

# Division of Water & Sewer 2009 Accomplishments



## Administration

1. Completed a comprehensive update of the Water Contingency Plan to bring the document into one binder, include additional scenarios, and information learned from 2008 events. Utilized a volunteer for update of the resource portion of the manual.
2. Developed a Sewer Collection System Contingency Plan. This was required as part of ARRA funding of a sanitary sewer project.
3. Using direction provided by City Manager developed a new format for the front end documents of the Five Year Capital Plan which was adopted by all Public Works Divisions.
4. Completed design to allow for water treatment plant improvements to increase capacity to 6 million gallons per day. Received OEPA approval for the plans with construction anticipated in 2010.
5. Completed design of the Rona Village boosted system and received plan approval from OEPA. This will address low pressure concerns in the area. Working with the city's legal office to procure necessary easements including attaining a property valuation.
6. Contracted with Arcadis to complete a sewer collection O&M manual. Completion anticipated by first quarter of 2010.
7. Applied for and selected to receive ARRA stimulus funding for lining of sanitary sewer mains. Completed extensive paperwork associated with the funding. Currently awaiting final monetary award. Project completion anticipated for first quarter of 2010.
8. Completed design of Kauffman Lift Station and received OEPA approval for construction; however funding was not available to construct the project. Construction is anticipated in 2010.
9. Developed a pandemic flu emergency response plan. As part of this preparedness, held a training session with key personnel to assure ability to operate water treatment plant in the event of loss of primary operators.
10. Developed an essential personnel policy in conjunction with the Joint Labor Management Committee and in accordance with the new AFSCME contract.
11. Participated in the water system activities associated with the Fire Department's ISO survey. Resulting water system ranking was an improvement over past reports.
12. Applied for but did not receive a Miami Conservancy District grant for development of a rain garden at Chapelgate Lift Station.
13. Developed and presented training pertinent to all Public Works Department employees. Handled all meeting notification and documentation. This included the submittal of 14 hours worth of training for OEPA contact hour approval.

Training program helps ensure sufficient contact hours for division's certified personnel. Assisted division certified operators with submittal of the necessary renewal documentation. A total of 611 hours were provided to division employees including:

- a. 322.25 in-house
  - b. 288.75 seminars, workshops, conferences, etc.
14. Fostered labor relations through employee meetings. This provided a communication link for disseminating information, fielding employees' questions and addressing division concerns.
  15. Karen Hawkins served on the city's negotiation team for the AFSCME contract.
  16. Karen Hawkins was an active participant in industry related professional organizations including:
    - a. Serving as a backflow instructor for the Operator Training Committee of Ohio (OTCO) which provides training for water and wastewater operators throughout the state.
    - b. Serving as trustee of the Ohio Section of the American Water Works Association's (OAWWA) Governing Board representing the SW District.
    - c. SW representative to Ohio WARN a mutual aid emergency response program for water and sewer utilities.
    - d. Participation in the newly formed Dayton area water purveyor's group.
  17. Eric Ross served on the OAWWA Customer Service Committee and is currently vice chair of the committee. He hosted a meeting of the committee at City facilities.
  18. Margie Thomas was elected to serve as Secretary/Treasurer for the SW District of OAWWA.
  19. Bill Theall served on the OAWWA Top Ops Committee as the SW District representative which included organizing and running the district competition.
  20. Provided a consumer confidence report in accordance to OEPA regulations to all Fairborn residents. Worked with Debbie Billetter to arrange for mailing of the report with the water bill.
  21. Administered the backflow prevention program including:
    - a. Oversight of annual testing of over 800 devices
    - b. Requirements for installations in new/changed businesses
  22. Processed 286 cost reports for services rendered resulting in \$49,469 in revenue.
  23. Processed 47 purchase orders and 44 super blanket purchase orders for services, material purchases and credit card purchases. Processed over 500 payments.

