

CONSOLIDATED EDISON COMPANY OF NEW YORK

GAS OPERATIONS PANEL

GAS

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- 1 Q. Would the members of the Gas Operations Panel please
2 state your names and business addresses?
- 3 A. Our names are Frank Ciminiello, Liliana Gonzalez,
4 Edward C. Foppiano, and Jyotin Thaker. Our business
5 addresses are 1615 Bronxdale Avenue, Bronx, New York,
6 10462 (for Ciminiello and Foppiano), 1560 Bruckner
7 Boulevard, Bronx, New York 10473 (for Gonzalez), and
8 315 Saw Mill River Road, Valhalla, New York 10595 (for
9 Thaker).
- 10 Q. By whom are you employed and in what capacity?
- 11 A. We are all employed by Consolidated Edison Company of
12 New York, Inc. ("Con Edison" or "Company").
13 (Ciminiello) I am the Chief Distribution Gas Engineer.
14 (Gonzalez) I am the General Manager, Gas Technical
15 Operations.
16 (Foppiano) I am the Chief Gas Transmission Engineer.
17 (Thaker) I am the General Manager of Westchester Gas
18 Operations.
- 19 Q. How long have you been employed by Con Edison and what
20 positions have you held while at Con Edison?

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1 A. (**Ciminiello**) I have been employed by Con Edison since
2 1968. From 1968 to 1976, I held positions of
3 increasing responsibility in the Gas Engineering
4 department. In 1976, I was promoted to Section
5 Manager of the Gas Engineering department. During the
6 past 25 years, I have held operating positions in each
7 of the five areas of Con Edison's Gas Operations
8 departments. My operating experience is as follows:

- 9 • Manager of Manhattan Gas Operations
- 10 • General Manager of Queens Gas Operations
- 11 • General Manager of Bronx Gas Operations
- 12 • General Manager of Central Gas Operations
- 13 • General Manager of Manhattan Gas Operations
- 14 • General Manager of Westchester Gas Operations

15 In early 2000, I assumed my current position of Chief
16 Gas Engineer. In 2004, responsibility between
17 Transmission and Distribution was separated and the
18 positions of Chief Distribution Engineer and Chief
19 Transmission Engineer were created.

20 (**Gonzalez**) I have been employed by Con Edison since
21 1985. After completing the Company's Engineering

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1 Management Intern Program, I held various positions of
2 increasing responsibility in System Operation and
3 Substations Operations - Protective System Testing,
4 including Senior System Operator - System Operation,
5 and Area Manager for Bronx and Lower Westchester in
6 Substation Operations - Protective System Testing. In
7 2001, I was promoted to Director of Equal Employment
8 Opportunity. In August 2004, I became Chief Design
9 Engineer in Central Engineering, Central Operations.
10 In October 2007, I assumed my current position where I
11 am responsible for managing the operations associated
12 with Gas Measurement, Corrosion Control, Leak Survey,
13 the Company's LNG plant, and maintenance of the
14 Company's various Tunnel Facilities.

15 (**Foppiano**) I have been with Con Edison for 36 years.

16 I was first employed by Con Edison in July 1973 and
17 have held various engineering and management positions
18 in Central Engineering, Construction, Steam
19 Operations, Electric Operations, Facilities Management
20 and Gas Operations. In 2000, I was assigned to Steam
21 Operations as Plant Manager of Waterside Generating

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1 Station. Between November 2001 and January 2004, I
2 was the Chief Engineer for the East River Repowering
3 Project ("ERRP"). In February 2004, I was the Chief
4 Civil/Mechanical Engineer, and since mid-December
5 2008, I have been the Chief Gas Transmission Engineer.
6 My current primary responsibility is to provide
7 leadership and oversight for Gas Transmission
8 Planning, Gas Transmission Pipeline Integrity, Gas
9 Major Projects, Gas Project Management, Gas Pressure
10 Control and Gas Control Sections. These sections all
11 support the gas transmission system as well as
12 pressure control for gas distribution.

13 (**Thaker**) My service at Con Edison spans 31 years.
14 During this time I have held various positions in
15 Electric Distribution Engineering, Electric
16 Construction, including General Manager of Bronx-
17 Westchester Electric Operations, Chief Electric
18 Distribution Engineer, and currently as General
19 Manager of Westchester Gas Operations.

20 Q. Briefly discuss your educational background.

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1 A. (**Ciminiello**) I earned a Bachelor of Engineering degree
2 from New York University in 1968. I attended several
3 executive management programs, including a one-month
4 executive management program at Columbia University
5 and the University of Colorado Gas Executives program.
6 (**Gonzalez**) I earned a Bachelor of Engineering in
7 Electrical Engineering (BEEE) from Pratt Institute in
8 1985. I also earned a Master of Science in Electrical
9 Engineering from Polytechnic University in 1991. In
10 addition, I am certified by Power Technologies Inc.
11 (PTI) in Power Engineering.
12 (**Foppiano**) I received a Bachelor's Degree in
13 Mechanical Engineering from Manhattan College in 1973.
14 I also received a Master of Business Administration
15 from Fordham University in 1978 and completed the
16 Public Utility Executive Program in July 1993 at
17 Michigan University.
18 (**Thaker**) I a hold Bachelor of Science degree in
19 Electrical Engineering from Manhattan College in New
20 York. I have also completed the Power Technology

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1 Distribution Systems curriculum from the Power
2 Technology Institute.

3 Q. Did you or do you still belong to any professional
4 organizations?

5 A. (**Ciminiello**) Yes. I am a member of the Operations
6 Safety Regulatory Action Committee ("OSRAC") of the
7 American Gas Association and am a former member of
8 both the Society of Gas Operators and the American
9 Welding Institute.

10 (**Gonzalez**) Yes. I am an active member of the
11 Northeast Gas Association, New York Advisory Committee
12 since 2007.

13 (**Foppiano**) Yes. I am a Professional Engineer in the
14 State of New York and a member of The American Society
15 of Mechanical Engineers Industry Advisory Board.

16 (**Thaker**) Yes. I was a member of the Institute of
17 Electrical and Electronics Engineer during my academic
18 years.

19 Q. Have any members of the Panel testified previously
20 before the New York State Public Service Commission
21 ("PSC" or "Commission")?

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1 A. Yes. (Ciminiello, Gonzalez, Foppiano) Each of us has
2 submitted testimony before the Commission. (Thaker) I
3 have not previously submitted testimony before the
4 Commission.

5 Q. Please summarize the Gas Operations Panel's testimony.

6 A. Our testimony will:

7 • Identify major capital programs/projects to be
8 conducted in 2010, 2011, and 2012 and introduce
9 the associated "White Papers" that provide
10 detailed description of these programs/projects,
11 their cost, schedule and units of work with
12 specific justification and explanations for
13 performing the work. We will highlight the
14 Company's infrastructure replacement objectives
15 and discuss our long-term strategy for Gas
16 Operations. Our description of capital programs
17 and projects will be grouped into the following
18 defined sections:

- 19 • Annual programs
20 • Supply Main projects
21 • Technical Operations programs and projects

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- 1 • Pressure Control programs and projects
 - 2 • Transmission programs and projects
 - 3 • Special IT projects; and
 - 4 • Describe the Company's planned O&M expenditures
 - 5 for the Rate Year;
 - 6 • Explain how several pending regulations, the full
 - 7 effects of which are not currently known and are
 - 8 not accounted for in our program and project
 - 9 funding request, may affect our capital and O&M
 - 10 budgets;
 - 11 • Propose continuance, modification or
 - 12 discontinuance of reconciliation mechanisms;
 - 13 • Recommend the continuance of performance measure
 - 14 metrics and revenue adjustments from Case 06-G-
 - 15 1332.
- 16 Q. How does the Company's capital and O&M expenditure
- 17 forecast compare to the Company's last gas rate case
- 18 filing?
- 19 A. The Company is proposing to mostly maintain its
- 20 current level of capital and O&M expenditures while

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1 continuing to provide the same level of safety,
2 service and reliability to our customers.

3

4 CAPITAL EXPENDITURES

5 Q. Is the Company seeking any increase in its capital
6 expenditures in 2011?

7 A. No. The Company is mindful of current economic
8 conditions and, as explained in more detail below, the
9 Company made significant efforts to hold the line on
10 its capital costs. The Company is proposing to
11 maintain capital expenditures at current levels.

12 Q. Why must the Company maintain its present level of
13 capital expenditures?

14 A. A gas distributor since 1823, Con Edison currently
15 provides natural gas service to more than one million
16 customers in Manhattan, the Bronx, Queens and
17 Westchester County, making the Company one of the
18 oldest and largest gas distribution companies in the
19 United States. The system comprises approximately
20 7,000 miles of gas mains and service pipes that
21 transport more than 200 million dekatherms of natural

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1 gas per year. The gas system is a vital part of the
2 energy infrastructure of the City of New York and
3 crucial to its economic well being.

4 As is the case for other critical pieces of the
5 infrastructure that serve New York City - its roads,
6 bridges, water mains, to name a few - Con Edison's gas
7 system must be continually maintained, restored and,
8 at times, replaced, for it to remain capable of
9 providing the safe and reliable gas service that our
10 customers have come to expect. The Company's
11 residential and commercial customers rely on the
12 vitality of the gas delivery system to provide the
13 fuel for their space heating, water heating, cooking,
14 processing, air conditioning and other needs. Major
15 gas customers, including hospitals, and the Housing
16 and School Authorities of the City of New York, play a
17 critical role in serving the needs of the residents of
18 New York City and Westchester County.

19 In addition, Con Edison's gas system is integral to
20 the Company's provision of electric and steam
21 services, providing the delivery infrastructure for

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1 the billions of cubic feet of natural gas relied upon
2 by in-City electric generating facilities and the
3 Company's steam and steam-electric production
4 facilities. As such, the Company's gas delivery
5 system provides the fuel for the power that heats,
6 lights and operates the area's residences, businesses,
7 high-rise elevators and mass transit system.
8 As the primary alternative to fuel oil, the Company's
9 natural gas delivery infrastructure enables the City
10 of New York to meet environmental objectives in
11 reducing harmful emissions that would result if
12 adequate supplies of natural gas were not available.
13 In addition, since fuel oil is often a more costly
14 alternative to natural gas, the availability of
15 natural gas for electric generation and steam
16 production enables the Company and competitive
17 providers of gas and electricity to reduce the cost of
18 utility services to the residents and commercial
19 establishments in the Company's service territory.
20 The plans to replace and/or upgrade our aging pipes,
21 equipment and facilities as outlined in this filing

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1 are required to enable the Company to continue to
2 provide the high-quality, reliable gas service that
3 customers have come to expect.

4 Q. Please summarize your annual capital spending for the
5 period of 2011 through 2013.

6 A. The Company's current rate plan for the period of
7 October 1, 2007 through September 30, 2010 establishes
8 a cap on capital expenditures and a proportionate
9 level funding for net plant. This amounts to
10 approximately \$315 million per year and we are
11 proposing capital expenditures at similar levels in
12 2011, 2012, and 2013. We will later describe the
13 intent of each capital program/project and introduce
14 detailed "White Papers" describing each
15 program/project, cost and schedule in detail.
16 Our proposed capital spending levels reflect the
17 Company's efforts to minimize the impact of higher
18 utility bills on our customers. For the near term, we
19 have taken into consideration a slowdown in new
20 business connections and new home constructions and
21 have made adjustments accordingly.

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1 We have prioritized other work in a manner designed to
2 maintain current levels of safety and reliability. We
3 are continuing with our programs to replace 40 miles
4 annually of leak-prone pipe and leaking services, and
5 to conduct all mandated safety inspections and
6 repairs/replacements.

7 Q. Are you suspending any major programs presented in the
8 last case?

9 A. Yes. Later in our testimony, we will provide an
10 update on the Company's plans for our LNG plant in
11 Astoria, Queens.

12 Q. Please explain some of the governing criteria you
13 utilize in establishing the Company's infrastructure
14 replacement objectives and long-term strategy for gas
15 operations.

16 A. Company Specification G-8051, titled "Gas System
17 Design Criteria," describes our long-term objective or
18 desired end-state conditions. Since the gas system
19 currently has a zero contingency design, we are
20 integrating the end state design in our daily tasks.

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1 Q. Please explain the design criteria to ensure minimum
2 required pressures to meet current load demand.

3 A. Our current gas transmission and distribution systems
4 are designed to meet the requirements of the 16 NYCRR
5 Part 255 and the load requirements of all firm
6 customers 365 days per year, 24 hours per day,
7 provided that the average of 24 hourly temperatures in
8 a calendar day does not fall below 0 °F (design day).
9 Maintaining the existing level of infrastructure
10 replacement is essential to:

- 11 • Maintain the reliability of the Transmission
12 System;
- 13 • Maintain the reliability of Supply Mains in the
14 event of an outage to a gate station or critical
15 regulating station; and
- 16 • Reduce the potential of incoming gas leaks each
17 year and maintain the system at optimal operating
18 pressures while satisfying design basis
19 conditions as described in our design criteria
20 procedure G-8051.

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1 Q. Can you provide a summary of the design criteria
2 procedure, G-8051?

3 A. For distribution main and service replacements, we
4 utilize the following criteria:

5 The replacement of bare steel, unprotected coated
6 steel, and cast iron gas mains will be prioritized
7 using a gas mains replacement ("MRP") statistical
8 computer program that includes risk, probability and
9 economic criteria.

10 • A quantity of small diameter bare steel and
11 unprotected coated steel mains shall be
12 replaced each year sufficient to maintain the
13 recent trend of incoming leak reduction.

14 • Cast iron distribution mains shall be replaced
15 when:

16 ■ Criteria for interference (undermining and
17 angle of repose - 16 NYCRR Part 255.756)
18 are met as per gas specification G-11839;
19 and

20 ■ Criteria for replacement or retirement are
21 met as per gas specification G-11841.

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- 1 • All Intermediate Pressure cast iron gas mains
2 8" and smaller shall be replaced or downgraded.
- 3 • All bare steel gas services installed between
4 1921 and 1950 shall be replaced by 2020.
5 Historically, bare steel services of the 1921 -
6 1950 vintage have accounted for more than 50
7 percent of all leaking services. The remainder
8 of the bare steel and unprotected coated steel
9 gas services shall be replaced by 2035.

- 10 • In addition to weather and pressure criteria,
11 all supply mains must be able to supply local
12 distribution mains in the event of loss of one
13 source of supply. The source may be either a
14 gate station or major regulating station.

- 15 • Areas of the low pressure distribution systems
16 shall be reinforced prior to the extremity
17 points reaching 4" wc during a design hour.

18 To continue to meet our design criteria, our master
19 plan includes projects that reinforce the system so
20 that the gas system can meet the pressure criteria on
21 a design winter day. The current level of spending

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1 will enable us to continue reinforcing the gas system
2 by replacing gas mains with larger size pipe, looping
3 redundant main around existing main, or adding
4 district regulating stations, where needed.

5 Q. What are the criteria used to select supply mains for
6 replacement?

7 A. Con Edison's gas distribution system consists of more
8 than 4,300 miles of mains in Manhattan, the Bronx,
9 Queens and Westchester. The key regulator stations
10 and backbone systems represent approximately 700 miles
11 of critical facilities which are called Supply Mains.
12 Supply Mains are typically the backbone pipes that
13 transport gas to major load pockets or other regulator
14 stations that feed lower pressure networks. In many
15 cases, they also represent single supplies to
16 distribution systems with no backup contingency in the
17 event of a damage or leak that would require the
18 shutdown of the supply main.
19 Most of these supply mains are large diameter (8"
20 through 30") and are located under major roadways.
21 The expense of replacing these facilities requires us

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1 to segregate these projects from smaller diameter
2 replacements/installations and to prioritize them in a
3 manner that will result in the maximum benefit.

4 Q. Are there other guidelines which provide direction for
5 capital improvements?

6 A. The Company is guided by the federal, state and local
7 regulations such as 16 NYCRR Part 255. In addition,
8 Gas Operations' long-term objective is to improve
9 safety by reducing incoming gas leaks, maintain
10 service to customers, and replace aging
11 infrastructure. We have a long-term master plan to
12 address supply mains and our transmission system. As
13 previously discussed, supply mains and distribution
14 facilities are not replaced in a wholesale or
15 geographic system. We currently have a multi-decade
16 replacement program under which thousands of small
17 projects scattered around the 4,300 miles of gas
18 mains, are completed each year to address site
19 specific issues.

20 Q. Was Exhibit ____ (GOP-1) titled, "CONSOLIDATED EDISON
21 COMPANY OF NEW YORK, INC. 2010-2014 GAS CAPITAL

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1 PROGRAM," prepared under the Gas Operations Panel's
2 direction and supervision?

3 A. Yes. Exhibit ____ (GOP-1) is the current 5-year capital
4 program, 2010 to 2014. The Company is continuing its
5 multi-year programs to improve the infrastructure of
6 its gas system. We are concentrating on unique asset
7 replacement and reinforcements to improve the level of
8 service and safety. As previously stated, we have
9 held our proposed expenditures to a level similar to
10 the current 2008-2010 approved level.

11 MARK FOR IDENTIFICATION AS EXHIBIT ____ (GOP-1)

12 Q. Please describe this exhibit.

13 A. This exhibit summarizes the gas system capital
14 expenditure estimates for the years 2010 through 2014,
15 which includes the rate year beginning October 1, 2010
16 in this proceeding and the two following years. Our
17 capital requirements are organized by functional areas
18 shown on the exhibit.

19 Q. What is the magnitude of this capital program?

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1 A. The Company plans to spend an estimated \$314 million
2 in 2011, \$308 million in 2012, and \$309 million in
3 2013 on various projects.

4 Operating Area Annual Capital Programs

5 Q. Please summarize the existing capital programs and
6 projects.

7 A. The general purpose of the existing programs is to
8 continue at current levels of replacement to address
9 known issues, replace undersized piping which requires
10 us to operate at higher than desirable gas pressures,
11 and where possible, target leak-prone pipe so that we
12 reduce incoming leaks and avoid future gas emissions.
13 We will continue all our existing annual programs,
14 which include:

- 15 • Gas Distribution 1 ("GD-1") is the annual
16 installation or replacement of mains and
17 services, meters and regulators, for both new
18 business and gas system reinforcement.
- 19 • Gas Distribution 3 ("GD-3") is the annual
20 replacement of corroded and leaking services.

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- Gas Distribution 4 ("GD-4") is the annual replacement of corroded steel mains.
- Gas Distribution 5 ("GD-5") is the annual program to identify coated unprotected steel mains and install necessary cathodic protection to extend the useful life of the steel gas main and services.
- Gas Distribution 11 ("GD-11") is the annual replacement of small diameter (4", 6", and 8") low pressure cast iron mains.
- Gas Distribution 29 ("GD-29") is the annual replacement of 2" high pressure steel mains where mechanical couplings are suspected to be an issue.
- Gas Distribution 30 ("GD-30") is the annual program to reinforce and seal 16" and larger cast iron joints internally through the Cast Iron Joint Sealing Robotic System ("CISBOT").

In addition to continuing the annual programs listed above, we will also discuss the need to continue multi-year supply main and transmission main projects.

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1 In order to maintain the long-term reliability of the
2 gas supply, system replacement of select supply and
3 transmission main will improve the reliability of the
4 gas supply while reducing the overall safety risk.

5 Q. Please continue to discuss the basis of the capital
6 main programs.

7 A. We will first describe the various capital
8 distribution programs:

- 9 • New Business
- 10 • System Reinforcement - Winter Load Relief
- 11 • Replacement of Leak Prone Main Pipe, which
12 includes GD-4, GD-11, GD-29 and some GD-1
13 programs
- 14 • Replacement of gas services, which includes GD-3
15 and some GD-1 programs
- 16 • Meter installations
- 17 • The cathodic protection of steel mains, GD-5
18 program
- 19 • The utilization of CISBOT on large diameter cast
20 iron mains, GD-30 program

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1 These programs and individual projects within these
2 programs are described in "White Papers" that provide
3 more detailed information such as: work description,
4 project justification, alternatives, estimated
5 completion date, current status, and forecasted
6 funding.

7 Q. Have you prepared an exhibit containing the "white
8 Papers" described above?

9 A. Yes, we have.

10 Q. Were the white papers in this exhibit prepared under
11 your direction and supervision?

12 A. Yes.

13 MARK FOR IDENTIFICATION AS EXHIBIT ____ (GOP-2)
14

15 Q. Please describe the New Business Program.

16 A. As explained in Exhibit ____ GOP-2, page 1, the New
17 Business Program provides new facilities (gas mains
18 and services) in response to customer requests for new
19 or increased gas usage.

20 In recent years, we have installed approximately 3,000
21 new services per year. In mid-2009, we experienced a
22 downward trend in customer requests. We are

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1 forecasting a continued downturn in 2010 to 2012. We
2 have funded \$37.8 million in 2011, \$39.4 million in
3 2012, and \$42.3 million in 2013. As previously
4 stated, we are maintaining current expenditure levels
5 and have not provided for any increases due to oil to
6 gas conversions, DIMP or the restart of housing
7 construction.

8 In 2007 and 2008, we spent an average of approximately
9 \$41 million annually and we are projecting a decrease
10 in 2011 and 2012.

11 Q. Please describe the System Reinforcement Program.

12 A. The System Reinforcement Program includes the
13 following categories:

- 14 • Winter load relief detailed in Exhibit __ GOP-2,
15 page 3; and
- 16 • Gas service replacements detailed in Exhibit __
17 GOP-2, page 5.

18 We have provided \$44.9 million in 2011, \$45.2 million
19 in 2012 and \$45.2 million in 2013, which are based on
20 historic trends.

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1 Winter load relief is an annual process in which our
2 engineering personnel measure actual system conditions
3 during the winter, effects of new business loads, and
4 modifications to gas mains as they are replaced.

5 These changes are entered into a Stoner computer model
6 which indicates gas pressures and flow rates. Where
7 required, we upsize smaller diameter pipe because we
8 are not able to provide adequate pressure to some
9 customers. Historically we replace 4 to 5 miles per
10 year due to this effort in order to comply with our
11 system design criteria and 16 NYCRR Part 255.

12 The other major item of work under system
13 reinforcement is the replacement of gas services.
14 Service replacements are comprised of the following
15 programs: steel services replaced in conjunction with
16 various main replacements, proposed services that do
17 not have an outdoor shut-off, and services that have
18 demonstrated a high rate of leak trends based on the
19 vintage year installed.

20 Q. Please describe the programs to replace leak-prone
21 cast iron main pipe.

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1 A. The replacement of cast iron pipe consists of two
2 specific capital budget programs:

- 3 • GD-1, the emergency replacement of cast iron
4 mains (Exhibit __ GOP-2, page 11); and
- 5 • GD-11, the replacement of small diameter cast
6 iron mains (Exhibit __ GOP-2, page 21).

7 At year-end 2008, Con Edison's gas distribution system
8 was comprised of approximately 4,300 miles of main.
9 Of this, approximately 62 percent is cast iron and
10 unprotected steel. A further material breakdown shows
11 approximately 32 percent is cast iron, and 30 percent
12 is unprotected steel.

13 Almost 80 percent of the cast iron mains are 8 inches
14 or smaller in diameter. A further size breakdown
15 shows 17 percent are 4 inch, 46 percent are 6 inch,
16 14 percent are 8 inch in diameter, and 23 percent are
17 greater than 8 inch in diameter. A total of 637 miles
18 or 51.9 percent are over 100 years old. The breakdown
19 by vintage is indicated in the table below.

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Cast Iron Main Inventory

Vintage	Mileage	% of System
Pre-1870	3.8	0.3%
1870-1879	15.2	1.2%
1880-1889	116.8	9.6%
1890-1899	209.7	17.1%
1900-1909	291.6	23.8%
1910-1919	219.5	17.9%
1920-1929	262.2	21.4%
1930-1939	42.3	3.5%
1940-1949	2.0	0.2%
1950-1959	32.6	2.7%
Post-1960	28.0	2.3%
Total	1,223.7	100.0%

1

2 Emergency low pressure cast iron main replacement is
3 only a small portion of the GD-1 budget program. This
4 program specifically addresses the emergency
5 replacement of cracked cast iron main to mitigate
6 immediate risk to public safety. We forecast annual
7 expenditures of \$2.55 million, \$2.56 million and \$2.56

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1 million for this program in 2011, 2012, and 2013,
2 respectively.

3 The GD-11 program is an annual program to replace
4 small diameter cast iron gas mains. We plan to
5 replace 100,000 feet per year of leak-prone cast iron
6 gas mains. We have more than 1,200 miles of cast iron
7 gas mains. We forecast annual expenditures of \$39.78
8 million, \$39.93 million, and \$39.93 million for this
9 program in 2011, 2012, and 2013, respectively. This
10 program is a critical component of the leak-prone pipe
11 replacement program and is essential to addressing and
12 mitigating the significant risk that cast iron main
13 cracks, breaks and leaks pose to employee and public
14 safety.

15 Q. Please describe the programs that replace leak-prone
16 steel main pipe.

17 A. The replacement of unprotected steel pipe is performed
18 in two specific capital budget programs:

- 19 • GD-4, the replacement of corroded steel gas mains
20 (Exhibit __ GOP-2, page 17); and

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- 1 • GD-29, the replacement of 2" high pressure steel
2 mains with coupling leaks (Exhibit __ GOP-2, page
3 23).

4 Approximately 78 percent of the steel mains are 8
5 inches or smaller in diameter. A further size
6 breakdown shows that approximately 16 percent are 2
7 inch or less, 24 percent are 3-4 inch, 26 percent are
8 6 inch and 12 percent are 8 inch in diameter.
9 Approximately 42 percent of the existing steel main
10 inventory was installed prior to 1950, and 49 percent
11 was installed between 1950 and 1971. Additionally,
12 approximately 36 percent of steel mains installed
13 prior to 1950 and 39 percent of the steel mains
14 installed between 1950 and 1971 were 8 inch or less in
15 diameter. The breakdown by vintage is as follows:

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1

Steel Main Inventory		
Vintage	Mileage	% of System
Pre-1900	5.4	0.45%
1900-1910	9.9	0.83%
1910-1919	17.7	1.48%
1920-1929	236.3	19.76%
1930-1939	216.2	18.08%
1940-1949	165.7	13.85%
1950-1959	293.8	24.57%
1960-1969	251.0	20.99%
Total	1196	100.00%

2 The GD-4 program is an annual program to replace
3 approximately 100,000 feet of corroded and leaking
4 steel gas mains. Approximately 1,200 miles of the
5 existing steel main inventory is unprotected. We
6 forecast expenditures of \$33.2 million, \$33.4 million
7 and \$33.4 million in 2011, 2012, and 2013,
8 respectively, for the replacement of this leak-prone
9 piping. It is essential to continue the existing

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1 level of funding for this program in order to improve
2 the gas infrastructure, mitigate risk to public and
3 employee safety, and continue reducing our greenhouse
4 gas emissions resulting from leaks.

5 In addition to corrosion, steel gas mains have been
6 susceptible to coupling failures. Approximately
7 150,000 feet, or 28.4 miles of the entire unprotected
8 steel gas mains in Queens is 2" in diameter. Over the
9 past several years, over 51 percent of the coupling
10 leaks discovered in Queens have occurred on less than
11 10 percent of the total inventory of unprotected steel
12 main in Queens. To mitigate the risk of 2" high
13 pressure coupling leaks in Queens, a new budget called
14 GD-29 was established in 2009 to replace areas of
15 mains that have a history of coupling failures. This
16 is an accelerated program to replace select gas mains
17 in Queens. It addresses an integrity problem due to
18 coupling issues on 2 inch steel gas mains. We are
19 planning to replace approximately 25,000 feet of
20 select mains per year. We forecast expenditures of

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1 \$6.3 million, \$6.4 million, and \$6.4 million in 2011,
2 2012 and 2013, respectively.

3 Q. Please discuss the capital gas service replacement
4 programs.

5 A. The replacement of gas services consists of several
6 specific capital budget programs including:

- 7 ▪ GD-1, other than new business services
8 related service replacements associated with
9 capital main work (Exhibit __ GOP-2, page
10 5);
- 11 ▪ Vintage service replacements (Exhibit __
12 GOP-2, page 9);
- 13 ▪ Service replacements due to non-existence of
14 curb valves (Exhibit __ GOP-2, page 7) and
15 in compliance with NYC Building rules; and
- 16 ▪ GD-3, emergency replacement of leaking gas
17 services (Exhibit __ GOP-2, page 15).

18 At year-end 2008, Con Edison's gas distribution system
19 was comprised of 383,862 services. Of this 125,740
20 (32.7 percent) is unprotected steel. The remainder
21 are made up of 19,862 protected steel (5.2 percent),

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1 212,771 plastic (55.4 percent), 24,580 copper (6.5
2 percent), and 909 other combination of material (0.2
3 percent).

4 Q. Please explain the program to replace services
5 associated with capital main replacements.

6 A. In conjunction with the replacement of leak-prone gas
7 mains, steel gas services related to those projects
8 are also replaced. Future leaks on these services
9 would require us to re-excavate in order to make
10 repairs resulting in customer dissatisfaction and
11 increased roadway restoration costs. We forecast
12 expenditures of \$22.9 million, \$23.0 million, and
13 \$23.0 million in 2011, 2012, and 2013, respectively.
14 This program is funded under System Reinforcement.

15 Q. Please explain the no curb valve service replacement
16 program.

17 A. The replacement of services that do not have a curb
18 valve is an on-going multi-year program. The New York
19 City Building Code requires outdoor shutoff valves on
20 all gas services. In 1998, we conducted a field
21 survey of existing gas services in New York City and

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1 found 5,526 services without outside shutoff valves.

2 A program was initiated to replace all services
3 without curb valves by 2020. As of July 31, 2009, a
4 total of 1,751 services need to be replaced by 2020.
5 We plan to replace 175 services annually until 2020.
6 We forecast annual expenditures of \$2.1 million in
7 2011, 2012, and 2013, respectively. This is funded
8 under System Reinforcement.

9 Q. Please explain the vintage service replacement
10 program.

11 A. In order to reduce future leaks, the program to
12 replace vintage gas services is part of an initiative
13 to remain proactive in eliminating pipeline
14 infrastructure that, due to its vulnerability to
15 leaks, could present greater safety risks to the
16 public. In a previous Rate Case, funding was approved
17 to initiate an accelerated replacement program to
18 replace 1921-1950 and pre-1911 vintage services. Our
19 long-term plan is to replace these vintage services
20 with the goal of reducing future leakage rates. We
21 forecast annual expenditures of \$3.1 million in 2011,

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1 2012 and 2013. This program is funded under System
2 Reinforcement.

3 Q. Please explain the leaking service replacement
4 program.

5 A. The GD-3 program is an annual program for the
6 replacement of leaking gas services. In 2011, 2,050
7 units will be replaced. In 2012, 2,000 units will be
8 replaced. In 2013, 1,950 units will be replaced. We
9 forecast expenditures of \$27.5 million, \$27.3 million
10 and \$26.5 million in 2011, 2012 and 2013,
11 respectively, for the replacement of those leaking
12 facilities.

13 Q. Please explain the Meter Installation Program (Exhibit
14 __ GOP-2, page 13).

15 A. This is an annual program to install or replace meters
16 due to new business and gas meter replacement
17 programs. We forecast expenditures of \$12.9 million,
18 \$13.09 million, and \$12.9 million in 2011, 2012, and
19 2013, respectively.

20 Q. Please explain the GD-5 program (Exhibit __ GOP-2,
21 page 19).

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1 A. This is the capital portion of the work associated
2 with the installation of test stations and anodes to
3 cathodically protect unprotected steel mains. The
4 cathodic protection of the steel mains will extend the
5 useful life of the existing main. We forecast annual
6 expenditures of \$375,000 in 2011, 2012 and 2013.

7 Q. Please explain the GD-30 program to seal large
8 diameter cast iron joints (Exhibit __ GOP-2, page 25).

9 A. This program covers the reinforcing and sealing of
10 large diameter 16 inch and larger cast iron joints
11 internally through CISBOT. We plan to seal and
12 reinforce approximately 300, 16 inch and larger
13 diameter cast iron diameter joints internally in lieu
14 of keyhole repairs and/or main replacement. This
15 minimizes the number of excavations to repair leaking
16 joints on large diameter cast iron mains that are
17 located on sensitive or highly congested streets. We
18 forecast annual expenditures of \$1 million in 2011,
19 2012 and 2013.

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1 Supply Main Projects

2 Q. Please explain the category titled "Supply Mains."

3 A. This program involves site-specific supply main
4 replacements or additions that are, in most cases,
5 several thousand feet in length. They are part of the
6 backbone distribution network supplying gas between
7 the transmission system and the piping that provides
8 gas to customers. In general, we are not replacing
9 the entire backbone but rather select locations for
10 project-specific reasons. Exhibit __ GOP-2, pages 27
11 through 102, explains the project scope and
12 justification for each Supply Main project. We
13 forecast expenditures of \$23.5 million, \$18.4 million,
14 and \$22.3 million in 2011, 2012, and 2013,
15 respectively, for the numerous supply main related
16 projects.

17 Q. Please provide an overview of your plan to reinforce
18 the distribution supply system.

19 A. We replace these facilities for various reasons
20 including:

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- 1 • To maintain minimum required operating pressures - As
2 the demand has increased, we have reinforced our low,
3 medium and high pressure systems in order to maintain
4 the minimum pressure at our customer's head of service
5 (4" w.c.); and maintain minimum operating pressures to
6 our low and medium pressure regulator stations (5 psig
7 and 25 psig, respectively).
- 8 • System Integrity - Many of these supply mains are pre-
9 1900 cast iron or bare steel initially installed in
10 the 1920's. As the cast iron or steel pipe on these
11 Supply Mains experience the effects of breakage and
12 corrosion, they are identified and prioritized based
13 on an evaluation of their leak history and the
14 utilization of a gas mains replacement statistical
15 computer program ("MRP") that assesses risk, corrosion
16 probability, and economic criteria. Replacing these
17 sections of pipe reduces the risk of significant
18 customer outages during the coldest winter days. For
19 example, over the past several years, existing 6 and 8
20 inch steel gas main installed between the 1920's and
21 the 1960's has been replaced along the Hawthorne to

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1 Peekskill Supply Main. These critical mains supply
2 the low pressure distribution systems through 7 low
3 pressure, 1 medium pressure, and 2 intermediate
4 pressure regulator stations as well as 13,000
5 individual high pressure customers. There is a multi-
6 year supply main program currently under way, with an
7 end-state design to replace approximately 25 miles of
8 this main with 12" PE to eliminate corroding bare
9 steel and improve the capacity for source regulators
10 at Peekskill and Hawthorne to backup each other on the
11 coldest winter days. From 2011 to 2013, we are
12 replacing 5,700 feet of undersized, corroded supply
13 main on the Hawthorne to Peekskill system. This
14 project is described in Exhibit __ GOP-2, page 57.

15 • Reduce Operating Pressures - By replacing existing
16 supply mains with larger diameter pipe, regulator
17 station operating pressures can be reduced to minimize
18 leaks. With these selective replacements, system
19 operating pressures can be significantly reduced
20 throughout the high pressure gas distribution system.
21 One example is the proposed Queens Pressure Reduction

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1 Project (Exhibit __ GOP-2, page 51). This project
2 involves the installation of over 3,000 feet of 12" PE
3 that will allow the operating pressure in the Third
4 Ward of Queens to be reduced from 65 psig to 55 psig.
5 This will also result in improving the reliability of
6 the system in the event of a loss of another supply
7 feed or the loss of a network regulator station by
8 increasing the available capacity in the event of such
9 an outage. Reducing operating pressures helps reduce
10 leaks, provides a safer environment for our workers,
11 increases safety to the public, and helps minimize gas
12 emissions. Completing these projects lower gas
13 pressure in hundreds of miles of the Queens HP grid.
14 Each supply main has its own set of unique issues, and
15 the existing conditions and exposures are explained in
16 Exhibit __ GOP-2, pages 27 through 103.

17 Technical Operation Programs and Projects

18 Q. Do you have any capital programs for Technical
19 Operations, which includes the Liquefied Natural Gas
20 ("LNG") Plant, Meter Operations and the Tunnel
21 Maintenance?

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1 A. Yes.

2 Q. Please provide a brief overview of the LNG Plant.

3 A. Con Edison's LNG Plant is located in Astoria, Queens
4 and has been in service since 1974. The LNG tank has
5 a storage capacity of 1 billion standard cubic feet
6 (scf) of gas, which is equivalent to 290,000 barrels
7 of liquid volume. The stored LNG can be vaporized to
8 inject up to 240 million scf per day into the Con
9 Edison gas system. Accordingly, the LNG Plant serves
10 a reliability function as the only source (capacity)
11 of in-City contingency supply protecting customers,
12 should there be an interruption from interstate
13 pipeline suppliers or other emergency conditions that
14 may affect the Company's gas distribution system. It
15 also serves as a cost-effective alternative to more
16 expensive short-term, firm gas peaking supplies for
17 the coldest days.

18 Q. Please explain how the plant works.

19 A. The plant is composed of two main processes -
20 liquefaction and vaporization. Liquefaction converts
21 natural gas (gas) received by the Company from

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1 interstate pipelines from a vapor state to a liquid
2 form, which reduces its volume to approximately 1/600
3 of the space that would be required to store an
4 equivalent volume of gas in vapor state. The gas
5 first passes through a liquid separator where water,
6 oil and pipe scale are removed. It is further
7 purified by passing through a series of molecular
8 sieve driers and adsorbers to remove moisture and
9 carbon dioxide. The gas then enters the cold box
10 where a closed loop nitrogen expansion cycle reduces
11 it to liquefaction temperatures. A gas turbine is
12 used to drive the nitrogen compressor, which is the
13 first stage of compression in the nitrogen expansion
14 cycle. The nitrogen is compressed from 55 pounds per
15 square inch (psig) to approximately 385 psig. The
16 nitrogen then flows through two expander compressor
17 units where it is compressed again to 600 psig and
18 then expanded as the pressure is reduced to 70 psig.
19 It is during this pressure reduction process that the
20 heat is removed from the gas reducing it to a
21 temperature of -260 degrees Fahrenheit where the

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1 methane component of the gas becomes liquid. The
2 cooling process entails a sub-cooling stage where the
3 heavier constituents of the gas, such as ethane, are
4 separated out and warmed and diverted for use as fuel
5 for the gas turbine. The liquefied natural gas is
6 then sent to the storage tank.

7 Q. When does the Company typically liquefy gas?

8 A. We typically liquefy gas in the spring and again in
9 the fall. It takes approximately 300 days to fill the
10 tank from empty.

11 Q. Please explain the vaporization process.

12 A. Vaporization warms the liquid to a gaseous state for
13 re-injection into the gas transmission system.
14 Vaporization is accomplished by pumping the LNG from
15 the tank using submerged pumps. The LNG is then
16 warmed through hot water bath heat exchangers. The
17 LNG plant has five submerged combustion vaporizers,
18 each equipped with four burners. The exhaust gas from
19 the burners heats the water, which heats the LNG and
20 converts it back to a vapor. The gas is then odorized
21 and sent into the transmission system.

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1 Q. What benefits does the plant currently provide to
2 customers?

3 A. As noted above, the plant provides an economical
4 alternative to short-term firm peaking supplies. In
5 addition, the LNG plant is the only source of in-city
6 gas supply and can be used as a supplement where
7 pipeline capacity is not available or cannot deliver
8 sufficient quantities, or if there are local
9 contingencies on the gas transmission system.

10 Q. Please describe the future plans for the liquefier
11 portion of the LNG plant.

12 A. Various studies are being performed by internal
13 resources and outside firms to determine the best
14 options regarding future liquefier operations. The
15 studies include:

- 16 • Determining the required minimum liquefier size. This
17 study will also indicate how much of the original
18 equipment may be able to handle lower volumes of
19 various gases and "qualities" with modifications.
- 20 • Determining whether mixing of the storage tank is
21 feasible. If so, we could obtain the required uniform

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1 gas density in the tank to prevent a potential
2 rollover event without expensive gas separation
3 equipment.

4 • Determining whether the existing liquefier can be
5 retrofitted instead of replaced. This may require
6 keeping long lead-time equipment and parts as spare.
7 If possible, we will re-use the existing footprint and
8 possibly the foundations. We also plan to retain the
9 gas turbine nitrogen compressor if possible,
10 eliminating the need for a new electrical substation
11 to supply an electric motor as the nitrogen prime
12 mover. The gas turbine compressor may be able to
13 handle the ethane as turbine fuel, eliminating the
14 need to run a separate gas line into the gas system.
15 Once these studies are completed in 2010, a cost-
16 benefit analysis can be performed to determine the
17 best option for future liquefier operations.

18 Q. Please describe the Company's proposed capital
19 expenditures for the liquefier project.

20 A. No capital expenditures for the liquefier are proposed
21 in the Company's current rate filing. Con Edison is

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1 currently performing a needs analysis and engineering
2 studies to evaluate our long-term requirements. If
3 our analysis indicates the need for major change out
4 or upgrade, we will evaluate our options in 2014 or
5 beyond.

6 Q. Please summarize the actions taken relative to the
7 liquefier since the previous rate case filing.

8 A. The rate plan adopted in Case 06-G-1332 included the
9 liquefier equipment replacement project ("LERP"), at
10 an approximate cost of \$57.5 million. The Company
11 allocated \$60 million to this project in its 2008-2012
12 five-year capital forecast. The Company issued a
13 purchase order to an outside consultant to develop the
14 specification for the replacement of the liquefier,
15 develop the various contractual documents, and act as
16 the Company's owner's engineer throughout the project.
17 Shortly after issuing the purchase order ("P.O.") to
18 this consultant, he became ill and was unable to
19 continue his duties. A new consultant was retained.
20 Since the most recent LNG plants in the country and
21 also the current one at Astoria were all installed or

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1 replaced using an engineer, procure, construct ("EPC")
2 approach, LERP was to be done using this approach. We
3 believed this would provide the lowest cost and most
4 reliable solution. A bid document was developed and
5 issued. There was minimal interest in the marketplace
6 with the EPC-type contract. Most firms indicated more
7 interest in bidding engineering, procurement ("EP")
8 contract and keeping construction separate. Thus, the
9 Company went out for bid with an EP type contract.
10 Originally, the new liquefier was planned to be
11 installed in the same footprint as the existing
12 liquefier. However, to minimize liquefier outages,
13 the plan was revised to build a new liquefier on the
14 property adjacent to the existing plant. The existing
15 liquefier would be available during the demolition and
16 construction phases of the project.
17 At the time, we envisioned that we would have to be
18 able to liquefy gases that could be imported as LNG,
19 regassified into pipelines, and delivered to us with a
20 high level of inert gases. The expected quality of

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1 the gas was that proposed by the Broadwater offshore
2 terminal in Long Island Sound.

3 As time progressed, the gas quality concern became a
4 national issue as different imported gases and newly
5 discovered shale gases were being planned to be
6 brought to market. During this time, various
7 potential gas quality issues arose which the new plant
8 would have to be able to handle. This changed the
9 scope of the project significantly.

10 The new equipment would have to be much larger and
11 have more components than originally planned in order
12 to handle a wider variety of potential gas qualities.

13 The discovery of vast quantities of gas from the
14 Marcellus Shale revealed that near-term future gas
15 quality would be more diverse, including potentially
16 very high ethane content. Ethane cannot be liquefied
17 at the temperatures used to liquefy methane.

18 For environmental reasons and to have fewer moving
19 parts, the nitrogen compressor gas turbine was to be
20 replaced by an electric motor. Since the new
21 equipment was expected to draw a larger load, the

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1 existing substation and cables required more capacity,
2 and a small new substation was required. At this
3 point, buildings, site work, and other portions would
4 be much more substantial in scope and cost than
5 originally expected. The total project capital cost
6 thus was expected to be higher than what was projected
7 in Case 06-G-1332.

8 When the EP bids were received, the cost of the EP
9 portion had essentially doubled. Rather than
10 proceeding with a plan that had much higher costs than
11 first estimated, the Company began to investigate
12 various alternatives in an attempt to significantly
13 reduce the project capital cost while still
14 accomplishing the project objectives. This
15 investigation is presently ongoing.

16 Q. Please explain the basis for the proposed capital
17 expenditures to upgrade the LNG plant.

18 A. The plant has been in service for 35 years. Much of
19 the equipment and instrumentation is original and
20 approaching the end of its useful life. Many
21 components of the original equipment and

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1 instrumentation have become obsolete and replacement
2 parts are no longer available or difficult to obtain.
3 For example, the plant's electronic flow control
4 valves still utilize the original pneumatic operators
5 and metering. Service and repair has become difficult
6 for the obsolete equipment and instrumentation.

7 Q. Are there any other reasons for these upgrades?

8 A. Yes, Exhibit __ GOP-2, pages 104-137, provides a
9 detailed work description, projected costs,
10 justification, and benefits for each LNG project.
11 Some of the upgrades relate to safety and security
12 improvements. The Department of Homeland Security is
13 in the process of reviewing the security measures in
14 place at the LNG plant as part of the Chemical
15 Facility Anti Terrorism Standard. This review may
16 result in the need to enhance existing security
17 measures. The security related project in this rate
18 case upgrades the plant's perimeter fence to a higher
19 security standard by replacing the existing fence mesh
20 with a smaller mesh.

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1 The plant's electric transformers, substations, and
2 motor control circuits contain no fire suppression
3 system. Thus a fire in either can cause collateral
4 damage to adjacent equipment resulting in the plant
5 being out of service. Finally, the control building
6 is not designed to withstand category 3 hurricane
7 winds, and one project will upgrade the control
8 building to withstand such an event.

9 Q. Please summarize the costs of the plant upgrades for
10 the LNG plant.

11 A. The Company plans to spend approximately \$3.7 million
12 in capital improvements on the LNG Plant in the years
13 2011 through 2013.

14 Q. Please describe the major programs comprising these
15 expenditures.

16 A. There are two main elements. The first is the upgrade
17 of obsolete equipment. As we explained, the age and
18 condition of equipment and difficulty in obtaining
19 service and spare parts for components necessitate
20 these projects. These projects are estimated at \$1.4
21 million. They include control and storage building

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1 salt water hydrant piping replacement, LNG meter run
2 motor control center replacement, and roadway
3 replacement/modifications. The second are the safety
4 and security related projects that enhance plant
5 reliability. These projects are estimated at \$2.3
6 million. They include replacement of security fences,
7 control building storm hardening, installation of a
8 substation fire suppression system, and installation
9 of a salt water pump house fire suppression system.

10 The work described above is necessary not withstanding
11 the upgrade of the Liquefier Project.

12 Q. Please explain the basis for the proposed capital
13 expenditures of \$5.7 million for the meter purchases
14 (Exhibit __ GOP-2, page 138).

15 A. The basis for the proposed capital expenditures is to
16 fund meter purchases and related devices (Metscans,
17 Service Regulators and Electronic Correctors) for new
18 business, for mandated meter programs as required by
19 PSC Title 16, Part 226, and for defective (customer
20 complaint, tampered, broken, etc.) meters. These
21 expenditures include the capital meter-shop personnel

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1 cost for refurbishing meters which account for
2 approximately \$1 million of the \$5.7 million capital
3 request.

4 Q. Please provide a brief overview of the Company's
5 utility tunnels.

6 A. Con Edison has seven (7) utility tunnels; three under
7 the East River, the Bronx River, the Flushing River,
8 Newtown Creek, and one on First Avenue in Manhattan
9 from 20th St to 36th St. The oldest tunnel,
10 Ravenswood, went into service in 1895 and the newest,
11 the First Avenue tunnel went into service in 2004.
12 The tunnels provide channels for our facilities under
13 waterways and underground. The tunnels house
14 electric, gas, and steam facilities as well as fuel
15 oil lines and telecommunications systems. The tunnels
16 also contain ancillary support equipment such as
17 ventilation fans, sump pumps and oil/water separators,
18 electrical and telecommunications equipment. The
19 tunnels are designed for walking passage with
20 elevators and/or ladders used as the primary means of
21 entry and exit. The tunnels are kept dewatered by

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1 pumps, and contain electric and communication systems
2 used for their maintenance and remote monitoring via
3 the Company's supervisory control and data acquisition
4 system ("SCADA").

5 Q. Please describe the environmental conditions affecting
6 the tunnels.

7 A. The tunnel infrastructure, which includes electrical,
8 structural and mechanical equipment and apparatus, is
9 constantly exposed to a harsh environment due to
10 extreme moisture, salt and humidity and for some,
11 extreme heat. This environment can compromise the
12 structural integrity of infrastructure due to
13 corrosion. As subsurface structures the tunnels are
14 subject to continual water intrusion from ground
15 seepage. The steel elements used to construct the
16 utility supports, the elevators, and/or ladders are
17 subject to corrosion from this water intrusion.

18 Q. Please explain the functions of Tunnel Maintenance.

19 A. The Tunnel Maintenance staff operates and maintains
20 the support equipment and performs regular inspections
21 of the utilities traversing the tunnels.

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1 Q. Please explain the proposed capital expenditures to
2 upgrade the seven utility tunnels.

3 A. Exhibit __ GOP-2, pages 140-181 describes the numerous
4 relatively inexpensive but operationally mandatory
5 projects required to periodically replace or upgrade
6 tunnel components to provide reliability for our
7 customers, the safety of our employees, and the
8 maintenance of the environment.

9 Q. Please describe the major programs comprising these
10 expenditures.

11 A. To address tunnel infrastructure reliability in the
12 years 2011-2013, the Company has projects to address
13 obsolete and ineffective water infiltration control
14 apparatus such as shaft gutter systems (seepage
15 control) in the 11th St. Conduit and the Ravenswood
16 tunnel. Effective control of water infiltration in
17 the shafts of tunnels is a crucial to minimize the
18 corrosive effect of dripping salt water. A gutter and
19 leader system diverts water infiltration harmlessly to
20 the tunnel sump below. A project is also planned to
21 replace rust-frozen roller assemblies supporting the

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1 electric transmission feeders in the Hudson Ave.

2 tunnel.

3 To address employee safety in years 2011-2013, the

4 Company has projects to address the emergency egress

5 ladder and landing system in the Queens shaft of the

6 Ravenswood tunnel. The existing ladder and landing

7 egress structure does not meet today's safety

8 standards and requires extreme care when ascending or

9 descending. There is minimal toe clearance between

10 the ladder rungs and shaft walls, and landings are too

11 small and irregularly shaped. A project is also

12 planned to replace the hard wired telephone system in

13 the 11th St. Conduit. Reliable communications is

14 critical to our employees' safety and the system in

15 the 11th St. Conduit has become unreliable due to

16 degraded conduit and wiring.

17 Two upgrade projects to address infrastructure

18 reliability and productivity and process improvement

19 are planned for the Ravenswood and First Ave. tunnels.

20 Both of these tunnels have heavy salt water seepage in

21 the horizontal sections that result in constant

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1 maintenance problems. In the past, we have installed
2 portable fiberglass deflector shields to divert water
3 and salt at problem locations. The extreme heat in
4 these tunnels due to the Steam transmission mains
5 causes the fiberglass shields to deform and dislodge
6 resulting in constant maintenance to replace or reset.
7 The planned projects are to install permanent
8 stainless steel shields at problem locations that can
9 be easily maintained.

10 One project to address potential environmental
11 concerns is planned to replace the bulkhead adjacent
12 to Brooklyn property of the 11th St. Conduit and the
13 Newtown Creek. This small bulkhead has deteriorated
14 over the years and needs to be rebuilt.

15 Q. Please summarize the cost of these planned projects.

16 A. The Company plans to spend \$4.8 million in capital
17 improvements to the tunnels in years 2011 through
18 2013. This includes several smaller scale projects
19 ranging from \$50,000 - \$100,000 each, such as
20 providing water service to the 11th St. Conduit to
21 facilitate maintenance of the tunnel and associated

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1 oil/water separators, sump pump purchases, and space
2 heating upgrades.

3 Q. Are there any alternatives to these projects?

4 A. No. Postponing these projects could potentially
5 jeopardize electric, gas and steam transmission
6 reliability and employee safety.

7 Transmission Projects and Programs

8 Q. Please describe Con Edison's gas transmission system
9 and the philosophy of the capital improvements being
10 made to the system.

11 A. Con Edison's gas transmission system is comprised of
12 85 miles of six inch to 36 inch diameter mains in
13 Manhattan, Queens, the Bronx and Westchester County.
14 The majority of these mains were installed from 1947
15 to 1973 and operate at pressures ranging from 245 psig
16 to 350 psig. The system is supplied by four gate
17 stations from three pipeline companies. In addition,
18 most of this system is part of a larger regional
19 network called the New York Facilities ("NYF") System
20 jointly operated by Con Edison and National Grid. Con
21 Edison's system is connected to National Grid's system

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1 at two bi-directional metering stations (Newtown Creek
2 in Long Island City and Lake Success in Nassau
3 County).

