

**MONTHLY MONITORING REPORT -**  
**World Trade Center Port Authority Trans-Hudson Terminal -**  
**PORT AUTHORITY OF NEW YORK AND NEW JERSEY**  
New York, New York

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Cover: *Mezzanine above Platform A, shown four days before opening for revenue service.*

## **DISCLAIMER -**

This report and all subsidiary reports are prepared solely for the Federal Transit Administration (FTA). This report should not be relied upon by any party, except the FTA or the project sponsor, in accordance with the purposes as described below.

For projects funded through FTA's Lower Manhattan Recovery program, the FTA and its Project Management Oversight Contractor (PMOC) use a risk-based assessment process to review and validate a project sponsor's budget and schedule. This risk-based assessment process is a tool for analyzing project development and management. Moreover, the assessment process is iterative in nature; any results of an FTA or PMOC risk-based assessment represent a "snapshot in time" for a particular project under the conditions known at that same point in time. The status of any assessment may be altered at any time by new information, changes in circumstances, or further developments in the project, including any specific measures a sponsor may take to mitigate the risks to project costs, budget, and schedule, or the strategy a sponsor may develop for project execution.

Therefore, the information in the monthly reports may change from month to month, based on relevant factors for the month and/or previous months.

## REPORT FORMAT AND FOCUS

This monthly report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract No. DTFT60-09-D-00008, Task Order No. 002. Its purpose is to provide information and data to assist the FTA in continually monitoring the grantee's technical capability and capacity to execute a project efficiently and effectively, and hence, whether or not the grantee continues to receive federal funds for project development.

This report covers the project management activities on the Permanent World Trade Center (WTC) Port Authority Trans-Hudson (PATH) Terminal (Hub) project, conducted by the Port Authority of New York and New Jersey (PANYNJ) as grantee and funded by the FTA's Lower Manhattan Recovery Office (LMRO).

## EXECUTIVE SUMMARY

*February ended with the achievement of Beneficial Use of Platform A. The grantee held an opening ceremony on February 25, 2014. The platform primarily will serve PATH's Hoboken Line. In addition to the platform, adjacent Track 1 and the mezzanine level above the platform were also placed into revenue service.*

### Project Description

The WTC PATH Hub Terminal serves the PATH electrified rail transit system in Lower Manhattan. The PATH Hub is an extensive underground complex of pedestrian corridors and train station facilities that will replace the original WTC PATH Terminal destroyed by terrorist attack on September 11, 2001.

### Construction Agreement (CA)

The CA was signed by the LMRO on April 25, 2006. A Revised and Restated Construction Agreement (RRCA) was executed on September 18, 2012. The RRCA establishes a Required Completion Date (RCD) of December 17, 2015, and commits \$2.872 billion in federal funding to the PATH Hub project. The RRCA establishes a not-to-exceed amount of \$3.995 billion for the project.

### Quarterly Progress Review Meeting (QPRM)

The QPRM for the fourth quarter of 2013 *was held on* February 24, 2014.

### Design Activity

The designer continues to provide construction support services, including the review of contractor shop drawings and other submittals.

### Procurement Activity

WTCC has completed all planned procurements for the PATH Hub project.

## Construction Activity

*February ended with the achievement of Beneficial Use of Platform A. The grantee held an opening ceremony on February 25, 2014. The platform primarily will serve PATH's Hoboken Line. In addition to the platform, adjacent Track 1 and the mezzanine level above the platform were placed into revenue service. The existing Platform B, the existing Track 3, and the temporary mezzanine above Platform B were all removed from service concurrent with the opening of Platform A, thus allowing large scale demolition of those elements to begin.*

*In the east bathtub, oculus steel erection advanced at improved performance levels during February, despite multiple weather-related delays. The quantities of upper portal and arch-transition elements set were on a par with the January performance, and the first rafter element was also set in place. Both months saw dramatically better production from that recorded in December 2013.*

## Schedule

In November 2013, World Trade Center Construction (WTCC) released Integrated Master Schedule (IMS) 70, (b) (4)

(b) (4)

## Cost Data

WTCC submitted its *monthly* cost model revision on *February 28, 2014*. It shows that, based on the contract awards and estimates through *January 31, 2014*, WTCC's Estimate at Completion (EAC) for the federally funded PATH Hub project is just over \$3.7 billion, which is unchanged from the *cost model revision submitted at the end of the prior month*. WTCC is also reporting *total* PATH Hub expenditures through *January 31, 2014*, to be more than \$2.78 billion, or approximately 75 percent of the EAC. That total includes an additional amount of nearly \$28 million in PATH Hub expenditures over the total contained in the *January 31, 2014* report. However, that *monthly expenditure value* is below the required average monthly burn rate of approximately \$40 million that is necessary to complete the project by the forecast date of December 2015.