24. Participated in the Dayton Water Festival with the presentation “Tapping Into Trivia” impacting 57 children and 9 adults. Attendees included classes from Fairborn, Dayton, Huber Heights and Mad River Local Schools.
25. Manned the utilities booth at Baker Junior High’s “Real Money Real World” program aimed at approximately 300 8<sup>th</sup> graders. Discussed conservation efforts that can help save money on these bills. Also provided a bag of handouts that included RiverSmart tips, the flier, From Storm to Stream; Leak ruler, Water Conservation at Home pamphlet and OUPS promotional items
26. Presented to 25 students and 2 adults from the Wright State University’s Discovery Program on the role of the Water Department.
27. Provided informational brochures to the public at the Government Center and Sweet Corn Festival on disaster preparedness, preventing plumbing floods and leaks and water conservation.
28. Worked with Katie in the City Manager’s Office to develop educational material for publication on the web, backs of bills and newspaper on various subjects.
29. Worked with consultant on updates to the water distribution model with anticipated completion in early 2010. This work included a review of the SR235/I-675 area and assessment of interconnections with other water purveyors.
30. Awarded a contract for the execution of a sanitary sewer interceptor study with anticipated completion in the second quarter of 2010.
31. OEPA conducted a sanitary survey of the water treatment and distribution systems. Currently awaiting results of the survey.
32. Filled three positions resulting from two retirements and one transfer.
33. Investigated water and sewer systems at Calamityville property. Verified purveyor status. Made recommendations regarding future water and sewer maintenance issues on the property. Also performed exploratory excavation to assist in determining underground storage tank locations.

## General

1. Made repairs to fence at W&S Administrative Offices.
2. Ran generators at Southeast Lift Station and the Water Treatment Plant as part of a required DP&L test for participation in the energy emergency buyback program.
3. Provided assistance to other departments/community partners on an as needed basis including:
  - a. Assisted WRC on several occasions including
    - i. several repairs/projects at the landfill
    - ii. cleaning the clarifiers

- iii. washing down Northwest Lift Station after heavy rain events.
  - iv. preparation of parking lot for paving
  - b. Provided drivers for snow removal during snow events including over 100 hours of work on overtime.
  - c. Provided assistance to Fairborn Schools on several occasions to deal with water and sewer issues.
  - d. Provided mutual aid to Bath Township on an as needed basis.
  - e. Provided confined space entry equipment to Fire Department for their use in employee training.
  - f. Provided water to Wright State University during renovations to their water system. Billed for water usage in accordance to written agreement.
  - g. Assisted Parks with relocation of a water fountain.
4. Performed annual inventory.
  5. Coordinated annual inspection of all division fire extinguishers.
  6. Generated 1183 service requests from customer complaints, work requests from other departments, and problems found during routine system checks. One hundred forty of these were related to the street program.
  7. Provided representation at preconstruction/development meetings.
  8. Responded to after hour alarms generated by Division's SCADA systems and emergency requests for services on an as needed basis.
  9. Reviewed blueprints of proposed construction sites to determine whether material and methods were appropriate and in keeping with Division policy.
  10. Exercised all division generators under load for a minimum of two hours once a month.
  11. Repaired concrete at 18 locations following excavations.
  12. Conducted dress ups at 65 locations following excavations.
  13. Performed locates daily in response to OUPS requests (total of 1292 for water, sewer and storm). Located water and sewer appurtenances an additional 15 times at the request of contractors or property owners.
  14. Prepared estimates at request of contractors/property owners for new services.

### Pumping & Distribution

1. Performed leak detection on all streets slated for repair under the 2009 street program and the middle third of the city for a total of 59 miles of main being surveyed. Survey found 18 leaking hydrants, 1 service leak, and one water main

leak. It is estimated that these problems account for approximately 34,000 gallons of water loss per day.

