

**Decision Notice  
and  
Finding of No Significant Impact  
for Construction of a Compost Toilet  
on Wild Horse Island**

**MT Fish, Wildlife and Parks  
Region One  
490 N. Meridian Road  
Kalispell, MT 59901**

August 13, 2002

Description of the Proposed Action:

The proposed action is to install a prefabricated Phoenix Systems compost toilet near the Skeeko Bay landing site area. This would help mitigate the problem of increasing signs of human waste in the vicinity. The installation of the toilet would reduce the potential human health hazard and degradation of the aesthetic quality of the area.

Finding of No Significant Impact (FONSI):

Based on the analysis in the Environmental Assessment, I find that the placement of the toilet at the Alternative 2 location to be the preferred alternative. I have evaluated the EA and applicable laws, regulations, and policies and have determined that this action will not have a significant effect on the human environment. Therefore, an environmental impact statement will not be prepared.

The final Environmental Assessment and the FONSI may be viewed at or obtained from Montana Fish, Wildlife & Parks, Region One, Kalispell, Montana. Please direct requests and questions to Jerry Sawyer, Park Operations Supervisor, (406) 752-5501 or e-mail to [jsawyer@digisys.net](mailto:jsawyer@digisys.net).

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Daniel P. Vincent  
Regional Supervisor

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Date

# Wild Horse Island Toilet Project Final EA

## MEPA/NEPA/HB495 CHECKLIST

### PART I. PROPOSED ACTION DESCRIPTION

1. **Type of Proposed State Action:** Installation of a compost toilet in Skeeko Bay landing site area.
2. **Agency Authority for the Proposed Action:**  
Montana Fish, Wildlife & Parks RCM 23-1-102, 23-1-110, 23-1-107
3. **Name of Project:** Skeeko Bay Area Toilet
4. **Name, Address, and Phone Number of Project Sponsor (if other than the agency):** N/A
5. **If Applicable:**  
  
**Estimated Construction/Commencement Date:** 08/15/02  
**Estimated Completion Date:** 08/20/02  
**Current Status of Project Design (% complete):** 100%
6. **Location Affected by Proposed Action (county, range, and township):**  
 County – Lake                      NW ¼, Sec 13, R21W, T24N

**Project Size: Estimate the number of acres that would be directly affected that are currently:**

	Acres		Acres
<b>(a) Developed:</b>		<b>(d) Floodplain.....</b>	<u>0</u>
residential.....	<u>0</u>		
industrial.....	<u>0</u>	<b>(e) Productive:</b>	
		irrigated cropland.....	<u>0</u>
<b>(b) Open Space/Woodlands/Recreation</b>	<u>&lt;1/4</u>	dry cropland.....	<u>0</u>
		forestry.....	<u>0</u>
<b>(c) Wetlands/Riparian Areas.....</b>	<u>0</u>	rangeland.....	<u>0</u>
		other.....	<u>0</u>

**8. Map/Site Plan: Attach an original 8½" x 11" or larger section of the most recent USGS 7.5' series topographic map showing the location and boundaries of the area that would be affected by the proposed action. A different map scale may be substituted if more appropriate or if required by agency rule. If available, a site plan should also be attached.**

See Figure 1.

**9. Narrative Summary of the Proposed Action or Project, Including the Benefits and Purpose of the Proposed Action:**

⊙ Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.

> Include a narrative description addressing the items identified in 12.8.604-1a (ARM)

◆ Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

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- ☆ Designated Landing Site
- ✕ Alternative 1 Toilet Location
- ⊗ Alternative 2 Toilet Location
- ⋯ Nature Trail

