were made available via the NPS park planning webpage as well as on PEPC at the onset of the civic engagement period (October 24, 2024). The park also posted to its social media to alert the public to the civic engagement period and virtual civic engagement meeting.

During the civic engagement period, 205 pieces of correspondence were received. Of these, 203 correspondences were received from the public directly in PEPC and one email correspondence was received by the Superintendent from The Sierra Club, Yosemite Committee. In addition, the NPS received feedback during the park's biweekly co-stewardship meeting held on October 18, 2024 with tribal representatives from American Indian Council of Mariposa County, Inc. ([AICMC] or Southern Sierra Miwuk Nation) and Mono Lake Kootzaduka'a. Invitations are extended to all associated Tribes of Yosemite National Park: AICMC/Southern Sierra Miwuk Nation, Bishop Paiute Tribe, Bridgeport Indian Colony, Mono Lake Kootzaduka'a Tribe of California and Nevada, North

[1] https://storymaps.arcgis.com/stories/057fd04078744b3783e1517de28d56b9.

Fork Rancheria of Mono Indians of California, Picayune Rancheria of the Chukchansi Indians, and Tuolumne Band of Me-Wuk Indians. Feedback received during the co-stewardship meeting was then input into PEPC as part of the official civic engagement record

Public Comment Analysis Methodology

Definition of Terms

The primary terms used in this document are defined below:

Correspondence: Correspondence is the entire document received from a member of the public or other interested party. This includes unaffiliated individuals, organizations, government officials, and agency representatives. This can be in the form of a letter, emails, meeting transcriptions and comments, comments written directly into PEPC, by mail, or in person at the park.

Comment: A comment is a portion of the text within the correspondence that addresses a single subject. It could include information as an expression of support or opposition for an alternative concept, additional ideas for future management of the site, data regarding the existing condition, or suggestions for topics to be considered.

Code: A code is a grouping centered on a common subject. Codes were developed during the civic engagement process and are used to track major subjects in the newsletter.

Concern: Concerns are statements that summarize the comments identified by each code. Each code is further characterized by concern statements to provide a better focus on the content of the comments. Some codes require multiple concern statements, while others do not.

Comment Analysis Methodology

As stated above, 205 pieces of correspondence were received during the civic engagement period. Correspondence was received directly into PEPC and via email (which were then entered into the PEPC system for analysis). Each correspondence was reviewed, and specific comments within each correspondence were identified. A total of 1,386 individual comments were identified.

Each comment was given a code to identify the general content of the comment, and to group similar comments. As listed in Table 1, 26 codes were developed to categorize the public comments. In some cases, the same comment may be categorized under more than one code, reflecting that the comment may contain more than one issue or topic.

Table 1 Civic Engagement Public Comment Codes

Code	Description
AL1000	Alternative Concept: Happy Isles, Safety
AL1100	Alternative Concept: Happy Isles, Wayfinding/Orientation
AL1200	Alternative Concept: Happy Isles, Stewardship/Education
AL1300	Alternative Concept: Happy Isles, Visitor Services
AL2000	Alternative Concept: Trail Corridor, Safety
AL2100	Alternative Concept: Trail Corridor, Wayfinding/Orientation
AL2200	Alternative Concept: Trail Corridor, Stewardship/Education
AL2300	Alternative Concept: Trail Corridor, Visitor Services
AL3000	Alternative Concept: Half Dome, Safety
AL3100	Alternative Concept: Half Dome, Wayfinding/Orientation
AL3200	Alternative Concept: Half Dome, Stewardship/Education
AL3300	Alternative Concept: Half Dome, Visitor Services
AL4000	Alternative Concept: Other Concept/Other Planning Area
AL5000	Alternative Concept: General Infrastructure Improvements
IR1000	Request for More Information
ISI1000	Issues and Impact Topics: Wildlife
ISI1100	Issues and Impact Topics: Vegetation
ISI1200	Issues and Impact Topics: Archeology
ISI1300	Issues and Impact Topics: Historic Structures
ISI1400	Issues and Impact Topics: Ethnographic/Tribal Values
ISI1500	Issues and Impact Topics: Socioeconomic
ISI1600	Issues and Impact Topics: Visitor Use and Experience
ISI1700	Issues and Impact Topics: Wild and Scenic River
ISI1800	Issues and Impact Topics: Wilderness
ISI1900	Issues and Impact Topics: Other
PN1000	Purpose, Need, and Objectives

Public Comment Results Summary

Content Analysis Tables

The following tables were produced by the PEPC database and provide information regarding the types of comments received, organized by code and by demographics.

Table 2 Correspondence Distribution by Organization Type

Organization Type	Number of Correspondence
Non-Governmental	1
Tribal Government	1
Unaffiliated Individual	203
Total	**205**

Table 3 Correspondence Distribution by State/Territory

State/Territory	Percentage	Number of Correspondence
California	75%	154
Nevada	3%	6
Washington	2%	4
Colorado	2%	4
New York	1%	3
Florida	1%	3
Connecticut	1%	2
Michigan	1%	2
Texas	1%	2
Oregon	1%	2
Hawaii	1%	2
Pennsylvania	1%	2
Arizona	1%	2
Montana	1%	2
Maryland	0.5%	1
Alaska	0.5%	1
Washington, DC	0.5%	1
Virginia	0.5%	1
New Mexico	0.5%	1
Vermont	0.5%	1
North Carolina	0.5%	1
Wisconsin	0.5%	1
Georgia	0.5%	1
Utah	0.5%	1
Ohio	0.5%	1
Wyoming	0.5%	1
Tennessee	0.5%	1
Massachusetts	0.5%	1
Unspecified (Canada)	0.5%	1
Total	**100%**	**205**

Table 4 Correspondence Distribution by Country

Country	Number of Correspondence
Canada	1
United States	204
Total	**205**

Table 5 Correspondence Distribution by Code

Note: Each correspondence may have multiple codes. As a result, the total number of correspondences may be different than the actual comment totals.

Code	Description	Number of Correspondence	Percentage
AL1000	Alternative Concept: Happy Isles, Safety	13	6%
AL1100	Alternative Concept: Happy Isles, Wayfinding/Orientation	52	25%
AL1200	Alternative Concept: Happy Isles, Stewardship/Education	9	4%
AL1300	Alternative Concept: Happy Isles, Visitor Services	50	24%
AL2000	Alternative Concept: Trail Corridor, Safety	99	48%
AL2100	Alternative Concept: Trail Corridor, Wayfinding/Orientation	90	44%
AL2200	Alternative Concept: Trail Corridor, Stewardship/Education	25	12%
AL2300	Alternative Concept: Trail Corridor, Visitor Services	98	48%
AL3000	Alternative Concept: Half Dome, Safety	41	20%
AL3100	Alternative Concept: Half Dome, Wayfinding/Orientation	8	4%
AL3200	Alternative Concept: Half Dome, Stewardship/Education	4	2%
AL3300	Alternative Concept: Half Dome, Visitor Services	23	11%
AL4000	Alternative Concept: Other Concept/Other Planning Area	113	55%
AL5000	Alternative Concept: General Infrastructure Improvements	127	62%
IR1000	Request for More Information	3	1%
ISI1000	Issues and Impact Topics: Wildlife	21	10%
ISI1100	Issues and Impact Topics: Vegetation	19	9%
ISI1200	Issues and Impact Topics: Archeology	3	1%
ISI1300	Issues and Impact Topics: Historic Structures	4	2%
ISI1400	Issues and Impact Topics: Ethnographic/Tribal Values	6	3%
ISI1500	Issues and Impact Topics: Socioeconomic	1	0.5%

Code	Description	Number of Correspondence	Percentage
ISI1600	Issues and Impact Topics: Visitor Use and Experience	87	42%
ISI1700	Issues and Impact Topics: Wild and Scenic River	8	4%
ISI1800	Issues and Impact Topics: Wilderness	39	19%
ISI1900	Issues and Impact Topics: Other	10	5%
PN1000	Purpose, Need, and Objectives	6	3%

Concern Statements

This report summarizes the comments received during civic engagement public comment period. Table 6 provides the list of concern statements by code.