2. Inspected all valves and valve boxes on streets slated for renovation as part of the 2009 Street Project. Began work on assessment of 2010 evaluations. This included physically exercising 83 valves using our valve operation equipment.
3. Terry Adkins took and passed the state of Ohio Class I Water Distribution Operator test.
4. Installed three new water services including one for a restroom facility at Community Park East and a fire line for the new Broad Street Grill.
5. Repaired 33 water main breaks for the year. This compares to 42 breaks in 2008. Checked on 8 sites reported as possible water breaks or leaks which were found to be ground or rain water.
6. Operated water system main valves to isolate areas for water line repairs and at request of contractors.
7. Performed 62 curb box repairs and 67 curb stop replacements. Repaired/Replaced 9 services with problems on our side of the curb stop.
8. Repaired 18 gate valve boxes and repaired or replaced 17 gate valves. Installed two gate valves on Dellwood Drive to allow for better isolation of the main for repairs.
9. Responded to 5 complaints of missing valve box lids.
10. Inspected and flushed over 1400 fire hydrants to assure proper operation of the hydrants and help maintain water quality in the distribution system. Also pumped out non-draining hydrants prior to cold weather to prevent freezing.
11. Performed maintenance on 25 fire hydrants and replaced four. Five of these repairs/replacements were the result of having been hit by a vehicle.
12. Performed one fire flow test at the request of fire protection companies. These are billed at \$50 per hour.
13. Painted and numbered 295 fire hydrants in the medium service area using one summer hire.
14. Provided hydrant meters for use by contractors at 12 locations. Also provided hydrant meters at no cost for the community garden and a business conducting a charity carwash.
15. Provided for installation the following meters:
  - a. Two hundred and five 5/8" x 3/4" (including 85 to replace frozen meters, 40 to replace clogged meters, and 2 as a result of fires)
  - b. Replaced three 3/4" frozen meter (including 1 frozen, 1 clogged meter and 1 meter tested at customer's request)
  - c. Two 1" (1 frozen, and one for a service downsizing)

- d. Two 1 ½" as replacements
- e. One 2" replacement
- 16. Read all of the city's 13,200+ meters on a monthly basis using the radio read system.
- 17. Worked with business owners on locations where bypasses were found to either remove or lock them out.
- 18. Tested and repaired one large compound meter at Red Roof Inn and replaced the unitized measuring element on the compound meter servicing Southpoint Village.
- 19. Disconnected 1480 water services for nonpayment. This compared to 1602 in 2008.
- 20. Investigated high water bill complaints at request of customer on 4 occasions. Also responded to 18 complaints of low pressure. The majority of the problems were found to be in the customer's plumbing.
- 21. Dispatched personnel on 45 requests for meter service. Additional service requests for division personnel were dispatched and tracked through the Utility Billing Department
- 22. Turned water off and back on for repairs on 74 occasions.
- 23. Located and operated curb stops for plumbers or homeowners making repairs at 25 sites. Also located 2 curb stops that could not be found during turn off events.
- 24. Put water dispenser in service for warm months and out of service for cold months. Resulted in \$320 revenue (including sale of keys required to access dispenser).
- 25. Worked with Vectren to support water mains impacted by excavation for work they were performing. Coordinated provision of used power poles by DP&L at no cost for use as the support beams.
- 26. Performed inspections and maintenance on Division's three pumping and five water tower facilities.
- 27. Made the following repairs to booster stations:
  - a. Replaced an impeller on a pump at Plant Medium Service.
  - b. Replaced rotating element, seals and bearings on one pump at Plant Medium Service.
  - c. Replaced a circuit breaker at Plant Medium Service.
  - d. Installed new roof and siding at Plant Medium Service.

## Water Treatment

1. Rehabilitated one filter. This included removal and replacement of the filter media by a contractor and replacement of all backwash and surface wash nozzles by plant personnel.
2. Implemented new minimum staffing regulations. This required assuring that a Class III or II operator was on site for at least 5 days a week for a total of 10 hours. This was somewhat challenging due to both the Class II and Class III having been off with major illnesses during the year.
3. Contractor redeveloped well #5 at the Mad River Well Field. Division personnel replaced defective service wire, rehabilitated motor starter contacts, and replaced level detector for this well.
4. Evaluated the new groundwater rule for impact on our system and developed a response plan. To assist in such response, installed sampling stations at both the Mad River and North Well Fields.
5. Replaced a non functioning motor on well #9 at the North Well Field and put well back in service.
6. Repaired a check valve at Well #11 at North Well Field that had frozen.
7. Conducted OEPA required water quality analysis including:
  - a. THM
  - b. Bacteria
  - c. Iron
  - d. Manganese
  - e. Nitrates
  - f. Haloacetic Acids
  - g. Synthetic Organic Chemicals
  - h. Unregulated Contaminant Monitoring II Rule
8. Performed 480 bacterial sample analysis in order to comply with OEPA requirements. An additional 211 samples were tested for special purposes such as water main breaks, customer complaints and process control of the plant. Twenty six new water main samples were analyzed prior to acceptance into our system.
9. Performed monthly well water level monitoring for wells located at the Mad River Well Field. Information was entered into a computer data base to allow for graphical display of water level trending for analysis of well performance.
10. Exercised the North Well Field and Central Park well on a periodic basis to assure operability in the event of an emergency and to collect water quality samples.
11. Treated over 1.2 billion gallons of water with a maximum single day usage of 4.24 million gallons on April 15, 2009 (during hydrant flushing).

