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INTRODUCTION

June 30, 2008

Hon. David A. Paterson
Governor of the State of New York
Executive Chamber
The Capitol
Albany, New York 12224

Dear Governor Paterson,

On June 11th, you called on me to assess the overall rebuilding effort at the World Trade Center site and publish a candid and transparent report of my findings.

Since then, the Port Authority staff under my direction have conducted a clear-eyed assessment, with input from the Federal Transit Administration (FTA); the New York City Mayor's Office; the National September 11 Memorial & Museum; Silverstein Properties, Inc. (SPI); the Metropolitan Transportation Authority (MTA); the New York State Department of Transportation (NYSDOT); the Lower Manhattan Construction Command Center (LMCCC); the Lower Manhattan Development Corporation (LMDC); and others.

Recognizing this challenge, for the first time in the history of the rebuilding effort, the key stakeholders at the World Trade Center (WTC) site worked collaboratively with the goal of producing an accurate and current picture of where we are and where we need to go. They opened up their books, shared information, communicated their concerns and – most importantly – asked fundamental questions that largely had gone unanswered in the haste to rebuild.

This report, and the process that led to its completion, marks a new way of business at the Port Authority and among all stakeholders – one that is and must continue to be defined by transparency, inclusiveness and accountability. It is an approach that builds on previous efforts by the Port Authority Board of Commissioners and one that is commensurate with the magnitude and meaning of this project – the most important rebuilding effort in our city's history.

As a result of this assessment, four overarching observations became clear:

1. First, while significant progress has been made, the schedule and cost estimates of the rebuilding effort that have been communicated to the public are not realistic. In fact, as other reports by the FTA and LMCCC/LMDC have already suggested, the schedule and cost for each of the public projects on the site face significant delays and cost overruns.
2. Second, as our Assessment Team attempted to correlate each project with a completion date and cost, we found that at least 15 fundamental issues critical to the overall project had not yet been resolved, many of which are in the control of stakeholders other than the Port Authority

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but impact our own schedule and budget. To forecast completion dates and costs before these fundamental issues have been resolved – and before engineering and construction professionals have validated the schedule and cost impacts of those decisions – would only create a new set of commitments and expectations that are unrealistic.

For example, until the Port Authority completes the final design of the WTC Transportation Hub, it is difficult both to responsibly predict a completion date and total cost of the Hub or, for that matter, to predict the completion dates and costs of all the other projects that are linked to and dependent on the Hub. Indeed, it is time that the design of that complex project be made to conform to real budget and schedule expectations, which will require tough decisions that have not been candidly addressed up to now.

The same can be said of the Vehicle Security Center (VSC), the design, completion date and cost of which are dependent upon a WTC Police and Security Plan that needs to be resolved between the Mayor’s Office and the Port Authority, the decontamination and deconstruction of 130 Liberty Street (the former Deutsche Bank building), and resolution of a land-rights issue with St. Nicholas Greek Orthodox Church.

3. Third, as evident by the critical list of issues that require resolution, there is a need to establish a more efficient, centralized decision-making structure – a steering committee – with authority to make final decisions on matters which fundamentally drive schedule and cost. In addition, there is no effective, centralized command and control structure to efficiently manage the enormously complex construction logistics on the 16-acre WTC site.

Going forward, an accountable governance structure is needed to ensure that all the stakeholders on the site are working together and resolving challenges as quickly as they arise, thus preventing slippage in schedules and escalation in costs.

4. Fourth, the previous schedule and cost estimates were established before construction had begun and before an adequate analysis was completed as to staging and logistics. Thus, these estimates did not reflect the unprecedented challenges associated with a project this complex and a project involving so many different public and private stakeholders.

To put this challenge in perspective, the WTC rebuilding program attempts to fit within the size of just a few city blocks:

- Five major skyscrapers, which will house Class A office space comparable to all of downtown Atlanta;
- One of the world’s most significant memorials and museums;
- The third-largest transportation hub in New York City;
- A world-class retail venue serving all WTC users;

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- A major performing arts center;
- A state-of-the-art vehicle security center;
- Two brand-new city streets (Greenwich and Fulton) and two brand-new pedestrian ways (Cortlandt and Dey); and,
- All of the critical infrastructure to support these projects (chiller plant, utility and communication networks, etc).

And all of this is happening within the confines of a transportation corridor that moves 150,000 commuters a day through an active construction site via the MTA #1 subway line, which literally cuts through the center of the site, and the WTC PATH Terminal, which runs beneath the site.

Add to this challenge the fact that there are 19 public agencies, two private developers, 101 different construction contractors and sub-contractors and 33 different designers, architects and consulting firms all in charge of one element of the project or another, and you have a construction challenge that is as complex as any in the world.

These observations, and our recommendations to address each one, form the central findings of this first phase of our assessment and are explained in greater detail in the pages that follow.

Having just outlined our central findings, it is important to make clear that significant progress has been made as a result of the Port Authority's decision to accept substantial responsibility for the WTC rebuilding effort. In early 2006, construction at the WTC site was at a virtual standstill. Since then, every major project on the site has begun construction: the Freedom Tower is now rising above street level; excavation and construction for the foundations for Towers 2, 3 and 4 and associated retail are well underway; the foundations and footings for the Memorial and Museum are nearing completion, with steel slated to arrive soon; and the foundation work of the WTC Transportation Hub has begun while the temporary North Access for the PATH Station has already been completed.