4 The overall plan for the gas transmission system is
5 to:

- 6 • Replace segments of the gas transmission system
7 that operate greater than 20 percent of the
8 Specified Minimum Yield Strength ("SMYS")
9 (approximately 50 miles), and are constructed of
10 a lower ductility pipe than currently used in our
11 new transmission mains. The operating pressure
12 in relation to SMYS and pipe ductility play a
13 critical role in characterizing if and how a pipe
14 will fail, either as a leak or as a rupture, if
15 damaged. Leaks are releases where the through
16 wall failure in a pipe remains essentially fixed
17 or very close to its original size. Ruptures
18 represent failure dynamics associated with high
19 stress steel pipelines where the original through
20 wall pipe failure becomes unstable and rapidly
21 (in microseconds) propagates down the pipeline.

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- Replace segments of lower ductility pipe with pipe that is made of steel that is tougher and more resilient.
- Withstand the loss of one of the four major gate stations that supply the transmission system. Loss of supply from these facilities can cause widespread customer outages.

The Company's long-term objective is to have an orderly plan to replace a major portion of our 55 year-old gas transmission system over the next 20 years, beginning with the work described in this testimony and presented in Exhibit __ GOP-2, pages 198-214. The plan was prioritized based on meeting the Gas Engineering Design Criteria, maximizing overall supply flexibility and reliability, improving gate station deliverability, eliminating bottle-necks and improving contingency mitigation such as the ability to lose a single major gate station. The criterion employed is designed such that Con Edison's internal system is capable of delivering the gas

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1 necessary to meet the needs of our firm customers and
2 generators.

3 Q. What are the capital projects planned for 2011, 2012,
4 and 2013 that are associated with the gas transmission
5 system?

6 A. The initiatives that we will describe are presented
7 Exhibit __ GOP-2, pages 198-214. These include the
8 following projects:

- 9 • Hunts Point to Hellgate Project
- 10 • Astoria to Ravenswood Transmission Main Project
- 11 • Transmission Pipeline Integrity Main Replacement
12 Program
- 13 • Westchester/Bronx Border to White Plains Project
- 14 • Hunts Point Gate Upgrade
- 15 • Remotely Operating Valves Program

16 Q. Please provide some of the details associated with the
17 Hunts Point to Hellgate Project.

18 A. The Hunts Point to Hellgate project is a multi-year
19 effort to install approximately 15,000 feet of new 36-
20 inch steel transmission pressure pipe, replacing the
21 existing 24-inch steel transmission main. The project

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1 extends from the Hunts Point section of the Bronx,
2 where the Iroquois gate station and our compressor
3 station are located, to the Hellgate section of the
4 Bronx, connecting to the newly installed Astoria
5 Tunnel main. It is a continuation of footage that has
6 already been installed in 2008 and in 2009.

7 This project accomplishes a number of system
8 objectives for improving the transmission system:

- 9 • It improves the takeaway capacity of the Hunts
10 Point station that delivers Canadian gas deep
11 into the Con Edison system.
- 12 • It helps reduce dependency on the critical 134th
13 Street gate station and the associated Gulf Coast
14 gas supply.
- 15 • It helps offset the loss of the Central Manhattan
16 gate station.
- 17 • It allows the future downgrade of the operating
18 pressure of the existing line to operate at less
19 than 20 percent SMYS.
- 20 • The future downgrade would be on the older, less
21 ductile pipe.

GAS OPERATIONS PANEL - GAS

1 The estimated expenditure to complete this project is
2 \$20.0 million in 2011.

3 Q. Please describe the Astoria to Ravenswood Gas
4 Transmission Project.

5 A. The Astoria to Ravenswood Gas Transmission Project is
6 a multi-year effort to install approximately 15,000
7 feet of new 30-inch steel transmission pressure main,
8 replacing the existing 24-inch steel transmission
9 pressure main from the Astoria Tunnel Headhouse to the
10 Ravenswood Generating Station.

11 The existing 24-inch main connects the Astoria and
12 Ravenswood generating complexes and the southern NYF
13 system to the Tennessee, Transco and Iroquois gate
14 stations. This section of pipe operates at 32 percent
15 of SMYS and is comprised of low ductility steel. This
16 means that the main is more susceptible to a rupture
17 rather than a leak. The addition of the Hunts
18 Point/Iroquois gate station provided a source of gas
19 delivery into the Con Edison system to help meet new
20 and future generation loads and to reduce dependency
21 on the 134th Street gate station. In order to

GAS OPERATIONS PANEL - GAS

1 maximize supply deliverability and provide contingency
2 mitigation that this new independent supply to the
3 transmission system promises, we need to increase the
4 takeaway capacity from the Astoria Tunnel. This
5 project greatly increases the system's ability to
6 provide supply reliability and contingency mitigation
7 for firm customers in the winter as well as for
8 generation during peak summer loads. The existing 24-
9 inch main also feeds 150,000 firm gas customers on the
10 high and low-pressure distribution systems in the
11 first ward of Queens that can be operated at pressures
12 substantially lower than the current 350-psig maximum
13 allowable working pressure ("MAOP"). The installation
14 of this project will allow us to downgrade the
15 existing main and operate at stress levels less than
16 20 percent of SMYS. The estimated expenditures for
17 this project are \$10.35 million in 2011, \$20.0 million
18 in 2012, and \$20.0 million in 2013.

19 Q. Please describe the Transmission Pipeline Integrity
20 Main Replacement Program.

GAS OPERATIONS PANEL - GAS

1 A. The Transmission Pipeline Integrity Main Replacement
2 Program is a multi-year project to replace sections of
3 defective transmission main that are identified
4 through pipeline integrity assessments administered by
5 the Integrity Management Plan, which guides our
6 inspection of the transmission system for existing
7 external and internal corrosion or damage in
8 compliance with federal and state regulatory
9 requirements. Through this program, by year 2012, we
10 will have conducted the internal corrosion direct
11 assessment of all sections of the transmission
12 pipeline along with an extensive external survey. The
13 estimated expenditure for this project is \$500,000
14 annually in 2011, 2012, and 2013.

15 Q. Please provide some examples of projects that were
16 completed under this program.

17 A. An example of repairs made to our Transmission System
18 are, for example, during the Direct Examination phase
19 of our Pipeline Integrity program, corrosion was found
20 at reinforcing ears near a compression coupling on a
21 section of our 24-inch transmission system. This

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1 corrosion was addressed in 2007 by replacing a section
2 of main. Prior to this, corrosion was discovered at
3 the source of a leak on a coupling and repaired.
4 Additional corrosion pits were discovered from direct
5 assessment of the pipe adjacent to this coupling and
6 were also repaired. These historical examples reveal
7 the need to set aside funds for replacing pipe as
8 anomalies are discovered.

9 Q. Please describe the Westchester/Bronx Border to White
10 Plains Project.

11 A. The Westchester/Bronx Border to White Plains
12 initiative consists of a multi-year project to install
13 approximately 54,000 feet of new 36-inch steel
14 transmission pressure main looping the existing 24-
15 inch steel transmission pressure main from the
16 Westchester/Bronx Line to the Tennessee White Plains
17 gate station outlet.

18 The 245-psig system consists of two mains - a 24-inch
19 main operating at 26 percent of SMYS (1940s vintage)
20 that connects the Hunts Point Yard to the Tennessee
21 White Plains gate station, and a 20-inch main

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1 operating at 18 percent of SMYS (1970s vintage) that
2 loops the 24-inch main from the Hunts Point yard to
3 the Westchester/Bronx line. There are approximately
4 125,000 customers supplied by the Hunts Point - White
5 Plains 245 PSIG system. Supplying the system from the
6 south is the Hunts Point regulator station (GR-199)
7 that reduces pressure from the 350-psig system and is
8 supplied from Transco and the Iroquois gate station.
9 Supplying the system from the north is the Tennessee
10 White Plains gate station. Installing the proposed
11 main will create a continuous parallel system from
12 Hunts Point in the Bronx to the White Plains gate
13 station in Westchester.

14 In addition, the 24-inch transmission main is the
15 oldest on our system, and is constructed of lower
16 strength steel joined with mechanical couplings, about
17 2,000 of which are not reinforced. There are 66 drip
18 pots on the 24-inch main, and these provide potential
19 points of failure. This reinforcement will allow us
20 to systematically downgrade the existing 24-inch main
21 and allow us to operate at stress levels less than 20

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1 percent of SMYS. The new main will replace the lower
2 ductility pipe with transmission pipe that is made of
3 steel that is stronger and more resilient. This would
4 allow for safer operation and minimize the possibility
5 of a main rupture. The estimated expenditure for this
6 project is \$10.35 million in 2012 and \$10.8 million in
7 2013.

8 Q. Please describe the Hunts Point Gate Upgrade project.

9 A. The Hunts Point Gate Upgrade project consists of the
10 installation of additional regulator and metering runs
11 at the existing Iroquois gate station in the Hunts
12 Point section of the Bronx. This project is the
13 second of two reinforcement projects intended to
14 maximize gas transport capability at Hunts Point for
15 system reliability, supply deliverability and
16 contingency mitigation. The first segment of this
17 project is the Hunts Point to Hellgate Transmission
18 Main Infrastructure project, which is currently in
19 progress. The Hunts Point Gate Upgrade project would
20 greatly increase the amount of gas that can be
21 transported through the gate station.

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1 As presently configured, the original Iroquois gate
2 station can deliver a maximum of 15 MMCF/H (300
3 MMCF/D). However, the meters and regulators limit the
4 gate station's capacity. Adding additional meter and
5 regulator equipment will allow the station to deliver
6 its full rated capacity of 25 MMCF/H (500 MMCF/D).
7 The estimated expenditure for this project is \$3.0
8 million in 2011 and \$3.0 million in 2012.

9 This work scope (additional regulators and meters) is
10 for phase 1 of this project. Phase 2 of the project
11 will be done in the future, and its scope will be to
12 modify the facility to provide additional gas heater
13 equipment to restore redundancy.

14 Q. Please explain the Remotely Operated Valve ("ROV")
15 program.

16 A. The ROV program consists of converting existing
17 transmission valves or installing new ROVs. In order
18 to protect the gas transmission and distribution
19 systems, maintain supply to firm gas customers, and
20 protect the public, a number of ROVs have been
21 installed at various locations on the gas transmission

GAS OPERATIONS PANEL - GAS

1 system. Additional locations have been identified for
2 installation of ROVs in order to have the ability to:

- 3 • Rapidly isolate a compromised section of the
4 transmission system to minimize affected areas;
- 5 • Rapidly isolate the transmission system at river
6 and tunnel crossings and at the outlet of gate
7 stations; and
- 8 • Rapidly separate intersecting transmission or
9 supply mains at tee or branch locations thereby
10 minimizing affected areas.

11 The ROV program includes the installation of one
12 retrofit or new ROV installation per year. The
13 estimated expenditure for this project is \$800,000
14 annually in 2011, 2012, and 2013.

15 Q. Please describe the Hurricane Hardening Program
16 (Exhibit __ GOP-2, page 235).

17 A. The Hurricane Hardening initiative is comprised of a
18 number of projects designed to ensure that critical
19 gas facilities are not incapacitated as a result of a
20 serious wind event. Gas Engineering completed an in-
21 depth analysis of our gas facilities to determine if

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1 they can withstand high winds up to and including
2 those of a category 3 hurricane.
3 The critical gas infrastructure that has been
4 identified as requiring capital improvements include
5 the Ravenswood, Astoria, Hellgate and Flushing tunnel
6 head houses which all contain gas transmission piping.
7 If damage to the head houses were to result because of
8 a severe wind event and subsequently the gas
9 transmission system was compromised, numerous firm gas
10 customers could potentially be affected.
11 Additionally, the Algonquin gate stations in Northern
12 Westchester and Iroquois gate station are sources of
13 gas delivery into the Con Edison system. Structures
14 at these facilities require enhancements to ensure
15 continuous gas supply is capable of being delivered
16 during and after a high wind/hurricane event. Lastly,
17 the LNG site has been identified as requiring
18 fortification of some structures. This will enable
19 the plant to operate under these adverse conditions
20 especially when it would be required to provide
21 contingency mitigation to the gas transmission system.

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1 The estimated expenditure for this project is \$1.0
2 million annually in 2011, 2012, and 2013.

3 Gas Pressure Control Programs and Projects

4 Q. Please describe the functions of Gas Pressure Control.

5 A. The Pressure Control group is charged with the
6 maintenance and operation of the Company's gas
7 pressure reduction equipment, involving assets from
8 transmission gate stations to local low pressure
9 district stations. These assets are located
10 throughout the service territory with some equipment
11 situated above ground, and the majority of sites
12 located within vaulted structures under roadways and
13 sidewalk areas. These assets include 280 regulating
14 stations which are each inspected annually to ensure
15 the integrity of this equipment and proper gas
16 pressures to our customers.

17 Q. Please describe the capital expenditures associated
18 with Gas Pressure Control.

19 A. Eight Gas Pressure Control programs are presented in
20 Exhibit __ GOP-2, pages 182-197. These capital
21 improvement programs involve work scopes from

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1 mechanical piping refurbishment to remote electronic
2 monitoring and control at our central Gas Control
3 Center.

4 The first three are asset improvement programs which
5 include Waterproofing Manholes, Replacement of
6 Equipment 2" Diameter and Larger, and Replacement of
7 Unserviceable Equipment. Because of the nature of
8 these structures and their below-grade location, they
9 are inherently exposed to ground water infiltration
10 and the ill effects associated with this water
11 intrusion. These three programs address this concern.
12 Each year, structures are inspected and due to aging,
13 corrosion and water infiltration, structures are
14 identified for component replacement or complete
15 equipment refurbishment. These ongoing programs have
16 resulted in continued facility improvements. We
17 forecast expenditures of \$1.3 million annually for
18 this work in 2011, 2012, and 2013.

19 The next Pressure Control program (Exhibit __ GOP-2,
20 page 188) is Regulator Vent System Refurbishment.
21 Larger size underground vaulted structures require

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1 fresh air exchange and venting systems in order to
2 comply with code requirements. In addition to
3 providing air exchanges, the vent system provides
4 atmospheric balance for the regulator pilots. Many of
5 the early vent system installations utilized bare and
6 coated steel piping components. Once a vent system is
7 compromised, mostly through corrosion, it could allow
8 water infiltration into the manhole and potentially
9 change the pressure from atmospheric which would lead
10 to improper pressure control. These vent systems are
11 inspected annually, and deteriorated vent systems are
12 identified for replacement. We forecast expenditures
13 of \$300,000 annually for this work in 2011, 2012, and
14 2013.

15 The next two Pressure Control (Exhibit __ GOP-2, pages
16 190-193) involve the replacement of Leaking Buried
17 Piping (uncoated inter-stage piping and gauge lines)
18 found during mandated annual inspections or periodic
19 leak patrols or as leaks reported by the public.
20 These ongoing programs cover the replacement of
21 leaking buried piping outside of the regulator vaults.

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1 Leak repair activity must be conducted once a leak is
2 identified in regulator station piping to allow for
3 proper gas pressure control from the regulating
4 stations. We forecast expenditures of \$400,000
5 annually in 2011, 2012, and 2013.

6 The next Pressure Control program (Exhibit __ GOP-2,
7 page 194 is Regulator Station Remote Monitoring /
8 Telemetrics. This program covers the installation of
9 electronic pressure monitoring equipment, and their
10 associated power supplies and communication equipment
11 for the transmittal of pressure readings and equipment
12 status to our Gas Control Center. Various stand-alone
13 technology has historically been available, but with
14 limited integration and restrained by the frequency of
15 communication exchanges to a central location. The
16 Company has been working to establish a design
17 standard that will support the integration of a robust
18 natural gas fueled "Thermal Electric Generator" which
19 will support unlimited communications with Gas
20 Control. This robust power platform is expected to
21 support not only greater communications, but will also

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1 improve real time alarming of critical discrete points
2 including water intrusion, security, and gas detection
3 at these critical assets. Early installations will
4 allow testing and refinement of initial designs and
5 overall equipment performance, with gradually
6 increasing deployments. We forecast expenditures of
7 \$300,000 annually for this program in 2011, 2012, and
8 2013.

9 The next Pressure Control program (Exhibit __ GOP-2,
10 page 196) is Regulator Station Remote Control /
11 Adaptive Controls. This program covers the
12 installation of remote and local regulator station
13 control devices which incorporate real time system
14 data and demands to automatically adjust a regulator
15 station's set point and flow. This "smart" equipment
16 minimizes the need to dispatch mechanics for seasonal
17 pressure adjustments, and would automate the section
18 of the distribution grid to which they are connected.
19 We forecast expenditures of \$300,000 annually for this
20 program in 2011, 2012, and 2013.

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1 Special Information Technology ("IT") Projects

2 Q. Please give an overview of the capital IT projects for
3 Gas Operations.

4 A. There are several capital IT projects for the gas
5 organization. Some of these programs are expansions
6 of the existing application infrastructure, and others
7 are new projects. Some go beyond the scope of Gas
8 Operations and are Corporate-wide initiatives that
9 cross asset boundaries. These IT projects will allow
10 current infrastructure to be compatible with existing
11 technologies and eliminate work-arounds on legacy
12 systems that can be costly to create and maintain.
13 Expertise in old technologies is dwindling, and it
14 will become increasingly more difficult and eventually
15 infeasible to keep maintaining these legacy systems.
16 All of these projects are described in detail in
17 Exhibit __ GOP-2, pages 215-236. Together, the IT
18 projects are expected to cost a total of \$11.8 million
19 over the three-year period of 2011 to 2013.

20 Q. Please list and describe the key IT projects with
21 2011, 2012, and 2013 costs.

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1 A. The Data Warehouse and the Gas Inspection System
2 ("GIS") technology upgrades are ongoing projects. The
3 technology upgrades update the existing applications
4 in GIS from an obsolete environment, VB6, to a current
5 environment, Microsoft Dot.Net. These applications
6 include the GIS Route Center, Customer Appointment
7 Scheduling, and Asset and Inspection Inquiry Screens.
8 The project will also build all Route Screen server
9 connections and back end processes to the GIS Web
10 application, and implement a new mapping tool that is
11 supported in Dot.Net replacing the old mapping
12 product. These upgrades convert and migrate the
13 inspection data from the Mainframe Legacy environment
14 to state of the art Client-Server environment for
15 supportability and expansion going forward. This
16 project is important because GIS is the only
17 application used to schedule and route the inspections
18 of critical assets on the gas system. GIS requires a
19 technology upgrade to ensure the application can be
20 reliably supported. The alternative, as with most IT
21 upgrades, is to continue to maintain a system that is

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1 obsolete and is not widely supported. Finding
2 expertise in older technology is difficult and
3 eventually will be unfeasible to maintain, and
4 maintaining an old infrastructure hampers the ability
5 to leverage new platforms and technologies. This
6 project is expected to cost \$800,000 over the three
7 year period from 2011 to 2013.

8 The Data Warehouse is another project in progress.
9 Its purpose is to consolidate data and provide a self-
10 service tool to create reports in a user-friendly
11 manner. Currently, the Main Valve portions are
12 complete and Leaks and Financial Exceptions portions
13 are ongoing. Subsequent phases will expand the
14 warehouse to different asset data and eventually
15 include all performance, statistical and financial
16 data that are used for reporting, regulatory
17 compliance and budgeting for Gas Operations. This
18 project improves the integrity and consistency of our
19 data. Our current lack of a structured reporting
20 process against consistent data makes compliance with
21 inspection requirements more difficult. Additionally,

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1 employees' time can be better devoted to business
2 analysis, correlations analysis, and cause and effect
3 of business processes, rather than gathering data from
4 multiple systems. Reports were historically created
5 by a dedicated contractor whereas a data warehouse now
6 allows ease of reporting through a comprehensive self-
7 service tool which does not require any programming
8 skills or in-depth knowledge of data base structures.
9 This project is expected to cost \$1.3 million over the
10 three year period from 2011 to 2013.
11 The Computer dispatch time-cards project is to enhance
12 the computer aided dispatch ("CAD") application. The
13 existing CAD application automatically captures field
14 crews' time as they log into their wireless laptops
15 and receive work orders. The intention of this
16 project is to use these electronic timestamps as
17 opposed to manually entering the employees' time to
18 improve accuracy and potentially productivity. It
19 will also reduce redundant handling of the same
20 information. This project is expected to cost
21 \$313,000 in 2011.

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1 The Mauell Screens in the Gas Control Center needs to
2 be replaced. These screens are used on a 24 hours per
3 day, 7 days per week basis to display critical gas
4 system overview information. The loss of these vital
5 wall display units will significantly impact the Gas
6 System Operators' ability to monitor and control the
7 transmission and distribution system. The current
8 technology will become obsolete and needs to be
9 replaced in order to maintain reliable operation,
10 availability of parts, and vendor support. This
11 replacement is expected to cost \$330,000 in 2011.
12 The Distribution Integrity Data Integration project is
13 expected to be scoped out when the Distribution
14 Integrity Management Rule is enacted in 2009. As per
15 DOT 192.1005, Local Gas Distribution Companies will
16 have no later than 18 months after the rule is enacted
17 to implement a written DIMP. The plan will encompass
18 the seven required DIMP elements, which include
19 identifying threats to address associated risks and
20 evaluating and ranking assets based on the associated
21 risks.

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1 We currently utilize the Main Replacement
2 Prioritization ("MRP") model to prioritize and plan
3 main replacement work. Already incorporated into the
4 MRP model are condition and risk scoring algorithms.
5 However, under DIMP, a comprehensive DIM risk model
6 would directly address the need to "Assess and
7 Prioritize Risk." MRP focuses on various threats
8 (i.e., cast iron and bare steel replacement), but it
9 does not provide a comprehensive risk management
10 solution for our entire system. A comprehensive risk
11 model would collect and integrate system wide data and
12 would provide us with the ability to compare risk from
13 various threats, for example evaluating the risk among
14 mechanical coupling failure, corrosion, and excavation
15 damage.

16 The purpose of this program upgrade is to incorporate
17 the DIMP requirements into the existing prioritization
18 system, to provide an efficient method of evaluating
19 risk and prioritize recommended programs. We expect
20 the project to cost \$222,000 in 2011.

21 Q. Please discuss the corporate-wide IT projects.

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1 A. The final two IT projects are corporate initiatives
2 including Gas Operations. The first is the Mapping
3 System which is a company-wide effort to consolidate
4 six different mapping systems. The existing mapping
5 systems were developed by a vendor, Intergraph, who is
6 migrating support from the existing FRAMME technology
7 to geospatial technology. Each mapping system now in
8 use is based on its own unique set of coordinates and
9 not based on real world coordinates or an accurate
10 land base. As such, they cannot interface with
11 external mapping systems built on real world
12 coordinates and precise land bases, such as Gas,
13 Electric, Steam and governmental map overlays. The
14 benefits of a company-wide system include the ability
15 to more readily share and use internal and external
16 geo-referenced data in conjunction with our facilities
17 data. Gas Operations' share for this project is \$5.8
18 million over the period of 2011 to 2013. The timing
19 of this project will be coordinated with Electric
20 Operations, which has submitted this project as part
21 of Case 09-E-0428.

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1 The other company-wide initiative is upgrading the
2 meter tracking application, ADAMS which is the current
3 system used to manage meters and verify that the
4 Company exchanges meters on schedule as per the PSC
5 code. The new application will be developed in
6 current technologies and is expected to provide
7 accurate inventory status and have extensive reporting
8 capabilities for meter trending and performance
9 tracking. From both legal and business perspectives,
10 corporate meter assets must be managed and tracked to
11 ensure they are properly booked and performing as
12 required. Despite various past programs to address
13 some of the deficiencies of the system and improve its
14 usefulness, ADAMS remains inflexible and difficult to
15 modify to suit current requirements. Our ability to
16 meet the requirements of our changing regulatory
17 environment is declining. With a large automatic
18 meter reading ("AMR") deployment under way, there is
19 no tracking of the AMR device in Gas ADAMS other than
20 the serial number of the device and its association
21 with a meter in a separate table (no installation

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1 history, no purchasing or retirement history, no
2 maintenance history, and no device transfer history).
3 There are also limitations in generating new required
4 reports, performing queries, identifying meters and
5 metering devices by type, service dates, and other
6 criteria. Furthermore, the prefix system currently
7 used for tracking the functionality of meters cannot
8 support new meters that have the ability to change
9 functionality through reprogramming. The annual
10 reconciliation of ADAMS and CSS is a major programming
11 effort as the programming language for Gas ADAMS is
12 considered obsolete. The investment in a replacement
13 system will allow us to more effectively manage the
14 meter population for the foreseeable future, including
15 using a common platform for all of the Company's
16 regulated businesses to manage their meter assets.
17 Gas Operations' share is \$3.0 million over the period
18 of 2011 to 2013. The timing of this project will be
19 coordinated with Electric Operations, which has
20 submitted this project as part of Case 09-E-0428.

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1

O&M EXPENDITURES

2 Q. What is the Company's forecast for O&M spending in the
3 Rate Year?

4 A. The Company forecasts O&M expenditures of \$89.1
5 million in the rate year. For the most part, the
6 Company plans to maintain its O&M programs at historic
7 year levels adjusted for escalation (which is
8 reflected in the Accounting Panel's exhibits).

9 Q. Why is the Company maintaining O&M programs at
10 historic year levels?

11 A. The Company believes that it can continue to maintain
12 current levels of gas safety, service and reliability
13 to our customers while mitigating the impacts of rate
14 increases under current economic conditions.

15 Q. Have you prepared an exhibit entitled "CONSOLIDATED
16 EDISON COMPANY OF NEW YORK, INC. GAS - O&M
17 EXPENDITURES?"

18 A. Yes, we have.

19 Q. Was this exhibit prepared under your supervision and
20 direction?

21 A. Yes, it was.

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1 MARK FOR IDENTIFICATION AS EXHIBIT ____ (GOP-3)

2 Q. Please explain what is reflected in Exhibit ____ (GOP-
3 3).

4 A. This exhibit shows historic year and rate year O&M
5 costs by program category. O&M expenditures in the
6 historic year were \$89.1 million. We examined
7 existing programs and adjusted expenditures based on
8 anticipated changes. The overall rate year O&M
9 request is \$89.1 million.

10 Q. Please explain the change in Emergency Response.

11 A. We are forecasting an increase in Emergency Response
12 of \$400,000 above the historic year level. To promote
13 public safety, this increase will support the widening
14 of gas leak investigations of sub-surface structures
15 and migration into buildings in response to reports of
16 gas odors and leaks.

17 Q. Please explain the changes in Gas Engineering &
18 Quality Assurance ("QA").

19 A. There is a net increase of \$238,000 in Gas Engineering
20 and Quality Assurance. This is comprised of a
21 \$362,000 reduction in this cost category due to the

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1 completion of an approved study to evaluate the
2 required hurricane hardening of Con Edison's critical
3 gas facilities and a \$600,000 normalization adjustment
4 to reflect slippage in the Astoria coating project
5 expenditures during the historic year. The Astoria
6 coating project is a six-year program, begun in 2008,
7 to clean, coat and repair the above-ground
8 transmission gas line piping supplying the Generating
9 Stations in Astoria. This project was budgeted for
10 \$1.1 million per year during the current rate plan,
11 and we continue to budget \$1.1 million per year in our
12 2011-2013 O&M Budget as part of this six-year program.
13 We anticipate completion of approximately 40% of the
14 six-year program by the end of the current rate
15 period, and the continued funding for the following
16 three years will complete the program in 2013. The
17 historic year's expenditure for coating the Astoria
18 Transmission piping was \$494,000, and the \$600,000
19 normalization returns the funding to previously
20 approved levels necessary to complete this project by
21 2013.

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1 Q. Are there other changes to O&M expenditures in the
2 test year?

3 A. Yes. During the Rate Year, we expect a reduction of
4 approximately \$610,000 in O&M costs associated with
5 the LNG plan. These funds are no longer required
6 because the O&M portion of the LNG work has been
7 completed.

8 Q. Please summarize your O&M request.

9 A. We are striving to maintain the aggregate cost of our
10 O&M programs at historic year levels while continuing
11 to provide our customers with the same level of
12 safety, service and reliability and minimize any rate
13 increase to them. In our request, we have taken into
14 consideration the termination of two O&M projects and
15 the continuation of on-going programs that were
16 approved in the prior rate case to maintain the
17 overall historic-year level of expenditures, subject
18 to escalation as applied by the Company's Accounting
19 Panel.

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DEFERRAL ACCOUNTING/RECONCILIATIONS

1

2 Q. Are you aware of any pending changes to federal, state
3 or local laws, rules or regulations that, if enacted,
4 would have a material impact on the forecasted level
5 of capital expenditures and/or O&M expenses?

6 A. Yes. We are aware of several pending changes that
7 would have such an impact.

8 Q. What are these changes?

9 A. First, the U.S. Department of Transportation ("DOT")
10 is considering changes to its regulations associated
11 with managing and improving the integrity of gas
12 distribution systems, including the creation of a
13 Distribution Integrity Management Plan ("DIMP"). DOT
14 is also considering changes in the requirements for
15 corrosion and leak inspections of customer-owned
16 service lines. The new rules will necessitate more
17 integration of pipe and components data risk
18 assessment, require a written implementation plan, and
19 establish performance metrics and reporting
20 requirements. The Company anticipates that the costs
21 to comply with these new requirements could be

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1 significant based upon the Company's experience in
2 developing a compliance program for comparable DOT
3 regulations regarding its delivery facilities
4 considered by DOT to be transmission.

5 Q. What is the current status of the proposed DOT
6 changes?

7 A. Both the DIMP and the new inspection requirements have
8 been the subject of ongoing discussions at the
9 national level. Con Edison continues to participate
10 in these discussions with the American Gas
11 Association, DOT, and Northeast Gas Association. At
12 the present time, there are pending final rules
13 proposed to become effective in December 2009. Should
14 that occur, the Company plans to reflect the impact of
15 these new rules during the update stage of this
16 proceeding.

17 Q. What are the other two changes to which you referred?

18 A. The City of New York is proposing to amend N.Y.C.
19 Chapter 2, Title 15, of the Rules of the City of NY,
20 pertaining to the prohibition of the use of #4 and #6
21 bunker oil and utilization of #2 fuel oil or natural

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1 gas for heating larger size buildings. At the federal
2 level, U.S. Senate Bill S1643, "The Cleaner, Secure,
3 Affordable Thermal Energy Act," would amend the IRS
4 Tax Code to provide significant monetary credits for
5 fuel oil to gas conversions.

6 Q. What would be the impact of these changes to the NYC
7 rules and the federal tax code?

8 A. Either or both of these changes would likely result in
9 a material increase in oil-to-gas conversions in the
10 Company's gas service territory. This would
11 necessitate significant capital investments to
12 reinforce and/or expand the Company's gas distribution
13 and transmission gas infrastructure in addition to a
14 material increase in spending in the new business
15 category. In contrast, our projected expenditures for
16 new business in this rate filing reflect a lower level
17 of activity than in prior years based upon an
18 evaluation of recent trends. Specifically, in 2010,
19 we plan to install 2,400 new business services
20 compared to recent levels of 3,000 new business
21 services. This lower level is based on the Company

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1 experiencing, from January through September 2009, a
2 15 percent reduction in new business service
3 installations.

4 Q. Why didn't you reflect these potential changes in laws
5 or regulations in your forecasted levels of capital
6 spending?

7 A. For several reasons. First, the Company sought to
8 mitigate the rate request in this case to reflect our
9 best estimates of the work required to maintain safe
10 and reliable service. Second, although one or more of
11 these events could have a material impact on spending
12 during the next several years, the nature, timing and
13 extent of such changes, and the resultant impact on
14 Company spending, is both uncertain and not subject to
15 reasonable estimation. For example, the impact on the
16 Company of the change in rules relating to gas
17 conversions is also dependent upon individual customer
18 decisions whether or not to convert to natural gas
19 service. Third, we relied on the fact that the
20 Commission has routinely recognized in the rate plans
21 that it has adopted mechanisms that address in a

GAS OPERATIONS PANEL - GAS

1 reasonable manner Company and customer interests
2 regarding such uncertainties.

3 Q. Please explain.

4 A. The current gas rate plan, adopted by the Commission
5 by order issued September 25, 2007 in Case 06-G-1332
6 ("2007 Gas Rate Order") contains the following
7 provision:

8 Distribution Integrity and Gas Inspections - The
9 Company will defer for recovery from customers
10 costs incurred as a result of new regulatory
11 requirements for distribution integrity and/or
12 gas inspections promulgated by either federal or
13 state regulatory agencies during the term of this
14 Gas Rate Plan.

15
16 We propose this provision be continued since it
17 addresses circumstances outside the Company's control
18 and because the circumstances that provided the basis
19 for this provision in the current plan have not
20 changed.

21 Q. What is your proposal for addressing potential
22 increased expenditures associated with the change in
23 the NYC rules or federal tax code as related to
24 increased oil to gas conversions?

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1 A. We propose that these events be covered by the "new
2 laws" provision proposed by Company witness Muccilo.

3 Q. What is the new laws provision?

4 A. Among the existing reconciliation mechanisms that Mr.
5 Muccilo proposes be continued is the provision
6 historically included in all Commission-approved Con
7 Edison gas rate plans, which provides that the
8 Company's incurrence of incremental costs or reduced
9 revenues be deferred on the Company's books of account
10 for recovery from or credit to customers, as
11 applicable.

12 We note that this provision would also capture other
13 changes in laws or rules that could materially impact
14 the level of the Company's expenditures, such as the
15 various pending federal, state and local initiatives
16 to reduce greenhouse gas emissions, carbon dioxide
17 ("CO₂"), and other air pollutants. We note that these
18 laws recognize that using natural gas can increase the
19 reliability and security of the United States energy
20 systems, reduce energy costs, and contribute to
21 meeting climate change initiatives.

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1 Q. Do you have an alternate proposal in the event the
2 Commission does not adopt a new laws provision in this
3 case?

4 A. Yes. In that event, the Commission should adopt a
5 deferral mechanism comparable to the Distribution
6 Integrity program mechanism, for these two potential
7 changes in laws or rules that are reasonably known and
8 being actively considered at this time.

9 Q. Are there any other existing reconciliation mechanisms
10 relating to gas operations that you propose be
11 continued, not be continued or be modified?

12 A. Yes. The Company proposes that the current mechanism
13 for reconciling Pipeline Integrity Costs relating to
14 New York Facilities Charges be continued, the current
15 reconciliation mechanism for capital infrastructure
16 expenditures other than interference not be continued,
17 and the current reconciliation mechanism for
18 interference capital expenditures be modified, as
19 further discussed below.

20 Q. Why are you proposing to discontinue or modify some
21 mechanisms and continue others?

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1 A. Generally, we are seeking to continue reconciliation
2 mechanisms to address circumstances outside the
3 Company's control that could have a material impact on
4 the Company's costs. The reconciliation of Pipeline
5 Integrity Costs regarding New York Facilities Charges
6 falls in this category, as do capital interference,
7 and new business and system reinforcement costs
8 resulting from changes in regulations, while general
9 capital infrastructure spending does not. These
10 modifications are necessary to allow for potential
11 changes in the regulatory environment.

12 Q. Please describe the current capital infrastructure
13 reconciliation mechanism.

14 A. The Company is permitted to defer carrying charges on
15 capital infrastructure net plant up to a target cap
16 set in the rate order. That cap is generally
17 reflective of the fact that current rates provide for
18 less than the full amount of net plant anticipated by
19 the capital spending program underlying the current
20 rate plan. In that sense, the mechanism is
21 essentially a downward-only reconciliation, providing

GAS OPERATIONS PANEL - GAS

1 for no reconciliation for expenditures above what was
2 anticipated when the rate plan was adopted, but
3 unlimited downward reconciliation to the extent the
4 net plant targets are not achieved.

5 Q. Why do you propose that the current capital
6 infrastructure reconciliation mechanism be
7 discontinued?

8 A. Like any other element of the Company's projected cost
9 of service, the capital infrastructure forecast is a
10 reasonable estimation and actual costs may be higher
11 or lower for a variety of reasons, including the
12 Company's need to address changing system conditions.
13 The Company believes that the asymmetrical nature of
14 this reconciliation mechanism is unduly preferential
15 to customers and unduly unfair in its treatment of the
16 Company. However, since these costs are generally not
17 outside the Company's direct control, the Company is
18 proposing to eliminate the current mechanism, rather
19 than propose a bilateral reconciliation, which would
20 be the equitable alternative.

GAS OPERATIONS PANEL - GAS

1 Q. What is your proposed modification to the capital
2 interference reconciliation mechanism?

3 A. Although circumstances in the last case warranted a
4 separate reconciliation for capital interference costs
5 to address a significant uncertainty as to the
6 projected level of these costs, capital interference
7 costs (as contrasted with interference O&M expense,
8 addressed by the Company's Municipal Infrastructure
9 Support Panel) have not historically been reconciled.
10 Currently, to our knowledge, the one event outside the
11 Company's control that may significantly impact the
12 projected level of capital interference costs is the
13 City receiving an award of federal stimulus funds that
14 results in a material increase in NYC infrastructure
15 programs. Accordingly, the Company proposes that it
16 be permitted to defer an increase in capital
17 interference costs above the projected level that are
18 attributable to the stimulus program.

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SAFETY PERFORMANCE MEASURES

1

2 Q. Does the Company propose that the Commission continue
3 in effect the currently-effective Safety Performance
4 Measures, as set forth in section F.7 of the Joint
5 Proposal adopted by the Commission in its September
6 2007 rate order?

7 A. For the reasons explained in prior Con Edison gas and
8 electric rate proceedings, the Company does not
9 believe that its safety or reliability performance
10 would differ in the absence of these specific
11 performance measures. Nonetheless, the Company
12 recognizes that the Commission has rejected the
13 Company's requests to eliminate such measures and
14 expects that safety performance measures will be
15 continued in the Rate Year. Accordingly, the Company
16 proposes that the currently effective mechanisms
17 continue in effect.

18 Q. Why is the Company proposing to continue the current
19 mechanisms?

20 A. The current mechanisms were considered and established
21 two years ago; there are no new circumstances that

GAS OPERATIONS PANEL - GAS

- 1 warrant an adjustment to these mechanisms; the Company
2 has met each of these targets during the current rate
3 plan and expects to meet these targets in the future,
4 should they be continued; and any adjustments to these
5 targets that would make them more stringent would
6 likely cause the Company to incur incremental costs
7 that would unnecessarily increase rates, without a
8 necessary or measurable increase in the safety or
9 reliability of the Company's gas service.
- 10 Q. Does this conclude the Panel's initial testimony?
- 11 A. Yes, it does.

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC

2010-2014 GAS CAPITAL PROGRAM

\$(000)

	Budget	Req	Req	Req	Req	10-14
	2010	2011	2012	2013	2014	Total
Operating Areas						
New Business	37,510	37,810	39,410	42,290	42,620	199,640
System Reinforcement	41,740	44,910	45,190	45,190	44,910	221,940
Meters	12,120	12,920	13,095	12,980	12,700	63,815
Total GD-1	91,370	95,640	97,695	100,460	100,230	485,395
GD-3 Leaking Services	27,480	27,550	27,280	26,520	25,610	134,440
GD-4 Corroded Steel Mains	32,860	33,150	33,380	33,380	33,150	165,920
GD-5 Cathodic Protection	375	375	375	375	375	1,875
GD-11 Small Diameter LPCI Replacement Program	39,585	39,780	39,930	39,930	39,780	199,005
GD-29 Steel Main Replacement For 2" Coupling Elimination	5,895	6,335	6,380	6,380	6,335	31,325
GD-30 CISBOT	0	1,000	1,000	1,000	1,000	4,000
Total Operating Areas	197,565	203,830	206,040	208,045	206,480	1,021,960
Supply Mains						
Annual Repl. of Supply Mains from Hawthorne to Peekskill (Albany)	1,100	1,500	1,600	1,000	1,500	6,700
Annual Repl. of Supply Mains from Greenburgh to Hawthorne	900	1,500	1,000	1,000		4,400
Annual Replacement of Supply Mains from Hawthorne to Katonah		1,500	1,000	500	500	3,500
Bronx Hospital Supply Main Ties	700					700
Replace Corroded Union Tpke Mains	560	350	350	350	350	1,960
Replace Saw Mill Elmsford Main	750	1,000	1,250	1,500	1,000	5,500
Houston St Manifold Replacement					1,000	1,000
Replace Saw Mill Greenburgh Main	600	1,000	1,000	1,600	1,000	5,200
Roosevelt Island Shaft					1,000	1,000
81th Street Eastside Regulator	2,500					2,500
Upgrade Regulator 419					1,500	1,500
Eastside Lower Manhattan Reconstruction Project	500	500			2,500	3,500
24" West Bronx High Pressure Main	8,000					8,000
Replacement of the Astoria- Flushing Main	1,100	1,000	1,000	500	1,000	4,600
Second Supply Main to City Island		800	800	800	1,000	3,400
Ossining IP System	1,200	280			0	1,480
Westchester Creek MP Main Replacement					2,000	2,000
Waterbury Ave & Hobart Ave Regulator Station		2,000				2,000
Westchester Ave Main Replacement	1,115	885				2,000
12" Medium Pressure Cast Iron Main Replacement Program		1,100	1,200	1,300	2,300	5,900
New Main Across Grand Central Parkway (RC08)					2,000	2,000
Small Main Ties Program (RC08)			1,000	2,000	2,100	5,100
Cortlandt/ Yorktown Tie	1,000	1,800				2,800
Second Supply to Roosevelt Island (RC08)					2,700	2,700
Grasslands Rd Upgrade(RC08)	2,200	1,555	1,600			5,355
Harlem River to 205 St (RC08)				2,175		2,175
Harlem River Crossing	1,000	1,200				2,200
205 St Regulator				0	2,500	2,500
Westchester Inner/Outer Loop (RC08)	600	600	500	0	0	1,700
Westside Manhattan Loop & Regulator (RC08)	2,700	2,000	1,000	500	500	6,700
Waters Place Tie				2,000		2,000
Purchase/Armonk HP Tie				1,000	1,000	2,000
Fort Washington HP Main			2,000	2,000	1,000	5,000
Scarsdale HP Main	800	500	600	0	0	1,900
Hurricane Flood Walls					1,000	1,000
East Bronx HP Loop Ties		500	500	500	2,000	3,500
Cortlandt/ Peekskill Tie		500	500	1,000	1,500	3,500
Sunnyside Yards				0	1,000	1,000

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC **2010-2014 GAS CAPITAL PROGRAM**

	\$(000)					
	Budget	Req	Req	Req	Req	10-14
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>Total</u>
Yorktown Upgrade			1,000	1,000	0	2,000
Westchester Large Valve Repl		500	500	500	500	2,000
Hudson RR Yards				1,000	1,000	2,000
Queens Pressure Reduction	1,200	900				2,100
179 St & Webster Ave Reg.	2,000					2,000
Total Supply Mains	30,525	23,470	18,400	22,225	35,450	130,070
Technical Operations						
Measurement	6,374	5,820	5,820	5,700	5,700	29,414
LNG	4,199	2,639	840	260	1,075	9,013
LERP	3,000	0	0	0	0	3,000
Tunnels	2,228	1,600	1,600	1,600	1,605	8,633
Total Technical Operations	15,801	10,059	8,260	7,560	8,380	50,060
Transmission & Generation Projects						
Westchester/Bronx Border to White Plains (RC08)			10,350	10,800	14,510	35,660
Transmission Pipeline Integrity Main Replacement Program	500	500	500	500	500	2,500
Hunts Point to Hellgate (Outlet To St Ann's Tee)	18,500	20,000				38,500
Remotely Operating Valves (ROV's)	800	800	800	800	800	4,000
Hunt's Point Gate Upgrade		3,000	3,000			6,000
Astoria to Ravenswood Loop	7,960	10,350	20,000	20,000	16,690	75,000
Total Transmission & Generation Projects	27,760	34,650	34,650	32,100	32,500	161,660
Pressure Control	2,600	2,600	2,600	2,600	2,600	13,000
Special Projects						
GOSS Control Center Network PI Upgrade	300					300
CENTS Rewrite (RC08)	1,000					1,000
Data Warehouse	480	388	480	480		1,828
GIS Technology Upgrades (RC08)	407	400	200	200		1,207
Distribution Integrity Data Integration (RC08)	218	222				440
Expand GIS for Gas Control ROV's (RC08)	128					128
Expand GIS for Drips & Red Tags	417					417
Computer Dispatch-Time Cards		313				313
Expand GIS for Corrosion (RC08)	100					100
Mauell Screens		330				330
Hurricane Hardening		1,000	1,000	1,000	1,000	4,000
Mapping System Upgrades (RC08)		2,757	2,320	767	500	6,344
Adams		1,000	1,000	1,000	1,000	4,000
Total Special Projects	3,050	6,410	5,000	3,447	2,500	20,407
Public Improvement/Interference	37,800	33,000	33,000	33,000	33,000	169,800
Total Gas Operations Excluding T&G Credits & XM's	315,101	314,019	307,950	308,977	320,910	1,566,957

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	New Business
Priority Number	3
Project Manager	
Project Engineer	Various
Budget Ref/Function Code	GD-1 GDI03
Project Number	Various
Status	On going
Estimated Service Date	
Work Plan Category	Increased customer demand
ERM Addressed	

Work Description:

Install new gas mains and/or services to provide new or additional gas load to customers.

Units per Year: 2,400 services and 24,000 feet of main

Mandatory: Yes

High-level schedule:

Justification:

We plan to install 2,400 new services and 24,000 feet of new main necessary to provide gas service to new customers and existing customers with increased load. Most jobs are small jobs requiring a single service and in some cases, a short main extension. Typically, major customer projects (capital costs estimated to be \$100,000 or greater) account for 15% of the services, 50% of the mains and 15% of the budget. The 2400 services represents a downturn in the historic trends associated with lower economy.

- Alternatives: There are no alternatives. Con Edison is responsible to furnish, place, construct at our expense up to a total of 100 feet of gas main extension and/or service line per metered dwelling unit.
- Risk of No Action: We will be in violation of the Tariffs.
- Summary of Financial Benefits and Costs: The new mains and services in this program will add additional load to the gas system and increase revenue.
- Non-financial Benefits (if applicable): The addition of new gas customers or customers who are using oil heat and are converting to gas heat has a direct impact on our Sustainability Strategy to continue to reduce the methane emissions from the gas distribution system and to pursue additional oil-to-gas conversions. This program will provide additional customer satisfaction.
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable): Anticipate downturn in New Business in 2010, 2011, 2012. No additional #4/#6 oil-to-gas conversions are anticipated in this projection.

Completion Date:**Current Working Estimate (if applicable):****Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
39,759	41,356	40,563	37,600

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
37,510	37,810	39,410	42,290	42,620	199,640

Historical elements of expense (EOE's)(\$000)

EOE	2006	2007	2008	2009 Budget
Labor	4,174	4,351	4,286	3,960
M&S	2,794	3,211	3,029	2,790
A/P	20,618	22,295	23,516	20,530
Indirects	12,173	11,499	9,732	10,320
Total	39,759	41,356	40,563	37,600

Forecast

EOE	2010	2011	2012	2013	2014
Labor	4,210	4,240	4,420	4,740	4,780
M&S	2,890	2,910	3,030	3,260	3,280
A/P	18,920	19,080	19,890	21,340	21,510
Indirects	11,490	11,580	12,070	12,950	13,050
Total	37,510	37,810	39,410	42,290	42,620

2010 Capital – CE Gas Operations – Distribution Project

Project/Program Title	Winter Load Relief
Priority Number	1
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	GD-1 GDI09
Project Number	Various
Status	Winter Load Relief is an annual project.
Estimated Service Date	
Work Plan Category	System and Component Performance Improvement & Increased Customer Demand
ERM Addressed	9- Gas Distribution System Events

Work Description:

This project includes the installation and replacement of gas mains for system reinforcement in areas where pressures do not meet the current design criteria on a design hour based on the prior winter's system performance.

Mandatory:

The PSC Code (NYCRR 255.623) and CE procedural (G-8051, Gas System Design Criteria) requirements are:

- Each operator shall maintain a pressure throughout its low pressure distribution systems at no less than 4" w.c. shall not more than 12" w.c. as measured at the customer's end of service.
- The maximum pressure variation at any point on the system shall not be greater than 50% of the maximum pressure on that day.(Part 255.623).
- As per G-8051 (System Design Criteria), supply mains shall be designed to maintain system pressures as per the "Operating Pressure Guidelines" issued by the Gas Distribution Engineering Planning Section. These guidelines are intended to reduce operating system pressures and, in turn, reduce incoming leaks in the distribution system. Additionally, the HP supply pressure to any medium or low pressure regulating station shall not be lower than 25 psig.
- The optimal pressure range at the outlet of a medium pressure regulating station shall be 7 psig to 13 psig. (G-8051).
- The minimum pressure at extremity points on a medium pressure system shall not be lower than 2 psig.(G-8051).
- The MP supply pressure to any low pressure regulating station shall not be lower than 5 psig.(G-8051)

Justification:

Gas Distribution Planning is responsible for analyzing the gas distribution system using the SynerGee® network model. Each year, these models are updated to include newly installed facilities and added system loads to replicate actual system conditions for the coldest day of the season. Once calibrated, gas engineers look for areas of our gas distribution systems that do not meet the pressure requirements of the current design criteria (G-8051) and PSC code requirements

on a design peak hour. System reinforcement is then recommended for these areas to increase pressures to meet these requirements.

Alternatives:

Recommendations are selected to minimize the required footages and maximize the system benefits. Alternatives with shorter required footages either did not provide the required benefit, or were not feasible.

Risk of No Action:

If no action is taken, the system low-points and downstream regulator inlet pressures identified are predicted to fall below the requirements stated above and possibly result in customer outages on the coldest winter days.

Technical Evaluation/Analysis:

Locations are identified where the gas network analysis model predicts conditions of lower than required system performance, along with the predicted benefit after the recommended reinforcement is completed. This work involves normal growth and does not account for potential gas demand resulting from #4/6 fuel oil to gas conversions.

Completion Date: Ongoing

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
8,512	6,503	24,450	10,496

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
12,890	14,280	14,340	14,340	14,280	70,130

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	1,450	1,094	3,115	1,545
M&S	470	392	1,230	565
A/P	4,074	3,189	14,315	5,640
Indirects	2,518	1,828	5,790	2,746
Total	8,512	6,503	24,450	10,496

Forecast

EOE	2010	2011	2012	2013	2014
Labor	1,900	2,100	2,110	2,110	2,100
M&S	690	770	770	770	770
A/P	6,920	7,670	7,710	7,710	7,670
Indirects	3,380	3,740	3,750	3,750	3,740
Total	12,890	14,280	14,340	14,340	14,280

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	Services Other Than New Business
Priority Number	1
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	GD-1 GDI09
Project Number	Various
Status	On going
Estimated Service Date	
Work Plan Category	System and component performance improvement Public and employee safety Environmental Excellence
ERM Addressed	Gas distribution system events (e.g., explosion/fire caused by damages, inside/outside leaks, carbon monoxide conditions, etc.).

Work Description:

Replacement of non-leaking services associated with GD-4, GD11, System Reinforcement and other main replacements other than New Business.

Units per Year: Approximately 2,600 services

Mandatory: The replacement of non-leaking steel services when completing the replacement of the main is in compliance with Gas Specification G-8100 and G-8005.

High-level schedule:

Justification:

In 2010 we plan on replacing 2600 services in conjunction with GD4, GD11, System Reinforcement and other emergency main replacements other than New Business. These service replacements also include those associated with the rate case 40 mile main replacement program.

- Alternatives: Transferring the existing unprotected steel service to a new plastic main is not a viable option and not a good business practice.
- Risk of No Action: Services are disconnected during main replacements. Since these services are installed prior to 1972 and are not cathodically protected, it is a not a good business practice to leave the old steel service, which is at risk for corrosion. Future leaks on the service would require us to excavate and make the necessary repair. This will result in future re-excavations to eliminate the leak and may result in customer dissatisfaction.
- Summary of Financial Benefits and Costs: Replacement of non-leaking services while performing capital main improvements will reduce future O&M cost to investigate future leaks on the bare steel service and excavation to repair/replace the steel service.
- Non-financial Benefits (if applicable): The replacement of the service is in conjunction with the replacement of 40 miles of leak prone pipe, which is a PSC mandated program and one of our

KPI's. In addition to replacing leak prone gas main, the replacement of these services will result in avoided future leaks.

- **Technical Evaluation/Analysis:** Replacement of non-leaking services has an indirect impact on the KPI for workable leak backlogs. Customer satisfaction is a KPI that will be impacted if services are not replaced and subsequently we receive a leak on that service requiring the company to excavate again at this location for required repair/replacement of the service. In addition, the elimination of leak prone pipe has a direct impact on our Sustainability Strategy to continue to reduce the methane emissions from the gas distribution system. In 2008, the total methane emission reduction was 158 mmcf.
- **Sensitivity Analysis (if applicable):** not applicable
- **Project Relationships (if applicable):** This program is related to the leak prone pipe replacement programs (GD-4, GD-11 and GD-29 main replacements).

