

MONTHLY MONITORING REPORT

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

December 2015



PMOC Contract Number: DTFT60-14-D-00010

Task Order Number: 006

O.P.s Reference: 01, 02, 25, 26, 40

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Cover: *View of the future transit lobby at Tower 3.*

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. DTFT60-14-D-00010, Task Order No. 006. 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 December, World Trade Center Construction (WTCC) formally transmitted Recovery Plan 05, which reforecast five of the remaining Revised and Restated Construction Agreement (RRCA) milestones by up to nine months beyond their previous forecast dates. In so doing, WTCC recognized the volume of remaining work in multiple areas of the project and the need to reframe its priorities and mitigation strategies for completing the project.

Also during December, the onset of less favorable weather conditions began to have an impact on the exterior work at and around the oculus. Finish work on the oculus steel and curtain wall, along with plaza work around the oculus, are both susceptible to weather-related delays through the upcoming winter months.

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)

(b) (4)
[Redacted text block]

Quarterly Progress Review Meeting (QPRM)

The QPRM for the fourth quarter of 2015 has been scheduled for February 29, 2016.

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 of the planned procurements for the PATH Hub project. However, change orders continue to be issued as necessary under the active construction contracts.

Construction Activity

As in November, construction activity during December was substantial in the west bathtub, where the use of double shifts allowed the structural elements at Platforms C and D to advance at a significant pace. Concrete placements were numerous at both the platform and mezzanine levels during the month, and similar progress is expected during January.

In the east bathtub, the oculus curtain wall and skylight contractor demobilized its hammerhead crane early in the month, thus allowing follow-on activities to advance along the northern side of the oculus. Installation of the oculus plaza granite pavers also started during December.

Schedule

On January 7, 2016, WTCC released Integrated Master Schedule (IMS) 83 (with a data date of December 1, 2015), (b) (4)

[REDACTED]

Cost Data

WTCC submitted its monthly cost model revision on December 30, 2015. (b) (4)

[REDACTED]

Risk Management

As of December 2015, the PMOC considers the following issues to be among the top risks to the PATH Hub project construction:

- Site-wide Systems Integration, Testing, and Commissioning.
- Completion of PATH Hub Support Rooms/Facilities/Elements.

- Remaining work to be performed by the low voltage contractors.
- *Performance of Hub Project work by other WTC stakeholders.*

Technical Capacity and Capability Review (TCCR)

The TCCR will be updated as necessary in conjunction with the update of the Project Execution Plan (PEP).

Project Management Plan (PMP)

An updated draft of WTCC's Operations Management Plan, a PMP sub-plan, was resubmitted in mid-November following discussion of the expected document contents among the FTA, the PMOC, and WTCC. *In late December 2015, the PMOC transmitted a draft spot report on the Operations Management Plan draft to the FTA for review and comment.*

Project Quality Assurance

During *December 2015*, WTCC Quality Assurance (QA) completed *three* oversight audits that included reviewing the Construction Manager (CM) QA's field audits and performing its own field construction audits. The *December 2015* audit total reflects the *three* WTCC QA audit reports that were issued and received at the time this monthly report was drafted. No quality issues were identified for corrective action.

Site Safety

The WTC PATH Hub project has established its own project safety performance goals for Total Case Incident Rate (TCIR) and Lost-Time Incident Rate (LTIR) of less than 5.0 and less than 2.0, respectively. In *November 2015*, the project had *two* recordable incidents and *one* lost-time incident, resulting in a monthly TCIR of 3.36 and an LTIR of 1.68, based on *118,918* hours worked. Safety initiatives that took place in *December* are discussed in the project monitoring section of this report. The *December 2015* safety data for the project was not fully available when this report was drafted but is expected to be available after mid-*January 2016*.