And all of this has unfolded against the background of lower Manhattan's tremendous resurgence – as a business district, as a highly desirable residential neighborhood and as a tourist destination. With a rebuilt World Trade Center, there is every reason to believe that Lower Manhattan will become an international model of a 21st century 24/7 urban district.

But we now stand at a crossroads in the rebuilding effort to achieve a fully rebuilt site on an acceptable schedule and within an acceptable budget. This will require a new way of doing business as we move forward: a set of aggressive yet realistic schedule and cost estimates; established priorities and intermediate milestones to which you and the public can hold us accountable; a focused effort to control costs and identify sources to close funding gaps; and a transparent, inclusive and central decision-making structure to coordinate this incredibly complex program and the work of the many stakeholders going forward.

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To achieve that end, the next phase of this assessment process will be to establish a new decision-making structure – defined in this report – that will work through the 15-plus issues that have yet to be resolved, and make decisions and reach resolutions on each. To be sure, this will require tough trade-offs, but trade-offs that must be made to complete the rebuilding effort as efficiently as possible. Once we have resolutions to these issues, we will come back to you with clear and achievable timelines and cost estimates for each of the major projects on the site, with interim milestones and deliverables that you and the public can track along the way.

I remain confident that with this new, more effective and accountable framework in place – our roadmap for getting this project on track – we can effectively deliver on the promise of a rebuilt World Trade Center and a renewed Lower Manhattan.

I look forward to reporting back to you, Governor Corzine, the Port Authority Board of Commissioners and the general public once the second phase of this assessment is complete at the end of September.

Sincerely,

Chris Ward
Executive Director
Port Authority of New York & New Jersey

Cc: Governor Jon Corzine
Anthony R. Coscia, Chairman, Port Authority of NY & NJ
Henry R. Silverman, Vice-Chairman, Port Authority of NY & NJ
Port Authority Board of Commissioners
Mayor Michael Bloomberg
Assembly Speaker Sheldon Silver
Senate Majority Leader Dean Skelos
Council Speaker Christine Quinn
Senator Charles Schumer
Senator Hillary Clinton
Congressman Jerrold Nadler

DIAGNOSIS OF THE CHALLENGE

As we began delving into this assessment, reaching out to stakeholders and poring over the data, the first basic questions that came to mind – ones we know are on the minds of all Americans – were: “How did we get to where we are today?” and “How could those original dates and costs have been so off?” These are natural questions to ask, and, perhaps most importantly, they are critical ones to answer if we are going to define a new way of doing business going forward.

This is not about critiquing the past with 20-20 hindsight. Rather, it is about learning from it so we can move forward. To that end, the Assessment Team identified four main factors that contributed to answering these fundamental questions:

1. The project’s unprecedented size and complexity;
2. The unique interdependencies of each of the projects on the site;
3. The change in market conditions that has resulted in significant construction cost escalations; and,
4. Given the lack of an effective decision-making process and governance structure, the inability to work through issues that fundamentally drive schedule and cost.

Each of these factors is examined in greater detail below.

Unprecedented Project Size and Complexity

The project’s sheer size, geographic constraints, operational necessities and overall construction environment make it arguably the most complex building project in the region’s history. The plan endeavors to build on just 16 acres – the equivalent of a few city blocks – the following: (A project map with all of the site’s projects is provided at the end of this section.)

- Five major skyscrapers, which will house Class A office space comparable to all of downtown Atlanta;
- One of the world’s most significant memorials and museums;
- The third-largest transportation hub in New York City;
- A world-class retail venue serving all WTC users;
- A major performing arts center;
- A state-of-the-art vehicle security center;
- Two brand-new city streets (Greenwich and Fulton) and two brand-new pedestrian ways (Cortlandt and Dey); and,
- All of the critical infrastructure to support these projects (chiller plant, utility and communication networks, etc).

Furthermore, this rebuilding effort, with thousands of workers and heavy construction equipment crammed within the space of a few city blocks, is all taking place within the confines of a transportation

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corridor that moves 150,000 commuters a day through the active construction site via the MTA #1 subway line, which literally cuts through the center of the site, and the WTC PATH station, which runs beneath the site. (An aerial graphic at the end of this section shows just how imbedded this transportation system is into the site.) Finally, and most importantly, the work must be completed in a manner that pays perpetual tribute to the memory of more than 2,900 people, adding an immeasurable and unique element that informs every aspect of the WTC program.

In addition to the project's unprecedented size and complexity, the engineering challenges faced on each project are daunting. For example, before they can even begin building up, construction workers must dig down seven-stories deep through the remnants of the original WTC to create space for a below-grade network of roads, loading docks, bus and car parking, mechanical areas, and pedestrian concourses, as well as the foundations for each of the site's five office towers. The perimeter of these deeply excavated holes must be supported by a thick concrete "Bathtub" – both to assure that the surrounding streets and other structures where thousands of New Yorkers walk, work, live and play, remain structurally unaffected, and to hold back the subterranean water from the Hudson River – all the while ensuring the continued uninterrupted operations of the MTA #1 and R/W subway lines. The soil and rock removed from the excavations for the foundations from just Towers 3 and 4 alone is enough material to fill Giants Stadium and fill a line of dump trucks 45 miles long. Put another way, if one were to lay down the steel that is reinforcing these foundation walls, it would extend from New York City to Washington, DC.

