FIFTEEN ROPE FERRY ROAD WATERFORD, CT 06385

TO: Mr. Robert J. Brule - First Selectman
FROM: Neftali Soto, PE - Chief Engineer
DATE: November 13, 2020

RE: Utility Commission – Capital Improvements Program FY 22-26

Dear First Selectman Brule,

For your consideration, and as requested on your Memorandum of September 28, 2020, the Utility Commission is pleased to submit two (2) copies of the Capital Improvements Program submittal.

In summary, the major funding requests for FY 22 are as follows:

- Funding for the rehab of the Fargo Lane elevated water tank. A two-year funding schedule is suggested; however, the Town may want to consider a [one time] loan from the State of Connecticut Sinking Revolving Fund. Total estimated cost - $1,000,000.

- Funding for the replacement and upgrade of the CCTV camera for $120,000.

- Funding to provide electric power and a stand-by generator to the Crystal Mall PS. This will eliminate the current condition on which the Crystal Mall provides both, main and emergency power to the pumping station. Since this is a [town owned] station, and since other properties besides the Crystal Mall are served by this station, we have the ultimate responsibility for the safe, efficient, and reliable operation of such station. Estimated cost - $225,000.

If there are any questions, please do not hesitate to contact this office.

Respectfully Submitted for Your Consideration,

Neftali Soto, P.E.
Chief Engineer

Cc: Utility Commission
Ms. Kim Allen - Finance Director

Town of Waterford

Utility Commission

Capital Improvements Plan

FY 2022 to FY 2026

TOWN OF WATERFORD
CAPITAL IMPROVEMENT PLAN
PROJECT CONSOLIDATION FORM - FY 2022-2026

DEPARTMENT/AGENCY: **Utility Commission**

DEPT PRIORITY	PROJECT NAME	FUNDING SOURCE	FISCAL YEAR 2021-2022	FISCAL YEAR 2022-2023	FISCAL YEAR 2023-2024	FISCAL YEAR 2024-2025	FISCAL YEAR 2025-2026	TOTAL
	WW INFRASTRUCTURE PROJECTS							
1	CCTV Camera Replacement (& Lateral Launcher)	1	$ 120,000	$ -	$ -	$ -	$ -	$ 120,000
2	Fargo Lane/Douglas Hill Water Tank Rehab	3	$ 500,000	$ 500,000	$ -	$ -	$ -	$ 1,000,000
3	Gorman-Rupp 17 PS - Retrofit of Control Panels	1	$ 30,000	$ 30,000	$ 30,000	$ 30,000.00	$ -	$ 120,000
4	Driveways, siding,& Roof Repairs at Pump Stations	1	$ 50,000	$ 50,000	$ 50,000	$ 25,000.00	$ -	$ 175,000
5	Crystal Mall PS - Main & Emergency Power	3	$ 225,000	$ -	$ -	$ -	$ -	$ 225,000
6	In-line Wastewater Solids Grinders	1	$ -	$ 85,000	$ 85,000	$ -	$ -	$ 170,000
7	Replace Marilyn Rd, Wiemes Ct. Ejectors	3			$ 475,000		$ 500,000	$ 975,000
8	Cross Rd. PS Partial Upgrade	3		$ 491,000				$ 491,000
9	Stoney Brook PS Partial Upgrade	3	$ -		$ 511,000			$ 511,000
10	Partial Upgrade Remaining 17 Pump Stations	3	$ -	$ 400,000		$ 400,000	$ 400,000	$ 1,200,000
11	Inflow and Infiltration Mitigation & Control	3	$ -	$ -	$ 350,000.00	$ 275,000.00	$ -	$ 625,000
12	Future SSES/CMOM	2	$ 33,000	$ 33,000	$ 33,000	$ 33,000	$ 33,000	$ 165,000
Commitment	LI Sound Nitrogen Reduction Pmt. To New London	2	$ 42,500	$ 41,800	$ 41,100	$ 40,400	$ 39,700	$ 205,500
Commitment	NLWWTP Sludge Storage tanks	2	$ 46,000	$ 46,000	$ 46,000	$ 46,000	$ 46,000	$ 230,000
13	Grinder Pumps Replacement	2	$ 31,000	$ 32,000	$ 33,000	$ 34,000	$ 35,000	$ 130,000
14	Pleasure Beach Water Lines Replacement	3	$ -		$ 175,000	$ 400,000		$ 575,000
15	Barlett Corner PS Decommission	3	$ -				$ 60,000	$ 60,000
16	Co-Op Sewer Lateral Extension ****	4	$ -	$ -	$ 375,000	$ 375,000	$ 350,000	$ 1,100,000
	TOTALS		**$ 1,077,500**	**$ 1,708,800**	**$ 2,204,100**	**$ 1,658,400**	**$ 1,463,700**	**$ 8,077,500**

INDEX TO FUNDING SOURCES

(1) CURRENT YEAR CAPITAL IMPROVEMENTS	(5) LoCIP
(2) UTILITY BUDGET/SEWER CAPITAL MAINTENANCE FUND	(6) CNR UNDESIGNATED FUND BALANCE
(3) TRANSFER TO CAPITAL & NON RECURRING	(7) FEDERAL/STATE GRANTS
(4) SHORT AND LONG TERM DEBT FINANCING	(8) OTHER FUNDING

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	CONTACT PERSON
Utility Commission	Neftali Soto - Chief Engineer
PROJECT NAME	**DEPARTMENT PRIORITY**
CCTV Camera and Lateral Launching System	1

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

The Waterford Utility Commission is responsible for the operation and maintenance of approximately 145 miles of sewer pipes, 28 pumping stations, over 3,500 manholes, and 101 individual grinder pumps. In 2011, a CCTV system was purchased for the inspection of our pipes and manholes. This equipment has been our main tool to identify structural deficiencies, illegal discharges, and, most importantly, identification of inflow and infiltration (I/I) into our collection system. This has resulted in significant operational savings as well as providing early identification of capital expenditures; furthermore, assuring that our system is reliable, safe, and efficient. Because of the miles of pipe/customers ratio of our system the identification and mitigation of I/I is critical, since we pay the City of New London based on the waste flow send to their plant. Although we have the ability to monitor the main lines and manholes, at this time we do not have the ability to inspect and monitor lateral services, which represent about 30 miles of pipe. A significant amount of I/I is the result of illegal connections, structural deficiencies, and broken laterals, etc. This was a component that we were planning to incorporate in 2011, but we wanted to justify its need. We indeed need this type of equipment for the full success of the I/I identification program. Based on our latest conversations and preliminary estimates by the vendor the cost for the lateral launcher upgrade is $110K-$125K.

2 PROJECT STATUS IF IN PROGRESS

Inspections are being done with the current equipment; however, the camera/lateral launcher set up is needed to capture a large part of our infrastructure that we currently we can't.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

This equipment is also utilized to assist DPW on the condition of stormwater pipes, as needed. The WPD has also been a beneficiary of this capability. Old pipes investigations.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

By inspecting the [laterals] component of our collection system infrastructure, we can identify and mitigate I/I, our treatment cost should be reduced accordingly, the system capacity preserved and, furthermore, early identify conditions that may trigger more expensive capital repairs.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

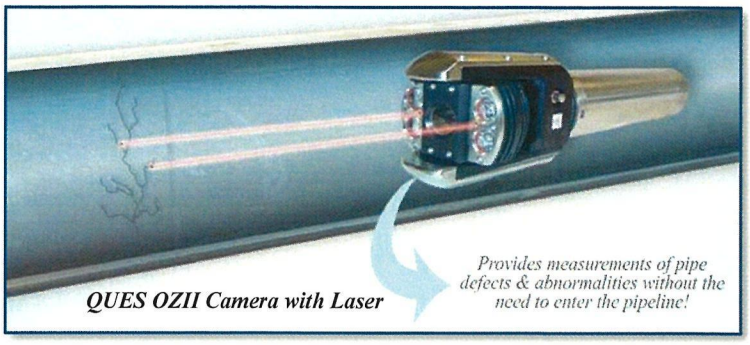
Service to the whole Waterford Collection System through the Town.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital	$ -	$ 120,000				
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						$ -
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ 120,000	$ -	$ -	$ -	$ -


TOWN OF WATERFORD
UTILITY COMMISSION
SEWER INSPECTION AND EVALUATION

- **CCTV Truck Equipment Upgrades and Appurtenances** – The Waterford Utility Commission owns and operates their or CCTV and flusher truck. As technology progresses, older camera equipment and software packages are no longer supported and require replacement. The Utility Commission should be planning on the need to budget approximately $50,000 every 5 year (not including inflation) to purchase additional camera equipment and software as well as the purchase newer more efficient technologies such as a zoom pole camera and CCTV cameras with laser capabilities to detect pipe abnormalities and spherical distortion such as the QUES OZII. This budget item is cost effective when compared to the cost of subcontracting out CCTV work. For example, WUC staff televised approximately 40,000 linear feet of sewer pipe in 2015. If subcontracted out, this would have cost the WUC between $40,000 and $50,000 for one single year.



QUES OZII Camera with Laser

- **Sewer Force Main Air Release Valves** - The Waterford Utility Commission is responsible for the operation and maintenance of approximately 12 air release valves installed at the high points of various sewer force mains in the collection system. It is recommended that an initial inventory and condition assessment of all existing air release valves be conducted and that the 4 valves be replaced each year. It is also recommended that an evaluation of the Stoney Brook Pump Station force main be conducted to determine if an air any air release valves are required. Regardless of the age of the valves, yearly inspection should be part of the WUC's routine inspection. Based on an assumed replacement cost of $5,000 for each individual unit, and a cost of $5,000 to evaluate the Stoney Brook Pump Station force main, the Utility Commission should be planning on


Typical Air Release Valve

As with the rest of the collection system, the mechanical, electrical and structural components of these systems are aging, and it is projected that major components will need to be replaced over the next 10 to 15 years. Based on an assumed replacement cost of $2,500 for each individual unit, the Utility Commission should be planning on the need to budget approximately $338,000 over the next 10 to 15 years (not including inflation). Upon replacement of the remaining 135 stations, this CIP line item will be phased out.

- **Sewer Pipe/Manhole Repairs and I/I Remediation** - One of the goals of the SSES program will be to identify sewer improvements and repair needs. This can include a variety of spot repairs up to full replacement of sewers and manhole. Until specific needs are identified, it is difficult to determine when the repairs will be needed, and what the cost will be to perform the repairs. One approach to determine the budget costs for sewer repair over time is to assume that all the sewers will eventually need to be replaced. Sewer replacement costs can vary considerably depending on size, depth, groundwater elevation and location.

Assuming an overall current average cost of $150/foot for sewer construction, the 142 miles of sewers in Waterford have an approximate replacement cost value of $112 million, not including the pump stations. If it is assumed that the sewers will be gradually replaced over a period of 500 years, this would equate to an annual budget of approximately $225,000 per year which could be allocated to sewer repair or replacement or approximately $3.40 million over 15 years (not including inflation). This line item can also be used to fund emergency repairs and sewer manhole lining, raising or replacement as a supplement to repairs that the WUC cannot complete on their own. Additional

Pipe Infiltration

"The Standard of the Industry"

CUES

LAMPII

Lateral & Mainline Probe

The self-propelled, robust LAMPII is a CCTV pipeline inspection tool for identifying infiltration and inflow, potential crossbores, pipe defects, and structural conditions in lateral services and mainlines. The LAMPII is able to accomplish this by utilizing a self-propelled lateral launcher, transportation platform, and two cameras, one for pan/tilt/optical zoom operations (mainline) and one for lateral launching. The LAMPII with the optional Mini Pan & Tilt Camera will inspect laterals services and traverse multiple bends and wyes when deployed with or against the flow.

LAMPII shown with the optional Mini Pan & Tilt Camera.

LAMPII Lateral & Mainline Probe

Features & Benefits

"The Standard of the Industry"

CUES

- True one-pass mainline and lateral inspection; inspect more in less time.
- Self-leveling lateral camera with built in sonde.
- Traverse multiple bends and wyes with or against the flow.
- Can be added onto existing CUES units.

PAN & TILT INSPECTION OF ALL LATERAL CONNECTIONS, WITH OR AGAINST THE FLOW! SIMULTANEOUS PAN, TILT & ZOOM INSPECTION OF MAINLINES!

- Easily launches with or against the flow.
- Inspect mainlines and laterals with one inspection run.
- Front-mounted pan and tilt / zoom camera (40:1 optical/digital zoom): Completes mainline inspection and monitors lateral camera; Articulates to facilitate invert entry; Automatic centering.
- Traverse up to 1,000' of mainline pipe while still being able to launch into laterals.
- Self-leveling lateral camera with built in sonde.
- Supplied with 4 sets of wheels for 6"-30" lines.
- Traverses 45 and 90 degree bends in lateral services.
- Fiberglass push cable: up to 150 ft. push cable.
- Rear tip-up connector.
- Optional Equipment: mini pan & tilt lateral camera with directional rod for steering; rear-view camera; high traction steel wheel sets; big pipe package available to increase pipe size range to 36".
- Robust 6 wheel drive with single point wheel removal.
- Can be added onto existing CUES units.

WTRIII Transporter

Wheeled/Tracked Transformer Transporter

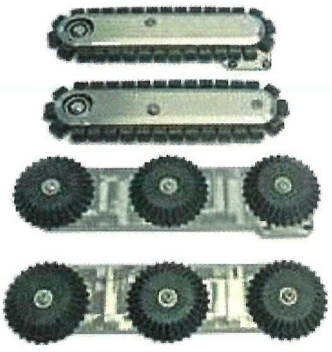
"The Standard of the Industry"

CUES

WTRIII transporter shown with the optional OZIII camera.

THE CUES WTRIII OFFERS THE BEST OF BOTH WORLDS. THE CUES WTRIII IS AN AFFORDABLE AND VERSATILE TRANSFORMER TRANSPORTER THAT CAN OPERATE WITH WHEELS OR TRACKS. YOU CAN TRANSFORM YOUR TRANSPORTER TO ACCOMMODATE VARYING PIPE CONDITIONS!

