Turtle Shower

Setup Guide
Summer 2026
Future Turtles

Unpack

The shower is stacked up and ratcheted together. Remove the ratchet straps. Keep the black foam and the ratchet straps on the palette. They will be needed to pack up again.

Parts

All of the parts you'll need are stored in the **grey water tote**.

When the system is operating, this will serve as a holding tank for grey water.

Be super careful with the delicate brass spigots – they need to remain waterproof so don't knock them around.

Place a tarp

Figure out where the shower is going to go. Place a solid 10x12 tarp on the playa and anchor it with lag screws and washers at four corners. It is OK just to drill a hole through the corners of the tarp with the lag screws.

Leak prevention

Even a tiny drip-drip-drip leak will turn into a huge muddy mess in a few hours on playa. Test every connection carefully and never let grey water hit the playa!

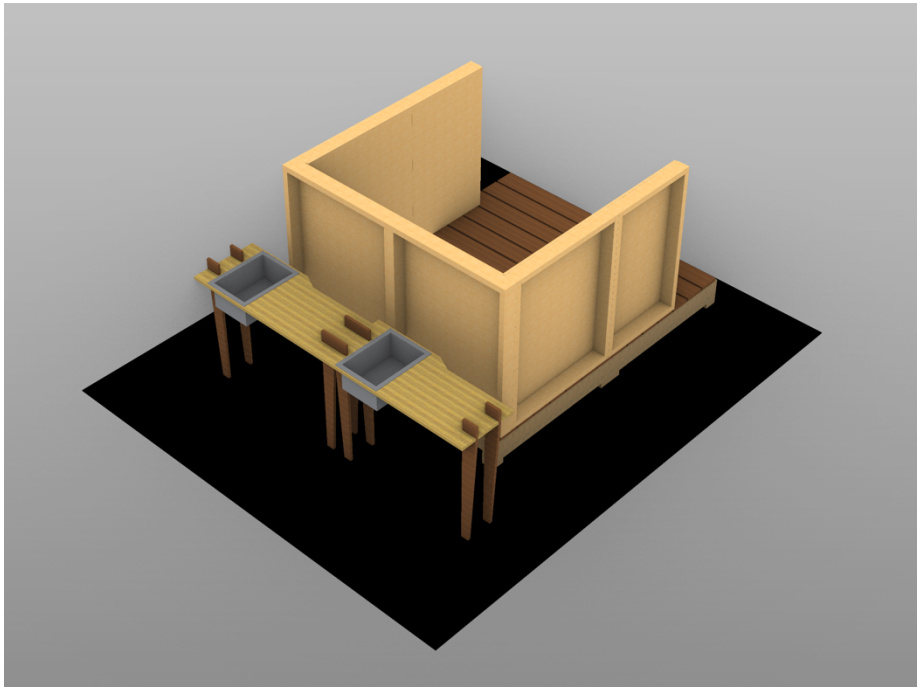
For simplicity, we use garden hose connections everywhere we can. Garden hose connections can be hand-tightened. They derive their water-tightness through a washer inside the female connector which is squeezed when you tighten them. The threads on a garden hose connection are not there to keep water from leaking out; they are just there to compress the washer. That means you should never try to use Teflon plumber's tape on a garden hose connection. If you have a connection that is leaking, replace the washer.

The canteen filler has one internal connection that uses tapered threads instead of a garden hose. Luckily for you, it is pre-assembled and you should not have to deal with it unless something goes wrong. Tapered threads need plumber's tape to seal them.

The smaller sink faucet connections are not garden hoses, but they are also compression fittings with a washer so they just need to be hand tightened and don't require plumber's tape. That also won't be a problem for you as they are pre-assembled.

Layout

This illustration shows the layout of the shower and vanities from a bird's-eye view. The black area represents a 10' x 12' tarp that protects the playa.



The shower consists of:

- Four platforms
  - Two have steel drain pans under the deck
  - Two don't
- Six wall pieces
  - Four are wide; two are narrow.
- Two vanities with sinks
  - One vanity also has a canteen filler

There are four platforms

Two of the platforms have steel drain pans and drain hoses. That's where people take a shower; water goes down through the slats, into the drain pans, and out through the drain.

