

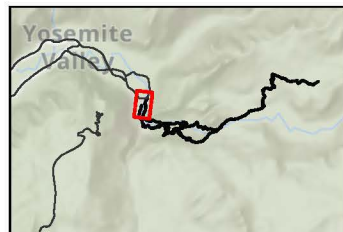
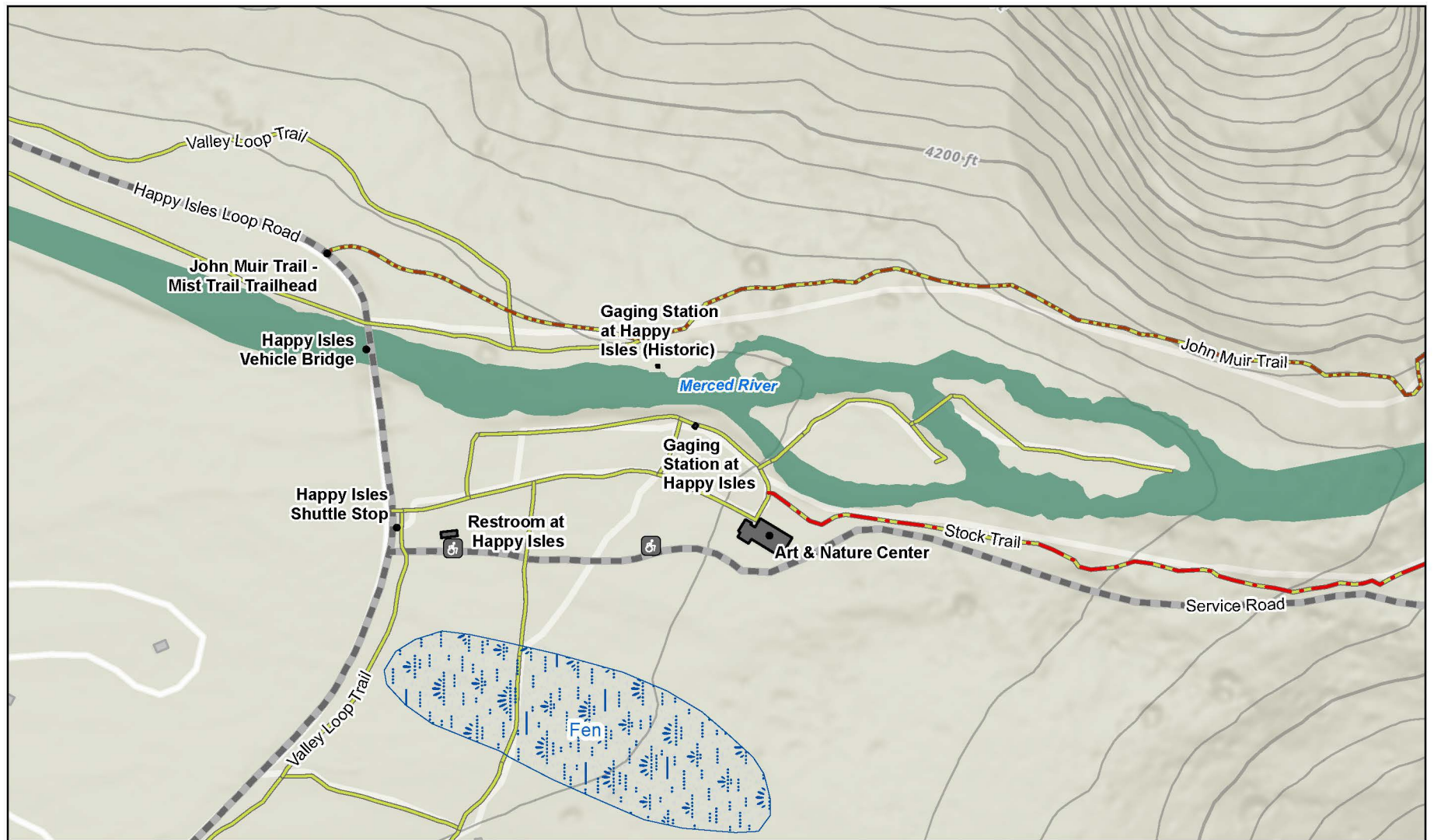


APPENDICES



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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



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, Geodatasystemen, 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, (c) 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

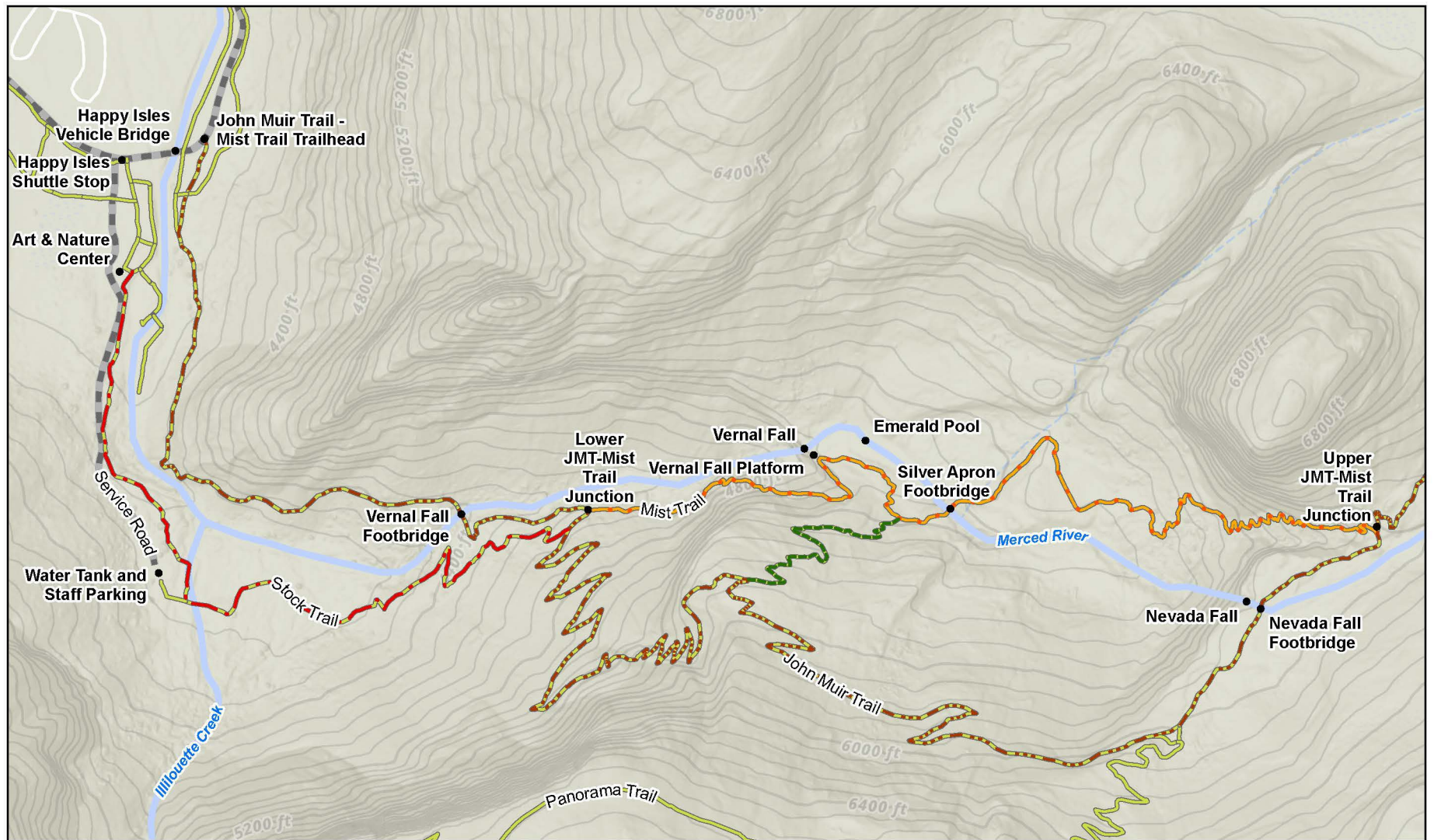
Mist Trail Corridor Project
Environmental Assessment

