

MONTHLY MONITORING REPORT

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

February 2016



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Task Order Number: 006

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Cover: View (looking west) of the main floor of the oculus. New stone flooring is being exposed in preparation for the early March 2016 opening of Phase I of a pedestrian route through the east bathtub.

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 February, World Trade Center Construction (WTCC) focused on completing an initial phase of the pedestrian route through the east bathtub and established a target date of the first week of March 2016 for its opening. Project resources were redirected towards achieving the opening of Phase I of this new route, which will consist of a portion of the main floor of the oculus, the southern leg of the North-South Concourse, and the transportation lobby located at street level in the Tower 4 podium. Four phases, in total, of the pedestrian route through the east bathtub are forecast to be open by the end of June 2016.

Also during February, WTCC retired the temporary chilled water supply and return lines running between the Central Chiller Plant and the Central Fan Plant, replacing them with the permanent 20-inch supply and return lines that run through the utility tunnel.

Project Description

The WTC PATH Hub 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]

Quarterly Progress Review Meeting (QPRM)

The QPRM for the fourth quarter of 2015 *was held on* 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

During February, WTCC reported the award of a contract to complete the WTC PATH Hub entrance to the adjacent New York City Transit (NYCT) E Line subway station. This connection existed before the terrorist attack on September 11, 2001, and several of the elements of the connection have been preserved in their pre-9/11 condition. This connection is also covered in the Cumulative Effects report.

Construction Activity

During February, WTCC deployed available project resources to making ready Phase I of the pedestrian route through the east bathtub in order to fulfill its announced plan to make the route available for public use during the first week of March 2016. Phase I will be the first phase of a four-phase plan for this pedestrian route, and will allow pedestrians to utilize a portion of the main floor of the oculus, the southern leg of the North-South Concourse, and the transportation lobby located in the Tower 4 podium.

Also during February, WTCC retired the temporary chilled water supply and return lines running between the Central Chiller Plant and the Central Fan Plant, and replaced them with the permanent 20-inch chilled water supply and return lines that run through the utility tunnel.

Schedule

On March 1, 2016, WTCC released Integrated Master Schedule (IMS) 84 (with a data date of February 1, 2016), (b) (4)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Cost Data

Updated cost data was not available from WTCC at the time of this report. (b) (4)

[REDACTED]

(b) (4)

Risk Management

As of *February 2016*, 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). *In February 2016, the PMOC conducted an assessment of the project residual risk profile and recommended a release of \$37 million from the remaining risk retainage, primarily because of favorable progress associated with Platform C Utility Tunnel and Mezzanine Structural Steel. However, the ongoing piecemeal openings to the public continue to present challenges for WTCC to complete the project in accordance with the requirements of the RRCA.*

Project Management Plan (PMP)

During February, WTCC transmitted an updated version of its Construction Phase Force Account Plan and Justification that extends the period covered through the end of September 2016. At the end of the month, the PMOC was reviewing the updated version of the plan and drafting a spot report addressing its contents.

Project Quality Assurance

During February 2016, 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 February 2016 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 *January 2016*, the project had two recordable incidents and *one* lost-time incident, resulting in a monthly TCIR of 3.74 and an LTIR of 1.87, based on 107,020 hours worked. Safety initiatives that took place in January are discussed in the project monitoring

section of this report. The *February* 2016 safety data for the project was not fully available when this report was drafted but is expected to be available after mid-*March* 2016.

Issues/Problems/Suggestions

During February, WTCC focused on making Phase I of the pedestrian route through the east bathtub ready for public use in order to meet its forecasted opening of that segment of the project to pedestrian traffic during the first week of March 2016. Also during February, WTCC was able to retire the temporary chilled water supply and return piping running between the Central Chiller Plant and the Central Fan Plant and replace it with the permanent 20-inch supply and return chilled water piping that runs through the utility tunnel.

Portions of the project that have been opened for use to date have done so using interim support systems and temporary workarounds as necessary. Going forward, those features will need to be replaced by the fully functional permanent systems and treatments for the project to be deemed complete.

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 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]

[REDACTED]

[REDACTED]

Quarterly Progress Review Meeting

The QPRM for the fourth quarter of 2015 *was held on* February 29, 2016.

WTC Site Master Plan

WTCC's latest site master plan is Master Plan Version 11, dated October 10, 2013. This information was reconfirmed with WTCC during January 2016.

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 *February*, 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 fourth quarter of 2015, WTCC reports that the designer has issued a total of 52 design certification letters for the PATH Hub project. *The*

designer's RFI log for the fourth quarter of 2015 indicated that a total of 162 RFIs were submitted during the quarter, with 24 remaining open at the end of the quarter.

