

# Nightmare on Worthen Street & Other Backflow Incidents

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City of Wenatchee

# City of Wenatchee



Service Connections – 7,741  
SFR 5,845  
MFR 787  
Commercial 1,109  
15 MG of storage (4 reservoirs)  
ADD 3.77 MGD  
MDD 7.45 MGD

# History of Backflow Incidents in Wenatchee

- \* Mostly limited to the customer's drinking water system  
Hooray for premise isolation!
- \* Sources of Contamination
  - \* Irrigation systems
  - \* Dental equipment
  - \* Boilers & hot water recycling systems
- \* Complaints that led to the discovery of a backflow event primarily have been received on a Friday.



# Nightmare on Worthen Street

1:58 PM on Friday, March 22<sup>nd</sup>



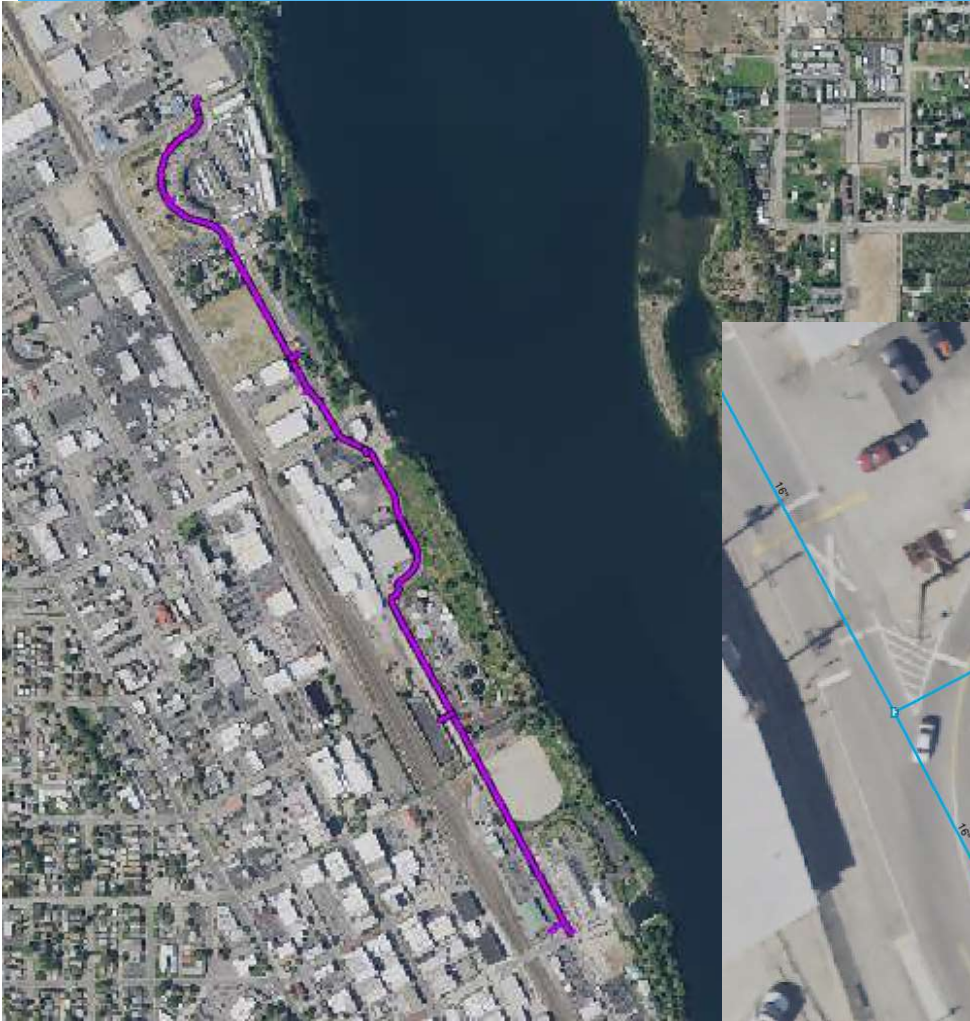
DCVA Vault at PUD Parking Lot on Worthen Street

# 2007-2009 Riverside Drive & Worthen Street Improvement Projects

- Future reclaimed water system installed for irrigation of waterfront properties near the wastewater treatment plant.
- Drinking water used to supply irrigation system on an interim basis.
- Existing irrigation services were tapped into the new irrigation system (included irrigation to the PUD Parking Lot).
- RPDA installed at entry point to the irrigation system.

