

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 users' fees.

In March 2013, Paul L. Criswell was reelected to a three-year term to the Board of Public Works. Owen H. Dugan was elected to a one-year term to fulfill the balance of William E. Charlton's term. The Board reorganized, effective July 1, 2013, with Paul L. Criswell as Chairman of the Board of Public Works, Owen H. Dugan as Vice Chairman, and David A.T. Donohue 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 including: 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 2013.

DPW Operations Building

During the first half of FY13 the DPW Engineering and Administration Divisions moved into the new Operations Building. The project took approximately 15 months to complete. The work was undertaken by Contractors Network Incorporated from East Providence, Rhode Island as the general contractor. The building consists of a 2-story, 8,640 square foot steel frame building with a rammed aggregate pier supported foundation. The Engineering Division actively worked with the Permanent Building Committee (PBC), the owner's representative Weston and Sampson, the project architect AECOM and our contractor to complete the building within the appropriated budget. The DPW is pleased with the completed project and extremely grateful for the community's support and the diligent efforts of the Permanent Building Committee.

Improvements at the Recycling and Disposal Facility (RDF)

Two new steel framed fabric structures at the RDF facility were constructed in FY13. The Engineering Division worked as the surveyors and site engineers on this Design, Bid, and Build project. The result was the addition of 9,600 square feet of covered area that better protects recycled products, maintains their market value and allows the RDF to increase the tonnage handled through the Business Initiatives Program. The work was completed by Seaver Construction from Woburn,

MA. The Division prepared permit submissions to the Design Review Board, the Zoning Board of Appeals, as well as the Building Department, and worked closely with the Health Department and the Wetlands Protection Committee. We coordinated plans with the Town's architect Weston & Sampson and mechanical engineer to successfully complete the project.

Additionally at the RDF, the Engineering Division served as surveyor, design engineer and construction managers to effect corrections to slope immediately adjacent to wetlands associated with the upper reaches of Fuller Brook. This work achieved the status of successfully complete near the end of the Fiscal Year.

Morses Pond Dredging Project

This project, one of the largest components of the Morses Pond 10 year management plan, was bid in FY12 and completed in FY13. Cashman Marine Contracting LLC of Quincy, MA completed the work in two stages occurring between August and November. This work isolated the top layer of material in the designed detention basin. It was dewatered in the Saint James Church parking lot and disposed of at a licensed landfill in March of 2013. The second phase moved post glacial-fluvial material from the Northern Basin to the Morses Pond Beach to be used for beach nourishment. This work was completed in May of 2013. The Engineering Division worked closely with our environmental consultant, Apex Companies, and the Natural Resources Commission for the timely completion of the project.

HVAC Project for DPW Park/Highway Building

During FY13, the DPW worked with the Permanent Building Committee (PBC) and Weston and Sampson Engineers to finalize the design and publicly bid this project to update the heating, ventilation and air conditioning (HVAC) for the DPW Park/Highway Building. This project replaces the existing systems, which were largely original to the building constructed in 1945. The project will correct numerous problems with the existing DPW Park/Highway Building HVAC systems that can affect air quality, heat loss, air temperature controls and energy consumption. The project will also convert the hardware to be consistent with HVAC controls for most of the other Town owned buildings including the DPW Operations Building. The project was bid in March of 2013 and subsequently awarded to Thomas E. Snowden, of Saugus, MA. The work was initiated in May and is expected to be complete before the winter. The Engineering Division will serve as clerk of the works for the project.

Infrastructure Projects

The Engineering Division was involved with several important drainage infrastructure projects during FY13 including Cliff Road and the Waterway. These projects replaced an aged and undersized culvert and stabilized an eroding bank. Additionally survey, design, permitting and construction services were prepared for the replacement of 1,400 linear feet of storm drain pipe on Forest and Seaver Street. Alternative drainage options and possible bike lane options were examined for the ongoing capital projects on Bacon Street and Kingsbury Street.

