

**Oakland Township Water Improvement Project
Public Meeting at Baldwin Elementary School
February 9, 2015**

Overview:

Oakland Township residents in the Southeast, Oakland Hunt, and Southwest water service areas were invited to participate in a public meeting to review the next steps in the Water Improvement Project. This is the initial meeting with follow-up meetings planned in May to review the results of the engineering analysis underway.

This meeting was videotaped and is available for viewing on the Oakland Township website. The following link will take you to the video section: <http://vp.telvue.com/player?id=T02627>. It is listed under the Water Resources Commission 2015 tab.

Participants: Please see Attachment #1 for meeting participant list.

Introductions:

Glenn Appel, Chief Engineer, Oakland County Water Resources Commissioner's Office introduced the OCWRC team in attendance: Tim Prince, Manager; Connie Sims, Water Quality; and Amy Ploof, Engineer.

Glenn also introduced the team that will be responsible for the engineering and construction of the water improvement project. Jim Redding and Doug Scott of Rowe Professional Services will be the engineering leads and Teresa Weed Newman of Project Innovations will be the public outreach lead.

Presentation:

Jim Redding presented the system history, background on the water reliability study, review of the conceptual engineering, areas of initial focus, and next steps.



Oakland Township Drinking Water System

February 9, 2015



Welcome & Introductions

- Welcome – Terry Gonser, Township Supervisor
- Introductions – Glenn Appel, PE, Chief Engineer, Water Resources Commissioner
 - Oakland Township
 - Oakland County Water Resources Commissioner
 - ROWE Professional Services Company
 - Project Innovations, Inc.
- Agenda review – Teresa Weed Newman, Project Innovations, Inc.

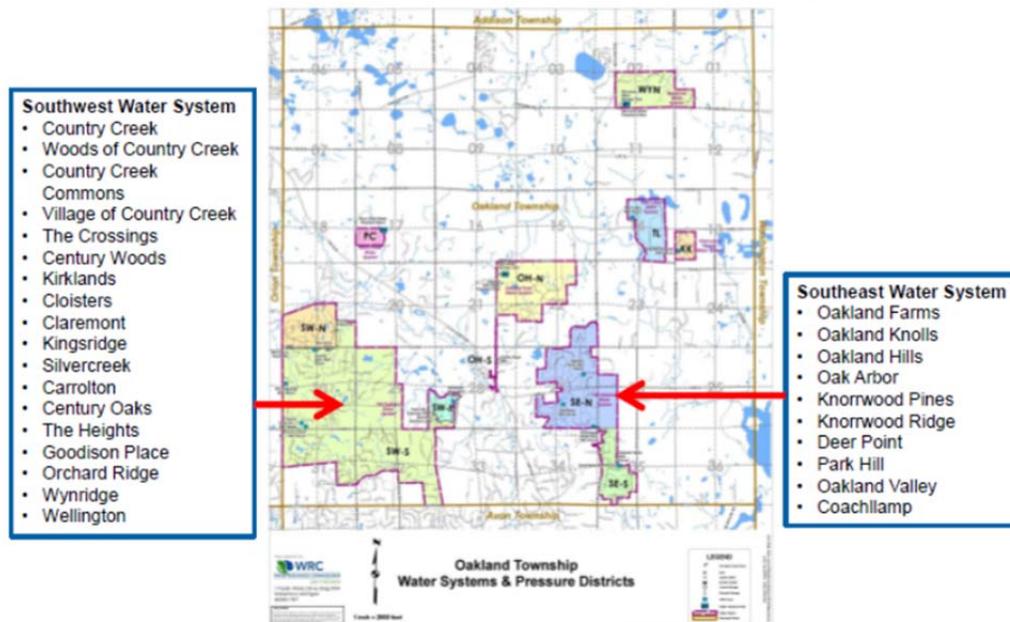


History

- Several separate systems constructed by developers
- DWSD option
- Township system – planning and upgrades for reliable, high-quality, long-term water supply
 - Ownership and O&M responsibilities - OCWRC
 - Combined into seven systems
 - Completed reliability study



Oakland Township Water Systems



Water System Characteristics

- Wells for water supply
 - Water is hard and has high iron content
 - Three of seven systems have treatment that remove iron
 - Some systems add chemicals to sequester iron
 - No systems provide softening
- Two of seven systems have storage facilities
- Distribution piping network
- Service to 9,638 people (50% of township residents)



