UPPER TAUNTON RIVER REGIONAL WASTEWATER EVALUATION PROJECT
SUMMARY NOTES OF

MANSFIELD SUB-REGION TECHNICAL ADVISORY COMMITTEE MEETING

Monday, June 16, 2008, 2:00 p.m. – 4:00 p.m.
Mansfield Town Hall, Meeting Room 3A/B, 3rd Floor
6 Park Row, Mansfield

BACKGROUND

The Upper Taunton River Regional Wastewater Evaluation Project is an outgrowth of the Regional Wastewater Planning Committee, which includes the communities of Avon, East Bridgewater, West Bridgewater and Easton. The state makes funding available for wastewater management studies to identify feasible solutions to the challenges of wastewater disposal and treatment that are economically and environmentally sustainable. The Upper Taunton project area encompasses 15 communities. The goal of Phase 1 is to identify potential regional treatment and disposal options for further study in Phase 2 of the project. The project public kick-off meeting was held on November 1, 2007.

Technical Advisory Committees (TAC) have been formed on a sub-regional basis. The sub-regions are organized around existing treatment facilities in Brockton, Mansfield and Taunton. A series of TAC meetings designed to encourage dialogue among sub-region communities and identify shared solutions will be supplemented with two public meetings in each of the sub-regions. This is the first of the Mansfield sub-region TAC meetings.

PRESENTATION

The overall presentation was the same for all three TAC meetings; however, community and sub-region specific information varied.

Kate Barrett from Regina Villa Associates, the project Public Involvement Manager, opened the meeting. She reviewed the agenda and the TAC's role in the project. The project team will look to TAC members to contribute suggestions on approaches to evaluations and additional alternatives to consider, local knowledge and perspectives, assistance with outreach to their respective communities, help anticipate local concerns and potential challenges, and take a leadership role in developing and maintaining collaborative relationships to advance the potential regional solutions.

John Gall from CDM, the Project Manager, presented a PowerPoint project update and review of the project purpose and other details. Until recently, wastewater planning has been done primarily within a community; however, the Massachusetts Department of Environmental Protection (MassDEP) would like to identify and evaluate potential regional opportunities for collaboration to overcome challenges, in particular to disposal of treated effluent. Mansfield, Foxborough and Norton are currently working on the details of a regional approach. As a result, the sub-region is more advanced in the regional planning process than the other sub-regions, so it will serve as a proto-type. The project is intended to complement not to supersede ongoing community efforts.

Mr. Gall noted that this phase of the project will develop background information on wastewater needs for each of the 15 communities within the project area, evaluate alternatives, develop a short-list of options that will be recommended for further evaluation in Phase 2 and prepare and submit the Environmental Notification Form. The Secretary's Certificate will indicate what should be studied in detail in Phase 2. Phase 1 is funded with a MassDEP grant and contributions from the City of Brockton and the Old Colony Planning Council (OCPC). Phase 2 has not been funded. Phase 2 will evaluate options and prepare the Environmental Impact Report and will included a detailed assessment of options and identify potential sources of funding for regional project implementation.

The needs assessments for the Mansfield sub-region were conducted in Easton, Foxborough, Mansfield, Norton and Sharon. The community consultants submitted needs assessment reports to each community and will receive their comments over the next few weeks. Mr. Gall referred to the regional needs summary slide in the presentation. He noted that there is a range of potential needs, which are presented in the table on the slide from low end to high end. He said the focus is on permitted disposal needs, as the existing treatment facilities have sufficient capacity. The goal is to avoid discharging to the Three Mile River. Needs are projected out 20 years and assume a status quo. In other words, only connections currently proposed are included in calculations. No new proposed additions to the sewer system are factored in.

Mr. Gall noted that a key interest of the communities is that the disposal capacity support economic development. Overall, the sub-region existing permitted treatment is 2.65 million gallons per day (mgd). Future needs for discharge range from about 3.4 mgd to 4.4 mgd; however, only 3.14 mgd could be permitted. As a result, there would be a need to discharge an additional .28 mgd to 1.29 mgd beyond the permit limits.

Disposal options can be expanded by regulatory changes. Other options include treated effluent reuse, wetlands augmentation, land application (if soils are favorable) and river discharge relocation. The options for land application and wetlands augmentation can be expanded by allowing these types of uses on lands that have not previously been included in similar discussions. For instance, public parkland and MassHighway land have not previously been considered as options.

