Council Update on Water Quality Issues
September 17, 2018

Emerging Issues for WTP

- PFAS
- New Disinfection Requirements
- Lead & Copper Rule Updates

What are PFAS?

- Per- and polyfluoroakyl substances
- Used in non-stick cookware, stain-resistant textiles, waterproofing, coating on food wrappers, consumer products, fire-fighting foam, other industrial applications




- Stable and do not degrade in the environment
- A family of thousands of compounds
- Analytical methods for detection of 24 of these compounds

How might PFAS impact health?

- Most data available on perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA)
- Ingestion is the primary route of exposure
- PFAS are bioaccumulative
- Health impacts may include:
  - Interference with hormone function
  - Increase in cholesterol
  - Affect on immune system
  - Increase in cancer risk
- Limited data on health impacts of other PFAS

How are PFAS regulated?

- PFAS are not currently regulated
- EPA Health Advisory Level: 70 parts per trillion (ppt) of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA)
- Proposed legislation in Michigan: 10 ppt for PFOS and PFOA
- Agency for Toxic Substances and Disease Registry (ATSDR) Report
  - Potential limit approximately 7 ppt for PFOS and 11 ppt for PFOA

PFAS in Ann Arbor

Huron River – Water

Drinking Water

Waste Water

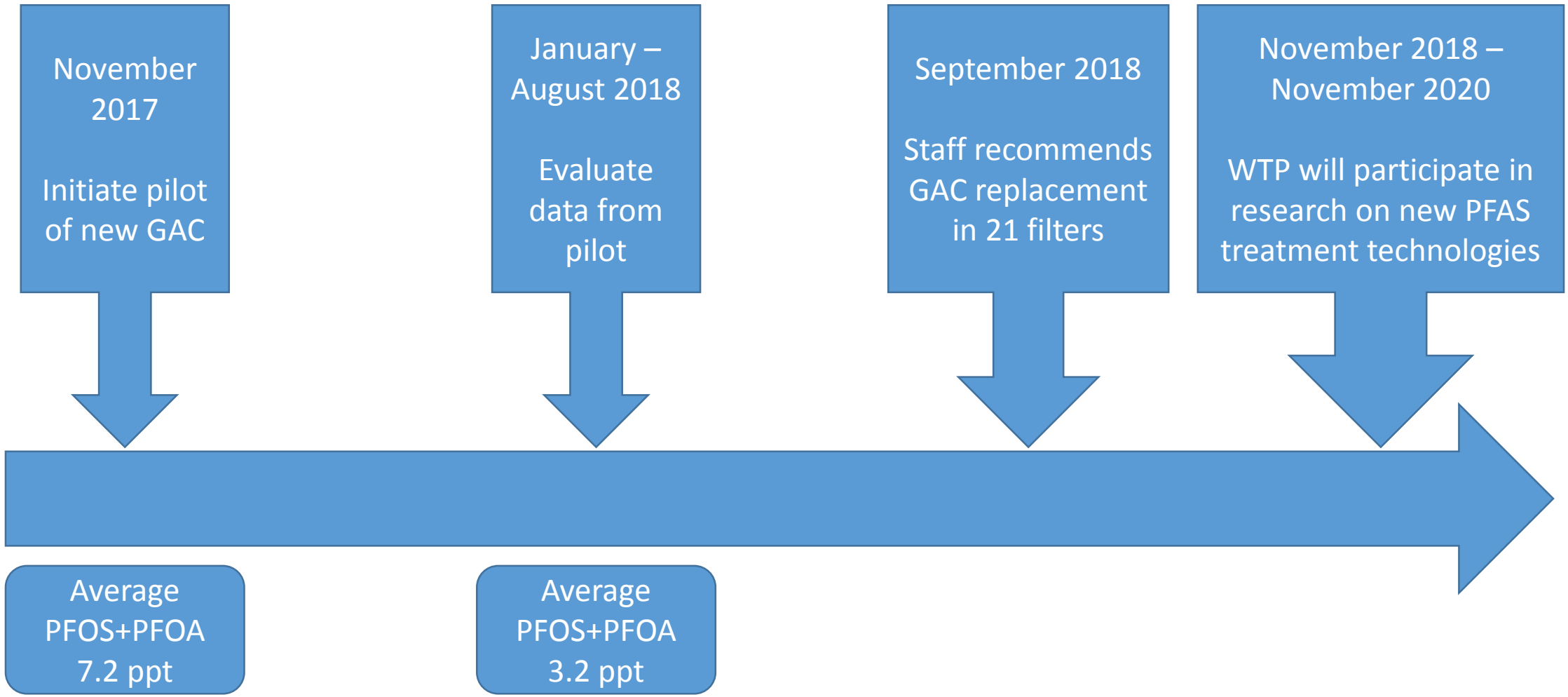
Huron River – Fish

Fire-Fighting Foam

PFAS in Ann Arbor Drinking Water

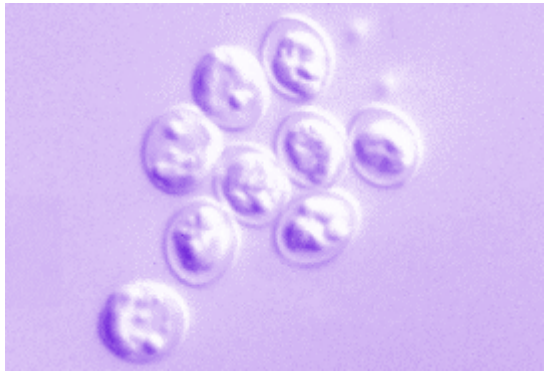
- Monitoring since 2014
- Currently monitoring monthly
- Maximum detection PFOS+PFOA: 43 ppt in 2014
- 2017 Data: average 7.2 ppt PFOS+PFOA (range 0 – 9.9 ppt)
- 2018 data: average 3.2 ppt PFOS+PFOA
- Granular active carbon (GAC) filtration is the best available technology

PFAS Control Strategy – Drinking Water



New Disinfection Requirements

New Disinfection Requirements



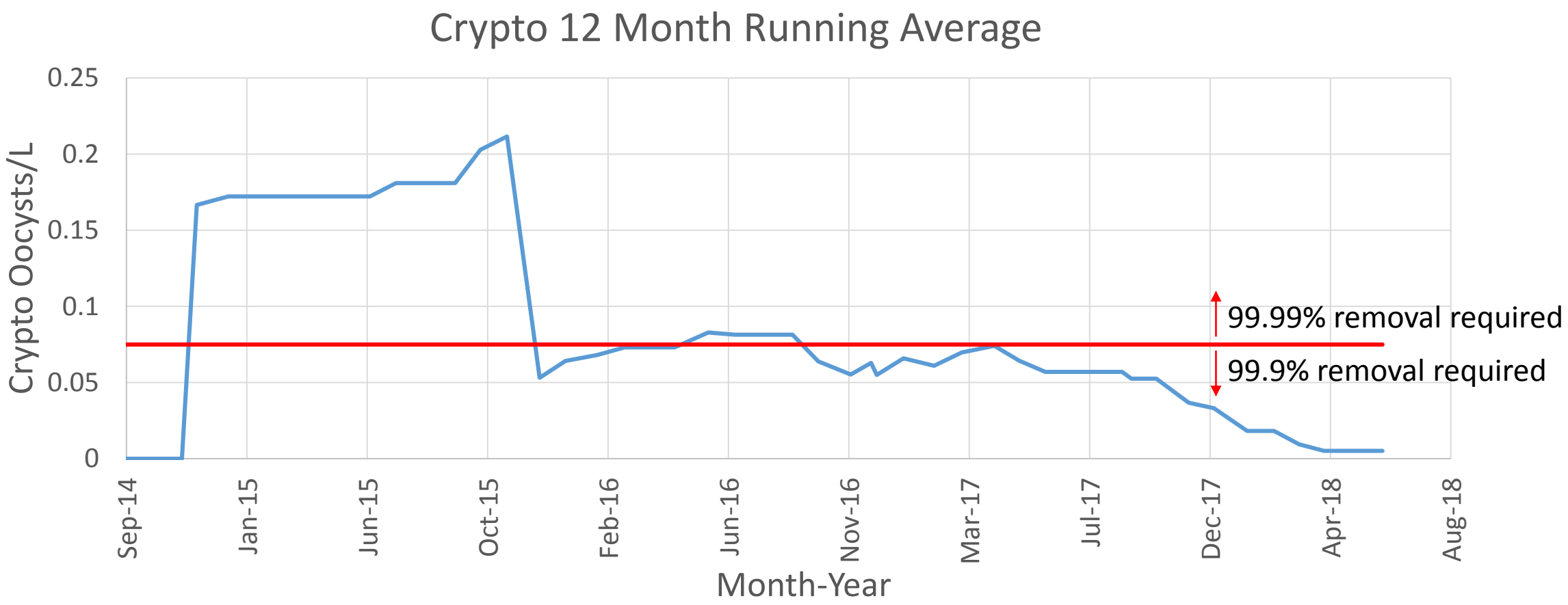
- EPA rule adopted in 2006 to further protect potable water sources from microbial contaminants, including *Cryptosporidium*.