Storm Water Management Program

During FY13, the Engineering Division continued its management of the Town's storm water management program and the federal permit known as NPDES. This

work includes monitoring of all construction activities, permitting of new connections, responding to reports of potential contamination issues as well as monitoring and sampling of flow. The NPDES permit is in its 10th year and it regulates the discharge of storm water to the waterways of the United States. Compliance with the permit has added activities for the Engineering Division including public education, public participation, active management and inspections, and development of site specific storm water cleaning technologies. 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.

An updated NPDES permit from the EPA is expected sometime in the next fiscal year. In anticipation the Engineering Division, together with the GIS and Highway counterparts, has undertaken an effort to inventory the entire system working from watershed to watershed. This has resulted in some changes to our record maps as well as increased outfall sampling.

GIS Implementation-Computerized Assessors Mapping

The Engineering Division continues to work with the GIS Department by providing asbuilt plans for new projects, GPS work, updating of the Town's utility infrastructure, property monumentation and ongoing assistance with data development. In 2013, the Engineering Division, together with the GIS Department, introduced a kiosk at the service counter so that the various available public records can be viewed by customers prior to printing. The Division sees this as a useful tool that will allow residents and contractors to fully understand what records are available, and what nomenclature and naming conventions are typically used so that there will be an easier transition and ability for self service when the Town's GIS system becomes publically available, hopefully in FY14.

VUEWorks Implementation

The Engineering Division continues to make use of the VUEWorks system which fully utilizes GIS and other DPW 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. This system will increase the ability for all Divisions and potentially all Town components to work more effectively and will greatly improve our ability to efficiently monitor public assets and resource allocation.

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 FY11, FY12 and FY13 are:

| <u>Utility Permits</u> | <u>FY11</u> | <u>FY12</u> | <u>FY13</u> |
|--|--------------------|--------------------|--------------------|
| Number of permits issued: | 808 | 852 | 878 |
| Number of permits completed as of 6/30 | 486 | 445 | 399 |
| Number of outstanding permits | 322 | 407 | 479 |

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, guardrails 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, parking meters and parking lot ticket machines. 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 2012-2013

The winter of 2012-2013 was notable due to the extraordinary snowstorm that pounded southern New England on February 8-9, 2013. Dubbed winter storm Nemo by the Weather Channel, the blizzard dumped 24" of snow in Wellesley in less than 25 hours. The winter crews were able to keep all major roads open and worked with Police & Fire to open any roads where emergency vehicles were needed. The closure of all roadways by the Governor to general traffic assisted greatly in the Highway's ability to open all roadways and make all the streets passable soon after the end of the snow.

Overall this winter will be remembered for the blizzard and late snow storms of March. November, December and January produced very little snow accumulations and were warmer than normal. Most of the winter snow is attributed to February and March with the February blizzard and two March storms.

The total snow accumulation measured at the Highway Division facility for the winter of 2012-2013 was 64.5 inches. This is above average for the region. The DPW responded to a total of 17 events and five of these required the attention of snowplowing crews. The remainder of these storms were treated with a combination of sand, salt and liquid calcium chloride. Responding to storms this season resulted in the use of approximately 40 tons of sand, 2,889 tons of salt, 2,000 gallons of liquid calcium chloride and 7,000 pounds of calcium chloride pellets.

Due to the severity of the blizzard in early February, the removal of snow was required in business and commercial areas once this winter.

Monthly Snow Accumulations - Winter 2012-2013

| | | | |
|----------|--------|----------|--------|
| October | 0" | January | 4.5" |
| November | 2.0" | February | 29.5" |
| December | 10.75" | March | 17.75" |

Street Resurfacing

The Street Resurfacing Program for Fiscal Year 2013 began early in the season due to the mild winter. Streets were prepared for several types of work which included leveling for chip seal, cold planing for both standard overlay and cold planing for a SAMI type overlay, and raising existing castings for a conventional asphalt overlay.