The other two platforms do not have drain pans. That's the area where people get dressed and undressed.

Position and orientation are important. Each platform has a drawing indicating where it should go on one of the legs. For example, this drawing indicates that that platform goes in the bottom right:

As you lay out the four platforms, look at the locations of the screw holes in the deck. Those holes are where the walls will be screwed in, so they will help you orient each platform.

Start with the two drain platforms

They already have drain hoses connected, even in storage.

Make sure the valve at the end of each drain hose is **closed** (*across* the flow of water means “closed”):

Open the slats at the end, which are on hinges, and pour in enough water to cover the drain holes:

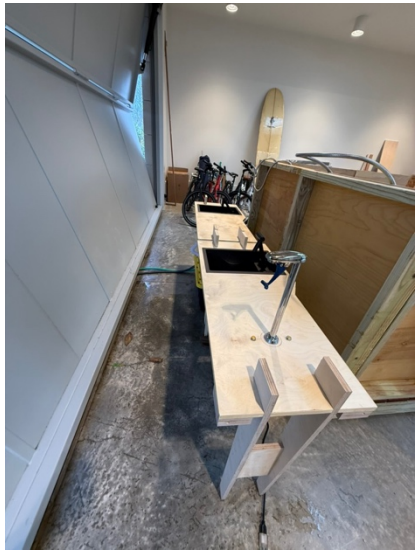
Let this sit for about fifteen minutes to make sure there is absolutely nothing leaking through the connection points of the drain.

While you wait

While you wait for that, you can put the other two platforms in place.

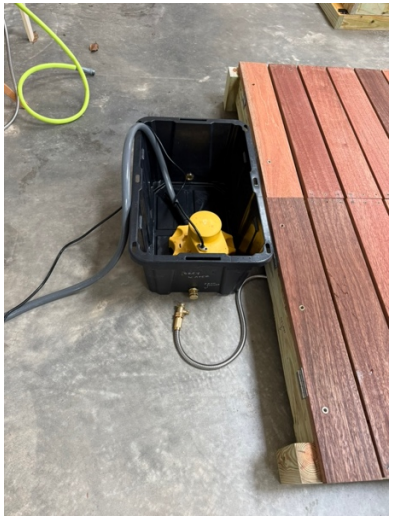
You will notice that on the leading edge, the mahogany deck boards extend a little bit past the edge if you laid them out right. Also double check that the screw holes for the walls are on the outer side.

You can also take this opportunity to install the legs on the vanities:



If they don’t slide in, give them little love taps with a block of wood, alternating between the front and back leg to keep them even, until the legs are flush with the counter.

Connect the grey water tote



The grey water tote has a yellow pump inside that will automatically activate whenever the water level goes up, pumping out to through the grey hose. When the level gets low enough, it switches off.

Connect the two shower drains to either side of the tote.

Important! Store the caps in the spare parts box; we'll need it to pack.

Note: the grey water tote has a third connection which can be used later to drain grey water from the food fort.

Open the drain valves

Open both drain valves between the drain hose and the tote. The test water you put into the pans should now dribble into the tote.

Connect the grey hose and power

Route the grey hose back to the United Site Services grey water tank, which looks like this:

Set it up there securely so it can drain into the tank without falling out.

Then plug in the pump to electricity and make sure everything is pumping correctly without leaks. Insure that the plug in connection point is in a Sockitbox to waterproof it.

Put the lid on the grey water tote

It has a corner cut out to accommodate the grey water hose and the pump power cord.

Bring the first vanity into place

Move the tote so that it sits under the middle of the first vanity. This is the vanity *without* a hole cut for the canteen filler.

Plug the drain of the sink, that white slinky, into the hole in the top of the grey water tote.

Bring the second vanity into place

This is the vanity *with* a hole for the canteen filler. Plug its drain into the top of the grey water, too.

Route all hoses and cables so they are between the legs and not tripping hazards.

