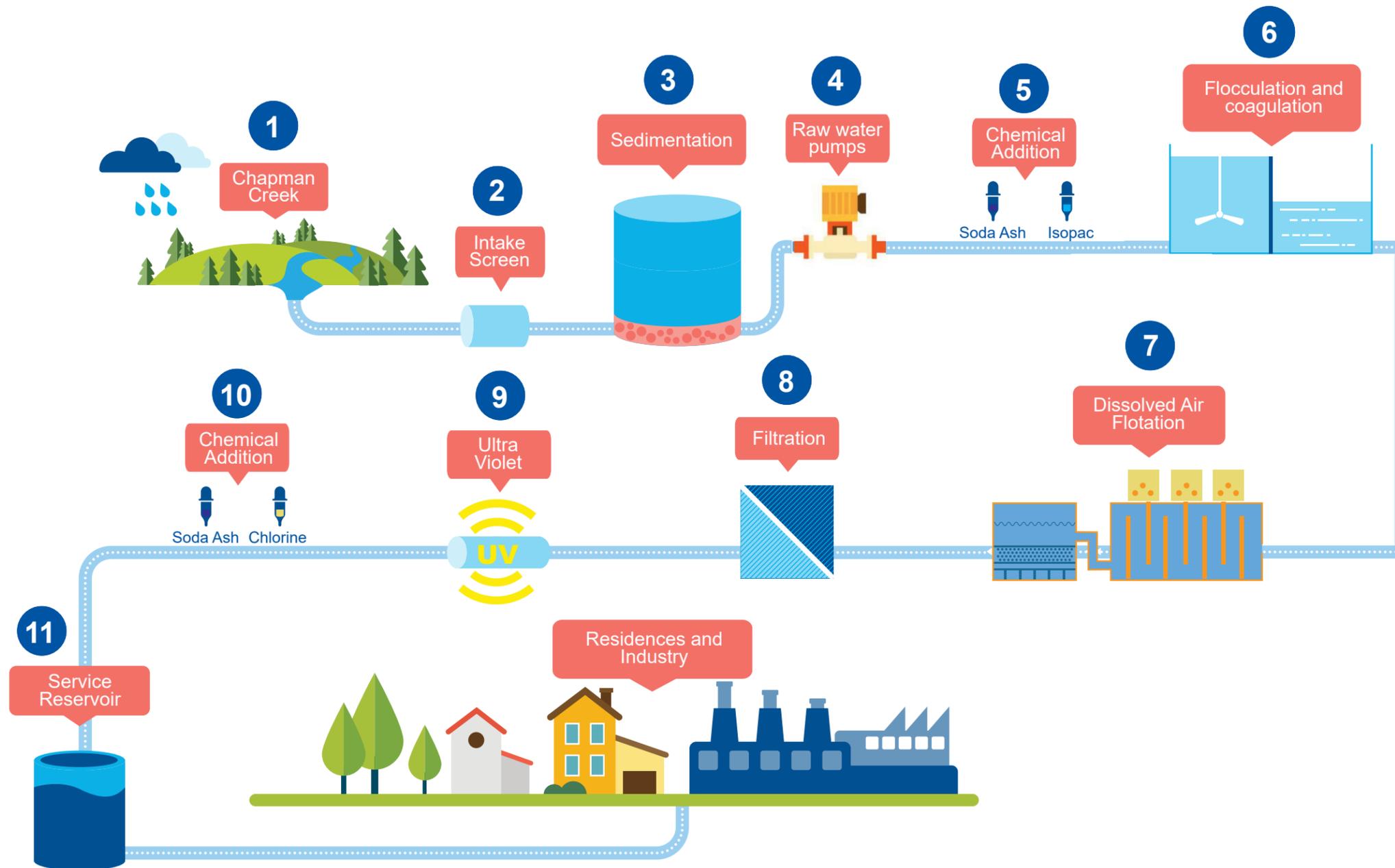




From Source to Tap:

The Sunshine Coast Regional District's Water Treatment and Water Monitoring Process



- 1 Chapman Creek:** Water flows from Chapman Lake and Edwards Lake to Chapman Creek.
- 2 Intake Screen:** Stops sticks, fish and debris from entering the intake.
- 3 Sedimentation:** The primary settling chamber slows the velocity of the water so heavy solids settle out.
- 4 Raw water pumps:** Low lift pumps pump the raw water up the hill to the plant. For most areas, these are the only lift pumps in the process.
- 5 Chemical Addition:** A coagulant called Isopac is added to form floc that removes the color and turbidity from the raw water. Soda ash is added to raise the pH for optimal treatment.
- 6 Flocculation and coagulation:** Isopac is used as the coagulant, which results in the clumping together of fine particles which cause colour and turbidity into larger particles called floc. Once the Isopac has been injected into the raw water, the water enters the flocculation tanks where it is gently mixed.
- 7 Dissolved Air and Flotation (DAF):** Water then goes to the DAF tank. The DAF tank has diffusers along the bottom that release air bubbles. The air picks up the floc as it rises to the surface creating a scum. The scum is removed and the treated water leaves via a perforated pipe at the bottom.
- 8 Filtration:** Anthracite coal and sand layer the bottom of each filter. The water enters from the top and trickles through the media to a collection drain.
- 9 Ultraviolet:** Ultraviolet light is used as the primary disinfection system just before the treated water leaves the plant.
- 10 Chemical Addition:** Chlorine is a secondary disinfectant added in the outflow chamber as the treated water leaves the plant prior to flowing into the 15 million litre reservoir. Soda ash is also injected in the outflow chamber once the treatment process is complete, again to raise the pH of the treated water.
- 11 Service Reservoir:** Covered clean water storage container.

The Chapman Creek Water Treatment Plant was placed into operation in March 2004. The total construction cost was \$7 million. \$3.8 million was paid through a Canada/BC Infrastructure grant. The water treatment process consists of chemical injection and rapid mixing, coagulation and flocculation, clarifying by flotation, filtration and disinfection. Ultraviolet light is used as the primary disinfection system followed by chlorine disinfection. The plant is operated with one operator on day shift, seven days a week. There are trained operators who share the work on a rotational basis throughout the year.