Joint Environmental and Transportation and Public Utilities Committee Bill No. 230278

June 1, 2023

PHILADELPHIA WATER DEPARTMENT

Background

- At 12:27 AM on Saturday, March 25, PWD was notified by the Delaware Valley Early Warning System of a latex product spilled along a tributary of the Delaware River tributary near Bristol Township, Bucks County, 9 miles north of the Baxter water treatment plant intake. The spill occurred just before midnight on Friday.

- PWD shut intakes to the Baxter water treatment plant as an immediate precaution.

- Given that the river in front of Baxter is tidal, the spill had the potential to be pushed upstream and downstream of the intake multiple times a day following the spill and could potentially remain in front of the intake for over 48 hours.

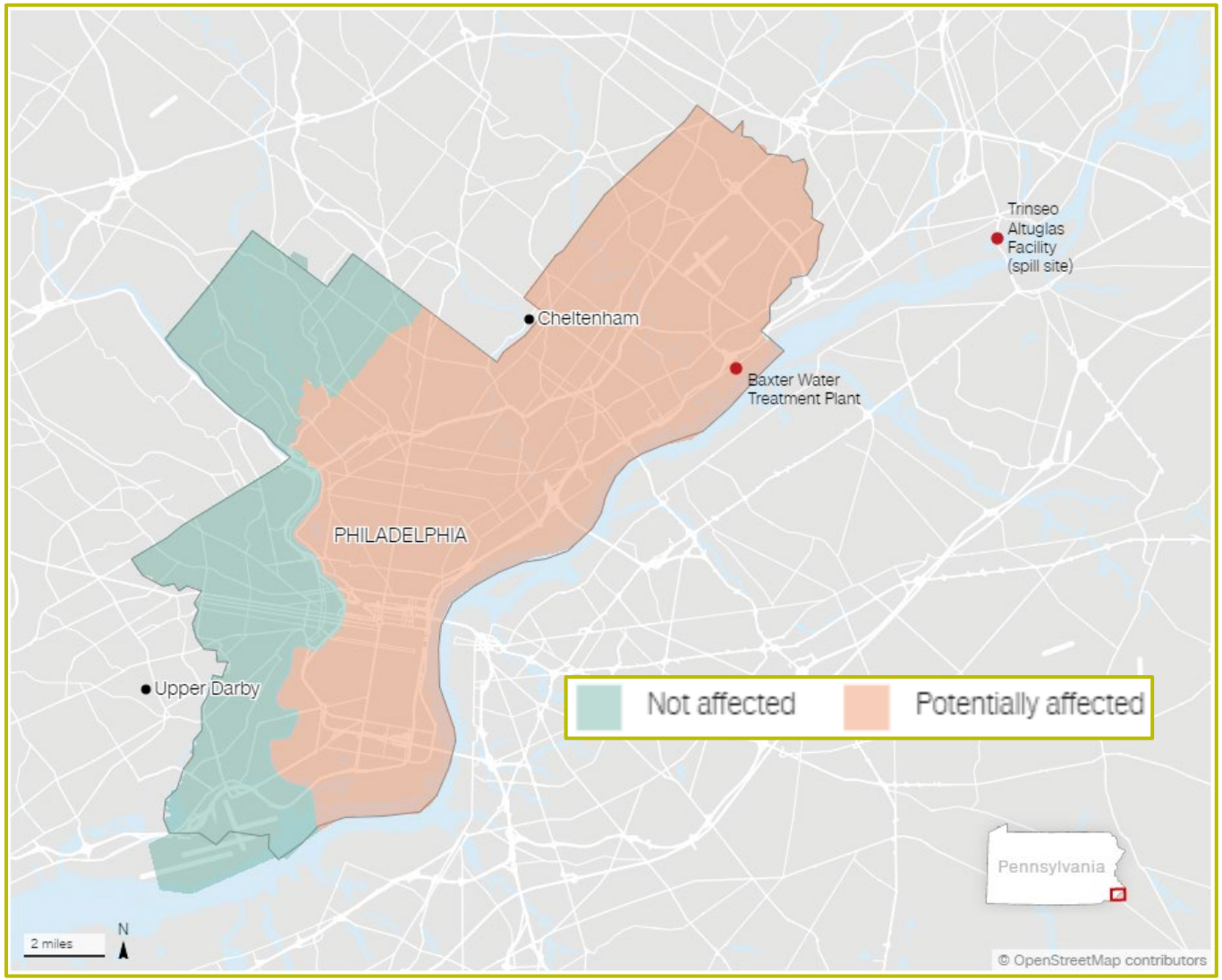
Trinseo Spill Location

Credit Google Earth

Afternoon, Saturday March 25

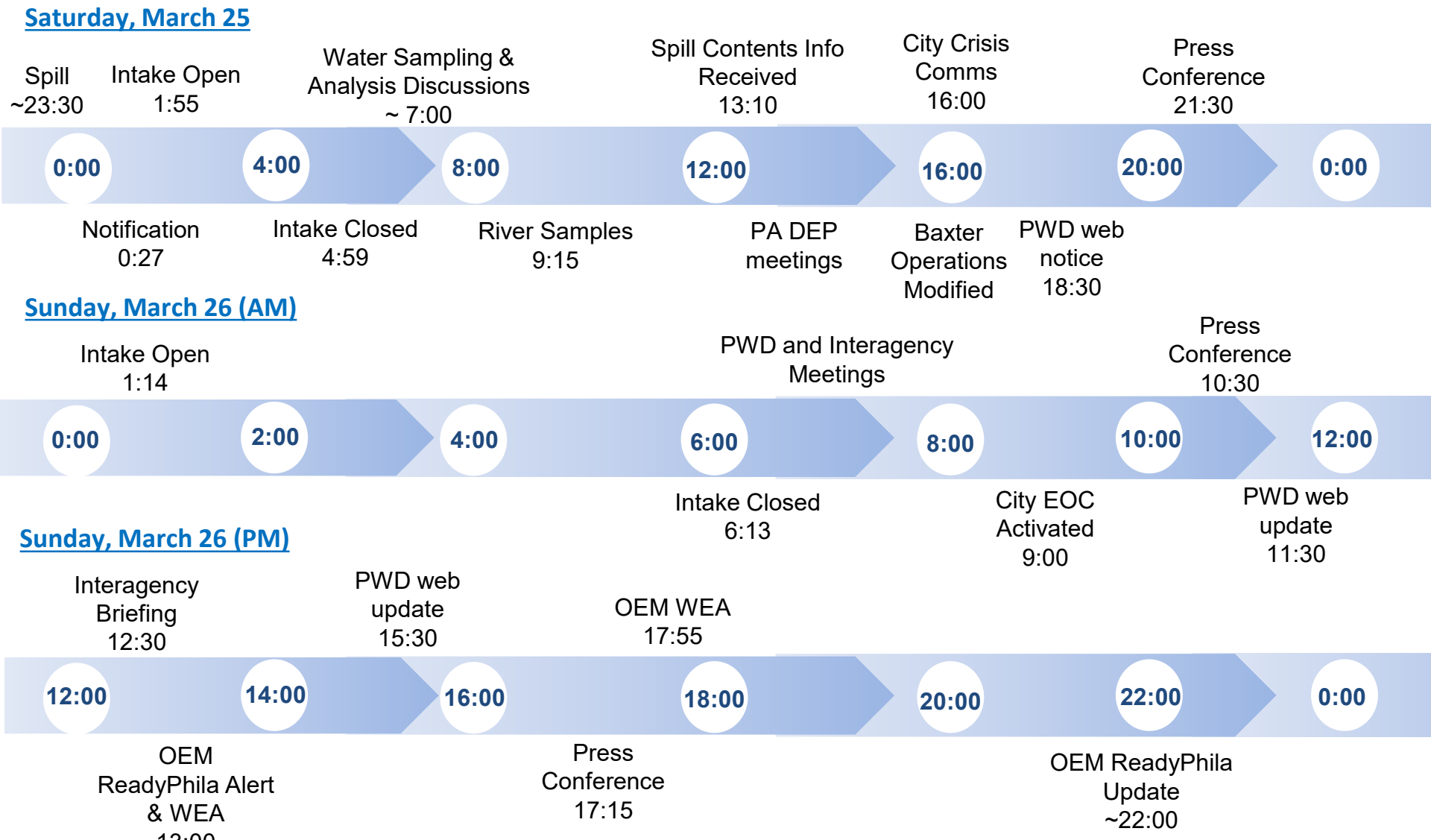
Drone footage from Burlington Bristol Bridge, looking downstream from Bristol, PA. River conditions cause the plume to hug the Pennsylvania-side of the Delaware River.