The following streets were Chip Sealed: Carlton Rd., Eliot St., Fisher Ave., Morrill Cir., Pilgrim Cir., Linwood Rd., Wedgewood Rd., Mansfield Rd., Woodcliff Rd., and Frontage Road which is the access road running adjacent to Rt. 9 from Heckle to Longfellow.

Chip Seal was also placed on Hundreds Road and a portion of Garden Road after they were cold planed. The purpose of Chip Sealing after the cold planing is to provide a Stress Absorbing Membrane Interlay (SAMI) prior to paving with conventional asphalt in order to reduce cracking of the road surface. Drainage improvements were also completed on Hundreds Road in the hollow near Glen Road. A double size catch basin frame with a gutter inlet was installed in an area prone to flooding. After the work a marked improvement was noted by Highway Staff.

The following streets were cold planed and then resurfaced: Clock Tower Drive and Laurel Ave. Laurel Ave also received drainage improvements prior to paving. Two additional catch basins were installed to capture storm water run-off from Forest Street prior to the low point near the intersection of Laurel Ave at Laurel Terrace.

The following streets were resurfaced after Highway Crews raised the castings prior to paving: Manor Ave., Colby Rd., Mayo Rd., Earle Rd. (from Cleveland to Pilgrim), Clock Tower Dr., Spruce Park, and Highland Rd.

Under the resurfacing program, 332 feet of guardrail was replaced on Hundreds Road due to the fact that it was failing.

Storm Water Improvements

As a continued group project with the Engineering Division and the NIS GIS Department, the survey and mapping of the Fullerbrook Drainage basin continued. This work includes physical inspections of each catch basin and drain manhole in the area plus the recording of each invert and outlet pipe. Dye testing was conducted to verify connection points. All of the gathered information is being recorded in the Town GIS. A large benefit of the inspection is the data recorded which helps the Engineering Division calculate for future projects and have a better understanding of potential problem areas with the frequency of heavier rain events we have experienced lately. This review will continue in the coming years so that all of the watershed basins are accounted for and the entire drainage system will be accurately captured in GIS. This information also assists Engineering in preparation of the EPA's required NPDES reports.

Drainage improvements were completed at 319 Linden Street which included installation of a double wide catch basin and regrading of the driveway apron to avoid residential flooding from street water runoff.

The double culvert on Lexington Road was cleaned in March resulting in 21 cubic yards of debris being removed. Throughout the winter, between snow events, crews were dispatched to brooks and culverts Town wide to clear potential blockages. This work is done at the request and permitting of the NRC. A total of 4,150 feet of brooks were cleared resulting in a removal of 108 cubic yards of brush and small limbs.

Other Activities

Hurricane Sandy made her entrance in October. With the early forecasting, DPW as a whole had ample time to prepare which included a last minute repair to a drain easement off of Forest Street to avoid residential flooding. Crews had time to make sandbags and deploy several pumps. In all, Wellesley fared the storm well. Rainfall amounts were lighter than expected, but the combination of wind and rain proved enough for extensive tree damage. Accuweather recorded for Massachusetts 3.03" (East Milton) and wind peak gusts at 83 mph (Cuttyhunk). With the severity of the storm and power line issues, DPW worked around the clock to keep roadways opened from downed trees and flooding. Several asphalt repairs were needed on streets where live electric lines arced on the wet surface and melted portions of the roadway itself. Highway crews replace 52 feet of steel guardrail on Forest St near the Cochituate Aqueduct which was damaged by fallen trees from the storm.

Highway crews were involved with the building projects at the Recycling and Disposal Facility in both the fall and spring of FY13. In the fall, Highway assisted by installing two new catch basins and approximately 42 feet of ductile iron drain for the new Baled Storage Building. Highway also provided services for grading and paving and installation of bollards near the doorway openings. In the spring, Highway assisted RDF personnel in the new Paper and Wood Processing Building construction. A large concrete slab with the weight of approximately 21 tons from the previous building was recycled and reset to grade on the floor of the new building. Re-grading was completed using 140 yards of reprocessed gravel hauled and then graded from the Highway yard prior to paving. The perimeter drain was installed and hooked up to a storm water recharging vault installed the previous year. Again bollards were installed adjacent to the doorways.

