

## **REPORT OF THE BOARD OF PUBLIC WORKS**

The Board of Public Works oversees the Department of Public Works (DPW), which consists of the following programs: Engineering, Park & Highway, Recycling and Disposal, Management Services, Water and Sewer. All of these programs are funded from general tax revenues except for the Water Program and the Sewer Program which, as enterprise funds, are funded exclusively by user's fees.

In March, 2011, William E. Charlton was reelected to a three-year term to the Board of Public Works. In June, 2011, William E. Charlton was elected as Chairman of the Board of Public Works, David A.T. Donohue will serve as Vice Chairman, and Paul L. Criswell as Secretary.

### **Engineering Division**

The Engineering Division aims to provide the Town of Wellesley with the highest level of professional engineering services. It is involved with nearly every engineering related task in the Town: preparation and review of engineering related reports and technical memoranda, preparation of detailed design plans and cost estimates, deed information and maintenance of record plans, computer-aided design and drafting, Geographic Information System (GIS) implementation and maintenance, surveying, contract administration and project representation services for construction projects, long-term planning and many other services. The Engineering Division uses state of the art technologies to perform these tasks, and to adjust to the ever-changing needs and priorities of the Department of Public Works and the Town of Wellesley. The following are highlights of the Division's work during Fiscal Year 2011.

#### **Reconstruction of Weston Road**

During FY11, Paolini Corp of Newton, MA, completed work on the reconstruction of Weston Road from Route 9 to Linden Street. The Engineering Division performed construction management and daily supervision of the project, including significant efforts responding to public safety and traffic management concerns associated with working along this major artery.

#### **DPW Operations Building**

During FY11 the DPW worked with the Permanent Building Committee (PBC) and the project architect AECOM in the design of the two-story building, which will provide adequate space for the DPW Management Services and Engineering Divisions. The Engineering Division was the lead division for the project, coordinating the various consulting specialties, engineering and architectural services, and analyzing various layouts and producing site plans for the proposed building as well as pre-construction permitting of the project, including Site Plan Approval and the Special Permit from the Zoning Board of Appeals. The Engineering Division worked closely with the PBC to gain unanimous approval at the 2011 Annual Town Meeting for construction. A special Town-wide election was held on May 18, 2011 and voters approved funding for this project.

This exciting project will complete the consolidation of the DPW facilities with the construction of an approximately 8,640 gross square foot addition and second floor

4,500 square feet interior fit-up to the recently completed Water & Sewer Building, which will provide Engineering and Administrative office space, document storage space, meeting rooms and restrooms, all complying to current accessibility requirements. The bid opening for the construction of the DPW Operations Building was held in February, 2011 and awarded to Contractors Network Inc. at a bid price of \$2,701,831. Construction is scheduled to commence in August, 2011 and the Engineering Division will oversee the work.

### **Sprague Clock Tower Preservation**

The bid opening for the Sprague Clock Tower Preservation project was held in November 2010 and awarded to Alpha Omega Construction at a bid price of \$72,525. During FY11 the contractor started on the tuck pointing work for the Clock Tower exterior masonry surfaces. The Department of Public Works worked closely with the Community Preservation Committee and Wellesley Historical Commission on this project incorporating specialty specifications that addressed the historic concerns. Funding for the project was approved at the December 6, 2010 Special Town Meeting.

The project work includes tuck pointing exterior mortar joints, replacement of cracked stone lintels and sills, replacement of a door, and rehabilitation of interior metal stairs and handrails. During FY11 work commenced and exterior masonry repairs were approximately fifty (50%) percent complete.

### **Glen Road Reconstruction-Phase III**

An important and environmentally critical portion of this project was the work along the stream bank of the Cold Stream Brook. During FY11, the Engineering Division worked closely with the Massachusetts Department of Environmental Protection (DEP) and the Wellesley Conservation Commission to complete this bank stabilization work. The effort included working within environmentally sensitive areas to complete structural bank improvements including extensive erosion control measures and alternative solutions such as the use of coconut fiber mats, wetland plants, and other stream channel clearing. The work was completed in the spring of 2011. A Certificate of Compliance was approved by DEP on May 3, 2011. Under the bylaw, the Town's Wetlands Protection Committee issued a Certificate of Compliance for the project on June 2, 2011.

### **Morses Pond Dredging Project**

The Engineering Division worked closely with an environmental consultant, Apex Companies, to pursue all required permits and produce bid documents for this important dredging project. The project involves dredging of the northern basin of Morses Pond, reducing erosion at Pine Point and nourishing the Town beach on the south side of the pond. The bids were opened on October 21, 2010. Unfortunately the bids exceeded the available budget, resulting in a "no award" recommendation by the Board of Public Works. The Engineering Division anticipates that additional funding opportunities will be pursued so that this important work can advance.

### **Storm Water Management Program**

During FY11, the Engineering Division continued its management of the Town's storm water management program and the federal permit known as NPDES in processing 25 connection permits and taking positive action on a potential

contamination issue. The NPDES permit is in its 8<sup>th</sup> year and it regulates the discharge of storm water to the waterways of the United States. Compliance with the permit has involved added activities for the Engineering Division including public education, public participation, active management and inspections, and development of site specific storm water cleaning technologies. This permit has modified many aspects of the overall DPW operation.