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



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, (c)
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 <i>Scenic Vista Management Plan</i> and the 2014 <i>Merced Wild and Scenic River Comprehensive Management Plan</i> .
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 SVMP’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: <i>Floodplain Management</i>	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: <i>Cultural Resource Management</i>	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 operations¹ 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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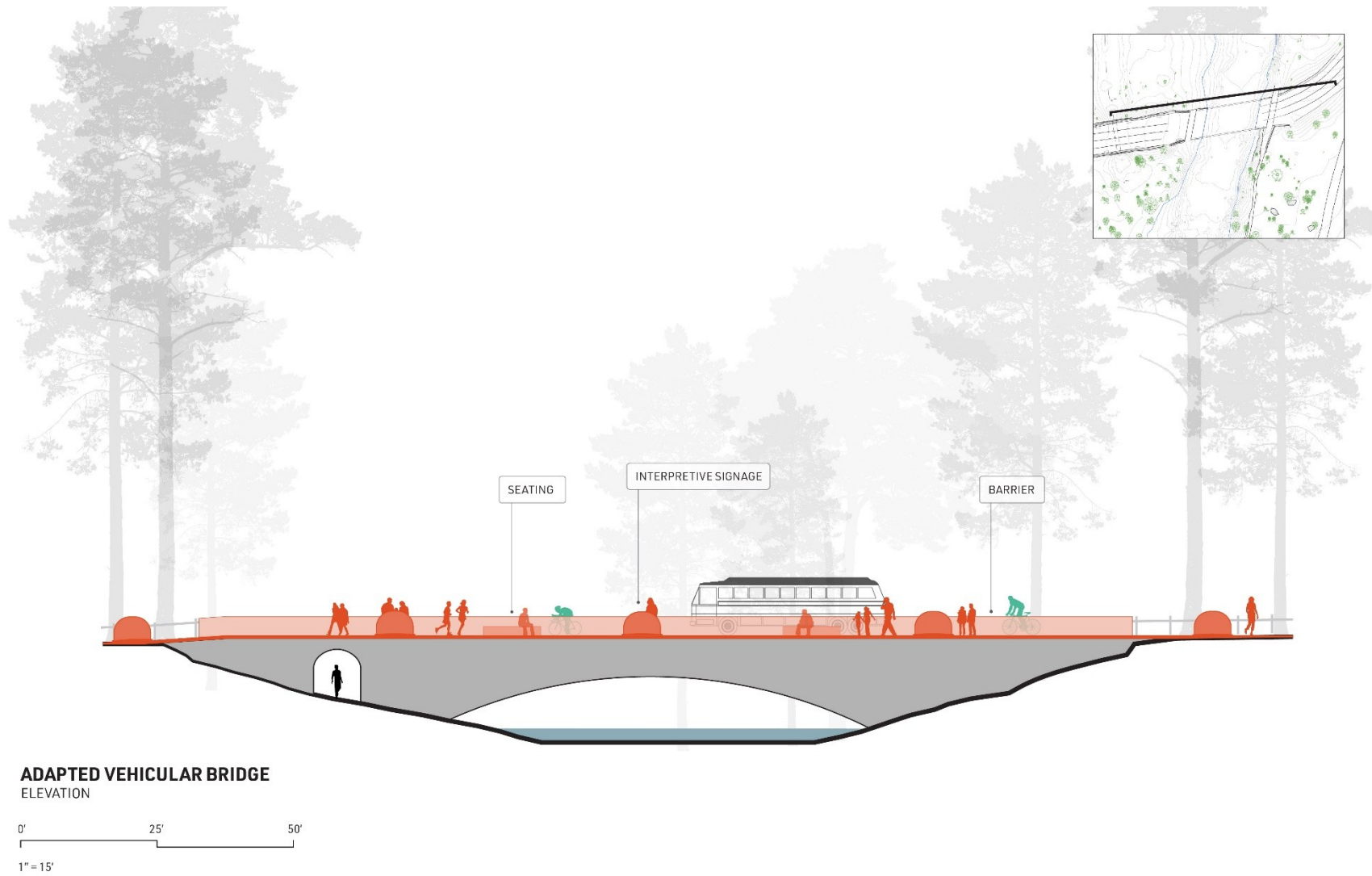


Figure E-2. Proposed Alternative B Adapted Vehicle Bridge Schematic

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Figure E-3. Proposed Alternative B Existing Trailhead Concept

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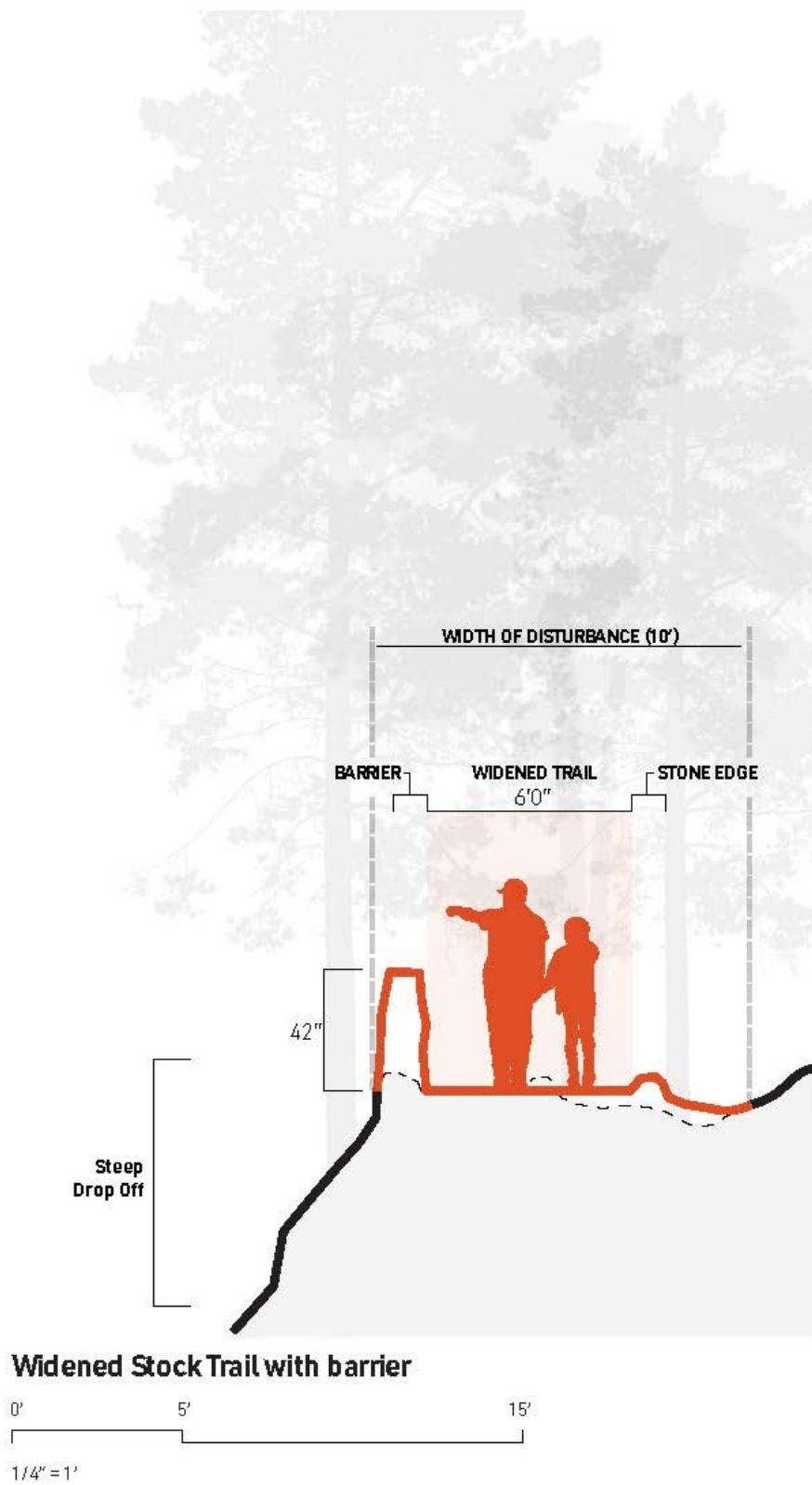


