

**PARTNERING SUCCESS: COORDINATING FUSRAP SITE REMEDIATION WITH A
MAJOR STATE HIGHWAY CONSTRUCTION PROJECT - 1055**

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ABSTRACT

The FUSRAP Maywood Superfund Site (the Site) is located in an urbanized part of Bergen County, New Jersey (NJ), approximately 13 kilometers west of New York City (Figure 1). The primary contaminant of concern at the Site is thorium, a naturally occurring radioactive rare earth element that was extracted from monazite sand at a chemical plant in Maywood, NJ from about 1916 to 1959. This process generated a sludge-like byproduct material that was pumped to holding ponds or otherwise disposed onsite. Some of this material migrated offsite through surface water sediment deposition. Other material was taken from the plant site for use as fill on nearby properties. The Site consists of 88 designated properties, including residential, commercial and some government-owned properties. Figure 1 locates FUSRAP Maywood Site properties. While the scale of Figure 1 lends itself to highlighting whole property parcels, contamination is known or suspected to exist in discrete areas of the individual parcels.

Site properties are located in three communities: the Boroughs of Maywood and Lodi and the Township of Rochelle Park. The combined population of these communities is approximately 39,000, with a population density of nearly 3,250 persons per square kilometer. This compares to New Jersey's statewide density of 452 per square kilometer (ranking the state first in the U.S.) and a national figure of 37 per square kilometer [1]. All 64 residential Site properties have been remediated in compliance with applicable regulatory cleanup standards. The Army Corps of Engineers (the Corps) is currently addressing the remaining commercial and government properties, most of which house active businesses. As of this writing, FUSRAP remedial actions have been completed at sixteen properties and are underway at four others. Five of the completed properties (four commercial and one public) are located near the junction of New Jersey Route 17 and Essex Street, a heavily traveled interchange that was recently reconstructed by the New Jersey Department of Transportation (NJDOT) (Figure 2) [2]. This paper will focus on representative coordination between the Corps and NJDOT at three of the commercial properties affected by the interchange upgrades.

