

# Outhouses in Alaska

*Arthur Nash, Energy Specialist*

Outhouses are not just for camping or summer cabins; they sometimes provide the only toilet options for year-round homes.

Some people use a camper's toilet for seasonal use or an indoor composting toilet that can be purchased and installed for a few thousand dollars, but many people prefer to put up a simple outhouse that removes the toilet from the home.

Outhouses in Alaska are used in some locations where there is a well or water delivery but where the ground may be difficult to install a septic system. Some may be put onto places where there are rocky subsurface areas while others may be inset into a hill.

Preparation of the site, construction materials and maintenance can all play into how long your outhouse will last. Depending on what part of the state you are in, you may be limited by the topography, soils and available construction materials before you even start building.

## Site location

Check with your local government to see what restrictions there might be to building an outhouse. Other key considerations for choosing a site are the minimum separation distances, or setbacks, required by the state — the distances outhouses need to be from wells, bodies of water, wetlands, etc. For required separation distances, see the table on page 2 from the Alaska Department of Environmental Conservation.

One thing to keep in mind with outhouses is that the surrounding watershed and drainage may behave differently during various seasons, and so

what works well in the summer, fall and winter may not work during breakup and spring drainage. Investigate your proposed site for a full year if you have the time.

Before prepping a location for an outhouse, consider where the water supply is coming from on the property and the depth of your water table. If your water supply is from a creek or natural spring, you want to place the outhouse at least 100 feet from the water supply to avoid contamination. If your outhouse is too close to the water table, you could



*Photo by javajoe6 (Wikimedia)*

<b>Minimum Required Separation Distances Measured horizontally or vertically</b>	
100 feet	Surface water, wetlands, sloughs, swamps and from any potable water system that is not a public water system
200 feet	Any water source used to supply a public water system serving at least 25 people for more than 60 days
6 feet	From the edge of the pit privy to any other soil absorption field
4 feet	The distance between the bottom of the pit privy and seasonal high groundwater table
Excerpted from "Wastewater Program Fact Sheet: Pit Privy Design and Operation"	

also have flooding and a mess in the outhouse. To find out how deep the water table is in your area, talk to people nearby to see how deep their wells are or check with well drillers who have put in wells in your vicinity.

State regulations say you should put your outhouse at least 100 feet away from the nearest well with the bottom of the pit at least 4 feet higher than the nearest seasonal high groundwater table.

Another thing to keep in mind is that you are going to want at least a 3.5-foot or 4-foot-square footprint. Choose a place where you are not going to be cutting long roots of trees with sensitive root systems. Birch, for instance, can be shocked somewhat easily if their expansive root systems are cut. If you can put your square footprint and trail in an area with spruce or blueberry brush, you may end up avoiding injuring nearby trees, which can then tip onto the outhouse when they die.

Also, think about the trail and what you will have to traverse in all the seasons to get from the main dwelling to the outhouse. You will be trampling down the ground vegetation and walking over roots. Try to choose as straight and level a path as possible without rocks and where ice patches don't form.

There are other factors that might affect your choice of site. Think about the distance from the road or trail on which you will need to haul your plywood and cribbing material. Consider the distance. You want the outhouse to be close enough to your dwelling to be convenient but far enough away to avoid the odor. Also, if you have a well, be aware of where your buried water supply line comes into your home. You do not want to trample a trail to the outhouse over the underground plumbing pipes as you might drive the frost down and freeze the line even with light foot traffic on the surface.

### **Latrine pit**

When you excavate the pit, keep in mind the size and shape of your subsurface containment. That might be a 55- or 80-gallon polydrum with holes in the bottom. Some people will shore up an earthen pit with creosote-coated railroad ties or pressure-treated wood used as cribbing material. This creates a square fortification around the pit, which is important to keep the dirt edges from caving in as the dirt gets wet. Because of moisture, use coated or pressure-treated wood, but remember that if you discontinue using the pit and fill it in, it will take longer for coated or pressure-treated wood to decay.

If you do not have a small bucket backhoe to use, tools such as a 2-foot blade spade, pickaxe, round point shovel and, possibly, a post hole digger will be helpful in creating your pit.

