

# Implementation of a Design/Build/Operate Project – The City of Taunton, Massachusetts Experience – Part 1



## A Case History of Massachusetts First D/B/O Wastewater Project

*Paul B. Doran, Jr., P.E.*

Many municipalities throughout the United States are facing the problem of balancing their need for improved utility services and infrastructure with their duty for responsible fiscal management. In the areas of municipal water and wastewater, the proliferation of federal funds in the 1970s and 1980s spawned a rash of new and retrofitted treatment facilities. Now, in many instances, these facilities are in disrepair, incapable of meeting environmental permit requirements, and require significant capital repairs and investment. Also, many municipalities require an increase in water and wastewater treatment capacity to supply the services for municipal growth. Several facilities are facing serious fines and penalties for discharge permit violations while others have been issued regulatory compliance enforcement actions.

With diminishing funding for water and wastewater projects a reality, communities are gaining an interest in

partnering with the private sector to revitalize their wastewater treatment and drinking water facilities, improve the quality of service, keep rates stable while bringing the facilities into regulatory compliance, assure the ongoing health and safety of their community, meet growing demands for clean water, protect the environment through proper wastewater treatment, and assimilate the liability and risk of performance guarantees.

The following is a case history of how a typical municipality in the northeastern United States implemented a long-term public-private partnership (20 years) for wastewater treatment services. The Taunton,

Massachusetts story illustrates how a municipality, local labor organizations and the private sector joined forces to provide local citizens with greatly needed treatment plant improvements while maintaining a flat sewer rate structure.

## **BACKGROUND INFORMATION**

### *Overview of City Government and Department of Public Works*

The City of Taunton is located in Southeastern Massachusetts, about 40 miles south of Boston and 15 miles east of Providence, Rhode Island. Over five million people live within a 50 mile radius of Taunton. The City's government consists of a nine-member Municipal Council and a Mayor, both elected every two years. The Municipal Council meets publicly at least once per week.



The City's Department of Public Works (DPW) has managed the Wastewater Treatment Plant operations contract since the City went to private operations in 1980. The DPW has also coordinated capital improvements at the facility and has overseen other expenditures that remained the City's responsibility.

### *Description of Existing Facilities*

The Taunton wastewater facilities consist of a collection system comprised of more than 70 miles of sewers, 23 wastewater pumping stations and a 8.4 MGD advanced wastewater treatment plant.

The wastewater collection system in Taunton serves approximately 14,000 domestic City housing units, 700 industrial, commercial and institutional users, 500 users from the Town of Dighton, and 736 industrial users and 187 commercial users from the Town of Raynham. The sewer system contains one combined sewer overflow (CSO), which discharges to the Taunton River during wet weather periods. During periods of significant rainfall, the City collection system is subject to heavy infiltration and inflow (I&I), severely impacting the quantity of wastewater received at the wastewater

treatment plant. The 23 collection system pump stations range from large-flow, large-horsepower, dry-pit/wet-pit types to small low flow submersible stations.

### *Prior Contract Operations Arrangement*

Originally a primary wastewater treatment plant, the Taunton facility was upgraded in 1977 to provide secondary treatment and nitrification. In 1980, after a short period of municipal operation, the City contracted with a private firm to provide short-term operation and maintenance services for its wastewater treatment plant and collection system pump stations via a 3-year contract with 2 additional renewable years. The private service provider was also responsible for residuals management and administering the industrial pretreatment program. As part of ongoing contract operations, the private service provider made limited capital improvements to the facilities. These capital improvements were funded by the City on an as needed basis.

The Taunton WWTP was staffed twenty-four hours per day, seven days per week by 18 operators, technicians and maintenance tradesmen. (Employees at the facility are represented by Public Employee Local Union 1144.) Compensation, benefits, work rules, management rights and other employment conditions are contained in a formal agreement between the contract operator and the Union. Staffing levels, shift coverage, and operator certification requirements were subject to review and approval by the Massachusetts Department of Environmental Protection (MADEP). The plant staffing was in compliance with MADEP requirements.

### *Permits and Compliance History*

The wastewater treatment plant operates under a National Pollutant Discharge Elimination System (NPDES) permit, the latest of which was issued to the City on October 26, 1995. Due to declining performance of worn out equipment, the plant had periodically exceeded the permit limits for five-day biochemical oxygen demand (BOD), total suspended solids (TSS), settleable solids, ammonia nitrogen, total residual chlorine, fecal coliform bacteria, and flow.

