

# CITY OF COLUMBUS

## Overview of the Lead and Copper Rule



THE CITY OF  
**COLUMBUS**  
ANDREW J. GINTHER, MAYOR

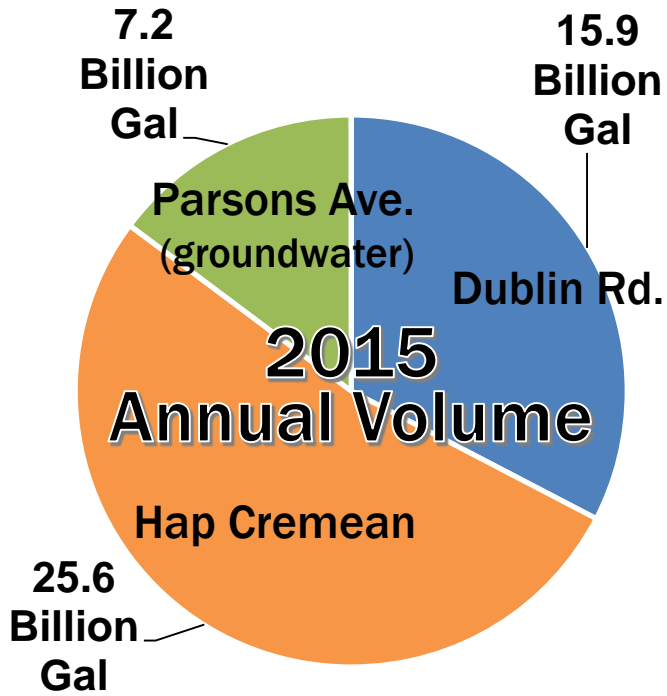
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DEPARTMENT OF  
PUBLIC UTILITIES

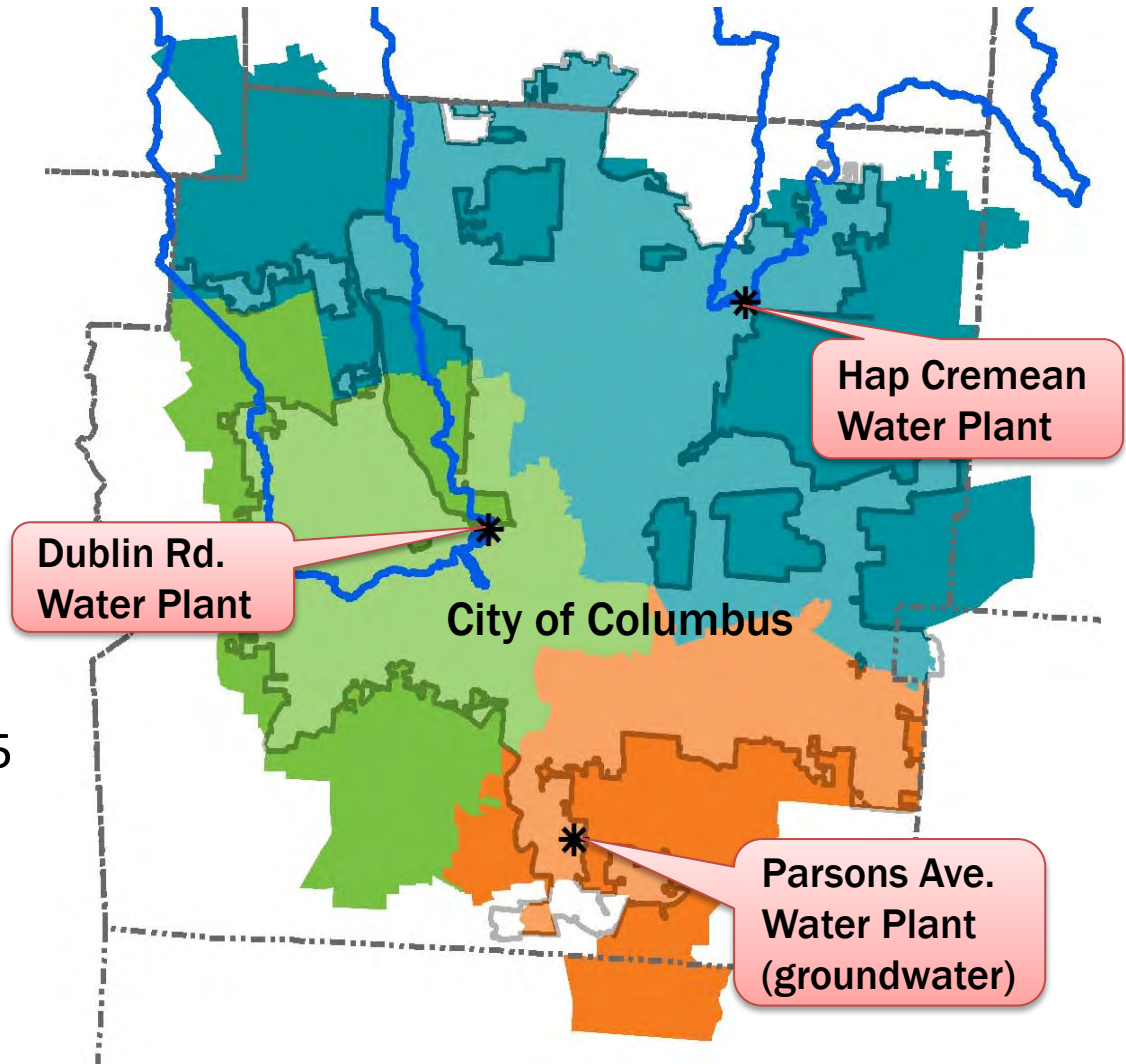
## Overview of Columbus Public Water System