On January 1, 2013, all public safety and business industrial land mobile radio systems (two-way mobile radios) operating in the 150-512 MHz radio bands were required to cease using 25 kHz efficiency technology, and begin using at least 12.5 kHz efficiency technology as mandated by the FCC. Migration to 12.5 kHz efficiency technology (once referred to as Refarming, but now referred to as Narrowbanding) will allow the creation of additional channel capacity within the same radio spectrum and support more users. To meet the FCC mandate, the Highway Management staff was tasked in making the transition for the DPW in order to keep the FCC license active. With the assistance of Wellesley Police, a vendor was selected and performed the changeover. This included changing out the main radio and antennae at the Maugus Hill reservoir site, installing remote stations at the DPW complex and RDF, and a reprogramming of 112 vehicle and portable radios. An immediate

improvement was noted by all staff now that we are operating with a repeater system. The previous system had been in service since the early 1980's.

In the late winter and early spring, Highway crews in conjunction with Park crews provided services for the Water and Sewer Division at the Morses Pond Parking Lot. This work was needed as a part of the new well being installed at the Morses Pond Treatment Plant to provide the required buffer zone. The work involved the removal of trees including the entire stump. The cleared area was then regraded and compacted to provide additional parking. In conjunction with this work, Highway assisted the Recreation Department by making improvements to the entrance and exit of the parking lot.

In an effort to improve the intersection of Jackson Road at Oakland Street, the Selectman's Office and Engineering Division redesigned the intersection layout. The Highway Division performed the necessary work to make these improvements. The work involved the removal HMA roadway and installation of approximately 430 feet of new asphalt berm. Areas of impact were restored and necessary signage and street painting work was performed. This work was completed mid September 2012.

| Comparative Statistics | FY12 | FY13 |
|---|-------------|-------------|
| <u>Street Resurfacing & Cracksealing (public ways)</u> | | |
| Hot Mix Asphalt (HMA) Overlay | 1.2 mi | 1.6 mi |
| Roadway cold planed & HMA Overlay | 2.1 mi | 0.3 mi |
| Stress absorbing membrane interlayer treatment (SAMI) | 0.0 mi | 0.6 mi |
| Asphalt rubber surface treatment | 1.3 mi | 2.12 mi |
| Streets cracksealed | 0.0 mi | 0.0 mi |
| <u>Curbing</u> | | |
| Granite curbing | 250 lf | 0 lf |
| HMA curbing | 1,335 lf | 820 lf |
| <u>Sidewalks</u> | | |
| Sidewalks resurfaced | 1,720 lf | 715 lf |
| New sidewalk construction | 417 lf | 0 lf |
| Sidewalks reconstructed | 735 lf | 0 lf |
| <u>Guardrail fencing</u> | | |
| Highway steel guardrail fencing installed | 60 lf | 384 lf |
| <u>Winter Maintenance</u> | | |
| Winter weather events requiring DPW response | 5 | 17 |
| Total snowfall, inches | 15 | 64.5 |
| Salt used for ice control on roads and walks, tons | 1,022 | 2,889 |

| | | |
|---|-------|-------|
| Calcium chloride (liquid) for ice control on roads, gallons | 750 | 2,000 |
| Sand used for ice control on roads and walks, tons | 18 | 40 |
| Calcium chloride (pellets) ice control in School Lots*, lbs | 5,500 | 7,000 |
| Sidewalks plowed each storm, miles | 50 | 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 were more areas/driveways around the new high school constructed with porous pavement in wetland areas. This restricts the use of salt or sand on these areas which is the typical treatment. To accommodate these parking lots and driveway areas around the high school, a truck is dedicated to distribute ONLY calcium chloride pellets. While the number of treatments needed this winter was less, the amount of material needed for each storm increased.

PARK & TREE DIVISION

The Park & Tree Division of the Public Works Department 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 & Tree Division.