Completion Date:

Current Working Estimate (if applicable):

Services associated with main replacements will continue to be replaced as needed.

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
5,127	5,310	21,617	22,000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
21,160	22,880	23,060	23,060	22,880	113,040

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	1,174	1,168	4,341	4,830
M&S	373	203	984	1,140
A/P	1,886	2,416	10,739	10,620
Indirects	1,694	1,523	5,553	6,370
Total	5,127	5,310	21,617	22,960

Forecast

EOE	2010	2011	2012	2013	2014
Labor	4,230	4,580	4,610	4,610	4,580
M&S	1,060	1,140	1,150	1,150	1,140
A/P	9,520	10,290	10,380	10,380	10,290
Indirects	6,350	6,870	6,920	6,920	6,870
Total	21,160	22,880	23,060	23,060	22,880

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	Services Without Curb Valves
Priority Number	1
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	GD-1 GDI09
Project Number	Various
Status	On going
Estimated Service Date	
Work Plan Category	Provide Reliable Service Reduce and Manage Risk
ERM Addressed	9. Gas distribution system events

Work Description: Replacement of services without curb valves.

Units per Year: 200

Mandatory: NYC Building code requirement

High-level schedule: A minimum of 200 services to be completed per year for a program completion by 2020.

Justification:

The New York City Building Code requires outdoor shutoff valves on all gas services. The New York City Fire Department is monitoring this requirement and requires an annual status report. In 1998, we conducted a field survey of existing gas services in NYC and found 5,526 services without outside shutoff valves. A program was initiated to replace all services without curb valves by 2020. Included in this total are a small percentage of commercial services without curb valves that must be replaced by 2010. As of July 1st there was no backlog of commercial services that need to be replaced and 1,764 that need to be replaced by 2020. We anticipate some of these will be replaced during routine work. We plan to replace 200 services in 2010.

- Alternatives: None
- Risk of No Action: We would be in violation of the mandate by the New York City Building code which requires shut off valves on all gas services. The risk to the safety of the public in case of fire or emergency leak to shut off a gas service.
- Summary of Financial Benefits and Costs: none
- Non-financial Benefits (if applicable): The ability to shut the service off from outside the house helps ensure the safety of the public, employees and FDNY in the case of a building or house fire. This enables the timely and safe gas shut down without having to enter the premises.
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date:

The regulatory requirement is to complete all of the services without curb valve

Current Working Estimate (if applicable):**Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
837	454	1,674	2,460

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
2,060	2,080	2,090	2,090	2,080	10,400

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	192	100	336	510
M&S	61	17	76	120
A/P	308	207	832	1,140
Indirects	276	130	430	690
Total	837	454	1,674	2,460

Forecast

EOE	2010	2011	2012	2013	2014
Labor	410	415	420	420	415
M&S	100	105	105	105	105
A/P	930	935	940	940	935
Indirects	620	625	630	630	625
Total	2,060	2,080	2,090	2,090	2,080

2010 Capital – CE Gas Operations – Distribution Project

Project/Program Title	Vintage Service Replacement Program
Priority Number	1
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	Various GDI09
Project Number	Various
Status	On-going
Estimated Service Date	
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9- Gas Distribution System Events

Work Description:

Replace 375 vintage unprotected steel services per year focusing on services without curb valves.

Units per Year:

375

Mandatory:

PSC encouraged LCD's to become more proactive in eliminating pipeline infrastructure that due to its vulnerability to leaks, could present greater safety risks to the public. This is a Rate Case funded program and is part of our proposed DIMP plan.

High-level schedule:

In the proceeding Rate Case funding was approved to initiate a 16 year program to replace 375 of 1921-1950 and pre-1911 vintage services per year in addition to services replaced due to leakage or other reasons.

Justification:

A 5 year analysis of corroded and leaking unprotected steel service replacements indicates that 61% consist of 1921-1950 vintages. An additional analysis added another 6,000 pre-1911 services to the program which were found to be leaking at rates similar to the 1921-1950. A rate case program was approved to initiate a long-term plan to replace these vintage services with the goal of reducing future leakage rates.

Alternatives:

Delay replacement schedule to coincide with main replacements and risk the chance of leaks developing.

Risk of No Action:

Increase in O&M costs due to leak response and scheduling of repair.

Summary of Financial Benefits and Costs:

Planned replacement utilizing Unit price Contracts have shown to represent a 50% savings over the use of company or per diem forces responding during leaking service activities.

Non-financial Benefits (if applicable):

Utilizing pre-paving schedules provided by DOT and Municipal agencies for replacement of services prior to paving develops rapport with Government and the public. A scheduled replacement of the service is more beneficial to the customer than inconveniencing them during an off hour emergency response to a leaking service.

Technical Evaluation/Analysis:

Analysis of repair history of leaking services earmarked these vintage year services as most vulnerable to repair due to the large number of replacement.

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
2,839	3,307	3,292	4,100

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
3,090	3,120	3,140	3,140	3,120	15,610

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	650	727	661	862
M&S	207	127	150	203
A/P	1,044	1,505	1,635	1,897
Indirects	938	948	846	1,138
Total	2,839	3,307	3,292	4,100

Forecast

EOE	2010	2011	2012	2013	2014
Labor	615	625	630	630	625
M&S	155	160	160	160	160
A/P	1,390	1,400	1,410	1,410	1,400
Indirects	930	935	940	940	935
Total	3,090	3,120	3,140	3,140	3,120

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	Emergency LPCI Replacement
Priority Number	1
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	GD-1 GDI09
Project Number	Various
Status	On-going
Estimated Service Date	
Work Plan Category	System and component performance improvement Public and employee safety Environmental Excellence
ERM Addressed	Gas distribution system events (e.g., explosion/fire caused by damages, inside/outside leaks, carbon monoxide conditions, etc.).

Work Description:

Emergency replacements of cast iron mains 12" or greater with history of multiple breaks, that are part of municipal paving lists, or have active leaks.

Units per Year: Approximately 2,000 feet of 12" cast iron main will be replaced per year contingent on cracks/breaks, pending paving or active leaks when a determination is made that the main must be replaced in lieu of making an O&M repair. Included in this budget reference item is the replacement of cast iron main due to water intrusion.

Mandatory: The footage completed under this program is part of the replacement of 120 miles of total leak prone gas main in a three-year period, which is a PSC 08-10 rate case mandate.

High-level schedule: None

Justification:

Multiple breaks on a cast iron main can be indicative of a main in a weakened condition due to soil subsidence, frost, high traffic load or graphitization. These mains may be replaced if the replacement criteria are met and the mains have active leaks or are part of municipal paving lists.

- Alternatives: O&M repairs can be made to the cast iron main in lieu of replacement. However, in the cases of pre-paving, the replacement of the main may be the best option to avoid future repairs needed to the main, which would require the company to disturb a protected street and therefore pay for full pavement restoration of the street. If a new cracks/break occurs on a main that has a history of multiple breaks, repairing this main in lieu of replacement may only mitigate the immediate risk but will not be the best practice for mitigating future risks to this segment of pipe.
- Risk of No Action: A repair or replacement must be taken. There is no alternative action. Taking no action due to pre-paving is an option, however, the cost of restoration if the segment of deteriorating cast iron main with a history of breaks/crack and where active leaks may exist would be extremely costly.
- Summary of Financial Benefits and Costs:

- **Non-financial Benefits (if applicable):** The replacement of leak prone pipe will improve the reliability of the gas system. Further, by replacing leak prone pipe, we are directly reducing the leak backlog as well as replacing gas main that is prone for future leaks and cast iron breaks/cracks. Therefore, the replacement of the leak prone pipe will also result in future O&M leak cost avoidance for leak investigation and repairs.
- **Technical Evaluation/Analysis:** This program has a direct impact on several KPI's, specifically the replacement of leak prone gas mains as well as the reduction of the leak backlog. This program will help reduce the probability that a crack/break will cause an incident.
- **Sensitivity Analysis (if applicable):** not applicable
- **Project Relationships (if applicable):**

Completion Date:

On-going

Current Working Estimate (if applicable):**Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
5,194	2,950	1,899	1,000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
2,540	2,550	2,560	2,560	2,550	12,760

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	885	496	242	140
M&S	287	178	96	60
A/P	2,485	1,447	1,111	540
Indirects	1,537	829	450	260
Total	5,194	2,950	1,899	1,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	375	375	380	380	375
M&S	135	140	140	140	140
A/P	1,365	1,370	1,370	1,370	1,370
Indirects	665	665	670	670	665
Total	2,540	2,550	2,560	2,560	2,550

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	Meter Installation
Priority Number	58
Project Manager	
Project Engineer	Various
Budget Reference	GD-1 GDI12
Project Number	Various
Status	On-going
Estimated Service Date	
Work Plan Category	Regulatory Requirement; Demand Growth
ERM Addressed	

Work Description:

This program involves the installation and replacement of gas meters.

Justification:

New meters are needed for New Business customers and to replace existing meters where capacity has increased.

Units per Year: Approximately 30,000 meters will be installed in 2010

Mandatory: Yes

High-level schedule:

Justification:

We plan to install or replace approximately 30,000 meters for new and existing customers.

- Alternatives: There are no alternatives. Meters are essential for recording customer gas usage, which is the basis for billing the customer.
- Risk of No Action: If gas meters were not installed then we could only bill the customer on estimated instead of actual gas usage.
- Summary of Financial Benefits and Costs: The new service installations, which require new meter installations, will add additional revenue.
- Non-financial Benefits (if applicable): The addition of new gas customers or customers who are using oil heat and are converting to gas heat has a direct impact on our Sustainability Strategy to pursue additional oil-to-gas conversions. This program will provide additional customer satisfaction.
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable): A portion of this program is directly related to the New Business program.

Estimated Completion Date:

This is an ongoing program.

Current Working Estimate:

This is an on-going program.

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
9,460	8,902	11,067	10,000

Approved 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
12,120	12,920	13,095	12,980	12,700	63,815

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	6,442	5,576	6,305	5,500
M&S	184	180	105	150
A/P	106	732	1,760	1,650
Indirects	2,728	2,414	2,897	2,700
Contingency				
Total	9,460	8,902	11,067	10,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	6,060	6,460	6,550	6,490	6,350
M&S	180	195	195	195	190
A/P	2,250	2,390	2,420	2,400	2,350
Indirects	3,630	3,875	3,930	3,895	3,810
Contingency					
Total	12,120	12,920	13,095	12,980	12,700

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	Replacement of Leaking Services
Priority Number	22
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	GD-3 GDI15
Project Number	Various
Status	On going
Estimated Service Date	
Work Plan Category	System and component performance improvement Public and employee safety
ERM Addressed	#9. Gas distribution system events (e.g., explosion/fire caused by damages, inside/outside leaks, carbon monoxide conditions, etc.).

Work Description:

Replace leaking gas services.

Units per Year:

In 2010, 2100 units will be replaced. In 2011, 2050 units will be replaced. In 2012, 2000 units will be replaced. In 2013, 1950 units will be replaced. In 2014, 1900 units will be replaced.

Mandatory: Not mandatory

High-level schedule:

Replace 2100 units in 2010.

Justification:

This program is to replace an estimated 2,100 leaking services. This is the annual program to replace leaking gas services and is part of our program to reduce the leak backlog and is one of our KPI.

- **Alternatives:** Pre-1972 gas services can be repaired in lieu of replacement if the repair can be made without causing an interruption to the gas service supplying the customer. All services that were installed after 1972 and are temporarily disconnected to repair a leak on the service must be pass a pressure test. Only those failing the pressure test will result in the replacement of the service. However, once an unprotected service leaks, it is likely to leak again in a short time.
- **Risk of No Action:** Any gas readings which are within 5' of the building wall are considered a type 1 leak, (potentially hazardous to life or property). Many of our leaking steel gas services have passed their useful life. Repairing the leak without replacing the service, may result in a future type 1 leak which creates a potentially hazardous condition to the life and property. The replacement of the leaking gas service is a risk avoidance measure taken and also is a cost avoidance measure which minimizes future cost for excavating and repairing future leaks that may occur.
- **Summary of Financial Benefits and Costs:** No financial benefit, but does result in cost avoidance. Replacing leaking gas services is part of our program to control the year end

backlog. Exceeding the PSC leak backlog indicators could cost the company in assessed penalties

- **Non-financial Benefits (if applicable):** This project will ensure that we continue providing safe and reliable natural gas to our customers. The replacement of unprotected steel leaking services with new plastic gas services will minimize the risk of future leaks.
- **Technical Evaluation/Analysis:** Generally, leaking gas services are considered critical in attaining the year end leak backlog goal. Therefore, the elimination of the leaks through the replacement of the vintage service reduced the workable leak backlog and minimizes the risk for future workable leaks on that service line.
- **Sensitivity Analysis (if applicable):** not applicable
- **Project Relationships (if applicable):** not applicable

Completion Date: On-going project

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
22,512	25,627	21,847	23,000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
27,480	27,550	27,280	26,520	25,610	134,440

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	8,332	10,387	8,860	9,085
M&S	699	456	263	345
A/P	5,664	6,450	6,487	6,120
Indirects	7,817	8,334	6,237	7,450
Total	22,512	25,627	21,847	23,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	9,990	10,020	9,920	9,640	9,310
M&S	410	410	410	400	385
A/P	7,230	7,240	7,175	6,975	6,735
Indirects	9,850	9,880	9,775	9,505	9,180
Total	27,480	27,550	27,280	26,520	25,610

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	Steel Main Replacement Program
Priority Number	1
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	GD-4 GDI25
Project Number	Various
Status	On going
Estimated Service Date	
Work Plan Category	System and component performance improvement Public and employee safety Environmental Excellence
ERM Addressed	#9. Gas distribution system events (e.g., explosion/fire caused by damages, inside/outside leaks, carbon monoxide conditions, etc.).

Work Description:

GD-4 is the capital replacement of corroded and leaking steel gas mains.

Units per Year: Approximately 100,000 feet of leak prone gas main replacement will be done under GD-4

Mandatory: This is part of the replacement of 120 miles of total leak prone gas main over the three-year period, which is a PSC 08-10 rate case mandate.

High-level schedule:

Justification:

Unprotected steel mains account for approximately 29% of the gas system materials. A large percentage of incoming gas leaks are associated to corroded steel gas mains. The GD-4 replacement program addresses this concern by replacing the corroded steel mains with plastic and/or protected steel mains. Main segments are identified for replacement by the Gas Mains Replacement Model that prioritizes the segments by condition and risk. By replacing the mains with the highest condition scores, future leaks and repairs can be avoided. The 2008 – 2010 rate case agreement requires that we replace 120 miles of leak prone mains. Approximately 20 miles of the 40 miles will be replaced under this program. This project addresses Enterprise Risk Management issues for a Gas Distribution system event. This is a rate case performance indicator.

- Alternatives: none
- Risk of No Action: This is a rate case performance indicator and therefore a penalty will be assessed for failing to meet the target.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): The replacement of leak prone pipe will improve the reliability of the gas system. Further, by replacing leak prone pipe, we are directly reducing the leak backlog as well as replacing gas main that is prone for future leaks. Therefore, the replacement of the leak prone pipe will also result in future O&M leak cost avoidance for leak investigation and repairs. In addition, the elimination of leak prone pipe has a direct impact on our Principle Sustainability

Strategy to continue to reduce the methane emissions from the gas distribution system. In 2008, the total methane emission reduction was 158 mmcf.

- Technical Evaluation/Analysis: The GD-4 program has a direct impact on several KPI's, specifically the replacement of leak prone gas mains as well as the reduction of the leak backlog.
- Sensitivity Analysis (if applicable): not applicable
- Project Relationships (if applicable): Leak prone pipe replacement is comprised of GD-4, GD-11 and GD-29 main replacements.

Completion Date:

On-going

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
17,745	17,236	46,279	36,100

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
32,860	33,150	33,380	33,380	33,150	165,920

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	3,244	4,660	8,474	6,500
M&S	637	727	2,987	2,165
A/P	8,275	6,687	22,910	16,605
Indirects	5,589	5,162	11,908	10,830
Total	17,745	17,236	46,279	36,100

Forecast

EOE	2010	2011	2012	2013	2014
Labor	4,930	4,970	5,010	5,010	4,970
M&S	1,970	1,990	2,000	2,000	1,990
A/P	16,100	16,245	16,360	16,360	16,245
Indirects	9,860	9,945	10,010	10,010	9,945
Total	32,860	33,150	33,380	33,380	33,150

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	Cathodic Protection
Priority Number	41
Project Manager	Various
Project Engineer	N/A
Budget Ref/Function Code	GD-5 GDI26
Project Number	Various
Status	On going
Estimated Service Date	
Work Plan Category	System and component performance improvement Environmental Excellence
ERM Addressed	#9. Gas distribution system events (e.g., explosion/fire caused by damages, inside/outside leaks, carbon monoxide conditions, etc.).

Work Description:

Install cathodic protection on coated unprotected steel gas mains and services.

Units per Year:

Mandatory: Not mandated

High-level schedule:

Justification:

This is a life extension program in which we are able to capitalize the installation cost of cathodic protection on coated unprotected steel mains and services.

- Alternatives: The replacement of the unprotected steel gas main. However, cathodically protecting larger diameter steel gas mains which are found to be in sound condition will extend their useful life.
- Risk of No Action: Failure to take action to either cathodically protect the gas main or replace the unprotected steel gas main with plastic will result in the accelerated deterioration of the existing gas main due to corrosion. This will result in future O&M leak repairs, safety risk to the public for leaks to the steel gas main, and the future need for the costly replacement of the corroded gas main.
- Summary of Financial Benefits and Costs: The installation of cathodic protection on existing gas mains consists of a small excavation every 500 feet, followed by the installation of a test station and 2 to 4 32 lb anodes. The cost of replacing gas main ranges from \$300 to \$1000 per foot based on size of the main, operating area as well as other factors. The cost of installing a test station and anodes every 500 feet will extend the useful life of the main while saving the cost of trenching and installing 500 feet of new gas main, which could result in a cost of \$150-500K per 500' section.
- Non-financial Benefits (if applicable): Cathodic protection will reduce future leaks due to corrosion and improve the reliability of the gas system. In addition, the protecting existing steel gas mains will have a direct impact on our Sustainability Strategy to continue to reduce the methane emissions from the gas distribution system.

- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable): not applicable
- Project Relationships (if applicable): Cathodic protection is done in lieu of replacement of the steel gas main program, (GD-4).

Estimated Completion Date:

On-going

Current Working Estimate (if applicable):**Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
570	530	702	375

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
375	375	375	375	375	1,875

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	242	222	296	160
M&S	179	165	213	115
A/P	81	74	96	50
Indirects	68	69	97	50
Total	570	530	702	375

Forecast

EOE	2010	2011	2012	2013	2014
Labor	160	160	160	160	160
M&S	115	115	115	115	115
A/P	50	50	50	50	50
Indirects	50	50	50	50	50
Total	375	375	375	375	375

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	Small Diameter LP Cast Iron Replacement Program
Priority Number	1
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	GD-11 GDI11
Project Number	Various
Status	On going
Estimated Service Date	
Work Plan Category	System and component performance improvement Public and employee safety Environmental Excellence
ERM Addressed	#9. Gas distribution system events (e.g., explosion/fire caused by damages, inside/outside leaks, carbon monoxide conditions, etc.).

Work Description:

Replace 4", 6" & 8" low pressure cast iron gas mains that are prone to leakage.

Units per Year: Approximately 100,000 feet of the 40 miles of mandated leak prone gas main replacement will be done under GD-11

Mandatory: This is part of the replacement of 120 miles of total leak prone gas main in a three-year period, which is a PSC 08-10 rate case mandate.

High-level schedule:

Justification:

This program covers the annual replacement of approximately 100,000 feet of 8" and smaller low pressure cast iron pipe. The gas system currently has over 5.6 million feet of 8" & smaller low pressure cast iron pipe. History has shown that these mains are more prone to breakage due to low beam strength. In order to plan for increased gas usage and establish a replacement program, we will schedule the replacement of the small diameter piping identified by our Main Replacement Model, and where necessary increasing pipe size for future needs. This project addresses ERM issues for a Gas Distribution system event or a Water Main Break. This is a rate case performance indicator.

- Alternatives: none
- Risk of No Action: This is a rate case performance indicator and therefore a penalty will be assessed for failing to meet the target.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): The replacement of leak prone pipe will improve the reliability of the gas system. Further, we are reducing the leak backlog as well as replacing gas main that is prone to leaks and/or breaks. Therefore, the replacement also results in future O&M leak cost avoidance for leak investigation and repairs. In addition, the elimination of leak prone pipe has a direct impact on our Sustainability Strategy to continue to reduce the methane emissions from the gas distribution system. In 2008, the total methane emission reduction was 158 mmcf.

- **Technical Evaluation/Analysis:** This program has a direct impact on several KPI, specifically the replacement of leak prone gas mains as well as the reduction of the leak backlog. This program will help reduce the probability that a crack/break will cause an incident.
- **Sensitivity Analysis (if applicable):** not applicable
- **Project Relationships (if applicable):** Leak prone pipe replacement is comprised of GD-4, GD-11 and GD-29 main replacements.

Completion Date:

On-going

Current Working Estimate (if applicable):**Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
	285	25,297	32,000

Approved 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
39,585	39,780	39,930	39,930	39,780	199,005

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor		34	1,193	1,600
M&S		7	1,281	1,600
A/P		168	17,096	21,440
Indirects		76	5,727	7,360
Total		285	25,297	32,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	3,560	3,580	3,595	3,595	3,580
M&S	2,570	2,585	2,595	2,595	2,585
A/P	22,370	22,475	22,560	22,560	22,475
Indirects	11,085	11,140	11,180	11,180	11,140
Total	39,585	39,780	39,930	39,930	39,780

2010 Capital – CE Gas Operations – Distribution Projects

Project/Program Title	Replacement of 2" HP Steel Coupling
Priority Number	1
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	8GD0029 GDI29
Project Number	Various
Status	On going
Estimated Service Date	
Work Plan Category	System and component performance improvement Regulatory
ERM Addressed	#9. Gas distribution system events (e.g., explosion/fire caused by damages, inside/outside leaks, carbon monoxide conditions, etc.).

Work Description:

Replace 2" HP steel piping in Queens 3rd Ward that is prone to coupling leakage.

Units per Year: Approximately 24,500 feet of main replacement under this program

Mandatory: This is part of the replacement of 120 miles of total leak prone gas main, which is a PSC 08-10 rate case mandate. In addition, the DIMP regulation requires operators to take appropriate measures to mitigate the risk of mechanical coupling failures.

High-level schedule:

Justification:

The 3rd Ward high pressure system has seen an unusually high number of leaks associated with 2-inch couplings. These couplings are of 1950s vintage, and are located in defined areas. Currently there are approximately 150,000 ft of 2" high pressure steel that was installed between 1950 -1955 in the 3rd Ward. Failure analysis is currently being performed on samples of these couplings by an external testing facility to determine the root cause of failure.

- Alternatives: Under the pending DIMP ruling, operators must assess and mitigate the risk to all their assets. One alternative to replacing the gas mains that have 2" mechanical couplings that pose a risk of failing is to excavate every 20 feet and expose the mechanical coupling then tighten and sleeve the existing mechanical couplings. Maintenance of the mechanical coupling would be costly and only extend the life of the mechanical coupling while leaving 1950 bare steel gas mains, which are susceptible to corrosion.
- Risk of No Action: This is a rate case performance indicator and therefore a penalty will be assessed for failing to meet the target. If we do not address coupling leaks and an incident should occur, we could be cited by the DOT and PSC. Several advisories have been issued on this subject.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): The replacement of leak prone pipe with couplings prone to leaking, will improve the reliability of the gas system. Further, we are directly reducing the leak backlog, resulting in future O&M leak cost avoidance for leak investigation and repairs. In addition, the elimination of leak prone pipe has a direct impact on our Sustainability Strategy to continue to reduce the methane emissions from the gas distribution system. In 2008, the total methane emission reduction was 158 mmcf. Not only does the reduction of methane emissions foster greenhouse gas reduction, but it also saves an estimated \$1M of natural gas commodity.

Technical Evaluation/Analysis: While the occurrences of coupling leaks are somewhat random, recent trends have shown that 2" couplings installed on high pressure between the years of 1950-1955 in Queens have been more susceptible to leaking. During that period of time, we have discovered that approximately 150,000 feet (28.4 miles) of our Queens 2" main pipe inventory is comprised of 1950-1954 unprotected steel main. Therefore, over 51% of the coupling leaks that occurred in Queens over the past several years have occurred on less than 10% of the total inventory of unprotected steel main in Queens

The GD-29 program has a direct impact on several KPI, specifically the replacement of leaking couplings on gas mains as well as the reduction of the leak backlog.

- **Sensitivity Analysis (if applicable):**
- **Project Relationships (if applicable):** not applicable.

Completion Date:

This is an on-going program

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budgeted 2009
0	0	0	5,300

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
5,895	6,335	6,380	6,380	6,335	31,325

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				1,460
M&S				350
A/P				1,675
Indirects				1,815
Total				5,300

Forecast

EOE	2010	2011	2012	2013	2014
Labor	1,625	1,750	1,760	1,760	1,750
M&S	385	415	420	420	415
A/P	1,865	2,000	2,015	2,015	2,000
Indirects	2,020	2,170	2,185	2,185	2,170
Total	5,895	6,335	6,380	6,380	6,335

2011 Capital / CE Gas Operations / Distribution Projects

Project/Program Title	Sealing Large Diameter Cast Iron Mains through CISBOT
Priority Number	
Project Manager	Various
Project Engineer	Various
Budget Ref/Function Code	GDI30 8GD7551
Project Number	Various
Status	On going
Estimated Service Date	
Work Plan Category	System and component performance improvement Public and employee safety Environmental Excellence
ERM Addressed	#9. Gas distribution system events (e.g., explosion/fire caused by damages, inside/outside leaks, carbon monoxide conditions, etc.).

Work Description:

Seal and reinforce 16" and larger diameter cast iron diameter joints internally on high congested and sensitive streets in lieu of keyhole repairs and/or main replacement.

Units per Year: Approximately 300 joints per year

Mandatory: Not mandated

High-level schedule:

Justification:

This program covers the reinforcing and sealing of large diameter 16" and larger cast iron joints internally through CISBOT. This minimized the number of excavations to repair leaking joints on large diameter cast iron mains that are located on sensitive or congested streets. This process is designed to launch a tool head through a special fitting into a live low pressure cast iron gas main, which travels 150 feet inside the pipe on skis then drills and injects anaerobic sealant into each joint it passes sealing any active and preventing any future joint leaks while being pulled back to the launch site. The robot is then turned around to the other side of the launch fitting and the process is repeated in the second direction to complete approximately 300 feet of main joint sealing from one insertion point with no release of gas to the environment and without disturbing service to our customers.

The sealant used is an anaerobic sealant (cures in the absence of oxygen) made up primarily of acrylics that acts as a packing to stop the flow of gas from between the dried-up jute fibers installed when the main was originally installed. This sealant has demonstrated through testing to be able to withstand the repeated ground movement from vehicular traffic, the seasonal pipe movement from thermal expansion and contraction and would last at least 35 years of these movements without any leakage of gas.

The wall thickness of the large diameter mains are generally in good condition. The leaks occur at the hubs, which are located approximately 12 feet apart. Therefore, the use of CISBOT to seal the cast iron joints internally will minimize the number of excavations required to eliminate the leaks and extend the useful life of the main.

This project addresses ERM issues for Gas Distribution system event, Water Main Breaks, and Incurring Operating Penalties for Customer Outages.

- Alternatives: Use current keyhole methods for sealing cast iron mains. This would require an excavation every 12 feet to seal leaking joints. Alternatively, replacement of the cast iron mains not a

good practice since the leak is at the joint and a repair to the joint can eliminate the leak and extend the useful life of the main without compromising the risk to public safety.

- **Risk of No Action:** Repairing the leak is mandatory and is a rate case performance indicator. This is one method to repair the leak while minimizing the disruption to the general public while also minimizing the cost of the repair.
- **Summary of Financial Benefits and Costs:** The use of CISBOT for reinforcing multiple joints on a segment of cast iron main will minimize numerous keyhole excavations and/or trenching if replacement was the method or repair. A total of two excavations can be made to reinforce a approximately 300 foot segment of pipe as opposed to making approximately 25 excavations for keyhole repairs to the same segment of pipe.
- **Non-financial Benefits (if applicable):** This process extends the useful life of the gas main by at least 35 years, and reduces the lost gas and water infiltration. In addition, the launch fitting can be reused for emergency shut-off since low pressure distribution system has no valves.
- **Technical Evaluation/Analysis:** This program has a direct impact on several KPI's, specifically the replacement of leak prone gas mains as well as the reduction of the leak backlog. This program will help reduce the probability that a crack/break will cause an incident.
- **Sensitivity Analysis (if applicable):** not applicable
- **Project Relationships (if applicable):**

Completion Date:

On-going

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Actual 2009

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	1,000	1,000	1,000	1,000	4,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor		50	50	50	50
M&S		50	50	50	50
A/P		550	550	550	550
Indirects		350	350	350	350
Total		1,000	1,000	1,000	1,000

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Westside HP Manhattan Main
Priority Number	17
Project Manager	Various
Project Engineer	Various
Budget Reference	7GD9820 GSM03
Project Number	MG06000568
Status	On going
Estimated Service Date	2014
Work Plan Category	System and Component Performance Improvement & Increased Customer Demand
ERM Addressed	9- Gas Distribution System Events

Work Description:

This project consists of the installation of approximately 11,000 ft of 12" High Pressure gas main on the West side of lower Manhattan in conjunction with State and City construction projects. As of 2010, there is approximately 4400 ft of 12" main remaining. When completed, this west side HP main will connect to the east side loop, completing the Master Plan of extending the HP gas supply to lower Manhattan. See attached overview map. This is part of our 08-10 Rate Case projects.

Mandatory:

The PSC Code (NYCRR 255.623) and CE procedural (G-8051, Gas System Design Criteria) requirements are:

- Each operator shall maintain a pressure throughout its low pressure distribution systems at no less than 4" w.c. not more than 12" w.c. as measured at the customer's end of service
- The maximum daily pressure variation shall not exceed a total range of 50% of the maximum gauge pressure experienced during the day at any point in the low pressure distribution system, as measured at the customer's end of service.

Justification:

Lower Manhattan, below Canal St is predominantly supplied by a low pressure distribution system. This system is fed by 3 HP to LP regulating stations. There are currently more than 125 service requests for gas that is expected to add approximately 900 mcfh of load to the system in the next 1 to 3 years. The current system cannot supply this future load without an additional source of supply. The attached overview map shows the installation schedules for the remaining work on this project.

Currently there is a project to extend a 12" High Pressure main down the East side at Water and Whitehall Streets. However, this will not satisfy the load growth on the west side. Working in conjunction with NYS DOT, NYC DOT & Transit Authority projects, a new 12" High Pressure main will be installed along West St., Battery Place and State St. to connect to the 12" main on the East side. Completing this main work will provide added supply redundancy to GR-5, which is currently fed off the radial 12" HP main on Madison Street and St. James Place, and allow more load to be connected to the looped HP system in Lower Manhattan. It will also complete the HP loop around Manhattan and create a HP supply to the proposed WTC Towers. This is part of our Supply Mains Master Plan.

Alternatives:

The alternative to this plan would be to continue to connect new load to the existing LP system in lower Manhattan. Since the LP system in Lower Manhattan has very limited capacity to accommodate new load, this option will require extensive LP system reinforcement to satisfy the expected new business load. Additionally, there will be no redundancy should the east side feed to GR-5 be interrupted.

Risk of No Action:

No action will result in the loss of the LP system capacity and will also limit the supply to GR-5 from the existing radial 12" HP main on the east side along Madison Street.

Technical Evaluation/Analysis:

The attached network analysis studies show the current 2009 Lower Manhattan LP network system pressures on a design peak hour before and after the pending new business load is added.

Estimated Completion Date: 2014

Current Working Estimate (if applicable): \$9.726 Million

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	92	934	2,000

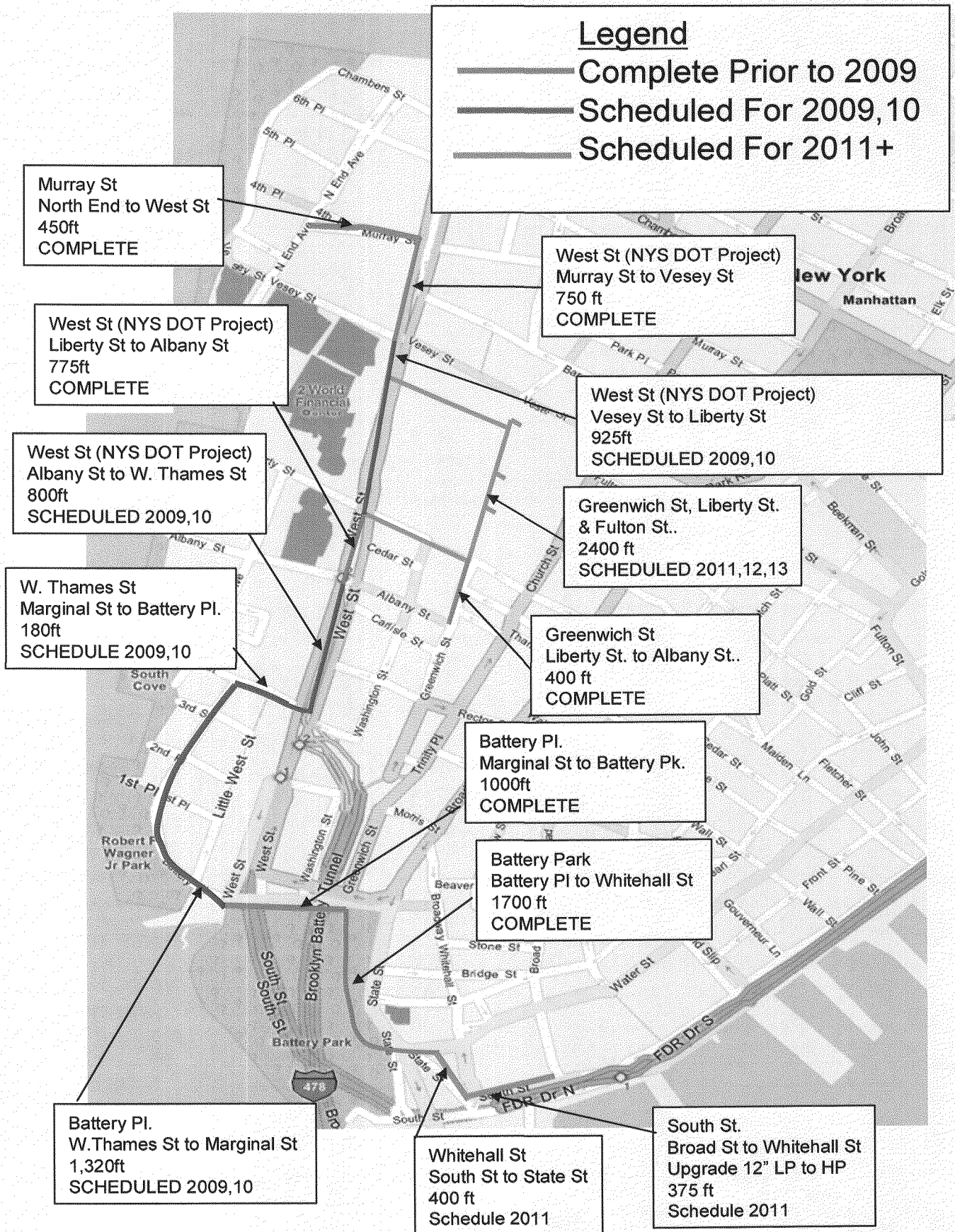
Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
2,700	2,000	1,000	500	500	6,700

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor		14	3	100
M&S		50	-9	200
A/P		0	744	1000
Indirects		28	196	700
Total		92	934	2000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	135	100	50	25	25
M&S	270	200	100	50	50
A/P	1350	1000	500	250	250
Indirects	945	700	350	175	175
Total	2700	2000	1000	500	500



2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Scarsdale HP Main
Priority Number	11
Project Manager	Various
Project Engineer	Tom Hernandez
Budget Reference	9GD1000 GSM04
Project Number	Various
Status	Planning
Estimated Service Date	2012
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9- Gas Distribution System Events

Work Description:

Replace restrictive, 4" bare steel main along the supply routes to 2 MP and 2 LP district regulator stations in the Scarsdale HP System with 8" PE. Approximately 4000 feet of 4" bare steel pipe along these supply mains installed in 1925 and 1946 are restricting the supply of gas to downstream district regulators.

Units per Year: In 2010, an 1800 ft. segment along White Plains Post Road between Wayside Lane and Richbell Road will be replaced with 8" PE. This segment also includes approximately 600 feet of 1925 4" bare steel pipe in front of Scarsdale High School and will improve gas supply to GR-501.

In 2011, two segments totaling approximately 1100 feet are recommended for replacement. The first is approximately 800 feet of 1941 through 1956 4" bare steel on Wilmot Road between Sunny View Lane and 919 Wilmot Road in New Rochelle. The second is approximately 300 feet of mostly 4" bare steel (1928) along Hutchinson Blvd. between Wilmot Road and Madison Road. There are currently 16 leak repairs on these sections. Replacement of these sections with 8" PE will eliminate 1100 feet of leak-prone steel main and also reduce the pressure drop towards the east end of Scarsdale and medium pressure station GR-625.

For 2012, the replacement of 1200 feet of 1925 4" bare steel is recommended along White Plains Road between Grand Blvd. and Woodruff Ave. This segment of main has 25 leak repairs. The replacement with 8" PE will eliminate 1200 feet of 4" bare steel pipe and improve the backup capability between supply stations GR-510 and GR-425.

Mandatory:

As per G-8051 (System Design Criteria), supply mains shall be designed to maintain system pressures in accordance with the "Operating Pressure Guidelines" issued by the Gas Engineering Planning Department. These guidelines are intended to reduce operating system pressures and, in turn, reduce incoming leaks in the distribution system. Additionally, the supply pressure to any medium or low pressure regulating station shall not be lower than 25 psig.

Based on the latest network analysis studies, which include pending new business load, the pressure to these stations is predicted to fall below 25 psig at the design peak hour. The completion of these HP supply main replacements in Scarsdale will address these concerns and raise the pressure to downstream regulators above the minimum required.

Justification:

The Scarsdale high pressure system is comprised 11.5 miles of main predominantly 4" & 6" bare steel. It supplies the low and medium pressure distribution systems through 2 low pressure and 2 medium

pressure regulator stations as well as 7,400 high pressure customers. It is supplied by regulator stations GR-425 and GR-510 in Scarsdale and by the Sawmill-Greenburgh System from the west.

During recent winters, GR-501 experienced pressures below 25 psig due to excessive pressure drop on the 4" main supplying this low pressure regulator station. This, in turn caused lower than desired pressures on the low pressure distribution system in the area. As a result, 1800 feet of main replacement is recommended for 2010 along White Plains Post Road.

Additional pipe segments identified for 2011 and 2012 were selected based on the Main Replacement Program score, the number of leak repairs and the flow restrictions caused by small diameter main along the supply runs. Replacement of these segments will improve the inlet pressure to downstream LP and MP stations, proactively replace restrictive, small diameter bare steel pipe along these vital supply runs, and improve the back-up capability between supply stations GR-510 and GR-425.

Alternatives:

An alternative that could provide a similar benefit would be to proactively replace other segments along these supply routes purely on a pressure drop basis. Network analysis studies indicate that these recommendations provide both the required system benefit and also eliminates leak prone steel main.

Risk of No Action:

No action will result in continued marginal low-point distribution pressure, LP and MP regulator inlet pressures. It would also increase the risk of customer interruptions due to leaks on these supply runs.

Technical Evaluation/Analysis:

See attached network analysis studies.

Estimated Completion Date: 2012

Current Working Estimate (if applicable): \$3.2 Million

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		1300

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
800	500	600	0	0	1900

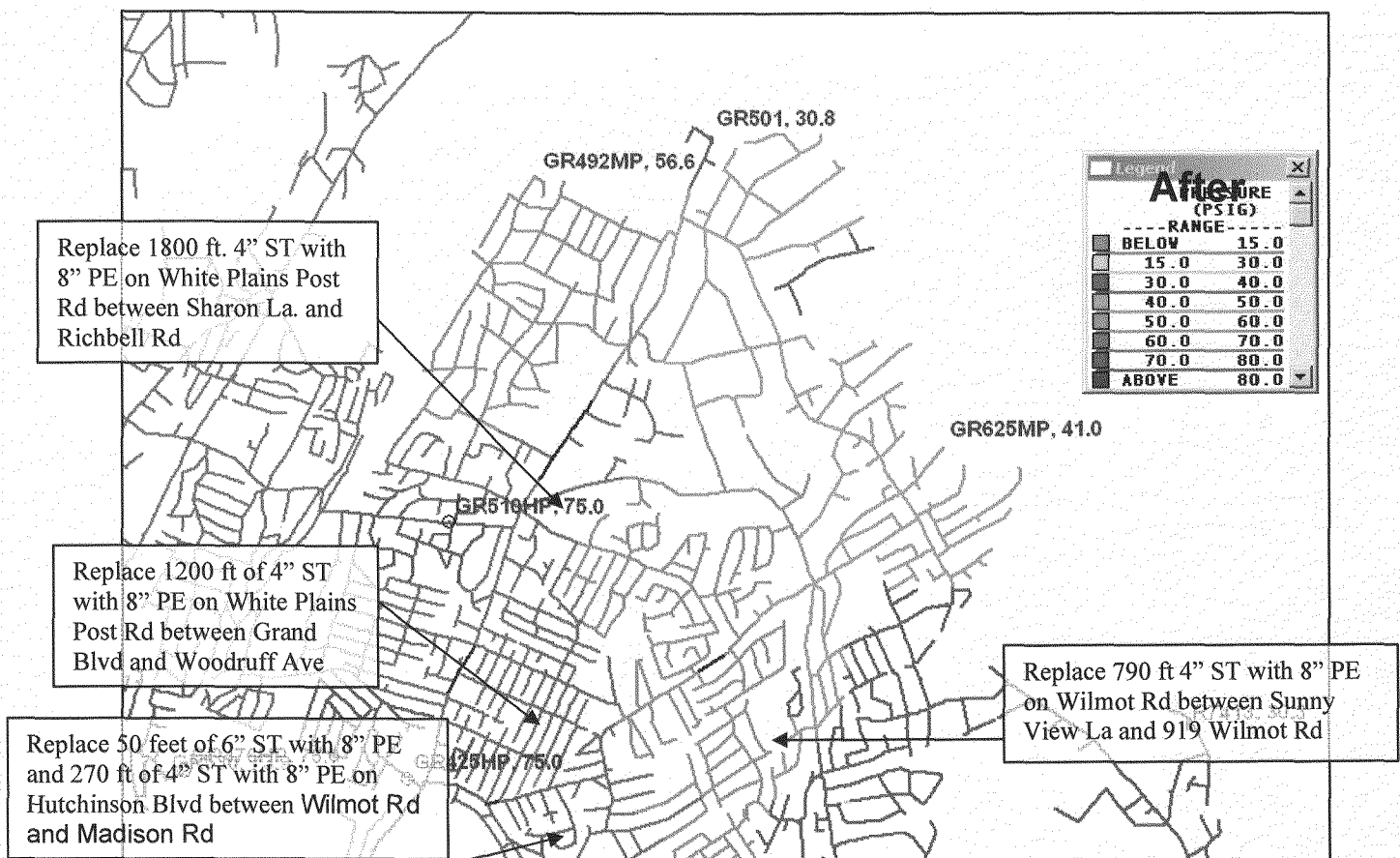
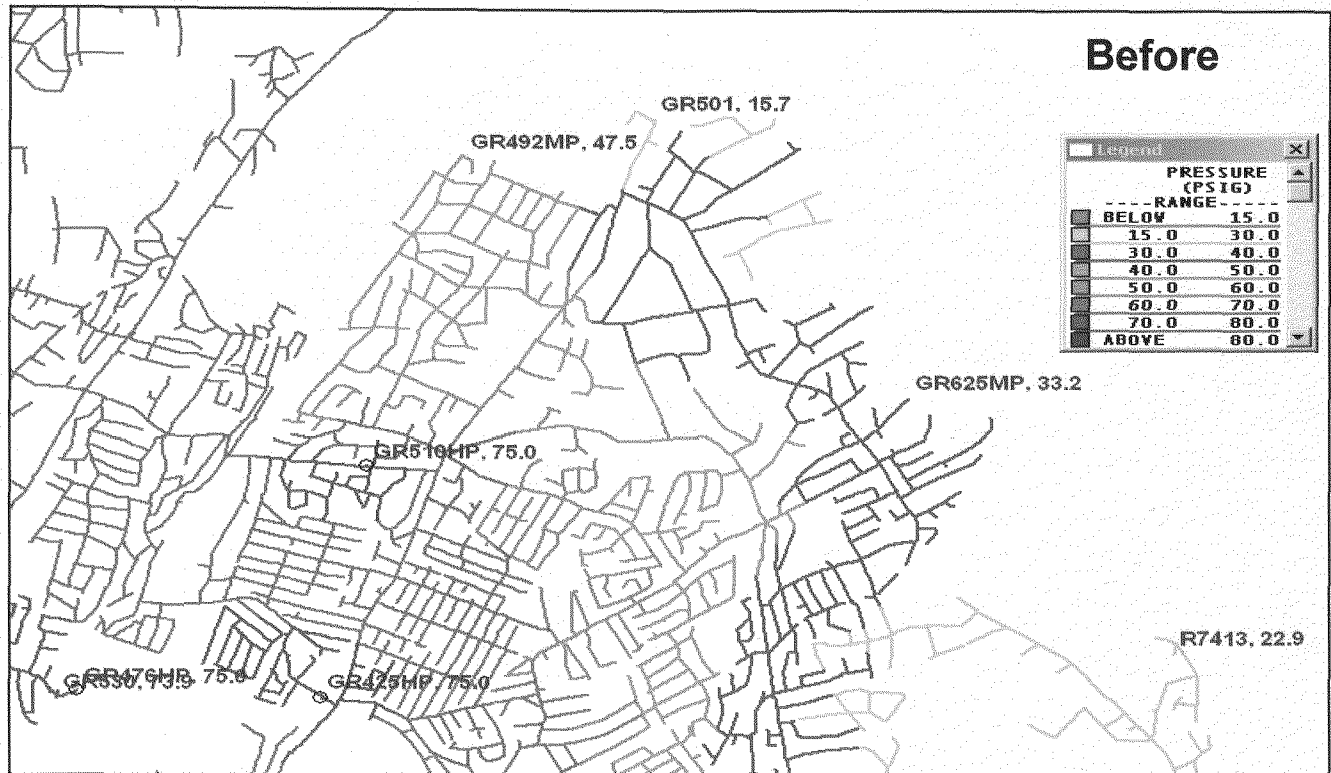
Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				65
M&S				130
A/P				715
Indirects				390
Total				1300

Forecast

EOE	2010	2011	2012	2013	2014
Labor	40	25	30		
M&S	80	50	60		
A/P	440	275	330		
Indirects	240	150	180		
Total	800	500	600		

Scarsdale HP System Before and After Main Replacement



2010 Capital - CE Gas Operations – Supply Main Projects

Project/Program Title	Cortlandt/ Yorktown Tie
Priority Number	28
Project Manager	Various
Project Engineer	Tom Hernandez
Budget Reference	9GD9804 GSM04
Project Number	Various
Status	Planning - Pending start date in 2009
Estimated Service Date	2011
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

Install a 12" tie between the Cortlandt and Yorktown high pressure systems.

In 2009 1,500 ft of main will be installed on E. Main St from the existing 8" to Stonegate Rd.

In 2010, 1500 feet will be installed from Stonegate Road to Sunnyside Avenue.

In 2011, 2000 feet of 12" PE will be installed from Sunnyside Avenue and tie into the existing Yorktown HP system on Barger Avenue and Route 6.

Justification:

The installation of 5,000 ft of 12" PE main is required to connect the radial Cortlandt System to the Yorktown system. The existing HP system in Cortlandt currently supplies nearly 1,200 customers and is a radial system fed solely by the Cortlandt Gate Station off the Algonquin pipeline. The Cortlandt area is comprised of open land and has seen significant load growth in recent years. Additionally, during periods of cold weather, the capacity from the Cortlandt Gate Station and equipment has approached its upper limits.

Alternatives:

There is no alternative that would provide the benefit of backing up the Cortlandt systems without installing a new regulator station along with an extensive length of large diameter supply main. An alternative tie between the Cortlandt and Peekskill HP system would provide backup to the Cortlandt System, but would require over 16,000 feet of new 12" PE to complete.

Risk of No Action:

If this project is not completed, the Cortlandt System would continue to be at risk of significant customer outages (including critical customers such as Hudson Valley Hospital) if the Cortlandt Station was to malfunction, a contractor damage were to occur on the radial supply or the Algonquin supply to this station was lost for any reason. The Cortlandt Gate Station is also at its upper limit on peak winter mornings and will experience lower outlet pressure as system load increases.

Non-financial Benefits:

This project will reduce the potential cost of customer outages due to the loss of supply or malfunction of the Cortlandt Station feeding this radial system. Avoided potential outages will also result in improved customer satisfaction, and better community and regulatory relations.

Technical Evaluation/Analysis:

When the tie is completed, the Cortlandt system will be able to operate and supply firm customers down to a 45 degree average day under emergency conditions.

See attached network analysis studies detailing this improved redundancy.

Completion Date: 2011**Current Working Estimate (if applicable):**

The current working estimate for this project is \$3.8 million.

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		1000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
1000	1800	0	0	0	3800

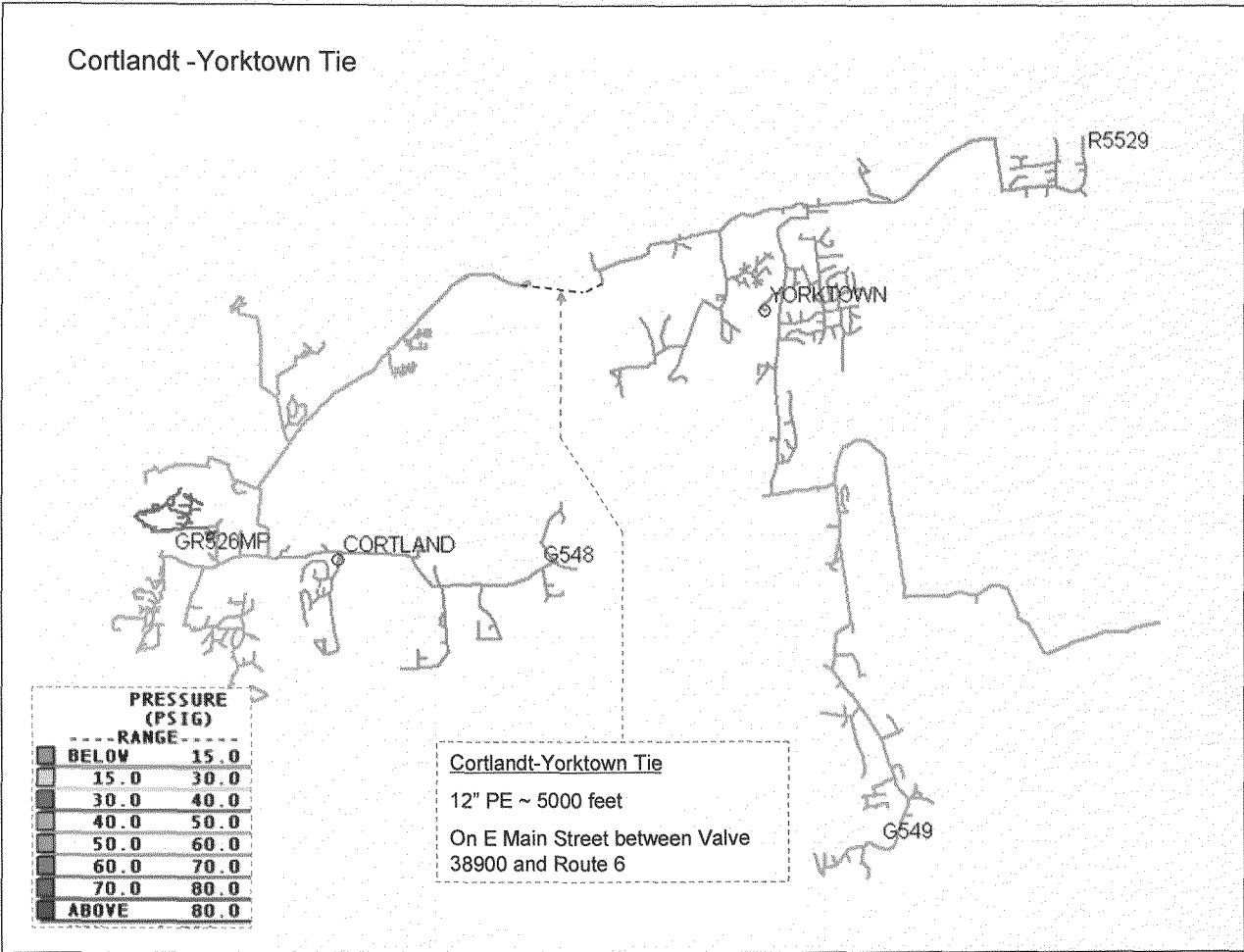
Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				50
M&S				100
A/P				550
Indirects				300
Total				1000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	50	90			
M&S	100	180			
A/P	550	990			
Indirects	300	540			
Total	1000	1800			

Cortlandt/Yorktown Tie



2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Westchester Medium Pressure Inner/Outer Loop
Priority Number	5
Project Manager	Various
Project Engineer	Tom Hernandez
Budget Reference	7GD9834 GSM04
Project Number	Various
Status	On-going
Estimated Service Date	11/1/2012
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9- Gas Distribution System Events

Work Description:

This project includes upgrades to the Westchester Medium Pressure Inner and Outer Loops. The first project will be to install a 3,200 ft. 12" main tie along Sunny Ridge Rd between North St. and Union Avenues in the Town of Harrison. This work started in 2008 and will be completed in 2010. The project also includes improvements to the Inner and Outer Loop Systems by adding main ties and systems improvements as described below. This is part of our 08-10 Rate Case projects.

