



IN REPLY REFER TO:  
L7615(YOSE-PM)

## United States Department of the Interior NATIONAL PARK SERVICE

Yosemite National Park  
P. O. Box 577  
Yosemite, California 95389

### Memorandum

**To:** Korwin Kirk, Project Manager, Yosemite National Park

**From:** Superintendent, Yosemite National Park

**Subject:** NEPA and NHPA Clearance: 2015-003 Little Yosemite Valley Composting Toilet Leach Field Installation (56675)

The Executive Leadership Team has reviewed the proposed project and completed its environmental assessment documentation, and we have determined the following:

- There will not be any effect on threatened, endangered, or rare species and/or their critical habitat.
- There will be no adverse effect on historical, cultural, or archeological resources.
- There will not be serious or long-term undesirable environmental or visual effects.

The subject proposed project, therefore, is now cleared for all NEPA and NHPA compliance requirements as presented above. Project plans and specifications are approved and construction and/or project implementation can commence.

For the proposed project actions to be within compliance requirements during construction and/or project implementation, the following mitigations must be adhered to:

- If subsurface prehistoric or historical materials are encountered during construction implementation, please stop work and notify the Archeology Office.

**Recommendations for Conditions or Stipulations:** None

For complete compliance information see PEPC Project 56675.

//Don L. Neubacher//  
Don L. Neubacher

Enclosure (with attachments)

cc: Statutory Compliance File

*The signed original of this document is on file at the  
Environmental Planning and Compliance Office in  
Yosemite National Park.*

Letter of Compliance Completion - Little Yosemite Valley Composting Toilet Leach Field Installation - PEPC  
ID: 56675



## Categorical Exclusion Form

**Project:** 2015-003 Little Yosemite Valley Composting Toilet Leach Field Installation

**PEPC Project Number:** 56675

**Project Description:**

The toilet facility currently does not have a leach field. Approximately 800 gallons of sewage (liquid waste) is evaporated each year with an evaporator unit. The 1200 gallons that cannot be evaporated are transported out of the backcountry with pack animals. The evaporator requires more electrical power than the photovoltaic system can produce and power must be supplemented by a gasoline powered generator running 1- 2 hours per day. This project will install a leach field with two lines running parallel 30' long x 16" wide x 24" deep and five feet apart and five feet from the structure. There would be a 10' trench for the discharge pipe running from the structure to the leach lines with a valve box just outside the building.

The installation of the leach field would reduce stock use on the John Muir Trail by 72 mules per season, eliminate the daily generator use in a wilderness area, and reduce the maintenance requirements of the facility by 20 man days per year.

**Project Locations:**

Mariposa County, CA

**Mitigations:**

- If subsurface prehistoric or historical materials are encountered during construction implementation, please stop work and notify the Archeology Office.

**Describe the category used to exclude action from further NEPA analysis and indicate the number of the category (see Section 3-4 of DO-12):**

C.15 Installation of underground utilities in previously disturbed areas having stable soils, or in an existing utility right-of-way.

**On the basis of the environmental impact information in the statutory compliance file, with which I am familiar, I am categorically excluding the described project from further NEPA analysis. No exceptional circumstances (e.g. all boxes in the ESF are marked "no") or conditions in Section 3-6 apply, and the action is fully described in Section 3-4 of DO-12.**

**Superintendent:** //Don L. Neubacher//

Don L. Neubacher

**Date:** 6/15/15

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Yosemite National Park.*



## ENVIRONMENTAL SCREENING FORM (ESF)

### DO-12 APPENDIX 1

Date Form Initiated: 03/24/2015

Updated May 2007 - per 2004 Departmental Manual revisions and proposed Director's Order 12 changes

#### A. PROJECT INFORMATION

**Park Name:** Yosemite National Park  
**Project Title:** 2015-003 Little Yosemite Valley Composting Toilet Leach Field Installation  
**PEPC Project Number:** 56675  
**Project Type:** Other Maintenance Activities (MNT)  
**Project Location:**  
**County, State:** Mariposa, California **District:** Wilderness  
**Project Leader:** Korwin Kirk

