

A scenic photograph of a river flowing through a forested area. The water is turbulent and brownish, suggesting rapids or a high-flow stream. The surrounding landscape is lush with green trees and grass, with rocky hills in the background.

Water Quality Services City of Fort Collins Utilities

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Water Quality Objectives

Fort Collins Utilities strives to meet all regulations and to otherwise protect and enhance the quality of the water supply wherever we store, consume, influence or return it – whether it be our raw water supplies, treated water, stormwater, wastewater or treated discharge.

Fort Collins Utilities Operations



Source Water



Drinking Water



Stormwater



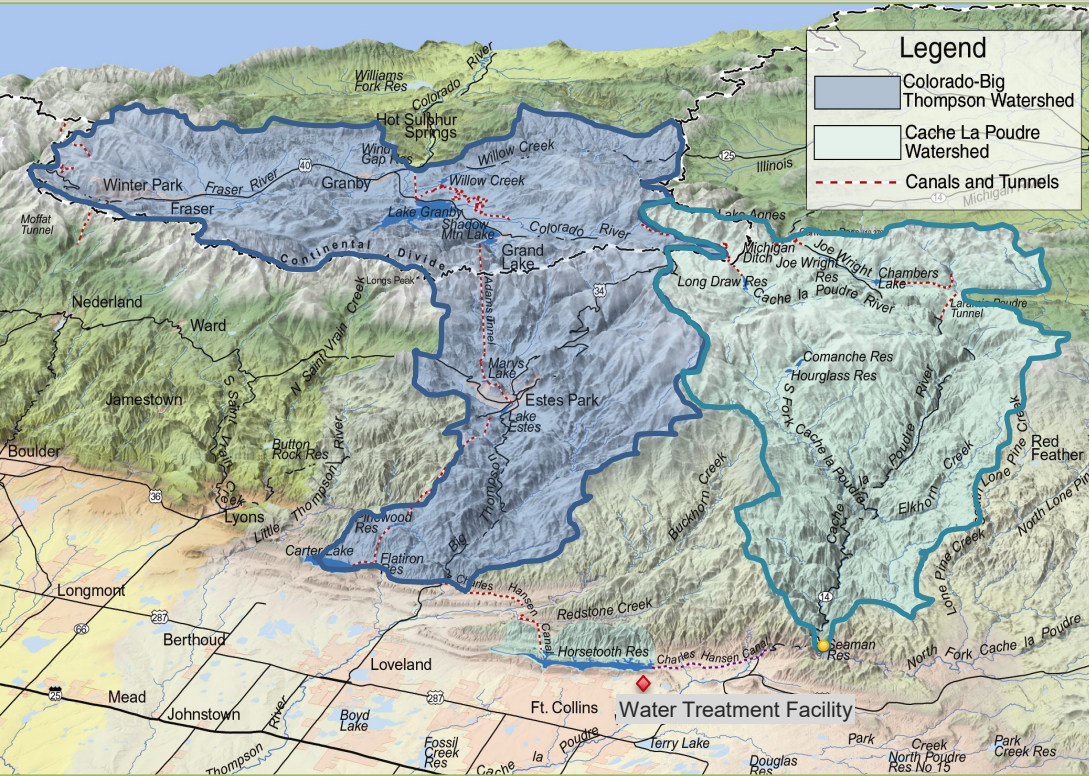
Wastewater

Water Quality Touchpoints



Source Watershed Program

- Water Quality monitoring
- Source Water Protection



Cache la Poudre River Horsetooth Reservoir

- ~50% each source / yr
- Blended for optimal treatment and quality
- City owns <1% land

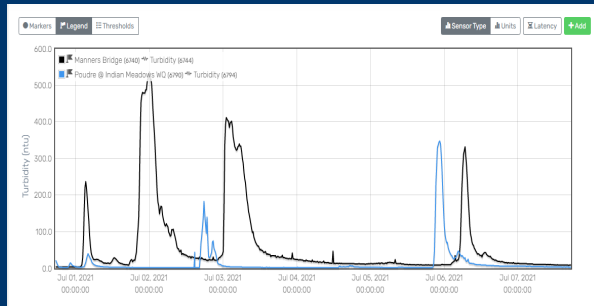


Routine monitoring to track long-term trends (Poudre & Horsetooth, Halligan)