Table 6 Concern Statements by Code

Code and Corresponding Concern Statement
AL1000 – Alternative Concept: Happy Isles, Safety
Commenters expressed interest in a reservation system to manage overcrowding. Commenters would also like to see signage to warn visitors about the conditions of the trail and the necessary gear and apparel needed.
Commenters would like to see the footbridge crossing the Merced River restored so visitors can safely access Happy Isles trailhead as opposed to walking along the vehicular bridge.
AL1100 – Alternative Concept: Happy Isles, Wayfinding/Orientation
Commenters recommended better wayfinding signage along the trail, including between Curry Village, the Happy Isle Shuttle Stop, and the Happy Isles trailhead.
Commenters would like to see more signage along the trail related to directions, the different routes, hazards, degree of difficulty and conditions of the trail.
AL1200 – Alternative Concept: Happy Isles, Stewardship/Education
During peak season, commenters would like to see dedicated Park rangers at the trailhead to educate visitors regarding safety, hazards on the trail, Leave No Trace principles and wildlife encounters.
Commenters would like to see more exhibits or signage regarding natural and cultural history of the Park.
AL1300 – Alternative Concept: Happy Isles, Visitor Services
Commenters expressed concern regarding the need for additional shuttle bus services and parking. Commenters would also like to see improved facilities for visitors including bicycle rentals, improved restrooms, water refill stations, picnic tables and informational signage about the trail.
AL2000 – Alternative Concept: Trail Corridor, Safety
Commenters expressed concern for safety at multiple locations along the trail corridor and supported a wide range of options to address safety, including: • Increased safety signage (in multiple languages) at each transition or major trail intersection with preparedness information (e.g., recommended gear, water, etc.) and warnings regarding trail steepness, distances, and potentially dangerous conditions; • Conversion of select Mist Trail segments to one-way traffic during peak visitor times;

Code and Corresponding Concern Statement
• Install additional pullouts, benches, and rest areas at more regular intervals along the trail corridor and at the bottom of steep climbs; • Improve drainage to reduce slipping hazards along trail sections subject to standing water; • Widen narrow areas of the trail that become difficult to navigate due to the number of visitors; • Institute a footwear traction and raingear requirement for all hikers; and • Increased safety-related materials related to trail corridor journey and existing conditions made available via NPS website (information or live cam) or a park app.
Commenters supported specific safety improvements related the Vernal and Nevada falls areas, including: • Safety signage leading up to stairs near Vernal and Nevada falls as well as at the tops of the falls warning visitors of dangers of swift waters; • Increased ranger presence at the tops of Vernal and Nevada falls; • Increased safety barriers/railings at the tops of the falls to prevent visitors from going off-trail; • Addition of safety barriers/railings along the rock stairs leading up to the falls; • Improvements to the rock stairs along the falls, including leveling and decreasing step height; and • Improve drainage to reduce fall risk along Vernal and Nevada falls trail sections subject to mist.
Commenters recommended stationing park staff or knowledgeable volunteers at strategic locations along the trail to provide visitors with trail safety information, advise on proper gear, and observe visitor behavior. One commenter suggested park staff should provide more advanced on-site safety orientation.
Commenters were in favor of limiting the number of visitors at one time on the trail corridor for safety purposes by instituting a reservation system.
AL2100 – Alternative Concept: Trail Corridor, Wayfinding/Orientation
Commenters expressed the need for additional directional signage and maps at critical trail junctions, switchbacks, and high-volume areas. Directional signage should indicate distance (in mi/km or steps) to next restroom, water filling station, and/or key observation point/vista. Signage should also include potential trail conditions to be encountered, elevation gain, and level of trail difficulty.
Commenters recommended additional informational signage at key trail junctions to make visitors aware of alternate routes that can be taken on the return journey.
Commenters requested that new signage be designed in a minimalistic and rustic manner as to not detract from the trail corridor features, such as steel-type. Another request involved following Tribal guidance on interpretive signs. A few commenters also requested that all informational and directional signage also be available in multiple languages as well as braille.
Commenters suggested the park provide additional mediums for visitors to obtain trail corridor information, directions, and maps, and location including via QR codes or along the trail corridor or trail app.

Code and Corresponding Concern Statement
AL2200 – Alternative Concept: Trail Corridor, Stewardship/Education
Commenters requested the addition of interpretive and educational signage and other media (i.e., audio tours) to promote interest and stewardship of cultural, historical, and natural resources along the Mist Trail Corridor, including, but not limited to, Leave No Trace principles; wildlife/food habituation; Native American and natural history information; the importance of staying on established trails, and other general park stewardship.
AL2300 – Alternative Concept: Trail Corridor, Visitor Services
Commenters suggested a wide variety of visitor services to be improved or added along the Mist Trail Corridor, including: • New and/or improved restroom facilities (particularly at Vernal and Nevada falls); • New and/or improved water filling stations; • Install additional pullouts, benches, rest areas, and shaded structures at more regular intervals along the trail corridor; • Addition of storage lockers and emergency phones at key rest stops; • Addition of more wildlife-proof trash receptacles along the trail; • Ranger stations and/or volunteer presence at key trail junctions to answer visitor questions; • Guided tour programs; and • Creation of new spur trails for shorter hikes.
One commenter requested the refurbishment of the historic horse trough and drinking station above the Casa Nevada site.
Commenters requested the opening of the Stock Trail loop to visitors to relieve congestion from other sections of the trail corridor.
AL3000 – Alternative Concept: Half Dome, Safety
Commenters recommended several structural improvements to enhance safety along the Half Dome cable route, including the addition of a third cable to create two lanes (one ascent, one descent); maintenance of and installation of additional crossbeams and/or planks; rehabilitating the slick granite beneath the cable route (e.g., via sandblasting); and installation of cable nets on the sides and underfoot.
Commenters recommended several non-structural improvements to enhance safety leading up to and along the Half Dome cable route, including requirement of safety gear (e.g., harnesses, clip-ins, rubber soles) and making this equipment available for rent; increased safety signage leading up to the cable route providing warnings of fitness, potential weather, and level of difficulty; implement required safety training or signing of waivers before acquiring a permit; reducing the number of permits issued; increased ranger presence at the base of and along the cable route; and closure of cable route when imminent weather is imminent.
Commenters expressed the need for safety improvements at Sub Dome, including addition of handrails or other barriers on stairs and increased warning signage for the cable route.
AL3100 – Alternative Concept: Half Dome, Wayfinding/Orientation
Commenters expressed the need for more prescriptive signage leading up to the cable route in recommending sticky rubber soles, gloves with palm grips, and a safety restraint system. Signage should also inform visitors of how to interact with other users of the cable route.
AL3200 – Alternative Concept: Half Dome, Stewardship/Education
Commenters emphasized the need to change the culture of how ascend Half Dome and make safety restraint systems expected and commonplace.
One commenter requested including educational signage detailing the Phimister Proctor account of 2nd ascent of Half Dome somewhere on a sign within view of Half Dome.

Code and Corresponding Concern Statement
AL3300 – Alternative Concept: Half Dome, Visitor Services
Commenters suggested a wide variety of visitor services to be improved or added at Half Dome, including: • New water filling station leading up to the cable route; • Issuance of "wag bags" to permit holders to be used on the cable route, when necessary; • Rental services for safety equipment; • Guided cable route trips; and • Expanding permits to two days or providing day-of vouchers to allow for flexibility due to inclement weather.
Related to Half Dome, one commenter expressed interest in installing a built-in feature at Happy Isles to demonstrate what the granite and cables feel like.
Commenters expressed interest in adding a designated trail and a composting toilet at Sub Dome.
Commenters suggested the removal of the Half Dome cables due to safety or cultural-related reasons. Others specifically requested no changes to the current route.
AL4000 – Alternative Concept: Other Concept/Other Planning Area
Commenters recommended improvements in Little Yosemite Valley, including construction of a cabin in the valley; new and/or improved restroom facilities; new and/or improved picnic areas with bear-proof trash receptacles; additional space at existing campgrounds; increased directional and safety-related signage; and increased ranger presence; and controlled burning or mechanical reduction in fuels at the existing campgrounds.
Many commenters expressed changing the existing permit/reservation system to reduce visitor numbers and improve safety. Suggested changes included: • Issuance of permits at the park visitor center(s) rather than online; • Permanent summertime reservation system; • Permanent year-round reservation system; • Expansion of existing Half Dome permitted system to include trail access all the way up to Nevada Fall; • Permit checkpoint at trailhead; • Reservation system to continue on the trail past the first bridge; and/or • Permit use after base of Vernal Fall. Other commenters were opposed to changes to the current permitting system.
Commenters requested changes to existing concessions contracts, commercial use permits, and special use permits.
Commenters expressed the need for additional transportation services throughout the Valley, including more free shuttle busses on the Curry Village - Happy Isles - Mirror Lake - Campgrounds loop. Others suggested changes in transportation services throughout other areas of the park (i.e., not related to the Mist Trail Corridor planning area). A few commenters suggested the elimination of all vehicle traffic, including shuttles, to the Happy Isles area.
AL5000 – Alternative Concept: General Infrastructure Improvements
Commenters expressed a need for a number of general trail and infrastructure improvements to be considered throughout the entire planning area, including: • More bathrooms and regular bathroom maintenance; • Additional water filling stations and potable water sources; • Additional bear-proof trash receptacles; • Decreased stair heights along trails; • Addition of safety railings, barriers, and messaging;

