City of Boston, Massachusetts
Public Facilities Department

Feasibility Study for Adaptive Re-use of an Existing Public Rest Room Building

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Table of Contents

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Introduction

The Boston Public Facilities Department (PFD), acting on behalf of the Boston Department of Parks and Recreation, has requested a study of the feasibility of renovating an existing public rest room on the Public Garden. This building, known as the "Men's Comfort Station", has been closed for several decades. The alternative to renovation is demolition.

CBI Consulting, Inc. prepared a study for demolition of the building in February 2007. The study concluded that demolition costs (exclusive of abatement and removal of the heating system) would be in the order of $56,000, including engineering and other "soft" costs.

The Parks Department has proposed that the building be renovated for use as a food vending location. Therefore, the intent of this feasibility study is to investigate what will be required to restore the building structure and to develop an order-of-magnitude estimate of the work. In accordance with PFD's request, we have also estimated the cost to fit out the building interior and install food service equipment and to provide new utilities from the street to the building.

Description

The Men's Comfort Station was constructed in the 1920's for use as a public men's toilet. It is located in the Boston Common, near the corner of Boylston and Charles Streets. It is convenient to the Boylston subway station and to one of the Common Parking Garage headhouses. We understand that it has been closed to the public since the 1970's.

It is an octagonal structure, built of cast stone and brick masonry, with a wood-framed glazed copper roof. The exterior includes one door and seven blind masonry panels, as well as a series of metal-framed clerestory lights below the cornice line. There are also several areaway openings to the basement that have been filled with masonry. There appears to be a basement (which we were not able to access) that presumably contains heating equipment, and which we understand is entered from a steel hatch on grade outside of the building. The exterior

footprint encloses approximately 660 gross square feet. The building is approximately 16 feet high at the roof edge. We noted a manhole marked "BSD" near the entry. However, we have no information that clearly indicates that functioning utility services exist in the vicinity of the building.

The interior is a single circular space that contains a number of urinals, toilet stalls and a service sink, all of which are arranged around the circumference. There is a cylindrical shaft at the middle of the building that contains a flue and heating pipes, and that also appears to provide structural support for the roof. Cast iron radiators surround the shaft. The interior finishes are plaster and ceramic tile. It is assumed that there is asbestos-containing material and other similar hazards within the structure that will require removal.

The current condition of the building is very poor. The glass and copper roof has failed, the entry door is severely damaged, and the interior finishes are damaged beyond repair. A number of the cast stone masonry units at the exterior have shifted, the mortar joints require extensive repair and repointing, and reinforcing bars are exposed in several locations. We are not able to assess the condition of the floor structure or the basement.

Design Intent

The Parks Department has proposed that the building be repaired and reconfigured for food vending to the public. Our understanding is that this would be a seasonal operation. Conceptually, the proposal seems very advantageous, because 1) it is close to a large number of office buildings and tourist attractions, suggesting a good potential customer base; 2) there are few other places to buy snacks or light meals in the vicinity; and 3) the location, which is surrounded by mature trees and is raised somewhat above the surrounding park, offers a very attractive setting for outdoor eating and relaxation. We see this as a desirable location for lunch during fair weather. In addition, the renovation and projected use will mitigate what otherwise is a rather neglected and dark corner of the Boston Common.

Operationally, the existing structure could be either renovated as a shell and then leased to a private operator who would be responsible for final finish and fit-out and operation ("Option #1), or it could be constructed with all necessary equipment and facilities to function as a snack vendor ("Option #2"). PFD and Parks and Recreation should determine which approach is most advantageous in consultation with potential operators.

For the purposes of this study, we have assumed that the facility will offer snacks such as potato chips, sandwiches and light lunch products, soft drinks, and ice cream. In addition, the facility may optionally offer grilled products like hamburgers and hot dogs that require cooking on site. All products will be sold directly to the public on a "take-out" basis. There is no interior seating. However, we envision outdoor seating, including tables and umbrellas. Other design considerations would include product storage and waste management needs. We have assumed that a handicapped-accessible toilet will be required and that the entrance must also be made accessible for employees.

The Boston Common is a designated historic district, and the grounds and structures are subject to a number of requirements for historic preservation. We therefore have discussed this proposed project with the staff of the Boston Landmarks Commission. They have outlined a number of restrictions regarding the exterior design of any changes to the building. These include, for example:

- No change may be made to any of the landscape elements. Any seating areas, decks, or similar features must be temporary and capable of being removed for storage during the off-season.
- The existing iron fence should be relocated appropriately, but not removed.
- Any new openings must be designed in a style that acknowledges the architecture of the existing building, as well as that of surrounding structures. The design of

the decorative grilles on the subway head-houses at Boylston and Park Street stations is considered appropriate.