- The grounds of Wellesley's 3 Libraries, Town Hall and Police Station
- The Recreation Department's Moses Pond Beach Facility
- 9 Playgrounds of Wellesley's Public Schools
- 13 Playing Field sites totaling 47 acres of the Natural Resource Commission and School Department properties
- 4 Tennis Courts (Hunnewell, Sprague, Schofield, Kelley) totaling 17 courts
- 6 Conservation Reservations and the Wellesley Town Forest
- 10 Municipal Parking Lots of the Board of Selectmen
- 18 Parks and 5 Playgrounds of the Natural Resources Commission
- 68 Landscaped Traffic Islands
- 3 Linear Parks (Caroline Path, Cochituate Path and Fuller Brook)
- 8 Ponds including annual mechanical and manual harvesting of invasive weeds at Longfellow, Rockridge and Moses Ponds
- Over 6,000 inventoried public shade trees and vegetation management along town roadways

During the Fiscal Year 2013, the Park & Tree Division also completed the following tasks and capital improvement projects:

- **Hunnewell Field Capital:** During the fall of 2012 re-graded and seeded the

High School Practice Football Field and completed the installation of an irrigation system at the Multi-Purpose Lighted Softball Field.

- **Elementary School Capital:** During the summer of 2012 installed a new irrigation system at the Upham School Little League Field.
- **Playground Capital:** During the fall of 2012 assisted the Hunnewell School PTO with the installation of new playground equipment and edging for the playground surfacing area.
- **Sprague Field Capital:** Installed over 100 feet of recycled guardrail along the Calvin Road Parking lot entrance. This was done to direct pedestrian traffic and control erosion along the grass edge of this path which is located on a steep incline.
- **Tennis & Basketball Court Capital:** During August of 2012 the two phase surfacing improvements and painting of the Hunnewell Tennis Courts were completed by New England Seal Coating. The two phase project allowed four of the eight tennis court to be available for use during the renovation project.
- **FY 13 Tree Planting Program:** During the fall of 2012 and spring of 2013 planted and maintained 136 new trees and 122 shrubs town-wide with funding provided by the Natural Resources Commission and other various capital project funds and donations.
- **A.D.A. Capital:** Repaved walkways at the Morses Pond Beach facility to improve A.D.A. access.
- **Traffic Island Capital:** Started renovation of the Standish & Priscilla Road traffic island by removing pair of dead trees and replanted with two new red maple trees. Next fiscal year invasive weeds will be managed and new shrubs and grass planted. Nine additional trees were also planted at two other locations: two trees at Cedar & Walnut Streets and seven trees along the driveway and parking area of the Warren Recreation Building.
- **Winter Moth Spraying Program:** In the spring of 2013 successfully sprayed 1,096 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 and the Wellesley Heath Department with treating over 3,200 catch basins with larvicide to help reduce the mosquito population in the town during July of 2012.
- **Aquatic Weed Harvesting:** In July of 2012 continued annual mechanical weed harvesting of invasive aquatic plants at Longfellow and Rockridge Ponds. Then during the months of August and September of 2012 and May

and June 2013 continued annual mechanical weed harvesting of invasive aquatic plants at Morses Pond. Also, provided support to the Phosphorus Activation System at Morses Pond during April, May and June of 2013.

- **Gift Account:** The division installed one new donated bench and planted two traffic islands with flowers, due to the generosity of town residents.
- **Fuller Brook Park Tree Maintenance Program:** With funding from the Natural Resource Commission and based on the NRC's Fuller Brook Tree Maintenance Plan the Division pruned 15 trees and removed 26 hazardous and/or invasive trees during FY13.
- **Town Hall Grounds:** During the spring of 2013 the Division in cooperation with the Wellesley Garden Study Group was able to renovate the landscape at the Town Hall entrance, planting over 100 new shrubs, annuals and perennial plants.
- **Turf Management:** With the assistance of written recommendations for an organic turf management plan and some new equipment provided by the Natural Resource Commission, the Division has been able to complete the transition to an organic turf management program. This includes a targeted plan for proper cultural practices that included recommended cutting heights, multiple types of aeration techniques, proper irrigation scheduling and regular seeding with high quality grass seed with the best species for the site. Soil tests are conducted every other year to make sure proper soil pH and fertilization requirements are maintained. To help reduce packaging waste and increase efficiency the Division purchased 1,000 pound bulk bags of organic fertilizer. High use fields also receive additional liquid soil amenity made of fish emulsion and seaweed extract that is produced locally in Gloucester, Massachusetts. For biological control of white grubs the Division applies nematodes, a parasitic soil microbe that kills white grubs. The cost of this program is supported by player use fees collected for the permitted use of the Town's athletic fields.