A revised NPDES permit, originally expected by this summer has been postponed by the EPA until FY12; however, the Engineering Division closely monitored the advancement of the permit, including participation in the public comment hearing held in March 2010. The Engineering staff worked closely with neighboring and regional interested parties to make the DPW well positioned for this anticipated increased regulation. Clearly we are excited about the goals of improving water quality and maximizing opportunities to protect our environment, but remain concerned with the costs and the long-range effectiveness of the permits goals. In this regard the Engineering Division worked diligently to assess the overall system, analyzed some of emerging technologies, and increased tracking of specific pollutant concerns. We envision our ongoing investments in the Town's GIS system and other tracking systems to be beneficial to the anticipated permit requirements.

Additionally the Engineering Division completed a variety of tasks at the RDF to assure compliance with its Multi-Sector General Permit including quarterly monitoring and analytical testing of storm water.

### **GIS Implementation-Computerized Assessors Mapping**

The Engineering Division continues to assist the GIS Department by providing as-built plans for new projects, GPS work, updating of the Town's utility infrastructure, and ongoing assistance with data development. In 2010, the Engineering Division, working with the GIS Department, began converting assessors' maps into computerized format. When the work is completed in 2012, this system will replace the hand drawn pen and ink maps that are currently utilized. The Engineering Division staff sees this work as essential for future effective management of the systems that we assist in operating.

### **VUEWorks Implementation**

During FY11, the Department of Public Works implemented an asset management program called VUEWorks. VUEWorks utilizes GIS and databases to spatially show and manage the Town's assets. The Engineering Division is creating work orders and service calls in VUEWorks to help manage and maintain project information and utility infrastructure. The Engineering Division continues to work with the Management Division to develop and implement a facilities module for the building inspection maintenance program. This system will increase the ability for all divisions and potential all town components to work more effectively and will greatly improve our ability to efficiently monitor public assets and resource allocation.

### **HVAC Study for DPW Highway Building**

During FY11, the DPW staff worked with the Permanent Building Committee (PBC) and Weston and Sampson Engineers for the heating, ventilating, and air conditioning (HVAC) study for the DPW Highway Building. There are a number of problems with the existing DPW Highway Building HVAC systems including air quality, heat loss, and air temperature controls.

The Engineering staff assisted in taking inventory and evaluating the existing facility and the development of recommendations for the HVAC system modifications including prioritized planning with cost estimates for various elements. The final design and permitting for the DPW Highway Building HVAC Systems Project is scheduled in FY13 and construction is scheduled in FY14.

**RDF Transfer Station Building Concrete Slab**

During FY11, the Engineering Division was responsible for the project management for the construction of a concrete slab in the new Recycling and Disposal Facility Transfer Station Building. The Engineering Division coordinated permitting of the project, which included submission of a permit application for the project to Mass DEP Solid Waste Division.

The bid opening for the construction of the RDF Transfer Station Building concrete slab was held in February 2010 and awarded to A. Vozzella & Sons at a bid price of \$52,400. The existing bituminous concrete surface in the transfer station building which was in poor condition and was removed and replaced with a reinforced concrete slab. Construction was completed on schedule and within budget in November 2010.

**RDF Transfer Station Building Fire Sprinkler System**

During FY11, the Engineering Division was responsible for the project management for the replacement of the fire sprinkler system in the old Recycling and Disposal Facility Transfer Station Building.

Bids were opened in the spring of 2010 and a contract awarded to Cogswell Sprinkler Company, Inc. in the amount of \$29,300. The existing overhead sprinkler system in the old Transfer Station Building was in poor condition and was removed and replaced. The construction work was completed during the summer of 2010.

**Utility Permit Program**

The Engineering Division manages the Town's Street Occupancy and Trench Permit Program. This program regulates all utility and excavation work within the public way in accordance with the Rules and Specifications Regulating Street Excavations, Obstructions and Driveway Aprons, promulgated by the Board of Public Works. The comparative program statistics for FY09, FY10 and FY11 are:

	<b><u>FY09</u></b>	<b><u>FY10</u></b>	<b><u>FY11</u></b>
Number of permits issued:	943	861	<b>808</b>
Number of permits completed as of June 30 <sup>th</sup>	337	497	<b>486</b>
Number of outstanding permits	606	363	<b>322</b>

The majority of outstanding permits are typically gas, telephone or water line repairs that have not yet been permanently patched. The number of outstanding permits at year's end also includes those streets that require cold planing, followed by an overlay of the pavement surface and those permits where the contractor is required to delay the final patch for a period of 60 days to account for settlement of the excavation.