- The new roof should be of similar materials and design as the original.
- Exterior signage and lighting must be minimal.
- The existing trees must be protected.
- All proposed exterior work must be reviewed and approved by the Landmarks Commission and other officials having jurisdiction.

Assumed Scope of Work and Basis of Estimate

Regardless of which of the two options described above is selected, there are a number of common front-end tasks that will be required. These include a detailed assessment of the building structure and available utilities, architectural design, permitting, and construction procurement. Total project costs will include these services (known as "soft costs"), as well as the "hard" costs for construction and fit-out. The conceptual project budget that follows is based on the estimated construction costs for the two options mentioned above, as well as a pro-rated amount for soft costs. We have also included a contingency amount to reflect the uncertainty of available information. We have not included a construction cost escalation amount because a project schedule has not been determined. Recently, escalation could be assumed at a rate of about 10% per year, compounded.

As noted above, we have assumed that the food service operation will be seasonal. The building will be closed and all outdoor furnishings will be removed and stored elsewhere during the "off season".

Baseline scope of work for renovation (Option 1):

- Abate all hazardous materials.
- Selectively demolish existing plumbing fixtures, toilet partitions, wall finishes and support, roof, floor if required, and door.
- Remove and reset damaged or shifted exterior masonry units as needed.
- Secure or remove the basement access hatch, after removing whatever equipment may be in the basement.
- Remove the existing door and frame.
- Cut three of the existing blind panels on the exterior wall to provide new window openings, adding steel lintels as required.

- Clean, re-set, and re-point exterior masonry and patch exposed reinforcing. Salvage and re-use cast stone from new window openings as appropriate.
- Repair the foundation wall as required.
- Relocate the existing metal fence.
- Install new water, sewer, and electric service from the street. We have assumed the tie-ins would be near the intersection of Boylston and Charles Streets, but this needs to be verified.
- Construct a new roof structure, including gutters and rain leaders. We have assumed metal and wood framing with copper roof. We have not assumed a glazed roof similar to the original. A new glazed roof could be installed at the Owner's option for additional cost.
- Install a new walkway for vendor and handicapped access.
- Install a new entry door and frame.
- Install three new windows and ornamental screens or shutters.
- Repair or replace the clerestory lights in kind.
- Heating and ventilation are assumed to be electric, intended for seasonal operation.
- Upgrade site lighting, consistent with the location, the proposed use and historic requirements.

Finishes and Fit-out (Option 2)

In addition to the work described under Option 1,

- Provide and install floor, ceiling, and wall framing and finish materials, including paint.
- Construct interior partitions to suit the plan layout.
- Install rough and finish electrical, lighting and plumbing fixtures, including a handicapped-accessible toilet and sink.
- Provide food service equipment as appropriate for the type of food service expected. This would include, for example, dry food storage, cold food storage, ice cream freezers, cold drink storage, ice machines, cooking or heating equipment, food preparation areas, sinks, and trash and garbage collection and storage. Provide all electrical and plumbing connections. We have attached a sketch, for illustrative purposes only, that shows one possible layout for general floor plan and the kitchen equipment. We have not evaluated the building code

requirements for this use or structure. Please note that this concept sketch includes fryers and other food service equipment that would include ventilation, hoods, grease traps, and other mechanical equipment that may be neither intended nor economically feasible. The cost estimate is based on an average for kitchen costs as a function of floor area, and not on the specific equipment shown in the sketch. The actual cost will depend on the type of food products served and the equipment needed to do so.

- Provide temporary outdoor seating, including tables with umbrellas, trash collection, etc.

Utilities

It isn't clear if there are existing and usable utilities for the building. We therefore have assumed that new water, sewer, and electric services will be required. We have also assumed that these will be run in a trench, following the alignment of existing sidewalks, to tie-ins near the intersection of Boylston and Charles Streets. However, we have not accounted for possible subsurface conditions such as existing utility crossings.

We have not, however, performed any engineering calculations regarding loads or the capacity of the services. This will require a more detailed analysis by a qualified engineering consultant. We have assumed nominal pipe and conductor sizes for these services, and also included approximate lump sum amounts for street tie-ins, surface restoration, permits, and other costs. These should be considered as "place holders" rather than bona-fide estimates.