RECYCLING DISPOSAL FACILITY

The Recycling and Disposal Facility (RDF) is located at 169 Great Plain Avenue (Route 135). This 88-acre facility is open 6 days a week. The hours of operation are: Monday, Tuesday and Wednesday 7:00 AM to 12:00 PM. Thursday and Friday, 7:00 AM to 3:45 PM and Saturday, 7:00 AM to 4:45 PM. The facility is closed on Sundays except for six Sundays in the fall during the busy leaf 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.

Reduction

Source reduction is the first step in managing the Town's waste. Home-composters and recycling containers 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 include 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 because of 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 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 the benefit to the Town is it keeps the items out of 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 \$1,500 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 with them. 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

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.

Recycling Revenue and Cost Savings Benefits

The following is compilation of all relevant recycling statistics:

| | | |
|---------------------------------|-----------|------------------|
| Product Sales Revenue: | \$ | 392,234 |
| Compost Sales: | \$ | 9,312 |
| Appliance Fees: | \$ | 16,700 |
| Commercial Yard Waste Fees*: | \$ | 14,515 |
| Commercial Recycling Fees**: | \$ | 4,616 |
| Recycling Container Sales: | \$ | 371 |
| Sub Total: | \$ | 437,748 |
| Cost Avoidance Benefits***: | \$ | 1,035,360 |
| Total Recycling Benefit: | \$ | 1,473,108 |

*Fees collected from commercial customers for the disposal of leaves, grass, clippings, brush and woodchips that ultimately decomposes and 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 FY13, a total of 7945 tons of municipal solid waste (MSW) was processed and hauled off-site. The DPW currently contracts with Seneca Meadows Incorporated (a disposal facility in Seneca Falls, New York) for the disposal of solid waste.

The Department of Environmental Protection developed and enforces the State's waste ban. This is a list of items which are recyclable materials that must be diverted from the waste stream and recycled. Cardboard, newspaper, plastic and glass bottles, commercial construction and demolition (C&D) material and tires are some of the items on the waste ban list. Starting in July of 2014, commercial food waste will be added to the list.

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.

A few years ago 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.

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 5, 2013. A total of 427 residents participated in bringing in a total of 13,680 lbs. of hazardous material. In addition, the RDF sponsored a first time shredding event that brought in 8.25 tons of shredded documents. The feedback from the residents was very positive and we may decide to sponsor this event next year.

Step Up Program

Step Up! You should have heard a lot by now about the RDF's recycling initiative called the Step Up! Program. 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, which 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 our 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. These routes 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.

Business Initiative Program

The goal of the RDF is to continue with the growth and continued success of the Business Initiative Program. The RDF accepted 1,537 tons of recycled products from neighboring communities and recycling haulers. The gross revenue from the Business Initiative Program in FY13 was \$137,247. The cost of doing business was \$73,211 for a net benefit of \$64,036. The seven-year net benefit to the Town is \$616,365. All revenues generated were deposited into the Town's General Fund.

Facility Improvements

A significant investment was made to erect two recycling buildings that would enable the RDF to increase capacity and efficiency in the Business Initiative and the wood recycling programs. The Baled Storage Building located near the Baler Building will create additional storage for baled material to accommodate the increased tonnage from the Business Initiative Program as well as provide a roof structure for all loose plastic products that will be baled and sold. The second building adjacent to the transfer station increases the efficiency of the wood processing operation and provides a roof structure over the area that will ensure

uninterrupted wood recycling activities through the winter season and during other inclement weather.