## Highway Division

The Highway Division is responsible for the maintenance and repair of all Town roads, street signs, sidewalks, and all surface and subsurface drainage systems. Maintenance includes the cleaning of streets, drains, catch basins, brooks, and culverts. The resurfacing program maintains the structure of streets through trench and pothole repair, crack sealing, chipsealing, resurfacing and reconstruction. During the winter, roads and sidewalks are kept safe for travel through the winter maintenance program, which includes surface treatment, plowing and snow removal. The Sign Shop maintains all of the traffic control signs, street signs, street line painting and parking meters. This includes replacement of worn, damaged or missing signs and meters and the installation of new signs and meters. The Highway Division also provides a wide range of construction and maintenance services to all Town departments in both emergency and non-emergency situations.

### **Winter of 2010-2011**

The winter of 2010-2011 was very snowy and colder than normal. December was warmer than normal but brought us two significant snow storms. January was extremely cold and broke many records for amounts of snow throughout the state. The accumulation of snow and lack of melting led to extensive snow banks on all streets. While February brought average temperatures, the snow fall was slightly above average and offered no relief from the accumulated snow. In order to maintain safe street widths, visibility and provide additional snow storage, widening of the streets with large snowblowers was required in many neighborhoods during January and February. March snow was minimal and the temperatures normal leading to the eventual melting of the accumulated snow.

The total snow accumulation measured at the Highway Division facility for the winter of 2010-2011 was 81.3 inches. The DPW responded to a total of 21 events. Ten of the 21 events required the attention of snowplowing crews. The remainder of the storms was treated with a combination of sand, salt and liquid calcium chloride. Responding to storms resulted in the use of approximately 238 tons of sand, 3,035 tons of salt, 9,700 gallons of liquid calcium chloride and 5,600 pounds of calcium chloride pellets. Due to the extreme accumulations of snow, removal was required twice this year in selected business areas. Throughout the winter months, hand crews were used to clear passages in the snow banks for pedestrians in the commercial areas or high use areas of Town.

### **Monthly Snow Accumulation Winter 2010-2011**

December	17.4"	February	18.75"
January	41.4"	March	3.75"

### **Fiscal Year 2011 Street Resurfacing**

The resurfacing capital program for Fiscal Year 2011 was completed after review of Fiscal Year 2010's season surveys and analysis to provide the best value with the available funding. The program encompassed several different treatment options: simple overlay, grind and overlay, stress absorbing membrane interlayer (SAMI) and asphalt rubber surface treatment. A total of 33 streets were identified for treatment this year, totaling 9.3 miles of roadway.

The following seven streets were treated with a conventional pavement overlay: Dewing Path, Lowell Road, Sturbridge Road, Sudbury Road, Tanglewood Road, Woodridge Road, and Woodway Road. Four roadways were identified for cold planning and overlay. These roads were: Amherst Road, Chestnut Street, Lanark Road and Marvin Road. A total of three streets received a SAMI treatment in which the street was cold planed, then received an asphalt rubber surface treatment and then was finally conventionally paved. These roadways were: Cameron Street, Cottage Street and Oak Street. There were 17 streets that received an asphalt rubber surface treatment. They were Bucknell Road, Charles River Court, Dukes Road, Edmunds Road, Essex Road, Inverness Road, Lincoln Road, Lincoln Circle, Livingston Road, Middlesex Street, Nantucket Road, Northgate Road, Royalston Road, Solon Street, Surrey Lane, White Oak Road, and Windsor Road.

Additionally, the Town used cracksealing to further prolong the wear surface of our streets. This work was completed by contractors under direct supervision of the Highway Division. There were 44 streets treated with rubberized filler in order to prevent future cracking and potholes.

With funding from National Grid, Cedar Street was resurfaced also. The SAMI treatment was used on this roadway.

### **Stormwater Drainage Projects**

Several drainage projects were completed during the year to address storm water issues:

- Franklin Road – Two new catch basins and a cross drain were constructed in the low area of Franklin Road near the driveway of #104 Forest Street in order to alleviate an issue with the street flooding in this area.
- Hunnewell Street – The existing storm drain line was replaced with a larger 12" pipe, and the catch basin in the low area adjacent to 81 Hunnewell Street was retro-fitted with a larger grate and back inlet for improved performance.
- Walnut Street near Fairbanks Avenue - Highway personnel upgraded the drainage system in the area of Fairbanks Avenue in order to address an ongoing flooding issue at the intersection. A total of four new catch basins were installed, two of which doubled capacity to take storm water. A total of approximately 260 feet of new 12" HDPE pipe was installed. Approximately 200 feet of new bituminous concrete berm was installed also.
- Wareland Road - Work began on drainage improvements from the Route 9 Access Road to #27 Wareland Road in order to capture surface run-off which creates icing conditions in winter. The Highway Division installed approximately 520' of new 12" HDPE pipe, two new double catch basins, and a precast concrete vault in an area with history of groundwater surfacing onto the roadway. This project was the first step in roadway improvements for Wareland Road. The street will be resurfaced in Fiscal Year 2012. This will include the grinding of the roadway to establish a better profile which should help keep storm water in the gutter line and reduce the icing situation.