In addition, the entire length of the MTA #1 subway line that cuts directly through the middle of the site has had to be "underpinned" – literally suspended in air by steel rods – to allow the subway to operate as usual, while construction continues over, under, and around it. To put this in perspective, for the first time in history, engineers are suspending on steel rods a train structure unparalleled in length – over 1,000 feet long – that cannot move more than two inches under the weight of the passing subway cars, and that resides directly in the middle of the most congested construction site in New York City.

Other engineering hurdles include:

- Designing a WTC Transportation Hub roof structure strong enough to support the hundreds of trees that will be placed above it as part of the Memorial Plaza;
- Building a state-of-the-art Vehicle Security Center below ground that can provide security as well as structural support for a large church and park directly above it on street level; and,
- Building the most environmentally sustainable project of its size in the world that will include: five commercial towers pursuing LEED Gold certification; a water harvesting system that will reclaim rainwater and use it for the cooling towers; generating electricity from what otherwise would be waste steam; overall energy performance that will be 20 percent more efficient than required by the New York State Energy Conservation Construction Code; and constructing one of the largest fuel cell installations in the world to generate electricity totaling 4.8 million watts an hour – enough to light 480,000 compact fluorescent bulbs.

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All Projects at the World Trade Center Site



WTC Redevelopment Major Projects

Transportation Projects

1. Transportation Hub
 - a. WFC Underpass
 - b. East West Connector (below Fulton Street)
 - c. North Temporary Access
 - d. Utility work at Church Street
 - e. Oculus
 - f. PATH Facility
 - g. Eastside North and South Connectors
2. Dey Street Passageway and Fulton Street Transit Center
3. Subway Stations (FTA funded)
4. Route 9a Realignment

Infrastructure Projects

5. VSC Phase 1-Vehicular Security Center and Tour Bus Parking Facility
6. VSC Phase 2 – Eastside Tour Bus Parking Facility
7. VSC 3 – West Bathtub Vehicular Access (helix)
8. Street, Utilities and Related Infrastructure
9. Central Chiller Plant and River Water System
10. Common Electrical System (PDC/SN and Emergency Generator Plant)
11. Common Infrastructure – Underpinning of 1 Subway
12. Site-wide Security/Operations Center (to be located)
13. Master Manager Facility

Commercial Projects

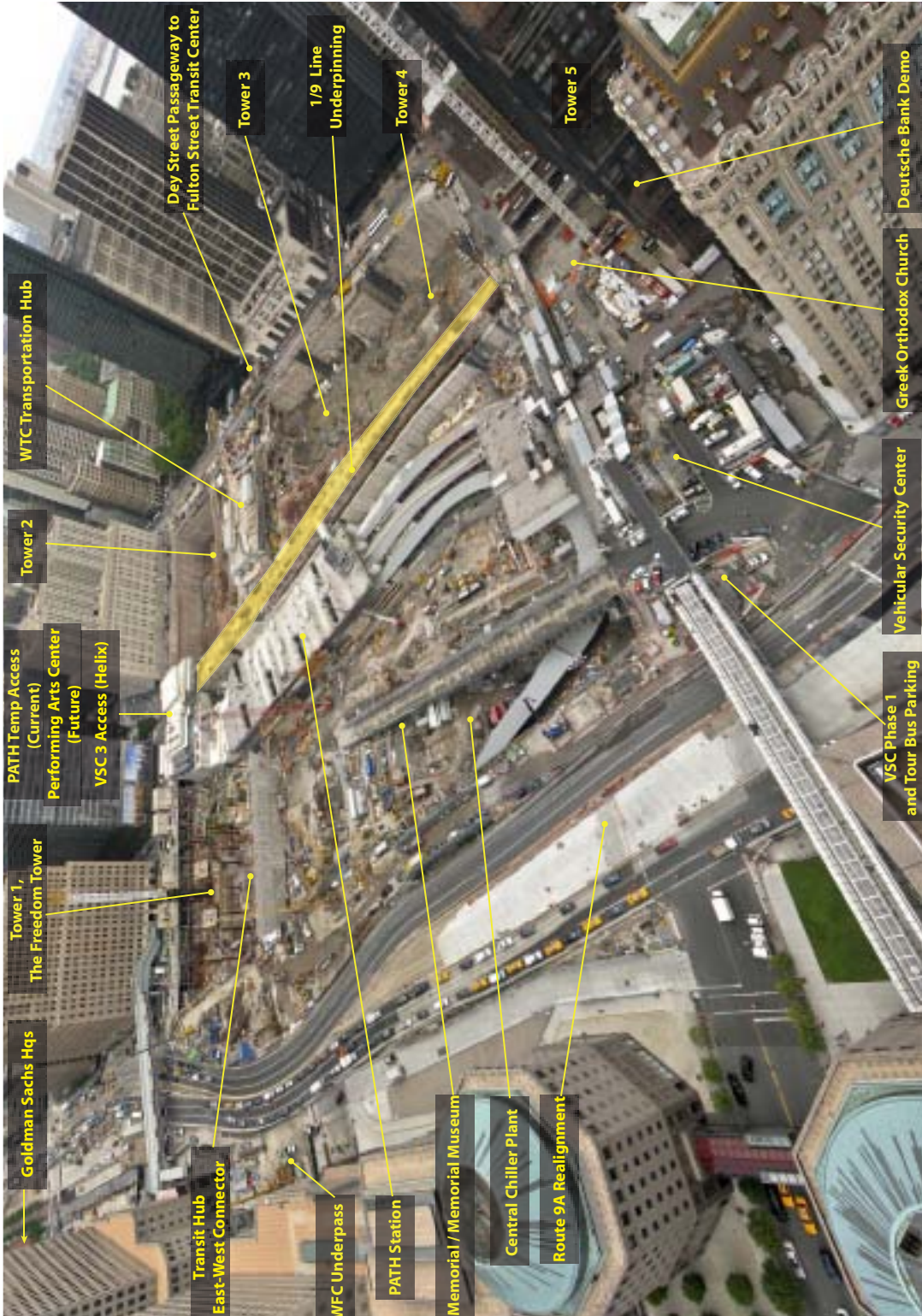
14. Commercial Infrastructure – East Bathtub Incremental Construction (accelerated turnover and 240 elevation work)
15. 1 World Trade Center, The Freedom Tower
16. Tower 2
17. Tower 3
18. Tower 4
19. Tower 5
20. Goldman Sachs World Headquarters
21. Deutsche Bank Building Deconstruction
22. Retail Development
23. Commercial Infrastructure (Parking)