12. Performed daily turbidity, fluoride, and chlorine analysis and weekly alkalinity, hardness, iron, manganese and pH analysis for plant process control.
13. Performed all tasks necessary to maintain bacterial and chemical lab certification including:
  - a. Maintaining laboratory instrumentation and quality control measures.
  - b. Quality control analysis and standardization on laboratory equipment.
  - c. Calibration of plant equipment to assure quality control.
  - d. Completion of a scheduled microbiological lab survey and an unannounced chemical lab survey with no deviations for either event.
14. Improved the treatment process operational efficiency, plant safety and facility conditions through general maintenance and completion of projects such as:
  - a. Painted effluent piping in the lower pipe gallery piping.
  - b. Installed a starter on Well #1 at the Mad River Well Field which allowed for the activation of an automatic megger that was already in place.
  - c. Cleaning of the reaction basin on two occasions.
  - d. Replacement of the chlorine room ventilation fan.
  - e. Installed screens around aerators at the recommendation of the Ohio EPA.
  - f. Replaced chlorine scales 1 and 2.
  - g. Installed new polymer scale load cell.
  - h. Replaced fluoride and chlorine feed lines.
  - i. Installed new mixer to the potassium permanganate day tank.
  - j. Installed confined space entry equipment at filter #3.
  - k. Several repairs to heating units.
  - l. Roof maintenance by contractor under warranty.
15. Conducted annual monitoring of four monitoring wells in the Mad River Well Field for volatile organics due to the presence of two fuel pipelines within the wellfield protection area.
16. Over 223 maintenance work orders were completed this year for general equipment service, building repair/upkeep, grounds maintenance, plumbing/electrical repairs and equipment calibrations.
17. Responded to 3 water quality complaints. Testing at each site indicated water was within acceptable parameters. Received 3 discolored water complaints – two were the result of a water main replacement in the area and one was reported months after the problem supposedly occurred.

18. Work underway to renovate the water meter testing bench to allow for in-house testing of meters now that the units are nearing 10 years of age. Anticipated that it will be back on line by January 2010.
19. Built up wellfield road with additional gravel.
20. Developed SCADA checklists to assure proper operation of the system on a daily basis.
21. Undertook several activities to improve emergency response capabilities including:
  - a. Development of procedural documents for filter backwashing and chlorine cylinder changeout for use by outside personnel in the event of the loss of operators.
  - b. Replaced the SCADA uninterruptable power supply with a larger unit which will allow for longer operation in emergency situations.
  - c. Trained and field certified other division employees for chlorine analysis. This will allow for daily collection of samples in the event of the loss of operators.
  - d. Installed a generator transfer switch at the North Well Field to allow for quicker, safer connection of a portable generator in the event of power loss. Conducted training on its use with all personnel.

### Storm Water Management

1. Installed the following storm projects:
  - a. Installed 24" catch basin and 342 feet of 8" PVC pipe from SE corner of Park Ct at Erie Dr to storm manhole at Flintridge & Erie at the request of Engineering.
  - b. Installed catch basin and piping at 11 N. Third at the request of Engineering.
  - c. Connected private storm system to main at 1149 N. Broad
  - d. Connected private downspouts to main at 410 White Ash Ct.
  - e. Connected private line to main at daycare on Goodman.
  - f. Modified an existing dry well to include a storm chamber on Van Tress.
  - g. Installed catch basin at 701 N. Broad at the request of Public Works Administrative Services Director.
  - h. Performed work on Lincoln Drive to address ponding issue on school property.
2. Crews developed an innovative means of addressing problematic catch basins in the Dayton Drive/Wright Ave area. We had received estimates of \$4000 each to do this

work but were able to perform the work in-house for approximately \$1000 each. Three such repairs have been done to date.