### **Structure**

Before building walls and a ceiling, think of the outhouse in terms of how you think of a house. The foundation needs to be solid. Some people build a short base, or pony wall, a couple of feet above the ground. The structure would then need to be sized up to the base so that it neatly fits on top but does not straddle it. One option is to put the structure on skids that fit right on top of the sill plate base in case you ever want to move it.

Use four 4-by-8-foot sheets of plywood that are 5/8-inch thick or greater for the walls and for a 4-by-4-foot bench seat. Once you have a tall rectangle with a 4-by-4 footprint, you will have to figure out how to center it over your pit. Probably the easiest method is to build the outhouse on the ground and

then bring it about a foot from the pit. With the open 4-by-4-foot bottom of the structure, tip it up 90 degrees over the pit.

There is nothing special about the 4-by-4-foot dimensions, but it does allow a good amount of room in the outhouse and is the quickest means of building due to the pre-cut dimensions of plywood sheeting. Obviously though, any type of siding or even vertical boards with perpendicular framing inside can be used and sizes can vary.

Whatever ground prep you do, realize that the plywood sheeting you use for the bottom edge will be susceptible to moisture and may rot over time. To prevent this, have pressure-treated 2-by-4 boards as “bottom plates” so that the plywood rests on the 2-by-4 and not the ground itself.

## Ventilation and roofing

Ventilation and moisture control is also important. Some people will put a vent in the top of the roof or high out of the side of the wall. Similar to an RV vent, this allows for passive air space in the structure, which helps to evacuate odor.

It is the moisture in the pit that you really want to have an outlet for to promote dehydration of the waste in the pit. Behind the seat hole(s), along the back wall, run a 4-inch piece of PVC or ABS plastic piping from just under the bench to at least a foot above the highest point of the roof. This additional ventilation tends to speed decomposition of the effluent in the pit.

Aside from a foundation and ventilation, probably the other important feature of any dwelling is the roof. This ties a great degree into moisture control, as you want to make sure your covering isn't going to let rain drip in or add to the burden of the structure's stability through snow accumulation. Here are some tips on roof construction:

- Use at least 3/4-inch treated plywood.
- Use mastic with flashing around a 4-inch vent stack.
- Build a roof with a slant to ease the snow load.
- Make sure the edges of the roof extend beyond the top edge of each wall
- Consider cutting out space for natural lighting

## Illumination

Since it is impractical to run electrical wire out to the outhouse from your dwelling breaker box, consider openings in the ceiling that can accommodate a curved skylight.

For a cheaper natural lighting option, take a 2-liter plastic pop bottle, fill it a quarter of the way up with water and a couple drops of bleach to keep the fluid clear. Be sure not to fill it completely full but to leave room for expansion when freezing. Place the bottle through a perfectly cut hole (try 3/8-inch diameter) in the roof so that half the bottle is below the roof and half is above. The pouring stem should be above the roof. Be sure to seal around the bottle and wood with durable silicone caulk. You may want to support it from below the roof with a net of chicken wire attached to the ceiling. Some people forgo the roof cut and cut rectangles into the walls a half foot from the top and screw on clear, wavy fiberglass siding for illumination.

## Other Considerations

Doors can be cut from plywood sheeting, and seat benches can be cut to accommodate as many holes as needed at one time. Make sure the trail leading up to the door opening is built up with peat or dirt so that it is flush with the foundation 2-by-4 plate mentioned earlier so that people don't trip. For Interior Alaska winters, cutting a 2-inch thick piece of foam board can give you close to 10R insulation from the cold, bench plywood.

For a warm toilet seat, use 2-inch rigid insulation. Cut a hole in the insulation the same size as the hole in the bench.

For other additional advice about building or maintaining an outhouse, see the Alaska Department of Environmental Conservation publication, “Wastewater Program Fact Sheet: Pit Privy Design and Operation,” which is available at <http://bit.ly/2zIDvdy>.

[www.uaf.edu/ces](http://www.uaf.edu/ces) or 1-877-520-5211

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