Justification:

The Westchester MP Outer Loop serves lower Westchester and operates at 15 psig MAOP. Currently on cold winter days, the MP Outer Loop System needs to operate at nearly its maximum pressure of 15 psig to maintain the minimum required system low-point and LP regulator inlet pressures. The design requirements are:

- The minimum pressure at system low-points feeding customers shall not be lower than 2 psig.(G-8051, Gas System Design Criteria)
- The supply pressure to any low pressure district regulating station shall not be lower than 5 psig.(G-8051, Gas System Design Criteria)

In addition, PSC Code and CE procedures, respectively, require that:

- The maximum pressure variation at any point on the system shall not be greater than 50% of the maximum pressure on that day.(Part 255.623)
- The optimal pressure range at the outlet of a regulating station shall be 7 psig to 13 psig. (G-8051)

Sunny Ridge Road Project in Harrison

The completion of 3,200 ft. of 12" PE along the Sunny Ridge Road will enable the district regulators feeding this system to operate at 13.0 psig on the coldest winter days and satisfy the system pressure requirements stated above. This installation will improve system pressures by tying two existing 12" mains that are not currently connected. Lower district regulator operating pressures will also reduce potential gas leaks on this medium pressure system.

The Sunny Ridge Project began in the 4th quarter of 2008 with the installation of 1200 ft of 12" PE main. The second section will be 1500 ft. and will be completed in 2009. The last section will consist of 500 ft. along Harrison Avenue (State Road 127) from Sunny Ridge Rd. to Union Ave., and will be completed in

2010. These remaining sections will replace approximately 1000 ft. of 6 and 8 inch leak-prone unprotected 1957 steel pipe. See attached network analysis studies.

Old Tarrytown Road Tie in Greenburgh

The second project is a 600 foot 8" PE tie on Old Tarrytown Road in Greenburgh. This tie will enable the supply regulators supplying this MP area to operate at 13 psig while maintaining low-point pressures above 2 psig and LP regulator GR-464 inlet pressure above 5 psig. This project is scheduled for 2010.

Croft Terrace Tie in New Rochelle

The third project will install a 200 foot 6" PE tie at Croft Terrace between Trenor Drive and 91 Croft Terrace in New Rochelle. This tie will allow the MP regulators supplying the MP Inner Loop System to operate at 13 psig while maintaining system low-points above 2 psig. This project is scheduled for 2010.

Winfield Avenue Inner/Outer Loop Tie in Harrison

The last project will install 2700 ft. of 8" PE along Winfield Avenue between Union Avenue and Glen Drive in Harrison. This job will be completed in 2011 (1500 feet) and 2012 (1200 feet), and will result in added system reliability by tying the MP Inner and Outer Loops (including the long Inner Loop radial along Winfield Avenue – approximately 900 customers), improved system pressures, and allow for the operation of MP district regulators in the Harrison area at 13 psig.

These projects will also reduce the potential cost of customer outages due to inadequate system low-point and LP regulator inlet pressures. Avoided leaks on leak prone pipe replaced along Sunny Ridge Road and the reduced likelihood of customer outages will also result in improved customer satisfaction, and better community and regulatory relations.

Alternatives:

An alternative to the Sunny Ridge Road job was to install 3200 ft. of 12" PE along Harrison Avenue (State Road 127). However, installation on this state road would require excavation through concrete roadway and restoration of half the road width which would increase the cost of the installation by 50%.

Other than longer, more expensive runs, there are no other alternatives to the ties recommended.

Risk of No Action:

If no action is taken, system pressure variation will increase, and system low-point and LP regulator inlet pressures will continue to drop below the minimum required as per PSC Code Part 255.623 and CE Specification G-8051 (Gas System Design Criteria), respectively. It will also increase the risk of customer outages as new load is added to the MP system.

Completion Date: 11/2012

Current Working Estimate (if applicable): \$3.159 Million

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	459	1000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
600	600	500	0	0	1700

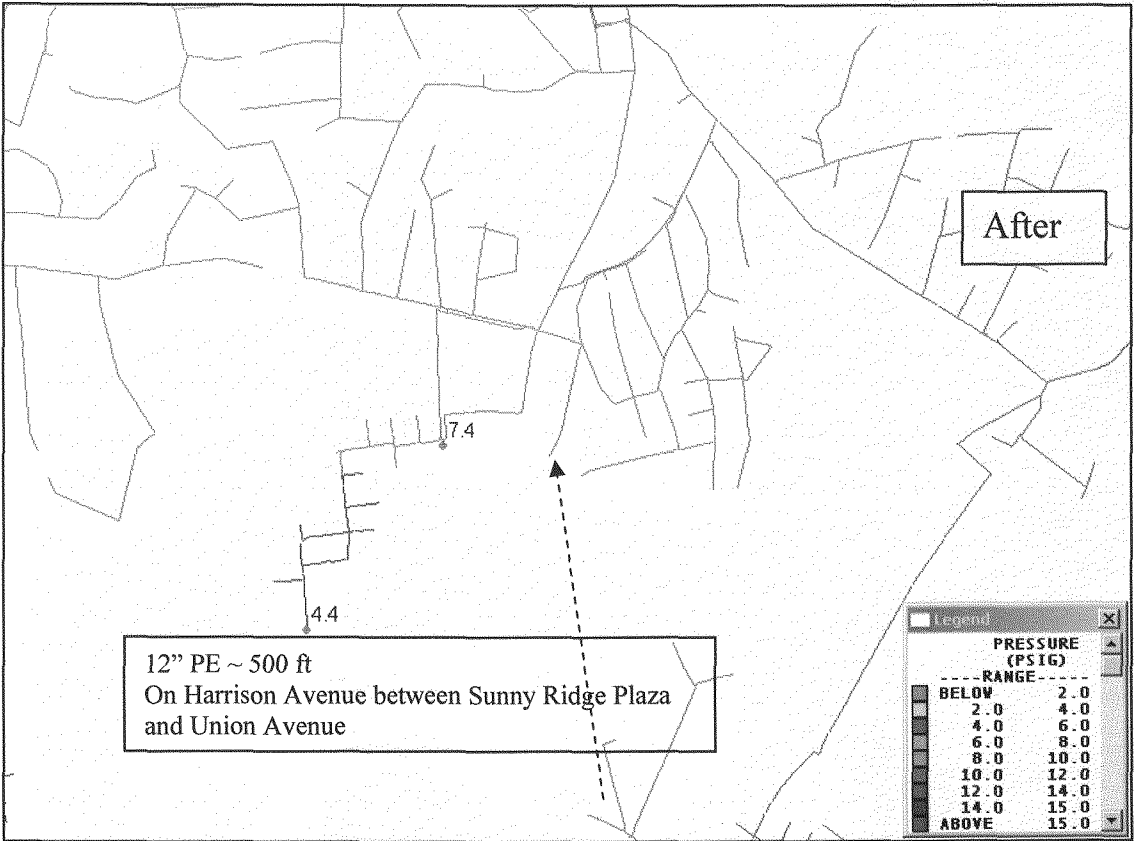
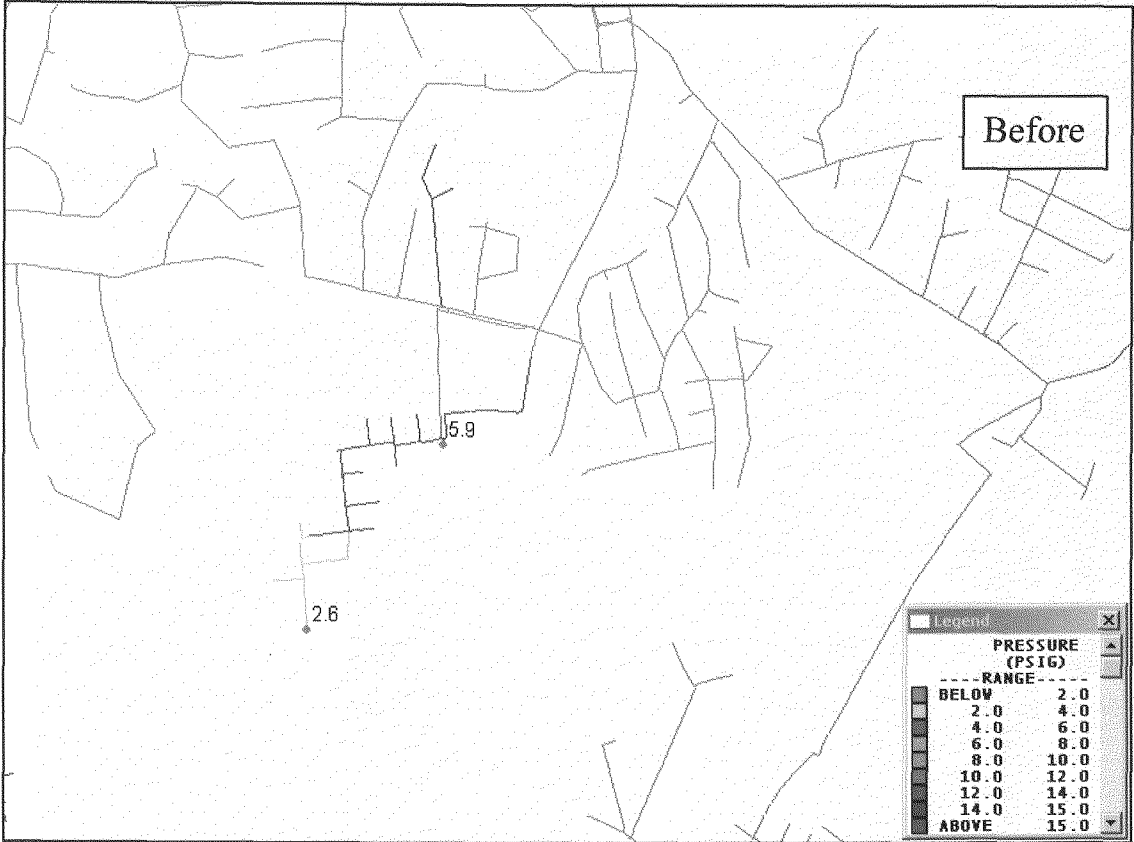
Historical elements of expense (EOE's)

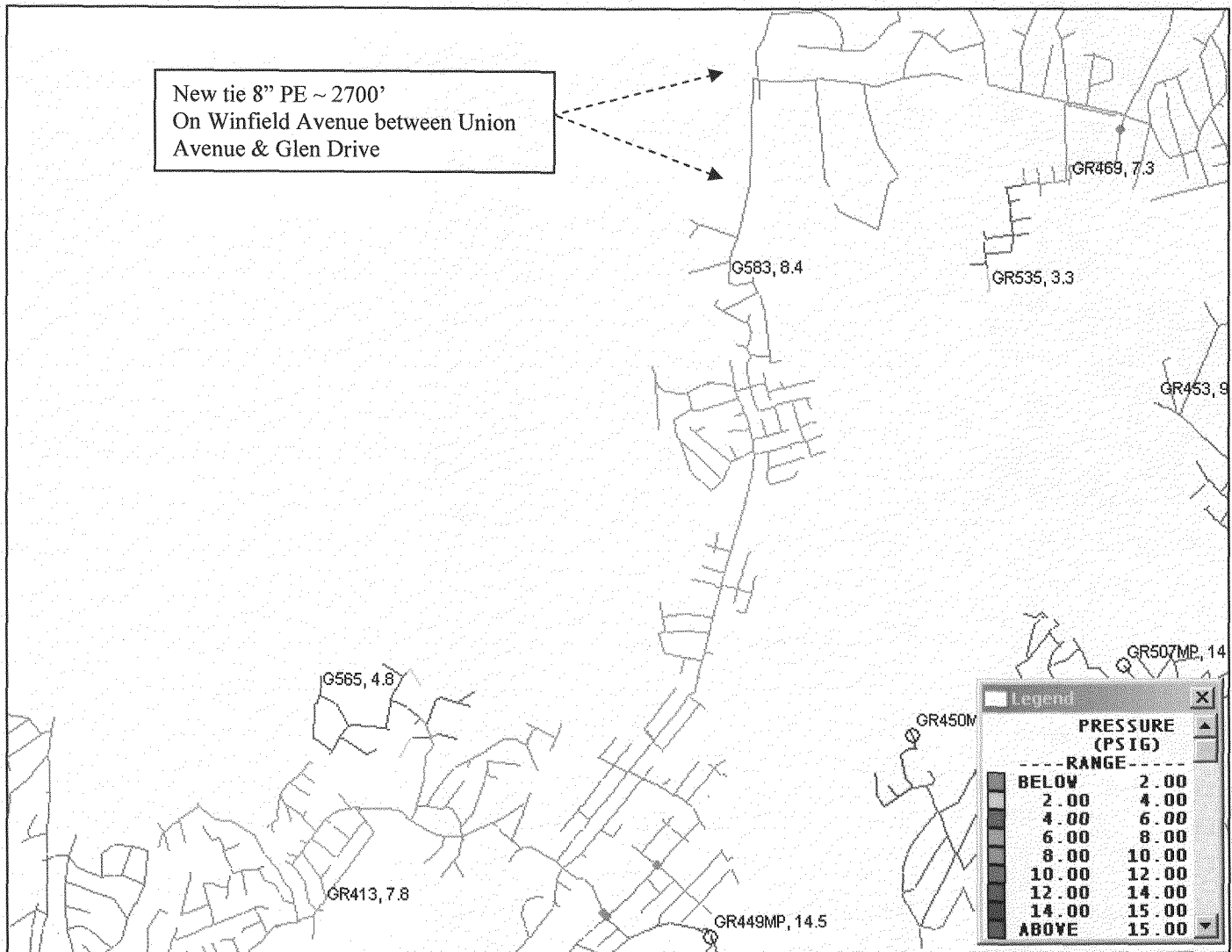
EOE	2006	2007	2008	2009
Labor			31	50
M&S			63	100
A/P			261	550
Indirects			103	300
Total			459	1000

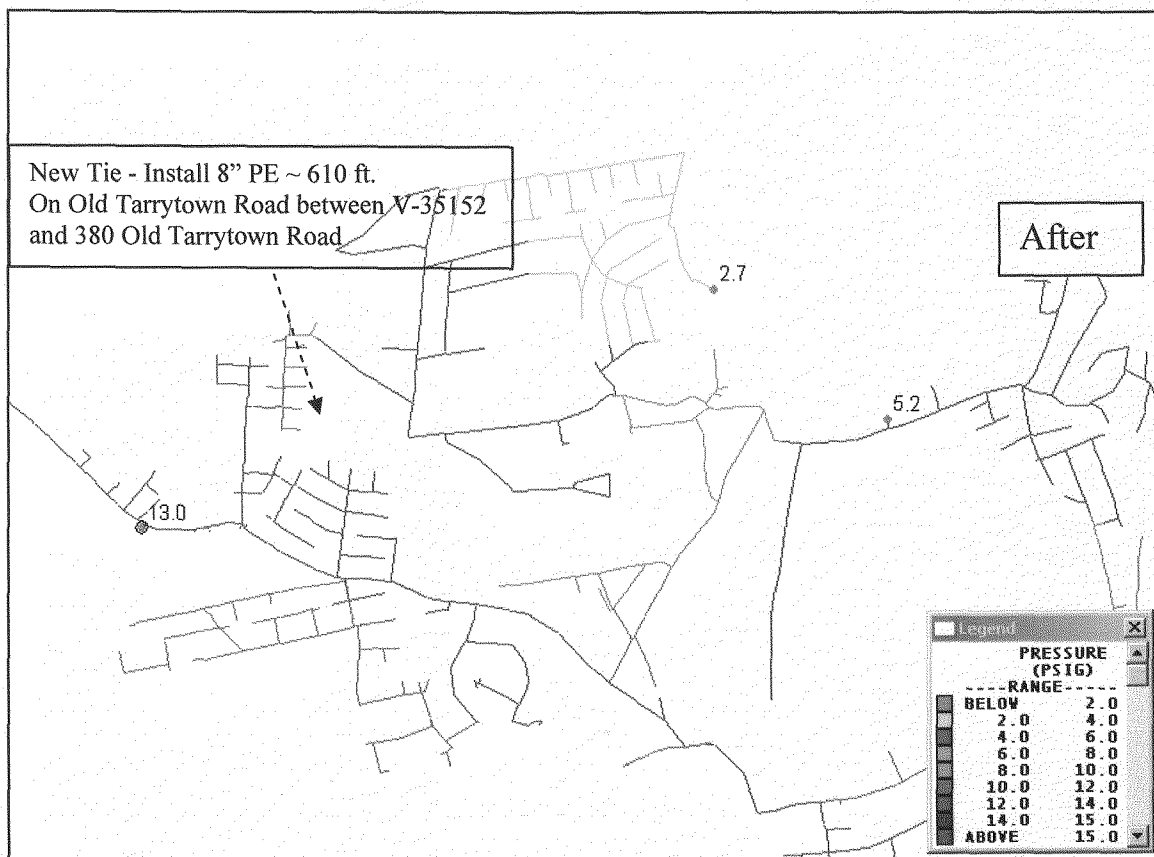
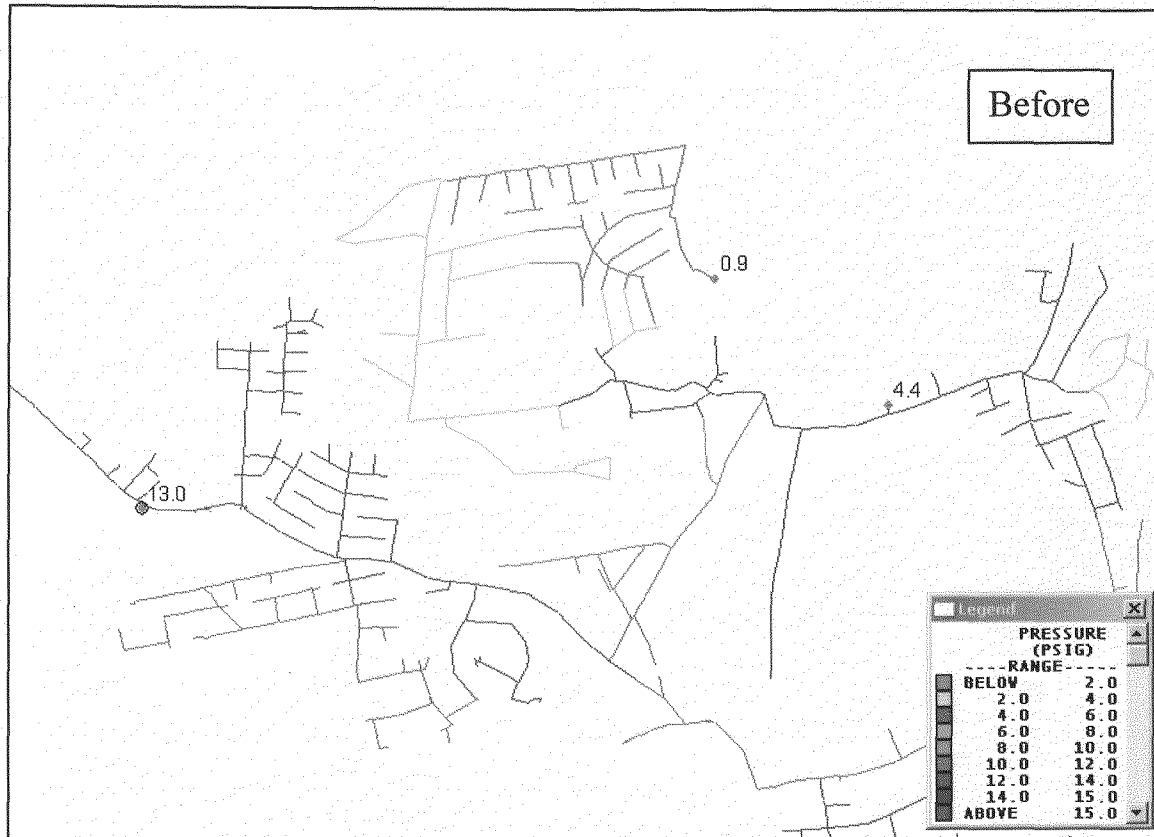
Forecast

EOE	2010	2011	2012	2013	2014
Labor	30	30	25		
M&S	60	60	50		
A/P	330	330	275		
Indirects	180	180	150		
Total	600	600	500		

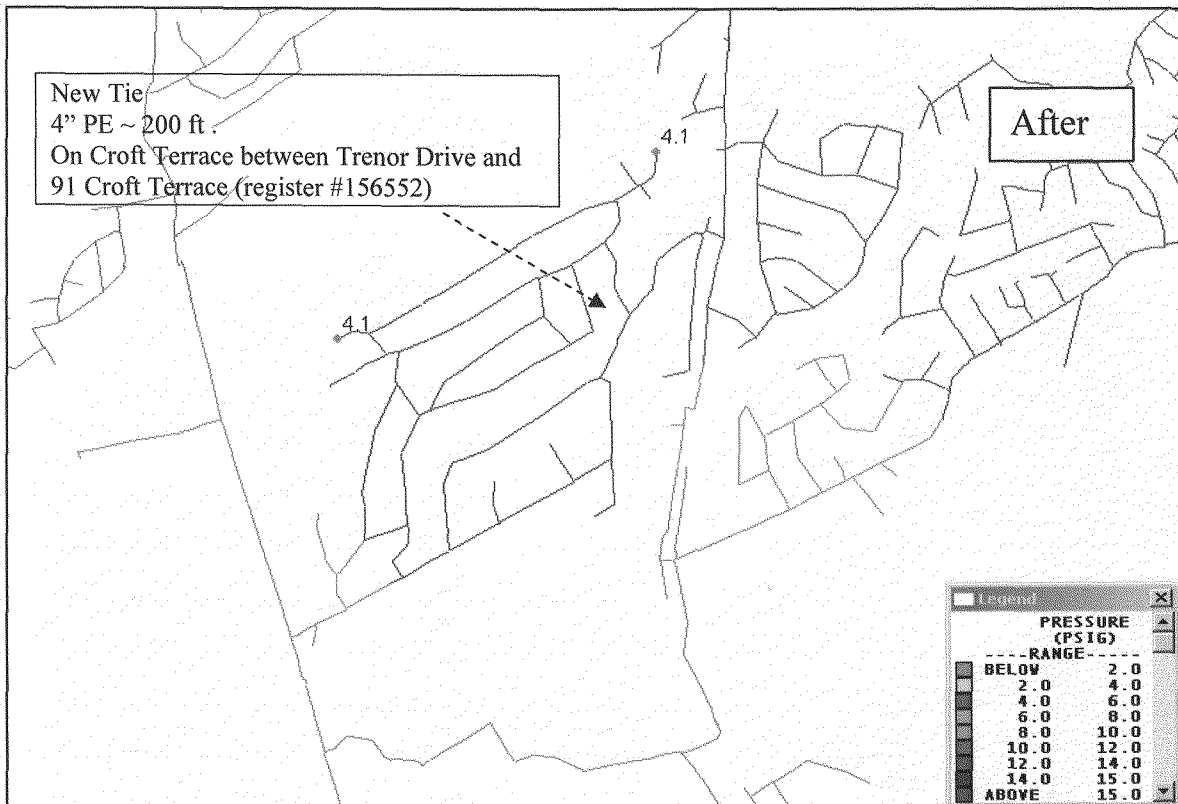
Sunny Ridge Road in Harrison



Winfield Avenue Inner/Outer Loop Tie in Harrison

Old Tarrytown Road Tie in Greenburgh

Croft Terrace Tie in New Rochelle



2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Harlem River Crossing
Priority Number	14
Project Manager	Russ Grogan
Project Engineer	Regina Erbe
Budget Ref/Function Code	HGS0188-620 – GSM04
Project Number	TBD
Status	Planning/Engineering Design
Estimated Service Date	2011
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9. Gas System Distribution Event

Work Description:

- The Distribution Master Plan prescribes a multi-year effort to extend high pressure gas into Manhattan by installing 5,400 feet of 16 inch and 12 inch gas main, and a Regulator Station at W 207th Street and 9th Avenue. The 2010 portion of the project is to install a 16” gas main in the M29 tunnel, which will introduce high pressure gas into Manhattan.

Justification:

- This project accomplishes a number of system objectives in the Distribution Master Plan:
 - It helps reduce dependency on both GR-60 at W 155th Street and Amsterdam Ave, and GR-118 at Landing Road and Cedar Ave.
 - Installing a High to Low regulating station at W 207th Street will provide long term reliability if the submarine crossing is lost. This main needs to be installed to make this regulator station possible.
 - A loss of the existing 30” CI main between Manhattan and the Bronx would leave Marble Hill with only one feed. Creating a large radial feed jeopardizes system reliability.
- Alternatives: One alternative would be to directionally drill across the Harlem River rather than putting it in the tunnel. This option wasn’t pursued because of issues found when the M29 feeder was designed. The Company favored a tunnel containing the M29 feeder and gas main.
- Risk of No Action: Currently the Bronx is being supplied by a 30 Inch Cast Iron main crossing the Harlem River that was installed in 1912 and has tenuous long-term reliability. If this new high pressure main is not installed, this area will continue to rely on the 30” cast iron main. Also, load growth in Northern Manhattan will be limited, due to the lack of low pressure system capacity.
- Summary of Financial Benefits and Costs: The total capital cost of this project is approximately \$2.2 million.
- Non-financial Benefits (if applicable): This project will increase the flexibility in which the system as a whole can be operated. The distribution main will provide system reinforcement to an existing 30-inch main at the Harlem River Crossing. Also, the new regulator station will insure adequate supply if the existing crossing is lost.
- Technical Evaluation/Analysis: Stoner analysis determined the size pipe required to realize the full supply potential.

- Sensitivity Analysis (if applicable):
 - Major assumptions relating to this project are:
 - M29 feeder project doesn't create any coordination delays
- Project Relationships (if applicable): The "205 St regulator" depends upon this project completing and this project depends on the "Fordham Rd to Harlem River" project completing.

Estimated Completion Date: 2011

Current Working Estimate (if applicable): \$2,200k

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budget 2009

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast Total 2009-2013
1,000	1,200				2,200

EOE	2010	2011	2012	2013	2014
Labor	20	25			
M&S	140	170			
A/P	610	730			
Indirects	230	275			
Total	1,000	1,200			

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Replacement Saw Mill to Elmsford
Priority Number	12
Project Manager	Various
Project Engineer	Tom Hernandez
Budget Reference	6GD9801 GSM04
Project Number	
Status	Ongoing
Estimated Service Date	2014
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9- Gas Distribution System Events

Work Description:

This project is part of an annual program to replace corroded supply mains on the Saw Mill to Elmsford high-pressure system in Westchester. The Sawmill-Elmsford high pressure system (See Section SW-3 on the attached map) is 12.8 miles of main (11.3 miles of unprotected steel), the majority of which is 10 inch steel installed in the 1930's, and 1.5 miles of cathodically protected main of various sizes and age. Over the next 5 years, 6650 feet of corroded main will be replaced as scheduled below.

For 2010, we will rehabilitate 1100 feet of existing 10" HP bare steel installed in 1931 utilizing the Rolldown trenchless technology method along Saw Mill River Road between Sprain Brook Parkway and South Stone Ave. This section has 8 leak repairs.

In 2011, we will rehabilitate 1300 feet of 10" 1931 bare steel along Saw Mill River Road from Babbitt Court to beyond South Stone Avenue. This section of main has 7 leak repairs.

In 2012, we will rehabilitate 1650 feet of 10" 1931 bare steel main along Saw Mill River Road from building #50 to Heath Place. This main has 7 leak repairs and 2 active type 3 leaks.

In 2013, we will rehabilitate 2297 feet of 1931 10" bare steel main along Saw Mill River Road from Barney Street to past Holly Place. This main has 6 repairs and 2 active leaks.

For 2014, we will rehabilitate approximately 1400 feet of 1931 10" bare steel main along Saw Mill River Road between Valve 21280 and Lawrence Street in Greenburgh. This main has 5 leak repairs and 1 active type 3 leak.

Justification:

The Saw Mill to Elmsford HP system supplies lower pressure distribution systems through 3 low pressure and 2 medium pressure regulator stations as well as 3,800 high pressure customers. It is supplied by the Pelham-Sawmill system from the south and the Greenburgh - Elmsford system from the north. Of the 11.3 miles of unprotected main, 3200 feet is 6 and 8 inch bare steel of 1930's vintage or earlier. Loss of service along this main due to a major leak could lead to customer outages during the winter heating season.

Alternatives:

The sections of main selected over the next 5 years (total of 6650 feet) were based on the priority established in the study performed by ZEI for Con Edison. This replacement program has been structured to replace the most vulnerable unprotected bare steel segments in descending order of pitting failure risk.

Therefore, unless there are factors preventing the replacement of the sections in the order recommended, the projects should be completed in the order prescribed.

Risk of No Action:

If these sections of main are not replaced, they will continue to deteriorate and develop leaks that will need to be repaired as they arise. Because they feed 3800 HP customers and supply 5 downstream MP and LP district regulators, the risk of customer outages is increased should a serious leak develop during the heating season.

Technical Evaluation/Analysis:

The Sawmill-Elmsford Supply Main is located along Route 9A, a state road that has heavy traffic and receives significant road salt during the winter. Consequently, in the past 5 years we have had to replace 2900 feet of leaking 10 and 12 inch bare steel main on an emergency basis.

ZEI, Inc. developed a study of the condition of Con Edison's gas supply steel mains in Westchester County. The scope included an analysis of location, size, age, length, coating protection and maintenance history. They also analyzed soil samples to determine metal corrosivity characteristics along the route of these mains. As a result of this study, ZEI recommended that a prioritized, long-range replacement program was necessary to proactively replace the steel main prior to the time pitting corrosion failure is predicted.

Completion Date: Ongoing

Current Working Estimate (if applicable): Ongoing Program

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		750

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
750	1000	1250	1500	1000	5500

Historical elements of expense (EOE's)

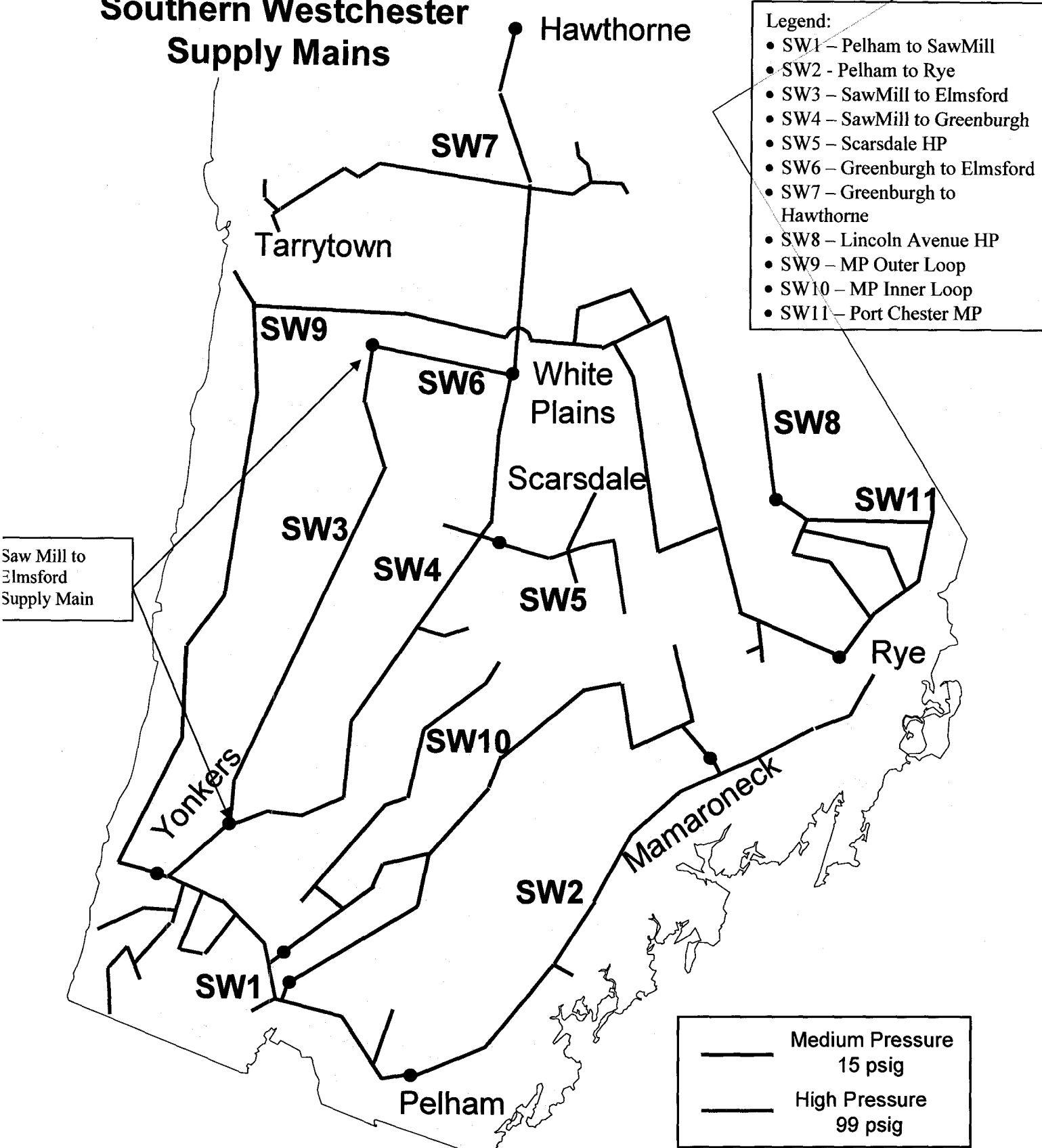
EOE	2006	2007	2008	2009
Labor				40
M&S				75
A/P				410
Indirects				225
Total				750

Forecast

EOE	2010	2011	2012	2013	2014
Labor	40	50	60	75	50
M&S	75	100	125	150	100
A/P	410	550	690	825	550
Indirects	225	300	375	450	300

Total	750	1000	1250	1500	1000

Southern Westchester Supply Mains



2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Replacement Saw Mill to Greenburgh
Priority Number	13
Project Manager	Various
Project Engineer	Tom Hernandez
Budget Reference	6GD9805 GSM04
Project Number	
Status	Ongoing
Estimated Service Date	2014
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9- Gas Distribution System Events

Work Description:

This project is an annual program to replace corroded supply mains on the Saw Mill to Greenburgh high-pressure system in Westchester. The Sawmill-Greenburgh high pressure system (See section SW-4 on the attached map) is 16.1 miles of main (15.3 miles of unprotected main), the majority of which is 8 and 10 inch steel installed in the 1920's, and 0.8 miles of cathodically protected main of various sizes and ages. Over the next 5 years, 8680 feet of corroded main will be replaced as scheduled below.

For 2010, we will replace 1080 feet of 10" HP steel installed in 1922 (and also abandon 800 feet of LP 6" CI) with 12" HP PE along Fortfield Ave. from Gavin Street and Briggs Ave. This section was selected because it has 11 existing repairs and will also improve the supply and backup capability between GR-519 and GR-476.

In 2011, we will replace 1700 feet of 8" HP bare steel installed mostly between 1925 and 1933 with 12" HP PE along Central Park Avenue from valve #21807 to Ardsley Road in Greenburgh. This section has 12 leak repairs and 2 active type 3 leaks.

In 2012, we will replace 1550 feet of 8" and 10" bare steel main installed in 1926 with 12" HP PE along Palmer Road from building #361 to Mile Square Road in Yonkers. This section has 11 repairs and 1 active type 3 leak.

In 2013, we will replace 2600 feet of 8" bare steel main installed in 1925 with 12" HP PE along Landers Road from Knollwood Road to West Downing Road in Greenburgh. This section has 12 leak repairs and 4 active leaks,

In 2014, we will replace 1750 feet of 10" bare steel installed in 1926 with 12" HP PE along Roosevelt Street, Claronden Avenue and Fortfield Avenue in Yonkers. This section has 6 leak repairs and 1 active type 3 leak.

Justification:

The Saw Mill to Greenburgh main supplies low and medium pressure distribution systems through 9 LP and 1 MP regulator stations. It also supplies HP to the Scarsdale system and 10,000 high pressure customers. It is supplied by the Pelham-Sawmill system in the south, by regulator station GR-519 at Greenburgh, and by regulator station GR-476 in Yonkers from the east. Loss of service due to a major leak could lead to customer outages during the winter heating season.

Alternatives

The section of main selected is based on the priority established in the study performed by ZEI for Con Edison. This replacement program has been structured to replace the most vulnerable unprotected bare steel segments in descending order of pitting failure risk. Therefore, unless there are factors preventing

the replacement of the sections in the order recommended, the projects should be completed in the order prescribed.

Risk of No Action:

If these sections of main are not replaced, they will continue to deteriorate and develop leaks that will need to be repaired as they arise. Because they feed 10,000 HP customers and supply 10 downstream MP and LP district regulators, the risk of customer outages is increased should a serious leak develop during the heating season.

Technical Evaluation/Analysis:

Of the 16.1 miles of unprotected main along the Sawmill-Greenburgh main, 7.0 miles is 6 and 8 inch bare steel of 1930's vintage or earlier. Following guidelines developed by ZEI for corroding steel main in Northern Westchester, this should be replaced over the next 10 years.

ZEI, Inc. has developed a study of the condition of Con Edison's gas supply steel mains in Westchester County. The scope included an analysis of location, size, age, length, coating protection and maintenance history. They also analyzed soil samples to determine metal corrosivity characteristics along the route of these mains. As a result of this study, ZEI recommended that a prioritized, long-range replacement program is necessary to proactively replace the steel main prior to the time pitting corrosion failure is predicted.

Completion Date: Ongoing

Current Working Estimate (if applicable): Ongoing Program

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		500

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
600	1000	1000	1600	1000	5200

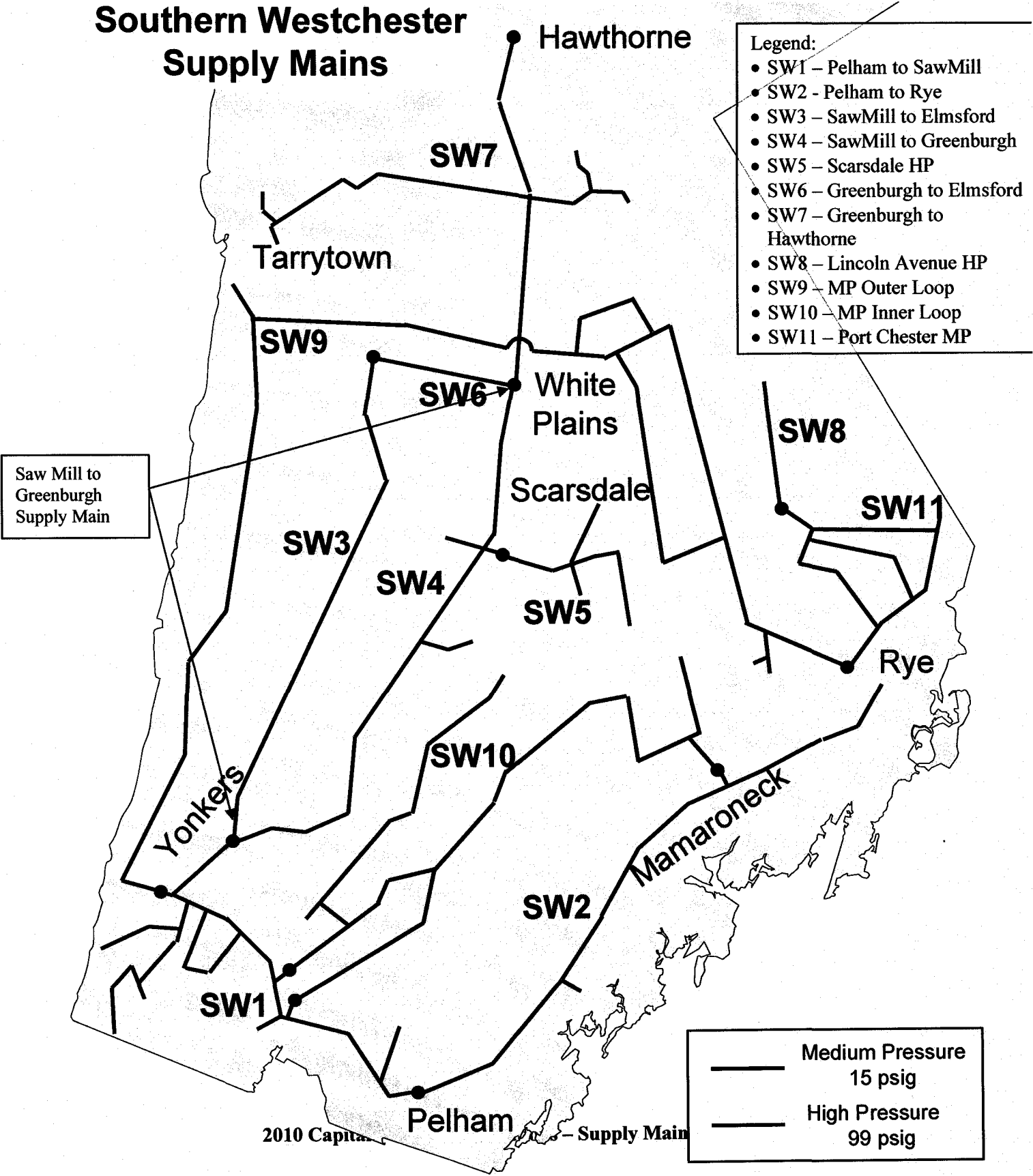
Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				25
M&S				50
A/P				275
Indirects				150
Total				500

Forecast

EOE	2010	2011	2012	2013	2014
Labor	30	50	50	80	50
M&S	60	100	100	160	100
A/P	330	550	550	880	550
Indirects	180	330	330	480	330
Total	600	1000	1000	1600	1000

**Southern Westchester
Supply Mains**



Project/Program Title	Queens Pressure Reduction
Priority Number	34
Project Manager	Various
Project Engineer	Various
Budget Reference	9GD9801 GSM04
Project Number	
Status	Ongoing
Estimated Service Date	2011
Work Plan Category	System & Component Performance Improvement/Public & Employee Safety
ERM Addressed	9- Gas Distribution System Events

Work Description:

Replace the restrictive high pressure mains in the 3rd Ward of Queens in order to reduce the overall operating pressure in the Third Ward of Queens and reduce leaks associated with 2" couplings.

In 2010, the installation of 1250 feet of new 12" PE is recommended on College Point Blvd. from Prince Street to Northern Blvd. This new tie from the 24" HP main on College Point Blvd. to the existing 12" HP main on Northern Blvd. will improve overall system pressures in Kew Gardens Hills above 15 psig. Also, replace 550 feet of 1948 4" bare steel with 8" PE along 43 Avenue from 215 Street to 216 Street. This replacement will increase the pressure to LP regulator GR-238 above 25 psig.

For 2011, replacement of 1260 feet of 4" 1962 steel with 8" PE along Whitestone Parkway between Linden Place and 31st Avenue. This replacement will increase low point pressures in College Point to above 15 psig.

Justification:

The Queens 3rd Ward high pressure system has seen an unusually high number of leaks associated with 2-inch compression couplings of 1950s vintage. Failure analysis is currently being performed on samples of these couplings by an external testing facility. Concurrent with these tests and in order to minimize the possibility of leaks and improve overall system reliability system reinforcement will be performed to allow for pressures to be maintained at 55 psig year round. Reinforcement would consist of the installation of approximately 4050 ft of 6", 8", and 12" plastic pipe, and the replacement of approximately 2300 ft of 2" and 4" steel with 6" and 8" plastic. The 2", 4" and 6" mains will be replaced through the GD-4 and GD-29 programs. The larger diameter (8" and 12") installations will be completed through this project. These large diameter projects to lower the pressures in the Queens 3rd Ward high pressure system started in 2009 and will be completed in 2012.

Alternatives:

These recommended replacements were selected in order to minimize the amount of main replacement required to attain the minimum required system low-point pressures (15 psig) and minimum downstream LP and MP district regulator inlet pressures (25 psig) as required by G-8051 (Gas System Design Criteria).

Risk of No Action:

If a proactive replacement is not implemented, it will increase the likelihood of 2" coupling leaks in the HP system. Since HP coupling leaks can result in large migration patterns that include buildings and subsurface structures, a proactive system pressure reduction could mitigate the risk to customers. This

program in the Queens high pressure area will reduce risk and is part of our Distribution Integrity Management Plan to minimize the number of leaks on 2" high pressure couplings.

Technical Evaluation/Analysis:

The attached network analysis studies show the resulting system pressures with HP supply regulators set at 55 psig after completion of the recommended projects.

Completion Date: 2011

Current Working Estimate (if applicable): \$3.1 Million

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		1000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
1200	900	0	0	0	2100

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				50
M&S				100
A/P				550
Indirects				300
Total				1000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	60	45			
M&S	120	90			
A/P	660	495			
Indirects	360	270			
Total	1200	900			

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Union Turnpike Main Replacement
Priority Number	19
Project Manager	Various
Project Engineer	Tom Hernandez
Budget Reference	7GD9732 GSM04
Project Number	
Status	Ongoing
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 – Gas Distribution System Events

Work Description:

This project will replace corroded sections of HP steel supply main on Union Turnpike in Queens. The 10" steel supply main along Union Turnpike is bare steel and susceptible to leakage. Since this main is the primary feed to Bellrose and Glen Oaks, Queens, it has been identified for proactive replacement.

Justification:

This is a multi-year project to replace the corroded 10" bare steel supply main with 12" PE on Union Turnpike feeding the Bellrose and Glen Oaks areas in the Third Ward of Queens. In 2010 we will replace an 800 foot section of corroded 1947 & 1948 8" bare steel supply main between 265th St & 268th St. which has 2 clamps. The MRP model was used to select this segment which ranked highly for replacement.

In 2011, a 500 foot section of 10" 1947 bare steel main will be replaced with 12" PE along Union Turnpike between 86th Road and Stronghurst Avenue. This section has 14 clamps and is highly ranked by the MRP.

In 2012, a 600 foot section of 10" 1947 corroded bare steel main will be replaced with 12" PE along Union Turnpike between 214th Street and Bell Blvd. This section of main scored highly on the MRP and also has 2 existing type 3 leaks.

In 2013, a 460 foot section of 8" 1947 bare steel main will be replaced with 12" PE along Union Turnpike between 254th and 255th Street. This main was also selected by the MRP for replacement.

Finally, in 2014, a 520 foot section of corroded 1947 8" steel main will be replaced with 12" PE also on Union Turnpike between 262nd and 265th Street. This main crosses in front of a church and a synagogue and was selected for replacement by MRP.

These segments will be re-evaluated on an annual basis to select the most leak prone sections based on the MRP score, leak repairs and existing leaks. Replacement of corroded sections of the Union Turnpike supply main is included in our Supply System Master Plan.

Alternatives:

This segment was selected based on its relative MRP ranking with other segments along Union Turnpike. Sections for replacement were selected based on its MRP score, active leaks and accessibility.

Risk of No Action:

By not replacing these identified sections of main, they will be susceptible to leaks and increased the risk of interruption. Interruption of this primary supply main during the heating season would result in numerous customer outages in the areas of Bellerose and Glen Oaks on the eastern end of the third ward of Queens. Some sensitive customers that would be affected include Parker Jewish Geriatric Hospital and LIJ Medical Center.

Technical Evaluation/Analysis:

The 2010 segment of Union Turnpike 10" main was selected based on its MRP score. The gas network analysis model predicts that if this segment of gas main were shut down due to a major gas leak during the winter, a large number of customers in Bellrose and Glen Oaks would experience service interruptions.

Completion Date: On Going

Current Working Estimate (if applicable): Ongoing Program

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	531	350

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
560	350	350	350	350	1960

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor			23	20
M&S			4	35
A/P			391	190
Indirects			113	105
Total			531	350

Forecast

EOE	2010	2011	2012	2013	2014
Labor	25	15	15	15	15
M&S	55	35	35	35	35
A/P	310	195	195	195	195
Indirects	170	105	105	105	105
Total	560	350	350	350	350

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Ossining IP System
Priority Number	30
Project Manager	Various
Project Engineer	Tom Hernandez
Budget Reference	6GD9707 GSM04
Project Number	
Status	Ongoing
Estimated Service Date	2011
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 – Gas Distribution System Events

Work Description:

This is a multi year program to replace the existing larger diameter intermediate pressure (IP) 6” and 8” cast iron mains within the Ossining Intermediate Pressure System. There currently remains 2100 feet of larger diameter cast iron in the Ossining IP system.

For 2010, 1700 ft of 6” CI main is recommended for replacement with 8” PE along Spring Street (and Rockledge Avenue) from Agate Avenue to Revolutionary Road.

For 2011, 400 ft of 8” CI is recommended for replacement with 6” PE along Main Street between Hunter Street and State Street.

Justification:

The Ossining Intermediate Pressure system is the only 2 psig system in Con Edison’s gas distribution territory.

Currently, there remains approximately 4,000 feet of 4” and under small diameter pipe and approximately 2,100 feet of 6” and 8” larger diameter cast iron pipe. Smaller diameter pipe will be replaced under the GD-11 Program.

The Town of Ossining is currently scheduling paving that will commence in 2010. If existing cast iron main is not replaced, it will be susceptible to leaks after paving is completed.

Risk of No Action:

If existing cast iron main is not replaced, it will be susceptible to leaks after paving is completed.

Summary of Financial Benefits and Costs:

The replacement of cast iron mains is coordinated with the municipality’s paving schedules. Replacing all the proposed mains before paving will eliminate future leaks that will results in high restoration costs.

Non-financial Benefits (if applicable):

Replacement of leak-prone mains in advance will keep us away from opening newly paved street in the future. This approach will enhance company’s relationship with the local government.

Completion Date: 2011**Current Working Estimate (if applicable):** \$1.73 Million**Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		250

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
1200	280	0	0	0	1480

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				10
M&S				25
A/P				140
Indirects				75
Total				250

Forecast

EOE	2010	2011	2012	2013	2014
Labor	60	15			
M&S	120	30			
A/P	660	155			
Indirects	360	80			
Total	1200	280			

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Hawthorne to Peekskill Main Replacement
Priority Number	8
Project Manager	Various
Project Engineer	Mike Turanchik
Budget Reference	8GD9802 GSM04
Project Number	G-06-903
Status	Ongoing
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 – Gas Distribution System Events

Work Description:

This project is an annual program to replace undersized corroded supply mains on the Hawthorne to Peekskill system in Upper Westchester. The Hawthorne – Peekskill main is an 82,000 ft section of main that supplies high-pressure gas from the outlet of GR-484 in Hawthorne and the outlet of GR-673 (Algonquin Gate Station) in Peekskill to high-pressure systems in Briarcliff, Croton, Ossining & Peekskill. Over the next 5 years, 9300 feet of corroded main will be replaced as scheduled below.

For 2010, the replacement of 1600 feet of mostly 1931 8” bare steel main with 12” PE along Scarborough Road between Old Briarcliff Road and Valve 22549 is recommended. This section has 25 existing repair clamps.

For 2011 the replacement of 1900 feet of 1931 8” bare steel main with 12” PE along Albany Post Road from Baltic Place to Valve 30784 is recommended. This section has 19 repair clamps and 2 active type 3 leaks.