## Risk Management

To provide an improved project risk tool, the FTA, the Project Management Oversight Contractor (PMOC), and WTCC completed the Project Execution Plan (PEP) in conjunction with the execution of the RRCA on September 18, 2012. As information on the impacts of Hurricane Sandy became available, the PMOC conducted PEP workshops in June 2013 to discuss and quantify the impacts to cost and schedule from the storm. The PMOC then reconciled the results of the workshops with WTCC, and the outcome of this effort was used to update the PEP. *The PEP was finalized in February 2014 and recognized WTCC's eligibility for receiving partial release of risk retainage by achieving beneficial use of Platform A on February 25, 2014. The PMOC will evaluate the project residual risk and update the PEP contingency curves accordingly.*

### Technical Capacity and Capability Review (TCCR)

An update to the TCCR will be performed in conjunction with the update of the PEP and is anticipated to be completed during the first quarter of 2014.

### Project Management Plan (PMP)

The grantee provided an approved copy of the WTC Project Quality Assurance Plan (PQAP), a PMP sub-plan, for FTA review on November, 7, 2013. The PMOC completed its review and concluded that the PQAP is consistent with the FTA Quality Assurance/Quality Control (QA/QC) Program Guidelines. However, the PMOC's conclusion included a recommendation that the FTA accept the PQAP contingent upon WTCC's providing clarification on the reporting lines between WTCC QA and WTCC management in order to demonstrate the independence of the WTCC QA organization. *WTCC has agreed to modify the PMP section that describes its organizational relationships to reflect that independence but has not yet transmitted that revision.*

An update to the grantee's Operations Management Plan, which is another PMP sub-plan, remains outstanding. The grantee has provided a draft construction phase Force Account Plan and Justification, and the PMOC is currently reviewing it.

### Project Quality Assurance

During *February* 2014, WTCC QA completed two QA oversight audits. For the QA audits completed in *February* 2014, no corrective actions were identified. The February 2014 audit totals reflect the audit reports issued at the time this report was drafted.

### Site Safety and Security Review

A review of safety performance indicators for the PATH Hub project through *December* 2013 was *limited, because safety data was not fully available due to technical issues with the WTCC Safety Management System Tracking Tool (SMST2). The technical issues reduced users' ability to input and retrieve data with the tracking tool.* For the year to date (through *December* 2013), both the Total Case Incident Rate (TCIR) and the Lost-Time Incident Rate (LTIR) decreased slightly and were below the established project goals of 5.00 and 2.00, respectively. WTCC has continued its active role in managing worker safety. *With the restoration of the full functionality of the SMST2 database at the end of January 2014, site contractors were updating information.*

### Issues/Problems/Suggestions

The widespread regional damage caused by Hurricane Sandy in late October of 2012 *caused a delay to the forecast completion of the PATH Hub project.* (b) (4)

[REDACTED]

## MONITORING REPORT

### A. Project Description

The PATH Hub facility is an intermodal terminal serving the PATH electrified heavy rail transit system, which has a total of 13 PATH stations in New York and New Jersey. When completed, the PATH Hub will connect to 11 New York City Transit (NYCT) subway lines in Lower Manhattan. The PATH Hub will include a platform level, associated mezzanine and concourse levels called the PATH Hall, and a terminal building called the Oculus, or Transit Hall, with north-south and east-west pedestrian connections to the NYCT subways, the World Financial Center, and WTC above-grade site development. It will be a permanent replacement of the original WTC PATH Terminal complex destroyed by terrorist attack on September 11, 2001.

### B. Project Status

#### Construction Agreement

The CA was signed on April 25, 2006. An RRCA was executed on September 18, 2012. The RRCA establishes an RCD of December 17, 2015, and commits \$2.872 billion in federal funding to the PATH Hub project. It also includes an FTA-allowable not-to-exceed amount of \$3.995 billion.

#### Quarterly Progress Review Meeting

The QPRM for the fourth quarter of 2013 was *held on* February 24, 2014.

#### WTC Site Master Plan

WTCC's current site master plan is Master Plan Version 10, released October 1, 2010.

#### Environmental Compliance

(Reported on separately by FTA's LMRO.)

