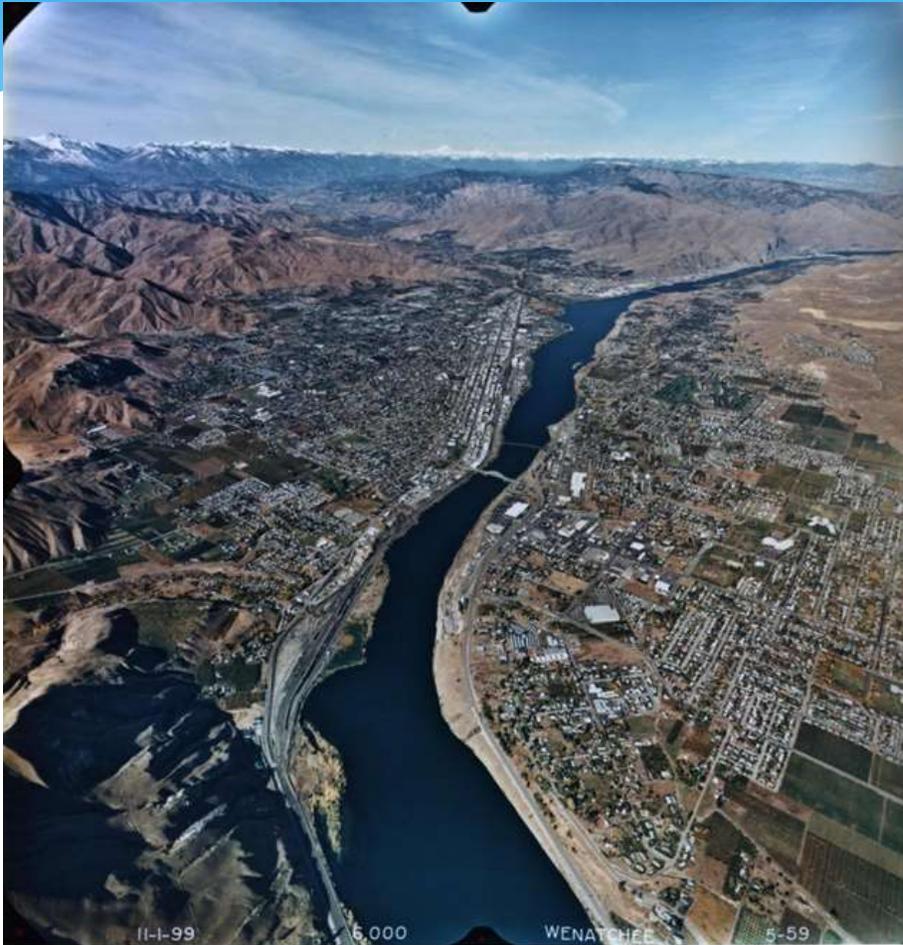


Nightmare on Worthen Street & Other Backflow Incidents

Jessica Shaw, Environmental Manager
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 22nd



