



# Montana Fish, Wildlife & Parks

Region One  
490 North Meridian Rd.  
Kalispell, MT 59901  
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FAX: 406-257-0349  
Ref:ARS023-04  
December 17, 2004

TO: Governor's Office, Attn: Todd O'Hair, PO Box 200801, Helena, 59620-0801  
Environmental Quality Council, PO Box 201704, Helena, 59620-1704  
Dept. of Environmental Quality, Planning, Prevention & Assistance, PO Box 200901, Helena, 59620-0901  
Dept. of Environmental Quality, Permitting Compliance, PO Box 200901, Helena, 59620-0901  
DNRC, PO Box 201601, Helena, 59620-1601; Kalispell: Jon Dahlberg  
Montana Fish, Wildlife & Parks - Director's Office: Reg Peterson; Parks: Walt Timmerman, Allan Kuser;  
Design & Construction: Paul Valle; Legal Unit: Brandi Fisher  
SHPO, PO Box 201202, Helena, 59620-1202  
Tom McDonald, Div Admin, CSKT Natural Resources, PO Box 278, Pablo, 59855  
Les Big Crane, CSKT, P O Box 278, Pablo, 59855  
Montana State Library, 1515 East Sixth Ave., Helena, 59620-1800  
Jim Jensen, Montana Environmental Information Center, PO Box 1184, Helena, 59624  
George Ochenski, PO Box 689, Helena, 59624  
Wayne Hirst, Montana State Parks Foundation, PO Box 728, Libby, 59923  
Montana State Parks Association, PO Box 699, Billings, 59103  
Joe Gutkoski, President, Montana River Action Network, 304 N 18<sup>th</sup> Ave., Bozeman, 59715  
Rep. John Brueggeman, 321 Lakeview Drive, Polson, 59860-93187  
Sen. Mike Taylor, Box 152, Proctor, 59929-0152  
Lake County Commissioners, 106 Fourth Avenue E, Polson, 59860  
Flathead County Library, 247 First Avenue E, Kalispell, 59901  
Polson City Library, 2 First Avenue E, Polson, 59860

Ladies and Gentlemen:

Fish, Wildlife & Parks (FWP), Region One, has written a draft environmental assessment (EA) for Cedar Island in Lake County for the purpose of installing a self-contained compost toilet.

The draft will be out for public review until January 16, 2005. Please direct your questions or comments to Jerry Sawyer, Park Manager, Flathead Lake State Park, FWP, 490 N. Meridian Rd., Kalispell, MT 59901, or e-mail [jsawyer@state.mt.us](mailto:jsawyer@state.mt.us).

Sincerely,

John Fraley  
Acting Regional Supervisor

/ni  
Enclosure

## MONTANA FISH, WILDLIFE & PARKS



### DRAFT ENVIRONMENTAL ANALYSIS MEPA/NEPA CHECKLIST

**MISSION.** Montana Fish, Wildlife & Parks, through its employees and citizen commission, provides for the stewardship of the fish, wildlife, parks, and recreational resources of Montana, while contributing to the quality of life for present and future generations.

All Montanans have the right to live in a clean and healthful environment. This brief environmental analysis is intended to provide an evaluation of the likely impacts to the human environment from proposed actions of the project cited below. This analysis will help Montana Fish, Wildlife & Parks to fulfill its oversight obligations and satisfy rules and regulations of both the Montana Environmental Policy Act (MEPA) and the National Environmental Policy Act (NEPA). The project sponsor has a responsibility to ensure that all impacts have been addressed. Some effects may be negative; others may be positive. Please provide a discussion for each section. If no impacts are likely, be sure to discuss the reasoning that led to your determination.

#### PART I. PROPOSED ACTION DESCRIPTION

1. Type of proposed action:

- |                       |                   |
|-----------------------|-------------------|
| Development           | <u>  X  </u>      |
| Renovation            | <u>          </u> |
| Maintenance           | <u>          </u> |
| Land Acquisition      | <u>          </u> |
| Equipment Acquisition | <u>          </u> |
| Other (Describe)      | <u>          </u> |

2. If appropriate, agency responsible for the proposed action: Fish, Wildlife & Parks

3. Name, address, phone number, and e-mail address of project sponsor:

Fish, Wildlife & Parks  
490 N. Meridian Rd, Kalispell, MT 59901  
(406) 752-5501  
Contact person: Jerry Sawyer  
E-mail: [jsawyer@state.mt.us](mailto:jsawyer@state.mt.us)

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4. Name of project: Cedar Island Compost Toilet Installation

5. If applicable:

Estimated construction/commencement date: March 2005

Estimated completion date: April 2005

Current status of project design: (% complete) 100%

6. Location affected by proposed action (county, range, and township):

Lake County, Sec 27, R20W, T24N

7. Project size: Estimate the numbers of acres that would be directly affected that are currently:

(a) Developed  
residential..... \_\_\_ acres  
industrial ..... \_\_\_ acres

(b) Open Space/Woodlands/  
recreation ..... < 1/8 acres

(c) Wetlands/Riparian Areas ..... \_\_\_ acres

(d) Floodplain..... \_\_\_ acres

(e) Productive:  
irrigated cropland ..... \_\_\_ acres  
dry cropland ..... \_\_\_ acres  
forestry ..... \_\_\_ acres  
rangeland..... \_\_\_ acres  
other..... \_\_\_ acres

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 Appendices A & B.

9. Narrative summary of the proposed action or project including the benefits and purpose of the proposed action:

This project would occur on Cedar Island located near the western shoreline and midpoint of Flathead Lake (Appendix A). The proposed action would result in the installation of a

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self-contained Clivus Multrum System compost toilet being located approximately 100 yards east of the old home and outbuildings and on the east side of the open meadow/orchard area (Appendix B). The ground area that the toilet would occupy is approximately 6' x 8'. A spur trail about 25 yards long would connect to the main trail and lead to the toilet. The toilet would be partially screened by vegetation to limit visibility from the main trail. Signs at the primary landing sites and at the spur 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 ATV and small trailer, where they will be assembled. The ATV 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 3-5 days.

