

Appendix B

**Project
Meeting Reports**



277 W. Nationwide Blvd.
Columbus, OH 43215
Telephone: (614) 464-4500
Facsimile: (614) 464-0588
Architectural & Engineering Services

PROJECT MEETING REPORT

LOCATION: URS Office
BY: Jeff Kerr
ATTENDEES: Village: J. Welsh, T. Bouts
RE: **Field Meeting Minutes**

MEETING DATE: September 27, 2011
ISSUE DATE: September 28, 2011
PROJECT: Ashville Wastewater Engineering Report
JOB NO.: URS: 14577731

COPIES: Attendees (via email), J. Kerr, K. Hogan, F. Christman, Central Files

THE FOLLOWING REPRESENTS MY UNDERSTANDING OF THAT WHICH SHOULD BE RECORDED. IF CHANGES SHOULD BE MADE, PLEASE FORWARD PROMPTLY SO THAT AN ACCURATE RECORD CAN BE MAINTAINED FOR THE BENEFIT OF ALL.

Specific items discussed were as follows:

1. Some previous Infiltration and Inflow studies in the Village have been done by Dennis Urban, Urban Engineering.
2. Manhole inspections and some smoke and dye testing in the Village were completed in 2002. A summary of inspection results appears to be available for most manholes. Some manhole rehabilitation work (chimney seals and dishes) appears to have been performed in 2002. Tom will look into what work was actually done in 2002.
3. Survey forms are available for a resident survey which asked questions about water in basements. Follow ups on water in basement issues may or may not have been performed.
4. Cleaning and TV inspection of the Village sewer system was performed in August, 1999. VHS tapes and paper logs are available. No engineering report summarizing the tapes and logs or recommending further action is available.
5. Parts of the sanitary sewer system may have direct stormwater connections. A budget of \$40,000 per year is being spent by the Village to find these problems with CCTV inspection and provide corrective actions. Drier and Maller, Inc. is currently working in town by providing CCTV services and hauling liquid sludge from the wastewater treatment plant.
6. Pickaway County expressed an interest in the past in eliminating some package plants. A package plant currently serving about 60 homes in the Walnut Heights subdivision is owned and operated by Pickaway County and is about two to three miles south of the Village on Cromley Road. There are two other package plants in this same area. Negotiations with the County would be required if the Village wants to add these customers and construct a project to convey their wastewater to the Ashville Wastewater Treatment Plant (WWTP).
7. Alsco Metal Products Corp. is located near SR 752. The company is a sheet metal fabricator. They have an NPDES permit that allows them to direct discharge to surface waters. In the past they had a zinc problem in their wastewater. Alsco could possibly be served by the Village at some time in the future with a sewer extension if an agreement can be negotiated.
8. A meeting with OEPA is needed to discuss a potential TDS and phosphorous NPDES Permit limits that could be required after Ashville's NPDES Permit expires in June, 2012. URS will arrange this meeting.
9. The Village's current OEPA contact is Erin Sherer in the Compliance and Enforcement Group. She wrote the Village a Notice of Violation letter on June 21, 2011. The letter summarized 20 NPDES Permit violations in March/April, 2011.

