

**REPORT ON THE INFRASTRUCTURE
OF THE CITY OF REVERE**

**Revisions: 1992, 1993, 1994, 1995, 1996
1997, 1998, 1999, 2000, 2001, 2004, 2005,
2006, 2007, 2008, 2009, 2010**

This report was prepared by the Department of Planning and Community Development and the Department of Public Works through the efforts of City Planner Frank Stringi, former DPW Superintendent Andrew De Santis, former DPW Superintendent John Barrett and DPW Superintendent Donald E. Goodwin, Jr.,

MAYOR THOMAS G. AMBROSINO

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I. INTRODUCTION

This report has been revised this year to focus solely on the City's infrastructure and its historic efforts to address the challenges presented by its mostly aging systems and facilities. The comprehensive capital improvements necessary to address some of the items and recommendations mentioned in this report are now separately documented and prioritized in a separate document entitled "Capital Improvement Program Fiscal Years 2011-2015." The two documents should be read together to gain a comprehensive understanding of the City's needs and its plans for future growth.

II. ECONOMIC DEVELOPMENT ACTIVITIES

Although Revere has seen a decline in the economic importance of its central business district, other areas of the City are experiencing enhanced economic activity. In fact, over the past few years, development has been expanding in many parts of the City, from Suffolk Downs and the Revere Beach Reservation to Northgate and Rowe's Quarry.

A review of economic development over the past decade establishes that significant strides have been made in expanding the economic base within the City.

- A retail development near the Shirley Avenue business district known as Wonderland Marketplace opened for business in 1996. Wonderland Marketplace comprises over 148,000 square of retail development.
- OSCO Drug constructed 15,000 square foot retail building on the site of the former City Yard on Broadway in 1996.
- The East Boston Savings Bank has constructed a new facility on the site of the former Wendy's on Broadway in 1996.
- Walgreens constructed a 14,000 square foot retail building in Linden Square in 1998.
- Pep Boys constructed a 21,800 square foot automotive retail and garage on Squire Road in 1998, now a Savers store.
- A 27,000 square foot office building on Broadway known as Fernwood Place was constructed in 1999.
- Expansion of the Comfort Inn on Route 1 to a Marriott courtyard with 30 additional rooms was completed in 2000.
- Construction of a 208 room Comfort Inn Suites hotel on American Legion Highway was completed in 2001.
- Construction of a new 20 theatre Showcase Cinema Complex on Squire Road was completed in 2001.
- Construction of an 80,000 square foot Super Stop & Shop on Squire Road was completed in 2001.
- Expansion and conversion of the Howard Johnson Hotel to a Sheraton Four Points Hotel on Squire Road was completed in 2001.
- Construction of the Prospect House, a 110 room Assisted Living Facility at the site of the former Hy-Sil Manufacturing building was completed in 2001.

- Expansion and conversion of the Revere Federal Savings Bank on Broadway to the Danvers Savings Bank was completed in 2001.
- The renovation and expansion of the former Towle Manufacturing building located at 135 American Legion Highway into the new international headquarters of the New England Confectionery Food Company (NECCO) was completed in 2004.
- The former Ames Department Store within the Northgate Shopping Center was completely refurbished and converted into the Burlington Coat Factory in 2004.
- The former Toys R Us and Fretter's retail space within the Northgate Shopping Center has been completely refurbished to make way for an 80,000 s.f. National Wholesale Liquidators retail store in 2005.
- The development of Rowe's Quarry into a major, mixed use commercial and residential development by Roseland Properties began construction in 2005.
- A major 200,000 s.f. retail center at Suffolk Downs, including a Target Store and Super Stop & Shop, opened in 2005.
- Construction of 48 residential lofts was completed in 2007 on the former Surf site on Ocean Avenue.
- Construction of a 6,000 s.f. commercial building was completed in 2007 on the former Streger Counter site at 166 Broadway.
- The Atlantica, a new 83 unit condominium on Revere Beach Boulevard was completed in 2007.
- Construction of a 60,000 s.f. shopping center on the former Lappens Auto site at Mahoney Circle, which opened in 2008.
- The construction of a 124,000 gsf BJ's Wholesale Club on Ward Street, which opened in early 2009.
- Construction commenced in 2008 on Phase 2 of the Shops at Suffolk Downs, which involves the construction of 30,000 gsf of commercial retail space. The new commercial building was completed in 2009.

III. PLANNING AND FEASIBILITY STUDIES

In an effort to positively guide economic development, infrastructure improvements, open space and recreation plans, public facility improvements and growth management within the City of Revere, it is essential that the city maintain the capacity to evaluate the conditions specific to these areas of study. Planning and feasibility studies provide the city with the necessary tools to make proper management and policy decision that affect the quality of life in the community.

Over recent years the city has undertaken a number of studies including a Sewer System Evaluation Study, a Sewer and Water Master Plan for the North Revere Beach area, a Water System Study and Master Plan for the Shirley Avenue area, a Short Range Transportation Planning Study, a Park Maintenance Efficiency and Organizational Study, a Downtown Marketing Study, a Growth Management Study, Land Use Study, an Open Space and Recreational Study, a School System Evaluation Study, a Public Library Improvement Study, a Flood Management Plan, a Public Safety Facilities Improvement Plan, and an Economic Development Strategy. These reports all have contributed to the improvement of the delivery of services and contributed to the successful reconstruction of infrastructure and public facilities within the city.

In 2008 the City completed work on a new GIS system, which created geographic layers of all city parcels and buildings and including water, sewer, and drainage mapping efforts.

Presently, the City is involved in a partnership effort with the MBTA in undertaking a feasibility study for the construction of a parking garage to support transit oriented development within the environs of the Wonderland T Station, including Parcel H and the North Lot.

Also, in 2008 and 2009 a hydraulic study model of the City's sewer system has been undertaken by CDM. A sewer capacity assessment and evaluation study was initiated in 2009 by CDM and will continue through 2010 and in 2008 Brown and Caldwell performed a sewer and drain pump station evaluation study which will lead to necessary upgrades and repairs to the existing pump stations.

In 2009, the City began updating its 7 year open space and recreation plan. The plan will be completed by July 2010.

IV. STORM WATER DRAINAGE

The City of Revere drainage system is primarily a gravity flow system with thirteen (13) large drainage areas containing twenty-three (23) smaller drainage areas as shown on a land contour map by Somerville Engineering. Pump Stations are located on Bennington Street, Broadsound Avenue, and Philomena Avenue at Greenhouse Estates and Rice Avenue. A previously used pumping station on Sargent Street was rendered unnecessary due to improvements made in 1980 in the Venditto Road area. The Central County Ditch, the Eastern County Ditch, Town Line Brook, Trifone Brook, Linden Brook, Sales Creek, Diamond Creek, Pines River and the Belle Isle Inlet are receiving bodies of water for the city's storm drain water.

A Storm Water Drainage Report was prepared during 1975 by Somerville Engineering for the City of Revere. Some of the proposed solutions for drainage deficiencies outlined in the report were funded for implementation by a bond issued passed in 1980. Correction to drainage problems existing along the Central County Ditch, Venditto Road, and Leverett Avenue were among those funded at that time. Improvements to several of the tide gate structures, new drainage on Malden Street, Washington Avenue, Broadway, Winthrop Avenue, Tuscano Avenue, East Mountain Avenue, John Mooney Road, and culverting of a section of Green's Creek are a few of the more important drainage improvements undertaken by the City.