Originally purchased by FWP for waterfowl nesting habitat, Cedar Island is sought out as a destination and stopover area by motorized and nonmotorized boaters, especially during the summer months. Direct observations by Parks staff and complaints from visitors over the years have indicated an increase in visible signs of toilet paper and human feces on the island during the high-use season. The construction of the compost toilet will reduce unsightly and potentially hazardous, openly visible human waste. As Cedar Island has historically been utilized by the public for camping, it will provide campers as well as day users with an acceptable means of waste disposal.

The Clivus Multrum compost toilet was invented over 40 years ago in Sweden and has been used extensively in Europe as well as the U.S. as an alternative to flush and vault-style toilets. The model to be installed will utilize a solar panel to provide power for venting and sprinkling fans. General specifications and product information can be found in Appendix C.

10. Description and analysis of reasonable alternatives (including the required no-action alternative) to the proposed action whenever alternatives are reasonably available and prudent to consider, and a comparison of the alternatives with the proposed action/preferred alternative:

**Alternative 1) No Action** - The no-action alternative would maintain the status quo. No toilet facility would be available on the island. This will result in continued presence of noticeable human waste during the peak season, with associated health risks to the public and to Parks staff who are required to clean up the wastes. Continued degradation of the aesthetic values of the area would occur during summer months.

**Alternative 2) Installation of Compost Toilet** - Alternative 2 would place the toilet facility approximately 100 yards east of the old house, just off the main trail and on the east side of the open meadow (old orchard area). This is a more centralized location on the island and provides an opportunity for continuous sunlight, necessary for proper functioning of the toilet system. Other areas of the island have been found to be unsuitable either because they are heavily forested or due to the rocky and uneven terrain. Some brush and small trees will be removed from the site to clear the area necessary for the toilet structure and as a precaution against future shading of the facility. This location provides

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limited vegetative screening from the main trail and does not affect the view of the island from the water. Although this location may inconvenience some of the general public, it will better target the actual island users and reduce the likelihood of some boaters emptying chemically treated porta-potty waste into the toilet. The rationale for selection of a compost toilet over a different type of toilet, such as a pit or vault design, is due primarily to 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, and there is a public acceptability issue regarding potential fire hazard. Consequently, the compost toilet was the only reasonable design considered.

**Alternative 3)** Require public to utilize personal portable toilets or human-waste disposal kits. This alternative would require the public to collect and remove their wastes through the use of their own portable toilets or waste disposal kits such as “WAG BAGS” (Waste Alleviation and Gelling). The alternative would rely on the public’s acceptance of responsibility for removal of their waste from the immediate environment. This strategy is utilized in some federal wilderness areas and especially along designated “Wild and Scenic River” systems. Cost to the agency in materials/maintenance is significantly reduced. However, education and enforcement efforts are needed, which require staff time. At present, it is thought unlikely that the public will accept this strategy in the Flathead Lake recreational setting. Where this strategy is utilized, the recreational access points can be monitored and/or controlled, for example, at river put-ins or wilderness trailheads where gear inspections of parties can reasonably be made prior to departure or even during the course of a trip. Within the Flathead Lake setting, inspection of a party’s gear at departure points or enroute is unrealistic. Inspection at the island could be done, but would only be feasible for those parties who were camping, and it would likely not cover the majority of day users. A regulation approved by the FWP Commission would be necessary to implement this alternative. This process would be lengthy and controversial. Additionally, even if adopted, enforcement of this type of regulation would be a major challenge.

11. Listing of each local, state, or federal agency that has overlapping or additional jurisdiction:

(a) Permits		
Agency Name:	Permit:	Date Filed:

(b) Funding	
Agency Name:	Funding Amount:

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(c) Other Overlapping or Additional Jurisdictional Responsibilities	
Agency Name:	Type of Responsibility:

12. List of agencies consulted during preparation of this environmental checklist:

Fish, Wildlife & Parks - Design and Construction Unit  
- Wildlife Division

13. Name of preparer(s) of this environmental checklist:

Jerry Sawyer, Park Manager  
Flathead Lake State Park  
Fish, Wildlife & Parks  
490 N Meridian Road  
Kalispell, MT 59901  
(406) 751-4575  
[jsawyer@state.mt.us](mailto:jsawyer@state.mt.us)

## PART II. ENVIRONMENTAL CHECKLIST

**PHYSICAL ENVIRONMENT.** At the bottom of this “Land Resources” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on land resources. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects of the action as well as the long-term effects. Attach additional pages of narrative if needed.

1. LAND RESOURCES 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				
f. Other		X				

### NARRATIVE DESCRIPTION AND EVALUATION:

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.

**PHYSICAL ENVIRONMENT.** At the bottom of this “Air” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on air resources. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects of the action as well as the long-term effects. Attach additional pages of narrative if needed.

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 13 (c))		X				
b. Creation of objectionable odors?		X				2b.
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. Any discharge that will conflict with federal or state air quality regs?		X				
f. Other		X				

**NARRATIVE DESCRIPTION AND EVALUATION:**

2b. Although no nonflush toilet unit is completely odorless, the designer of the Clivus Multrum system claims the unit provides sufficient airflow and venting to make the unit "odorless" as long as the unit is properly installed and periodic maintenance occurs. Examples of installations at other state and national parks in the U.S. and in locations throughout Europe confirm this claim. To guarantee proper installation, a technician from the manufacturer will come to the site in April 2005 to inspect the installation and make any necessary changes prior to its opening for public use.

**PHYSICAL ENVIRONMENT.** At the bottom of this “Water” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on water resources. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects as well as the long-term effects. Attach additional pages of narrative if needed.

3. WATER	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
<b>Will the proposed action result in:</b>						
a. Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?		X				
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				3h.
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				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. Effects to a designated floodplain?		X				
m. Any discharge that will affect federal or state water quality regulations?		X				
n. Other:		X				

**NARRATIVE DESCRIPTION AND EVALUATION:**

3h. Liquids that accumulate as part of the composting process will be eliminated through gravity feed from the main unit into a secondary storage tank. The liquid fertilizer that results from the composting process is stable, odorless, and according to the manufacturer, can be stored indefinitely by the time it reaches the collection area. “In temperate climates, the liquid will accumulate at the rate of approximately one gallon per 25 uses. It has a useful nutrient content and should, where allowed, be used on ornamental plantings, trees, shrubs, and lawns.” (from manufacturer). Experience from a compost toilet on Wild Horse Island has shown that evaporation significantly reduces the amount of liquid end product. It is thought that since climatic conditions will be similar, this will also be the case for this toilet. However, a storage tank will be installed to collect any excess liquid that may occur. This liquid can then be pumped into a portable container and removed from the island.