These violations prompted the United States Environmental Protection Agency (US EPA) to issue a series of Administrative Orders, requiring the City to correct deficiencies. The Administrative Orders also required the City to conduct traditional facilities planning and prepare detailed scopes of work for an Infiltration and Inflow Reduction Plan, a Combined Sewer Overflow Abatement Plan, and a Wastewater Facilities Capital Improvements Plan.

## TRADITIONAL PROJECT DELIVERY

### Wastewater Treatment Facility Planning

Following the EPA Administrative Orders, the City of Taunton initiated the traditional EPA facilities planning approach to include an initial Plan of Study and a follow-up comprehensive Facilities Plan. The Plan of Study included a detailed inspection, review, and evaluation of all wastewater treatment plant unit processes and systems, including an assessment of their condition and usefulness within the context of an improved and expanded facility capable of meeting projected needs to the year 2020. Existing tanks, buildings, and other structures were incorporated into the upgrade plan. The recommendations of the study included detailed design criteria, preliminary process schematics and facilities layouts for the recommended treatment plant improvement program.

As part of this planning program, the older, larger, and key sewer system pump stations were also inspected for their need for upgrade and rehabilitation. All pump stations were inspected and evaluated as to their: general condition; flow capacity; and satisfactory operation considering emergency power systems, alarm telemetry systems, flow metering systems, and any special operational or maintenance issues.

The study resulted in a recommended facilities program to improve, upgrade, and refurbish as necessary all of these larger and older pump stations.



*Aerial View of Taunton Wastewater Facility Before DBO*

After the completion of the facilities planning stage, the City planned to enter into a traditional design/bid/build project delivery method to complete the design and construction of the required wastewater infrastructure improvements.

## Traditional Project Delivery in Massachusetts -

### Design/Bid/Construction and Operation Contracts

To varying degrees, all states regulate the procurement of goods and services by public entities. In Massachusetts, municipalities, as public entities, must follow the rigid design/bid/construct process set by Massachusetts General Laws. These laws were developed in the late 1970s in response to the recommendations of a special state commission that uncovered corruption in public building procurement practices. Compliance with these public procurement laws is now carefully monitored and enforced by the Office of the Inspector General (IG). The IG also scrutinizes any proposed legislation relating to public procurement, and subsequently makes recommendations to the Legislature and Governor relative to passage.

### Design-Bid-Construct

The conventional sequential procurement approach of design, bid, and construct is regulated in Massachusetts by two companion laws that separate the design and construction functions. The first is Chapter 7, the "Designer Selection Law", that governs the procurement of consultant design services. Using the project plans and specifications prepared by the designer, the second law, Chapter 149, the "Construction Bidding Law", requires a strict competitive bidding process for any significant construction project involving a building, equipment and other capital intensive construction. Any construction contract awarded under this law must be to the lowest responsible bidder, so long as the "responsible" standard is met.

The traditional facilities planning approach, now in use by USEPA and MADEP, fully complies with the procurement of capital intensive water and wastewater improvements in Massachusetts.

### Operation Contracts

Separate from the Designer Selection Law and the Construction Bidding Law is Chapter 30B, the law governing supply and service contracts. Operation contracts for water and wastewater services in Massachusetts are procured through 30B. These types of services can be bid using 30B procedures, with the Request for Proposals (RFP) as the main procurement document. The 30B RFP process permits you to weigh the relative merits of proposals submitted by competing firms. The municipality would award the contract to the firm submitting the most advantageous proposal, taking into consideration each proposal's merits and price. Unlike the conventional bidding process, the 30B RFP process may not always result in the selection of the qualified proposer offering the lowest price.

The 30B RFP process requires proposers to submit separate technical and cost proposals, each one reviewed independently by two separate evaluating teams. Costs would not be revealed to the technical proposal review team until its evaluations were completed. The technical proposals are to be evaluated on explicit criteria specifically established in the project's RFP and given a value of "Highly Advantageous", "Advantageous", "Minimum Acceptable" or "Unacceptable". The price proposals are evaluated by the criterion set forth in the RFP (usually life cycle costs and present worth analysis).

