
**NVCOG REGIONAL WASTEWATER TREATMENT CONSOLIDATION STUDY
WORKSHOP #1
SUMMARY REPORT**

Meeting Date: **May 30, 2018**

Meeting Time: **1:00 – 4:00 PM**

Meeting Location: **Seymour City Hall**

1 1st St, Seymour, CT 06483

Attendees:

(Refer to sign-in sheet – Attachment 1)

From: Black & Veatch

To: Workshop Attendees

Workshop #1 for the NVCOG Regional Wastewater Treatment Consolidation Study was held on May 30, 2018 at Seymour City Hall, 1 1st St, Seymour, CT 06483.

The following summary report of the workshop generally follows the order of the workshop agenda which is provided as Attachment 2 to this report.

A. Introduction & Roles

1. John DiCarlo opened the meeting by thanking all attendees for coming and emphasized that the intent of the workshop was to share information for the benefit of all communities involved. He encouraged all participants to communicate any critical information and challenges of their respective communities and wastewater treatment plants with Black & Veatch.
2. Mario Francucci gave a brief introduction to Black & Veatch (B&V) noting:
 - a. The firm has provided engineering services for over 100 years. We operate nationwide and around the world, with the two largest business sectors being in Water/Wastewater and Power generation/transmission.
 - b. B&V has been doing work continuously in New England since 1978 and in Connecticut since 1984 and is therefore very familiar with the state's organizations, communities, utilities and DEEP.



3. In addition to the five communities participating in this study, Mario stated that the Connecticut Office of Policy and Management (OPM) and the Connecticut Department of Energy & Environmental Protection (DEEP) would have key roles on this project.
4. Mario noted that B&V has no previous work involvement with any of the five study communities and will be executing the study without any bias towards any of the communities or organizations involved. Our goal is to provide regionalization based recommendations which are of maximum benefit for all five communities.
5. Participant Interaction
 - a. A participant from Derby asked why a representative from DEEP was not present at the workshop to which John DiCarlo replied that they were notified but were not available at the time.

B. Interactions with the Communities

1. Project Outcomes

- a. Mario Introduced the two planned phases of the project:
 - Phase 1: Long List of Regional Wastewater Alternatives – documented in a report to be provided at end of Phase 1.
 - Phase 2: Recommended Regional Wastewater Alternatives – a report will also be provided along with an Environmental Impact Evaluation (EIE).

2. Information Requests To-Date

- a. Mario stated that a large component of the study will involve collecting, studying, and analyzing data, plans, and reports associated with the wastewater treatment plants and the collection systems of the towns/cities. This includes interaction with the communities to gather as complete of a picture as possible regarding the wastewater capital needs and associated costs. We have already requested information from stakeholders and have asked for detailed flows and loads data, reports,



capital plans, and costs, among other key information. B&V has also begun visiting the communities to better understand the wastewater systems. We have visited Naugatuck and will visit all of the communities.

3. Data Gaps

- a. There are still many gaps in the data that will need to be filled in order for the study to progress. Mario noted that the information provided by the communities will allow us to prepare the base case. The base case represents the capital program and costs that will be needed for each community to address reliability and regulatory requirements, over the next 20 years, generally through about year 2040. Mario noted that the communities themselves best know what the needs and costs should be for the base case. The base case will be the basis for comparing whether a community is best going alone or possibly considering regionalizing. For this reason, a solid definition of the capital project needs and the related cost of the base case is important for this study.

C. Project Approach & Schedule

1. Mario continued by explaining the steps and methods that Black & Veatch would be approaching the study with:
 - a. Interactive workshops that inform, capture ideas and facilitate communication.
 - b. Stakeholder participation that gains buy-in and support.
 - c. Close technical coordination with NVCOG, the communities, and DEEP.
2. He then went into detail about the steps and schedule involved with each phase:
 - a. Phase 1 Feasibility Report – 6 months
 - The base case will be a main focus of development during Phase 1 – but also again in Phase 2 with more detail. The base case represents the capital program and the related cost needed by each community to meet the reliability and permit compliance requirement for the next 20 years.



