

MONTHLY MONITORING REPORT

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

September 2014



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Cover: *The oculus structure begins to take on its “Bird in Flight” form as additional rafters are set.*

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

In the west bathtub, Platform B continued to be the focus of activity during *September*. *Multiple additional concrete placements occurred at Platform B including platform support walls and platform slab sections.*

In the east bathtub, *improved performance* by the Oculus Steel contractor yielded the erection of an additional 29 rafter elements during *September*, bringing the total quantity of rafters erected to 88 out of a total requirement of 114.

Also during September, the project worked towards meeting its established November 1, 2014 target date for removing the North Temporary Access from service. In its place, pedestrian traffic will be routed to and from the WTC PATH Station through the east bathtub. When it is implemented, this new route will include the new fare control line, grand staircase, temporary pedestrian corridors, the lower level of the North-South Concourse (NSC), and PATH Hub street-level entrances at Tower 2 and Tower 4. Life safety and Americans with Disabilities Act (ADA) treatments will also be included.

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)

A QPRM for the third quarter of 2014 has been scheduled for November 17, 2014.

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 continue to be issued as necessary under the active construction contracts.

Construction Activity

Construction of the new Platform B continued to advance during the month of *September*. *Additional areas of platform slab were placed and Mechanical, Electrical, and Plumbing (MEP) elements were installed under the platform. Stair installation also started, as did construction of back-of-house rooms at the northernmost section of the platform.*

At the Transit Hall, the Oculus Steel contractor recorded improved performance during the month, setting 29 additional rafters and completing 21 rafter base welds.

Also during September, WTCC focused on completing the lower level of the NSC in order to advance its goal of re-routing pedestrian traffic through the east bathtub by November 1, 2014. Adjacent areas, including the new fare control line, grand staircase, temporary pedestrian corridors, and PATH Hub street-level entrances at Tower 2 and Tower 4, are also being expedited.

Schedule

In *September* 2014, WTCC released Integrated Master Schedule (IMS) 75 (b) (4)

[REDACTED]

Cost Data

WTCC submitted its monthly cost model revision on *September 30, 2014*. It shows that, based on the contract awards and estimates through *August 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 *August 31, 2014*, to be more than \$2.97 billion, or 79.9 percent of the EAC. That total of PATH Hub expenditures includes an additional \$59.1 million in PATH Hub expenditures over the total contained in the *August 31, 2014* report.

Risk Management

To provide an improved project risk tool, the FTA, the 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. In July of 2014, the PMOC initiated a review of the 2013 PEP update in consideration of various project developments that had arisen during the intervening period. In August, the PMOC updated the contingency draw-down curve to reflect the evaluation of the project's residual risks and the potential risk retainage release amounts associated with each of the remaining PEP milestones.

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 updated its PMP and submitted version 6.0 of the plan in early August 2014. The PMOC is currently reviewing that submission.

Project Quality Assurance (QA)

During *September* 2014, WTCC QA completed *six* oversight audits that included observing the Construction Manager (CM) QA's field audits and performing its own audits of field construction activities. No corrective actions were identified by WTCC QA during these audits. The *September* 2014 audit total reflects the *six* WTCC QA audit reports that were issued and received at the time this monthly report was drafted.

Site Safety

The WTC PATH Hub project has established safety performance goals for its Total Case Incident Rate (TCIR) and Lost Time Incident Rate (LTIR) of less than 5.0 and less than 2.0, respectively. In *August* 2014, the project recorded *two* recordable incidents and *no* lost-time incidents resulting in a TCIR of 2.84 and an LTIR of 0.0, based on 140,774.5 hours worked. In comparison, the *July* 2014 incident totals were two recordable incidents and *two* lost-time incidents, resulting in a TCIR of 2.32 and an LTIR of 2.32, based on 172,202.5 hours worked. In reviewing the *August* safety performance, WTCC Safety continues its active role in managing worker safety, evaluating the causes of each incident, and developing lessons learned. The *September* 2014 safety data for the project was not fully available at the time this report was drafted but is expected to be available after mid-*October* 2014.