The municipality must determine the most advantageous proposal for its needs. The proposal ranked Highly Advantageous may have a higher cost than a proposal ranked Advantageous. The 30B law does not restrict the municipality in the award of a higher priced contract provided a detailed written explanation is submitted revealing the reasons for the award.

Chapter 30B documents include: written rationale for decision to use an RFP; the RFP, with any addenda; the public advertisement; the register of proposals; written individual and composite proposal ratings; written rationale for the contract award; and the executed contract. The 30B written documents remain on file for six years and are open to public inspection.

## NON-TRADITIONAL PROJECT DELIVERY

Taunton is a typical municipality with many simultaneous needs. Several City projects (e.g., new school, public safety building) also need funding, presenting the City with competing demands for financing of community infrastructure projects. As a potential means to reduce cost and to satisfy the needs of the wastewater infrastructure and the other municipal needs, the City assessed several options for increasing the role of the existing private wastewater plant contract operator.

Alternative Resources, Inc. (ARI) approached the City with the concept of using the design/build/operate method of project delivery for the needed improvements at the wastewater plant. After learning about the process, City officials decided to abandon the conventional facilities plan procurement approach and take the necessary steps to implement a non-traditional, design-build-operate approach.

In May of 1995, ARI conducted a study to identify various options for increasing the responsibilities of



**DBO Contract Construction of the New Headworks**

private industry to operate the treatment plant and make the overdue major capital improvements to the facility. The study recommended that Taunton consider four options to increase private industry participation:

- 1.) design/build services for capital improvements with separate operations contract;
- 2.) long-term operations services with capital improvements and financing the improvements in one contract;
- 3.) facility sale; and
- 4.) facility lease.

At the time these recommendations were made to the City, national experience with wastewater facility sales, leases and long-term contracts were not widespread. ARI made these recommendations based on its experience with design/build/operate procurements in the solid waste and waste-to-energy field.

### Special Legislation Required

Design/build/operate project delivery methods are not allowed under the Massachusetts procurement laws for municipal projects. If this method were to be implemented, the City would have to draft special legislation that would be sent to the Massachusetts Legislature for approval. The Legislature would approve the City's special legislation and enact a special law, signed by the Governor, which would give Taunton the legal basis to conduct a design/build/operate (DBO) procurement.

*The Taunton procurement was conducted during a period where national experience with wastewater facility sales, leases and long-term contracts were not widespread.*

The first step in the process was to secure political support for passage of special legislation that would allow a design-build-operate process. Meetings were held with Raynham, Dighton and Taunton governments to inform them of the merits of design/build/operate, inform them of the

need for legislation, and seek their written support. Their support was essential in enlisting the aid of the local legislators.

Once that support was gained, meetings were then held with local state representatives and senators. Their support was essential to gain the passage of legislation. Ultimately, one of these legislators served as the District's champion in the State Legislature and was instrumental in spearheading its passage.

ARI and the City also met with representatives from the local labor unions to explain the procurement process. As a result of these meetings, provisions for protecting the interests of labor were included in the drafted legislation.

While support was being solicited, the City and ARI drafted the Taunton legislation and submitted it for review to the Office of the Inspector General. Patterned after 30B, the legislation was written in a manner that assured a fair and open competitive process would be used to select a design/build/operate service provider, and that the process was in the spirit of existing state procurement law, while maintaining adequate flexibility and control for the City throughout the procurement process. The Taunton special legislation, **Chapter 362**, was recommended to be passed on July 31, 1996 and was signed into law on August 9, 1996.

Key elements of the Taunton Special Legislation were:

- Term of Agreement: 20 years,
- Renewals: One 5-year extension,
- SRF: Project eligible for Massachusetts State Revolving Loan Funding,
- Selection Criteria: Developed in RFP; award on technical, qualitative and quantitative merits
- Selection Criteria: Most advantageous proposal to the City (may not be lowest in cost)
- Labor Provisions: Project Labor Agreement required, salaries and benefits equal or better,
- Negotiation: Provision to negotiate with vendor.

### ***City Objectives For a Design/Build/Operate Public-Private Partnership***

In considering an increased private role at its wastewater plant and pump stations, the City desired to satisfy a number of objectives. Each is briefly described below:

1. **Upgrade Treatment Plant and Pump Stations and Improve Performance.** The City sought private assistance to identify, finance, permit, design and construct cost effective means to upgrade the treatment plant and pump stations.