Conclusion and Recommendations

Based on our observations and the information available, the existing structure appears to be sufficiently sound that renovation is feasible. However, this must be confirmed by a licensed structural engineer. The projected use as a food vending location seems to be reasonable, given the configuration of the building and the attractive location. Furthermore, there are few competing food vendors near by, which would suggest that there is an unmet need in this part of the Common.

We have developed order-of-magnitude estimates for both options: 1) renovation of the existing structural shell, and 2) for the additional cost to fit out the renovated shell with interior partitions, finishes, and equipment (both movable and fixed) as is reasonable to meet the stated design intent. The estimates have been adjusted to current (2007) costs. Please keep in mind that construction costs have been escalating in the order of 10% annually, and the estimate should be considered with this in mind. The attached

conceptual plan shows how the building could be adapted and fitted out for use as a seasonal food vending operation.

The construction cost estimate includes a contingency amount for change orders during construction. In addition to the "hard" costs of construction, we have included an allowance for "soft" costs such as design and permitting fees, and for project contingency. This is intended to cover the cost of design and construction to account for conditions that are unknown at this time (such as structural deficiencies in the existing building), as well as design considerations that have not been included in the assumed scope. For a project such as this where there is much that is unknown about the existing structure, we recommend carrying a contingency of about 20% of the hard and soft costs.

The order-of-magnitude estimates of the costs for the two options, including construction, soft costs, and recommended contingencies, are tabulated below:

Conceptual Project Budget

	Option #1 - General renovation (including utilities)	Option #2 - additional costs for fit-out and equipment	Total
Construction cost	$485,126	$129,014	$614,140
"Soft" costs	$145,538	$ 38,704	$184,242
Contingency	$126,133	$ 33,544	$159,677
Total:	$756,797	$201,262	$958,059

If the City decides to proceed with this project, we recommend first undertaking a full evaluation of the building's condition by qualified engineering firms. The intent would be to assess the building's structural integrity and determine the extent of hazardous materials, as well as to determine the condition and contents of the basement. It will also be necessary to survey the existing utilities (if any) to confirm their location and capacity. The next step would be to engage an architectural firm to measure the building, develop the scope and program for the proposed use, and to prepare the design and construction documents for renovation. This would require close consultation with the Department of Parks and Recreation and the Public Facilities Department, as well as other regulatory agencies such as the Boston Landmarks Commission and Inspectional Services. Once the plans are complete and to the satisfaction of the various regulatory agencies, the project could be advertised and bid for construction.

We have not been provided with any schedule information. However, a suggested project schedule might be as follows:

Consultant procurement:	Two months
Building condition survey, including structural and hazmat:	Two months
Programming and architectural design (concurrent with permitting):	Eight months
Bidding	Two months
Construction and fit-out (including utilities)	Ten months
Estimated total duration:	**Twenty-four months**

Basis and Assumptions of the Estimate

1. This conclusion and the estimate are based on limited visual observations of the building and its apparent condition. It is very likely that there are significant structural issues of which we are not aware. In particular, we do not know the condition of the floor or the basement walls and foundations. This will require a detailed assessment by an engineer.
2. As noted above, we have included a 20% design contingency amount to represent the uncertainness of the scope of work.
3. We have assumed that any existing utilities are not serviceable. New utilities may well be required from the street.
4. We have included an estimated amount for removal of hazardous materials. This amount is based on CBI's report, but it may not reflect actual conditions accurately.
5. We have assumed that the building will be used only during the warmer months. There will be no heating or ventilating equipment other than that provided by the food service equipment, although it may be reasonable to include electric space heaters for cool weather.
6. Building insulation is provided at the roof only.
7. The estimate is based on the outline scope of work that is described above. Quantities are approximate. It would be necessary to develop detailed architectural plans and specifications in order to prepare a more accurate cost estimate.
8. Soft costs are estimated at about 20% of the estimated construction costs. This figure is an average of other projects with which we have been involved. However, various factors may alter this amount, including, for example, consultant costs and project management fees.
9. We have adjusted the unit costs, where appropriate, to account for construction cost escalation to the present and for the city cost index for the Boston area.
10. Assumptions regarding construction of new utilities are summarized in the narrative.