### Other FY11 Highway Activities

- The Highway Building façade was pressure washed and sealed to prevent aging against exposure and prolong the surface. This was completed by Highway personnel.
- As required by the Department of Environmental Protection (DEP), the street sweeping materials and catch basin cleaning materials stored in the DPW yard were properly disposed of at a lined landfill.
- Highway personnel assisted the Recycling and Disposal Facility (RDF) in the removal of the debris associated with the reconstruction of the floor in the transfer building. This required the removal of the existing asphalt surface and the sub-grade materials. Highway staff completed this work and then performed the preparation work for a new concrete slab floor installation by the private contractor. The preparation involved the installation of 1.5" stone to grade and compaction.
- Highway also supported the RDF and Engineering Divisions in removing approximately 6,600 yards of material in association with the mitigation of the DEP Wetlands encroachment settlement.

Comparative Statistics	FY10	FY11
<b>Street Resurfacing &amp; Cracksealing (public ways)</b>		
Hot Mix Asphalt (HMA) Overlay	0.0 mi	2.1 mi
Roadway cold planed & HMA Overlay	0.0 mi	0.9 mi
Stress absorbing membrane interlayer treatment (SAMI)	0.0 mi	1.8 mi
Asphalt rubber surface treatment	0.0 mi	4.5 mi
Streets cracksealed	0.0 mi	14.3 mi
<b>Curbing</b>		
Granite curbing	-- lf	0.0 lf
Bituminous concrete curbing	836 lf	425 lf
<b>Sidewalks</b>		
Sidewalks resurfaced	675 lf	1,969 lf
New sidewalk construction	--	--
Sidewalks reconstructed	74 lf	0.0 lf
<b>Guardrail fencing</b>		
Highway steel guardrail fencing installed	--	405 lf
<b>Winter Maintenance</b>		
Winter weather events requiring DPW response	18	21
Total snowfall, inches	32.6	81.3
Salt used for ice control on roads and walks, tons	2,202	3,035
Calcium chloride (liquid) for ice control on roads, gallons	5,775	9,700
Sand used for ice control on roads and walks, tons	31	238
Calcium chloride (pellets) for ice control in School Lots*, pounds		5,600
Sidewalks plowed each storm, miles	49	50

### Highway Maintenance Inventory

Streets, miles	110	110
Sidewalk, miles	118	118
Curbing, miles	78	78
Fencing, miles	6	6
Culverts, miles	75	75
Brooks & streams, miles	15	15
Catch basins, each	3,657	3,657

\*Note: Added to the snow responsibilities was the treatment of the newly constructed temporary high school parking lots which were constructed with porous pavement in wetland areas. This restricted the use of salt or sand on these lots which is the typical treatment. To accommodate these parking lots, a truck was setup to distribute ONLY calcium chloride pellets.

### Park Division

The Park Division is responsible for the year-round maintenance of the Town's parks, athletic fields, outdoor recreation facilities, conservation lands and public shade trees. Listed below is a breakdown of the town properties routinely maintained by the Park Division.

- The grounds of Wellesley's branch Libraries, Town Hall and Police Station
- The Recreation Department's Moses Pond Beach Facility
- Nine Playgrounds of Wellesley's Public Schools
- Thirteen Playing Field sites totaling 47 acres of the Natural Resource Commission and School Department properties
- Four Tennis Courts (Hunnewell, Sprague, Schofield, Kelley) totaling 17 courts
- Six Conservation Reservations and the Wellesley Town Forest
- Ten Municipal Parking Lots of the Board of Selectmen
- Eighteen Parks and five Playgrounds of the Natural Resources Commission
- Sixty-eight Traffic Islands
- Three Linear Parks (Caroline Path, Cochituate Path and Fuller Brook)
- Eight Ponds including annual mechanical and manual harvesting of invasive weeds at Longfellow, Rockridge and Moses Ponds
- Public shade trees totaling 3,150 and vegetation management along town roadways

During Fiscal Year 2011, the Park & Tree division also completed the following tasks and capital improvement projects:

- **Hunnewell Field Capital:** In July of 2010 installed new drywell and walkway to improve drainage at the spectator's gate of the football field. Then in November renovated the center portion of the football field by installing 20,000 sq. ft. of new sod.
- **Elementary School Capital:** Renovated the Brown Playground little league field and installed 10 sq. ft. of new sod and seeded the remaining field in

August of 2010. At Hardy School and Brown Playground new drinking fountains were installed.