Code and Corresponding Concern Statement
• More pullouts/rest areas, picnic areas, and shaded structures; • Improvements to drainage along trails (including leveling and changes to trail surfaces); • Increased accessibility for those with physical or visual limitations; • Additional trip preparedness and directional signage at critical trail junctions; • Additional wayfinding along the trail with specific information on level of difficulty, elevation gain, etc. • Signage and/or ranger programs to increase education/stewardship along trail (e.g., Leave No Trace); • More historical, cultural, and natural history interpretive signage; • Removal of social trails; and • Increased ranger and/or volunteer presence.
Commenters suggested the implementation of loops and one-way trail sections to reduce visitor traffic. Suggested sections included the following: • Uphill via the Mist trail then to Clark Point, and downhill via the JMT to Happy Isles; • Mist Trail along the Merced River between the Vernal Fall Footbridge and Vernal Fall Platform should be made a one-way trail only, directing the hikers to the Clark Point Cut-off Trail and John Muir Trail to come down from Vernal Fall; • A loop would start from the Vernal Fall Footbridge, around the Vernal Fall Platform on the way to Nevada Fall but go down and end at the footbridge; • One-way segment along Mist Trail steps; • Make the lower trail to Vernal Footbridge a loop trail using the old Stock Trail. Reduce traffic on the lower footbridge trail by offering an alternate way up/down to the shuttle bus lot and parking area; • One-way uphill traffic on the steps near Vernal Fall requiring all downhill from Nevada Fall to continue to Clark Point and hike down the JMT-allow both up hill and downhill on that alternate longer route; • Make a loop by maintaining the West Side of Merced River trail from Happy Isles to Vernal Bridge (the horse trail) for walkers to use both sides; and • Create a parallel Stock Trail to avoid conflict between stock and visitors at narrow pinch points. Some commenters were opposed to creating loops or changing existing trail flow in any way.
Many commenters expressed a wish that no improvements be made to the trail network and supporting infrastructure to support an increase in capacity. Some requested any changes be limited to necessary safety improvements only.
IR1000 – Request for More Information
Commenters requested additional information regarding the project, or that additional data be incorporated into the analysis, including: • Feedback on why pass holders must acquire permits; • Data on where/how long (i.e., number of hours) park staff, volunteers, and PSAR representatives are stationed on the trail; • Information on funding to cover the increase in operations costs associated with trail improvements; and • Map overlays of the geographical focus areas with cultural and natural resources.
ISI1000 – Issues and Impact Topics: Wildlife
Commenters expressed concern with frequent human-wildlife interactions along the Mist Trail Corridor and the need for improvements to include visitor education and removal of social trails.

Code and Corresponding Concern Statement
ISI1100 – Issues and Impact Topics: Vegetation
Commenters expressed concern about erosion to vegetation and riparian areas from high visitor use and that future improvements should include removal of social trails and incorporation of native vegetation and rocks on the sides of trails.
ISI1200 – Issues and Impact Topics: Archeology
Commenters expressed the importance of protecting archeological sites and the need for consultation with Associated Tribes.
ISI1300 – Issues and Impact Topics: Historic Structures
Commenters expressed the importance of preserving the historic trail and character of the trail corridor.
ISI1400 – Issues and Impact Topics: Ethnographic/Tribal Values
Commenters requested that improvements consider the cultural heritage of the area and noted the need to consult Associated Tribes on sacred site location(s?) and naming. Commenters also expressed concern that the allowance of climbing on Half Dome is not in line with indigenous beliefs.
ISI1500 – Issues and Impact Topics: Socioeconomic
One commenter requested that park access should be made easier for visitors with a lower socioeconomic status.
ISI1600 – Issues and Impact Topics: Visitor Use and Experience
The majority of commenters were in favor of trail improvements and expressed the need for such improvements to balance the preservation of nature, inclusivity, accessibility, and safety. The most frequent visitor use and experience-related issue along the trail corridor noted by commenters was visitor overcrowding associated impacts to natural and cultural resources and visitor experience.
Some commenters were opposed to any engineered or other trail improvements citing that improvements would detract from the natural beauty and wilderness experience of the corridor.
ISI1700 – Issues and Impact Topics: Wild and Scenic River
Commenters expressed the importance of protecting riparian areas and the Merced River and noted that any future improvements should be compatible to the Merced River Plan.
ISI1800 – Issues and Impact Topics: Wilderness
Commenters expressed the need to protect wilderness character along the corridor with as little additional development as possible. Other commenters noted that impacts should be concentrated along this corridor as opposed to nearby designated Wilderness.
ISI1900 – Issues and Impact Topics: Other
Commenters expressed need to consider other resources in future planning, such as impacts to scenic vistas and other visual resources, backcountry access, and park operations (e.g., closures, maintenance, enforcement).
PN1000 – Purpose, Need, and Objectives
Many commenters supported the objectives of the project (i.e., enhance the visitor experience in the Mist Trail Corridor by addressing safety, wayfinding, stewardship, and education and improving amenities to accommodate sustainable levels of visitor use). Others expressed the need to keep modifications minimal or limit to those essential visitor safety for visitor safety, while others opposed any and all improvements.

APPENDIX N: DRAFT MIST TRAIL CORRIDOR PROJECT WILD AND SCENIC RIVERS ACT SECTION 7 DETERMINATION

SECTION 7(a) EVALUATION AND DETERMINATION

PROJECT NAME:	Mist Trail Corridor Project PEPC 105979	**EFFECTIVE DATE:**	4/9/2026
AGENCY ID#:	DOI, NPS, YOSE	**AGENCY:**	Yosemite National Park, The National Park Service

River Segment:			Merced River Segment 2A - Recreation		
NPS Unit/2aii:	YOSE	**State:**	CA	**Classification:**	☐ Scenic ☒ Recreation ☐ Wild

ORV:	☒ Scenic	☒ Cultural	☒ Recreation	☒ Historic
	☐ Fish & Wildlife	☒ Geological/Hydrological	☒ Archaeological	☐ Scientific

Project Location	Latitude:	37.7308854	Longitude:	-119.5589502	Other Location ID	Section 28 Township 2 South, Range 22 East Mount Diablo Principal Meridian California

Inclusions:	☒ Location Map	☒ Plans/Drawings	☒ Pictures	☒ List of Required Measures

Timeframe:	2027 (12-14 months construction duration)

Prepared by: *Anna Puchkoff, Environmental Protection Specialist, Yosemite National Park; Catherine Fong, Hydrologist, Yosemite National Park*

Project Description

Mist Trail Corridor Rehabilitation (105979)

The Merced River flows into the eastern end of Yosemite Valley through a series of waterfalls and a narrow gorge known as "The Mist Trail Corridor." SAR incidents are concentrated in this area, as the trail is extremely popular and follows steep, rugged terrain, including extended sections of wet and slippery stone steps. As an example, in 2025, there were 239 SAR incidents park-wide; 69 of those (or 28.8%) were in the corridor. From 2001 to 2025, the park responded to 4,661 incidents, with 58 unintentional deaths. These conditions underscore the physically demanding nature of the trail and the importance of visitor preparedness, orientation, and wayfinding. Over the past decade, the park has implemented safety improvements, including railings, stone walls, step height corrections, and trail widening to allow visitors to pass by each other, where feasible. Despite these efforts, high levels of SAR incidents in the corridor persist. Additionally, visitors embark on their hike without adequate orientation, information, or amenities to prepare for the crowded trails ahead. Scoping with park staff, partners, and the public helped identify measures to support visitor safety, including improved informational signage, enhanced wayfinding and orientation, and expanded trip planning resources, both on-site and online. This highlighted a need for the park to address the issues through a comprehensive corridor plan as analyzed in the Environmental Assessment. The preferred alternative for park management includes re-establishment of the historic Happy Isles Footbridge, and the retirement of the existing Mist Trail/John Muir Trail (JMT) trailhead.

The historic Happy Isles Footbridge, which spanned the Merced River and provided direct access to the Mist Trail Corridor, was demolished in 2001 after being partially destroyed in 1996 by a rockfall and impacted again in 1997 by flooding. With the footbridge removal, hikers were detoured to the nearby Happy Isles vehicle bridge to access the JMT-Mist Trail trailhead on the east side of the Merced River. This rerouted access was not designed or developed to function as a primary trailhead to the Mist Trail Corridor. As a result, the limited wayfinding and signage present do not adequately orient visitors, leaving them confused when trying to locate the trails within the corridor.