Install the canteen filler

The canteen filler is a preassembled unit with filter, wood mount, and supply hose:

Install it from the *bottom* of the vanity:

Use two of the bolts with washers to secure it in place. These bolts can be tightened with a 9/16” socket wrench (preferred), or with the impact wrenches we use to drill lag screws into the ground in camp (but be gentle).

Set up the water manifold

The water manifold brings in a single hose with fresh water from the main tank, and has five outputs.

Place it on top of the grey water tote and connect the water filler and both sinks. Now you are ready for an end-to-end test of the sinks and water filler.

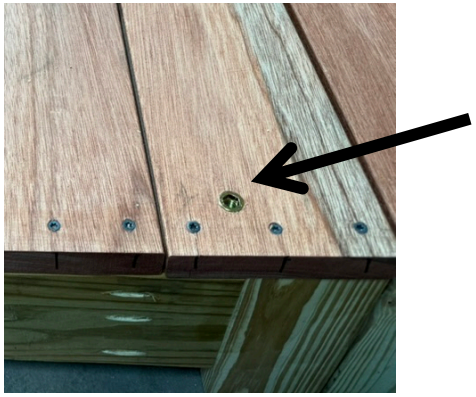
Install Front Walls

The walls are not interchangeable as holes have been pre-drilled to mount them.

Notice that each of the six walls has a diagram on the back that tells you which wall it is:

Start by installing the front two walls. These are the ones which have shower hoses running through them.

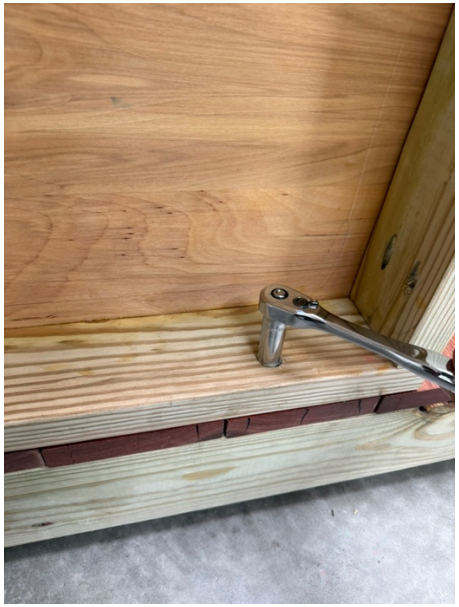
The platforms have little nuts embedded to receive screwed-down walls:



Line up the matching holes in the wall frame, and fasten the wall to the platform using the provided bolts and washers:

You don't have to tighten so much that the screw is digging into the wood. It's enough to get it tight enough that the walls are firm and don't rock.

You can use a 9/16” socket wrench to tighten:



If you can’t find one, you can use the same impact wrenches we use for lag screws in camp, but be gentle!

Install Remaining Walls

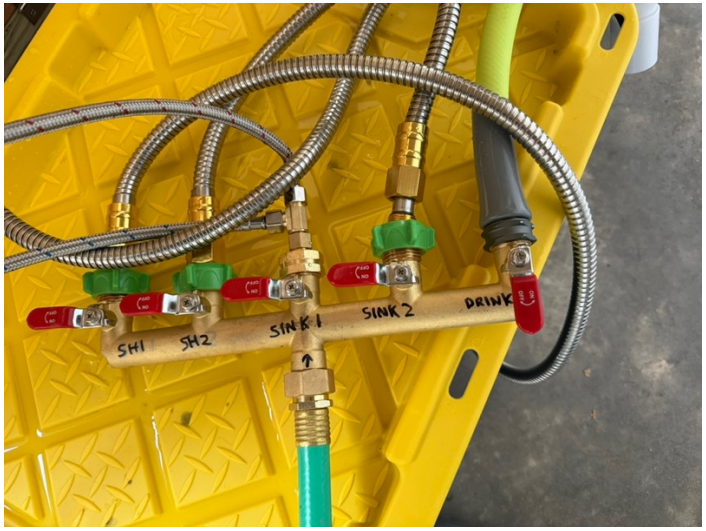
The other walls have black hooks that connect them together at the top:

You will have to lift each new wall to connect the hooks.

Secure the four new walls with bolts.

Connect shower hoses

Now you can connect the two shower hoses to the manifold:



Shower hoses connect to the outlets marked SH1 and SH2.