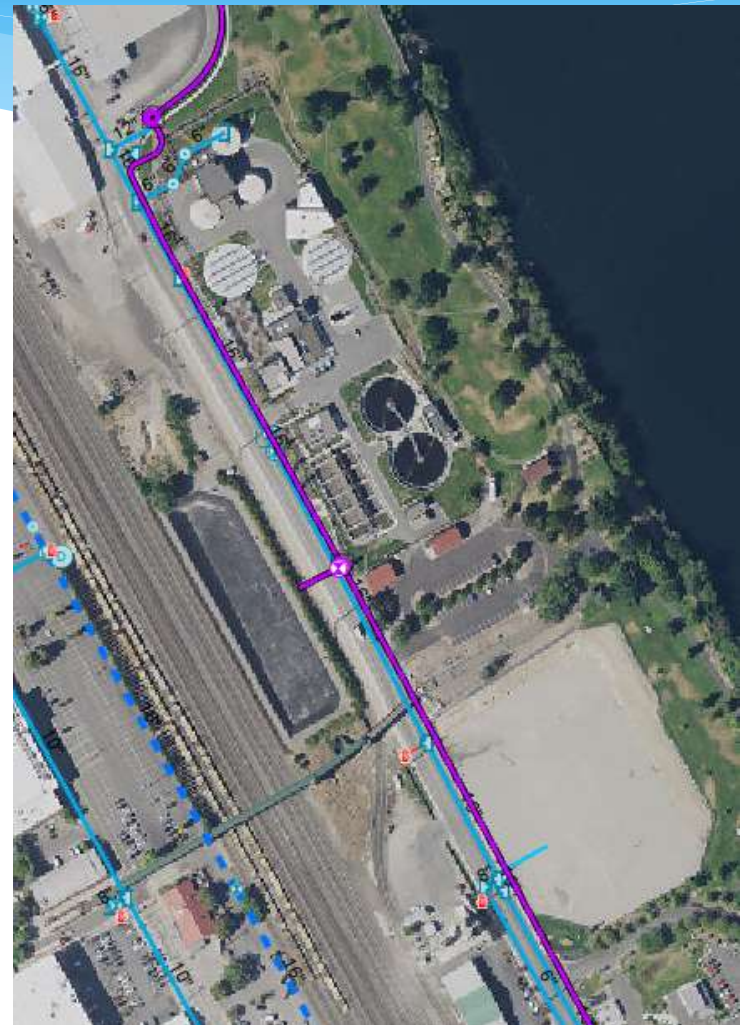


# Map of Irrigation System



# Where was the blue water coming from?

- \* Checked taps before the 8" RPDA (entry point to irrigation system) – no blue water
- \* Checked taps on the irrigation system upstream and downstream of the DCVA in the PUD parking lot – no blue water
- \* Collected samples
- \* Tested the RPDA and then shutoff the irrigation system at the entry point.



# Test Results

- \* 8" RPDA initial test failed on both the main assembly and the detector assembly. Both were repaired and passed.
- \* Water Tests: bacteria, pH, & herbicides
  - \* Sample from 3/22 -Total Coliform Positive/E.coli negative
  - \* Triggered City's Coliform Response Plan – all follow-up tests were satisfactory
  - \* pH = 6 (City water pH = 6.8)
  - \* Herbicide results negative



# Interviews

- \* Developed a list of people to interview: City & PUD Parks staff and nearby businesses
- \* Reached out to water operators from other cities

The blue water was only found at the DCVA in the PUD parking lot on 3/22.