The proposed action would replace the Happy Isles Footbridge in its original location, reestablishing the historic connection from the Yosemite Valley Loop Trail and Happy Isles Nature Center to the John Muir Trail and Yosemite Wilderness. Visitor access to the Mist Trail Corridor would again be directed through Happy Isles, crossing a newly constructed pedestrian bridge at the historic site of the former Happy Isles Footbridge, thereby restoring the original access alignment and serving as the primary pedestrian entry point to the corridor. The new footbridge would span the 100-year floodplain, with the new bridge abutment and bridge deck constructed above the elevation of the 100-year floodplain to protect and enhance the free-flowing condition of the Merced River. No construction

equipment would be used within the river's bed or banks. Its design would retain the historic east abutment left in place after the 2001 demolition, which remains in the bed and banks of the river. To date, there have been no signs of deterioration or degradation of the existing abutment, indicating its minimal impact from its continued presence in the river. The appendix of this document depicts a preliminary design concept and associated limits of construction and grading disturbance, respectively, for the proposed footbridge based on existing topographical and hydrological conditions. Final design and construction details would be determined during the detailed design phase of the project.

The park will adhere to the guidance outlined in Reference Manual (RM) 46, in conjunction with Director's Order #46 (NPS 2015), to ensure consistency in fulfilling National Park Service (NPS) responsibilities under the 1968 Wild and Scenic Rivers Act (WSRA). This RM provides insights into the common challenges faced by the NPS in managing wild and scenic rivers.

River Access: The piers and abutments will be installed outside of the 100-year floodplain, the single-span bridge will not require river access to the bed and banks of the Merced River.

Staging: The project staging area will be located on the west side of the Merced River, along the paved road path of the existing Stock Trail. The staging will go beyond the road prism in adjacent areas that are upland, compacted, and with minimal existing vegetation.

This project will be implemented and managed by Randal Corrall, NPS Architect, Design and Engineering Division at Yosemite National Park.

Relationship to past and future management activities

The historic Happy Isles Footbridge has experienced several iterations over the past century. The first wood-truss bridge, made of massive, milled timbers, was constructed in 1883. Replacement bridges were constructed in 1910 and 1929. The concrete reinforced bridge, often referred to as the "Old Happy Isles Footbridge," remained in place until 2001. It was removed as a result of irreparable damage from the air blast of a large 1996 rockfall from Glacier Point and the flood of record in Yosemite Valley in 1997. Since the removal of the Happy Isles Footbridge in 2001, access to the Mist Trail/JMT trailheads, by way of the Yosemite Valley Loop Trail, is no longer available. As a result, circulation in the Happy Isles area has become confusing and visitors cross over a vehicular bridge to access the current trailhead.

The Merced River was designated as Wild and Scenic in 1987, recognizing its exceptional natural and recreational value. In 1997, Yosemite National Park began developing the Merced River Management Plan to establish strategies for managing the river, focusing on maintaining its free-flowing condition, ensuring water quality, and preserving its Outstandingly Remarkable Values (ORVs). The final *Merced Wild and Scenic River Comprehensive Management Plan and Environmental Impact Statement* (MRP) was completed with a Record of Decision signed in 2014.

The MRP provides a framework for future development and activities on federal lands within the river corridor (MRP, 2-10) and guides the park to implement the following actions:

> Riparian Buffer (RES-AS-005) – Protect the riparian zone from new development within 150 feet of the OHWM. Relocate or remove all campsites at least 100 feet away from the OHWM. The riparian buffer will protect water quality, hydrological processes, aquatic ecosystems, and riparian vegetation. (2014 MRP, Appendix E-5).
>
> Footings at the former Happy Isles footbridge (beyond gage): free flowing condition (RES-2-056) – Remove former Happy Isles footbridge footings and former river gage base (steel re-enforced concrete and wet and dry wall masonry). Revegetate denuded areas and improve wayfinding between Happy Isles and the Mist Trail from the shuttle stop. Break concrete and masonry into movable pieces using an excavator-mounted jackhammer. Move material offsite with front-end loaders and dump trucks. Recontour and decompact soils and plant appropriate riparian vegetation in all denuded areas. Work would be performed by a contractor at low flow, in the fall, and would take four weeks. (2024 MRP, Appendix E-13)

The Happy Isles Footbridge is located within Segment 2A of the river and is classified as Recreational. Between Nevada Fall and the Happy Isles Vehicle Bridge, bedrock and large boulders line the river channel. The channel is laterally confined by high valley walls, resulting in a naturally narrow floodplain, and the free-flowing condition of the river is largely intact in this section. From Happy Isles Bridge to Clark's Bridge, the channel is largely confined on the right bank by glacial moraines. This reach was generally stable at the time of designation in 1987 (Madej et al. 1991) (MRP, 5-11). Because a bridge structure existed at this location at the time of designation, the proposed action represents a continuation of a historic condition rather than a new encroachment; however, this determination is based on the absence of measurable effects to free-flowing condition, water quality, and ORVs.

Impacts Analysis

Analysis of Free Flow and Water Quality

Happy Isles Footbridge Replacement		
Section 7 Considerations	**Short-Term Impacts**	**Long-Term Impacts**
Free flow characteristics • Active channel location • Channel geometry (cross-sectional shape, width/depth characteristics) • Channel slope (rate or nature of vertical drop) • Channel form (straight, meandering, or braided)	•None: all new construction would be done outside of the OHWM.	• No change in channel geometry, channel slope, or channel form from construction. • The bridge deck would be constructed to provide adequate freeboard above the 100-year flood elevation. The new bridge abutment would be located outside of the 100-year floodplain. • The bridge deck would span the river channel without the need for additional piers placed in the river channel. • Retaining the eastern abutment of the former Happy Isles footbridge and constructing the bridge at the preferred location would have minimal impact on the long-term channel geomorphology as the lateral movement of the river channel is minimal at this site due to river being laterally confined by high valley walls, resulting in a naturally narrow floodplain, and the free-flowing condition of the river is largely already intact in this section. • The eastern abutment was already in place and functional during the WSR designation of the Merced River, therefore there is no net impairment or degradation from the time of designation. • Because the project does not alter discharge, timing, routing, or hydraulic characteristics of the river, it does not constitute a direct and adverse effect on the free-flowing condition.
Water Quality • Turbidity • Temperature	• Minimal: no construction activities or equipment below the OHWM; BMPs would be used to ensure	• Minimal - The MRP prohibits development within 150 feet of the OHWM of the Merced River in order to retain a riparian buffer to protect water quality, hydrological processes, aquatic ecosystems,

• Nutrient availability • Per MRP**:** Adverse impact: Exceedance of USEPA bacteriological criteria for water contact recreation: E. coli and nitrates	construction activities within 150 feet of the OHWM do not affect water turbidity, temperature, or nutrient availability.	and riparian vegetation. In the location and alignment of the proposed bridge, development would occur within the footprint of existing impermeable pavement on the west side of the river (river left). On the east side of the river (river right), the area of disturbance for the abutment will occur in the highly compacted trail prism (permeable) as it transitions from flat riverside trail to the first climb up the Mist Trail. In both disturbance locations, there is no pre-existing vegetation (of riparian species or otherwise) or jurisdictional wetland habitat, and would only minimally alter the area's ability to slow down and infiltrate water before reaching the Merced River. Therefore, there will be minimal impact to water quality because of the proposed bridge construction. • Positive – The footprint of the existing trailhead is within the 25-year floodplain (see depiction in Appendix). Ecological restoration of the existing trailhead from Happy Isles Road to the proposed bridge location on the east side of the river will revegetate and decompact an area that is currently barren with very little vegetation due to trampling and the existing trail. These actions will improve riparian habitat, slow down floodwater, and filter water before it reaches the Merced River. The project reduces human disturbance within the active floodplain by removing the existing trailhead footprint and restoring riparian function, resulting in a net benefit to floodplain processes.

Analysis of Outstandingly Remarkable Values in Segment 2A of the Merced River

Mist Trail Corridor Project - Merced River ORVs	Magnitude and/or Extent of the Proposed Activities
Biological *The continuum of relatively undisturbed ecosystems along the Merced River provides nearly intact river-dependent habitats for wildlife and vegetation. The high-quality riparian, wetland, meadow, and riverine environments support a diversity of river-related plants and animals, including rare and special-status species.*	• Per the Merced River Plan criteria for an adverse impact: ○ Meadow Fragmentation: Adverse impact: A one-year decrease in the LPI5 index below 93% at the level of an individual meadow