#### Design Support during Construction

The designer continued providing post-award design support services for the PATH Hub construction, including responding to contractor Requests for Information and providing design certifications for completed elements of construction.

#### Construction Status

Transit Hall Concrete: During *February*, the concrete contractor continued placement of miscellaneous concrete items and concrete wall sections located at the lower levels of the Transit Hall. Current work includes the removal of formwork material and punch list work. The concrete contractor is approximately 99 percent complete with its work.

Oculus Steel: The only major oculus steel elements that remained in fabrication during *February* are rafter and purlin elements. All of the other major elements have been fabricated and shipped during previous months, including the sub-portals, lower portals, upper portals, abutment components, and arch-transitions. *Of the total of 146 rafter components required, 92 have been received in New York, with the most recent shipment, which consisted of 47 rafter elements, arriving and being off-loaded on February 22, 2014. Of the remaining 54 required rafter elements, 26 were fully completed and released for shipment from the shop as of the end of February 2014, and the other 28 were nearing completion of fabrication; these remaining 54 rafter elements are currently scheduled to be loaded for shipment during the week of March 17, 2014.*

*February erection work at the site produced improved results over the January performance and reflected an increasing degree of mastery with regard to the geometry control issues that had slowed erection progress in prior months. Although the results for February were improved, the overall oculus steel erection remains behind schedule by approximately four months. The February work also included the erection of the first rafter element. The following table quantifies the field progress during the month:*

**Summary of Oculus Steel Erection Progress (February 2014)**

	<b>Upper Portals</b>	<b>Arch-Transitions</b>	<b>Rafters</b>
Total Quantity	110	110	146
Set Last Month	14	10	0
Set This Month	12	16	1
Total Set to Date	88	81	1
Number Remaining	22	29	145

Oculus Glass: Although previously forecast to begin in the third quarter of 2013, commencement of oculus glass installation continues to await the turnover of the oculus *steel* structure. *During February, mobilization of the glass contractor was re-forecast to occur during the summer of 2014. All of the glass panels have been fabricated and shipped from the contractor’s fabrication subcontractor, and are being stored at the contractor’s storage facility in Harrison, New Jersey. The glass contractor has applied for additional compensation as a result of the delay in starting the glass panel installation, although this issue has not been settled at present. Additionally, a number of designer comments remain open on the mock-ups of the oculus glass and metal panels that were erected on-site in November 2013. Meetings to discuss the comments and what can be done to address them continued during February 2014, along with team visits to observe the site mock-ups and review how some of the open comments could be addressed. Not all of the comments have been resolved, however, and the meetings to review their possible resolution are expected to continue in early March.*

Oculus Skylight: *During February, testing of a full-size mock-up of a typical section of the oculus skylight continued at the contractor’s testing facility. Testing was completed for air infiltration, static water penetration, dynamic water penetration, thermal cycling, soft body impacts, hard body impacts, and breakage. However, skylight cycle testing at various temperatures continued during February, and unfavorable initial results were recorded for condensation formation at exterior temperatures of 5 degrees Fahrenheit and 12 degrees*

*Fahrenheit. Retesting is expected to continue through early March 2014. Representatives from the project team have been periodically visiting the testing facility in eastern Pennsylvania during the testing to assess the testing methods and the test results.*

Transit Hall Interior Stone: Under this contract, stone floor and wall finishes are to be furnished and installed throughout the Transit Hall side of the project, including at both of the grand staircases; the oculus floors at elevations 274 and 296; both levels of the north-south concourse; and various other associated stairs, passageways, and entryways. Phase 1 installation, consisting of the stone flooring at the southern end of the lower level of the north-south concourse, commenced during October and continues to advance in the northerly direction toward the oculus. During *February, the contractor continued making progress, and by the end of the month, installation of the stone flooring had reached the north-south portion of the concourse adjacent to Tower 3. Stone fabrication is following the same phasing sequence, with the next major portion of stone to be furnished targeted for the grand staircase at the western end of elevation 274 of the oculus. That stone is currently forecast to be delivered in late April 2014. However, installation of the stone stair treads and risers is constrained by the need to first install stone treatments on the walls at the northern and southern ends of the grand staircase. That wall stone has not yet been released for fabrication, because the initial shop drawing set submitted by the contractor was partially rejected in mid-February and was returned to the contractor to revise and resubmit the drawings for approval before proceeding.*