Water Reliability Study

- Water complies with primary EPA drinking water regulations
- Water is hard and has high iron content
 - Secondary quality standards
 - Aesthetic and increased operating and maintenance
- Water distribution system adequate for peak demands and fire fighting
- Storage required by MDEQ for Southwest, Southeast, and Twin Lakes systems



Conceptual Engineering

- Interconnection (Oakland-Hunt & Southeast)
 - Improved reliability
 - Well redundancy
- Distribution System Storage (Southwest & Southeast)
 - MDEQ requirement
 - Improved pressures
 - Southwest district – peak demand periods
 - Improved Reliability
- Treatment (Iron Removal)
 - Improved water quality
 - Reduced home treatment expense
 - Reduced WRC operations & maintenance



Preliminary Engineering

- Define alternatives to address issues
- Evaluate options
 - Cost
 - Constructability
 - Impacts
 - Rate Impact
- Present recommendations
- Finalize scope of upgrades



Initial Focus

- Southwest District
 - Storage required
 - Pressure improvements
 - Evaluate treatment for iron removal
- Southeast District
 - Storage required
 - Evaluate treatment for iron removal
- Oakland-Hunt / Southeast
 - Evaluate interconnection



Screening of Options

- Storage
 - Ground vs. elevated
 - Location
- Iron treatment
 - Removal
 - Sequestration
- Softening – not planned
- Costs
 - Interconnection
 - Staging or phasing of upgrades
 - Peak flow reduction – potential savings through capacity reduction

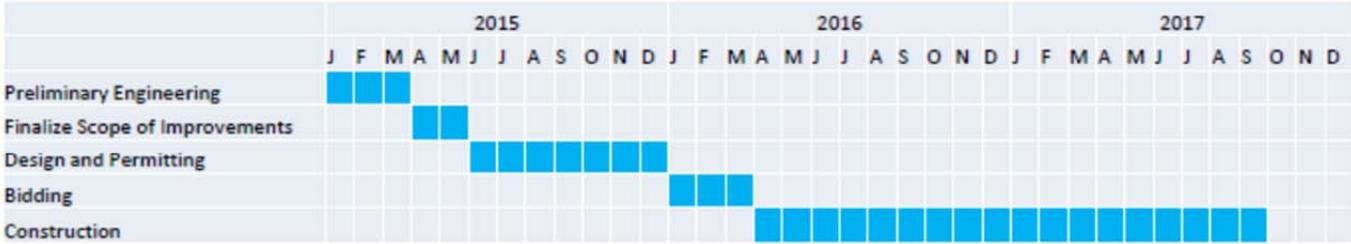


Next Steps

- Present options (spring 2015)
 - Public information meetings
- Public Input
- Finalize project(s)
- Design and permitting
- Bidding
- Construction



Anticipated Schedule



Questions



Question and Answer Period:

1. What was the reasoning behind not pursuing Detroit water?

Township Supervisor Terry Gonser stated that there were a number of factors involved, one of which was cost to bring Detroit water into the Township. The closest connection route is Squirrel Road from Walton Blvd. and across Silverbell Rd. The preliminary estimate was \$30,000,000. This would have required interconnections within the Township and storage in addition to having Detroit water because we are at the end of the Detroit water system. The second factor was timing; it made sense to complete construction of the water mains while the construction work was being done on Squirrel Road. Another factor is the problems with the Detroit water system, there's been a lot of consternation about cost and issues, you may have seen in the newspaper a couple weeks ago that there is a proposed 14% increase in water rates this year. Detroit water is double that of Oakland Township. So the factors are capital costs and recurring costs to the customer to bring water into the Township.

2. What is the status of the money that was collected from developers to cover cost to connect to DWSD?

In 1998 the Board of Trustees passed a resolution to collect \$2,500 from each new home site. The developers paid that money into a fund. The Township collected that fund over a 15-year period, up to about \$5.5M. The money has been refunded to 2 of the developers that could prove they paid the money. A class action lawsuit has been filed

against the Township to cover the rest of the developers, the remaining \$2.5-\$3,000,000 was given to the Circuit Court of Oakland County and they made the final determination on received the balance of the fund.