Area Potentially Impacted by Spill



Credit CNN

Abbreviated Timeline (March 25 & 26)



Saturday, March 25

- EWS hydrodynamic model predicted potential contaminants could reach Baxter intake around 6:00 AM
    - Intake opened from 1:55 AM to 4:59 AM, a shortened period.

- **7:19 AM** – Discussed water sampling and analysis options with ***limited information available*** about the chemical components of the product spilled.

- **9:15 AM** – First river samples collected

- **1:10 PM** – Received more complete information from PA DEP about the possible contents of the spill
    - Primary substances of concern for public health were butyl acrylate, ethyl acrylate and methyl methacrylate.

Saturday, March 25

- **Afternoon**
  – PA DEP convened meetings with Trinseo, area water suppliers, and other stakeholders
  – City's Crisis Communications Group enacted
  – Baxter's plant operations modified to conserve water
  – Intake NOT opened during high tide
- **6:30 PM** – PWD notification on website
- **9:30 PM** – First City press conference
- **~10:45 PM** – As a result of shortened opening overnight and skipped opening during most recent high tide, treatment plant was operating at critically low levels

Sunday, March 26 (morning)

- Intake opening required to assure plant would be capable of providing water to its service area for all essential services, such as fire protection
    - Intake opened from 1:14 AM to 6:13 AM

- **9:00 AM** – City's Emergency Operations Center (EOC) is activated

- **10:30 AM** – Press briefing to make public aware that intakes were opened. Out of abundance of caution, stated that bottled water use might be considered after 2:00 PM.
    - The fact that Baxter was operating at historically low water levels and the lack of water quality data informed this decision and timeline

- **11:30 AM** – PWD website update

Sunday, March 26 (afternoon)