- Rule requires sampling of source water and tailors treatment to risk

  ↑ pathogens = ↑ treatment

- EPA established classes which identified treatment levels based upon raw water *Cryptosporidium* concentrations.

Cryptosporidium Monitoring Data



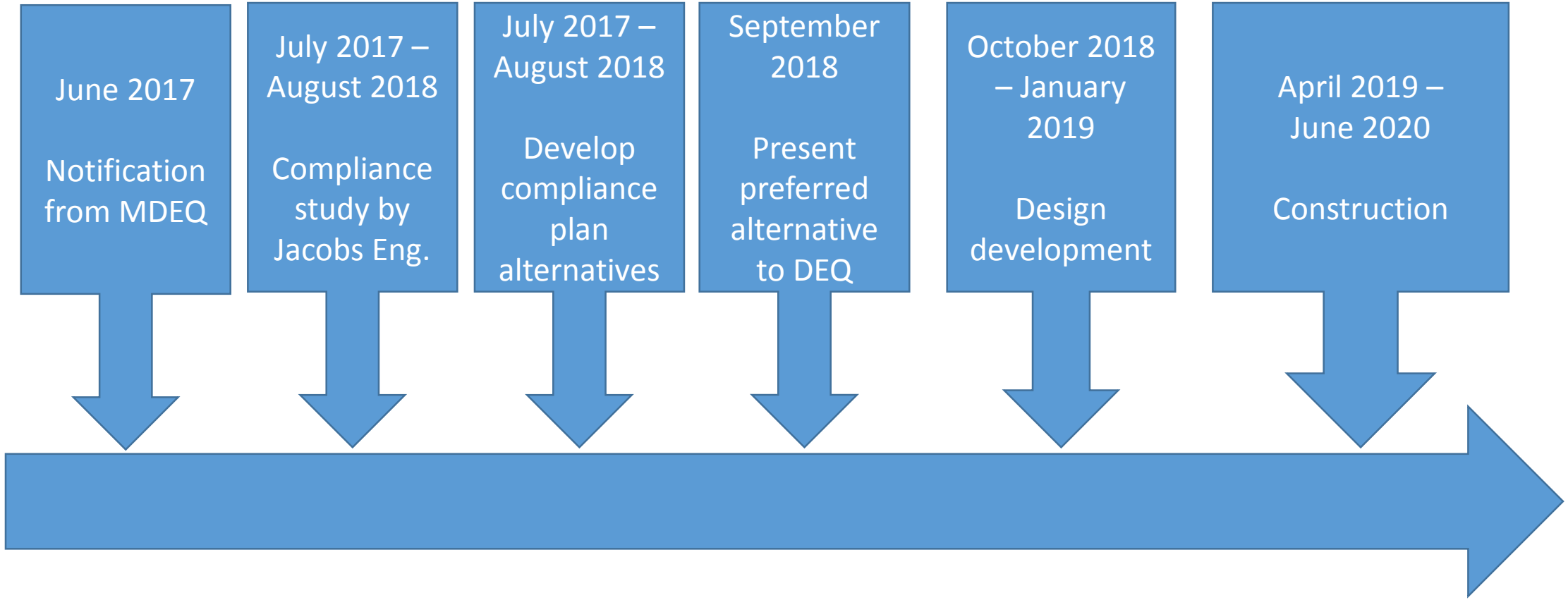
Cryptosporidium Management Strategy

- Under normal operating conditions, WTP meets additional disinfection requirements with current treatment configuration

- Under special circumstances, such as annual maintenance activities, WTP is unable to meet the new requirements