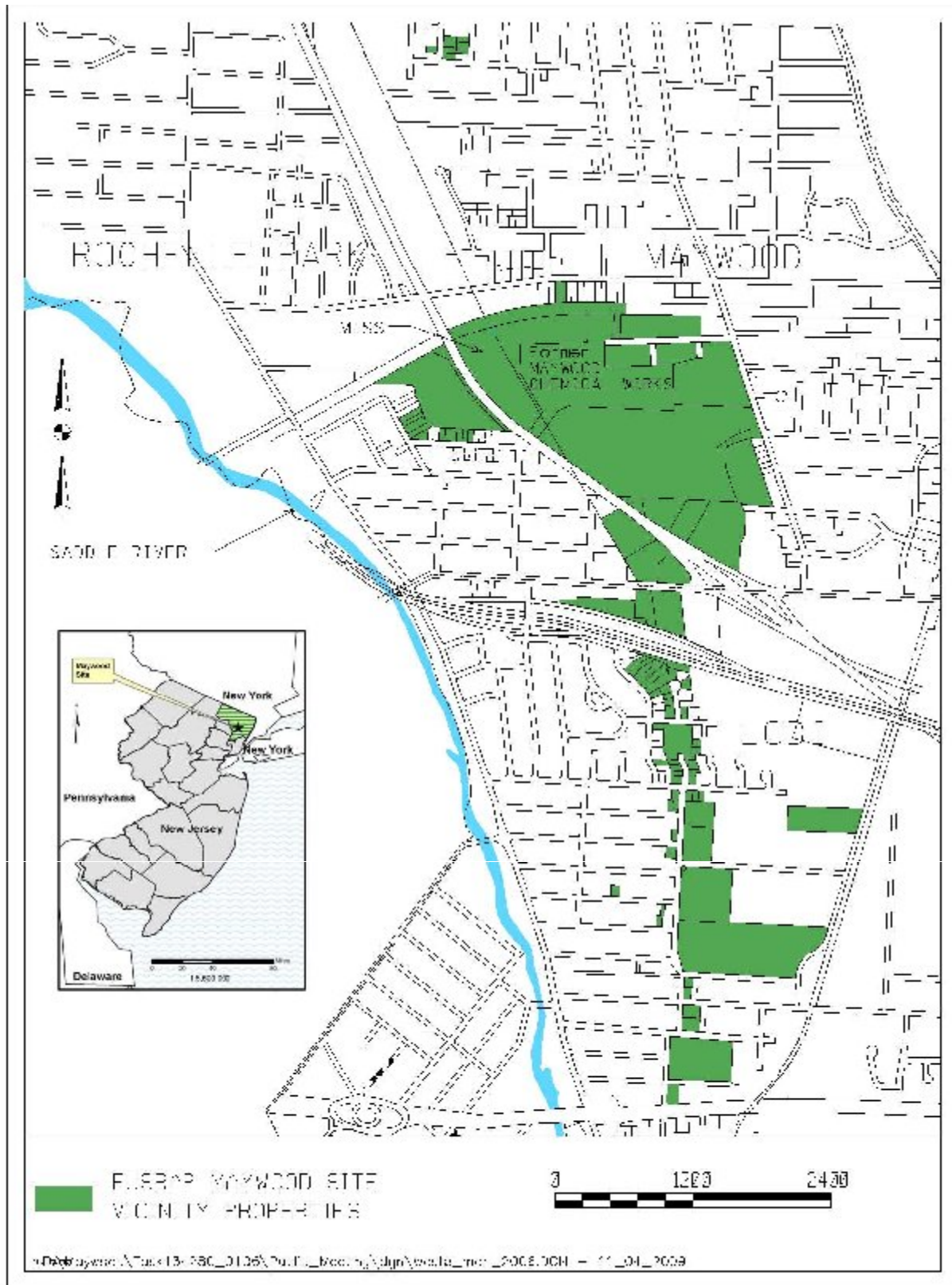


Figure 1 locates FUSRAP Maywood Superfund Site vicinity properties.



Figure 2. A 2008 aerial view of the FUSRAP Maywood Site vicinity properties impacted during the New Jersey Department of Transportation highway construction.

INTRODUCTION

Shortly after the U.S. Congress transitioned the Formerly Utilized Sites Remedial Action Program (FUSRAP) from the U.S. Department of Energy (DOE) to the Army Corps in 1998, the Corps initiated contacts with affected Site property owners and local government and community leaders. These contacts soon revealed that NJDOT was planning a major highway construction project at the junction of New Jersey Route 17 and Essex Street in the Boroughs of Lodi and Maywood, at the heart of the FUSRAP Maywood Site. The Corps immediately contacted NJDOT directly for more information. The agency confirmed plans for the interchange improvements, as well as plans for two other projects in the Site area: sound barrier wall construction along Interstate 80 and major drainage upgrades along NJ Route 17. While the latter two projects involved excavation work that could *potentially* impact Maywood Site soil contaminants, the Route 17/Essex Street interchange improvements *certainly* would as they required substantial earth moving on several designated Site properties with known subsurface contamination. This paper will address the Route 17/Essex Street project, as it represented the greatest stakeholder partnering challenge.

INITIAL COORDINATION

The Corps and NJDOT quickly recognized that close coordination was needed to execute their respective missions of site remediation and infrastructure improvement. To that end, a Memorandum of Understanding (MOU) [3] between the parties was executed in June 2000 to memorialize the roles, responsibilities and contact points for each organization. The MOU committed the Corps to remediating radiological contamination “ahead of or in coordination with NJDOT’s schedule.” For its part, NJDOT agreed to submit its plans and schedules to the Corps at least six months prior to construction (or sooner) and to work with the Corps as needed to coordinate FUSRAP remediation on NJDOT-impacted properties. Both parties agreed to “share resources and information to the extent practicable and coordinate effort with impacted property owners, utility companies, etc. in order to complete the respective projects.”