- In 2015, Columbus provided almost 49 billion gallons of safe, clean drinking water to over 1.1 million people in 23 communities throughout the Central Ohio region
- Clean, safe drinking water is truly a public health business
- Some quick facts about the Columbus water system infrastructure:
  - 3 Water Plants – 2 surface water and 1 ground water
  - 4 Reservoirs (Hoover, O’Shaughnessy, Griggs, Douitt)
  - 3,518 Miles of water main maintained by the City of Columbus  
(2,517 miles owned by Columbus; 1,001 miles owned by suburbs)
  - 26 Booster stations operated and maintained
  - 39 Water tanks operated storing ~81 million gallons
  - 25,611 Fire hydrants owned by the City of Columbus
  - Certified degreed lab analysts, certified water operators (24 hrs. per day)

# Service Area

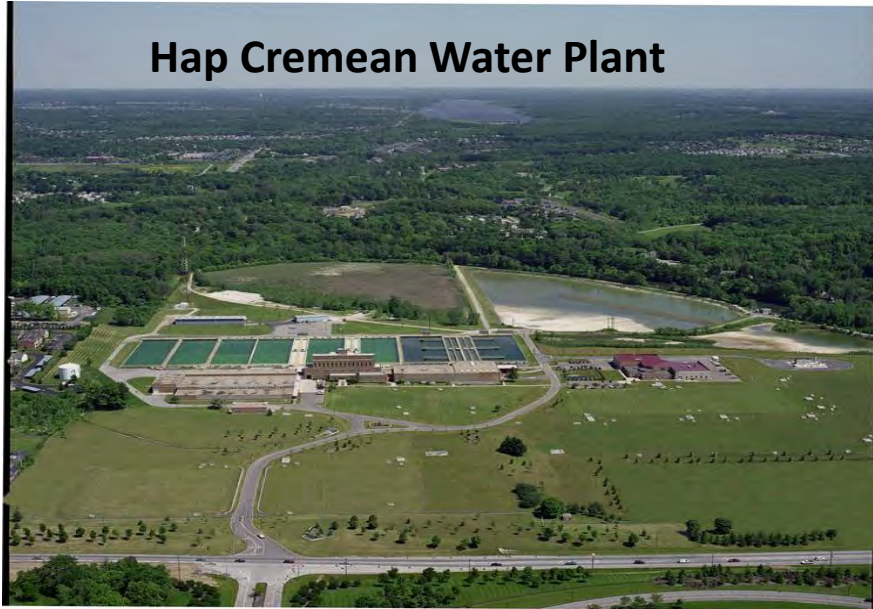


- 48.7 billion gallons in 2015
- 85% surface water
- Service population 1.16 million



# Our Water Plants

**Hap Cremean Water Plant**



**Dublin Road  
Water Plant**



**Parsons Avenue Water Plant**



# Columbus Is In Compliance With All Of The Safe Drinking Water Act Requirements

...Including the Lead and Copper Rule

	Lead (micrograms per liter)	Copper (micrograms per liter)
Year	90 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile
2014	<1.0	58.7
2011	<1.0	51.0
2008	<1.0	69.4
2005	<1.0	53.7

The **Regulatory Lead Action Level** is **15 ug/L** and the **Copper Action Level** is **1300 ug/L**