In this reach of river (section 2A), the biological ORVs are mid-elevation riparian communities in Yosemite Valley: indicators used are Meadow fragmentation resulting from proliferation of informal trails 2. Status of riparian habitat and 3. Riparian bird abundance	▪ There are no meadows within the project area, and none will be impacted because of the project (directly or indirectly) o Mid elevation riparian habitat: Adverse impact: When 30% or more of monitored sites are rated in a low condition class ▪ This threshold for this reach of the Merced River has not been met o Riparian bird abundance: Adverse impact: When the average abundance of any individual species or the average abundance summed across all species falls below the 20th percentile in at least four out of ten years ▪ Based on the data from the 2024 MRP Riparian Bird Indicator report, this threshold for this reach of the Merced River has not been met • The project includes the decommissioning and ecological restoration of the existing trailhead approach, which is partially within the 25,50,100, and 500-year floodplain. The ecological restoration of the floodplain on the eastern (river right) side of the river will enhance riparian and riverine environment. The decompaction and revegetation of riparian plant species including shrubs, deciduous trees, and graminoids, beneficial for riparian bird habitat. • Terrestrial biological resources would be protected and enhanced by allowing direct access to the John Muir Trail and removing the incentive for hikers to take shortcuts down the riverbanks and across the river itself. Aquatic biological resources would be protected by having the bridge and abutments constructed above the OHWM. Therefore, the project will not result in a direct and adverse effect on biological Outstandingly Remarkable Values of the Merced River.
Geological Processes/Conditions *Glacial landforms are the foundation for the hydrology and biology of the Merced and South Fork Merced River, and the geology dictates the form of the rivers and surrounding area.* *In this reach of river (section 2A) the Merced River drops over 594-foot Nevada Fall and then 317-foot Vernal Fall, creating what is*	• Geologic processes will remain largely unaffected by the project. o It is very unlikely that this ORV would be affected by human intervention. Because the ORV is essentially impervious to intended human activities, no indicator will be used to monitor it. For the same reason, management standard, adverse impact, and degradation are not defined for this ORV, and the NPS will not monitor the condition of this ORV as part of the Final Merced

known as the Giant Staircase. Such exemplary stair-step river morphology is characterized by substantial variability in river hydrology, from quiet pools, such as Emerald Pool, to the dramatic drops in the waterfalls.	River Plan/EIS. Accordingly, the project will not result in a direct and adverse effect on geological Outstandingly Remarkable Values.
Hydrologic Processes *On the Merced and South Fork Merced River, dramatic changes in the rivers' speed and volume are the result of major changes in elevation. The river starts in high alpine settings, drops down sheer cliffs and steep gradients at high speeds with large springtime volumes, and then becomes calm and meandering before tumbling down another steep gradient.* *ORV 5—The "Giant Staircase," which includes Vernal and Nevada Falls, is one of the finest examples in the western United States of stair-step river morphology.* Processes contributing to this ORV include: • The ability of the channel to change course, re-occupy former segments, or inundate its floodplain. • Streambank erosion potential, sediment routing and deposition, or debris loading. • The amount or timing of flow in the channel. • Existing flow patterns. • Surface and subsurface flow characteristics. • Flood storage (detention storage). • Aggradation/degradation of the channel.	• There will not be any changes to the channel morphology, as the construction of the bridge does not require any in-water work, or disturbance to the bed and banks of the Merced River; no flow diversions, flow patterns, or changes in flow will occur. • The footprint of the project is downstream of Vernal and Nevada Fall and will not have an impact on the area with stair-step river morphology. • The project includes the decommissioning and ecological restoration of the existing trailhead approach, currently within the 25, 50, 100, and 500-year floodplain. The ecological restoration of the floodplain on the eastern (river right) side of the river will enhance floodplain function (detail in Water Quality section). • Temporary upland impacts are expected during bridge construction; BMPs will be implemented to reduce runoff potential of sediment generated during construction. • See previous analysis on free-flowing condition for further discussion on impact to long-term channel geomorphology. No measurable change to hydrologic processes, including flow regime, sediment transport, or floodplain function, will occur; therefore, the project will not result in a direct and adverse effect on hydrologic Outstandingly Remarkable Values.
Recreation *The Merced and South Fork Merced River offer diverse, river-related recreation, including the opportunity to recreate in the peerless setting of the entire river corridor. Recreating in these areas is inextricably linked to the dynamic natural processes in the Merced River that have helped form and continue to contribute to the scenery and evocative landscape.*	• Recreational opportunity impacts will be temporary and minimal during the bridge construction work due to equipment use and closures in the project area. • Recreation resources would be protected and enhanced by re-establishing the direct connection from the Yosemite Valley Loop Trail and the Happy Isles Nature Center to the John Muir Trail and Yosemite Wilderness. Therefore, the project will not result in a direct and adverse effect on recreational Outstandingly Remarkable Values.

Scenic *The scale, grandeur, and extraordinary concentration of scenic features in the Merced River watershed inspire emotional connections to the river and surrounding Yosemite National Park.* ORV 16—Visitors to Yosemite Valley experience views of some of the world's most iconic scenery, with the river and meadows forming a placid foreground to towering cliffs and waterfalls. The management standard is defined according to river segment classification and associated acceptable contrast ratings. Recreational segment (2A) shall meet Visual Resource Management (VRM) Class III definitions: *Class III Objective – Partially retains existing character of the landscape. Any changes to the landscape should result in moderate differences. Management activities may be noticeable but should not dominate views. Any changes should repeat the basic elements found in the predominant natural features of the landscape*	• Temporary intrusions into the scenic views of the river will occur during the bridge work. Scenic features will be restored after work is completed. • Scenic views from the bridge once construction is complete will enhance and expand visitor opportunities for inspirational moments and access to views they would otherwise be unable to experience. • "Recreation" river segments are readily accessible by road or railroad, may have some development along shorelines, and may have undergone impoundment or diversion in the past. Replacing the historic bridge will not result in a classification modification.
Mist Trail Corridor Project - Merced River Cultural ORVs	**Magnitude and/or Extent of the Proposed Activities**
The continuum of human use along the Merced and South Fork Merced River encompasses thousands of years, a diversity of people and cultures, and a variety of uses. Historic/cultural landscapes, historic structures, and archeological resources along the rivers reflect trade, travel, and settlement patterns from prehistory to present-day. Prehistoric, historic, and modern American Indian uses of the park form a long continuum of cultural, traditional, and spiritual uses and veneration for the area.	

Cultural -Archeological District The Yosemite Valley Archeological District: An adverse impact, as defined under the MRP, occurs when the number of sites free from current serious human impacts falls to 60% for sites with low data potential, and 70% for sites with high data potential, in a ten-year monitoring interval.	• The proposed construction of a new footbridge would involve ground disturbance and vegetation removal that may adversely affect archeological resources. All proposed ground disturbances associated with the new footbridge construction, staging areas, and new trail access from the new footbridge to the Mist Trail Corridor would need to be reviewed by the park archeologist and affiliated Tribes to incorporate resource protection measures to avoid adverse effects. With implementation of these measures, the project will not result in a direct and adverse effect on cultural Outstandingly Remarkable Values. • Tribal consultation for this project was initiated in March 2022 during early project planning, and ongoing discussions and input at October 2024, September 2025, and March 2027 co-stewardship meetings. While not formal comments, some Tribal members at these meetings expressed interest in the bridge and more areas for people to reflect in nature. Formal consultation will be concluded upon the completion of the EA.
Cultural – Historic District Yosemite Valley Historic Resources: An adverse impact would occur if 40%-60% of the extant assets are in "good" or "fair" condition; if more than 20% of the assets are in "serious" condition; or more than 30% of the contributing resources of the three NHLs are in "poor" or "serious" condition The ORV includes three National Historic Landmarks (the Ahwahnee Hotel, the Rangers' Club and the LeConte Memorial Lodge), as well as the Yosemite Valley Historic District (comprised of three historic developed areas - the Ahwahnee Hotel developed area, Camp Curry, and Yosemite Village), numerous sites, and broad-scale landscape characteristics). Because the historic district is one complete whole, the ORV includes those components that extend beyond the ¼-mile Merced wild and scenic river corridor.	• The historic footbridge abutments and gaging station within the construction footprint are contributing to the Half Dome Trail Corridor Cultural Landscape (HDTCCL). Reinstatement of a footbridge in this location would have a beneficial effect on the HDTCCL because it would restore landscape characteristics such as land use, circulation, existing trail alignments, historic viewsheds and connectivity to buildings and structures such as the Happy Isles area. The design of the footbridge would retain the historic gaging station and abutments, follow the style and design guidelines of the district, and would not destroy historic materials that characterize the property. Therefore, the project will not result in a direct and adverse effect on historic cultural Outstandingly Remarkable Values. • SHPO consultation is in process and will be concluded concurrently with the EA.
Cultural – Ethnographic Resources *Yosemite Valley American Indian ethnographic resources: Meadow fragmentation, black oak health, and riparian habitat*	• Meadow fragmentation: The project footprint does not extend into intact meadow habitat. • Black oak health: There are no black oak trees or groves that will be impacted by this project. The current black oaks in the project vicinity are located further west near the Happy Isles Fen and will be protected.

	• Riparian habitat: See biological indicators ORV above. Accordingly, the project will not result in a direct and adverse effect on ethnographic Outstandingly Remarkable Values.

Required Measures

These measures are required to ensure no degradation of river values during construction.