PATH Hall Construction (PHC): During *February, the PHC contractor continued the demolition and excavation work on the closed portions of Platform B at the north end and east section of the station. The PHC contractor has constructed multiple concrete sections of the east portion of Platform B. The architectural work and signage on Platform A have made significant progress. On the mezzanine level above Platform A, the Mechanical, Electrical, and Plumbing (MEP) trades continued making progress under the PATH Hall roof, installing overhead piping and electrical components, and metal ceiling panels. The commissioning of the escalators, the elevators, the MEP systems, and the fire alarm system necessary for Platform A operation was completed. On February 25, 2014, PATH Track 1 began train service into Platform A. The mezzanine-level area above Platform A was also opened to PATH commuters.*

Structural Steel to Grade (SSTG): During *February, the SSTG contractor continued erecting structural steel members and installing the precast concrete box girders that also serve as ductwork over Track 2 at the north end section of Platform B in the PATH Station.*

East Bathtub Mechanical, Electrical, Plumbing, and Fire Protection Work: *During February, work on spot networks SN-PN and SN-NW progressed. Both of these spot networks are currently forecast to be fed only to their line sides by mid-March. Ultimate energization of the two spot networks is presently forecast to occur by the end of April 2014. The mechanical contractor is currently projecting that the 60 smoke purge fans to be installed at the roof level of the Transit Hall, along with the rails that will allow them to be installed, will be delivered from its supplier before the end of March 2014. Access to the oculus roof level to install the fans will require the use of scaffolding provided by other oculus contractors with the details of those scaffold logistics still being developed at present.*

Emergency Generator Plant and Emergency Chiller Plant: During *February, installation of the emergency generator equipment and emergency chiller equipment advanced. Using diesel fuel from 55-gallon drums, generators #4 and #5 were started and briefly run during the month.*

*However, for the start-up of generators #7 and #8, larger quantities of fuel will be needed, making the use of two 350-gallon capacity day tanks necessary. The day tanks still need fuel oil piping to connect them to the generators, and that piping has not yet been installed. In addition, the mechanical contractor is required to provide the diesel fuel oil pumps and control panels at elevation 240' in the basement of Tower 3 as part of the fuel delivery system needed to feed diesel fuel to the emergency generators in the permanent configuration. Those pumps and control panels are currently forecast to be delivered to the site before the end of March 2014.*

Primary Distribution Center (PDC) at Tower 1: Four of the eight line-ups at the Tower 1 PDC had been energized as of the end of October 2013. Energization of the next set of line-ups, line-ups E and F, is *currently projected to occur by the end of March 2014*. Additionally, although line-ups A, B, C, and D are live, they are not yet feeding the PATH Hub project elements that they will serve in the future. Instead, the Temporary Primary Distribution Center (TPDC) at the North Temporary Access continues to supply the PATH Hub project's electrical requirements. Migration from the TPDC source to the PDC source will likely begin *by the end of the first quarter of 2014*, with completion of those electrical load transfers required during the second quarter to allow for the planned demolition of the North Temporary Access. The PDC power supply is currently being utilized by some of the other WTC site stakeholders, including Tower 1.

Vertical Circulation: During *February*, the contractor completed installing the escalator and elevator components at Platform A. The contractor continued installing the escalator components located in the Transit Hall at elevations 274 and 286. The contractor also continued to work on the escalators located in Tower 4.

Architectural Trades: The contractors continue to install stone flooring, ornamental metal, and steel wall panels in the north-south concourse. The Construction Manager (CM) is coordinating the work of the various crafts in the concourse areas under construction. At the Transit Hall, the contractor continues to coordinate architectural steel installation and fit-up with the oculus steel contractor. At the mezzanine level, D1–D13, the contractor is installing ceiling panels, ornamental metal, and stairway rough-in elements. The contractor's goal is to complete fit-out construction by the end of June 2014.

North Projection Structural Rehabilitation: During the month of *February 2014*, the contractor continued cleaning areas and performing punch list work.

Commissioning: The focus has been the commissioning of systems required for the Platform A temporary permit to occupy, which *was issued on February 21, 2014*. The areas turned over are Track 1, Platform A, and the mezzanine level above Platform A. The commissioning of all low-voltage systems, specifically the life safety system/fire alarm/smoke management system and the Building Automation Temperature Control System that are necessary to support the operation of Platform A, *has been completed*. The commissioning of the vertical circulation system to support Platform A also has been completed.

