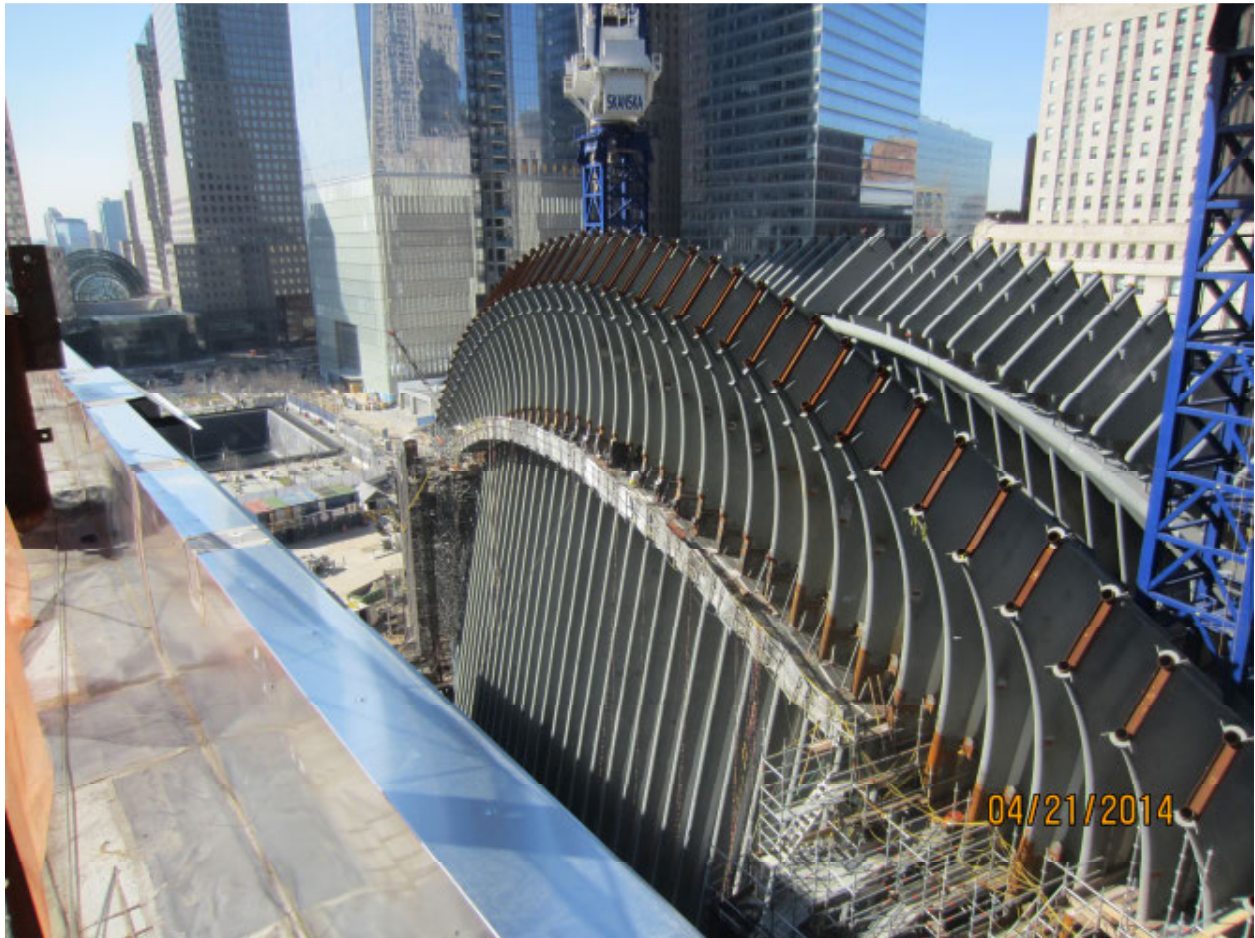


## MONTHLY MONITORING REPORT

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

*April 2014*



PMOC Contract Number: DTFT60-09-D-00008

Task Order Number: T09002, Project Number: RV-43-0001, Work Order No. 005

O.P.s Reference: 01, 02, 25

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PMOC / Start of Assignment: David Evans and Associates, Inc. / October 2008

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Cover: *Oculus structure being readied to accept rafter elements.*

## **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

*During April, the demolition of existing Platform B, along with the adjacent Track 3 and track slab, advanced; by the end of the month, all of the platform and most of the track was removed. In the east bathtub, the last of the oculus steel upper portals and arch-transitions were erected, leaving rafters as the lone remaining group of major oculus steel elements to be erected.*

### 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 first quarter of 2014 is scheduled for June 2, 2014, at 1:30 p.m.*

### Design Activity

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

## Procurement Activity

World Trade Center Construction (WTCC) has completed all planned procurements for the PATH Hub project. However, Change Orders continued to be issued as necessary under the active construction contracts.