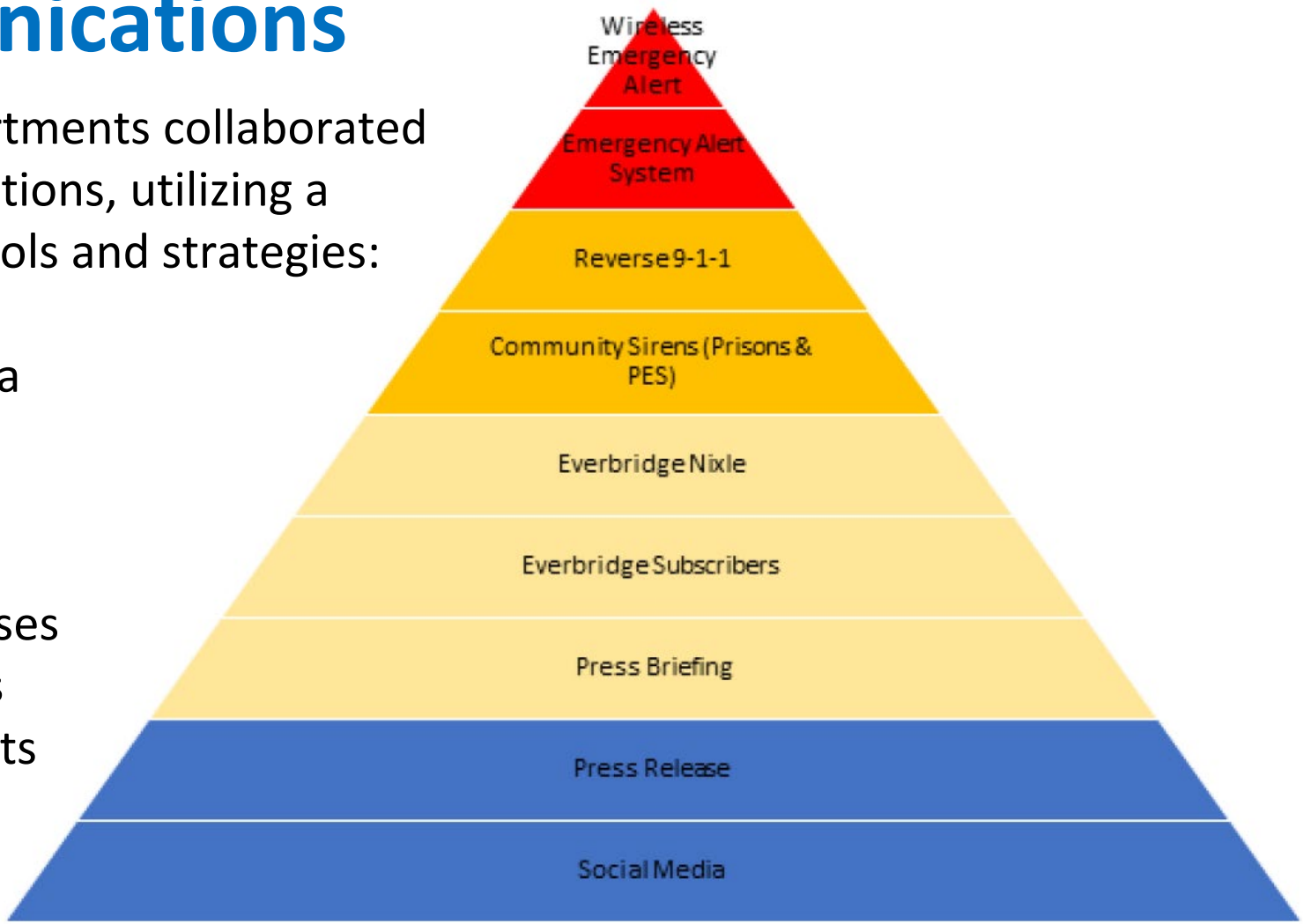
- **12:30 PM** – Interagency briefing
- **1:00 PM** – ReadyPhila Alert and Wireless Emergency Alert (WEA)
- **Mid-afternoon**
  – Early Sunday morning intake opening helping Baxter plant to begin recovering, with in-plant storage starting to increase

  – Water sampling results from early Sunday morning indicate non-detection of chemicals of concerns
- **3:30 PM** – PWD website update
- **5:15 PM** – Press briefing. Based on updated hydraulic modeling and the latest sampling results, tap water from Baxter will remain safe to drink and use at least through 11:59 p.m. Monday, March 27, 2023.
- **5:55 PM** – WEA / **10:00 PM** – ReadyPhila update

Communications

Multiple departments collaborated on communications, utilizing a hierarchy of tools and strategies:

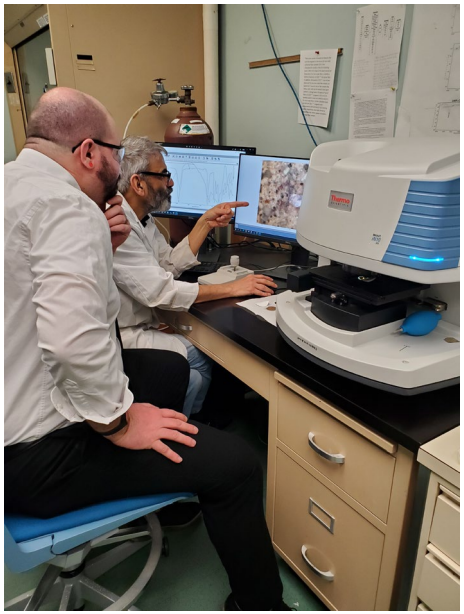
- Website
- Social Media
- Toolkits
- Flyers
- Blog Posts
- Press Releases
- Email Alerts
- Mobile Alerts