Cultural Projects

24. Memorial/Memorial Museum and Memorial Pavilion
25. Performing Arts Center
26. St. Nicholas Greek Orthodox Church

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World Trade Center Site Aerial 2008



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Interdependencies of Each Project World Trade Center Site Plan



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Cost Escalators

Throughout the region and nation, rapidly rising construction costs are a factor confronting every new or active construction project. Market conditions have led to dramatic price increases in virtually every construction commodity. Most notably, crude oil and steel prices have surged to record highs and have dramatically increased construction costs. As reported by the Bureau of Labor Statistics, the construction material price index increased over 30% from December 2003, when the conceptual planning phase of the program was ongoing.

As costs continue to rise, while some projects will benefit from the Port Authority's early procurement of construction services (approximately 90 percent of the Freedom Tower contracts have been bid or are ready to award and more than 70 percent of the Memorial contracts have been bid or are ready to award), other projects remain exposed to market shifts and escalations. The Port Authority will continue to work with its contractors on early procurement of materials and other cost stabilization initiatives, but we do not realistically expect to fully offset the effect of intense construction market conditions and the dramatic rise in materials costs.

Thus, we must zero in on controlling costs and examine trade-offs that may include the need to adjust Port Authority operating and capital expenditures in other areas should increases in WTC costs result in funding gaps that are not be shared with other stakeholders.

Lack of a Governance Structure and Difficulties Resolving Fundamental Issues

If a project of this size and complexity were being managed by a single owner, with overall control of the design and construction processes, it would be a much simpler story altogether. However, the WTC site is far more complex because of the overall program's size, and large number of program partners – who both must work separately to advance their respective projects on time and on budget, and also work together toward a common goal. Consider the following facts.

Working within just a few city blocks are:

- 600-700 construction workers, soon to be thousands;
- 101 different construction contractors and sub-contractors;
- 33 different designers, architects and consulting firms;
- 19 different governmental entities from every level of government each laying claim to some component of the overall project: The Port Authority of New York and New Jersey; the Federal Transit Administration; the MTA; the U.S. Department Housing and Urban Development; the Environmental Protection Agency; the Occupational Safety and Health Administration; the New York State Department of Transportation; the Empire State Development Corporation; the Lower Manhattan Development Corporation; the Lower Manhattan Construction Command Center; the

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Office of the Governor of New York; the Office of the Governor of New Jersey; the Office of the Mayor of New York, the New York City Council; the New York City Department of Transportation; the New York City Department of Environmental Protection; the New York City Police Department; the New York City Fire Department; the New York City Department of City Planning; and the New York City Department of Buildings;

- Multiple public and private stakeholders including: the National September 11 Memorial and Museum; Silverstein Properties, Inc.; Westfield; JP Morgan Chase; Goldman Sachs; Brookfield Properties; the Greek Orthodox Church; and Battery Park City Authority;
- Dozens of elected officials and family groups representing victims and survivors of the September 11th attacks and 1993 bombing; and,
- Community and civic organizations including: Community Board 1; the Downtown Alliance; the Partnership for New York City; the Association for a Better New York; and the New York Building Congress.

Given the variety of program partners and given the sheer complexity and interdependencies of the overall program, strong central governance is paramount. The type of governance needed is two-pronged:

First, there is great need for a Steering authority that can make final decisions about critical path issues, and that will be informed by an organizational structure underneath it that includes all of the stakeholders and allows for meaningful input before decisions are made. While many of the entities named above have the goal of moving a single part of the project forward, no single entity with decision-making authority over the entire construction process exists, causing significant delays and complications. This deficiency is only exacerbated due to the geographic constraints and interlocking nature of the program.