Issues/Problems/Suggestions

The Building Automation and Temperature Controls (BATC) contract work is essential to the future turnover of many of the PATH Hub project systems to PATH Operations and the Property Management entity. Many of the systems that have been installed, and that are currently being used in occupied areas of the project, remain in manual (construction start-up) mode or are being operated using temporary support features and treatments. The finished project will require that all of these systems are fully operational in both the Hub Public and Hub Support spaces, and that these systems be able to be monitored, operated, and controlled from various remote locations via computer console commands, queries, and observation. The BATC contract work is pacing this turnover process; however, it is reportedly lacking in resources and synchronization with the latest project schedule and interim turnover objectives, thereby potentially delaying the turnovers.

(b) (4)

(b) (4)

WTCC continues to focus on opening areas of the project for public use. However, the project's back-of-house and support elements also require completion in order to fulfill the terms of the RRCA and deliver a fully functional WTC PATH Hub facility. A broader focus on the complete project scope would be beneficial.

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 stations in New York and New Jersey. When completed, the WTC 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 the 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. (b)

(4)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Quarterly Progress Review Meeting

The QPRM for the fourth quarter of 2015 has been scheduled for February 29, 2016.

WTC Site Master Plan

WTCC's latest site master plan is Master Plan Version 11, dated October 10, 2013.

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 during *December*, including responding to contractor Requests for Information (RFIs), reviewing contractor submittals, and providing design certifications for completed elements of construction. Through the end of the third quarter of 2015, WTCC reports that the designer has issued a total of 52 design certification letters for the PATH Hub project.

Construction Status

Oculus Painting: Painting by the prime painting contractor, which includes the repair and filling of surface blemishes, continued in designated quadrants of the oculus exterior during *December*. This work, which was not originally included in the painting contract scope, was added by change order in early October. That change order was identified as “Rat Hole Remediation” at a settled change order value of \$1,321,000. By the end of *December*, *seasonal weather conditions had curtailed the exterior painting work, and it is not expected to resume until the spring of 2016, with continuation through the second quarter of 2016 anticipated. At the interior of the oculus, the prime painting contractor patched areas of damaged intumescent paint at the sub portals at elevation 296’ throughout the month. Last, repairs to the approximately 40 points of temporary attachment of the hanging scaffold to the oculus structure commenced during December. Those repairs entail the surface restoration where the attachment system had been affixed and then applying the required multi-coat painting system.*

Oculus Curtain Wall: During *December*, the curtain wall contractor continued to perform finish work on the glass panel portion of the curtain wall system *in the southwest and northwest quadrants. This work is essentially complete in the other two quadrants. Installation of insulation, gaskets, metal trim pieces, and caulking for the glass portion advanced during the month. As of the end of December, 204 metal trim panels remained to be installed, representing approximately 15 percent of the total quantity required and including a significant number of trim panels that are custom-sized in order to close the gaps at the tops of each bay of the oculus. Next month, installation of the smaller-sized curved transition pieces and the adjacent checkered plate catwalk pieces is expected to begin. Hose testing of finished portions of the glass curtain wall continued during December, and some anomalies were identified that were reportedly under review with the curtain wall glass system designers at the end of the month.*

Oculus Skylight: During *December*, the oculus skylight contractor *installed the skylight ridge cap, thus completing another element of the skylight system. Yet to be installed are the bird deterrent brushes, which were added via change order and are intended to prevent birds from nesting in the roof-level pockets that will contain the skylight panels when the skylight is in the open position. Also during December, the hammerhead tower crane, which had been used to set the skylight elements and the curtain wall system elements, was demobilized from the site. At the east entrance to the oculus, the overhead fixed skylight was also installed.*