The MOU was followed by release of an Engineering Evaluation/Cost Analysis (EE/CA) [4] by the Corps in November 2001. The EE/CA was a removal action decision document specific to the properties to be affected by the NJDOT highway work. Approved by the U.S. Environmental Protection Agency (EPA), the EE/CA authorized the Corps to proceed with early cleanup of these properties while development of a final remedy for the entire FUSRAP Maywood Site as set forth by the EPA’s Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, commonly known as Superfund) [5] proceeded separately.

Completion of the EE/CA, while a key regulatory success, also presented a significant stakeholder challenge. Local government officials, principally those in the Borough of

Maywood, had for many years been pressing the Corps and its DOE predecessor both publically and in private to move faster on Site remediation. During the public involvement process for the EE/CA, some of these officials expressed renewed frustration that cleanup was only now moving forward to accommodate NJDOT while for years their own calls went unheeded. The Corps addressed this perception by emphasizing the public benefit: the EE/CA would allow early cleanup of several Site properties that otherwise would not be addressed until the more comprehensive site-wide Record of Decision (ROD) [6] was approved. It would also allow NJDOT to proceed with critical upgrades to an antiquated highway interchange that supported approximately 150,000 vehicles per day and included a structurally deficient bridge. While some outspoken officials and members of the public continued to hold to their perceptions, no significant objections were raised during the EE/CA public comment period (including no requests to extend the period as permitted under CERCLA) and the EE/CA document was approved and released without undue delay.

With cleanup authorization and an agreement with NJDOT in hand, the Corps and its site remediation contractor (Shaw Environmental, Inc., at the time Stone & Webster) went about re-contacting the key stakeholders, including owners, tenants and employees of Site properties covered under the EE/CA. This established a dual approach to stakeholder involvement that would ultimately contribute to the success of both projects: coordination with NJDOT on engineering, design, scheduling and construction; and, working with individual land owners and property users directly on site access, logistical planning, employee communication and other property-specific matters. This is not to suggest that these parallel paths never merged. This paper will show how the Corps and NJDOT integrated their stakeholder communications to demonstrate a partnership at the agency level and thereby enhance property-specific coordination.

PARTNERING SUCCESSES: THREE EXAMPLES

On any complex remediation or construction project, individual challenges arise that can have potentially serious downstream impacts on schedule, budget and quality. This section presents three such challenges faced by the FUSRAP Maywood and NJDOT Route 17/Essex Street projects and describes how they were overcome to keep the respective projects moving forward. For convenience, the key players responsible for meeting these challenges are listed here:

For the FUSRAP Maywood Site Project:

- United States Army Corps of Engineers, New York District
- Shaw Environmental, Inc. (prime environmental restoration contractor)

For the Route 17/Essex Street Interchange Project:

- New Jersey Department of Transportation

- Taylor, Wiseman & Taylor (design engineer)
- Creamer-Sanzari, A Joint Venture (construction contractor)

Example 1 - Coordinating a Phased Remediation

The FUSRAP Maywood vicinity property at 200 Route 17 housed a retail parts and service center operated by Sears-Roebuck. NJDOT's engineering design for the Route 17/Essex Street Interchange called for acquisition of this site for ramp construction. FUSRAP remediation of the property under the EE/CA began in October 2002. Property acquisition by NJDOT had not yet occurred so the retail operation remained active. Therefore, remedial excavations during this phase were limited to discrete parking lot areas, and even these actions had to be phased so that ample parking and customer/employee access for the building was maintained at all times. This initial phase was completed in May of 2004 and included removal of over 4,900 cubic yards (*in-situ*) of contaminated soil and restoration of all disturbed areas. At that point, FUSRAP personnel demobilized from the property while the state continued its land acquisition process. It is useful to note here that the FUSRAP Maywood Site ROD for Soils and Buildings considers contamination under structures and active roadways to be inaccessible until such time as property owner actions make it accessible. In the case of the 200 Route 17 property, this would occur when the State of New Jersey acquired the land and demolished the existing building.

