

## **2.0 ANALYSIS FRAMEWORK**

### **2.1 Introduction**

In the aftermath of the September 11, 2001 attacks, it was determined that a common framework of environmental analysis for reconstruction and redevelopment projects in Lower Manhattan could produce substantial benefits for each project, including the avoidance or minimization of environmental impacts and an increase in public understanding. The initiation of transportation recovery projects to be undertaken with the \$4.55 billion in federal funding to restore and enhance functionality of the infrastructure and support the recovery of the area (“Federal Transportation Recovery Projects”) presented an early opportunity for implementing a “framework” for evaluating and minimizing potentially adverse environmental effects, particularly cumulative effects, from other projects in Lower Manhattan that are constructed and put into operation during similar time frames and which may affect the same resources.

The Environmental Analysis Framework for the Federal Transportation Recovery Projects (Framework), of which the South Ferry Terminal Project is a part, was developed by the following group of governmental entities involved with recovery in Lower Manhattan: FTA, Federal Highway Administration (FHWA), MTA/NYCT, PANYNJ, NYSDOT, LMDC, the Office of the New York City Council, and the New York City Planning Commission. The Framework has been agreed to and supported by these entities, and will be used in connection with each of their proposed Federal Transportation Recovery Projects. It is intended that, when completed, each Federal Transportation Recovery Project, including the South Ferry Terminal Project, will result in an overall positive impact on the environment. A copy of the Framework, and the signatory letters, is included as Appendix D. The Framework consists of the following components (described in detail in Appendix D):

- Green Design, Green Construction, and Sustainability Principles
- Construction Environmental Protection Plan
- Public Involvement and Governmental Entities Coordination Plan
- Baseline Assessment of Resources and Coordinated Cumulative Effects Analysis Approach

In accepting the Environmental Analysis Framework, the project sponsors also adopted common Environmental Performance Commitments (EPCs) intended to be incorporated into project planning, design and construction documents and contracts. The EPCs are included with the Framework in Appendix D.

The environmental impact analysis approach for the South Ferry Terminal Project in this Environmental Assessment (EA), therefore, incorporates the Environmental Analysis Framework, in addition to being consistent with federal NEPA and New York SEQRA requirements. This approach necessitates a comparison between future conditions without the project (No Build Condition) to future conditions with implementation of the

project (Proposed Action or Build Condition). The difference between these two conditions is then considered the impact of the Proposed Action. The No Build Condition assumes that the other major Lower Manhattan projects would be constructed, and their effects are considered in the No Build Condition as appropriate to the South Ferry Terminal Project. The No Build Condition also reflects the continuation of existing conditions, deficiencies, and/or problems that the Proposed Action is intended to address. The Proposed Action or Build Condition is typically established by projecting existing conditions out to the year when the project would be fully operational and, thus, when operational impacts are likely to be the most intense. As described in Section 2.2 below, two operational years are analyzed: 2008 when the project will be in its initial year of operation, and 2025 when the other Lower Manhattan Recovery Projects are anticipated to be fully operational and Lower Manhattan itself is fully recovered. In addition to impacts during operation, the EA addresses impacts during construction. The construction impact analysis identifies a period during which construction is expected to be most acute and when analysis of potential impacts would therefore be most conservative. This peak construction year is 2005/2006.

Each technical analysis section of the EA discusses a particular resource and presents existing and future conditions of the resource in the project study area. The analysis section describes the existing conditions with regard to that resource, and assesses potential environmental impacts on the resource under the No Build and Proposed Action conditions. The study area for each resource is defined as appropriate, consistent with the reasonably expected geographic extent of potential impacts on such resources. Through the planning process for the South Ferry Terminal Project, environmental enhancements or features have been integrated into the project's design and construction methods to minimize and/or eliminate potential impacts. These features are also described for each resource category as appropriate.

## **2.2 Analysis Years**

### **2.2.1 Pre-9/11 Reference Condition**

The events of September 11, 2001 resulted in extensive impacts to the economy, transportation services, infrastructure, and environment in Lower Manhattan. The current 2003-2004 condition is a lower level of economic activity than existed prior to September 11. Due to the effects of September 11, current conditions are not, therefore, considered truly representative of normal conditions in Lower Manhattan. It is expected that it would be several years before economic growth resumes and Lower Manhattan is restored to its pre-9/11 condition. For the purposes of this EA, it is assumed that current and planned revitalization efforts would be successful so that the level of development and activity in 2025 would reflect the economic growth up to that year, as would have been projected prior to September 11, 2001 for 2025 (see Section 2.2.4).