- **Playground Capital:** During the summer and fall of 2010 all the Town's nine school playgrounds and six parkland playgrounds had safety fiber added and were renovated, as needed, to meet required ADA and safety standards.
- **Sprague Field Capital:** Supplemented field maintenance with increased aeration to reduce soil compaction and contracted out additional liquid organic fertilizer to reduce turf stress on the Town's busiest athletic facility during the fiscal year.
- **Tree Planting:** During the fall of 2010 and spring of 2011 planted and maintained 153 new public shade trees town-wide with funding provided by the Natural Resources Commission and other various capital project funds and donations.
- **The American Disabilities Act (ADA) Capital:** A new asphalt walkway apron at the Colburn Road entrance of Brown Playground and a five foot wide 300 ft. long stone dust path leading to the playground were installed in the fall of 2010.
- **Traffic Island Capital:** Conducted extensive pruning, thinning and removal of dead trees and shrubs along the Great Plain Avenue traffic islands in the fall of 2010 and spring of 2011.
- **Winter Moth Spraying Program:** In the spring of 2011, personnel successfully sprayed over 800 public shade trees to control damage from invasive Winter Moth caterpillars. Also, in cooperation with the Natural Resources Commission, provided public information to town residents on how they can best protect their private trees against this destructive pest.
- **Mosquito Control:** In response to the West Nile Virus, assisted the Middlesex Mosquito Control program and the Wellesley Heath Department with treating over 3,100 catch basins with larvicide to help reduce the mosquito population in the town during the summer of 2010.
- **Aquatic Weed Harvesting:** In July of 2010 continued annual mechanical weed harvesting of invasive aquatic plants at Longfellow and Rockridge Ponds. Then during the months of August and September, 2010 and June, 2011 the Park Division continued the annual mechanical weed harvesting of invasive aquatic plants at Morses Pond while providing support to the Phosphorus Activation System during April, May and June of 2011.
- **Waban Street Parking Lot:** With funding from the Board of Selectmen installed 160 ft. of new fencing along with a new tree and shrubs.
- **Site Amenities for Wellesley Ponds:** With funding from the Natural Resources Commission, installed five new benches and a picnic table at Longfellow Pond, two new benches at Reeds Pond and a new picnic table at

Rockridge Pond. Included in this project was the planting of 24 new shrubs around the Town Hall Duck Pond.

- **Wellesley Commercial Areas:** Installed nine new bike racks that can hold a total of eighteen bicycles as part of a \$1,500, Massachusetts Area Planning Council Grant, along with funding from the DPW for two additional bike racks at the Hills and Fells Libraries.
- **Town Hall Grounds:** Removed 150 feet liner feet of an obsolete five foot wide sidewalk and restored this 750 square foot area to natural grass.

### **Recycling and Disposal Facility**

The Recycling and Disposal Facility (RDF) is located at 169 Great Plain Avenue (Route 135). This 88-acre facility is open six days a week. The hours of operation are: Monday, Tuesday and Wednesday 7:00 a.m. to 12:00 p.m. Thursday and Friday, 7:00 a.m. to 3:45 p.m. and Saturday, 7:00 a.m. to 4:45 p.m. The facility is closed on Sundays except for the six Sundays in the fall during the busy leaf collection season.

The solid waste management strategy utilized by the RDF is the "3 R's" diversion method. Waste that cannot be diverted from the waste stream via **Reduction**, **Reuse**, or **Recycling** is transported to a State-approved disposal facility. All materials are processed in an environmentally, operationally and financially sound method.

#### **Recycling:**

Recycling eliminates the financial and environmental costs of land filling waste and can generate revenues that are deposited into the Town's General Fund. A major component to the success of the RDF operation is the Lindeman Baler. This is a high-density baler that produces an export quality bale, thus enabling the RDF to market to upper level worldwide markets that are typically accessible only to high volume private companies. In order to achieve the highest economic benefit for the Town, recyclable material is inspected and/or sorted on a quality control conveyor. Contaminates are removed to ensure mill acceptance at a premium grade classification. The most important aspect of our marketing strategy is to eliminate the profit making middle companies or brokers. This enhances the Town's position to capitalize on the constantly changing market conditions to maximize revenue. Another benefit of this strategy is that it allows the RDF to have more control over the operation by developing long-term relations with mill buyers.

#### **Reduction**

Source reduction is the first step in managing the Town's waste. Home-composters are available for purchase at the RDF and can significantly reduce each household's waste. Additionally, the Massachusetts' Department of Environmental Protection provided the RDF with "Junk Mail Reduction Kits", which includes information on how to remove oneself from mailing lists and a "Non-Toxic Products" brochure with a listing of environmentally friendly products that can be used at home.

## Reuse

Reuse is the next component in the Town's solid waste management strategy and the RDF has a few areas for residents to take or leave items that still have value.

The most visible and popular of these areas is the Reusables Area (Take-It-Or-Leave-It). The area was closed July 1, 2005 due to budget cuts. Friends of Recycling Inc. (FOR), a community based non-profit organization, made up of Wellesley residents dedicated to helping the Town's recycling program, organized a volunteer effort to operate and manage the area. The area has since reopened with a volunteer force of approximately 50 volunteers. The RDF staff and volunteers have successfully worked together to keep the area open.

A few years ago, a new fabric structure building was erected at the Reusables Area to protect good used items that can be reused from inclement weather. In previous years, items placed at the Reusables Area were often damaged by rain and had to be thrown away. The roof structure helps extend the useful life of the recycled items and benefits the Town while assisting in prevention of items entering the waste stream. With the total cost of solid waste disposal at approximately \$100 per ton, this amounts to real savings for Wellesley!

The Book Exchange is also a very popular area in the facility. It is not uncommon to see residents relaxing and enjoying a good book, or just browsing through the many different types of books. Surplus books that are not taken are shipped free of charge to third world countries for reuse at libraries and schools. The Town's benefit is the avoided disposal costs (estimated at \$1,000 a year) and the fact that we are doing our part in helping to improve the world's literacy rate.