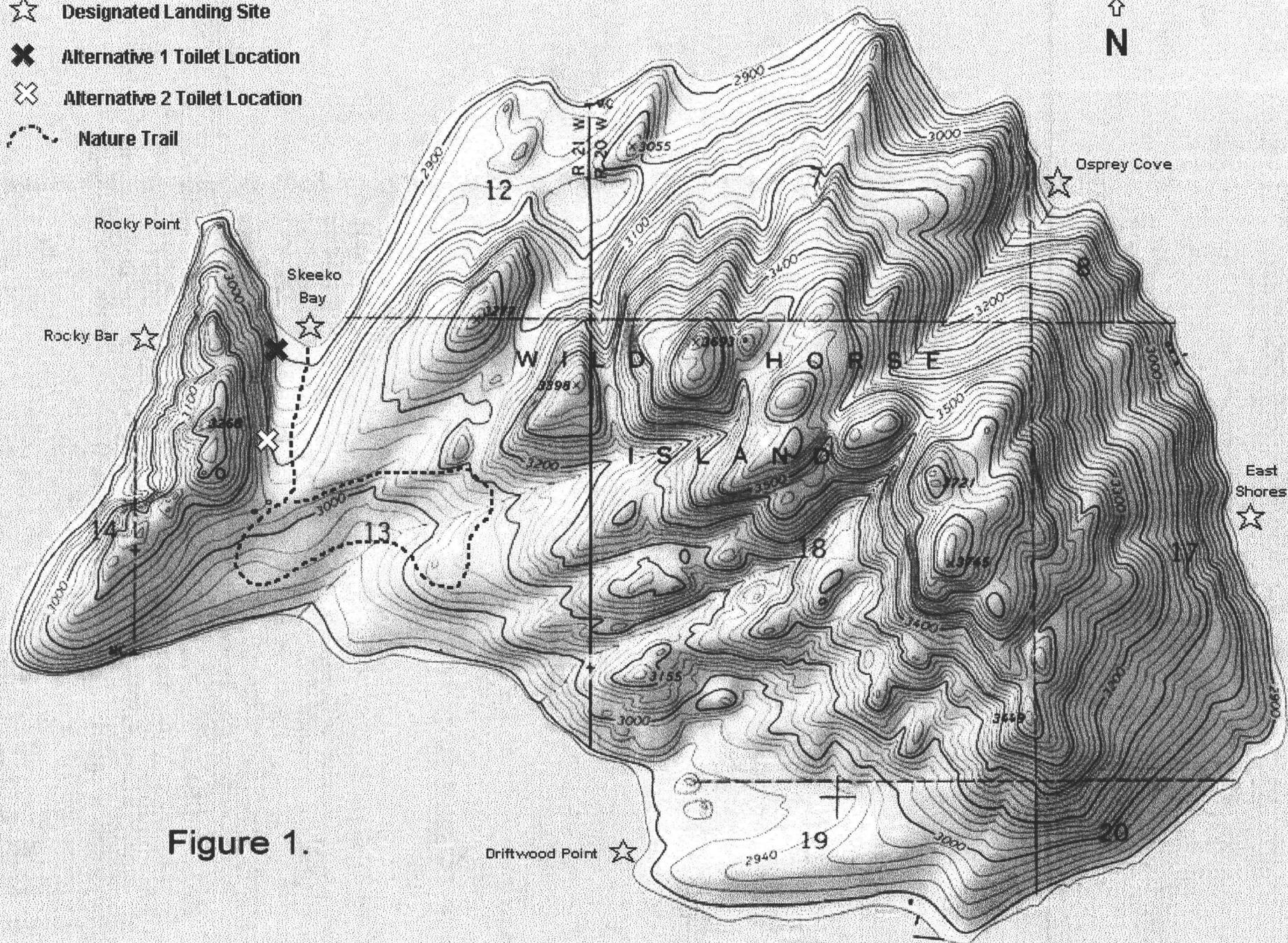
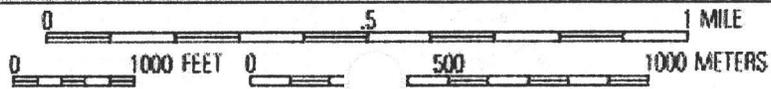


Figure 1.



This action would result in the installation of a self-contained Phoenix Systems compost toilet (Appendix A) being located approximately 300 yards up the main trail from the Skeeko Bay landing site.

The ground area that the toilet would occupy is 6' x 8'. A spur trail approximately 40 yards long would connect to the main trail and lead to the toilet. The toilet would be screened by vegetation to limit visibility from the main trail. A sign at the spur trail and main trail junction would direct users to the location. Construction of the toilet requires excavation of a 6' x 8' area approximately 2-3' deep for the foundation. Materials will be prefabricated and brought to the site by an OHV vehicle and small trailer, where they will be assembled. The OHV and trailer will follow the main trail and proposed spur trail to limit impacts on vegetation. No excavation machinery will be used and all digging will be done by hand. Installation will occur mid-week and take approximately 3 days.

Currently, there are no public sanitation facilities on Wild Horse Island. A pit toilet was constructed in the 1980s on the west side of the island near the shoreline approximately halfway between Rocky Point and the current Rocky Bar landing site (Figure 1.). Due to its isolated location and distance from popular hiking areas, the toilet was infrequently utilized by the public. Additionally, because of environmental concerns over its close proximity to the shoreline, it was torn down in 1995. Although a public toilet existed on the island, the concern for a sanitation facility at a more appropriate location was recognized and a proposal for a new more environmentally safe facility was made during the 1994 management plan update process. However, the proposal was not adopted, as little visitation data was available to determine the best location, potential usage, and required capacity for a toilet. In 1993, Wild Horse Island was designated by the Montana Legislature as a Primitive Park. This legislation (Appendix B) does allow limited improvements including those necessary for proper sanitation.

Visitation data gathered since the mid-90s indicates usage of the island has doubled over the last 6-7 years. For total visitation, 65-70% of visitors utilize the five designated landing sites. Of this total, approximately 70% of all visitors land at Little Skeeko Bay. Direct observations by Parks staff and complaints from visitors at Skeeko Bay over the years has indicated an increase in visible signs of toilet paper and human feces in this area during the high-use season. Registration data shows that on high-use weekends, 60-80 visitors use the Skeeko Bay trail through the course of a day. The proposed toilet would be located in this area, as it has been determined to have the highest use. The compost toilet would be capable of handling 80 –100 uses per day during peak season.

The rationale for selection of a compost toilet over a different type of toilet, such as a pit or vault design, is primarily concerns over environmental issues, as in the case of a pit toilet, and the logistics of pumping a vault style toilet. A pit toilet presents the potential for ground water contamination, obnoxious odors, and periodic relocation as pits become full. For a vault type toilet, it would be very costly to pump a vault located on the island, and it would require special equipment. Another alternative is a combustible (propane) toilet, where wastes are reduced to ash by an oven-like burning process. However at present, the capacity of this design is limited to residential usage. Consequently, the compost toilet was the only reasonable design considered. The Phoenix system appears to be a more superior design to the older Clivis-Multrum styles and

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is currently successfully being used by the National Park Service at the Grand Canyon and by the Army Corp of Engineers at Dworshak Reservoir in Idaho.

