Exhibit SDM 3.1
Rider ICR Accelerated Main Replacement Program (AMRP)
Program Management Transition Plan

Prepared For

Peoples Gas Light and Coke Company

Submitted By

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August 2009

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Executive Summary

Jacobs Consultancy conducted a review of the processes, systems, and labor resources PGL employs in executing low-pressure system replacement capital projects. In this report, we summarize the existing project delivery process, describe a program delivery process approach, identify differences between project and program delivery, and identify potential vulnerabilities in PGL's current project delivery process created by an accelerated main replacement program.

The existing project delivery process is appropriate for PGL's typical capital investment level. However, expanding the level of capital investment by a factor of 3, as presented in the ICR testimony of Salvatore Marano, has created challenges for companies in all business sectors. Some of the more significant challenges an expansion of this magnitude can cause include: labor resources, scheduling, cost control and management, scheduling, and quality control.

To address these challenges, a central conclusion we have reached is PGL should move from a project delivery process to a program delivery process. Typically, under a program-type delivery process, costs are estimated, tracked, controlled and managed project by project, enabling the program manager to recognize problems, take corrective action, mitigate the cost, schedule or to quality impact and implement process changes in order to prevent future occurrences.

The full benefits of a program delivery process can best be achieved by the creation of a program management office. This report presents three means of implementing a program management office. The program management office organizational structure is similar regardless of the method of implementation. The major benefits of a program management office include:

- Single point of responsibility
- Stronger cost, schedule and quality management
- Earlier identification and quicker response to problems
- Greater cost transparency

Another significant challenge identified is that of labor resource requirements. Based on the level of construction presented in Jacobs Cost Benefit Analysis for the 2030 Scenario, we have identified that there could be a significant increase in labor requirements to complete the program.

Meeting the program management challenges of the accelerated main replacement program, as presented in the ICR testimony, will require a number of actions items. From our review, we have identified action items which need to be undertaken between now and the start of the accelerated main replacement program. In some cases these action items will carry on through

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the program ramp-up period. PGL has already initiated some action on at least one of the items-organizational structure. Some of the key action items include:

- Select the best PMO option for AMRP success
- Continue to identify and map PMO business processes
- Recruit/Hiring professional and inspection staff
- Develop a scorecard type reporting methodology
- Develop an AMRP Construction Execution Plan

Based on our current understanding, knowledge and experience, we believe that PGL can implement the necessary changes, as outlined in the management transition plan, to begin the accelerated main replacement program in 2011.

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Preface

In this section, we present background information on why this report was prepared and the scope of issues covered in this report.

Background

Peoples Gas Light (PGL) has typically replaced 40-50 miles of cast iron and ductile iron pipe per year. In 2008, PGL replaced approximately 46 miles at a cost of about $52 million. PGL is planning to accelerate the replacement of the remainder of its low-pressure distribution system and medium-pressure cast iron and ductile iron pipe. The accelerated replacement program will result in a significant increase in capital expenditures, which is estimated to total approximately $2.8 billion (2010 dollars) when it is completed by 2030.

A large increase in capital expenditures often stresses existing processes and systems, causing some of them to falter or highlighting their existing flaws. PGL recognizes that while ramping up the capital spending program over a period of years can provide time to respond to problems, they have decided on a more proactive means of preventing and mitigating problems by reviewing the existing processes, systems and resources, and seek means to improve the processes prior to expanding the reliance upon them.

Scope of Report

Integrys retained Jacobs Consultancy to provide an independent review of the existing processes, systems and resources, identify gaps and recommend a plan of action that will enable effective management of the program. The review is to include the following elements:

- Organizational Structure
- Staffing Levels and Skills Assessment
- Adequacy of Business Process and Systems
- Roles and Responsibilities of PGL Staff and Service Providers
- Program Budget
- Cost Estimating
- Buildability/Constructability/ Maintainability Review
- Program Schedule
- Cost Management, Control and Reporting
- Contract Administration
- Project Records, Document and Drawing Controls
- Quality Control/Assurance

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- Performance Measurement

The body of this report is comprised of six sections.

- Section 1 – PGL Current Process
- Section 2 – Program Delivery Process
- Section 3 – Process Enhancements and Changes
- Section 4 – Program Management Office Options
- Section 5 – Management Transition Plan and Next Steps

In preparing this report, Jacobs Consultancy conducted approximately 20 meetings with PGL, and initiated data requests and follow-ups to ascertain information about the current preconstruction and construction processes at PGL. Below is a list of topics covered in the meetings:

- Program Management of the Accelerated Replacement Program
- Project Planning and Process Control, Cost Control, Metrics, IT Systems
- Project Execution
- Labor, Contracts, Safety
- Contract Administration and Materials Logistics
- Public Communications and City Coordination
- Training and Operator Qualifications
- Long Range Planning
- Project Engineering
- Construction and Project Execution
- Regulatory and Reporting
- Accounting
- IT Systems

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1. PGL Current Process

Findings

PGL's current functional pre-construction and construction process is comprised of several elements that can be grouped into five major categories:

- Business Systems
- Technical Systems
- Utility Execution
- Regulatory and Governmental
- Stakeholder Outreach

Under each category, there are a number of sub-units that play an important and key role in the progress of a typical project.

Figure 2 - PGL Functional Construction Flow Chart, depicts, conceptually a typical progression of a project from pre-construction through construction, and the roles of the different organizational units involved.

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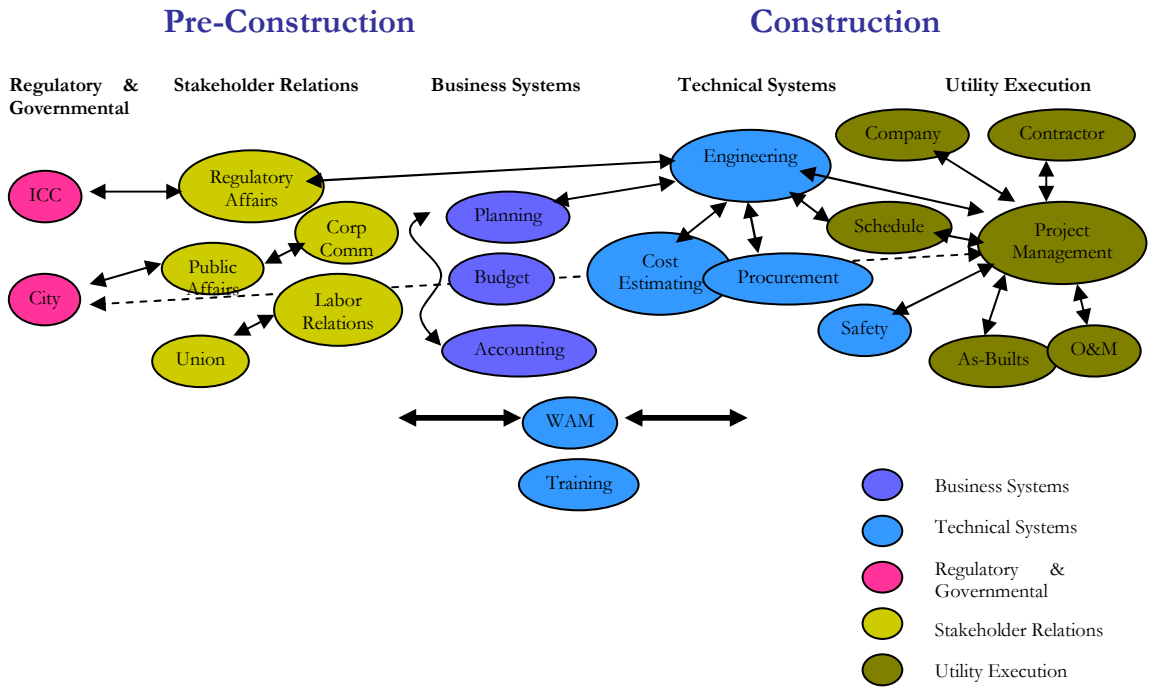
Figure 2. PGL Functional Construction Flow Chart



From the information collected to date comes a more complete mosaic of the current state of the project delivery process. The following sub-sections present our findings regarding the major functional elements in the current project delivery process.