The City of Revere, the Department of Conservation and Recreation (DCR), the Massachusetts Bay Transportation Authority (MBTA), MassHighway Dept., and the United States Army Corps of Engineers have all been moving forward on various projects intended to abate storm event flooding.

BELLE ISLE INLET, SALES CREEK AND GREENS CREEK

The Belle Isle Inlet/Sales Creek Pump Station on the west side of Bennington Street at the Revere boundary and the City of Boston together with a tandem tidegate structure outlets stormwater runoff from a large portion of Beachmont, Ward Two (2), and the Library Street area.

Plans for improvements to this drainage area date back to a report issued by Andrew Christo Engineers during the early 1980's recommending the construction of the Belle Isle Inlet/Sales Creek Pumping Station, new culverts on Sales Creek in Suffolk Downs, culverting Sales Creek. The culvert work in Suffolk Downs and the construction of the pump station were completed by the Division of Waterways in 1982.

The Winthrop Conservation Commission and the Friends of Belle Isle Marsh sued in order to have further environmental studies of the water and sediment quality of Sales Creek before the pumping station would be allowed to operate. An agreement was reached with all parties involved to allow emergency operation of the pump station.

Work was completed in the fall of 1994 to make the station a fully automatic operation and clean the culvert as well as the ditch system leading to it.

An area in lower Beachmont bounded by Crest Avenue, Winthrop Parkway, Revere Beach Parkway, Winthrop Avenue and State Road is drained by a main conduit beginning behind the homes on the west side of Winthrop Parkway. It follows Henry Street to Atlantic Avenue running under the Our Lady of Lourdes Church and finally outfalling at the beginning of Sales Creek behind Shaws Supermarket directing surface water run-off to the pump station.

The drainage ditch on the west side of the MBTA Blue Line Right-of-Way receives flows from the high point of Shirley Avenue to the north draining the area around the Garfield School, Curtis Park and Ocean Avenue. This ditch flows southerly to the beginning of Sales Creek.

Drainage from all of Young's Hill including all of Shirley Avenue flows to the Bennington Street Pump Station. Green's Creek courses from the Lee Burbank Highway near the Esquire Club behind Pratt's Trailer Court to Sales Creek near the Revere Beach Parkway

The Westerly high end of this drainage system is the Lowe Street Place area. Installation of new drainage by the City of Revere and private development entities has abated flooding along the rear of the homes on Haddon St.

The Bennington Street Pumping Station when used in conjunction with the Broadsound Avenue MDC Pumping Station has been found effective in controlling flooding due to waves overtopping the seawall at the intersection of Leverett Avenue and Winthrop Parkway. Drainage installation by the City of Revere during 1982 on Leverett Avenue conveys the water to the main drain and the pump station.

Surface water runoffs the southerly side of the Beachmont Hill to the Atlantic Ocean and Belle Isle Inlet. A major feature of this drainage area is a large drain that outfalls through a tide gate structure at the edge of Repucci Memorial Park.

THE CENTRAL COUNTY DITCH

The Central County Ditch drains a large portion of the City of Revere (approximately 670 acres) including the area south of Revere Street between the B & M Railway Tracks and American Legion Highway.

The Central County Ditch prior to the early 1950's flowed into the Eastern County Ditch in the vicinity of Dunn Road at Sagamore Street. The DCR constructed a five-foot (5') diameter culvert under Consiglia Della Russo Memorial Playground and outfalled the Central County Ditch through a tandem tidegate structure at the Burnham Street end of Diamond Creek.

A retention area was created in 1981 on Towle Manufacturing land along with the installation of parallel five-foot (5') pipes through Della Russo Park. In addition to the retention area, a major feature of the Central County Ditch is a main drainage conduit that runs westerly from the open ditch near the Towle Manufacturing building at American Legion Highway under the Revere High School playing fields and Erricola Park where it splits into a north branch and a south branch.

The North branch proceeds up Ambrose Street to Lee Street, Revere Street, and Carleton Street where it turns westerly and crosses Broadway paralleling Malden Street at the low points of the streets between Malden Street and Rumney Road terminating at Orvis Road.

The South branch of the Central County Ditch conduit runs under School Street, East Mountain Ave., and the old City Yard site crossing Broadway and terminating at Harry Della Russo Stadium. The Central County Ditch drains the north side of the Trelvalley Hills, the Municipal Parking Lot, most of Broadway, part of the northerly side of the Reservoir Hill, the eastern portion of the Mountain Avenue hill, the Coolidge Street area, most of the Fenley Street hill and most of the area between Malden Street, Rumney Road and Broadway.

The re-alignment of the open portion of the Central County Ditch and the installation of drain lines installed during 1980 in the vicinity of Revere Street corrected a substantial flooding problem that recurred frequently along the north branch of Malden Street. From Halls Corner down Malden Street and Washington Avenue, storm water was diverted away from the Central County Ditch to Town Line Brook, which contributed to the relief of flooding.

PEBBLE BEACH, CRESCENT BEACH, REVERE BEACH,
WONDERLAND RACE TRACK, KELLY'S MEADOWS,
OAK ISLAND, EASTERN COUNTY DITCH,
DIAMOND CREEK AND POINT OF PINES

The area bounded by Winthrop Parkway and Broadsound Avenue drains toward the Atlantic Ocean. The Broadsound Avenue Pumping station collects runoff from this area.

All along the beachfront, numerous drain outlet pipes lead to Broadsound. The majority of these discharge points are owned by the DCR.

The Eastern County Ditch begins at Beach Street on the west side of the MBTA Blue Line Right-of-Way flowing north, parallel to Ocean Avenue under Revere Street halfway to Oak Island where it turns westerly and flows through a culvert under North Shore Road meandering through the marsh before outfalling through a tidegate at the B&M Tracks. Wonderland Racetrack to Kelly's Meadow, the area around Bay Road, and the Arcadia Street area runoff into the Eastern County Ditch. The Eastern County Ditch channels flows from rainfall events and seawall overtopping. During the January 2, 1987

storm, seawall overtopping that occurred between Revere Street to the north and Shirley Avenue to the south collected at a low point on the Revere Beach Boulevard and created a saltwater stream flowing westerly down to what was formerly Beaver Street forming a lake on Ocean Avenue. Seawater on Revere Beach Boulevard between Revere Street and Oak Island Street during some storm events overflows the westerly sidewalk of Revere Beach Boulevard and finds its way to the Eastern County Ditch. The resanding of Revere Beach has reduced coastal flooding due to overtopping of the seawall along Revere Beach Boulevard.

The Grove section of Oak Island contains several small drain lines but most surface water flows in sheet-flows over the roadways and out to the surrounding marshland.

The area between Oak Island Street to the south and Point of Pines to the north bounded by Revere Beach Boulevard and North Shore Road is primarily a saltwater marsh which drains through a series of culverts which are equipped with self-regulating tidegates connecting this area to the Pines River.

The oceanside of the Point of Pines drains primarily through a large drainpipe that flows from south to north across all of the Point of Pines streets terminating at the Point of Pines Drainage Pump Station on Rice Avenue. The pump station was designed and constructed during the early 1970's to handle storm water runoff caused by rainfall events and severe wave action. The pump station is equipped with two (2) pumps, with emergency power provided by natural gas to one pump unit. A liquid chlorine disinfectant system is part of the equipment at the station.

