Rainwater Harvesting for Toilet Flushing

Case Study: Volunteer-Installed System at a Commercial Building/Community Center

Average Water Savings	Total 20-Year Lifetime System Savings	% of Annual Indoor Water Use Offset by Rainwater	Lab Results from *E.Coli* Testing
455 gallons/month **3,640** gallons/year*	**72,800** gallons	**11%**	✓ Meets Water Quality Standards

✳ Rainwater available 8 months of the year (Nov-June) if tank is full at the end of March

How it Works

Step 1 – Screen Debris
Rainwater is diverted through a screen to remove leaves and debris before entering the 1,320 gallon tank.

Step 2 – Pump Water
Water from the tank is pumped into the building through a dual plumbing system (purple pipe). There is no cross-connection with potable water lines.

Step 3 – Filter and Disinfect
Rainwater is piped through a 50 micron and 20/ 1 dual micron filter to remove fine sediment before disinfection by ultraviolet light.

Step 4 – Connect to Toilets
Purple rainwater piping is connected to toilet supply lines. Two high efficiency, dual flush (0.8/1.6 gpf) toilets are connected to the rainwater system.

Step 5 – Plan for Dry Months
No rain? No problem! When rainwater supply is low, a mechanical fill valve opens to let a municipal water into the tank through an air gap.

Step 6 – Divert Overflow
When the tank is full, excess rain water overflows to a rain garden to keep water onsite and out of storm drains. Drought-tolerant, California native plants are planted around the rain garden to shade the tank from the sun.
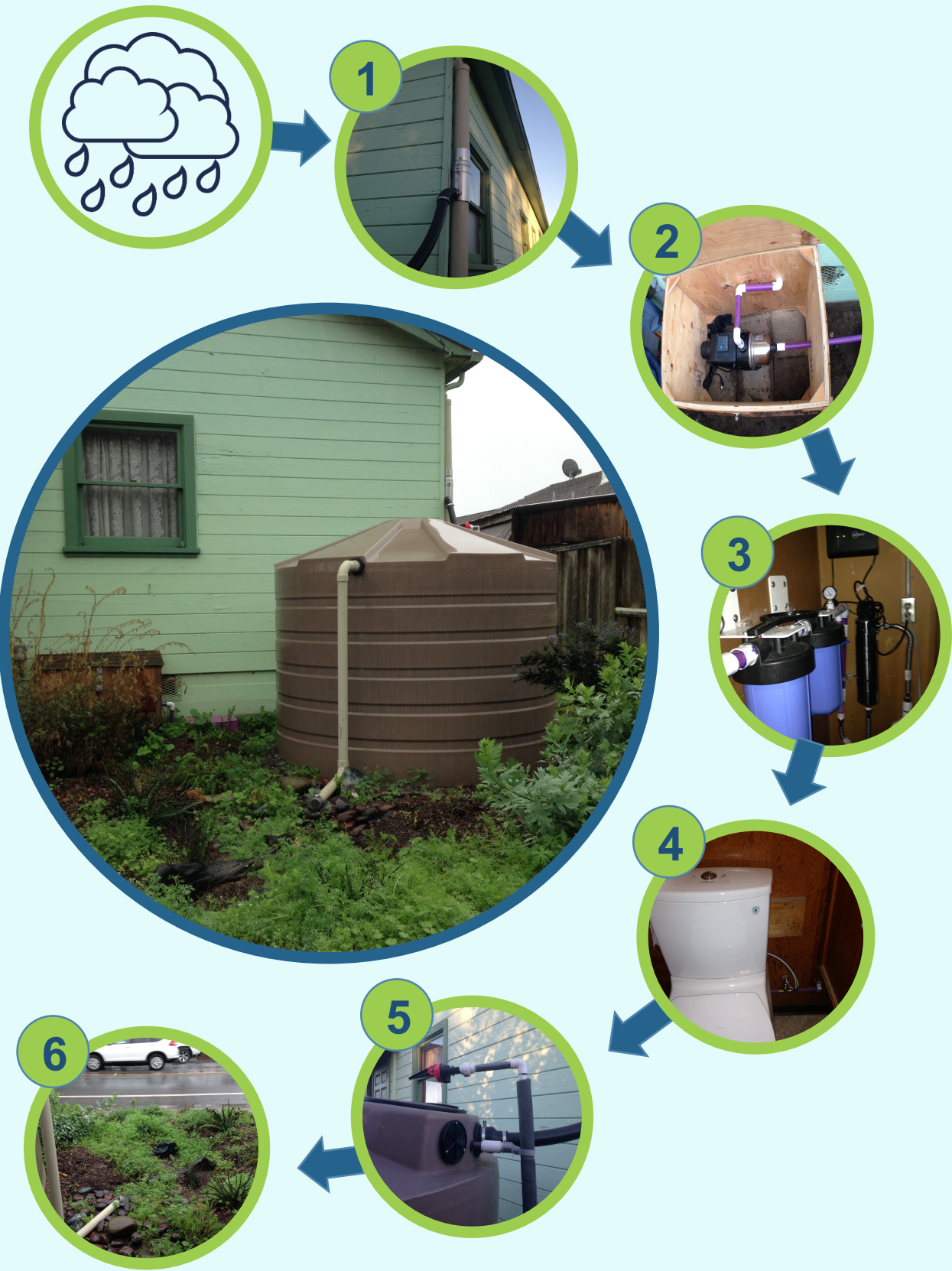
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for more information

Materials Cost Summary for this Commercial System

Labor (80 hours)	Donated	Pump	$620
Building Permit	$455	Filters and housing	$218
1,360 gal. cistern	$799	UV disinfection system	$525
Pea gravel	$39	Rain garden materials	$506
Rainwater piping, fittings	$547	Sale tax & delivery	$332
RainAid auto fill valve	$199	**TOTAL COST**	**$4,239**
		Lifetime Cost per Gallon	**$0.06/gal**