**PHYSICAL ENVIRONMENT.** At the bottom of this “Vegetation” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on vegetative resources. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects as well as the long-term effects. Attach additional pages of narrative if needed.

4. VEGETATION  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				4e.
f. Effects to wetlands or prime and unique farmland?		X				
g. Other:		X				

**NARRATIVE DESCRIPTION AND EVALUATION:**

- 4a. Vegetation in the foundation zone (6' x 8') will be removed. This is considered a very insignificant loss 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.
- 4e. Disturbance of the vegetation will occur during construction, exposing bare soil. All areas that are disturbed will be reseeded with native plant species and monitored for emergence of any noxious weeds. All weeds will be eradicated.

**PHYSICAL ENVIRONMENT.** At the bottom of this “Fish/Wildlife” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on fish and wildlife resources. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects as well as the long-term effects. Attach additional pages of narrative if needed.

5. FISH/WILDLIFE	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
Will the proposed action result in:						
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. Adverse effects to threatened/endangered species or their habitat?		X				
i. Introduction or exportation of any species not presently or historically occurring in the affected location?		X				
j. Other:		X				

**NARRATIVE DESCRIPTION AND EVALUATION:**

5. There are no anticipated impacts to fish and wildlife from this project due to the nature and scope of the project.

**HUMAN ENVIRONMENT.** At the bottom of this “Noise/Electrical Effects” checklist, provide a narrative description and evaluation of the cumulative and secondary effects of noise and electrical activities. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects as well as the long-term effects. Attach additional pages of narrative if needed.

6. NOISE/ELECTRICAL EFFECTS  Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment 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:**

6a. Noise above existing levels will be generated by an ATV 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 may also be used at the site. The cumulative noise is considered minor, intermittent, and temporary.

**HUMAN ENVIRONMENT.** At the bottom of this “Land Use” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on land use. Even if you checked “None” in the table, explain how you came to that conclusion. Attach additional pages of narrative if needed. Consider the immediate, short-term effects as well as the long-term effects.

7. LAND USE  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. A conflict with a designated natural area or area of unusual scientific or educational importance?		X				
c. A 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. Compliance with existing land policies for land use, transportation, and open space?		X				7e.
f. Increased traffic hazards, traffic volume, or speed limits, or effects on existing transportation facilities or patterns of movement of people and goods?		X				
g. Other:						

**NARRATIVE DESCRIPTION AND EVALUATION:**

7e. Cedar Island is closed to public use during the waterfowl nesting period from approximately March 1 to the Friday before the Memorial Day weekend. The proposed facility will have no effect on the seasonal closure or nesting waterfowl.

**HUMAN ENVIRONMENT.** At the bottom of this “Risk/Health Hazards” checklist, provide a narrative description and evaluation of the cumulative and secondary effects of risks and health hazards. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects of the action as well as the long-term effects. Attach additional pages of narrative if needed.

8. RISK/HEALTH HAZARDS	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
Will the proposed action result in:						
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. Effects on existing emergency response or emergency evacuation plan or create need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				8c.
d. Disturbance to any sites with known or potential deposits of hazardous materials?		X				
e. The use of any chemical toxicants?		X				
f. Other:		X				

**NARRATIVE DESCRIPTION AND EVALUATION:**

8c. The end product materials of the composting process are considered safe for use as compost material or fertilizer. However, to allow for natural processes to occur, the compost end product will be placed in plastic bags at the end of the high-use season (mid-September) and removed from the island.

**HUMAN ENVIRONMENT.** At the bottom of this “Community Impact” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on the community. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects as well as the long-term effects. Attach additional pages of narrative if needed.

9. COMMUNITY IMPACT	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
Will the proposed action result in:						
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:**

9. Cedar Island has no permanent human habitation. No community impacts will be generated from this project.

**HUMAN ENVIRONMENT.** At the bottom of this “Public Services/Taxes/Utilities” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on public services, taxes, and utilities. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects as well as the long-term effects. Attach additional pages of narrative if needed.

10. PUBLIC SERVICES/TAXES/UTILITIES	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
Will the proposed action result in:						
a. An effect upon 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 so, specify:		X				
b. Effects on the local or state tax base and revenues?		X				
c. 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. Increased used of any energy source?		X				
e. Other.		X				
Additional information requested:						
f. Define projected revenue sources.	10f.					
g. Define projected maintenance costs.	10g.					

**NARRATIVE DESCRIPTION AND EVALUATION:**

10f. FAS License Account - \$6,000 for Clivus Multrum Compost unit  
 FAS License Account - \$2,500 (building materials)

10g. Projected maintenance costs are considered minimal. 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 \$75/year. Projected costs for cleaning include approximately 20 staff hours per year, which translates into about \$200 per year of additional salary expenditure.

**HUMAN ENVIRONMENT.** At the bottom of this “Aesthetics/Recreation” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on aesthetics & recreation. Even if you checked “None” in the above table, explain how you came to that conclusion. Consider the immediate, short-term effects as well as the long-term effects. Attach additional pages of narrative if needed.

11. AESTHETICS/RECREATION  Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?			X			11a.
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. Adverse effects to any designated or proposed wild or scenic rivers, trails, or wilderness areas?		X				
e. Other:		X				

**NARRATIVE DESCRIPTION AND EVALUATION:**

11a. The toilet building will be visible to public view on portions of the main hiking trail as the trail crosses the abandoned orchard area. The facility is partially screened from the main hiking trail and other access trails by small pine and deciduous trees that have invaded the field. The building will not block or affect any major scenic views as it is located at the edge of the old fruit orchard and the entire orchard area is surrounded by heavy forest and affords no views of the lake or mountains. The building will be constructed of materials and siding which blend with the natural surroundings. Additionally, since the toilet facility is centrally located on the island, it cannot be viewed from the water.

**HUMAN ENVIRONMENT.** At the bottom of this “Cultural/historical Resources” checklist, provide a narrative description and evaluation of the cumulative and secondary effects on cultural/historical resources. Even if you checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects as well as the long-term effects. Attach additional pages of narrative if needed.