The Earth Products Area gives residents an opportunity to take screened compost back home. Brush is ground into woodchips and leaves and grass clippings are put into windrows and eventually screened and are sold as a finished product. This compost is available by the shovel full to Wellesley residents at no charge, or larger quantities are available for purchase for residents and local businesses.

## Recycling Revenue and Cost Avoidance

The following is compilation of all relative recycling statistics:

Product Sales Revenue:	\$ 540,370
Compost Sales:	16,015
Appliance Fees:	17,816
Commercial Yard Waste Fees*	40,411
Commercial Recycling Fees**	2,675
Recycling Container Sales:	<u>1,088</u>
<b>Sub Total:</b>	<b>617,312</b>
Cost Avoidance Benefits***	896,648
<b>Total Recycling Benefit:</b>	<b>\$1,513,960</b>

\*Fees collected from commercial customers for the disposal of leaves, grass, clippings, brush and woodchips that ultimately decompose is moved off site as compost.

\*\*Includes fees collected from commercial customers for RDF labor reimbursement to separate out commercial wood from the waste stream.

\*\*\*Avoided landfill disposal costs by diverting material out of the waste stream.

### **Municipal Solid Waste**

In FY11, a total of 8,319 tons of municipal solid waste (MSW) was processed and hauled off-site to a disposal facility in Seneca Falls, New York. The DPW currently contracts with Seneca Meadows, Incorporated for the disposal of solid waste.

The Department of Environmental Protection has included Commercial Construction and Demolition Material (C&D) on their waste ban list. This means that the RDF had to develop a plan to accept commercial C&D material and divert it from the waste stream and process and ship C&D material to a recycling company. C&D materials as defined in the Waste Ban Laws include the following materials: asphalt pavement, bricks, concrete, metal and wood (treated and untreated wood). The RDF has implemented a program to divert residential wood products, brick and concrete. Residents separate these products at a disposal cost to the Town that's lower than the cost of solid waste disposal.

The Executive Office of Environmental Affairs (EOEA) and the Department of Environmental Protection (DEP) have issued a Solid Waste Master Plan, which describes strategies and policies for working toward the State's goals in the coming decade. These goals are to: 1) Reduce the quantity and toxicity of our waste to the irreducible minimum, leaving as little waste as possible to be disposed; 2) Dispose only residuals from recycling and other waste reduction efforts; and 3) Ensure that waste handling facilities are environmentally sound.

The DEP expanded its regulatory requirements on all municipal and private waste disposal operations. We must inspect and conduct daily monitoring of all incoming commercial waste and also perform random comprehensive inspections on commercial loads. The RDF has been visited by State Inspectors and it has been determined that the RDF is in compliance with all pertinent laws.

### **Twenty-First Household Hazardous Products Collection Day**

A fundamental component in Wellesley's environmentally responsible approach to integrated solid waste management is the annual Household Hazardous Products Collection Day. This year the event was held on Sunday May 1, 2011. A total of 357 residents participated in bringing in a total of 10.86 tons of hazardous material.

### **Step Up! Program**

Hopefully, you have heard a lot about the RDF's recycling initiative called "Step Up!" This is an effort to encourage **all** residents to increase their participation in waste reduction, regardless of where they are today, in terms of how much and what they recycle. Envision a staircase of recyclable materials; a non-recycler would be at the bottom step and veteran recyclers that recycle certain items occupy the next few steps. If the non-recycler started to recycle just paper, he would take a step up. If a resident who now only recycles paper started to also recycle bottles and cans, it would be a step up. The top step is community education and outreach. If every household took a step up and started to recycle one more product line, we would reach our overall goal of five percent more recycling over the next five years. Every resident can nudge us towards this goal by looking for one or two more items to recycle or remove from their trash. Recycling saves natural resources and makes the Town a lot of money.

The RDF picks up municipal recyclables and trash at most municipal buildings as well as the trash barrels on the sidewalk in the commercial areas in town. Last year, these routes were expanded to include the pickup of trash and recyclables at Town Hall and the main library saving considerable money for the Town.

The RDF strives to be innovative and come up with ideas that will maximize the recycling diversion rate. Every ton of recyclables that is diverted from the waste stream saves over \$100 per ton for the Town. In the third year of diverting construction material from the waste stream, in FY 2011 a total of 821 tons of wood waste, concrete, and bricks were diverted from the waste stream.

### **Business Initiative Program**

The goal of the RDF is to continue with the success of the **Business Initiative Program**. The RDF accepted 1,718 tons of recycled products from neighboring communities and recycling haulers. The gross revenue from the Business Initiative Program in FY11 was \$192,647. The cost of doing business was \$69,996 for a net benefit of \$122,651. The four-year net benefit to the Town is \$406,152. All revenues generated were deposited into the Town's General Fund.