In recognition of this, and in conjunction with the environmental analyses being carried out for major Lower Manhattan projects, the analysis of the South Ferry Terminal Project includes a pre-9/11 "Reference Condition" where appropriate. The Reference Condition

is defined as the existing conditions in Lower Manhattan on September 10, 2001. This Reference Condition was defined in commitments by the project sponsors in the Environmental Analysis Framework (Appendix D). The Existing Conditions section of the resources evaluated in this EA focuses on the current conditions (2003-2004) and describes the pre-9/11 Reference Condition only if appropriate; for most resource categories, the current conditions are substantially the same as the pre-9/11 Reference Condition.

### **2.2.2 Analysis Years for Assessing Construction Impacts: 2005/2006**

Construction of the South Ferry Terminal Project is anticipated to start in late 2004 and be completed by the end of 2007. The peak period of construction is anticipated to occur between 2005 and 2006. Construction activities in 2007 will primarily consist of finishing work on the underground facilities. A more detailed discussion of the conceptual construction plan for the South Ferry Terminal Project is provided in Chapter 4: Construction Methods and Activities.

The 2005/2006 peak period coincides with the construction of other projects in Lower Manhattan including, among others, the Permanent WTC PATH Terminal, the WTC memorial and site redevelopment, the Route 9A project, and the Fulton Street Transit Center. The 2005/2006 conditions are established by analyzing existing (2003-2004) conditions, and projecting these conditions out to 2005/2006. Construction impacts are identified by comparing future conditions in 2005/2006 without the project but with the other major Lower Manhattan projects, to 2005/2006 conditions with the project under construction. The assumption of a sustained construction peak, overlaid with the construction peak of other Lower Manhattan projects (see Section 2.3.4), ensures that the impact analyses performed in the EA evaluate the highest potential level and combination of construction activity that could reasonably be assumed to occur. Although for the purposes of analyses, the timing and duration of this peak has been assumed to be during 2005/2006 for up to one year, the actual timing and duration of the peak could shift, without affecting the substance and validity of the analyses. Based on the expected construction schedule of the South Ferry Terminal Project and other Lower Manhattan projects, it is not considered likely that this peak would change substantially, or that the cumulative construction peak of the South Ferry project and other Lower Manhattan projects would last for more than one year.

### **2.2.3 Analysis Year for Assessing Initial Operational Impacts: 2008**

The South Ferry Terminal Project is expected to be operational at the beginning of 2008. In 2008, the area of Lower Manhattan served by the project would still be subject to continued rebuilding efforts. As the area would not yet have been fully restored, it would not yet be functioning at the level of economic activity and associated transit demand that would have existed based on projections made prior to September 11, 2001. Consequently, the South Ferry Terminal would not be expected to operate with full patronage in 2008.

Several large-scale recovery projects would still be under construction in 2008 and the construction activities associated with those projects would create an environmental setting somewhat different from the current environmental setting. In addition to the large-scale recovery projects, several other projects are expected to be in place by 2008. These include several commercial projects and a large number of residential projects, including both new residential buildings and conversions of existing non-residential buildings to residential use. In recognition of the changes in environmental context in 2008, the potential operational impacts of the Proposed Action in 2008 were analyzed.

It must be noted, however, that the South Ferry Terminal Project is primarily a replacement project, i.e., the existing South Ferry Station would be replaced with a new and improved terminal facility. All of the facilities would be located below ground, with the exception of three entry/exit facilities, ventilation structures, and emergency hatches. Once operational, it would essentially return aboveground conditions to conditions prior to construction. Therefore, it is not anticipated that the project would have substantial operational impacts to the surrounding aboveground environment.

#### **2.2.4 Analysis Year for Assessing Full Operational Impacts: 2025**

To conservatively assess potential long term operational impacts of the South Ferry Terminal Project, the project was also evaluated for a year when the project would be expected to operate with full patronage. By 2025, economic growth in the area served by the South Ferry Terminal is expected to be fully restored to levels that would have been projected prior to September 11, 2001; thus, the South Ferry Terminal would be operating at full patronage levels. The year 2025 was therefore selected for assessing full or long-term operational impacts.