**10. Listing of Any Other Local, State, or Federal Agency That Has Overlapping or Additional Jurisdiction:**

**(a) Permits:**

<u>Agency Name</u>	<u>Permit</u>	<u>Date Filed/#</u>
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**(b) Funding:**

<u>Agency Name</u>	<u>Funding Amount</u>
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**(c) Other Overlapping or Additional Jurisdictional Responsibilities:**

<u>Agency Name</u>	<u>Type of Responsibility</u>
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Confederated Salish and Kootenai Tribes	Tribal Authority – Flathead Indian Reservation
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Department of Natural Resources and Conservation – State Lands Division	Fire Suppression
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**11. List of Agencies Consulted During Preparation of the EA:**

MT Fish, Wildlife & Parks – Design and Construction Unit

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## RT II. ENVIRONMENTAL REVIEW

### 1. Evaluation of the impacts of the proposed action, including secondary and cumulative impacts on the physical and human environment.

#### A. PHYSICAL ENVIRONMENT

1. <u>LAND RESOURCES</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant		
>a. Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility?			X			1b.
>c. Destruction, covering, or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition, or erosion patterns that may modify the channel of a river or stream, or the bed or shore of a lake?		X				
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				
her (list)						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

1b. Displacement and compaction of the soil will occur at the location site of the toilet during excavation and construction. These effects will be limited to the foundation and immediate area. Any bare soil visible after construction will be reseeded with native grass seed. Soil removed from the excavation of the foundation will be used as surfacing material for the spur trail. Soil compaction will occur on the access trail to the toilet. This compaction normally occurs on all well-used hiking trails and is considered acceptable.

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2. AIR Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
>a. Emission of air pollutants or deterioration of ambient air quality? (Also see 13c.)		X				
b. Creation of objectionable odors?		X				2.b
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
♦e. For P-R/D-J projects, will the project result in any discharge, which will conflict with federal or state air quality regs? (Also see 2a.)		X				
f. Other		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air Resources (Attach additional pages of narrative if needed):

2b. Although no nonflush toilet unit is completely odorless, the designer of the Phoenix system claims the unit provides sufficient airflow and venting to make the unit "odorless" to all but the most discriminating noses.

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3. <u>WATER</u> the proposed action result in:	IMPACT				Can Impact Be Mitigated	Com ment Index
	Unknown	None	Minor	Potentially Significant		
>a. Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen, or turbidity?		X				3a.
b. Changes in drainage patterns or the rate and amount of surface runoff?		X				
c. Alteration of the course or magnitude of floodwater or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water-related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?		X				
i. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
♦ ♦ i. For P-R/D-J, will the project affect a designated floodplain? (Also see 3c.)		X				
♦ m. For P-R/D-J, will the project result in any discharge that will affect federal or state water quality regulations? (Also see 3a.)		X				
n. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (Attach additional pages of narrative if needed):

3a. Liquids that accumulate as part of the composting process will be eliminated through a secondary evaporation system (Appendix B, pg. 10).

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4. <u>VEGETATION</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Changes in the diversity, productivity or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?			X			4a.
b. Alteration of a plant community?			X			4b.
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?		X				
♦♦f. For P-R/D-J, will the project affect wetlands, or prime and unique farmland?		X				
g. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

4a. Vegetation in the foundation zone (6' x 8') will be removed. Two small pine trees (@ 10-14' high) will also be removed to reduce potential shading on the toilet site. These are considered very insignificant losses when the area is viewed as a whole.

4b. Minor vegetation loss will occur at the toilet location and along the access trail. Vegetation in this area is a mixture of native and nonnative species and the loss is not significant.

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5. <u>FISH/WILDLIFE</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?		X				
c. Changes in the diversity or abundance of nongame species?		X				
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest, or other human activity)?		X				
♦♦h. For P-R/D-J, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (Also see 5f.)		X				
♦i. For P-R/D-J, will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d.)		X				
j. Other:		X				

♦♦h. For P-R/D-J, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (Also see 5f.)

♦i. For P-R/D-J, will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d.)

j. Other:

**Positive Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):**

**5. There are no anticipated impacts to fish and wildlife from this project.**

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## B.HUMAN ENVIRONMENT

6. <u>NOISE/ELECTRICAL EFFECTS</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Com Index
	Unknown	None	Minor	Potentially Significant		
a. Increases in existing noise levels?			X			6a.
b. Exposure of people to severe or nuisance noise levels?		X				
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

6a. Noise above existing levels will be generated by an OHV engine when transporting materials from the shore to the site. Additionally, noise from a small generator and power tools will occur periodically during construction. A chain saw will be used to remove 2 small Ponderosa pine at the site. The cumulative noise is considered minor, intermittent, and temporary.

7. <u>LAND USE</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict with a designated natural area or area of unusual scientific or educational importance?		X				7.b
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Other: _____		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

7.b Although Wild Horse Island is designated as a Primitive Park, the legislation does allow for improvements necessary to meet health standards for sanitation. Therefore, this project does not conflict with the island's Primitive Park status.

Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.

Include a narrative description addressing the items identified in 12.8.604-1a (ARM)

Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

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8. <u>RISK/HEALTH HAZARDS</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant		
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				
b. Affect an existing emergency response or emergency evacuation plan or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				8c.
♦d. For P-R/D-J, will any chemical toxicants be used? (Also see 8a.)						
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

8 c. The end product materials of the composting process will be placed in plastic bags at the end of the high use season (mid-Sept) and removed from the island.

COMMUNITY IMPACT Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant		
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		x				
b. Alteration of the social structure of a community?		x				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

9. No community impacts will be generated from this project.

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10. PUBLIC SERVICES/TAXES/UTILITIES Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Ind
	Unknown	None	Minor	Potentially Significant		
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased used of any energy source?		X				
>e. Define projected revenue sources.						10e.
>f. Define projected maintenance costs.						10f.
g. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

10e. Boat in Lieu funding - \$25,000

10f. Projected maintenance costs are considered minimal. The Phoenix system toilet carries a 10-year warranty on all parts and 5 years on labor. Routine cleaning and maintenance of the building would be included in the duties of the seasonal staff assigned to Wild Horse Island and should not interfere significantly with other tasks. Inspections of the toilet during the off-season would be included as part of the current normal schedule of periodic inspections of the island.