2. **Minimize Operation and Maintenance (O&M) Costs .** The Proposers were required to preserve all capital investments in the facilities, assure the long-term reliability and efficiency of the treatment plant and pump stations.
3. **Improve NPDES Compliance.** Over the years, unreliable treatment plant equipment contributed to the problem of noncompliance with NPDES permit

*Taunton drafted special legislation that would allow the state Legislature to enact a special law, which would give Taunton the legal basis to conduct a DBO procurement.*

requirements; thus, the Proposers were expected to correct equipment deficiencies and improve compliance with NPDES permit limits. If selected as Service Provider, the Proposer would also assume liability for fines and penalties for NPDES noncompliance.

4. **Limit The City's Economic Exposure for NPDES Noncompliance.** The Proposers would be required to provide high quality, uninterrupted, economical operation of the wastewater treatment plant, the collection system pump stations, and solids handling and residuals disposal. In addition, the Proposers would be required to process the City's wastewater in a manner that meets all

*The special legislation was written in a manner that assured that a fair and open competitive process would be used to select a design/build/ service provider, and that the process was in the spirit of existing state procurement law, while maintaining adequate flexibility and control for the City throughout the procurement process.*

applicable Commonwealth of Massachusetts and Federal laws, regulations, policies and rules.

5. **Compliance with Administrative Order Requirements.** The Proposers would ensure that the requirements of the latest and all future EPA Administrative Orders were satisfied. The City would incorporate the Proposer's Capital Improvements Program to satisfy the Administrative Orders.
6. **Rate Impacts.** The City's economic objectives were to reduce costs for the City and its customers. It was anticipated that with a long-term contract, annual service fees for private operation would be reduced. Costs for repayment of capital projects were expected to be offset by increased operating efficiency and reduced operating costs, and by

more efficient design and construction resulting in reduced costs for capital improvements.

7. **Customer Service Objectives.** The Proposers would be expected to plan and schedule operations to deliver wastewater treatment services in a manner which avoided any negative impacts, real or perceived, on the City and its customers. This would include minimizing odor, lighting, noise, and visual impacts on the surrounding neighborhood.

8. **Employment, Career Opportunities and Development.** The Proposers would provide employment opportunities to all present plant employees, with compensation (i.e., wages plus benefits), comparable or better than the combined compensation currently being paid by the present service provider and the City. Proper training, as well as career development opportunities, were also sought.

9. **Combined Sewer Overflow Compliance.** The Proposers would be responsible for the necessary Combined Sewer Overflow improvements, which would comply with EPA Nine Minimum Controls in the short term and EPA CSO policy in the long term. The City's preferred solution was the elimination of all CSO discharges.

10. **Economic Development and Water Quality.** Plant Capacity was considered a finite resource available to meet the City's water quality and economic development objectives. The Proposers' programs should assist in promoting conservation of its use to help meet these objectives.

The City did not want to achieve a short-term gain through concession fees, but rather to reduce cost to the City and the rate-payers over the long term.

## THE PROCUREMENT PROCESS

### *The Request for Proposals*

As this type of procurement process was relatively new to Massachusetts, a "draft" Request for Proposals (RFP) was issued in May of 1996 to test "market interest" in the process and seek input from the regulatory community, members of the City Council, community members and private vendors. The City was especially interested in comments on the proposed scope of

services, business terms and conditions, contract provisions and distribution of risk for each of the four options offered in the draft RFP.

*Proposers were invited to respond to 4 options:  
1: Continue current, short-term contract operations services with no capital improvements;  
2: Provide long-term (20 year) O&M services with DB of capital improvements;  
3: Purchase the wastewater treatment plant and make capital improvements; or  
4: Lease the wastewater treatment plant and make capital improvements.*

Extensive interest from all sectors was received. The private vendors submitted 30 pages of comments to the City for consideration in the final RFP document.

The final RFP was issued on August of 1996.

A pre-proposal conference was held in Taunton on Sept. 12, 1996,

after which a site and facility visit was conducted for all parties. Additional site visits were arranged by individual appointment, during which detailed facilities inspections and literature reviews were allowed.

The City issued six Addenda to the RFP and formally responded in writing to all questions raised by proposers during the proposal preparation period.