Figure E-4. Proposed Stock Trail Widening Concept

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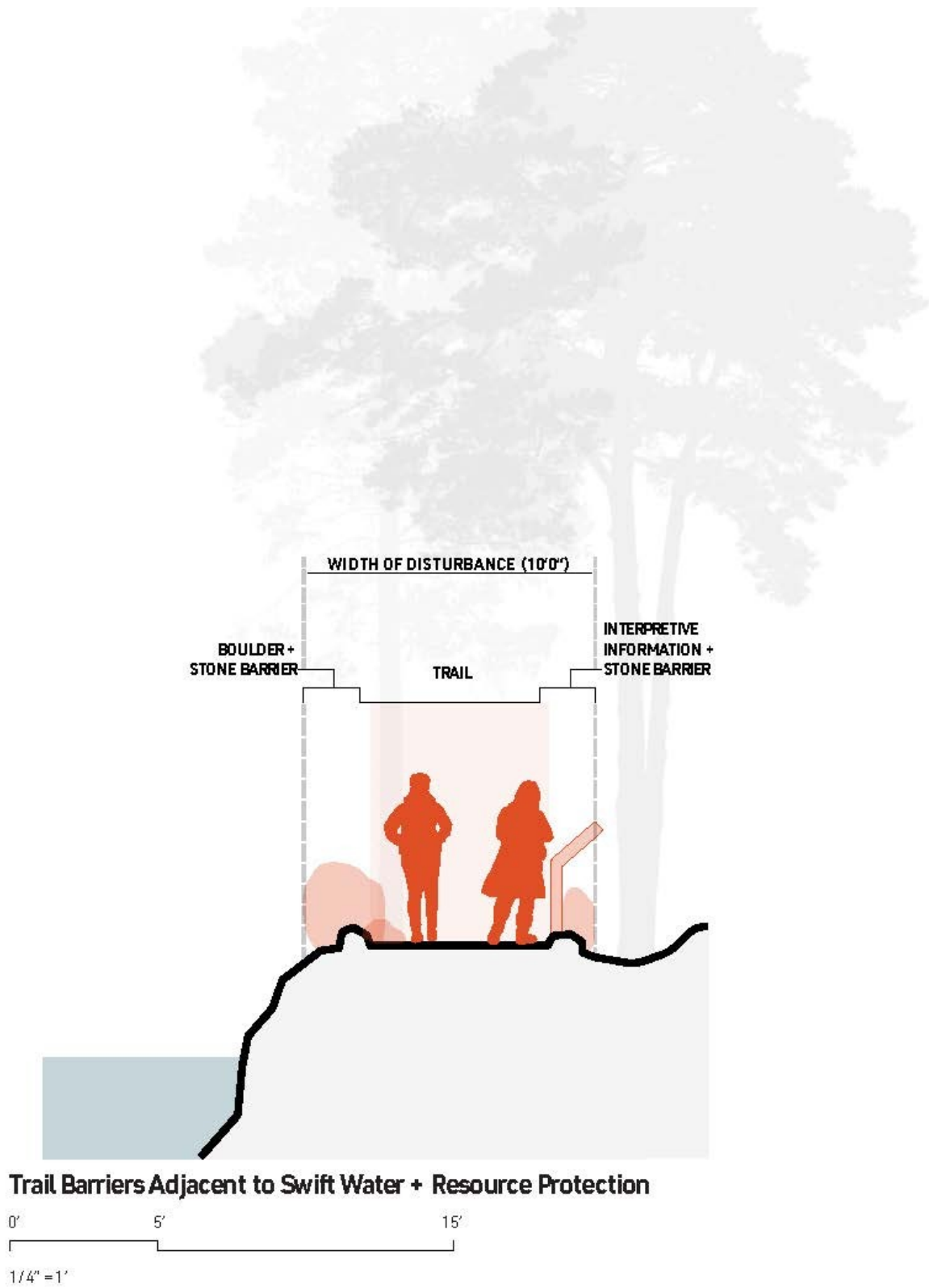
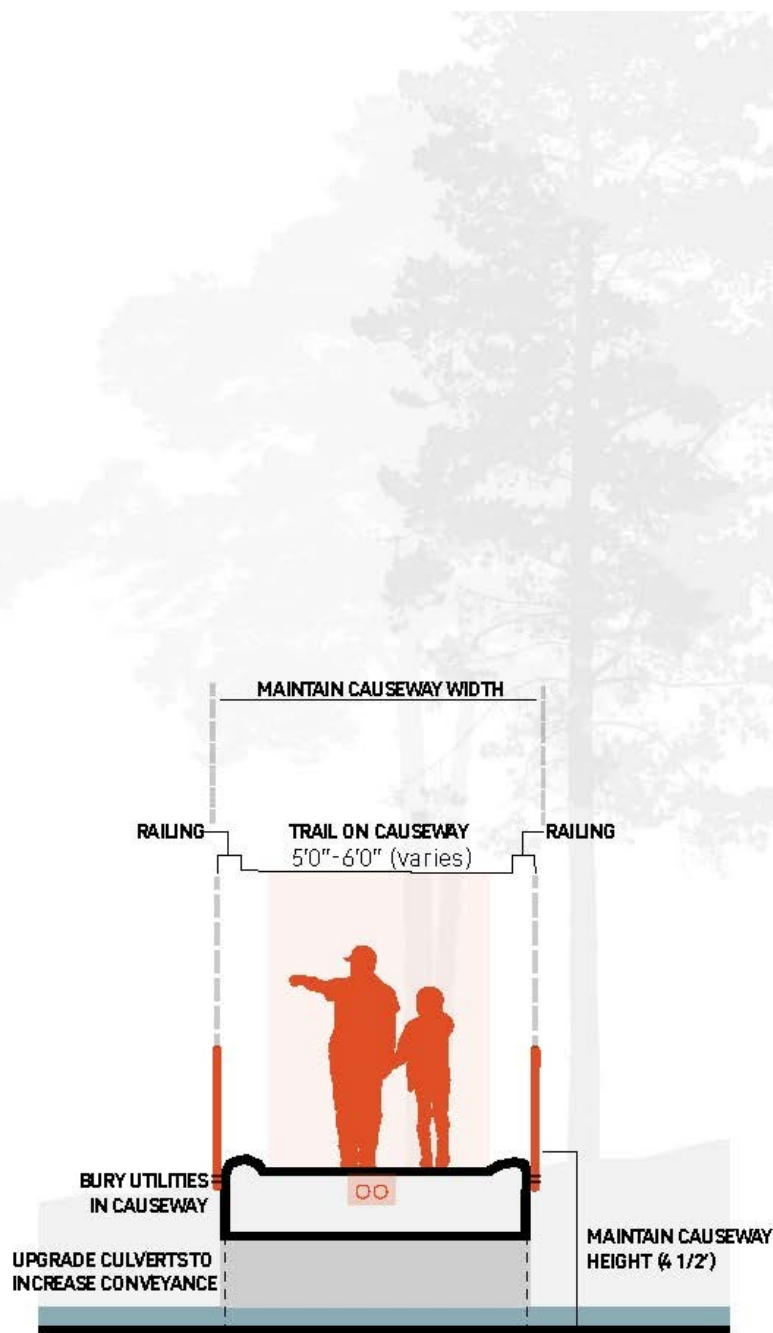