12. CULTURAL/HISTORICAL RESOURCES	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
Will the proposed action result in:						
a. Destruction or alteration of any site, structure, or object of prehistoric historic, or paleontological importance?		X				
b. Physical changes that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
d. Adverse effects to historic or cultural resources?		X				
e. Other:		X				

**NARRATIVE DESCRIPTION AND EVALUATION:**

12. No impacts to cultural or historical resources are anticipated. The proposed building site is approximately 50 yards from the nearest outbuilding, about 150 yards from the main structure, and will be located at a site that has been previously disturbed by agricultural activity. Historical site inventory is pending and will be completed prior to final decision notice.

**HUMAN ENVIRONMENT.** At the bottom of this “Summary Evaluation of Significance” checklist, provide a narrative description and evaluation of the cumulative and secondary effects. Even if you have checked “None” in the table, explain how you came to that conclusion. Consider the immediate, short-term effects as well as the long-term effects. Attach additional pages of narrative if needed.

13. SUMMARY EVALUATION OF SIGNIFICANCE	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
Will the proposed action, considered as a whole:						
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				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. Have organized opposition or generate substantial public controversy?		X				
Additional information requested:						
g. List any federal or state permits required.						

**NARRATIVE DESCRIPTION AND EVALUATION:**

The scope of this project is not considered sufficient to generate any cumulative or long-term negative impacts to the resources of the island. It will positively affect the resource by eliminating most potentially hazardous, openly visible human waste.

## PART III. ENVIRONMENTAL CHECKLIST CONCLUSION SECTION

1. Discuss the cumulative and secondary effects of this project as a whole:

The negative cumulative effects of the project are considered minimal. Minor resource impacts will result from the excavation of the base area for the toilet building. Vegetation in this area will be lost. Additionally, vegetation will be impacted and reduced along the route of the spur trail leading to the toilet. Temporary trampling of vegetation surrounding the toilet site will occur during construction. The vegetation from this activity is expected to fully recover. Noise will be temporary and limited to the time of construction. Additional costs will be generated for staff time required to maintain the facility and for needed cleaning supplies and toilet paper. Costs for supplies are not expected to exceed \$75.00 per year and can be absorbed under the Region's current operations budget. After construction, additional labor should amount to no more than 1 hour per week or 20 hours per year. At \$9.48 an hour for paid staff, this would amount to approximately \$190.00 per year. Routine maintenance of the toilet would coincide with normal patrol and inspection. The product generated from the composting process will be bagged and removed from the island. Data from the manufacturer suggests this should occur no more than once a year. Although a secondary storage tank will be installed, accumulation of liquids is not expected as experience from the compost toilet on Wild Horse Island shows that almost all the liquid evaporates. In fact, with the typical climatic conditions encountered, additional water is needed to keep the compost process active. No other negative effects are anticipated. The positive cumulative effect of the project is an enhancement of the visitors' recreational experience. This is due to a reduction in scattered human waste deposits, which minimize the potential health hazards from the feces, and the improvement of the aesthetic quality of the area and the convenience and privacy afforded by a restroom facility.

No secondary cumulative effects are anticipated.

2. Based on the significance criteria evaluated in this Environmental Checklist (Part II), is an EIS required?

YES \_\_\_\_\_

NO   X  

If an EIS is not required, explain why the current checklist level of review is appropriate:

The project is minor in scope, with little controversy and minimal resource impacts.

3. Describe the public involvement for this project.

Public involvement consists of a 30-day written comment period. This level is appropriate, as the project is considered small in scope and noncontroversial.

4. What is the duration of the public comment period?

Thirty days - from December 17, 2004, through January 16, 2005.

## GLOSSARY OF TERMS

**Affected Environment** – The aspects of the human environment that may change as a result of an agency action.

**Alternative** – A different approach to achieve the same objective or result as the proposed action.

**Categorical Exclusion** – A level of environmental review for agency actions that do not individually, collectively, or cumulatively cause significant impacts to the human environment, as determined by rulemaking or programmatic review and for which an EA or EIS is not required.

**Cumulative Impacts** – Impacts to the human environment that, individually, may be minor for a specific project, but when considered in relation to other actions, may result in significant impacts.

**Direct Impacts** – Primary impacts that have a direct cause and effect relationship with a specific action, i.e., they occur at the same time and place as the action that causes the impact.

**Environmental Assessment (EA)** – The appropriate level of environmental review for actions that either do not significantly affect the human environment or for which the agency is uncertain whether an Environmental Impact Statement (EIS) is required.

**Environmental Assessment Checklist** – An EA checklist is a standard form of an EA, developed by an agency for actions that generally produce minimal impacts.

**Environmental Impact Statement (EIS)** – A comprehensive evaluation of the impacts to the human environment that likely would result from an agency action or reasonable alternatives to that action. An EIS also serves as a public disclosure of agency decision-making. Typically, an EIS is prepared in two steps. The Draft EIS is a preliminary, detailed, written, statement that facilitates public review and comment. The Final EIS is a completed, written statement that includes a summary of major conclusions and supporting information from the Draft EIS, responses to substantive comments received on the Draft EIS, a list of all comments on the Draft EIS and any revisions made to the Draft EIS, and an explanation of the agency's reasons for its decision.

**Environmental Review** – An evaluation, prepared in compliance with the provisions of MEPA and the MEPA Model Rules, of the impacts to the human environment that may result as a consequence of an agency action.

**Human Environment** – Those attributes, including but not limited to biological, physical, social, economic, cultural, and aesthetic factors that interrelate to form the environment.

**Long-Term Impact** – An impact, which lasts well beyond the period of the initial project.

**Mitigated Environmental Assessment** – The appropriate level of environmental review for

actions that normally would require an EIS, except that the state agency can impose designs, enforceable controls, or stipulations to reduce the otherwise significant impacts to below the level of significance. A mitigated EA must demonstrate that: (1) all impacts have been identified, (2) all impacts can be mitigated below the level of significance, and (3) no significant impact is likely to occur.

**Mitigation** – An enforceable measure(s) designed to reduce or prevent undesirable effects or impacts of the proposed action.