For 2012, replacement of 2200 feet of 1931 8” bare steel main with 12” PE along Lower South Street between Sherman Avenue and Travis Lane in Peekskill is recommended. This section has 8 leak repairs and 1 active type 3 leak.

For 2013, replacement of 1600 feet of 1931 8” bare steel main with 12” PE along Pine Road and Elm Road between Birch Road and South State Road is recommended. This section has 6 leak repair clamps and 1 active type 3 leak.

For 2014, replacement of 2000 feet of 1928 6” bare steel with 12” PE along Snowden Avenue between North Water Street and Van Wyck Street is recommended. This section has 7 leak repair clamps and 1 active type 3 leak.

Justification:

The Hawthorne to Peekskill main supplies lower pressure distribution systems through 7 low pressure, 1 medium pressure, and 2 intermediate pressure district regulator stations as well as 13,000 high pressure customers. At temperatures lower than 40 degrees F, a loss of one of its two supplies will result in thousands of customer outages due to the extensive amount of restrictive 6” and 8” diameter pipe between Peekskill and Hawthorne. This restrictive main is mostly bare steel installed in the 1920’s and 30’s. Replacement of these sections will result in improved capacity and the removal of the most leak prone sections of bare steel pipe.

Alternatives:

The section of main selected is based on the priority established in the study performed by ZEI for Con Edison. This replacement program has been structured to replace the most vulnerable unprotected bare

steel segments in descending order of pitting failure risk. Therefore, unless there are factors preventing the replacement of the sections in the order recommended, the projects should be completed in the order prescribed.

Risk of No Action:

If these sections of main are not replaced, they will continue to deteriorate and develop leaks that will need to be repaired as they arise. Because they feed 13,000 HP customers and supply 10 downstream MP and LP district regulators, the risk of customer outages is increased should a serious leak develop during the heating season.

Technical Evaluation/Analysis:

The gas network analysis model has identified the Hawthorne-Peekskill main as a virtual radial (zero contingency) system at temperatures lower than 40 degrees F. At this temperature, a loss of one of its two supplies will result in thousands of customer outages. The remedy is to increase system capacity by replacing the remaining 6" and 8" steel main with larger diameter 12" PE.

The section of main was also selected is based on the priority established in the study performed by ZEI for Con Edison. This replacement program has been structured to replace the most vulnerable unprotected bare steel segments in descending order of pitting failure risk.

Estimated Completion Date:

Ongoing

Current Working Estimate (if applicable): Ongoing Program

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	1049	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
1100	1500	1600	1000	1500	6700

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor			29	
M&S			120	
A/P			649	
Indirects			251	
Total			1049	

Forecast

EOE	2010	2011	2012	2013	2014
Labor	55	75	80	50	75
M&S	110	150	160	100	150
A/P	605	825	880	550	825
Indirects	330	450	480	300	450
Total	1100	1500	1600	1000	1500

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Greenburgh to Hawthorne Main Replacement
Priority Number	9
Project Manager	Various
Project Engineer	Mike Turanchik
Budget Reference	GSM04
Project Number	
Status	Ongoing
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

This project is an annual program to replace undersized and/or corroded supply mains on the Greenburgh to Hawthorne system in Upper Westchester. The Greenburgh-Hawthorne high pressure system is 12.8 miles of main. It includes 7.4 miles of unprotected steel, the majority of which is 8 inch steel installed in the 1920s and 1960s. Over the next 4 years, 5800 feet of corroded main will be replaced as scheduled below:

For 2010, the replacement of 1250 feet of 1928 8" bare steel along Bradhurst Avenue from Lisa Lane to north of Lake View Ave. is recommended. This section of main has 20 repair clamps and 1 active type 3 leak.

For 2011, the replacement of 2000 feet of 1928 8" bare steel with 12" PE along Bradhurst Avenue from Lakeview Avenue to Valve 22993.

For 2012, the replacement of 1450 feet of 1928 8" bare steel with 12" PE along Bradhurst Avenue from the service to the Margaret Chapman School to the service feeding the Westchester Medical Center is recommended. This section has 3 leak repair clamps.

For 2013, the replacement of 1100 feet of mostly 1928 8" bare steel with 12" PE along Bradhurst Avenue between Stevens Avenue and Bldg. #128 is recommended.

Justification:

The Greenburgh to Hawthorne main supplies lower pressure distribution systems through 3 low pressure and 1 medium pressure regulator stations as well as 1,600 high pressure customers directly.

The gas network analysis model has also identified the need to increase system capacity to avoid thousands of customer outages in Northern Westchester in the event the parallel transmission main supplied from Tennessee's Knollwood Road gate station is curtailed or interrupted.

Alternatives:

The section of main selected is based on the priority established in the study performed by ZEI for Con Edison. This replacement program has been structured to replace the most vulnerable unprotected bare steel segments in descending order of pitting failure risk. Therefore, unless there are factors preventing the replacement of the sections in the order recommended, the projects should be completed in the order prescribed.

Risk of No Action:

If these sections of main are not replaced, they will continue to deteriorate and develop leaks that will need to be repaired as they arise. Because this main supplies lower pressure distribution systems through 3 low pressure and 1 medium pressure regulator stations as well as 1,600 high pressure customers directly, the risk of customer outages is increased should a serious leak develop during the heating season.

Technical Evaluation/Analysis:

The gas network analysis model has also identified the need to increase system capacity to avoid thousands of customer outages in Northern Westchester in the event the parallel transmission main supplied from Tennessee's Knollwood Road gate station is curtailed or interrupted.

The section of main was also selected is based on the priority established in the study performed by ZEI for Con Edison. This replacement program has been structured to replace the most vulnerable unprotected bare steel segments in descending order of pitting failure risk.

Estimated Completion Date:

Ongoing

Current Working Estimate: Ongoing Program

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
900	1500	1000	1000	0	3400

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor	45	75	50	50	
M&S	90	150	100	100	
A/P	495	825	550	550	
Indirects	270	450	300	300	
Total	900	1500	1000	1000	

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Astoria-Flushing Main Replacement
Priority Number	10
Project Manager	Various
Project Engineer	Tom Hernandez
Budget Reference	5GD1100 GSM04
Project Number	Various
Status	Ongoing
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9- Distribution System Events

Work Description:

This is a multi year program to rehabilitate sections of the Astoria-Flushing HP main which has the most significant corrosion and leakage history. Approximately 2600 ft of the main has already been lined using both Starline Cured in Place liner and Subline trenchless technology. Future sections of this main will continue to utilize these rehabilitation technologies.

For 2010, we plan to rehabilitate approximately 1000 ft of main installed in 1929 utilizing the Starline method. This is a section of main along N. Boulevard between Jackson Mill Road and 99th Street and has 2 leak repairs.

For 2011, we plan to rehabilitate approximately 950 feet of 24” steel along Northern Boulevard between 77th Street and 81st Street. This section was installed in 1929 and has 2 leak repairs.

For 2012, we plan to rehabilitate 900 feet of 1928 24” steel along 20th Avenue between 19th and 23rd Street. This section has 3 leak repairs.

In 2013, we plan to rehabilitate 500 feet of 1928 24” steel along 23rd Avenue between 42nd and 45th Street. This section has 4 leak repairs.

For 2014, we plan to rehabilitate a 1000 ft section of 1942 24” steel main along Northern Boulevard from 77th Street to the West Service Road which has 6 repair clamps.

Justification:

This is an approved Rate Case project. The 24 inch Astoria-Flushing Main runs 6.5 miles and is an unprotected steel pipeline, most of which was installed in the 1920's. It supplies two (2) high to low-pressure regulator stations in Astoria and is one of the primary feeds to the high-pressure mains system in the Queens' Third Ward, serving as a back-up for eastern Queens should a contingency arise and the transmission main feed running parallel to the high pressure main is lost.

Alternatives:

The best replacement candidates were selected based on their corrosion condition, leakage history and accessibility.

Risk of No Action:

If no action is taken proactively, there would be an increased risk of a major leak that could result in an emergency shutdown of this vital feed. As a consequence, the feed to the Third Ward of Queens would be affected including 2 downstream LP regulators. If this were to occur during the heating season, service interruptions to customers would result.

Technical Evaluation/Analysis:

The SynerGEE network analysis model shows that on a 20 degree average temperature day, the loss of this supply main would significantly impact the distribution system including the loss of 2 LP district regulators and approximately 15,000 customers below 2" w.c.

Completion Date: Ongoing

Current Working Estimate (if applicable): Ongoing Program

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
435	1504	1449	1200

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
1100	1000	1000	500	1000	4600

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	114	253	188	60
M&S	3	86	182	120
A/P	175	748	719	660
Indirects	143	417	360	360
Total	435	1504	1449	1200

Forecast

EOE	2010	2011	2012	2013	2014
Labor	55	50	50	25	50
M&S	110	100	100	50	100
A/P	605	550	550	275	550
Indirects	330	300	300	150	300
Total	1100	1000	1000	500	1000

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	West Side Rail Yards
Priority Number	
Project Manager	Tomas Hernandez
Project Engineer	N/A
Budget Reference	
Project Number	
Status	Planning
Estimated Service Date	Ongoing
Work Plan Category	System & Component Performance Improvement & Increased Customer Demand
ERM Addressed	None

Work Description:

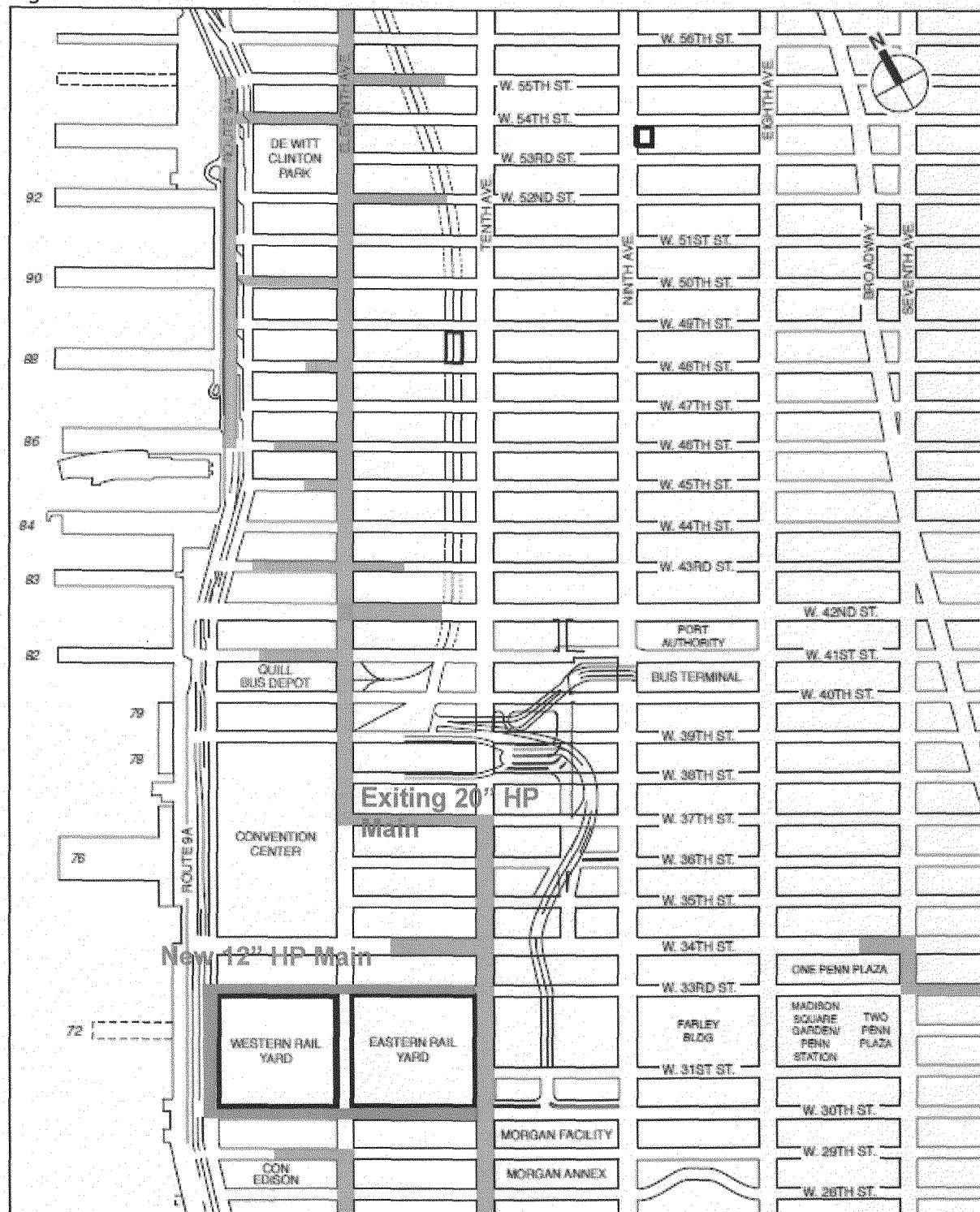
The Metropolitan Transportation Authority (MTA) and the New York City Planning Commission (CPC) plan to develop The MTA's John D. Caemmerer 26-acre West Side Rail Yards. This site is located between West 30th and West 33rd Streets from 10th to 12th Avenues (see Figure 1). The developer's plan is to build 13 towers, consists of over 5000 apartments and about 6 million sq. ft. of commercial and retail space.

The preliminary gas work for this MTA proposed development is to feed from the existing 20" high pressure system from 10th Avenue to 12th Avenue on West 33rd Street, then loop around from 12th Avenue and West 30th Street to create a high pressure loop for the West Side Rail Yards (see Figure 2). This loop will provide two-way feed to the development. The installation of the 12" gas main will start in 2013.

Figure 1



Figure 2



Units per Year:

For 2013, we plan to install approximately 1000 feet of 12" HP main extended from existing 20" high pressure main located at 10th Avenue on West 33rd Street to 11th Avenue.

For 2014, we plan to install approximately 1000 feet of 12" HP main on West 33rd Street from 11th Avenue to 12th Avenue.

This will be an ongoing project that will eventually connect the newly installed 12" high pressure main from 12th Avenue, and install approximately another 2300 feet of 12" HP main on West 30th Street and tie in to the existing 20" HP main at 10th Avenue to complete the loop.

Justification:

To accommodate the estimated load of 12,000 mcfh of the West Side Rail Yards development, we will build a 12" high pressure loop extended from an existing high pressure main located at 10th Avenue on West 33rd Street. The total estimated footage is 4300 feet, and will ensure reliable delivery of natural gas to these customers.

Estimated Completion Date: Ongoing

Current Working Estimate (if applicable): Ongoing

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
0	0	0	0

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	0	0	1000	1000	2000

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				50	50
M&S				100	100
A/P				550	550
Indirects				300	300
Total				1000	1000

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Replacement of Supply Mains from Hawthorne to Katonah
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	7GD9842
Project Number	
Status	Planning
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9- Gas Distribution System Events

Work Description:

This is a multi-year project to replace 6" and 8" bare steel along the Hawthorne to Katonah high-pressure supply run.

Units per Year:

In 2011, 1200 ft of 8" steel on Bedford Road between Orchard Ridge Road and Shadow Brook Parkway will be replaced with 12" plastic. This segment has 18 repairs and 5 Type-3 leaks. Also in the same year, 1000 ft of 8" bare steel will be replaced with 12" plastic along Bedford Road between Apple Hill Road and 16 Bedford Road. This 1000-ft segment includes 15 repairs and 2 Type-3 leaks.

In 2012, 1350 ft of 8" steel on North Moger Avenue between Main Street and Carpenter Avenue will be replaced with 12" plastic. This section currently has 8 repairs.

In 2013, 390 ft of 8" steel will be replaced with 12" plastic along Bedford Road between North Way and 399 Bedford Road (near valve #22269). This segment has 5 repairs and 1 Type-3 leak. In the same year, 475 ft of 8" bare steel on Bedford Road between Whippoorwill Road and 416 Bedford Road will also be replaced with 12" plastic pipe. This segment includes 3 repairs and 1 Type-3 leak.

In 2014, 925 ft of 8" steel on Lexington Avenue between Main Street and Radio Circle will be replaced with 12" plastic. This section includes 7 repairs.

Justification:

The Hawthorne-Katonah high pressure system is 27.3 miles of main – 17.7 miles of unprotected main, the majority of which is 6 and 8 inch steel installed in the 1920s, and 9.6 miles of protected main of various size and age. It supplies approximately 11,000 high pressure customers. It is supplied by GR-484 in Hawthorne and is tied to the Greenburgh-Hawthorne and Yorktown-Katonah high pressure systems.

Additionally, gas system network analysis has identified this as a virtual radial (zero contingency) system at temperatures lower than 30 degrees F. At this temperature a loss of one of its two supplies will result in thousands of customer outages. This region is also experiencing new construction and oil conversion gas heating growth that increases the cold weather peak gas load, further taxing the system. The remedy is to increase system capacity by replacing 6" and 8" steel main with larger diameter 12 inch pipe.

Risk of No Action:

No action will result in an increased risk of loss of feed to more than 11,000 customers and/or potential leaks in the system.

Non-financial Benefits:

This project will reduce the potential cost of customer outages due to the loss of supply the Hawthorne or Yorktown station. Avoided potential outages will also result in improved customer satisfaction, and better community and regulatory relations

Technical Evaluation/Analysis:

Our gas network analysis model shows that replacement along this supply run with 12" PE will protect against risk of an outage to 11,000 customers at or above a 30 degree average temperature day. The risk of an outage is due to possible loss of the Hawthorne supply station (GR-484) or a major leak along this supply run.

ZEI, Inc. also developed a study of the condition of Con Edison's gas supply steel mains in Westchester County. The scope included an analysis of location, size, age, length, coating protection and maintenance history. They also analyzed soil samples to determine metal corrosivity characteristics along the route of these mains. As a result of this study, ZEI recommended that a prioritized, long-range replacement program was necessary to proactively replace the steel main prior to the time pitting corrosion failure is predicted.

Estimated Completion Date: Ongoing

Current Working Estimate (if applicable): Ongoing

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	1,500	1,000	500	500	3,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor		75	50	25	25
M&S		150	100	50	50
A/P		825	550	275	275
Indirects		450	300	150	150
Total		1,500	1,000	500	500

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	12" Medium Pressure Cast Iron Main Replacement in Westchester
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	7GD9825
Project Number	
Status	Planning
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9- Gas Distribution System Events

Work Description:

This program includes the multi-year replacement of 12" medium pressure cast iron (MPCI) main, using trenchless technology wherever feasible. Currently our gas system has approximately 62,000 ft of 12" cast iron main which operates at pressures up to 15 psig. 12" diameter is the smallest cast iron pipe in the Westchester medium pressure system. Cast Iron piping is prone to leakage through bell & spigot joints. Replacement of this pipe will reduce medium pressure leakage and the effects of cast iron breaks.

Units per Year:

In 2011, 1250 ft of 12" cast iron will be replaced with 12" plastic (roll down) on W Purdy Avenue and Purchase Street between Theodore Fremd Avenue and Highland Road in Rye. This segment includes 3 repairs and was installed in year 1902.

In 2012, 1775 ft of 12" cast iron will be replaced with 12" plastic (roll down) along Taxter Road and Sunnyside Lane between 87 Taxter Road and 104 Sunnyside Lane in Irvington. This segment, installed in 1929, currently has a total of 7 leak repairs.

In 2013, 1860 ft of 12" cast iron will be replaced with 12" plastic (roll down) on North Avenue and Forest Avenue between Paine Avenue and Montgomery Circle in New Rochelle. This segment, installed in 1926, has 8 repairs and 3 Type-3 leaks.

In 2014, 3050 ft of 12" cast iron will be replaced with 12" plastic (roll down) on Howard Street and W Lincoln Avenue between Mac Questen Parkway and Westchester Avenue in Mount Vernon. There are 3 repairs and 1 Type-3 leaks on this run. This cast iron main was installed in year 1900.

Mandatory:

The Public Service Commission of NY State (PSC) rate-case mandates replacement of cast iron main in the vicinity of schools. Some of the 12" MPCI mains are in the vicinity of schools in Westchester e.g. 12" cast iron main near North Avenue and Forest Avenue in New Rochelle.

Justification:

Most of the 12" MPCI mains exist on major supply runs in Westchester medium pressure system. These mains were mostly installed in early 1900s. Higher demands during peak time or winter months require us to operate the system almost at maximum setting of 15 psig. As cast iron piping is prone to leakage

through joints/breaks, replacement of this pipe will reduce leakage, enhance public safety and improve system reliability.

Risk of No Action:

No action will elevate the risk of gas leaks and/or loss of customers to a greater degree.

Technical Evaluation/Analysis:

All 12" MPC I mains were first identified, evaluated and prioritized for replacement based on risk factors such as repair history, outstanding leaks, year installed, etc. Please see the attachment for an overview of 12" CI mains in the MP system.

Estimated Completion Date:

Ongoing

Current Working Estimate (if applicable): Ongoing

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	1,100	1,200	1,300	2,300	5,900

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor		55	60	65	115
M&S		110	120	130	230
A/P		605	660	715	1265
Indirects		330	360	390	690
Total		1,100	1,200	1,300	2,300

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Cortlandt-Peekskill Tie
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	
Project Number	
Status	Planning
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

Install 15,500 ft of 12" plastic main tie between the Cortlandt and Peekskill high pressure systems.

Units per Year:

In 2011, 725 ft of 12" plastic will be installed on Croton Avenue between Sassinoro Blvd and north of 171 Croton Avenue

In 2012, 725 ft of 12" plastic will be installed on Croton Avenue between 171 Croton Avenue and Furnace Dock Road

In 2013, 1450 ft of 12" plastic will be installed on Furnace Dock Road between Croton Avenue and 509 Furnace Dock Road

In 2014, 2150 ft of 12" plastic will be installed on Furnace Dock Road between 509 & 480 Furnace Dock Road

Justification:

The installation of 15,500 ft of 12" PE main is required to connect the radial Cortlandt System to the Peekskill system. The existing HP system in Cortlandt currently supplies nearly 1,100 customers and is a radial system fed solely by the Cortlandt Gate Station. Cortlandt and Peekskill are comprised of open land and has seen significant load growth in recent years. Additionally, during periods of cold weather, the capacity from the Cortlandt Gate Station and equipment has approached its upper limits.

Alternatives:

We evaluated alternate routes and the shortest one is 3,100 feet longer than the route selected for this project.

Risk of No Action:

If this project is not completed, the Cortlandt System would continue to be at risk of significant outages to more than 1,100 customers (including critical customers such as Hudson Valley Hospital) and a medium pressure station (GR-526), if the Cortlandt Station was to malfunction, a contractor damage were to occur on the radial supply or the Algonquin supply to this station was lost for any reason. The Cortlandt Gate

Station is also at its upper limit on peak winter mornings and will experience lower outlet pressure as system load increases.

Also, if there was a loss of feed to radial supply main on Watch Hill Road (near Peekskill supply main on Albany Post Road) then approximately 150 high pressure customers would experience outages.

Non-financial Benefits:

This project will reduce the potential cost of customer outages due to the loss of supply or malfunction of the Cortlandt Station feeding this radial system. Avoided potential outages will also result in improved customer satisfaction, and better community and regulatory relations.

Technical Evaluation/Analysis:

When the tie is completed, the Cortlandt system will be able to operate and supply our gas customers down to a 46 degree average day under emergency conditions.

See attached for an overview.

Estimated Completion Date:

Ongoing

Current Working Estimate (if applicable): Ongoing

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

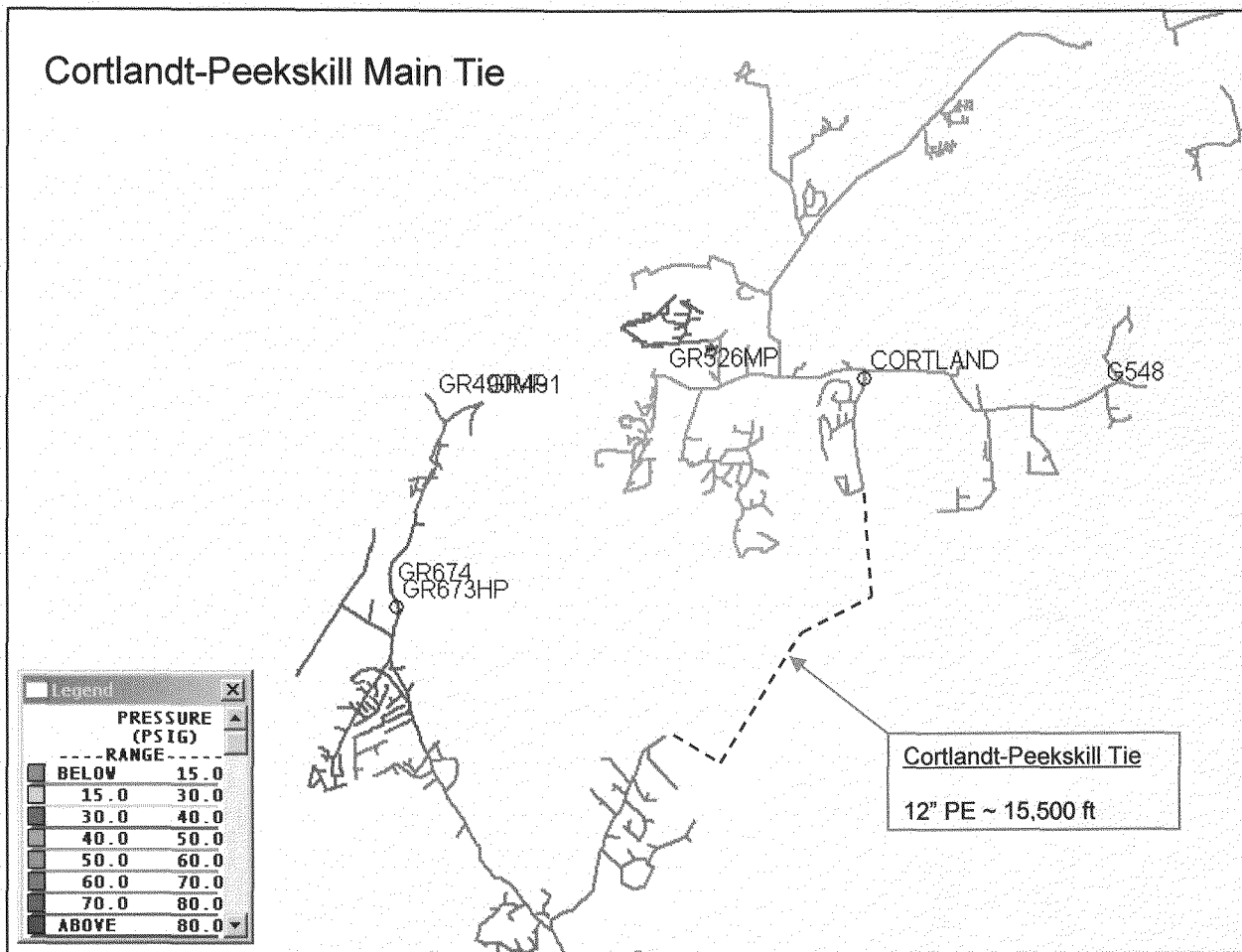
Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	500	500	1,000	1,500	3,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor		25	25	50	75
M&S		50	50	100	150
A/P		275	275	550	825
Indirects		150	150	300	450
Total		500	500	1,000	1,500



2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Small Main Ties
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	7GD9829
Project Number	
Status	Planning
Estimated Service Date	2014
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

This program includes installation of 18,200 ft of small ties in Westchester, Queens and Manhattan.

Units per Year:

It is planned to install small ties as follows:

Year 2012 – 3,600 ft

Year 2013 – 7,100 ft

Year 2014 – 7,500 ft

Justification:

In the company's gas distribution system, there are approximately 12,000 customers being supplied by radial mains. If damage were to occur to the main line feeding the radial area, there would be customer outages ranging from 50 to 2000. In most of these cases, a small tie would create a secondary feed to these areas.

Risk of No Action:

If ties are not made, this existing risk of outages will remain.

Technical Evaluation/Analysis:

Several small were ties reviewed and evaluated to enhance the system performance and reduce outages. An example is shown in the attachment.

Estimated Completion Date:

2014

Current Working Estimate (if applicable): \$5.1 Million

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

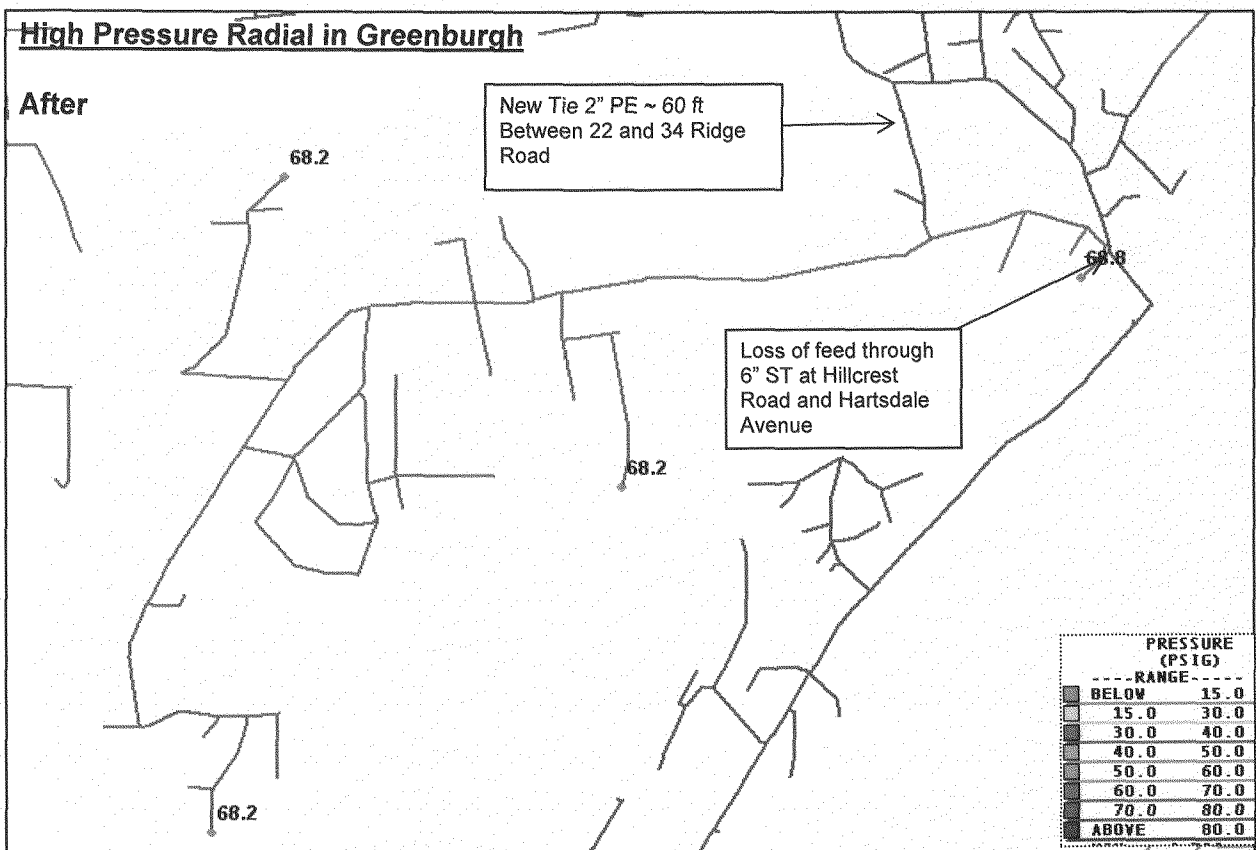
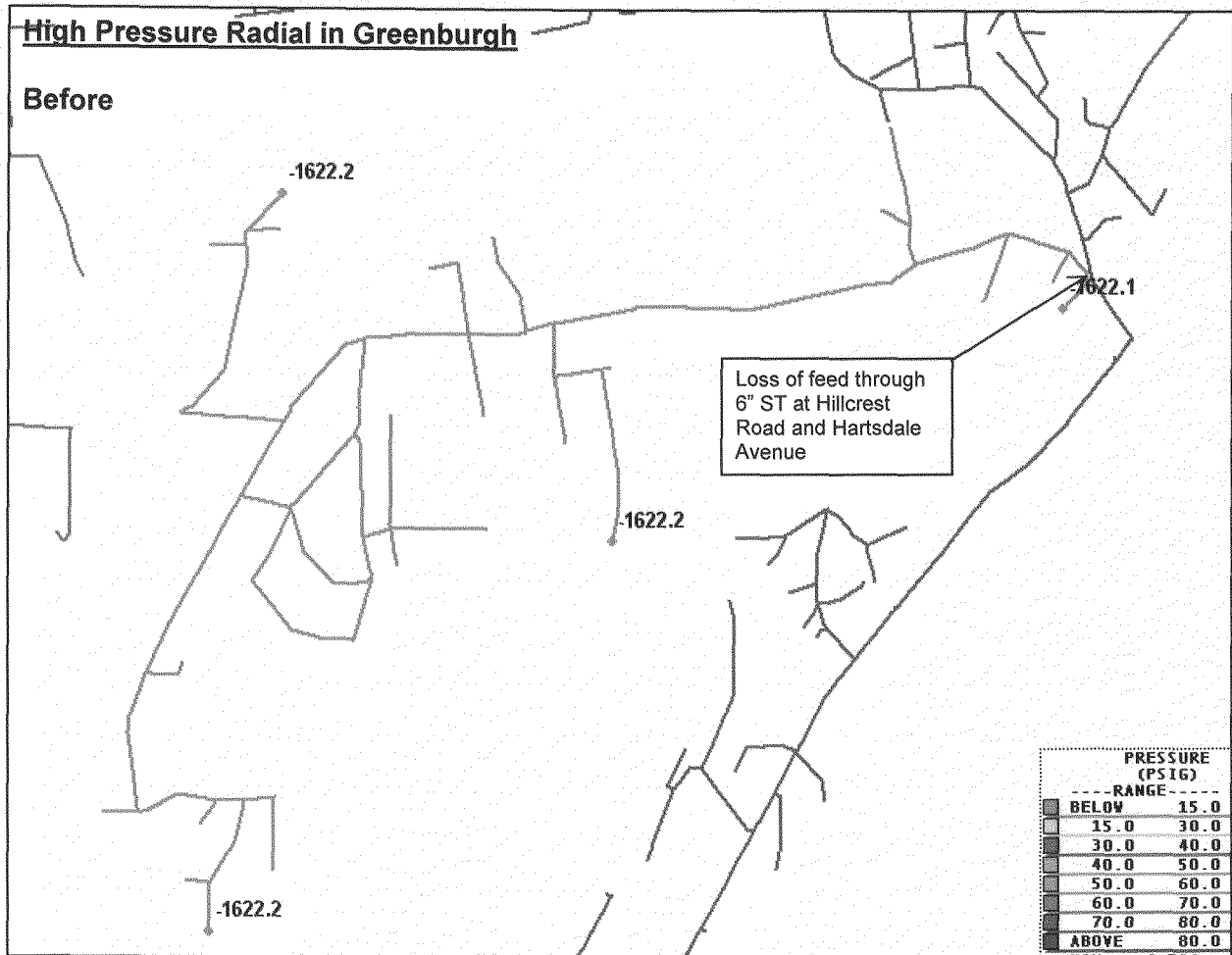
Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	-	1,000	2,000	2,100	5100

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor			50	100	105
M&S			100	200	210
A/P			550	1,100	1,155
Indirects			300	600	630
Total			1,000	2,000	2,100



2011 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Waterbury Ave and Hobart Ave Regulator Station
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Ref/Function Code	6GD9711 – GDI09
Project Number	
Status	Engineering Phase
Estimated Service Date	2011
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9. Gas System Distribution Event

Work Description:

Install a regulator station on Waterbury Ave to tie into the 16" medium pressure main on Hollywood Ave. This job is dependent on upgrading the medium pressure main on Westchester and Waterbury Avenues to high pressure. GR 102 will be converted to feed high pressure into the system.

Justification:

The Throgs Neck Medium pressure system is supplied by regulator station GR-101 at Blackrock & Castle Hill Avenues, and station GR-102 at Westchester and Glebe Avenues. This system supplies 160 customers and seven low pressure regulating stations (GR-132, GR-135, GR-161, GR-175, GR-177, GR-179, GR-193). GR-101 feeds the system through an 80 year old, 24" cast iron river crossing main. If a failure were to occur on this crossing or at GR-101 at an average temperature below a 50 deg day, GR-102 cannot provide enough backup and outages of approximately 160 MP and 58,000 LP customers can be expected. To eliminate this potential problem, our Master Plan was developed to upgrade 8,600 ft of gas main along Westchester and Waterbury Avenues from medium pressure to high pressure and to install this new high to medium pressure regulator on Waterbury & Hobart Avenues. In addition, the upgraded high pressure main will be tied to the Sackett Ave and future Mace Ave high pressure loops to provide for additional contingency supply. The Hobart Ave regulator is a necessary step in the overall vision for improving the system.

Alternatives:

One alternative to the regulator station could be to upsize the 12" pipe to 16" on Westchester and Waterbury Avenues. This option would cost in excess of \$15 million which, compared to simply installing the regulator, is cost prohibitive.

Risk of No Action:

Leaving the system as-is will not increase its reliability nor will it provide for additional capacity to customers. Therefore is not recommended. Furthermore, in not installing the regulator, we would not be able to take advantage of the replacement work done in anticipation of the upgrade.

Summary of Financial Benefits and Costs:

The total capital cost of this project is approximately \$2 million. This estimate is based upon other similar regulator stations.

Project Relationships (if applicable):

- This is dependent on the upgrade to high pressure. This station is also required before doing the ties to the other high pressure systems in the Bronx.

Technical Evaluation/Analysis:

- SynerGee network analysis showed that GR-102 cannot provide enough backup for GR-101 on an average temperature below a 50 deg day; this will consequently lead to outages of approximately 160 MP and 58,000 LP customers.

Estimated Completion Date: 2011

Current Working Estimate: \$2M

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budget 2009
0	0	0	0	0

Approved 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	2,000	-	-	-	2,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor		100			
M&S		200			
A/P		1,100			
Indirects		600			
Total		2,000			

2011 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Purchase-Armonk High Pressure Tie
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	HGS0071
Project Number	
Status	Planning
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

This project consists of the installation of 16,100 ft of 12” plastic between the Purchase and Armonk high pressure radial systems.

Units per Year:

For 2013, 1450 ft of 12” plastic is recommended to install on Purchase Street between Fairway Drive and Mangolia Drive

For 2014, 1450 ft of 12” plastic is proposed to install along Purchase Street between Mangolia Drive and Windsor Court.

Justification:

The Armonk high pressure system is one of the large radial systems in Northern Westchester service territory. This system is fed from regulator station GR-484 through an 8” steel supply main mostly installed in 1950s and 1960s. The Purchase high pressure system is also a radial system that is solely fed by GR-498. Purchase and Armonk radial systems supply approximately 1,100 high pressure customers including several major accounts such as SUNY, Manhattanville College, Doral Arrowood, etc. The recommended tie is vital to back up service these customers, GR-498 and GR-484.

Alternatives:

There is no alternative to install a second feed from within our service territory.

Risk of No Action:

If supply through an 8” main (Nanny Hagen Road and Columbus Avenue) and/or GR-498 were interrupted, the Purchase and Armonk radial systems would remain at risk of outages to 1,100 high pressure customers including large users.

Also, if the Hawthorne Station (GR-484) were forced out of service, the Armonk radial system would suffer significant outages during peak demand periods.

Summary of Financial Benefits and Costs:

Currently there are residential and commercial properties along the proposed route. The tie will allow the opportunity to add these customers.

Non-financial Benefits:

This project will reduce the potential cost of customer outages due to the loss of supply or malfunction of the GR-498 feeding the Purchase radial system. Avoided potential outages will also result in improved customer satisfaction, and better community and regulatory relations.

Technical Evaluation/Analysis:

Our SynerGee network analysis model shows that the tie will not only back up the Purchase and Armonk radial systems but also will back the Hawthorne Regulator Station (GR-484) up when the average temperature is at or above 33 degree F. See attached for an overview.

Sensitivity Analysis (if applicable):

Installation of main from Purchase side will bring additional benefits, such as elimination of small radial (with nearly 50 customers) fed by Country Club Drive main and provide service to future potential customers, earlier than otherwise will have brought due to extension from Armonk side.

Estimated Completion Date:

Ongoing

Current Working Estimate (if applicable): OngoingFunding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

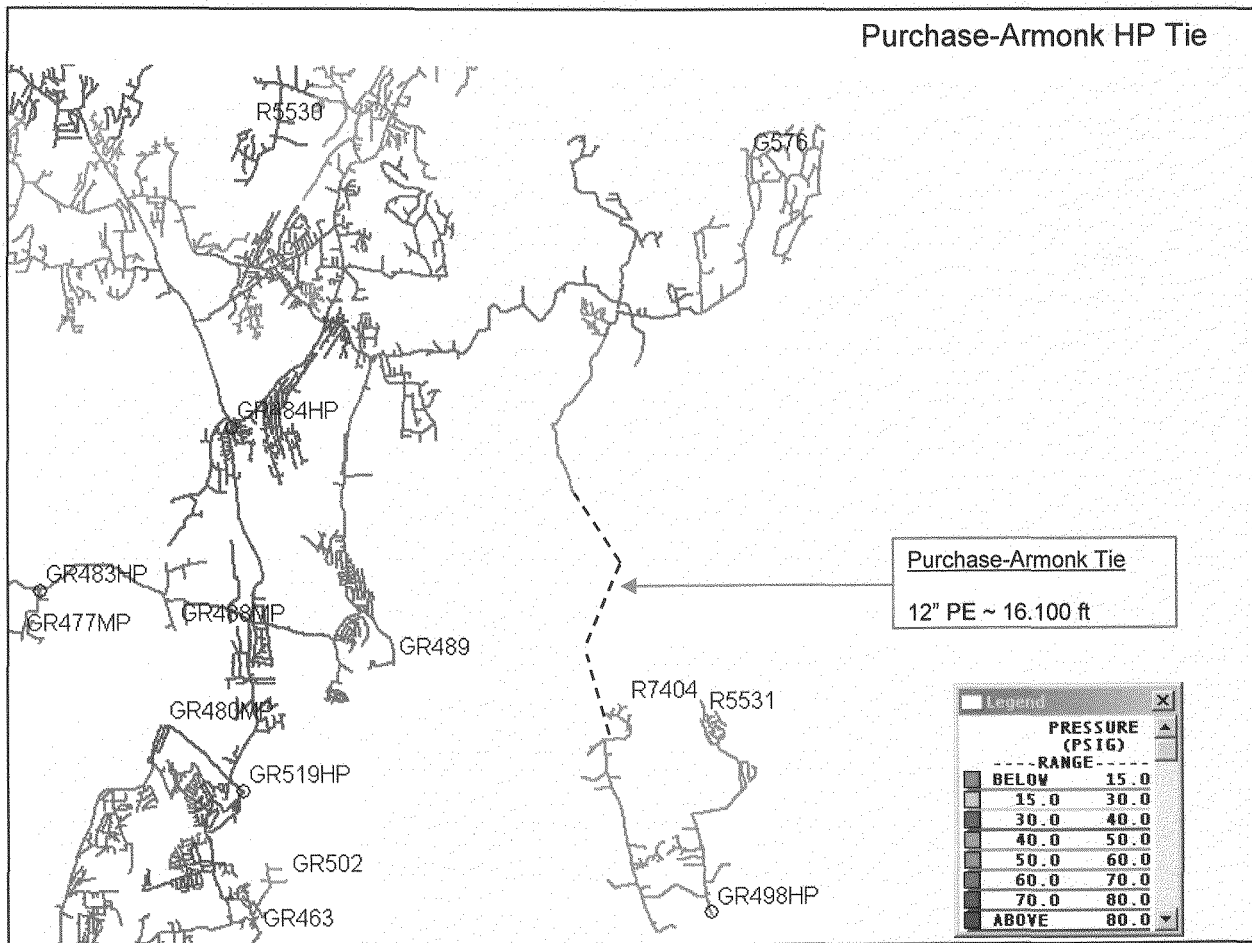
Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	-	-	1,000	1,000	2,000

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				50	50
M&S				100	100
A/P				550	550
Indirects				300	300
Total				1,000	1,000



2011 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Waters Place Tie
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	HGS0068
Project Number	
Status	Planning
Estimated Service Date	2013
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

This project includes the installation of 2300 ft of 12" PE tie between Sackett Avenue and Throgs Neck (currently medium) high pressure systems.

Units per Year:

In 2013, 2350 ft of 12" plastic will be installed on Waters Place (small portion on Westchester Avenue and Tan Place) between Industrial Street and E Tremont Avenue.

Justification:

GR-104 on Sackett & Bronxdale Avenues is a radial supply to three hospitals (Jacobi, Einstein and Calvary), a large housing project (Parkchester Condominiums), and a new executive park (Hutch Metro). This station is currently at its maximum design capacity and is currently the only regulator station with three parallel runs in our entire system. Loss of this regulator feeding the radial system could result in outages to these and other customer.

The Throgs Neck Medium pressure system is supplied by regulator station GR-101 at Blackrock & Castle Hill Avenues, and station GR-102 at Westchester and Glebe Avenues. This system supplies 160 customers and seven low pressure regulating stations (GR-132, GR-135, GR-161, GR-175, GR-177, GR-179, GR-193). GR-101 feeds the system through an 80 year old, 24" cast iron river crossing main. If a failure were to occur on this crossing or at GR-101 at an average temperature below a 50 deg day, GR-102 would provide sufficient backup resulting in outages to approximately 160 MP and 58,000 LP customers. To eliminate this potential, a plan is in place to upgrade 8,600 ft of gas main from medium to high pressure and to install a new high to medium pressure regulator on Waterbury & Hobart Avenues.

The Waters Place Tie is recommended to provide for contingency supply between the two high pressure systems.

Alternatives:

An alternate tie (Eastchester Road to Blondell Avenue to E Tremont Avenue) is approximately 200 ft longer than the proposed run and would result in higher project costs.

Risk of No Action:

If the contingency tie is not considered, the Sackett Avenue and Mace Avenue (future HP) systems will continue to remain radials. Should one of the supply stations to these systems were to fail, outages to

thousands of customers would result. These outages would severely effect O&M cost and loss of company revenue.

Non-financial Benefits (if applicable):

This tie will enhance system reliability.

Technical Evaluation/Analysis:

See attached for an overview of the Water's Place Tie (Segment B).

Project Relationships (if applicable):

Overall benefit of this project is dependent on the completion of the medium-to-high pressure upgrade of "Westchester Avenue" supply main.

Estimated Completion Date:

2013

Current Working Estimate (if applicable): \$2M

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	-	-	2,000	-	2,000

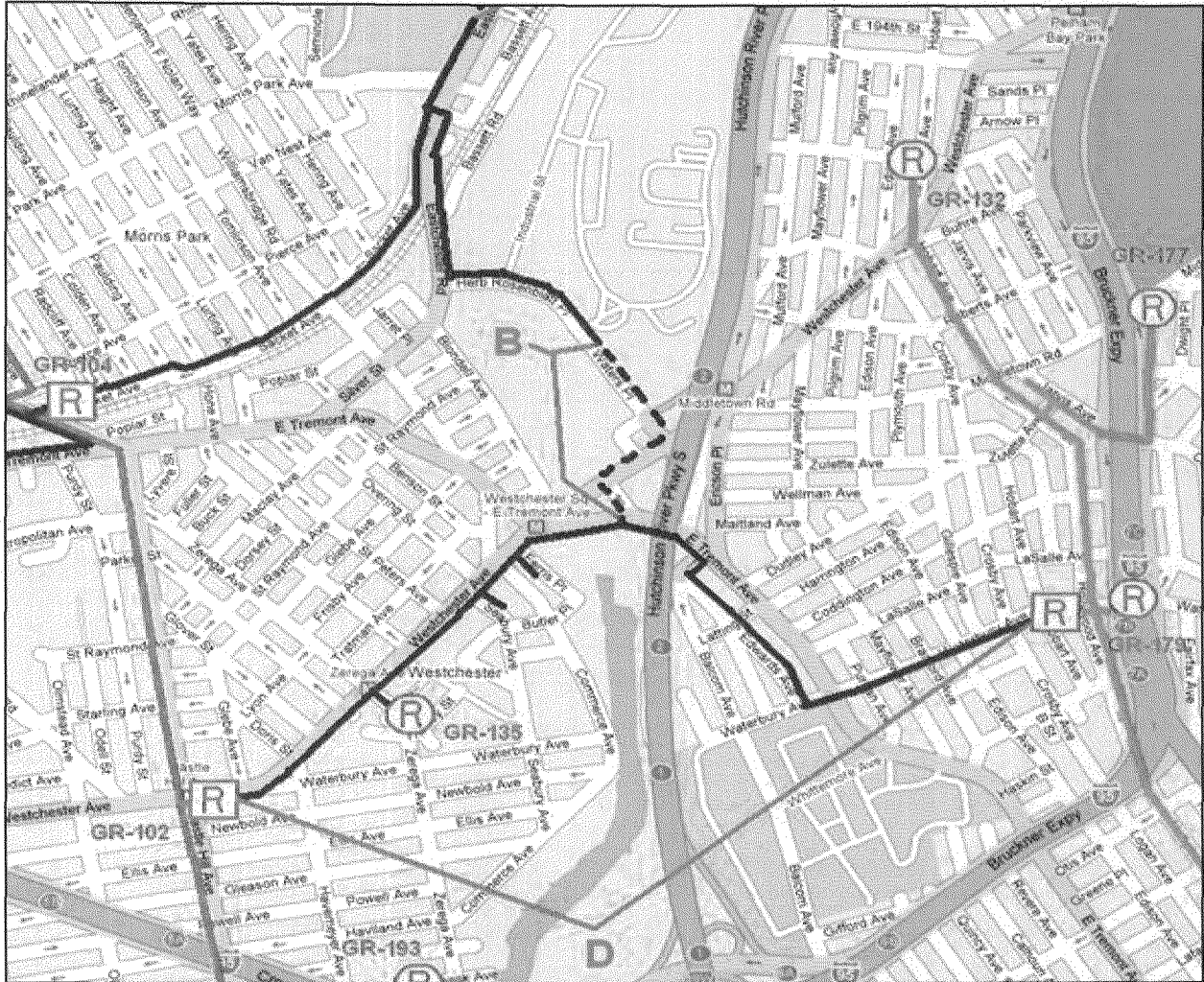
Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				100	
M&S				200	
A/P				1,100	
Indirects				600	
Total				2,000	

Waters Place Main Tie



2011 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	East Bronx HP Loop Tie
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	HGS0074
Project Number	
Status	Planning
Estimated Service Date	2014
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

This project includes installation of 4200 ft of 12” plastic tie between Mace Avenue (future high pressure system) and Co-op City high pressure systems.

Units per Year:

In 2011, 650 ft of 12” plastic will be installed on Mace Avenue between Eastchester Avenue and 1562 Mace Avenue

In 2012, 650 ft of 12” plastic will be installed along Mace Avenue between 1562 and 1608 Mace Avenue.

In 2013, 650 ft of 12” plastic will be installed on Mace Avenue and Kingsland Avenue between 1608 Mace Avenue and 2546 Kingsland Avenue.

In 2014, 2250 ft of 12” plastic will be installed on Kingsland Avenue and Bartow Avenue between 2546 Kingsland Avenue and Edson Avenue.

Justification:

GR-106 at Bronxwood & Mace Avenues is the only supply to two large housing projects (Eastchester Houses and Pelham Parkway Houses), three schools (PS 89, Columbus High School, and The New York Institute for the Education of the Blind), two low pressure regulating stations (GR-173 & GR-178), and other residential customers. Loss of either of the regulators feeding the individual systems could result in customer outages.

The Co-op City high pressure system is fed by two regulators and supplies Co-op City residential, commercial, and power generation load. This is the largest system of elevated pressure currently in the area supplying over 15,000 residential customers and two low pressure regulator stations (GR-151 and GR-196).

The tie is recommended to provide an additional back-up supply to these high pressure systems.

Technical Evaluation/Analysis:

See attached for an overview (see segment C).