Final Check

Everything should be ready! Turn on one thing at a time and make sure there are no leaks or little drips.

Remember to store everything we're not using in the shipping container so that it will be easy to find during strike. That includes:

- The spare parts box and the bolts box
- This instruction manual
- Black foam used in packing

Winterizing the Turtle Camp

The Future Turtles provide running water in the shower, sinks, our canteen filler, and the food fort.

All this stuff is stored outdoors in Reno where it freezes every winter. If there is any water left in the plumbing fixtures (like faucets), that water will expand and break the fixture.

This is not hypothetical! It has happened to us almost every year, requiring thousands of dollars of repairs and hours of work that we wouldn't have needed if we had properly winterized our water system.

Luckily, winterizing is easy. All we have to do is connect the whole system up to *air* instead of water, and blow the air through the system to push out any water. It takes about 20 minutes and can be done by one person.

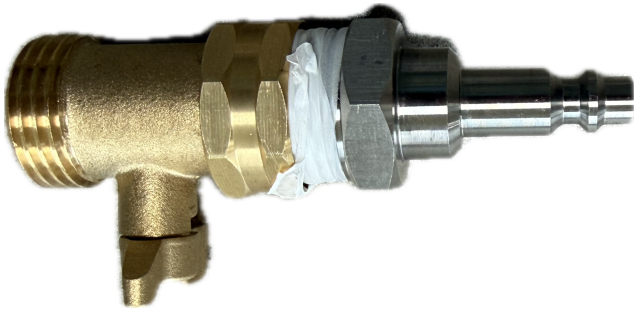
Where do we get air?

The build team RV has pressurized air available whenever the engine is running.

- The air valve is located in the bay door under the driver window.
- There is a coiled air hose stored in a milk crate in one of the bay doors in the RV. It will click right into the air valve.
- To get the engine running, obtain the ignition key from Jetpack and just start the engine like a normal car.

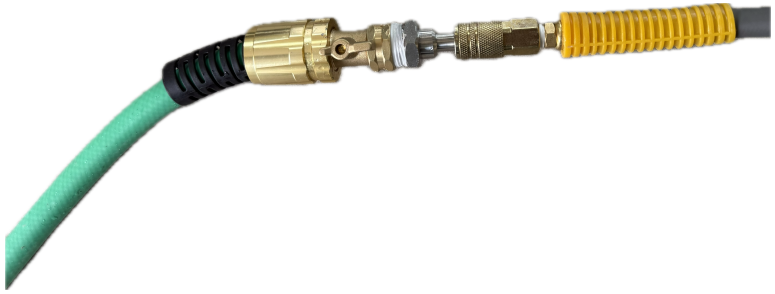
The Winterization Valve

This is the magic valve that makes winterization easy:



On the right hand side, it plugs into the air hose to bring air from the RV.

On the left hand side, it has a garden hose fitting just like our fresh water system.



All you have to do is remove the camp's water supply hose from the fresh water tank and hook it up to the RV's air supply. Now the whole camp has air on tap instead of water!

Run Each Tap Until It's Empty

Go to each tap in turn and open it all the way. At first a lot of water will come out, but eventually it will just start spitting air. That's how you know the water has been cleared from that line. Close the faucet and move onto the next one.

Remember:

- Every faucet in the food fort, hot and cold
- The canteen filler
- Both sinks, hot and cold
- Both showers

You should work on one faucet at a time to get maximum air pressure.

When you're done, disconnect the air.

Store the winterization valve

Put the valve back in the shower spare parts (blue) box. Put everything else back where you found it, turn off the RV ignition, and give the key back to Jetpack.

Strike! Storing the Future Turtles Shower

Before you start:

- Make sure the winterization procedure has been done – these instructions assume water has been turned off and air used to blow out all the fresh water pumps already
- Make sure the grey water pump is still connected and operational – there is still some grey water in the shower pans
- Make sure you know where it's going. The entire shower and sinks and vanities will be stacked up in one giant stack in one of the containers on top of a shipping palette.
- Get an impact wrench or 9/16" socket wrench.
- Get bleach and a rag to clean things that touched dirty or drinking water.