Is project a hot topic (controversial or sensitive issues that should be brought to attention of Regional Director)? No

#### B. RESOURCE EFFECTS TO CONSIDER:

Identify potential effects to the following physical, natural, or cultural resources	No Effect	Negligible Effects	Minor Effects	Exceeds Minor Effects	Data Needed to Determine/Notes
1. Geologic resources – soils, bedrock, streambeds, etc.		Negligible			Ground disturbance includes two 30 foot long by 16 inches wide by 24 inches deep.
2. From geohazards	No				
3. Air quality	No				
4. Soundscapes		Negligible			There will be temporary construction noises during the leach field installation.
5. Water quality or quantity	No				
6. Streamflow characteristics	No				

<b>Identify potential effects to the following physical, natural, or cultural resources</b>	<b>No Effect</b>	<b>Negligible Effects</b>	<b>Minor Effects</b>	<b>Exceeds Minor Effects</b>	<b>Data Needed to Determine/Notes</b>
7. Marine or estuarine resources	No				
8. Floodplains or wetlands	No				
9. Land use, including occupancy, income, values, ownership, type of use	No				
10. Rare or unusual vegetation – old growth timber, riparian, alpine	No				
11. Species of special concern (plant or animal; state or federal listed or proposed for listing) or their habitat	No				
12. Unique ecosystems, biosphere reserves, World Heritage Sites	No				Yosemite National Park is a World Heritage Site.
13. Unique or important wildlife or wildlife habitat	No				
14. Unique or important fish or fish habitat	No				
15. Introduce or promote non-native species (plant or animal)	No				
16. Recreation resources, including supply, demand, visitation, activities, etc.	No				
17. Visitor experience,		Negligible			Visitor experience will be enhanced by fewer mules on the trail

<b>Identify potential effects to the following physical, natural, or cultural resources</b>	<b>No Effect</b>	<b>Negligible Effects</b>	<b>Minor Effects</b>	<b>Exceeds Minor Effects</b>	<b>Data Needed to Determine/Notes</b>
aesthetic resources					transporting liquids from the composter.
18. Archeological resources	No				
19. Prehistoric/historic structure	No				
20. Cultural landscapes	No				
21. Ethnographic resources	No				
22. Museum collections (objects, specimens, and archival and manuscript collections)	No				
23. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure	No				
24. Minority and low income populations, ethnography, size, migration patterns, etc.	No				
25. Energy resources	No				
26. Other agency or tribal land use plans or policies	No				
27. Resource, including energy, conservation potential, sustainability	No				
28. Urban quality,	No				

<b>Identify potential effects to the following physical, natural, or cultural resources</b>	<b>No Effect</b>	<b>Negligible Effects</b>	<b>Minor Effects</b>	<b>Exceeds Minor Effects</b>	<b>Data Needed to Determine/Notes</b>
gateway communities, etc.					
29. Long-term management of resources or land/resource productivity	No				
30. Other important environment resources (e.g. geothermal, paleontological resources)?	No				

### **C. MANDATORY CRITERIA**

<b>Mandatory Criteria: If implemented, would the proposal:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comment or Data Needed to Determine</b>
A. Have significant impacts on public health or safety?		No		
B. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas?		No		
C. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources (NEPA section 102(2)(E))?		No		
D. Have highly uncertain and potentially significant environmental effects or involve		No		

<b>Mandatory Criteria: If implemented, would the proposal:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comment or Data Needed to Determine</b>
unique or unknown environmental risks?				
E. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?		No		
F. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?		No		
G. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office?		No		
H. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species?		No		
I. Violate a federal law, or a state, local, or tribal law or requirement imposed for the protection of the environment?		No		
J. Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898)?		No		
K. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007)?		No		
L. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such		No		

<b>Mandatory Criteria: If implemented, would the proposal:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comment or Data Needed to Determine</b>
species (Federal Noxious Weed Control Act and Executive Order 13112)?				