Planning

Currently, new gas distribution construction projects are generated from three different sources:

- Public improvement;
- Discretionary, including system improvement; and
- System expansion.

Public Improvement Projects

Historically, at least one-third of the work stems from projects being undertaken by the City of Chicago (City). PGL is notified where the City will be excavating for water or other public utility and street projects, and adjusts the schedule to coordinate needed replacement work in the same area. This process avoids the unnecessary excavation of City roads and properties, and

also produces savings for PGL in terms of avoided restoration costs. Due to budgetary constraints in 2008 and 2009, the proportionate share of the public improvement - related projects will become greater compared to other "discretionary" projects.

Inputs to public improvement project long-range planning include plans issued by governmental organizations. Cook County provides a five-year plan, the State of Illinois provides a two-year plan, and the City provides a one-year plan. The City's plan, however, accounts for approximately 90% of the public improvement project work. In addition, the City has a more general three-year plan that is not strictly followed, but does assist PGL in its long-range planning.

Public improvement projects are recommended by the Gas Operations group, and then submitted to the Construction manager, who reviews the project and incorporates it into the budget at the particular district location. If the Construction manager approves the project, it goes forward for financial review. PGL has a formal written financial approval process, with authorization prescribed by the dollar magnitude of project. This process is described more as an approval than a review process.

The Gas Operations group attends monthly meetings with the City, but these are mainly discussions of current projects already underway. There are meetings held by the City roughly once a year that discuss the City's long-range plans. The City prefers to receive PGL's plans first. PGL has observed that coordination within the different City agencies could be improved, particularly related to long-range planning.

Federal stimulus funding could cause an increase in local road construction that might affect future projects to be coordinated between the City and PGL.

System Improvement Projects

A second source of projects is so-called discretionary work, known as "system improvement." These items include: the cast iron/ductile iron (CI/DI) replacement projects, conversion from low-pressure to medium-pressure, and replacement of faulty vaults. The Gas Engineering group of Integrys Business Support (IBS) contributes to the selection of system improvement projects using its Main Ranking Index (MRI) and cost optimization tools.

The MRI was developed to identify and prioritize gas main segments as candidates for replacement. Each individual segment is evaluated, based on its maintenance history. Criteria taken into account include breaks, cracks at taps, pipe wall thickness based on pipe coupons, visual observations, incidence of leaks and other repairs. Each of these criteria is assigned a

multiplication factor based on "Break Equivalents" which is then multiplied by the number of occurrences.

The sum of the aforementioned numerical value is then multiplied by a factor based on pipe material, operating pressure, diameter, street type and pavement cover. The result of this calculation is an MRI value that is assigned to each segment. The MRI value is rounded to the nearest quarter point, (i.e. The Uniform Main Rank Index (UMRI)) and sorted in descending order in order to identify those segments with the highest incidence of UMRI points per block.

All segments that have accumulated a UMRI rating greater than 6.0 are placed on a schedule to be retired. Segments with a UMRI value greater than 3.0 are viewed as possible replacement candidates when performing work on adjacent segments and when evaluating the extent of Public & System Improvement projects.

These projects are normally accompanied by only rough magnitude cost estimates. Other drivers of system improvement work are elimination of water infiltration in the low-pressure system. In the past, the CI/DI retirement mileage goals were more than enough to support the entire capital program. With the exception of the reduced capital budgets for 2009 and 2010, this accounted for 80 to 100 projects, totaling about 45 miles.

System Expansion

The third source of planned projects is called “system expansion,” and refers to new construction. This is largely comprised of new customer connections. In past years, there may have been as many as 3000 new customer connections per year, but current levels are projected to be only about 400 per year.

Currently, PGL plans system construction projects about one year out.

Budgeting

Budgeting for the current CI/DI replacement program is incorporated within PGL’s capital program. The company maintains discrete budgets for operations and maintenance, and for capital construction. This practice is common in the utility industry, and conforms to the Federal Energy Regulatory Commission’s (FERC) adoption of the universal system of accounts for individual items within those budgets.

Projects that would cost over approximately $1 million are set out for individual bid by the contracting and procurement group, as described further below. Smaller projects are sent to

contractors working under blanket orders and performed on a unit price basis. Unit labor prices vary due to locational considerations in the City, e.g. work in the congested Loop is more expensive than many other locations.

PGL's current goal is to replace the majority of the CI/DI system by 2050. Some of the larger diameter CI/DI pipe may not be replaced until 2070. In order to meet that goal, PGL has been replacing approximately 45 miles annually, although budget constraints in 2009 and 2010 will result in replacement of approximately 8 to 10 miles per year.

The budgeting process is very much top-down, normally determined by evaluating the costs required to replace 45 miles from the previous year and adding in an inflation factor. The yearly budget for the replacement program is based on an estimate for Gas Operations. Monies are allocated into individual projects, and the accounting department will check to see if the project totals fit within the overall capital expenditures budget. If actual expenditures vary from the capital budget by about 1 million dollars in a month, there will be an investigation to determine reasons for the difference.

Project Implementation

The Engineering Department's initiation of projects begins with Engineering asking Construction if they need more work. If so, Engineering creates accounts and begins seeking permits and other preliminary steps. If projects need specific materials such as larger diameter pipe beyond normal orders of 2 - 4 inch plastic, Engineering then contacts Materials Management to order pipe.

Once a project goes into the system, "place holding" is maintained. The district Construction shops maintain Gantt charts tracking project progress. For 95% of the projects, Gas Operations maintains approximately two weeks of needed materials on hand. There is no existing long-term material forecasting mechanism.

PGL intends to fully install and begin use of the automated Work Asset Management system (WAM). The current mainframe systems will be totally retired and all the gas assets information will be moved to an asset resource management system that will be part of WAM. The main body of the project is scheduled to be completed by January 2010. The WAM will include a mobile data system that will be enabled so that field changes to assets will be sent directly to the data repository. The mobile piece of the system will be the last to be completed, sometime by mid-2010. However, there are currently no plans to extend this mobile compatibility to construction contractors.

Project scheduling will also be automated as part of the system. All work under the Accelerated Main Replacement Program (AMRP) would be handled by the system, except for the meter installation and relocation. In addition, currently there is no solution found for the tracking of permitting costs, but that is an intended use of the system. Data related to the AMRP and related indirect costs will flow through PeopleSoft software. Material usage will also be recorded according to tags from the FERC accounting system.

Materials Management has been normally based on historical usage rates, maintaining a rolling inventory with automatic replenishment. Normally, approximately two to four months supply of inventory is held on hand. In normal construction years, approximately 90 - 98% of available storage space is filled with inventory.

In the past, 90 - 95% of materials have come from PGL's in-house inventory, and these were primarily related to small diameter pipes. Integrys Business Service's Materials Management group responded there are two additional sites that have been used for staging of material for large jobs.

Larger diameter pipe orders require a longer lead time, but Materials Management believes that even if demand for large diameter pipe is doubled or tripled by the AMRP, there will be no problem in resetting the order points. Construction staff expects material management processes to become more automated and accurate when they are incorporated in the Work Asset Management System (WAM), described further in this report.

Although contractors are typically responsible for spoil disposal, PGL has provided areas for the testing of spoil prior to its classification for proper landfill disposal. Also, materials are not stored at job sites in Chicago.

In regard to in-house labor's ability to adjust to different locations, it is currently not difficult to switch people to assignments between Construction shops. However, personnel must still report to their home shops, resulting in extra travel time to the job sites.

The Contract Administration discussion below includes a description of which types of work are normally performed by contractors, and which types are normally performed by PGL crews. Furthermore, the increases in staff anticipated to meet the goals of the AMRP are detailed in Resource Requirements Report.

