



IDAHO REGION II STABILIZATION PLAN



Annex P

SEWAGE and WASTE DISPOSAL

This annex provides guidance for sewage and waste disposal after a catastrophic event.

Co-Leads: Public Health
Environmental Quality

Partners: Public Works
Road Department

INTRODUCTION

Water treatment, sewage treatment, and solid waste disposal systems have provided an environment that has greatly reduced outbreaks of typhoid, cholera, and hepatitis. However, these diseases are always present and will cause sudden, severe, and widespread illness during a time when medical resources and treatment are overwhelmed and incapable of stemming them. Therefore it is imperative that sanitation programs begin immediately after an event, to prevent significant illness and loss of life.

SCOPE

This annex applies to municipalities when sewage or solid waste collection systems are shut down or degraded for an extended period.

SITUATION AND ASSUMPTIONS

Competition for limited critical resources may disrupt traditional wastewater and sewage disposal. Example resource limitations include:

- Competing demands of electricity
- Competing demands for water
- Degradation of transportation and equipment
- Lack of personnel

POLICIES

1. If critical resource limitations threaten the ability to provide safe drinking water, municipal wastewater and sewage disposal systems will be shut down.
2. Traditional sewage disposal systems control the spread of disease. Many of the emergency sewage disposal methods in this annex minimize the spread of disease. Because of this difference, public health authorization is required before using methods in this annex in municipalities.
3. Any alternative sewage disposal method will be located at least 100 feet away from a source of water such as a well, pond or stream.

SEWAGE OPTIONS

Home Waste Disposal Systems. Home waste disposal begins with alternatives to the traditional toilet and ends with sanitary disposal of the waste. The following waste disposal options would need to be tailored to an individual home.

1. Existing Systems.

- A. **Septic Tanks.** Houses with septic tanks can continue to use them, along with the existing toilet. To conserve, save gray water (water that has been used for cleaning or washing) and use it to flush toilets. This may be a temporary measure. When the septic tank is full, septic pumping services may not exist.

Keep toilet paper use to a minimum to prevent your system from clogging up. If possible, burn or bury toilet paper instead.

- b. **Outhouses.** Pre-event, outhouses are mainly used in rural areas.

2. Toilet Alternatives.

- a. **Modify an existing toilet.** An existing toilet may be modified as follows:
 - Line the inside of a toilet bowl with two heavy-duty plastic garbage bags.
 - Place kitty litter, fireplace ashes, or sawdust into the bottom of the bags.
 - At the end of each day, bag the waste, wearing disposable gloves.

This alternative is limited by the supply of plastic bags.

- b. **Create a bucket toilet.** A bucket toilet can be made by putting a toilet seat on a 5 gallon pail or another appropriately sized waste container. At the end of each day, the bucket is emptied (see "Waste Disposal" below).

3. Waste Disposal. Any waste must be disposed at least 100 feet away from a source of water, such as a well, stream or pond. If you have a well, locate the latrine or outhouse on lower ground or "downhill" from it if possible. It should also be located where it will not be flooded by storm water, which could contaminate any local water supply.

- a. Build an outhouse. Dig a deep hole – approximately 4 feet square and 8 feet deep. Construct a wooden building with a door, around the hole. The pit is partially planked over, with a box or platform bench in the back in which a hole is cut for sitting down. Outhouses must be ventilated, and window screens are a necessity.

For proper sanitation there should be a hinged board which covers the hole in the bench, and it should be down when not in use. The toilet seat should be cleaned and disinfected at least once a day with a strong bleach solution.

Once a day, some lime or composting material (such as sawdust or peat moss) should be thrown down the hole, to help eliminate odors. Soap and water must be available for hand sanitizing, even if only in wash basins. If hand towels or linen are used for sanitary purposes, a heavy plastic bucket with a dilute bleach solution should be used for soaking clothes (similar to a baby's diaper pail), and the linens washed daily.

When the pit fills up, simply dig another one close by and move the outhouse to the new pit. Use the dirt from the new hole to fill in the old one making a mound on top because it will settle as the waste decomposes.

- b. Dig a latrine. You can bury waste by digging a trench or hole a foot wide and two feet deep. The top of the latrine should be raised or built up at least 6 inches above ground level to prevent rainwater from entering the pit. It should have a tight-fitting lid so insects and animals can not enter it.

Curtains of black plastic sheeting, canvas, bamboo and/or wood, or burlap can be erected to provide privacy, but normally no seating arrangements are provided. After use the material in the trench must be covered immediately with earth.