For example, decisions made by the MTA for the Fulton Street Transit Center affect the Transportation Hub and WTC Retail; decisions made by the Port Authority about the design of the Transportation Hub affect the Memorial and also Towers 2, 3, and 4, which are being built by Silverstein Properties, Inc; and decisions made by the Lower Manhattan Development Corporation at 130 Liberty Street affect the Vehicle Security Center, which is being constructed by the Port Authority. Each entity makes daily decisions about their individual projects, but no streamlined process or authority is in place to resolve competing decisions or to ensure that each decision is in the best interest of the overall project, rather than in the best interest of one component of the project over the others.

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Second, there is a great need for a stronger Site Logistics authority that has command and control over the many moving parts of the site (LMCCC's current role). This would operate essentially like an air-traffic controller to resolve conflicts among the hundreds, and soon-to-be thousands, of workers and construction equipment moving throughout the site on a daily basis. Such an authority will save time, money and enhance the day-to-day safety on site.

Our assessment found that currently neither governance structure – a Steering authority or Site Logistics authority – exists in a way that is adequate for the task at hand. This has led to indecision that has resulted in significant schedule delays and cost escalation. Section III of this report describes a recommended organizational structure to address this need going forward.

DECISION POINTS AND MITIGATION OPTIONS

An examination of the current status of the overall WTC rebuilding program makes clear that project schedules and costs are significantly out of line with earlier projections. As the first two sections of this report illustrate, one of the main reasons is the fact that certain key issues that are fundamental drivers of schedule and cost need to be resolved. It is critical that the Port Authority and the other stakeholders involved work through these decision points and assess all options that can possibly mitigate the schedule and cost outlook. The following section of this report outlines what each of these decision points and mitigation options are. This list that will be added to over time as the stakeholder outreach process unfolds.

It should be noted that many of these actions will involve modifications in the design of certain projects or potential prioritization of one project's needs over others. These actions will involve tough choices that must be made in order to recover time and cost, and, as noted several times throughout this report, will require a stronger overall governance process to execute these decisions and communicate their rationale to the public.

It also should be noted that many value engineering initiatives have already been undertaken to limit schedule slippage and cost increases. The extensive review of the program's current schedule and estimated cost suggests that there are few "easy wins" left. Instead, we must consider major mitigation steps that in many cases will require tough trade-offs, but trade-offs that are necessary to getting WTC rebuilding on track. Having said that, on many of the public sector projects, there should be no illusion that future mitigation efforts will dramatically scale back schedule and cost to the point of meeting those dates and costs originally projected, which, as this report makes clear, are not realistic.

While not the entire universe of decision points and mitigation options that will have to be pursued over the next many months, the following list reflects the 15 fundamental decisions referred to earlier in the Introduction to this report. These decisions are illustrative of the critical-path issues that have not yet been dealt with, yet which fundamentally drive the schedule and cost of the WTC project.

DECISION POINTS AND MITIGATION OPTIONS

Decision Points and Mitigation Options

- World Trade Center Transportation Hub Design Alternatives
- Construction of a Permanent Underpinning for the MTA's #1 Subway Line
- St. Nicholas Greek Orthodox Church – Land Rights Claim
- Final Design/Engineering on the NE Corner of Memorial Quadrant
- Owner/Builder Management Coordination for Memorial and Museum
- 130 Liberty Street Abatement and Demolition
- Potential Redesign of Tower 3 to Accommodate Merrill Lynch Lease Requirements
- Contracting Strategy for the World Trade Center Transit Hub
- Procurement and Contracting Inefficiencies
- Temporary PATH Station Early Removal
- Route 9A Staging and Funding
- World Trade Center Police and Security Plans
- Cortlandt Street Subway Station – Design and Schedule Issues
- Below-Grade Engineering at the Performing Arts Center Site
- Site Logistics

DECISION POINTS AND MITIGATION OPTIONS

Issue: **World Trade Center Transportation Hub Design**

Context: At different times, there have been efforts to address schedule and cost concerns relating to the WTC Transportation Hub. The Port Authority is now working on several design alternatives, with the goal of optimizing the schedule and making the project more economically viable. While the Oculus, the term given to the Terminal Hall Structure designed by architect Santiago Calatrava, will remain in place, it is being reviewed for potential design savings such as building a structure that does not open and close entirely. In addition to the Oculus design savings, the Port Authority is examining a number of different ideas including a more traditional column-supported structural approach to the PATH Mezzanine, reuse of the current PATH Hall, and others which may positively affect the Memorial & Museum and other projects that are impacted by the structural complexities of the current design.

Impacts: The implementation of alternative design approaches may help mitigate the schedule slippage and cost escalations on the project and, as a result, schedule and cost savings on the other projects dependent on the Hub.

Stakeholders: Port Authority, National 9/11 Memorial, FTA

Projects Involved: WTC Transportation Hub, Memorial & Museum, WTC Streets

DECISION POINTS AND MITIGATION OPTIONS

Issue: Construction of the Permanent Underpinning for the MTA's #1 Subway Line Box and Silverstein Properties, Inc. (SPI)

Context: The Port Authority faces challenges meeting the proposed schedule for the complex work of underpinning the MTA's #1 line subway structure that runs through the site. This is in part because the Port Authority has limited space in which to perform the needed construction, which is adjacent to the areas where SPI is building the foundations for Towers 3 and 4. The Port Authority will initiate discussions with SPI about logistics strategies or procurement and work allocation strategies that could expedite this work.

