2008 State Damage Prevention Program Grants Progress Report
Funding Opportunity Number: DTPH56-08-SN-0001
CFDA Number: 20.720

Award Number: DTPH56-08-G-PHPS12
Project Title: New Jersey Board of Public Utilities – 2008 Damage Prevention Program Grant
Date Submitted: December 31, 2008
Submitted by: Michael Stonack

Specific Objective(s) of the Agreement

Under this grant award NJBPU will develop a simulation training platform and data mining tool to support NJBPU in their statewide initiative of damage prevention. Specifically, the simulation training platform will serve as an assessment tool for emergency responders. The data mining tool will be used to develop training based on the needs of first time (infrastructure hit) offenders.

Workscope

Under the terms of this agreement, the Grantee will address the following elements listed in 49 USC §60134 through the actions it has specified in its Application.

- *Element (4):* Participation by operators, excavators, and other stakeholders in the development and implementation of effective employee training programs to ensure that operators, the one call center, the enforcing agency, and the excavators have partnered to design and implement training for the employees of operators, excavators, and locators.

- *Element (8):* A process for fostering and promoting the use, by all appropriate stakeholders, of improving technologies that may enhance communications, underground pipeline locating capability, and gathering and analyzing information about the accuracy and effectiveness of locating programs.

- *Element (9):* A process for review and analysis of the effectiveness of each program element, including a means for implementing improvements identified by such program reviews.

Accomplishments for this period (Item 1 under Agreement Section 9.01 Progress Report: "A comparison of actual accomplishments to the objectives established for the period.")

Specific Objectives

The specific objectives under this grant award were to develop a simulation training platform and data mining tool to support the NJBPU in their statewide initiative of damage prevention. An initial State authorization for this work was processed in August 2008. The work was to be performed by a designated project consultant. Our guidance on this authorization was changed in September 2008 and a decision on December 4, 2008 from the New Jersey Office of Information Technology, through which this authorization was to be granted, is imposing requirements that will further delay this project. On December 23, 2008 a request was sent by the President of the New Jersey Board of Public Utilities to the Chief Technology Officer in New

Jersey for assistance in expediting the authorization of the grant project. The NJBPU is waiting for a response to this request. Upon receipt of this response and a quantifiable timeline going forward, the NJBPU will need to request a time extension for the completion of this grant award.

On the data mining project, some preliminary work was started internally with NJBPU Staff. The following outlines that work:

1. *A standard spreadsheet form was developed to be used to electronically file quarterly damage reports. The initial use of the electronic form was started with the natural gas local distribution companies (LDC's), who were asked to electronically submit quarterly damage reports that were previously filed with the NJBPU for calendar years 2006, 2007, and 2008.*
2. *Electronic reporting will be spread to the other utility types (electric, water, etc.).*
3. *The electronic form was successfully tested and modified to meet the NJBPU needs.*
4. *The electronic forms were compared against the hard copy reports for errors.*
5. *An electronic repository for data storage was created.*
6. *A review of population and municipal boundaries related to damage data is in progress to determine potential relationships to underground damages.*

On the simulation training platform, we have outlined the proposed training scenario incident but have not progressed any further due to the delay in State authorization described above. The intent of this training simulation platform is to develop an interactive training tool to enable training participants to virtually experience the consequences of actions encountered during a simulated incident.

Workscope Objectives

Under the workscope objectives of this grant award, the NJBPU was to address 3 elements of the 9 elements of an effective damage prevention program. The following outlines actions taken to date on the 3 elements as a result of the grant award:

Element (4): The simulation training platform initiative was designed to improve Element 4 in the NJBPU damage prevention program. There has been no progress to date on this initiative due to the delay in State authorization as described above.

Element (8): The NJBPU has not yet made any additional improvements with regard to this Element in their damage prevention program during the grant award timeframe.

Element (9): The NJBPU has implemented a process to review the effectiveness of each program Element on an annual basis. Improvements will be recommended on the basis of such program reviews. As an example, the budget for Element 5, Public Education, will be increased by $100,000 to a total of $400,000 in the next One Call Center contract which starts in November 2009. This proposed increase was a result of the review conducted for this program Element where it was decided that additional public education outreach was necessary. In addition, the NJBPU is planning to implement a stakeholder process involving the membership of the New Jersey Common Ground Alliance (NJCGA) in the first quarter of 2009. This stakeholder process will involve the NJCGA in reviewing the effectiveness of each program Element throughout the year. It is anticipated that NJCGA recommendations for improvements will be reviewed on a quarterly basis. The NJBPU is a member of NJCGA.