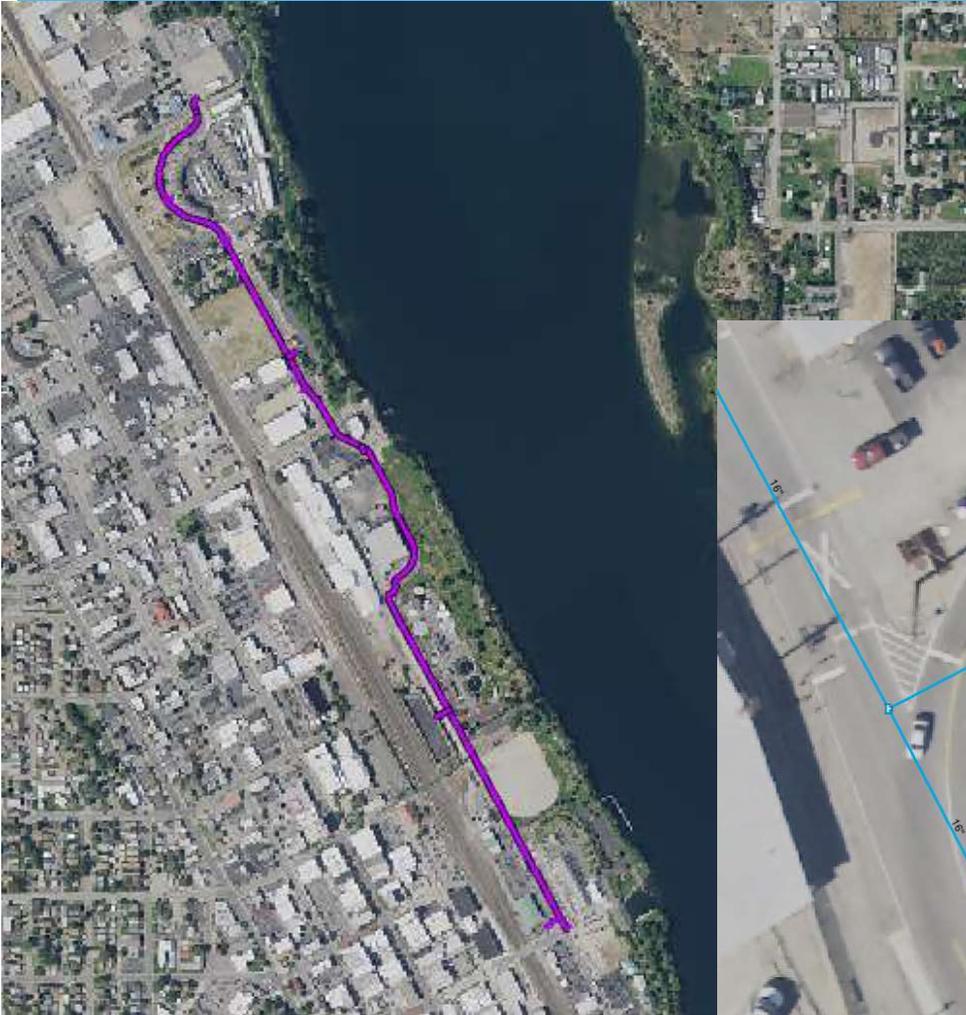
DCVA Vault at PUD Parking Lot on Worthen Street

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 29th, a witness came forward.

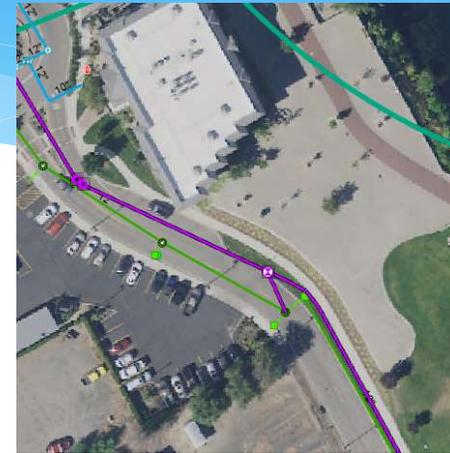
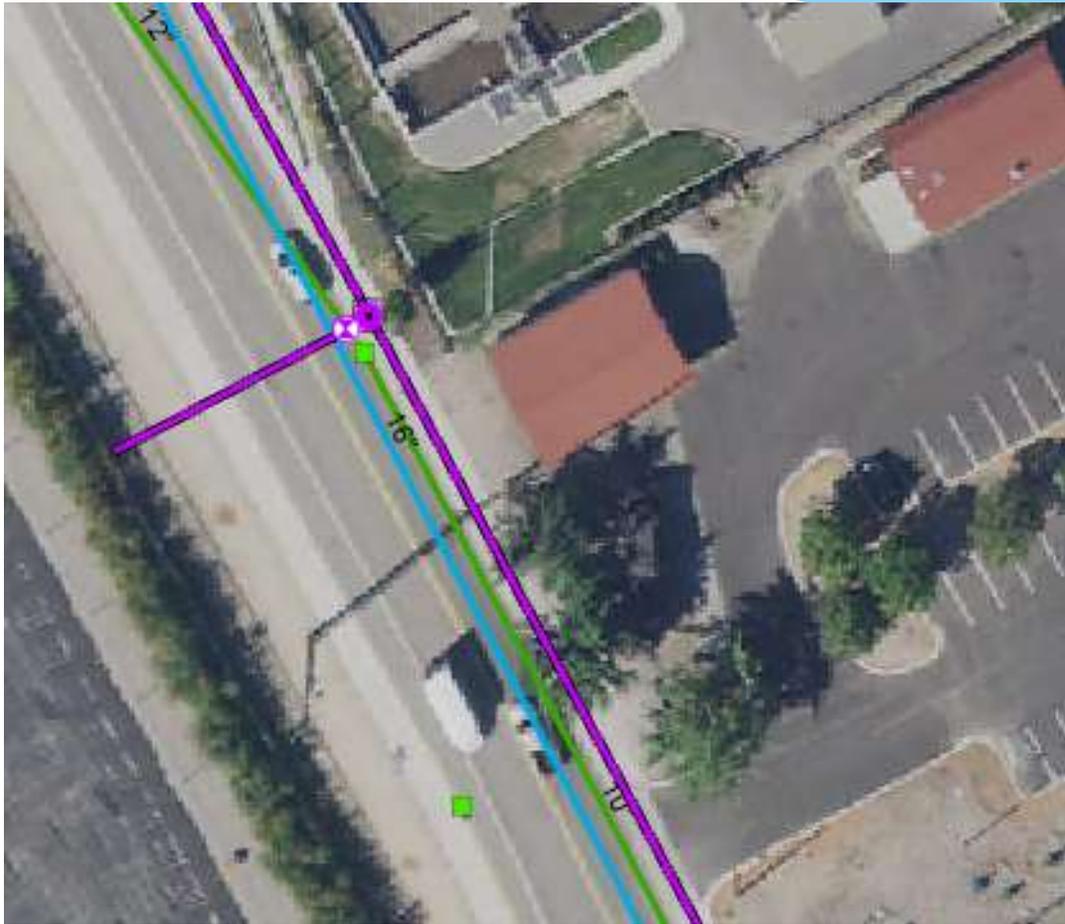