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Cost Management, Control and Reporting

Cost estimates are made from actual cost per foot historical values. IBS believes that the WAM will use compatible labor and materials units. Engineering believes that aggregate estimates have been within 5% of actual costs, but this varies greatly by individual projects. There has been little effort to improve cost estimation for individual projects because it has been proven to be difficult to predict exact labor costs for smaller individual projects, and the overall aggregate estimates have been fairly accurate. Larger projects go out for competitive bidding, and therefore those costs are held by contract values.

Currently the use of outside contractors means much less work in accounting in regard to redistribution costs, than is required proportionally for in-house personnel. Contractor billings are approved by Operations and then forwarded to Accounting.

The WAM system will assign actual work units involved in the AMRP, and those units will be converted to actual project costs will be tied in to the Peoplesoft project costing system. The team characterized WAM as the start of the feeding mechanism into project accounting.

In summary, the WAM system's chief functionality is as a work management system, rather than an accounting and reporting mechanism. As such, it will not be a single point to obtain all of the cost data that would be contemplated in reporting the AMRP program to the Commission. It would, however, provide aggregated or sorted data relating to activities dedicated to the AMRP.

Contract Administration

Major procurement actions are undertaken by IBS, and the current main replacement program is supported by ongoing agreements and blanket orders. Current contracted labor opportunities were sent out to bid, and IBS settled on two contractors for PGL, ensuring competition. One contractor does new construction, and one does primarily replacement construction. The firms were awarded three-year contracts which come up for renewal at the end of 2010. The timing of this renewal coordinates well with the beginning of the AMRP. In the past, the posting and bidding of these general construction contracts has required approximately two months.

Under historical CI/DI replacement rates of approximately 46 miles per year, there has been an approximate 50/50 split between PGL and contractor labor. Current availability of directional drilling equipment is a limiting factor. Based on an estimated availability of directional drilling equipment, the current labor force could do as much as 80 miles of replacement per year, and 48 miles of retirement (including installation of new pipe) per year. All meter set fabrication is performed by PGL personnel; contractors are currently not performing meter sets and re-lights.

Currently, about 75% of the contracted work is replacement projects and 25% is new construction. With a decrease in new construction stemming from economic conditions and the configuration of the service area, there are no more PGL crews doing new construction. Sometimes individual large projects, such as a large diameter main replacement or vaults, are bid out to a list of seven or eight pre-approved contractors. This means that small diameter CI/DI replacement projects go to company crews or an existing blanket contractor, and large diameter CI/DI individual jobs are bid out. Individual project bidding, if expedited, can take approximately two to three weeks from the request for bids to bid awarding. The quantity of large diameter replacement projects is expected to decline during the 2009 to 2010 period due to budget constraints. This will result in the AMRP being more challenging, in that it will be accelerated from lower levels of projects and on-hand resources than have been normally present in the recent past.

In the past, longer duration contracts have been executed by PGL. A five-year contract was awarded and extended to a total of 10 years. There is also a pool of qualified contractors working for other Integrys utilities in other service areas, and some contractors work in multiple service areas.

The current contractors seem to be working satisfactorily. Procurement and Gas Operations staff believes that the current contractors would be capable of ramping up work to meet the requirements of the AMRP. However, it was noted by training personnel that the use of new contractors requires incrementally greater work for Integrys in scrutiny of the contractors' Operator Qualifications (OQ) programs, drug testing, and other programs. Of course significant additions to the company workforce would also create new demands for employee training and other human resources-related tasks.

Because the present contractors operate under blanket contracts, change orders are only needed when billing amounts exceed the contract values. Change orders are executed when large project scope or design changes are involved. The protocols for change orders are defined processes and must be initiated by the project manager. Purchase orders are also a documented process.

Quality Control/Assurance

Ensuring that there is a well-trained, skilled workforce is one of the primary steps in quality assurance. IBS's training group in Chicago manages the Training Center in support of PGL. The Center conducts OQ training for PGL employees, as well as training on other subjects. OQ training is not conducted by the Training Center for contractor's workforce. The Training Center reviews the OQ training programs of contractors using the Midwest Energy Association

standards as a guideline. However, to further assure safe operations, the Training Center requires its own welding and fusion qualification testing for all employees, including contractors.

Progression of employees from introductory level gas workers, to employees at the mechanic level who are qualified to do tie-ins and meter sets, normally requires approximately two years.

On the quality control side, the Training Center also conducts routine audits of employees' skills and activities. Approximately 850 employees are audited each quarter on 43 activities, primarily in operation and maintenance functions.

Project construction is administered from three Construction office locations: North, Central, and South. Construction office district managers wear many hats in the QA/QC arena. In addition to attending meetings with the City of Chicago to ascertain the needs for future public improvement project-related gas construction, they spot check as-built drawings, and perform on-site inspection of PGL and contractor construction. Performance measurement is discussed further below.

Project Records, Documents, and Drawing Control

Inspectors and company crews at the construction offices prepare project drawings, which are reviewed at the Construction offices on a spot basis. All as-builts are then submitted to the Engineering group. These as-builts are prepared as paper drawings, as opposed to electronic GIS files. The IBS group then transfers them to a GIS system, while noting nearby pipes to be considered for replacement as a result of the cost optimization model.

Performance Measurement

Performance measurement of the current replacement program occurs in these primary areas:

- Individual project construction performance
- Contractor performance
- Overall replacement program objectives

In regard to individual project construction performance, PGL inspectors use the methods and procedures contained in the Distribution Department Contractor Manual & Engineering Specifications. In addition, inspectors use a checklist that contains the major quality items to look for and monitor. All of PGL's newly-hired inspectors possess college degrees in construction management or related fields and have prior construction experience. PGL also employs seasoned construction inspectors with over twenty years of experience.

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The critical factors that are used to evaluate the performance of construction inspectors and managers include the safety performance of their crew; hits on other facilities; customer or community problems encountered and the handling of same during the project; coordination with shop forces regarding gassing and retirement of facilities; damage or disruption of customer property; timely processing of associated records and as-builts, and overall quality of work as evidenced by QA,/QC audits. In addition to this extensive list, Construction Management indicated that monitoring the cost of installation and ability to maintain a defined schedule would be useful performance measures to gauge the success of the replacement program.

Contractor compliance with company procedures in the field is monitored by PGL construction technicians using checklists containing major quality items, as is done for PGL personnel.

Overall replacement program performance measurements include the following:

- Number of miles retired
- $ per mile to replace
- Synergies with Public Improvement projects (resulting in reduction in restoration costs)
- Trend of MRI rankings
- Leaks per mile
- Reduction in medium-pressure ductile iron main
- Reduction in vulnerable services
- Reduction of vulnerable services adjacent to sensitive facilities (hospitals, schools & nursing homes)

Currently, PGL is unable to conduct studies to determine if the MRI and cost optimization model it uses is identifying the best candidates for replacement, such as examining post-replacement operations and maintenance costs. Engineering states that because so many of PGL's projects are still driven by public improvement projects, there is not enough data on discretionary projects. Also, because pipes are retired in-place, there are no follow-up assessments performed regarding the structural integrity of the pipes that are designated for replacement.

Beyond Engineering’s performance evaluation of the replacement program which concentrates on the pipe selection process and overall yearly mileage goals, there is not currently another organization that performs evaluations of the main replacement program. PGL is in the process of revising its organization structure, and the Process Control & Improvement area will have a Metrics & Performance Management section.

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Items which measure the ultimate effectiveness of the replacement program are related to many of those that are currently tracked for Gas Operations in other areas such as Customer Service, Maintenance, and Compliance and include:

- Reduction in leaks (normalized for weather)
- Reduction in specific O & M costs (leak repairs, inspections, etc.)
- Percentage of yearly goal of meter replacements/relocations
- Customer feedback
- Reduction in customer outages (primarily caused by water in main)
- Reduction in number of customers that could be impacted by a 3rd party hit

Cost and financial return tracking of the above areas are also performance measurements. Planned construction metrics include: cost per foot of main installation for company and contract crews (separate categories 2", 4", and 6" diameters), cost per service pipe installation (less than 2" diameter), and project cost versus project estimate. The metrics on installations are on a monthly and fiscal year to date basis.