#### **D. OTHER INFORMATION**

1. Are personnel preparing this form familiar with the site? Yes
- 1.A. Did personnel conduct a site visit? No
2. Is the project in an approved plan such as a General Management Plan or an Implementation Plan with an accompanying NEPA document? No
3. Are there any interested or affected agencies or parties? No
4. Has consultation with all affected agencies or tribes been completed? Yes
5. Are there any connected, cumulative, or similar actions as part of the proposed action? (*e.g., other development projects in area or identified in GMP, adequate/available utilities to accomplish project*) No

#### **E. INTERDISCIPLINARY TEAM SIGNATORIES**

<b><u>Interdisciplinary Team</u></b>	<b><u>Field of Expertise</u></b>
Don L. Neubacher	Superintendent
Kathleen Morse	Chief of Planning
Randy Fong	Chief of Project Management
Jeff Hilliard	Chief of Administration Management
Ron Borne	Chief of Facilities Management
Linda C. Mazzu	Chief of Resources Management & Science
Kris Kirby	Chief of Business and Revenue Management
Tom Medema	Chief of Interpretation and Education
Kevin Killian	Chief of Visitor and Resource Protection
Korwin Kirk	Project Leader
Madelyn Ruffner	Environmental Planning and Compliance Program Manager
Renea Kennec	NEPA Specialist



## F. SUPERVISORY SIGNATORY

*Based on the environmental impact information contained in the statutory compliance file and in this environmental screening form, environmental documentation for this stage of the subject project is complete.*

### Recommended:

Compliance Specialists	Date
<u>//Renea Kennec//</u> Compliance Specialist – Renea Kennec	<u>5/18/15</u>
<u>//Madelyn Ruffner//</u> Compliance Program Manager – Madelyn Ruffner	<u>5/27/15</u>
<u>//Randy Fong//</u> Chief, Project Management – Randy Fong	<u>6/18/15</u>

### Approved:

Superintendent	Date
<u>//Don L. Neubacher//</u> Don L. Neubacher	<u>6/15/15</u>

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Yosemite National Park.*



## PARK ESF ADDENDUM

Today's Date: March 31, 2015

### PROJECT INFORMATION

**Park Name:** Yosemite National Park  
**Project Title:** 2015-003 Little Yosemite Valley Composting Toilet Leach Field Installation  
**PEPC Project Number:** 56675  
**Project Type:** Other Maintenance Activities (MNT)  
**Project Location:**  
**County, State:** Mariposa, California **District:** Wilderness  
**Project Leader:** Korwin Kirk

### PARK ESF ADDENDUM QUESTIONS & ANSWERS

ESF Addendum Questions	Yes	No	N/A	Data Needed to Determine/Notes
<b>SPECIAL STATUS SPECIES CHECKLIST</b>				
Listed or proposed threatened or endangered species (Federal or State)?		No		
Species of special concern (Federal or State)?		No		
Park rare plants or vegetation?		No		
Potential habitat for any special-status species listed above?		No		
<b>NATIONAL HISTORIC PRESERVATION ACT CHECKLIST</b>				
Entail ground disturbance?	Yes			Ground disturbance includes two 30 foot long by 16 inches wide by 24 inches deep.
Are any archeological or ethnographic sites located within the area of potential effect?		No		
Entail alteration of a historic structure or cultural landscape?		No		
Has a National Register form been completed?		No		
Are there any structures on the park's List of Classified Structures in the area of potential effect?			N/A	
<b>WILD AND SCENIC RIVERS ACT CHECKLIST</b>				
Fall within a wild and scenic river corridor?	Yes			Merced River
Fall within the bed and banks AND will affect the free-flow of the river?		No		

<b>ESF Addendum Questions</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Data Needed to Determine/Notes</b>
Have the possibility of affecting water quality of the area?		No		
Remain consistent with its river segment classification?	Yes			
Fall on a tributary of a Wild and Scenic River?		No		
Will the project encroach or intrude upon the Wild and Scenic River corridor?		No		
Will the project unreasonably diminish scenic, recreational, or fish and wildlife values?		No		
<b>WILDERNESS ACT CHECKLIST</b>				
Within designated Wilderness?	Yes			Minimum Requirement Analysis is attached.
Within a Potential Wilderness Addition?		No		