Platforms C and D: WTCC continued to execute the work at Platforms C and D on a two-shift basis during *December*. Saturday work was also included in this acceleration effort, *although some cessation did occur, as expected, during the holiday period at the end of December. By the end of the month, most of the precast smoke ducts over tracks 4 and 5 were set in place. Only pieces at the north end had been omitted to leave the access opening for material deliveries from overhead, and to allow for the upcoming construction of the collector duct extension across both tracks and Platform C. The interconnection of the precast duct sections over tracks 3 and 4 remains to be performed, and those joints are being temporarily supported by a temporary steel beam support system. Iron workers continued to make welded connections at the joints of truss girders to columns and at connection plates that join the truss girders to the precast mezzanine floor sections. Along the west wall of Platform D, also known as the north-south shear wall, carpenters continued to attach metal studs and install cement wall boards that will subsequently receive stone panels. Carpenters were also preparing the underside of the precast smoke purge*

ducts to later receive metal cover panels. The construction of the Platform C structure continued from south to north and was approximately 85 percent complete at the end of the month. At the south end of the platform, electricians began to install conduits and cable trays in the below-platform utility chase. Also during December, ironworkers set the steel frames for stairs 4 and 5 at the south end of Platform D, and for stairs 9 and 10 at the south end of Platform C. At the area north of Platform C, electricians installed an electrical duct bank under tracks 4 and 5. These conduits tie into a duct bank previously installed under track 3. On the mezzanine level, areas of concrete floor slab were placed; the largest of these areas is located at the northwest corner of the mezzanine. During December the painting subcontractor applied intumescent paint to the supporting columns and sections of the truss girders. In the back-of-house spaces to the south of Platforms C and D, electricians were installing conduits and panels following delivery of some of the switch gear and distribution panels to the equipment rooms in those spaces.

East Bathtub Mechanical, Electrical, Plumbing (MEP), and Fire Protection Work: *Throughout the east bathtub, electricians continued to install light fixtures in the ceiling areas and to power up the fixtures in order to test the lighting. In the fresh air shaft, the shaft wall openings that had been made to gain access to the north fuel riser piping were closed with concrete block as part of the shaft wall restoration. The repair of the insulation layer and the sheet metal air shaft lining is expected to occur during January, thus allowing the removal of the shaft scaffold system. Filling of the temporary opening in the shaft wall where it adjoins the B4 level of the Tower 3 basement is projected to begin during January as part of the completion of the fresh air shaft. Conduits have been installed between supply fans SF-1, SF-2, and SF-3 and their associated motor control cabinets at the top of the shaft, but the wires remain to be pulled and terminated. Work also advanced during December on the MEP and Fire Protection elements throughout the east bathtub at many of the back-of-house rooms that will serve the PATH Hub project, and that are located both within the footprint of the oculus and within PATH Hub spaces in the podiums and subgrade portions of Towers 2, 3, and 4. Rooms housing communications equipment, radio equipment, fire alarm equipment, electrical distribution equipment, elevator systems, air conditioning equipment, and the like were continuing to receive active installation of required MEP and fire protection treatments during December. At the spill air plenum at elevation 237 in the Central Fan Plant, electricians installed conduits and pulled wires to the power-operated dampers that will automatically activate during a fire alarm event.*

East Bathtub Finish Work: *During December, multiple finish trades continued working in and around the oculus. Within the oculus interior, stone flooring was being installed at the 284 elevation entrance to the Dey Street Concourse. The stone contractor began installing stair walls with custom railings at the east grand staircase. The contractor also commenced installation of permanent glass doors at the entrance to the Dey Street Concourse. Also during December, sections of the curved railing shoe were being installed at the east end of the 296 elevation, and carpenters were installing metal ceiling panels at the area around the east diving board and above the entrance to the Dey Street Concourse. At the southeast oculus plaza area, the waterproofing and sitework contractor commenced the installation of stone pavers. These large pavers are up to 10 feet by 5 feet in area and are 3 inches thick. This contractor also placed a waterproofing system, drainage pipes, troughs, and lightweight concrete before the pavers were installed. Cold weather will likely force the deferral of some of this work, although tenting,*

along with temporary heat application, is under consideration as a means of continuing to move forward with this work.

