

Federal Agencies

Oxbow National Wildlife Refuge Devens, MA

Profile

- Park area with 1667 acres
- Refuge for various endangered water birds, mammals, and reptiles
- Expanding trail system
- New visitor contact station and wildlife education center
- New fire pit and story telling area
- Located in Nashua River corridor
- Canoeing and hiking trails
- Open daily year-round

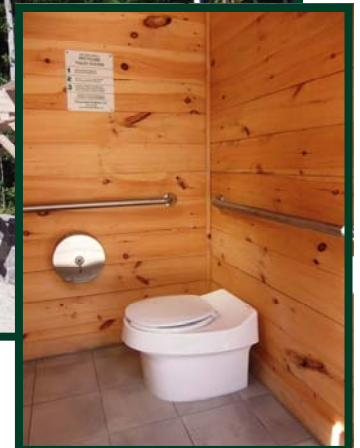


Challenge

- Provide safe, sanitary restrooms
- No running water available
- No sewer or septic on site
- Environmentally sensitive area

Solution

- Installed Clivus composting waste treatment system
- Eliminated sewage and wastewater
- Zero discharge to the environment
- Building design by Oak Point Associates, Portsmouth, NH





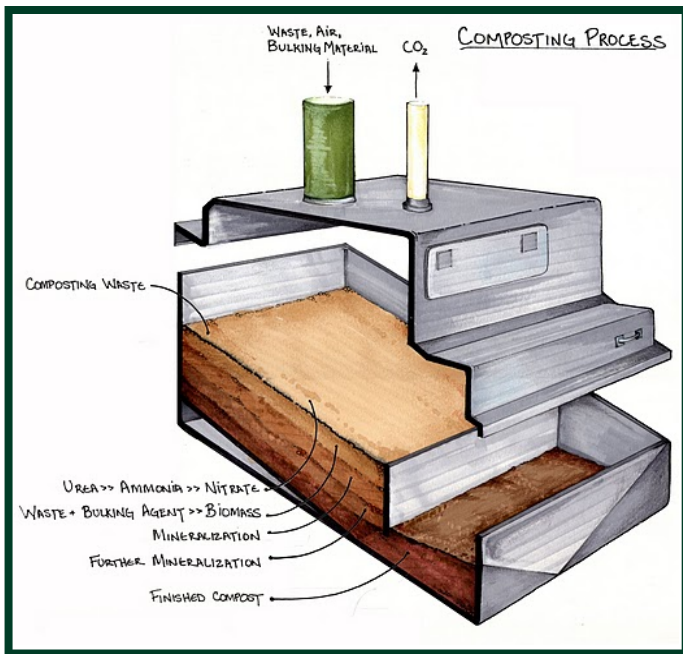
Elements such as the nitrogen found in urine are harmful to the natural balance of lakes, ponds, and aquifers. The nitrogen-rich liquid effluent is sent from the composter to a liquid storage tank to be pumped by a licensed septage hauler; external pump-out connectors add convenience. Hand sanitizer is provided in lieu of hand washing sinks. By designing the waste treatment as a "closed" system there is no polluting discharge.

The bathhouse building was designed with Clivus in mind. Bulkhead doors allow safe, easy access to the basement for maintenance, and an outside connection to the liquid storage tank makes pump outs simple and trouble-free.



The ventilation fan keeps the system and restrooms odor-free.

All Clivus systems are NSF Standard 41 Tested and Certified



Composting takes place in all soils which support plant and animal life. Clivus systems employ the same process in the controlled environment of the composting chamber. As waste breaks down in the composter a less chemically complex, more chemically stable substance rich in organic matter and very similar to soil is produced. Human waste consisting mostly of water is reduced by over 90%. By-products of the composting process are water vapor and CO₂ and are released harmlessly into the atmosphere through the ventilation system.