Accountability Responsibilities

As can be seen from above, responsibilities for the current CI/DI replacement program lie within many areas. As the program has evolved, accountability responsibilities fall within both single project and program areas. The district construction offices and Integrys' Engineering and Gas Operations organizations have accountability responsibilities for individual replacements. In addition, these organizations share responsibility to see that yearly mileage goals are met. They also have responsibilities to see that the dollars allocated for individual projects are not overspent.

Overall, budget responsibilities for the current replacement program also fall within a larger program "bucket" such as the Capital Construction Program. Within the Capital Construction Program, individual expenses are tracked, primarily by FERC accounting codes and types of materials. Further adding to the complexity of the accountability responsibilities are internal budgeting issues, such as a separate accounting from construction of meter installations and relocations. In addition, financial approvals are assigned primarily by individual project cost, not by whether or not the projects are part of the replacement program.

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2. Program Delivery Process

PGL's approach to managing main replacement capital budgets is by individual projects. Each main replacement has been the product of coordination between Engineering Services, Gas Operations, the various district construction shops, and the City of Chicago. Each group is responsible and accountable for their portion of the process. Typically, under this type of approach, project costs are managed with respect to the overall budget. Whether an individual project comes in under or over the estimate is less important provided the total budget is not exceeded. The AMRP will have many of the same challenges faced by the existing main replacement program increased by a magnitude of three, as well as new challenges stemming from the vastly increased scale of operations and the expected scrutiny by regulators. Some of these challenges include, in no particular order:

- Competing priorities
- Availability of resources
- Scheduling
- Internal and external coordination
- Internal and external communication
- Change order management
- Invoice validation
- Document management
- Internal and external reporting
- Implementation of new methods
- Management of change
- Corrective action
- Traffic planning
- Capital forecasting

A leading practice used by organizations that have large capital programs, which will be scrutinized by communities, corporate/public boards, governmental agencies, and other groups, is to take a program, rather than project, management approach. Program management is the practice of construction management applied to a capital improvement program of one or more projects from inception to completion. Typically, under a program type delivery method, costs are estimated, tracked, controlled and managed project by project, enabling the program manager to recognize problems, take corrective action, mitigate the cost, schedule or quality impact and implement process changes to prevent future occurrences.

The use of a program management process differs from traditional project delivery methods in several important ways. Many of these strengths are based on the independent functioning of a

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Program Management Organization with a single goal of managing the life cycles of the various projects, which make up a complex program such as the AMRP. Options for incorporating the Program Management Organization within PGL's structure are discussed later in this report.

The Program Management Organization would be responsible exclusively for the AMRP and would act in the program's interest at every stage. This would be especially useful for PGL, because many other vital activities required for providing safe, reliable and cost-efficient service such as existing Operations and Maintenance, Customer Service and other aspects of gas utility operations must be ongoing and fully-staffed during the AMRP's execution. The Program Management Office (PMO) can augment existing PGL staff by providing pre-planning, design, construction engineering, and management expertise to ensure the best possible outcome. It would apply a structured value-engineering process to each stage of AMRP, making the necessary decisions that are required throughout the program life cycle.

Most, but not all, construction-related work would migrate from project (non-program) to program application. Operation and maintenance, inspection related, and emergency construction would remain within the project execution organizations. Figure 3, Construction Work Migrating to PMO, illustrates this point.

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Figure 3 - Construction Work Migrating to PMO

Types of Construction Related Work

		Non-Program	Program
Enforced			
	Public Works	X ------>	X
	CDOT	X ------>	X
	IDOT	X ------>	X
System Expansion			
	Transmission	X	
	Medium Pressure Main	X ------>	X
	Low Pressure Main	X ------>	X
	Meter Relocation*	X ------>	X
	Pressure Regulator Stations	X ------>	X
	Meter Stations	X ------>	X
	New Customer Connections	X	
System Improvement			
	LP to MP Conversion	X ------>	X
	Condition**	X ------>	X
	Vault Replacement	X ------>	X
	Planned	X ------>	X
Emergency		X	

*Meter relocations associated with zonal projects are Program work.
**Guidelines will need to be established distinguishing which Condition replacement projects are migrated to the program.

Figure 4 shows a sample PMO organizational, applicable to any of the options that are discussed in Section 4.

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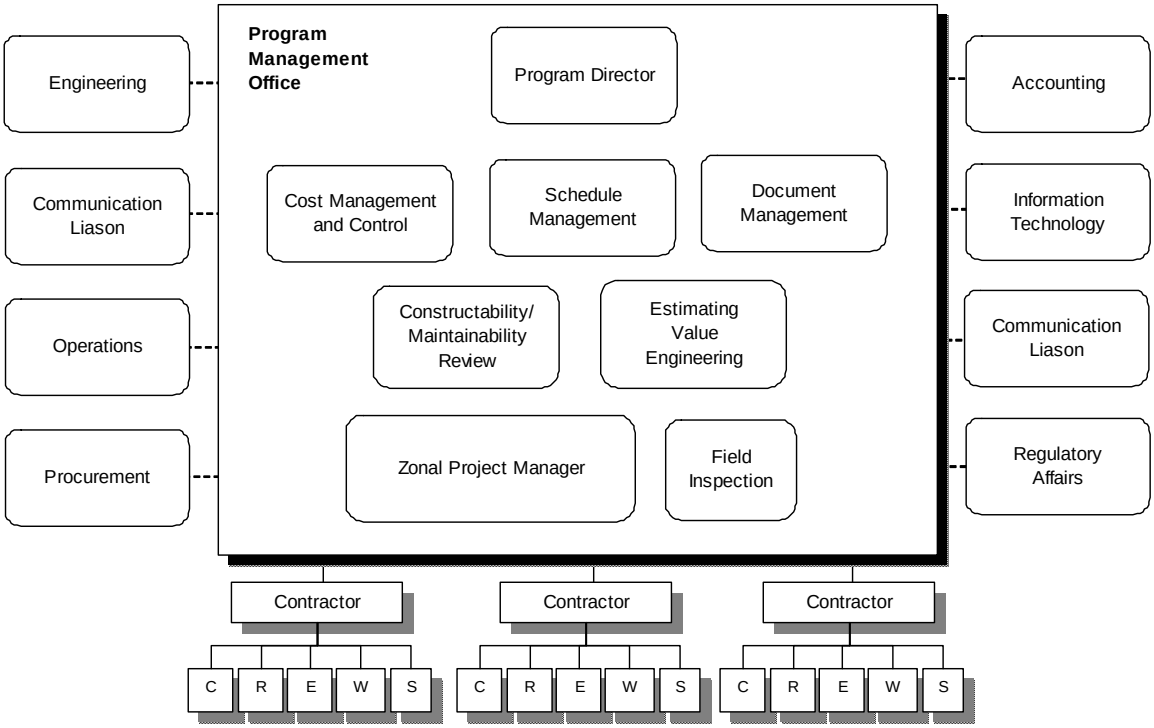
Figure 4 – Sample PMO Organization



The creation of a PMO is compatible with the new organizational structure already underway at PGL, and is focused on the execution of the AMRP. The dashed lines in the figure represent communication links to functional PGL/IBS organizations, the names of which may change as a result of reorganization. Establishment of a PMO would create a single point of contact and does not interfere with other aspects of operations as reflected in the new PGL organizational structure.

For these reasons, PGL should consider undertaking a program management approach to the AMRP.

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3. Process Enhancements and Changes

Our conclusions are described in this section from our review and analysis; we have identified a number of areas that should be addressed prior to implementation of an AMRP, and in some cases extending through the program ramp-up. These areas, including adoption of a PMO, are vital to implementation and successful execution of the AMRP. It should be noted that at this stage, we have identified what actions PGL should undertake, but not how these actions should be accomplished.