Distinguished as the first modular transporter in the CCTV pipeline inspection industry, the WTRIII can be adapted to operate in varying, difficult, and hazardous pipelines ranging from 6" diameter relined pipe up to 30" pipes. Save time with the quick installation of wheels or tracks with single point removal. Save money since existing CUES wheel sets can be used on the transporter. Various wheel sets and tracks are available to maximize performance.



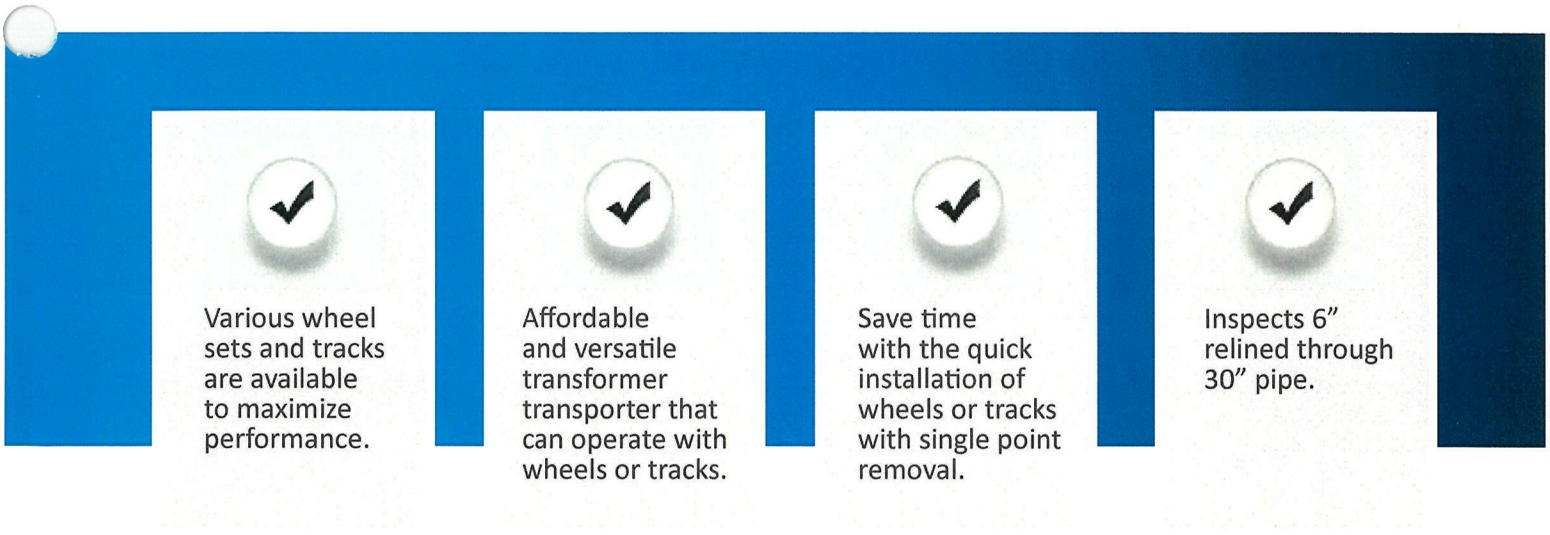
WTRIII Transporter

Features & Benefits

"The Standard of the Industry"

CUES

- Traverse varying pipe conditions with quick install of wheels or tracks.
- Inspects 6" relined through 30" pipe.
- Optional high-traction tracks are available, easy to install.
- Weighted adapters optically center the camera in each pipe size and increase bottom clearance.
- Single point removal of wheels.
- Various wheel sets available to maximize performance in various pipe conditions.
- Camera connects directly into transporter with protective carriage assembly.
- Works with CUES OZIII pan and tilt zoom camera or CUES OZIII Nite Lite Pan and Tilt Camera.



The CUES WTRIII is an affordable and versatile transformer transporter that can operate with wheels or tracks. You can transform your transporter to accommodate varying pipe conditions!

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY **Utility Commission**	**CONTACT PERSON** **Neftali Soto - Chief Engineer**
PROJECT NAME **Fargo Lane (aka Douglas Hill) Water Tank Rehab**	**DEPARTMENT PRIORITY** **2**

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

The Connecticut Department of Health (CTDOH) requires for water storage tanks to be inspected every ten years. The Town of Waterford was reminded of this requirement during a sanitary survey conducted by the Connecticut Department of Health about six years ago, and most recently as part of the MOU related to Waterford's Public Water Supplier status with the CTDOH. Therefore, in order to comply with CTDOH requirements in 2011 the Utility Commission retained the services of Lenard Engineering, Inc. (LEI) to conduct such inspection and evaluation on our behalf. A partial copy of this report is submitted as support documentation. Based on the findings of the LEI report some minor aesthetics and structural repairs, as well as a new interior (wet area) coating and exterior coating are recommended. During their sanitary survey the Department of Health also determined that the discharge point of the Fargo La. tank overflow pipe had to be relocated because it cannot discharge inside a catch basin. According to the CTDPH, a back siphoning condition could occur. The tank is about 116 feet high. The writer explained to the DPH technician that the laws of physics would not allow for such back siphoning to occur. However, the DPH did not withdraw their determination. After no success arguing with DOH, the drain was retrofitted and the overflow drain pipe was daylighted. NOTE: For the rehab of the Fargo La. tank, specifications were already developed by Lenard Engineering; therefore, this is a "shovel ready" project. Since these specs will be used during the procurement process, they were not included on this plan. (If needed, I can provide a copy, if requested.). NOTE: The State Dept. of Health Drinking Water Division may issue a consent order for the Town to fund the rehab of the Fargo tank. A consent order from the State must be avoided at all cost. The Town may consider funding through the CTDPHS Clean Water Revolving Sinking Fund (CWRSF), long term loan at 2% interest. Funding for the Fargo Lane tank rehab is critical.

2 PROJECT STATUS IF IN PROGRESS

Evaluation was conducted by engineering consultant and recommendations given.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

Work will take place at one of the locations where Waterford has its emergency communications system.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

None. The tank is operated and maintained by the City of New London under Inter-local agreement.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None known. A State Revolving Fund (SRF) loan can be solicited. The State has already given priority to Waterford to apply for such loan.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

See appendix.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR	$0	$ 500,000	$ 500,000			
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$0	$ 500,000	$ 500,000	$ -	$ -	$ -

Condition Inspection Report

for the

750K Gallon Fargo Road Waterspheroid Tank

Waterford Water Pollution Control Authority

December 2011

Prepared for:

Mr. Jim Ericson, PE
Vice President
Lenard Engineering, Inc.
2210 Main Street
P.O. Box 1088
Glastonbury, CT 06033

Prepared by:

Mr. Joe Harris
President
Infrastructure Technologies, Inc.
P.O. Box 6312
Hamden, CT 06517

Infrastructure Technologies, Inc.

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INTRODUCTION

On November 29, 2011 ITI conducted a condition inspection of the Fargo Road Waterspheroid Tank operated by Waterford Water Pollution Control Authority. The inspection protocol included a full inspection of the tank exterior and an inspection of the tank interior via ROV (Remote Operated Vehicle). Both the interior and exterior of the tank were evaluated per AWWA Standard D 101-53 (R1986) "Inspecting and Repairing Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks, for Water Storage" and the "10 Year Atmospheric Storage Tank Inspection Guidelines" issued by the State of Connecticut Department of Public Health, Drinking Water Section where possible.

The Fargo Road Waterspheroid Tank was last painted in the 1984 when the tank was originally built. The current interior protective coating system is unknown but likely a conventional epoxy and the exterior system is alkyd incorporating a red lead primer.

Tank statistics: The tank is a welded steel structure and is 140 ft. high.

FINDINGS

Exterior:

See TABLE I – Tank Exterior Condition

See Photograph Section

Interior:

See TABLE II – Tank Interior Condition

See ROV Video

Safety Appurtenances:

- There is no exterior roof handrail system in place to prevent falls from the tank roof.
- The interior access ladder rungs are 15-1/2 inches from the inside of the side rails. OHSA 29CFR1910.27 requires the length of rung between the side rails to be 16-0 inches minimum.

Additional Findings:

- The exterior DFT is approximately 9 to 10 mils thick in two coats. This includes a primer and finish coat.
- The adhesion of the topcoat to the prime coat is poor. ASTM D3359 Method A X-Cut was used to test the coating system adhesion.
- There is lead in the primer coat, therefore, exterior repainting strategies must take into account technologies and methods that will prevent lead paint waste and dust from leaving the immediate area of the tank. See SSPC Guide 6 (Latest Revision) "Guide for Containing Debris Generated During Paint Removal Operations".

RECOMMENDATIONS

Exterior:

The exterior protective coating system has surpassed its service life and should be replaced.

Interior Wet Areas:

The interior tank lining has surpassed its service life and should be replaced.

Interior Dry Areas:

Interior dry areas exhibiting rust may be locally treated by the strategy of spot repair and over coat. In addition the dry areas may be pressure washed to remove dirt and grime, however, care should be taken to cover all electronic equipment if pressure washing is used in the dry areas of the tank.

Safety Appurtenances:

- The center working area of the roof should have a circular hand rail system installed meeting OSHA 29CFR1910.23 to provide for a safe working area.
- Interior access ladders should be modified to provide for a minimum clear length of rung of 16-0 inches per OSHA 29CFR1910.27.
- All Safety-T-Climb rails should be replaced.

*Recommended Protective Coating Systems:**

Exterior:

- Primer (Conventional Epoxy)
- Intermediate Coat (Conventional Epoxy)
- Finish Coat (Two Coats of an Aliphatic Polyurethane)

Interior Wet Areas:

- Stripe Coats (Conventional Epoxy)
- Prime Coat (Conventional Epoxy)
- Finish Coat (100% Volume Solid Epoxy except in vapor phase of tank interior)
- In Vapor Phase of Tank Interior – apply three coats of Conventional Epoxy including Stripe coats. This provides workability around structural beams and surfaces with edges.

Interior Dry Areas(Spot Repair and Overcoat):

- Conventional thin film Epoxy or Moisture Cured Urethanes both in two coats.

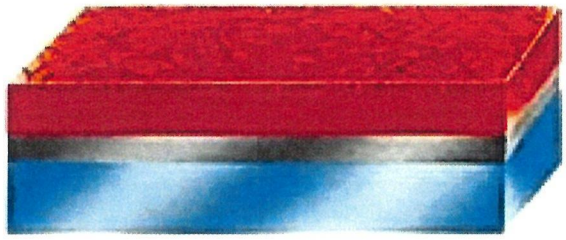
*See coating manufactures Product Data Sheets for Dry Film Thickness requirements.

DISCUSSION

Condition of Paint:

- Exterior –

The exterior protective coating system has performed well due to the use of a lead pigmented primer in 1984. However, normal film degradation and age has lead to the exposure of the prime coat in many places and checking of the finish coat.



Checking or micro-cracking of the finish coat can been seen by a microscopic examination. This film failure occurs as coatings become aged and brittle. In the end micro-cracking leads to paint film undercutting and release from the underlying substrate. Hence, the areas of the tank where the finish coat has been removed and the lead primer exposed.

Due to this type of paint film failure the only option for this tank is to completely remove the existing coating system. Choosing the option of remove and replace will provide for a paint system that should perform for 15 to 20 years. A painting strategy of spot repair and overcoat could lead to rapid premature failure of the existing paint film.

- Interior-

The interior tank lining is failing by a number of causes. They include osmotic blistering, pin hole porosities, and edge failure to name a few. As a result exposed steel substrate is corroding which in the long run will lead to structural damage which will require repair. See the enclosed ROV Video and associated Video Log.

Life Expectancy of the Existing Protective Coating Systems -

- Exterior Protective Coating System-The exterior protective coating system is becoming unsightly due to the loss of finish coat. However, as long as the red lead primer stays intact it will continue to protect the tank from corrosion.
- Interior Tank Lining-The interior tank lining has reached its useful life and should be replaced to prevent structural damage to the tank.

General –

The overcoating of existing paint systems is always problematic. However, certain parameters have been developed from empirical data that give a structure owner guidance in selecting an appropriate strategy. TABLE 3 provides guidance in three categories important to an overcoating strategy. They are degree of protective coating deterioration, adhesion strength and Dry Film Thickness (DFT). These parameters are to be judged in the whole as well as independently. A protective coating system can have low DFT's but have poor adhesion detrimental to an overcoating strategy.

The assessment of a structure with regards to corrosion damage is one of economics. From the analysis of cost associated with protective coating projects it has been determined that above certain limits the repair of protective coating systems is as expensive as full replacement. In Table 3 an unlikely candidate for repair would have greater than 17% coating failure. The range for possible candidates is 10%-17%. This results from factors such as size and complexity of structure as well as the degree of environmental controls.

DFT is an important parameter as it relates to the build-up of residual stress in a coating as its' thickness increases. From TABLE 3 protective coating systems which have DFT's greater than 30 mils are not likely candidates for overcoating. This is because the possibility for premature failure from the application of additional coats of paint is increased. Although other data should be considered such as adhesion strength and condition of the existing protective coating system, adhesion or tensile strength is an important parameter as it provides information on the strength of the existing protective coating system. Protective coating systems with low adhesion strength are more likely to fail prematurely from the application of additional coats of paint. The application of thermal expansion and contraction stresses, from freeze/thaw cycles, adds additional shear stresses to the coating. Combined with the residual stresses found in coating systems premature failure can occur within several years.

Protective coating systems exhibiting high adhesive/tensile strengths are more desirable candidates for overcoating. However, it should be noted that consideration must be given to the condition of the existing protective coating. That is residual and cyclic stresses may be approaching the tensile strength of the system any way so that the addition of more stress may fail the system.

The condition of the existing protective coating system may be the most telling with regard to expected performance from overcoating. Old coatings systems may be failing due to their age. This is typically observable as cracks in the coating, delamination, lifting, etc. Weather the data generated from adhesion test and DFT surveys is within parameters for overcoating a failing system cannot provide a good base for additional coats of paint.