Surveillance system to provide early warning of events

Special Studies

- Emerging Contaminants
- Harmful Algal Blooms
- Wildfire Impacts



- Cameron Peak Fire – Poudre Water Supply
- East Troublesome Fire – Horsetooth Reservoir Water Supply
- Redundancy is major advantage in managing post-fire impacts
- Biggest Risk: degradation in both sources concurrently



Destabilized hillslope



Black water event 7

Wildfire Impacts on Drinking Water

Chambers Lake



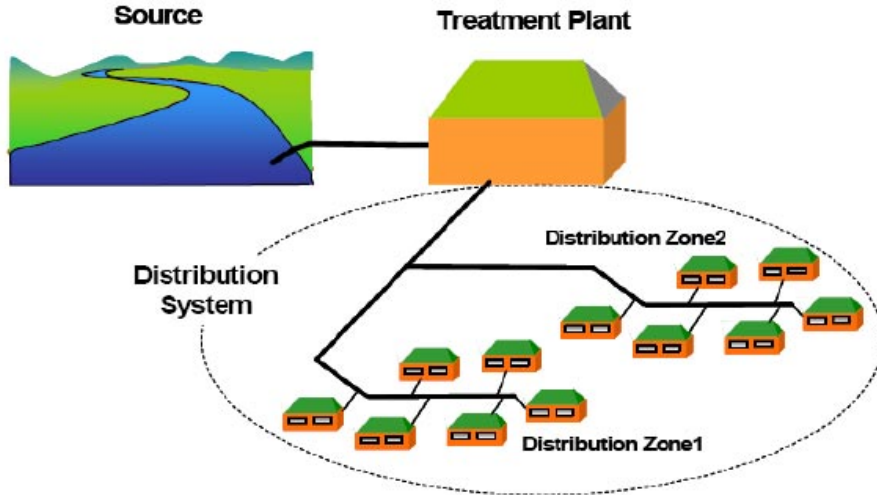
Source Water Quality	Treatment Challenges
Increased nutrients	Blue green algae Taste and odor compounds Cyanotoxins
Increased turbidity	Difficult to remove during treatment
Increased TOC, alkalinity	Disinfection by-products
Increased Sediment	Sediment-bound pollutants Infrastructure Damage
Hardness	Mineral deposits

- Identify & mitigate high priority threats to source water quality
- Provide funding for collaborative projects with local partners & agencies
- Wildfire Risk & Impacts Mitigation
 - Forest fuels management
 - Stream channel restoration
 - Erosion controls
- Spill Response Coordination





Drinking Water Treatment & Distribution



- Treatment Effectiveness
 - Turbidity removal
 - Corrosion Control
 - Optimal Disinfection
- Consistent quality from treatment to customer taps
 - 120-135 samples / month
- Meet & exceed all Safe Drinking Water Standards

State of Colorado Certification for Drinking Water Analysis

Employs 5 chemists, 2 lab assistants, and a Lab Supervisor and a 2-person Quality Assurance team

Provides cost-benefit over outsourcing, flexibility, and faster turn-around times