## Construction Activity

*During April, erection of the last oculus steel upper portals and arch-transitions was accomplished, bringing the total quantity of each to 110, and leaving rafters as the only remaining major oculus elements to be erected. Work has also advanced on the lower level of the north-south concourse, which is expected to allow pedestrian traffic through the east bathtub sometime during the third quarter of 2014.*

*In the west bathtub, demolition activities continued at Platform B. The existing platform and most of the existing adjacent track slab were removed during the month. At the Platform D work area, excavation for the section of the utility tunnel that will pass under that platform and future Track 5 commenced.*

## Schedule

In March 2014, WTCC released Integrated Master Schedule (IMS) 71 and IMS 72, (b) (4)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## Cost Data

WTCC submitted its monthly cost model revision on *April 30, 2014*. It shows that, based on the contract awards and estimates through *March 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 reported total PATH Hub expenditures through *March 31, 2014*, to be more than \$2.81 billion, or approximately 76 percent of the EAC. That total of PATH Hub expenditures includes an additional *amount of \$28.2 million* in PATH Hub expenditures over the total contained in the *March 31, 2014 report*.

## 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.

#### Technical Capacity and Capability Review (TCCR)

The TCCR will be updated as necessary in conjunction with the update of the PEP.

#### Project Management Plan (PMP)

*The grantee is updating its PMP and expects the update to be completed by June 2014. WTCC furnished a draft of updated Chapter 4—Program Organization and WTCC Project Staffing on April 28, 2014; it is currently under review.*

#### Project Quality Assurance

During April 2014, WTCC QA completed three QA oversight audits to review the CM) QA field observations and WTCC activities performed in April 2014. For the QA audits completed in April 2014, no corrective actions were identified. The April 2014 audit total reflects the three audit reports that were issued, and received, at the time this report was drafted.

#### Site Safety

*Year-to-date safety performance indices for the PATH Hub project through March 2014 decreased. The Total Case Incident Rate (TCIR) and the Lost-Time Incident Rate (LTIR) are below the project's goals for these rates. The TCIR is 4.53, which is just below the project's goal of 5.0. The LTIR is 1.65, which is below the project's goal of 2.0. Notwithstanding the improved March safety performance, WTCC Safety has continued its active role in managing worker safety and has been evaluating the causes of each of the 2014 incidents. The project's April 2014 safety data was not fully available at the time this report was being drafted.*

#### 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]

[REDACTED]

[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 established 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. *FTA approved WTCC's February 18, 2014 Schedule Recovery Plan thereby establishing a revised RCD of December 31, 2016. Also included in the Schedule Recovery Plan was a change in WTCC's forecasted Substantial Completion Date to December 31, 2015.*

#### Quarterly Progress Review Meeting

*The QPRM for the first quarter of 2014 is scheduled for June 2, 2014, at 1:30 p.m.*

#### 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 (RFIs) and providing design certifications for completed elements of construction. During *April*, the designer also issued *Addendum 44*. Addenda typically incorporate multiple, issued RFI responses in which the designer authorized changes to the base design documents. They bring those design documents into conformance with the RFI responses.

#### Construction Status

Oculus Steel: The ninth and final shipment of major oculus steel elements *arrived* in New York *on April 21, 2014*. That shipment consisted of the final 54 rafter elements and completes the



total of 146 required rafter elements. *Also during April, the last 8 upper portals and the last 12 arch-transitions were set in place. Completion of the north and south arches is imminent and requires only the installation of the two steel keystone elements at the center bay of each arch. Each of those elements require a dry fit-up, followed by fit adjustments, shim fabrication, bolt hole drilling, and then final setting and fastening. Completion of both keystone elements is projected to occur by mid-May, 2014.* The following table quantifies the field progress during the month:

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

	<b>Upper Portals</b>	<b>Arch-Transitions</b>	<b>Rafters</b>
Total Quantity	110	110	146
Set Last Month	14	11	1
Set This Month	8	12	1
Total Set to Date	110	110	3
Number Remaining	0	0	143