Impacts: Favorable schedule and cost impacts on Tower projects, as well as the WTC Transportation Hub, the Memorial and Greenwich Street.

Stakeholders: Port Authority, MTA, Silverstein Properties Inc., National 9/11 Memorial.

Projects Involved: Towers 2, 3, & 4, Transportation Hub, Parking, Retail, Common Infrastructure, Memorial & Museum

DECISION POINTS AND MITIGATION OPTIONS

Issue: **St. Nicholas Greek Orthodox Church – Land Rights Claim**

Context: St. Nicholas Greek Orthodox Church was destroyed during the 9/11 attacks. The World Trade Center Master Plan, approved in 2005 after several years of public discussion, calls for the land on which the structure once stood to be part of the Vehicle Security Center, which serves the entire WTC site. The Church agreed to accept land a short distance to the east, on the same block, for the construction of their new sanctuary. However, the Church and the Port Authority need to negotiate a land deal to effectuate this concept. Otherwise, the issue will continue to delay construction of the Vehicle Security Center, a key facility for the entire site. Negotiations have been going on for some time, but need a quick resolution.

Impacts: Without this property, the Port Authority cannot proceed with the construction of the Vehicular Security Center, which not only increases the direct timeline and costs for the VSC, but affects those facilities like Towers 1, 2, 3, 4, 5 and the Memorial and Museum that depend on the VSC being open in time to service those facilities.

Stakeholders: Port Authority, St. Nicholas Greek Orthodox Church, LMDC

Projects Involved: St. Nicholas Greek Orthodox Church / Vehicle Security Center, Towers 1, 2, 3, 4 & 5, Memorial & Museum

DECISION POINTS AND MITIGATION OPTIONS

Issue: **Final Design/Engineering on NE Corner of Memorial Quadrant**

Context: The interested stakeholders below have been working together to conclude the final design details to allow for Memorial Plaza trees on the northeast corner of the quadrant. Several issues need to be resolved, including the number of trees that can be accommodated, as well as specific locations for those trees and flagpoles. These resolutions must be coordinated with the structure of the WTC Transportation Hub's roof directly beneath given the design and construction implications of these above-grade elements.

Impacts: A final design agreement must be reached as soon as possible so that the designs for the Memorial and the Transportation Hub are not further delayed.

Stakeholders: Port Authority, National 9/11 Memorial, City of New York

Projects Involved: Memorial & Museum, WTC Transportation Hub

DECISION POINTS AND MITIGATION OPTIONS

Issue: **Owner/Builder Management Coordination for Memorial and Museum**

Context: Currently, the responsibility for the design and construction management of the Memorial is split between the National 9/11 Memorial, which as owner oversees the implementation of the design, and the Port Authority, which as builder oversees the construction. The parties need to define a set of guidelines to ensure the coordination between the Port Authority and the National 9/11 Memorial is as efficient as possible.

Impacts: Without a clear definition of roles and responsibilities, as well as a concise list of steps that can be taken to achieve greater project efficiencies at the staff level, the Memorial and Museum will be vulnerable to schedule delays and cost escalations.

Stakeholders: Port Authority, National 9/11 Memorial

Projects Involved: Memorial & Museum, WTC Transportation Hub

DECISION POINTS AND MITIGATION OPTIONS

Issue: **130 Liberty Abatement and Demolition**

Context: 130 Liberty Street must be abated and deconstructed to allow for the construction of the Vehicle Security Center and a new Tower 5.

LMDC and federal, state and city regulators are working toward a goal of completing the deconstruction by the end of this year, but as of now, a completion date in the first half of 2009 is more likely.

Impacts: Until the demolition of 130 Liberty Street is complete, neither Tower 5 nor the Vehicle Security Center can be fully constructed.

Stakeholders: LMDC

Projects Involved: 130 Liberty Abatement and Demolition, Vehicle Security Center, Towers 1, 2, 3, & 4, Memorial & Museum, Retail, Parking, WTC Transportation Hub

DECISION POINTS AND MITIGATION OPTIONS

Issue: **Potential Redesign of Tower 3 to Accommodate Merrill Lynch Lease Requirements**

Context: Discussions are ongoing to secure Merrill Lynch as the tenant for 3 World Trade Center.

Impacts: This potential tenant lease would require redesign of some elements of the building, including sub-grade areas that impact the WTC Transportation Hub, retail elements, VSC and shared infrastructure, which may involve cost escalations.

Stakeholders: Port Authority, Silverstein Properties, Merrill Lynch, City of New York, Empire State Development Corporation

Projects Involved: WTC Transportation Hub, Retail, World Trade Center Tower 3, Shared Infrastructure

DECISION POINTS AND MITIGATION OPTIONS

Issue: **Contracting Strategy for the WTC Transportation Hub**

Context: Because of the urgency of the WTC rebuilding effort, the current Construction Management/General Contractor contract – with the “Phoenix Joint Venture” – was developed and institutionalized before the Port Authority was able to finalize key design decisions of the project. This has required several early work packages to be performed on a “time and materials” basis rather than utilizing contracting arrangements that would most effectively limit the Port Authority’s cost exposure and make sure the contractors’ interests are aligned with the Port Authority’s interest in getting the job done promptly – such as a Guaranteed Maximum Price (GMP) or “lump sum” contract. Further, on a project of this size and complexity, design work should ideally be sufficiently complete so construction cost estimates align with actual costs, setting a higher degree of certainty regarding the ultimate scope and cost of the project.