# ASSESSMENT OF ACTIONS HAVING AN EFFECT ON HISTORIC PROPERTIES

## A. DESCRIPTION OF UNDERTAKING

1. **Park:** Yosemite National Park

### 2. Project Description:

**Project Name:** 2015-003 Little Yosemite Valley Composting Toilet Leach Field Installation  
**Prepared by:** Renea Kennec    **Date Prepared:** 03/24/2015    **Telephone:** 209-379-1038  
**PEPC Project Number:** 56675

#### Area of potential effects (as defined in 36 CFR 800.16[d])

Project Area; archeological resources in the vicinity but not in the project area

### 3. Has the area of potential effects been surveyed to identify historic properties?

       No  
  X   Yes

Source or reference:

### 4. Potentially Affected Resources: None

### 5. The proposed action will: (check as many as apply)

- No   Destroy, remove, or alter features/elements from a historic structure  
  No   Replace historic features/elements in kind  
  No   Add non-historic features/elements to a historic structure  
      Alter or remove features/elements of a historic setting or environment  
  No   (inc. terrain)  
      Add non-historic features/elements (inc. visual, audible, or atmospheric)  
  No   to a historic setting or cultural landscape  
  No   Disturb, destroy, or make archeological resources inaccessible  
  No   Disturb, destroy, or make ethnographic resources inaccessible  
  Yes  Potentially affect presently unidentified cultural resources  
      Begin or contribute to deterioration of historic features, terrain, setting,  
  No   landscape elements, or archeological or ethnographic resources  
      Involve a real property transaction (exchange, sale, or lease of land or  
  No   structures)  
      Other (please  
      specify): \_\_\_\_\_

## 6. Supporting Study Data:

(Attach if feasible; if action is in a plan, EA or EIS, give name and project or page number.)

### B. REVIEWS BY CULTURAL RESOURCE SPECIALISTS

The park 106 coordinator requested review by the park's cultural resource specialist/advisors as indicated by check-off boxes or as follows:

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☒ Anthropologist

Name: Mike Turek

Date: 05/14/2015

Comments: There are no ethnographic concerns regarding the proposed project.

*Check if project does not involve ground disturbance* ☐

Assessment of Effect: ☐ No Potential to Cause Effect ☐ No Historic Properties Affected ☒ No

Adverse Effect ☐ Adverse Effect ☐ Streamlined Review

Recommendations for conditions or stipulations:

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☒ Archeologist

Name: Sonny Montague

Date: 03/25/2015

*Check if project does not involve ground disturbance* ☐

Assessment of Effect: ☐ No Potential to Cause Effect ☒ No Historic Properties Affected ☐ No

Adverse Effect ☐ Adverse Effect ☐ Streamlined Review

Recommendations for conditions or stipulations: If subsurface prehistoric or historical materials are encountered during construction implementation, please stop work and notify the Archeology Office.

Doc Method: Park Specific Programmatic Agreement

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☒ Historical Landscape Architect

Name: Kevin McCardle

Date: 05/01/2015

*Check if project does not involve ground disturbance* ☐

Assessment of Effect: ☐ No Potential to Cause Effect ☒ No Historic Properties Affected ☐ No

Adverse Effect ☐ Adverse Effect ☐ Streamlined Review

Recommendations for conditions or stipulations:

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No Reviews From: Curator, Historical Architect, Historian, 106 Advisor, Other Advisor

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### C. PARK SECTION 106 COORDINATOR'S REVIEW AND RECOMMENDATIONS

#### 1. Assessment of Effect:

☐ No Potential to Cause Effects

Assessment of Effect Form - Little Yosemite Valley Composting Toilet Leach Field Installation - PEPC ID: 56675

☐ No Historic Properties Affected  
☒ No Adverse Effect  
☐ Adverse Effect

## 2. Documentation Method:

☐ A. STANDARD 36 CFR PART 800 CONSULTATION  
Further consultation under 36 CFR Part 800 is needed.

☐ B. STREAMLINED REVIEW UNDER THE 2008 SERVICEWIDE PROGRAMMATIC AGREEMENT (PA)

The above action meets all conditions for a streamlined review under section III of the 2008 Servicewide PA for Section 106 compliance.