- A “Long List” of regional wastewater alternatives will be developed which will include:
 - 20-year flow and load projection and conceptual description
 - Advantages and disadvantages
 - Order of magnitude cost estimate
 - Phase 1 Report
- b. Phase 2 Final Report – 12 months
 - Screening of Phase 1 Long List of Alternatives to form a “Short List”
 - Selection of Preferred Alternative(s) including:
 - Basis for selection
 - Conceptual drawings and supporting information
 - Planning level cost estimates
 - Phase 2 Report
 - Environmental Impact Evaluation
- 3. The project schedule was displayed which showed the breakdown of each phase, with Phase 1 scheduled for 6 months starting April 23rd, 2018 and Phase 2 scheduled for 12 months upon the completion of Phase 1. A total of 5 workshops are currently anticipated for the whole study; however, more can be added.
- 4. Participant Interaction
 - a. A participant asked if the EIE would be included in the 12 months schedule for Phase 2 to which Mario replied - yes as we currently know the project.
 - b. John DiCarlo asked Mario to summarize the main items that B&V will be looking for when meetings are arranged with the communities. Mario replied with the following:
 - What are the needs of the facility to meet its requirements now and for the next 20 years?
 - What are the costs of the facility?
 - What are the condition and capability of the wastewater treatment plants and collection systems?
 - What are the shortcomings of the facilities (structural or process)?
 - Is the plant in compliance with regulations?



- What is the plant's ability to handle flows (rain or shine)?

He continued by saying that B&V will listen to everything that each community has to say.

D. Data Review

1. Chuck Pike led this part of the discussion. He described the data that has been collected on each of the communities thus far.
2. The data collected thus far in the study has been gathered from reports or directly from the communities.
3. Initial population projections were taken from 2015-2040 projections published by the Connecticut State Data Center (CTSDC) in 2017. OPM recognizes the CTSDC as the entity that develops population projections for the state's cities and towns. Thus our initial wastewater flow projections are based upon the population growth of the respective communities, per the CTSDC population numbers.
4. For each community, Chuck provided a brief description noting the following (notwithstanding data gaps):
 - a. Population (2020 and 2040 projections)
 - b. Contributing Communities
 - c. Wastewater Plant Flow (2015-2018 Average and 2040 Projected)
 - d. NPDES Permit
 - e. Plant Age & Condition
 - f. Phosphorus Removal Status
 - g. Infiltration/Inflow
 - h. Major Lift Station and Sub-Basins

5. Population Projections

The following table was presented which details the population projections provided by the Connecticut State Data Center for each community and from which numbers have been developed thus far early on in the work.



City/Town	US Census, 2010	POPULATION PROJECTIONS Based on CT State Data Center Population Projections, Published August 31, 2017					Used for This Study	
		2020	2030	2035	2040	Percent increase, 2040 vs. 2020	2040	Percent increase, 2040 vs. 2020
Derby	12,902	13,251	13,803	13,959	14,082	6.3	14,082	6.3
Ansonia	19,249	19,841	20,648	20,890	21,067	6.2	21,067	6.2
Seymour	16,540	16,798	16,924	16,852	16,753	-0.3	16,924	0.8
Beacon Falls	6,049	6,421	6,587	6,591	6,587	2.6	6,591	2.6
Naugatuck	31,862	32,212	32,638	32,372	31,854	-1.1	32,638	1.3
TOTAL	86,602	88,523	90,600	90,664	90,343	2.1	91,302	3.1

6. Participant Interaction

a. Naugatuck

- i. Jim Stewart of Naugatuck commented that the population numbers presented for Naugatuck are not in line with the growth that the town is expecting. Black & Veatch acknowledged this and said that they will revise the population and flow projections to be in line with those that Naugatuck is projecting.
- ii. Jim Stewart also said to look at the growth projections for Middlebury and Oxford as these communities contribute to Naugatuck. Specifically the industrial area of Oxford contributes to Naugatuck and is expanding significantly.