RDF Comparative Statistics

All figures in tons unless otherwise noted.

| (A) Recyclables* | FY12 | FY13 | FY13 (\$Sales)** |
|---------------------------------------|--------------|--------------|---------------------|
| Paper | 2,051 | 1,832 | 123,587 |
| Cardboard | 1,304 | 1,244 | 149,012 |
| Glass: Clear | 148 | 156 | N/A |
| Brown | 67 | 56 | N/A |
| Green | 191 | 207 | N/A |
| Ferrous Metal | 363 | 306 | 60,939 |
| Non-Ferrous Metal | 55 | 26 | 3,100 |
| Aluminum Foil and Plates | 4 | 3 | 1,439 |
| Steel Cans | 31 | 33 | 6,644 |
| Refundable Containers | 12 | 28 | 11,500 |
| Plastics | 357 | 306 | 31,822 |
| Books | 18 | 23 | 623 |
| Wood Products | 621 | 520 | N/A |
| Stone/Brick/Concrete | 951 | 902 | N/A |
| Batteries (Automotive) | 2 | 2 | 1,740 |
| Waste Oil | 12 | 12 | 1,548 |
| Tires | 16 | 13 | N/A |
| Textiles (Used Clothing) | 171 | 151 | N/A |
| Paint | 11 | 12 | N/A |
| Hazardous Products | 118 | 113 | N/A |
| Miscellaneous | 110 | 115 | N/A |
| Recycling Containers | 46 units | 29 units | 280 |
| Used Medical Equipment | 261 units | 193 units | N/A |
| Ink Jet Cartridges | 121 units | N/A | N/A |
| Mobile Phones | 305 units | 565 units | N/A |
| Eye Glasses | 288 units | 375 units | N/A |
| (A) Total Recyclables | 6,614 | 6,061 | 392,234 |
| Subtotal by source (estimated) | | | |
| Residential | 4,293 | 4,113 | 231,822 |
| Municipal | 120 | 122 | 6,876 |
| Commercial | 547 | 289 | 16,289 |
| Business Initiatives | 1,654 | 1537 | 137,247 |

| (B) Solid Waste | FY011 | FY12 | FY13 |
|------------------------------|--------------|--------------|--------------|
| Residential | 7,188 | 6,868 | 6,447 |
| Municipal | 298 | 244 | 238 |
| Commercial | 1,295 | 1,372 | 1,260 |
| (B) Total Solid Waste | 8,781 | 8,484 | 7,945 |

*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 FY13

| (C) Yard Waste (tons) | FY11 | FY12 | FY13 |
|------------------------------|--------------|--------------|--------------|
| Residential | 2,669 | 4,475 | 4,506 |
| Municipal | 1,507 | 1,816 | 1,860 |
| Commercial | 2,624 | 329 | 515 |
| (C) Total Yard Waste | 6,800 | 6,620 | 6,881 |

| All Waste Materials | FY11 | FY12 | FY13 |
|-----------------------------|---------------|---------------|---------------|
| Total Weight (A+B+C) | 21,866 | 21,718 | 20,887 |

Recycling Percentages

| Excluding Yard Waste | FY11 | FY12 | FY13 |
|---------------------------------------|--------------|--------------|--------------|
| Residential | 32.4% | 38.5% | 38.9% |
| Municipal | 34.4% | 33.0% | 33.9% |
| Commercial | 67.5% | 61.6% | 59.2% |
| (C) Total Excluding Yard Waste | 41.7% | 43.8% | 43.3% |

| Including Yard Waste | FY11 | FY12 | FY13 |
|---------------------------------------|---------------|---------------|---------------|
| Residential | 46.50% | 56.10% | 57.20% |
| Municipal | 84.80% | 88.80% | 89.30% |
| Commercial | 84.70% | 64.80% | 65.00% |
| (C) Total including Yard Waste | 59.80% | 60.90% | 62.00% |