10. Sludge from the WWTP is currently hauled by Sam's Excavating to the Pinegrove Landfill. Geobags at Ashville usually provide 12 to 16% solids concentrations. The Village prefers not to have any more geobags. The bags create odors when they are emptied. The headworks of the WWTP also creates odors that can drift into the neighborhood when the garage door is open. A tank was being pumped by Drier and Maller during the plant visit. This work was creating odor problems that resulted in resident complaints.
11. Some sewer rehabilitation work has been completed by the Village and/or contractors in the past. Projects included Station Street (2007), Center Alley, and South Street. These small projects were completed using Village funds.
12. Copies of recent Monthly Operating Reports (MORS) were received from the Village for April, May, July, and August 2011. Some flow charts were also made available. Additional MORs for 2010 and the remainder of 2011 are needed.
13. Peak flows resulting from a half inch rain have been known to create SSOs at the WWTP. A rain of this size results in flows of about 600,000 gpd. Two manholes at the WWTP are known to overflow and are currently being reported as SSOs by the Village. A 24" and 18" sewer come together at the WWTP and create a hydraulic problem that results in overflows. When WWTP flow exceeds 1.6 MGD, plant personnel need to protect the plant equipment. Bypassing of the final clarifiers is necessary to protect the oxidation ditch rotor bearings from submergence.
14. URS will consider an alternative that involves moving the WWTP to a new site. A possible site for a new Ashville WWTP is Cromley Farm located near the intersection of SR 316 and Cromley Road (i.e. CR 28). This farm is located next to Walnut creek. URS will look into this and possibly other downstream properties further. This evaluation will include a review of elevations and floodway/ floodplain boundaries. The existing WWTP could possibly be converted into a pump station to pump to a new WWTP site.
15. The current Ashville WWTP is located on a 28 acre site. Much of this site is located in the floodway or floodplain. URS will obtain FEMA maps showing the WWTP site and forward a copy to the Village.
16. URS will contact Pomeroy and Associates to obtain a sewer system map in AutoCAD and pump station plans.
17. The Village is looking into establishing an emergency water connection with the Earnhart Hill Regional Water and Sewer District. This Water & Sewer District is a political subdivision of the state of Ohio organized under Chapter 6119 of the Ohio Revised Code. The district serves drinking water to more than 3300 customer connections within its service area, which primarily includes Pickaway County, Ohio. Water service is provided to Pickaway County areas north, south and east of Ashville. The District provides wastewater service to areas south of Circleville.
18. The Village has not entered into cooperative water/sewer agreements with South Bloomfield. However, cooperation appears to be pending on a CEDA agreement. Rick Wilson is the Mayor and the Village is represented by Clark and Associates out of Circleville, Ohio.
19. The Village has three major pump stations: Columbus Industries, Ashton Crossing and Ashton Village. Ashton Crossing pump station has a capacity of 450 gpm at 75' TDH. The station is 38' deep and has Flygt submersible pumps. The station has an adjacent manhole that was installed for future expansion. The Ashton Village pump station has a capacity of 320 gpm at 50' TDH. The pump station is 32' deep and also has submersible pumps.
20. Action Items:
 - a. URS will request a CAD map of the sewer system and pump station plans from Pomeroy and Associates.

- b. The Village will assemble additional MOR report copies for 2010 and 2011 for URS.
- c. Tom Bouts will look into past infiltration and inflow studies and the work completed as a result of these studies.
- d. URS will arrange a meeting with OEPA to discuss the upcoming Village NPDES Permit.
- e. URS will obtain floodplain mapping from FEMA and integrate into an overall GIS map of the Village vicinity.
- f. URS will schedule a progress meeting with the Village for the 4th week of October.



277 W. Nationwide Blvd.
Columbus, OH 43215
Telephone: (614) 464-4500
Facsimile: (614) 464-0588
Architectural & Engineering Services

PROJECT MEETING REPORT

LOCATION: URS Office
BY: Jeremy Cook
ATTENDEES: Village: J. Welsh, T. Bouts, Adam
URS: J. Cook, B. Walker
RE: **Condition Assessment Meeting Minutes**
COPIES: Attendees (via email), J. Kerr, K. Hogan, F. Christman, Central Files

MEETING DATE: September 7, 2011 10:00 am
ISSUE DATE: September 22, 2011
PROJECT: Ashville Wastewater Engineering Report
JOB NO.: URS: 14577731

THE FOLLOWING REPRESENTS MY UNDERSTANDING OF THAT WHICH SHOULD BE RECORDED. IF CHANGES SHOULD BE MADE, PLEASE FORWARD PROMPTLY SO THAT AN ACCURATE RECORD CAN BE MAINTAINED FOR THE BENEFIT OF ALL.

Specific items discussed were as follows (**Action items in blue**):

1. The Village provided three sets of original drawings from the 1987, 1995, and 2004 Ashville Wastewater Treatment Plant (WWTP) upgrades. The Village also provided a complete set of WWTP 11x17 drawings that were printed from scanned images; however, they indicated that there are some duplicate and missing drawings. The Village indicated that the elevations on the drawings may not correct.
A. The Village will send URS a copy of the CD with the scanned drawings. If needed, URS will re-scan missing drawings before returning them.
2. Village staff indicated that a regional WWTP option may not be a serious consideration at this time and that URS should concentrate on the repairs, upgrades and expansion of the existing WWTP.
3. Columbus Industries has downsized from 300 to 4 employees. The wastewater pump station that previously served this company is now bypassed.
4. The Village has grown by about 1000 people every 10 years for the past several decades. The Lockbourne Intermodal project could bring significant additional growth to the Village and surrounding area.
5. The Village has significant problems with the reliability of the electrical power at the WWTP (discussed further in Item 8).
6. Process Assessment
A. Influent Screen
 - 1) The City has one mechanical bar screen with 3/8" openings. The original 12" diameter sewer enters from the east and a new 24" sewer enters from the west.
 - 2) The system was supplied by Envirex.
 - 3) These sewers are fairly shallow and during heavy rains the manholes overflow at the WWTP site. Rags and grease clog the screen which can also cause overflows.
 - 4) The 3/8" openings in the screen are not small enough to keep all the rags from passing through and clogging pumps and equipment in the plant.
 - 5) The influent screen is currently out of service and is being repaired by J.R. Mason.
 - 6) A pole building was recently constructed over the influent screen channel to keep the screen from freezing.

