Completed in 2016, consisted of the major structural features of the flood damage reduction improvements: the installation of the two culverts (one under the Riverway and the other under Brookline Avenue); daylighting of two sections (about 700 linear feet) of the Muddy River at the Former Sears Parking and at Upper Fens Pond; and the reconstruction/restoration of the headwall at Avenue Louis Pasteur Bridge. It also included bank restoration and planting emergent wetland plants and restoring riparian vegetation in upland areas by planting trees and shrubs.

Phase 2 addresses both upstream and downstream of Phase 1 work. Phase 2, expected to begin in Spring 2020, will consist of removal of river sediments for flow conveyance in the Back Bay Fens and Riverway sections of the Muddy River. It also includes removal of the sandbar and island at Leverett Pond. Work also includes removal of Phragmites from wetland and riparian areas which affect flow conveyance. After removal of river sediments and Phragmites, preservation and restoration of the historic park shoreline in construction areas will consist of planting emergent wetland plants and restoring riparian vegetation in upland areas by planting trees and shrubs. The work is expected to take 3 years to complete.