Conclusions

Process Mapping

Functional information was collected for the major categories by interviews throughout Integrys/PGL. However, as the AMRP progresses, it will be beneficial to map individual baseline business processes to fully understand the impact of potential improvements that will ensure the program's success. There is a need to first understand what the process currently is and where the potential stresses may occur before making changes. The emphasis of this process mapping will be to drive improvements, where needed, in the overall engineering and construction management aspects of the AMRP.

At this time, the following processes require further mapping:

- Budget management
- Cost management
- Change management
- Schedule management

Cost Forecasting, Estimating and Management

Cost forecasting is currently accomplished by a reliance on historical costs and materials. The labor cost components are controlled by the use of long-term contracts, and negotiated in-house workforce agreements. Material costs, however, have been proving to be quite variable in the industry, and depend to some degree on factors beyond the immediate control of PGL, such as competition and manufacturing supply factors. The significant increase in magnitude from the current program to the accelerated program decreases the reliability of depending on historical usage to forecast future costs. Costs and ordering methods used historically would not reflect potential economies of scale savings.

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- The WAM system will increase the ability to access project data, especially if steps are taken to track and aggregate projects into a basis for the accelerated program. An additional improvement will be to enable PGL to track and report entire program expenses to the Commission.

The Accounting Department is expecting that WAM will improve the visibility in forecasts and expenditures. For the accelerated program, the Accounting Department would rather have a data resource that is adaptive to their needs, rather than a standard report format. It is believed that the PeopleSoft component of WAM will allow accounting to track cast iron main replacement moneys separately, when implemented in January of 2010.

PGL should consider all options at its disposal in order to utilize economies of scale in both labor and materials and should review and consider the following:

- Greater use of innovative contracting such as turnkey contracts and proper incentives.
- An increase in in-house replacement personnel would mean that many more accounting staff would be needed to properly redistribute their costs.
- There is also a pool of qualified contractors working for other Integrys utilities in other service areas, and some contractors work in multiple service areas.

In regard to the challenges of the AMRP stemming from materials, advance planning and material forecasts must be integrated to control prices which have tended to be volatile. In discussions with the Construction team, a logistical problem was noted regarding the lack of storage space for vehicles and equipment that would be expected for the AMRP. For example, current contractors use PGL's sand, because the City has not agreed to allow sorted spoil to be used as fill, or to allow small hole technology, both of which would greatly reduce spoil storage and fill requirements. Other logistical problems noted include: lack of storage space for vehicles, equipment, and spoil that would be expected to be on hand for the AMRP.

Procurement and Contract Management have stated that an increase in magnitude represented by the AMRP could be managed with one of the current methods. PGL employs two commonly used procurement and contract methods: competitive bidding of individual projects and unit price contacting. In the first method, PGL would prepare specific design and construction bid packages for a project. This method is often used for one-off projects, such as a gate station or pressure-regulator station. In the second method, a contractor having successfully entered into a unit price contract with PGL through a competitive bid process, would be provide a detailed project packet containing the cost estimate based on the unit price contract. This method is used for repetitive projects of similar nature and complexity. In the latter method, Procurement and Contract Management is mostly involved upfront in bidding and awarding unit price

contracts. The former method would become very burdensome if routinely employed as part of the AMRP.

Expanding PGL's portfolio of labor, material and services procurement, and contract methods will assure competitive pricing and reduce total installed costs. Some of the methods to be considered for labor and services include:

- Engineer, procure and construct
- Design-Build
- Turn-key contractors
- Incentive based contracts

Some of the methods to be considered for material include:

- Improvement to the forecasting of needed materials
- Just-in-time logistical arrangements
- Bulk buying and sharing of inventories with sister utilities
- Greater participation by construction contractors in providing materials
- Contractors ordering and storing their own pipe, as is currently employed by Wisconsin Public Service
- Establishing a buyer solely dedicated to the AMRP within the PMO
- The logistics of moving and storing materials for the major increases in construction,
- Cycling of unused materials back into inventories

With the increased amount of money being spent monthly, comes an increased amount of committed dollars. These committed costs become recorded when an invoice is received. When these committed dollars are not accurately tracked, the ability to accurately forecast a project's total installed cost or monthly project capital needs is undermined. A process for the systematic and timely capture and communication of committed costs is needed.

Constructability Review

A complete constructability and maintainability review is vital to ensuring program success, as well as future operation. It provides an examination of critical components of a construction project, defines critical issues that must be resolved, and potential consequences that must be overcome for the project to be constructed safely in compliance with specified standards, completed on schedule, and provide safe, reliable service. This is essentially a matter of proper coordination, requiring the integration of various steps so that no one component, such as a

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missing permit or piece of construction equipment could result in cascading delays and failures. Benefits of a constructability and maintainability review and proper oversight include:

- Shorter Overall Schedule
- Lower Field Costs
- Natural Barrier Breaker Among Teams
- Lower Engineering/Procurement Costs by Defining Construction Needs
- Improved Employee Safety
- Fewer Construction–Based Requests for Information and Change Orders

PGL should review the following in greater detail:

- Health, Safety, and Environmental. The potential risk associated with higher levels of construction and worker involvement will need to be managed at a level beyond the current properly staffed workforce, to ensure against unplanned work stoppages.
- Methods to Control Restoration Costs. Working with the City to facilitate code changes that would allow greater use of small hole technology, as well as the use of properly segregated spoil as fill would reduce restoration costs, excavation and restoration time requirements, and costs related to spoil and fill storage and transportation.
- Communication with the Community and Assorted Stakeholders. Given the potential for political concerns to severely impact the timing and execution of construction projects, a proactive team dedicated to community relations regarding the AMRP is vital to the programs constructability.
- Traffic Planning. If PGL is to utilize a zonal construction approach, large parts of the City would contain numerous construction sites. The accelerated program office will need to coordinate with the City's underground infrastructure office, police and emergency services, and transportation division. Within the strategy of zonal replacement, a centralized point of contact will be needed to coordinate so many different activities.
- Spoil Management. Larger scale construction within zones may be conducive to contracts which require trucking directly from the construction area to disposal sites, and establishing localized staging areas for spoil storage and testing.

Information Systems

The need for significant resources to track accelerated program expenditures is viewed as a primary challenge to be achieved in part by the WAM system.

PGL should undertake the detailed review of the following:

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- Managing the impacts in many categories on plant asset accounting
- Extending the WAM system's capability to utilize mobile data to selected contractors
- Developing an auditable process and system that can track actual expenses, as well as committed costs of the accelerated program and put them in a format that is readily adaptable for reporting to the Commission
- Reviewing the desired improvements for addressing the ICR/AMRP through WAM with all operations leads
- Considering improvements to utilize the enhanced PeopleSoft replacement tracking capability for the tracking and reporting of actual costs associated with the Rider, if approved.

Labor Resource Planning

PGL and IBS have been well-prepared to meet the needs of the current replacement program. The skilled execution of the current program and a "can-do attitude" provides a partial explanation why project delivery personnel such as Materials Management and Engineering expressed needs for relatively small and incremental staff and other resources to complete the accelerated program.

However, the accelerated program represents several new challenges and demands on labor when compared to the current program:

- Recruiting and hiring professional, inspection and other staff
- A new zonal replacement approach comprised of multiple projects
- An expanded need for coordination and communication with stakeholders, e.g., City Departments, Businesses, Communities, Commerce Commission.
- Training, certification and OQ compliance monitoring
- Upgrading from low- to medium-pressure facilities
- Relocation of inside meters

Additionally, these challenges may be exacerbated by the decreased construction levels in 2009 and 2010 because of the economic downturn.