Another factor directly affecting the success of overcoating candidates is the presence of mill scale on the substrate. Mill scale if tightly adherent may provide for adequate adhesion between the primer and substrate. If the mill scale is not tightly adherent then premature coating failures are most likely. Although cases exist where tightly adherent mill scale have proven to be a suitable anchorage's for primers the probability of premature failure increases. This is especially true if the DFT of the existing coating system is high.

Cost Estimate-

- To completely repaint the exterior and install a new interior tank lining the cost per square foot will range between $17.00 to $22.00. At this time I do not see a reason to completely repaint interior dry areas of the tank. On these surfaces a spot repair and overcoat strategy is sufficient. This strategy is covered in the square foot cost presented above.

- To modify and install new safety appurtenances the cost estimate is $30,000.00.

- Pit filling of corrosion pits deeper than 40% of the base metal thickness in the wet areas of the tank estimate 100 pits at $50 per pit or $5,000.

- Repair of linear welds in wet area of tank 50 LF at $100 per foot or $5,000.

TABLE I

TANK EXTERIOR CONDITION

Component	Excellent	Good	Fair	Poor	None
Exterior Surfaces (Below Roof)					
▪ Condition of Paint				X	
▪ Anchor Bolts		X			
▪ Indications of Leakage					X
▪ Ladder					X
▪ Ladder Cage					X
▪ Metal Condition		X			
▪ Condition of Overflow		X			
▪ Condition of Overflow Screens		X			
▪ Overflow Pipe Air Gap					X
▪ Fall Prevention Device					X
Exterior Roof					
▪ Safety Platforms & Railing					X
▪ Paint Condition				X	
▪ Condition of Vent & Screen		X			
▪ Condition of Roof Hatch(s)		X			
Miscellaneous					
▪ Concrete		X			
▪ Moisture Barrier					X

TABLE II

TANK INTERIOR CONDITION

Component	Excellent	Good	Fair	Poor	None
Interior Wet Areas					
▪ Condition of Paint				X	
▪ Corrosion Damage				X	
▪ Indications of Leakage					X
▪ Ladder			X		
▪ Condition of Overflow		X			
Interior Roof Area (In vapor zone)					
▪ Paint Condition				X	
▪ Corrosion Damage				X	
Miscellaneous					
▪ Shell Hatches					X
▪ Cathodic Protection System					X
▪ Aeration System					X
▪ Sediment*			X		
▪ Tank Cleanliness			X		
▪ **Tank Seams (Welded Steel)**			X		

TABLE III

PROTECTIVE COATING REPAIR CANDIDATES

COATING ATTRIBUTE	LIKELY CANDIDATE	POSSIBLE CANDIDATE	UNLIKELY CANDIDATE
CORROSION (SSPC Vis 2/ASTM D 610)	< 10%	10-17%	> 17%
KNIFE ADHESION (ASTM D 3359)	> 2A OR 2B	1A OR 1B	0A OR 0B
TENSILE ADHESION (ASTM D 4541)	> 400 psi	300-400 psi	< 300 psi
THICKNESS (DFT)	< 20 mils	20-30 mils	> 30 mils

STATE OF CONNECTICUT DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION

10 YEAR ATMOSPHERIC STORAGE TANK INSPECTION GUIDELINES

Effective Date: June 29, 2009

Authority: Section 19-13-B102(f)(5)(C) of the Regulations of Connecticut State Agencies (RCSA) requires that all atmospheric finished water storage tanks, basins and clearwells be inspected at a minimum of once every ten years for sanitary conditions and structural integrity. The inspection report shall be retained for reference and submitted to the department upon request.

Purpose: This document is intended to clarify the requirements of the Regulations of Connecticut State Agencies (RCSA) Section 19-13-B102 (f)(5)(C) related to the required and recommended components of 10 year atmospheric finished water storage tank inspections.

Applicable Regulation: RCSA Section 19-13-B102(f)(5)(C).

Definitions: "Atmospheric finished water storage tanks, basins and clearwells" include all finished water storage facilities of any volume or material that are not pressurized. The term "tank" will be used for the remainder of this document and includes all finished water atmospheric storage facilities.

Guidelines: The Drinking Water Section (DWS) expects all inspections to minimally incorporate the elements outlined in the following section to assess "sanitary conditions and structural integrity":

- A qualified inspector should conduct the inspection (refer to Qualifications on last page).
- A detailed inspection of all overflows, vents, fill pipes, drain lines, and hatches must be conducted to ensure that the tank is protected from contamination in accordance with RCSA Section 19-13-B102(f)(5)(A). An investigation of any other appurtenances associated with the tank must be performed to ensure that the entrance of contaminants is not possible. This includes, but is not limited to, cathodic access plates, cell phone towers mounted on tanks, level probe/sensor wiring, site tubes, etc. The most critical components of a tank inspection are a thorough investigation of the tank vent(s), overflows, and roof hatches regardless of their inaccessibility.
- The exterior of the tank should be inspected for corrosion, cracks, holes, deterioration of paint/exterior coating, pitting, spalling, etc., that may create the potential for contamination per RCSA Section 19-13-B102(f)(5)(A) or loss of structural integrity of the tank.
- The interior of the tank should be inspected for corrosion, cracks, holes, pitting, spalling etc. that may create the potential for contamination per RCSA Section 19-13-B102(f)(5)(A) or loss of structural integrity of the tank. The interior coating of the tank should be analyzed by a qualified individual to determine its condition and estimated useful life. This analysis should include measurements of the depth and rate of corrosion of steel tanks. The sediment in the tank should be evaluated, and removed, as necessary. Under normal conditions, the tank should be emptied for this portion of the inspection. If the water system is incapable of taking the tank off line, a diver or ROV (remote operated vehicle) may be used, provided that adequate sanitary procedures are in place to prevent contamination. In which case, the quality and quantity of water to the system should be maintained during the tank inspection.
- The controls, probes, alarms, sensors, etc. associated with a tank should be inspected and tested to ensure proper, reliable operation.

10 YEAR ATMOSPHERIC STORAGE TANK INSPECTION GUIDELINES

- For steel tanks on concrete foundations, an inspection of the juncture between the tank and base should be performed to ensure structural integrity. A check for excessive and/or differential foundation settlement should be performed.

- An inspection of the seams on concrete tanks should be performed to ensure structural integrity.

- An assessment of the appropriateness of the volume and detention time of the tank should be performed. A tank that is too large may cause stagnant water and/or loss of chlorine residual. Accumulated sediment may consume some or all of the available free chlorine and promote bacteria growth. An analysis of flow through the tank (turnover) should be performed, including assessments of any baffles, mechanical mixing systems, or separate inlet/outlets. If none exist, an evaluation should be conducted to determine if such an installation would be beneficial. The DWS has created Storage Tank Design And Construction Guidelines that may aid in this analysis. The document is available at: http://ct.gov/dph/.

- An analysis of the water quality should be conducted as part of the tank inspection, including test results for total coliform bacteria, total and free chlorine residual, physical parameters, and volatile organic chemicals collected from or near the tank.

- The tank inspection must include verification that the tank is at least fifty (50) feet from any part of the nearest subsurface sewage disposal system and twenty-five (25) feet from the nearest watercourse or storm drain or other source of pollution, in accordance with RCSA Section 19-13-B102(f)(5)(B). Tanks must be at least fifty (50) feet from the nearest sanitary sewer unless the sewer is constructed in accordance with the technical standards for subsurface sewage disposal systems pursuant to section 19-13-B103d of the RCSA, in which case it may be no closer than twenty-five (25) feet.

- An assessment of any cathodic protection systems, if they are installed, should be performed by an inspector who has experience with their installation and maintenance. Acceptable certifications include NACE International's Cathodic Protection certifications (CP1, CP2, CP3, and CP4) or equivalent.

- The tank inspection must include an evaluation of the valves associated with the tank in accordance with RCSA Section 19-13-B102(q). All valves associated with the tank must be regularly exercised to ensure proper operation.

- An assessment of the tank's vulnerability to tampering, vandalism, terrorism and other security issues should be performed. This information should be kept secure and need not be provided to the DWS. Any deficiencies should be addressed. Water systems should regularly assess ways to make security improvements at or around the tank, including fencing, surveillance, and patrolling. This also includes an assessment of tank ladders and access to hatches, vents, etc.

- In accordance with RCSA Section 19-13-B102(r), the tank inspection should include an assessment of the operations and maintenance necessary to ensure continued sanitary conditions and structural integrity, including: necessary repairs, who will perform the repairs, a timetable for the repairs, and a schedule of the routine maintenance.

- Subsequent to emptying the tank and performing an inspection, RCSA Section 19-13-B47 requires that the tank be effectively disinfected. The disinfection should be in accordance with the latest revision of AWWA C-652 – Disinfection of Water Storage Facilities. This document also contains information on

the disinfection procedure for inspecting a full tank.

- In accordance with RCSA Section 19-13-B102(f)(5)(C), an inspection report must be completed. The report should include a detailed description of the inspection process, the findings, actions that were taken as a result of the inspection, and photographs and/or video. The report should also include a completed checklist that includes a signed acknowledgement of the certification. If the inspection finds that the tank has deficiencies related to sanitary conditions or structural integrity, a plan of correction that includes a timetable for repairs of the deficiencies should be included. The DWS may request this report after completion of the inspection, and it is standard practice to review this document as part of the routine sanitary survey. It is advisable to submit the report and plan of correction to the DWS any time deficiencies are found. Please note that RCSA Section 19-13-B102(d)(2) requires DWS approval before making changes of "sanitary significance". This would include replacement of, or significant modifications to, the inspected tank.

Qualifications
The term "qualified" inspector/individual, as used above, includes some or all of the following:
American Petroleum Institute (API) API 653 Certified Tank Inspector;
NACE International Certified Coating Inspector;
A Professional Engineer that has documented experience with atmospheric tank, clearwell and basin inspections; and/or,
A Certified Operator that has documented experience inspecting atmospheric tanks, clearwells and basins.

Safety
Individuals entering tanks or any other confined space should be compliant with guidelines of the Occupational Safety & Health Administration (29 CFR - 1910.146). OSHA, in the Dec. 1, 1998 revision to their regulations, defines a confined space as a space that:
(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and,
(3) Is not designed for continuous employee occupancy.

The OSHA website should be reviewed for the most recent definitions of confined spaces and associated precautions.

Inspection Frequency
Although required only once every ten years by regulation, it is strongly recommended that all atmospheric storage tanks, clearwells and basins be inspected at least once every 3-5 years. It is also strongly recommended that all storage tanks (hydropneumatic, etc.) be inspected on a 3-5 year frequency. A routine check of the vents, vent screens, overflow screens, hatches, and drain line screens should be conducted at least quarterly.

Useful References and Links
American Water Works Association Manual of Water Supply Practices – Steel Water-Storage Tanks (AWWA M42). Chapter 9 and Appendix C (formerly AWWA D101-53 (R1986)) provide recommendations for the inspection of steel tanks.

http://www.awwa.org/
http://www.nace.org/nace/index.asp
http://10statesstandards.com/waterstandards.html
http://api-ep.api.org/certifications/
http://www.osha.gov/Publications/osha3138.html

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	**CONTACT PERSON**
Utility Commission	**Neftali Soto - Chief Engineer**
PROJECT NAME	**DEPARTMENT PRIORITY**
Retrofit Control Panels - Gorman-Rupp Pumping Stations	**3**

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

Among the components of our wastewater collection system, we have 28 pumping stations that move wastewater generated in Waterford to its final destination at the New London treatment plant. Of those 28 stations, when the sewering of the Town of Waterford was initiated in the early 80s, the town made the wise decision of standardizing the smaller stations (19 of them) as package lift stations manufactured by the Gorman-Rupp Company. These stations rely on electronic components intended for their safe, reliable, and efficient operations. Many of these stations are coming into the age that the electronics are becoming obsolete, are no longer or minimally supported, and are not 100% compatible with the needs for SCADA system. Most of these electronic components are proprietary to the Gorman-Rupp brand. However, our SCADA consultant together with our in-house electrician are in the process of retrofitting the control panels of these stations with control panels and an open architecture programming with the ability of developing and expand our SCADA capabilities. The cost of each station retrofitting is about $9,000.

2 PROJECT STATUS IF IN PROGRESS

Some work is being done by our electrician and consultant, but the vast extend of this project and the need to proceed at an accelerated pace, requires for the total implementation to be funded as a capital item.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

SCADA capabilities enhancements.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Reduce false alarming and the need for outside of working hours responses by our field staff. Reliability of the alarm system. The ability of our staff to establish setpoints at a higher degree of confidence.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

Service to the whole Waterford Collection System through the Town.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital	$ -	$ 30,000	$ 30,000.00	$ 30,000.00	$ 30,000.00	
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						$ -
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	**$ -**	**$ 30,000**	**$ 30,000**	**$ 30,000**	**$ 30,000**	**$ -**

U.S. Automation, Inc.

"One Source for all your Automation Needs"

January 15, 2020

To: Town of Waterford, CT.
Mr. Neftali Soto & Mr. Jim Bartelli
Waterford Utility Commission; Chief Engineer
15 Rope Ferry Road
Waterford, CT. 06385

Attn: Mr. Neftali Soto & Mr. Jim Bartelli
Waterford Utility Commission
Phone: (860) 444-5886
E-Mail: nsoto@waterfordct.org
jbartelli@waterfordct.org

From: Andy Sincali & Mark Sawaryn
U.S. Automation, Inc.
Phone: (860) 235-7766
FAX: (860) 271-8007
E-Mail: andy.sincali@usautomationcorp.com

Subject: U.S. Automation's Proposal for Multiple Control System Upgrades for the Cross Road Pump Station and Several Field Instruments Repair/Replacement located in the Town of Waterford, CT.