Friday, March 29<sup>th</sup>, a witness came forward.

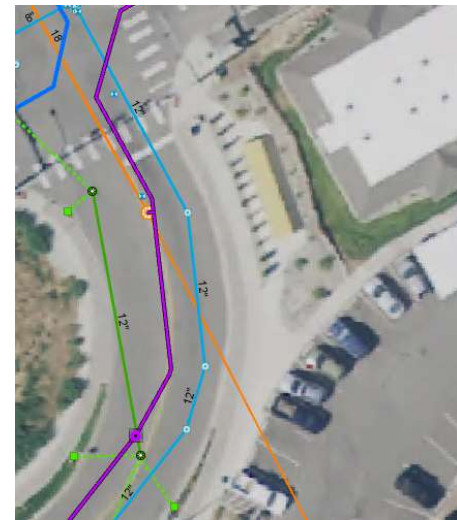
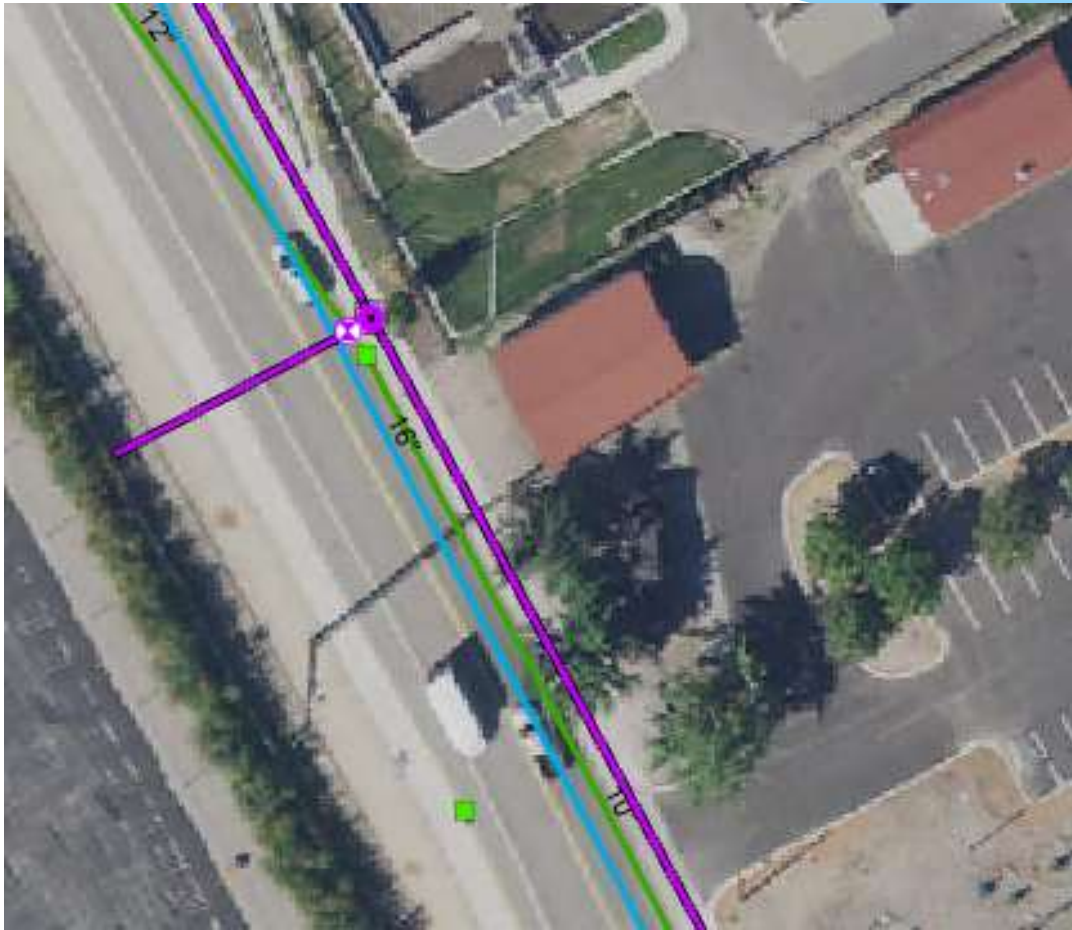