The Riverside section of the Point of Pines drains through a series outfalls along Mills Avenue to the Pines River.

The north side of Revere Street from North Shore Road to the east of American Legion Highway to the west drains through a series of small drainage systems outfalling in the marshland between Lynn Marsh Road and North Shore Road (Diamond Creek).

LINDEN BROOK, TOWN LINE BROOK AND NORTH REVERE

Surface water run-off from the westerly side of the Mountain Avenue Hill, the Caruso Farms area, the area bounded by Sargent Street, Newhall Street and Malden Street, the area around Washington Avenue and the streets between Malden Street and Grover Street all flow into Town Line Brook. A large box culvert runs from Asti Avenue at Tuscano Avenue in a westerly direction under the low point of the Northeast Expressway to Trifone Brook.

Town Line Brook is a wide paved waterway at the Revere - Malden boundary line under the jurisdiction of the DCR. Drainage flows from the brook through a multiple opening tide gate structure on the north side of Route One at the Sea Plane Basin. The

simultaneous occurrence of large amounts of rainfall and wind-driven high tides create flooding in the areas adjacent to Town Line Brook.

Few drainage facilities exist in the North Revere section. Drainage from fresh water wetlands at the top of the hill near Grandview Avenue and Hywood Street flows cross-country across Franklin Street to the marshland behind the residential building at 205 Salem Street. The marshland becomes a woodlands/wetland extending westward to Muzzey Street and the Saugus line. Collected water flows under Salem Street through two (2) forty-two inch concrete pipes installed during 1986. The Salem Street Drainage Improvement Project and a new asphalt coated and paved corrugated metal arch-pipe installed during 1982 under Marshall Street have corrected some of the drain problems in North Revere.

MILL CREEK DRAINAGE AREA

Mill Creek at the Chelsea - Revere boundary flows into the Mystic River and Boston Harbor. Tidal flooding of Mill Creek floods a small portion of Revere in the vicinity of the Revere Beach Parkway at the Northeast Expressway. Drainage from the southerly side of the Reservoir hill and the area around Mill and Vinal Street flows into Mill Creek through several culverts.

A ditch between Fenno Street and the Northeast Expressway brings storm water to a culvert that runs from Fenno Street near Spring Street under the expressway to Chelsea where it turns and again crosses the Northeast Expressway back to Mill Creek. Channel improvements completed during 1983 have improved flows along these ditches. Construction of a new bridge over Mill Creek and channel improvements along Mill Creek west of Broadway were completed in 1994. Intense rainfall events and tidal action cause some nuisance flooding in the Vinal Street and Olive Street areas.

DRAINAGE IMPROVEMENTS

Many areas of the City of Revere, especially those areas that were at one time comprised of primarily summer residences lack sufficient drainage facilities. Drainage improvements in these areas are important and a comprehensive planning and maintenance effort is necessary to ensure the new drainage when installed will work in conjunction with existing facilities. Increase in hydraulic capacity and rehabilitation of several main drain conduits is necessary prior to loading these systems with additional surface water runoff.

TABLE ONE A

DRAINAGE IMPROVEMENTS COMPLETED

<u>LOCATION</u>	<u>SCOPE OF WORK</u>	<u>COST</u>	<u>COMPLETED</u>
1. Point of Pines Drainage Pump Station	Completed rehabilitation of mechanical components of drainage pump station on Rice Avenue including retention of outfalls into Pines River	\$280,000.	10/90
2. Vera Street	Installation of drainage structures on Vera Street between North Shore Road Glendale Street		7/90
3. Bay Road	Installation of drainage structures at intersection of Bay Road and Sears Street		7/90
4. John Mooney Road	Replacement of collapsed drain on John Mooney Road in conjunction with roadway improvements.	\$94,000.	9/89
5. Kingman Avenue	Install new drainage structures in easement to Malden Street drainage	\$38,300	9/89
6. Repucci Park	Correction of drainage deficiency	\$8,500.	9/88
7. Sigourney Street	Correction of drainage deficiency	\$98,000.	7/90
8. Dunn Road	Drainage and Pump Station	\$232,000.	10/93

9. Clifton Street Drainage	install new drain and catch basin .	\$5,000.	10/90
10. Brenton Street	Installation of new drainage structures	\$5,000.	9/93
11. Alden Avenue	Installation of new drainage structures	\$2,500.	12/94
12. Sullivan Street & Conant Street	Installation of new drainage structures	\$10,000.	12/94
13. Rossetti Street	Corrected drainage deficiency	\$500.	6/94
14. Sargent Street	Installation of new drain line	\$3,500.	7/92
15. Bay Road/ Jackson Road	Pump Station and catch basin	\$6,500.	6/94
16. Festa Road	Installed lift station	\$6,500.	6/94
17. Joey Road/ Cecilian Avenue	Installed lift station	\$6,500.	7/93
18. Dolphin Avenue	New drain structures and drainage in front of Hyman Towers	\$4,300.	12/94
19. Reservoir Avenue	New drainage system	\$110,000.	8/94
20. Abruzzi Street	New drainage system	\$90,000.	11/93
21. Hichborn Street	Installation of new 48" Culvert	\$280,000	2/97
22. Sherman Street	Regrading of Roadway	\$10,000.	11/96

23. Savage Street	Regrading of Roadway	\$10,000.	11/96
24. Installation of new self regulating tidegate structure at Martin Street outflow of Central County Ditch.		\$100,000.	12/97
25. Leonard & Lawrence Road	New drainage system	\$60,000.	10/97
26. North Avenue drainage regrade roadway		\$30,000.	8/97
27. Newman Street roadway regrading		\$10,000.	9/97
28. Lechmere, Mc Coba and Ward Street – new drainage system installed		\$60,000	7/99
29. Franklin Street	Installed Lift Station	\$10,000	6/99
30. Installation of twin 36” ADS pipe between Sagamore St. and North Shore Road		\$60,000	8/00
31. Installation of 7 self regulating tide gates along Pines River and 6 ft. diameter culvert under North Shore Rd. at Eastern County Ditch		MassHighway	10/01
32. Replacement of Route 1 tide gates including the installation of 3 self regulating gates		MassHighway	8/01
33. Installation of twin 42” culverts from Spring St. to Northeast Expressway 7’x4’ box culvert		\$150,000	7/01
34. Purchase of two 8” pumps for the purpose of assisting in the drainage of the Central County Ditch		\$100,000	2002
35. Point of Pines Pump Station Repair		\$50,000	2002
36. Malden Street/Gore Road Drainage Improvement		\$25,000	2003
37. Broadsound Avenue - Connect north and south ends of drainage system into Broadsound Ave. pump station		\$100,000	2003
38. Installation of 6’ culvert with self-regulating tidegate and repair of existing tide gate and culvert at the eastern county ditch at the B&M tracks		\$2 million	2004
39. New drainage system along Fenno St.			2004