### **RDF Comparative Statistics** *All figures in tons unless otherwise noted*

<b>(A) Recyclables*</b>	<b>FY10</b>	<b>FY11</b>	<b>FY11 (\$Sales)**</b>
Paper	2,465	2,159	230,461
Cardboard	1,385	1,406	226,780
Glass: Clear	143	141	2,823
Brown	63	63	947
Green	213	215	N/A
Ferrous Metal	388	378	71,215
Non-Ferrous Metal	34	57	6,385
Aluminum Foil and Plates	3	2	1,214
Steel Cans	37	37	10,687
Refundable Containers	17	13	10,169
Plastics	351	552	53,863
Books	8	11	420
Wood Products	760	620	N/A
Stone/Brick/Concrete	191	201	N/A
Batteries (Automotive)	8	4	1,040
Waste Oil	16	15	220

Tires	16	14	N/A
Textiles (Used Clothing)	132	169	N/A
Paint	11	9	N/A
Hazardous Products	131	110	N/A
Miscellaneous	105	108	N/A
Recycling Containers	N/A	109 units	1,088
Crutches & Canes	334 units	252 units	N/A
Ink Jet Cartridges	216units	60 units	N/A
Mobile Phones	318 units	245 units	N/A
Eye Glasses	253 units	302 units	N/A
<b>(A) Total Recyclables</b>	<b>6,478</b>	<b>6,285</b>	<b>\$617,312</b>
<b>Subtotal by source (estimated)</b>			
Residential	3,220	3,465	322,195
Municipal	227	156	14,506
Commercial	1,496	946	87,964
Business Initiatives	1,535	1,718	192,647

<b>(B) Solid Waste</b>	<b>FY09</b>	<b>FY010</b>	<b>FY11</b>
Residential	7,182	7,207	7,069
Municipal	222	279	298
Commercial	825	1,295	952
<b>(B) Total Solid Waste</b>	<b>8,229</b>	<b>8,781</b>	<b>8,319</b>

\*Unsold tonnage in inventory is not included in the above figures; actual tonnage may be slightly higher

\*\* Recycling sales revenue indicates the amount of all recycled products sold, however, some of these monies may be received in FY11

<b>(C) Yard Waste (tons)</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Residential	6,820	5,941	2,669
Municipal	1,333	1,419	1,507
Commercial	567	1,140	2,624
<b>(C) Total Yard Waste</b>	<b>8,720</b>	<b>8,500</b>	<b>6,800</b>

<b>All Waste Materials</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
<b>Total Weight (A+B+C)</b>	<b>23,500</b>	<b>23,759</b>	<b>21,404</b>

### Recycling Percentages

<b>Excluding Yard waste</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Residential	33.9%	31.7%	32,9%
Municipal	7.1%	44.9%	34,4%
Commercial	77.5%	75.3%	73,7%
<b>(C) Total Excluding Yard waste</b>	<b>44.3%</b>	<b>44.0%</b>	<b>43.0%</b>

<b>Including Yard waste</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Residential	59.4%	56.8%	46.5%
Municipal	85.9%	85.5%	84.8%
Commercial	80.5%	80.7%	84.7%
<b>(C) Total including Yard waste</b>	<b>65.0%</b>	<b>64.5%</b>	<b>61.1%</b>

### Per Capita Recycling

<b>Per Capita Recycling (tons) ***</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Residential	277	242	248
Municipal	1	17	11
Commercial	214	228	190
<b>Total Per Capita Recycling</b>	<b>492</b>	<b>487</b>	<b>449</b>

\*\*\* does not include yard waste

### Total Sales Revenue (\$)

<b>Sales Revenue ****</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Recycling Sales and Fees	347,126	479,651	617,312
Commercial Trash Tipping Fees	151,789	165,715	172,140
Earth Product Sales and Fees	24,349	52,107	56,426
Recycling Containers *****	N/A	N/A	1,088
Commercial Snow Permits	10,988	14,900	11,250
<b>Total Sales Revenue</b>	<b>\$534,252</b>	<b>\$712,373</b>	<b>\$857,128</b>

\*\*\*\*\$849,742 was deposited into the General Fund in FY11

\*\*\*\*\*Recycling Container revenue returned to the Compost Bin Revolving Fund

### Water & Sewer Division

The Water and Sewer Division is responsible for the operation and maintenance of the Town's water and sanitary sewer systems. Described herein are the Division's FY11 accomplishments.

#### **Water Program**

The Water Program is responsible for the operation and maintenance of the Town's wells, pump stations, water treatment facilities, water distribution and storage systems. The program provides a potable and reliable water supply for its users and for fire protection. Water conservation and water resource protection are important components of the program.

Wellesley's water system consists of nine wells, five well pump stations, three water treatment facilities, two booster pump stations, two storage facilities with a combined capacity of about six million gallons, and 149 miles of distribution main. Wellesley's water is supplied from nine local wells and from the Massachusetts Water Resources Authority (MWRA). All water users connected to the system are metered.

We are pleased to report that the water quality of our supplies was in compliance with the Federal Safe Drinking Water Act throughout FY11.