Some additional costs will be incurred for toilet paper and cleaning supplies. This is estimated to be approximately \$100/year.

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11. <u>AESTHETICS/RECREATION</u> Will the proposed action result in:	IMPACT <sup>⊙</sup>				Can Impact Be Mitigated <sup>⊙</sup>	Comment Index
	Unknown <sup>⊙</sup>	None	Minor <sup>⊙</sup>	Potentially Significant		
a. Alteration of any scenic vista, or creation of an aesthetically offensive site or effect that is open to public view?			X		X	11. a
b. Alteration of the aesthetic character of a community or neighborhood?		X				
>c. Alteration of the quality or quantity of recreational/tourism opportunities and settings? (Attach tourism report.)		X				
♦d. For P-R/D-J, will any designated or proposed wild or scenic rivers, trails, or wilderness areas be impacted? (Also see 11a, 11c.)		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

11a. The toilet building will be visible to public view from high points to the west and northeast of the site location. The facility does not block or affect any major scenic views as it is located at the bottom of a slope and screened from view in most directions by vegetation. The building will be constructed of materials and siding which blend with the natural surroundings. Additionally, the toilet facility, when seen from distant high points, is situated in the same general area as two other buildings, an old cabin and barn. Therefore, it is not likely to noticeably stand out when viewed from a distant ridge or knoll.

12. <u>CULTURAL/HISTORICAL RESOURCES</u> Will the proposed action result in:	IMPACT <sup>⊙</sup>				Can Impact Be Mitigated <sup>⊙</sup>	Comment Index
	Unknown <sup>⊙</sup>	None	Minor <sup>⊙</sup>	Potentially Significant		
>a. Destruction or alteration of any site, structure, or object of prehistoric, historic, or paleontological importance?		X				
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
♦♦d. For P-R/D-J, will the project affect historic or cultural resources? Attach SHPO letter of clearance. (Also see 12a.)		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

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12. No impacts to cultural or historical resources are anticipated. A survey of the toilet location was conducted, and no evidence of cultural or historic resources were found. The report is pending and will be forwarded to the State Historic Preservation Office upon completion.

### SIGNIFICANCE CRITERIA

13. SUMMARY EVALUATION OF SIGNIFICANCE Will the proposed action, considered as a whole,:	IMPACT*				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant		
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources, which create a significant effect when considered together or in total.)		X				
b. Involve potential risks or adverse effects, which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard, or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				13. d
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				13. e
♦f. For P-R/D-J, is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e.)		X				
♦♦g. For P-R/D-J, list any federal or state permits required.		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (Attach additional pages of narrative if needed):

13d. The 1993 Primitive Parks Bill allows for improvements for sanitation purposes. This project is intended to remove potential health risks in the high-use area of Skeeko Bay. If future visitation continues to increase and health risks are generated at other landing sites, then additional toilet facilities will be considered at identified problem areas.

13e. The scope of this project is not sufficient to generate substantial debate over impacts.

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## **PART II. ENVIRONMENTAL REVIEW (CONTINUED)**

### **1. Description and analysis of reasonable alternatives (including the no-action alternative) to the proposed action, whenever alternatives are reasonably available and prudent to consider, and a discussion of how the alternatives would be implemented:**

Alternatives (refer to Figure 1):

#### **1) Construction at location 1**

Alternative 1 would result in construction of the compost toilet at a location approximately 200 feet from the shoreline. This site would allow for more convenient use of the facility, as visitors would not be required to walk inland. Additionally, it would provide more convenience to the general public including those who merely stop at the Island primarily to use the restroom. The disadvantage to this location is that the toilet design requires that the building receive a significant amount of sunlight throughout most of the day, so that proper ventilation is not impeded and that sufficient heat from radiation is provided in order to maintain the maximum efficiency of the composting process. This location is heavily shaded by large old growth Ponderosa pine. In order to provide the proper amount of sun, several (3-4) large trees would need to be removed. Another disadvantage would include additional maintenance costs, as this facility would serve as a restroom stop for many boaters who might not normally visit at the island. Additionally, the closeness to the shoreline might tempt some large boat owners to empty their porta-pottys into the toilet. If this occurred it would introduce chemicals into the main vault of the system and hinder or prevent breakdown of the waste. This would then require the contaminated contents to be cleaned out and replaced with fresh bulk materials to ensure proper breakdown of waste.

How this alternative would be implemented is discussed in Part I, Section 9, Paragraph 2.

#### **2) Construction at location 2 (preferred alternative)**

Alternative 2 would place the toilet facility approximately 300 yards up from the shoreline just off the main trail in a grove of small Ponderosa pine. This location provides an opportunity for continuous sunlight, as there are no large trees to contend with. Two small pine trees will be removed as a precaution against future shading of the facility by these trees as they mature. Additionally this location provides more vegetative screening from the main trail and does not affect the aesthetics of the old growth Ponderosa pine forest near the shoreline. Although this location may inconvenience some of the general public, it will better target the actual park visitor and reduce the risk of contamination of compost materials from introduced chemicals.

As in Alternative 1, how this action would be implemented is discussed in Part I, Section 9, Paragraph 2.

#### **3) No action**

The no action alternative would maintain the status quo. This will result in continued presence of noticeable human waste during the peak season with associated health risks and degradation of the aesthetics of the old growth forest area.

**2. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:**

Any disturbed area as a result of construction will be reseeded with native grass seed. The facility site will be monitored for any growth of noxious weeds. All noxious weed detected will be eradicated.