When the trench is half full, it should be covered with soil, and then another trench dug.

- c. Human manure composting. If done right and applied correctly, human manure composting is safe, simple, and efficient. To minimize disease potential, the compost pile must "cure" for a year. After the first year, a second compost pile is used, while the previous years' compost cures.

This plan is only activated in the event of a national emergency and attendant local disaster/emergency declarations

Compost from solid human manure is to be used for trees or pasture only. Do not use on vegetable gardens. Human urine, however, may be used as a nitrogen source for gardens, as it is sterile. Urine may be put in a separate compost pile for gardens, or it may be diluted (1 part urine to ten parts water) and applied to the garden directly.

Large Facility Waste Disposal Systems. Examples of large facilities are retirement complexes, businesses, shelters, and schools. These facilities have multiple waste disposal concerns:

- Preventing disease
- Minimizing nitrogen pollution
- Disposing a high volume of grey water

Alternative waste disposal systems for large facilities is at Appendix 1.

SOLID WASTE DISPOSAL OPTIONS

When a catastrophic event disrupts existing collection and disposal systems, there may be extra waste caused by the emergency itself. However, a combination of events should lead to a reduction in the amount of garbage and other solid waste shortly after event onset:

- A significant amount of canned goods in most peoples' homes and on the grocery shelves will be used up in a few weeks
- The volume of non-food goods purchased may drop significantly

When this reduction is combined with public education on composting and reusing glass and plastic containers when practical, the volume of waste produced is greatly minimized. The time between garbage pickup can then be doubled or tripled.

As increasingly less waste is produced, communal storage bins can be located at the neighborhood gathering points. Members of the Neighborhood Emergency Teams in charge of sanitation can assist in further waste reduction by outdoor burning (when appropriate to weather conditions) and by sorting materials for possible scavenging, such as furniture and appliances.

Hazardous materials will continue to require special treatment.

CONCEPT OF OPERATIONS

In a catastrophic emergency, sewage, and solid waste disposal must be considered early to prevent the spread of disease. Sewage disposal is a two-part process, consisting of education and technical assistance for homeowners and constructing expedient sewage disposal for large facilities. Solid waste is managed with a combination of education and actions based on the volume of waste.

RESPONSE PHASE—SEWAGE DISPOSAL

- ___ Review status of critical resources
 - ___ Electrical availability
 - ___ Chlorine on-hand and available (swimming pools, industrial users)
- ___ Assess impact of resource limitations
 - ___ Determine need for, and degree of, water restrictions
 - ___ Consider cessation of wastewater treatment
 - ___ Coordinate with chief executives to issue applicable water restriction and sewage disposal directives
- ___ Coordinate with Annex G: Public Information
- ___ Coordinate with other annexes to support home and community waste disposal systems during an extended electrical outage
 - ___ Annex D – Water Treatment: Distribute water and bleach using tanker trucks and NET Teams
 - ___ Annex K - Neighborhood Emergency Teams (NET Teams): Provide flyers on home waste disposal systems
 - ___ Annex O - Administration and Resource Management:
 - ___ Obtain and deliver port-a-pots to neighborhood gathering points, shelters, and congregate facilities
 - ___ Obtain and coordinate delivery of sawdust and other composting materials
 - ___ Coordinate scheduling of septic trucks as available

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- _____ Equipment and supplies as needed to construct expedient waste disposal at large facilities (Appendix 1)
- _____ On-going activities
 - _____ Coordinate with Annex M: Education to teach classes at neighborhood gathering points on safe sanitation and waste disposal
 - _____ Coordinate with Annex E: Healthcare to monitor for any disease trends

RESPONSE PHASE – SOLID WASTE DISPOSAL

Note: All bio-hazards will be incinerated. Collection and disposition of medical wastes will be done by a specialized medical team.

Note: Hazardous materials disposition will be under the direction of the fire department.

- _____ Continue with scheduled solid waste pickup for two weeks. Augment regular service provider with public works resources if needed
- _____ Coordinate with Annex G: Public Information to provide education on reducing the amount of garbage produced and on re-using plastic and glass bottles
- _____ As garbage volume is reduced, consider establishing communal storage bins at Neighborhood Gathering Points
 - _____ Ensure sanitation workers are provided masks, gloves and boots
 - _____ Sort materials for possible scavenging (furniture, appliances, etc.) or re-use
 - _____ Consider open burning by sanitation workers to further reduce volume of garbage

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Appendix 1: Alternative Community Wastewater Management

(in development)

DRAFT

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