Quantifiable Metrics/Measures of Effectiveness (Item 2 under Agreement Section 9.01 Project Report: "Where the output of the project can be quantified, a computation of the cost per unit of output.")

On the data mining project, gas damage data has been summarized by county in comparison with mark-out calls (requests) and whether the damage locations were marked or not marked. The majority of the unmarked damage locations are a result of no calls. A summary of 2007 gas damage data is shown in the electronic attachment entitled "Table 1 – 2007 Gas Damages by County". The table indicates that 42.5% of gas damages on a statewide basis were not marked (due to no calls). A further breakdown is summarized by county and natural gas LDC in the electronic attachment entitled "Table 2 – 2007 Gas Damages by Natural Gas LDC". In addition, the electronic attachment entitled "Map 1- 2007 Gas Damages plotted on NJ State Map" shows a plot of all gas damages, marked and not marked, by location. The intent of this data analysis is to determine the areas of the State that have high damages due to no calls and to target enhancements of outreach and public education measures for damage prevention in these areas. This would improve Element 5 in the NJBPU damage prevention program. The data analyzed to date is providing the information needed to develop targeted outreach and public education initiatives with the goal of reducing damages due to no calls.

Issues, Problems or Challenges (Item 3 under Agreement Section 9.01 Project Report: "The reasons for slippage if established objectives were not met. ")

The established objectives for the training simulation platform and the data mining tool have not been met due to the delay in State authorization to move forward with this grant award project as further described in the Accomplishments section above. The NJBPU grant application proposal for completion of these projects indicated a 10-month timeline. The NJBPU will need to request a time extension for this grant award project and anticipates forwarding this request in mid-January 2009.

Other pertinent information including, when appropriate, actions taken to address the recommendations PHMSA provided in correspondence dated [Different for each] (Item 4 under Agreement Section 9.01).

Recommendations under 3b

1. Solicitation, Section 6.01, Criteria (6) states, "A commitment to quality controls in timing, personnel, and costs for deliverables offered in exchange for the grant." We would like to see more detail on your commitment to this criterion.
   As a result of the delay in State authorization to move forward with this grant award project, the NJBPU will comment on this recommendation in the final report.
2. Please provide more clarity on all 9 elements, including what's being done now and plans to improve, even if they won't be accomplished with this grant.
   A description of each of the 9 elements of the NJ Damage Prevention Program was provided in the application for the 2009 State Damage Prevention Program Grant and is included as an electronic attachment to this submittal entitled "NJ Damage Prevention Program – 9 Elements.
3. Please provide clarity on whether the board is all-inclusive (i.e. stakeholders involved). If it is not, please state whether a more inclusive board has been considered.
   Currently, the board is not all-inclusive. The NJBPU is considering the issues associated with having a more inclusive board.

4. Your proposal Element 9. Please provide more clarity on oversight through regular review of the program and reports. How frequently does review take place (and how) and what is the specific follow-up on reports?

   As described in the workscope objectives under Element 9, the NJBPU has implemented a process to review the effectiveness of each program Element on an annual basis. Improvements will be recommended on the basis of such program reviews. In addition, the NJBPU is planning to implement a stakeholder process involving the membership of the New Jersey Common Ground Alliance (NJCGA) in the first quarter of 2009. This stakeholder process will involve the NJCGA in reviewing the effectiveness of each program Element throughout the year. It is anticipated that NJCGA recommendations for improvements will be reviewed on a quarterly basis. The NJBPU is a member of NJCGA.

Mid-term Financial Status Report

As a result of the delay in State authorization to move forward with this grant award project, the NJBPU will not be submitting a mid-term Financial Status Report.

Plans for next period (remainder of grant)

For the remainder of the grant period, the NJBPU will resolve the State authorization issue so that it can move forward to accomplish the project and workscope objectives of this grant award. As mentioned in the requests section below, a request for a time extension is expected to be processed in mid-January 2009.

Requests of the AOTR and/or PHMSA

On December 31, 2008, Michael Stonack had a telephone conversation with Sam Hall, AOTR for this grant award, regarding the delay in State authorization to move forward on this grant award project. A NJBPU request for a time extension to complete the grant award project will be processed by mid-January 2009.