40. Installation of new 36" drain along Broadway from Fenno St. to Mill Creek	\$425,000	2005
41. Installation of new manhole and pump station at Jackson St.	\$10,000	2006
42. Replacement of collapsed section of Eastern County culvert at Shawmut Street.	\$72,000	2006
43. Cleaned and televised 4,679 l.f. of drain lines on Curtis Rd., Eliot Rd., Garfield Ave., Broadsound Ave., Revere St., Union St., Spring Ave., Belgrade St., George Ave., Jones Rd., Richard St., Calumet St., Walnut St., Dunn Rd., Shawmut St., Neponset St., Fenno St., Oak Tree Lane, Highland Ave., Thornton St., and Walnut St.		2006
44. Completion of new drainage system on Morris Street.	\$68,890.00	2006
45. Completion of a new drainage system on Pearl Ave.		2007
46. Reconstruction of Sales Creek drainage culvert at Suffolk Downs	\$2 million	2007
47. Reconstruction of Revere Beach Blvd drainage from Revere St. to Carey Circle	\$3 million	2007
48. Replacement of a portion of the 95" x 67" culvert at the High School fields	\$750,000	2007
49. Point of Pines drain pump station upgrade including electrical system, generators and alarm system	\$73,000	2007
50. Storm drain and outfall mapping efforts on GIS		2008
51. Replaced 262 L.F. of 36" drain between Vane St. and Reservoir Ave.	\$108,000	2008
52. Drain pump station evaluation study	\$70,000	2008
53. Lined LF of 10" drain along Gore Road easement		2008
54. Installation of 1,570 LF of twin 15" drain pipe replacing existing 12" pipe on Ellerton St. and Arcadia St.	\$648,514	2009
55. Replaced Richie Road pump station		2010

V. SANITARY SEWAGE COLLECTION SYSTEM

The sanitary sewer collection system consists of about 80 miles of separated sanitary sewer with the majority of the system constructed of vitrified clay pipe with brick manholes. Pipe sizes range from 6" to 30" in diameter with some larger oval shaped trunk sewers. About 75% of these pipes are 8" diameter lateral sewers. Stormwater enters a separate drainage system, which was designed to keep stormwater and sanitary sewage apart.

The earliest sanitary sewers in Revere were constructed in 1892. About 67% of the existing system was constructed prior to 1940. Additions to the system have been constructed at intervals since then with the existing system now serving virtually the entire population of the City. In general, however, that portion constructed prior to 1940 having cement-mortared joints maybe the largest source of groundwater infiltration.

The City of Revere is one of 43 communities in the Greater Boston Metropolitan Area included in the sanitary sewage collection system service area of the Massachusetts Water Resources Authority (MWRA). The majority of the sewage from the municipal system flows through a 36" x 48" brick arched sewer to the MWRA twin 36" siphon near Slades Mill. The brick arched sewer high-end portion is referred to as the Harris Street Tunnel and the entire line is the main interceptor sewer in the City. The low-lying area along Revere Beach Parkway from Vinal Street westerly across Broadway to Olive Street discharges through a separate 8" connection at the siphon. A 10" connection at the MWRA system on Washington Avenue near the Chelsea line serves a portion of the southwest corner of the City. Trunk sewers extend from the brick sewer to various sections of the City. Sanitary sewage pumping stations on Salem Street, Linehurst Road, Marshall Street, Sherman Street, Goldie Street, Bruno Street, Griswald Street, Marshview Terrace, Milano Avenue, Atwood Street, Lynnway and at the Garfield School service areas that could not be connected by gravity sewers. Some streets still have homes with septic disposal systems. Washburn Avenue north of Winthrop Avenue, Revere Beach Parkway from Olive Street to Borden Street, and parts of Spring and Jordan Streets are among the areas without municipal sewage collection.

All of Revere wastewater flow is discharged into the MWRA trunk sewers for conveyance to their treatment facility on Deer Island. The MWRA has recently installed permanent flow meters in these truck sewers to monitor sewer flows received from the City. Sewer user rates paid to the City are based on measured flows.

In view of the preceding, the City has undertaken a Sewer System Evaluation Study and Inflow/Infiltration Analysis which was completed in the winter of 1995 by the engineering firm of Hayden/Wegman to identify the scope and nature of the I/I problem with the ultimate objective of establishing a plan which will economically justify the removal of excessive I/I and thereby avoid an unnecessarily high MWRA sewer assessment, and reduce system operating costs and operational problems. Those sources of excessive infiltration/inflow recommended in the final SSES report for rehabilitation are incorporated in this capital improvement and infrastructure program.

A previous Sewer System Evaluation Study was prepared by Hayden/Wegman in 1980 with the help of an EPA grant. The 1980 SSES report recommendations included testing and sealing approximately 32,000 feet of sanitary sewer, sealing 90 sanitary sewer manholes and replacing about 3,000 feet of damage pipe at numerous locations. Other recommendations included rerouting or eliminating an estimated 91 direct inflow connections to the sanitary sewer.

Based on the recommendations of the 1980 SSES report, contract documents were prepared by Hayden/Wegman for sewer rehabilitation. These contract documents were entitled "Sewer System Rehabilitation Program, August 1984: and publicly bid as a municipal contract.

Construction for the rehabilitation continued to November 1985. In 1987 a limited amount of flow isolation work and manhole inspections were conducted to verify I/I reductions as a result of the rehabilitation work. This survey concluded that an estimated 2,720,000 gallons per day of peak I/I had been eliminated from the sewer system as a result of the rehabilitation work undertaken in 1984 and 1985.

In addition to the sewer rehabilitation work undertaken in 1984, a 24" relief sewer was constructed from VFW Parkway to North Shore Road and was extended under the MBTA Blue Line tracks north along Ocean Avenue to Revere Street. This work which was accomplished with the help of a Community Development Action Grant in 1985 eliminated a sagging section of pipe and also eliminated many uncapped abandoned service connections from buildings that once existed along Ocean Avenue as sources of inflow. Other major sewer replacement projects which were completed along the beachfront as a result of new development within this area included: the installation of 2,000 ft. of 18" PVC sewer pipe from the Revere House north replacing 15" and 12" sections of pipe, and the installation of new 24" sewer line continuing the previous work on Ocean Avenue north along the beachfront well past Revere Street to the St. George Condominium Development.

Sewer mains in the higher elevations of the city are for the most part adequate in size and structural strength and do not require much work. Many of the low-lying areas which suffer from I/I related surcharging during wet weather will see a great improvement if the city is successful in eliminating the inflow sources that still exist in the form of sump pumps and roof leaders connected to the sewer system. House-to-house inspections should be continued as part of a code enforcement program targeted at illegal sump pump and roof leader connections. Also, a systematic maintenance program must be developed and implemented by the Department of Public Works for the cleaning of sewer lines on a regular basis, particularly in the low-lying areas of the city where sewer lines are relatively flat and vulnerable to blockage due to the build up of grease and sediment.