Moreover, as explained further below, the combination of procurement and contract administration requirements imposed by the FTA and the Port Authority has created inefficiencies, which slow payments to the contractor and impose additional burdens on both the Phoenix Joint Venture and the Port Authority. These inefficiencies are creating schedule delays and cost escalations, as well as challenges in controlling the project’s budget. Further the contract is not well structured, resulting in the inability to negotiate a Guaranteed Maximum Price (GMP).

Impacts: A concerted effort to finalize key remaining design decisions so that the Port Authority can contract for work on a lump sum or GMP basis and with a clearly defined scope will create more financial and schedule accountability, stability and confidence. In the absence of a more effective contracting strategy, the construction of the WTC Transportation Hub will continue to face schedule delays and cost escalations. Because of project interdependencies any delays in the WTC Transportation Hub project will impact the other WTC projects as well.

Stakeholders: Port Authority, FTA, National 9/11 Memorial

Projects Involved: WTC Transportation Hub, Memorial & Museum, WTC Towers

DECISION POINTS AND MITIGATION OPTIONS

Issue: **Procurement and Contracting Inefficiencies**

Context: The combination of federal contracting requirements and the Port Authority's own standard contractual protocols has resulted in significant administrative inefficiencies on the WTC Transportation Hub project. Decisions must be made on measures to reduce or eliminate inefficiencies while not compromising safeguards necessary to ensure that public funds are spent prudently.

Impacts: The effect of these inefficiencies are slow payments to the contractors for work performed, greater uncertainty in sub-contracting, and increased administrative burdens on both the Phoenix Joint Venture contractor and the Port Authority – all contributing to increased costs and schedule delays.

Stakeholders: Port Authority, Federal Transit Administration

Projects Involved: WTC Transportation Hub, Vehicle Security Center

DECISION POINTS AND MITIGATION OPTIONS

Issue: **Temporary PATH Station Early Removal**

Context: The Temporary PATH Station or “North Temporary Access” (NTA) is currently the only means of entering and exiting the PATH World Trade Center station. The temporary station was originally planned to be in service until the WTC Transportation Hub’s Transportation Terminal Hall was able to accept passengers, at which time it would be demolished. Following that, the North Helix (parking access) and Performing Arts Center could begin construction, followed by the north portion of Greenwich St.

The delay of the PATH project could trigger delays to other projects that depend on the timely demolition of the NTA. The NTA is located in the path of the new Greenwich Street – at the front door of Tower 2 – and interferes with at grade access to the Memorial and below grade access to the Freedom Tower. The Port Authority will explore alternate access points for PATH riders and other strategies that would permit prompt removal of this obstruction.

Impacts: Expediting the demolition of the North Temporary Access will have a positive cost and schedule impact on multiple project elements including the Memorial, Freedom Tower, the completion of Greenwich Street, access to Towers 2, 3, 4 and the construction of the Performing Arts Center.

Stakeholders: Port Authority, Silverstein Properties, Inc., the National 9/11 Memorial, City of New York, LMDC

Projects Involved: WTC Transportation Hub, Performing Arts Center, North Helix Parking, Freedom Tower, Towers 2, 3 and 4, Greenwich Street, Vesey Street

DECISION POINTS AND MITIGATION OPTIONS

Issue: **Route 9A Staging and Funding Issues (West Street)**

Context: The New York State Department of Transportation (NYSDOT) and the Port Authority have ongoing projects at and adjacent to Route 9A that require coordination. NYSDOT is realigning a segment of Route 9A and underground utilities adjacent to the WTC site. At the same time, the Port Authority is constructing major project elements that parallel Route 9A, including the Freedom Tower, Vehicle Security Center, Memorial and Museum, and the WTC Transportation Hub.

Impacts: Without an agreement on construction staging, and the funding for the ongoing NYSDOT project, there will be significant delays and cost impacts to multiple projects including: the Vehicle Security Center; the Memorial and Museum; the WTC Transportation Hub, the Freedom Tower and Route 9A.

Stakeholders: Port Authority, City of New York, NYSDOT, FTA, National 9/11 Memorial, Battery Park City Authority

Projects Involved: Vehicle Security Center, WTC Transportation Hub, Memorial & Museum, Freedom Tower, Route 9A

DECISION POINTS AND MITIGATION OPTIONS

Issue: **WTC Police and Security Plans**

Context: A comprehensive security plan for the World Trade Center area needs to be developed by the City of New York and the Port Authority, taking into account the new City streets that will traverse the site itself, and the security needs of the office, retail, public transportation, Memorial & Museum, and cultural facilities, as they fit into the overall WTC area.

Impacts: An agreement must be reached on law enforcement jurisdictional issues throughout the site so that a comprehensive security plan can be developed and implemented. Because the plan will have impacts throughout the site (and the World Trade Center Area), it must be developed quickly in order to complete the implementation of nearly every project at the site.