Mr. Gall said that the project team is cognizant of the water balance issue and its impact on local ecology and downstream ecosystems and communities. The water balance is the key driver in generating alternatives. Keeping water local is a primary focus. This means that water is collected and discharged within the same watershed. He pointed out pink areas on the water balance presentation slide that show areas that have a water deficit – meaning more is being taken out than is returned. He noted that this project will not entirely balance the water budget in this watershed, but options generated will focus on adding water to areas where there are deficits. For instance, using reclaimed water in the upper watershed is better than discharging it near the bottom of the watershed area, closer to the mouth of the river.

MassDEP's reclaimed water regulations are extremely important for this project. They will affect communities' ability to implement land application or wetlands augmentation options. Mr. Gall reported that new reclaimed water regulations were issued on June 11 and are currently in the public comment process. He reviewed the regulations slide and noted that for the purposes of this project, the only difference between the three classes is the bacteriological standards. For instance, Class A can be used in areas where there is public access, such as irrigation for parks, playgrounds and golf courses. Class B can be used only where there is no public access, such as irrigation for sod farms, ornamental nursery stock, unprocessed food crops and highway areas. Class C can only be used for irrigation of orchards and vineyards where there is no contact with the edible portion of food. Mr. Gall said he would like to see an open dialogue on using reclaimed water. It is currently being used in Kingston and Yarmouth and at Gillette Stadium. He added that "purple pipes" carry reclaimed water and are more common in the U.S. An advantage of this system is that the water can be metered and communities can charge for use. He estimated the cost of building a "purple pipe" network at $1 million per mile and compared the cost to that of building a new plant, which would cost upwards of $10 million to $15 million.

An issue gaining more widespread attention is personal care products and their impacts on water resources. Medications and ingredients from shampoos and other products are getting into water supplies. Studies on the risks and impacts to public and environmental health are only now being done, so not much is known yet. There is a

concern about discharging even highly treated, Class A, effluent in the proximity of Zone 2 public water supply well recharge areas. This will limit somewhat the available areas for discharge.

Mr. Gall discussed reuse and referred to the presentation slide indicating some potential reclaimed water users in the sub-region. Golf courses, cemeteries, cropland, pastureland, highway systems and wetlands are some obvious areas for reclaimed water use. Highway system use will have to be approved by MassHighway and will require early coordination with that agency. Wetlands augmentation use will require coordination with and approval by local conservation commissions. Mr. Gall added that watershed groups and other stakeholders could help in the identification of potential areas for reclaimed water use. Golf courses use about 200,000 to 300,000 gallons per day (gpd) of water, seasonally.

In referring to the wetlands augmentation slide, Mr. Gall said, that in general, one acre of wetlands has the capacity to absorb about 250,000 gpd. Additional treatment might be necessary to discharge to wetlands. Completely degraded or marginal constructed wetlands might have fewer obstacles for use of this kind. He also noted that the team had recently learned that there is a rare Atlantic white cedar swamp in Sharon that has a decreasing water level and this is an example of an area within the sub-region that might benefit from augmentation.

Soil characteristics, such as permeability, are important in identifying appropriate locations for land application. In theory, soil that has good characteristics has capacity for 50,000 gpd. Land application is more land intensive. Geo-political issues such as ownership and access to favorable sites are important considerations in identifying feasible options. State-owned land (properties with restricted access) is a major component of available land, and coordination with MassDEP's sister agencies will be critical to gaining access and approval to use these sites. For instance, the Department of Conservation and Recreation (DCR) and the State's ACEC (Area of Critical Environmental Concern) program are major landowners.

Mr. Gall said that the upper Taunton River and its tributaries suffer from seriously reduced water flow in the summer months. He pointed to the discharge relocation slide, which showed the base flows in several areas of the upper Taunton watershed. The team is considering the option of moving discharge points further downstream where the base flows are higher to reduce the impacts. Moving discharge points could change the hydrology of the river and streams, so no major changes would be proposed for summer months when the systems are stressed. He said that one option could be to use effluent for irrigation in the summer and in fall discharge the effluent further

downstream where base flows are higher. A challenge will be what to do with the water from October to June.