Figure E-5. Proposed Stock Trail Barriers and Signage Concept

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Illilouette Creek Causeway with Railing + Trenched Utilities



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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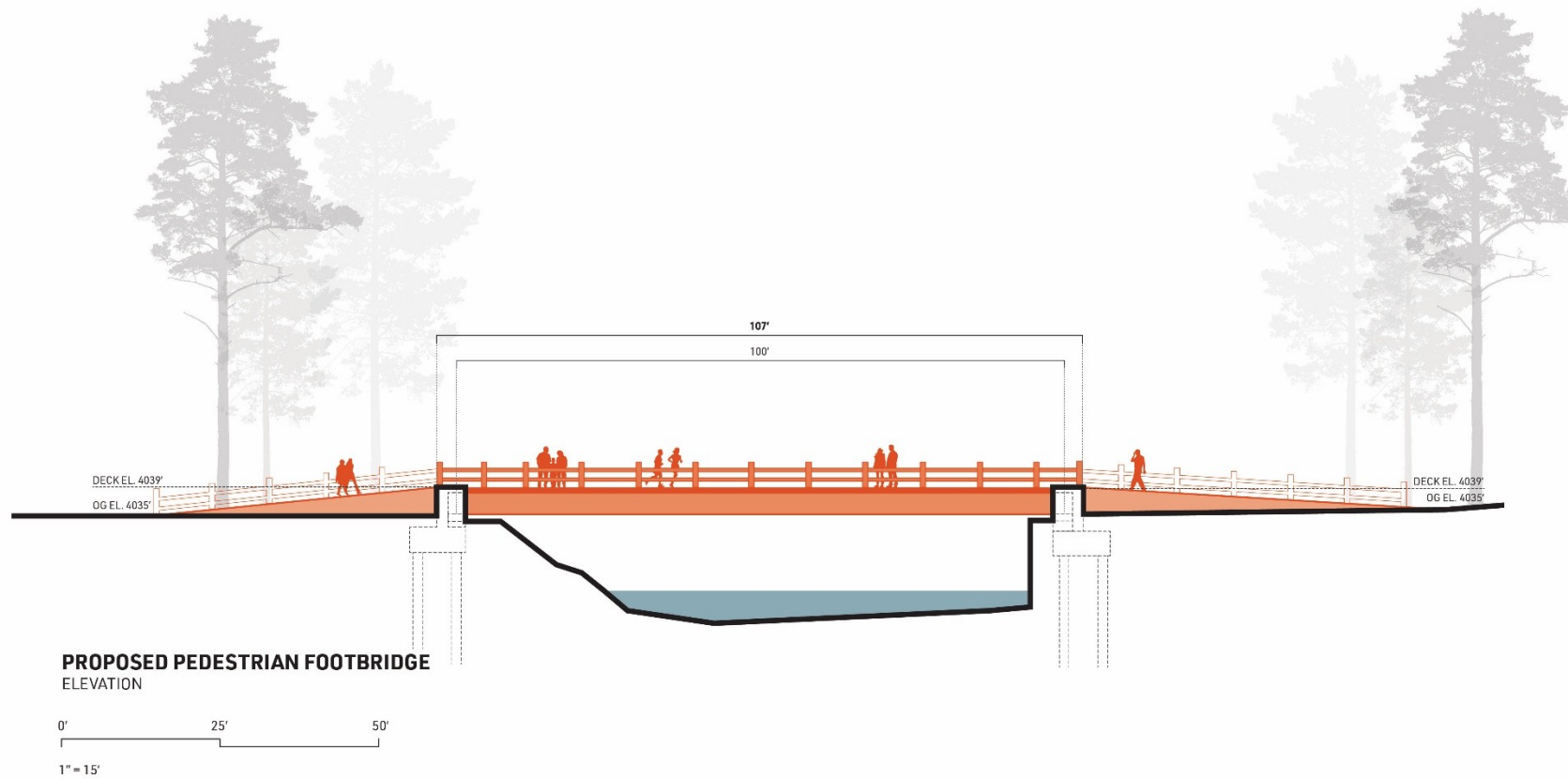


Figure E-8. Proposed Alternative C Happy Isles Footbridge Schematic

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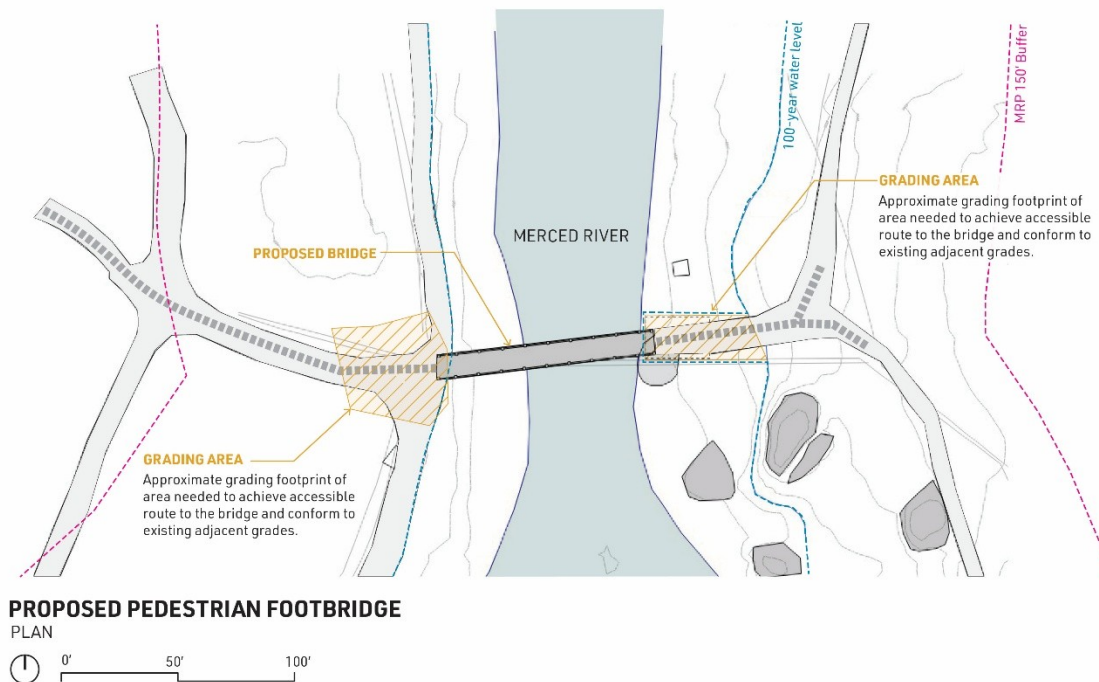


Figure E-9. Indicative Alternative C Happy Isles Footbridge Construction and Grading Areas