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)

(b) (4) [Redacted]
[Redacted]
[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 Transit Hall, or Oculus, 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. The FTA approved WTCC's February 18, 2014 Recovery Plan, thereby establishing a revised RCD of December 31, 2016. Also included in the Recovery Plan was a change in WTCC's forecasted substantial completion date to December 31, 2015.

Quarterly Progress Review Meeting

A QPRM for the *third* quarter of 2014 has been scheduled *for November 17, 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 (RFIs) and providing design certifications for completed elements of construction. The designer also continues to prepare and issue addenda that incorporate multiple, issued RFI responses in which the designer authorized changes to the base design documents that bring those documents into conformance with the RFI responses.

Construction Status

Oculus Steel: September brought improved performance from the Oculus Steel contractor with the setting of 29 additional rafters during the month, bringing the total number of rafters set to

88 at the end of the month. 26 rafters remain to be set. Of those 26, 22 rafters will require on-site splice welding due to their overall length. Welding rates at the rafter bases and the purlin-to-purlin connections also improved during September, although the overall rafter welding progress continued to lag behind the rafter setting. The lag in purlin-to-purlin welds completed held steady at a quantity of 20 during September. The lag in rafter base welds completed grew to 37 during the month. The following table summarizes the rafter erection progress during September:

Summary of Rafter Erection Progress (September 2014)

	Rafters Set	Purlin-to-Purlin Welds Completed	Rafter Base Welds Completed	Rafter Splice Welds Completed
Total Qty. Req'd	114	110	114	32
Last Month	20	18	13	3
This Month	29	29	21	7
Total to Date	88	68	51	10
Number Remaining	26	42	63	22

Oculus Glass: As currently planned, oculus glass panel installation will proceed after all of the steel rafters have been set by the Oculus Steel contractor. *The intent is to allow the steel structure to reach its final position before the installation of glass panels begins. All of the designer comments on the oculus glass panel mock-up and metal panel mock-up have been satisfied. During September, the Oculus Glass contractor continued to attach glass panel support clips to the oculus steel upper portals at the north and south sides of the oculus. Additional work areas opened up to the glass contractor during the month as overhead rafter welding operations advanced.*

Oculus Skylight: The Oculus Skylight contractor, which is the same contractor as the Oculus Glass contractor, continued to advance the shop fabrication and assembly of skylight sections at multiple locations. Ultimately, all skylight sections will be completed at a facility located in Virginia and will be *delivered* to the site when installation is ready to begin. *All shop testing for the Oculus Skylight has been completed and all tests were passed.* Safe access for skylight installation will be provided by the contractor's planned installation of a hanging scaffold, which will be located just below the oculus roof line and will span from the eastern end of the oculus to the western end. *Delivery of the crane required for the skylight installation currently remains on hold until oculus steel erection is completed and the steel erection tower cranes are removed.*

PATH Hall Construction (PHC): During September, platform construction activities continued at Platform B with the *placement of additional sections of platform slab. Construction of encased duct banks was also performed under the new slab areas. The contractor has also started the construction of the back-of-house rooms at the northernmost section of Platform B. The temporary column that interfered with the elevator pit construction was removed, thus freeing the space for drilling of the two piston shafts for the two Platform B elevators. At the south end of the Platform B work area at Track 3, rock excavation continued in preparation for the installation of utilities. Currently, the reconstruction of Track 3 is dependent upon the*

completion of this work. Electricians continued to install conduits under the platform and above the platform for power, communication, and fire alarm systems. The mechanical contractor continued to install piping in the under-platform area. Installation of metal channels and blocking to accept finish panels along the precast overhead smoke purge ducts started. The radio system contractor installed parts of the antenna system along the track ceilings. Installation of Heating, Ventilation and Air-Conditioning (HVAC) ducts on the platform columns advanced. The stair subcontractor has installed portions of the steel staircases between the platform and the mezzanine (elevation 266). In the mezzanine ceiling area, MEP and fire protection subcontractors continued the installation of light fixtures, ductwork, fire alarm components and ceiling panels. At the Platform D work area the contractor excavated additional rock for the section of the utility tunnel that passes under the platform. Ironworkers are constructing a temporary steel truss system over the utility tunnel area that will support overhead loads when two temporary columns are removed from the utility tunnel area, thereby allowing the utility tunnel work to continue.