## Construction Logistics

The WTCC Office of Program Logistics (OPL) continued biweekly logistics and coordination meetings to facilitate construction progress and the sharing of access, egress, and work zones among all contractors on-site. Tower 4 connector work at grade continues. Upon completion of below-grade electrical utilities, bollards, and Church Street median work, access on Church

Street will improve for pedestrian and vehicular traffic. The contractor continues to encounter problems with space limitations as a result of street utility work around the site area. The oculus steel contractor is exploring options for alternative routes for delivery of oculus steel to the site, since the New York City Department of Design and Construction project on Broadway is expected to breach the intersection at Fulton Street later this spring.

#### Interagency Coordination

OPL continued its coordination of site construction and logistics among the many project stakeholders, including contractors, construction managers, tenants, insurance firms, PATH operations, and the Port Authority Police Department.

#### Community Relations

OPL continued to distribute construction alerts, updates, and monthly construction progress newsletters to the community and stakeholders.

#### C. Schedule

WTCC released IMS 70 in November 2013. (b) (4)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] WTCC continues to assess opportunities for workarounds, in particular for platform construction. *WTCC achieved Platform A beneficial use on February 25, 2014, which is approximately two months later than the IMS 70 projected date of December 31, 2013. Given the continued challenges faced on the oculus steel erection, delays to progress on the east bathtub construction are expected to be reflected in IMS 71, which has a data date of December 1, 2013. IMS 71 was expected to be submitted during January 2014, but it had not been submitted as of the date of this report.*

The following table summarizes the 90-day look-ahead for significant activities:

Significant Activity	Action by
<i>Central Fan Plant On-line</i>	WTCC
<i>Demolition of Platform B</i>	WTCC
<i>Erect/Bolt/Weld Oculus Steel Upper Portals and Arch-transitions</i>	WTCC

#### D. Cost Data

WTCC submitted its *monthly* cost model revision on *February 28, 2014. It shows that, based on the contract awards and estimates through January 31, 2014, WTCC's Estimate at Completion (EAC) for the federally funded PATH Hub project is just over \$3.7 billion, which is unchanged from the cost model revision submitted at the end of the prior month. WTCC is also reporting total PATH Hub expenditures through January 31, 2014, to be more than \$2.78 billion, or*

approximately 75 percent of the EAC. That total includes an additional amount of nearly \$28 million in PATH Hub expenditures over the total contained in the January 31, 2014 report. However, that monthly expenditure value is below the required average monthly burn rate of approximately \$40 million that is necessary to complete the project by the forecast date of December 2015.

On October 18, 2012, the Port Authority Board re-authorized the WTC PATH Hub project, at an estimated total project cost range of \$3.74 billion to \$3.995 billion. This authorization provided for an increase in the budget from approximately \$3.4 billion to slightly more than \$3.7 billion.

The \$3.7 billion budget reflects the updated engineer’s estimates for all packages in the completed procurement plan and includes the PATH Hub project’s share of the common infrastructure projects, such as Retail, the Central Chiller Plant, the Common Electrical System, and site-wide operational support elements. WTCC continues to update the cost allocations that are assigned to the PATH Hub project.

The following table summarizes the latest available EAC (WTCC’s forecast) and expenditures as of January 31, 2014:

Description	EAC (WTCC’s Forecast) (in millions)	Expenditures (in millions)
Construction	\$2,823	\$2,161
Program Management and Design	682	621
Contingency	(b)	(b)
Total	(b) (4)	(b) (4)

The RRCA commits \$2.872 billion in federal funding to the PATH Hub project and includes an FTA-allowable not-to-exceed amount of \$3.995 billion.

Although it was the opinion of the PMOC that the budget established after the October 18, 2012 project re-authorization by the Port Authority Board would not provide WTCC with adequate funding to complete the project given the impacts of Hurricane Sandy, WTCC has advised that the costs related to Hurricane Sandy are being funded from a separate operating account set up by PANYNJ for Hurricane Sandy and will not impact WTCC’s current EAC of \$3.7 billion.

#### E. Risk Management

The PMOC conducted a contingency assessment workshop in August 2011 to facilitate the completion of the PEP and the RRCA. WTCC and the PMOC reviewed the results of the cost and schedule risk models. Results from this workshop and subsequent analyses were used to develop the executed RRCA and PEP. To provide an improved project risk tool, the FTA, the PMOC, and WTCC completed the PEP in conjunction with the execution of the RRCA on September 18, 2012.