Assuring the availability of qualified, skilled and experienced workers for both company and contractor AMRP work is critical for the safety of workers, the public, and the system. Reviews of the following plans are in order to identify and mitigate any impact the AMRP may present:

- Health, Safety and Environment Plan
- Operator Qualification and Contractor Certification

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- Damage Prevention

4. Program Management Office Options

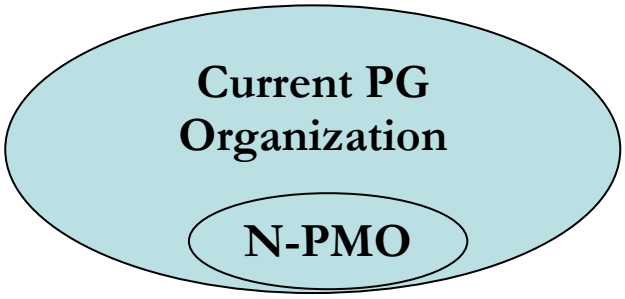
There are three basic Program Management Office (PMO) delivery options to consider in the implementation Accelerated Main Replacement Program: Nested, Aligned and Independent. Each has a functionally different organizational set of characteristics. For all three options there are seventeen attributes that fall into five categories: Business Systems, Technical Systems, Utility Execution, Regulatory and Governmental and Stakeholder Outreach. The following section discusses the potential delivery options highlighting their respective strengths and weaknesses, barriers to implementation and the attributes of each option.

Option I. Nested - Program Management Office (N-PMO)

Organizational Structure

The N-PMO is interwoven as a functional unit within the operational structure of PGL (See Figure 5, Nested Program Management Office). All technical and support functions are shared through a high performance team environment that is collaborative (but not necessarily dedicated) toward the implementation of the main replacement program.

Figure 5 - Nested Program Management Office



Strengths (S) and Weaknesses (W)

S-Command and Control of AMRP using current structure
S-Resource and Systems-Processes sharing
S-Common mission, culture and intent

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W-Interface with “New” Current Structure
W-Old Habits/Old Processes that are geared for a smaller volume of work
W-Competing priorities or lacking commitment to the AMRP

Potential Implementation Challenges

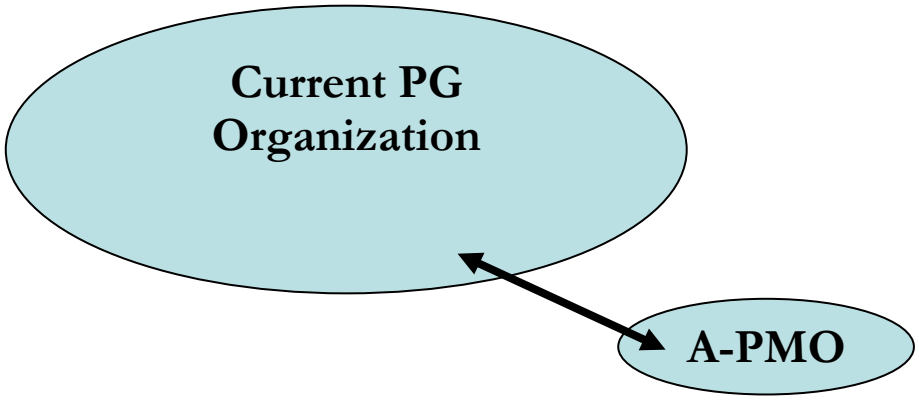
- Cultural Change in realizing magnitude or priority of the AMR Program
- Management’s focus on the PMO team
- Current systems for administration and management are less adequate for AMRP scale

Option II. Aligned - Program Management Office (A-PMO)

Organizational Structure

The A-PMO is a separate yet aligned functional unit within the operational structure of PGL (See Figure 6, Aligned Program Management Office). Almost all technical and support functions will be acquired, developed and dedicated only to the main replacement program.

Figure 6 - Aligned Program Management Office



Strengths (S) and Weaknesses (W)

S-Commitment to AMR Program only
S-Common mission, culture and intent

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W/S-Separate yet similar in functionality
W-Old habits/old processes that are geared for a smaller volume of work yet assigned to the A-PMO
W-Ability to Recruit/Grow staff for the A-PMO

Potential Implementation Challenges

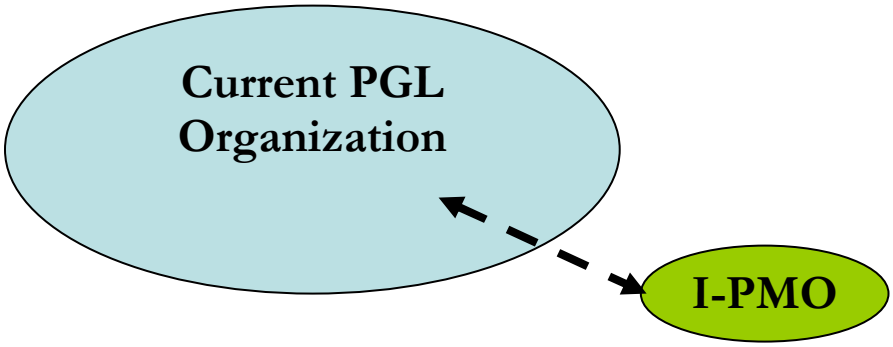
- Cultural Change in realizing magnitude of AMRP
- Current systems for administration and management are less adequate for AMRP scale

Option III. Independent - Program Management Office (I-PMO)

Organizational Structure

The I-PMO is contractor supported and externally aligned as a functional unit to the operational structure of Peoples Gas (See Figure 7, Independent Program Management Office). Most all of the technical and support functions will be provided outside of PGL to support the main replacement program. Liaison positions will be coordinated with PGL.

Figure 7 - Independent Program Management



Strengths (S) and Weaknesses (W)

S-Fast ramp-up with experienced program management contractor team
S-Resources and systems readily available and proven to be effective
S-Opportunity to apply and learn from fresh perspective on best practices

W-Cultural differences between contractor and company

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W (S)-Cost factors involving outside contractor

Potential Implementation Challenges:

- Maintaining common company goals and intentions
- Systems interfacing between contractor and company
- Location remote from company

Option Attributes

When assessing any of the three delivery options that would best serve PGL in implementing the AMR Program, consideration must be given to the various attributes involved. These attributes are divided among the five categories identified above in the section discussing PGL's Pre-Construction to Construction Flow Process. The same categories - Business Systems, Technical Systems, Utility Execution, Regulatory and Governmental and Stakeholder Outreach - are to be considered for each of the three program delivery options. Under each of the five categories, there are several operational components that in essence define the category. These components play a key role and must be properly and completely addressed. The breakdown of the components for each category is listed below.

For Business Systems the operational components include:

- Financial Management & Accounting
- Change Management – Systems/Processes, Communication, Culture and Leadership
- Organizational Mission & Orientation
- PMO Charter – Responsibility, Accountability, Empowerment, Decision-Making Authority
- Strategic-Tactical Planning Process

For Technical Systems the operational components include:

- PMO Facilities and Equipment
- Procurement & Contract Management
- Health Safety Environmental
- QA/QC System
- Training and Compliance
- Staffing and Resources

For Utility Execution the operational components include:

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- Operations - Administration & Management
- Systems Integration
- Budget Management & Accounting
- Project Controls & Risk Management System

For Regulatory and Governmental, the operational component includes: Regulatory and Requirements.

For Stakeholder Outreach the operational component includes: Public Outreach and Community Involvement.

5. Management Transition Plan

An acceleration of this magnitude requires immediate action if PGL is to be ready to implement the AMRP by January 2011. We have taken the individual items described in Section 3 - Process Enhancements and Changes needed for the AMRP, and applied them as tasks to a transitional timeline that would accommodate any one of the three PMO alternatives.

Many of the activities described in this report must begin well in advance of the start of construction. Generally, these are shown to have completion dates of December 31, 2010.

In addition, many of the startup activities could be implemented or refined, and accelerated during the three-year ramp-up period described in the ICR testimony of Salvatore Marano. Generally, these action items are to be completed by December 31, 2014.