Information Sources and References

Floor plan showing food service equipment layout:

Harbour Food Service Equipment, Inc.
229 Marginal St.
Chelsea, MA
617 884-3900
Angelo Sodano

Construction costs:

Means Construction Cost Data, 2005 edition (escalated to 2007)

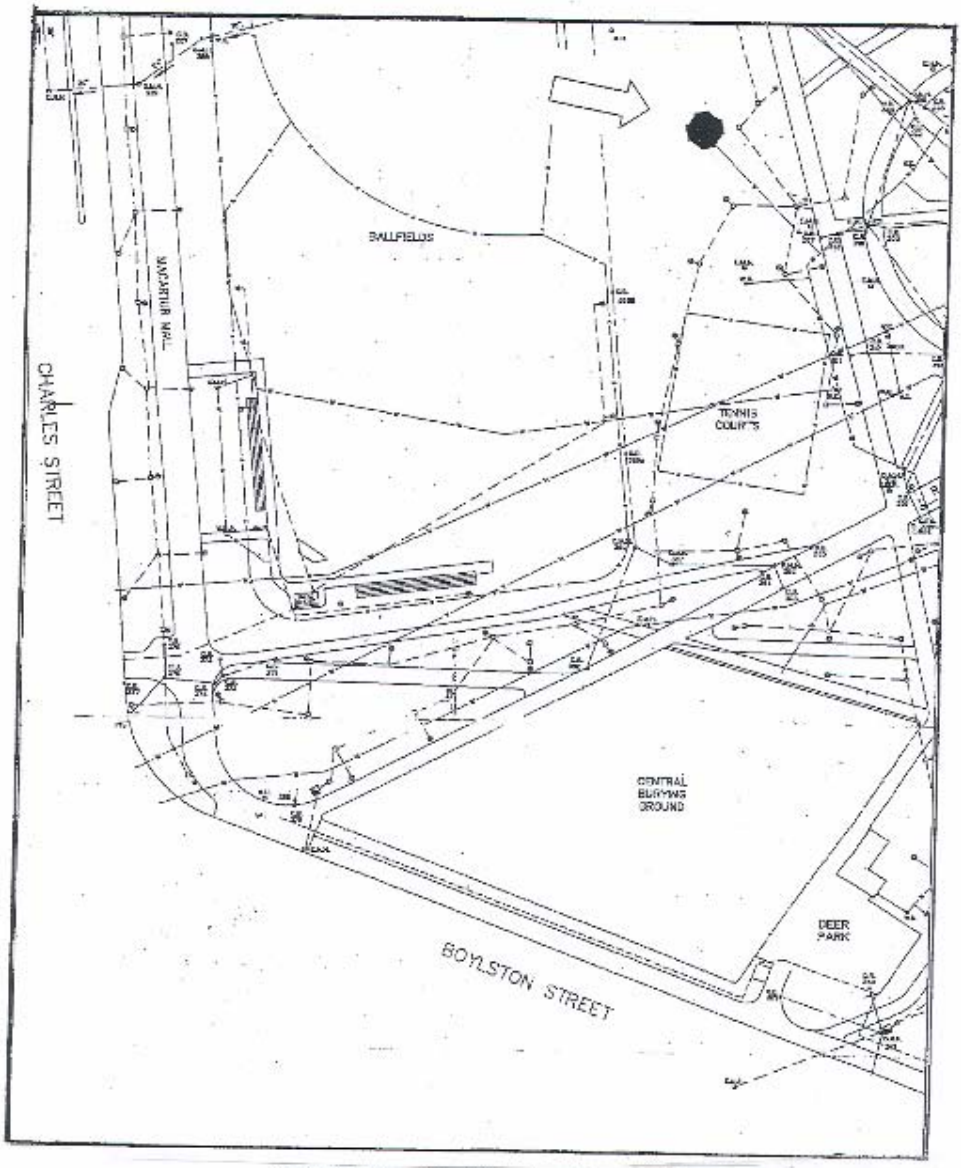
Historic preservation assistance

Boston Landmarks Commission
"Standards and Criteria", dated 3/8/78
"Boston Common Management Plan"