3. What is the current financial rating for the Township?

The current financial rating of the Township is AAA.

4. How will this water improvement project be financed? Property taxes? Water rates? Other?

Through the water rates, the project will likely be financed through a 20-year bond.

5. Where on the timeline (in 2013) is the time spent on decision-making and community input regarding the decision to not connect to the Detroit system?

Supervisor Gonser: The Board looked at the data available working with OHM and NOCWA and decided it wasn't prudent to pursue Detroit water. It was primarily based on cost. It was discussed at the Board meetings but I can't tell you how many people spoke for or against it but the decision was not made in a vacuum.

6. Who is responsible for the costs incurred during this project?

Tim Prince: We are in discussions with the Township on bonding the project. If we bond the project it will probably be a county bond so the county would have to pay those bonds back over a period of 20 years. Ultimately, it's paid for through water rates and the customers of the system would essentially be paying for the improvement projects.

7. Is this Water Improvement Project multi-phased with the final goal of establishing a public water system for Oakland Township?

We will be looking at working with the existing Public Community Water System of Oakland Township which includes the 7 systems on the map. It won't be one combined system, but multiple systems called the Oakland Township Water System operated by the County much like it is today. The Southwest and the Southeast Oakland/Oakland Hunt will be essentially phased in. If there is a determination that we decide not to interconnect Oakland Hunt and Southeast, we can decide to look at it again in the future. Storage for Twin Lakes system is deferred at this time. It's a DEQ requirement, but it's not as urgent as the projects in the Southeast and Southwest districts. It's not the intent of this project to make it a Township border to border water system. There will still be private wells.

8. What is the projected cost of this project?

We don't have an answer for that yet. We plan to have that in the next couple of months. In the spring we will review the recommendations in a public meeting. We have some preliminary conceptual numbers from June that we presented to the Board. The feedback we received is that we need to sharpen our pencils and fine tune these numbers to be as cost effective as possible. It would be less than \$30,000,000.

9. If Bald Mountain is eventually turned from recreational to residential, will this have an impact on our water systems?

It's an Orion Township project so it wouldn't affect Oakland Township.

10. Why not build a softening system for Southwest? It would seem more cost effective for one central system then for all residents to have softeners.

The plan is to take a high level look at softening. The trouble with softening is in small systems it is fairly expensive to operate and it isn't cost effective. It's more cost effective for the homeowners to handle the softening component

and let the municipalities provide good water supply. Softening is usually provided by larger facilities, it is very labor intensive. We will evaluate to see if there's any feasibility. One of the drawbacks is you spend a lot of money to soften all the water and it's not really necessary to do that.

11. Does the Southwest system have any iron removal process currently?

No, see question 12.

12. Current iron in the water is 1-2 ppm. I understand that you are adding a chemical that is keeping iron in suspension, this is passing iron through the softener and is deposited in toilets and dishwashers, this costly system won't help the situation.

The only way you can address the iron effectively is to remove it at the source if you want to get rid of the problem entirely. Otherwise you will have iron coming into your home. Our goal is to try and keep it in solution where it isn't going to cause water quality issues for the water customers. Sequestering has been the best thing that we've had so far, there are no other ways of addressing it other than removing it at the source. We realize that sequestering is not the solution for water quality. In the County's estimation we are not providing an adequate level of service and that's why we are looking at iron removal because we can't sequester it and solve the problem. You get yellow water coming out of your faucet. Iron removal treatment systems have been built in other systems we operate and maintain (and Rowe will evaluate the best treatment for these sites). Oxford in particular, utilizes oxidation filtration. They use chlorine to oxidize the iron and filter it out through media sand filters. That's the most common way to remove iron in this situation because iron likes to precipitate out so you can use an oxidant like chlorine or you add oxygen to get it to precipitate out. It's a fairly reliable process.

13. Does the chlorine react with the softening system?

No, there is chlorine in the water already.