Construction Status

Phased Opening of Pedestrian Route Through the East Bathtub: Following WTCC's mid-January announcement of its plans for a phased opening of a pedestrian route through the east bathtub, February construction activities were focused on making the Phase I portion of the route ready for public use. Most of the east bathtub prime contractors were actively mobilized to advance the remaining work, including the work on the Hub support systems and facilities that must be operational for the public opening to occur. More detail on these activities is included in the paragraphs below.

Oculus Painting: Exterior painting work did not occur during February; however, the prime painting contractor continued working on the interior of the oculus, where repair and filling of steel surface defects continued, followed by the application of the multi-coat paint system. The contractor focused heavily on those areas of the oculus interior that needed to be finished before the planned opening of Phase I of the pedestrian route through the east bathtub in early March. Marring of the oculus steel exterior finishes was again noted during February during the installation of the metal trim at the glass panels and also during the installation of the catwalk and replacement skylight gaskets. All of these activities are performed from boomlifts that make incidental but frequent contact with the oculus steel while this work is being done. Exterior painting work is not expected to resume until the spring of 2016.

Oculus Curtain Wall: During February, the curtain wall contractor continued to perform finish work on the glass panel portion of the curtain wall system in the southwest quadrant of the oculus. By the end of the month, only caulking of the metal panel joints and hose-testing of the finished system remained to be performed, although winter weather conditions necessarily slowed both activities. Two glass panels that were damaged have not yet been replaced, and they cannot be replaced until the replacement units have been fabricated and delivered.

Oculus Skylight: During February, the contractor nearly completed the replacement of the skylight ridge gasket system, after it had been observed that the previously installed ridge gasket material had torn and was dislodged at multiple locations. The causes of the gasket failure remained under review at the end of the month. Additionally, installation of the laser-based skylight sensor system, which is intended to automatically trigger minor positioning changes in the skylight panels as the oculus structure moves under varying environmental conditions, was performed during February. However, programming and deployment of the system were still ongoing at the end of the month. Installation of the catwalk portion of the WT-3 metal panels also started during February and approached the halfway mark during the month. The remaining parts of the catwalk are expected to be placed during March 2016. The same prime contractor holds both the curtain wall and the skylight contracts.

Platforms C and D: WTCC continued to execute the work at Platforms C and D on a two-shift basis during February. Stone installation on the wall to the west of Platform D and the mezzanine above that platform was advanced to approximately 75 percent completion. Escalator trusses were delivered and set for three of the seven escalators, and the elevator pistons for each of the four elevators were set into position at the bottom of the elevator pits. Structural work

included additional wall and slab concrete placement for the north end of Platform C. Tracks 4 and 5 were both extended northward from their southern ends, thereby allowing access deeper into the station area for delivery of construction materials by railcar.

East-West Connector: Above the north end of the mezzanine level of the PATH Hall, at elevation 284, work on the previously omitted portion of the upper level of the East-West Connector advanced during *February, following the January* placement of the required concrete floor slab for this area. *During February, the contractor began welding the joints of the steel ribs that line this corridor, on a limited basis, once these steel ribs were rotated into position. The length of the corridor that remains to be completed in approximately 150 feet. WTCC expects that work on this project element will continue into the third quarter of 2016, with completion intended to correspond with the completion of Platforms C and D.*

East Bathtub Mechanical, Electrical, Plumbing (MEP), and Fire Protection Work: *During February, the east bathtub MEP contractors focused on bringing the necessary public and support spaces to the level of operation needed to allow the early March opening of Phase I of the pedestrian route through the east bathtub. Work on these elements diverted resources from other project areas and also used selective extended workday and workweek craft resources in order to deliver the promised early March opening. Areas being expedited by these trades included the oculus radiant floor heating system work, ventilation work, power supply including emergency backup power, and hot water and chilled water distribution work, along with associated testing and commissioning of these elements. In addition to the pedestrian route activities, work at the fresh air supply fans and fresh air shaft in the Tower 3 podium also advanced during February. Installation of plenum sheet metal liners and insulation above and within the shaft continued, requiring the continued presence of the scaffolding within the shaft. WTCC is forecasting that the activation of the fresh air shaft and supply fans will occur in the second quarter of 2016.*

East Bathtub Finish Work: *During February, as part of the effort to open Phase I of the pedestrian route through the east bathtub by early March, the finish contractors were primarily deployed in the areas that comprise Phase I of the route. The stone contractor, carpentry contractor, ornamental metals contractor, and interior glass and storefront contractor were all actively engaged in completing the elements of work under their respective contract scopes that are necessary for the utilization of the southern leg of the lower level of the North-South Concourse. By the end of the month, and using selected overtime, the finish work was approaching completion in the Phase I areas. The Phase I areas connect to the street level at the transportation lobby located in the podium of Tower 4, which is situated at the northwest corner of Church and Liberty Streets.*