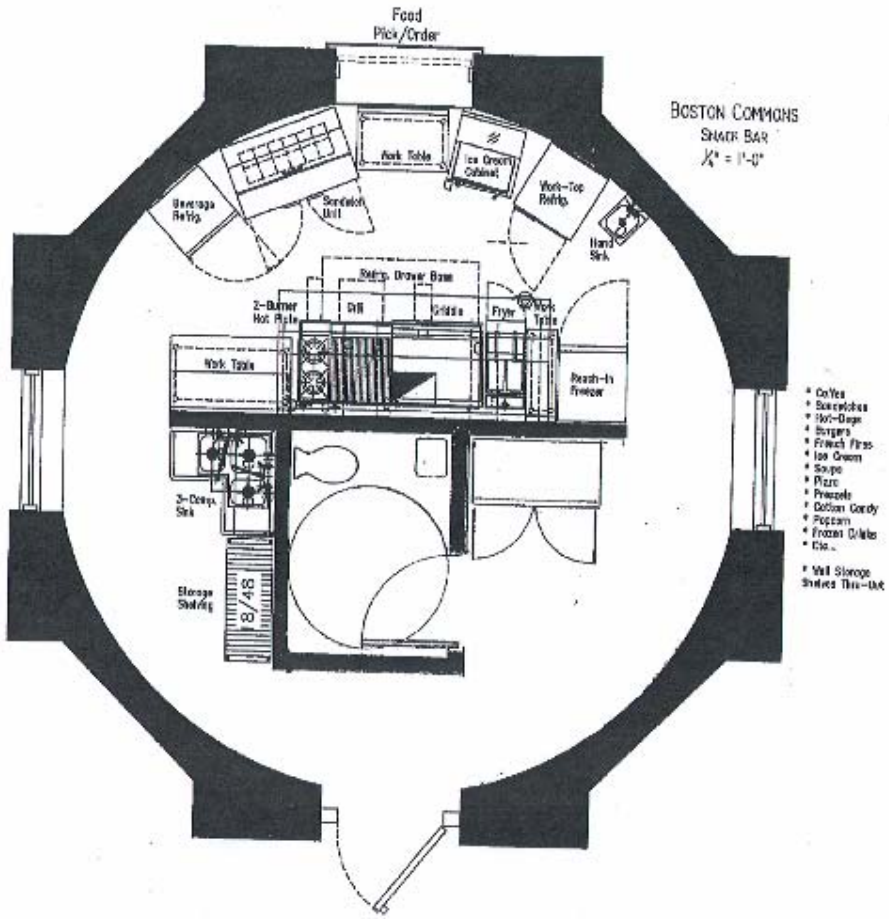
Ellen Lipsey and Gary Russell

Demolition Study dated February 2007

CBI Consulting, Inc.
250 Dorchester Ave.
Boston, MA 02127
Robert G. Wilkin, PE



Men's Comfort Station Locus Plan



Conceptual Layout Drawing

City of Boston
Public Facilities Department

"Men's Comfort Station" Renovations: Conceptual Construction Cost Estimate
(including Utilities)

Gross floor area (approx):	659 sf	
	Shell only (Option #1)	Full fit-out (Option #2)
Construction cost per square foot:	$736.16	$931.93
Project cost per square foot:	$1,148.40	$1,453.81

Div.		Units		Unit Price	Base Construction	Additional to fit-out
		(Note 2)				
2	**Sitework**					
	Hazmat abatement - allowance	1	ls	$5,000.00	$5,000	
	Selective demolition- allowance	1	ls	$15,000.00	$15,000	
	Relocate existing fence - allowance	1	ls	$5,000.00	$5,000	
	Finish grading and planting - allowance	1	ls	$30,000.00	$30,000	
	Site furnishings - allowance	1	ls	$10,000.00	$10,000	
	Concrete paving	1000	sf	$3.64	$3,640	
	Site Utilities (see note 5)	1	ls	$128,910.00	$128,910	
3	**Concrete**					
4	**Masonry**					
	Repair existing masonry	1	ls	$35,000.00	$35,000	
	Repoint	2400	lf	$4.84	$11,626	
	Clean masonry	1224	sf	$2.80	$3,427	
	Install new lintels	3	ea	$2,000.00	$6,000	
	Cut new window openings - 20" thick masonry	69	lf	$40.04	$2,763	
5	**Metals**					
	Structural steel for roof - allowance	1	ls	$5,000.00	$5,000	
6	**Wood and Plastic**					
	Infill frame and sheath new roof	675	sf	$14.00	$9,450	
	Interior framing for walls and partitions	1040	sf	$1.16		$1,208
	Misc blocking - allowance	1	ls	$1,000.00	$1,000	
	Interior trim - allowance:	1	ls	$1,000.00		$1,000
7	**Thermal and Moisture Protection**					
	Copper roof	675	sf	$19.60	$13,230	
	Roof membrane (ice and water shield)	675	sf	$2.80	$1,890	
	Gutters and rain leaders (copper)	85	lf	$16.80	$1,428	
	Misc. flashing - allowance	1	ls	$5,000.00	$5,000	
	Roof insulation - R-30	530	sf	$1.83	$972	
8	**Doors and Windows**					
	New custom exterior metal door and frame	1	ea	$2,800.00	$2,800	
	New custom metal exterior windows	125	sf	$150.00	$18,750	
	Decorative security window grilles - allow	3	ea	$5,000.00	$15,000	
	Replace existing clerestory windows and grilles	45	sf	$150.00	$6,750	