Tetris!

This is what it looks like stacked. There is a very specific order everything has to go in to fit perfectly and stay secure. Notice the stacking numbers running up the left hand side?

Disconnect Fresh Water

The system has six fresh water connections at the manifold which looks like this:

For simplicity, we **only** disconnect the six hoses from the manifold. Nothing else has to be disconnected. Unscrew each of the six hoses leading into the manifold and put the manifold aside.

Undo the canteen filler

Unscrew the two bolts and store them, and their washers, in the blue box. Remove the canteen filler from the bottom and put it aside.

Remove the Shower Walls

Unscrew each of the six shower walls and put them aside.

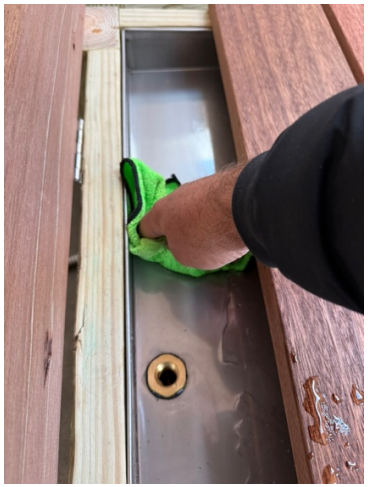
Two of the walls will have silver shower hoses going through them. They stay, even in storage! Don't try to remove the shower hoses.

Save the bolts with their washers in the blue box marked "Shower Assembly Bolts."

Purge remaining grey water from the shower pans

Flip open the last slats on the shower platform to reveal the shower pans and drain:

Using a rag, push any remaining grey water down the drain:



When you've gotten as much as you can, get a friend and lift up the whole wood platform, and pour any extra water right into the grey water tote.

Make sure the grey water pump is done

Wait until the grey water pump has finished pumping any water out. There will still be a little bit left in the tote. You can encourage the pump to suck out most of that by tilting the tote towards the pump.

Disconnect the pump from power and take it out. Wash it with bleach and a rag.

Disconnect all grey water hoses from the tote

Remove the hoses that are connected to the tote. Cap these holes using the caps which were stored in the blue Spare Parts box.

Pour any remaining grey water into the USS grey water tank

Also use this opportunity to wipe the inside of the tote with bleach.

Store the water pump neatly

Put it on the left side of the tote, and wrap its grey hose around the edge as shown:

There may have been another hose connected to this one if the USS tank is far away. That additional hose will **not** be store here.

Now tuck the manifold in the bottom:

Store the Drinking Water Filter

We have a convention that we always store **fresh water** hoses connected to themselves in a loop. That's a signal to future future turtles that the hose in question was only used for potable water. Make a loop out of the lime-green drinking water hose and store it:

Next, place the canteen filler as shown:

Add the foam cutouts and the blue boxes

Stack the platforms on the shipping palette in the container

There is a “Stack” number written on each wood part. Your goal will be to assemble a complete stack of all the remaining wood parts so that these stack numbers go from 1 at the bottom to 12 at the top. The text will always be right side up even though some of the parts will be stored upside-down. Here’s what you’re going to build:

Platforms 1 and 2

These platforms are still connected to silver drain hoses – just tuck them underneath! Don’t disconnect them.

Platform 3

Platform 3 will be stored upside down. Try to line up the 4x4 legs with each other, even though platform 3 will have a bit of decking sticking forward.

Then you will store the four leg assemblies from the vanities in the space that remains as shown:

Platform 4

Platform 4 is also stored upside down:

This is to make it possible to store the vanities with it:

Notice how the entire sink and its plumbing all tucks into the platform:

The faucet itself even folds into the sink. The second vanity should fit right in:

Put the wood cutting boards into the sinks:

Store the Walls

Now proceed to stack the six walls. There is a very specific pattern to tetris these in. Two of the walls are narrower and require black foam:

Two of the walls have shower hoses still going through them. If you follow the stacking order shown on the corners everything will still fit together nicely.

Fasten four ratchet straps

Et voila! You’re done! Take a break, and don’t get dehydrated.