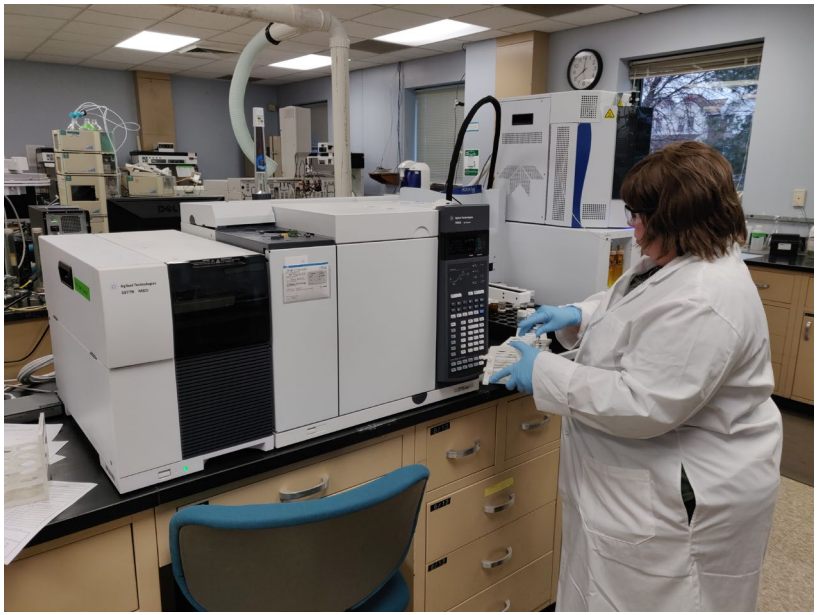


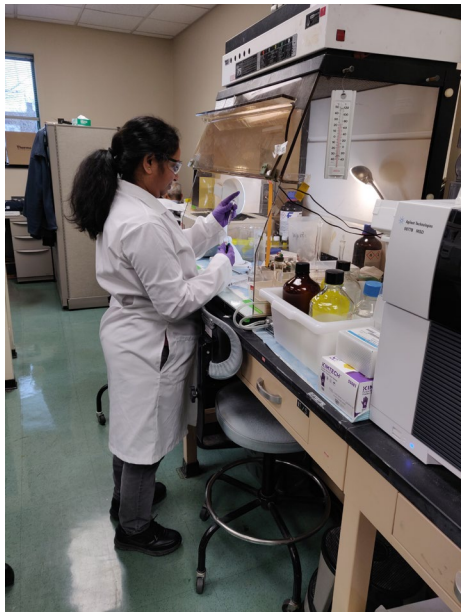
Translations: Spanish; Chinese; Korean; Polish; Vietnamese; Russian; Ukrainian

Water Monitoring & Modeling

- PWD instituted a rigorous monitoring plan to determine whether any contaminated water entered the Baxter WTP
- PWD tasked the hydrodynamic modeling group with determining when the spill – hazardous or not – would no longer be near the intake for the Baxter WTP.