TABLE TWO A

SEWER IMPROVEMENTS COMPLETED

<u>LOCATION</u>	<u>SCOPE OF WORK</u>	<u>COST</u>	<u>COMPLETED</u>
1. North Shore Road	Installation of extension of sewage collection system 1240 feet north of Oak Island Street on North Shore Road.	\$140,000	9/90
2. Arcadia Street	Replacement of nine-hundred feet (900') of eight inch (8") sewer on Arcadia Street from Oak Island Street to the end of Arcadia Street	\$206,000	10/90
3. Roughan's Point	Reconstruction of sewer mains from old Surf Site through to Broadsound Avenue, Leverett Avenue, Dolphin Avenue and George Avenue.	\$850,000	11/94
4. Sewer System Evaluation Study and I/I Analysis.		\$450,000	1/95
5. Broadway at Taft Street	Replaced 250 feet of sewer main Revere Beach Parkway to Taft Street and disconnected inflow from Page Street drainage system.	\$ 38,000	11/94
6. St. Anthony's Parking Lot	Disconnected drainage system from sewer main and installed gravity drain down Abruzzi Street to marsh. Removal 367,000 gpd of inflow.	\$90,000	10/93
7. York Olds Site	Disconnected stormwater connection to sewer system in parking lot and rerouted drainage to State Highway. Removal of 550,000 gpd inflow.		6/92
8. 1064 North Shore Road	Removal of 6 ejector pumps which were connected to sewer system resulted in the removal of 250,000 gpd of inflow.		4/93

9. Atwood Street	Replaced 2" force line with 4" line and repaired lift station.	\$16,000	11/92
10. Broadway at Cooledge Street	Replaced 250' of collapsed sewer main	\$23,000	2/93
11. Bulter Street	Replaced 200' of collapsed sewer main and connected to 35" main on Harris Street.		5/95
12. Point of Pines Force Main	Replaced approximately 1800' of 8" force main with 10" along Revere Beach Boulevard from pump station to gravity line.		10/95
13. Point of Pines Pump Station	Repairs to pumps.		3/96
14. Sewer Rehabilitation including point repairs, joint sealing and grouting, replacement of manhole covers. (Park Avenue, Malden Street, Shawmut Street and Neponset Street).			
		\$500,000.	5/97
15.	Replaced 200' of 18' pipe on Winthrop Avenue from Victoria Street to Haddon Street	\$400,000	10/97
16.	Replacement /relocation 24" trunk sewer at Copeland Circle	\$535,000.	8/97
17.	Cured in place insituform lining of 910 ft. of 24" sewer line from B&M tracks to American Legion Highway	\$137,000	10/99
18.	Cured in place insituform lining of 248' of 8", 245' of 10", And 389' of 12" along Spring Ave. and Fenno St.	\$50,000	10/99
19.	Lined 2,602 ft. of 12" along Revere Beach Boulevard		6/01
20.	Lined 1,300 ft. of 15" along Atlantic Ave.		4/01
21.	Replaced 1,160 ft. of 10" with 12" on Bryant St. through marsh	\$167,000	9/01
22.	Lined 1,096 ft. of 18" and 573 ft. of 15" on Winthrop Ave. from Broadway to Haddon St.		5/01

23.	Lined 1,657 ft. of 15" along Broadway from Cooledge St to Winthrop Ave.	5/01
24.	Lined 631 ft. of 12" on Jackson St.	9/01
25.	Lined 618 ft. of 8" on Sears St.	9/01
26.	Lined 661 ft. of 8" between Ridge Rd. and Fenno St.	9/01
27.	Lined 213 ft. of 8" on Yeamans Street	10/01
28.	Lined 1,974 feet of 8" sewer within the Riverside easement from Archer to John Avenue	11/01
29.	North Revere Pump Station Repair, including replacement of two pumps	2002
30.	Point of Pines Sewer Pump Station Repair	2003
31.	Lines 294 ft. of 8" sewer on Adams St.	2002
32.	Lined 157 ft. of 8" sewer on Cushman Ave.	2002
33.	Lined 457 ft. of 8" on Thurlow Ave.	2002
34.	Lined 412 ft. of 8" sewer on Roosevelt St.	2002
35.	Lined 260 ft. of 8" sewer on Harrington Ave.	2002
36.	Lined 385 ft. of 12" sewer on Gordon Rd. to Cooledge St.	2002
37.	Lined 649 ft. of 15" sewer on Elmwood Ave.	2002
38.	Lined 410 ft. of 8" sewer on McKinley St.	2002
39.	Lined 724 ft. of 8" sewer on Washington St.	2002
40.	Lined 478 ft. of 8" sewer on Shurtleff St.	2002
41.	Lined 253 ft. of 8" sewer on Rice Ave.	2002
42.	Lined 513 ft. of 15" sewer on Cooledge St.	2002
43.	Lined 526 ft. 15 sewer on Revere Beach Blvd.	2002
44.	Lined 201 ft. of 10" sewer on Bryant St.	2002

45.	Lined 303 ft. of 12" sewer on Park Ave.	2002
46.	Lined 1,043 ft. of 10" sewer under Rt. 1A from Hichborn St	2002
47.	Lined 404 ft of 12" sewer on Ocean Ave.	2003
48.	Lined 2,051 ft. of 15" sewer on Ocean Ave.	2003
49.	Installed 1,307 ft. of 8" gravity sewer on Furlong Drive.	2003
50.	Installed 926 ft. of 4" force main and sewer pump station on Furlong Dr.	2003
51.	Cleaned and televised various sewer lines adjacent to Revere Beach along Revere Beach Blvd. in Beachmont, Shirley Ave., Malden St. and Washington Ave. area totaling 62,110 l.f.	2005/2006
52.	Installation of 490' of new 24" sewer main on Revere Beach Parkway at New Police Station Site.	2006
53.	Lined 776' of 8" sewer on Eastern Ave.	2007
54.	Lined 300' of 8" sewer on Tapley Ave.	2007
55.	Lined 233' of 10" sewer on Putnam Rd.	2007
56.	Lined 358' of 8" sewer on School St.	2007
57.	Lined 185' of 8" sewer on True St.	2006
58.	Lined 979' of 8" on Malden St.	2006
59.	Lined 811' of 8" sewer on Jones Rd.	2007
60.	Lined 199' of 8" sewer on Montfern Ave.	2007
61.	Lined 429' of 8" sewer on Pearl Ave.	2007
62.	Lined 134' of 8" sewer on Everard Ave.	2007
63.	Lined 225' of 8" sewer on Washburn Ave.	2007
64.	Lined 447' of 10" sewer on Crescent Ave.	2007
65.	Lined 350' of 12" sewer on Robert Rd.	2007
66.	Lined 329' of 8" on John Ave.	2007

67. Lined 202' of 8" sewer on Clinton Rd. 2007
68. Lined 84" of 8" sewer on Loring Rd. 2007
69. Lined 343' of 8" sewer on Mountain Ave. 2007
70. Lined 344' of 8" sewer on Agry Terrace. 2007
71. Lined 291' of 18" sewer on Eliot Rd. under MBTA 2007
72. Lined 205' of 18" sewer on Tuscano Ave. under Rte 1. 2007
73. Lined 193' of 24" sewer under Commuter Rail behind Necco 2007
74. Pipe burst 850' of 20" sewer pipe and replaced with 24" sewer between Green St. and Revere Beach Pkwy. 2007
75. Completed short sewer line repairs on Bay Rd. (37'), Clinton Rd. (30'), Leonard Rd. (10'), School St. (15'), Malden St. (81'), Winthrop Pkwy (21'), and Keayne St. (15') 2006
76. Completed short line sewer repairs on Mountain Ave.(30'), Pearl Ave. (22'), Montfern Ave. (20'), Everard Ave. (8'), Beachland Ave. (5'), Glover Dr. (5'), Bennington St. (15'), Winthrop Parkway (20'), Tuscano Ave. (5'), Tedford Ave. (5'), Malden St. (35'), Washington Ave. (10') 2007
77. Installed 2" force main and 3 ejector pumps on easterly side of Washburn Ave. to Winthrop Ave. 2007
78. Sewer mapping for GIS 2008
79. Sewer system hydraulic model completed 2008
80. Sewer pump station evaluation study 2008
81. Lined 572' of 20" sewer within sewer easement running through Capital Waste site on Route 1A 2008
82. Lined 178' of 24" sewer on Tuscano Ave. under Northeast Expressway 2008
83. Completed point repair of collapsed sewer section on Beach St. 2008
84. Cleaned and televised 5,918 LF of 8", 1,595 LF of 10", 2,349 LF of 12", 869 LF of 15", 2,222 LF of 18", and 1,255 LF of 20" sewer 2008