Proposers were invited to respond to one or more of the following options:

- Option 1: Continue current, short-term contract operations services;
- Option 2: Provide long-term (20 year) contract operations services and capital improvements;
- Option 3: Purchase the wastewater treatment plant and make capital improvements; or
- Option 4: Lease the wastewater treatment plant and make capital improvements.

Since the current short-term contract had expired, the City decided to take advantage of this procurement to solicit new short-term proposals, thereby avoiding a separate procurement process for the renewal of the short-term operations contract. Thus, as a minimum, all Proposers were required to respond to Option 1 and provide a proposal for current, short-term operations. The City's plan was to provide the most flexible procurement process possible. Each of the options are described below.

### *Option 1: Continue Current Contract Operations Arrangement*

The Service Provider would be responsible for the operation and maintenance of the treatment plant, the main lift station, force main, and pump stations, CSO monitoring and metering, residuals management, conducting the City's industrial pretreatment program,

including sampling, analysis, and management requirements, and provision of special services, all in accordance with applicable permits and regulations. The term of contract would be three years, with two, one-year options for renewal.

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### Plant tour begins wastewater bid process

Biggest names in wastewater treatment visit plant

By JAMES R. DEARRUDA  
Gazette Staff Writer

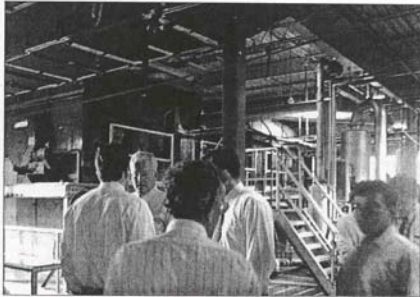
TAUNTON — The biggest names in the big business of wastewater treatment are testing the waters in Taunton.

Representatives of a dozen of the largest wastewater treatment developers and operators toured the city's plant on West Water Street Friday as they consider whether to submit bids on upgrades and long-term operation of the aging facility.

The potential bidders have been shown a first draft of the request for proposals and will offer comments on what they've seen before the final draft is sent out in early July.

The city, faced with a need to expand the plant's capacity and mandated upgrades which could cost \$15 million, is looking for alternatives to financing the improvements by itself.

By accepting proposals which could involve anything from the outright sale of the facility, to



OUT WITH THE OLD: Potential bidders for upgrades and operation of the city's aging wastewater treatment plant are challenged to be creative with their plans for the obsolete equipment they were shown while touring the West Water Street facility, Friday.

Photo by James DeArruda

The City would be responsible for planning, permitting, designing, constructing and financing the required capital improvements to the existing wastewater plant and pump stations. The City would continue to own the plant and pump stations and be designated as permittee for all permits. Enforcement of the industrial pretreatment program would remain the City's responsibility.

Under Option 1, 32 separate operation services were defined and made part of the new short-term contract. In addition, the successful vendor was required to provide an Emergency Management Plan, an OSHA Compliance Plan, an Odor Control Plan and a Transition of Operations Plan.

### Option 2: Provide Long-Term Contract Operation Services

In Option 2, the Service Provider would be responsible for long-term contract operation and maintenance services for the wastewater treatment plant, main lift station, force main, and pump stations. Option 2 services would also include private financing, permitting, design and construction, operation and maintenance and asset management of capital improvements to these facilities. The term of the contract would be 20 years, with a five-year renewal option.

In responding to Option 2 of the RFP, the Proposers were to conduct comprehensive evaluations of the wastewater treatment plant, pumping stations, and CSO. Once the analysis was completed, the Proposers were to: develop a prioritized listing of recommended improvements to comply with the Administrative Orders; accommodate a minimum design flow of 8.4

MGD (average daily flow), and a minimum peak daily design flow of 17.4 MGD; optimize plant, main lift station, force main, and pump station performance; prevent CSO discharges or bring same into compliance with Federal and State policy; and minimize operation and maintenance costs.

The Proposers were encouraged to recommend any and all beneficial changes to the existing wastewater treatment plant processes, pump stations, and CSO to the City, provided that all changes meet the requirements of EPA and DEP.

All of the capital improvements were to adhere to design and performance standards as defined by the Massachusetts Department of Environmental Protection (MADEP), the USEPA, the Water Environment Federation, the New England Water Pollution Control Commission and that of good and customary engineering practice. If the Proposer took exception to the design standards, it was to provide justification for use of equivalent standards.