Throughout this interim period, the Corps and NJDOT maintained regular communications on the status of the property acquisition through designated points of contact. It was critical that FUSRAP Maywood project management receive sufficient notice so that a field crew could be positioned to investigate and, if needed, remediate the building footprint once the property was acquired and the structure removed. After some protracted negotiations with the landowner, NJDOT notified the FUSRAP project in August 2005 that the property acquisition had been completed. FUSRAP personnel remobilized to the site within weeks. They first collected soil samples from under the building slab to assess whether or not it had come in contact with FUSRAP material. This was critical information to both parties. If the slab was contaminated in excess of Site cleanup standards, the concrete would be removed by the Corps and managed as FUSRAP waste. If not, NJDOT would include removal of the slab in its building demolition contract scope. As it turned out, sample analysis showed the concrete slab was not impacted, and NJDOT prepared its bid package accordingly.

NJDOT soon awarded a demolition contract, and a preconstruction meeting was held in November at NJDOT's Regional Office. All relevant parties were represented, including NJDOT, the Corps, Shaw and the demolition contractor. The agenda included: confirmation that the building slab was not impacted by FUSRAP material, schedules for the building demolition (including asbestos removal) and subsequent FUSRAP remediation; establishment of contact points for NJDOT's Construction Field Manager and demolition contractor; and a request that all

external contacts specific to FUSRAP activities be referred to the FUSRAP Maywood Community Relations Manager.

The building demolition was completed in March 2006. FUSRAP Maywood field personnel followed onsite in late May, the earliest opportunity within the overall project schedule at the time. Remedial excavations were completed in mid-August with the removal of an additional 154 cubic yards of FUSRAP material. A final status survey to verify remedial action objective compliance was performed next, followed by the completion of property restoration in September.

As shown, FUSRAP remediation at 200 Route 17 was complicated by many factors. Initial cleanup activities were conducted concurrent with active business operations. While this is the norm at FUSRAP Maywood vicinity properties, 200 Route 17 like many Site properties posed a unique set of operational and logistical challenges to be met. Planning and execution of the second phase was driven by NJDOT's property acquisition and building demolition schedules. As these schedules were fluid, FUSRAP resource availability was constantly assessed and reassessed to ensure that required support could be brought to bear when needed. When NJDOT eventually made the site available following the demolition, FUSRAP Maywood resources were positioned to respond rapidly and effectively to keep both project schedules on track.

Example 2 - Coordinated Communications with Property Owners

As noted previously, there were occasions when the interests of Corps and NJDOT were best served by direct integration of stakeholder communications. Two such occasions involved the 99 Essex Street and 160/174 Essex Street vicinity properties, both of which were within the highway construction work zone. The property at 99 Essex Street is a commercial building that houses the owner's business (a property development and management company) and several tenants; 160/174 Essex Street is a back-office data processing operation owned and operated by the Bank of New York (BNY).

In the planning phase of their projects, the Corps and NJDOT met with the 99 Essex Street owner separately on numerous occasions to discuss logistics, safety, schedules and other details. It soon became apparent to all parties that a unified approach was needed to clearly communicate the full range of impacts to the property from both projects. In response, the Corps and NJDOT jointly developed an integrated schedule showing all work items planned for the property, with an estimated schedule and duration for each. They also shared information as needed to create detailed color-coded graphics showing a combined construction sequencing plan for the property. These graphics proved especially useful to the property owner in communicating construction impacts to employees and tenants. The drawings presented practical information on temporary traffic patterns and parking locations, alternate pedestrian walkways and building access points, and other temporary conditions to be established during construction.