# Crime Scene

Worthen Street at the PUD Parking Lot Entrance



# Cross Connections Everywhere!



# Next Steps

- \* City re-surveyed uses on irrigation system to verify it wasn't being used as potable water.
- \* Verified that chambers and meters on the irrigation system were clearly identified.
- \* On-going maintenance issues has led the City to begin an alternatives analysis on the future of the irrigation system.

- \* Residential customer states that the tap water is musty & cloudy.
- \* No residual chlorine at the kitchen faucet. After flushing the sink, residual chlorine returned and water cleared up.
- \* Monday, May 7<sup>th</sup>, the customer called back and said that now the tap water is yellow and swampy.



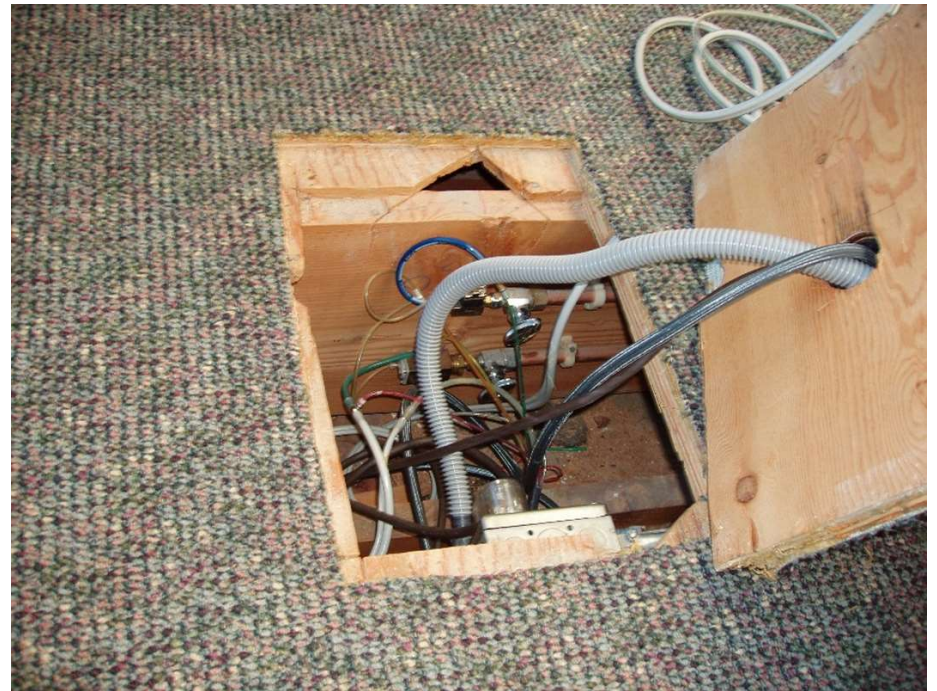
# Dental Office

## Complaint:

Air in the water coming out of a hand wash sink in the exam room.

Quote from the Dental Equipment Supply Technician:

*“It’s just an air/water crossover.”*



# Post Office

## Complaint:

No cold water in the break room. Only warm water coming out of the cold water tap.

*Same cross connection at a local hotel resulted in a Total Coliform positive sample.*



Can you find the cross connection in this picture?

# Medical Center

Complaint:

Green water coming out of  
the drinking fountain on the  
second floor.



# Lessons Learned

- \* Thoroughly investigate water complaints, especially on Friday.
- \* Survey, survey, and survey again (preferably on-site).
- \* Ask questions and take time to listen to stories.
- \* Reach out to your resources including DOH and other operators.
- \* Don't forget to call the local health district.