Vertical Circulation: *During February, the vertical circulation contractor focused its resources on the elevator and escalator work at Platforms C and D as well as the vertical circulation work along Phase I of the pedestrian route through the east bathtub. The contractor also made some progress on the scenic elevator (elevator 14) located at the western end of the Transit Hall. At Platforms C and D, four escalators, in total, have been delivered, and three others remained off-site at the end of the month. Also at the platforms, the hydraulic pistons for elevators 1, 2, 3, and 4 were set in position within the elevator pits. Progress was also made at the mezzanine-level elevator machine room that supports the four elevators and that houses the hydraulic tanks and*

pumps that will raise and lower the elevator cabs during operation. Also during February, the escalators that had previously been installed along Phase I of the route through the east bathtub were made ready for public use. A total of four escalators will handle the initial influx of pedestrians, with two escalators serving the levels between elevations 274 and 296, and two others serving the levels between elevation 296 and the street level. One of the activities observed in the final days of February at these four escalators was the replacement of several of the escalator steps. The status of elevators (and material lifts) and escalators through the end of February 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	29	3	47
Elevators	9	9	8	12	0	21

Commissioning: During February, WTCC continued to conduct biweekly commissioning meetings with the commissioning entity, the property management entity, PATH Operations, and the CM. These meetings are generally divided into two parts: (1) a review of the project elements or supporting spaces that have already been authorized for occupancy (either by the public or as support spaces), and (2) a review of project elements that are approaching their construction completion and therefore entering the testing and commissioning phase before occupancy. During the month, testing and commissioning activities advanced on three primary fronts; of these three, the project elements supporting the Phase I pedestrian route through the east bathtub were assigned first priority. Second, commissioning activities were also undertaken for the operable oculus skylight and included an initial training session for the property management staff members on the skylight control equipment. Finally, commissioning and testing of some of the previously omitted equipment rooms in the south mezzanine were also performed.

Fire Alarm System: During February, the fire alarm contractor worked on installing fire-alarm controls at various supply air dampers located within the fresh air plenum that connects to the Central Fan Plant. These fire alarm controls will override the Heating, Ventilation, and Air Conditioning (HVAC) system controls at the same dampers in the event of a smoke condition as part of the fire alarm system's response. Under normal conditions, the Building Automation and Temperature Control (BATC) system controls the operation of these dampers as part of the distribution of HVAC through the air-handling equipment in the Central Fan Plant.

Radio System: During February, WTCC focused the attention of the sitewide radio system contractor on the system's first of two Head-ends being installed in room TH-015 in the basement of the Tower 2 podium. Interim radio coverage is being maintained using temporary head-end equipment housed in room MZ-194 at the south mezzanine. This new permanent head-end is in the early stages of build-out and is not forecast to replace the interim head-end until the end of 2016. A second permanent head-end is slated to be installed in place of the temporary head-end once the transfers to the first permanent head-end are implemented. As a guide, a testing period of 160 days is being projected as part of the transfer. Other priorities for the radio system contractor are the installation of an off-air room within the West Vent Structure, which is

located at the southwest corner of the Memorial Plaza, and the installation of conduit between the west bathtub and east bathtub communications room PL-077 at elevation 255 under the 1 Line subway box. WTCC forecasts that the conduit run will be completed during March 2016.

Telecommunications and Security Systems: During February, WTCC made an informal presentation addressing the security system contract. In its presentation, WTCC noted that the security system contract is primarily composed of access control devices at various room entry points, and Closed Circuit Television (CCTV) cameras and monitors throughout the PATH Hub facility, including non-public spaces. Also during February, the contractor worked with WTCC and representatives from the PANYNJ Security Office to set camera views throughout the Phase I portion of the pedestrian route through the east bathtub, in anticipation of its opening in early March.

Central Fan Plant: During February, WTCC successfully retired the temporary chilled water piping running between the Central Chiller Plant and the Central Fan Plant, and installed and activated the permanent chilled water supply and return chilled water lines that run through the utility tunnel between those same two facilities. This transition took approximately four days and forced the redeployment of spot coolers at some of the active equipment rooms to prevent excessive heat buildup. The Central Fan Plant remained without the permanent fresh air supply system during February and continued to rely on receiving fresh air using the spill air shaft at the Tower 2 footprint on an interim basis. WTCC currently forecasts that the provision of fresh air supply using the fresh air shaft and three fresh air supply fans will begin during the second quarter of 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 February, OPL continued discussions with the Metropolitan Transportation Authority (MTA) concerning the planned opening of the interconnection between elevation 284 of the Transit Hall and the Dey Street Underpass at the boundary between those two properties. WTCC is projecting that this interconnection will open during March 2016.