Once construction at 99 Essex Street was underway, superintendents from Shaw, Creamer-Sanzari and their subcontractors met regularly in the field to address issues that invariably arose with two major projects operating in such proximity. Meanwhile, the planning focus of Corps and NJDOT project management, supported by Shaw, Taylor Wiseman & Taylor and Creamer-Sanzari, shifted to property restoration. Again, an integrated approach was needed as each side had specific contract responsibilities and understandings with the property owner for restoring those areas they disturbed. A meeting at NJDOT's project field office was held prior to the start of restoration to establish schedules and work scopes for both sides. At this meeting it became clear that the Corps' remedial activities would not be completed before NJDOT's restoration work was scheduled to begin. To guard against duplication of effort (such as NJDOT restoring areas that would only be disturbed by subsequent FUSRAP excavations), a clear line demarcating the restoration scopes was agreed to. Essentially, the Corps would restore north of a sidewalk to be constructed on the site; NJDOT's scope would begin with construction of that walk and extend south towards Essex Street. Figures 3 and 4 show this demarcation and some of the finished restoration elements constructed by each organization.



Figure 3. These photos show an entrance walkway and landscape pond restored as part of FUSRAP remediation of the 99 Essex Street vicinity property. The FUSRAP restoration scope picked up at the edge of the sidewalk shown in the left photo and onto the rest of the property.



Figure 4. The restored parking lot at 99 Essex Street. The parking lot foreground was remediated and backfilled under FUSRAP. By agreement, NJDOT then restored the entire parking lot, including curbing, islands and striping, and the sidewalks shown here (photo courtesy of Joseph M. Sanzari, Inc.).

Pre-construction coordination between the Corps and NJDOT concerning the property at 160/174 Essex Street was similar to that for 99 Essex Street. Joint meetings were held with BNY corporate and property-level representatives to discuss scope, schedules, and construction sequencing. Subsequent meetings with local property management focused on details such as traffic, parking, pedestrian access, site security and safety and health protections during construction and included several employee briefings. One major difference in working with the two properties was in the number of contact points. 99 Essex Street housed a family-owned company with at most three points of contact at any given time. In addition, the 99 Essex owner elected to handle most employees and tenant communications, with some notable exceptions when particular FUSRAP technical expertise was required. In contrast, BNY's corporate structure required contact with representatives from many departments and disciplines, including engineering, environmental, property management, legal, real estate, health and safety, shipping

and receiving, security, and human resources, as well employees and contractors. The major challenge here was consistency: With so many audiences, was the information being transmitted separately by the Corps and NJDOT consistent and therefore credible? This challenge was met through joint meetings as described above, which were carefully planned during preparatory discussions between the Corps and NJDOT. Of course, formal meetings with many attendees can be difficult to schedule. Thus it was imperative that both parties maintained less formal yet still regular communications to ensure consistent communication with BNY. This was achieved by designating central points of contacts for both sides, each of whom was largely responsible for communicating with BNY on behalf of their projects. For FUSRAP, this was Shaw's Community Relations Manager; for NJDOT, it was Taylor Wiseman & Taylor's Project Manager. Each was responsible for tracking their respective communications with the bank, sharing this knowledge and developing consistent responses as appropriate.

The same high level of cooperation was equally critical during construction. A prime example was the replacement of an elliptical corrugated metal pipe with 100 meters of pre-cast concrete culvert (known as the Lodi Brook culvert) included in NJDOT's engineering design for the BNY property. The culvert ran directly under the main employee parking lot; installation of the new pipe would displace dozens of parking spaces. To accommodate NJDOT's construction schedule, there was a critical need to minimize the FUSRAP remedial construction duration, which included a large by-pass pumping operation, removal of impacted soils and debris, final status survey, crane placement of the pre-cast concrete culvert, and expedited backfill to meet schedule and budget expectations of the Corps, NJDOT, the property owner, and the public.¹ Close coordination was therefore needed to integrate Corps and NJDOT efforts and thus avoid two separate government agencies expending costs on two independent efforts. The Corps was able to accomplish this by working with NJDOT to establish a schedule, engineering design, procurement process and construction-sequencing plan that met remediation goals and completed the culvert replacement in a single synchronized effort.