b. Beacon Falls

- i. Jim Galligan of Beacon Falls and Seymour noted that Beacon Falls has no contributing communities.
- ii. Jim stated that the sewer service area map is mostly in the developed part of town and that some areas are undeveloped.
- iii. Jim noted that there was an upgrade to the Beacon Falls plant in the 1990s. There was also a phosphorus upgrade completed 2 years ago and they have been meeting their permit.



c. Seymour

- i. Jim Stewart of Naugatuck stated that contributing flow from Oxford is low right now compared to the future potential.
- ii. Jim Galligan said that a phosphorus upgrade had been completed recently and that they have been compliant as of April 1.
- iii. Black & Veatch made a number of requests for information for both Beacon Falls and Seymour. These were summarized in an email dated June 1 to both communities and sent by John DiCarlo.
- iv. Jim Galligan stated that a high level study on merging the Seymour and Beacon Falls systems had been completed, and he will provide a copy of the study.

d. Ansonia

- i. Brian Capozzi of Ansonia noted that the town takes a few customers from Derby, but the contribution is almost negligible.
- ii. Brian noted that the outfall of the new UV facility is not sized to handle peak flows and can only pass about 7 mgd during wet weather events. He said the system will back up for a couple days after a wet weather event but that there were no complaints from anyone as of yet. There was some speculation that perhaps the collection system has some storage capacity.
- iii. Brian noted that the upgrade to the Ansonia plant was completed in 2011 and that some of the pump stations have also been upgraded recently.

e. Derby

- i. Lindsay King of Derby confirmed that a consent order for \$5.4M on infiltration & inflow (I&I) upgrades had been sent by the EPA which they have been collaborating on.
- ii. Lindsay noted that Derby serves about 140 houses in Orange.
- iii. He also stated that the peak flow is probably higher than the 10 mgd stated.



- iv. He noted that a \$31M referendum was on hold because of the study and that he will provide a breakdown of the referendum.
- v. He clarified that 3 small pump station upgrades have been completed recently and that 1 larger pump station upgrade is in process.
- vi. B&V will also be comparing the growth and flow projections presented in the City's facilities plan and compare those projections with flow estimates that would be derived from population numbers published by the CTSDC.

E. Alternatives Analysis

1. Jeff Stillman took the lead during this part of the workshop discussion. He noted that this was still a very preliminary and high level analysis based on the limited information that has been collected thus far.
2. Jeff reiterated that the base case is the first scenario to be analyzed in depth and that each alternative would be compared to the base case in a cost-benefit analysis.
3. Jeff described Black & Veatch's ongoing analysis of each of the communities with respect to:
 - a. Plant Treatment Capacity
 - i. All communities seem to be sized adequately to handle their maximum month flows.
 - b. Peak Flow Capacity
 - i. Ansonia and Derby are not sized adequately to handle peak flows.
 - ii. Not enough information was known about the hydraulic capacity of Naugatuck, Beacon Falls, and Seymour to make a conclusion. However it appears that Naugatuck is handling peak flow treatment through the plant.
 - c. Plant Condition
 - i. Ansonia completed an upgrade recently but the rest of the communities are in need of upgrade.
 - ii. Naugatuck and Derby have completed facilities plans.



d. Phosphorus Removal

- i. Ansonia reports that they are meeting their permit.
- ii. B&V needs information from Beacon Falls and Seymour on their phosphorus treatment systems which apparently have been recently installed and made operational.
- iii. Data from 2017 indicated that Naugatuck is far from meeting its phosphorus permit. However, Jim Stewart reported that thus far in their first month of 2018 it appears their plant has met its effluent TP requirement.

e. I&I

- i. I&I was acknowledged to be an issue of major concern for the communities, most especially for Seymour, Ansonia and Derby.
- ii. Ansonia noted that they did I&I rehab in 2006-2007. Average flows were 2.2-2.3 mgd before rehab and are around 1.6 mgd after rehab. No significant change was seen in peak flows. B&V asked for this report and supporting data.