East Bathtub Mechanical, Electrical, Plumbing, and Fire Protection Work: During September, WTCC continued expediting the work needed to place the Emergency Generator Plant in-service. To this end, work on the fuel oil system, which delivers diesel fuel from the fuel storage tanks in the basement of Tower 3 up to the day tanks in the generator plant located on the 4th floor of Tower 3, is the critical factor in the plant becoming operational. During the month, an initial quantity of 2,500 gallons of diesel fuel was successfully delivered to fuel tank #1. However, the anti-siphoning valves on the three fuel pumps need to be replaced, and work on the fuel oil system cannot go forward until the new valves are received. This group of contractors also has significant work to be performed within the Transit Hall space, including the installation of roof drain leaders, smoke purge fans, and electrical power up to the roof level of the oculus. At present, they have been alerted to the upcoming erection of the hanging scaffold by the Oculus Skylight contractor that will be available for their shared use in performing their roof-level installations. Lastly, at the Central Fan Plant, WTCC is planning to perform initial fan rotation for Air Handling Units (AHUs) 8A and 8B, both scheduled to serve Platform B, in early October, once power from Spot Network SN-NW is made available to the units.

Primary Distribution Center (PDC) at Tower 1: Migration of PATH Hub project electric loads from the Temporary Primary Distribution Center (TPDC) in the North Temporary Access to the PDC in Tower 1 stalled during September following the successful completion of the first of six load transfers during the prior month. Although the migration of loads was initially expected to advance in two-week increments through the six-step transfer process, WTCC reported that staffing limitations on the part of the PANYNJ High-Tension unit and other priorities have caused the deferral of the second transfer until early October.

Vertical Circulation: During September, work continued on the installation of the escalators and elevators located in the Transit Hall. Some of these units are required in support of WTCC's plan to re-route pedestrian traffic through the east bathtub starting on November 1, 2014. Work also continued on the installation of the escalators located in the segments of the NSC that fall within the footprints of Towers 2, 3, and 4, which are also needed in support of the re-routing of pedestrian traffic. Currently, the delivery of the new elevators and escalators for Platform B is on hold until the southern sections of Track 3 are reconstructed. When restored, Track 3 will allow a work train to transport the elevator and escalator components on flatcars for off-loading

directly onto the platform. The status of elevator and escalator installation at the end of September was unchanged and is shown on the following table:

Item	In Service	On-site/Under Construction	Not Yet On-site	Total
Escalators	8	29	10	47
Elevators	4	11	6	21

North-South Concourse: At the lower level of the NSC, all the architectural work has been completed south of the main floor of the oculus except for the ongoing work in the south transept area and the installation of air diffusers at the ceiling-level ventilation duct outlets. At elevation 296, most of the storefront steel framing has been installed, and glass installation continues to follow behind the steel framing work. Also at elevation 296, the contractor has installed rough-in for MEP and fire protection items above the ceiling, as well as the ceiling grid system. Wall framing and ceiling rough-in work continued at the north transept at elevation 274 during the month. At the Tower 2 street entrance area, wall panel and ceiling panel work progressed. At the Tower 4 street entrance area, stone work on the stairs and floors began.

Fire Alarm System: During September the installation of fire alarm conduits continued throughout the PATH Hub areas. Portions of the required conduit have been run to the new Fire Command Station, but wires have not been pulled to this location. Except for the two motherboards, the fire alarm monitoring equipment has not yet been installed in the new fire alarm cabinets.