14. Why do smaller systems already have iron removal?

You are probably referring to 3 of the 7 water systems in Oakland Township: Plum Creek, Oakland Hunt, and Wynstone. Plum Creek needed to have arsenic removal treatment equipment installed when the allowable arsenic level was reduced by the EPA from 50 parts per billion to 10 parts per billion allowable in water. They're small enough that we were able to put it in the existing well house. In 2006, Oakland Hunt and Wynstone were new developments coming in and developers were providing different concentrations of arsenic in the water sampling done on the new wells. As a way of addressing the fluctuating arsenic concentrations, we changed our well house design standards at the WRC's office and put an addendum in to say that the secondary limit for iron must be met (which is 0.3 mg/L.) Since the water out here won't meet that, treatment was required. The treatment that was put in also removed the arsenic. So we have the health benefit of reducing arsenic and also have the aesthetic benefit of the iron removal. Had iron removal treatment been put in when these wells were originally drilled, we wouldn't be here today to discuss this portion.

15. Those areas/districts where iron has been removed, have homeowners seen significant change (do these homes still require water softeners)?

The problems with hardness in the water can be that your soap might have trouble lathering, you get spots on your glasses, or on your shower doors, or if your sprinkler hits your windows you will get spots. That's typically where we see problems or the aesthetic concerns from hardness. One of the benefits of the iron removal up front is you may not have to treat all your water. I recommend in other systems where we have iron removal to bypass part of the water around your softener. The Detroit supply water averages 5 to 6 grains of hardness. I think out in this area it is around 15 grains. So you could bypass 1/3 of your water around your softener and blend it in your own home. Then you would reduce the amount of salt used and wouldn't have that slippery feel of water softened to zero. When we

look at systems that have iron removal there are virtually no water quality complaints. We have a map showing the complaints - see **Attachment #2**.

16. What costs are added to developers when “staging-phasing” upgrades?

If there is a future development that ties into a district after we make the improvements we will create what we call a “system development charge”. So if the treatment is slightly oversized or if the tank is slightly oversized, then part of that cost wouldn’t be paid for by residents but paid for by future connection fees by the developer.

17. Comment: Sequestering iron should not be an option, it should be done right and removed at the source.

18. Speak to the “storage”. It is the understanding that you want to put water towers in Bear Creek Park rather than in the subdivisions where they will be utilized? Is this true?

We will be looking at sites that are available for storage whether its ground storage or elevated tanks. There were some sites generally identified on Township property and subdivisions or developer’s properties. When we presented to the Board in June 2014, we talked about the possibility of inter-connecting Oakland Hunt with Southeast District and if we did that, there was some Township property there that would be an optimum site for a storage tank. All options will be reviewed and evaluated again. If we are looking for the most cost effective location to put these tanks then that’s where it may end up being; higher elevation where there’s no cost for property.

Bear Creek was one of the sites that they listed when OHM looked at addressing storage, a requirement that came out of the reliability study by MDEQ. Rowe will continue to evaluate. Nothing has been decided.

19. Comment: It should be noted that the Township does not own park property.

20. Who has final authority over location of storage? How will decisions be made on the locations and types (above ground tank on raised pipes, underground) of storage structures?

Regarding the decisions on location and type; DEQ requires storage in those 3 systems we talked about. We will identify potential sites; whether they are Township property, developer property or other areas and then evaluate the benefits/drawbacks for each potential site. Some sites will lend themselves to elevated tanks and some sites will lend themselves to ground storage sites. So it’s going to be a combination of looking at these specific sites and costing out what is necessary and comparing the alternatives. At the end of the day it may cost more to put a tank on a site that’s less desirable from an engineering standpoint but more desirable to the residents. We will provide those options. Ultimately it’s a County owned system but the County will involve the Township Board and residents in making the final decision.

21. Will the selection of the storage location be voted on, on the ballot?

No, it won’t be on a ballot or be voted for; we may send questionnaires out and get input that way. Those details will be part of future meetings. When the details get worked out, they will be definitely be discussed. All affected Township residents will receive information about future meetings. The County always tries to work with the residents and the Township Board for the most viable option.

22. Will the system planners operate with full respect toward lands owned by Oakland Township for park use, and recognize that these areas are not up for grabs to install municipal service pipes and tanks?

Yes.

23. If feasibility study says we have enough water for pressure and fire in Southeast, why is storage on the table?

The MDEQ uses a 10 States Standard as their guidelines. Once you exceed 150 living units you are not allowed to use hydro pneumatic tanks that are in the well houses currently and used for storage. MDEQ requires system storage.