Please be advised that this detailed SCADA Upgrade proposal, as prepared by the dedicated control system engineers of U.S. Automation, is the result of a comprehensive investigation into the current problems with operation of the Cross Roads Pump Station. To simplify your review, I have identified each of the recommended SCADA upgrades in order of their priority (importance) to the Waterford Utility Commission operations.

The existing Cross Road Pump Station control system is an extremely outdated combination of a custom designed bubbler/pressure level controller with a complex configuration of hard-wired relays, mechanical timers, overload relays, and varying sizes of across-the-line motor starters. Repair of this antiquated relay logic control system (which has probably provided more than 15 years of continuous service) could be undertaken but it would be an exercise in futility since it would be a very short time until another component failed. In lieu of trying to maintain these outdated relay logic control modules and air bubbler tube solenoids/compressors; our engineering staff recommends using the installed Allen Bradley MicroLogix 1400 SCADA PLC with the addition of DI, AI, AO, and relay output modules. With the exception of a few customized field wiring interfaces, the proposed modifications/ upgrade; including a new Maple Systems HMI display (with user programming) will use the same control equipment and will be very similar to the upgrades already designed/ installed at the Waterford Village and East Neck Pump Stations.

Fortunately, as mentioned previously, the currently installed SCADA Interface PLC is an Allen Bradley MicroLogix 1400 and with the addition of a few I/O expansion modules and a new Maple Systems HMI5070L color touchscreen operator display terminal, this SCADA equipment can be reprogrammed to perform both the pump control and radio SCADA alarm functions. The new Maple Systems HMI5070L touchscreen operator terminal can be programmed to improve access to the wet well level, pump functions/setpoints and alarms. The cost to upgrade this existing PLC and install a new Color Touchscreen Operator is shown below;

Upgrade Existing Allen Bradley MicroLogix 1400 PLC:

The Total Equipment Upgrade Cost; see below: $2,500.00

4 Additional I/O Expansion Modules

Add (1) 16pt 24VDC Digital I/O Expansion Module – Model #1762-IQ16
Add (1) 16pt Relay Output I/O Expansion Module -- Model #1762-OW16
Add (1) 4pt 4-20mA Analog Input Module -- Model #1762-IF4
Add (1) 4pt 4-20mA Analog Output Module -- Model #1762-OF4

and a New Maple System CMT-3072;

Add One (1) New Maple System CMT-3072; 7" Color Touchscreen Operator Display w/EasyAccess 2.0 Software Interface

Total Engineering Labor Cost to create design all of the wiring modifications needed to transfer all pump station control functions from the hard-wired Relay Logic to the new Allen Bradley MicroLogix 1400: 10 man-hours x $75.00/hour = $ 750.00

Total PLC Programming Support Cost to transfer all of the pump control, alarm functions, and monitoring functions from the existing hard-wired Relay Logic to the Allen Bradley MicroLogix 1400: 24 man-hours x $75.00/hour = $ 1,800.00

Program the new Maple Systems CMT-3072 Color Touchscreen Operator Display System with EasyAccess 2.0 Software includes the Start-up, Programming, and On-Site Testing of the new HMI 16 man-hours x $75.00/hour = $ 1,200.00

Miscellaneous Costs, Supervision of the Waterford WUC electrician to insure proper re-wiring of the 2 control panels; --------- 16 man-hours x $75.00/hour = $ 1,200.00

Cost Summary:

Total Pump Station PLC & HMI Equipment Cost = $2,500.00
Total SCADA System Engineering & Programming Cost = $4,950.00**

** I believe that the Town of Waterford WUC could cover all or a portion ($3,000.00) of the Cross Road Pump Station SCADA System Engineering & Programming Upgrade Cost under U.S. Automation's existing SCADA Support Contract, but I am not sure if you would prefer to charge this work under your annual operating/maintenance cost budget or to bill it as a separate capital expense; Please Advise

Not Included: Assistance of the Waterford WUC Electrician (presumably Eric Williams) is not included in the above costs, but he will be required during the Cross Road Pump Station Upgrade; as per our normal practice in other pump station upgrades, Waterford's electrician will primarily install/run additional conduits/signal & power wiring between the 2 existing control panels, to install the new Maple Systems HMI terminal, and to assist in the field termination of the new MicroLogix PLC I/O modules. It is estimated that this electrical installation support service will require approximately 2-3 man-days of effort.

Optional Field Instruments:

To complete this installation, 2 field devices will be needed as follows:

(1) 4-20 KPSI Wet Well Submersible Pressure/Level Transducers - $ 995.00 each
0-15 feet measuring range
(3) Dwyer Pressure Switches for Effluent Pump Pressure Alarm - $ 495.00 each
Electronic Unit to Replace Damaged/Failed Equipment

Although this above equipment & field instruments are required for the successful upgrade of Cross Road Pump Station, our engineers can specify the required items and they can be ordered/supplied by the Town of Waterford or if desired, these items can by provided by my staff at U.S. Automation, Inc.

On behalf of U.S. Automation; we are very pleased to offer this Cross Road Pump Station upgrade proposal for your review/approval. If you have any questions regarding this detailed contract information, please call our representative; Andy Sincali or Ankur Patel/ Samantha Sincali directly on our 24-hr. mobile phone service (860) 235-7766 at your earliest convenience. Thank you for your time and consideration. It is always a pleasure to work with you at your various facilities.
Sincerely;

Andy Sincali
Manager of Engineering
U.S. Automation, Inc.
Phone: (860) 235-7766
Fax: (860) 271-8007
E-Mail: andy.sincali@usautomationcorp.com or
sincali@msn.com

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	CONTACT PERSON
Utility Commission	Neftali Soto - Chief Engineer
PROJECT NAME	**DEPARTMENT PRIORITY**
Retrofit Control Panels - Gorman-Rupp Pumping Stations	3

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

Among the components of our wastewater collection system, we have 28 pumping stations that move wastewater generated in Waterford to its final destination at the New London treatment plant. Of those 28 stations, when the sewering of the Town of Waterford was initiated in the early 80s, the town made the wise decision of standardizing the smaller stations (19 of them) as package lift stations manufactured by the Gorman-Rupp Company. These stations rely on electronic components intended for their safe, reliable, and efficient operations. Many of these stations are coming into the age that the electronics are becoming obsolete, are no longer or minimally supported, and are not 100% compatible with the needs for SCADA system. Most of these electronic components are proprietary to the Gorman-Rupp brand. However, our SCADA consultant together with our in-house electrician are in the process of retrofitting the control panels of these stations with control panels and an open architecture programming with the ability of developing and expand our SCADA capabilities. The cost of each station retrofitting is about $9,000.

2 PROJECT STATUS IF IN PROGRESS

Some work is being done by our electrician and consultant, but the vast extend of this project and the need to proceed at an accelerated pace, requires for the total implementation to be funded as a capital item.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

SCADA capabilities enhancements.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Reduce false alarming and the need for outside of working hours responses by our field staff. Reliability of the alarm system. The ability of our staff to establish setpoints at a higher degree of confidence.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

Service to the whole Waterford Collection System through the Town.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital	$ -	$ 30,000	$ 30,000.00	$ 30,000.00	$ 30,000.00	
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						$ -
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ -

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY **Utility Commission**	**CONTACT PERSON** **Neftali Soto - Chief Engineer**
PROJECT NAME **Replacement of Roof and Siding - Various Pumping Stations**	**DEPARTMENT PRIORITY** **4**

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This entails the replacement and, as needed, structural improvement, of the roof and siding of various of our pumping stations throughout the Town. This work is necessary to safeguard the building and protect from the weather the (very expensive) pumping stations(s) components. Some of the stations may need for the structural framing to be replaced or extensively rehabilitated. The building and grounds rehab also include the replacement of various driveways at some of the pumping stations that are in very poor conditions.

2 PROJECT STATUS IF IN PROGRESS

No work has been done related to roofing and siding until funding is secured. Some driveways that were in very poor conditions were replaced this past year. However, in order to hve these driveways done at the lowest cost associated with economies of scale comprehensive funding is herein requested.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

None regarding the budget, but it will provide a reliable shelter for the pumping station(s) components.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

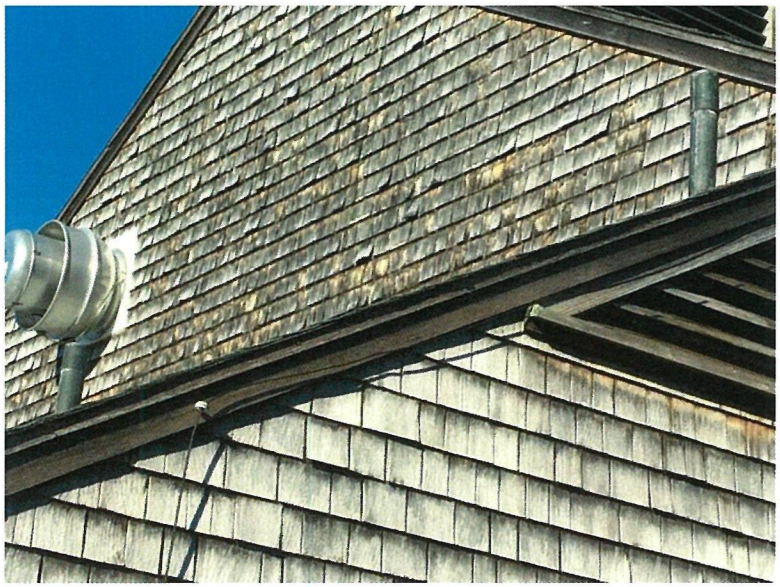
None.

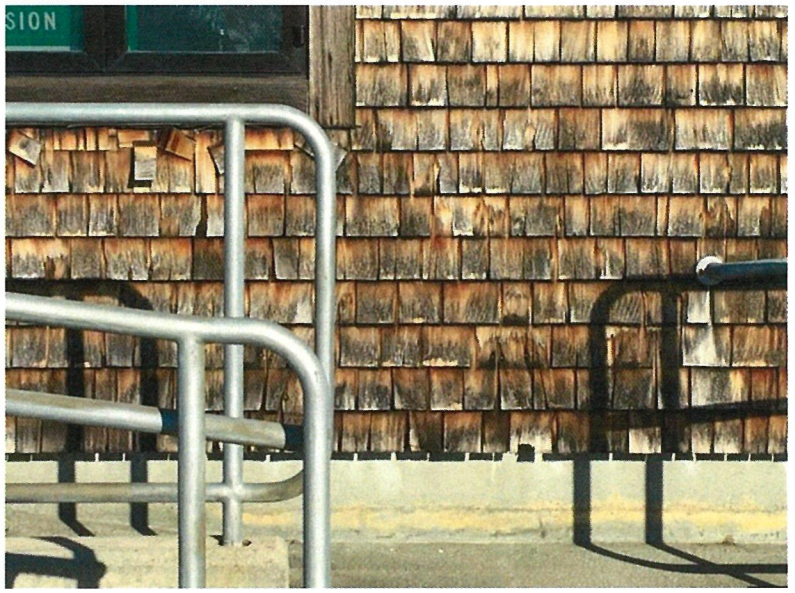
6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

Typical roof and siding conditions photos attached.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital		$ 50,000	$ 50,000	$ 50,000	$ 25,000	$ -
2	Utility Budget/Sewer Cap Maint Fund						
3	CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	Undesignated CNR fund balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 25,000.00	$ -





Typical Roof and Siding Conditions at Structures to be re-roofed and re-sided.

Current Typical Conditions of Roofs intended to be re-roofed .

Note: Some structural work may also be needed (as discovered).

Trusted Name for 100 Years

Office: office@.com
Fax: www..com
E-Mail:
Web:

CUSTOMER:

Waterford Utility Commission
Attn: Mr. Jim Bartelli
1000 Hartford Road
Waterford, CT 06385

PROPOSAL

Project Location	Project	Proposal No.	Date	TERMS
Pump Stations Quaker Hill	Paving	20-402	6/2/2020	Net 30

Description	Qty	Unit	Rate	Proposed Amt:
Remove and replace pavement at the following pump stations: Bolles Court, Quaker Hill Center, Richard Grove, and Old Norwich Rd. Project to include CBYD, mobilization, remove and dispose of old asphalt, grade existing base compacted, pave one course 3" thick after compaction, loam/seed edges, and demobilization. Exclusions: Traffic control, curb, new base.				
Supervisor	1	day	520.00	520.00
Operator	2	day	440.00	880.00
Truck Driver	2	day	400.00	800.00
Truck Driver	2	day	400.00	800.00
Laborer	2	day	384.00	768.00
Mini Excavator	1	day	460.00	460.00
Dump Truck	2	day	480.00	960.00
Dump Truck	2	day	480.00	960.00

Subtotal	**Sales Tax (6.35%)**	**Proposed Amt:**

Notes / Conditions:

1. Any rock over 1/2 CY, ledge, utilities, water, concrete structures, voids, contaminated soil, or any hazardous materials (for example, but not limited to, asbestos, lead, etc.) in the way of construction will be an additional charge.
2. Any changes to the above scope of work that take place after work has started which involves an increase in the scope of work will become an extra charge over and above the proposed amt. Changes must be submitted in writing and approved by both S. , LLC and the project Owner's rep.
3. S. , L.L.C. will not assume liability for any damages done to existing property in order to perform work.
4. S. , L.L.C. will not be responsible for any cracking in concrete work.
5. S. , L.L.C. will not be responsible for any vandalism, but can provide security to prevent vandalism, on a short term basis, for an additional charge.
6. Project Owner responsible for watering any new or repaired landscaped areas, including lawns.
7. If 6.35% CT sales tax has been figured into the proposed amount and this is a tax exempt project, please submit a tax exempt certificate upon acceptance of this proposal; otherwise, tax will be included upon invoicing.
8. Customer responsible for obtaining any necessary permits, unless otherwise noted.
9. Proposed amount is not based on Prevailing Wages. If Prevailing Wages apply, it must be disclosed by Customer prior to start of project.
10. S. , L.L.C. has the right to make changes to the proposed amount after 30 days due to any rise in material, fuel, insurance, etc. costs.
11. S. , LLC will provide the C.B.Y.D. If there are any unmarked utilities or if C.B.Y.D. will not perform services at a particular location, there will be an additional charge to have the utilities marked out.