Erosion Control

Water quality management is delegated to state and local resource agencies. Erosion control often falls to local zoning, conservation commissions, and NPDES permits or Section 401 water quality certifications under the Clean Water Act. By coordinating with the appropriate agencies and including specific conditions about sediment erosion control, effective protections for riverine health can be implemented.

Required Measures

- An erosion and sediment control plan must be developed for the site and remain on site for the duration of the project. Particular attention shall be given to any drainage ways, ditches and streams that could convey sediment laden water directly to the Merced River. Appropriately designed rock-check dams and other erosion controls shall be utilized in ditches and drainage ways.
- A phased construction schedule must be utilized to minimize open areas and reduce the potential for erosion. Temporary vegetative cover must be used to stabilize areas that are not subject to active construction. Any exceptions to these conditions must be authorized by the NPS in writing or otherwise made part of this determination.
- Appropriate sediment/storm water controls must be installed prior to grading or other land disturbing activities.
- Properly installed (framed and entrenched) silt fence shall be properly installed around the work site perimeter and storm water inlets.
- All erosion control devices shall be inspected daily and properly maintained until final site stabilization is achieved. Accumulated sediment shall be cleaned out of erosion control devices, and worn-out or deteriorated materials must be replaced on a regular basis.
- All sediment and erosion controls shall be removed upon stabilization of the project area with vegetation.
- Straw bales shall not be permitted as a form of erosion control.
- All denuded areas, including ditches, culverts and river/stream banks, shall be permanently seeded using native plant materials approved by NPS Vegetation and Ecological Restoration Branch staff, and mulched (or covered with fiber mat material)

immediately upon completion of earthwork or temporarily seeded and mulched (or covered with fiber mat material) within seven days if the area is to remain idle for more than thirty days.

Construction Equipment/Staging Areas/Work Site

A majority of impacts to the river that are attributed to construction activities can be avoided by maintaining a tidy site. Proactive site management minimizes the potential for unintended consequences. Standard best practices include scheduling to avoid sensitive periods, biological monitoring, erosion and sediment control, and revegetation.

Required Measures

- Litter and construction debris shall be contained daily. Construction and/or worker-generated debris/garbage must be contained on site in properly covered containers; daily clean up must be performed to prevent materials from entering the river.
- All construction equipment must be inspected daily for hydraulic and fuel leaks and repaired as necessary. When not in use, idle equipment, petrochemicals and toxic/hazardous materials shall be locked and may not be stored in the 100-year floodplain or near any drainage ways, ditches or streams; discharge of petroleum products, cement washings, or other construction materials into the river is not permitted.
- All fueling operations, lubricating, hydraulic topping off, fuel tank purging, and equipment maintenance/repairs shall be performed at an upland site outside of the one-hundred-year floodplain. These activities shall take place on an approved pad with spill control/collection devices in place. The use of canola oil or other biodegradable fuels and fluids is recommended when working in sensitive riverine environments.
- Appropriate oil spill kits shall be maintained on site and readily accessible at all times during construction and each operator trained in its use.
- No wastewater shall be discharged into the river.
- Prior to moving construction equipment into the project area, the contractor must take reasonable measures to ensure that each piece of equipment is free of soil, seeds, vegetative matter, or other debris that may contain seeds of non-native invasive species (consider including aquatic if equipment will be used in-stream). Heavy equipment must be inspected for non-native invasive plant species outside of park boundaries before moving onto the site.
- All tools, equipment, barricades, signs, surplus materials, and rubbish from the project work limits shall be removed upon project completion. All construction debris and litter must be completely removed off site and disposed of properly upon completion of the project.

- All debris, excess fill material, and excavated material shall be disposed of at an approved upland location (above 100-year flood elevations). Disposal in wetlands, floodplains or within 1000 feet of the Merced River is prohibited.

Bridge Rehabilitation/Restoration/Removal

Location and timing of construction activities are important to cause the least amount of disturbance to aquatic ecosystems and local fisheries.

Required Measures

- If painting, and/or sand or water blasting of any portion of the bridge is necessary, appropriate aprons shall be utilized to provide for complete containment of all paint, and/or sealant over-spray particles and other debris during bridge removal, installation, or maintenance operations.
- Fire retardant, termiticide, and insecticide/fungicide shall be applied to new and reused wooden bridge members outside of surface waters or wetlands.
- Aprons, tarps, shrouds, and/or other containment devices must be in place during bridge demolition, bridge maintenance, bridge construction and/or bridge surfacing activities to capture falling debris, paints, welding slag, sealant overspray, asphalt deck materials, or other debris. All concrete chunks, asphalt, grindings, concrete materials, wood, rebar, and other debris generated during demolition or construction that enters the river shall be immediately removed and taken to an appropriate disposal facility outside of the floodplain.
- All concrete chunks, asphalt, grindings, concrete materials, wood, rebar, and other debris generated during demolition or construction that enters the river must be immediately removed from the river and taken to an appropriate disposal facility outside of the floodplain.
- Replacement bridges that are designed to span the river (no piers in the water) are preferred. At minimum, replacement bridge design shall result in the elimination or reduction of instream piers with no net addition of piers.
- No net gain of transportation corridors is required unless otherwise agreed to in writing. All approaches and abutments must be returned to preconstruction condition. Bed, banks, and river corridor must be fully restored and no net loss of floodplain is required unless otherwise agreed to in writing.

Section 7 Determination

The proposed work on Mist Trail Corridor Project PEPC 105979 project is consistent with management goals to protect and enhance the Merced Wild and Scenic River. These actions will not have a direct and adverse effect on the free-flowing condition, water quality, or outstandingly remarkable values listed above of the Merced Wild and Scenic River. The project is consistent with the non-degradation and enhancement policy of the Wild and Scenic Rivers Act and will not degrade the values for which the Merced River was designated. Therefore, this project is approved for implementation.

Approved By: _____,
Raymond McPadden, Superintendent, Yosemite National Park

_____,
Randy Lavasseur, Deputy Regional Director, National Park Service, Interior Regions 8, 9, 10, and 12

References

1. *Merced River Plan/EIS, 2014 Volume-1_web_2014Feb14.pdf*
2. *National Park Service, Reference Manual 46: Wild and Scenic Rivers (U.S. Department of the Interior, 2021).*

Appendix

- *Project location map*
- *Site maps*
- *Happy Isles Footbridge Replacement Designs*