Conditions in 2025 were established by identifying the conditions existing prior to September 11, 2001 for each resource and projecting those conditions out to 2025, taking into account anticipated land use changes through 2025. For the purposes of analysis of operational impacts, it was assumed that what existed prior to the events of 9/11 would be reconstructed to pre-9/11 conditions. Where it was expected that replacement land uses could differ substantially from that which existed prior to 9/11, land use projections for 2025 were adjusted accordingly. Where 2025 conditions were uncertain, those conditions existing or projected to exist prior to September 11, 2001 were assumed to prevail.

### **2.3 Cumulative Effects**

#### **2.3.1 Introduction**

NEPA regulations require the analysis of cumulative effects. Cumulative effects result from the incremental effect of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes such actions. The objective of the cumulative effects analysis is to identify and consider the total and combined effects of multiple actions that potentially would not be identified

if each action and its associated effects were evaluated in isolation. As Lower Manhattan will be subject to several construction and rebuilding efforts over the next decade, the potential for cumulative effects has been identified by the Environmental Analysis Framework as a key issue in the consideration of environmental consequences. The Framework also identified a number of resource areas which could have potential for adverse cumulative effects. These categories form the basis of the cumulative effects analysis performed for the South Ferry Terminal Project and are as follows:

- Air quality;
- Pedestrian and vehicular access and circulation;
- Historic and cultural resources;
- Noise and vibration; and
- Business and economic interests.

The five areas of concern for cumulative effects analysis were identified during the initial Federal Emergency Management Agency (FEMA) scoping process as part of early NEPA activities for the initial 9/11 disaster recovery phase. Subsequent consultation between FEMA, FTA, and local project sponsors with the U.S. Environmental Protection Agency (EPA) led to further refinement and confirmation of these areas of concern, including conceptual approaches to addressing the cumulative effects analysis. These approaches are described in the following section.

### **2.3.2 Overview of Cumulative Effects Approach**

To maintain a consistent approach to the cumulative effects analysis of Lower Manhattan projects, the project sponsors and FTA have committed to the development and implementation of a coordinated cumulative effects analysis approach that will be conducted for the major Lower Manhattan projects (see Appendix D for documentation of this approach). The key aspects of the approach are:

- Environmental stewardship and the implementation of Environmental Performance Commitments (EPCs). The EPCs will contribute to lowering the potential of the sponsor's project for adverse environmental impacts, and as a consequence also lessen the potential for the contribution of each project to overall adverse cumulative effects in Lower Manhattan;
- A building block approach to ensure that opportunities for reduction in potential adverse cumulative effects are made on all projects. This would be achieved through the sequential completion of cumulative effects analysis for each project within a single evaluation framework comprising consistent analysis assumptions and methodologies;
- Delivery of projects using the building block approach whereby each project would advance at its own pace, with identified impacts of completed analyses being incorporated into the background of future projects; and
- Focus of the cumulative effects analysis on the five key resource areas identified as having potentially significant adverse cumulative effects.

### **2.3.3 Cumulative Effects Methodologies**

Cumulative effects are assessed in the EA for both construction conditions and operational conditions in Chapter 6: Cumulative Effects. The South Ferry cumulative effects analysis considers other projects that incrementally contribute to the cumulative effects on resources affected by the Proposed Action. Resource categories that are not affected by the Proposed Action are not evaluated for cumulative effects. The cumulative effects analyses include the effects of those actions that overlap with the Proposed Action in time and/or space, affect the same resource as that affected by the Proposed Action, and represent a change from conditions existing prior to September 11, 2001.

An overview of other actions reasonably foreseeable to be in place or under construction in between 2005 and 2006 is presented in Section 2.3.4 below. In accordance with the approach set out by the Framework, the cumulative effects analysis for South Ferry Terminal Project is based on a No Build Condition that includes the baseline condition, which is defined as background growth in combination with the cumulative effects of other Lower Manhattan projects. This is then compared to a Build Condition that includes the baseline condition and the additional effects associated with the South Ferry Terminal Project.

### **2.3.4 Projects Included in the Cumulative Effects Analysis**

In addition to the South Ferry Terminal Project, a number of large-scale recovery projects are proposed for construction in Lower Manhattan between 2004 and 2025. These projects include:

- Route 9A/West Street reconstruction;
- Permanent WTC PATH Terminal;
- WTC Memorial and Site Redevelopment; and
- Fulton Street Transit Center.

The above projects are included in the No Build (baseline) Condition for the environmental review of cumulative construction impacts because of their anticipated overlapping construction schedules. The 2005/2006 peak year construction assumptions used in the cumulative effects analysis for these projects are included in Appendix E.