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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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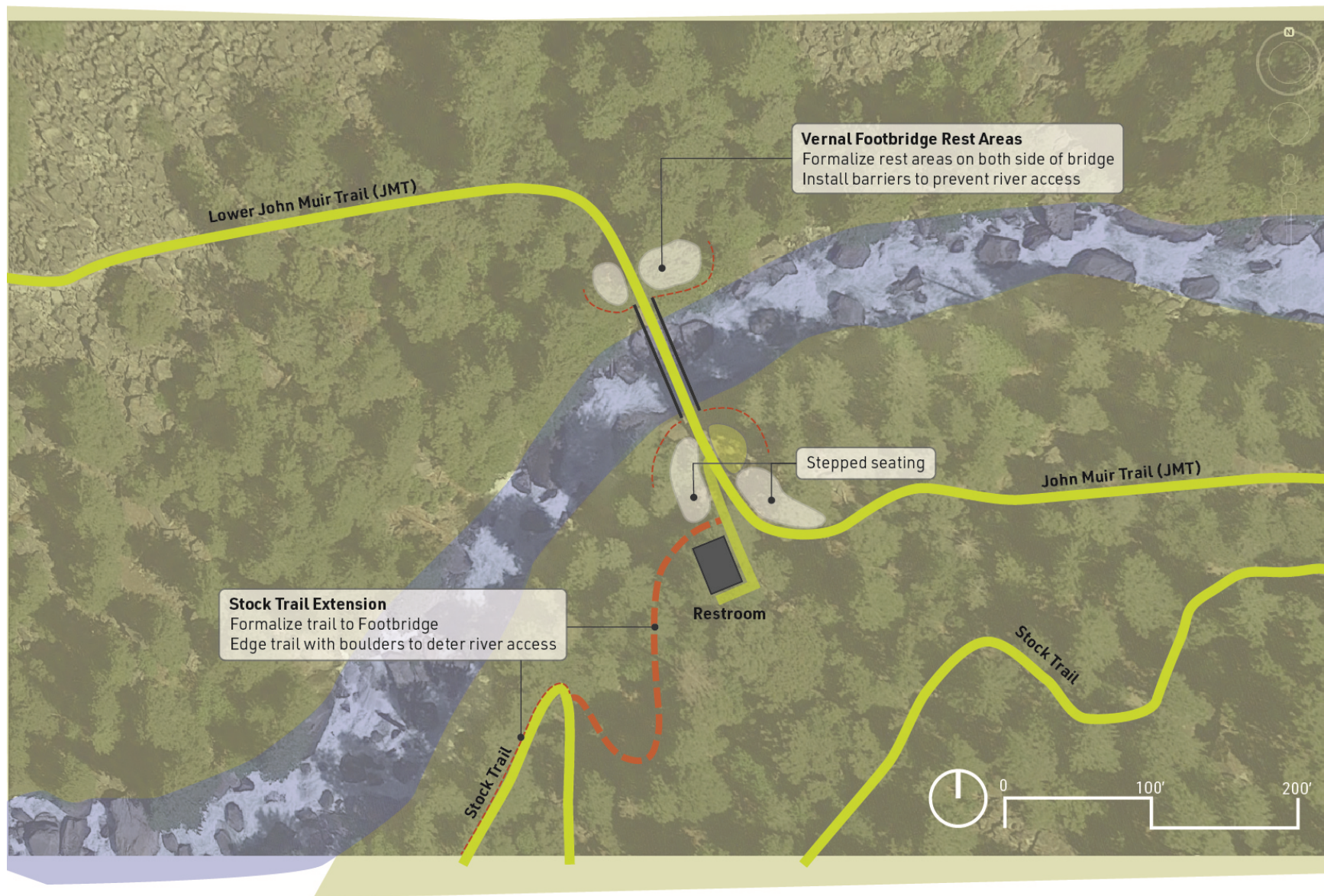


Figure E-13. Proposed Trail Pullouts/Seating Concept at Vernal Fall Footbridge

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 sidewalks 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 (<i>Pekania pennanti</i> 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 (<i>Canis lupus</i>)	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 (<i>Gulo gulo luscus</i>)	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 (<i>Scientific name</i>)	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 (<i>Vulpes vulpes necator</i>)	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 (<i>Strix occidentalis occidentalis</i>)	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 (<i>Strix nebulosa</i>)	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 (<i>Empidonax traillii</i>)	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 (<i>Scientific name</i>)	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 (<i>Actinemys marmorata</i>)	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 preying 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 <i>Water Resources, Environmental Consequences</i> section of the Mist Trail Corridor Project Environmental Assessment (EA).
Amphibians		
California red-legged frog (<i>Rana draytonii</i>)	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 <i>Biological Resources, Environmental Consequences</i> 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 (<i>Rana boylei</i>)	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 (<i>Scientific name</i>)	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 (<i>Rana sierrae</i>)	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 <i>Biological Resources, Environmental Consequences</i> section of the Mist Trail Corridor Project EA. As such, this species is unlikely to be present in the project area.
Yosemite toad (<i>Anaxyrus canorus</i>)	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 (<i>Hydromantes platycephalus</i>)	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 (<i>Scientific name</i>)	Status ¹	Habitat Type and Likelihood of Occurrence
Insects		
Monarch butterfly (<i>Danaus Plexippus</i>)	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 (<i>Boechera repanda</i>)	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.

¹Status 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

²Target 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 CNDDDB RESULTS

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

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.

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 species¹ 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 Fisheries²).

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](#).

-
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:

Mammals

NAME	STATUS
Fisher <i>Pekania pennanti</i> 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 <i>Canis lupus</i> There is final critical habitat for this species. https://ecos.fws.gov/ecp/species/4488	Endangered
North American Wolverine <i>Gulo gulo luscus</i> 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 <i>Vulpes vulpes necator</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4252	Endangered

Birds

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

Reptiles

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

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> 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 <i>Rana boylei</i> 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 <i>Rana sierrae</i> 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 <i>Anaxyrus canorus</i> 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 <i>Danaus plexippus</i> 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.

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

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 <i>Haliaeetus leucocephalus</i> 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 <i>Aquila chrysaetos</i> 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

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.

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.

Breeding Season (■)

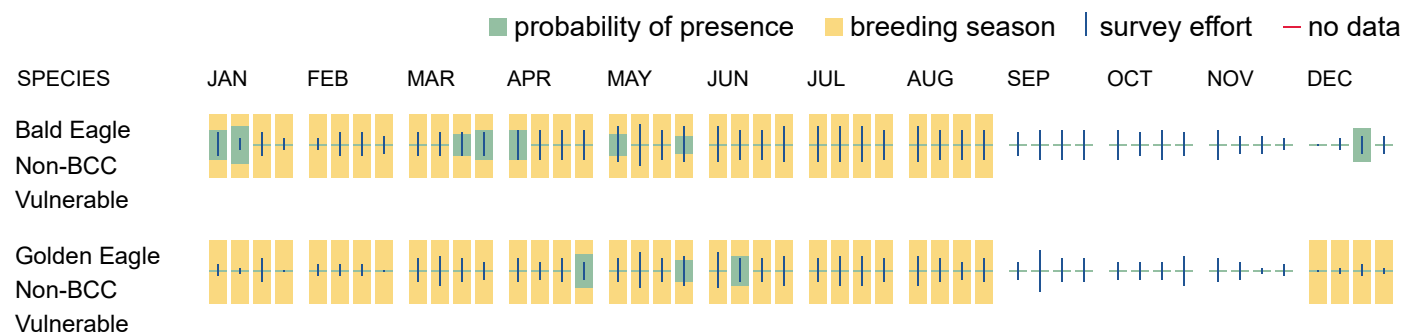
Survey Effort (I)

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

No Data (—)

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.



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.

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

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 <i>Cinclus mexicanus</i> 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 <i>Haliaeetus leucocephalus</i> 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 <i>Cypseloides niger</i> 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 <i>Setophaga nigrescens</i> 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 <i>Larus californicus</i> 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 <i>Strix occidentalis occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 10 to Jun 15

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>

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 (■)

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 (I)

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.





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

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.

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.

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 tubercid 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.