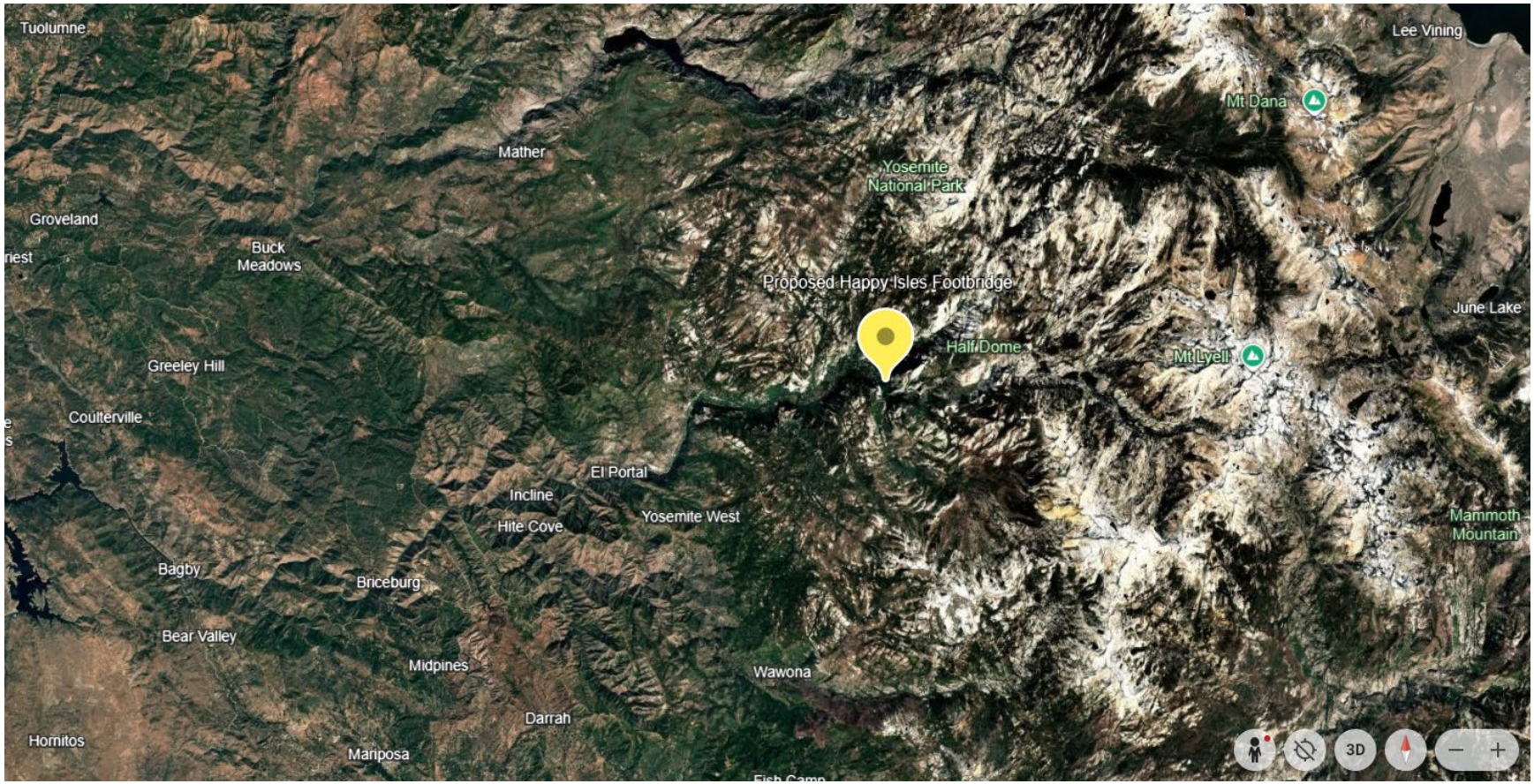


Figure 1. Extent map of Yosemite National Park showing the general location of the project.

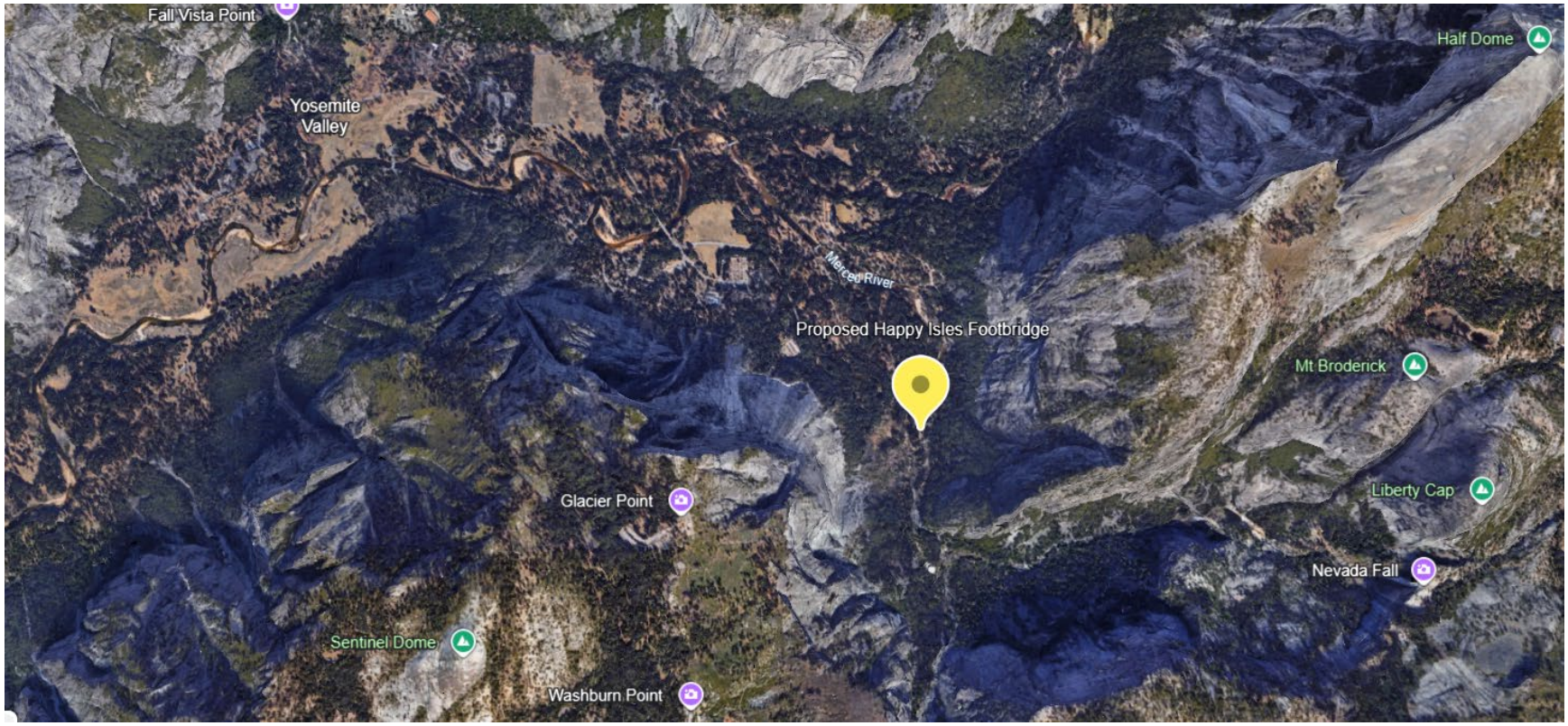


Figure 2. Zoomed in extent of the project location in Yosemite Valley in Yosemite National Park.



Figure 3. Conceptual map of Happy Isles area in Yosemite Valley zoomed in to the specific location of the project. The green, yellow, and orange lines are existing trails, the blue dashed line is the approximate location of the 100-year floodplain.

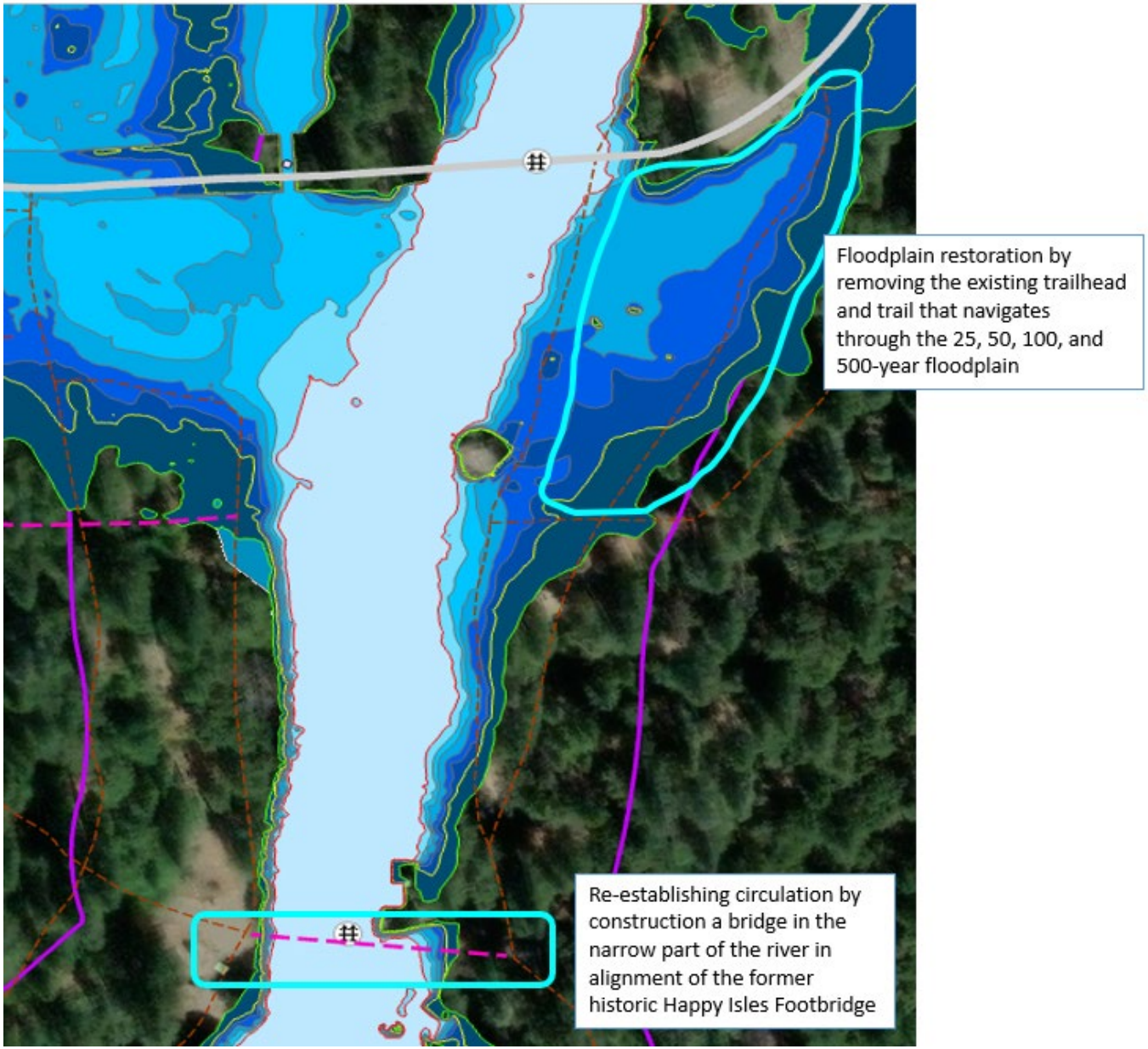


Figure 4. Zoomed in map of the Merced River in the Happy Isles area of the locations of the existing trailhead and the bridge construction. The floodplain restoration will remove the brown dashed line within the turquoise polygon, and retain the others (Valley Loop Trail on the east and horse trail on the west towards the active channel. The blue gradient polygons represent the 2-year (red outline), and 5, 10, 25, 50, 100, and 500 year floodplain. The floodplain restoration will occur within the 25, 50, 100, and 500 year floodplain.