Estimated Completion Date:

2014

Current Working Estimate (if applicable): \$3.5M**Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	500	500	500	2,000	3,500

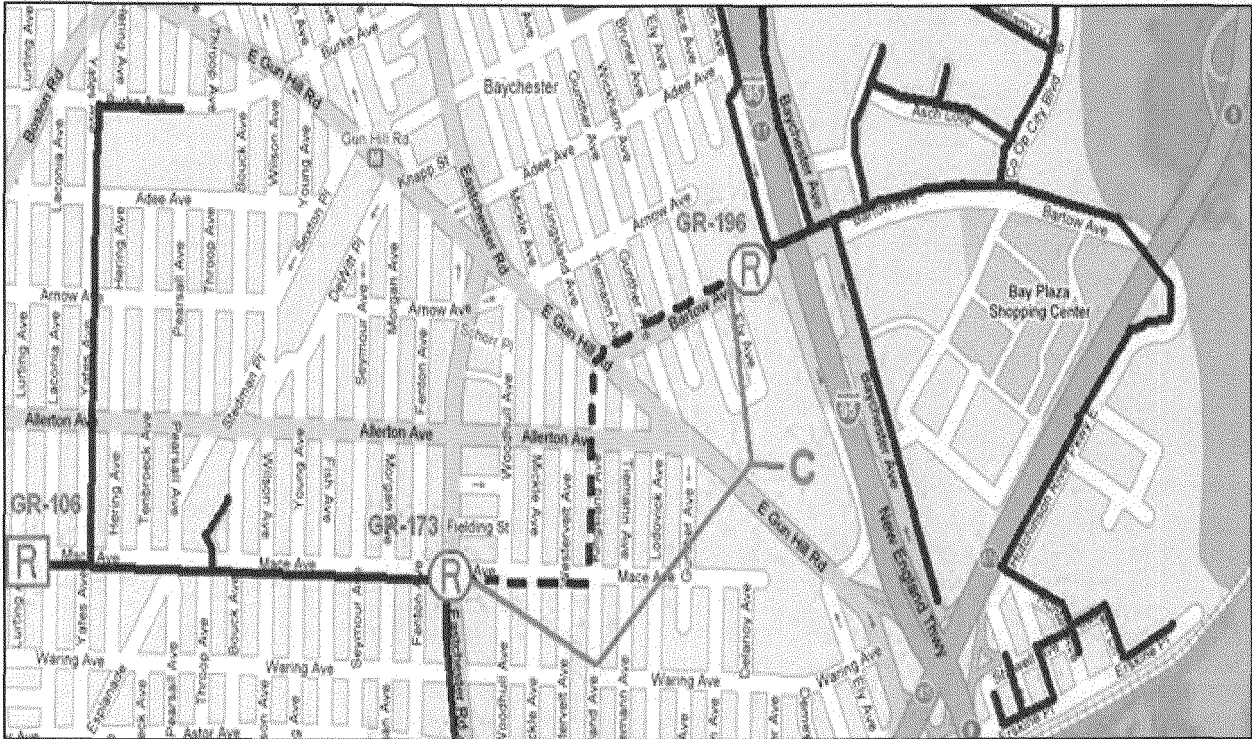
Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor		25	25	25	100
M&S		50	50	50	200
A/P		275	275	275	1,100
Indirects		150	150	150	600
Total		500	500	500	2,000

East Bronx HP Tie



Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Fort Washington High Pressure Main
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	HGS0072-620
Project Number	
Status	Planning
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

In Northern Manhattan, the low pressure gas system north of 179th Street is primarily supplied from the Bronx through a 30” 1911 Cast Iron main that crosses the Harlem River near West 209th Street & 9th Avenue. To insure the reliability of the gas system and accommodate the increasing load growth in Northern Manhattan, a regulator station at West 177th Street & Broadway was installed in 2006.

The long term plans are to cross the Harlem River with a 16” high pressure main in a tunnel with Electric Operation’s planned M-29 feeder. The plan also includes a new LP regulator station near 205th Street to supplement the feed from the 30” CI main. As these projects are completed, we plan to initiate a multi-year project starting in 2013 to tie the high pressure main at 177th Street to the proposed main at 205th Street along Nagle and Bennett Avenues in Northern Manhattan. This project will consist of 9500 feet of new 12” HP PE gas main. This will create a high pressure system that stretches from the South Ferry in Southern Manhattan to 205th St. in northern Manhattan which will support any future load growth including the potential #2 oil to natural gas conversions that are expected to occur.

See the attached overview map.

Units per Year:

In 2013, 2014 and 2015, we will install approximately 1500, 1500 and 1000 feet of 12” PE HP gas main.

Estimated Completion Date: Ongoing

Current Working Estimate (if applicable): Ongoing

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

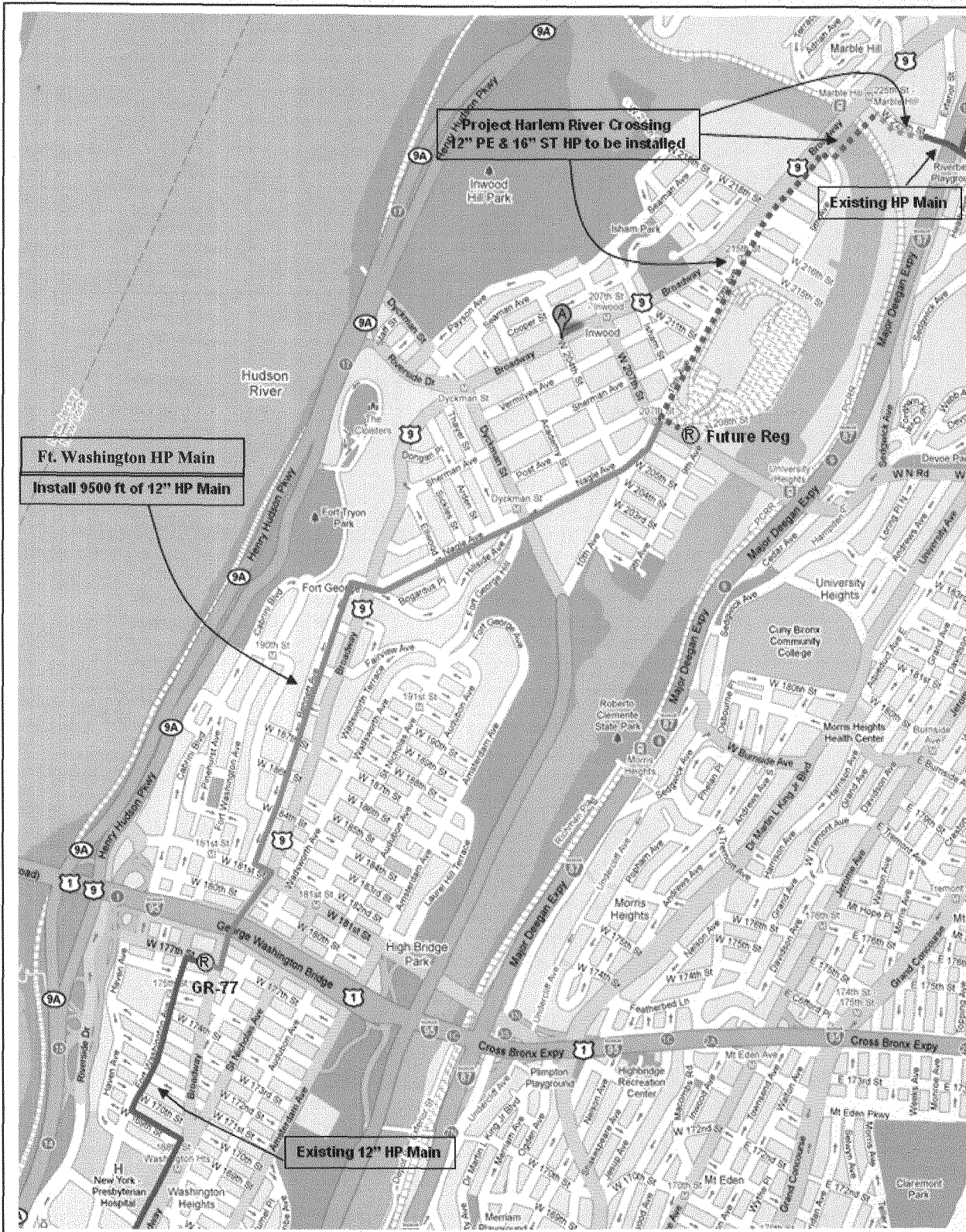
Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	0	2000	2000	1000	5000

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor			100	100	50
M&S			200	200	100
A/P			1100	1100	550
Indirects			600	600	300
Total			2000	2000	1000



Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Second Supply Main to City Island
Priority Number	
Project Manager	Tom Hernandez
Project Engineer	TBD
Budget Reference	HGS0169
Project Number	
Status	Ongoing
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement & Increased Customer Demand
ERM Addressed	9-Distribution System Events

Work Description:

Continue to replace existing 1930's vintage bare steel 6" gas main and also install a second high pressure supply to City Island.

Justification:

City Island is currently supplied by a radial main that runs through Pelham Bay Park. This existing main has numerous repairs and sections have been replaced by direct buried 8" PE and also lined to provide a second feed. There remains approximately 12,000 feet of this main to be replaced and lined to create the second feed. Directional drilling will be utilized for the new feed where feasible. The DOT also has plans to replace the bridge into City Island and will be designed to allow for two mains to be installed within the structure. These two mains will be tied together with valves to allow for the isolation of one in case of emergency.

Units Per Year:

For 2011, 2000 feet of 6" bare steel installed in 1930 will be lined and 400 feet of 8" PE will be installed along Park Drive. These mains will be tied together to allow for isolation of one in case of emergency.

After 2011, sections of main along Park Drive and Pelham Bridge Road will be selectively replaced based on their current and historical leaks.

Risk of No Action:

If the 6" bare steel main is not replaced, the approximately 1675 gas customers in City Island will continue to be at risk to lose service in the event of a major leak or damage to the current supply main.

Estimated Completion Date: Ongoing

Current Working Estimate (if applicable): Ongoing

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	800	800	800	1000	3400

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor		40	40	40	50
M&S		80	80	80	100
A/P		440	440	440	550
Indirects		240	240	240	300
Total		800	800	800	1000

Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Westchester Large Valve Replacement
Priority Number	
Project Manager	Tom Hernandez
Project Engineer	TBD
Budget Reference	
Project Number	
Status	Planning
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

Replace inoperable large diameter supply main valves.

Justification:

There are a large number of large diameter valves installed in the early 1900's in various supply mains in Westchester. These valves are critical to isolate potential leaks or damages on these supply mains. The repair of many of these valves is not economically feasible and must therefore be replaced with a new valve in order to maintain the ability to isolate the supply systems in case of emergency.

Risk of No Action:

If these valves are not repaired, there is a risk that a major leak or damage will result in a larger number of customer outages or worse, a delay in shutting down and isolating a main during an emergency.

Estimated Completion Date: Ongoing

Current Working Estimate (if applicable): Ongoing

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	500	500	500	500	2000

Forecast

EOE	2010	2011	2012	2013	2014
Labor		25	25	25	25
M&S		50	50	50	50
A/P		275	275	275	275
Indirects		150	150	150	150
Total		500	500	500	500

Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Yorktown Upgrade
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	
Project Number	
Status	Planning
Estimated Service Date	Ongoing
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9 - Gas Distribution System Events

Work Description:

In 2011, replace 1300 feet of 8" steel installed in 1956 with 12" PE along Gomer Road between London Road and Smith Rd.

After 2011, segments of main will be selected based on the supply mains historical and current leak history.

Justification:

The Yorktown high pressure (60 psig) system is 11.3 miles of main – the vast majority of which is 8 inch steel installed in the 1950s and 1960s. It supplies 3000 high pressure customers in the Yorktown area. It is supplied by the Algonquin Yorktown gate station and the Yorktown-Katonah system.

The gas network analysis model has identified the need to increase system capacity to adequately supply the Hawthorne-Katonah system and avoid thousands of customer outages in the event of a cold weather supply curtailment from Tennessee Pipeline at GR-484 in Hawthorne. This would require us to replace 3 miles of 8 inch steel with 12 inch pipe from the Algonquin Yorktown gate station to the Yorktown-Katonah.

Risk of No Action:

If no action is taken, there will be an increased risk that a major leak may result in a large number of customer outages within the Yorktown area.

Non-financial Benefits:

Replacement of this 60 psig supply main will eventually result in improved system capacity that will result in the fuller utilization of the Yorktown and Hawthorne Stations to back up the other in the event of a major leak, damage or supply curtailment affecting the system.

Estimated Completion Date: Ongoing

Current Working Estimate (if applicable): Ongoing

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	0	1000	1000	0	2000

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor			50	50	
M&S			100	100	
A/P			550	550	
Indirects			300	300	
Total			1000	1000	

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Eastside Lower Manhattan Reconstruction
Priority Number	40
Project Manager	Russ Grogan
Project Engineer	Trevor L. Jackson
Budget Ref/Function Code	5GD1300 – GDI09
Project Number	G-07-905
Status	Engineering
Estimated Service Date	2014
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9. Gas System Distribution Event

Work Description:

The remaining work of this project includes installing approximately 500 LF of 12" high pressure main and a high to low pressure regulator station to reinforce the Lower Manhattan low pressure system. The new station will be installed on Old Slip Street between South and Water Streets. This is the last part of the project which included installing 10,000 feet of high pressure main to create the loop. When completed the Eastside HP main will tie into the Westside HP main and complete a loop around the Southern part of Manhattan. This is part of a prior ratecase and our Master Plan.

Justification:

- The low-pressure distribution system south of Houston St. is primarily supplied by GR-9 located on Duane Street west of Broadway and GR-2 located on Chambers St., west of Greenwich St. Both stations are supplied by a radial high-pressure main that is fed by GR-16 located at 20th St. & 1st Ave. and GR-10 located at Ave D & 3rd St. The dual regulator station supply is the backbone of the system providing natural gas that extends south to the Battery. An interruption of the high-pressure supply or a break along the backbone supply system could cause extensive customer outages in Lower Manhattan.
- New York City is proposing a major reconstruction project for the lower east side of Manhattan. Included in this plan is the construction of 300 affordable housing units north of the Brooklyn Bridge. The Lower Manhattan Development Corporation is allocating \$ 50 million of funding from HUD for this project. South of the Brooklyn Bridge to the Battery, the City is proposing the major construction of 10,000 housing units and parkland over the next 10 years.

Alternatives:

- Install a new regulator station at Rector Street and Broadway. This alternative will be more costly than the recommended solution because of additional piping and traffic restrictions. In addition, the pressure gain will not be as much compared to the recommend solution as per Gas Distribution Planning.
- Install a new regulator station at Park Row and Worth Street. This alternative will be more costly than the recommend solution because of additional piping. In addition, the pressure gain will be approximately 73% lower compared to the recommend solution as per Gas Distribution Planning.

Risk of No Action:

- Not installing this regulator will mean that on a cold day, the loss of either GR-16 or GR-10 would result in loss of thousands of customers. In addition, as customer loads in the area continue to increase, the existing regulators will need to have their outlet pressures increased to 12 in WC, and eventually run out of capacity.

Summary of Financial Benefits and Costs:

- The total capital cost of this project is approximately \$2 million.

Technical Evaluation/Analysis:

- Stoner Network Analysis showed that existing area regulators GR-2 and GR-9 located south of Houston Street will not be able to manage the expected load increase in Lower Manhattan.

Estimated Completion Date: 2014**Current Working Estimate:** \$3.5M remaining to complete.**Funding (\$000):**

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budgeted 2009
0	2618	3705	2326	2000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
500	500	-	-	2,500	3,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	50	230	84	45
M&S	378	545	191	355
A/P	1389	2015	1600	830
Indirects	801	915	451	770
Total	2618	3705	2326	2000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	10	10			50
M&S	90	90			450
A/P	210	210			1050
Indirects	190	190			950
Total	500	500			2500

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Westchester Ave Main Replacement
Priority Number	18
Project Manager	Amr Hassan
Project Engineer	Trevor L. Jackson
Budget Ref/Function Code	6GD9712 – GDI09
Project Number	TBD
Status	Engineering Phase
Estimated Service Date	2010
Work Plan Category	System and Component Performance Improvement
ERM Addressed	9. Gas System Distribution Event

Work Description:

- Replace and line a total of 1742 feet of 12" medium pressure steel mains for the purpose of eventually upgrading pressure to high pressure. Mains are located on Westchester Avenue between Glebe Ave. to Glover Street (1025 feet) and East Tremont Avenue between Hutchinson River Parkway to Edwards Avenue. (717 feet).

Justification:

- The Throgs Neck Medium pressure system is supplied by regulator station GR-101 at Blackrock & Castle Hill Avenues, and station GR-102 at Westchester and Glebe Avenues. This system supplies 160 customers and seven low pressure regulating stations (GR-132, GR-135, GR-161, GR-175, GR-177, GR-179, GR-193). GR-101 feeds the system through an 80 year old, 24" cast iron river crossing main. If a failure were to occur on this crossing or at GR-101 at an average temperature below a 50 deg day, GR-102 cannot provide enough backup and outages of approximately 160 MP and 58,000 LP customers can be expected. To eliminate this potential problem, our Master Plan was developed to upgrade 8,600 ft of gas main along Westchester and Waterbury Avenues from medium pressure to high pressure and to install a new high to medium pressure regulator on Waterbury & Hobart Avenues. In addition, the upgraded high pressure main will be tied to the Sackett Ave and future Mace Ave high pressure loops to provide for additional contingency supply.

Alternatives:

- Install 1742 feet of 12" Polyethylene (PE) main on Westchester Avenue between Glebe Ave. and Glover Street (1025 feet) East Tremont Ave. between Hutchinson River Parkway and Edwards Ave (717 feet). While this alternative will maintain the required gas flow, the 12" PE main will increase the cost by an additional \$200,000 compared to the liner, therefore this alternative is not recommended.
- Insert 1742 feet of 8" PE pipe into existing 12" steel mains on Westchester Avenue between Glebe Ave. and Glover Street (1025 feet) and East Tremont Ave. between Hutchinson River Parkway and Edwards Ave (717 feet). While this alternative will cost slightly less than the liner option, replacing the 12" main with the small diameter 8" main will significantly reduce gas flow to the prospective regulator station at Waterbury and Hobart Avenues. Therefore this alternative is not recommended as per Gas Distribution Planning as this reduced capacity is insufficient to supply the Throgs Neck at medium pressure.

Risk of No Action: Leaving the system as-is will not increase its reliability nor will it provide for additional capacity to customers. Therefore is not recommended.

Summary of Financial Benefits and Costs:

- The total capital cost of this project is approximately \$1.1 million. This estimate is based upon replacing 1742 LF of steel main.

Project Relationships (if applicable):

- Hobart Avenue Regulator Station is dependent upon the completion of this project.

Technical Evaluation/Analysis:

- Stoner Network Analysis showed that GR-102 cannot provide enough backup for GR-101 on an average temperature below a 50 deg day; this will consequently lead to outages of approximately 160 MP and 58,000 LP customers.

Estimated Completion Date: 2011

Current Working Estimate: \$2M

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budget 2009
0	0	0	0	2,000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
1,115	885	-	-	-	2,000

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				45
M&S				355
A/P				830
Indirects				770
Total				2,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	25	20			
M&S	200	155			
A/P	460	370			
Indirects	430	340			
Total	1115	885			

2010 Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Grasslands Road – 12”HPPE Gas Main
Priority Number	7
Project Manager	Russ Grogan
Project Engineer	Dave Marshall
Budget Ref/Function Code	7GD9830 – GDI25
Project Number	TBD
Status	Planning/Engineering Design
Estimated Service Date	2012
Work Plan Category	System and component performance improvement
ERM Addressed	9. Gas Distribution System Event.

Work Description:

- Replacement of 7000 ft of existing 6 and 8 inch high pressure steel with 12” high pressure polyethylene gas main. Approximately 2000 ft has already been completed with another 1800ft planned for 2009. The remaining footage will be completed in the next 3 years. The proposed replacements allow GR 519 to provide a backup supply to the Northern Westchester backbone system. This is a ratecase program and part of our Master Plan.

Justification:

- This section of the Northern Westchester high pressure (99 psig) gas system is fed from the Hawthorne regulator station (GR-484) in the north, and the Greenburgh Regulator Station (GR-519) in the south. The existing 6” HP (1929) steel gas mains limit the capacity of the Greenburgh Regulating Station to back up the Hawthorne Regulating Station during a System Emergency. The existing 6” HP steel gas main installed in 1929 on Grasslands Road between the East Grasslands Gate of Westchester Community College, and the East Grasslands Gate of Westchester Community College, has eleven (11) existing repair clamps installed on this section and is called for replacement. In addition the existing piping is too small to provide supply from GR 519.
- **Alternatives:**
Keep the existing 6” HP Steel gas main and continue to maintain with clamps in the event of leaks. This alternative would continue to tie up O&M resources on a main that is an important interconnect in Westchester. GR-484 is a major regulator station and its loss would cause outages of tens of thousands of customers.

Risk of No Action: If this project is not completed, the ability to respond to adverse conditions on the gas distribution system is greatly reduced which may result in the loss of customers. This program greatly increases contingency mitigation and allows for a partial failure of GR-484.

- **Summary of Financial Benefits and Costs:** The total capital cost of this project is approximately \$8 million. This estimate is based upon test pit information, and actual installation costs from previous 12”HPPE Gas Main installations on Grasslands Road.
- **Non-financial Benefits (if applicable):** This main greatly improves the reliability of the system.
- **Technical Evaluation/Analysis:** An evaluation of this project was conducted using Stoner Network Analysis.. The studies clearly indicate that the upsizing of the main greatly improves the reliability of the system.
- **Sensitivity Analysis (if applicable):** N/A

Project Relationships (if applicable): N/A

Estimated Completion Date: 2012

Current Working Estimate (if applicable): \$8M

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budget 2009
			1,023	2,500

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast Total 2010-2014
2,200	1,555	1,600	-	-	5,355

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor			32	55
M&S			97	440
A/P			533	1,040
Indirects			361	965
Total			1023	2500

Forecast

EOE	2010	2011	2012	2013	2014
Labor	50	35	35		
M&S	390	275	285		
A/P	915	645	665		
Indirects	845	600	615		
Total	2200	1555	1600		

Capital – CE Gas Operations – Supply Main Projects

Project/Program Title	Harlem River to 205 Street
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	HGS0188
Project Number	
Status	Planning
Estimated Service Date	2013
Work Plan Category	System and Component Performance Improvement & Increased Customer Demand
ERM Addressed	9-Distribution System Events

Work Description:

Install 3300 feet of 12” HP PE pipe from W 215 Street and Broadway to W 207 Street and 10th Avenue.

Justification:

The Gas Distribution System Master Plan incorporates plans for a gas crossing and a new regulator station near 205th Street. As these projects are completed, we plan to tie the high pressure main at 177th Street to the main at 205th Street along Fort Washington Avenue. This will create a high pressure system that stretches from the South Ferry in Southern Manhattan to 205th St. in northern Manhattan.

This segment will extend the proposed gas crossing at W 215 Street and provide the supply to the future HP to LP regulator station to be located at W 207 Street and 10th Avenue, where it will tie into the existing 30” LP main that crosses the Harlem River and currently is the major supply to Northern Manhattan gas customers. Completion of this plan will eventually eliminate our dependency on the 30” river crossing.

Risk of No Action:

This is the HP option that could potentially feed the future W 207th Street Regulator Station.

Project Relationships (if applicable):

This project is dependent on the completion of the Harlem River HP Crossing (M29).

Estimated Completion Date: 2013

Current Working Estimate (if applicable): \$2.175 Million

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-		-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
-	0	0	2175	0	2175

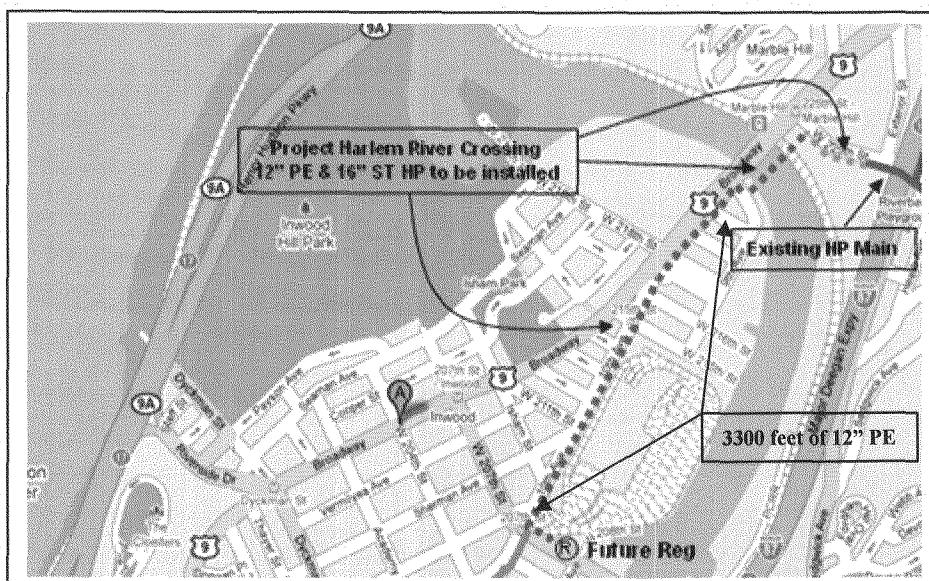
Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				109	
M&S				218	
A/P				1196	
Indirects				652	
Total				2175	

Harlem River to 205 Street – 3300 feet



2011 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Replacement of Security Fences
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering
Budget Reference	HGS0053
Project Number	
Status	Planning
Estimated Service Date	July 2011
Work Plan Category	Regulatory
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The LNG plant is enclosed within a security fence. The Department of Homeland Security is in the process of performing risk assessments of chemical facilities deemed to contain above the threshold quantity of a defined hazardous chemical, which includes LNG. This project upgrades security by replacing the current fence mesh with 1" hole security type mesh.

Units per Year: 3500'

Mandatory: Chemical Facility Anti-Terrorism Standard (CFATS)

High-level schedule: Project will begin and be completed in summer 2011.

Justification:

The LNG plant has been assigned a security ranking tier which requires a subsequent evaluation of the facilities current security plan. The requirements of this plan have not be prescribed and this project provides for the next level of fence security upgrade available.

- Alternatives: None
- Risk of No Action: Regulatory non-compliance.
- Summary of Financial Benefits and Costs: The loss of use of the LNG plant during a time of needed dispatch due to a terrorist action could result in the incurrence of penalty charges from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable): Improved site security to terrorist actions.
- Technical Evaluation/Analysis: The project utilizes the existing fence frames and replaces the wire mesh.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: July 2011

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	389	0	0	0	389

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor		21			
M&S					
A/P		315			
Indirects		18			
Contingency		35			
Total		389			

2011 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Transformer Fire Suppression System
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering
Budget Reference	HGS0047
Project Number	
Status	Planning
Estimated Service Date	October 2011
Work Plan Category	Public and employee safety
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The three L&P transformers V-8998, V-9031, & V-9100, which currently do not have a fire suppression system, are located adjacent to the plant substation and control building. This project installs a fire suppression system on the L&P transformers.

Units per Year: 1

Suggested:

High-level schedule: Project will begin and be completed in summer 2011.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The L&P transformers are backed up by a black start generator, but a fire in the transformers burning unchecked will impact ancillary structures thus impacting the vaporization of the plant, which is typically required on the coldest days of the year.

- Alternatives: None
- Risk of No Action: Plant unavailable.
- Summary of Financial Benefits and Costs: The loss of use of the LNG plant during a time of needed dispatch could result in the incurrence of penalty charges from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: The L&P is backed up by a black start generator thus a redundant power feed is not required.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: October 2011

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	200	0	0	0	200

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor		15			
M&S					
A/P		156			
Indirects		11			
Contingency		18			
Total		200			

2011 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Substation Fire Suppression System
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering
Budget Reference	HGS0048
Project Number	
Status	Planning
Estimated Service Date	October 2011
Work Plan Category	Public and employee safety
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The plant's substation is located adjacent to the main control building. The substation does not have any fire suppression system. This project installs a fire suppression system on the substation.

Units per Year: 1

Suggested:

High-level schedule: Project will begin and be completed in summer 2011.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The substation is backed up by a black start generator, but a fire burning unchecked will impact adjacent breakers and structures thus impacting the vaporization capability of the plant, which is typically required on the coldest days of the year.

- Alternatives: None
- Risk of No Action: Plant unavailable.
- Summary of Financial Benefits and Costs: The loss of use of the LNG plant during a time of needed dispatch could result in the incurrence of penalty charges from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: An unchecked fire in the substation will impact ability fo plant to operate.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: October 2011**Current Working Estimate (if applicable):****Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	389	0	0	0	389

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor		21			
M&S					
A/P		315			
Indirects		18			
Contingency		35			
Total		389			

2011 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Salt Water Pump House Fire Suppression System
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering
Budget Reference	HGS0049
Project Number	
Status	Planning
Estimated Service Date	October 2011
Work Plan Category	Public and employee safety
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The salt water pump house is supplied L & P by HTV-8990 and HTV-8792. The transformers supply the electric driven salt water fire pump located in the building adjacent. These transformers do not have any fire suppression system. This project installs a fire suppression system on the transformers.

Units per Year: 1

Suggested:

High-level schedule: Project will begin and be completed in summer 2011.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The salt water pump house has a back-up diesel driven pump, but a fire burning unchecked on the SWPH transformers will impact the diesel pump thus impacting the fore protection system of the plant, which is typically required on the coldest days of the year.

- Alternatives: None
- Risk of No Action: Plant unavailable.
- Summary of Financial Benefits and Costs: The loss of use of the LNG plant during a time of needed dispatch could result in the incurrence of penalty charges from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: An unchecked fire in the substation will impact ability of the plant to operate.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: October 2011

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	389	0	0	0	389

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor		21			
M&S					
A/P		315			
Indirects		18			
Contingency		35			
Total		389			

2011 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Motor Control Center Fire Suppression System
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering
Budget Reference	HGS0050
Project Number	
Status	Planning
Estimated Service Date	October 2011
Work Plan Category	Public and employee safety
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The motor control center (MCC) for the plant is designed so as to not totally impact plant performance by separating electrical supplies to major equipment. The MCC room does not have a fire suppression system, thus a fire burning unchecked will impact adjacent MCCs as well as the control building, which houses the MCCs. This project installs a fire suppression system on the L&P transformers.

Units per Year: 1

Suggested:

High-level schedule: Project will begin and be completed in summer 2011.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The MCCs are configured to have the equipment load split so loss of one MCC will not impair total plant capability, but a fire in the MCCs burning unchecked will impact ancillary MCCs thus impacting the vaporization ability of the plant, which is typically required on the coldest days of the year.

- Alternatives: None
- Risk of No Action: Plant unavailable.
- Summary of Financial Benefits and Costs: The loss of use of the LNG plant during a time of needed dispatch could result in the incurrence of penalty charges from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: The MCCs are designed to spread load so there is no one point of loss that will take plant out of service so mitigating a fire will maintain partial plant operability.
- Sensitivity Analysis (if applicable):

- Project Relationships (if applicable):

Estimated Completion Date: October 2011

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	200	0	0	0	200

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor		15			
M&S					
A/P		156			
Indirects		11			
Contingency		18			
Total		200			

2011 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Control and Storage Building Salt Water Hydrant Piping Replacement
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering
Budget Reference	HGS0046
Project Number	
Status	Planning
Estimated Service Date	May 2011
Work Plan Category	Public and employee safety
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The salt water hydrant system provides fire protection to the plant. The majority of the original cast iron pipe has been upgraded to polyethylene pipe due to breakage. Several extension legs off the main header are the original cast iron pipe. This project replaces those original pipes with polyethylene.

Units per Year: 1

Suggested:

High-level schedule: Project will begin and be completed in Spring of 2011.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. The salt water hydrant system being replaced provides fire protection for the main control building and ancillary support buildings. Loss of this system will result in the plant being taken out of service by the FDNY until fire protection is restored.

- Alternatives: None
- Risk of No Action: Plant unavailable.
- Summary of Financial Benefits and Costs: The loss of use of the LNG plant during a time of needed dispatch could result in the incurrence of penalty charges from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: Leaving the existing cast iron pipe exposes the plant to a loss of service from an unplanned leak or water main break.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: October 2011

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	400	0	0	0	400

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor		21			
M&S					
A/P		325			
Indirects		19			
Contingency		35			
Total		400			

2011 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Replace LNG Meter Run Motor Control Center
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering
Budget Reference	HGS0051
Project Number	
Status	Planning
Estimated Service Date	August 2011
Work Plan Category	System and component performance improvement
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. This project replaces the motor control center that operates the remote operated valves on the meter piping.

Units per Year: 1

Mandatory: Operational

High-level schedule: Project will begin in Spring 2011 after traditional vaporization season and be completed prior to winter vaporization season.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. Vaporization is typically on the coldest days of the year and reliability is of paramount importance. The meter run valves are remote of the plant and thus remotely operated.

- Alternatives: None
- Risk of No Action: Failure to vaporize when needed.
- Summary of Financial Benefits and Costs: The loss of use of the LNG plant during a time of needed dispatch could result in the incurrence of penalty charges from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: The motor control center is the original equipment installed with the plant. The components are obsolete and have no redundancy for back-up. The new units will be state-of-the-art controls ensuring reliable service.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: August 2011

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	200	0	0	0	200

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor		16			
M&S					
A/P		155			
Indirects		11			
Contingency		18			
Total		200			

2011 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Replace LNG Meter Run Instruments
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering
Budget Reference	HGS0052
Project Number	
Status	Planning
Estimated Service Date	August 2011
Work Plan Category	System and component performance improvement
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. This project upgrades the instruments used for gas measurement on the meter piping with the current instruments used on the system.

Units per Year: 1

Mandatory: Operational

High-level schedule: Project will begin in Spring 2011 after traditional vaporization season and be completed prior to winter vaporization season.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. Vaporization is typically on the coldest days of the year and reliability is of paramount importance. Meters accuracy is required for billing purposes.

- Alternatives: None
- Risk of No Action: Improper metering resulting in inaccurate custody transfer meter totals.
- Summary of Financial Benefits and Costs: The inaccurate metering of the LNG plant sendout can result in penalty charges being incurred from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: The meters are used for billing firm gas customers.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: August 2011

Current Working Estimate (if applicable):**Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	167	0	0	0	167

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor		16			
M&S					
A/P		126			
Indirects		10			
Contingency		15			
Total		167			

2011 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Roadway Replacement
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg
Budget Reference	HGS0054
Project Number	
Status	Planning
Estimated Service Date	June 2011
Work Plan Category	Public and employee safety
ERM Addressed	

Work Description:

This project replaces 35,000 sq-ft of asphalt roadway and 1,500 ln-ft of associated curb.

Units per Year:

Discretionary: Project can be delayed if needed

High-level schedule: Project can be installed anytime except for the extreme weather when frost is present.

Justification:

The plant roadway is extensively cracked and the associated curb is broken. The plant roadway is used as a daily means of ingress and egress to the plant.

- Alternatives: None
- Risk of No Action: None
- Summary of Financial Benefits and Costs: None
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: None
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: Summer 2011

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	305	0	0	0	305

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor		20			
M&S					
A/P		217			
Indirects		38			
Contingency		30			
Total		305			

2012 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Control Building Storm Hardening
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg
Budget Reference	HGS0065
Project Number	
Status	Planning
Estimated Service Date	August 2012
Work Plan Category	System and component performance improvement
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. This project upgrades the building so as to be structurally capable of withstanding a Category 3 hurricane for wind whereas now it is rated only for Category 1.

Units per Year: 1

Mandatory: Operational

High-level schedule: Project will begin in Summer 2012 after traditional vaporization season and be completed prior to winter vaporization season.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. This project is required to ensure the control building remains viable in the event of a Category 3 hurricane.

- Alternatives: None
- Risk of No Action: Category 3 hurricane wind can damage building thus impacting plants ability to operate.
- Summary of Financial Benefits and Costs: The loss of use of the LNG plant during a time of needed dispatch could result in the incurrence of penalty charges from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: The building was assessed by Thornton-Tomasetti, Inc. and determined the building is not structurally capable of withstanding a Category 3 hurricane winds.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: Summer 2012

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	0	750	0	0	750

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor			30		
M&S					
A/P			630		
Indirects			32		
Contingency			58		
Total			750		

2012 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Septic System Replacement
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg
Budget Reference	HGS0066
Project Number	
Status	Planning
Estimated Service Date	Summer 2012
Work Plan Category	Environmental
ERM Addressed	

Work Description:

This project replaces the plant's original septic system.

Units per Year:

Discretionary: Project can be delayed if needed with system continued to be pumped as needed.

High-level schedule: Project can be installed anytime except for the extreme weather when frost is present.

Justification:

The LNG plant cannot be connected to a sewer system due to the potential presence of LNG in the event of an incident. Therefore the sewage is handled on sight by a septic system. The existing system is not adequately leaching into the surrounding soil requiring it be pumped on a regular basis.

- **Alternatives:** Continue to pump system as needed.
- **Risk of No Action:** None
- **Summary of Financial Benefits and Costs:** None
- **Non-financial Benefits (if applicable):**
- **Technical Evaluation/Analysis:** Existing system does not adequately leach into surround soil.
- **Sensitivity Analysis (if applicable):**
- **Project Relationships (if applicable):**

Estimated Completion Date: Summer 2011

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	0	40	0	0	40

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor			4		
M&S					
A/P			30		
Indirects			2		
Contingency			4		
Total			40		

2012 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Control Building AC Replacement
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg
Budget Reference	HGS0067
Project Number	
Status	Planning
Estimated Service Date	Winter 2012
Work Plan Category	Environmental
ERM Addressed	

Work Description:

This project replaces the plant's control building AC units.

Units per Year: 3

Discretionary: Project can be delayed if needed with system continued to be maintained as repairs are required needed.

High-level schedule: Project can be installed anytime in the winter.

Justification:

The control building AC units require on average about 2 repairs per season to keep operational. Units are beyond economical life.

- Alternatives: Continue to repair units as needed.
- Risk of No Action: None
- Summary of Financial Benefits and Costs: None
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: Existing systems require regular maintenance.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: Summer 2012

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	0	50	0	0	50

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor			8		
M&S					
A/P			35		
Indirects			2		
Contingency			5		
Total			50		

2013 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Install Motorized Gate on North Side Entrance
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg
Budget Reference	9GS9708
Project Number	
Status	Planning
Estimated Service Date	Fall 2013
Work Plan Category	Public and employee safety
ERM Addressed	

Work Description:

This project installs a new motorized gate on the plant's north side fence line replacing the existing manual gate.

Units per Year: 1

Discretionary: Project can be delayed if needed.

High-level schedule: Project can be installed anytime.

Justification:

The main south side ingress and egress is motorized and upon an emergency shutdown (ESD) automatically opens to allow for egress. The north side manual gate does not allow for ESD egress and its availability provides an alternate exit in the event the south gate is blocked by a hazard.

- Alternatives: None
- Risk of No Action: Possible delay of evacuation in the event the south side gate is blocked.
- Summary of Financial Benefits and Costs: None
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: None
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: Summer 2013

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	0	0	60	0	60

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor				9	
M&S					
A/P				41	
Indirects				5	
Contingency				5	
Total				60	

2013 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Install Back-up Ultrasonic Meter
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg
Budget Reference	9GS9709
Project Number	
Status	Planning
Estimated Service Date	November 2013
Work Plan Category	System and component performance improvement
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. This project replaces the back-up orifice meter with an ultrasonic meter.

Units per Year: 1

Mandatory: Operational

High-level schedule: Project will begin in Spring 2011 after traditional vaporization season and be completed prior to winter vaporization season.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. Vaporization is typically on the coldest days of the year and reliability is of paramount importance. Meters accuracy is required for billing purposes.

- Alternatives: None
- Risk of No Action: Improper metering resulting in inaccurate custody transfer meter totals.
- Summary of Financial Benefits and Costs: The inaccurate metering of the LNG plant sendout can result in penalty charges being incurred from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: The meter is used for billing firm gas customers.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: August 2013

Current Working Estimate (if applicable):**Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	0	0	200	0	200

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor				23	
M&S					
A/P				129	
Indirects				28	
Contingency				20	
Total				200	

2014 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Replace Plant Pneumatic Valve Operators
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering
Budget Reference	9GS9710
Project Number	
Status	Planning
Estimated Service Date	August 2014
Work Plan Category	System and component performance improvement
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. This project replaces the plant's original pneumatic valve operators on the plant's electronic control valves (ECV).

Units per Year: 9

Mandatory: Operational

High-level schedule: Project will begin in Spring 2014 after traditional vaporization season and be completed prior to winter vaporization season.

Justification:

The LNG plant serves as a peaking and contingency supply of natural gas to the firm gas customers. Thus its availability ensures reliable service. Vaporization is typically on the coldest days of the year and reliability is of paramount importance. The ECVs are required vaporize and to safely shutdown in the event of the emergency shutdown system (ESD) activates.

- Alternatives: None
- Risk of No Action: Failure to vaporize or fail safe after an ESD.
- Summary of Financial Benefits and Costs: The loss of use of the LNG plant during a time of needed dispatch could result in the incurrence of penalty charges from the pipelines by exceeding the Company's daily scheduled volume. The penalty charges would be in the order of magnitude of \$60/dt.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: The pneumatic operators are original plant equipment. The units are obsolete with parts not readily available.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: October 2014

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	0	0	0	450	450

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor					16
M&S					
A/P					340
Indirects					19
Contingency					75
Total					450

2014 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Install Electric Start on Hunts Point Compressor Station
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/BGA Engineering/Solar Turbines
Budget Reference	9GS9711
Project Number	
Status	Planning
Estimated Service Date	December 2014
Work Plan Category	Environmental
ERM Addressed	

Work Description:

The Hunts Point compressor has a starter that operates off the gas transmission system line pressure. This project replaces the gas starter with an electric motor.

Units per Year: 1

Mandatory: Operational

High-level schedule: Project will begin in Winter 2014 and be completed by beginning of traditional compressor operating season.

Justification:

The compressor's gas starter vents the gas to atmosphere each time the unit is started. This venting can pose a potential gas leak call from the public and also contributes to green house gas emissions. The electric started eliminates both concerns.

- Alternatives: None
- Risk of No Action: Regulation by the EPA to eliminate fugitive gas emissions.
- Summary of Financial Benefits and Costs: The electric motor prevents the release of gas to the atmosphere that currently occurs each time the unit is operated.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: Solar Gas Turbines has an electric starter available for this application. The electric grid in the Hunts Point section of the Bronx has been improved so the feeder upgrade that was originally required for this motor is no longer needed. The CE vacant plot of land adjacent to the station will revert back to NYC ownership with plans for development.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: April 2014

Current Working Estimate (if applicable):**Funding (\$000):**

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	0	0	0	500	500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor					152
M&S					
A/P					149
Indirects					122
Contingency					77
Total					500

2014 Capital – CE Gas Operations – LNG Plant

Project/Program Title	Upgrade Hunts Point Compressor Bristol Computer Control System
Priority Number	
Project Manager	Rick Trieste
Project Engineer	Howard Goldberg/Bristol
Budget Reference	9GS9712
Project Number	
Status	Planning
Estimated Service Date	December 2014
Work Plan Category	System and component performance improvement
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC or O&R service territory

Work Description:

The Hunts Point compressor Bristol control computer utilizes obsolete technology that is no longer supported by manufacturer. This project upgrades the technology to current state-of-the-art.

Units per Year: 1

Mandatory: Operational

High-level schedule: Project will begin in Winter 2014 and be completed by beginning of traditional compressor operating season.

Justification:

The compressor's control computer is no longer supported by the manufacturer.

- Alternatives: None
- Risk of No Action: Compressor station unavailable for use.
- Summary of Financial Benefits and Costs: None
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: Bristol, the manufacturer of the compressors control computer no longer supports the technology deployed in the station.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: Winter 2014

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Budget 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
0	0	0	0	125	125

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total	0	0	0	0

Forecast

EOE	2010	2011	2012	2013	2014
Labor					3
M&S					
A/P					105
Indirects					5
Contingency					12
Total					125

2011 Capital / CE Gas Operations / Measurement

Project/Program Title	Metering Purchases
Priority Number	58
Project Manager	
Project Engineer	Greg Ludwig
Budget Reference	9GD0100
Project Number	
Status	Program – On going
Estimated Service Date	Ongoing
Work Plan Category	Regulatory/Environmental Excellence; Demand Growth
ERM Addressed	9. Gas distribution system events (e.g., explosion/fire caused by damages, inside/outside leaks, carbon monoxide conditions, etc.).

Work Description:

Purchase, refurbish, and test gas meters and related devices (Metscans, Service Regulators and Electronic Correctors) to meet NYS PSC standards set forth in Title 16, Part 226.

Justification:

Gas meters and related devices shall conform to the accuracy standards set forth in NYS PSC Title 16, Part 226. Meters that fail to meet these standards are removed and either retired or refurbished.

Gas meters are used to for new business, meter replacements to complete PSC requirements and to replace meters for cause. Approximately 75 % of the meter inventory is maintained through new meter purchases and the remainder from refurbished meters.

Below is a listing of Meters and related devices (Metscans, Regulators and Electronic Correctors) purchases for 2010. Also listed below are the 2010 costs for the Vendor that refurbishes used meters and the Meter Shop capital labor. All of the 2010 costs are also indicative of the five year budget, and their respective cost.

- Diaphragm, rotary, and turbine meter required for code-mandated removal programs, unscheduled removals, cause/trouble removals, and new business.
Diaphragm Meters (\$1,807K total)
 - Cat. A/C AIP (900) - \$48K
 - LC Cat. O (2,800) - \$1,246K
 - New Business (7,700) - \$408K
 - Cause Meters (1,000) - \$53K
 - Non-Program Meters (1,000) - \$53KRotary Meters (1,000) \$1,400K
Turbine Meters (25) - \$325K
- Replacement meters for meters that failed AIP programs.
 - Cat. A Remediation (4,500) - \$190K
 - Cat. O Remediation (300) - \$122K
 - Cat. C Retirement (2,200) - \$186K
- Pressure regulating equipment for new business and meter set upgrades.
 - Residential 1" X 1" Regulators - \$40K
 - Commercial 1" X 1.25" Regulators - \$29K
 - Commercial 2" X 2" Regulators - \$135K
 - Industrial Regulators - \$120K

- For metering products and services used to improve operating efficiency including electronic correctors, outsource vendor meter refurbishment, and capitalized M.S. labor.
 - Electronic Correctors - \$300K
 - Out Source Vendor Meter Refurbishment - \$718K
 - Metscan Replacements - \$55K
 - Meter Shop Capital Labor - \$200K

Total cost is approximately \$5,700,000 per year.

Estimated Completion Date:

This is an ongoing program that extends beyond 2014.

Current Working Estimate:

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
4,066	5,186	6,713	4,700

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
5,700	5,820	5,820	5,700	5,700	28,740

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	549	714	737	564
M&S		46	85	47
A/P	3,056	3,822	5,147	3,525
Indirects	461	604	744	564
Total	4,066	5,186	6,713	4,700

Forecast

EOE	2010	2011	2012	2013	2014
Labor	684	684	684	684	684
M&S	57	57	57	57	57
A/P	4,275	4,395	4,395	4,275	4,275
Indirects	684	684	684	684	684
Total	5,700	5,820	5,820	5,700	5,700

2011 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Annual Sump Pumps
Priority Number	42
Project Manager	David Ferri
Project Engineer	Tom Warner
Budget Reference	9TF1000
Project Number	
Status	Planning
Estimated Service Date	Sept. Annually
Work Plan Category	System and Component Performance Improvement
ERM Addressed	18

Work Description: Annual program to purchase four new sump pumps each year to replace those that have reached the end of their useful life.

Units per Year: Total cost is for three to four sump pumps

Mandatory:

High-level schedule: There is generally a three month lead time for delivery.

Justification: There are 14 sump pumps that service 7 tunnels. Sump pumps are taken out of service and replaced every 12-18 months. Those that can be refurbished are sent to a vendor. Many need to be retired. A reliable supply of replacement pumps for both scheduled and emergency replacement is essential to insure the pumping capabilities of each tunnel.

- Alternatives: No alternatives
- Risk of No Action: Several unplanned pump failures could result in a shortage of suitable replacements pumps
- Summary of Financial Benefits and Costs: Sump pumps are general refurbished or recycled one to two times. A general rule of thumb is not to refurbish a pump if the cost is half it's original purchase price.
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/31/2010

Current Working Estimate (if applicable): \$75,000 annually

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
53	42	66	75

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
75	75	75	75	75	375

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P	52	41	60	65
Indirects	1	1	6	10
Contingency				
Total	53	42	66	75

Forecast

EOE	2010	2011	2012	2013	2014
Labor					
M&S					
A/P	65	65	65	65	65
Indirects	10	10	10	10	10
Contingency					
Total	75	75	75	75	75

2011 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	First Ave. Tunnel Drip Shields
Priority Number	
Project Manager	David Ferri
Project Engineer	Tom Warner
Budget Reference	9TF9723
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2011
Work Plan Category	System and Component Performance Improvement
ERM Addressed	18

Work Description: Install Permanent, Stainless Steel Drip Shields throughout the First Ave tunnel.

Units per Year:

Mandatory:

High-level schedule:

Justification: The First Ave. Tunnel was built without a sealing membrane behind the concrete tunnel casing to eliminate and control seepage water through cracks and deficiencies of the concrete casing. As a result heavy mineral and water infiltration exist at every casing joint through out the tunnel causing accelerated corrosion of all tunnel components. Stainless steel drip shields at each joint will direct all infiltration harmlessly to tunnel drainage trough located in the floor of the tunnel.

- Alternatives: Continue to use fiber shields that are mobile and inefficient. The heat in this steam tunnel causes the fiber shields to deform.
- Risk of No Action: accelerated deterioration of all steel components in the tunnel and increased maintenance
- Summary of Financial Benefits and Costs: Reduction in undefined amount of O&M associated with cleaning, protection and maintenance of tunnel steel components
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2011

Current Working Estimate (if applicable): \$500,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	500	-	-	-	500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor		65			
M&S					
A/P		410			
Indirects		25			
Contingency					
Total		500			

2011 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Ravenswood Elevator
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	9TF9724
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2011
Work Plan Category	Public and Employee Safety/ System and Component Performance Improvement
ERM Addressed	18

Work Description: Replace the existing Hydraulic elevator with a gear operated elevator

Units per Year:

Mandatory:

High-level schedule:

Justification: The existing Hydraulic elevator although functional is obsolete. The replacement would facilitate the installation of a smaller cab assembly that would provide additional space in the shaft so that the existing egress ladder/landing system could be replaced with a system that meets OSHA standards.

- **Alternatives:** None
- **Risk of No Action:** No action would mean that the existing egress ladder/landing system, which does not meet OSHA standards due to space limitations, would have to remain in place. The existing Egress system could result in employee injury
- **Summary of Financial Benefits and Costs:**
- **Non-financial Benefits (if applicable):** Increased employee Safety
- **Technical Evaluation/Analysis:**
- **Sensitivity Analysis (if applicable):**
- **Project Relationships (if applicable):** Replacement of non compliant Egress ladder/landing system

Estimated Completion Date: 12/1/2011

Current Working Estimate (if applicable): \$500,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	500	-	-	-	500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor		65			
M&S					
A/P		410			
Indirects		25			
Contingency					
Total		500			

2011 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	11th St. Conduit Water Service
Priority Number	
Project Manager	David Ferri
Project Engineer	Tom Warner
Budget Reference	9TF9725
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2011
Work Plan Category	Efficiency and Process Improvement
ERM Addressed	18

Work Description: Install a water service to the Brooklyn head house of the 11th St. Conduit

Units per Year:

Mandatory:

High-level schedule:

Justification: Currently water needs to be tanker in to facilitate the cleaning and flushing of the tunnel AFL and Mercer type oil/water separators. A water service would reduce the cost of these vendor services.

- Alternatives: Continue current practice
- Risk of No Action:
- Summary of Financial Benefits and Costs: \$1,500 per service x six services per year = \$9,000 annually
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2010

Current Working Estimate (if applicable): \$50,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Approved 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	50	-	-	-	50

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor		7			
M&S					
A/P		40			
Indirects		3			
Contingency					
Total		50			

2011 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Ravenswood Tunnel-Ladders/Landings (Queens Shaft)
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	9TF9726
Project Number	
Status	Engineering & Design
Estimated Service Date	3/1/2012
Work Plan Category	Public and Employee Safety
ERM Addressed	18

Work Description: Replace ladders, landings, railings and associated structural steel for the emergency egress ladder system in the Queens Shaft of the Ravenswood Tunnel.

Units per Year:

Mandatory:

High-level schedule:

Justification: The existing egress system does not meet OSHA standard. A customized system was installed sometime in the 1970's due to space limitations in the shaft.

- **Alternatives:** None
- **Risk of No Action:** Risk of personal injury while ascending or descending ladders and landings. OSHA violation.
- **Summary of Financial Benefits and Costs:**
- **Non-financial Benefits (if applicable):** Increased employee Safety
- **Technical Evaluation/Analysis:**
- **Sensitivity Analysis (if applicable):**
- **Project Relationships (if applicable):** This project is contingent of the replacement of the Ravenswood elevator with a smaller elevator which would allow for more space in the shaft to install compliant egress system.