**National Environmental Policy Act (NEPA)** – The federal counterpart of MEPA that applies only to federal actions.

**No-Action Alternative** – An alternative, required by the MEPA Model Rules for purposes of analysis, that describes the agency action that would result in the least change to the human environment.

**Public Participation** – The process by which an agency includes interested and affected individuals, organizations, and agencies in decision making.

**Record of Decision** – Concise public notice that announces the agency’s decision, explains the reason for that decision, and describes any special conditions related to implementation of the decision.

**Scoping** – The process, including public participation, that an agency uses to define the scope of the environmental review.

**Secondary Impacts** – Impacts to the human environment that are indirectly related to the agency action, i.e. they are induced by a direct impact and occur at a later time or distance from the triggering action.

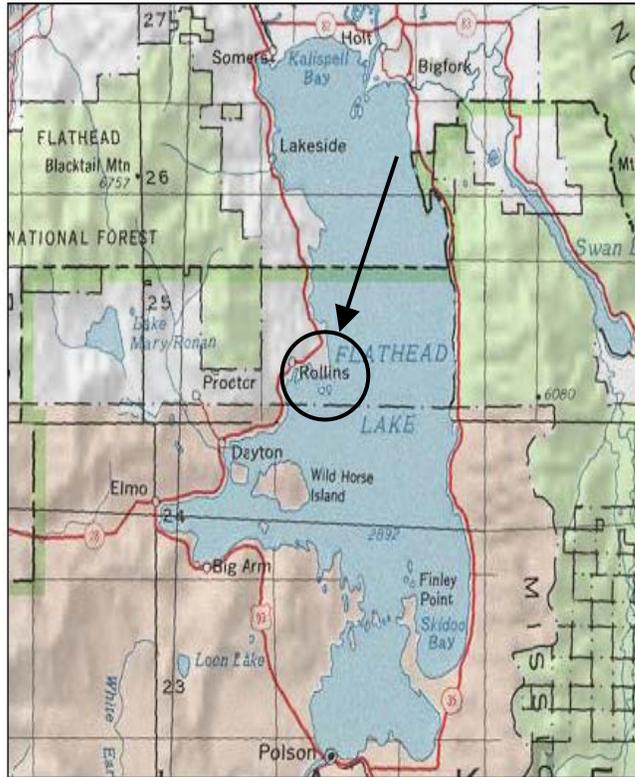
**Short-Term Impact** – An impact directly associated with a project that is of relatively short duration.

**Significance** – The process of determining whether the impacts of a proposed action are serious enough to warrant the preparation of an EIS. An impact may be adverse, beneficial or both. If none of the adverse impacts are significant, an EIS is not required.

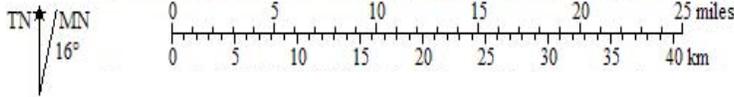
**Supplemental Review** – A modification of a previous environmental review document (EA or EIS) based on changes in the proposed action, the discovery of new information, or the need for additional evaluation.

**Tiering** – Preparing an environmental review by focusing specifically on narrow scope of issues because the broader scope of issues was adequately addressed in previous environmental review document(s) that may be incorporated by reference.