**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. *As currently planned, oculus glass panel installation will not proceed until all of the steel rafters have been set by the oculus steel contractor, thereby ensuring that the steel structure is in its final position when glass panel installation begins. However, some preparatory work by the glass contractor will commence before all of the rafters have been installed.* 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. *WTCC is reporting that the contractor will begin mobilization during May 2014 with three construction trailers expected to be delivered to the site.* 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, *some designer comments remain open on the mock-ups of the oculus glass and metal panels that are erected on-site, including a request that all gasketing materials be changed from a black color to a white color. A concern regarding the potential fading of white gasketing material is going to be further assessed by specialized aging simulation at the contractor's testing facility in eastern Pennsylvania during May and June, 2014.*

**Oculus Skylight:** *During April, the oculus skylight mock-up was disassembled at the testing facility in eastern Pennsylvania and loaded for transport to a location in Minnesota, where it will be subjected to extensive repeated cycles of opening and closing to check performance over the design life of the skylight. This phase of the testing should be completed by mid-May 2014. Skylight shop drawings were submitted by the contractor on April 1, 2014 and remain under review by the designer at the end of the month.*

**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, was



*essentially completed during April, with only minor stone pieces remaining to be installed in isolated areas. Also in April, installation commenced at elevation 296 of the north-south concourse south of the oculus, and stone floor installation is ongoing through the southern leg of that elevation. Stone fabrication is following the same phasing sequence, with some pieces of stone for the grand staircase at the western end of elevation 274 of the oculus on-site and the balance scheduled for delivery in June. Because the stone stairs and risers will not be in place for a planned June 2014 opening of the north-south concourse, a temporary ramp is planned to be constructed over the grand staircase to connect elevations 274 and 266.*

*PATH Hall Construction (PHC): During April, demolition activities continued at Platform B; the existing platform and most of the existing track slab were removed during the month. New steel truss girders have been installed, and some additional sections of precast smoke purge ducts have been installed to the south. Installation of formwork, along with reinforcing steel, has started for the new platform. At the Platform D work area, excavation for the section of the utility tunnel that will pass under that platform and adjacent future track 5 commenced.*

*Structural Steel to Grade (SSTG): WTCC has indicated that performance issues have again arisen with regard to the SSTG contractor. This contractor's responsibilities include furnishing and installing structural elements at the PATH Hall, including pre-cast concrete smoke purge ducts and steel truss girders, both of which run longitudinally above each side of new Platform B and are necessary to the advancement of that work. During March, WTCC indicated that many of those structural elements remained off-site and under the contractor's control, but should have been released and staged for delivery and ultimate installation at the project site. April brought some progress: Portions of the required materials were released, and WTCC continues to take action to force the release of the balance of the structural materials in order to avoid the accrual of any delay to the Platform B work.*

*East Bathtub Mechanical, Electrical, Plumbing, and Fire Protection Work: During April, work on spot networks SN-PN and SN-NW continued, along with work at the Central Fan Plant and in the PATH Hub project back-of-house equipment spaces located in Tower 2 and Tower 4. Emphasis is being placed on contract work and related temporary workarounds needed to support the achievement of critical schedule milestone events in the second quarter of 2014, including the start of pedestrian traffic through the east bathtub, the securing of Temporary Permits to Occupy (TPTOs) for PATH Hub equipment spaces located in the podium of Towers 2 and 4, and the removal from service of the North Temporary Access (NTA). The work of these four contractors (mechanical, electrical, plumbing, and fire protection) also includes work within the oculus structure. To date, only limited access has been provided for installation of necessary components within the oculus space, especially for those components that require installation at the roof level, such as exhaust fans, electrical power supply, and drainage leaders. Coordination of construction access and of the delivery of necessary mechanical, electrical, plumbing, and fire protection treatments continues at present. The CM distributed copies of the oculus skylight contractor's plans to erect hanging scaffolding near the oculus roof line to each contractor for information and use in developing their installation and safety protocols.*

*Emergency Generator Plant and Emergency Chiller Plant: All eight of the Emergency Generators have undergone startup, and load-bank testing is scheduled for the first half of May with each unit subjected to a two-hour test under load. Fuel line installation in the emergency generator room has been completed, but piping from the fuel tanks in level B-4 remains to be*

*completed.* WTCC has identified the placement into service of the Emergency Generator Plant as a critical milestone that needs to be completed by June 1, 2014. Among the activities that must be completed to accomplish that objective are the delivery and installation of the fuel oil pump sets and associated control panels at the tank room, which is located at elevation 240 of Tower 3. *Also required at the tank room are the addition of electrical power and lighting, the installation of a foam fire suppression system, and the installation of access control devices. Fill lines to the tanks and the associated overfill alarms are also yet to be installed, along with a fill box at street level.*