85. Replaced 262' of 12" sewer within easement between Vane St. and Reservoir Ave. 2008
86. Cleaned and televised 34,370 LF of 6"-8", 2,800 LF of 10"-12", 4,800 LF of 15"-18", and 4,660 LF of 21"-24" sewer. 2009

VI. WATER DISTRIBUTION SYSTEM

Every home, apartment building and commercial establishment in the City of Revere receives water from the City of Revere municipal water distribution system. The water system began delivery of water to customers over one hundred (100) years ago. Many changes have been made to the water distribution system. The system first distributed water from a cistern existing underground at the location of the old city yard on Broadway. The cistern was fed by springs running off the hills of Reservoir Avenue and Mountain Avenue. A spring in the North Revere area provided water for this area. The City of Revere built a reservoir and connected to the MDC water distribution system when demand exceeded the availability of water from springs.

The MWRA assumed control of the sewer collection and water distribution systems of the MDC in 1985 and now supplies the city with water from Quabbin Reservoir. The MWRA, as did its predecessor, chlorinates the water and until recently supplied some of the best quality drinking water in the nation without extensive treatment. Recent algae bloom problems in Wachusett Reservoir has created an odor and taste problem with the water that may require that the MWRA construct a filtration plant to correct the situation. Six (6) metered and regulated connections exist between the MWRA system and the city distribution system. The connection at Squire Road and Conant Street is not in service at the present time due to adverse pressure effects on the distribution system.

Larger water pressure mains exist on the larger streets such as Broadway, Malden Street, Beach Street, Revere Street and Winthrop Avenue. The system is mostly interconnected with itself through the distribution mains that exist within the distribution system. The systems are interconnected but valved. The so-called low system serves most of the city and is fed by four (4) of the working MWRA connections. The fifth working MWRA connection located on Prospect Avenue at Tudor Street feeds the Reservoir Avenue and Mountain Avenue hill and is called the high system. The names of the systems are not related to the pressures in each system. The pressures in the so-called high system were the worst in the city until the installation of a water pressure booster pump station on T. Carroll Way at the reservoir. The reservoir serves to regulate pressure in the low system and has no effect on the high system. At times when system demand is very high, the reservoir starts to drain down as water is used. During the evening hours when demand becomes minimal the reservoir fills back up. Pressure relief of the system is necessary; otherwise, water mains would burst at a greater frequency than they do at present.

The MWRA is responsible for setting the pressure at which drinking water flows through the regulators at Liberty Avenue and Salem Street, Revere Beach Parkway at Woods Avenue, Revere Beach Boulevard at Revere Street, Revere Boulevard at Carey Circle and Prospect Avenue at Tudor Street. The city requires that the MWRA set the regulators at a higher summer than winter reading. This is necessary due to fluctuations between winter and summer demand on the systems. Leaving the system on wintertime pressure levels during the summer would leave certain sections of the city without water. Leaving the system on summer pressure levels during the winter would cause continual breakage of distribution pipes. The wintertime setting is seventy to seventy-one pounds per

square inch (70-71 psi) and the summer time setting is seventy-four to seventy-five pounds per square inch (74-75 psi).

Improvement to the water distribution system over the last fifteen (15) years include cleaning and lining of several sections of water main, installation of new water main on Ocean Avenue, Ellerton Street, Liberty Avenue, Breedens Lane, T. Carroll Way, Neponset Street, Pitcairn Street, Bennington Street, Winthrop Avenue, Griffin Street and the interconnection of several dead end water mains.

The system is constructed primarily of cement lined cast-iron and ductile-iron pipe with copper service connections installed in the last fifty (50) years. Pipelines older than fifty (50) years for the most part are unlined cast iron pipes with lead service connections. A significant part of the lack of pressure problems on a given street are due to the reduction of available cross-sectional flow area in a pipe due to tuberculation. Tuberculation is the formation of primarily iron oxide along the interior walls of the cast iron pipes. A portion of the pressure problem is due to the inability of certain pipeline sections to withstand higher pressures without bursting, thus restricting pressure levels in the system as a whole.

RECOMMENDATIONS

Somerville Engineering performed a study of the water distribution system during 1975 which was the basis for some of the improvements that have been completed in the last several years. The study was not a hydraulic capacity study of the water system but was based on information provided by City of Revere Engineering and Department of Public Works personnel of their working knowledge of the system and consumer generated complaints. In order to plan for future growth in the City of Revere a hydraulic capacity analysis of the system is warranted. It is only with the complete understanding of the current operating condition of the water distribution system that improvements can be planned that benefit both existing residents and development needs. A mapping of the system and flow isolation measurements are recommended. Some improvements to the system are needed immediately and are proposed to be funded under the Capital Improvement Program (CIP). The 1985 planning study by Coffin & Richardson of the water system in the areas of development along Revere Beach and the 1994 Water Distribution System Study by CDM for the Shirley Avenue Area contains some recommendations for rehabilitative work which are contained within the proposed improvements.

Lead service connections as they become corroded and develop leaks are being replaced by DPW water crews on as needed basis. A programmed approach to elimination of all lead services is necessary. In addition to the leaking services being replaced, lead services existing on streets where mains are being replaced are also to be replaced with copper.

TABLE THREE A

WATER IMPROVEMENTS COMPLETED

<u>LOCATION</u>	<u>SCOPE OF WORK</u>	<u>COST</u>	<u>COMPLETED</u>
1. South Cambridge	Replaced approximately one thousand feet (1000') ten inch (10") on Reservoir Avenue from T. Carroll Way to South Cambridge Street, and down to South Cambridge Street to Park Avenue.	\$175,000.	6/90
2. Shirley Avenue	Replaced twelve inch (12") water line under MBTA bridge over Blue Line at Shirley Avenue.	\$10,000.	5/90
3. Francis Street	Replaced seven hundred feet (700') of six-inch (6") water main with eight inch (8") from Franklin Avenue to dead end.	\$90,000.	9/87
4. Payson Street	Replaced one thousand feet (1000') feet six inch (6") water main with eight inch (8") on Payson Street from East Mountain Avenue to Beach Street.	\$150,000.	6/90
5. Beach Street	Cleaned and lined 7000 linear feet 10" and 12" water main along Beach Street.	\$282,000.	12/90
6. George Ave. Dolphin Ave. Leverett Avenue Henry Street Jones Road	Replaced 6" watermain with 8" watermain	\$500,000	11/95
7. Broadsound Ave.	Replaced 1,990 feet of 6" watermain with 8"	\$225,000	11/96