Div.		Units		Unit Price	Base Construction	Additional to fit-out
9	**Finishes**					
	Gypsum wallboard (high-impact)	1210	sf	$1.51		$1,830
	Gypsum ceiling	415	sf	$1.74		$720
	Resilient flooring	415	sf	$7.00		$2,905
	Base	100	lf	$1.88		$188
	Paint	1650	sf	$0.63		$1,040
10	**Specialties**					
	Signage - allowance	1	ls	$1,000.00		$1,000
11	**Equipment**					
	Kitchen Equipment (see note #4)	1	ls	$60,000.00		$60,000
12	**Furnishings**					
	None					
13	**Special Construction**					
	None					
14	**Elevators**					
	None					
15	**Mechanical**					
	Plumbing service - allowance	1	ls	$1,000.00	$1,000	
	Plumbing (sf allowance)	415	sf	$20.00		$8,300
	Mechanical (sf allowance)	415	sf	$10.00		$4,150
16	**Electrical**					
	Electrical service upgrade - allowance	1	ls	$10,000.00	$10,000	
	Electrical (sf allowance)	415	sf	$25.00		$10,375
				Subtotal:	$348,636	$92,716
1	**General Conditions**					
	General Conditions at 10%				$34,864	$9,272
				Subtotal	$383,499	$101,987
				Overhead and profit at 15%	$57,525	$15,298
				Construction subtotal	$441,024	$117,285
				Construction contingency at 10%:	$44,102	$11,729
				Construction total:	$485,126	$129,014
				"Soft" costs at 30% (see note #3):	$145,538	$38,704
				Subtotal:	$630,664	$167,718
				Project/design contingency at 20%:	$126,133	$33,544
				Estimated project cost:	**$756,797**	**$201,261**

Div.		Units	Unit Price	Base Construction	Additional to fit-out

Notes:

1) Unit costs are from Means' Building Construction Cost Data, 2005. Costs have been adjusted for escalation (2 years at 10% annually = 121%) and for location (116%). Total adjustment is 140%.

2) Quantities are approximate. An accurate take-off will require detailed design documents.

3) Soft costs include professional fees for design, engineering and project management, permitting fees, testing costs, etc.

4) Equipment cost estimated on Means rule of thumb: $110 per sf of kitchen area. Final cost will depend on scope selected.

5) Site utilities: see separate estimate. Amount includes only direct construction costs.

City of Boston
Public Facilities Department

"Men's Comfort Station" Renovations: Conceptual Utilities Estimate

Div.		Units		Unit Price	Base Construction
2	**Site Utilities**				
	Excavate and backfill trench	300	CY	$56.00	$16,800
	4" CI sewer pipe	900	LF	$5.40	$4,860
	Street connection (assume tie-in to exist SMH)	1	LS	$15,000.00	$15,000
	Water pipe - 1 1/2" PVC	900	LF	$2.00	$1,800
	Valves, etc.	1	LS	$1,000.00	$1,000
	Street connection - water	1	LS	$15,000.00	$15,000
	PVC electric conduit - 2 @ 2"	900	LF	$7.50	$6,750
	Conductors - 3 @ #4/0	900	LF	$3.00	$2,700
	Pull boxes, manholes, etc.	1	LS	$25,000.00	$25,000
	Street connection (assume tie-in to exist EMH)	1	LS	$15,000.00	$15,000
	Misc. costs: police detail, surface restoration, etc.	1	LS	$25,000.00	$25,000
				Subtotal:	$128,910

Notes:

1) Unit costs are from Means' Building Construction Cost Data, 2005. Costs have been adjusted for escalation (2 years at 10% annually = 121%) and for location (116%). Total adjustment is 140%.

2) Quantities are approximate. An accurate take-off will require detailed design documents.