ACCEPTANCE OF PROPOSAL

The above prices, specification, and notes/conditions are satisfactory and hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Authorized Signature: **Date:**

You may cancel this transaction, without any penalty, within three business days from the above date. If you cancel, any payments made by you will be returned within ten business days following receipt of cancellation notice. If you cancel, you must make available to S. , LLC, any goods delivered to you under the contract; or you may, if you wish, comply with the instructions of the seller regarding the return shipment of the goods at the seller's expense and risk. If you do make goods available and the seller does not pick them up within twenty days of the date of the cancellation, you may retain or dispose of the goods without any further obligation. If you fail to make the goods available to the seller, or if you agree to return the goods to the seller and fail to do so, then you remain liable for all obligations under the contract.

To CANCEL this transaction, mail or deliver a signed and dated copy of this CANCELLATION NOTICE or to: S. , L.L.C. at P.O. Box 1270, New London, CT 06320 within three business from the date above.

I HEREBY CANCEL THIS TRANSACTION. Signature of Customer(s):_____, Date: _____.

Trusted Name for 100 Years

Office: office@ .com
Fax: www. .com
E-Mail:
Web:

CUSTOMER:

Waterford Utility Commission
Attn: Mr. Jim Bartelli
1000 Hartford Road
Waterford, CT 06385

PROPOSAL

Project Location	Project	Proposal No.	Date	TERMS
Pump Stations Quaker Hill	Paving	20-402	6/2/2020	Net 30

Description	Qty	Unit	Rate	Proposed Amt:
Service truck w/tools	2	day	308.00	616.00
Vibratory Drum Roller	1	day	390.00	390.00
Paving Box	1	day	785.00	785.00
Sawcutting	1	ls	430.00	430.00
Asphalt	76.62	ton	78.00	5,976.36
Loam, Seed, Hay	1	ls	385.00	385.00

Subtotal	$14,730.36	**Sales Tax (6.35%)**	$0.00	**Proposed Amt:**	$14,730.36

Notes / Conditions:

1. Any rock over 1/2 CY, ledge, utilities, water, concrete structures, voids, contaminated soil, or any hazardous materials (for example, but not limited to, asbestos, lead, etc.) in the way of construction will be an additional charge.
2. Any changes to the above scope of work that take place after work has started which involves an increase in the scope of work will become an extra charge over and above the proposed amt. Changes must be submitted in writing and approved by both S. , LLC and the project Owner's rep.
3. S. , L.L.C. will not assume liability for any damages done to existing property in order to perform work.
4. S. , L.L.C. will not be responsible for any cracking in concrete work.
5. S. , L.L.C. will not be responsible for any vandalism, but can provide security to prevent vandalism, on a short term basis, for an additional charge.
6. Project Owner responsible for watering any new or repaired landscaped areas, including lawns.
7. If 6.35% CT sales tax has been figured into the proposed amount and this is a tax exempt project, please submit a tax exempt certificate upon acceptance of this proposal; otherwise, tax will be included upon invoicing.
8. Customer responsible for obtaining any necessary permits, unless otherwise noted.
9. Proposed amount is not based on Prevailing Wages. If Prevailing Wages apply, it must be disclosed by Customer prior to start of project.
10. S. , L.L.C. has the right to make changes to the proposed amount after 30 days due to any rise in material, fuel, insurance, etc. costs.
11. S. , LLC will provide the C.B.Y.D. If there are any unmarked utilities or if C.B.Y.D. will not perform services at a particular location, there will be an additional charge to have the utilities marked out.

ACCEPTANCE OF PROPOSAL

The above prices, specification, and notes/conditions are satisfactory and hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Authorized Signature: **Date:**

You may cancel this transaction, without any penalty, within three business days from the above date. If you cancel, any payments made by you will be returned within ten business days following receipt of cancellation notice. If you cancel, you must make available to S. , LLC, any goods delivered to you under the contract; or you may, if you wish, comply with the instructions of the seller regarding the return shipment of the goods at the seller's expense and risk. If you do make goods available and the seller does not pick them up within twenty days of the date of the cancellation, you may retain or dispose of the goods without any further obligation. If you fail to make the goods available to the seller, or if you agree to return the goods to the seller and fail to do so, then you remain liable for all obligations under the contract.

To CANCEL this transaction, mail or deliver a signed and dated copy of this CANCELLATION NOTICE or to: S. , L.L.C. at within three business from the date above.

I HEREBY CANCEL THIS TRANSACTION. Signature of Customer(s):_____, Date: _____.

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY **Utility Commission**	**CONTACT PERSON** **Neftali Soto**
PROJECT NAME **Crystal Mall PS - Main and Emergency Power**	**DEPARTMENT PRIORITY** **5**

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This request is triggered by the need to transfer the responsibility of providing power to the Crystal Mall pumping station (CMPS) from the Crystal Mall to the Town of Waterford. The Town of Waterford owns the pumping station. It sites on an easement provided by the Crystal Mall.Since its construction in 1985, the CMPS has been powered by a feed from the Crystal Mall. Emergency power is also provided by the stand-by generator at the Crystal Mall. Considering that besides wastewater from the Crystal Mall, this station also receives wastewater from nearby properties not associated with the Crystal Mall, and in order to, as it should be, the Utility Commission be 100% responsible for the maintenance and the operation of this station, the WUC Assistant Director, together with the Planning Director, and Town Counsel have been working the details with Crystal Mall staff to complete the necessary steps and requirements for this transfer of responsibilities. The transfer entails the provision of power from Rt. 85 (independent of the CM power), and the installation of a back-up generator at the station site.

2 PROJECT STATUS IF IN PROGRESS

Land survey, history, and preliminary evaluations by Assistant Director, Planning Director, and Town Counsel.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None known at this time.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Additional expense for electricity. At this time unknown, but considering that tis is a small station, no significant concern.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

See attached Fleet Management Schedule

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital		$ 225,000	$ -	$ -	$ -	$ -
2	Utility Budget/Sewer Cap Maint Fund						
3	CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	Undesignated CNR fund balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ 225,000	$ -	$ -	$ -	$ -

Wright-Pierce **MEMORANDUM**

TO:	Neftali Soto, P.E., Jim Bartelli Waterford Utility Commission	**DATE:**	November 12, 2007
FROM:	Chris Pierce	**PROJECT No.:**	10232Q
SUBJECT:	Crystal Mall Pump Station Improvements		

At the request of the Waterford Utility Commission, Wright-Pierce developed a preliminary project cost for improvements to the Crystal Mall Pump Station. Based on information provided by WUC staff, a proposed mall to be constructed along Route 85 would like to discharge to the Crystal Mall pump station. While the existing pump station has sufficient pumping capacity to handle the additional flow, another of other pump station operation and maintenance issues have been identified. These issues will be aggrevated by the additional flows from the proposed mall. The issues identified by the WUC staff include:

- The existing station receives normal power from the Crystal Mall. No separate service or meter is provided at the pump station.
- The existing station receives emergency power from the Crystal Mall. The emergency generator is owned, operated and maintained by the Crystal Mall.
- The station has problems with grease accumulation in the wetwell. The connection of an additional retail facility with restaurants will likely increase the amount grease discharged to the station.
- The rags and debris that enter the wetwell pass through a manually-cleaned strainer basket. The strainer basket fills with debris quickly and then any additional debris overflows into the wetwell contributing to pump clogging problems. The debris seen is typical for a retail establishment pump station. The addition of more retail flows are expected to increase the amount of debris that reaches the pump station.

Wright-Pierce conducted a site visit to the station on October 22, 2007. A copy of the site visit summary memorandum is attached. Electrical one-line diagrams and a site plan were obtained. However, drawings of the pump station itself are not available at this time. Based on the available information and our site visit, Wright-Pierce has developed a preliminary cost estimate to design and construct improvements to the Crystal Mall Pump Station.

Alternatives

As described in the attached Electrical Evaluation Memorandum, two alternatives were considered for the Crystal Mall Pump Station. The scope of the improvements for each alternative is presented below. Additional information on the two alternatives is provided in the attached electrical evaluation.

Alternative No. 1

The following improvements are recommended as Alternative No. 1:

- New 277/480 volt 3 phase, 4 wire underground electrical service extension from possible SNET pole #163 on Route 85.
- New above grade electrical service equipment pedestal enclosure with the following new electrical equipment:
  - Kilowatt hour meter and meter socket.
  - Main circuit breaker and 277/480 volt, 3 phase, power distribution panel.
  - Automatic transfer switch.
  - Generator circuit breaker.
  - Manual transfer switch and receptacle for portable generator.
  - Small dry-type transformer and lighting panel with lights and receptacle connections.
  - Motor starters and controls for the in-line grinder and wetwell mixer.
  - Outdoor emergency generator with weatherprotective enclosure and integral fuel tank.
- New submersible mixer located on a slide rail system in the existing wetwell including a new above-grade OEM control panel provided by the mixer manufacturer.
- New inlet channel-mounted sewage grinder located in a new manhole on the inlet pipe to the wetwell. At this time, no drawings are available. It was assumed that a new 4'-0" diameter pre-cast concrete manhole would be installed on the existing pipe and that a channel-mounted sewage grinder with submersible motors and OEM control panel would be installed. The control panel would be provided by the manufacturer and installed above grade.

Alternative No. 2

- Same electrical equipment upgrades as for Alternative No. 1.
- Under this alternative the existing pump control panel, currently located in the below grade pump station, would be replaced in its entirety. The new control panel would be located above grade and would include VFD's for the pumps. These VFD's would be located outside of the pump control panel. A small slab on grade building would be provided for housing all electrical equipment including the incoming service equipment. This would be in lieu of the above grade electrical service equipment pedestal recommended in Alternative No. 1. The construction of the building could range from stick built to pre-cast concrete. This would house the following:
  - All incoming electrical service equipment as previously mentioned in Alternative No. 1 that would be normally housed within the electrical service equipment pedestal enclosure.

  - New PLC based control panel and VFD's.
  - New wet well level monitoring system equipment which would include submersible level transducer and back-up float switch control system.
  - Miscellaneous station equipment.
  - The emergency generator would still be provided as an outdoor unit in a weather-protective enclosure as previously recommended for Option 1.
- New submersible mixer located on a slide rail system in the existing wetwell including a new above-grade OEM control panel provided by the mixer manufacturer.
- New inlet channel-mounted sewage grinder located in a new manhole on the inlet pipe to the wetwell. At this time, no drawings are available. It was assumed that a new 4'-0" diameter pre-cast concrete manhole would be installed on the existing pipe and that a channel-mounted sewage grinder with submersible motors and OEM control panel would be installed. The control panel would be provided by the manufacturer and installed above grade.

Conceptual Design Costs

Planning-level project costs have been prepared for the recommended facilities and are presented in the attached tables for the two different alternatives. These planning-level costs were developed using standard cost estimating procedures consistent with industry standards utilizing concept layouts, unit cost information, and information from other recent projects, as necessary. Total project capital costs include an allowance of 48% of the estimated construction costs to account for unaccounted for items, inflation to the mid-point of construction, construction contingency (change orders), design and construction engineering services, materials testing, permitting, as well as financing, administrative and legal expenses. The project cost information presented herein is in current dollars and is based on ENR Index 8092 (November 2007). The total project capital cost is estimated to be $432,000 for Alternative No. 1 and $602,000 for Alternative No. 2.

It should be noted that many factors arise during final design (e.g. foundation conditions, owner selected features and amenities, code issues, etc.) that can not be definitively identified and estimated at this time. These factors are typically covered by the 40% allowance described above; however, this allowance may not be adequate for all circumstances.

ALTERNATIVE NO. 1

PRELIMINARY ASSESSMENT OF PROJECT COSTS

TOWN OF WATERFORD, CT
CRYSTAL MALL PUMP STATION IMPROVEMENTS - OPTION 1
W-P PROJECT NO. 10232Q
CONCEPTUAL DESIGN PHASE
NOVEMBER 2007 (ENR INDEX 8092)
PROJECT COST ESTIMATE

PROJECT COMPONENT		COST
CONSTRUCTION		$360,000
CONSTRUCTION CONTINGENCY	5.0%	$20,000
TECHNICAL SERVICES	15.0%	$50,000
MATERIALS TESTING		$1,500
ASBESTOS & LEAD PAINT ABATEMENT		$0
DIRECT EQUIPMENT PURCHASE		$0
LAND ACQUISITION/ EASEMENTS		$0
LEGAL/ ADMINISTRATIVE		$0
FINANCING	2.0%	$0
ENGINEER'S ESTIMATE OF PROJECT COST		$432,000

TOWN OF WATERFORD, CT
CRYSTAL MALL PUMP STATION IMPROVEMENTS - OPTION 1
W-P PROJECT NO. 10232Q
CONCEPTUAL DESIGN PHASE
NOVEMBER 2007 (ENR INDEX 8092)
CONSTRUCTION COST ESTIMATE

DESCRIPTION		ESTIMATED COST
CIVIL		
SITE WORK (Grinder Manhole Installation / Electrical)		$5,000
SITE PIPING		$0
ARCHITECTURAL		
PRE-CAST CONCRETE BUILDING		$0
PROCESS EQUIPMENT AND PIPING FINISHES		$0
STRUCTURAL		
GENERATOR CONCRETE PADS		$7,500
MISCELLANEOUS STRUCTURAL (Control Panel Supports)		$1,000
PROCESS		
DEMOLITION		$2,000
SUBMERSIBLE MIXER		$20,000
INFLUENT SEWAGE GRINDER		$35,000
HVAC/ PLUMBING		$0
INSTRUMENTATION		
INSTRUMENTATION - GENERAL		$0
SCADA SYSTEM HARDWARE/ SOFTWARE		$0
ELECTRICAL		
NEW ELECTRICAL SERVICE & EQUIPMENT		$80,000
RECONNECTION TO EXISTING PUMP STATION		$10,000
NEW 125 KW GENERATOR W/OUTDOOR ENCLOSURE		$70,000
MISC. ELECTRICAL REQUIREMENTS		$10,000
SPECIALS		
MOBILIZATIONS		$10,000
PROCESS BY-PASS PUMPING		$2,500
SHEETING		$0
PILES		$0
GROUNDWATER DEWATERING (OPEN)		$0
TEMPORARY SLUDGE THICKENING/ DEWATERING		$0
SITE SECURITY		$0
WINTER CONSTRUCTION		$0
SUBTOTAL, CONSTRUCTION		$83,000
GENERAL CONTRACTOR OH&P AND GENERAL CONDITIONS	20.0%	$17,000
SUBTOTAL, SUBCONTRACTORS		$170,000
GENERAL CONTRACTOR MARKUP	5.0%	$9,000
ELECTRICAL/ TELEPHONE ALLOWANCE		$10,000
UNIT PRICE ITEMS	0.0%	$0
SUBTOTAL, CONSTRUCTION COSTS		$289,000
PROJECT MULTIPLIER, DESIGN CONTINGENCY	1.20	
PROJECT MULTIPLIER, INFLATION TO MIDPT CONST.	1.05	
ENGINEERS ESTIMATE OF CONSTRUCTION COST		**$364,000**

Considering that the main work to be done is the provision of new power to the station, plus the installation of a back-up generator, the initial request is limited to $225K. This should be able to cover the immediate needs.