Stakeholders: City of New York, Port Authority

Projects Involved: All

DECISION POINTS AND MITIGATION OPTIONS

Issue: **Cortlandt St. Station Design and Schedule**

Context: The MTA is planning to rebuild the Cortlandt Street subway station, but there are design and construction issues that first need to be coordinated and agreed upon between the MTA and the Port Authority. Among the issues to be resolved include: the substantial duct work required for the MTA construction interferes with utilities on Greenwich Street; funding needs to be identified for the MTA project; the construction staging needs to be determined and an expedited schedule needs to be developed to assure that Greenwich Street can be ready in time to serve all the other projects – the Memorial, the WTC Towers, etc.

Impacts: The Cortlandt Street Station project completion date can have a ripple effect, impacting Greenwich Street. This, in turn, can impact the Memorial, the WTC Towers and the other projects on site.

Stakeholders: Port Authority, MTA, Silverstein Properties Inc., City of New York, the National 9/11 Memorial, FTA

Projects Involved: WTC Transportation Hub, World Trade Center Towers 2, 3, & 4, National 9/11 Memorial, Performing Arts Center, Streets and Utilities

WTC PROGRAM GOVERNANCE AND ORGANIZATION

Issue: **Below-Grade Engineering at the PAC Site**

Context: The WTC master plan proposes that the Performing Arts Center (PAC) be built where the existing Temporary PATH Station is located. In order to ensure that a world-class facility can be built on this site, the design and engineering of the below-grade areas should be coordinated with the many other uses that need to be accommodated at this site. The other uses include: Hub ventilation and egress, retail, parking and parking access (vehicle helix), access roads, and utilities.

Impacts: Final design and engineering of the many uses at the site cannot be completed without a complete understanding of what the below-grade needs of the PAC will be.

Stakeholders: Port Authority, City of New York, LMDC

Projects Involved: WTC Transportation Hub, PAC, North Helix (parking access)

WTC PROGRAM GOVERNANCE AND ORGANIZATION

Issue: **Site Logistics**

Context: As discussed earlier in the report, the World Trade Center site sits in a very congested area of New York City. When you have the following projects all going up at the same time, you have a recipe for one gigantic traffic jam in terms of staging construction equipment and moving workers throughout the site:

- Five major skyscrapers, which will house Class A office space comparable to all of downtown Atlanta;
- One of the world’s most significant memorials and museums;
- The third-largest transportation hub in New York City;
- A world-class retail venue serving all WTC users;
- A major performing arts center;
- A state-of-the-art vehicle security center;
- Two brand-new city streets (Greenwich and Fulton) and two brand-new pedestrian ways (Cortlandt and Dey); and,
- All of the critical infrastructure to support these projects (chiller plant, utility and communication networks, etc).

Coordinating staging and traffic is further complicated by the external realities imposed on the program. A review of LMCCC – the current entity charged with this authority – is underway and recommendations will be made shortly on how to improve this critical function.

Impacts: Unless there is a single “traffic cop” to coordinate all of the moving pieces in this confined space, every project on the site risks schedule delays and cost escalations.

Stakeholders: All public and private entities at the WTC site.

Projects Involved: All.

WTC PROGRAM GOVERNANCE AND ORGANIZATION

As indicated earlier, significant progress has been made over the past year-and-a-half on the design and construction of the WTC projects. At the same time, now that the major phase of construction has commenced and we have a real sense of the reality on the ground, a great deal has been learned about the future challenges we face in delivering the overall program successfully. With this experience in hand, there are now clear opportunities to take advantage of what we have learned and make substantive changes that will help control schedule, cost and quality while increasing program accountability and transparency.

First, as has been a running theme throughout this report, we need to create a more effective governance structure to resolve disputes and coordinate logistics among the multiple stakeholders at the site. The number of critical stakeholders and often competing project interests make effective governance a critical success factor. If key decisions affecting the overall site cannot be made effectively and in a timely fashion, project schedules will continue to slip and associated costs will continue to rise. These decisions will often be difficult ones, requiring the balancing of one project's goals against the greater good of the overall program. Nonetheless, if we are to learn from the past and keep costs and schedule under control, there must be a structure in place which ensures that when decisions are needed, they will be made in a prompt and final manner. Such decisions should be made after input from stakeholder representatives the results of these decisions – the rationale, the benefits, as well as potentially adverse impacts on cost and schedule, whether positive or negative – need to be effectively communicated to the public.

Second, the complexity resulting from designing and constructing large-scale projects with significant interdependencies and within the limited acreage of the WTC site has created logistical challenges that need to be addressed through fundamental organizational changes. These changes must be focused primarily on ensuring that the entire program can advance in a sensible, integrated manner – while at the same time allowing for the successful execution of individual project designs and construction.

Third, the public investment in the successful development of the WTC site requires a high degree of accountability and transparency. While numerous public agencies, organizations and private companies share responsibility for delivering on the vision of a rebuilt World Trade Center, the Port Authority has a unique role as the one public agency with majority ownership of the site. Our new approach to management of the WTC program will take full account of this responsibility.

The Port Authority will address the above opportunities and challenges through the implementation of a strengthened WTC program organization as illustrated below.

WTC Program Organization