Primary Distribution Center (PDC) at Tower 1: During *December*, the project remained dependent on the North Temporary Access (NTA) for emergency power from the two temporary emergency diesel generators that are housed there and from the Emergency Distribution Substation (EDS-NTA), which is located within the NTA facility. That temporary emergency power supply will be required until all of the permanent emergency generators at Tower 3 are in service and connected via EDSs to all of the Automatic Transfer Switches (ATSS) that are currently in use. In *December*, as part of the transition, *additional* ATS swing-overs were performed. Once the transition is completed, the project will be fully independent of the temporary electrical services housed in the NTA, and they can then be decommissioned.

Vertical Circulation: During *December*, *the piston shafts were drilled and casings were installed for elevators 1 and 2 (Platform D) and elevators 3 and 4 (Platform C). On the mezzanine level above the elevator locations, four elevator hydraulic system tanks and pumps were delivered to the elevator machine room.* The escalator work for the two platforms is not expected to start until *the beginning of February, after a sufficient amount of the track has been restored such that rail delivery of escalator trusses to the platform levels can occur.* In the east bathtub, *the remedial steel work on the elevator 16 and 17 shafts was completed.* The two scenic elevators (Elevators 14 and 18) remained in fabrication during *December.* *The vertical circulation contractor installed the rails and jacks in the elevator 14 shaft, and was preparing to install the jacks and rails at the elevator 18 shaft.* Installation of these scenic elevators is now forecast to begin during the first quarter of 2016, and completion is projected to occur in the second quarter of 2016. *During the month of December, the contractor concentrated its efforts on escalators 35/36 and 39/40 (east and west diving boards).* The status of elevators (and material lifts) and escalators through the end of *December* 2015 remains unchanged from November, and is summarized in the following table:

Item	In Service Last Month	In Service This Month	Onsite/Under Construction Last Month	Onsite/Under Construction This Month	Not Yet Onsite	Total
Escalators	14	14	26	26	7	47
Elevators	9	9	8	8	4	21

Commissioning: During *December*, commissioning activities focused on *the continuation of the swing-over of ATSS from the temporary emergency generators at the NTA to the permanent emergency generators housed in the Tower 3 podium.* Progress *during the month included the swing-over of a small group of ATSS as well as the completion of the testing of the foam system at the emergency diesel fuel storage tank room in the basement of Tower 3.* During *December*, WTCC established an additional goal as a priority for the first quarter of 2016: *to secure a Temporary Permit to Occupy (TPTO) for the occupied areas of the South Mezzanine.* This priority recognizes that, *although the South Mezzanine received a TPTO in 2012, the ongoing completion of work affecting that area warrants the return to that space to test and commission the systems and other elements that were not included in the initial TPTO.* Other commissioning activity in *December* included *water infiltration testing of the oculus curtain wall glass panels.*

Reportedly, the results of some of this infiltration testing were inconclusive, and the data was referred to the designer of record for its recommendation on interpreting the results.

Fire Alarm System: During December, work on the new fire alarm system advanced in the east bathtub, where the installation of detection devices and annunciators and the wiring of those devices to the various data-gathering panels were advanced in both the public and back-of-house spaces. In the west bathtub, the fire alarm contractor made some initial installations of under-platform conduit at Platform D.

Radio System: During December, WTCC changed the plan for migrating from the temporary radio head-end at room MZ-194, which was to have received new permanent head-end equipment and have become the first of two permanent head-ends handling radio transmissions throughout the WTC site. For various reasons, WTCC determined that the second permanent radio system head-end, located at room TH-015 in the Tower 2 basement, will instead be the initial permanent radio system head-end to be placed in service, and the site wide radio system contractor was directed to proceed on that basis. Some of the work activities needed to accomplish this objective was identified by the contractor as requiring the installation and testing of radio equipment components that it was furnishing, but that were long-lead items. These required long-lead items include the nodes that are to be installed in radio equipment rooms PL-110 and PL-093.

