

Useful Definitions

ANOXIC TANK

The anoxic tank is the first part of the advanced activated sludge process. Water entering the anoxic tank is mixed with a sludge that has a high population of microbes. Without any free air in the water, the microbes “steal” oxygen away from any nitrate (NO₃⁻) that is present, and releases harmless nitrogen gas (N₂) into the atmosphere.

BIOLOGICAL (SECONDARY) TREATMENT

Secondary (or biological) treatment removes dissolved oxygen-demanding organic substances by using bacteria to convert degradable organic matter into bacterial cells. Wastewater is then clarified by separating treated liquid from grown bacterial cells using gravity. Bacteria and sludge is then either processed onsite or sent to a separate solids treatment facility.

CORE AREA

The CRD’s Core Area Municipalities include Colwood, Esquimalt, Langford, Oak Bay, Saanich, View Royal and Victoria.

DISCHARGE (OUTFALL)

An outfall is a pipe, located underwater, out from shore, where wastewater exits the sewer system and joins marine waters.

DISINFECTION

Disinfection of wastewater can take place using chlorine or ultraviolet light. During the latter process, water passes through chambers containing ultraviolet lamps; the resulting exposure to high levels of light kills disease-causing bacteria and viruses.

EQUALIZATION TANK

This tank equalizes the flow rate into the subsequent parts of the treatment system.

FILTRATION

Filtration occurs with the help of sand and crushed coal, which remove small solid particles and clean wastewater effluent.

FATS, OILS & GREASE (FOG)

FOG refers to grease left over from cooking and frying, sauces, salad dressing and liquid cooking oil. Each year almost one million kilograms of FOG flow down the drains of homes and businesses throughout the Capital Region. FOG can clog pipes and treatment screens, causing backups, overflows and odour problems. FOG that makes it through to the ocean can deplete oxygen, harming fish and other organisms that inhabit the environment. Where treatment is in place, additional energy and treatment capacity is required to break down excess FOG entering the system.

HOUSEHOLD HAZARDOUS WASTE

Household hazardous waste (HHW) is any leftover household product marked as flammable, corrosive, explosive or poison. Common examples include pesticides, varnishes, paints, cleaners, and batteries.

MEDICATIONS

Medications that go down the drain end up in the ocean, where they can have a negative effect on the marine environment. Medications in household garbage are not only easily accessible to children, pets and wildlife, but once they reach the landfill, they can enter the leachate collection system and eventually wind up in the marine environment. To dispose of medications properly, return them to one of the many pharmacies participating in the Medications Return Program (MRP). The MRP collects expired or unwanted medications for proper and safe disposal.

MEMBRANE CLARIFICATION

Membrane technology separates treated liquid from the bacterial cells grown in solids processing tanks through membrane filtration. Some bacteria may then be returned to the biological treatment stage. The rest are sent to solids treatment with biosolids for potential reuse.

Useful Definitions

OXIC TANK

Wastewater flows into the oxic tank where it undergoes anaerobic digestion. Organisms use the oxygen in the wastewater to complete decomposition.

PRELIMINARY TREATMENT

Preliminary treatment screens out coarse solids (rocks, rags, plastics, etc.) and grit (sand and gravel), which are normally sent to landfill. Wastewater is screened down to 6mm sized particles at the CRD’s Clover Point and Macaulay Point Facilities, where preliminary treatment is currently in effect.

PUMPING SYSTEMS

Most sanitary sewers move wastewater downhill by gravity to a wastewater treatment facility. In some situations, special pumps are needed to force the wastewater uphill into the facility.

SCREENING

Equipment that separates solid material from liquid by allowing the liquid to pass through constrictions (the screen) of chosen size, coarse or fine.

SLUDGE

In secondary treatment, heavy solids in wastewater fall to the bottom of settling tanks, where they become a thick slurry known as sludge. Sludge is then pumped or trucked to a solids treatment plant where it is processed into biosolids.