ALTERNATIVE 2

PRELIMINARY ASSESSMENT OF PROJECT COSTS

TOWN OF WATERFORD, CT
CRYSTAL MALL PUMP STATION IMPROVEMENTS - OPTION 2
W-P PROJECT NO. 10232Q
CONCEPTUAL DESIGN PHASE
NOVEMBER 2007 (ENR INDEX 8092)
PROJECT COST ESTIMATE

PROJECT COMPONENT		COST
CONSTRUCTION		$510,000
CONSTRUCTION CONTINGENCY	5.0%	$30,000
TECHNICAL SERVICES	12.0%	$60,000
MATERIALS TESTING		$1,500
ASBESTOS & LEAD PAINT ABATEMENT		$0
DIRECT EQUIPMENT PURCHASE		$0
LAND ACQUISITION/ EASEMENTS		$0
LEGAL/ ADMINISTRATIVE		$0
FINANCING	2.0%	$0
ENGINEER'S ESTIMATE OF PROJECT COST		$602,000

TOWN OF WATERFORD, CT
CRYSTAL MALL PUMP STATION IMPROVEMENTS - OPTION 2
W-P PROJECT NO. 10232Q
CONCEPTUAL DESIGN PHASE
NOVEMBER 2007 (ENR INDEX 8092)
CONSTRUCTION COST ESTIMATE

DESCRIPTION		ESTIMATED COST
CIVIL		
SITE WORK (Grinder Manhole Installation / Electrical)		$10,000
SITE PIPING		$0
ARCHITECTURAL		
PRE-CAST CONCRETE BUILDING		$40,000
PROCESS EQUIPMENT AND PIPING FINISHES		$0
STRUCTURAL		
GENERATOR CONCRETE PADS		$7,500
MISCELLANEOUS STRUCTURAL (Control Panel Supports)		$1,000
PROCESS		
DEMOLITION		$2,000
SUBMERSIBLE MIXER		$20,000
INFLUENT SEWAGE GRINDER		$35,000
HVAC/ PLUMBING		$0
INSTRUMENTATION		
INSTRUMENTATION - GENERAL		$0
SCADA SYSTEM HARDWARE/ SOFTWARE		$0
ELECTRICAL		
NEW ELECTRICAL SERVICE & EQUIPMENT		$80,000
NEW 40 HP VARIABLE FREQUENCY DRIVES		$40,000
NEW PLC BASED PUMP CONTROL PANEL		$40,000
RECONNECTION AND RECONFIGURATION OF TELEMETRY PANEL		$5,000
NEW WETWELL LEVEL CONTROL SYSTEM		$10,000
CONNECTION TO EXISTING PUMP STATION		$10,000
NEW 60 KW GENERATOR W/OUTDOOR ENCLOSURE		$35,000
MISC. ELECTRICAL REQUIREMENTS		$10,000
SPECIALS		
MOBILIZATIONS		$10,000
PROCESS BY-PASS PUMPING		$2,500
SHEETING		$0
PILES		$0
GROUNDWATER DEWATERING (OPEN)		$0
TEMPORARY SLUDGE THICKENING/ DEWATERING		$0
SITE SECURITY		$0
WINTER CONSTRUCTION		$0
SUBTOTAL, CONSTRUCTION		$128,000
GENERAL CONTRACTOR OH&P AND GENERAL CONDITIONS	20.0%	$26,000
SUBTOTAL, SUBCONTRACTORS		$230,000
GENERAL CONTRACTOR MARKUP	5.0%	$12,000
ELECTRICAL/ TELEPHONE ALLOWANCE		$10,000
UNIT PRICE ITEMS	0.0%	$0
SUBTOTAL, CONSTRUCTION COSTS		$406,000
PROJECT MULTIPLIER, DESIGN CONTINGENCY	1.20	
PROJECT MULTIPLIER, INFLATION TO MIDPT CONST.	1.05	
ENGINEERS ESTIMATE OF CONSTRUCTION COST		**$512,000**

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	**CONTACT PERSON**
Utility Commission	**Neftali Soto - Chief Engineer**
PROJECT NAME	**DEPARTMENT PRIORITY**
Future SSES/CMOM	**12**

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

The Town of Waterford embarked on a massive sewers extension program directed to protect our natural resources, improve our living standards, and to some degree provide the proper environment and infrastructure to attract industrial and commercial institutions. In recognition to the aging wastewater infrastructure nationwide, the EPA is in the process of expanding the Clean Water Act with new rules which will require municipal systems to develop and implement a formal Capacity, Management, Operation, and Maintenance Program (CMOM). The proposed CMOM program rules include requirements to continuously monitor and maintain wastewater collection systems in order to prevent sanitary sewers overflows (SSOs). In order to comply with this program, the municipality must continue to conduct detailed sanitary system evaluations and surveys (SSES). The UC, on its own, initiated its SSES program about six years ago and it is committed to continue it for the efficient, safe, and reliable operation of our system. Therefore, funds from the Sewer Development and Maintenance Fund (SDMF) are intended to be used for these endeavors.

2 PROJECT STATUS IF IN PROGRESS

Annual Activity

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

Grit Receiving Station and CCTV Equipment are major tools and components of this evaluation.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

More efficient operation. Reduction on energy and treatment cost. Liability exposure reduction.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

The CTDEEP currently allows for a 20%/80% grant loan program for sewer repairs and 55% grant for SSES. However, although it is our intention to pursue such funding, the competition for these funds across the state is very fierce.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

See Wright-Pierce Capital Needs Evaluation

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund		$ 33,000	$ 33,000	$ 33,000	$ 33,000	$ 33,000
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ 33,000	$ 33,000	$ 33,000	$ 33,000	$ 33,000

pump stations and Maintenance Building. The life expectancies of some of the structure features are past their useful life and require replacement. These upgrades include landscaping, tree removal, roofing, site lighting, doors, hardware, painting, siding, fencing and paving. It is recommended that the Utility Commission budget $100,000 in 2016, and then $50,000 each additional year for such improvements and replacements.

- **Long Term SSES Efforts/CMOM** - It is prudent operating practice to implement an annual program to routinely clean and inspect portions of the sewer system in order to avoid SSOs and prevent catastrophic failures. When promulgated, Federal CMOM rules will require a formal program to monitor the collection system in order to identify maintenance and repair requirements. This will include cleaning and TV inspections of the entire sewer system, along with inspections of every manhole. Currently, the Utility Commission has the necessary equipment and staff to perform this type of monitoring work and should continue these efforts by planning to CCTV 5 to 10 miles of gravity sewer piping each year with a focus on concrete gravity sewer piping to avoid pipe failure similar to that experienced on Logger Hill Road. From past I/I studies, select areas have been prioritized for additional SSES work including the Richards Grove, Stoney Brook, Bolles Court, Blue Hills, Evergreen and New London drainage areas.

- **New London Draft Order and Long Island Sound Nitrogen Reduction Payments** – All of the wastewater generated in Waterford is transported and treated at the New London Wastewater Treatment Plant (WWTP). As part of a terms and conditions of an inter-municipal agreement, Waterford is committed to make a yearly Long Island Sound Nitrogen Reduction payment to New London. Waterford will also be responsible for a percentage of the project costs associated with the next WWTP upgrade.

3 CAPITAL IMPROVEMENT PLAN

The Waterford system is relatively new. However, most of the sewers and pump stations are now over 40 years old and are experiencing an increasing need to address normal deterioration and wear. The Waterford Utility Commission should plan for the long-term repair and upgrade of the collection system in addition to routine operation and maintenance requirements. The

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY
Utility Commission

CONTACT PERSON
Neftali Soto - Chief Engineer

PROJECT NAME
In-line Solids Grinders

DEPARTMENT PRIORITY
6

1	**DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)**
	This request intends for the continuation of a economies of scale funding for the installation and construction of in-line grinders. The purpose of in-line grinders is to grind and shred large quantities of solid materials such as: sanitary products, pampers, garbage, and other solid waste that are (unlawfully) discharged into our collection system. We are experiencing an increased amount of these products being discharged into our collection system; therefore, at our pumping stations. Our big pump stations are already equipped with in line grinders (aka Muffin Monsters). However, our smaller (package) stations such as the Gorman-Rupp stations, do not have this capability. The Crystal Mall station is one example, where the amount of these solids generate excessive maintenance requirements. Furthermore, by grinding such solids the life expectancy of the station, as well as other of its mechanical components is expected to be extended. Failure of the pumps due to these materials clogging the pumps will create dangerous conditions that will jeopardize public health in the event of flooding to basements and adjacent properties. It is our intention to implement this, much needed, capital program for a period of 5-7 years. Expected cost - $31,000 ea. Installation cost - $5-$6,000/ea. As eval time moves on, cost & implementation might be reduced.
2	**PROJECT STATUS IF IN PROGRESS**
	Evaluation of the stations that will get installation priority.
3	**LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST**
	None at this time. Operating and maintenance annual expenses for this facility will be funded under the Wastewater Enterprise Fund.
4	**DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)**
	Annual operating and maintenance expenses estimated at less than $5,000/yr./ea. (mainly electricity), to be funded by the WW Enterprise Fund.
5	**GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)**
	None known.
6	**ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION**
7	**COST/FUNDING SOURCE**

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital	$ 170,000	$ -	$ 85,000	$ 85,000		
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	**$ 170,000**	**$ -**	**$ 85,000**	**$ 85,000**	**$ -**	**$ -**

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	**CONTACT PERSON**
Utility Commission	Neftali Soto - Chief Engineer
PROJECT NAME	**DEPARTMENT PRIORITY**
Evaluate and replace Weimes Ct. & Marilyn Ct. PS	7

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

For these stations built in 1979, conditions assessments, including non-destructive testing of the below-grade structural steel enclosures at the Marilyn and Weimes Court Ejector stations, are necessary to determine the structural conditions of the stations and upgrades needed. The Utility Commission is recommending the need to capital budget approximately $475,000 in FY 24 and $500,000 in FY 26 to proceed with and complete these tasks. Depending on the conditions of these stations, a decision will be made on whether to rehab the station, or to upgrade to a more conventional (pumps) system.

2 PROJECT STATUS IF IN PROGRESS

Not in progress, yet. Funding request for evaluation and work needed.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Maintain reliability of the stations. Replace or upgrade asset.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None at this time.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

Future project. To be provided once evaluation and assessment of needs is determined.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR	$ -	$ -	$ -	$ 475,000	$ -	$ -
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						

8	Other (detail in section 5 above)						
	TOTALS	**$ -**	**$ -**	**$ -**	**$ 475,000**	**$ -**	**$ -**

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	CONTACT PERSON
Utility Commission	Neftali Soto - Chief Engineer
PROJECT NAME	**DEPARTMENT PRIORITY**
Cross Road Pumping Station Partial Upgrade	8

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This project entails the evaluation and implementation of recommended measures associated with the rehabilitation and/or upgrading of the Cross Road pumping station. The station was built in 1982. This station has been well maintained by our maintenance staff. However, like any other infrastructure that has static as well as dynamic electro-mechanical components, fatigue and wear and tear significantly reduces the useful life of the facility and components. The Utility Commission is recommending the need to capital budget approximately $491,000 in FY 23 to proceed with and complete these tasks. Depending on the conditions of these station, a decision will be made on whether to do a major rehab to the station. Our maintenance staff is keeping this and our other stations in great operational conditions, however, a complete evaluation and associated improvements might be necessary to insure that the efficient, reliable, and safe use of the station is extended beyond its useful life for the benefit of future generations.

2 PROJECT STATUS IF IN PROGRESS

Time and funding permitted, a preliminary cursory evaluation is planned for FY22.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

More efficient, safe, and reliable operation of the station with expected energy savings and operational reliability.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None at this time. For this and other pumping stations upgrades, the Town may want to consider the use of state loans at low interest. This will reduce the impact of high capital expenditures in one given year. However, it is important to note that the competition for state (loans or grants) funding is very fierce, and Waterford may not qualify, or may qualify very low in the list of requests.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

To be provided as a more comprehensive understanding of the work needed is secured.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR		$ -	$ 491,000	$ -	$ -	$ -
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ -	$ 491,000	$ -	$ -	$ -

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	CONTACT PERSON
Utility Commission	Neftali Soto - Chief Engineer
PROJECT NAME	**DEPARTMENT PRIORITY**
Stoney Brook Pumping Station Partial Upgrade	9

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

Similar to the intended approach for the Cross Road pumping station, the Stoney Brook PS project entails the evaluation and implementation of recommended measures associated with the rehabilitation and/or upgrading of the, built in 1991, Stoney Brook pumping station. As with all of our pumping stations, this station has been well maintained by our maintenance staff. However, like any other infrastructure that has static as well as dynamic electro-mechanical components, fatigue and wear and tear significantly reduces the useful life of the facility. Our maintenance staff is keeping this and our other stations in great operational conditions, however, a complete evaluation and associated improvements might be necessary to insure that the useful life of the station is extended for the benefit of future generations. The Utility Commission is recommending the need to capital budget approximately $511,000 in FY 24 to proceed with and complete these tasks.