Mr. Gall cited an example of a disposal option that was not pursued seven to eight years ago. TPC, which owns a golf course in Norton, also owns one in Florida. In Florida, TPC was using reclaimed water. The firm wanted to use reclaimed water in Norton, as well, but for a variety of reasons the proposal did not move forward. Since TPC was previously open to using reclaimed water, the idea could be revisited. Norton also has several athletic fields where land application could be used.

Mr. Gall said one of the next steps is for the study team to overlay all of the information to identify the most promising options and areas. Finding an option that can use 500,000 gpd in the summer would be ideal. He said the study team would work on identifying feasible alternatives over the summer.

NEXT STEPS

Mr. Gall summarized next steps. TAC members should review and return the needs assessments to their consultants and work to identify beneficial uses of reclaimed water. The study team members will refine and finalize the needs assessments, develop options, identify key components and draft information on feasible options. The group will meet in September to review the list of preliminary alternatives and provide input. Opportunities for funding Phase 2 of the project will also be explored.

TAUNTON RIVER WATERSHED STUDY

Mr. Gall introduced Scott Horsley from Horsley & Witten. The firm is leading the Bridgewater State College Taunton River Watershed Study, which is developing a long-term vision and strategy for sustainable management of the Taunton River watershed. The focus of the study is on water balance, habitat and Smart Growth issues.

Mr. Horsley noted that the project is developing a comprehensive watershed plan. There are opportunities to share information between the two projects. In addition, Weston & Sampson is working on both projects. Mr. Horsley referred to PowerPoint slides during his presentation. Phase 1 of the project is data gathering and developing a water balance model. The work is 90% complete. The water budget illustrates water withdrawals and natural recharge. It also takes into account Title V septic systems and private wells. Community boundaries rarely match watershed boundaries, so water transfers from one watershed to another become problematic.

The study has identified more than 100 sub-watersheds and is documenting the water balance at that level. He highlighted Rattlesnake Creek and Coweeset Brook as sub-watershed models. Presentation slides included maps that showed the sub-watersheds with color coding to indicate water surpluses and deficits for each. Mr. Horsley noted that soils are important, for instance, sand and gravel are more permeable and have higher recharge rates. The study is also looking at the ecology and base flows to identify ways to restore and preserve habitat. He said that the Hockomock Swamp has about 5% to 8% less base flow than it should and added that reducing withdrawals and using reclaimed water could help restore the swamp.

Mr. Horsley also noted that smart growth principles, such as low impact development, are being looked at in the study, as are stormwater management and community site planning, open space and transit-oriented and cluster developments.

DISCUSSION/QUESTION & ANSWER

Carolyn LaMarre, Taunton River Watershed Alliance (TRWA), said she has heard that there are existing maps of lost or diminished wetlands that might be helpful in identifying reuse locations and that MassDEP may have them. She also mentioned the Pine Hills lagoon as an example. Land application is done well downstream and the wastewater is treated to a higher level and sprayed on. *The project team will look into the availability of this information.*

Representative Jay Barrows said he is pleased that the Mansfield sub-region will be used as a model as this project moves forward. He said the transmission infrastructure will likely need to include a pressurized system with pump stations and a storage tank for the reclaimed water. He noted that Wheaton College is building a new life sciences campus and said it would be better if the process were planned and could be implemented in phases. He also asked if the ecosystem has become accustomed to the flow levels with the wastewater included. Would removing wastewater create problems? *The ecosystem has adapted to current conditions with wastewater flow, but removing it could create a problem with low flows in general if it is not replaced.*

Robb Johnson, The Nature Conservancy (TNC), asked about nutrients and personal care products. *Mr. Gall said that treatment plants will have to increase the quality of the effluent by reducing phosphorous to .2 or .1 parts per million (ppm). Nitrogen removal is also required. Personal care products are an emerging issue. The issues of nutrient balances and reuse with land application will be addressed during the Environmental Impact Report of Phase 2 of the project. The soil takes up some phosphorous. Mr. Gall said that phosphorous, nitrogen, solids and biological oxygen demand are not as much of a concern with land application. The*

concerns are focused more on MassDEP's reuse regulations for Class A, B and C. Bacteria tend to attach to particles, so increased turbidity would reduce the free bacteria. The required quality of the effluent depends on the discharge area. The criteria for oxygen demand is 5 milligrams per liter. Phosphorous is typically 5 ppm; however, it is reduced to .2 ppm for some discharge areas. Nitrogen removal is also required, because water used in land application can migrate to drinking water sources. High nitrogen levels can cause Blue Baby Syndrome. These details will be addressed in Phase 2.