- 7) **URS will evaluate the plant hydraulics and investigate installing an influent pump station to prevent the manhole overflows at the WWTP.**
 - 8) **URS will consider a screen with smaller openings to prevent clogging of pumps and equipment.**
- B. Flow Equalization
- 1) The flow equalization system was designed to use the existing tanks from the 1969 WWTP. The Village is currently using the two old final clarifiers, the two aerobic digesters (160,000 gallons each) and the primary clarifier for flow equalization.
 - 2) Use of the aerobic digesters for flow equalization has left the Village without enough tankage for sludge digestion.
 - 3) **URS will evaluate the need for any flow equalization if the plant capacity is increased. URS will also evaluate converting the old aerobic digesters (now used for flow equalization) back to aerobic digesters.**
- C. Primary Clarifier
- 1) There is one primary clarifier that is 31 feet in diameter and 12 feet deep with a volume of 67,750 gallons.
 - 2) The original purpose of this primary clarifier was to remove 20-30% of the BOD load, 90% of the settleable solids, and 40-60% of the suspended solids, grit and grease.
 - 3) The Village no longer uses the primary clarifier because it reduced too much of the pollutant load to the oxidation ditch which did not function properly and produced an anaerobic (septic) sludge that caused odors. The primary clarifier was put into service in 2003 and taken out of service early in 2009 based upon an analysis done by the Ohio EPA.
 - 4) **URS will evaluate converting the primary clarifier to a vortex grit and grease removal system.**
- D. Oxidation Ditch
- 1) The exterior oxidation ditch concrete appears to be in good condition.
 - 2) The system was supplied by Lakeside.
 - 3) The bearing/motor work pits are flooded with wastewater when the water level rises too high.
 - 4) **The WWTP expansion is likely to add a second oxidation ditch which will likely prevent bearing/motor work pit flooding. However, in the meantime, the effluent weir could be lowered to reduce this flooding. URS will check the effects on the aeration system before the Village adjusts the weir.**
 - 5) The oxidation ditch has a volume of 300,000 gallons.
 - 6) The north rotor bearings were replaced two years ago and the south rotor bearings were rebuilt 5 years ago.
- E. Final Clarifiers
- 1) Each final clarifier is 26 feet in diameter by 12 feet deep and holds 47,650 gallons. Each clarifier has a peak capacity of 0.503 MGD.
 - 2) The clarifier equipment was supplied by Lakeside.
 - 3) Both clarifier drives were rebuilt in the year 2011.
 - 4) The clarifiers were apparently sized smaller than usual due to the presence of a primary clarifier (which is no longer used). Solids and grease currently pass through the clarifiers during peak flows.
 - 5) The telescoping valves for the return activated sludge (RAS) do not provide sufficient control because since they plug if kept too high.
 - 6) **URS will investigate using variable frequency drives (VFDs) on the RAS pumps to provide better control.**
 - 7) **The final clarifiers are severely undersized for the existing peak flows.**

F. Effluent Structure

- 1) The effluent structure consists of a baffled chlorine contact tank, a dechlorination/post aeration chamber and a parshall flume with a flow meter.
- 2) The concrete is in good condition.
- 3) A scum draw-off pipe was added in the chlorine contact tank which is too low and constantly recycles water during peak flows. The sump pump which recycles the scum water is too small and the sump pit overflows.
- 4) **URS will investigate converting the chlorine system into an ultraviolet disinfection system.**

G. Chemical Feed Building

- 1) The chemical feed building has two rooms. One room is for Sodium Hypochlorite (used for chlorination) and the other is for Sodium Thiosulfate (used for dechlorination).
- 2) The building is in good condition; however, the exhaust fans and heaters in both rooms do not work.
- 3) The transformer in the Sodium Thiosulfate room was noted to be very hot, but appears to be operating within specifications.

H. Sludge Digestion/Holding

- 1) The two aerobic digesters (160,000 gallons each) were converted into flow equalization tanks.
- 2) The sludge holding tank has a capacity of 40,000 gallons.
- 3) Lime is added to stabilize the sludge and then it is either pumped into GEO tubes to be dewatered or it is hauled away for land application.