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Figure 10 - Management Transitional Timeline

	Tasks/Activates	Start Date	End Date	Days Completed	Days Remaining
1	**Organizational**	01/01/09	03/31/10	200	254
	Establish Program Management Office				
2	**Staffing**	09/01/09	12/31/10	0	529
	Review Contract Agreements				
	Contracting Construction Contractors				
	Recruit/Hire professional and inspection staff				
	Training				
3	**Business Processes and Systems**	09/01/09	12/31/14	0	1990
	Forecasting Expenditure				
	Vendor Commitment				
	Design/Construction Change Order Management				
	Company/Contractor Health and Safety Plan				
4	**Role and Responsibilities**	09/01/09	06/30/10	0	345
	Establish Cross Departmental Links with PMO				
	Develop PM/CM Office Job Descriptions				
	Transactional versus Program Work				
5	**Program Planning / Budgeting**	09/01/09	09/30/10	0	437
	Move to 3 yr plan				
	Zone Selection				
6	**Cost Estimating**	09/01/09	12/31/10	0	529
	Capture Actual Expenditures				
7	**Buildability/Constructability/Maintainability Review**	09/01/09	12/31/14	0	1990
	Approval to Use of Spoil				
	Incorporate Traffic Plan				
8	**Scheduling**	09/01/09	12/31/10	0	529
	Material Scheduling				
	Project Scheduling				
9	**Cost Management, Control and Reporting**	09/01/09	12/31/10	0	529
	ICR Reconciliation/Reporting				
	Staff & Overhead Cost Allocations				
	PM/CM Office Cost Accounting				
	ICR related transactional projects outside PMO				
10	**Contract Administration**	09/01/09	12/31/14	0	1990
	Explore Turn-key Contracting				
	Material Storage				
11	**Project Records, Document and Drawing**	09/01/09	12/31/14	0	1990

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	Control				
	Contractor access to mobile data				
12	**Quality Control/Assurance**	09/01/09	12/31/10	0	529
	Planning for Increased Construction Inspection				
	Contractor Invoicing				
13	**Performance Measurement**	09/01/09	12/31/10	0	529
	Adapted Program Management Measures				
14	**Communications**	09/01/09	12/31/13	0	1625
	Increase Coordination with City				
	Community Relationships				

On-going activities and adjustments to processes that will be carried on through the AMRP completion in 2030 are not described or charted in this Transitional Implementation Plan Timeline. Successful completion of AMRP will depend on program coordination and flexibility, which will be greatly enhanced by adoption of a PMO option.

Next Steps

Given the need to undertake actions in order to implement the transitional plan, the following steps are recommended:

- Explore and select the best PMO option for AMRP success
- Develop a scorecard-type methodology for managing the AMRP
- Continue to evaluate and map key business processes that are crucial to engineering, program and construction management, to ensure that Integrys' business goals and the demands of the AMRP are met in the most efficient manner. At this time, the following processes are recommended for further mapping:
    - Budget management
    - Cost management
    - Change management
    - Schedule management
- Begin readiness actions for accomplishing the most critical transitional implementation plan tasks (green items in the timeline chart). This includes:
    - Establish Program Management Office
    - Recruit/Hire Professional and Inspection Staff

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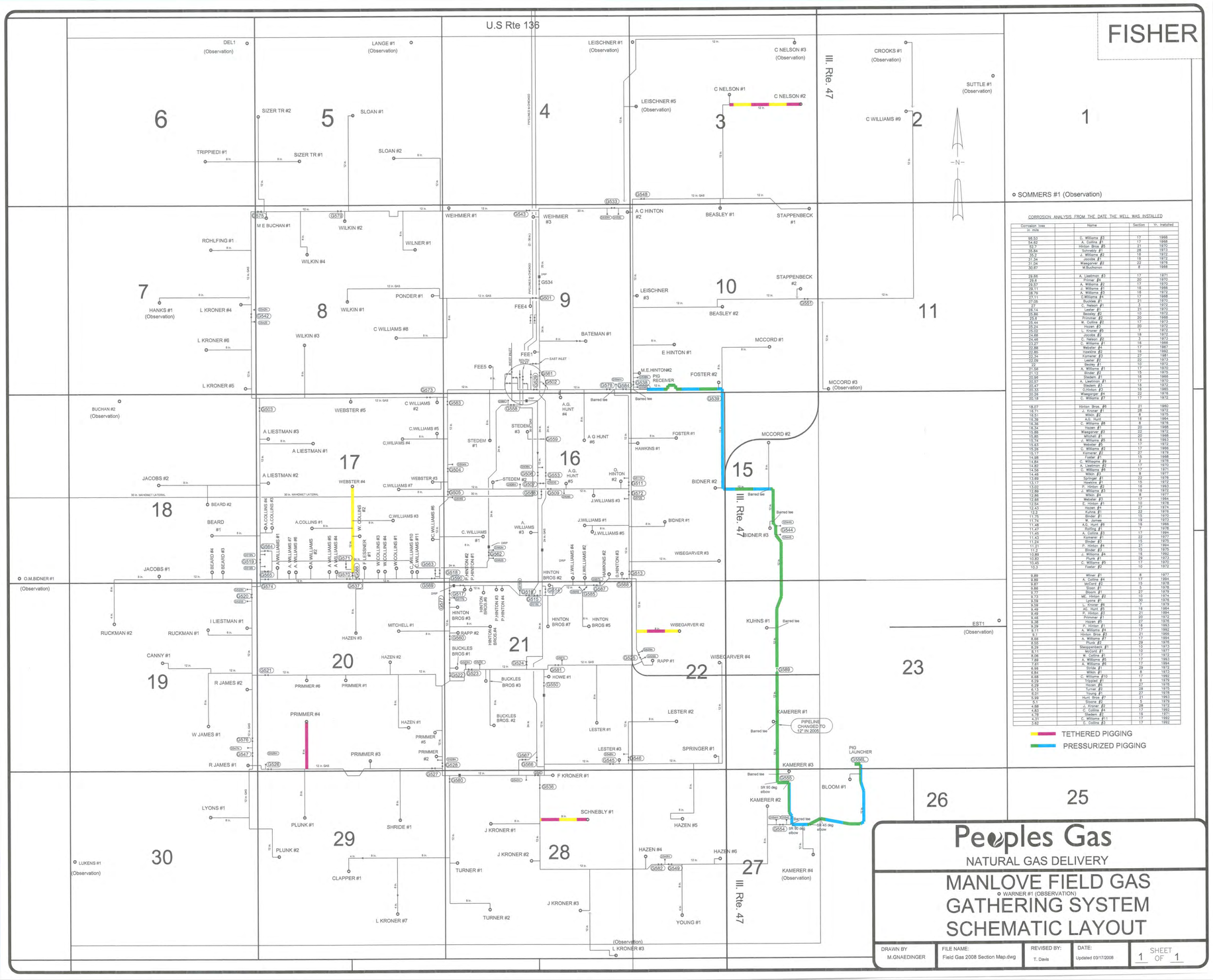
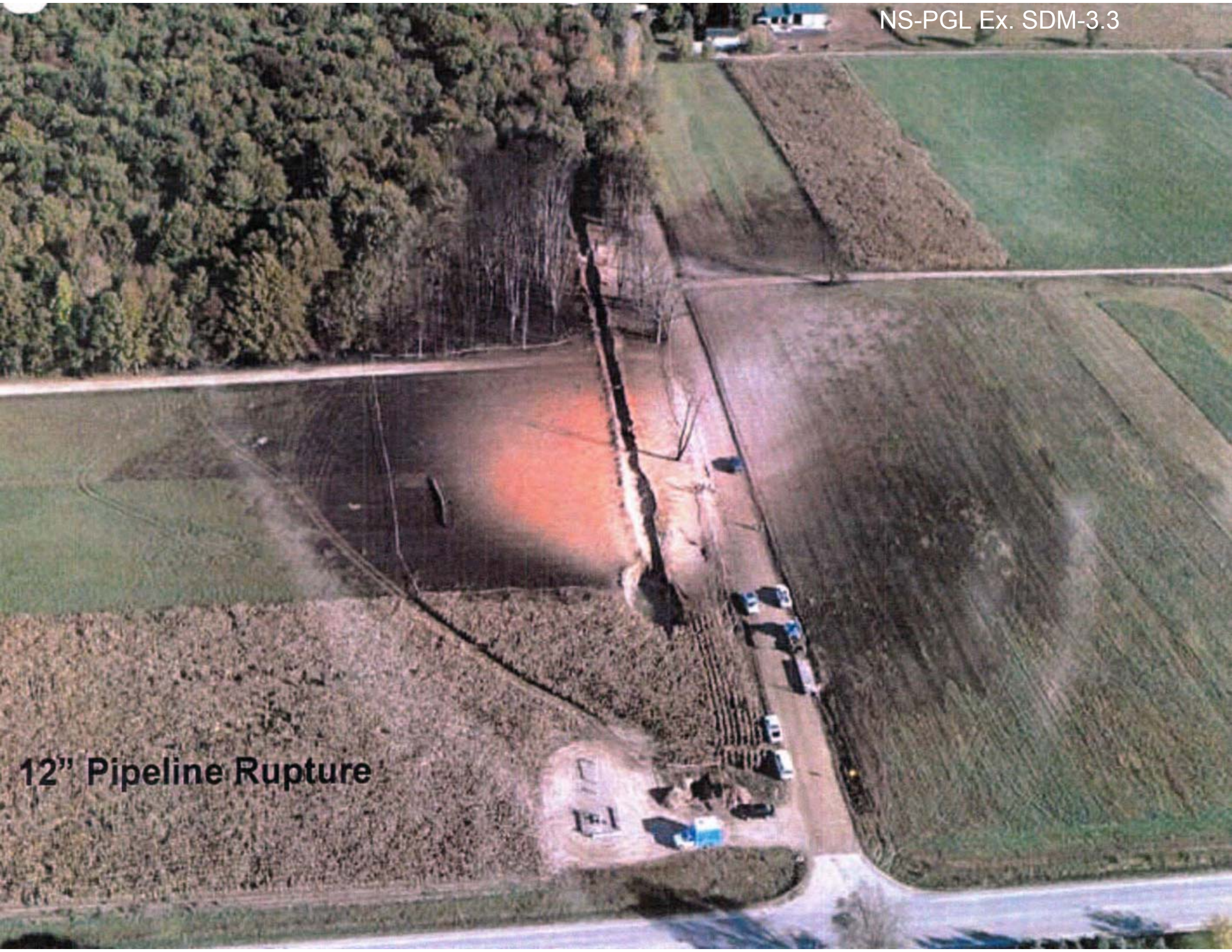
- Establish PMO Project Expenditure Forecasting SOP
- Establish PMO Cost Accounting SOP
- Establish PMO Change Order Management SOP
- Establish AMRP Training Policies and begin Training Readiness
- Develop an AMRP Construction Execution Plan
- Review and Update Company/Contractor Health and Safety Plan, Operator Qualification Programs, and Damage Prevention Programs
- Coordinate WAM Functions
- Develop ICR Reconciliation/Reporting Process (if applicable)
- Address Material Ordering and Storage