Facility will be inspected and cleaned on a weekly basis from approximately mid-May to Mid-September. Thereafter it will be inspected at least once a month.

**PART III. NARRATIVE EVALUATION AND COMMENT**

List all comments under each table.

1b. Displacement and compaction of the soil will occur at the location site of the toilet during excavation and construction. These effects will be limited to the foundation and immediate area. Any bare soil visible after construction will be reseeded with native grass seed. Soil removed from the excavation of the foundation will be used as surfacing material for the spur trail. Soil compaction will occur on the access trail to the toilet. This compaction normally occurs on all well-used hiking trails and is considered acceptable.

2b. Although no nonflush toilet unit is completely odorless, the designer of the Phoenix system claims the unit provides sufficient airflow and venting to make the unit "odorless" to all but the most discriminating noses.

3a. Liquids that accumulate as part of the composting process will be eliminated through a secondary evaporation system (Appendix B, pg. 10).

4a. Vegetation in the foundation zone (6' x 8') will be removed. Two small pine trees (@ 10-14' high) will also be removed to reduce potential shading on the toilet site. These are considered very insignificant losses when the area is viewed as a whole.

4b. Minor vegetation loss will occur at the toilet location and along the access trail. Vegetation in this area is a mixture of native and nonnative species and the loss is not significant.

5. There are no anticipated impacts to fish and wildlife from this project.

6a. Noise above existing levels will be generated by an OHV engine when transporting materials from the shore to the site. Additionally, noise from a small generator and power tools will occur periodically during construction. A chain saw will be used to remove 2 small Ponderosa pine at the site. The cumulative noise is considered minor, intermittent and temporary.

7b. Although Wild Horse Island is designated as a Primitive Park, the legislation does allow for improvements necessary to meet health standards for sanitation. Therefore, this project does not conflict with the island's Primitive Park status.

8c. The end product materials of the composting process will be placed in plastic bags at the end of the high use season and removed from the island.

9. No community impacts will be generated from this project.

10e. Boat in Lieu funding - \$25,000.

10f. Projected maintenance costs are considered minimal. The Phoenix system toilet carries a 10-year warranty on all parts and 5 years on labor. Routine cleaning and maintenance of the building would be included in the duties of the seasonal staff assigned to Wild Horse Island and should not interfere significantly with other tasks. Inspections of the toilet during the off-season would be included as part of the current normal schedule of periodic inspections of the island.

Some additional costs will be incurred for toilet paper and cleaning supplies. This is estimated to be approximately \$100/year.

11a. The toilet building will be visible to public view from high points to the west and northeast of the site location. The facility does not block or affect any major scenic views as it is located at the bottom of a slope and screened from view in most directions by vegetation. The building will be constructed of materials and siding which blend with the natural surroundings. Additionally, the toilet facility when seen from distant high points is situated in the same general area as two other buildings, an old cabin and barn. Therefore, it is not likely to noticeably stand out when viewed from a distant ridge or knoll.

12. No impacts to cultural or historical resources are anticipated.

13d. The 1993 Primitive Parks Bill allows for improvements for sanitation purposes. This project is intended to remove potential health risks in the high use area of Skeeko Bay. If future visitation continues to increase and health risks are generated at other landing sites, then additional toilet facilities will be considered at identified problem areas.

13e. The scope of this project is not sufficient to generate substantial debate over impacts

#### **PART IV. EA CONCLUSION SECTION**

- 1. Based on the significance criteria evaluated in this EA, is an EIS required? YES / NO If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:**

No EIS is required. The project is minor in scope with little controversy.

- 2. Describe the level of public involvement for this project, if any; and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?**

Public involvement consists of a written comment period. This level is appropriate, as the project is considered small in scope and noncontroversial.

- 3. Duration of comment period, if any: Two-week written comment period.**
- 4. Name, title, address, and phone number of the person(s) responsible for preparing the EA:**

Jerry Sawyer  
Region 1, Park Operations Supervisor  
490 N. Meridian Rd.  
Kalispell, MT 59901  
406-752-5501

# Appendix A

## Phoenix Composting Toilet Facility Specifications June 11, 2002

### 1 SCOPE

The following specifications provide details for the design, construction and erection of a modular composting toilet building for Wild Horse Island State Park.

### 2 GENERAL SPECIFICATIONS

The complete composting toilet facility including the Phoenix composting toilet systems, photovoltaic system, lighting system, solar heat system, earth tube, rainwater cistern system and building shall be supplied and erected by the composting toilet manufacturer to assure compatibility of all systems and components.

### 3 BUILDING SPECIFICATIONS

#### 3.1 General

The building design and construction shall be compatible with the Phoenix Composting System installation and maintenance requirements. Dimensional lumber shall be #2 and better. All wood in contact with the ground shall be .6 ACQ treated. No treated lumber containing arsenic or chromium shall be used. Components shall be durable and compatible for the intended use. Good construction techniques shall be employed throughout. All interior and exterior finishes shall be applied.

#### 3.2 Foundation

The foundation shall be constructed in accordance with the "All Weather Wood Foundation System Design, Fabrication and Installation Manual", using Group B (#2 and better fir), .6 ACQ treated studs. The supplier shall provide engineering calculations for foundation bending and shear stresses showing nailing schedule, stud spacing and dimensions and plywood thickness for each wall. Underground sheeting shall be .6 ACQ treated, Grade B plywood with horizontal face grain and edges blocked. All underground fasteners shall be stainless steel. A soil drainage mat shall cover below grade portions of the foundation and drain tile shall surround the foundation, daylighting downhill. Basement walls, doors and ceiling shall be insulated with expanded polystyrene foam completely filling module cavities. The basement floor shall be insulated with 2" of extruded polystyrene and covered with 3" of clean soil. The interior of the foundation walls shall be covered with 1/2" ACQ treated plywood below grade and 3/8" CDX plywood above. The basement interior walls shall be painted a light color.