Estimated Completion Date: 3/1/2012

Current Working Estimate (if applicable): \$500,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Approved 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	475	25	-	-	500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor		60	4		
M&S					
A/P		390	20		
Indirects		25	1		
Contingency					
Total		475	25		

2012 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Ravenswood Tunnel Drip Shields
Priority Number	
Project Manager	David Ferri
Project Engineer	Tom Warner
Budget Reference	7TF9712
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2012
Work Plan Category	System and Component Performance Improvement
ERM Addressed	18

Work Description: Install Permanent, Stainless Steel Drip Shields throughout the Ravenswood tunnel.

Units per Year:

Mandatory:

High-level schedule:

Justification: The Ravenswood Tunnel was built in 1895 without a sealing membrane behind the concrete tunnel casing to eliminate and control seepage water through cracks and deficiencies of the concrete casing. In fact there is a section of the tunnel with no concrete liner either. As a result heavy mineral and water infiltration exist at every casing joint or crack through out the tunnel causing accelerated corrosion of all tunnel components. Stainless steel drip shields at area with infiltration will direct all infiltration harmlessly to tunnel drainage trough located in the floor of the tunnel.

- Alternatives: Continue to use fiber shields that are mobile and inefficient.
- Risk of No Action: accelerated deterioration of all steel components in the tunnel and increased maintenance
- Summary of Financial Benefits and Costs: Reduction in undefined amount of O&M associated with cleaning, protection and maintenance of tunnel steel components
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2012

Current Working Estimate (if applicable): \$500,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Approved 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
		500	-	-	500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor			65		
M&S					
A/P			410		
Indirects			25		
Contingency					
Total			500		

2012 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Ravenswood Tunnel – 71st St. Louvers
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	HTF0059
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2012
Work Plan Category	System and Component Performance Improvement
ERM Addressed	3,5,10,17,18

Work Description: Replace existing Louver system utilized for tunnel ventilation with a new louver system

Units per Year:

Mandatory: Operationally Mandatory

High-level schedule:

Justification: The existing Louver system has deteriorated and has broken levers and louvers. Also the framing has corroded. The existing system is also over-sized and allows large amount of dirt and dust to enter the tunnel head house from the FDR highway. The amount of dirt and dust is unmanageable. The louvers also would be compromised by a Category 3 Coastal storm and flood the tunnel. A smaller opening with louvers would improve all the aforementioned problems.

- Alternatives: None
- Risk of No Action: Tunnel would flood during a Category 3 storm
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Increased employee Safety/Performance Improvement
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2012

Current Working Estimate (if applicable): \$300,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	300	-	-	300

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor			40		
M&S					
A/P			245		
Indirects			15		
Contingency					
Total			300		

2012 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Reversible Vent Fans for First Ave. Tunnel
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	HTF0060
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2012
Work Plan Category	
ERM Addressed	

Work Description: Replace the existing Vent fan for the First Ave. tunnel with a larger CFM reversible fan assembly

Units per Year:

Mandatory:

High-level schedule:

Justification: The existing vent fan is not reversible and does not provide adequate ventilation for the tunnel. The First Ave. tunnel houses a 36" steam main and ambient temperatures in the tunnel and shaft can reach 120 degrees F. A larger CFM fan that is reversible is need to reduce ambient temperatures to allow employees to enter in a safer atmosphere

- Alternatives: Do nothing
- Risk of No Action: Employee heat stress
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Increased employee Safety/Performance Improvement
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2012

Current Working Estimate (if applicable): \$125,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	125	-	-	125

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor			15		
M&S					
A/P			105		
Indirects			5		
Contingency					
Total			125		

2012 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	11th St. Conduit Telephones
Priority Number	
Project Manager	David Ferri
Project Engineer	Darrell Blackman
Budget Reference	9TF9727
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2012
Work Plan Category	System and Component Performance Improvement
ERM Addressed	18

Work Description: Replace existing telephone system with a new telephone system throughout the tunnel and both head houses. Installation includes conduit, wiring and telephones.

Units per Year:

Mandatory:

High-level schedule:

Justification: The existing system is unreliable. It was installed in PVC conduit that has cracked and as a result allows water to infiltrate the system and short the wires.

- Alternatives: None
- Risk of No Action: The telephones, which are a source for tunnel communications to an outside line, will not be available in the event of an emergency.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Increased employee Safety
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2012

Current Working Estimate (if applicable): \$100,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	100	-	-	100

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor			70		
M&S					
A/P			15		
Indirects			15		
Contingency					
Total			100		

2012 Capital – CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	11th St. Tunnel Gutters
Priority Number	
Project Manager	David Ferri
Project Engineer	Tom Warner
Budget Reference	7TTF9710
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2012
Work Plan Category	System and Component Performance
ERM Addressed	18

Work Description: Replace existing gutters in both shafts of the tunnel and add additional gutters where needed

Units per Year:

Mandatory:

High-level schedule:

Justification: Many of the existing gutters have corroded or been damaged over the years and additional gutters are needed where water infiltration has occurred at other locations in the shafts

- Alternatives: Do nothing
- Risk of No Action: Failing gutters and un-captured water infiltration will cause damage to electric feeders and structural components in the shafts. Employee safety due to slippery conditions.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Reduce the chance of a feeder leak due to corrosion and accelerated deterioration on structural steel components. Also will improve employee safety as un-captured water in the shafts is a slipping hazard.
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2012

Current Working Estimate (if applicable): \$200,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	200	-	-	200

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor			25		
M&S					
A/P			165		
Indirects			10		
Contingency					
Total			200		

2012 Capital – CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Hudson Ave. Tunnel Feeder Rollers
Priority Number	
Project Manager	David Ferri
Project Engineer	Charles Valenti
Budget Reference	HTF0058
Project Number	
Status	Planning
Estimated Service Date	12/1/2012
Work Plan Category	System and Component Performance Improvement
ERM Addressed	18

Work Description: Many rollers on various feeders in the Hudson Ave. tunnels have deteriorated failed or are not function able and need to be replaced.

Units per Year:

Mandatory:

High-level schedule:

Justification: Rollers are critical in the support, insulation and movement of feeders in the tunnels. Over time the insulation can fail or the rollers can bind and cease to operate fully.

- Alternatives: None
- Risk of No Action: Failed rollers can damage the protective coating on the feeder pipe or the feeder pipe it self. If enough rollers fail the feeder pipe can drift from its designed location make contact with structural steel, thus creating a potential source for corrosion.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2012

Current Working Estimate (if applicable): \$200,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	200	-	-	200

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor			135		
M&S					
A/P			40		
Indirects			25		
Contingency					
Total			200		

2012 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Gutter System for Ravenswood Tunnel Shafts
Priority Number	
Project Manager	David Ferri
Project Engineer	Tom Warner
Budget Reference	7TF9702
Project Number	
Status	Engineering & Design
Estimated Service Date	06/1/2013
Work Plan Category	System and Component Performance
ERM Addressed	18

Work Description: Install a gutter system to collect and direct ground water infiltration from the shafts to the sump area below.

Units per Year:

Mandatory: Operationally Mandatory

High-level schedule:

Justification: Neither shaft of the Ravenswood Tunnel were designed to have gutter system. A Gutter system is critical in the control of water infiltration into the shafts. Uncontrolled ground water infiltration causes damaged to Gas, Steam and Electric transmission pipelines and structural steel components of the tunnel.

- Alternatives: Do nothing
- Risk of No Action: Failing gutters and un-captured water infiltration will cause damage to electric, gas and steam transmission pipelines that could result in a failure of the pipeline. And/or structural components in the shafts. Employee safety can be compromised due to slippery conditions.
- Summary of Financial Benefits and Costs: Electric feeder leaks can cost anywhere from \$75,000 to \$150,000 to repair.
- Non-financial Benefits (if applicable): Reduce the chance of a gas, electric pipeline failure due to corrosion and accelerated deterioration on structural steel components. Also will improve employee safety as un-captured water in the shafts is a slipping hazard.
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable): The Gutter system in the Queens shaft of the Ravenswood tunnel is dependant of the installation of a smaller elevator and redesigned ladder/landing egress system to facilitate installation. The Ravenswood shaft has limited space present elevator and Ladder/landing configuration.

Estimated Completion Date: 12/1/2013

Current Working Estimate (if applicable): \$325,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	42	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	75	225	-	300

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor			5	
M&S			1	
A/P			30	
Indirects			6	
Contingency				
Total			42	

Forecast

EOE	2010	2011	2012	2013	2014
Labor			10	30	
M&S					
A/P			60	180	
Indirects			5	15	
Contingency					
Total			75	225	

2013 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Backup Electric Supply to 11th St. Conduit Elevator
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	HTF0026
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2013
Work Plan Category	Emergency Response Programs
ERM Addressed	18

Work Description: Install an electric feed from the existing backup generator at the 11th St. Conduit to the elevator in the Brooklyn head house. The existing backup generator currently on supplies power to lights and sump pumps.

Units per Year:

Mandatory:

High-level schedule:

Justification: In the event of a prolonged power outage the tunnel would need to be entered via the egress ladder/landing system. A powered elevator would allow for a safer and quicker response to any tunnel emergency. The 11th St. Conduit generates a lot of ground water infiltration, 60 gal/min. It is critical to maximize all responses to this tunnel since a loss of pumping capability can result in rapid flooding of the tunnel.

- Alternatives: Do nothing
- Risk of No Action: If a pump failure or feeder failure should occur and is accompanied a prolonged power outage, the response to these emergencies would be hampered, perhaps halted.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Increased employee safety and more effective emergency response
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2013

Current Working Estimate (if applicable): \$80,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	-	80	-	80

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				10	
M&S					
A/P				65	
Indirects				5	
Contingency					
Total				80	

2013 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Astoria Gas Main Supports
Priority Number	
Project Manager	David ferri
Project Engineer	Tom Warner
Budget Reference	7TF9711
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2013
Work Plan Category	System and Component Performance Improvement
ERM Addressed	8,17,18

Work Description: Replace the NYF gas main movement supports for the 26" NYF gas main at the bottom of each shaft of the Astoria tunnel.

Units per Year:

Mandatory:

High-level schedule:

Justification: The movement supports are showing signs of wear and should be replaced to ensure pipeline integrity

- Alternatives: Do nothing
- Risk of No Action: The supports are located at an elevation and that is impossible to inspect fully without the construction of a fairly large scaffold. Failure of either of the supports could result in damage to the NYF pipeline.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Increased Pipeline integrity
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2013

Current Working Estimate (if applicable): \$325,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	-	325	-	325

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				40	
M&S					
A/P				265	
Indirects				20	
Contingency					
Total				325	

2013 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Bronx River Tunnel Head House Class 1 Div. 2 Electric
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	HTF0062
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2013
Work Plan Category	System and Component Performance Improvement/Public and Employee Safety
ERM Addressed	8,17,18

Work Description: Replace existing electrical system in the Bronx River tunnel with a Class 1 Div. 2 system

Units per Year:

Mandatory: Operationally Mandatory

High-level schedule:

Justification: The existing system is not Class 1 Div. 2 design and although the existing design is grandfathered under current specifications, it does not meet code and should be brought up to code.

- Alternatives: None
- Risk of No Action: If a leak should occur on the NYF gas main in the tunnel, the current electrical system could cause ignition.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Increased Public and employee safety
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2013

Current Working Estimate (if applicable): \$250,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	-	250	-	250

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				30	
M&S					
A/P				205	
Indirects				15	
Contingency					
Total				250	

2013 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	11th St. Conduit Bulkhead (Brooklyn)
Priority Number	
Project Manager	David Ferri
Project Engineer	Tom Warner
Budget Reference	7TF9707
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2013
Work Plan Category	Environmental
ERM Addressed	18

Work Description: Rebuild 11th St Conduit bulkhead (Brooklyn) that borders Newtown Creek

Units per Year:

Mandatory:

High-level schedule:

Justification: The Bulkhead is showing signs of deterioration and needs to be rebuilt

- Alternatives: None
- Risk of No Action: The Bulkhead could collapse into the Newtown creek.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2013

Current Working Estimate (if applicable): \$225,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	-	225	-	225

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				30	
M&S					
A/P				185	
Indirects				10	
Contingency					
Total				225	

2013 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Jackson St. Tunnel Head House Louvers
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billinghamurst
Budget Reference	9TF9728
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2013
Work Plan Category	System and Component Performance Improvement
ERM Addressed	18

Work Description: Replace Ventilation Louvers on the Jackson St. Head House of the Hudson Ave. Tunnel

Units per Year:

Mandatory:

High-level schedule:

Justification: The ventilation Louvers on the Jackson St. head house are showing signs of deterioration and should be replaced.

- Alternatives: Do nothing
- Risk of No Action: none
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/01/2013

Current Working Estimate (if applicable): \$50,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	-	50	-	50

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				6	
M&S					
A/P				41	
Indirects				3	
Contingency					
Total				50	

2013 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	First Ave Tunnel Vent Sump Discharge Line
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	9TF9729
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2013
Work Plan Category	System and Component Performance Improvement
ERM Addressed	18

Work Description: Replace existing vent sump pump system with a gravity feed system

Units per Year:

Mandatory:

High-level schedule:

Justification: The existing vent sump system is a system where by water that is collected in the small vent chamber sumps is pumped into the NYC sewer system. The small pumps and float system are constantly failing for various reasons. By eliminating the floats and pumps and installing gravity feed discharge line directly from the sump down the shaft to the tunnel sump with make the system total maintenance free.

- Alternatives: None
- Risk of No Action: none
- Summary of Financial Benefits and Costs: Small O&M cost to repair and replace sump pumps and floats
- Non-financial Benefits (if applicable): Maintenance free system and 100% reliability
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2013

Current Working Estimate (if applicable): \$100,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	-	100	-	100

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				15	
M&S					
A/P				80	
Indirects				5	
Contingency					
Total				100	

2013 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	11th St Conduit Heating System
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	9TF9730
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2013
Work Plan Category	Public and Employee safety
ERM Addressed	18

Work Description: Install space heating system in both head houses

Units per Year:

Mandatory:

High-level schedule:

Justification: Neither tunnel head house has space heating and during winter months the temperature in the head house can be almost as cold as ambient outdoor temperatures. Tunnel Maintenance employee are required to stay in head house as a safety watch whenever someone enter the tunnel. Our employees should not be expected to endure these conditions if there are simply alternatives.

- Alternatives: Utilize electric space heaters
- Risk of No Action: None
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Increased employee safety
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2013

Current Working Estimate (if applicable): \$100,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	-	100	-	100

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				15	
M&S					
A/P				80	
Indirects				5	
Contingency					
Total				100	

2013 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Hudson Ave Head House Heating System
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	9TF9731
Project Number	
Status	Engineering & Design
Estimated Service Date	12/1/2013
Work Plan Category	Public and Employee safety
ERM Addressed	18

Work Description: Install space heating system in Brooklyn head houses of the Hudson Ave. tunnel

Units per Year:

Mandatory:

High-level schedule:

Justification: The Brooklyn head house of the Hudson Ave tunnel does not have space heating and during winter months the temperature in the head house can be almost as cold as ambient outdoor temperatures. Tunnel Maintenance employee are required to stay in head house as a safety watch whenever someone enter the tunnel. Our employees should not be expected to endure these conditions if there are simply alternatives.

- Alternatives: Utilize electric space heaters
- Risk of No Action: None
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Increased employee safety
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: 12/1/2013

Current Working Estimate (if applicable): \$100,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	-	100	-	100

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				15	
M&S					
A/P				80	
Indirects				5	
Contingency					
Total				100	

2013 Capital / CE Gas Operations/ Tunnel Maintenance Projects

Project/Program Title	Ravenswood Head House Heating System
Priority Number	
Project Manager	David Ferri
Project Engineer	Vic Billingham
Budget Reference	9TF9732
Project Number	
Status	Engineering & Design
Estimated Service Date	6/1/2014
Work Plan Category	System and Component Performance Improvement
ERM Addressed	18

Work Description: Replace the steam heating system in pump room of the Queens head house of the Ravenswood tunnel

Units per Year:

Mandatory: Operationally Mandatory

High-level schedule:

Justification: The pump room for the Queens head house of the Ravenswood tunnel currently has a steam heating system that requires new steam traps and a new discharge system. The steam heating system is required to prevent the water storage tank for the water driven hydraulic elevator from freezing.

- Alternatives: none
- Risk of No Action: Failure of the steam heating system and freezing of the Hydraulic Elevator control system.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): Increased reliability of the Ravenswood elevator
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable): This project becomes unnecessary if the existing hydraulic elevator is replaced with a non hydraulic type elevator system.

Estimated Completion Date: 6/1/2014

Current Working Estimate (if applicable): \$100,000

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
	-	-	70	30	100

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S				
A/P				
Indirects				
Contingency				
Total				

Forecast

EOE	2010	2011	2012	2013	2014
Labor				10	5
M&S					
A/P				55	23
Indirects				5	2
Contingency					
Total				70	30

2011 Capital – CE / Gas Operations / Pressure Control Projects

Project/Program Title	Waterproofing Manholes
Priority Number	44
Project Manager	Len Toscano
Project Engineer	Charles DiGiacomo
Budget Reference	9GD0700 – GPC11
Project Number	
Status	Planning
Estimated Service Date	By Dec 2010
Work Plan Category	Regulatory/Environmental Excellence
ERM Addressed	

Work Description:

Treatment and coating of regulator station vaults to eliminate water intrusion.

Units per Year: 16 to 24 manholes

Mandatory: approximately 10 sites are identified per year; some of the waterproofing activity is executed in conjunction with Budgets 9GD0900 and 9GD0300.

High-level schedule:

Justification:

This is an established annual preventive and code compliant gas program. There are regulator manholes on the Con Edison system that experience water intrusion due to deteriorated manhole conditions. PSC code 255.189 requires we minimize the entrance of water. Alleviating the water intrusion will improve the safety and reliability of the station operation and reduce maintenance. This allocation covers stand-alone work. As highlighted above, some waterproofing activity is also performed in conjunction with other planned capital program work.

- Alternatives: None at this time
- Risk of No Action: Unmitigated water intrusion provides an unacceptable condition for component corrosion, some times with certain conditions at an accelerated rate. This water intrusion can lead to equipment conflicts and improper equipment operation, premature equipment failure, as well as PSC code violations and citations
- Summary of Financial Benefits and Costs: Code mandated
- Non-financial Benefits (if applicable): Acceptable and more reliable regulator station equipment and performance, compliance with regulatory requirements, safer work conditions, in addition to PSC code compliance.
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):

- **Project Relationships (if applicable):** Budgets 9GD0900 and 9GD0300. Work scopes and funding associated with this budget are integrated into the two highlighted budgets in order to allow for a single property record ruling for the appropriate inside plant accounting. This action also supports improved project management through minimized equipment outages, reduced mobilization and decreased contractor coordination requirements.

Estimated Completion Date: This is an ongoing annual program - Dec 2010

Current Working Estimate (if applicable): \$300

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
			100

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
300	300	300	300	300	1,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	0	0	0	12
M&S	0	0	0	1
A/P	0	0	0	48
Indirects	0	0	0	30
Contingency	0	0	0	9
Total	0	0	0	100

Forecast

EOE	2010	2011	2012	2013	2014
Labor	39	39	39	39	39
M&S	2	2	2	2	2
A/P	144	144	144	144	144
Indirects	91	91	91	91	91
Contingency	24	24	24	24	24
Total	300	300	300	300	300

2011 Capital – CE / Gas Operations / Pressure Control Projects

Project/Program Title	Replace Components - Regulators, Valves, Strainers - 2" & Larger
Priority Number	45
Project Manager	Len Toscano
Project Engineer	Charles DiGiacomo
Budget Reference	9GD0900 – GPC11
Project Number	
Status	Planning
Estimated Service Date	By Dec 2010
Work Plan Category	Regulatory/Environmental Excellence
ERM Addressed	

Work Description: Replacement of valves, regulators, and/or strainers of sizes 2" and larger at regulator stations. Work scopes are primarily associated with select component replacement mostly due to corrosion or if repair is deemed not to be cost effective.

Units per Year: Approximately 12 to 16 manholes per year.

Mandatory: Approximately 12 to 16 manholes per year

High-level schedule:

Justification: This is an ongoing annual capital program. Regulator stations are important links in the overall reliability of our gas distribution system and require replacement in order to ensure a safe and reliable operating system and to meet PSC code Part 255.739. In 2004, the company revised its property record classification for partial equipment replacements within regulator manholes, and the replacement of equipment 2" and larger is now classified and practiced as a capital activity. This program funds these occurrences, supports aged, and equipment identified for replacement / upgrade to be completed in conjunction with proper capital accounting.

- Alternatives: None. As equipment is identified for replacement, replacement components are ordered and work packages developed. The sites are then scheduled for select equipment replacement as seasonal and system demands permit.
- Risk of No Action: The equipment identified for replacement is usually beyond a minor repair. The required replacement must be conducted in order to comply with specification and PSC code. The alternative activity of executing the required component replacement under maintenance accounts would drive up O&M charges for the department, and expect to exceed the department's annual O&M funding.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:

- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable): Budgets 9GD0700 and 9GD0300

Estimated Completion Date: This is an ongoing annual program - Dec 2010

Current Working Estimate (if applicable): 500

Funding (\$000):

Actual Exp 2006	Actual Exp 2007	Actual Exp 2008	Budget 2009
759	824	678	800

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
500	500	500	500	500	2,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	257	223	200	250
M&S	86	23	88	100
A/P	239	416	255	250
Indirects	177	162	135	150
Contingency	0	0	0	50
Total	759	824	678	800

Forecast

EOE	2010	2011	2012	2013	2014
Labor	140	140	140	140	140
M&S	80	80	80	80	80
A/P	150	150	150	150	150
Indirects	100	100	100	100	100
Contingency	30	30	30	30	30
Total	500	500	500	500	500

2011 Capital – CE / Gas Operations / Pressure Control Projects

Project/Program Title	Replace Unserviceable / Undersized Equipment
Priority Number	46
Project Manager	Len Toscano
Project Engineer	Charles DiGiacomo
Budget Reference	9GD0300 – GPC11
Project Number	
Status	Planning
Estimated Service Date	By Dec 2010
Work Plan Category	Regulatory/Environmental Excellence
ERM Addressed	

Work Description: Complete replacement of piping, regulators, regulator components, strainers and valves at existing stations where the equipment is corroded beyond repair, where designs are obsolete or equipment upsizing is required.

Units per Year: 8 to 12 manholes per year.

Mandatory: 8 to 12 manholes per year

High-level schedule:

Justification: This is an ongoing annual capital program. Regulator stations that fall within this program are important links in the overall reliability of our gas distribution system and must be upgraded in order to ensure a safe and reliable operating system and to meet PSC code Part 255.739. Activities that fall under this budget line item involve major equipment change outs within the regulator manhole. This could be required because the components are obsolete, they no longer fulfill the demands on the regulator station and require upsizing, or the equipment is no longer able to be serviced and maintained because of water infiltration over time and requires major overhauls to be in compliance with code and specification compliance.

- Alternatives: None. As equipment and station, piping is identified for replacement, pressure-regulating equipment, components are ordered, and work packages developed. The sites are then scheduled for equipment replacement as seasonal and system demands permit.
- Risk of No Action:. The equipment identified for replacement and work scope under this budget line is beyond just a single component replacement. The required replacements must be conducted in order to comply with specification and PSC code. The alternative activity of executing the required component replacement under maintenance accounts would drive up O&M charges for the department, and expect to exceed the department's annual O&M funding.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable):

- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable): Budgets 9GD0700 and 9GD0900

Estimated Completion Date: This is an ongoing annual program - Dec 2010

Current Working Estimate (if applicable): \$500

Funding (\$000):

Actual Exp 2006	Actual Exp 2007	Actual Exp 2008	Budget 2009
1,063	849	789	800

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
500	500	500	500	500	2,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	275	202	246	250
M&S	110	80	33	100
A/P	438	405	338	250
Indirects	240	162	172	150
Contingency	0	0	0	50
Total	1,063	849	789	800

Forecast

EOE	2010	2011	2012	2013	2014
Labor	140	140	140	140	140
M&S	80	80	80	80	80
A/P	150	150	150	150	150
Indirects	100	100	100	100	100
Contingency	30	30	30	30	30
Total	500	500	500	500	500

2011 Capital – CE / Gas Operations / Pressure Control Projects

Project/Program Title	Regulator Station Vent System Refurbishment
Priority Number	47
Project Manager	Len Toscano
Project Engineer	Charles DiGiacomo
Budget Reference	9GD0500 – GPC11
Project Number	
Status	Planning
Estimated Service Date	By Dec 2010
Work Plan Category	Regulatory/Environmental Excellence
ERM Addressed	

Work Description: Installation of a CIP (cured in place) lining system in the 2 inch regulator vent line and two 4 or 6 inch foul and fresh air vent lines at various regulator station vaults where lining is a preferred solution. If conditions exist where the lining system is unable to be dispatched, the vent system will be replaced via direct burial.

Units per Year: 15 to 20 vent systems.

Mandatory: 15 to 20 vent systems

High-level schedule:

Justification: This is an ongoing annual capital program. Regulator vent systems are required to both vent the regulator manhole of potential gas accumulation, and to vent the regulator pilot and diaphragms. During mandated periodic inspections, some of the existing vent lines are identified as being either obstructed or corroded.. If corroded, it can allow water to enter the pilot or regulator possibly resulting in equipment failure. Without proper atmospheric registration the pilot regulators cannot operate as designed, and the pressure regulating station could create an overpressure condition possibly impacting very large segments of the distribution grid.. The condition of the equipment affects system reliability and safety. The applicable PSC Parts are 255.187, 255.189, and 255.619 through 255.623.

- Alternatives: None at this time
- Risk of No Action: The buried vent systems identified for replacement and work scope under this budget line involve more than a single component replacement. The required vent system replacement / upgrade must be conducted in order to comply with company specification and PSC code requirements. The alternative activity of executing the required repairs under maintenance accounts would drive up O&M charges for the department, and expect to exceed the department's annual O&M budgets and funding.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable):

- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: This is an ongoing annual program - Dec 2010

Current Working Estimate (if applicable): \$300

Funding (\$000):

Actual Exp 2006	Actual Exp 2007	Actual Exp 2008	Budget 2009
105	395	857	800

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
300	300	300	300	300	1,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	24	135	303	270
M&S	12	64	135	120
A/P	50	107	229	200
Indirects	19	89	190	170
Contingency	0	0	0	40
Total	105	395	857	800

Forecast

EOE	2010	2011	2012	2013	2014
Labor	100	100	100	100	100
M&S	50	50	50	50	50
A/P	80	80	80	80	80
Indirects	65	65	65	65	65
Contingency	5	5	5	5	5
Total	300	300	300	300	300

2011 Capital – CE / Gas Operations / Pressure Control Projects

Project/Program Title	Pressure Control Replace Uncoated Pipe
Priority Number	49
Project Manager	Len Toscano
Project Engineer	Charles DiGiacomo
Budget Reference	9GD0400 – GPC11
Project Number	
Status	Planning
Estimated Service Date	By Dec 2010
Work Plan Category	Regulatory/Environmental Excellence
ERM Addressed	

Work Description: Replace corroded steel buried piping outside of regulator vaults (considered inside plant) when leaks are discovered, or severe corrosion is identified..

Units per Year: 1 to 2

Mandatory: 1 to 2

High-level schedule:

Justification: This is an ongoing annual capital program. This program covers the replacement of leaking, unprotected and corroded buried steel piping located outside regulator station vaults. The condition of the equipment affects system reliability and safety. Leaking pipe can prove hazardous to the public and property. They can also cause closure of a critical regulator station during peak load times, affecting system pressures and reliability. Applicable parts from the PSC code are 255.619 through 255.623.

- **Alternatives:** The leak repair activity must be conducted. Property accounting allows for full line replacement between vault structures under capital accounting. If the repair activity is conducted by a partial pipe replacement or clamp installation and temporary repair, the accounting is directed toward maintenance. The alternative activity of executing the required repairs under maintenance accounts would drive up O&M charges for the department, and expect to exceed the department's annual O&M budgets and funding.
- **Risk of No Action:** A gas leak condition that worsens to the point of impacting station performance, regulator station reliability and possible regulatory code violations.
- **Summary of Financial Benefits and Costs:** Overall costs associated with this budget line item is directly connected to site logistics, facility location, depth of cover, existing roadway materials, etc. Each of these components directly impacts the project's cost, thus affect the overall budget expense for a facility replacement.
- **Non-financial Benefits (if applicable):**

- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: This is an ongoing annual program - Dec 2010

Current Working Estimate (if applicable): \$200

Funding (\$000):

Actual Exp 2006	Actual Exp 2007	Actual Exp 2008	Budget 2009
0	93	200	100

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
200	200	200	200	200	1,000

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	0	47	67	30
M&S	0	7	8	15
A/P	0	16	85	20
Indirects	0	23	40	30
Contingency	0	0	0	5
Total	0	93	200	100

Forecast

EOE	2010	2011	2012	2013	2014
Labor	60	60	60	60	60
M&S	30	30	30	30	30
A/P	40	40	40	40	40
Indirects	60	60	60	60	60
Contingency	10	10	10	10	10
Total	200	200	200	200	200

2011 Capital – CE / Gas Operations / Pressure Control Projects

Project/Program Title	Pressure Control Replace Corroded Gauge Lines
Priority Number	48
Project Manager	Len Toscano
Project Engineer	Charles DiGiacomo
Budget Reference	9GD0200 – GPC11
Project Number	
Status	Planning
Estimated Service Date	By Dec 2010
Work Plan Category	Regulatory/Environmental Excellence
ERM Addressed	

Work Description: Replace corroded steel gauge lines between regulator vaults and gauge posts at regulator stations.

Units per Year: 1 to 2

Mandatory: 1 to 2

High-level schedule:

Justification: This is an ongoing annual capital program. This program covers the replacement of leaking, unprotected and corroded buried steel gauge lines which are located between regulator vaults and gauge posts at regulator stations. The condition of the equipment affects system reliability and safety. Leaking pipe can prove hazardous to the public and property. They can also cause regulators to open or close inappropriately due to incorrect pressure sensing, which may be in violation of PSC Parts 255.619 or 255.623.

- **Alternatives:** The leak repair activity must be conducted. Property accounting allows for full line replacement under capital, or partial replacement or spot repairs under maintenance. If the repair activity is conducted by partial pipe segment replacement or clamp installation, the repair charges are then directed toward maintenance accounts. This alternative activity of executing the required repairs under maintenance accounts then may increase O&M charges for the department, and possibly contribute to exceeding the department's annual O&M budgets and funding.
- **Risk of No Action:** A gas leak condition that worsens to the point of impacting station performance, regulator station reliability and possible regulatory code violations.
- **Summary of Financial Benefits and Costs:** Overall costs associated with this budget line item is directly connected to site logistics, facility location, depth of cover, existing roadway materials, etc. Each of these components directly impacts the project's cost, thus affect the overall budget expense for a facility replacement.
- **Non-financial Benefits (if applicable):**

- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable): Budgets 9GD0500 and 9GD0400

Estimated Completion Date:

Current Working Estimate (if applicable): \$200

Funding (\$000):

Actual Exp 2006	Actual Exp 2007	Actual Exp 2008	Budget 2009
0	0	0	100

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
200	200	200	200	200	1,000

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	0	0	0	30
M&S	0	0	0	15
A/P	0	0	0	20
Indirects	0	0	0	30
Contingency	0	0	0	5
Total	0	0	0	100

Forecast

EOE	2010	2011	2012	2013	2014
Labor	60	60	60	60	60
M&S	30	30	30	30	30
A/P	40	40	40	40	40
Indirects	60	60	60	60	60
Contingency	10	10	10	10	10
Total	200	200	200	200	200

2011 Capital – CE / Gas Operations / Pressure Control Projects

Project/Program Title	Regulator Station Remote Monitoring /Telemetry
Priority Number	50
Project Manager	Len Toscano
Project Engineer	Charles DiGiacomo
Budget Reference	9GD0600
Project Number	
Status	Planning – GPC11
Estimated Service Date	By Dec 2010
Work Plan Category	Regulatory/Environmental Excellence
ERM Addressed	

Work Description: Installation of electronic pressure monitoring instrumentation, electric power supply, and communication equipment for real time remote monitoring of pressure readings and equipment operation.

Units per Year: 7 to 10

Mandatory:

High-level schedule:

Justification: This program covers the installation of electronic pressure monitoring instrumentation, electric power supply, and communications equipment for real time remote monitoring of pressure readings and equipment operation. In addition, we are expecting to migrate to electronic pressure monitoring to replace traditional paper charts at each remote site. This new instrumentation is expected to allow for other communication points, which can then provide valuable information as well as security information. This equipment is expected to assist toward enhanced system reliability, asset management safety and system security.

- Alternatives: Maintain paper charts and perform periodic site visits. PSC code mandates that pressure regulator stations be periodically inspected on a monthly cycle. The integration of more robust electronic monitoring platforms are expected to mitigate these needs once real time data collection systems overcome time stamp, historian archive and site power management issues. These data storage issues are currently being addressed in conjunction with the ongoing SCADA upgrade project.
- Risk of No Action: Continue with physical monthly inspections, paper chart archiving and historical records and data management. This does not support advanced real time monitoring of the distribution system. Possible delayed response to outages, incidents or damages by limited real time system monitoring
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable):

- Technical Evaluation/Analysis: Initial limited trials of electronic pressure recording equipment (EPRs) have been dispatched and under evaluation. Next steps include improving and mastering power management with field electronics, and historical data management at the SCADA host end - GOSS / Gas Control.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable): GTI is currently working with Con Ed's Pressure Control & R&D organization to test and identify more robust power supplies, such as thermal generators. Site testing has been underway since 2008 with some thermal generating equipment. Engineering and design installation standards projects are currently underway with GTI and are expected to be available in 2010. In addition, Gas Operations is currently upgrading its SCADA system that is expected to sponsor more robust historical data storage, management and reporting.

Estimated Completion Date: This would begin an ongoing annual program to incrementally sponsor enhanced specific site monitoring over the next 5 to 10 years.

Current Working Estimate (if applicable): \$300

Funding (\$000):

Actual Exp 2006	Actual Exp 2007	Actual Exp 2008	Budget 2009
67	0	0	300

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
300	300	300	300	300	1,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	16	0	0	60
M&S	0	0	0	10
A/P	35	0	0	140
Indirects	16	0	0	60
Contingency	0	0	0	30
Total	67	0	0	300

Forecast

EOE	2010	2011	2012	2013	2014
Labor	80	80	80	80	80
M&S	15	15	15	15	15
A/P	140	140	140	140	140
Indirects	50	50	50	50	50
Contingency	15	15	15	15	15
Total	300	300	300	300	300

2011 Capital – CE / Gas Operations / Pressure Control Projects

Project/Program Title	Regulator Station Remote Control / Gridboss Adaptive Controls
Priority Number	51
Project Manager	Len Toscano
Project Engineer	Charles DiGiacomo
Budget Reference	9GD0800 – GPC11
Project Number	
Status	Planning
Estimated Service Date	By Dec 2010
Work Plan Category	Regulatory/Environmental Excellence
ERM Addressed	

Work Description: Install automated / adaptive control equipment at various regulator stations to improve the efficiency of system pressure regulation.

Units per Year: A distribution region / system usually involving 3 to 4 regulator stations.

Estimated cost to upgrade each regulator station is approximately \$90K

Mandatory: Directly related to system performance and new system loads

High-level schedule:

Justification: This program covers the installation of automated / adaptive control equipment, which uses real time system data to adjust regulator station pressures/output. This automated adaptive (or “smart”) equipment minimizes the need to dispatch mechanics for pressure adjustments during system changes since changes occur automatically. Because pressures continually change to meet demand, systems are operated at lower pressures, aiding in leak reduction. This equipment will help to maintain system reliability and safety.

- **Alternatives:** Continued manual station adjustments, which increases O&M charges and manpower demands
- **Risk of No Action:** Continued manual station adjustments, which increases O&M charges and manpower demands
- **Summary of Financial Benefits and Costs:**
- **Non-financial Benefits (if applicable):**
- **Technical Evaluation/Analysis:** Gas Distribution Engineering identifies possible sites for potential dispatch using annual system modeling updates and reviews. This then sponsors a detailed field review of possible sites for equipment dispatch to confirm adequate communications and infrastructure are available to support the automated system needs and operating platform.

- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date: Dec 2010

Current Working Estimate (if applicable): \$300

Funding (\$000):

Actual Exp 2006	Actual 2007	Actual 2008	Budget 2009
40	0	0	100

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
300	300	300	300	300	1,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor	0	0	0	15
M&S	0	0	0	10
A/P	34	0	0	45
Indirects	6	0	0	20
Contingency	0	0	0	10
Total	40	0	0	100

Forecast

EOE	2010	2011	2012	2013	2014
Labor	45	45	45	45	45
M&S	30	30	30	30	30
A/P	135	135	135	135	135
Indirects	60	60	60	60	60
Contingency	30	30	30	30	30
Total	300	300	300	300	300

2010 Capital – CE Gas Operations – Transmission & Generation Projects

Project/Program Title	Remotely Operated Valves (ROVs)
Priority Number	21
Project Manager	TBD
Project Engineer	TBD
Budget Ref/Function Code	7GD9723-620
Project Number	G97-901
Status	Planning/Engineering Design/ Construction
Estimated Service Date	1 ROV in service per year
Work Plan Category	System and component performance improvement Public and employee safety
ERM Addressed	# 8. Gas from our transmission system explodes or burns out of control #21. Inadvertent shutdown of a Remote Operated Valve

Work Description:

- The Remotely Operated Valve (ROV) program consists of converting existing transmission valves or installing new ROVs, to meet the future ROV design criteria as specified in G-8051.
- Suggested: The project satisfies future Gas System Design Criteria.
- High Level Schedule: install one new ROV or retrofit one valve into a ROV per year. There are eighteen (18) locations that have been identified and this work would be conducted over an eighteen-year period.

Justification: Remote Operated Valves (ROVs) are installed in order to:

- Rapidly isolate a compromised section of the transmission system to minimize affected areas
- Rapidly isolate the transmission system at river and tunnel crossings and at the outlet of gate stations
- Rapidly separate intersecting transmission or supply mains at tee or branch locations thereby minimizing affected areas
- In addition, the future Gas System Design Criteria requires that ROVs be installed for the following reasons:
 - To limit the loss of regulator stations to no more than one high pressure and one low pressure regulator station
 - Closure of any two (2) ROVs will not negatively impact supply mains or the distribution system on an average winter day (20 degrees F). Future ROV installations will allow closure of any two valves on a design day (0 degrees F).
- Alternatives: An alternative to remotely operated valves is to close the valves manually. This alternative would prevent the rapid isolation of affected sections of the gas transmission system and would increase the risk of a wide spread customer outage due to a catastrophic event.

Risk of No Action: If this project is not completed, the ability to respond to adverse conditions on the gas transmission system is greatly reduced. The time required to isolate the transmission system would not be reduced any further. Multiple personnel would need to be dispatched to the appropriate valves, travel to the location, gain access and operate the valve. This program greatly increases contingency mitigation.

- Summary of Financial Benefits and Costs: The total capital cost of this project is approximately \$21 million. This estimate is based upon three ROVs being new construction at a cost of \$3 million each and fifteen ROVs being retrofitted at a cost of \$800,000 each.

- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis: An evaluation of this project was conducted using Stoner Network Analysis, both steady state and unsteady state analysis was performed. The studies clearly indicate that isolating the affected section of the gas transmission system would significantly reduce the possibility of a wide spread customer outage.
- Sensitivity Analysis (if applicable):
 - Major assumptions relating to this program are:
 - Contractor price for the installation of a new ROV and associated piping or the price associated with retrofitting existing valves.
 - Existing valves can be modified to be remotely operated. Two locations have been clearly identified as not being able to be modified due to subsurface interference preventing the installation of a vault, communication and telemetric equipment
- Project Relationships (if applicable):

Estimated Completion Date: This is an ongoing project with one ROV being completed per year for the next 18 years.

Current Working Estimate (if applicable): \$906k has been spent to date

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budgeted 2009
				670

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast Total 2010-2014
800	800	800	800	800	4,000

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				15
M&S				55
A/P				420
Indirects				180
Total				670

Forecast

EOE	2010	2011	2012	2013	2014
Labor	20	20	20	20	20
M&S	70	70	70	70	70
A/P	500	500	500	500	500
Indirects	210	210	210	210	210
Total	800	800	800	800	800

2010 Capital – CE Gas Operations – Transmission & Generation Projects

Project/Program Title	Astoria to Ravenswood Transmission Main
Priority Number	4
Project Manager	TBD
Project Engineer	TBD
Budget Ref/Function Code	HGS0086-327
Project Number	N/A
Status	Planning/Engineering Design
Estimated Service Date	December 2014
Work Plan Category	System and component performance improvement Public and employee safety
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC for an extended period of time #21. Inadvertent shutdown of a Remote Operated Valve

Work Description:

- The Astoria to Ravenswood Gas Transmission Project consists of a multi-year effort to install approximately 15,000 feet of new 30 inch steel transmission pressure main, replacing the existing 24 inch steel transmission pressure main from the Astoria Tunnel Headhouse to the Ravenswood Generating Station.
- Units per Year: average of 3000 ft per year
- Mandatory: This is a crucial main identified by the Transmission Master Plan to satisfy G-8051, the Gas System Design Criteria specification.
- High Level Schedule: install 15,000 feet of 30 inch main over a five-year period.

Justification:

- This project accomplishes a number of system objectives in the Transmission Master Plan:
 - It delivers Canadian gas from the Hunts Point station into Queens diversifying the supply.
 - It helps reduce dependency on the critical 134th St gate station and the associated Gulf Coast gas supply.
 - It helps offset the loss of Central Manhattan.
 - It allows the future downgrade of the MAOP of the existing line to operate at less than 20% SMYS.
 - This future downgrade would be on the older brittle pipe that may rupture.
 - The extra capacity helps supply new generation loads.
- The addition of the Hunts Point/Iroquois gate station in 2004 provided a new source of gas delivery into the Con Edison system to help meet new and future loads and reduce dependency on the 134th Street gate station. In order to maximize supply deliverability and provide contingency mitigation that this new independent supply to the transmission system promises, we need to increase the takeaway capacity from the Astoria Tunnel.
- This project greatly increases the system's ability to supply gas reliably and provides contingency mitigation for firm customers in the winter. The existing 24-inch main feeds 150,000 firm gas customers on the high and low-pressure distribution systems in the first ward of Queens. Replacing the main will allow us to downgrade the existing main in the future and operate at stress levels less than 20% of SMYS, which would be accomplished by installing new regulator stations and ROVs to downgrade the MAOP of the existing transmission mains from Hunts Point to Ravenswood. Additionally the downgraded pipe is of the older brittle vintage which could have a tendency to rupture.

- The existing 24-inch main that connects the Astoria and Ravenswood generating complexes and the southern New York Facility (NYF) system to the Tennessee, Transco and Iroquois gate stations currently operates at 32% of SMYS. The Design Criteria calls for all transmission pipes installed prior to 1970 to operate at less than 20% SMYS by 2024. This project will contribute towards this objective. Additionally, operating the system at less than 20% SMYS removes these lines from the Federal DOT definition of transmission lines and related transmission pipeline integrity rules.
- Alternatives: Since this is the only transmission main, connecting the southern NYF system to the Tennessee, Transco 134th Street and Iroquois gate stations, one alternative to this project would be to install a comparable main in Manhattan. The cost would be much greater due to the greater distance and the sub-surface interference that would be experienced by trying to construct in Manhattan.
- Risk of No Action: If this project is not completed, the reliability of the gas transmission system will not improve and as the system ages, the reliability may actually decrease. This project greatly increases the system's ability to supply gas reliably and provides contingency mitigation for firm customers in the winter. The existing 24-inch main also feeds 150,000 firm gas customers on the high and low-pressure distribution systems in the first ward of Queens that can be operated at pressures substantially lower than the current 350-psig MAOP. The existing 24 inch transmission main would continue to operate at 32% SMYS. Also, this existing pipe is made of steel that is more brittle than newer steel pipe and is more prone to rupture.
- Summary of Financial Benefits and Costs: The total capital cost of this project is approximately \$75 million. If a condition occurred where supply from the Transco Central Manhattan gate station was lost on a design day, approximately 75,000 gas customers can be adversely affected. Restoring gas service to these customers would be a time consuming, labor-intensive effort, greatly reducing our ability to respond to other calls, incidents and events. Furthermore, this restoration effort will most likely consume resources from other neighboring utilities hampering their normal operations. Numerous customers would be without life sustaining, essential amenities such as heat and hot water for an extended period of time, and commercial businesses would suffer economically and may even be forced out of business. Resulting claims to the Company from such an event could be enormous, in addition to sustaining tremendous damage to its reputation. Installing this main mitigates these potential liabilities.
- Non-financial Benefits (if applicable): The primary non-financial benefit is a more reliable gas transmission system. This section of the system would operate more safely due to the fact that it would be operated at a lower SMYS particularly because it is of the old brittle vintage pipe installed prior to 1970.
- Technical Evaluation/Analysis: An evaluation of this project was conducted using Stoner Network Analysis, both steady state and unsteady state analysis was performed. The studies clearly indicate that additional gas supply can be transported along the new 30-inch transmission pressure main. The new main also improves the studies associated with the minimum oil burn analysis as well as contingency risk mitigation.
- Sensitivity Analysis (if applicable):
 - Two major assumptions relating to this project are:
 - Contractor price for the installation of the facility as well as the cost of material
 - Length of the project may vary (total footage) due to sub-surface interference and the generation of a viable route for the transmission pressure main through the streets of Astoria and Long Island City.

- **Project Relationships (if applicable):** The project is part of the Gas Transmission Master Plan. Two projects have been completed, the Astoria Tunnel project and the St. Ann's Tee to Hellgate project. In addition, the Hunts Point to Hellgate project is currently in progress. The possible arrival of a new gate station in lower Manhattan could lower the priority of this project as another backup to existing gate stations would be available.

Estimated Completion Date: December 2014

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budget 2009
				-

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast Total 2010-2014
7,960	10,350	20,000	20,000	16,690	75,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	174	226	437	437	364
M&S	1,556	2,023	3,910	3,910	3,263
A/P	4,165	5,416	10,464	10,464	8,733
Indirects	2,065	2,685	5,189	5,189	4,330
Total	7,960	10,350	20,000	20,000	16,690

2010 Capital – CE Gas Operations – Transmission & Generation Projects

Project/Program Title	Hunts Point to Hellgate (Outlet to St Ann's Tee)
Priority Number	3
Project Manager	Amr Hassan
Project Engineer	Steve Benish
Budget Ref/Function Code	3GD1500-327
Project Number	G-06-911
Status	Engineering and Construction of different phases are in progress
Estimated Service Date	2011
Work Plan Category	System and component performance improvement Public and employee safety
ERM Addressed	#8. Gas from our transmission system explodes or burns out of control #17. We lose our gas supply into NYC for an extended period of time #21. Inadvertent shutdown of a Remote Operated Valve

Work Description:

- This is a multi-year project to install 36" transmission pressure pipe to insure adequate gas pressures and to maximize the capability of the Iroquois gate station at Hunts Point. It is a continuation of footage that has already been installed in 2008 (3000 ft) and will be installed in 2009 (5000ft).
- Units per Year: approximately 4000-5000 ft per year
- Mandatory: This is a crucial main identified by the Transmission Master Plan to satisfy G-8051, the Gas System Design Criteria specification.
- High-level schedule: 50% complete in 2010, 50% in 2011

Justification:

- This project accomplishes a number of system objectives in the Transmission Master Plan:
 - It improves the takeaway capacity of the Hunts Point station that delivers Canadian gas deep into the Con Edison system.
 - It helps reduce dependency on the critical 134th St gate station and the associated Gulf Coast gas supply.
 - It helps offset the loss of Central Manhattan.
 - It allows the future downgrade of the MAOP of the existing line to operate at less than 20% SMYS.
 - This future downgrade would be on the older brittle pipe that may rupture before it leaks.
 - The extra capacity helps supply new generation loads.
- The addition of the Hunts Point/Iroquois gate station in 2004 provided a new source of gas delivery into the Con Edison system to help meet new and future loads and reduce dependency on the 134th Street gate station. In order to maximize supply deliverability and provide contingency mitigation that this new independent supply to the transmission system promises, we need to increase the takeaway capacity from the Hunts Point Gate Station.
- Looping the existing 24-inch main operating at 32% of SMYS greatly increases the system's capacity providing supply reliability and contingency mitigation for firm customers in the winter as well as for generation during peak summer loads. The Design Criteria calls for all transmission pipes installed prior to 1970 to operate at less than 20% SMYS by 2024. This project will contribute towards this objective through the eventual downgrading of the existing pipe. Additionally, operating the system at less than 20% SMYS removes these lines from the Federal DOT definition of transmission lines and related transmission pipeline integrity rules.

- **Alternatives:** Two route alternatives are being looked at to connect pipe already in the ground. One is primarily through a set of private properties (the “easement route”), and another primarily along Bruckner Blvd (the “franchise route”). The most feasible route will be chosen and executed.
- **Risk of No Action:** Without this project, the pressure drop from the additional Iroquois supply to the St. Ann’s Tee would be excessive and the full capacity of the gate station would not be realized. In order to maximize supply deliverability and provide contingency mitigation that this new independent supply to the transmission system provides, we need to increase the takeaway capacity from the Hunts Point Station. Leaving the existing main in service means operating at greater than 20% SMYS on pipe that is some of the oldest and brittle in the system, prone to rupture.
- **Summary of Financial Benefits and Costs:** The total capital cost to finish this project is approximately \$39 million. This is on top of \$8M already spent in 2008 and \$23M projected to be spent in 2009 (see cash flow below). If a condition occurred where supply from the Transco Central Manhattan gate station was lost on a design day, approximately 150,000 gas customers can be adversely affected. Restoring gas service to these customers would be a time consuming, labor-intensive effort, greatly reducing our ability to respond to other calls, incidents and events. Furthermore, this restoration effort will most likely consume resources from other neighboring utilities hampering their normal operations. Numerous customers would be without life sustaining, essential amenities such as heat and hot water for an extended period of time, and commercial businesses would suffer economically and may even be forced out of business. Resulting claims to the Company from such an event could be enormous, in addition to sustaining tremendous damage to its reputation. Installing this main mitigates these potential liabilities.
- **Non-financial Benefits (if applicable):** This project will reduce the consequences of various risks and increases the flexibility in which the system as a whole can be operated.
- **Technical Evaluation/Analysis:** Stoner analysis demonstrates the pressure drop to the St. Ann’s Tee and determines the size pipe required to realize the full supply potential.
- **Sensitivity Analysis (if applicable):**
 - Two major assumptions relating to this project are:
 - Contractor price for the installation of the facility as well as the cost of material
 - Length of the project may vary (total footage) due to sub-surface interference and the generation of a viable route for the transmission pressure main through the streets or through private property.
- **Project Relationships (if applicable):** The project is part of the Gas Transmission Master Plan. Two projects have been completed, the Astoria Tunnel project and the St. Ann’s Tee to Hellgate project. Furthermore sections of this project are either already in progress or complete. This project also makes use of the Hunts Point Upgrade project which expands the metering inside the station which will improve its takeaway capacity.

Estimated Completion Date: 2011

Current Working Estimate (if applicable): Total cost upon completion estimated at \$70M. \$38.5M is forecasted for future work.

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budgeted 2009
-	-	-	6,920	11,000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast Total 2010-2014
18,500	20,000				38,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor			190	300
M&S			1,070	1,700
A/P			4,068	6,470
Indirects			1,592	2,530
Total			6,920	11,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	405	440			
M&S	3,615	3,910			
A/P	9,680	10,460			
Indirects	4,800	5,190			
Total	18,500	20,000			

2010 Capital – CE Gas Operations – Transmission & Generation Projects

Project/Program Title	Transmission Pipeline Integrity Main Replacement Program
Priority Number	23
Project Manager	Frank Stauss
Project Engineer	Shawn Mackey
Budget Ref/Function Code	7GD9819-327
Project Number	(Generate project # for each pipeline location addressed.)
Status	Planning
Estimated Service Date	5-year program
Work Plan Category	Public and employee safety
ERM Addressed	#8. Gas from our transmission system explodes out of control

- **Work Description:** This is a multi-year project to replace sections of defective transmission main that are identified through pipeline integrity assessments administered by the Integrity Management Plan, which guides our inspection of the transmission system for existing external and internal corrosion or damage in compliance with federal and state regulatory requirements. Through this program, by year 2012, we will have conducted the internal corrosion direct assessment along with an extensive external survey of all 84 miles of transmission pipeline.
- **Units per Year:** This main replacement program provides for 200 linear feet of new pipe per year.
- **Mandatory:** The scope of work for the main replacement program is driven by the direct assessment results of our Pipeline Integrity program. The timely replacement or repair of any identified pipe damage that affects pipeline integrity is mandatory.
- **High-Level Schedule:** The replacement schedule is driven by the results of our transmission main inspection program. Damaged pipe will be replaced either at the time of discovery or as soon as feasible.
- **Justification:** Following recent repairs made to our transmission system, a multi-year pipeline replacement program is prudent. For example, during the Direct Examination phase of our Pipeline Integrity program, corrosion was found at reinforcing ears near a compression coupling at California Road and Mill Road in Eastchester. This corrosion was repaired in 2006 by replacing a small section of main. Another corroded coupling was discovered at the source of a leak at California Road and Allair St. in Eastchester. Additional corrosion pits were discovered from direct assessment of the pipe adjacent to this coupling. These historical examples reveal the need to set aside funds for replacing pipe as anomalies are discovered.
- **Alternatives:** There are acceptable alternatives to pipe replacement such as split repair sleeves, grinding, high hats, leak clamps, hot tapping, and welded patch plates. However, each repair method is acceptable for only certain types of damage, in accordance with Con Edison maintenance procedures. Aside from these specific instances, pipe replacement is the only method acceptable.
- **Risk of No Action:** Risk of fire or explosion arises from workers (Company, contractor or other) who excavate and accidentally make contact with Con Edison's gas transmission main. Other potential causes of this type of incident might be gas transmission main damage that has gone undetected and has produced localized corrosion, or leaking adjacent water lines that erode the gas pipe. These scenarios could create a leak that might lead to an explosion or fire.

