

City of Richmond's Wastewater Treatment Plant

City of Richmond
Department of Public Utilities



1 In this preliminary treatment stage, wastewater flows to the headworks by gravity. Grit, rags, and heavy debris are removed and taken to a landfill off-site. Water is pumped from the lift station to the primary clarifiers.

2 Light material, such as plastics and grease, float to the top of these separation tanks. These floatables are skimmed, dewatered, and landfilled. Heavy material sinks. Phosphorus is treated. Both materials are then pumped to the solids treatment processes (Step 5).

3 Organics and nitrogen are removed by biological activity. To maintain favorable conditions for treatment, dissolved oxygen concentration and other parameters are monitored and controlled.

4 Nitrogen removal, solids filtration, and disinfection occur in this final treatment stage. Nitrogen gas is released, small solids are filtered from the water, and disease-causing organisms are neutralized before treated water is released to the James River.

5 Biodegradable solids are thickened, digested, and dewatered in the solids treatment train. These biosolids are stabilized and treated for land application to agricultural lands used for livestock feed and production.

WASTEWATER TREATMENT PLANT

Wastewater Treatment Plant

DPU Customer Care: (804) 646-4646
RichmondGov.com/DPU

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Fun Facts:

- Richmond's Wastewater Utility began in 1958
- It serves more than 57,000 customers in the city of Richmond, Goochland County and small portions of Henrico and Chesterfield counties
- The Wastewater Treatment Plant has the ability to treat more than 75 million gallons of wastewater per day
- The wastewater infrastructure within the city of Richmond includes 1200 miles of sewer lines, five pumping stations, as well as floodwalls and canals

What is wastewater?

It is the water that leaves your house after being used for such activities as flushing toilets, cooking, cleaning, showers, washing dishes, washing clothes.

Where does wastewater go?

After leaving the interior of your home or business, the water goes down the drain or is flushed and travels through underground collection pipes to Richmond's Wastewater treatment plant where pathogens and waste are removed. The now treated water is then delivered back to the James River, cleaner than when it was removed. This is good for fish and wildlife that make their home in the James River.

Biosolids

As wastewater is cleaned, many things are removed from it to meet both state and federal regulatory requirements. The nutrient-rich organic materials found in the wastewater are captured, treated further, and finally converted into a cake-like product that is safe to recycle and apply to designated fields and other lands as a soil amendment. Material grown on these fields is not for human consumption. Biosolids can improve soil tilth, increase organic matter, and improve moisture control. Use of biosolids provides a sustainable, improved environment for the soil and stimulates plant growth. The Richmond plant land applies about 25,000 tons of biosolids each year.

Do your part:

- Never pour oil or grease directly into the drain, toilet or onto a parking lot or street
- Scrape and wipe down pots, pans and work areas prior to washing
- Dispose of food waste directly into the trash can or compost bin
- Only flush human waste and toilet paper down the toilet



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**WASTEWATER TREATMENT PLANT
TOUR REQUEST**

Today's Date: _____

Name: _____

Address: _____ City: _____ Zip: _____

Email: _____

Telephone: _____ Cellular: _____

Name of Group/Organization: _____

Number of persons in group: _____

Number of Adults: _____ Number of Youth: _____

NOTE: Tour participants must be 10 years old or above. This is a walking tour so tour participants should wear comfortable, closed-toe shoes. Depending on the size of the group, tours may last up to two hours. Participants should be able to walk for that length of time. DPU will provide hard hats and safety vests for areas where Personal Protective Equipment is required.

Preferred dates for tour: (please pick up to three (3) dates)*:

Wastewater Treatment personnel will try to accommodate your first choice, but please be mindful that we receive numerous requests per week.

First choice: _____ Second choice: _____ Third Choice: _____

*Please return completed request one of the following ways at least a month prior to desired tour date:

Email: edwin.edmondson@richmondgov.com

Fax: (804) 646-0081

Mail: City of Richmond Department of Public Utilities
1400 Brander Street
Richmond, VA 23224