24. I signed up with Connie for a citizen's advisory council. Is that still going to happen?

Yes, that is going to happen with the email addresses that Connie has collected and those we have from tonight's meeting.

25. Are storage facilities typically underground or above ground and are they typically constructed close to current pump houses?

Regulations require that storage tanks are above ground. There's a concern that if they are below ground there might be contamination from leakage that may occur. Ground storage tank requires a pumping facility located at the tank to pump the water out of the tank to pressurize it to get it out into the system. That's one of the drawbacks with a ground storage tank is the re-pumping you have to do.

26. Can you provide pictures of storage tanks?

Yes, see **Attachment #3**.

27. Is any area of Oakland Township suffering from water shortage at this time? What could cause any water shortages?

We are not aware of any areas of water shortage in the community systems.

28. If electricity were not available, due to a disaster, how long could the stored water supply the Township's needs?

Some or all of the well houses have generator backups so in the event of a power failure; the wells are going to be able to provide water. If you have an elevated tank, it will come out whenever it needs to but ground storage tanks would have to pump the water out with a generator power back-up. So in answer to your question, we should be able to operate indefinitely through the use of generators. The generators probably aren't designed to provide peak flow but will be okay for flushing toilets and drinking but there would probably be sprinkling restrictions, etc.

29. Are the generators natural gas or diesel?

Current generators are diesel.

30. For Southwest section, what amount of storage is required?

That has not been determined yet.

31. How could the capacity in Oakland Hunt be increased?

When the Oakland Hunt wells were originally put in, they did an aquifer analysis and there was more aquifer capacity available than needed for the wells required for the development. Utilizing that capacity is one of the items being evaluated.

32. Is it safe to expand the treatment as opposed to putting at more than one other well site?

That's one of the concepts that Rowe has been hired to evaluate.

33. Who is responsible for the maintenance and improvement of the subdivisions community wells?

Oakland County owns the system; we operate and maintain it on behalf of the Township. We want to work with the Township.

34. Where are the plants expected to be placed?

We haven't gotten that far in the analysis.

35. Comment: Have you considered tower placement north of Goodison? The Township owns the corner of Stony Creek and Lake George Roads. That area is not included in the existing water systems.

That location is not part of the current water system area.

36. Will any "group" exemptions be made?

A water system is a water system. Everybody will be involved in the same improvements in that system, it's not individual subdivisions.

37. How will fracking in Rochester Hills impact the water system in Oakland Township?

There is MDEQ oversight over fracking. They are aware of where the wells are. One of the things the Township is looking at is a Wellhead Protection Program now that they have decided to stay with the wells as a source. So part of that will have protection program, but the state is aware of where the community water supply systems are.

Questions submitted on cards but not answered directly in the meeting:

38. Saw at last meeting a 300% increase in water rates – comment!

The fixed water rates have not increased. A cost recovery component was added to the water bills of customers in the Southwest, Southeast and Oakland Hunt water systems. That component is to help recover costs spent to date on the improvement projects (conceptual engineering, etc.) and contribute to future costs of the projects. Those costs will be evaluated by a financial expert provided by Rowe. The financial expert is to provide recommendations on paying for the water improvement projects through water rates/components.

39. Would the need for water tanks still exist if other water source options were pursued?

The other source was a DWSD supply and storage was still needed for that source.

40. Is there a handout, if not, why?

A handout was not provided at this meeting. The slides, questions and answers, etc. will be provided after the meeting via email and through a link on the Township web site.

41. What water softener systems are recommended to try?

None at this time.

42. Could DWSD water still be an option later in the future?

We will look at the DWSD option again, but previous capital costs and water rate evaluations have made improvements in the current system more acceptable.

43. What would it take to connect the proposed system to the Detroit Tri-county system – physically not political – would such a connection be feasible?

A connection with NOCWA would be the only option available at this time. This has been evaluated previously, but can be reviewed by Rowe again.

44. I've been living in Oakland Farm sub for 25 years and have replaced our water heater 5 times and replace our waster 3 times. How will your future plan for water treatment alleviate this situation?

Removing the iron at the source will improve the water quality and should extend the life of your equipment.

45. Is my assumption correct, the "Drinking Water Reliability Study" was completed as part of the Oakland Township Water Improvement Project?