Crime Scene

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.

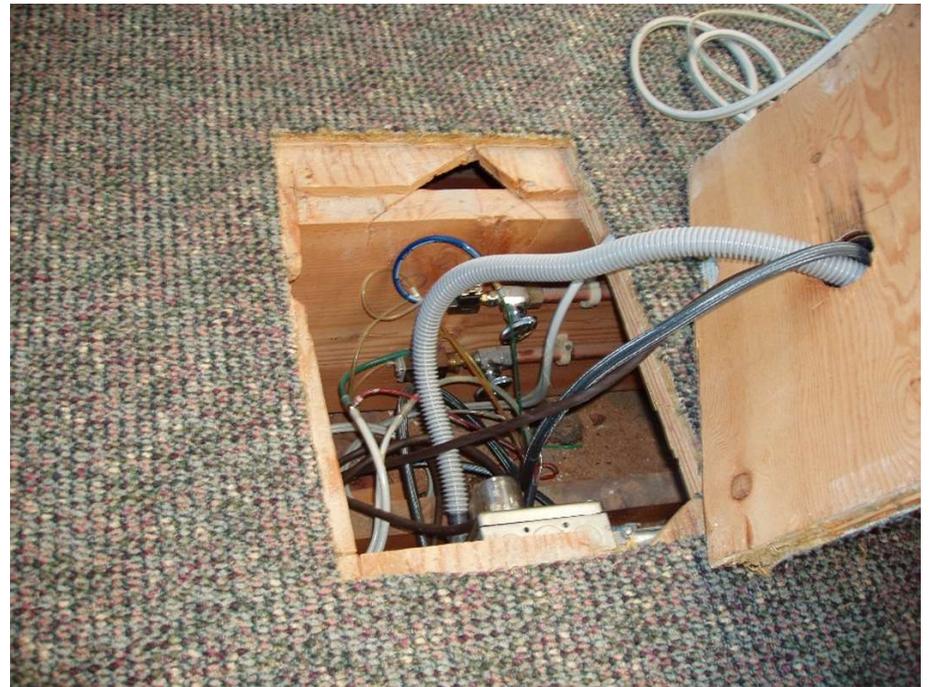
Dental Office

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.