2009 New Jersey Damage Prevention Program Grant

9 Elements of an Effective Damage Prevention Program

In New Jersey, the 9 elements of an effective damage prevention program have been successfully implemented. The activities associated with each element are described below:

Element 1: Participation by operators, excavators, and other stakeholders in the development and implementation of methods for establishing and maintaining effective communications between stakeholders from receipt of an excavation notification until successful completion of the excavation, as appropriate.

One Call Center

1. The operator of the New Jersey One Call Center is designated by the New Jersey Board of Public Utilities ("Board") and the Board provides policy oversight to the One Call Center and One Call Damage Prevention System by New Jersey Statute.
2. The Board established a One Call Damage Prevention System pursuant to N.J.S.A. 48:2-76. New Jersey operates a single Statewide 24-hour, seven-day-a-week One Call notification center.
3. Performance is consistent with CGA's best practices.
4. Coordinates and communicates the safety and damage prevention process with all stakeholders through the New Jersey Common Ground Alliance.
5. Promotes 811 Call Before You Dig through promotional items, media advertising, participation at safety meetings, seminars, and trade shows.
6. Distributes educational materials describing how the one call system works.
7. Provides excavators with contact information for each underground facility owner/operator regarding locate tickets or for any other necessary field communication.
8. Provides 4 ways to request a mark-out:
   a) Telephone 811 or 1-800-272-1000.
   b) Fax a locate agreement between excavator and One Call Center.
   c) ONTRY (using web and e-mail): http://ontry.1-call.com.
   d) IBIS Remote Entry Intelligent Batch Input System.
9. Uses available technology whenever possible to enhance all aspects of its communications with members, excavators and general public.

Government (New Jersey Board of Public Utilities)

1. The Board oversees compliance with the NJ One Call Law.
2. Monitors current excavation process and performs field inspections for compliance and enforcement.
3. Adopts and revises the One Call regulations including mark-out standards.
4. Takes enforcement actions against violators of the One Call Law.
5. Fosters outreach education efforts in conjunction with all stakeholders.
6. Promotes damage prevention and the safety of underground facilities.

Underground Facility Owner/Operator

1. Is a member of the one-call center.
2. Responds to locate requests promptly, accurately and in compliance with state law.
3. Provides locate status to excavators, including a "positive response":
   a) Provides a "Positive Response" by logging onto the One-Call Center's online positive response system and indicating that the underground facility operator does not own, operate or control any underground facilities on the site.
4. If problems with locating, communicates with excavator.
5. Responds to questions/inquiries from excavators promptly.

6. Provides up to date mapping information to center.
7. Provides up to date maps to locators.
8. Provides field assistance to excavators when needed, such as:
   a) improving operators' coordination with excavators
   b) having a representative on site during excavation
9. Uses uniform marking standards, generally consistent with CGA's Best Practices.

Excavator

1. Uses one call before digging, such as:
   a) Not proceeding with an excavation until facility marking is completed or a positive response has been received from all facility owners/operators notified by the one-call center
   b) Following all state and one-call center excavation notice requirements
2. Provides accurate and clear information regarding the excavation projects such as:
   a) By white-lining
   b) Reducing over-notification by calling only the area needed, or that can be excavated before the expiration of a ticket
3. Communicates with operator/locator any issues found in the field before taking a chance/risk, such as:
   a) Evidence of unmarked facilities
   b) Prior knowledge of the facilities in the area
   c) Conduct pre-construction meetings when appropriate
4. Communicates and coordinates with owner/operators and locators regarding projects that will require numerous locates over time (example: major cable or pipeline installation projects).

Contract Locator

1. Performance is generally consistent with the National Utility Locating Contractors Association (NULCA)'s best practices (minimum standards).
2. When necessary makes contact with excavator while marking out to address questions.
3. Promotes effective field communication.
4. Uses available technologies for locating facilities to assure mark outs are performed accurately.
5. Reports to facility owner/operators difficulties encountered performing locates or with using facility location information provided by the owner/operator.

Element 2: A process for fostering and ensuring the support and partnership of stakeholders, including excavators, operators, locators, designers, and local government in all phases of the program.