## Appendix A

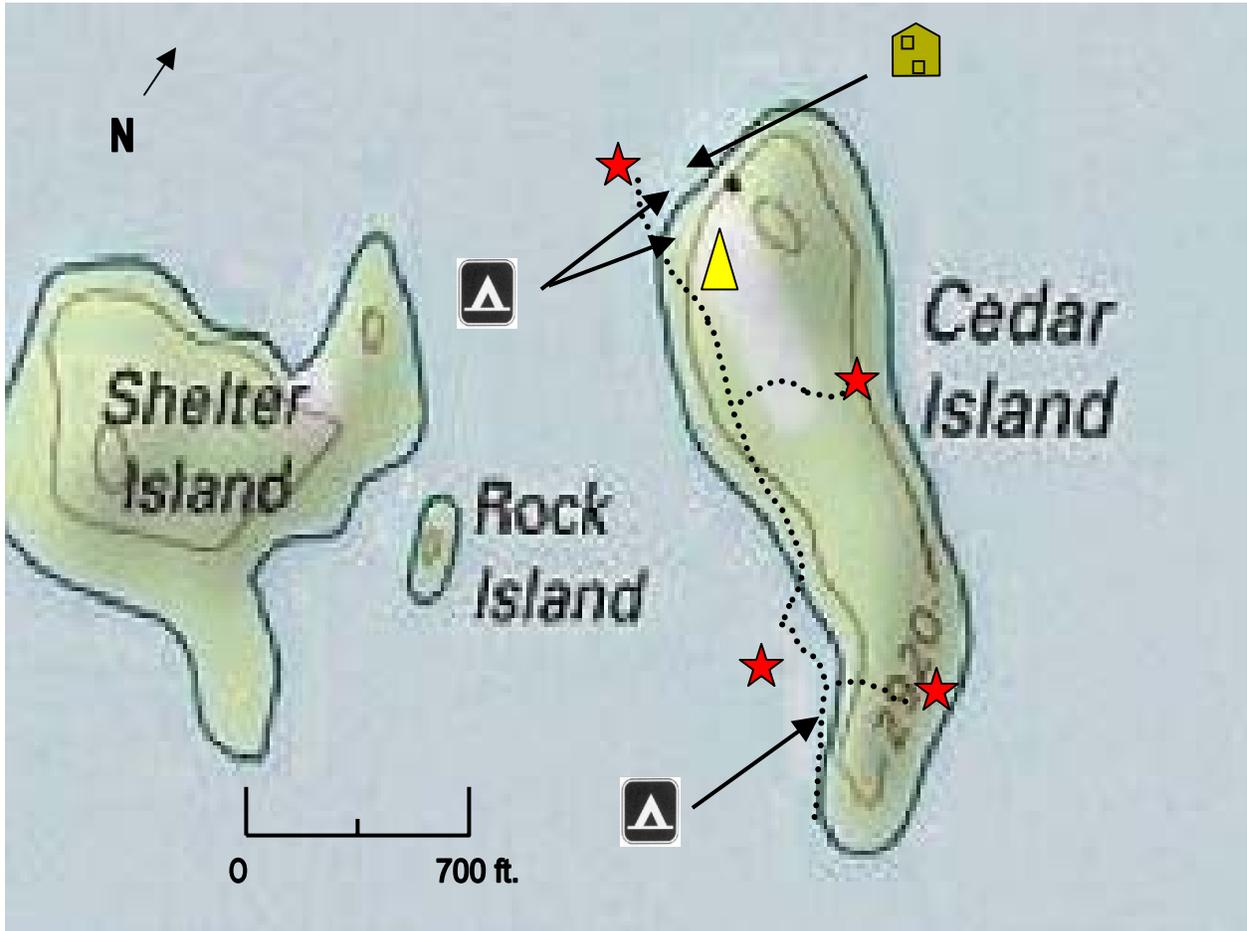


**Cedar Island  
Location  
On Flathead Lake**



Appendix B

**Proposed Location for Cedar Island Compost Toilet**

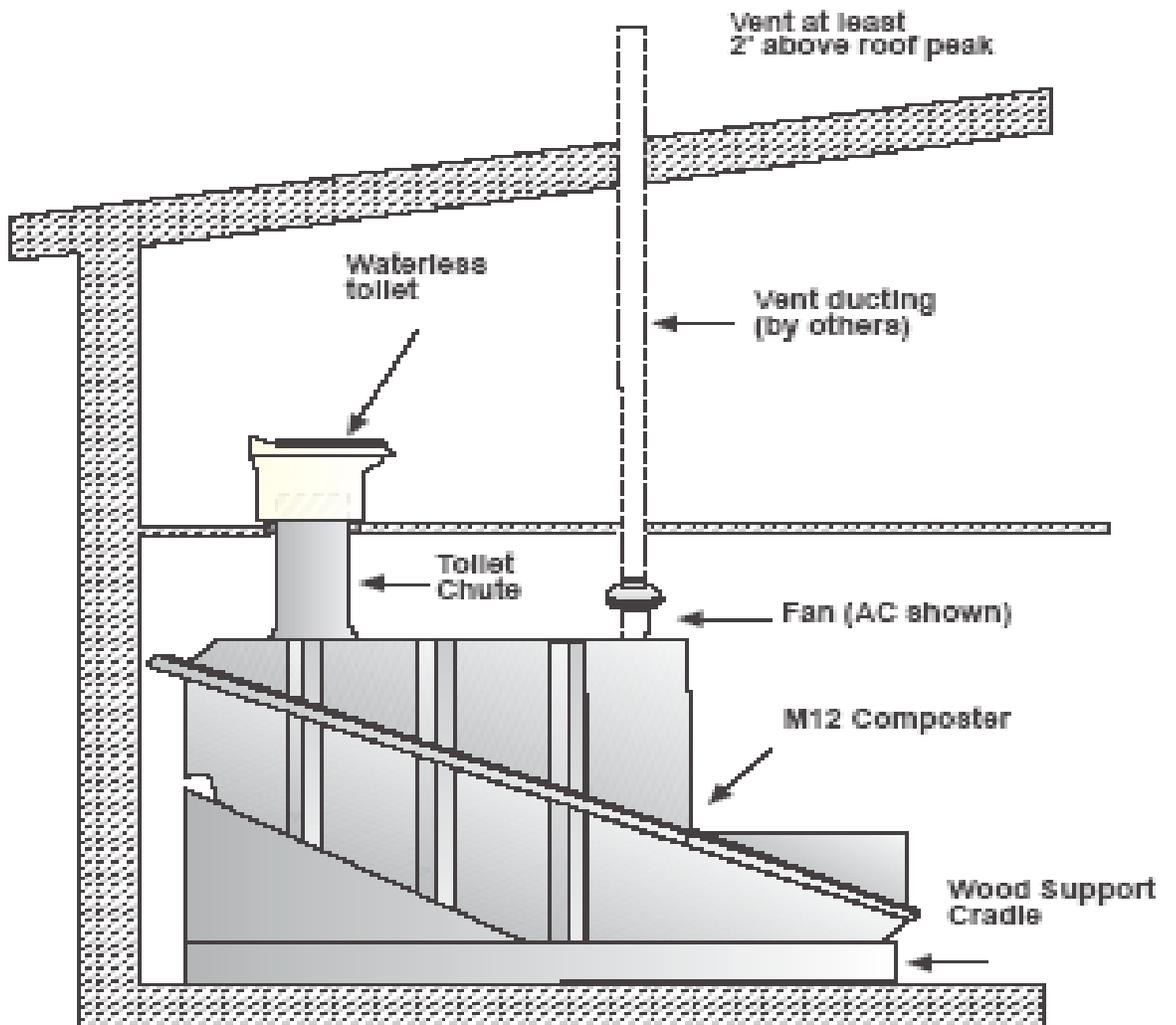


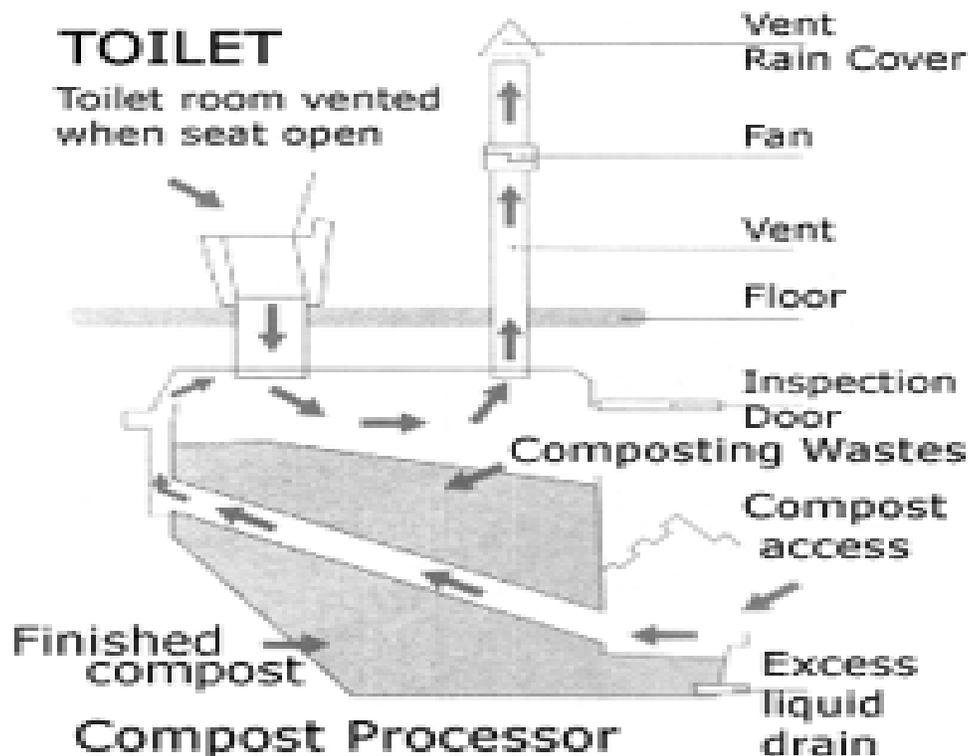
-  Primary Landing site
-  Developed Campsite
-  Developed Hiking Trail
-  Homestead Buildings
-  Compost Toilet