APPLICABLE STREAMLINED REVIEW Criteria  
(Specify 1-16 of the list of streamlined review criteria.)

☐ C. PLAN-RELATED UNDERTAKING

Consultation and review of the proposed undertaking were completed in the context of a plan review process, in accordance with the 2008 Servicewide PA and 36 CFR Part 800.  
Specify plan/EA/EIS:

☒ D. UNDERTAKING RELATED TO ANOTHER AGREEMENT

The proposed undertaking is covered for Section 106 purposes under another document such as a statewide agreement established in accord with 36 CFR 800.7 or counterpart regulations.

1999 Programmatic Agreement as amended in 2014

☐ E. COMBINED NEPA/NHPA Document

Documentation is required for the preparation of an EA/FONSI or an EIS/ROD has been developed and used so as also to meet the requirements of 36 CFR 800.3 through 800.6

☐ G. Memo to SHPO/THPO

☐ H. Memo to ACHP

SHPO/THPO Notes:

## 3. Additional Consulting Parties Information:

Additional Consulting Parties: No

## 4. Stipulations and Conditions:

**Following are listed any stipulations or conditions necessary to ensure that the assessment of effect above is consistent with 36 CFR Part 800 criteria of effect or to avoid or reduce potential adverse effects.**

## 5. Mitigations/Treatment Measures:

Measures to prevent or minimize loss or impairment of historic/prehistoric properties:  
(Remember that setting, location, and use may be relevant.)

- **Assessment of Effect - If subsurface prehistoric or historical materials are encountered during construction implementation, please stop work and notify the Archeology Office.**

## D. RECOMMENDED BY PARK SECTION 106 COORDINATOR:

**Historic Preservation Officer:**

Kimball

Koch

//Kimball Koch//

**Date:** 5/19/15

## E. SUPERINTENDENT'S APPROVAL

The proposed work conforms to the NPS *Management Policies* and *Cultural Resource Management Guideline*, and I have reviewed and approve the recommendations, stipulations, or conditions noted in Section C of this form.

**Superintendent:** //Don L. Neubacher//

**Date:** 6/15/15

Don L. Neubacher

*The signed original of this document is on file at the  
Environmental Planning and Compliance Office in  
Yosemite National Park.*

## **Minimum Requirement Analysis**

### **Little Yosemite Valley Composting Toilet**

Prepared by: Korwin Kirk, NPS Backcountry Utilities

3/2015

#### **Step 1: Problem Statement**

The composting toilet at Little Yosemite Valley (LYV) has more liquid waste accumulation than the facility can process. This has led to added mule trips to pack out liquid waste and daily operation of a gas powered generator to run the evaporation system. The generator degrades the undeveloped and primitive qualities of wilderness character.

#### **Step 2 Background**

The facility does not have a leach field. There is an evaporator installed in the unit that will normally evaporate 800 gallons of liquid waste between May and October each year. Operation of the evaporator adds an additional 80% load to the photovoltaic system. The photovoltaic system will not produce enough power to keep up with the facilities load demand so a gas powered generator must be run from 1-2 hours per day to keep the system operational. Since the photovoltaic system was installed tree growth has reduced the amount of sun on the building, reducing the effectiveness of the system. Approximately 1200 gallons of additional waste water must be pumped into five gallon containers and packed out with stock. The waste is disposed of in the Yosemite Valley sewer system.

Congress provided guidance on the removal of human waste from the Yosemite Wilderness in House Report 98-40:

It has been noted that helicopters have come into increasing use through recent years in several national park system backcountry areas for the purpose of periodically removing human excrement....Helicopter use for routine nonemergency purposes associated with visitor use is a questionable activity in national park system wilderness areas and should be eliminated within designated national park system wilderness.

#### **Step 3: Consider Actions Outside of Wilderness**

The toilet is located in Wilderness and serves the most popular destination in the wilderness, the Little Yosemite Valley campground.

#### **Step 4: Necessity for Action**

Running a gas powered generator for 1-2 hours every day is a significant impact to the undeveloped and primitive qualities of wilderness character. Action is needed to address these impacts.