### Option 3: Purchase Wastewater Treatment Plant

In Option 3, the City received proposals for the purchase of the main lift station, the force main, and the wastewater treatment plant. In this option, City properties supporting the wastewater treatment plant (not the main lift station and the force main) would be leased to the Service Provider for the contract term. The Service Provider would provide wastewater treatment services and pump station operations and maintenance services to the City for a 20-year period.

In addition, the Service Provider would be responsible for financing, permitting, designing, and constructing all capital improvements to the wastewater treatment plant, main lift station, force main, pump stations and CSO, in accordance with its own specifications and design standards, provided that these design standards met the requirements of DEP, EPA, and accepted practices within the wastewater industry. All improvements were to be approved by the City. As permittee (if allowed by the appropriate regulatory agencies) the Service Provider would be completely responsible for permit compliance.

The City would retain ownership of the collection system, including pump stations (except the main lift station and the force main), to collect, transport, and deliver to the Service Provider's facility all influent originating in the service area. The City would also maintain the collection system and amend, as necessary, regulations, which currently exist with regard to the collection system; i.e., the sewer use ordinance and industrial pretreatment agreement.

The City would maintain primary responsibility for the enforcement of the industrial pretreatment program.



#### ***Option 4: Lease the Wastewater Treatment Plant***

In Option 4, the Service Provider would lease for 20 years the wastewater treatment plant, including the property on which the plant is located, the main lift station and the force main. The Service Provider would be responsible for the long-term operation and maintenance of the wastewater plant, main lift station, force main, pump stations, and CSO described in Option 2. The Service Provider would also be responsible for meeting the NPDES permit requirements and would design, permit, construct, and finance all necessary capital improvements to the plant, main lift station, force main, pump stations, and CSO under the same conditions as specified in Option 2.

The City would retain the ownership of all facilities.

#### ***Proposals Received***

Through extensive direct outreach to potential proposers, exposure in the trade journals, and direct advertising, the City was able to maximize competition.

On December 16, 1996, the City was pleased to receive seven (7) proposals from well-qualified firms and/or teams. These included:

1. American Anglian Environmental Technologies (AAET), Voorhees, New Jersey
2. Operations Management International (OMI), Denver, Colorado
3. Earth Tech, Concord, Massachusetts
4. Ogden Yorkshire Water Company, Fairfield, New Jersey
5. Professional Services Group (PSG), Houston, Texas
6. US Water, LLC, Somerville, New Jersey
7. US Filter Operating Services (USFOS), Palm Desert, California

All seven proposers submitted on Option 1: Short Term Contract Operations and Option 2: Long Term Contract Operations with Capital Improvements/Asset Management. Only two proposers submitted on the lease and sale options, Earth Tech and US Filter.

The City enjoyed an overwhelming response to its RFP. Reasons for this were:

- Clear commitment of the Mayor and Municipal Council to fairly evaluating the approach
- Community needed to address the long term capital problems of the wastewater system
- Support from MADEP and USEPA to explore the options
- Clear City objectives
- Completion of an outreach program to neighborhood groups, labor, media, community and other stakeholders
- The City's communication with the Massachusetts Office of the Inspector General
- A Draft RFP which encouraged early private input
- A final RFP that included a clear decision making process and evaluation criteria
- Availability of extensive design data in digital form
- The use of well qualified, expert consultants during the procurement process.

#### **EVALUATION PROCESS**

The proposal evaluation process consisted of the following three separate phases:

1. The technical evaluation performed by the Technical Review Team,
2. The financial/cost review, undertaken by the Financial Review Team, and
3. The Value Analysis performed by both Review Teams, resulting in the final ranking of proposals.



*Two separate review teams independently reviewed the proposals: A Technical Review Team and a Financial Review Team*

### **The Technical Review**

All proposals were initially reviewed for completeness. Incomplete proposals were not reviewed any further. All proposals judged complete were then evaluated to determine if each Proposer was “responsive and responsible”. Each proposal was then evaluated using the established Evaluation Criteria for topics such as:

- Proposal content and approach,
- Compliance with City objectives,
- Compliance with key terms and conditions of contract,
- Risk allocation,
- Qualifications and experience, (design, design/build, operations, key personnel)
- Business experience,
- Financial capacity,
- Schedule, and
- Employee relations.

