



City of Bristol  
Department Of Public Works  
Bristol, Connecticut 06010

**MEMORANDUM**

TO: Walter E. Veselka, P.E., Dir Public Works  
FROM: Brian Fowkes, P.E., Asst. Dir Public Works/WPC Manager  
DATE: November 9, 2012  
RE: WPC PHOSPHORUS REDUCTION PROJECT

Our previous consultant who prepared our Phosphorus Reduction Study recommended that the plant upgrade include an effluent pump station to handle high storm related flows that pass through the plant. They determined that the station would be necessary to overcome the hydraulic restrictions associated with the existing plant and additional processes.

The City recently designed and awarded a contract to reduce the high flow restrictions in our outfall structure. Our design will reduce these restrictions beyond what the consultant had anticipated in their more conservative estimates.

Our current consultant that is designing the plant upgrade has developed a preliminary cost estimate for the proposed pump station, anticipating a cost in the vicinity of \$1.5 million dollars. The Pump station will essentially be used during high flows, a few days per year to overcome the flow restrictions inherent to the City's existing 24 year old pressurized Ultraviolet Disinfection (UV) system. In order to pass the necessary flows the City would also have to add a fifth UV reactor. This would require having one custom fabricated to the old specification, costing approx \$300,000.

An alternate to constructing the pump station would be to replace the antiquated pressurized UV system with a modern above ground open channel UV system. The newer systems create much less of a flow restriction during high flows than the existing system. A similar UV system in another municipality cost approx. \$2.6 million dollars. The new UV systems are more energy efficient, much less labor intensive to maintain and will eliminate the risk we currently have overflowing the plant if the UV inlet screens become obstructed.

We have discussed the potential to replace the proposed pump station with a new UV system with the DEEP staff. They are in favor of this change and would be open to extending the project grant funding to include the UV system. The DEEP grant/loan program includes a 20% to 30% grant for the majority of the project. The grant carries the restriction that to retain its eligibility the project must be bid and awarded by June of 2013. This presents a very challenging time table for design.

In order to proceed with the change we will need to negotiate an amendment to our consultant's design contract and request an additional appropriation to cover additional design fees. The fees associated

with integrating the proposed UV system, taking into account a credit for the un-used pump station design fees, is \$151,800.

I recommend the Board, acting in their capacity as the Sewer Authority, consider taking the following actions:

- **Endorse the modification of the Phosphorus Reduction Upgrade design to replace the proposed pumping station with an open channel ultraviolet disinfection system.**
- **Forward a recommendation to the Board of Finance to approve an additional appropriation within the Sewer Operating Fund in the amount of \$151,800 to fund the additional design services necessary to incorporate a replacement UV system into the plant upgrade.**
- **Forward a recommendation to the City Council to approve Amendment #2 to the City contract with CDM Smith, Inc**