Primary Distribution Center (PDC) at Tower 1: Four of the eight line-ups at the Tower 1 PDC *were energized at the end of October 2013. Energization of the next set of line-ups, line-ups E and F, continues to be deferred, reportedly due to the absence of final test parameters.* 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 NTA continues to supply the PATH Hub project's electrical requirements. Migration from the TPDC source to the PDC source had been projected to begin by the end of the first quarter of 2014 but was not accomplished. Completion of those electrical load transfers is required during May 2014 to allow the planned *removal from service and demolition* of the NTA to begin on June 1, 2014, as currently scheduled. Eight separate load transfer events are planned to incrementally migrate the PATH Hub project loads from the TPDC to the PDC.

Vertical Circulation: During *April*, the contractor continued to install the escalator and elevator components located in the Transit Hall at elevations 274, 296, and 306. The contractor also continued to work on the PATH Hub project escalators *located in the lower levels of Towers 2, 3, and 4, including operational testing for Escalator 23/24 located in the PATH Hub/Tower 2 area.*

Architectural Trades: The *east basement stone installation* contractor completed the floor installation at elevation 274 in the area south of the Oculus toward the Tower 4 leg. Stone floor installation in the same area of elevation 296 *commenced* on April 1, 2014. Ornamental metal, glass storefronts, and steel wall panels in the north-south concourse at elevation 274 are *mostly completed, except for areas of curved glass that are being shipped to the site.* The CM continues coordinating the work of the various crafts in the concourse areas under construction. *At column lines D1 to D13, under the 1 Line box, the contractor has begun installing sprinklers and conduits for lighting and fire alarm along the ceiling. Work on the fare collection system has also started in this area. WTCC's goal continues to be the completion of fit-out construction by the end of June 2014.*

North and South Projections: During *April*, work advanced at both the north projection and south projection facilities. At the north projection, sections of the required transition duct elements were *installed within the fan chamber.* At the south projection, *work was primarily performed on the fire alarm system that will provide coverage of the fan plant and adjacent areas. Connection of electrical service to the fans and other electrically-powered elements located within the fan plant has not been performed and must be coordinated with PATH Operations since it will be drawn from an adjacent substation under their control.* The south projection fan plant is currently forecast to go into service by the end of the second quarter of 2014.

Commissioning: There are currently a number of key milestone events for the PATH Hub project that are projected to occur during the second quarter of 2014. Project elements that must be completed and commissioned are the Central Fan Plant, the Emergency Diesel Generator Plant, the lower level of the north-south concourse, the south projection fan plant, the Emergency Chiller Plant, and the below-grade corridors and staircases serving PATH Hub equipment spaces within the podiums of Tower 2 and Tower 4. In most cases, the event being worked toward is the placement into service of a portion of the project element and not the full project element. *The fire/jockey pump system located in Tower 2, at level B-1, was started using both normal and emergency power, and the testing and commissioning was performed satisfactorily. Load bank testing of the eight emergency diesel generators is currently projected to be performed during the first week of May 2014. Punchlist work for the South Mezzanine, East-West Connector and Platform A are all ongoing at present.*

#### Central Fan Plant

Air Handling Unit (AHU)-6 and AHU-7: Both units appear to have their piping, valving, and insulation completed as well as the partial insulation of the duct system. Both units have their Variable Frequency Drives (VFDs) installed but not fully wired. According to the Building Automatic Temperature Control (BATC) contractor, the VFDs do not have power, and therefore installation of the control work cannot commence. The control work is scheduled to be installed soon; however, it will not be activated until power to the units is completed. Fire alarm wiring, termination, and interfacing at the VFD appears to be completed for AHU-6; AHU-7 fire alarm work is ongoing. *These two air-handling units are projected to be the first to come on line and are intended to serve the Hub project back-of-house equipment rooms and associated access corridors that are located within the podiums of Tower 2 and Tower 4. However, a workaround has been initiated whereby the initial ventilation requirements for those Hub project spaces will be initially provided by other local air-handling units in the immediate vicinity of the back-of-house spaces. The units being deployed in this fashion are AHU-19 and RF-19 at Tower 4 and EF-7 at Tower 2.*

#### 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. 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 in the spring. The opening of the Memorial Museum is currently scheduled for May 21, 2014, and the logistics plan for handling museum visitors is under active development.