1. All stakeholders are provided a comment period regarding any Legislative effort to enhance law, rules, best practices, etc.
2. Input is sought from all stakeholders on NJ One Call Center issues.
3. Response to excavator or locator questions in the field is available.
4. When damage happens, assistance is offered to prevent reoccurrence.
5. For large/complex projects, pre-project meetings are encouraged.
6. Each member of the One Call Center has a formal, written agreement that states the rights and responsibilities of members and the One Call Center.
7. New Jersey's regional CGA is structured to give various stakeholder groups (owners/operators, designers, contractors/excavators, and government) and key sub-sets of operators and excavators adequate representation and can be the originating body for state best practices, regulations and legislation.
8. The NJ CGA fosters and ensures the support and partnership of all stakeholders.

Element 3: A process for reviewing the adequacy of a pipeline operator's internal performance measures regarding persons performing locating services and quality assurance programs.

Owner/Operators

1. Have quality assurance programs to ensure good work by operator locators and contract locators.
2. Include performance measures with corresponding and meaningful incentives/penalties in locating contracts.
3. Periodically review the Operator Qualification plan criteria and methods used to qualify personnel to perform locates.
4. Conduct regular field audits of the performance of locators/contractors and take action when necessary.
5. Ensure the locator is provided with information on new facilities that are not yet in the One Call Center's database or locator's maps.
6. Regularly meet with contract locating management to review results and expectations.

Government (New Jersey Board of Public Utilities)

1. Inspects jurisdictional operators regarding the operator's locating and excavation procedures for compliance with state law and regulations.
2. Inspects jurisdictional operators to examine a sampling of records to determine if locates are being made within the time frame required by state law and regulations.
3. Inspects pipeline operators to review if locating and excavating personnel are properly qualified in accordance with the operator's Operator Qualification plan and with federal and state requirements.
4. Performs periodic reviews of trends of root causes of damage and potential locating errors. The Data Mining Tool being developed as part of the 2008 State Damage Prevention Program Grant project is planned to enhance this capability.
5. During investigations of incidents or accidents resulting from excavation damage, determines if state laws and regulations on locating and proper excavation were followed.
6. Performs inspections of excavation projects to determine the level of compliance with state law and regulations.
7. As part of its oversight of pipeline operators, NJ pipeline safety inspectors continually review operator mark-outs during construction inspections.

Element 4: Participation by operators, excavators, and other stakeholders in the development and implementation of effective employee training programs to ensure that operators, the one-call center, the enforcing agency, and the excavators have partnered to design and implement training for the employees of operators, excavators, and locators.

1. In 2009, New Jersey is proposing to use the SDPP Grant funding to hold additional training sessions within the State and to develop a mechanism to offer the simulation training platform to other states. In addition, enhancements to the simulation training platform will be developed, based on feedback from participants and lessons learned from the pilot project performed in 2008. The project is expected to take one year to complete beginning in March 2009 and ending by the end of February 2010 (See attachment entitled 2009 Project Abstract for a detailed description of the project proposed to be funded by the 2009 State Damage Prevention Program Grant).
2. Owner/operators participate in educating excavators working around their system, such as:
    a) Providing specific information regarding their system
    b) Contact information for problems or emergencies
    c) Use of 811
    d) Use of 911, when appropriate
3. Pre-construction meetings are conducted, when appropriate.
4. Field representatives (operators, locators, excavators) are used to provide field education anytime the opportunity presents itself.
5. All stakeholders review training programs in response to comments or complaints received.
6. The NJ One Call Center participates in educating locators, excavators and other stakeholders throughout the State by holding evening Damage Prevention Training Presentations. The NJ Board

of Public Utilities also participates in these training presentations by reviewing the One Call Law and Statewide damage statistics to educate stakeholders and promote damage prevention.
7. Through the NJ Common Ground Alliance, Owner/operators, locators, and excavators assist in educating One Call management and help them understand the critical role they play in protecting underground facilities, lives and property.

Element 5: A process for fostering and ensuring active participation by all stakeholders in public education for damage prevention activities.

1. Partnership of NJ Board of Public Utilities, One Call Center, operators, excavators, and locators as part of the NJ Common Ground Alliance in public outreach education efforts, emphasizing the use of 811 Call Before You Dig.
2. In 2008, the State of New Jersey was awarded a One Call Damage Prevention Grant and the funds are being used for an 811 Educational/Awareness campaign to enhance its damage prevention program. Specialized promotional materials with the 811 logo are being utilized to promote 811awareness throughout the State.
3. Any and all available means are used to provide public education outreach such as:
   a) News media, billboards, mailings, pamphlets, giveaways, contractor association newsletters, websites, operator, excavator, State DOT and other vehicle fleets; field equipment (meters, above ground facilities, pedestals, etc.); construction plans, permits, homeowners associations, landscaping, plumbers, and others.
4. Field representatives (operators, locators, excavators) are used to provide education anytime opportunity presents itself.