A microgram per liter (ug/L) is equivalent to 1 second in 37.1 years

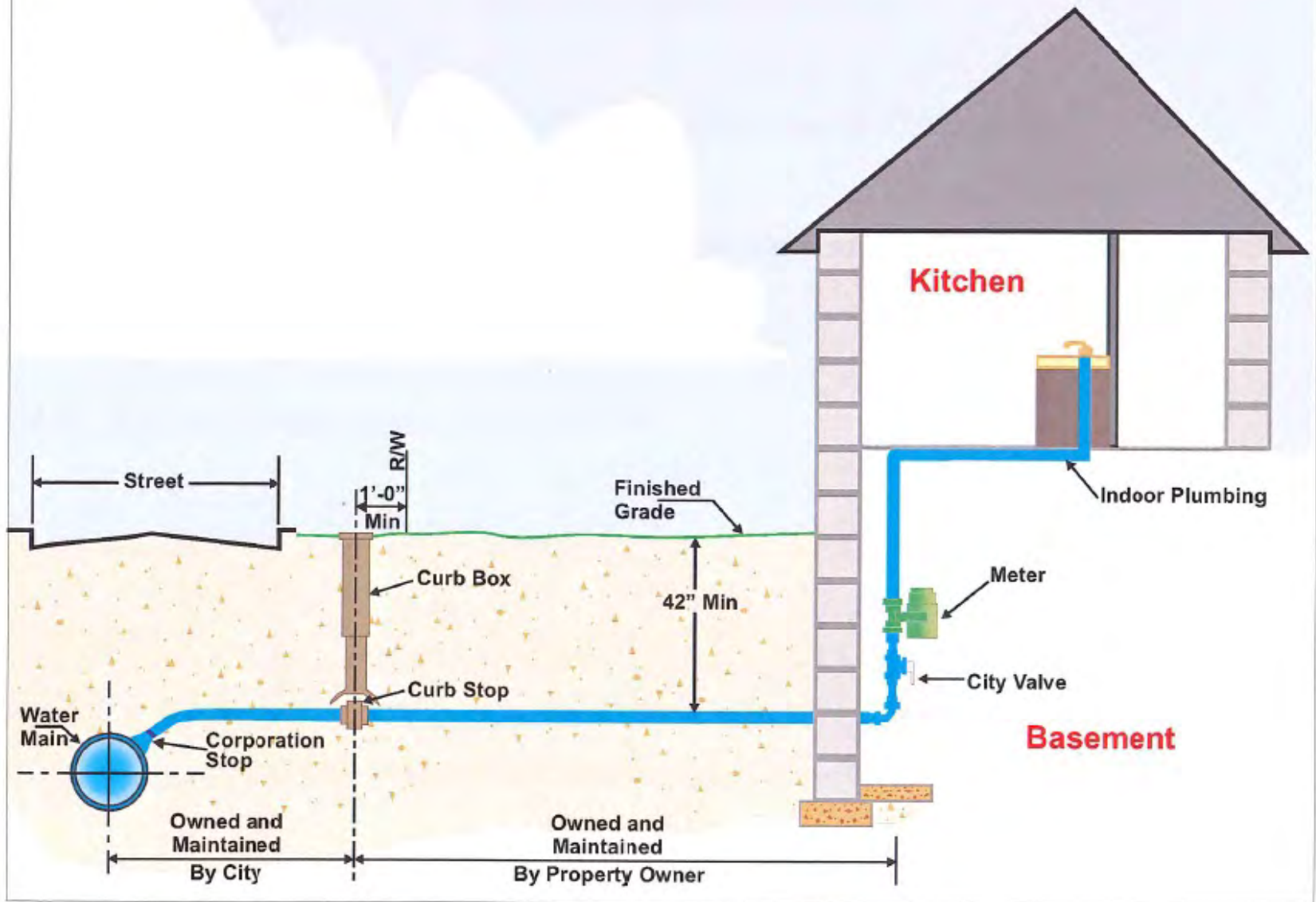
## Environmental Sources of Lead

- Lead paint and lead dust (most significant source of lead) (CDC, CDPH)
- Imported medicines and makeup (CDC)
- Imported dishes and containers (CDC)
- Imported candy and toys (CDC)
- Hobbies like arts, crafts, imported clay pots, imported jewelry (CDC)
- Hunting (Regulations now require stainless shot) and fishing (CDC)
- Lead service lines and home plumbing
  - From a water system without optimum corrosion control



## Where Can Lead In Water Come From?

- The water leaving Columbus water plants doesn't have any lead
- Lead is found:
  - Lead based solder in home plumbing (lead solder banned in 1986)
  - Brass fixtures (brass contained up to 8% lead until 2014)
    - New rules were adopted in 2014 for lead free plumbing (<0.2% lead)
  - Customer's service pipes if lead
  - City owned service lines (~10% of city water service pipes are lead)  
(Columbus spends approximately \$20 million annually to replace water mains with frequent main breaks as part of its repair and replacement program. All existing water services (lead, copper, etc.) are replaced with the water main). Also, during the repair of water main breaks, if lead services are encountered, they are replaced with copper.