Public safety and service reliability could be imperiled by an incident of this nature. The cost of restoring damaged customer property, Company property and systems (gas, electric, or steam structures), and non-Company utilities could also be significant. In addition, the Company might have to engage in an extensive effort to restore gas service to customers. This type of event could also lead to increased oversight and/or penalties from regulatory agencies, who could mandate relocation of Company facilities or impose restrictions on gas pressures, both of which could adversely impact our operations.

The aforementioned risk of taking no action is tempered by existing pipeline monitoring programs. Gas Control continually monitors system pressures and flows utilizing the GOSS SCADA system to detect abnormal conditions, which may be an indication of a major leak or damaged facilities. Leak survey patrols our entire transmission system three times each year.

- Summary of Financial Benefits and Costs: Based on actual project costs for a similar main installation job at Hunts Point, the total cost estimate (loaded with direct and indirect costs) to replace (1) linear foot of 24-inch pipe is \$2,500.
- Non-financial Benefits (if applicable): Damage to Company reputation would require a post-incident public relations campaign.
- Technical Evaluation/Analysis: Indirect inspection tools or techniques such as close integral survey (CIS), alternating current voltage gradient survey (ACVG), and direct current voltage gradient survey (DCVG) detect holidays. Utilizing 2 indirect examination techniques, transmission pipeline integrity is ensured through completion of the ECDA assessment on every section of transmission main. When combined with direct inspection and repair or replacement of the gas main, active corrosion and leaks are preventable throughout the entire transmission system.
- Sensitivity Analysis (if applicable): not applicable
- Project Relationships (if applicable): not applicable
- Estimated Completion Date: N/A.
- Status: The engineering and design of the replacement program will be performed as needed. Needs are dictated by the transmission pipeline inspection program.
- Current Working Estimate: The current working estimate is \$500K per year. It is anticipated that this funding level will be carried forward as necessary until the program is completed. The total project cost through the next 5 years (2009-2013) is \$2.5M.

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budgeted 2009
				1,000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast Total 2010- 2014
500	500	500	500	500	2,500

Historical elements of expense (EOE's)

EOE	2006	2007	2008	Budget 2009
Labor				20
M&S				200
A/P				520
Indirects				260
Total				1,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	10	10	10	10	10
M&S	100	100	100	100	100
A/P	260	260	260	260	260
Indirects	130	130	130	130	130
Total	500	500	500	500	500

2011 Capital – CE Gas Operations – Transmission & Generation Projects

Project/Program Title	Bronx Border to White Plains
Priority Number	
Project Manager	Amr Hassan
Project Engineer	Steve Blom
Budget Reference	7GD9817
Project Number	G-07-914
Status	Route study in progress. Engineering to follow.
Estimated Service Date	2023
Work Plan Category	System and component performance improvement Public and employee safety
ERM Addressed	Gas from our transmission system explodes or burns out of control (8); We lose our gas supply into NYC for an extended period of time (17); Inadvertent shutdown of a Remote Operated Valve (21).

Work Description:

- This consists of the multi-year project to install approximately 54,000 feet of new 36 inch steel transmission pressure main looping the existing 24 inch steel transmission pressure main from the Westchester/Bronx Line to the Tennessee White Plains gate station outlet.
- Units per Year: approximately 2000-5000 ft per year
- Mandatory: This is a crucial main identified by the Transmission Master Plan to satisfy G-8051, the Gas System Design Criteria specification.
- High-level schedule: 7000 ft in the first 3 years with 5000 ft per year for the following 9 years.

Justification:

- This project accomplishes a number of system objectives in the Transmission Master Plan:
 - It delivers Canadian gas from the Hunts Point station further into Westchester diversifying the supply.
 - It helps reduce dependency on the critical White Plains gate station and the associated Gulf Coast gas supply.
 - It helps offset the loss of 134th St.
 - It allows the future downgrade of the MAOP of the existing line to operate at less than 20% SMYS.
 - This future downgrade would be on the older brittle pipe that may rupture before it leaks.
- The 245-psig system consists of two mains - a 24 inch main operating at 26% of SMYS (1940's vintage) that connects the Hunts Point Yard to the Tennessee White Plains gate station, and a 20 inch main operating at 18% of SMYS (1970's vintage) that loops the 24 inch main from the Hunts Point yard to the Westchester/Bronx line. There are approximately 125,000 customers supplied by the Hunts Point – White Plains 245 PSIG system. Supplying the system from the south is the Hunts Point regulator station (GR-199) that reduces pressure from the 350-psig system and is supplied from Transco and the Iroquois gate station. Supplying the system from the north is the Tennessee White Plains gate station. Installing the proposed main will create a continuous parallel system from Hunts Point in the Bronx to the White Plains gate station in Westchester.
- In addition, the 24-inch transmission main is the oldest on our system, is constructed of lower strength steel joined with mechanical couplings, about 2,000 of which are not reinforced. There are 66 drip pots on the 24-inch main and these provide unnecessary potential points of failure. This

reinforcement will allow us to systematically downgrade the existing 24-inch main. This 24-inch main also feeds 22 distribution system regulator stations that can be supplied at pressures substantially lower than the current 245-psig MAOP. Looping this section will allow us to downgrade the existing 24-inch main and operate at stress levels less than 20% of SMYS. The Design Criteria calls for all transmission pipes installed prior to 1970 to operate at less than 20% SMYS by 2024. This project will contribute towards this objective. Additionally, operating the system at less than 20% SMYS removes these lines from the Federal DOT definition of transmission lines and related transmission pipeline integrity rules.

- Alternatives: Several route alternatives are currently being analyzed – Route 22, Route 100, Bronx River Pkwy, and a fourth hybrid alternative in local streets.
- Risk of No Action: At some point in the future, the 24" main may leak again as it has already. Not installing this main means that we expose ourselves to future leaks on this main as it is operating at one of the highest SMYS levels in our system.

Summary of Financial Benefits and Costs: The total capital to complete this project is approximately \$250 million. This reinforcement will greatly enhance system capacity and provide supply reliability (contingency mitigation) for firm and interruptible customers in the Bronx and Westchester that are currently served by a system operating under a zero contingency mode at temperatures below 30 deg F. The project increases system reliability on the loss of single gate station. This project eliminates any customers lost due to the loss of the White Plains Gate station (75,000) or the loss of the Hunts Point regulator (315,000). If a condition occurred where one of these sources was lost on a design day, the gas customers previously mentioned can be adversely affected. Restoring gas service to these customers would be a time consuming, labor-intensive effort, greatly reducing our ability to respond to other calls, incidents and events. Furthermore, this restoration effort will most likely consume resources from other neighboring utilities hampering their normal operations. Numerous customers would be without life sustaining, essential amenities such as heat and hot water for an extended period of time, and commercial businesses would suffer economically and may even be forced out of business. Resulting claims to the Company from such an event could be enormous, in addition to sustaining tremendous damage to its reputation. Installing this main mitigates these potential liabilities.

- Non-financial Benefits (if applicable): This project will reduce the consequences of various risks and increases the flexibility in which the system as a whole can be operated. In addition, the 24-inch transmission main is the oldest on our system, is constructed of lower strength steel joined with mechanical couplings, about 2,000 of which are not reinforced. There are 66 drip pots on the 24-inch main and these provide unnecessary potential points of failure. This reinforcement will allow us to systematically downgrade this older brittle main.
- Technical Evaluation/Analysis: Stoner analysis determined the size pipe required to realize the full supply potential.
- Sensitivity Analysis (if applicable):
 - Major assumptions relating to this project are:
 - Contractor price for the installation of the facility as well as the cost of material
 - Length of the project may vary (total footage) due to sub-surface interference and the generation of a viable route for the transmission pressure main through the streets or through private property.
 - Any community resistance is overcome to the point that it doesn't impact the project.

- **Project Relationships (if applicable):** The project is part of the Gas Transmission Master Plan. The Hunts Point Gate Upgrade would enhance the takeaway ability of this main.

Estimated Completion Date: 2023

Status: A firm has been hired to conduct a route study to determine the best way to go.

Current Working Estimate (if applicable):

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	3,250	8,588

Approved 2009	Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2009-2014
-	-	-	10,350	10,800	14,510	37,160

Historical elements of expense (EOE's)

EOE	2006	2007	2008	Budget 2009
Labor				190
M&S				1,680
A/P			2,349	4,490
Indirects			901	2,228
Total			3,250	8,588

Forecast

EOE	2010	2011	2012	2013	2014
Labor			225	235	315
M&S			2,025	2,110	2,835
A/P			5,415	5,650	7,590
Indirects			2,685	2,805	3,770
Contingency					
Total			10,350	10,800	14,510

2011 Capital – CE Gas Operations – Transmission & Generation Projects

Project/Program Title	Hunts Point Gate Upgrade
Priority Number	2
Project Manager	TBD
Project Engineer	TBD
Budget Reference	HGS0085-327
Project Number	N/A
Status	Planning/Engineering Design
Estimated Service Date	2012
Work Plan Category	System and component performance improvement; Increased customer demand
ERM Addressed	Gas from our transmission system explodes or burns out of control (8); We lose our gas supply into NYC for an extended period of time (17); Inadvertent shutdown of a Remote Operated Valve (21).

Work Description:

- The Hunts Point Gate Upgrade project consists of the installation of additional regulator runs at the existing Iroquois gate station in the Hunts Point section of the Bronx. This project is the second of two reinforcement projects identified to be able to maximize additional gas at Hunts Point for system reliability, supply deliverability and contingency mitigation. The first segment is the Transmission Main Infrastructure project, which is currently in progress. The Hunts Point Gate Upgrade project would greatly increase the amount of gas that can be transported through the system.
- There are two phases for this project. Phase I is to upgrade the facility and to install additional regulators and meters. The scope of this project is strictly Phase I.
- Phase II of the project to be done at some point in the future would be to modify the facility to provide additional gas heating equipment and restore redundancy on heating equipment. This would be a future project based on gas supply contracts through this gate station.
- Suggested: Would improve reliability of the system
- High level Schedule: The Phase I work would be conducted over a two-year period consisting of the installation of additional meter and regulator runs as well as the associated appurtenances.

Justification:

- As presently configured, the original Iroquois gate station can deliver a maximum of 15 MMCFH (300 MMCFD). However, it is the meters and regulators that limit this new gate station's capacity. This project represents the installation of additional regulators and meters allowing the station to deliver its full rated capacity of 25 MMCFH (500 MMCFD).
- In 2004, the addition of the Hunts Point/Iroquois gate station provided a new point of gas delivery into the Con Edison system. In addition to being a new supply point, Iroquois gas is from a new source as well. Whereas all other gas supplied to Con Edison is from the Gulf Coast region, Iroquois gas comes from Canada and potentially from other non-gulf regions. It helps supply new generation loads and reduces dependency on the 134th Street gate station. This upgraded level of service will allow the Iroquois gate station to backup the critical Transco 134th Street gate station.
- **Alternatives:** One alternative would be to increase the capacity of the existing Transco 134th Street gate station. The expansion of the 134th Street gate, if feasible, would require additional transmission

pipng from the outlet of the gate station, through upper Manhattan, crossing the Harlem River, connecting at St. Ann's Avenue in the Bronx. The scope of this initiative would require the installation of approximately 14,000 feet of 36-inch pipe and a directional drill across the Harlem River. This entire plan (gate upgrade, main installation, directional drill) is estimated to be in excess of \$100 million. In addition, reliance on the 134th Street gate station would be increased and the system would experience widespread customer outages if the station were lost.

- **Risk of No Action:** If this project is not completed, the reliability of the gas transmission system will not improve and as the system ages and loads increase, the reliability may actually decrease. This project greatly increases the system's ability to supply gas reliably and provides contingency mitigation for firm customers in the winter as well as for generation during peak summer loads.
- **Summary of Financial Benefits and Costs:** The total capital cost of this project is approximately \$6 million. The financial benefit of this project is the ability of contracting for less expensive gas supply. If less expensive gas supply is available via the Iroquois pipeline, it can only be obtained if adequate station capacity is present. The decrease in gas cost would benefit both the firm gas customer as well as the electric customer (gas being used by the electric generators).
- **Non-financial Benefits (if applicable):** The primary non-financial benefit is a more reliable gas transmission system where the system would be able to withstand the loss of the critical Transco 134th Street gate station.
- **Technical Evaluation/Analysis:** An evaluation of this project was conducted using Stoner Network Analysis, both steady state and unsteady state analysis was performed. The studies clearly indicate that additional gas supply can be transported from the upgraded facility to firm gas customers as well as to electric generating facilities. In addition, the studies indicate that the transmission system would be able to withstand the loss of the Transco 134th Street gate station on a zero degree-day (design day).
- **Sensitivity Analysis (if applicable):**
 - Major assumption relating to this project:
 - Contractor price for the installation of the facility as well as the cost of material
- **Project Relationships (if applicable):** The project is part of the Gas Transmission Master Plan. Two projects have been completed, the Astoria Tunnel project and the St. Ann's Tee to Hellgate project. In addition, the Hunts Point to Hellgate project is currently in progress.

Estimated Completion Date: 2012

Status: Planning

Current Working Estimate (if applicable):

Funding (\$000):

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast Total 2009-2014
-	3,000	3,000	-	-	6,000

EXHIBIT __ (GOP-2)

EOE	2010	2011	2012	2013	2014
Labor		65	65		
M&S		585	585		
A/P		1,570	1,570		
Indirects		780	780		
Total		3,000	3,000		

2011 Capital / CE Gas Operations / Special Projects

Project/Program Title	GIS Technology Upgrade
Priority Number	36
Project Manager	Glenn Meyers
Project Engineer	Steven Tomiko
Budget Reference	7GD9738-159 COM24
Project Number	
Status	IN PROGRESS
Estimated Service Date	2013
Work Plan Category	Strategic IT Enhancement , Strengthen Support Activities, Provide Reliable Service, Reduce and Manage Risk
ERM Addressed	None

Work Description:

Upgrade the existing GIS Route Center, Customer Appointment Scheduling, Asset and Inspection Inquiry Screens from VB6 to Microsoft Dot.Net. Upgrade/remove some of the functionality that no longer models the current business process. Build all Route Screen server connections and back end processes to the GIS Web application. Implement a new mapping tool that is supported in Dot.Net and replace the existing VB6 compatible mapping product.

Units per Year: N/A

Mandatory: GIS is required to schedule and route mandated inspections of critical components/assets on the gas system.

High-level schedule: 2013

Justification:

GIS is the only application used to schedule and route the inspections of critical assets on the gas system. The Route Center is the original module that was developed when GIS was initially developed. As new gas assets were introduced into GIS (corrosion, leaks, supervisory review and miscellaneous assets, outside leaks and the electronic 5013R) these were developed in the latest dot.net technology. The Asset and Inspection screens in for meters, BOPA, HPR, vaulted areas and customer access appointments are also written in VB6 which has become an obsolete technology. GIS uses map based routing to create efficient routes minimize travel time and distance between scheduled inspections. The mapping software is based on older technology and will not work in the Dot.Net technology environment thus will have to be replaced. GIS requires a technology upgrade to ensure the application can be reliably supported.

- Alternatives: Continue to operate on a system that is obsolete and will no longer be supported. Not a viable option.
- Risk of No Action: VB6 components in GIS are obsolete and will not be supported. Application expansion to meet new business requirements will not be feasible.
- Summary of Financial Benefits and Costs:

- Non-financial Benefits (if applicable): N/A
- Technical Evaluation/Analysis: VB6 components in GIS are obsolete and will not be supported. Application expansion to meet new business requirements will not be feasible.
- Sensitivity Analysis (if applicable): N/A
- Project Relationships (if applicable): GIS works in conjunction with the Gas Computer Dispatch System. Mandated inspections are scheduled in GIS, packaged into an efficient route and electronically dispatched to gas mechanics through the Gas Computer Dispatch System. The Computer Dispatch System cannot operate as a stand-alone system without the work created in GIS.

Estimated Completion Date: 2013

Current Working Estimate: \$1795k

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budget 2009
-	-	-	197	391

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
407	400	200	200	-	1,207

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor			39	84
M&S				
A/P			118	239
Indirects			10	10
Contingency			30	58
Total			197	391

Forecast

EOE	2010	2011	2012	2013	2014
Labor	95	95	25	25	
M&S					
A/P	235	228	137	137	
Indirects	17	17	8	8	
Contingency	60	60	30	30	
Total	407	400	200	200	

2011 Capital / CE Gas Operations / Special Projects

Project/Program Title	Gas Data Warehouse
Priority Number	33
Project Manager	Glenn Meyers
Project Engineer	Steven Tomiko
Budget Reference	8GD9804-159 COM24
Project Number	
Status	IN PROGRESS
Estimated Service Date	2013
Work Plan Category	Strategic IT Enhancements, Providing Reliable Service, Strengthen the Company's Support Activities, Enhance External Relations
ERM Addressed	None

Work Description:

Build a data warehouse for Gas Operations that will provide a Self Service tool where each user can create their own reports and access established reports. Develop the ELT process to extract, load and transform gas data from multiple sources into a structured reporting Star model or equivalent model. Develop a user defined reporting dashboard for accessing reports and creating ad-hoc reports. Phase I incorporating main valve data is complete. New modules in progress are Financial Exceptions and Leaks. Subsequent phases will expand the warehouse to different asset data and eventually include all performance, statistical and financial data that is used for reporting, regulatory compliance and budgeting for Gas Operations.

Units per Year: N/A

Mandatory: Data Warehouse is required to schedule and track the progress of mandated Inspections of critical components/assets on the gas system.

High-level schedule: Multi year project: 2011-, Vaulted Areas, High Pressure Regulators. 2012 – Gas Corrosion Assets, 2013 - Bridge, Submarine Crossings, Expansion Joints, Unstable Soils.

Justification:

- Alternatives: Continue to use the existing disparate reports and paper tracking mechanisms
- Risk of No Action: Inaccuracy of existing reports and lack of a structured reporting process against consistent data may impact inspection compliance requirements.
- Summary of Financial Benefits and Costs: Data Warehousing efforts have traditionally yielded soft savings with high tangible results.
- Non-financial Benefits (if applicable): Maintaining a reliable distribution and transmission system will minimize the risks of gas related events from component failure by ensuring inspection and maintenance programs are followed. In addition, employees' time can be devoted to business analysis, correlations analysis, cause and effect of business processes rather than gathering data from multiple systems. Reports were created by a dedicated contractor whereas a data warehouse allows ease of reporting through a comprehensive self-service tool which does not require any programming skills or in depth knowledge of data

base structures. Obtain greater economies of scale through standardization and consolidation of processes and activities.

Effective and efficient reporting for mandated inspections can yield Increased Customer Satisfaction by providing a higher level of service from the gas distribution and transmission service. Mandated inspections are designed to ensure the integrity of gas system components through proactive inspections and repairs. Efficient reporting on Public Service reports and data requests will strengthen Commissions' view of the Company.

- Technical Evaluation/Analysis: The use of an accurate reporting system will assist Gas Operations in meeting their Key Performance Indicators; workable leak backlog, overall leak backlog and budget requirements.
- Sensitivity Analysis (if applicable): The contractor labor and employee costs of developing the data warehouse will remain stable during the course of the project.
- Project Relationships (if applicable): The Gas Data Warehouse will eliminate the dependency on reports created and maintained in ECS and reports created from systems that are not supported by IR.

Estimated Completion Date: 2013

Current Working Estimate: \$3546

Funding (\$000):

Actual 2006	Actual 2007	Actual 2008	Budget 2009
0		713	1,005

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast 2010-2014
480	388	480	480		1,828

Historical elements of expense (EOE's)

EOE	2006	2007	2008	2009
Labor				
M&S			254	
A/P			387	840
Indirects			4	17
Contingency			68	148
Total	0	0	713	1,005

Forecast

EOE	2010	2011	2012	2013	2014
Labor					
M&S					
A/P	394	340	394	394	
Indirects	17	20	17	17	
Contingency	69	28	69	69	
Total	480	388	480	480	

2011 Capital / CE Gas Operations / Special Projects

Project/Program Title	Distribution Integrity Data Integration
Priority Number	31
Project Manager	TBD
Project Engineer	TBD
Budget Ref/Function Code	7GD9744 GMS04
Project Number	TBD
Status	Planning
Estimated Service Date	2011
Work Plan Category	Strategic IT Enhancements, Providing Reliable Service, Strengthen the Company's Support Activities, Enhance External Relations
ERM Addressed	Distribution System Event

Work Description:

The Distribution Integrity Management Rule will be enacted the fall of 2009. As per DOT 192.1005, Local Gas Distribution Companies will have no later than 18 months after the rule is enacted to implement a written Distribution Integrity Management Plan (DIMP). The plan will encompass the seven required DIMP elements, which includes identifying threats to address associated risks and evaluating and ranking your assets based on the associated risks.

We currently utilize the Main Replacement Prioritization (MRP) model to prioritize and plan main replacement work. Already incorporated into the MRP model are condition and risk scoring algorithms. However, under DIMP, a comprehensive DIM risk model would directly address the need to "Assess and Prioritize Risk". MRP focused on various threats (i.e. cast iron and bare steel replacement), but it does not provide a comprehensive risk management solution for our entire system. A comprehensive risk model would provide us with the ability to compare risk from various threats, for example evaluating the risk between mechanical coupling failure, corrosion, and excavation damage. A system-wide focus on collecting and integrating data and be able to focus on threats.

The purpose of this program upgrade is to incorporate the DIMP requirements into the existing prioritization system.

Units per Year: not applicable

Mandatory: Compliance with DIMP is mandated under DOT 192.1005

High-level schedule:

Justification:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) released a Notice of Proposed Rulemaking for Distribution Integrity Management. Data integration will be required to support and document distribution integrity decision making. This program change will fund necessary software applications that will support data integration, management and documentation of Distribution Integrity Management efforts.

- Alternatives: Compliance with the DIMP rule is not optional. Alternatives may include using a different vendor to prioritize to manage and mitigate risk to comply with the

ruling. However, this alternative would be costly and would fail to create a synergy between the new DIMP risk plan and existing MRP model which integrates the ECS and VISION data into an ESRI based environment and then calculates risk and condition to prioritize main replacements.

- Risk of No Action: Compliance with the DIMP rule is not optional and failing to take no action would expose the company to penalty.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): The purpose of the DIMP ruling is to ensure that local distribution companies are using a risk-based approach for managing and mitigating the risk various threats pose to all the natural gas assets. Therefore, while the implementation of an effective DIMP program may be primarily due to regulatory compliance, it will ultimately assist in mitigating risk and indirectly improve overall customer safety, while improving community and regulatory relations. The program will allow for data integration to be evaluated on one common platform and enable decisions to be made for replacement due to overall relative risk.
- Technical Evaluation/Analysis: The DIMP risk factors will be incorporated into the MRP risk and condition ranking. Therefore, it will continue to reinforce efforts to select leak prone pipe that may present the highest risk or is in the worse overall condition for replacement. This will have a direct impact on reducing the overall gas leak backlog. The reduction in the overall leak backlog and the replacement of gas main are key performance indicators for Gas Operations.
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Completion Date: 2011

Current Working Estimate (if applicable): \$440k

Funding (\$000):

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
218	222	0	0	0	440

Forecast

EOE	2010	2011	2012	2013	2014
Labor					
M&S					
A/P	200	202			
Indirects	15	16			
Contingency	3	4			
Total	218	222			

2011 Capital / CE Gas Operations / Special Projects

Project/Program Title	Gas Control Mauell Screens
Priority Number	
Project Manager	Giuseppe Mirasola
Project Engineer	
Budget Reference	7GD9741-159
Project Number	Not Applicable
Status	Not started
Estimated Service Date	1st Quarter 2011
Work Plan Category	Strategic IT Enhancement
ERM Addressed	None

Work Description:

Replace obsolete components of the large Mauell Screen projection wall at the Van Nest primary Gas Control Center. Also replace the single large projection screen located at the disaster control center (4 Irving Place 23rd floor conference room).

Units per Year: Three rear projection cubes

Mandatory: Required by the Gas Control System Operators to monitor and control the Con Edison and Orange and Rockland gas transmission and distribution systems.

High-level schedule: Hardware replacement 1st quarter 2011

Justification:

The large Mauell Screens are used on a 24 by 7 basis to display critical gas system overview information. The current technology will become obsolete and needs to be replaced in order to ensure reliable operation, availability of parts and vendor support.

- Alternatives: Limited to the specific space the current hardware is housed in, may not have many alternatives for comparable hardware.
- Risk of No Action: Loss of the wall display units will negatively impact the Gas System Operators ability to monitor and control the transmission and distribution system.
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable): System reliability benefit. The wall units are used to provide large scale real time overview of the transmission and distribution system to the Operators.
- Technical Evaluation/Analysis: Hardware is reaching expected end of life.
- Sensitivity Analysis (if applicable):

- Project Relationships (if applicable):

Estimated Completion Date: End of 1st quarter 20011

Status: Not started

Current Working Estimate (if applicable): \$330,000

Funding (\$000):

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
-	330	-	-	-	330

Forecast

EOE	2010	2011	2012	2013	2014
Labor					
M&S		250			
A/P		30			
Indirects		50			
Contingency		0			
Total		330			

2011 Capital / CE Gas Operations / Special Projects

Project/Program Title	Computer Dispatch – Time Cards
Priority Number	
Project Manager	Glenn Meyers
Project Engineer	Steve Tomiko
Budget Reference	7GD9742-159
Project Number	TBD
Status	Not Started
Estimated Service Date	2011
Work Plan Category	Strategic IT Enhancement , Strengthen the Company's support activities
ERM Addressed	None

Work Description:

Implement the Time Card functionality in the Computer Dispatch application. This requires modifications to the CD application and developing an interface into Field Reporting/HR Payroll. Actual time worked would be electronically uploaded to Field Reporting and in turn uploaded into HR Payroll.

Justification:

Electronic input into Field Reporting eliminates the requirement to manually create and enter field mechanics time spent on various job types. This is part of the overall effort to migrate Gas Operations to a virtually paperless environment. Eliminates manual entry, redundant data handling and more accurate working time and charges against Gas accounts.

- Alternatives: Continue with manual process
- Risk of No Action: Continued inaccurate time and account reporting affecting Gas Operations' budgets.
- Summary of Financial Benefits and Costs: Time card initiative will improve the efficiency of the process by eliminating waste and non-value added steps. This directly correlates to a reduction in clerical FTE's, yielding a hard savings.
- Non-financial Benefits (if applicable): Obtain greater economies of scale through standardization and consolidation of processes and activities. Reduce the probability of a Sarbanes – Oxley violations by predetermining the accounting splits for jobs as opposed to leaving it to the discretion of field personnel. "Green" initiative by eliminating paper.
- Technical Evaluation/Analysis: Automating the time card entry will assist Gas Operations in meeting their Key Performance Indicators for reliable service.

- Sensitivity Analysis (if applicable): The contractor labor and employee costs will remain stable during the course of the project. Low sensitivity to changes in assumptions.
- Project Relationships (if applicable): Expansion of GIS to incorporate all field activities will allow the mechanics to capture all jobs in CAD and automate the time card entry process.

Estimated Completion Date: 2011

Current Working Estimate: \$313k

Funding (\$000):

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
-	\$313	-	-	-	\$313

Forecast

EOE	2010	2011	2012	2013	2014
Labor					
M&S					
A/P		270			
Indirects		30			
Contingency		13			
Total		313			

2011 Capital / CE Gas Operations / Special Projects

Project/Program Title	Meter Shop ADAMS
Status	In progress
Estimated Service Date	December 31, 2011
Work Plan Category	Strategic IT Enhancements

Work Description:

ADAMS is a corporate application used by various organizations for inventory and management of the company's metering assets. Besides the Electric Meter Shop and the Gas Meter Shop, ADAMS is used by the division storerooms, Meter & Test groups, Gas Distribution Services and Customer Service areas to receive and ship pallets of meters, consign meters to individuals performing installations, to resolve location and prefix issues that affect billing, and to enter results of accuracy tests performed in the field. O&R currently uses GEMS to perform the functions found in ADAMS and will be included in the common platform of a new single meter record and asset management system. Electric Operations, Gas Operations and O&R require a replacement system that satisfies their collective business needs synergistically with the flexibility to meet future emergent needs. The new system may also include Steam, ensuring a single system for inventory and management of all the company's metering assets.

In Phase 0 of the project, Information Resources will work with Electric Operations, Gas Operations, Steam Operations, Customer Operations, O&R and others as required to develop the functional specification document detailing the requirements of the ADAMS replacement system. Subsequent phases will include the acquisition of a packaged software solution, purchase of necessary supporting hardware, migration of data from the existing systems to the new system, and integration with the other corporate systems that the Electric and Gas ADAMS and GEMS systems are currently linked to.

Justification:

From both legal and business perspectives, corporate meter assets must be managed and tracked to ensure they are properly booked and performing as required. Despite various past programs to address some of the deficiencies of the system and improve its usefulness, ADAMS remains inflexible and difficult to modify to suit current requirements. The investment in a replacement system will allow us to more effectively manage the meter population for the foreseeable future, including using a common platform for all of the company's regulated businesses to manage their meter assets.

• **Alternatives:**

Remain with the current Electric and Gas ADAMS systems, which use obsolete programming languages.

Replace the Electric and Gas ADAMS systems with a state-of-the-art system, also providing the opportunity for synergy to include O&R and possibly Steam Operations on a common meter asset management platform.

• **Risk of No Action:**

- The ability of the current Electric and Gas ADAMS systems to effectively manage our corporate meter assets (i.e., the company's "cash registers") is severely challenged:

- There is declining ability to meet the requirements of our changing regulatory environment. With a large AMR deployment under way, there is no tracking of the AMR device in Gas ADAMS other than the serial number of the device and its association with a meter in a separate table (no installation history, no purchasing or retirement history, no maintenance history, and no device transfer history).
 - There are limitations in generating new required reports, performing queries, identifying meters and metering devices by type, service dates, and other criteria.
 - The prefix system currently used for tracking the functionality of meters cannot support new meters that have the ability to change functionality through reprogramming.
 - Work management functions are ineffective in determining the quantity of work produced or the cost of reconditioning the meters.
 - The annual reconciliation of ADAMS and CSS is a major programming effort.
 - Programming languages for both Electric and Gas ADAMS are considered obsolete.
- Non-financial Benefits:
 - It is important to consider that tracking metering devices is not only required by law, but also critical to the corporation. ADAMS helps to keep the metering infrastructure under control by tracking the location of individual meters and providing a mechanism to identify those portions of the population that could be experiencing performance issues, which in turn could affect customer bill and company revenue.
 - A replacement system will be responsive to new functional needs and changing regulatory requirements. It will also be a platform that is contemporary and more readily supported.
 - A replacement system will provide strategic and synergistic benefits that include providing a common platform to manage all corporate meter assets for Electric Operations, Gas Operations, O&R and possibly, Steam Operations.

Estimated Completion Date: 2014

Status: Further review is necessary to determine the proper funding allocation between Gas & Electric Operations.

Funding (\$000):

Gas Share:

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
-	1000	1000	1000	1000	4000

Forecast

EOE	2010	2011	2012	2013	2014
Labor		67	67	67	67
M&S					
A/P		666	666	666	666
Indirects		200	200	200	200
Contingency		67	67	67	67
Total		1000	1000	1000	1000

2011 Capital / CE Gas Operations / Special Projects

Project/Program Title	Mapping Systems Upgrades
Status	Planning
Estimated Service Date	December 31, 2014
Work Plan Category	Strategic IT Enhancements

Work Description:

The Company continues to work towards improving its mapping systems for electric, gas and steam operations. Initially, these improvements will focus on establishing standards for land base and coordinate systems, and asset data quality. The improvements will enhance the functionality of the current systems and continue to establish a foundation for migrating to a single mapping platform for all business units. In 2011, focus will begin to switch towards replacing the current mapping applications and establishing a consolidated GIS platform.

2009 Work Description

- Define detailed business case and communicate strategy throughout business units
- Conduct analysis of land base standards, develop strategy, conduct pilot and develop deployment plan
- Establish strategy for real-world coordinates develop strategy, conduct pilot and develop deployment plan
- Determine disposition of M&S plates as reference.
- Conduct analysis of conduit and duct occupancy, vendor selection , and development of a detailed plan for conduit map data creation, registration and migration.
- Determine short-term disposition of Brooklyn IDMS mapping (write requirements document, determine if this will be done in-house or by a vendor, create a detailed plan).
- Define processes and technologies to be utilized to address asset data cleansing and continued data integrity
- Research and educate all stakeholders about GIS concepts, capabilities of vendor products and utility industry asset data models

2010 Work Description

- Complete land base standardization efforts begun in 2009
- Complete real-world coordinate efforts begun in 2009
- Continue data cleansing and quality initiatives begun in 2009
- Implement conduit and duct occupancy based on analysis completed in 2009
- Convert Brooklyn IDMS to new GIS platform
- Develop common conceptual electric GIS data model
- Begin formal vendor software evaluation
- Refine detailed business case and communicate strategy

2011 Work Description

Con Edison will commence a Phase 0 Assessment for Mapping Systems in 2011. A full time team comprised of key business users, Information Resources support staff and consultants, will be dedicated to this effort. The team will review all mapping-related business processes, conduct the planning and analysis necessary to streamline the business processes as appropriate and finalize a technology strategy for a consolidate GIS platform for Electric , Gas and Steam Operations.

The Phase 0 Assessment Team will compile a comprehensive report summarizing the work management business process changes, technology strategy, project cost estimate and implementation plan. The report will also include the following deliverables:

- Project charter statement
- Summary of streamlined business processes, developed by Operations personnel, addressing all aspects of mapping including a:
 - Summary of business processes and rules documented through use cases and decision trees
 - Summary of activities and/or business changes needed to achieve new business process
- Solutions summary and fit/gap analysis
- Summary of all required reports, interfaces, conversions and enhancements
- Summary of all benchmarking visits and project research
- Implementation project scope and exclusions
- Business case including ROI, summary of benefits and additional justifications
- Package selection decision or summary of enhancements to existing systems
- Request for Proposal (if required)
- Implementation team structure and summary of roles and responsibilities for all project resources
- Implementation schedule, including milestones and checkpoints
- Detailed cost estimate and cash flow summary for implementation
 - Software licenses and development
 - Computing infrastructure
 - Labor
 - Interfaces
 - Data Conversion
 - Testing
 - Training
 - Overheads and contingencies
- Testing strategy
- Change management plan addressing
 - Implementation impact on Operations personnel and other stakeholders
 - Implementation impact on existing systems

The overall business plan will include costs, constraints, justification and benefits with ROI, and a risk assessment. A high level business strategy will be conducted as the first scoping effort.

2012 Work Description

- Migrate data and establish new mapping environment for Brooklyn, including integration with engineering and operations models.
- Adopt the same process for Staten Island and commence system implementation.
- Adopt the same process for Queens and commence system implementation.

2013 Work Description

- Adopt the same process for Manhattan and commence system implementation.
- Adopt the same process for Bronx/ Westchester, and commence system implementation.
- Complete system implementation and integration efforts.

Justification:

Company forces and the customers they serve continue to demand more from corporate mapping systems. Increased demands from business units and customers for mapping data has also exposed issues with data synchronization, standardization and quality of asset data, and timeliness of data updates. Additionally, there are few robust, user-friendly tools that empower end users to query for analysis.

The current applications that are installed are truly AM/FM (Advanced Mapping and Facilities Mapping) not GIS (geographic information systems). The primary functions that the AM/FM applications support are facilities management; they do not easily perform spatial analysis. For decades the graphic display of the maps has been the primary use. The need for data and relational queries to support engineering, work management, asset management, and property records needs have increased. This makes the capability to interrogate the data behind the map graphic and determine spatial relationships increasingly important for more than just taking an accurate printed map out to the field. The current applications do not support robust query and ad-hoc reporting for self-service so many requests need to be handled by the technical staff due to the limitations of the applications and nature of the data. Quick and flexible access to maps and spatial analysis will empower end users to more easily access data and simplify the capability for other applications to be integrated.

The Company operates and maintains six corporate mapping applications in support of its electric, gas and steam distribution systems. Significant business benefits can be realized by migrating to a single automated mapping / facilities management environment, with a single data model, and in giving the Company's facilities data a spatially accurate orientation. To the greatest extent possible, a new system would provide, either inherently or via extended applications, the functional capabilities of map viewing, plotting, specialty mapping, engineering design and system modeling that are in use in the existing environment.

Since the mapping systems were originally developed, Con Edison has undergone significant structural and organizational changes in response to the need to control costs. Operating groups centralized core functions and merged geographic areas in electric and gas distribution. For example, Bronx and Westchester Electric Operations were combined, as were Brooklyn and Queens. In the process, electric control centers were reduced from six to four. Similar consolidations were implemented in regional engineering organizations, where the use of multiple mapping applications becomes problematic. Gas Operations merged Bronx and Westchester operating groups, and those in Manhattan and Queens. Its gas control centers and engineering groups were reduced from four to one.

While operations across the regions have not yet been combined, there is potential benefit in having system platforms in place that facilitate standardized work practices. Especially in Electric Operations, reducing the number of mapping systems would have a favorable impact on operating and maintenance costs. Updating and maintaining multiple land bases and map products in a consolidated set of applications would be more efficient and provide the Company with more timely system updates. Furthermore, integration with the engineering and operations models, as well as other systems, would be greatly simplified and would better support corporate asset management and work management objectives.

The Company's mapping systems include VISION (Intergraph FRAMME-based applications in support of all gas and all electric secondary facilities), Feeder Mapping System (separate non-FRAMME application for electric primary – feeders), Electric Distribution Facilities Information System (application developed for Staten Island electric primary, secondary and C&DO maps), Intelligent Database Mapping System (maintains Brooklyn's electric primary, secondary and C&DO maps), Steam Operations Mapping Information System (for the entire steam distribution system), and Electric Transmission (AutoCAD). With the exception of the IDMS system in Brooklyn that is exclusively Oracle, all Con Edison's mapping systems use Bentley Microstation as the graphics engine, although other, ancillary data is stored in AutoCAD (e.g., Electric Transmission).

Specifically with respect to Electric Operations, the following issues must be addressed:

- Existing data needs to be consolidated into a single data model, and data standards must be established and adopted across all operating regions
- Existing landbases must be replaced with spatially accurate base maps available from New York City and Westchester County; existing electric data must be registered to these base maps, inheriting "real-world" coordinates in the process
- Existing systems need to be replaced with contemporary technology, with an eye towards reducing the long-term cost of ownership
- Conduit maps, which currently reside in only raster format, ultimately need to be converted to a digital format and their contents referenced to the same NYC and Westchester landbases

Alternatives: The following alternatives were considered:

- Alternative 1: Migrate to one of the existing platforms.
- Alternative 2: Continue maintaining the current mapping platforms

Both alternatives were dismissed because they did not meet the following strategic goals:

- Strategically position Con Edison to leverage technology shifts toward GIS
- Gain operational efficiencies in the area of AM/FM/GIS since this functionality is not available or limited in the current mapping applications
- Maintain a standards based system that is easier to support and obtain support as necessary

Risk of No Action: In addition to internal grounds for looking towards a more consolidated mapping environment, changes in the direction of the present Intergraph FRAMME technology are making the need to investigate other options a high priority. Because of a recent announcement by Intergraph to discontinue evolving the FRAMME technology product and shifting the company's focus towards a more GIS-type of technology (its "G-technology") the need to evaluate the impacts of staying with the existing platform or migrating towards a new

platform to support AM/FM/GIS has now become a strategic imperative for all Intergraph FRAMME users.

Non-financial Benefits:

- Strategically position Con Edison to leverage technology shifts toward GIS
- Gain operational efficiencies in the area of AM/FM/GIS since this functionality is not available or limited in the current mapping applications
- Maintain a standards based system that is easier to support and obtain support as necessary

Technical Evaluation/Analysis:

Two studies have been conducted with respect to planning for GIS

- Enspira study in 2006. This produced a high level plan and rough order of magnitude estimates for establishing a common GIS for electric, gas and steam.
- Micon Group study in 2008. This produced 3 roadmap scenarios focused on electric for GIS, work management, SCADA and asset management.

Project Relationships: In 2009 the Company will initiate a Phase 0 Assessment for Electric Operations Work Management. This will be followed by the implementation of a new work management solution for Electric Operations. The scope and complexity of this effort has caused the Company to postpone the establishment of a consolidated mapping platform until the implementation of the work management solution is underway.

Estimated Completion Date: December 31, 2014

Status: Planning Phase, 0% completed

Funding (\$000s): Capital

Gas Share:

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
-	\$2757	\$2320	\$767	\$500	\$6344

Forecast

EOE	2010	2011	2012	2013	2014
Labor					
M&S		1000			
A/P		1000	1780	700	450
Indirects		500	450	60	50
Contingency		257	90	7	0
Total		2757	2320	767	500

2011 Capital / CE Gas Operations / Special Projects

Project/Program Title	Gas Facility Hardening Associated with Hurricane
Priority Number	
Project Manager	TBD
Project Engineer	TBD
Budget Reference	to be assigned
Project Number	N/A
Status	Planning/Engineering Design
Estimated Service Date	December 2011 – 2014
Work Plan Category	System and Component Performance Improvement
ERM Addressed	A Major Storm or Hurricane Damages Electric and/or Gas Facilities Because of High Winds and Severe Flooding.

Work Description:

- Gas Engineering with the help of Thornton Tomasetti have identified gas facility (tunnel head house, gate stations, LNG facility) vulnerabilities and have recommended strengthening/hardening to minimize damage during a hurricane event.
- Units per Year: Two locations per year.
- Discretionary: These gas facilities are crucial to keep the gas system operational during/after a hurricane event.

Justification:

- The Ravenswood, Astoria, Hell Gate and Flushing head houses all house gas facilities. If damage to the head houses were to result because of a hurricane event and subsequently the gas mains were damaged, numerous customers would be effective.
- The Somers and Iroquois gate stations are sources of gas delivery into the Con Edison system to help meet new and future loads and reduce dependency on the 134th Street gate station. Reinforcing them would insure that during a hurricane, we would continue to maximize our supply deliverability and provide for contingency mitigation on our transmission system.
- The LNG tank, substation and pipe racks are items that are critical for the operation of the LNG system during peak winter days. Insuring the integrity of these facilities during a hurricane maintains our system's ability to supply gas reliably and provides for contingency mitigation for the firm customers on the coldest winter days.
- Alternatives: Building new head houses and other facilities from the ground up which would be more expensive than reinforcing the existing ones.
- Risk of No Action: If this project is not completed, the reliability of the gas system is at risk during/after a hurricane event.
- Summary of Financial Benefits and Costs: The total capital cost of this project is approximately \$4 million. If a condition occurred during a hurricane event and gas could not flow through the system, once the event was over many gas customers would be adversely

affected. Restoring gas service to these customers would be a time consuming, labor-intensive effort, greatly reducing our ability to respond to other calls, incidents and events. Furthermore, this restoration effort will most likely consume resources from other neighboring utilities hampering their normal operations. Numerous customers would be without life sustaining, essential amenities such as heat and hot water for an extended period of time, and commercial businesses would suffer economically and may even be forced out of business. Resulting claims to the Company from such an event could be enormous, in addition to sustaining tremendous damage to its reputation. Installing these hardening projects would mitigate these potential liabilities.

- **Non-financial Benefits (if applicable):** The primary non-financial benefit is a gas system that can withstand the impact of a Category 3 hurricane.
- **Technical Evaluation/Analysis:** An evaluation of gas facilities was conducted using the engineering firm Thornton Tomasetti, Their assessment clearly indicates damage to gas facilities during a hurricane event.
- **Sensitivity Analysis (if applicable):** The costs may change when each project's scope is reviewed in detail.
- **Project Relationships (if applicable):** The project is part of the Con Edison hurricane plan. Steam and Electric also have projects planned to strengthen/harden their facilities.

Estimated Completion Date: December 2011 - 2014

Status: 2010 engineering design, construction starting in 2011

Current Working Estimate (if applicable):

Funding (\$000):

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast Total 2010-2014
-	\$1000	\$1000	\$1000	\$1000	\$4000

Forecast

EOE	2010	2011	2012	2013	2014
Labor		22	22	22	22
M&S		195	195	195	195
A/P		523	523	523	523
Indirects		260	260	260	260
Contingency		0	0	0	0
Total		1000	1000	1000	1000

2010 Capital – CE Gas Operations – Public Improvement

Project/Program Title	Interference (Excluding Lower Manhattan)
Priority Number	20
Project Manager	None
Project Engineer	Don Soldiviero & Bob Mata (Section Engineering Managers)
Budget Ref/Function Code	GDI06
Project Number	Various
Status	On Going
Estimated Service Date	None
Work Plan Category	Reduce and manage risk Enhance external relations
ERM Addressed	# 9. Gas distribution system events

Work Description:

Con Edison has an extensive system of gas mains in addition to services and appurtenances of various sizes within the streets of its service territories. These facilities share the space under the streets with other facilities, such as telephone and cable TV owned by private utility companies and sewer, water and traffic facilities owned by municipalities. When a City or a municipal entity plans to perform work within these streets and is prevented from completing the proposed plan due to other facilities being in the way, the term “interference” is used. Interference can be direct or indirect. A direct interference means that the existing facility needs to be moved to accommodate and provide space for the new facility, which usually results in a capital expense.

Justification:

If the City of New York or a municipality performs work, such as installing new or upgrading water mains, sewers, catch basin's, curbs and side walks etc. around a Con Edison facility, then Con Edison must bear the cost to move, replace its facilities affected by the City's or municipalities proposed construction activity.

- Alternatives: None
- Risk of No Action:
- Summary of Financial Benefits and Costs:
- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date:

Completion date varies based on New York City project schedule.

Current Working Estimate:

None

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budget 2009
25,165	31,890	33,920	28,202	31,600

Approved 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
33,240	26,675	24,540	24,600	25,900	134,955

Historical elements of expense (EOE's)

EOE	2006	2007	2008	Budget 2009
Labor	5,531	4,874	4,457	5,529
M&S	1,279	1,059	1,404	1,670
A/P	15,363	18,779	15,375	14,632
Indirects	9,717	9,208	6,966	9,769
Contingency	-	-	-	-
Total	31,890	33,920	28,202	31,600

Forecast

EOE	2010	2011	2012	2013	2014
Labor	5,282	4,268	3,926	3,936	4,144
M&S	1,484	1,067	982	984	1,036
A/P	17,304	14,138	13,006	13,038	13,727
Indirects	9,170	7,202	6,626	6,642	6,993
Contingency	-	-	-	-	-
Total	33,240	26,675	24,540	24,600	25,900

2010 Capital – CE Gas Operations – Public Improvement

Project/Program Title	Interference (Lower Manhattan)
Priority Number	20
Project Manager	Mike Mobyed
Project Engineer	Don Soldiviero (Section Engineering Managers)
Budget Ref/Function Code	GDI06
Project Number	Various
Status	On Going
Estimated Service Date	2010 thru 2015
Work Plan Category	Reduce and manage risk Enhance external relations
ERM Addressed	# 9. Gas distribution system events

Work Description:

Con Edison has an extensive system of gas mains in addition to services and appurtenances of various sizes within the streets of its service territories. These facilities share the space under the streets with other facilities, such as telephone and cable TV owned by private utility companies and sewer, water and traffic facilities owned by municipalities. When a City or a municipal entity plans to perform work within these streets and is prevented from completing the proposed plan due to other facilities being in the way, the term “interference” is used. Interference can be direct or indirect. A direct interference means that the existing facility needs to be moved to accommodate and provide space for the new facility, which usually results in a capital expense.

Justification:

The City of New York has embarked on a program called the Lower Manhattan Roadway Reconstruction Program to replace roadways affected by the World Trade incident. Under this program the City is replacing water mains, sewers, catch basins, curbs, sidewalks, etc and is rebuilding the entire roadway from curb to curb in various areas of Lower Manhattan (South of Houston Street). Utility facilities including Con Edison facilities have to be supported, maintained or relocated to a different location in the street to accommodate the City proposed work. The cost associated with the support, protection and relocation are borne by the Utility.

Recently a new bidding protocol was implemented by the City called the Joint Bid Program. Under this protocol the Utility’s scope of work is competitively bid along with the City scope of work and payments for utility work is based on the bid prices.

The forecast for Lower Manhattan capital expenditure is being submitted separately because unlike areas outside of Lower Manhattan the capital work is competitively bid and implemented under the Joint Bidding program. Since this program is new and even the first project under the new Joint Bidding Program is not completed, there is no adequate data to compare our estimates to actual expenditures to formulate a forecasting methodology. Therefore, forecasts for projects in Lower Manhattan is developed by preparing order of magnitude estimates for each project based on the past experience of similar projects in the area.

- Alternatives: None
- Risk of No Action:
- Summary of Financial Benefits and Costs:

- Non-financial Benefits (if applicable):
- Technical Evaluation/Analysis:
- Sensitivity Analysis (if applicable):
- Project Relationships (if applicable):

Estimated Completion Date:

2010 through 2015

Current Working Estimate:

None

Funding (\$000):

Actual 2005	Actual 2006	Actual 2007	Actual 2008	Budget 2009
N/A	N/A	N/A	3,854	5,000

Forecast 2010	Forecast 2011	Forecast 2012	Forecast 2013	Forecast 2014	Forecast/Approved Total 2010-2014
4,560	6,325	8,460	8,400	7,100	34,845

Historical elements of expense (EOE's)

EOE	2006	2007	2008	Budget 2009
Labor	N/A	N/A	427	403
M&S			263	258
A/P			2,233	2,891
Indirects			931	1,448
Contingency			-	-
Total	N/A	N/A	3,854	5,000

Forecast

EOE	2010	2011	2012	2013	2014
Labor	436	569	761	756	639
M&S	273	379	508	504	426
A/P	2,640	3,669	4,907	4,872	4,118
Indirects	1,211	1,708	2,284	2,268	1,917
Contingency	-	-	-	-	-
Total	4,560	6,325	8,460	8,400	7,100

**CONSOLIDATED EIDSON COMPANY OF NEW YORK, INC.
GAS O&M EXPENDITURES**

	TEST YEAR 12 Months Ended	
	7/1/2008 TO 6/30/2009	2011 RATE YEAR 1 REQUEST
Leak Repairs	25,607	25,607
Emergency Response	6,644	7,044
Safety Inspections	5,284	5,284
Fault Repairs	1,454	1,454
Corrosion Faults	981	981
Service Cut-offs/Demos	2,287	2,287
Service Transfers	1,443	1,443
Capital Related Mtce.	1,381	1,381
Net Negative Salvage	1,622	1,622
Other Highway Complaints, Drips, etc.	2,702	2,702
Non Leak Tickets / Poor Pressure No Gas	3,742	3,742
Follow-up & Rechecks	647	647
Meters, Regulators, Others	765	765
Emergency Response Center	3,081	3,081
TOTAL AREA GAS OPERATIONS	57,640	58,040
Gas Engineering & QA	4,812	5,050
EH&S	2,413	2,413
Security	519	519
LNG Plant	4,210	3,600
Tunnel Mtce.	3,978	3,978
Pressure Control	4,241	4,241
Corrosion Control	988	988
Leakage Survey	2,307	2,307
Measurement	953	953
Gas Control	1,641	1,641
TOTAL TECHNICAL OPERATIONS	26,062	25,690
S.V.P. & Staff	1,311	1,311
New York Facilities (Con Ed's portion of Keyspan's Exp.)	4,097	4,097
TOTAL S.V.P. & STAFF	5,408	5,408
Total Gas Operations	89,110	89,138