8. Cleaned and lined 7,000' of 10" and 8" pipe along Lynnway, Rice, and Alden Avenue and looped dead ends along Mills Avenue	\$568,000.	10/98
9. New high pressure service system for Shirley Avenue area. Installation of PRV Stations at Woods Avenue and Hichborn Street and new check valve station at Shirley/Centennial. Installed new 12" line along Revere Beach Parkway from Woods Avenue to North Shore Road. Installed new 12" line along North Shore Road from Parkway to Shirley Avenue. Installed new 8" line on Summit Street Installed new 8" line on Avalon and lower Dix Street	\$1.1 million	10/98
10. Water System Distribution Study – City Wide conducted by Tata & Howard	\$50,000.	6/98
11. Replacement of approximately 500' of deteriorated 8" line on Fenno Street with new 8" line.	\$66,000	2002
12. Installation of two Pressure Reduction Valve stations at Woods Avenue	\$200,000	2003
13. Installed 660 l.f. of 8" water main along Cooper Terrace to create a water system loop between North Marshall St. and Salem Street.	\$103,000	2005
14. As part of the \$1 million MWRA Pipeline Assistance Program the following water main improvements were Undertaken in 2005: Installed 836 l.f. of 16" water main Along Revere Beach parkway; Installed 600 l.f. of 8" Water main along Avalon St.; Installed 360 l.f. of 8" Water main along Blake St.; Installed 1,300 l.f. of 8" Water Main along Yeamans St.; Installed 1,750 l.f. of 10" Water main along Keyne St.; Installed 1,294 l.f. of 8" Water main along Cummings Ave.; Installed 680 l.f. of 8" Water main along Crest Ave.	\$1 million	2005
15. Installed 1,844 l.f. of 10" and 186 l.f. of 8" CLDI pipe on Park Ave. from Cambridge St. to Broadway.		2007
16. Installed 250 l.f. of 8" CLDI pipe on Barrett St.		2007
17. Installed 130 l.f. of 8" CLDI pipe on Eliot Road		2007

18. Installed 290 l.f. of 8" CLDI pipe on Pomona St. from Revere St. to High School.		2007
19. Installed 1,100 LF of 6" PVC C-900 pipe on Arcadia St. and 200 LF of 6" PVC pipe on York St.	\$133,000	2009
20. Installed 1,900 LF of 10" PVC C-900 pipe along Rice Ave. from Lynnway to Witherbee Ave.	\$194,715	2009

VII. ROADWAYS

Revere has a total of approximately one-hundred seventeen miles (117) of public and private roadways within its boundaries. Revere's roadway system is classified within three (3) categories: 1) local streets; 2) collector streets; and 3) arterial streets.

Local streets provide direct access to residential properties and are designed to service the traffic needs within a particular neighborhood. Local streets comprise a majority of Revere's roadway network and are often subject to greater levels of through traffic than originally designed. The city's collector streets primarily serve to drain traffic off of local streets and lead such traffic to arterial roadways. As local and collector streets serve a diversity of needs within Revere's roadway system, these streets constitute a majority of the improvements planned within the City's Capital Improvement Program.

TABLE FOUR A

STREET/SIDEWALK PROJECTS COMPLETED

The following additional roadways were repaved as a part of the City of Revere's Capital Improvement Program.

1988

Salem Street
Burbank Street
Cooledge Street

1989

John Mooney Road & Eustis Street
Burbank Street
Bellingham Avenue
Crest Avenue
Crescent Avenue
Proctor Avenue
Ensign Street
Oak Island Rd.
Bridge Street
Oak Island Street
Goldie Street
Trifone Road
Keayne Street
Sigourney Street
Sullivan Street
Hauman Street
Raymond Road
So. Cambridge Street
So. Furness Street
Hyde Street
Payson Street
Temple Street
Cleveland Street
Washington Street
Mc Kinley Street
Bosson Street
Roosevelt Street
Florence Street
Francis Street
True Street

Jones Road
Charger Street
Sprague Street Parking Lot
City Hall Parking Lot
Hawes Street
South Avenue
Loomis Street
Italia Avenue
Tudor Street
Vivian Street
Johnny Road
Caruso Street
Agry Terrace
Waterview Avenue
Cheever Street
Harrington Street
Gladys Street
Flint Street
Woodland Road
Alice Street
Glendale Street
Augustus Street

1990

Kingman Avenue
Cary Avenue
Eliot Road
Standish Road
Clark Road
Curtis Road

Arlington Avenue

Intervale Street
Vera Street
Sagamore Street
Shawmut Street
Agawam Street
Prospect Avenue and
Suffolk 300'
Bay Road

1991 and 1992

Beach Street
Belle Isle Avenue
Milano Avenue
Rossetti Street
Pitcairn Street
Franklin Street
Avalon Street
Centennial Avenue
(North Shore Road to Orr Square)
Dunn Road
Mountain Avenue
(Broadway to School Street)

Endicott Avenue
Freeman Street
Garfield Avenue
Hillside Avenue
Mc Clure Street
Neponset Street
Randall Road
Robert Road
Roland Road
Walden Street
Wentworth Road

1993 and 1994

Rumney Road
Everett Street
Asti Avenue
Lantern Road
Carlson Avenue
Sargent Street
Beach Road

Washington Avenue
(from Park to Dale St.)
Reservoir Avenue
Prospect Avenue
Crescent Avenue
Vinal Street
High Street

1995

Washington Ave. (Sargeant St. to Malden St.)
Abruzzi Street
Grover Street (crack sealing)
Hutchinson Street
Emmanuel Street
Union Street
S. Irving Street
Pearl Avenue
Woods Avenue
Charles Avenue
Overlook Avenue
Albert Avenue
Park Avenue (crack sealing)
Winthrop Avenue (crack sealing)

Naples Rd.
Fiske Street
Belgrade Street
George Avenue
Henry Street
Dolphin Avenue
Leverett Avenue
Waterview Avenue
Penn Street
Revere Street (crack sealing)
Adams Street (crack sealing)

1996

Burnham Street
Case Drive
Cecilian Avenue (dead end)
Charger Street
Frye Street
Highland Street – sidewalks
Gage Avenue
Griffin Street
Joseph Road
Kimball Avenue – sidewalks
Campbell Avenue – sidewalks
Lee Street
Lowell Street
Paul Revere School Traffic Signals

Moretti Street
Cushing Avenue
Haith Street
Oakwood Avenue
Richie Road
Savage Street
Sherman Street
Sumner Street - sidewalks
Thornton Street – sidewalks
Venditto Road
Walnut Place – sidewalks
Walnut Avenue – sidewalks
Washington Ave (Park to Sargeant)

1997

Ambrose Street
Lee Street
Elmwood Ave.
East Mountain Ave.
Reservoir Ave. (dead end)
Bellingham Ave. (south end sidewalks)
Ferragamo Way

Joey Road
Ann Road
Amasa Street
Festa Road
Nell Road
Campbell Ave. sidewalks
Cove Street sidewalks

North Ave. (lower end)
Tapley Ave. (end)

Broadsound Ave.
Shirley Ave./Walnut St. traffic signal

1998

Lucia Ave.
Vane Street
Warren Street
Yeamans Street

1999

Ward Street
Lechmere Street
McCoba Street
Taft Street sidewalks

2000

Thurlow Ave. sidewalks
Cambridge Street
South Genessee Street
Allston Street sidewalks
Lawrence Road
Leanord Road
Sears Street

Wadsworth Ave. sidewalks
Witherbee Ave. sidewalks
Bateman Ave. sidewalks
Fowler Ave. sidewalks