The members of the Technical Review Team and the City’s consultants first scored each Evaluation Criterion individually. Following this, the Team met in a group to review the individual scores, discuss the reasons for the individual ratings and to reach group consensus on the final rating for each criteria. For many Criteria, consensus was not reached. At this point, the Team

*The Technical Review Team and consultants were not aware any of the proposal costs; thus, the City met its objective to rate each proposal on its technical merits alone.*

requested all Proposers to respond to a series of written clarifying questions, which continued until the Team felt there was enough information to give each Criteria a final rating for each Proposer. During this review, the Technical Review Team and consultants were not aware any of the proposal costs; thus, the City met its objective to rate each proposal on its technical merits alone.

### **The Financial Review**

Cost proposals were received in separate sealed envelopes and were evaluated by an independent Financial Review Team. Costs were not revealed to the Technical Review Team. Similarly, the Technical Review Team’s rankings were not discussed with the Financial Review Team.

The Financial Review Team reviewed each proposal for content and completeness, including all items requested and the proper completion of all appropriate RFP Cost Forms. Thereafter, the Cost Proposals were evaluated using a life-cycle cost analysis financial model for the 20 year term. Costs were escalated over the term using each respective Proposer’s proposed Annual Adjustment Factor (a percent of the CPI-U for Boston, Massachusetts) submitted with its proposal. Each Proposer was asked to determine the Annual Adjustment Factor in percent to add another dimension of competition to the procurement process.

In addition to the life-cycle costs, the Team calculated total present worth costs of each Proposer’s net fee to be paid by the City.

# Wastewater partnership lauded as state model

By **KURT MOFFETT**  
Gazette Staff Writer

TAUNTON — Local and state legislators are lauding Texas-based PSG’s proposal to take over operation of the city’s wastewater treatment as a model for the rest of the state.

State Sen. Marc R. Pacheco, D-Taunton, said during a press conference at City Hall yesterday that legislation enacted in August 1996 allows the city to enter into a 20-year contract with Professional Services Group without costing current plant employees their jobs or benefits. He said this “sets a precedent in public/private partnerships.”

The statute also ensures that a project labor agreement will be executed for any future construction, modification or renovations of the treatment plant.

Pacheco said other communities



**PATRICK McMAHON**  
PSG president

## Value Analysis

Following each respective review team's analysis, a joint committee of the Technical and Cost Review Teams, the Joint Evaluation Committee, was formed to conduct a Value Analysis of all proposals. During the initial meeting, both Teams determined that five of the seven Proposer's submittals required further clarification; thus, these five Proposers were invited to a formal interview with the Joint Evaluation Committee. As a result of the interviews, further written inquiries were presented to each of the five Proposers. Responses were received from all vendors. The Joint Evaluation Committee then ranked all proposals in the order most advantageous to the City.

*After submitting their analysis, the Technical and Financial Review Teams formed into a Joint Evaluation Committee to conduct a value analysis and ranking of each proposal.*

A written recommendation was forwarded to Mayor Robert Nunes, the Chief Procurement Officer, for his final ranking. Prior to his decision, each Proposer was invited to meet with the Municipal Council to discuss its qualifications. Following this meeting, Mayor Nunes accepted the ranking of the Joint Evaluation Committee, and announced that the City would begin to negotiate with the top-ranked private Proposer until an acceptable contract was agreed to, or until negotiations broke off. The City would then have the option to negotiate with the next highest ranked firm.

## RESULTS

After the review of all the proposed options, it was evident that the private purchase or lease options (Option 3 & 4) did not provide terms more attractive than the long term contract (Option 2); thus, Options 3 and 4 were eliminated from consideration.

Based on the technical review, the following were the rankings, from highest to lowest, of the seven private vendors: Earth Tech, OMI, American Anglian, U.S. Filter, PSG, Ogden Yorkshire, and U.S. Water.