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



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
moosewort <i>Botrychium tunux</i>	PPOPH01240	None	None	G3G4	S1	2B.1
Morrison bumble bee <i>Bombus morrisoni</i>	IIHYM24460	None	None	G3	S1S2	
Mount Lyell salamander <i>Hydromantes platycephalus</i>	AAAAD09020	None	None	G4	S4	WL
mountain bent grass <i>Agrostis humilis</i>	PMPOA040P0	None	None	G4Q	S2	2B.3
North American porcupine <i>Erethizon dorsatum</i>	AMAFJ01010	None	None	G5	S3	
northern slender pondweed <i>Stuckenia filiformis ssp. alpina</i>	PMPOT03091	None	None	G5T5	S2S3	2B.2
northwestern pond turtle <i>Actinemys marmorata</i>	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
Nuttall's ribbon-leaved pondweed <i>Potamogeton epihydrus</i>	PMPOT03080	None	None	G5	S2S3	2B.2
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G4	S3	SSC
Robbins' pondweed <i>Potamogeton robbinsii</i>	PMPOT030Z0	None	None	G5	S3	2B.3
short-leaved hulsea <i>Hulsea brevifolia</i>	PDAST4Z020	None	None	G3	S3	1B.2
Sierra Nevada mountain beaver <i>Aplodontia rufa californica</i>	AMAF01013	None	None	G5T3T4	S2S3	SSC
Sierra Nevada red fox - Sierra Nevada DPS <i>Vulpes vulpes necator pop. 2</i>	AMAJA03017	Endangered	Threatened	G5TNR	S1	
Sierra Nevada yellow-legged frog <i>Rana sierrae</i>	AAABH01340	Endangered	Threatened	G2	S2	WL
silver-haired bat <i>Lasionycteris noctivagans</i>	AMACC02010	None	None	G4	S3S4	
slender lupine <i>Lupinus gracilentus</i>	PDFAB2B1R0	None	None	G3	S3	1B.3
slender silver moss <i>Anomobryum julaceum</i>	NBMUS80010	None	None	G5	S2	4.2
slender-stemmed monkeyflower <i>Erythranthe filicaulis</i>	PDPHR012H0	None	None	G2	S2	1B.2
Small's southern clarkia <i>Clarkia australis</i>	PDONA05040	None	None	G2	S2	1B.2
spotted bat <i>Euderma maculatum</i>	AMACC07010	None	None	G4	S3	SSC
Tompkins' sedge <i>Carex tompkinsii</i>	PMCYP03DR0	None	Rare	G3G4	S3S4	4.3



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



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



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Yuma myotis <i>Myotis yumanensis</i>	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 (HDTCCCL) 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 HDTCCCL 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 HDTCCCL 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 HDTCCCL is excerpted from the CLI (Quinn Evans 2026).

The HDTCCCL 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 HDTCCCL 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 HDTCCCL 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 HDTCCCL, 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 HDTCCCL 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 HDTCCCL, 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 HDTCCCL. 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**



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 StoryMap¹ 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 Corral, 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.
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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 <i>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.</i>	- 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

<i>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</i>	▪ There are no meadows within the project area, and none will be impacted because of the project (directly or indirectly) ○ 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 ○ 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.
<i>Geological Processes/Conditions</i> <i>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.</i> <i>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</i>	• Geologic processes will remain largely unaffected by the project. ○ 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

<i>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.</i>	River Plan/EIS. Accordingly, the project will not result in a direct and adverse effect on geological Outstandingly Remarkable Values.
Hydrologic Processes <i>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.</i> <i>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.</i> 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 <i>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.</i>	• 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 <i>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.</i> 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: <i>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</i>	• 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
<i>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.</i>	

<i>Cultural -Archeological District</i> 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.
<i>Cultural – Historic District</i> 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 (HDTCCCL). Reinstatement of a footbridge in this location would have a beneficial effect on the HDTCCCL 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.
<i>Cultural – Ethnographic Resources</i> <i>Yosemite Valley American Indian ethnographic resources: Meadow fragmentation, black oak health, and riparian habitat</i>	• 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.
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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:

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Raymond McPadden, Superintendent, Yosemite National Park

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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*

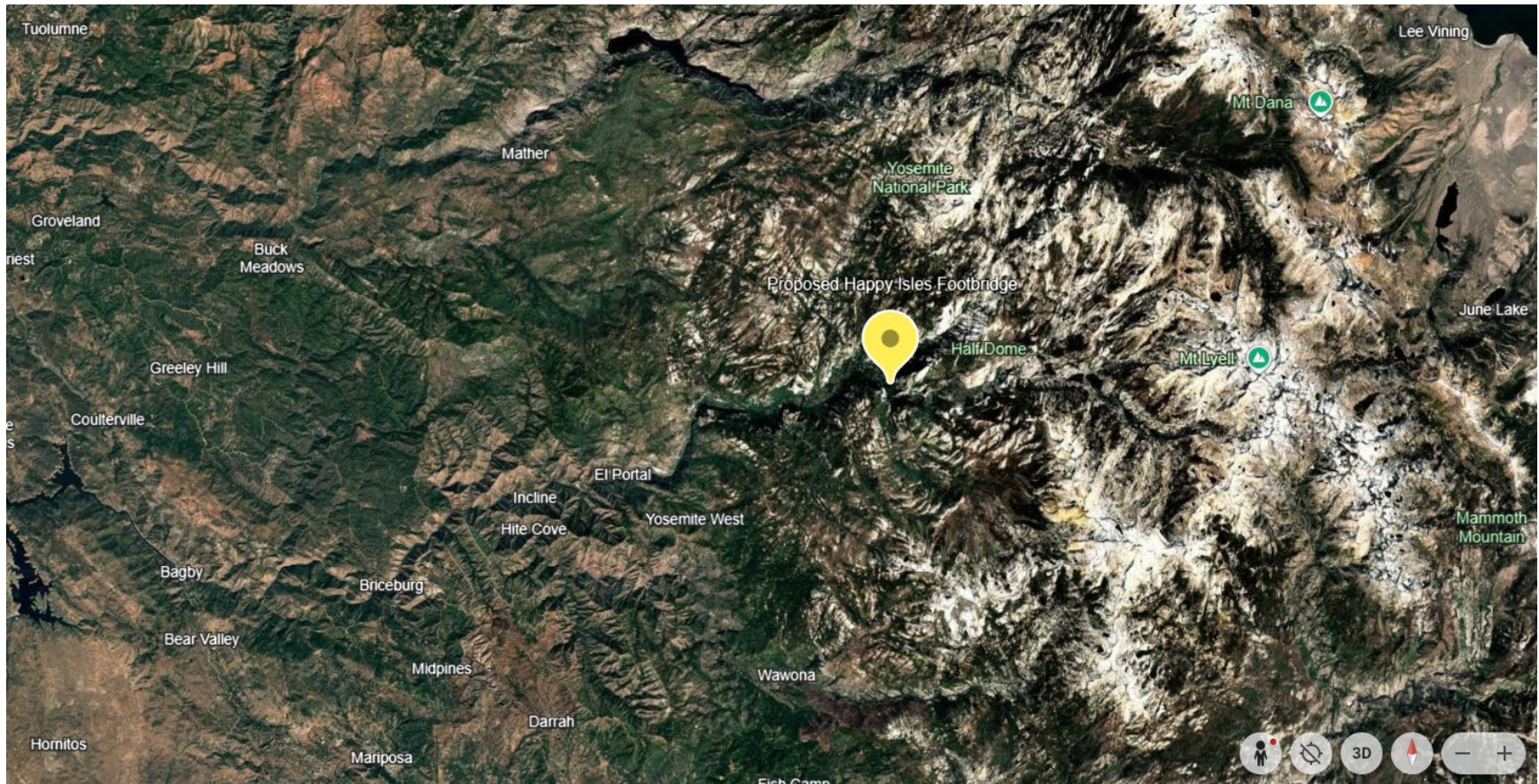


Figure 1. Extent map of Yosemite National Park showing the general location of the project.