#### 3.3 Building Floors

The building floor shall be constructed from 2"x4" joists on 12" centers with 1/2" plywood glued and nailed. The floor shall have a 1/4"/ft. slope toward the entry door and a 1-1/2' cant strip at floor-wall intersections. A polyurethane coating shall be applied according to manufacture's directions to the floor and 6" up the side walls. Silica sand shall be added to the floor coating for traction.

#### 3.4 Building Walls

Toilet room walls shall be framed with 2"x3" studs on 1' centers with 3/8" plywood glued and nailed on the inside. All interior plywood edges shall be blocked. Walls shall be finished with tan fiberglass panels with a pebble textured surface bonded to the wall sheeting. Interior wall corners shall be covered with stainless steel angle and fiberglass seams shall join with an extruded PVC strip of matching color. Exterior sheeting shall be 5/16" fiber-cement siding (Hardipanel).

### 3.5 Building Roof

The building south facing roof shall incorporate the photovoltaic panels and solar heat collectors. It shall be covered with 10 mm, double-walled Lexan glazing with EPDM gasketed battens. Photovoltaic panels shall be accommodated under the glazing and be accessible from the storage room. The north facing roof shall be similarly constructed with transparent glazing acting as skylights over the toilet rooms. The roof shall include a gutter to direct rainwater to a 100 gallon cistern in the basement.

### 3.6 Doors

Toilet room doors shall be foam filled fiberglass panels with an oak frame. Each door shall include a hydraulic closer, three ball bearing hinges, oiled bronze interior and exterior handle, dead bolt and thumb latch. The basement access door and shutter door shall be wood construction using the same exterior finish as the building walls, with a continuous stainless steel strip hinges. Shutter doors shall bolt from the inside; the access door shall include a dead bolt lock with a key. Interior access doors shall be covered with the same fiberglass as the walls with a strip hinge and keyed latch. All locks shall be manufactured by Best.

### 3.7 Deck and Railing

Decks and railings shall be constructed from ACQ treated lumber and plastic wood. Posts shall be ACQ treated 4x4's, frame ACQ treated 2x6 and decking and balusters recycled plastic wood. Plastic wood decking shall be supported on 16" centers and fastened to each intersecting frame member with stainless steel screws.

## 4 PHOENIX COMPOSTING TOILET SYSTEM

### 4.1 System Specifications

The composting toilet shall be a model 200 Phoenix Composting System with the following salient characteristics essential for structural integrity, mechanical operation and biochemical decomposition:

#### 4.1.1 Tank

The composting tanks shall be manufactured with a 1/4" thick rotationally molded, polyethylene exterior shell and a 5/8" thick foamed polyethylene inner insulation layer. Upper and lower access doors shall be similarly constructed and shall provide access to the entire top and bottom of the compost pile using a conventional length rake or shovel. All fasteners shall be corrosion resistant stainless steel, nylon, or fiberglass. Tank sections shall connect together with an overlapping, gasketed joint. Aeration of the compost pile shall be provided by sidewall baffles so that no point within a full tank shall be more than 2' from air contact. Liquid shall be separated from solid material by an elevated porous baffle in the bottom of the tank and receive secondary treatment in the aerated stable medium beneath this baffle. Three rotatable tines shall control the movement of finished compost to the access area. The upper tine shall include an auger located under the toilet while the lower tines shall be porous with a connection to outside air for additional aeration of the compost pile.

#### 4.1.2 Toilets

The toilet shall be manufactured from white polyethylene and ABS. It shall be 18" tall and include a black tapered polyethylene liner 12" diameter chute and tank connector. The toilet seat shall close automatically when the toilet room door opens.

#### 4.1.3 Vent System

The vent system shall consist of a fan housing/hose connector with a brushless 12 volt dc fan encapsulated for corrosion resistance. 4" vinyl hose shall screw into the fan housing and connect to 4" schedule 40 pvc vent pipe. All joints in the vent system shall seal so that there will be no leaks from rain or condensation. To conserve energy, ventilation rate shall be controlled by day and night, toilet room door openings, battery voltage and manual maintenance switch. The fan shall include a white LED for insect control and a thermostatic switch to turn the fan off in case of fire.

#### 4.1.4 Liquid Spray System

The composting tank shall include an internal spray system for periodically applying water or liquid end product on to the top of the compost pile so that no sections of the pile are dry. The spray nozzles shall be accessible from the top access door and easily removed for maintenance. The frequency and duration of spraying shall be adjustable.

#### 4.1.5 System Controller/Monitor

The system controller shall be installed in a NEMA 4X corrosion proof, sealed enclosure. It shall include circuit protection and load control for each device and photovoltaic panel and battery disconnect and overcurrent protection. The controller shall monitor temperatures, sunlight, battery voltage and door openings to control the fan, light, spray pump and seat closer. A display shall indicate operating mode and allow the operator to adjust system parameters such as fan speed, spray interval and timing functions. The controller shall include a door opening counter to keep track of toilet use. It shall also include a self test function for each electrical device which monitors the device during normal operation and informs the operator of failures.

#### 4.1.6 Maintenance Tools

Maintenance tools shall include a rake capable of reaching to the back of the tank, a tray for collecting finished compost and a reacher for removing trash. A bin to hold wood shavings and a scoop connected to the wall with a bead chain shall be mounted on the toilet room wall with instructions for users to add shavings after using the toilet.