## Step 5: Alternatives

### Considered but dismissed:

Increase the number of solar panels: Increased solar panels will be of limited value unless the nearby trees shading the building are cut down, which is considered unacceptable. Adding solar panels on the ground away from the building greatly increases the footprint and obtrusiveness of the building and leaves the panels vulnerable to vandalism.

Reduce use levels: Day use levels were significantly reduced in 2010 with the implementation of a permit system on Half Dome but the liquid waste problem persists. Little Yosemite is near the starting point of a network of popular trails, so reducing use there greatly reduces recreational use of the wilderness. Addressing the liquid waste problem in this way would require unacceptably large reductions in use.

### Alternative 1:

No action- the NPS will continue to pack out the waste and the gasoline powered generator will be required to operate the photovoltaic system for the facility.

### Alternative 2:

Helicopter transport of waste: Generator use to run the evaporator would cease, and a helicopter would be used to transport waste to sewage facilities in El Portal. This would require approximately 10 flights per season.

### Alternative 3:

Stock transport of waste: More frequent stock transport of waste would eliminate the need for generator use. This would require approximately 120 head of stock over the course of the season.

### Alternative 4:

Construct a Leach field adjacent to the composter- The leach field would be dug with hand tools. The leach field would consist of pipes placed in ditches running parallel 30' long x 16" wide x 24" deep and five feet apart and five feet from the structure. There would be a 10' trench for the discharge pipe running from the structure to the leach lines with a valve box just outside the building. A pipe must be installed to get the liquid waste from inside the facility to the leach field. A hole must be cut through the foundation and concrete slab in the maintenance area. Cutting this hole would require approximately one hour of motorized tool use; using hand tools for this purpose is likely to result in damage to the foundation. The only part of the leach field that would be visible after construction is a plastic cover for a valve box; it would be flush with the ground. All materials, tools, personal gear, and food would be transported in and out of Wilderness with mules; this will require approximately 18 head of stock.

## **Step 6: Analysis of Effects on Wilderness Character**

### **Untrammeled:**

No significant impact on the untrammeled quality from any of the alternatives.

### **Undeveloped:**

Alternatives 1 would require the continuing use of operating a gasoline powered generator 1-2 hours per day between May and October each year. The generator produces noise at 59 decibels.

Alternative 2 would require approximately 10 helicopter flights and landings in wilderness per year.

Alternative 3 would involve no structures, installations, or helicopter use.

Alternative 4 would require the use of a gasoline powered generator and a motorized abrasive saw and rotary hammer for 1-2 hours during construction. It adds a leach field to the existing structure. The rotary hammer and abrasive saw will create noise chipping and cutting through the concrete foundation.

### **Natural:**

All alternatives require the use of stock. Alternative 3 would greatly increase the impacts of stock use while alternatives 2 and 4 would significantly reduce such impacts. There is more risk of spilling human waste when transported by stock.

### **Outstanding Opportunities for Solitude or Unconfined Recreation:**

Alternative 1 will continue to have a major impact to opportunities for primitive experience due to a generator running 1-2 hours per day (at 59 decibels) all season long.

Alternative 2 would have a major negative effect on this quality due to 10 helicopter flights/landings per season. The flights would affect the most popular hiking area in the park. Eliminating the generator use would be a long term benefit.

Alternative 3 increases stock use on the John Muir Trail; this has a significant negative effect to the experience of some hikers. Eliminating the generator use would be a long term benefit.

Alternative 4 would have a significant effect on this quality during construction but would eliminate the generator use in the long term.

## **Step 7 Safety and Economics**

### **Safety**

#### **Employee exposure to human waste:**

This is significant under the no action alternative and alternative 2 and would be the greatest under alternative 3. The least exposure would be under alternative 4.

#### **Risk of back injuries**

Lifting heavy containers on and off of stock increases the risk of back injuries. There is also some risk in moving such containers to the helicopter pick up location.