I. Sludge Drying Beds

- 1) The sludge drying beds are being used to hold the GEO tubes.
- 2) A new enclosure was built recently for a polymer feed system.

7. The WWTP capacity has been projected (in previous reports) to increase from 0.6 MGD average to 1.2 MGD average. However, this final size remains to be determined by URS using population, flow and loading projections. The WWTP was originally laid out to include a future second oxidation ditch and two future final clarifiers.
 - 1) **URS will verify the hydraulics and equipment sizing needed to expand the WWTP.**
 - 2) **The Kinder report recommended a peaking factor of only 3. This peaking factor will be evaluated further due to infiltration/inflow issues and known high peak flows. The Kinder report recommended three new oxidation ditches and two new clarifiers. URS will evaluate the number and size of new oxidation ditches and clarifiers that will be required.**
 - 3) **Several sludge treatment and handling alternatives will be evaluated. These alternatives include: covering the existing drying beds/GEO tubes, aerobic digestion and a rotary press. One additional drying bed for GEO tubes may be needed. As mentioned earlier, the flow equalization tanks may be converted back to aerobic digesters or new aerobic digester tanks could be constructed. The continued use of sludge bags will be discussed with staff. At our previous meeting, Village staff indicated that sludge bags should not be used as part of a long term sludge treatment/disposal plan.**

8. Electrical Assessment

- A. The plant personnel described their issues with South Central Power in detail. The most recent issue is the near certainty of power loss or brown out when any storm moves through the area. The brown out will not cause a complete loss of power, but will shut down any motors running at the time. The generator is connected to the WWTP system via a manual transfer switch. When there is a complete loss of power, plant personnel must manually start generator and transfer the power. These issues cause major operational problems. The

WWTP is not manned after normal business hours. WWTP personnel cannot get an afterhours alarm that indicates loss of power. Most equipment will not automatically restart after the restoration of power. Therefore, Village personnel spend a great deal of time dealing with the results of power losses the day after they occur.

- B. WWTP electrical service is supplied by pole mounted South Central transformers. The service conductors are routed overhead to a pole mounted main disconnect and manual transfer switch. The main service is 480/277, 3 phase, 4 wire. The main circuit breaker disconnect is 400 ampere. The generator is a 480/277 volt, 200 Kw generator (full output of 240 amperes, approximately).
- C. The WWTP has a second smaller residential size service feeding an equipment storage building. This second service can be eliminated and the equipment storage building re-powered from the WWTP's internal distribution system. This change would reduce costs by eliminating the second service and its base costs (costs not associated with energy used by building).
- D. During site investigation the exterior main service disconnect circuit breaker was inspected. There was a large amount of unidentified debris covering the exposed line side connection lugs at the circuit breaker. This debris looked like saw dust or even nesting material. There was an unusual amount of rust on the inside of the disconnect enclosure that suggested water was getting inside the enclosure. This was called to the attention of plant personnel as a safety hazard. If the debris absorbed any amount of moisture it would likely cause a catastrophic short circuit and destroy the connection lugs at the circuit breaker. WWTP personnel indicated they would deal with it by using compressed air to blow the debris off the connection lugs. The secondary conductors appear to have two splices on each phase conductor. This is not recommended practice for cable installation.
- E. The WWTP Motor Control Center (MCC) is more than 25 years old and has exceeded its useful life. Motor starter indicating lights do not appear to work. The space where the MCC is located has been converted into office space. There is not enough NEC (National Electric Code) working clearance in front of the MCC, which is a code violation.
- F. Oxidation ditch starters and electrical disconnects are mounted on the handrail next to the oxidation ditch. The starters and disconnects appear to be in good condition and have no reported problems. The enclosures are stainless steel.
- G. Site lighting is limited and lights are provided by South Central Power. Replacing the site lights and powering them from the WWTP power distribution system will remove the flat monthly fee for each light and replace with the actual cost of energy usage for each light.
- H. The existing WWTP SCADA system is an extension of the existing Water Plant Rigid SCADA system. The WWTP is currently monitored for a limited number of I/O points that report back to the system at the Water Plant. There is limited interface with the system for the operators at the WWTP. A chronic SCADA issue is the lack of monitoring at the WWTP for electric service status, generator status, and plant operations status.