Jacobs Consultancy and Engineering Group believe this approach should be started immediately given the time available. Based on our current understanding, knowledge and experience, we believe that PGL can implement the necessary changes, as outlined in the management transition plan, to begin the accelerated main replacement program in 2011.



COBROSION ANALYSIS FROM THE DATE THE WELL WAS INSTALLED

Corrosion loss in mils	Name	Section	Yr. Installed
56.53	C. Williams #3	17	1968
54.62	A. Collins #1	17	1968
53.7	Hinton Bros #3	21	1970
35.84	Schnebly #1	28	1973
35.2	J. Williams #2	16	1972
31.34	Jacobs #1	18	1976
31.04	Waegerner #2	15	1978
30.87	M.Buchman	6	1966
29.66	A. Liestman #3	17	1971
29.6	Pitmer #4	20	1970
29.37	A. Williams #2	17	1970
29.11	J. Williams #1	16	1966
28.79	A. Williams #3	16	1972
27.11	C.Williams #4	17	1968
27.06	Buckles #1	21	1970
27	C. Nelson #1	3	1972
26.14	Leeter #1	30	1972
25.86	Nessler #1	32	1972
25.44	Hinton #2	20	1966
25.44	W. Collins #1	17	1973
25.24	Hozen #3	20	1972
25.02	L. Kroner #5	7	1972
24.66	Jacobs #2	18	1972
24.48	C. Nelson #2	3	1973
23.27	C. Williams #1	16	1966
22.88	Webster #2	17	1967
22.85	Hawkins #2	16	1992
22.34	Kamerer #3	22	1973
22.09	Leeter #1	30	1973
21.6	Hozen #2	20	1972
21.02	A. Williams #1	17	1970
21.12	Binder #2	15	1975
20.98	Steiden #1	16	1966
20.57	A. Liestman #1	17	1970
20.47	Steiden #3	16	1972
20.33	C.Hinton #3	16	1966
20.26	Waegerner #4	22	1976
20.18	C. Williams #7	17	1972
18.07	Hinton Bros #6	21	1980
16.91	Jacobs #3	28	1972
16.51	Wilson #2	8	1975
16.39	A.G. Hunt	16	1964
16.36	C. Williams #8	8	1976
16.34	Hozen #1	20	1968
15.86	Waegerner #3	22	1972
15.85	Mitchell #1	20	1968
15.74	J. Williams #3	16	1993
15.63	Webster #5	17	1972
15.35	C. Williams #2	17	1966
14.98	Kamerer #2	22	1979
14.84	C. Williams #9	2	1978
14.82	Leeter #2	30	1971
14.56	C. Williams #6	17	1977
13.98	Binder #1	8	1977
13.6	Springer #1	22	1978
13.17	Hawkins #1	15	1972
13.02	P. Hinton #2	16	1993
12.89	J. Williams #3	16	1972
12.86	Wilson #4	8	1977
12.68	Webster #3	17	1964
12.54	E. Hinton #1	10	1978
12.43	Hozen #4	27	1974
12.3	Kuhns #1	28	1970
11.75	Binder #3	15	1970
11.74	Hozen #5	18	1973
11.48	A.G. Hunt #9	16	1966
11.47	Rolling #1	7	1978
11.45	A. Collins #3	17	1994
11.43	Kamerer #1	22	1977
11.24	Binder #3	15	1975
11.21	P. Hinton #4	21	1994
11.2	Binder #3	15	1975
10.89	J. Williams #4	16	1992
10.83	Plunk #1	29	1973
10.45	C. Williams #5	17	1972
10.3	Foster #2	15	1972
9.89	Wilner #1	8	1977
9.89	A. Collins #4	17	1994
9.87	McCord #3	15	1978
9.86	Sloan #1	5	1978
9.77	Bloom #1	27	1979
9.73	ME. Hinton #2	10	1974
9.59	Lynne #1	30	1976
9.58	L. Kroner #6	7	1964
9.49	AG. Hunt #7	16	1964
9.49	Hozen #6	20	1994
9.38	Pitmer #3	20	1972
9.38	Hozen #5	27	1978
9.39	P. Hinton #1	16	1993
9.11	A. Williams #4	17	1992
9.1	Hinton Bros #3	21	1966
8.66	A. Williams #7	17	1994
8.55	Plunk #2	29	1970
8.29	Steppenbeck #1	10	1973
8.11	McCord #1	15	1977
8.06	W. Collins #1	17	1973
7.89	A. Williams #8	17	1993
7.85	A. Williams #6	17	1994
6.93	Stride #1	29	1972
6.84	Wilson #1	8	1973
6.68	C. Williams #10	17	1992
6.39	Tripplet #1	8	1979
6.29	Hozen #6	27	1978
6.13	Turner #2	28	1970
6.01	Young #1	27	1978
5.99	Hunt Bros #7	21	1970
5.1	Sloane #2	5	1979
4.98	J. Williams #5	28	1972
4.75	C. Collins #2	17	1992
4.53	Steiden #2	16	1971
4.31	C. Williams #11	17	1992
3.82	C. Collins #3	17	1992


12" Pipeline Rupture