f. Lift Station Capacity/Condition

- i. In general, the participants reported that the lift stations in their communities are in reasonable condition, with some having been recently upgraded or are currently being renovated.

g. Siphons

- i. It was noted that siphons should be included as an element in the analysis as well.
- ii. Seymour has 5 siphons.
- iii. Beacon Falls has 1 siphon.
- iv. Naugatuck has a large interceptor (size and alignment to be confirmed by Naugatuck) that may have available capacity to support regionalization alternatives and alleviate siphon utilization.



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4. Jeff then continued to outline some of the alternatives under consideration. Within each alternative the following challenges were identified:
- a. Available capacity
 - b. Conveyance corridors
 - c. Phosphorus loading
 - d. I&I
 - e. Plant footprint
5. The following outline alternatives were discussed and feedback was collected from participants:
- a. Alternative 1: Beacon Falls → Naugatuck
 - i. This would require pumping.
 - b. Alternative 2: Beacon Falls → Seymour
 - i. A participant noted that this would be difficult because of the terrain between the communities, although it may be possible to run pipe along the highway.
 - c. Alternative 3: Derby → Ansonia
 - i. This scenario had previously been considered by Derby and Ansonia but it did not work out.
 - ii. The Derby plant and collection systems need a significant amount of work.
 - iii. A participant noted that many of the smaller towns cannot support the infrastructure upgrades they need on their own; therefore, regionalization is most likely the best option.
 - iv. Another participant noted that Derby and Ansonia are already studying the possibility of regionalizing their school systems. Thus this seemed to imply that regionalizing their wastewater systems was also a reasonable idea.
 - d. Alternative 4: Derby → Ansonia with Piped Effluent to Housatonic River
 - i. A participant asked if the Ansonia plant could handle the additional phosphorus load to which Jeff responded that this would be considered in the analysis of this alternative.



- e. Alternative 5: Derby and Seymour → Ansonia
 - i. Jim Galligan stated that he believes that both Beacon Falls and Seymour can handle their own upgrades as they have been staying on top of their equipment and system upgrades over time. He believes the cost to regionalize would be greater than the cost of the upgrades necessary for these communities.
 - ii. Jim stated that the Seymour plant is in good shape, although the town could spend more on I&I rehabilitation.
 - f. Alternative 6: Part of Derby → Ansonia, Part of Derby → Seymour
 - i. A participant asked if it would make more sense to do Derby to Ansonia and then Ansonia to Seymour because of the positioning of the communities to which Jeff replied that we would consider this.
 - ii. Jeff clarified that whenever a plant comes offline, it would become a pump station and that a headworks may also be needed.
 - g. Alternative 7: Part of Derby → Ansonia, Part of Derby → Seymour, Part of Derby → Derby
 - i. Lindsay King posed the question if it makes sense to maintain the plant at this point because of operating costs to which Jeff replied that this is possible but the cost-benefit analysis would need to be reviewed first.
 - ii. Jeff noted that new permits would be issued after regionalization.
6. Jeff noted that in all alternative analyses that Black & Veatch would look at costs over 20 years considering all costs, including operations and maintenance costs as well.
7. John DiCarlo clarified that NVCOG serves the cities and towns in the region and that wastewater regionalization should not be looked at as resulting in layoffs and job elimination, but instead should be viewed as an opportunity to lower capital expenditures and bills by the individual communities applied to wastewater treatment and management and increased efficiencies.

F. What's Next?

1. Black & Veatch will continue collecting and analyzing key wastewater system related information from the communities. We will also be meeting with the communities regarding their wastewater systems, including with the WPCAs.
2. Another workshop will be coming later in Phase 1 after more information on the base case and the long list of alternatives is better developed.
3. John DiCarlo and Black & Veatch thanked all attendees for their participation in the workshop and noted that we are looking forward to more meaningful discussions and sharing of information throughout the study.