Example 3 - NJDOT Schedule Acceleration

The final and perhaps most important example of interagency coordination occurred in response to NJDOT's decision to dramatically accelerate its schedule for the Route 17/Essex Street project. This decision was made in December 2007 and publicly announced shortly thereafter. At that point, both the highway construction and FUSRAP remediation efforts were well underway in accordance with the schedules that had been adopted by the parties after months of painstaking consultation. The accelerated schedule now called for substantial completion of the highway project by Thanksgiving Eve, 2008, a full year earlier than previously scheduled. As

¹ construction details by permission from *USACE FUSRAP Maywood Team and New Jersey Department of Transportation Execute a Coordinated Solution Prior to Highway Improvements*, proceedings of 2007 Waste Management Symposium.

described at the time by NJDOT representatives themselves, arrangements with their contractors to shorten the schedule were “cut quickly” and the new completion date arrived at “last minute.” Clearly, the challenges to both the Corps and NJDOT were significant, both in terms of project execution and in managing public expectations.

A meeting with the 99 Essex Street property manager was scheduled immediately after the 2007 Holidays. As noted, FUSRAP remediation of that property was already in progress. It was noted that the current schedule called for closing Essex Street in 2009 with FUSRAP remediation within the roadway during that closure. However, the new NJDOT schedule would close Essex Street sooner and thus require earlier FUSRAP remediation within the right-of-way, to allow for utility relocations and replacement of the Lodi Brook culvert segment that ran beneath the street. In order to meet the new timeline, FUSRAP activities at 99 Essex would have to be suspended for up to four months while the crew working there was redeployed to Essex Street itself. This approach was met with some skepticism by the property manager, but he agreed to propose it to his management and requested a revised schedule. An updated FUSRAP phasing plan for both 99 Essex Street and the Essex Street right-of-way was prepared and delivered within three days. In addition, Corps and NJDOT management jointly stressed that the new schedule would benefit the 99 Essex Street owner, tenants and the general public by substantially decreasing the overall duration of NJDOT’s work and the disruptions associated with it. This message was emphasized in hopes that it would help persuade the property owner to accept the revised schedule.

Once again, cooperation and consistent messaging by the Corps and NJDOT yielded the desired outcome, as the 99 Essex Street owner agreed to the new schedule. A FUSRAP initial conditions survey of Essex Street was conducted on January 7, 2008. FUSRAP excavations within the street commenced shortly thereafter and were completed in mid-March. During this time, NJDOT contractors performed utility relocations literally on the heels of FUSRAP excavations, as soon as field screening (for areas outside FUSRAP remedial design limits) or formal final status surveys (for excavated areas) confirmed compliance with Site cleanup objectives. Also during this period, NJDOT was able to substantially complete replacement of the Essex Street Bridge, a major and highly visible milestone for their project.

Continuing the forward-looking planning approach critical to the compressed schedule, plans to resume FUSRAP remediation at 99 Essex Street took shape even before the Essex Street right-of-way cleanup was finished. This required a new and integrated restoration plan, as restoration responsibilities for the property established under the original schedule had changed significantly. Again, a meeting was convened between the Corps, NJDOT and the contractors to establish work scopes and schedules. Responsibility was assigned for individual construction items including retaining and landscape walls, paving and curbing, entrance walkways, and landscaping. These arrangements were then reflected on a new schedule prepared by the Corps and presented to the property owner. After some final coordination with the owner, FUSRAP

remedial activities resumed in late March and were completed in less than one month. Extensive landscape restoration then began and took approximately one year to complete, including stand-down time over the winter months. This work included construction of the walkway and landscape pond shown in Figure 3.