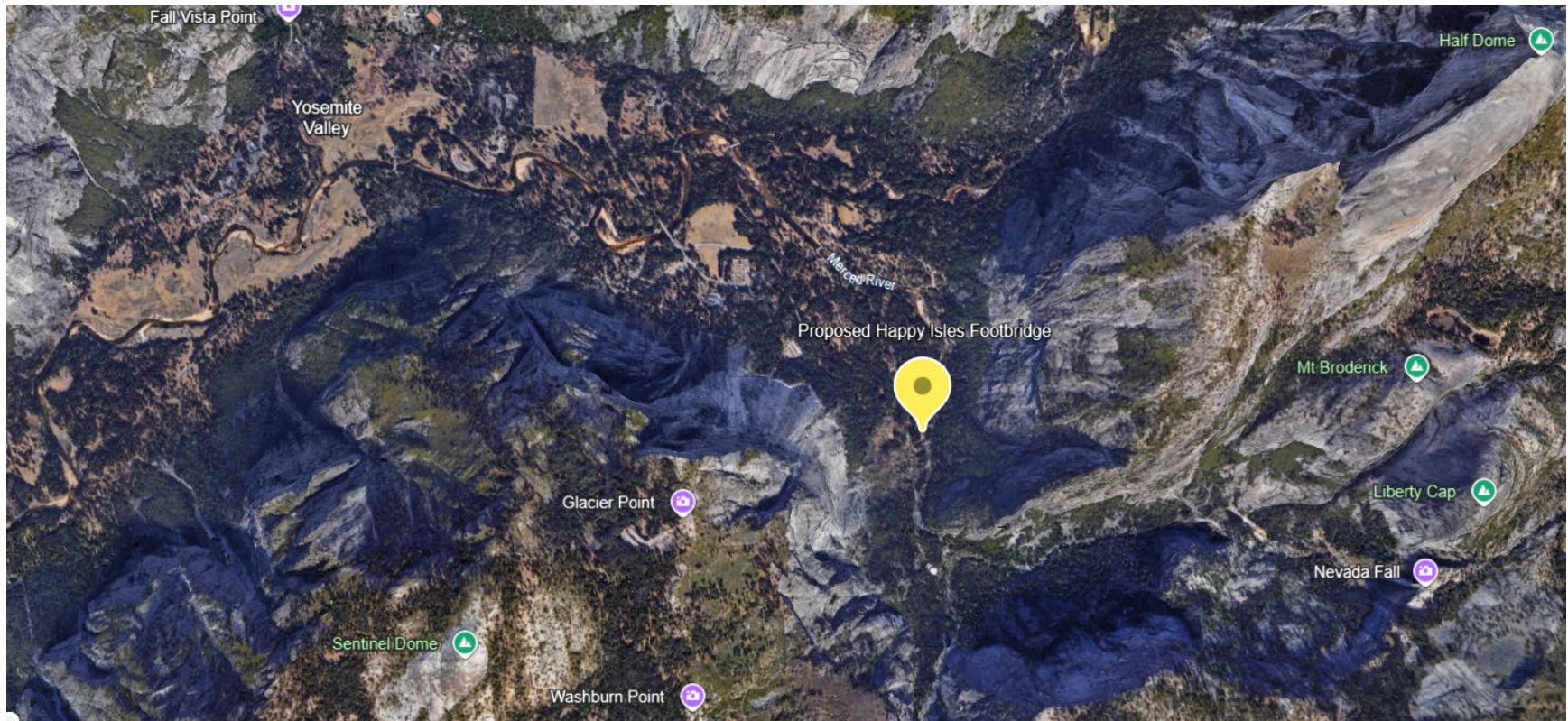


Figure 2. Zoomed in extent of the project location in Yosemite Valley in Yosemite National Park.

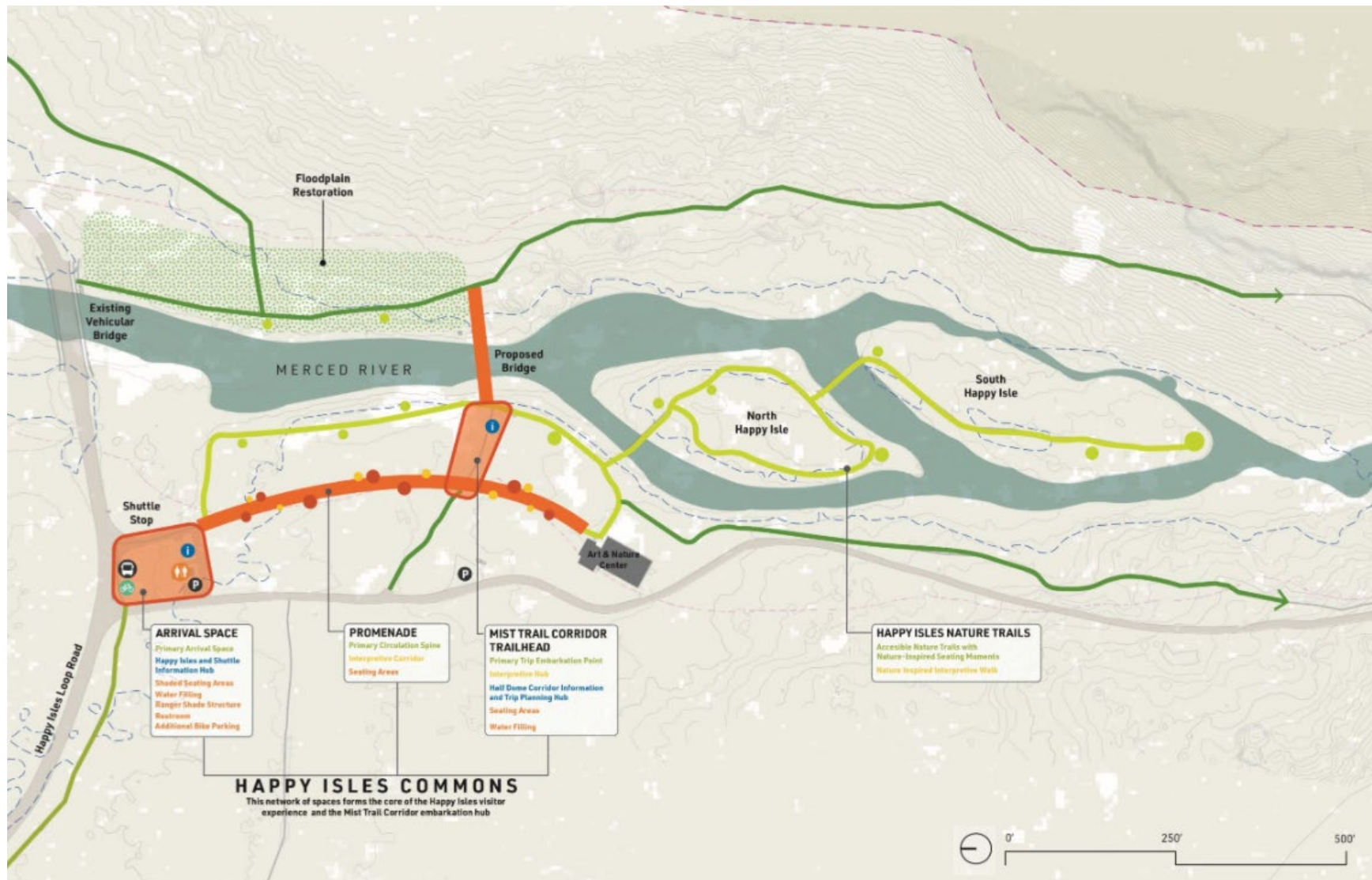


Figure 3. Conceptual map of Happy Isles area in Yosemite Valley zoomed in to the specific location of the project. The green, yellow, and orange lines are existing trails, the blue dashed line is the approximate location of the 100-year floodplain.