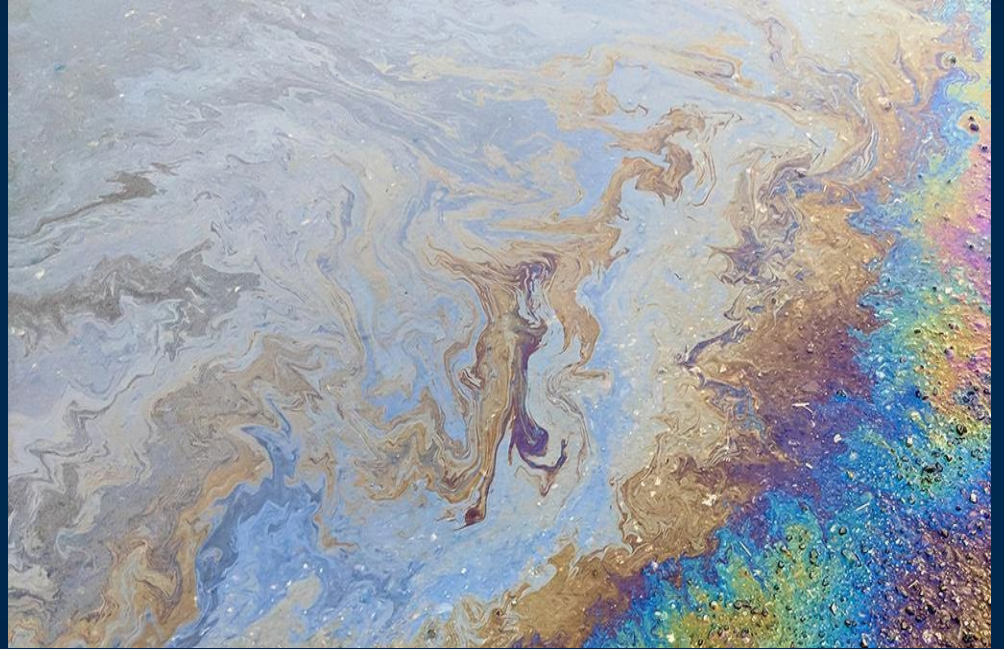
General Chemistry
E.coli/Coliforms/HPC
Metals
Nutrients

Total Organic Carbon
Ions
Volatile Organic Compounds
Chlorophyll-a



Stormwater Quality

- Municipal Separate Storm Sewer System (MS4) Program





- Illicit discharge detection and elimination
- Construction site erosion control
- Pollution prevention education
- Low Impact Development



Water Reclamation



Two treatment facilities (Mulberry & Drake) treat up to 23 million gallons of wastewater a day, from approx. 100,000 customers

- remove sediments, suspended solids, nutrients and pathogens.

Discharges are regulated under the National Pollutant Discharge Elimination System (NPDES) and the Colorado Water Quality Control Act

Must meet water quality standards that are protective of aquatic life, recreation, and downstream water users on the Poudre River.





Water quality testing services for Water Reclamation Facilities & Biosolids

- NPDES Permit & Other Regulatory Reporting
- Plant Operations & Optimization
- Poudre River Monitoring
- Special Studies

Volatile Fatty Acids

Semi-Volatile Compounds

Nutrients

Metals

Microbiological Identification

E.coli/Coliforms

Biological Oxygen Demand



Water Quality Challenges & Emerging Issues of Concern



Harmful Algal Blooms

- Source Water Monitoring for HABs
- EPA's Unregulated Contaminants Monitoring Program (UCMR4, 2020)
- Fort Collins - Urban Lakes Water Quality Management Policy



Contaminants of Emerging Concern

- Increasing number and prevalence of unregulated compounds
- EPA's Unregulated Contaminants Monitoring Program (UCMR3, 2012)
- Forever Chemicals – Perfluoroalkyl Compounds (PFAs, PFOAs)
- Microplastics



Drought

- Reduced flows provide less dilution for pollutants, nutrients, fire runoff
- Increases likelihood of harmful algal blooms, occurrence of taste & odor issues
- Coupled with growth, drought intensifies demand for limited water supplies



Wildfires

- Larger, more frequent, higher intensity
- Short and long-term effects on downstream water supplies
- Can render water supplies unusable for periods of time
- Response & recovery funding is limited



Changing Regulations

- New Proposed Lead and Copper (LCR) Rule
- Total Maximum Daily Load (TMDL) issuance for E.coli
- Surface Water Nutrient Standards challenge limits of wastewater technology

Water issues rarely affect only one discipline

Issues are increasing in complexity

Collaboration is essential

Reimagine our processes & practices

Ensures outcomes provide broader benefits

Fort Collins Utilities One Water Approach



Questions?

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