

# Infrastructure Master Plan for the Hayden/Prentiss Street Neighborhood

Town of Orange, Massachusetts

## **EXECUTIVE SUMMARY**

The Town of Orange, with assistance from the Franklin County Housing and Redevelopment Authority (FCHRA), retained Weston & Sampson Engineers, Inc. (Weston & Sampson) to identify the infrastructure improvements required for the Hayden and Prentiss Streets neighborhood (project area). The information presented in the Infrastructure Master Plan (IMP) report will be used to design the improvements in the project area.

As part of the IMP, Weston & Sampson conducted inspections and evaluations of the infrastructure in the project area. The major infrastructure deficiencies identified during the evaluations are presented below.

### Sewer System

The sewer system in the project area is made primarily of open joint clay pipe with brick manholes. Much of the pipe was found to be structurally deficient during inspections. Many of the manholes were also in poor condition. A portion of the sewer system runs cross country through a wooded wetland area. This area is known to have high groundwater that enters the sewer system through infiltration in the pipeline as well as inflow from private sump pumps connected to the sewer system. The Town of Orange received an Administrative Consent Order (ACO) from the Massachusetts Department of Environmental Protection (MADEP) for excessive infiltration and inflow within the sewer collection and treatment facility. The ACO stipulates that infiltration and inflow must be removed from the sewer collection system.

### Storm Drainage System

The existing drainage systems include open channels and closed pipe systems. The roadway systems include a mix of formal and informal drainage. Some of the drainage pipe is laid at flat slopes and is undersized. The topography of the roadways is generally flat, providing little or no relief to drain water. The existing system does not meet MADEP standards for sediment removal or industry standards for the locations of drainage structures. The condition of the existing drainage system has resulted in areas that collect water and do not drain which cause puddles, ponding, broken pavement, and icing conditions during the winter.

### Water System

The existing water system is undersized in some areas and aging and several streets have water mains that are less than 6-inches in diameter. Some of the water system does not meet the current fire flow demands as stipulated by the Insurance Safety Office (ISO) and some areas also fail to meet MADEP water system requirements.

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## Pedestrian Accessibility and Destinations

There are a large number of pedestrian destinations in and around the project area. The area contains two parks, including tennis courts, ball fields, and a playground. The area is adjacent to another park, as well as being adjacent to two (2) schools. The project area is also near to the Orange downtown area. The sidewalks in the area are cracked, broken, heaved, and do not meet ADA requirements. The sidewalks also are not located on many of the major pedestrian routes in the project area.

## Overall Infrastructure Improvements

The IMP includes complete renovation and/or replacement of the sanitary sewer system, storm drainage system, water system, sidewalks, and roadways. These improvements will reduce the infiltration and inflow to the sanitary sewer system, prevent ponding and flooding in the roadways, improve domestic and fire flows, provide a safe route for pedestrian traffic and provide a stable road surface for vehicular traffic.

## Project Phasing and Implementation

Phasing of design and construction of the proposed improvements will be according to the priorities and objectives selected by the Town. At this stage the Town has identified the following priorities for improvement:

- Replace the sewer on Hayden Street between East River Street and Blodgett Street to allow for the removal of the cross country sewer.
- Replace the sewers on King Street, Dewey Conrad Avenue, and East Myrtle Street to allow for the removal of the cross country sewer.
- Replace the cross country drain line on Church Street and the associated drainage system to allow for installation of a new, functional drainage system.
- Replace the water main on Blodgett Street and Harrison Avenue to allow the water system in the project area to meet ISO fire flow requirements.
- Install or replace sidewalks on Hayden Street, Prentiss Street, Burrill Avenue, King Street, East Myrtle Street, Adams Street, and Church Street.
- All other utility improvements should be completed in conjunction with the work described above.