



# Local Concept Development Study for Retaining Wall & Slope Stabilization Improvements along Manhattan Avenue, Union City, Hudson County, New Jersey



## Project Purpose & Need Statement

### **PURPOSE:**

The purpose of this project is to rehabilitate or reconstruct the deteriorating retaining walls along Manhattan Avenue in Union City, New Jersey. Many sections of the stone masonry wall exhibit significant structural deterioration, including cracks, joint deterioration, missing stones, bulging, and water seepage. The retaining walls need to be repaired and/or reconstructed to improve public safety.

### **NEED:**

Over the last 100 years, since their original construction, numerous resources were invested to inspect, maintain, and repair the stone masonry walls. Within the last 30 years alone, there have been at least three (3) major rehabilitation projects and other smaller-scale maintenance projects that were implemented, so that the walls could continue to function safely. Nonetheless, these repairs did not last, and the walls have continued to deteriorate.

Many of the existing weep holes, which are intended to allow water to drain from behind the wall, are clogged. This is of particular concern because a 150-foot by 40-foot segment of the South Wall collapsed in April 2007, during a major Nor'easter storm, and the cause was attributed to inadequate drainage.

The function of these walls is to stabilize and retain the rock cliff and soil behind them, which had been excavated to construct the 14th Street Viaduct. These walls also provide lateral support to the foundations and utilities for the buildings along Palisade Avenue (above). Manhattan Avenue and the 14th St. viaduct provide a vital link between the cities of Union City and Hoboken with direct access to the Lincoln and Holland Tunnels. A sudden failure or collapse of any portion of these walls could be catastrophic and would impact the lives of thousands of people.

### **GOALS AND OBJECTIVES:**

Goals and Objectives for this project include:

- Reinforce and modernize the walls, so that they meet current masonry standards.
- Improve drainage to eliminate or reduce the buildup of hydrostatic pressure on the wall.
- Maintain accessibility to pedestrians and motorists during construction.
- Provide durable and long-lasting repairs that reduce the frequency of major maintenance.
- Avoid or minimize social, economic, and environmental impacts and implement context sensitive design solutions.
- Coordinate construction with other ongoing high-level transportation projects in the region that will affect traffic along Manhattan Avenue and the 14<sup>th</sup> St. Viaduct.