# Columbus Has an Optimal Water Corrosion Control Program

- Treatment
  - Neutral pH adjustment to 7.8, not acidic or basic
  - Add corrosion inhibitor – **zinc orthophosphate** \$1800 per day
- **Required** Monitoring and Testing
  - Test water plant tap every other week for required water quality parameters
    - Hardness, alkalinity, pH, corrosion inhibitor
  - 50 customer homes every 3 years (25 lead services, 25 built 1982-1986) (First draw)
  - Distribution system water quality quarterly during the same year of 50 homes
- **Additional** Monitoring and Testing
  - Test plant tap water multiple times per day for many water quality parameters
  - Test distribution system samples monthly for water quality parameters
  - Test representative distribution system samples monthly for lead
  - Lead (and other metals) coupon testing



## Zinc Orthophosphate Feed



## Division of Water's Corrosion Control Program (Continued)

- **Required Public Education**
  - Mail results to the 50 customers who participated in sample collection
  - Publish results in the **annual consumer confidence report** (mailed annually to all customers, also available at [Columbus.gov/utilities](http://Columbus.gov/utilities) under document library).
- **Additional Public Education**
  - Annual brochure “What you need to know about lead in Drinking Water”
  - DPU website has a lead brochure (also mailed annually)
- **Studies**
  - Study of over 2000 homes in year 2000 where we tested directly from the lead service line
  - Lead profiles of homes and other studies
  - Cooperative project with Columbus Public Health's Healthy Homes Program



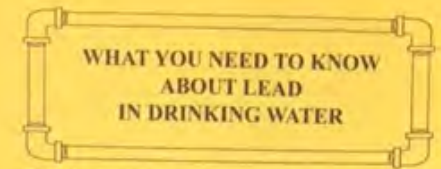
## Other Water Systems Who Receive Our Water And Test For Lead?



- **All are in compliance with the Lead and Copper Rule**
- Reynoldsburg – 2014
  - 30 homes every 3 years
- Bexley – 2014
  - 30 homes every 3 years
- Franklin County – 2014
  - 20 homes every 3 years
- Gahanna – 2015
  - 30 homes every 3 years
- Lockbourne – 2015
  - 5 homes every 3 years

## What Can Customers Do To Reduce Their Risk?

- Check home plumbing for any sources of lead
- If their home was built before 1950's
  - Call the Division of Water to identify the service line material
- If they have lead or think they have lead:
  - Flush the tap for 30 seconds or longer if water has sat unused for more than six hours
  - Cook with cold water
- For specific questions about lead call:
  - Columbus Water Quality Assurance Lab (614) 645-7691
  - See “Lead in Water” and “Consumer Confidence Report” at [Columbus.gov/utilities](https://www.columbus.gov/utilities) under document library



The United States Environmental Protection Agency (USEPA) and the City of Columbus, Department of Public Utilities, Division of Water want you to know about lead in your drinking water. We have provided this brochure to explain the simple steps you can take to reduce your exposure to lead in the tap water. Please read it carefully.

The USEPA action level (AL) for lead is 15 parts per billion (ppb). An AL is the concentration of a contaminant, which if exceeded, triggers treatment or other requirements that a water system must follow. The USEPA has also established maximum contaminant level goals (MCLG) for lead at 0 ppb. An MCLG is the level of contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

The lead concentration in the drinking water leaving our water treatment plants is below the level of detection. However, lead can enter the water from household brass fixtures, lead pipes or lead solder when water resides in plumbing for more than 6 hours. Under these conditions, testing has shown that lead levels can exceed the USEPA action level of 15 ppb in some homes. Most homes in the Columbus area do not have lead service lines and have little to no detectable levels of lead in their tap water.

To meet federal USEPA regulations, we have a treatment program in place that includes state-of-the-art corrosion control measures and source water treatment. We also have a public education program to inform the public about lead in drinking water. Drinking water accounts for a very small percentage of lead exposure. Lead-based paints, industrial emissions and lead contaminated dust are environmental sources of lead that pose a much greater risk.

**THE MOST EFFECTIVE WAY TO REDUCE THE POSSIBILITY OF EXPOSURE TO LEAD IN YOUR DRINKING WATER IS TO FLUSH COLD WATER FAUCETS USED FOR DRINKING AND COOKING FOR AT LEAST 30 SECONDS IF THE WATER HAS NOT BEEN USED FOR OVER 6 HOURS.**

## Summary

- Columbus provides drinking water meeting or exceeding drinking water regulations. Columbus goes beyond minimum requirements to provide safe drinking water.
- Columbus has an excellent corrosion control program based on monitoring, research, and treatment of reliable water resources.
- Columbus has a history of transparency and communications regarding its drinking water as exemplified by the annual CCR, lead brochure, and lead program.
- Columbus has strong leadership all the way from our elected officials to our rate payers, who provide the resources and support to effectively treat drinking water.