Other projects in the vicinity of the South Ferry Terminal Project that are either currently under construction or may be under construction concurrent with the South Ferry Project include the Museum of Jewish Heritage at 36 Battery Place in Battery Park City, the Castle Clinton redevelopment, and the Whitehall Ferry Terminal/Peter Minuit Plaza reconstruction project. The Museum of Jewish Heritage is scheduled to open in June 2004; therefore, its construction period will not overlap with the South Ferry Project and is not directly considered in the peak construction period (2005/2006) cumulative effects analysis because its construction will be complete before that period. The Castle Clinton redevelopment project is also a potential future project in the South Ferry vicinity; however, its implementation and construction schedule is not currently known as it is

contingent on funding. Therefore, it is not considered to be under construction during the peak 2005/2006 construction year for South Ferry. The Whitehall Ferry Terminal reconstruction project is anticipated to be completed in early 2005, before the peak construction year (starting in mid-2005) for the South Ferry Terminal Project. Therefore, like the Museum of Jewish Heritage, it is not directly considered in the peak construction period (2005/2006) cumulative effects analysis because its construction will be complete before that period. Additional detail about the construction coordination between the Whitehall Ferry Terminal and South Ferry Terminal projects is provided in Section 4.4 of the EA.

## 2.4 Environmental Performance Commitments

A key aspect of the cumulative effects analysis is the implementation by project sponsors of Environmental Performance Commitments (EPCs). These are standards and measures adopted by individual project sponsors that would contribute to lowering the potential of the sponsor's project for adverse environmental impacts, and lessen the potential for each project to contribute to overall adverse cumulative effects in Lower Manhattan. This approach recognizes that improvement of access to Lower Manhattan in support of economic recovery and resumed growth may cause short-term impacts before all potential benefits of improved public transportation on the Lower Manhattan environment and economy are realized. To minimize the burden on the environment when improving access to Lower Manhattan, EPCs would be incorporated into the implementation of each project. The EPCs consist of measures that would be proactively implemented to avoid or minimize potential adverse effects of the project on the environment. The EPCs are particularly focused on the five resource categories identified in Section 2.3.1 as most sensitive to cumulative impacts. In addition, each project sponsor may undertake additional measures appropriate to its project based on the project's particular nature, timing, and scope. The EPCs are included in Environmental Analysis Framework document in Appendix D.

The EPCs will be integrated into the design and construction of the Proposed Action in accordance with MTA/NYCT's *Design for the Environment*<sup>TM</sup> (*DfE*) and *Construction for the Environment*<sup>TM</sup> (*CfE*) guidelines. These include energy-saving features in design, the use of ultra low-sulfur emission diesel construction equipment, construction coordination protocols, and the implementation of a Construction Environmental Protection Plan (CEPP). Where applicable, the technical analysis sections provide a discussion of how the project will implement protective measures to proactively minimize adverse effects on the environment in the form of EPCs, and the anticipated benefit of the EPCs for the environment.

The EPCs established for the Federal Transportation Recovery Projects carry an obligation for the implementing agencies to continue to communicate and coordinate their work through the design, construction, and opening of the projects. As has been occurring since early 2002, MTA/NYCT will continue to meet and exchange information with the other local project sponsors and resource agencies in Lower Manhattan. Specifically, MTA/NYCT will:

- Share its commercial and technical information for design and construction with other local project sponsors as appropriate, request and review similar information from other agencies, and incorporate language into the documents where the approach may need to be more uniform.
- Host coordination sessions with the other agencies regarding its draft CEPP, incorporate appropriate information into the CEPP, and share this final document with the other agencies. One of the goals of these sessions will be to develop ways for the agencies to individually and/or jointly monitor adherence to the EPCs during construction (e.g., truck traffic routes).
- Along with its contractors, participate in biweekly construction coordination meetings with the other local project sponsors to keep each other apprised of the upcoming construction activities and to coordinate these activities as appropriate to avoid or minimize impacts on the community (e.g., through adjustments to scheduling of noise-producing activities).
- During design and construction, enforce the adherence to the EPCs, as written into the contract language.
- During construction, share monitoring data and knowledge gained with the other agencies.
- During construction, post a hotline number around the construction site and on the website so the public may get information and register complaints about the project. The contractor and MTA/NYCT would jointly respond to these inquiries/complaints.
- Develop a public and governmental entity involvement plan that will serve to keep the public involved and informed, especially during construction. (Note that this may be a joint process with other local project sponsors, but MTA/NYCT will, at a minimum, share this plan with others during its development.)