Telecom Work: During the month of September, telecom equipment was placed in room TH-083, and electricians started installing and terminating wires at the equipment. This room is vital to the telecom system backbone. At the Emergency Generator Plant area, equipment vital to the emergency power system was delivered to room MI 057.

Commissioning: WTCC's efforts to advance the commissioning process for several project elements produced limited results during September. Spot Network SN-NW was advanced through to acceptance by PANYNJ's High-Tension group, and the emergency diesel fuel storage tanks were able to accept an initial fuel delivery during the month. However, placing the Emergency Generator Plant in-service, and securing a Temporary Permit to Occupy (TPTO) for the back-of-house PATH Hub spaces located in the podium of Tower 4 were not achieved during the month as had been planned. Commissioning-related work that is planned for October includes continued testing at the Emergency Generator Plant, initial testing of selected components in the Central Fan Plant, and also includes initial testing of portions of the Emergency Chiller Plant, which is located on the 5th floor of the Tower 3 podium.

Central Fan Plant: Activity in September within the Central Fan Plant was considerable although none of the equipment housed there is yet in-service. Although electricians continued to install power and control wiring to several of the individual AHUs, and steamfitters worked on steam and chilled water piping, the facility still awaits the delivery of fresh outside air via the intake shaft and supply fans that are located in the podium of Tower 3, and electrical power from Spot Network SN-NW for start-up and testing of the most critical AHUs. WTCC is deploying

effective workarounds to deliver ventilation to those critical areas of the project that would have been receiving coverage from the Central Fan Plant had it been available. Supply of fresh air via supply fans SF-1, SF-2, and SF-3 is one of the critical fan plant elements currently being pursued. The Oculus Steel contractor, rather than the Structural Steel to Grade (SSTG) contractor, will be providing support steel in the fresh air supply shaft which subsequently will be used by the east bathtub mechanical contractor for the installation of sound traps and associated hardware, currently forecast for delivery in December, 2014.

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 sidewalk on Church Street adjacent to Tower 4 was opened for public access during July. During August, a sidewalk shed was installed along Cortlandt Way, adjacent to Tower 4, in preparation for the initiation of structural work above the podium level of Tower 3. *During September, the site boundary fencing was relocated along Vesey Street thereby widening the available walkway for pedestrian traffic to the PATH Temporary Station at the North Temporary Access.*

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 75 in *September* 2014, with a data date of *August 1, 2014*. (b) (4)

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.

In IMS 75, WTCC included additional details related to the oculus MEP, painting, and glazing trades in response to the risk drivers outlined by the PMOC. The added schedule logic potentially reduces risk exposures to the oculus trade coordination. WTCC is expected to release IMS 76 in early November 2014.

During September, WTCC reported the achievement of the following Recovery Plan 02 milestones:

1. Spot Network NW Commissioning Complete

2. *MEP Connections to Central Systems*
3. *Mezzanine Structural Steel at Platform B Substantially Complete*

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

Significant Activity	Action by
Central Fan Plant Online	WTCC
Migrate PATH Hub Electrical Loads from the TPDC at the North Temporary Access to the PDC at Tower 1	WTCC
Start of Oculus Glazing Panel Installation	WTCC
Erect/Bolt/Weld Oculus Steel Rafters and Purlins	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 re-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 *August 31, 2014*:

Description	EAC (WTCC's Forecast) (in millions)	Expenditures (in millions)
Construction	\$2,806	\$2,325
Program Management and Design	699	649
Contingency	(b) (4)	(b) (4)
Total	(b) (4)	(b) (4)

WTCC submitted its monthly cost model revision on *September 30, 2014*. It shows that, based on the contract awards and estimates through *August 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 *August 31, 2014*, of more than *\$2.97 billion*, or 79.9 percent of the EAC. That total includes *\$59.1 million* more in PATH Hub expenditures than the total contained in the *July 31, 2014* report. Over the last 12 months, the average project expenditure per month has been *approximately \$26.0 million*. That monthly expenditure is below the monthly burn rate of *\$46.9 million* that would be necessary to support the substantial completion date of December 2015.