# Appendix C

## Clivus Multrum Toilet System

### Typical Configuration





## COMPOSTING TOILET PROCESS

Composting is the breakdown of organic matter in the presence of aerobic organisms. This is the same process that happens wherever organic matter is exposed to oxygen and moisture: in forests, garden compost piles, lawns, etc. The compost toilet allows human waste to breakdown into simple, stable compounds that have value as plant nutrients, i.e., fertilizer.

### Biological Aspects

The breakdown of waste in the Clivus is carried out by mesophilic organisms, i.e., organisms that thrive within a temperature range of 20-45 °C. Chief among these are a wide range of bacteria and fungi. Also highly active within the compost system are many invertebrates, such as red worms, which transport oxygen and moisture throughout the compost mass while they assist the physical and chemical breakdown. Red worms are only present if put there by system maintainers. Bulking material (typically, shredded bark mulch) is added to help maintain a porous texture that promotes aeration and good moisture content. Human pathogens are killed not by the heat within the composter, but by predatory organisms and the long retention time in the system. Especially important

in the compost process are the nitrifying bacteria (e.g., nitrobacter and nitrosomonas), which turn the nitrogen in human waste into nitrites and nitrates, i.e., forms of nitrogen plants need for growth.

## **Chemical Aspects**

One of the most important processes taking place within the compost system is the chemical transformation of the nitrogen in human waste. Most of the nitrogen is contained in urine in the form of urea. In the composter, urea is readily broken down into ammonia and carbon dioxide by a variety of bacteria and fungi. As it passes through the compost mass, nearly all of the ammonia is converted, first to nitrites and then to nitrates, by nitrifying bacteria. Nitrate, incorporated in manufactured fertilizer at great cost and environmental damage, is a form of nitrogen readily taken up by plants. Two other macro plant nutrients, phosphorous and potassium, along with a wide range of micro-nutrients, are also present in human waste in useful quantities and are captured by the compost process. Separated from the solid matter by the composter design, the compost liquid that results is a stable, high-strength fertilizer. Feces in the compost system are reduced in volume by more than 90%, and break down over time. When fully composted, this material looks and smells like topsoil, and is an organically rich soil amendment.

## **CONCLUSION**

By use of the processes described above, the compost toilet and gray water technologies have the following benefits: saving water that would otherwise be used to carry toilet waste, protecting water sources from pollution by human waste, creating fertilizer for use in agriculture, and providing irrigation water for plants.

## **Additional Information**

### **The Clivus Does Not Smell**

No need to worry about smells! A small electric fan in the vent pipe creates airflow within the system and ensures that any toilet room smells are drawn away - leaving less odor than even a flush toilet.

### **The Clivus is Completely Natural**

The decomposition process is a totally natural one. Chemicals are not used, as they would only harm the various composting organisms.

### **The Clivus is Easily Cleaned**

The toilet bowl is easily cleaned with biodegradable cleaner and a toilet brush. Because of its straight-through design, it actually needs less cleaning than a regular toilet bowl. The seat and the outside of the toilet can simply be wiped with some disinfectant applied to a damp cloth.

## **The Clivus is Energy Efficient**

The small fan positioned in the vent pipe is the only component requiring power and uses only a few dollars worth per year. Alternatively, we have optional solar power systems that require no main power connection at all.

## **The Clivus Has Easy Access**

This of course is essential should anything of value inadvertently fall down the toilet. The Clivus provides easy access via the inspection door. With other systems often the only access is via the toilet chute making retrieval extremely difficult if not impossible.

## **The End Result: Safe, Clean Compost**

The end product is simply removed via a large hatch at the front of the composting tank and can be dug into the garden. In domestic circumstances this is usually necessary only once or twice a year; some households have found it unnecessary to remove any compost for up to two years. After a year or more in the processor the compost is safe to handle, has a fresh earthy smell, and feels and looks much like regular garden compost.

(Above information is compiled from manufacturer websites: [www.clivusmultrum.com](http://www.clivusmultrum.com)T and [www.clivus.com.au](http://www.clivus.com.au))



## Model M12 Specification Sheet

### NSF Certification

The Clivus Model M12 is certified by the National Sanitation Foundation under Standard 41.

#### Capacity

M12 Volume: 132 cubic feet; 987 US gallons  
Daily capacity at average temp. >65°F: 80 visits  
Annual capacity at average temp. >65°F:  
30,000 visits

#### Specifications and Materials

##### Dimensions

Length: 105"; Width: 62"; Height: 58.5" Wt: 365 lb  
Weight: 365 lbs

Working Area on Top of Composter: 48"x57.5"

Waste Access Door: 10"x30" on composter front  
Compost Access Lid: 32"x62" on composter front  
Polyethylene Wall Thickness: .375" nominal

##### Materials

The M12 Modular Composter is rotationally molded using high density linear polyethylene resin that conforms with the following specifications:

Density (ASTM TEST D 4883): 0.938 g/cm<sup>3</sup>

Tensile Strength at Yield (ASTM D 638): 2700 psi

Dart Impact (-40°C, 250 mils thickness): 145 ft-lbs

Envt. Stress Crack Resistance (D 1693): 400 hrs

##### Ventilation

**AC:** 115V, 93w, 60 Hz, .72 amp fan with 243 cfm at free air. Fan made of GE Noryl plastic, totally enclosed, ball-bearing motor, in-line, direct drive. UL and CSA approved. Diameter: 11.75";

Inlet/Outlet Diameter: 5.87"; Length: 7.75". The fan is mounted in-line near the composter, within 4" PVC or ABS ducting (not included).