3. Repaired 121 catch basins ranging from minor repairs to complete replacements. 86 of the catch basins were associated with the street program. This included use of 12 units made in-house using a custom made mold.
4. Repaired storm sewers at the following locations:
  - a. Greene Street
  - b. Central at Circle
  - c. Valle Greene and Sandpiper
  - d. Ironwood & Routzong
5. Removed debris from Redbank ditch and Hebble Creek multiple times.
6. Inspected all catch basins and storm drainage components associated with 2009 street program and began assessment for 2010 targeted streets.
7. Inspected and cleaned over 200 culverts, gratings, and bridge crossings multiple times.
8. Cleaned all 3000+ catch basins two times. Cleaned additional 26 catch basins resulting from work orders and cleaned those areas subject to flooding during heavy rain events on several occasions.
9. Responded to 2 reports of missing catch basin lids.
10. Completed and filed the sixth annual OEPA required Storm Water Phase II report.
11. Assisted animal control in investigation of an animal cruelty complaint that involved the storm sewer system.
12. Investigated a milky substance in Hebble Creek which was traced back to the school's athletic field paint machine. Worked with them on a resolution to prevent future incidents.
13. Coordinated installation of catch basin markers by volunteers on 161 catch basins.

## Sewer Collection

1. Conducted smoke testing in the Wright View neighborhood which resulted in the identification of 36 sewer lateral clean out lid problems, two downspouts connected to the sanitary sewer, and two manhole problems.
2. Installed sewer force main for new restroom facility at Community Park East.
3. Completed a one year inspection of 35 manholes on the sewer main entering the Southeast Lift Station that were rehabilitated in 2008. Addressed minor issues found during the inspection.

4. Cleaned 224,812 feet of sanitary sewer pipe utilizing the Division's sewer jet/vacuum truck as part of a preventive maintenance program and in conjunction with camera work. This is approximately 1/3 of the city's total footage of sanitary sewer pipe.
5. Inspected sanitary sewer mains and manholes located in five easements, right of ways, fields and along ditch lines on multiple occasions. Sewers within these confines amount to 293,400 feet.
6. Continued treatment of sewage at Southeast Lift Station to combat odor problems on Old Yellow Springs Rd.
7. Televiewed 41,190 feet of sanitary sewer mains on an as needed basis including areas following a sewer main stoppage to document the case and identify necessary corrective action and all areas scheduled for repair in the 2009/2010 street programs.
8. Televiewed 4 sewer laterals at the request of the customer. Billed for this service.
9. Responded to 56 sanitary surcharge reports, 36 of which were in the homeowner's line and 18 in the City main. Completed the OEPA sanitary sewer overflow report for the 10 incidents that were considered reportable and forwarded it to Tony for inclusion in the annual NPDES report.
10. Responded to four sewer odor complaints with the majority being dry traps in the customer's home. Instructed them on how to prevent future problems.
11. Contractor applied root control to over 4800 feet of sewer main.
12. Cut roots in 9,102 feet of sewer main.
13. Rodded out 4 sewer laterals from the property line to the street during repair or replacement by the contractor.
14. Inspected all manholes in areas scheduled for repair in the 2009 street project.
15. Made repairs to 27 manholes including 3 associated with street program areas.
16. Responded to 2 complaints of missing sewer lids.
17. Repaired three sewer laterals including two that were damaged by a contractor installing a French drain for the city.
18. Performed sewer point repairs at the following locations:
  - a. 5 areas on S. Maple
  - b. Normandy
  - c. North Haven at Marchmont
  - d. 206 Erie
  - e. Zimmer & Glendale
  - f. Dayton Yellow Springs Rd. & Cozad

- g. Intersection of Koogler and Second St.
- 19. Assisted division crews on several occasions using jet truck to hydroexcavate and for cleaning of catch basins.
- 20. Inspected and performed routine maintenance on the Division's four sanitary sewer pumping stations.
- 21. Applied degreasing solutions to wet wells at Southeast and Kauffman Lift Stations.
- 22. Made the following repairs/improvements to lift stations:
  - a. Replaced motor on one pump at Kauffman Lift Station
  - b. Replaced moisture probe wire on pump #2 at Kauffman Lift Station
  - c. Replaced load side line base for Pump #3 at Southeast Lift Station
  - d. Replaced impeller on one pump at Southeast Lift Station
  - e. Replaced bellows on bioxide pump at Southeast Lift Station
  - f. Installed phase protection for generator at Southeast Lift Station