2001

Whiten Ave. sidewalks
Rice Ave sidewalks
Lancaster Ave. sidewalks
Bickford Ave. sidewalks
Alden Ave. sidewalks
Delano Ave. sidewalks
Chamberlain Ave. sidewalks
Goodwin Ave. sidewalks
Harrington Ave. sidewalks
North Shore Rd. (from Revere St. to Pt. of Pines)

Winthrop Ave.
Everard Ave.
Lowe Street Place
Norman Street
Bryant Street
Waite Street (from Floyd St. to end)
Blake Street
Broadway closed loop traffic signals

Streets and sidewalks completed in 2002:

1. James Street
2. Burbank Street (between Proctor Avenue and Mountain Avenue)
3. Tudor Street (between Prospect and Suffolk)
4. Eastern Avenue
5. Signore Terrace
6. Marshall Street
7. Stevens Street
8. Pemberton Street
9. Derby Road

Streets and Sidewalks Completed in 2003:

1. Florence Avenue Sidewalks (western side Centennial to James)
2. Revere Beach Boulevard Rear
3. Waitt Court
4. Waitt Park
5. Fenwick Street
6. Stone Street
7. Lamson Street
8. Orvis Road
9. Gore Road
10. Lantern Road
11. Steeple Street
12. Newman Street
13. Conant Street (Malden to Squire Rd)
14. Larkin Street
15. Patriot Parkway
16. Putnam Road
17. Maggi Road
18. Camille Road
19. Assunta Road
20. Tedford Avenue
21. Glover Drive
22. Burnett Road
23. Stark Avenue

Streets and Sidewalks completed in 2004

1. Fenno St. roadway and sidewalks
2. Bradstreet Ave. sidewalks and roadway
3. Cross St. sidewalks
4. Sales St. sidewalks
5. Haddon St. roadway and sidewalks
6. Victoria St. roadway and sidewalks
7. Library St. roadway and sidewalks
8. Sewall St. roadway and sidewalks

9. Butler St roadway and sidewalks
10. Bixby St. roadway and sidewalks
11. Elm St. roadway and sidewalks
12. Harris St. roadway and sidewalks
13. Mill St. Place roadway and sidewalks

Streets and sidewalks completed in 2005

Arnold St. roadway and sidewalks
Foster St. roadway and sidewalks
Grand & Emmett roadway and sidewalks
Dehon St. roadway and sidewalks
Proctor Ave. (between Amasa and Vivien) roadway and sidewalks
Shirley Avenue roadway and sidewalks
Hichborn St. roadway (mill and binder)
Malden St. (between Pemberton and Newhall) roadway
Beverly St. roadway
Loring and Clinton roadway
Sagamore Street (sections on upper and lower end)
Greentree Lane

Streets and sidewalks completed in 2006

Suffolk Avenue
Ridge Road
Homer Street
South Hancock Street
Beverly Street (Roadway Only)
Grandview Avenue
Mills Avenue (Thayer to John Only)(Roadway Only)
Bates Street
Douglas Street
Elmwood Street
Railroad Avenue
Neponset (Sagamore to North Shore Road)
Proctor Avenue (Vivien to Adams Street)

Streets and Sidewalks completed in 2007

Bellevue Avenue
Shurtleff Street
Stowers Street
Tuttle Street
Carlton Street
Pomona Street
Lambert Street

Kilburn Street
Jarvis Street
Irving Street
Proctor Avenue (Broadway to Adams Street)
Morris Street
Agatha Street
Breedens Lane

Streets and Sidewalks completed in 2008

Linehurst Street
Brookline Street
View Street
Salem Street
Keayne Street
Newhall Street
Malden Street (Broadway to Hall's Corner)
Seaview Avenue
Gordon Street
Sigourney Street
North Street
Vinal Street (Broadway to Mill Street)
Borden Street
Fernwood Place
Fernwood Ave. (Broadway to Fernwood Place)
Florence Avenue (sidewalks only)
Mountain Ave.(from Broadway to Adams St.)
Cottage St. (sidewalks only)
Beachmont School (front entrance sidewalks)
Park Ave.
Central Ave.

Streets and Sidewalks completed in 2009:

Dale Street
Fenley Street
Haskell Ave.
Oxford Park
Campbell Ave.
Central Ave. trees
Madison Ave.
Newbury Street
Oxford Street
Howard Street
Rand Street
Revere Street sidewalks (from Broadway to American Legion Hwy)
Centennial Ave. (mill and binder)
Fairfield Ave. (mill and binder)

VIII. PUBLIC FACILITIES

This section will focus on public facility improvements encompassing all public buildings and will include expansion of existing government buildings, construction of new facilities, improvements to the physical plant of existing buildings and handicap accessibility requirements.

Police Station

The City completed construction of a new 32,000 s.f. public safety facility on Revere Beach Parkway. The total cost was \$20.2 million. Construction was completed in early 2008, and the Police Dept. occupied their portion of the new facility in June of 2008.

Fire Stations

The City completed construction of two new fire facilities in 2008. The first was a new three bay facility on Revere Beach Parkway, part of the \$20.2 million public safety complex described above. The second was the new one bay fire facility within the Overlook Ridge development in North Revere. That new building was opened and occupied in the Spring of 2008.

Schools

The Revere School Department has completed its needs assessment. As a result of that assessment, the City has embarked on a historic school building program that involves construction of five new school buildings: a New Elementary and Middle School on the Whelan site; a New Middle School, the Rumney Marsh Academy, on the Revere High School site; a New Paul Revere School and a New McKinley School. The New Whelan School opened in August of 2006. The Rumney Marsh Academy opened in August of 2008. The New Paul Revere School commenced construction this Winter, and will open for students in August of 2010.

The City also replaced the Revere High School roof, a project completed in 2003.

As part of a new Energy Management Contract between the School Department and Ameresco, the City will implement over \$10 million in new energy efficient construction within the School System, including a new Beachmont School solar panel roof and new HVAC system for the Lincoln School.

Library

The existing Public Library located on Beach Street was built in 1903 with a grant from Andrew Carnegie. No substantial renovation has been undertaken to the library since its original construction in 1903 which served a population of approximately 6,000. Now, the 43,000 resident now the residents. The greatest need for the library is the gain additional space to accommodate the service demands of the current population. It is recommended in the Library Program Report prepared by Northeast Library consultants that the existing facility must be expanded to at least 19,000 s.f. and the existing collection of 46,000 volumes should be increased to 80,000 volumes in order to meet the service demands of a population around 43,000.

In addition to space requirements, the existing library facility is in need of new mechanical systems and does not meet codes for access and egress as well as handicap accessibility. The present fire alarm system does not meet code and must be replaced.

The estimated cost for expansion and renovation of the existing library to an approximately 20,000 s.f. facility is at least \$7 million.

City Hall

Revere City Hall was made handicap accessible as a result of the installation of an elevator and handicap restrooms in 1988. In 1998, the following structural improvements were completed for City Hall; reinforcement and reconstruction of side and front stairways, repointed all sides of the building and repaired roof, water proofed entire building and reconstructed the granite block wall on the Pleasant Street side.

In 2007, the City completed a \$350,000 oil to gas conversion and upgrade of HVAC facility.

In 2008, the MIS offices were expanded into a portion of the auditorium by means of a \$250,000 office buildout.