2 PROJECT STATUS IF IN PROGRESS

Planning stages. Time and funding permitted, a preliminary cursory evaluation is planned for FY22.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

More efficient, safe, and reliable operation of the station with expected energy savings and operational reliability.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None at this time. For this and other pumping stations upgrades, the Town may want to consider the use of state loans at low interest. This will reduce the impact of high capital expenditures in one given year. However, it is important to recognize that the competition for state (loans or grants) funding is very fierce, and Waterford may not qualify, or may qualify very low in the list of state funding applicants.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

To be provided as a more comprehensive understanding of the work needed is secured.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR	$ -	$ -	$ -	$ 511,000	$ -	$ -
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ -	$ -	$ 511,000	$ -	$ -

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY Utility Commission	**CONTACT PERSON** Neftali Soto - Chief Engineer
PROJECT NAME Partial Upgrade - Remaining 17 Pumping Stations	**DEPARTMENT PRIORITY** 10

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This project entails the evaluation and implementation of recommended measures associated with the rehabilitation and/or upgrading of the remaining 17 Gorman-Rupp pumping stations. As with all of our pumping stations, this stations are being well maintained by our maintenance staff. However, like any other infrastructure that has static as well as dynamic electro-mechanical components, fatigue and wear and tear significantly reduces the useful life of the structure. Our maintenance staff is keeping this and our other stations in great operational conditions, however, a complete evaluation and associated improvements might be necessary to insure that the useful life of the station is extended for the benefit of future generations. The Utility Commission is recommending the need to capital budget $400,000 during FY23, FY25, and FY26 to proceed with and complete these tasks.

2 PROJECT STATUS IF IN PROGRESS

Considering implementation.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

More efficient, safe, and reliable operation of the station with expected energy savings and operational reliability.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None at this time. For this and other pumping stations upgrades, the Town may want to consider the use of state loans at low interest. This will reduce the impact of high capital expenditures in one given year. However, it is important to recognize that the competition for state (loans or grants) funding is very fierce, and Waterford may not qualify, or may qualify very low in the list of state funding applicants.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

Additional documents to be provided once a better and more accurate assessment of needs is developed.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR	$ -	$ -	$ 400,000	$ -	$ 400,000	$ 400,000
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	**$ -**	**$ -**	**$ 400,000**	**$ -**	**$ 400,000**	**$ 400,000**

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	CONTACT PERSON
Utility Commission	Neftali Soto - Chief Engineer
PROJECT NAME	**DEPARTMENT PRIORITY**
Inflow and Infiltration Control and Mitigation	11

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This funding request is associated with our on-going inflow and infiltration (I/I) control and mitigation program. This program, although a bit delayed by the COVID-19 pandemic, still very active and it is our intention to, if permissible, accelerate this program this coming Spring. Under the current agreement between Waterford, East Lyme, and the City of New London, payment to the City is based on the actual cost for treatment distributed among the communities based on their proportional actual flow into the treatment plant. This flow not only includes generated wastewater, but also clean water that infiltrates or gain access via illegal connections, or infiltration areas in our collection system. This is a program that is on-going at the present there still funding available from previous appropriations. However, as our collection infrastructure ages other area not currently impacted may need to be corrected. The control of I/I needs to be done on a continuous basis. Once the current appropriations are depleted, and the success of the current program is evaluated, the funding figures herein requested will be re-visited.

2 PROJECT STATUS IF IN PROGRESS

On-going. Continuous implementation.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

The need for efficient and reliable sewer jet rodding equipment and CCTV equipment. This is the equipment that is used to identify I/I into our collection system.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

More efficient, safe, and reliable operation of the station with expected energy savings and operational reliability due to the reduction of water that needs to be pumped. Extension of the life of pumping stations. Reclamation of capacity of the collection systems.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None at this time. For this and other pumping stations upgrades, the Town may want to consider the use of state loans at low interest. This will reduce the impact of high capital expenditures in one given year. However, it is important to recognize that the competition for state (loans or grants) funding is very fierce, and Waterford may not qualify, or may qualify very low in the list of state funding applicants.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

To be provided as progress is made and a more accurate assessment of needs is developed.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR	$ 332,287	$ -	$ -	$ 350,000	$ 275,000	$ -
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	**$ 332,287.00**	**$ -**	**$ -**	**$ 350,000**	**$ 275,000**	**$ -**

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY **Utility Commission**	**CONTACT PERSON** **Neftali Soto - Chief Engineer**
PROJECT NAME **Future SSES/CMOM**	**DEPARTMENT PRIORITY** **12**

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

The Town of Waterford embarked on a massive sewers extension program directed to protect our natural resources, improve our living standards, and to some degree provide the proper environment and infrastructure to attract industrial and commercial institutions. In recognition to the aging wastewater infrastructure nationwide, the EPA is in the process of expanding the Clean Water Act with new rules which will require municipal systems to develop and implement a formal Capacity, Management, Operation, and Maintenance Program (CMOM). The proposed CMOM program rules include requirements to continuously monitor and maintain wastewater collection systems in order to prevent sanitary sewers overflows (SSOs). In order to comply with this program, the municipality must continue to conduct detailed sanitary system evaluations and surveys (SSES). The UC, on its own, initiated its SSES program about six years ago and it is committed to continue it for the efficient, safe, and reliable operation of our system. Therefore, funds from the Sewer Development and Maintenance Fund (SDMF) are intended to be used for these endeavors.

2 PROJECT STATUS IF IN PROGRESS

Annual Activity

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

Grit Receiving Station and CCTV Equipment are major tools and components of this evaluation.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

More efficient operation. Reduction on energy and treatment cost. Liability exposure reduction.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

The CTDEEP currently allows for a 20%/80% grant loan program for sewer repairs and 55% grant for SSES. However, although it is our intention to pursue such funding, the competition for these funds across the state is very fierce.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

See Wright-Pierce Capital Needs Evaluation

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund		$ 33,000	$ 33,000	$ 33,000	$ 33,000	$ 33,000
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ 33,000	$ 33,000	$ 33,000	$ 33,000	$ 33,000

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	**CONTACT PERSON**
Utility Commission	Neftali Soto - Chief Engineer
PROJECT NAME	**DEPARTMENT PRIORITY**
Grinder Pumps Replacement	13

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This activity entails the securing funds through the WW Enterprise Fund for the replacement of individual grinder pumps that the Utility Commission has the responsibility to maintain. At this time, we are still responsible for 101 grinder pumps located on private property. Due to age, many of them fail and repairs are not justified. This is a continuation of our annual program of grinder pumps replacement, and it is funded through the Enterprise Fund.

2 PROJECT STATUS IF IN PROGRESS

This is an annual program.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

This will optimize the utilization of our staff in other [more pressing] tasks. It will also the reduce the [out of working hours] call outs due to failure of pumps. Grinder pumps is an appliance which, as we know, have a certain life expectancy and after that time repairs are not justified.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund		$ 31,000	$ 32,000	$ 33,000	$ 34,000	$ 35,000
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	**0**	**$ 31,000**	**$ 32,000**	**$ 33,000**	**$ 34,000**	**$ 35,000**

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	CONTACT PERSON
Utility Commission	Neftali Soto - Chief Engineer
PROJECT NAME	**DEPARTMENT PRIORITY**
Pleasure Beach Water Lines Replacement	14

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This funding request is associated with a program that was initiated around 2005 with the intention of replacing some water mains at the Pleasure Beach area that were experiencing breaks that New London described as abnormal, and complained about the conditions. However, the City did not provide data defining the abnormality of breaks. The Town of Waterford, in good faith, replaced some pipes on various roads of the Pleasure Beach area. Due to the decrease of such water main breaks, the pipes replacement program was halted. Funds are still requested for future years in case such water main breaks, which will affect the reliability of the distribution system, may surface again.

2 PROJECT STATUS IF IN PROGRESS

No further action, unless necessary as explained above.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

O&M of the water system is the responsibility of the City of New London. Waterford responsible for capital.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

Based on priorities, CT Dept. of Health State Revolving Sinking Fund loans.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

To be provided as progress is made and a more accurate assessment of needs is developed.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR	$ -	$ -	$ -	$ 175,000	$ 400,000	$ -
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ -	$ -	$ 175,000	$ 400,000	$ -

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	CONTACT PERSON
Utility Commission	Neftali Soto - Chief Engineer
PROJECT NAME	**DEPARTMENT PRIORITY**
Barlett Corner Water Pressure Booster (PS) Decommission	15

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This funding request is associated with expenditures that might be necessary to fully decommission the Barlett Corner Water Pressure Booster Station. This station was constructed many years ago as a component of a hydro-pneumatic system that was used to increase water pressure at the northern Quaker Hill area. Due to pressure deficiencies at other areas of Quaker Hill a new booster station with a water storage standpipe was constructed in 2008, as part of the Thames River Drinking Water Inter-connection project, initiated by the Mohegan Tribe. Once this new system was activated, the Barlett Corner system was no longer needed, and taken out of service. The booster station and the building are still standing. Our maintenance staff uses the building as a staging area and to store materials on the northern side of town. The decommissioning of the station is not a high priority, but funding in the future may be required to either demolish the building and remove old components or, recondition the building for the sue and storage of the WUC maintenance staff.

2 PROJECT STATUS IF IN PROGRESS

No further action, unless necessary as explained above.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

None.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

Based on priorities, maybe CT Dept. of Health State Revolving Sinking Fund loans.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

To be provided as progress is made and a more accurate assessments of needs is developed.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR	$ -	$ -	$ -	$ -	$ -	$ 60,000
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	$ -	$ -	$ -	$ -	$ -	$ 60,000

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY Utility Commission	**CONTACT PERSON** Neftali Soto - Chief Engineer
PROJECT NAME Co-op Sewers Lateral Extension ****	**DEPARTMENT PRIORITY** 16

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

**** - In cooperation with DPW for the reconstruction of roads, if necessary.

The big sewer extension program of the 80s, 90s, and early 2000s, came to an end. As recommended in the 2011 Facilities Plan, a pre-determined amount of funds are required to extend lateral sewers into areas that may present pollution, health problems, and other concerns. All areas that in the past were identified as potential sewer extension areas are listed below. A detailed needs and justification assessment has to be conducted and priorities assigned to those areas identified, prior to the request of funds. At this time there are no request for sewer extensions. The areas previously identified, but not limited to, to be considered in the future are: • Oil Mill/Gurley Rd. Sewers,• Hickory La./Dayton South,• Paula La./Ina La./Doyle Road, • Dimmock Rd/Pepperbox Rd., • Bloomingdale Rd. South (from Gallows La. To Applewood Dr.), • Cinderella La./ Woodworth Dr., • Braman Rd./Marry Butler Rd. It is important to understand that the order of the projects herein presented could be altered, or projects added or deleted according to public health protection and pollution control needs priorities as they may develop and/or as recommended by the updated facilities plan.

2 PROJECT STATUS IF IN PROGRESS

No further action, unless necessary as explained above.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

DPW - roads reconstruction, as needed.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Additional staff and equipment needed.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

Based on priorities, maybe CT DEEP - Clean Water Sinking Fund grants and loans.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

To be provided as progress is made and a more accurate assessments of needs are developed.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds	$ -	$ -	$ -	$ 375,000	$ 375,000	$ 375,000
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	**$ -**	**$ -**	**$ -**	**$ 375,000**	**$ 375,000**	**$ 375,000**

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY **Utility Commission**	**CONTACT PERSON** Neftali Soto - Chief Engineer
PROJECT NAME **LI Sound Nitrogen Reduction Payment**	**DEPARTMENT PRIORITY** **Commitment**

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

A State mandate effective January 2001 required the New London sewage treatment facility to reduce the amount of discharged nitrogen by 56%. This funding represents the Town of Waterford's share ($780,000 at 2% interest over twenty years) of the improvements made to the regional treatment facility necessary to comply with the mandate.

2 PROJECT STATUS IF IN PROGRESS

Annual Commitment

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Treatment Cost.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund		$ 42,500	$ 41,800	$ 41,100	$ 40,400	$ 39,700
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	**$ -**	**$ 42,500**	**$ 41,800**	**$ 41,100**	**$ 40,400**	**$ 39,700**

pump stations and Maintenance Building. The life expectancies of some of the structure features are past their useful life and require replacement. These upgrades include landscaping, tree removal, roofing, site lighting, doors, hardware, painting, siding, fencing and paving. It is recommended that the Utility Commission budget $100,000 in 2016, and then $50,000 each additional year for such improvements and replacements.

- **Long Term SSES Efforts/CMOM** - It is prudent operating practice to implement an annual program to routinely clean and inspect portions of the sewer system in order to avoid SSOs and prevent catastrophic failures. When promulgated, Federal CMOM rules will require a formal program to monitor the collection system in order to identify maintenance and repair requirements. This will include cleaning and TV inspections of the entire sewer system, along with inspections of every manhole. Currently, the Utility Commission has the necessary equipment and staff to perform this type of monitoring work and should continue these efforts by planning to CCTV 5 to 10 miles of gravity sewer piping each year with a focus on concrete gravity sewer piping to avoid pipe failure similar to that experienced on Logger Hill Road. From past I/I studies, select areas have been prioritized for additional SSES work including the Richards Grove, Stoney Brook, Bolles Court, Blue Hills, Evergreen and New London drainage areas.