Element 6: A process for resolving disputes that defines the State authority's role as a partner and facilitator to resolve issues.

The New Jersey Board of Public Utilities:
1. Encourages communication between parties to resolve issues, keep door open to facilitation and/or mediation.
2. Addresses any issues related to damage that can affect the process, partnership and future actions.
3. Seeks all views and ensures all stakeholders have an opportunity for input
4. Does not give up on issues until all needs are met.
5. Brings issues requiring resolution to stakeholders in meetings, conferences, etc.
6. Facilitates revisions of laws, rules, practices, etc. to serve the stakeholders with damage prevention as the main goal.

Element 7: Enforcement of State damage prevention laws and regulations for all aspects of the damage prevention process, including public education, and the use of civil penalties for violations assessable by the appropriate State authority.

The New Jersey damage prevention program operates as follows:
1. Consistent enforcement (not just the high-profile accidents); sending a strong message regarding compliance.
2. Fair, transparent and accountable enforcement process assuring credibility of process/program.
3. Appropriate enforcement based on seriousness, past behavior, willingness to change behavior.
4. Use of remediation or public service measures as options to reducing fines, such as:
   a) Damage Prevention Advertising
   b) Training
   c) Helping with public education

5. The NJ Board of Public Utilities reviews compliance with laws and regulations on locating, excavating, public awareness and personnel qualification during inspections of jurisdictional operators.

Element 8: A process for fostering and promoting the use, by all appropriate stakeholders, of improving technologies that may enhance communications, underground pipeline locating capability, and gathering and analyzing information about the accuracy and effectiveness of locating programs.

1. In New Jersey, the One Call Center uses appropriate technology to receive, process and transmit information from excavator to locators, such as by:
   a) Using web ticket entry, up-to-date communication equipment/devices (such as fax machines), maps, and methods consistent with CGA best practices.
   b) Facilitating a paperless notification process from caller to center, to member, to locator in the field and back to the member, the center and the caller (this process is partially completed).
2. Excavators use technology to provide accurate and specific information on their project to one call center, such as:
   a) Use of web ticket entry
3. Operators provide up to date base maps to one call center and locators using available information, such as:
   a) Expedited means of disseminating new maps or information on facility changes
4. Locators use advanced technology to locate facilities, document markings and prepare accurate records.
5. Excavators use technology to dig safely, such as vacuum excavation.
6. Excavators use no-dig technologies such as horizontal directional drilling, internal lining rehabilitation methods, and the use of existing facilities as casing.
7. At the end of 2007, the NJBPU implemented a process to categorize high risk excavation activities and facilities that could be significantly affected by excavation damage. Computer software, programming, and system modifications were made to revise the One Call System to enable One Call tickets to be categorized for high risk excavation activities associated with schools and hospitals; and excavations associated with the repair and/or removal of underground tanks. These tickets are readily available to NJBPU inspectors based on the enhancements incorporated into the online One Call Ticket Search capability. NJBPU inspectors can access this information in the field through the use of wireless laptop computers. The project has resulted in enhanced compliance monitoring of these types of excavations by NJBPU inspectors.

Element 9: A process for review and analysis of the effectiveness of each program element, including a means for implementing improvements identified by such program reviews.

The New Jersey Board of Public Utilities:

1. Reviews the effectiveness of each program element on an annual basis. Improvements are recommended on the basis of such program reviews. As an example, the budget for Element 5 – Public Education, will be increased by $100,000 to $400,000 in the next One Call Center contract starting in November 2009. This proposed increase was a result of the review conducted for this program element where it was decided that additional public education outreach was necessary.
2. Collects data to measure the performance of the excavation damage prevention program. Starting in 2009, underground facility operators will submit quarterly damage reports to the NJ One Call Center for data and statistical analysis. Previously these reports were submitted to the NJ Board of Public Utilities.
3. Provides ongoing monitoring of the program through reporting and NJ Board of Public Utilities' oversight of the One Call Center.

4. Performs periodic reviews of trends of root causes, responsible parties, potential locating errors, etc. (The Data Mining Tool being developed as part of the 2008 State Damage Prevention Program Grant project is planned to enhance this capability).
5. Uses excavation damage data for guiding the damage prevention program, education, amending the One Call Law, changing processes for the One Call System, and setting goals for the damage prevention program.