- Proposed alternative: UV disinfection

Cryptosporidium Management Timeline



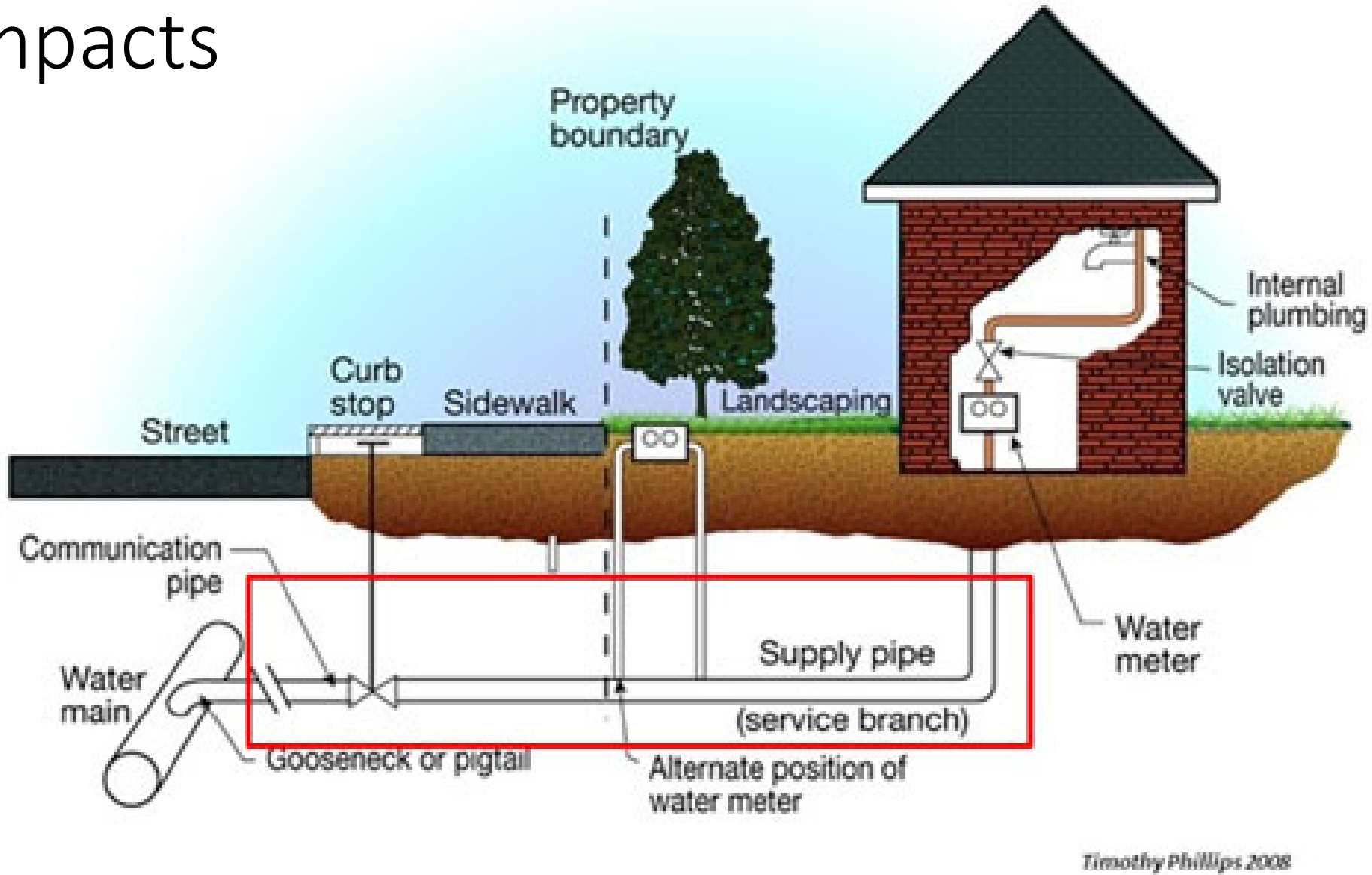
Michigan Lead and Copper Rule

Michigan Lead and Copper Rule Changes and Impacts

- June 2018 – State of Michigan legislated a revised Lead and Copper Rule

- Action level changed to 12 ppb from 15 ppb as of January 1, 2025
  - No impact to City – current lead level 3 ppb

Michigan Lead and Copper Rule Changes and Impacts



Michigan Lead and Copper Rule Changes and Impacts

- New rule addresses galvanized service lines that were connected to lead
- All lead service lines on the City side have been removed
- City next steps:
  - Conduct paper inventory of customer-side service lines that were previously connected to lead goosenecks (January 1, 2020)
  - Develop replacement plan for these service lines