- **New London Draft Order and Long Island Sound Nitrogen Reduction Payments** – All of the wastewater generated in Waterford is transported and treated at the New London Wastewater Treatment Plant (WWTP). As part of a terms and conditions of an inter-municipal agreement, Waterford is committed to make a yearly Long Island Sound Nitrogen Reduction payment to New London. Waterford will also be responsible for a percentage of the project costs associated with the next WWTP upgrade.

3 CAPITAL IMPROVEMENT PLAN

The Waterford system is relatively new. However, most of the sewers and pump stations are now over 40 years old and are experiencing an increasing need to address normal deterioration and wear. The Waterford Utility Commission should plan for the long-term repair and upgrade of the collection system in addition to routine operation and maintenance requirements. The

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY **Utility Commission**	**CONTACT PERSON** **Neftali Soto - Chief Engineer**
PROJECT NAME **Wastewater Treatment Plant Sludge Storage Tanks**	**DEPARTMENT PRIORITY** **Commitment**

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

The City of New London is planning for the upgrade of their sludge storage tanks. See attached email from the NL Director of Utilities. As per the NL/EL/Waterford Wastewater agreement, Waterford is responsible for 30% of the final capital cost (about $900,000). New London contributes 55% and East Lyme 15% of the capital cost. New London is planning to float a 20 yr. bond for this project. Annual payments for the Waterford contribution will be billed by NL to the UC. Please note that annual payments are currently made to NL by the UC for the installation of the nitrogen reduction infrastructure that was built about 17 year ago. Waterford's share of the debt service is paid by through the wastewater enterprise fund and does not affect the taxpayers, only the ratepayers. This payment will be made through the depreciation fund account established by New London to which Waterford makes contributions on an annual basis as part of the treatment cost. It is estimated that once the annual payments are prorated, our annual contribution payment would be in the neighborhood of $46,000/yr.

2 PROJECT STATUS IF IN PROGRESS

Bids received. Work in progress.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

May trigger an adjustments to the sewer rates.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

The lead of this project is the City of New London. They intend to bond this project.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

See attached email from New London Director of Utilities

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund		$46,000.00	$46,000.00	$46,000.00	$46,000.00	$46,000.00
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	**0**	**$46,000.00**	**$46,000.00**	**$46,000.00**	**$46,000.00**	**$46,000.00**

CITY OF NEW LONDON
DEPARTMENT OF PUBLIC UTILITIES

INTERDEPARTMENTAL MEMORANDUM

TO: City Council thru Mayor Michael Passero

FROM: Joe Lanzafame, Director of Public Utilities

DATE: February 28, 2017

RE: Request to Accept Low Rebid for City of New London Sludge Storage Tank Rehabilitation For Council Approval on March 20, 2017

Please see attached communication from Alicia Smith, Purchasing Agent for the City of New London. I have reviewed rebids received for the City of New London and after doing so I determined that C.H. Nickerson's rebid was substantially complete. I, respectfully, request Council's approval relative to same. C.H. Nickerson was the low bidder at $1,689,844.00

As always, thank you for your support. If you have any questions, please do not hesitate to contact me at (860) 437-6365.

mgm
attachment

copy to: Finance/Purchasing
Jenny Startz, Council Office

Council.rebidlowbido.h.nickerson

4.0 3-16-17

City of New London

Department of Finance-Purchasing Agent
13 Masonic Street • New London, CT 06320 • Phone (860) 447-5215 • Fax (860) 447-5297

INTERDEPARTMENTAL MEMORANDUM

DATE: February 24, 2017

TO: Joseph Lanzafame, Public Utilities Administrator

FROM: Alicia Smith, Purchasing Agent/Accountant (AS)

SUBJECT: IFB 2017-08 (Re-Bid) Sludge Storage Tank Rehabilitation Project

Today I publicly opened three (3) bids received in response to the Invitation for Bids (IFB) – Sludge Storage Tank Rehabilitation Project (re-bid). Bidding was done in accordance with the City's purchasing ordinance. A legal advertisement was published in *The Day* and the IFB was posted on the following three websites, the City of New London, the State of Connecticut Department of Administrative Services and Public Purchase.

Bidders are:

Structural	$3,510,723.75
Delray Contracting	$2,166,541.00
C.H. Nickerson	$1,689,844.00

Attached for your review and recommendation is a copy of the Bid Tabulation Form. Included are copies of the three bids received. Please forward your written recommendation, including the account number to which this work will be charged, at your earliest convenience. Upon City Council approval of award, I will issue the letter of award and notice to proceed.

City of New London
Connecticut

Bid Tabulation Form

Bid No.: 2017-08 (Re-Bid)
Project: Sludge Storage Tank Rehabilitation
Bid Opening Date and Time: February 24, 2017 @ 2:00pm

				Structural 1755 Highland Ave., Bldg B Cheshire, CT 06410		Delray Contracting, Inc. 10 Nutmet Drive Ellington, CT 06029		C.H. Nickerson & Co., Inc. 49 Hayden Hill Rd Torrington, CT 06790		
Item No.	Description			Lump Sum		Lump Sum		Lump Sum		Lump Sum
1)	Lump sum base bid price			$ 3,266,670.00		$ 1,969,666.00		$ 1,605,769.00		
2)	Total extended unit base bid price			$ 244,053.75		$ 196,875.00		$ 84,075.00		
	Item #1: Replace 10" BS	1	EA	$ 10,300.00	$ 10,300.00	$ 22,500.00	$ 22,500.00	$ 4,000.00	$ 4,000.00	
	Item #2: Replace 10" TS	1	EA	$ 8,230.00	$ 8,230.00	$ 22,500.00	$ 22,500.00	$ 4,000.00	$ 4,000.00	
	Item #3: Detail 1 on Sheet DL-001	375	SF	$ 121.65	$ 45,618.75	$ 100.00	$ 37,500.00	$ 35.00	$ 13,125.00	
	Item #4: Detail 2 on Sheet DL-001	200	SF	$ 115.45	$ 23,090.00	$ 100.00	$ 20,000.00	$ 35.00	$ 7,000.00	
	Item #5: Detail 3 on Sheet DL-001	700	SF	$ 176.30	$ 123,410.00	$ 100.00	$ 70,000.00	$ 50.00	$ 35,000.00	
	Item #6: Detail 4 on Sheet DL-001	90	SF	$ 204.50	$ 18,405.00	$ 125.00	$ 11,250.00	$ 50.00	$ 4,500.00	
	Item #7: Detail 7 on Sheet DL-001	25	SF	$ 200.00	$ 5,000.00	$ 125.00	$ 3,125.00	$ 258.00	$ 6,450.00	
	Allowance for disposal of lead/Asbe	1	Allowance	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	
			Total Bid Price	$ 3,510,723.75		$ 2,166,541.00		$ 1,689,844.00		$ -

ch2m:

February 28, 017

Joseph Lanzafame, P.E.
Director of Public Utilities
City of New London
120 Broad Street
New London, CT 06320

Subject: Recommendation of Contract Award
New London WWTP Sludge Storage Tanks Rehabilitation Project
Contract Number 2017-11

Dear Mr. Lanzafame:

We have completed our bid evaluation for the Sludge Storage Tanks Rehabilitation Project. On February 24, 2017 three bids were received for the above referenced project. Attached is the Bid Tabulation provided by the City of New London Purchasing Department. The apparent low bid was submitted by C.H. Nickerson in the amount of $1,689,844. This evaluation consisted of reviewing the bid results and a limited review of the bid documents provided as part of the bid. This evaluation focuses on the bid pricing and bidder's qualifications. This memorandum summarizes the results of our bid evaluation and represents our recommendations.

The following additional documentation, which was submitted with the bid, was also provided to CH2M: Bid Proposal Form, Bid Bond, Non-Collusion Affidavit of Prime Bidder, Statement of Bidder's Qualifications, Affirmative Action Policy Statement, Certification of Bidder Regarding Equal Employment Opportunity, Certification of Non-Segregated Facilities, Bid Addendum, and DAS Contractor Prequalification Certificate and Update Statement. CH2M provided a cursory review to confirm all required information was submitted. Based on the information provided, we found that C.H. Nickerson has provided substantially complete information.

<u>Bid Form (Section 00 41 13):</u>

The work to be performed under this contract is divided into lump sum and unit price work.

The Engineers Estimate for the lump sum plus unit price work is is $2,300,000. The bid form submitted as part of the C.H. Nickerson bid is $1,689,844 which is 27% less than the Engineers Estimate, and outside the estimate accuracy of -15% and +20%; however, the estimate was completed prior to the bidding period. During the bidding period the construction timeline was increased and an alternate product proposed by DN Tanks was accepted. In discussions with C.H. Nickerson these changes had a significant impact on their bid.

Based on our evaluation of the bid prices and discussions with C.H. Nickerson the submitted project cost of $1,689,844 is fair and reasonable.

Bidder Qualifications and Experience:

C.H. Nickerson & Co., Inc. provided a complete Statement of Bidd's Qualifications with the bid as required and attached a Statement of Bidders Qualifications which included Contracts on Hand, Major Contracts Recently Completed, Major Available Equipment, Similar Experience, and Principal Members Experience.

Information provided in the Bid indicate that C.H. Nickerson & Co., Inc. has previous experience constructing the type of work in this contract and has a good record of successful performance based on the projects that are listed in the Bid.

The bid failed to list proposed Subcontractors as required in the Bid Form, Section 00 41 13 Paragraph 7.1.7. During discussion with C.H. Nickerson they have indicated they plan on using DN Tanks for structural rehabilitation work and on page 2 of the Statement of Bidder's Qualifications the work to be done by Subcontractors and dollar value was listed as Shotcrete and coatings, $900,000.

Based on our evaluation of the bid and our subsequent discussions with C.H. Nickerson, we recommend award of the contract to the bidder C.H. Nickerson in the amount of $1,689,844.

This information should be combined with your own evaluation to make the final award decision.

Sincerely,

Stephen Clark PE
Project Manager

cc: Eric Muir/CH2M

City of New London
Connecticut

Bid Tabulation Form

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Project: Sludge Storage Tank Rehabilitation
Bid Opening Date and Time: February 24, 2017 @ 2:00pm

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	Allowance for disposal of lead/Asbe	1	Allowance	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	
			Total Bid Price	$ 3,510,723.75		$ 2,166,541.00		$ 1,689,844.00		$ -

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY **Utility Commission**	**CONTACT PERSON** **Neftali Soto - Chief Engineer**
PROJECT NAME **Grinder Pumps Replacement**	**DEPARTMENT PRIORITY** **13**

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This activity entails the securing funds through the WW Enterprise Fund for the replacement of individual grinder pumps that the Utility Commission has the responsibility to maintain. At this time, we are still responsible for 101 grinder pumps located on private property. Due to age, many of them fail and repairs are not justified. This is a continuation of our annual program of grinder pumps replacement, and it is funded through the Enterprise Fund.

2 PROJECT STATUS IF IN PROGRESS

This is an annual program.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANTOHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

This will optimize the utilization of our staff in other [more pressing] tasks. It will also the reduce the [out of working hours] call outs due to failure of pumps. Grinder pumps is an appliance which, as we know, have a certain life expectancy and after that time repairs are not justified.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund		$ 31,000	$ 32,000	$ 33,000	$ 34,000	$ 35,000
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other (detail in section 5 above)						
	TOTALS	**0**	**$ 31,000**	**$ 32,000**	**$ 33,000**	**$ 34,000**	**$ 35,000**

the need to budget approximately $65,000 over the next 10 years (not including inflation).

- **SCADA System Equipment Upgrades** – The Waterford Utility Commission is currently in the process of installing an upgraded SCADA system to monitor and remotely control their sewer pump stations. Funding has been procured, RFPs have been received, and a contract award is anticipated in 2015. As technology progresses, hardware, such as the programmable logic controllers (PLCs), and software are no longer supported and require replacement. The Utility Commission should be planning on the need to budget approximately $200,000 in 10 years (not including inflation) to purchase newer more efficient hardware and software packages for their SCADA system.

Typical SCADA System Server/Central Station

- **Individual Property Grinder Style Pump Stations** - The Waterford Utility Commission is also responsible for the operation and maintenance of approximately 135 individual property grinder style pump stations. This number will continue to reduce based on a May 2004 ordinance changing the responsibility of the operation and maintenance of these grinder stations to the property owner. The Utility Commission also provides a user fee credit to each property for the electrical cost to operate each town owned station. Utility Commission staff routinely addresses equipment problems with these stations and reportedly have the equivalent of 0.5 staff members dedicated to this effort. Based on our current understanding of this program, it appears that it results in an overall lower equivalent user fee for properties with pumping systems, compared to those without pumping systems.

As with the rest of the collection system, the mechanical, electrical and structural components of these systems are aging, and it is projected that major components will need to be replaced over the next 10 to 15 years. Based on an assumed replacement cost of $2,500 for each individual unit, the Utility Commission should be planning on the need to budget approximately $338,000 over the next 10 to 15 years (not including inflation). Upon replacement of the remaining 135 stations, this CIP line item will be phased out.

- **Sewer Pipe/Manhole Repairs and I/I Remediation** - One of the goals of the SSES program will be to identify sewer improvements and repair needs. This can include a variety of spot repairs up to full replacement of sewers and manholes. Until specific needs are identified, it is difficult to determine when the repairs will be needed, and what the cost will be to perform the repairs. One approach to determine the budget costs for sewer repair over time is to assume that all the sewers will eventually need to be replaced. Sewer replacement costs can vary considerably depending on size, depth, groundwater elevation and location.

Assuming an overall current average cost of $150/foot for sewer construction, the 142 miles of sewers in Waterford have an approximate replacement cost value of $112 million, not including the pump stations. If it is assumed that the sewers will be gradually replaced over a period of 500 years, this would equate to an annual budget of approximately $225,000 per year which could be allocated to sewer repair or replacement or approximately $3.40 million over 15 years (not including inflation). This line item can also be used to fund emergency repairs and sewer manhole lining, raising or replacement as a supplement to repairs that the WUC cannot complete on their own. Additional

Pipe Infiltration