For the first *eight* months of 2014, project expenditures have been \$28 million, \$17 million, \$28 million, \$29 million, \$24 million, \$18 million, \$29 million, and *\$59 million* respectively. It should be noted that the June value (\$18 million) understated the actual project expenditure because it incorporated a downward adjustment of \$6.04 million for soft costs that had been incorrectly charged to the project in prior periods. Those costs were allocated to other stakeholders during June, thus skewing the PATH Hub project expenditure value. *The August expenditure of \$59 million is higher than typical because it includes an amount of approximately \$40 million in payment to the SSTG contractor consisting of accumulated payments for prior work and the Hub project share of a settlement of multiple commercial issues.*

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. In July 2014, the PMOC began assessing the impacts on the project

critical path of oculus steel delays. Then in August, the PMOC updated the contingency draw-down curve to reflect the evaluation of the project's residual risks and the potential risk retainage release amount associated with each of the remaining PEP milestones.

F. Technical Capacity and Capability Review

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

Project Management Plan (PMP)

The grantee updated its PMP and submitted version 6.0 of the plan in early August 2014. The PMOC is currently reviewing that submission. An updated draft of WTCC's Operations Management Plan, a PMP sub-plan, was also received in August and is being reviewed. Finally, WTCC submitted an updated Construction Phase Force Account Plan and Justification to the PMOC in late August, and it is also currently under review by the PMOC.

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 *September* 2014, WTCC QA completed *six* oversight audits that included observing the CM QA's field audits and performing its own audits of field construction activities. No corrective actions were identified by WTCC QA during these audits. The *September* 2014 audit total reflects the *six* WTCC QA audit reports that were issued and received at the time this report was drafted.

G. Site Safety

The WTC PATH Hub project has established safety performance goals for its TCIR and LTIR of less than 5.0 and less than 2.0, respectively. In *August* 2014, the project recorded *two* recordable incidents and *no* lost-time incidents which resulted in a TCIR of 2.84 and an LTIR of 0.0, based on 140,774.5 hours worked. In comparison, the *July* 2014 incident totals were two recordable incidents and *two* lost-time incidents, resulting in a TCIR of 2.32 and an LTIR of 2.32, based on 172,202.5 hours worked. In reviewing the *August* safety performance, WTCC Safety continues its active role in managing worker safety, evaluating the causes of each incident, and developing lessons learned. The *September* 2014 safety data for the project was not fully available at the time this report was drafted but is expected to be available after mid-*October* 2014.

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)

Construction of the oculus steel structure in the east bathtub continues to lag behind targeted monthly goals. Difficulties with geometry control and site logistics have combined with the large amount of welding required as each oculus steel rafter is erected to delay the planned completion of the oculus steel work. As a result, the PMOC has re-assessed the project's critical path, and the east bathtub has overtaken the west bathtub as the controlling work area for the overall project completion date *at the present time*.

WTCC's current focus on the re-routing of pedestrian traffic through the east bathtub requires the dedication of resources that has the potential to reduce the attention to upcoming Hub project milestones.

End of report. Appendix follows.

APPENDIX A – LIST OF ACRONYMS

ADA	Americans with Disabilities Act
AHU	Air Handling Unit
CA	Construction Agreement
CM	Construction Manager
EAC	Estimate at Completion
FTA	Federal Transit Administration
HVAC	Heating, Ventilation, and Air-Conditioning
IMS	Integrated Master Schedule
LMRO	Lower Manhattan Recovery Office
LTIR	Lost-Time Incident Rate
MEP	Mechanical, Electrical, and Plumbing
NSC	North-South Concourse
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
QA	Quality Assurance
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
WTC	World Trade Center
WTCC	World Trade Center Construction