TICKET SUMMARY 2007					
County	Calls	Calls/1000pop	Gas Damages	Not_marked	%Not Marked
ATLANTIC	24773	98	177	80	45.2%
BERGEN	46853	53	165	65	39.4%
BURLINGTON	41405	98	91	24	26.4%
CAMDEN	36162	71	216	57	26.4%
CAPE MAY	13059	128	146	81	55.5%
CUMBERLAND	11521	79	80	37	46.3%
ESSEX	32570	41	88	41	46.6%
GLOUCESTER	26191	103	159	77	48.4%
HUDSON	14586	24	67	28	41.8%
HUNTERDON	8752	72	22	10	45.5%
MERCER	25640	73	58	14	24.1%
MIDDLESEX	41715	56	189	68	36.0%
MONMOUTH	65436	106	354	160	45.2%
MORRIS	29917	64	122	54	44.3%
OCEAN	55454	109	255	135	52.9%
PASSAIC	15747	32	68	29	42.6%
SALEM	4624	72	31	14	45.2%
SOMERSET	23028	77	81	33	40.7%
SUSSEX	5627	39	16	6	37.5%
UNION	30648	59	128	56	43.8%
WARREN	4452	43	5	1	20.0%
N/A	0	0	10	4	40.0%
TOTAL	**558160**	**66**	**2528**	**1074**	**42.5%**

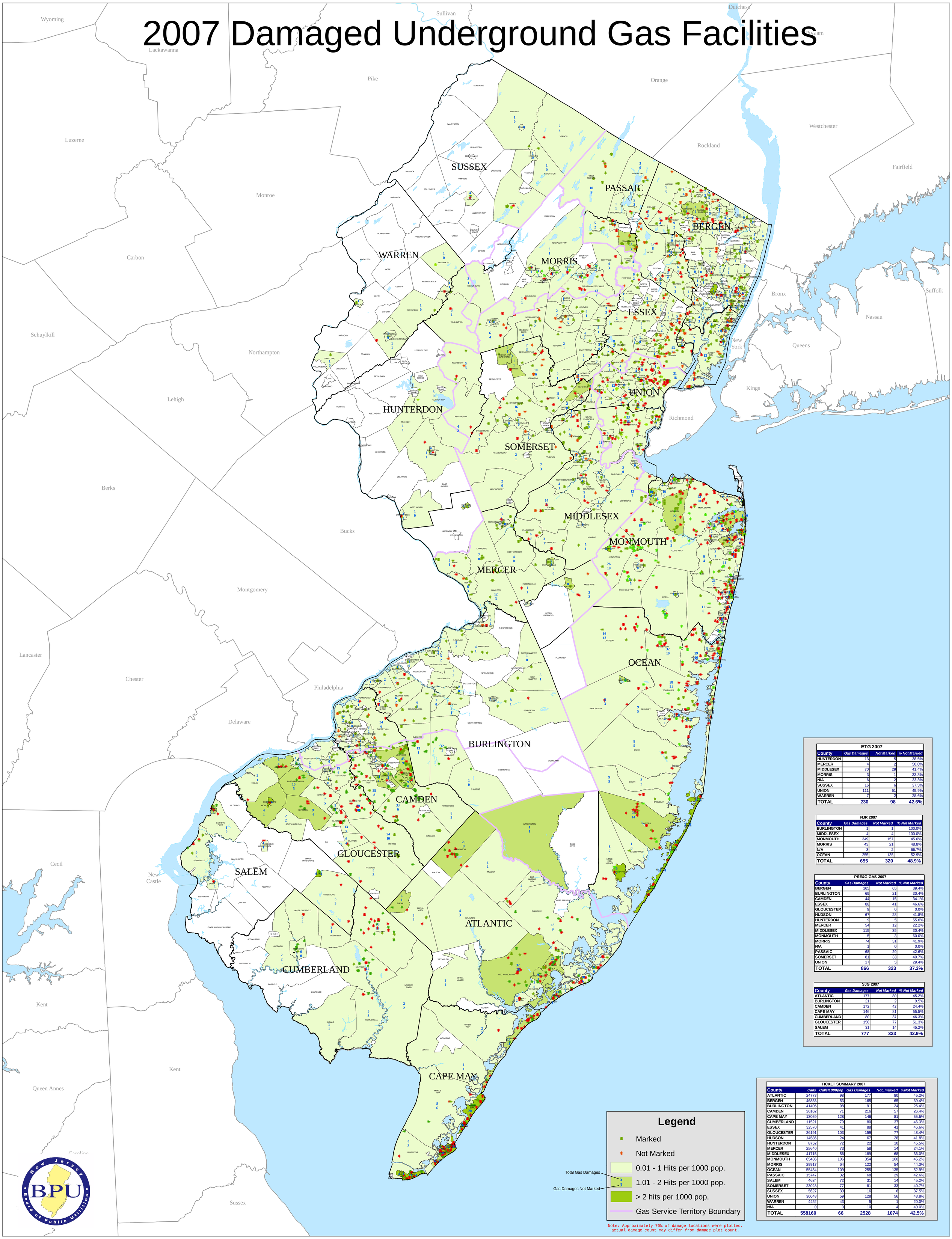
ETG 2007			
County	Gas Damages	Not Marked	% Not Marked
HUNTERDON	13	5	38.5%
MERCER	4	2	50.0%
MIDDLESEX	70	29	41.4%
MORRIS	3	1	33.3%
N/A	6	2	33.3%
SUSSEX	16	6	37.5%
UNION	111	51	45.9%
WARREN	7	2	28.6%
TOTAL	230	98	42.6%