Interagency Coordination

During February, WTCC advised that progress had been made with respect to advancing the work needed to complete connections to some of NYC Transit's station access points that adjoin the PATH Hub project along Church Street. Specifically, WTCC advised that agreements were being put in place whereby the Tower 2 and Tower 4 building developer will perform work for the benefit of the MTA in order to complete the connection between the south end of the southbound R Line platform and the southern end of the North-South Concourse, and also to complete the connection between the southern end of the E Line station and the northeast corner of the oculus via the Tower 2 basement.

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 publicized on commonly used social media outlets, and specific presentations are periodically made to Manhattan's Community Board #1. During January, PANYNJ issued a press release announcing the planned partial opening of the Transit Hall portion of the PATH Hub project for a forecasted date of early March 2016, as the first phase of a three-phase sequence. The partial opening of the Transit Hall will be the first utilization of this portion of the project by the public. *In late February, several news outlets called attention to the impending planned opening of the oculus and the new pedestrian routes through the east bathtub. Some of those reports were critical of the cost of the PATH Hub project.*

C. Schedule

On March 1, 2016, WTCC released IMS 84 (with a data date of February 1, 2016), (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
Central Fan Plant Online	WTCC
Emergency Generator Plant Online	WTCC
Partial Opening of Transit Hall to Pedestrian Traffic	WTCC

The PMOC, independent of the grantee's schedule forecasts, has 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)	[REDACTED]
[REDACTED]	[REDACTED]

D. Cost Data

(b) (4)

(b) (4)

(b) (4) 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 December 31, 2015:

Description	EAC (WTCC's Forecast) (in millions)	Expenditures (in millions)
Construction	\$2,811	\$2,526
Program Management and Design	721	707
(b) (4)	(b) (4)	(b) (4)
(b) (4)	(b) (4)	(b) (4)

WTCC submitted its monthly cost model revision on January 29, 2016. It shows that WTCC's EAC for the federally funded PATH Hub project (b) (4)

E. Risk Management

As of January 2016, 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. *In February 2016, the PMOC conducted an assessment of the project residual risk profile and recommended a release of \$37 million from the remaining risk retainage, primarily because of favorable progress associated with the Platform C Utility Tunnel and Mezzanine Structural Steel. However, the ongoing piecemeal openings to the public continue to present challenges for WTCC to complete the project in accordance with the requirements of the RRCA.*

Project Management Plan

During February, WTCC transmitted an updated version of its Construction Phase Force Account Plan and Justification that extends the period covered through the end of September 2016. At the end of the month, the PMOC was reviewing the updated version of the plan and drafting a spot report addressing its contents.

Project Quality Assurance

During February 2016, WTCC QA completed three oversight audits that included reviewing the CM QA's field audits and performing its own field construction audit. The February 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 *January 2016*, the project had two recordable incidents and *one* lost-time incident, resulting in a TCIR of 3.74 and an LTIR of 1.87 for the month, based on 107,020 hours worked. During *January*, WTCC Safety issued safety information for use by its site safety managers, including information that addressed the topics of "Site-Wide Coordination of Work" and "Safe Access to Work Areas," and also issued an Inclement Weather Advisory that was sent out before the January 23, 2016 snowstorm and that included a high-wind advisory and precautions for protecting the construction site. Site safety managers were encouraged to discuss these topics at toolbox talks.

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

H. Issues/Problems/Suggestion

During February, WTCC focused on making Phase I of the pedestrian route through the east bathtub ready for public use in order to meet its forecasted opening of that segment of the

project to pedestrian traffic during the first week of March 2016. Also during February, WTCC was able to retire the temporary chilled water supply and return piping running between the Central Chiller Plant and the Central Fan Plant, and replace it with the permanent 20-inch supply and return chilled water piping that runs through the utility tunnel.

Portions of the project that have been opened for use to date have been opened using interim support systems and temporary workarounds as necessary. Going forward, those features will need to be replaced by the fully functional permanent systems and treatments for the project to be deemed complete.

End of report. Appendices follow.

APPENDIX A – LIST OF ACRONYMS

BATC	Building Automation and Temperature Control
CA	Construction Agreement
CCTV	Closed Circuit Television
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
MTA	Metropolitan Transportation Authority
NYCT	New York City Transit
OPL	Office of Program Logistics
PANYNJ	Port Authority of New York and New Jersey
PATH	Port Authority Trans-Hudson
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
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