Telecommunications and Security Systems: During December, the contractor proceeded with installation of the Supervisory Control and Data Acquisition (SCADA) equipment, with the expectation that all of the panels and terminations will be completed in early January 2016. Interoperability issues between Lenel and Firecom remained an open issue in December. WTCC has requested that the contractor provide an update on the resolution of the issues raised by Firecom. Network integration remains on hold, although WTCC did request that the contractor provide a date for when integration can be expected to begin. The field acceptance test for Verint took place during the week of December 14, 2015. The contractor indicated that the results of the Customer Information System Factory Acceptance Testing (FAT) that was performed in mid-November 2015 had been deemed satisfactory.

Central Fan Plant: During December, initial fit-out of the engineer's office at the Central Fan Plant commenced with the delivery of furniture near the end of the month. Controls work for the dampers in the fresh air supply plenum and the spill air plenum was also performed. The contractor also made progress installing the 20-inch permanent supply and return chilled water piping in the utility tunnel: Sections of pipe were positioned and welding of pipe joints was performed. Other utilities, including electrical conduit and sprinkler piping, were also being installed in the utility tunnel during the month. Utility tunnel installations are expected to continue during January 2016.

Construction Logistics

The WTCC Office of Program Logistics (OPL) continues to facilitate construction progress and the sharing of access, egress, and work zones among all contractors onsite. During December, OPL continued to address issues of water infiltration at the boundary between MTACC's 1-Line Cortlandt Street Station project and the WTC PATH Station mezzanine directly below. *At the*

interior areas of the oculus at elevations 274 and 296, WTCC is now coordinating with various fit-out contractors that are working for future tenants in the available retail spaces. Access for material deliveries for these areas must be coordinated with WTCC.

Interagency Coordination

During December, the status of the group of projects known as the Church Street Corridor Projects was reviewed with WTCC with regard to the performance of the work. WTCC reported that, although WTCC had completed some of the work for the projects for the Metropolitan Transportation Authority, completion of the remainder of its portions of the projects has been deferred pending the resolution of commercial issues and the execution of additional formal agreements. Most notably, the Church Street Corridor Project known as the “R to E Free Connector” requires additional subsurface excavation and construction near the northeast corner of the site; however, WTCC has not yet undertaken this work, because it is awaiting receipt of compensation for the work that it performed at the “Hub to R Connector” below Tower 4. Elsewhere, the Campus Plan work by the New York City Department of Design and Construction continues to require close coordination with WTCC as it proceeds to establish the WTC site perimeter treatments that will control vehicle access at all four sides of the site.

Community Relations

OPL continued to distribute construction alerts, updates, and monthly construction progress newsletters to the community and stakeholders. Updates on the project are listed at the website wtcprogress.com, and specific presentations are periodically made to Manhattan’s Community Board #1.

C. Schedule

On January 7, 2016, WTCC released IMS 83 (with a data date of December 1, 2015), (b) (4)

[REDACTED]

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

Significant Activity	Action by
Stone Floor Installation at Elevation 274	WTCC
Mezzanine Structural Steel Complete at Platform C	WTCC
Central Fan Plant Online	WTCC
Emergency Generator Plant Online	WTCC

The PMOC, independent of the grantee’s schedule forecasts, has independently developed forecasts for various critical schedule milestones. The results of that effort identified the following forecast dates for the milestone events listed:

Schedule Tool Topic	PMOC Forecast
(b) (4)	

D. Cost Data

(b) (4)

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted] 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 *November 30, 2015*:

Description	EAC (WTCC’s Forecast) (in millions)	Expenditures (in millions)
Construction	\$2,807	\$2,510
Program Management and Design	721	705
[Redacted]	(b) (4)	[Redacted]
[Redacted]	[Redacted]	[Redacted]

WTCC submitted its monthly cost model revision on *December 30, 2015*. It shows that WTCC’s EAC for the federally funded PATH Hub project (b) (4)

[Redacted]

[Redacted]

[Redacted]