**12 V DC available.**

##### Automatic Moistening System

An automatic control device monitors daily compost mass moistening. Timer is housed in water-resistant NEMA box. Spray time is preset at factory.

**Components:** Solenoid--120VAC, 50/60Hz, UL and CSA listed. Timer--Synchronous motor, 48 max. on

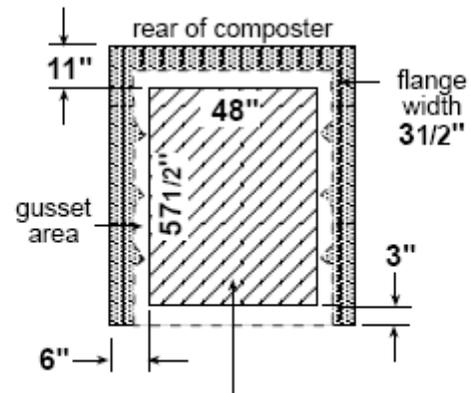
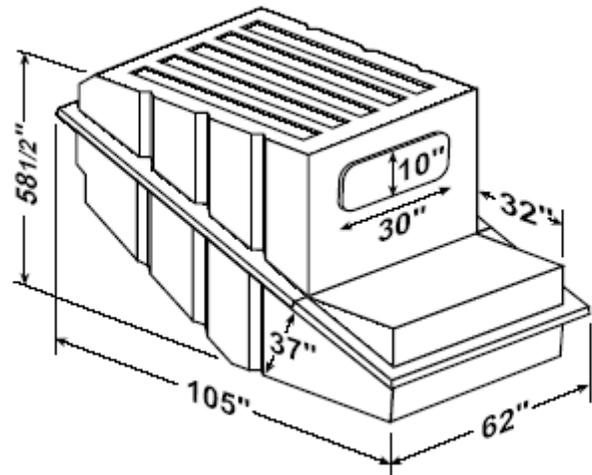
##### Liquid Removal Pump

**AC:** Submersible, 115V, 5 amp, with 18', 3-conductor, oil-resistant cord. UL and CSA approved. 1" NPT liquid discharge outlet. Capacity is 20.4 gallons per minute at 1' with a maximum pumping height of 26.3'.

**12 V DC available.**

##### Wood Composter Support Cradle Kit

Supports the M12 Composter. Made from pressure treated lumber.



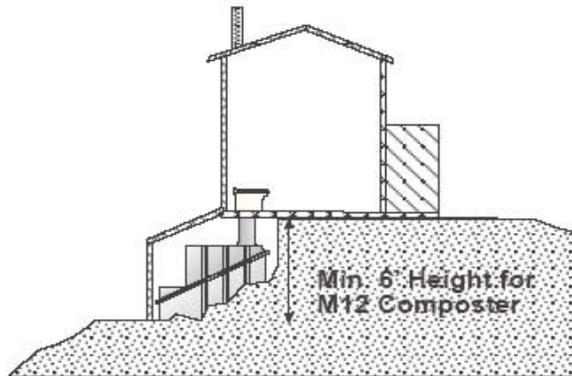
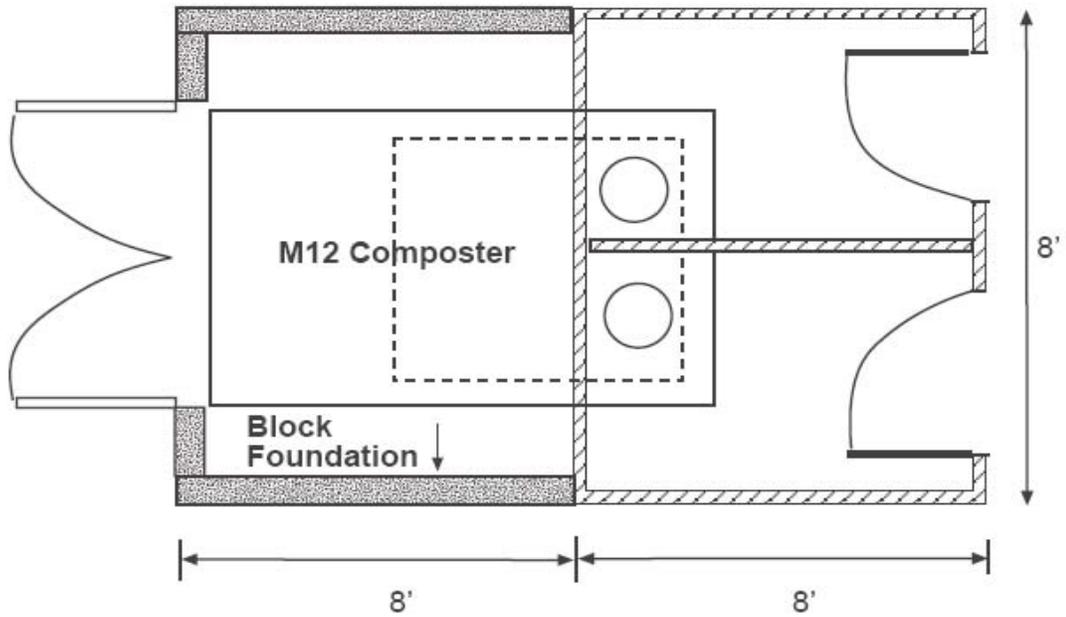
TOP WORKING AREA FOR TOILET CONNECTION

##### Toilet

The **Waterless Toilet** is constructed of impact resistant fiberglass with a sanitary white gel-coat finish. The seat and lid are made of plastic; the liner is made of rotationally molded polyethylene. The toilet must be located directly over the composter, which is situated in a space or room below. The toilet is connected with a 14" diameter straight chute. Toilet height: Standard - 14"; Handicapped - 18" Width: 18.5"; Length: 24.25"



### Concept Sketch Clivus Compost System Hillside Configuration



5/12/00