NJR 2007			
County	Gas Damages	Not Marked	% Not Marked
BURLINGTON	1	1	100.0%
MIDDLESEX	4	4	100.0%
MONMOUTH	349	157	45.0%
MORRIS	43	21	48.8%
N/A	3	2	66.7%
OCEAN	255	135	52.9%
TOTAL	655	320	48.9%

PSE&G GAS 2007			
County	Gas Damages	Not Marked	% Not Marked
BERGEN	165	65	39.4%
BURLINGTON	69	21	30.4%
CAMDEN	44	15	34.1%
ESSEX	88	41	46.6%
GLOUCESTER	9	0	0.0%
HUDSON	67	28	41.8%
HUNTERDON	9	5	55.6%
MERCER	54	12	22.2%
MIDDLESEX	115	35	30.4%
MONMOUTH	5	3	60.0%
MORRIS	74	31	41.9%
N/A	1	0	0.0%
PASSAIC	68	29	42.6%
SOMERSET	81	33	40.7%
UNION	17	5	29.4%
TOTAL	866	323	37.3%

SJG 2007			
County	Gas Damages	Not Marked	% Not Marked
ATLANTIC	177	80	45.2%
BURLINGTON	21	2	9.5%
CAMDEN	172	42	24.4%
CAPE MAY	146	81	55.5%
CUMBERLAND	80	37	46.3%
GLOUCESTER	150	77	51.3%
SALEM	31	14	45.2%
TOTAL	777	333	42.9%

2007 Damaged Underground Gas Facilities



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ESSEX	88	41	46.6%
GLOUCESTER	9	0	0.0%
HUDSON	67	28	41.8%
HUNTERDON	9	5	55.6%
MERCER	54	12	22.2%
MIDDLESEX	115	35	30.4%
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CUMBERLAND	80	37	46.3%
GLOUCESTER	150	77	51.3%
SALEM	31	14	45.2%
TOTAL	777	333	42.9%

Legend

- Marked
- Not Marked
- 0.01 - 1 Hits per 1000 pop.
- 1.01 - 2 Hits per 1000 pop.
- > 2 hits per 1000 pop.
- Gas Service Territory Boundary

Total Gas Damages

Gas Damages Not Marked

Note: Approximately 70% of damage locations were plotted, actual damage count may differ from damage plot count.

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HUNTERDON	8752	72	22	10	45.5%
MERCER	25640	73	58	14	24.1%
MIDDLESEX	41715	56	189	68	36.0%
MONMOUTH	65436	106	354	160	45.2%
MORRIS	29917	64	122	54	44.3%
OCEAN	55454	109	255	135	52.9%
PASSAIC	15747	32	68	29	42.6%
SALEM	4624	72	31	14	45.2%
SOMERSET	23028	77	81	33	40.7%
SUSSEX	5627	39	16	6	37.5%
UNION	30648	59	128	56	43.8%
WARREN	4452	43	5	1	20.0%
N/A	0	0	10	4	40.0%
TOTAL	558160	66	2528	1074	42.5%