#### 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 71 and IMS 72 in March 2014, with data dates of December 1, 2013, and February 1, 2014, respectively. (b) (4)

(b) (4). The delay is primarily attributed to the effects of Hurricane Sandy. However, re-sequencing of platform construction in support of the early demolition of the NTA may further delay the project's substantial completion date. 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. Although the construction of the west bathtub platform remains critical for substantial completion, the five-month delay for the oculus steel erection shown in the current IMS indicates the increasing criticality of the east bathtub work. (b) (4)

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

Significant Activity	Action by
Central Fan Plant On-line	WTCC
<i>Migrate PATH Hub Electrical Loads from the TPDC at the NTA to the PDC at Tower 1</i>	WTCC
<i>Mobilization of Oculus Glazing Contractor</i>	WTCC
<i>Erect/Bolt/Weld Oculus Steel Rafters and Purlins</i>	WTCC

## D. Cost Data

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.

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.

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.

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

Description	EAC (WTCC's Forecast) (in millions)	Expenditures (in millions)
Construction	\$2,823	\$2,184
Program Management and Design	682	630
Contingency	(b) (4)	■
■	■	■

WTCC submitted its monthly cost model revision on *April 30, 2014*. It shows that, based on the contract awards and estimates through *March 31, 2014*, WTCC's 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 reported total PATH Hub expenditures through March 31, 2014, at more than \$2.81 billion, or approximately 76 percent of the EAC. That total includes an additional amount of \$28.2 million in PATH Hub expenditures over the total contained in the March 31, 2014 report. Over the last 12 months, the average project expenditure per month has been \$25.5 million. That monthly expenditure is below the monthly burn rate of \$43 million that would be necessary to support the Substantial Completion Date of December 2015.*

*A review of the burn rate for recent prior months was undertaken during April. For the first three months of 2014, project expenditures have been \$28 million, \$17 million, and \$28 million respectively in January, February, and March. WTCC's Cost Unit was also consulted about this data and any underlying causes for the less than expected values recorded. No underlying causes for the shortfalls were identified, and the construction labor hours for the period have been relatively constant, running between 159,000 and 165,000 per month.*

#### 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.

#### F. Technical Capacity and Capability Review

The FTA uses the PEP to measure WTCC's technical capability and capacity.

##### Project Management Plan (PMP)

*WTCC is updating its PMP and expects it to be completed by June 2014. On April 28, 2014, WTCC furnished a draft of updated Chapter 4 –Program Organization and WTCC Project Staffing; it is currently under review.*

An update to WTCC's Operations Management Plan, a PMP sub-plan, remains outstanding. WTCC 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 *April* 2014, WTCC QA completed three QA oversight audits covering CM QA field activities and WTCC activities performed in *April* 2014. For the QA audits completed in *April* 2014, no corrective actions were identified. The *April* 2014 audit totals reflect the three audit reports that were issued, and received, at the time this report was drafted.

#### G. Site Safety and Security Review

The WTC PATH Hub project's safety performance through *March* 2014 reflects a *decrease* in safety incidents *when* compared to the safety performance through the end of February 2014. *During March 2014, there was one recordable incident and there were no lost-time injuries on the project, with 158,874 hours worked, whereas during February 2014 there were six recordable incidents and two lost-time injuries, with 161,300 hours worked.* The resulting 2014 year-to-date TCIR for the project is 4.53, which is *below* the project's goal of 5.0. The corresponding LTIR is 1.65, which is *below* the project's goal of 2.0. *Notwithstanding the improved March safety performance, WTCC Safety has continued its active role in managing worker safety and has been evaluating the causes of each of the 2014 incidents.* The project's *April* 2014 safety data was not fully available at the time this report was being drafted.

#### 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 continued during *April*, and included the setting of the last upper portals and the last arch-transitions. However, recovery of the time lost in 2013 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, *it is likely that* the east bathtub *will* overtake the west bathtub in schedule criticality, especially if the weekend service shutdowns allow improved schedule advancement in the west bathtub.

End of report. Appendix follows.

## APPENDIX A – LIST OF ACRONYMS

AHU	Air Handling Unit
BATC	Building Automatic Temperature Control
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
NTA	North Temporary Access
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
RFI	Request for Information
RRCA	Revised and Restated Construction Agreement
SSTG	Structural Steel to Grade
TCCR	Technical Capacity and Capability Review
TCIR	Total Case Incident Rate
TPDC	Temporary Primary Distribution Center
TPTO	Temporary Permit to Occupy
VFD	Variable Frequency Drive
WTC	World Trade Center
WTCC	World Trade Center Construction