SOURCE CONTROL

The CRD’s Source Control program is a pollution prevention initiative aimed at reducing the amount of contaminants that industry, businesses, institutions and households discharge into the district’s sanitary sewer systems.

SURFACTANTS

Surfactants are essential ingredients in a wide range of cleaning products such as laundry detergent, dishwashing soap and shampoo. The main issue with surfactants is their potential toxicity to marine life, including hormone disruption. Surfactants also require additional energy and treatment capacity to break them down. Using a smaller scoop of laundry soap will reduce the presence of potentially toxic compounds in the wastewater collection system and marine receiving environment.

WATER REUSE

Treated wastewater effluent can be reused for industrial processes, for irrigation of crops or golf courses, and even as a non-potable water source for toilet flushing. Reclaimed water that is used for irrigation can provide valuable nutrients, such as nitrogen and phosphorus, to the crops being grown.

WASTEWATER

The water which leaves a building after being used in bathrooms, kitchens or industrial uses. Raw wastewater contains solids and liquids, or effluent.

HOW DO I FIND OUT MORE ABOUT WASTEWATER TREATMENT?

Additional information is available by visiting www.wastewatertreatment.ca or by calling the Wastewater Project Team: 250.360.3001

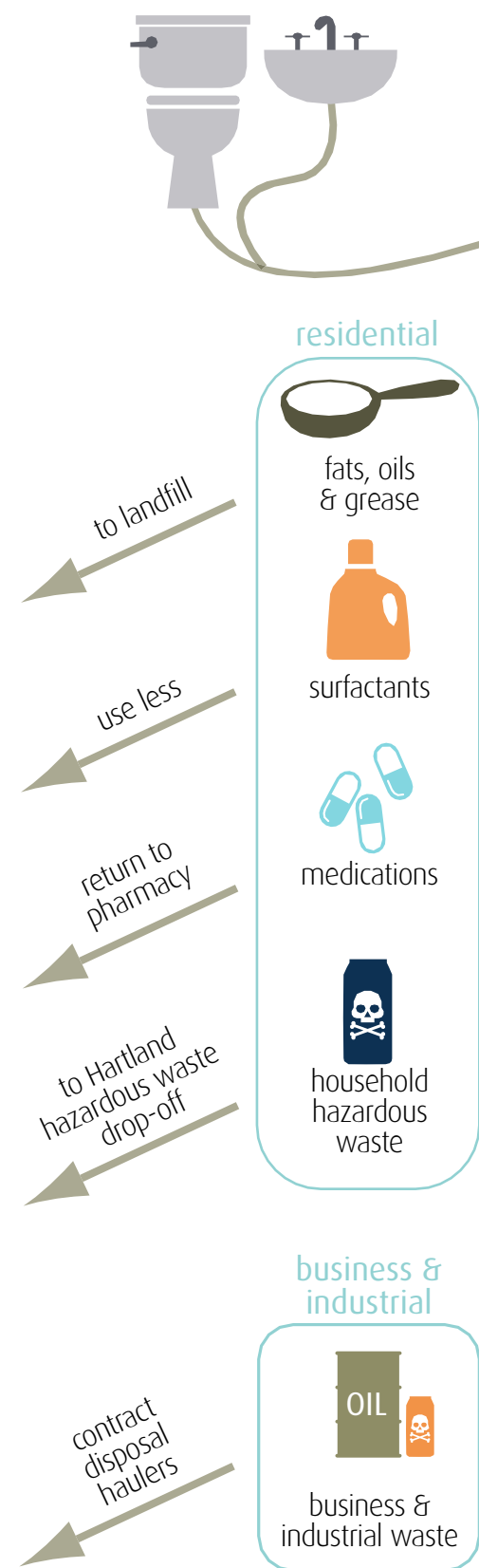