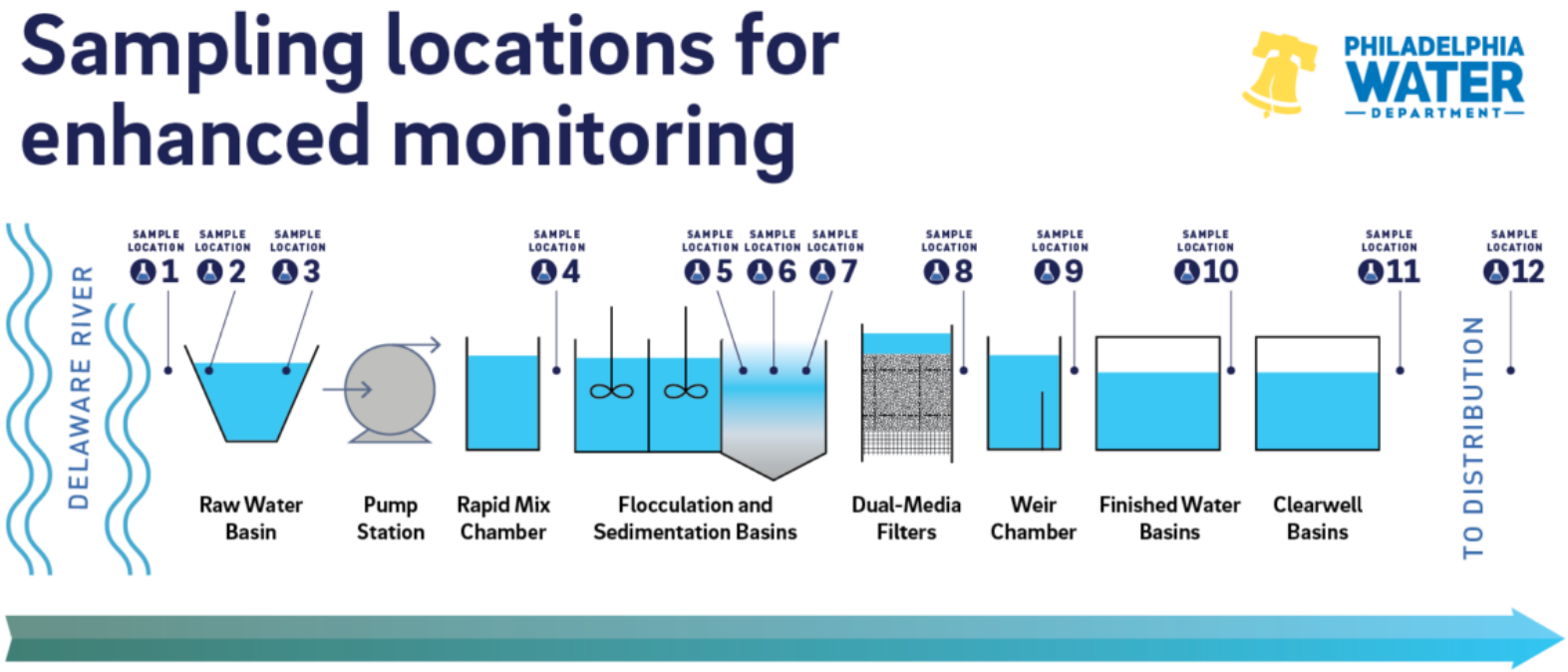




Water Quality Monitoring

Up to 12 locations including:

- The Delaware River
- The Baxter raw water basin influent and effluent
- Multiple locations in the treatment process
- Multiple entry points to the distribution system



Early Warning System (EWS)

- EWS water and industrial users provide critical services to the 6.8 million people in the EWS coverage area.
  - Drinking water; Wastewater; Energy; Manufacturing
- The EWS contains 124 water intakes in its coverage area.
- Over 7,400 stream and river miles in the EWS Coverage area.
- 529 WQ events have been reported into the EWS since its inception in 2004.
- Each reported event automatically generates a notification to the user base. Users can update event details as new information becomes available.

Hydrodynamic Modeling

- The hydrodynamic model simulates the transport and dispersion of a contaminant plume as the tides move water upstream and downstream twice each day.
- Similar to how water from the river eventually reaches the Delaware Bay, a contamination plume takes days to move downstream from the spill location and past the Philadelphia drinking water intake, while the incoming and outgoing tides dilute and lengthen the plume over time.

Acknowledgements

Responding to a spill in the Delaware River is extremely complex and requires coordination:

City of Philadelphia:

- Water Department
- Office of Emergency Management
- Mayor's Office of Communications
- Health Department
- Other City Departments

Our Partners:

- Pennsylvania DEP,
- Aqua/Essential Utilities
- FEMA
- US EPA
- US Coast Guard
- Delaware Valley Incident Command
- Emergency Management teams / County Partners
- Salvation Army

Questions