No, the Drinking Water Reliability Study was a requirement of the MDEQ and SDWA. The Oakland Township water improvement projects came out of the reliability study and other discussions.

46. Who initiated the Oakland Township Water Improvement Project?

The Oakland Country Water Resources Commissioners Office (WRC.)

47. Who serves as the Oakland Township Contact Person?

The new Oakland Township Manager, Warren Brown, will serve as contact person.

48. Did the preliminary engineering assessment for water system improvements include all of Oakland Township water systems (community and private wells) or just the 27 subdivisions listed later in your letter?

The Reliability Study reviewed the 7 water systems which the subdivisions are part of, private wells were not included.

49. What types of water systems do the 27 subdivisions targeted for the first phase of the project currently have? Are they private subdivision wells?

The subdivisions noted on the slides are served by the 7 water systems evaluated in the Reliability Study. Three of those systems are part of the current water system improvement project.

50. Who granted the approval to investigate the possibility of the water tower being placed within Bear Creek Park or any of the Township Parks?

Conceptual engineering looked for any potential site for water system storage.

51. Have you ever met or been asked to contact any member of the Oakland Township Parks and Recreation Commission to discuss the placement of a water tower in Bear Creek Park or any of our township parks?

Only conceptual engineering has been completed to date. Discussions with Parks and Recreation would be part of the preliminary engineering if a site located in a park was being considered at that point of the engineering process.

52. Have any of the Park Commissioner's been contacted or provided input regarding this project?

Please see the question/answer above.

ATTACHMENT #1 – Participant List (address and contact information is not provided in this list)

Name	Neighborhood Name	Name	Neighborhood Name
Troy Alden	Oakland Valley	Matt Hocking	PEA
Joanna Aneese	Oakland Farm	Dennis Howdyshell	Oakland Farm
Georgiann Antonelli	Crossings	Eric Johnston	Oakland Valley
John Arathri		Galen & Linda Kerns	
David & Maryellen Baker		Jerry Kolinski	
Colleen Barkham		Jeanne Langlois	
Justina Baron		Theresa Liska	Coach Lamp
Diane Bennett	Whims	Bob Long	
Albert Black	Woods	Kathleen Luberda	Oakland Farm
David & Clarke Bonten	Oak Hill	Dave Mackley	Oakland
Richard Bosler	Crossings	Cam Mannino	
Jeff Boyer	Century Oaks	Mike Marton	Oakland Farm
Jim Burt	Oakland Farm	Richard Mette	Oakland Valley
James Carra	Parkland Hills	Betty Midkiff	Silver Creek
Kevin Coakley	Oakland Valley	Rita Miller	Crossings
Jim Conover		Melinda Milos-Dale	
Mary Lynn Cook	C. Creek	Anne Minbiole	Oakland Farm
Marsha Damon		V Morganti	
Rita & Robert Davidson		Mark Mullen	Oakland Farm
Frank Ferriolo	Kings Point	Steve Neiheisel	Goodison Place
Pat Fisher	Belmonte at Silvercreek	Carolyn Newberg	
John Giannangeli		L. A. Newberg	
Terry Grzesikowski	Crossings	Debbie Northup	
Robert Guy	Country Creek	Kevin Nosek	
Bob Heinrichs		Paul Rakizer	
Andy Hester	The Woods	Bev Pears	Bear Creek
Kevin R. Higgins	Oakmonte	Joseph Peruzzi	Greenbrook
Priscilla Hildum	Belmont at Silvercreek	Cathy Rooney	

Name	Neighborhood Name		
Janine Saputo	Oakland Twp. Planning Commission		
John Scales	Oakland Farm		
Siegfried Schweighofer	Century Oaks		
Bob Simpson	Oakland Valley		
Latha & Manu Srikrishna	Kirkland		
Tom Steen	Oak Arbor		
Berry Stulberg			
Maureen Thalmann			
Alice Tomboulia			
Al Trudeau	Silver Creek		
Steve Walbrun			
Darryl Walker	Oakland Farm		
Scott Windingland			
John Wosina	Oakland		
Frank Zuazo	Oakland Farm		
Denis Zyrek	Oakland		

Representative Water Tanks

Elevated Storage Tanks



Fluted Column Steel Tank



Composite Tank



Single Pedestal Tank

Ground Storage Tanks



Concrete Tanks

Steel Tanks