Priscilla Chapman, Mass Audubon/TRWA, asked if the existing conditions in the needs chart include private systems. *Mr. Gall said only failed systems that must be corrected were included in the needs.*

Mr. Johnson suggested a change to the slide title "Restricted Access." He said the title is counter-intuitive because it refers to public lands that do not restrict public access.

Vanessa Johnson, DCR, noted that DCR and MassHighway lands are being considered for reuse. She asked if state hospital land was also under consideration. *Mr. Gall said the project team will meet with state agencies such as MassHighway, state hospitals, the corrections department and others to discuss reuse. The team will also contact DCAM to discuss available surplus land.*

Mr. Johnson noted the overlap with the Taunton River Watershed Study. He asked if water balance has been considered yet. *Mr. Gall said that the pink areas on the map are water deficit areas and they will be considered first for reuse.*

Representative Barrows asked about the affects of the Dighton desalination plant on water balance and the potential to add water to basins with deficits. *Dave DeLorenzo, MassDEP, responded to this question and made several additional points. He noted the hesitancy to accept water reuse and said that as water becomes increasingly viewed as a resource, it makes economic sense to reuse. He said that the Aquaria project planning began about 10 years ago. It will contribute water to the watershed, but desalinated water networks typically follow the electric transmission grids because of the need for power, so desalination has limited applicability. He noted that NPDES permits regulate surface water discharges and added that reducing nutrients significantly increases treatment costs. He pointed out that emerging contaminants such as personal care products in drinking water and wastewater are a serious concern. A large-scale municipal discharge in a Zone 2 public drinking water well recharge area would be a great concern. Currently, there are no controls for these substances. He added that within the watershed, the northern section is more developed and, therefore, has a more sophisticated infrastructure.*

Ms. LaMarre asked if Brockton finds other sources for importing water, would its use of Silver Lake decrease. *Mr. DeLorenzo said that Brockton must reduce its use of Silver Lake regardless of this project.*

Jack Hamm, MassDEP, reminded participants that only Phase 1 of this project has been funded. It will be essential for communities to identify other sources of funding to continue work on Phase 2.

Mr. Horsley said that the water balance model includes water imports, such as the addition of water from the desalination plant. He said that reuse should be targeted to reduce the use of drinking water supplies for irrigation. He noted that increased drilling of private wells and pointed out that these private wells are taking water from public drinking water aquifers for lawn irrigation. Public education is essential. He said that the Ipswich River watershed could be used as a model for dealing with water withdrawals, low base flows and other water balance issues.

Dave Young, CDM, asked what the next step is for the reuse regulations. *Mr. DeLorenzo said a number of comments were received, but the response was not overwhelming.*

Leo Potter, Foxborough, commented from the perspective of a water supplier. He said lawn watering places tremendous stress on communities' water supplies, consuming an average of 65 gallons per day.

Representative Poirier said she has been pleased have an opportunity to work with Representative Barrows on these important issues, and is glad to see the project move forward.

There were no further questions or comments.

ATTENDANCE

Name	**Affiliation**
Carolyn LaMarre	Taunton River Watershed Alliance
David DeLorenzo	MassDEP
David Young	CDM
Eric Hooper	Town of Sharon
Fran Yanuskiewicz	Weston & Sampson
George Dentino	Mansfield Board of Selectmen
Jim Watson	Old Colony Planning Council
Kate Barrett	Regina Villa Associates

Kent Nichols	Weston & Sampson
Lee Azinheira	Mansfield Department of Public Works
Leo Potter	Foxborough Water Department
Pamela Truesdale	MassDEP
Pat Ciaramella	Old Colony Planning Council
Priscilla Chapman	Mass Audubon/ TRWA
Robb Johnson	The Nature Conservancy
Tim Watts	Taunton River Watershed Alliance
Vanessa Johnson	Department of Conservation and Recreation
William J. Pauk	CDM
Rep. Jay Barrows	State Representative
Rep. Elizabeth Poirier	State Representative

HANDOUTS (attached)
Agenda
PowerPoint presentation

Meeting materials and other information and resources are posted on the project website – www.tauntonriverwastewater.org.