PROJECT MEETING REPORT

LOCATION: Municipal Building
5023 South Union Street
South Bloomfield, OH 43103

MEETING DATE: January 9, 2012

ISSUE DATE: January 11, 2012

BY: Jeremy Cook

PROJECT: Ashville Wastewater
Engineering Report

ATTENDEES: S. Bloomfield: Mayor R. Wilson, Joe
Allen (WWTP Superintendent)
Ashville: F. Christman, G. Cook,
J. Welsh, URS: G. Otey

JOB NO.: URS: 14577731

RE: **S. Bloomfield Regional
Coordination Meeting Minutes**

COPIES: Attendees (via email), K. Hogan, Central Files

THE FOLLOWING REPRESENTS MY UNDERSTANDING OF THAT WHICH SHOULD BE RECORDED. IF CHANGES SHOULD BE MADE, PLEASE FORWARD PROMPTLY SO THAT AN ACCURATE RECORD CAN BE MAINTAINED FOR THE BENEFIT OF ALL.

Specific items discussed were as follows:

1. Mayor Rick Wilson indicated South Bloomfield was interested in working with Ashville on Regional alternatives. Franklin and Glenn agreed it would be a positive step forward.
2. Greg Otey discussed the status of Ashville's Preliminary Engineering Report that URS is developing and that Ashville wished to review possible regional options as part of this report. URS distributed GIS maps showing the service areas of all the entities in the region for discussion purposes. URS handed out a summary of flow data for both the Ashville and South Bloomfield WWTPs.
3. South Bloomfield's existing WWTP was constructed in 2006. Their sewer system was installed in 1995 and they do not have inflow and infiltration (I&I) problems. The WWTP has a design average daily capacity of 0.5 million gallons per day (MGD) and a peak hour flow of 1.0 MGD and a 180,000 gallon equalization (EQ) tank.
 - a. Currently, South Bloomfield would be willing to accept between 100,000 to 300,000 gallons per day (gpd) because their average daily flows are only 180,000 gpd. Flows above this would require an expansion of their WWTP and sewer system.
4. Joe Allen described a couple of ideas to pump flow from Ashton Crossing subdivision to South Bloomfield. They only want to take normal daily flows and not I&I.
 - a. The additional forcemain required makes this option unfeasible for the small amount of flow that could be diverted from the existing Ashville WWTP. Also, 100,000 to 300,000 gpd is not enough to offset major improvements to Ashville's WWTP.
5. URS proposed that it may be feasible to pump flow from one of the gravity sewers along SR 316 on the west side of Ashville to Millport (in South Bloomfield's service area) if an EQ tank were constructed. The flow in this option would consist of normal sewage and I&I.
 - a. South Bloomfield has an 8-inch gravity sewer which ends at Millport. At 0.4% slope, this sewer has a maximum capacity of 600,000 gpd. The maximum flows from

- Millport are estimated at 25,000 gpd; therefore, this sewer can handle the additional flow from Ashville; however, South Bloomfield's Mud Run Pump Station would need to be upgraded at their own cost.
- b. The required size of the equalization tank is not known at this time, but it would likely need to be close to 1,000,000 gallons. The exact costs are also not known but would be around \$1,500,000. In addition, approximately 1 acre of land would have to be purchased along SR 316 unless the EQ tank and pump station were located at the WWTP, which would require additional forcemain.
 - c. South Bloomfield's normal sewer rate is \$6.5/1000 gallons. For users outside the Village, the rate is \$9.75/1000 gallons. Rick stated that the rate for Ashville would be negotiable since it would be a large contributor and a constant flow.
6. Jeremy mentioned the possibility of Ashville sending its sludge to South Bloomfield for treatment instead of having duplicate sludge treatment in Ashville.
- a. Ashville's sludge treatment system needs many improvements which could be avoided or delayed until South Bloomfield reaches their design capacity (presumably, this could be 10 to 20 years).
 - b. Ashville would need to purchase a vac truck to haul the sludge to South Bloomfield.
 - c. Alternatively, a pump station could be installed at the WWTP to pump the sludge to the Millport sewer.
7. Another option may be to pump Ashville's brine waste from the water treatment plant.
8. Greg mentioned the option of creating a 6119 district to combine Ashville's and South Bloomfield's service areas.
- a. Rick stated that their objection is that Ashville has expensive I&I problems to fix and South Bloomfield does not.
 - b. URS said that each area could have a different rate.
 - c. South Bloomfield's other concern is that the board created for the 6119 are not accountable to the voters.
9. Other opportunities for regional planning.
- a. Currently, there is no emergency connection between Ashville's and South Bloomfield's water systems. Many neighboring water utilities have such connections in case of water line breaks or for use during construction tie-ins and elevated tank cleaning. This would only require a few hundred feet of pipe and a meter vault.