PUBLIC OUTREACH

Aside from targeted (and when called for, integrated) communications with key stakeholders such as landowners and public officials, both projects maintained robust public outreach programs for the community at large. The FUSRAP Maywood Site's program started with the EE/CA public meeting and comment period in the summer of 2001. From that point forward, the status of FUSRAP work at the NJDOT-impacted properties as well as information on the Site as a whole was made available to the public through many other channels, including:

- the Site Administrative Record document file
- a staffed Public Information Center storefront office
- a community mailing list
- mailing and online posting of project newsletters (April 2001, January 2002, March 2003, October 2003 and June 2004 newsletters included articles specific to Corps-NJDOT coordination)
- periodic updates to local officials
- public information sessions and required public meetings at regulatory milestones
- public notices as required; media outreach as appropriate
- a Site Community Involvement Plan
- employee briefings at affected properties
- a project website at www.fusrapmaywood.com

For its part, NJDOT held several public information sessions for the local community (attended by FUSRAP Maywood representatives) and established its own project web site. While it is not the intent of this paper to chronicle the scope of NJDOT's outreach, it is important to note that any information disseminated by that agency with respect to FUSRAP activities was first vetted by the Corps for accuracy. This included printed and graphic materials used at public forums as well as online content.

CONCLUSIONS

Coordination between the Corps, NJDOT and the various contractors throughout their interrelationship was critical to the success of both the remediation and highway construction efforts. Many factors contributed to this success, but chief among them was an overriding commitment by both parties to intensive planning and documenting mutual expectations. Impacts of major work activities were carefully assessed for potential conflicts and inefficiencies and improved as needed. Coordination between the two agencies and with affected landowners continued as the work was executed in the field. This commitment was shared at both the project management and field supervisory levels and included contractors and subcontractors as appropriate. It was further enhanced by the fact that both organizations were physically located close to the Route 17/Essex Street Interchange itself. The FUSRAP Maywood field office was located about one-half mile north of the interchange, while NJDOT maintained a project office on Essex Street in Rochelle Park, literally steps from the project site. This allowed the parties to meet face to face, on short notice if needed, to plan ahead or to address issues as they arose in the field.

FUSRAP remedial construction in advance of the NJDOT Route 17/Essex Street Interchange project began in April 2002. The last of the remediation was completed in April 2008. Nearly 25,000 cubic yards of contaminated soil were removed during these actions, with no interruptions to commercial business activities, no worker lost time accidents, full compliance with FUSRAP Maywood Site remedial action objectives, and without negative impact on NJDOT's construction schedule. For its part, NJDOT was able to resolve its own unique set of design and government/community relations issues and start construction in September 2007. The Essex Street Bridge was reopened well ahead of schedule and in time for the Independence Day (July 4) 2008 holiday traffic, with substantial completion of the entire \$40 million project in November. The greatest testament to this successful partnership was the fact NJDOT's already aggressive schedule was accelerated by approximately one year, in large part due to the Corps' ability to accelerate its own remediation schedule in kind.

REFERENCES

1. United States Department of Commerce, U.S. Census Bureau, Population Division, *Population Estimates* (July 2008).
2. NJ Office of Information Technology, Office of Geographic Information Systems, *New Jersey 2007 - 2008 High Resolution Orthophotography* (October 2008).
3. State of New Jersey, Department of Law and Public Safety, Division of Law, *Memorandum of Understanding Between the United States of America and the State of New Jersey* (June 2000).

4. United States Army Corps of Engineers, *Engineering Evaluation/Cost Analysis for a Removal Action in Support of NJDOT Roadway Improvement Projects at the FUSRAP Maywood Superfund Site* (July 2001).
5. United States Environmental Protection Agency, 42 U.S.C.9601 et seq., *Comprehensive Environmental Response, Compensation and Liability Act* (1980).
6. United States Army Corps of Engineers, *Record of Decision for Soils and Buildings at the FUSRAP Maywood Superfund Site, Maywood, New Jersey*, prepared by Shaw Environmental, Inc. (August 2003).