#### 4.1.7 Certification and Training

A completed installations shall be certified by an authorized representative for Advanced Composting Systems to assure proper installation and to validate the warranty. After completion of the installation, Advanced Composting Systems shall provide a training session for maintenance personnel.

#### 4.2 Substitutions

If the contractor makes a substitution for the specified Phoenix Composting System, it is his responsibility to hire an independent engineering firm to verify through analyses, demonstrations and tests to the satisfaction of the customer that the substituted system is equal to the Phoenix in the following specific areas: Composting tank capacity, material longevity, strength, service temperature, corrosion resistance and thermal conductivity; Tine shaft and bearing material strength, wear resistance and corrosion resistance; FIFO compost path and ease of compost removal; compost aeration mean path length; mean liquid path length and retention time; ventilation rate, fan speed control and energy consumption; ventilation fan corrosion resistance and longevity; vent system corrosion resistance and leak resistance.

### 5 SOLAR HEATING SYSTEM

Solar heat collectors built into the south facing roof shall be insulated from the ceiling with 1" fiberglass insulation. All internal surfaces shall be painted black to increase collection. The system controller shall monitor collector temperature and control circulate air in the basement through insulated duct to the collectors.

6 PHOTOVOLTAIC ELECTRIC SYSTEM

The photovoltaic system shall include a 100 watt panel installed under the roof glazing, 12 volt 375 AH lead-acid battery and system charge controller which will indicate battery voltage, charge current and load current. All NEC requirements for array disconnect, battery disconnect and overcurrent protection, load overcurrent protection and grounding shall be satisfied.

7 WATER SYSTEM

Rain water from the roof gutters shall be collected in a 100 gallon tank. A pump and hose shall provide pressurized water for cleaning the toilet rooms. The pump shall be activated by a push button switch located in the service room.

8 TOILET ROOM LIGHT

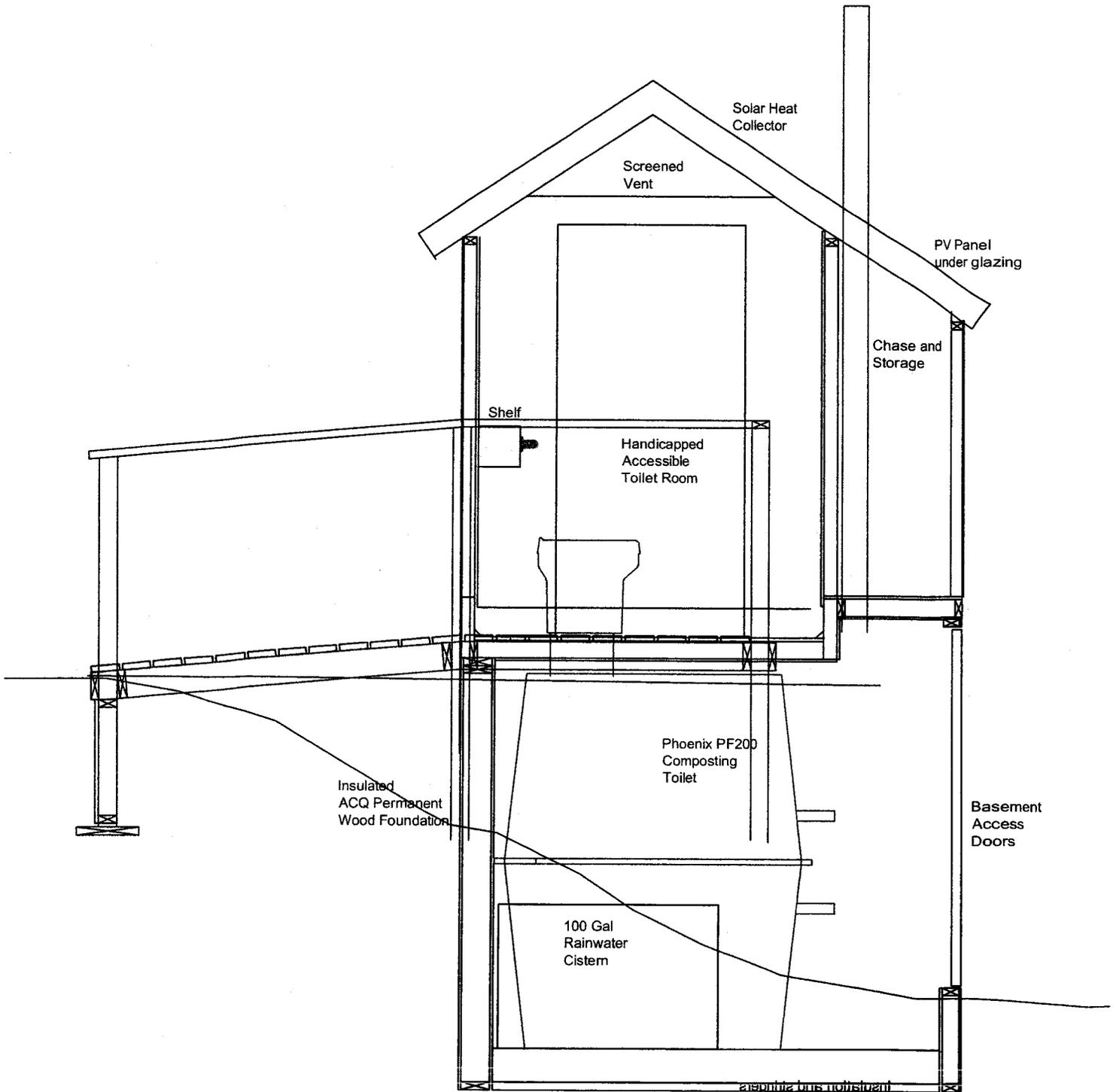
A recessed LED light shall be installed in the toilet room ceiling. It shall turn ON at night for an operator adjustable period when the toilet room door opens.