#### **Risks associated with stock travel:**

The John Muir Trail between Little Yosemite and the Vernal Fall footbridge area is one of the most dangerous stretches of stock travel in the park. In many places the trail is confined, with steep slopes beneath it, and sharp turns on switchbacks. The risk is not from these characteristics alone but rather in the large numbers of hikers on the trail, most of whom are inexperienced around stock and often behave in inappropriate, unsafe ways. Some of this risk can be mitigated with an early morning start from Yosemite Valley, but this is harder to do on the return trip.

This risk is therefore substantially increased with alternative 3, which greatly increases the number of stock on this trail.

#### **Risks associated with helicopter use:**

Flying helicopters in mountainous terrain is inherently risky; these risks can be lessened by following standard safety protocols. Landing in Little Yosemite may require additional personnel for crowd control because of the proximity to a popular trail and the LYV campground.

### **Economics**

The cost for Alternative 1 is \$8000 per year.

The cost for Alternative 2 is \$21,600 per year.

The cost for Alternative 3 is \$10,500 per year.

The cost for Alternatives 4 is approximately \$37,500 for the project.

### **Step 8 Decision**

Alternative 3, transport of human waste by stock, is the only alternative that does not involve a Wilderness Act section 4 (c) prohibition. This alternative, however, requires significant risks to both employees and the general public on the popular John Muir Trail. Both alternative 1, no action, and alternative 2, helicopter transport, require major, ongoing impacts to the undeveloped and primitive qualities and are therefore considered unacceptable. Alternative 4, building a leach field, will add to the current infrastructure in Little Yosemite and have some construction related impacts, but given the safety concerns with alternative 3 is considered the minimum required for the preservation of wilderness character.

**Little Yosemite Valley Composting Toilet**

Check one:

- ☒ X The proposed action is a temporary, one time activity.
- ☐ The proposed action will be an on-going, long term activity.

Submitted By:

Korinne Hink

Date

Reviewed By:

E. Dulaey 4/30/15

Wilderness Manager

Date

(Attach any comments and conditions-See Attached)

W. A. [Signature] 5/4/15

Chief Ranger

Date

(Attach any comments and conditions)

Approved By:

D. J. [Signature] 5/5/15

Superintendent

Date

## Comments & Conditions

### Conditions:

- 1) If tools or methods other than those identified in the MRA are necessary for completion of the project an amendment should be provided
- 2) Use of the generator should only be used to supplement the PV system before it shuts down due to inadequate power supplies remaining in the batteries (as a result of 2-3 consecutive cloudy days). Such use of the generator would be considered an emergency. Use of the generator in these circumstances should be limited to no more than 1 hour.
- 3) All other "projects" requiring the use of motor or mechanized equipment should be evaluated utilizing the minimum requirement analysis.
- 4) Due to the proximity of this work area to the trail head additional use of the generator should not occur for charging batteries.

### Comments:

Given that value added would be provided by adding a more robust alternative, we agreed that those alternatives would involve a leach field.

Given that this MRA addresses the leach field concept as the minimum required the real changes would be in retrofitting the existing structure or reconstruction.

Use levels and amount of infrastructure necessary to effectively deal with the amount of human waste within Little Yosemite Valley and other areas is becoming more difficult. The question is not can we design a system to deal with the amount of waste, we can. It's when the impacts relative to building and maintaining that infrastructure and operations becomes unsustainable with ever increasing impacts to wilderness character.

The park should consider utilizing or testing systems which separate liquids and solids before entering the composter for greater efficiencies. While recognizing this may require leach fields in some circumstances it could reduce the accumulative impacts to wilderness by allowing for a more effective composting process while more efficiently managing for liquid waste.

We need to do a better job of tracking waste. We should have seen this problem coming, and if we did there should be better communications. I am still unsure of why we have seen increasing use when implementation of the Half Dome plan reduced use. One explanation is use is now distributed over 7 days and not just the weekends, however we do not know if this is a correct assumption. Trends in use and their impacts need to be monitored to allow for better management documents and decisions going forward.

I was unable to find any documents that showed the approved use of the generator at LYV (i.e. in order to mitigate the impacts of increasing use (liquid waste) at LVY). Use of any mechanized equipment should be evaluated through the MRA process.