WASTEWATER TREATMENT MADE CLEAR

Core Area Wastewater Treatment Project

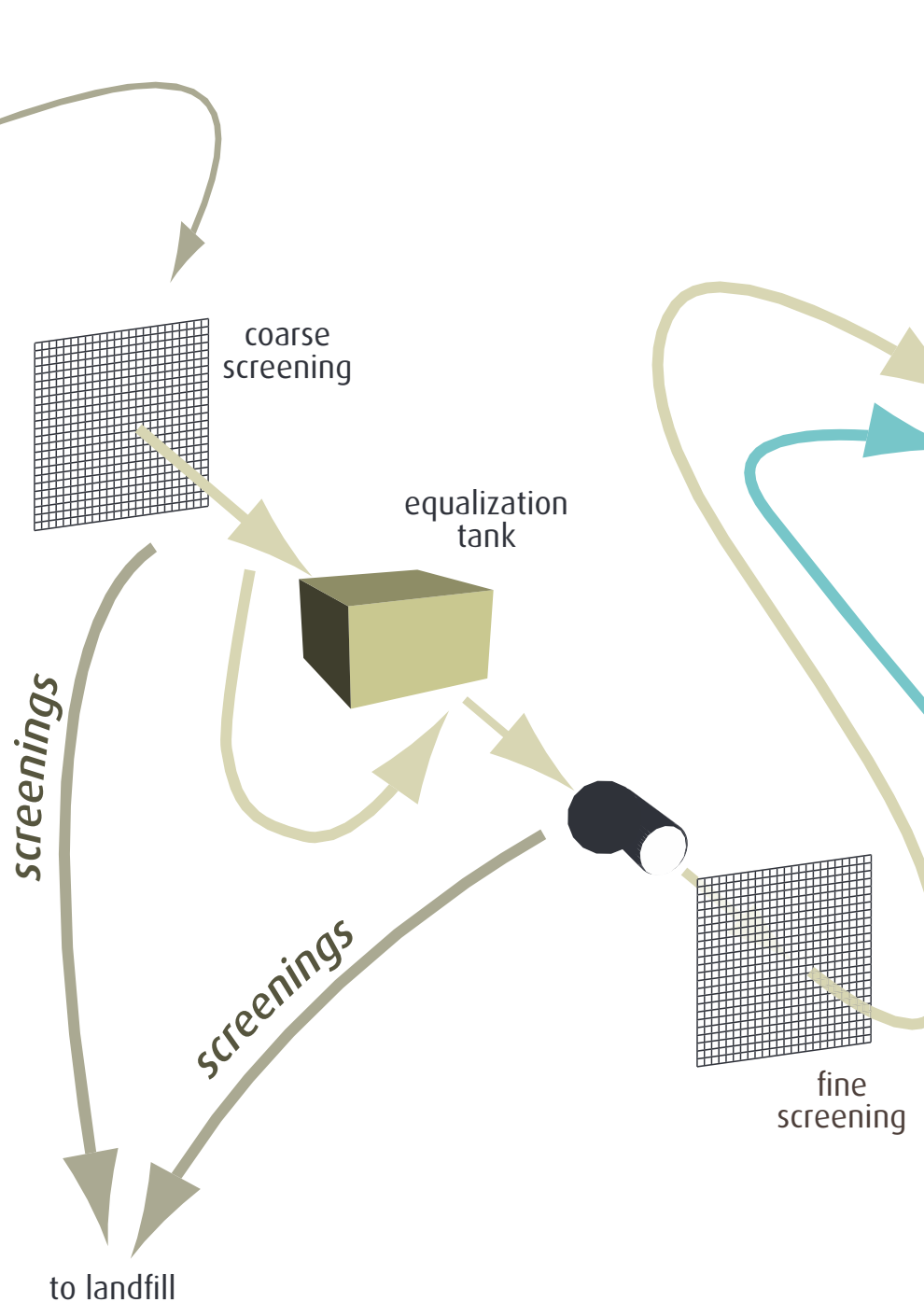
How Wastewater Treatment Works

How Wastewater Treatment Works

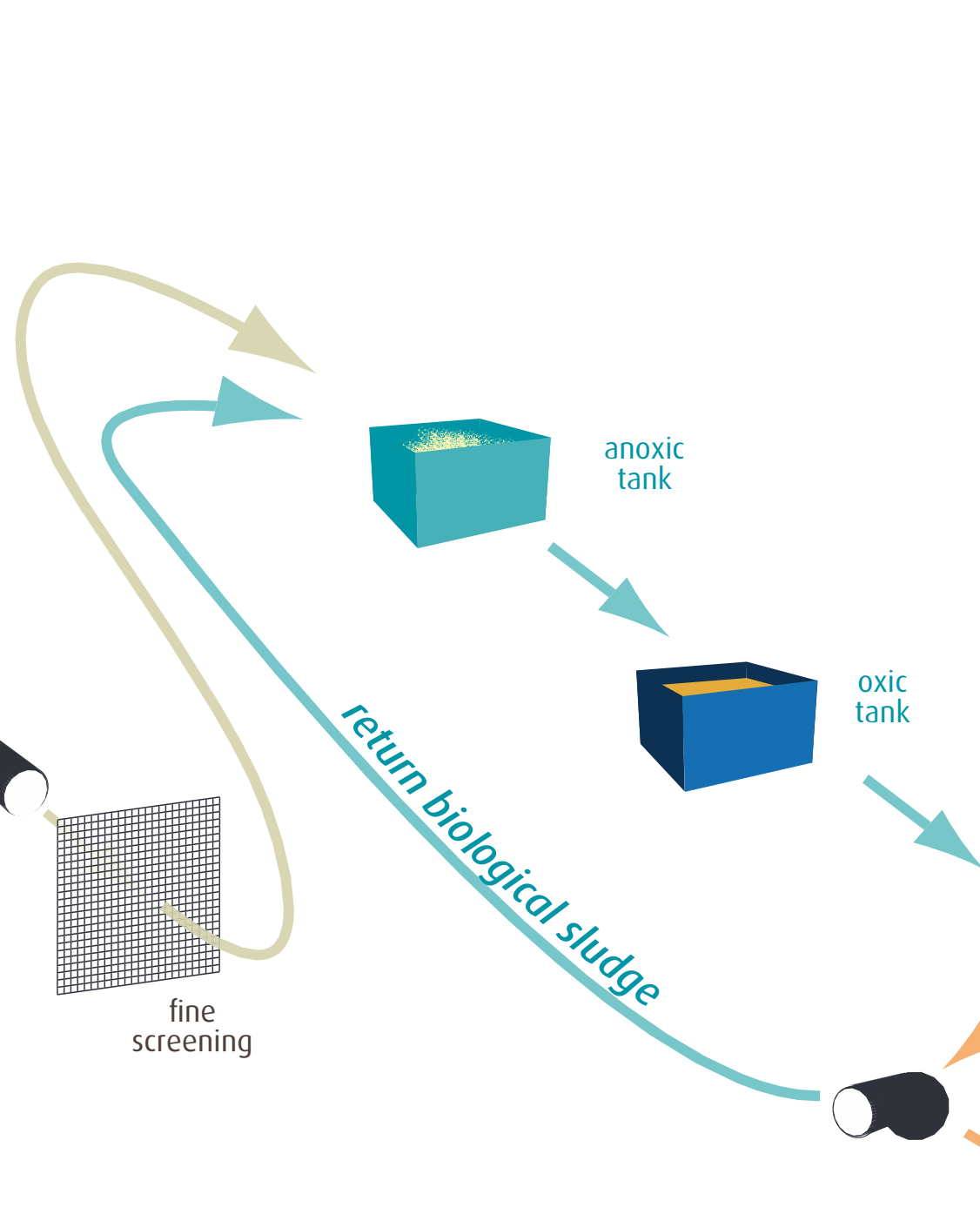
step one
source control



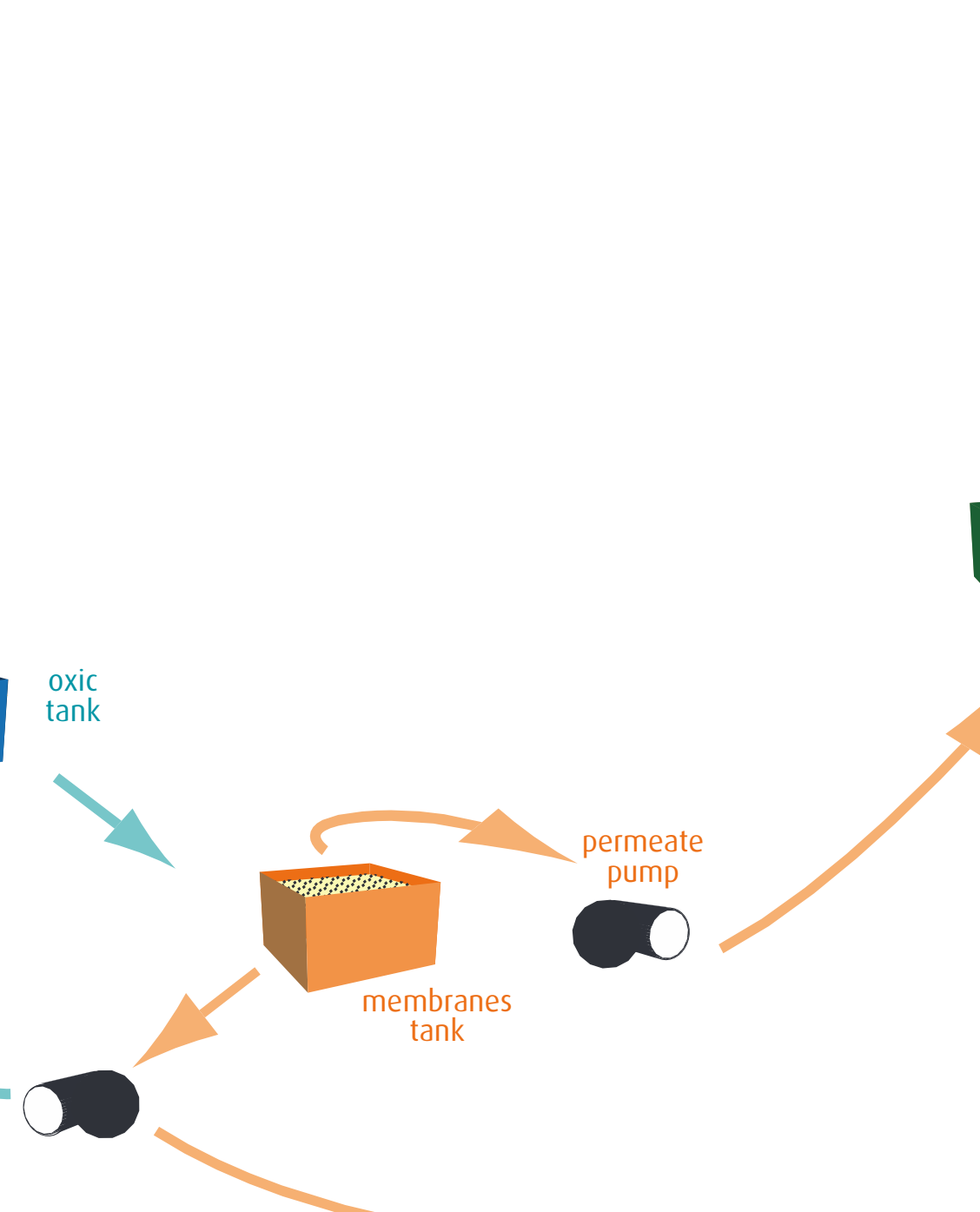
step two
wastewater preliminary treatment



step three
wastewater biological treatment



step four
wastewater membrane clarification



step five
wastewater disinfection