9 ERECTION

Erection shall include excavation, building and system assembly and site restoration. Access trails shall be provided by others.

10 WARRANTY

The standard 10 year warranty for the Phoenix shall apply. ACS shall warranty all other materials and workmanship with the exclusions contained in the standard Phoenix warranty for a period of 5 years from the date of completion of the installation.

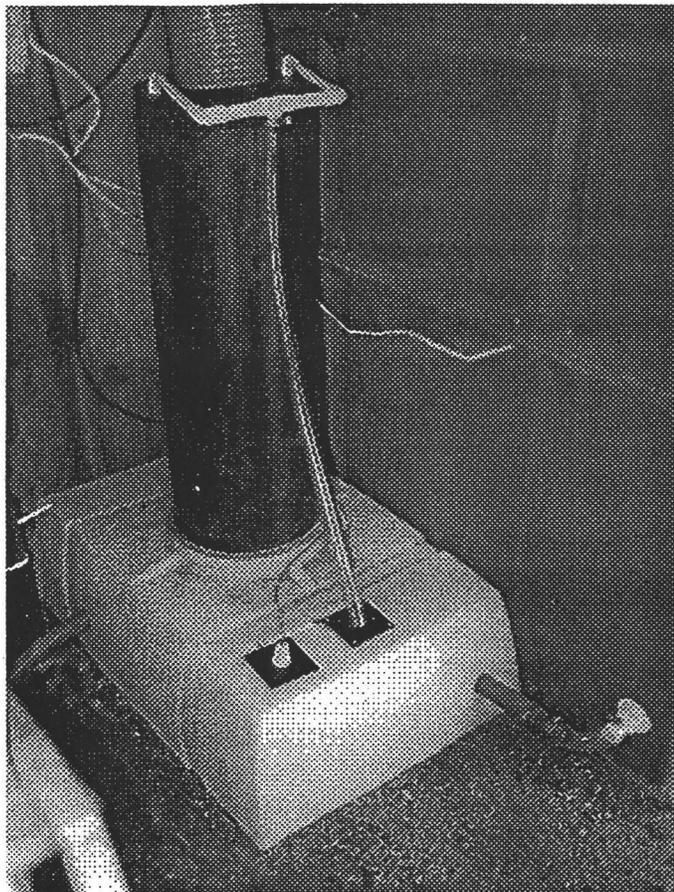


Phoenix Building  
 USACE Dworshak Reservoir

## Appendix B – ACS Evaporators

**Features.** The ACS Evaporation System eliminates the liquid end product from the Phoenix when the liquid cannot be disposed of through other on-site means.

Our design is based upon the pioneering work of the New York Department of Environmental Conservation. The system consists of a 50 or 100-gallon storage tank to handle surge flows, and an evaporation tower containing an evaporative medium with a large surface area to volume ratio. A pump sprays the liquid on the media in the tower. An a.c. blower or d.c. fan moves air through the tower, accelerating evaporation. The control system monitors the level of the liquid, and optionally, humidity and temperature.



*Above, the 50-gallon tank, which measures 26 by 41 by 15 inches high. The 100-gallon tank measures 26 by 41 by 28 inches high. The 12 or 24-volt d.c. fan draws 20 watts. The 110-volt a.c. blower draws 350 watts.*

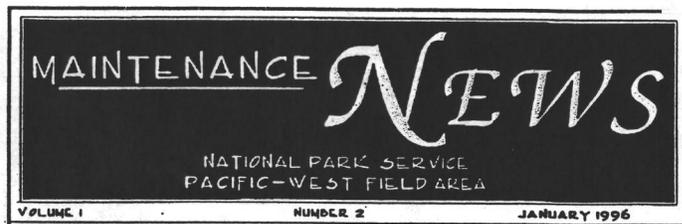
*The evaporator is designed for evaporative efficiency, durability, reliability, and easy maintenance. The insights of maintenance personnel in the field were invaluable to us in developing this product.*

*Right, encomium from a satisfied customer.*

**Capacity.** In relatively warm (95° F, or 35° C) and dry (25 percent relative humidity) conditions, this system can evaporate up to 100 toilet uses per day, or approximately five gallons (20 liters) with the d.c. fan. The a.c. blower increases the capacity to 20 gallons (76 liters) per day. Higher humidities and/or lower temperatures significantly reduce evaporation rates.

In cool and/or moist climates, preheating the air that is blown through the system boosts the evaporation rates — but the process is energy intensive. It requires approximately five times as much energy to vaporize water as it does to raise its temperature from the freezing point to the boiling point. As a general rule, using solar collectors to support preheating systems is more economical than using electricity or burning hydrocarbons.

Evaporation potential is maximized best by integrating the evaporation hardware with the building and Phoenix, and by performing a site-specific analysis of the relevant parameters prior to designing and constructing the facility. We can analyze the evaporation potential for your site and ensure that your installation's configuration is optimal for your conditions.



### Solar Technology Revolutionary Composting Toilet At Crater Lake

**E**ach summer, 75,000 tourists hike 1.1 miles down to the shore of Crater Lake to take a boat ride or enjoy the water. Human waste is a continual maintenance problem.

A composting toilet helped but 600 gallons of liquid still had to be packed up the trail each year. Last year, a liquid evaporation system solved the problem.

Solar panels provide electricity to pump fluids from the holding tank into the top of a drip-tank filled with plastic balls which provide tremendous surface area for evaporation. A small fan aids evaporation. At season's end, all the liquids completely evaporated. The system functions perfectly and the crews no longer haul liquids up the trail.