All of the proposals were evaluated utilizing four different financing scenarios, each reflecting a different approach to fund the capital improvements required. The four financing scenarios were:

1. The Proposer's preferred financing plan, assuming a 70/30 split of operating costs, fixed and variable respectively, reflecting the best terms the Proposer could guarantee
2. The Proposer's preferred financing plan, assuming a 80/20 split of operating costs, fixed

and variable respectively, consistent with the January 1997 I.R.S. regulations associated with private activity bonds, reflecting the best terms the Proposer could guarantee,

3. The City financing scenario where the City would fund the upfront capital costs using the source of funding through the Massachusetts Water Pollution Abatement Trust, the SRF program, with an 80/20 split of operating costs, and
4. The City financing scenario where the City would fund the upfront capital costs using the source of funding through the issuance of City general obligation bonds with an 80/20 split of operating costs.



In order to ensure a level playing field, the City published the assumptions to be used in the evaluation in the RFP. These included a 4% inflation rate, a 4% discount rate for net present value calculations and a 6% interest rate for use with private activity bonds.

Applying the financial models for all four of the scenarios, the Proposers were financially ranked, from lowest to highest, as follows: PSG, U.S. Filter, Earth Tech, American Anglian, OMI, Ogden Yorkshire and U.S. Water.

The Joint Evaluation Committee reached the following conclusions:

1. Not one proposal was technically superior to justify paying a large extra cost differential,
2. The value analysis should focus on the three lowest cost proposals,
3. Using the Proposer financed options, PSG and U.S. Filter had costs that were comparable,
4. PSG was clearly the most cost advantageous Proposer using the City and SRF financing options,
5. The SRF loan is clearly an advantage for the City,

6. The Earth Tech proposal did not present enough extra value (ranked #1 technically) to justify its choice over the PSG proposal,
7. The Earth Tech proposal did represent enough value to justify its second place choice over the U.S. Filter proposal, and
8. The overall final value ranking of all Proposers was as follows: PSG, Earth Tech, U.S. Filter, American Anglian, OMI, Ogden Yorkshire and U.S. Water.

*The Taunton wastewater improvement project was the first municipal environmental project in Massachusetts to use the design/build/operate project delivery method. The Taunton Special Legislation allowing this form of procurement, served as a model for the many DBO projects now underway in the state. In addition, the trails blazed by the Taunton project, served to make subsequent projects flow more smoothly.*

The Joint Evaluation Committee recommended to Mayor Robert Nunes, Chief Procurement Officer, that the City negotiate with Professional Services Group (PSG) for the long term operation and maintenance plus capital improvements of the wastewater treatment plant. Mayor Nunes accepted the ranking of the Joint Evaluation Committee, and announced that the City would begin to negotiate with PSG.

The Contract was negotiated with PSG and signed on August 20, 1998. Construction of the \$10,294,000 capital improvements began on October 19, 1998.



*Gazette photo by DICK ARIKIAN*

**Breaking ground for the new wastewater facility are from left Mayor Robert G. Nunes; state environmental secretary Trudy Coxe; Thierry Mallet, president and CEO of Aqua Alliance; and Paul McNally of the Laborers International Union.**

An estimated \$15 million in capital and \$48 million in operation and maintenance costs will be saved over the 20 year life of the project as compared to the City's conventional approach.

The design/build operate team consists of the engineering firm of Metcalf and Eddy, Inc., Wakefield, Massachusetts, as the design engineer; Poole and Kent – New England, Inc., Waterbury, Connecticut, as the construction contractor; and Professional Services Group, Norwell, Massachusetts, as the operator and overall project guarantor.

The Taunton wastewater improvement project was the first municipal environmental project in Massachusetts to use the design build operate project delivery method. The City of Taunton Special Legislation allowing this form of procurement, served as a model for the many DBO projects now underway in the state.

In addition, the trails blazed by the Taunton project, served to make subsequent projects flow more smoothly. The construction of the Taunton wastewater improvements qualified for a loan through the State Revolving Fund, making it the first state DBO project to receive SRF money. Procedures established jointly by MADEP, the City and the City's consultants, enabled the review of the project to occur without delays.

Construction of the project is approximately 95 % complete. To date, the DBO process has gone smoothly. To-date, The DBO contractor has issued one change order to the City for concealed underground conditions encountered on the site. This change order amounted to approximately **0.2%** of the total construction cost. Over 170 change orders have occurred on the job that the City was not involved.

In the future, Part II of this paper will describe the key DBO contract provisions along with the design and construction issues encountered during the DB of the capital improvements.

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**Paul B. Doran, P.E.** is the Director of Engineering at Alternative Resources, Inc, corporate offices in Concord, Massachusetts