[Redacted]

(b) (4)

[Redacted]

(b) (4)

E. Risk Management

As of *December* 2015, the PMOC considers the following issues to be among the top risks to the PATH Hub project construction:

- Site-wide Systems Integration, Testing, and Commissioning.
- Completion of PATH Hub Support Rooms/Facilities/Elements.
- Remaining work to be performed by the low voltage contractors.
- *Performance of Hub Project work by other WTC stakeholders.*

F. Technical Capacity and Capability Review

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

Project Management Plan

An updated draft of WTCC's Operations Management Plan, a PMP sub-plan, was resubmitted in mid-November following discussion of the expected document contents among the FTA, the PMOC, and WTCC. In late December 2015, the PMOC transmitted a draft spot report on the Operations Management Plan draft to the FTA for review and comment.

Project Organization

WTCC continues to update consultant and contractor staff assignments across project areas to address staffing needs as the project advances. *During December, the PANYNJ appointed the current WTCC Director to a new title and added the leadership role on three other PANYNJ capital initiatives to the incumbent's assigned responsibilities.*

Project Quality Assurance

During *December* 2015, WTCC QA completed *three* oversight audits that included reviewing the CM QA's field audits and performing its own field construction audit. The *December* audit total reflects the *three* WTCC QA audit reports that were issued and received at the time this monthly report was drafted. No quality issues were identified for corrective action.

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 *November* 2015, the project had *two* recordable incidents and *one* lost-time incident, resulting in a TCIR of 3.36 and an LTIR of 1.68 for the month, based on 118,918 hours worked. As part of its ongoing safety initiatives, WTCC Safety holds weekly safety committee meetings with all site contractor safety managers. During *December*, WTCC Safety issued safety information for use by its site safety managers, including information that addressed the topics of: *Frequency of Scaffold Inspections; Medical*

Professionals Supporting the WTC Site; and WTC Site Sanitation, Cleanliness and Housekeeping.” Site safety managers were encouraged to discuss these topics at toolbox talks.

The *December* safety data for the project was not fully available at the time this report was drafted but is expected to be available after mid-*January 2016*.

H. Issues/Problems/Suggestion

The Building Automation and Temperature Controls (BATC) contract work is essential to the future turnover of many of the PATH Hub project systems to PATH Operations and the Property Management entity. Many of the systems that have been installed, and that are currently being used in occupied areas of the project, remain in manual (construction start-up) mode or are being operated using temporary support features and treatments. The finished project will require that all of these systems are fully operational in both the Hub Public and Hub Support spaces, and that these systems be able to be monitored, operated, and controlled from various remote locations via computer console commands, queries, and observation. The BATC contract work is pacing this turnover process; however, it is reportedly lacking in resources and synchronization with the latest project schedule and interim turnover objectives, thereby potentially delaying the turnovers.

(b) (4) [Redacted text block]

WTCC continues to focus on opening areas of the project for public use. However, the project’s back-of-house and support elements also require completion in order to fulfill the terms of the RRCA and deliver a fully functional WTC PATH Hub facility. A broader focus on the complete project scope would be beneficial.

End of report. Appendices follow.

APPENDIX A – LIST OF ACRONYMS

ATS	Automatic Transfer Switch
BATC	Building Automation and Temperature Controls
CA	Construction Agreement
CM	Construction Manager
EAC	Estimate at Completion
EDS	Emergency Distribution Substation
FAT	Factory Acceptance Testing
FTA	Federal Transit Administration
IMS	Integrated Master Schedule
LMRO	Lower Manhattan Recovery Office
LTIR	Lost-Time Incident Rate
MEP	Mechanical, Electrical, and Plumbing
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
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
SCADA	Supervisory Control and Data Acquisition
TCCR	Technical Capacity and Capability Review
TCIR	Total Case Incident Rate
TPTO	Temporary Permit to Occupy
WTC	World Trade Center
WTCC	World Trade Center Construction