### **Water Distribution**

During FY11 North Atlantic Constructors of Gloucester, MA completed the upgrade of the Hegarty Pump Station, which boosts the Massachusetts Water Resources Authority (MWRA) water supply to the Town's pressure. This upgrade included redundant pumping, emergency power, and supervisory control and data acquisition for the facility.

### **Water Supply**

In FY11 the dual-media in all five filtration vessels was replaced at the Wellesley Avenue Treatment Facility. This replacement included the anthracite and greensand media for the naturally occurring mineral removal of the aquifer's ground waters.

Also in FY11 a plan for upgrading the Morses Pond wellfield was approved by the Massachusetts Department of Environmental Protection. The Division contracted with Wright-Pierce Engineers, of Andover, MA for the design and construction supervision of the Upgraded Morse Pond wellfield, which will include individual pumping of four wells, three new and one existing. The existing wellfield includes three wells pumped from a single manifold system.

### **Water Conservation**

A primary component of our water conservation program is leakage detection. A comprehensive leak detection survey of our entire distribution system began in FY11, with approximately fifty percent completion during the year. This comprehensive survey includes sonic testing of the 149 miles of pipe. In addition to the comprehensive survey another technology, using digital correlating equipment is being employed to precisely locate leaks. This technology was utilized first in the high pressure areas of the distribution system and during the latter part of the year in areas of culverts and brook crossing, where leaks will not surface and are difficult to detect using other sonic devices.

### **Water Meter Upgrade**

Customer meters have been read by radio since 1999; the devices that accompany the meters, which encode, receive, and transmit the data by radio signal, are powered by batteries. The expected lives of these batteries are about half that of the meters. In FY07 we began replacing the batteries on these meters. At the end of FY11 a total of 11,324 batteries were replaced, which represents more than 98% of the entire system.

## **Sewer Program**

The Sewer Program is responsible for the operation and maintenance of Wellesley's sanitary sewer system, which includes 134 miles of collection lines and twenty-two (22) lift stations. Sewage is delivered into the MWRA's regional sewerage collection system and is treated at the MWRA Wastewater Treatment Facilities at Deer Island near Boston Harbor.

### **Sewer Collection System Rehabilitation**

In FY11 the Division contracted with National Water Main Company of Canton, MA to continue our annual program of joint testing and sealing and manhole sealing. During FY11 a total of 8,980 sewer pipe joints were tested and of that total 2,502 joints were sealed. In addition, a total of 114 sanitary sewer manholes were sealed at a total of 844 vertical feet.

### **MWRA Sewer Metering Program**

A large portion of Wellesley's MWRA sewer assessment (cost) is based on the metered wastewater flows leaving the Town and entering the MWRA system. These measured flows are reported on a calendar basis, and are used to formulate the following fiscal year's assessment. The following is a comparison of the five most recent calendar-year wastewater flow statistics:

<u>Calendar Year</u>	<u>MWRA Wastewater Flow Measurements(MGD)</u>	
	Average (Daily)	Peak (Monthly)
2006	4.30 (1.20%)	6.50 (1.20%)
2007	3.67 (1.19%)	7.80 (1.54%)
2008	4.34 (1.23%)	6.91 (1.37%)
2009	3.55 (1.09%)	4.62 (1.16%)
2010	3.85 (1.15%)	10.43 (1.50%)

The percentage of Wellesley's contribution to the total MWRA system flow is noted within the parentheses. It is the goal of our Sewer Collection System Rehabilitation Program to reduce Wellesley's share of the total MWRA system flow (the numbers in the parentheses). By so doing our costs to the MWRA would be reduced. It can be noted that during wet conditions (i.e. peak month versus average day) Wellesley's proportionate share is increased. Such conditions are a reminder that it is illegal for sump pumps to be connected to the household sanitary plumbing. The discharging of sump pumps into basement set tubs, or directly to the plumbing, may result in surcharging of the public sewers and may cause overflows from down gradient sewers into house basements or onto streets as well as increases in our MWRA costs.

### **Water & Sewer Funds Audit Reports**

The certified public accounting firm of Powers and Sullivan, L.L.P has prepared the FY2011 Financial Reports of the Water and Sewer Funds. The audited financial statements for the Water and Sewer Funds are included at the back of this Annual Town Report.

<b><u>Division Statistics</u></b>	<b><u>FY09</u></b>	<b><u>FY10</u></b>	<b><u>FY11</u></b>
Number of Water Accounts	11,894	12,016	12,006
Water Pumped from Local Wells, mg	674.99	662.26	639.20
Water Pumped from MWRA, mg	338.48	313.63	414.78
Total Water Pumped, mg	1,013.47	975.89	1,053.98
Peak-to-Average Day Water Demand	1.80	1.70	2.03
Total Water Billed, mg	840.81	781.01	871.16
Unaccounted Water, %	17.0	20.4	17.3
New Meters Installed/Replaced	256	184	213
New Hydrants Installed/Replaced	4	11	14
Number of Sewer Accounts	8,156	8,190	8,124
Number of House Services Rodded	340	329	319
Feet of Sewer Main Rodded/Flushed	304,242	297,780	305,337