As information on the impacts of Hurricane Sandy became available, the PMOC conducted PEP workshops in June 2013 to discuss and quantify the hurricane's impacts on cost and schedule. The PMOC then reconciled the workshop results with WTCC, and the outcome of this effort was used to update the PEP. *The PEP was finalized in February 2014 recognizing WTCC's eligibility of receiving partial release of risk retainage by achieving beneficial use of Platform A on February 25, 2014. The PMOC will evaluate the project residual risk and update the PEP contingency curves accordingly.*

#### F. Technical Capacity and Capability Review

An update to the TCCR and a new TCCR Spot Report are anticipated to be completed later in 2014. The FTA will use the PEP to measure WTCC's capability and capacity.

#### Project Management Plan (PMP)

The grantee provided an approved copy of the WTC Project Quality Assurance Plan, a PMP sub-plan, on November 7, 2013. The PMOC completed its review and concluded that the PQAP is consistent with the FTA QA/QA Guidelines. However, the PMOC's conclusion included a recommendation that the FTA accept the PQAP contingent upon WTCC's providing clarification on the reporting lines between WTCC QA and WTCC management in order to demonstrate the independence of the WTCC QA organization. *WTCC has agreed to modify the PMP section that describes its organizational relationships to reflect that independence but has not yet transmitted that revision.*

An update to the grantee's Operations Management Plan, which is another PMP sub-plan, remains outstanding. The grantee previously provided a draft construction phase Force Account Plan and Justification, and the PMOC is currently reviewing it.

#### Project Organization

WTCC continues to update consultant and contractor staff assignments across project areas to address staffing needs as the project advances.

#### Project Quality Assurance

During *February 2014*, WTCC QA completed *two* QA oversight audits covering CM QA activities and *the* installation of structural steel. For the QA audits completed in *February 2014*, no corrective actions were identified. The *February 2014* audit totals reflect the audit reports completed at the time this report was drafted.

#### G. Site Safety and Security Review

*Because safety data was not fully available due to technical issues that reduced users' ability to input and retrieve data in the WTCC SMST2 (safety tracking tool), a full review of the safety performance of the PATH Hub project through December 2013 was limited. According to WTCC estimates, there were 39 recordable injuries and 16 lost-time injuries on the project from the start of the year through the end of December 2013, with 2,123,000 hours worked. The resulting year-to-date LTIR for the project is 1.51, which is below the established project goal of 2.00. The corresponding TCIR for the project for the same period is 3.67, which is also below the*

established goal of 5.00. WTCC has continued its active role in managing worker safety on the site. *The full functionality of the SMST2 database was restored by the end of January 2014, and site contractors were updating their safety information.*

#### H. Issues/Problems/Suggestions

The widespread regional damage caused by Hurricane Sandy in late October 2012 *caused a delay to the forecast completion of the PATH Hub project. WTCC submitted its formal Recovery Plan document to the FTA on February 18, 2014.* (b) (4)

*In the east bathtub, the oculus steel erection advanced at an improved rate during February, but recovery of the time lost in previous months was not achieved and the steel erection work remains behind schedule. At present, the oculus steel erection is projected to continue through the summer of 2014. If that occurs, the possibility for the east bathtub to overtake the west bathtub in schedule criticality will become more likely, especially if the weekend service shutdowns allow improved schedule advancement in the west bathtub.*

End of report. Appendix follows.

## APPENDIX

### APPENDIX A – LIST OF ACRONYMS

CA	Construction Agreement
CM	Construction Manager
EAC	Estimate at Completion
FTA	Federal Transit Administration
IMS	Integrated Master Schedule
LMRO	Lower Manhattan Recovery Office
LTIR	Lost-Time Incident Rate
MEP	Mechanical, Electrical, and Plumbing
NYCT	New York City Transit
OPL	Office of Program Logistics
PANYNJ	Port Authority of New York and New Jersey
PATH	Port Authority Trans-Hudson
PDC	Primary Distribution Center
PEP	Project Execution Plan
PHC	PATH Hall Construction
PMOC	Project Management Oversight Contractor
PMP	Project Management Plan
PQAP	Project Quality Assurance Plan
QA	Quality Assurance
QC	Quality Control
QPRM	Quarterly Progress Review Meeting
RCD	Required Completion Date
RRCA	Revised and Restated Construction Agreement
SMST2	Safety Management System Tracking Tool
SSTG	Structural Steel to Grade
TCCR	Technical Capacity and Capability Review
TCIR	Total Case Incident Rate
TPDC	Temporary Primary Distribution Center
WTC	World Trade Center
WTCC	World Trade Center Construction