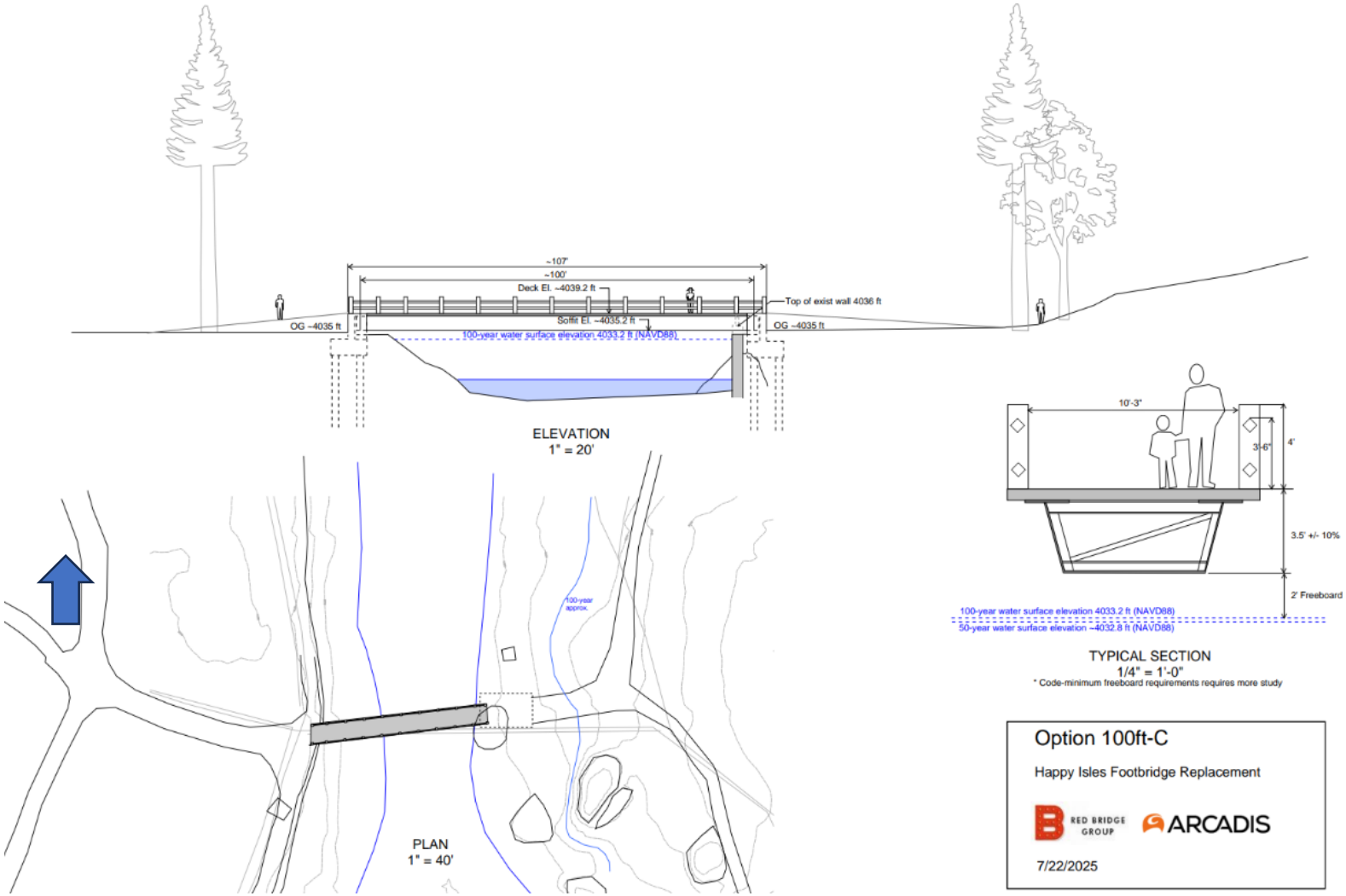


Figure 5. Conceptual design of the constructed bridge, from profile and overhead view. The bridge would use the existing abutment on the east side of the river

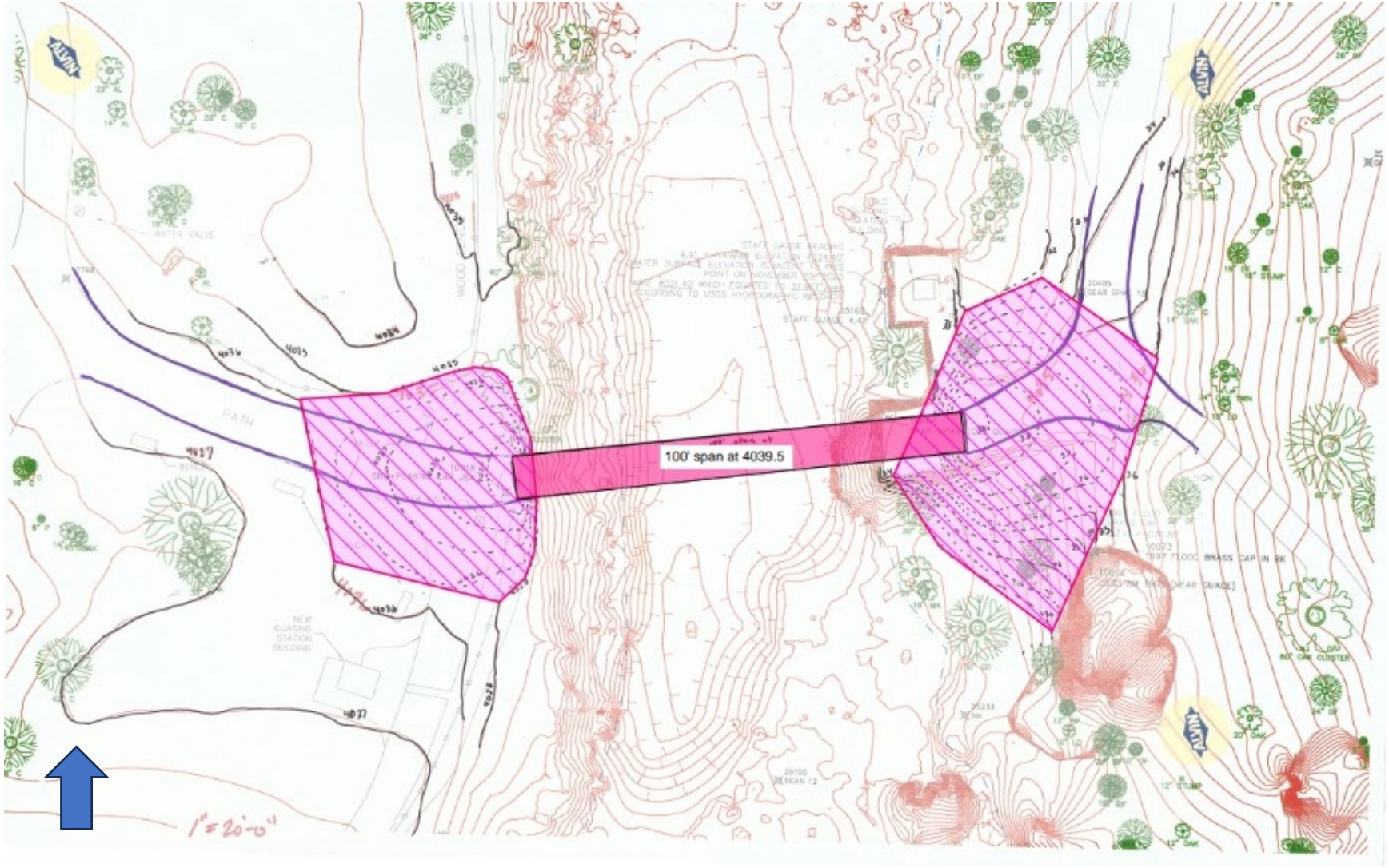


Figure 6. Grading plan study and proposed construction limits of the footbridge.