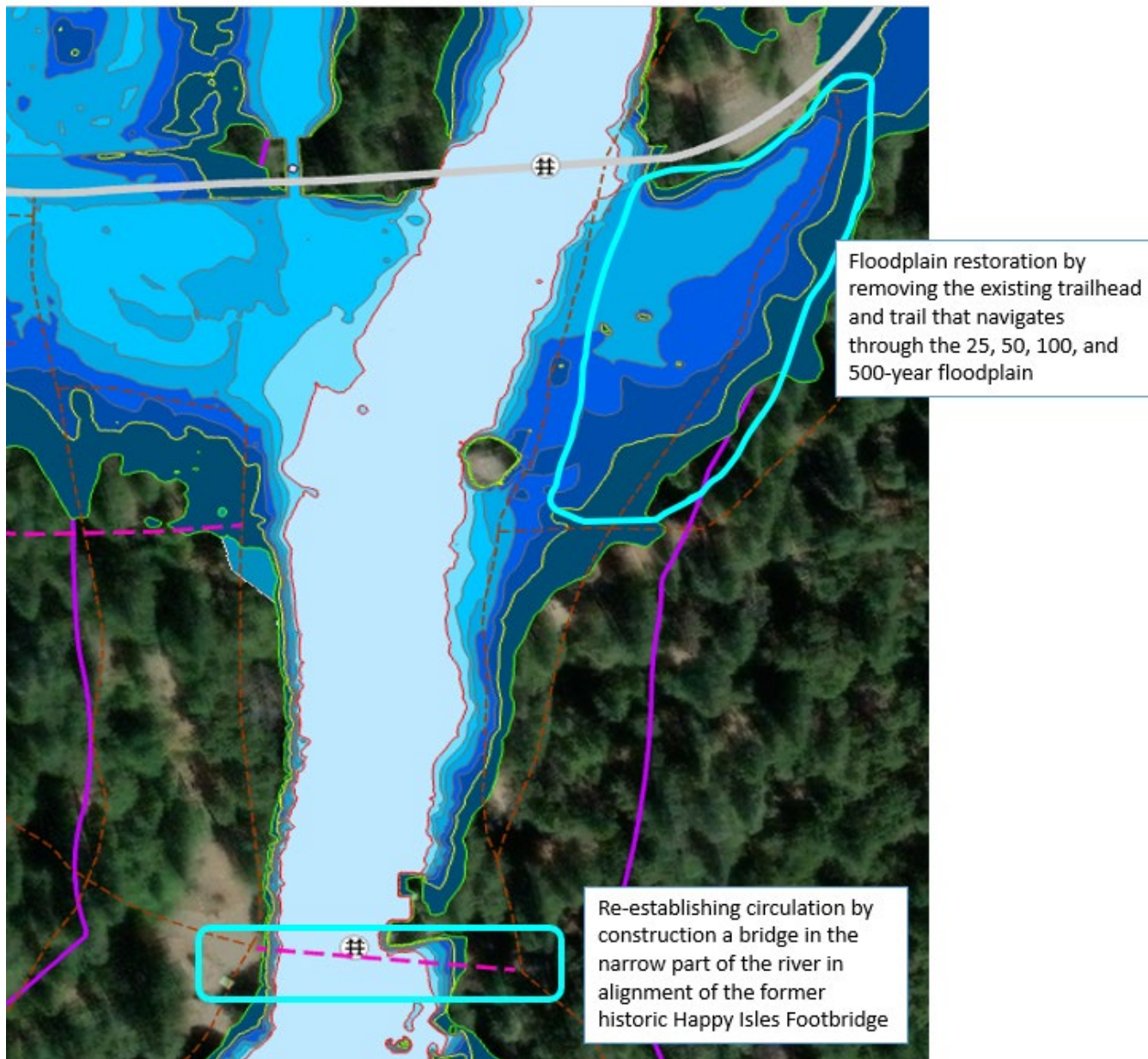


Figure 4. Zoomed in map of the Merced River in the Happy Isles area of the locations of the existing trailhead and the bridge construction. The floodplain restoration will remove the brown dashed line within the turquoise polygon, and retain the others (Valley Loop Trail on the east and horse trail on 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.

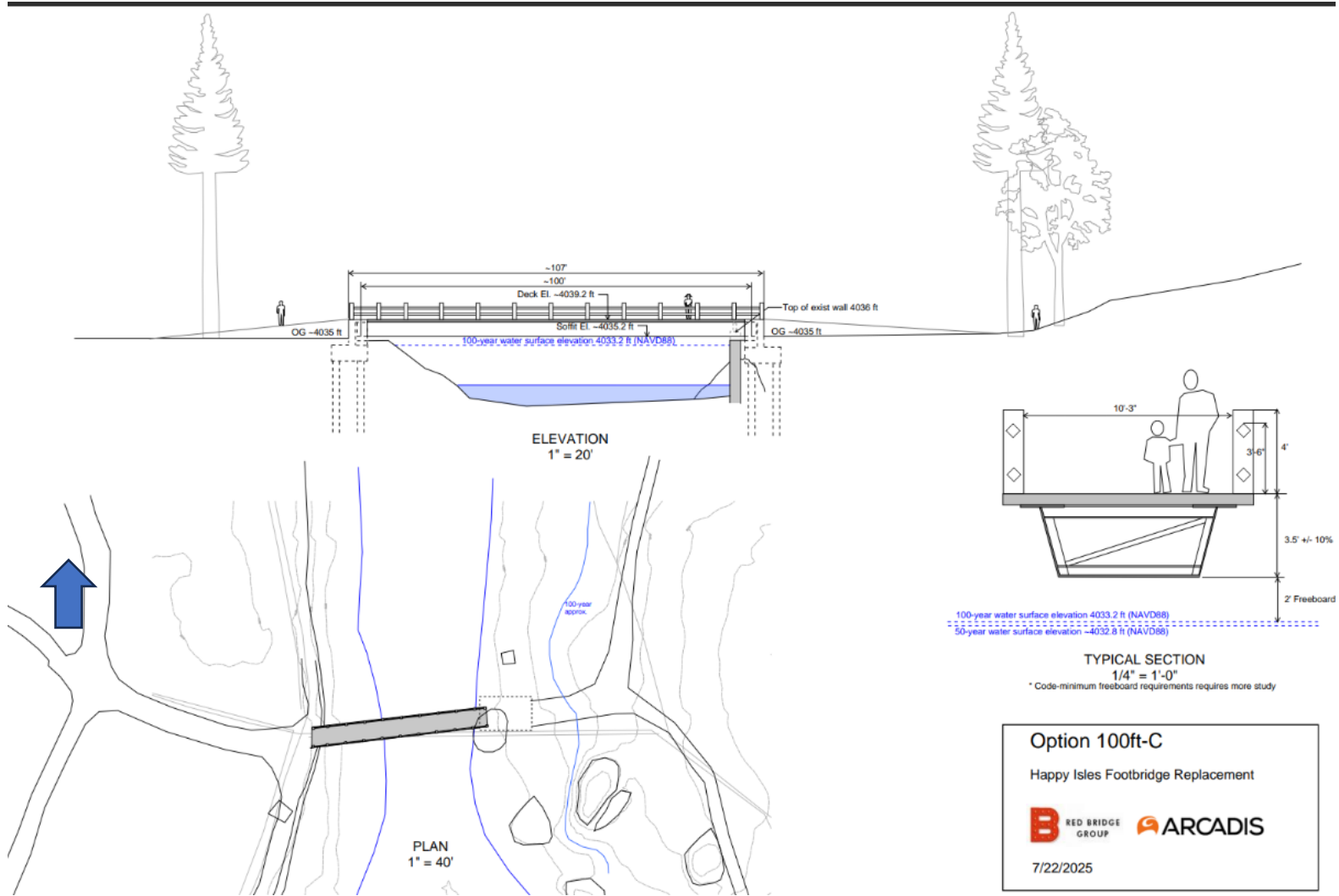


Figure 5. Conceptual design of the constructed bridge, from profile and overhead view. The bridge would use the existing abutment on the east side of the river