Per Capita Recycling

| Per Capita Recycling (tons) *** | FY11 | FY12 | FY13 |
|--|-------------|-------------|-------------|
| Residential | 246 | 307 | 294 |
| Municipal | 11 | 9 | 9 |
| Commercial | 192 | 157 | 131 |
| Total Per Capita Recycling | 449 | 473 | 433 |

*** does not include yard waste

Total Sales Revenue (\$)

| Sales Revenue | FY11 | FY12 | FY13 |
|--|----------------|----------------|----------------|
| Recycling Sales and Fees | 617,312 | 543,603 | 413,921 |
| Commercial Trash Tipping Fees | 172,140 | 167,082 | 179,183 |
| Earth Product Sales and Fees | 56,426 | 23,683 | 23,827 |
| Commercial Snow Permits | 11,250 | 2,875 | 9,700 |
| Total Sales Revenue**** | 857,128 | 737,243 | 626,631 |
| Total Deposits into General Fund***** | 851,101 | 794,845 | 634,873 |

***** Some sales revenue may be deposited in the next fiscal year

***** Some deposits may be from sales from the previous fiscal year

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 FY13 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 ten 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 ten 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 FY13.

Water Distribution

The trees were removed on the sloped sides of the land around the water distribution storage tanks at Pierce hill. Two 12 inch valves to control flow to the Pierce tanks were found to be inoperable and were replaced. The distribution system flushing from the fire hydrants was done in the spring and fall. New security gates were added to the entrances to the Maugus and Pierce reservoirs. Some additional statistics:

| | |
|--------------------------------------|-----|
| New Replacement Hydrants | 13 |
| Hydrants Repaired | 47 |
| Services Cut Off For Home Demolition | 65 |
| New or Replaced Water Services | 109 |

Water Supply

In FY13, construction was completed for the replacement of the Morses Pond wells, the well pumping station and the filtration media upgrade. The design includes individual pumping of the four new wells by submersible pumps. Each well pump is controlled by a variable frequency drive and the flow from each pump is metered. Additional MWRA water was used to supply the Town during the Morses Pond well replacement work.

Water Conservation

A primary component of our water conservation program is leakage detection. A leak detection survey of our entire distribution system was completed in FY13. This comprehensive survey includes surveying the system hydrants with the digital leak

detector to identify leaks and/or hydrants for repair, and acoustic testing of the water mains. In addition to the comprehensive survey, digital correlating logging equipment was employed to locate leaks where leaks will not surface and are difficult to detect using other acoustic devices. Eighteen water main and service leaks were repaired this year.

Water Metering

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 FY13 a few batteries remain to be replaced. The water metering system consists of about 8,332 residential meters and 3,768 irrigation meters.

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, seventeen lift stations and two major pumping stations. About 1.25 billion gallons of sewage were delivered into the MWRA's regional sewerage collection system and was treated at the MWRA Wastewater Treatment Facilities at Deer Island near Boston Harbor.

Sewer Collection System Rehabilitation

In FY13 the Division contracted with National Water Main Company of Canton, MA to continue our annual program of sewer collection system rehabilitation. This year eight cured in place short liners were installed to repair a total of about 40 linear feet of vitrified clay pipe. There were 53 manholes sealed which represents about 405 linear feet of manhole that were found to have infiltration. In addition, about 11,937 feet of vitrified clay sewer pipe were treated for root control. Also the replacement of the Pickerel Road sewer lift station was bid and construction was begun with the expectation that it would be placed in service in early FY14.

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 flows are measured in Million Gallons per Day (MGD), 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:

MWRA Wastewater Flow Measurements (MGD)

| <u>Calendar Year</u> | <u>Daily Average</u> | | <u>Monthly Peak</u> | |
|-----------------------------|-----------------------------|---------|----------------------------|---------|
| 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%) |
| 2011 | 4.10 | (1.15%) | 6.58 | (1.34%) |
| 2012 | 2.94 | (1.06%) | 3.65 | (1.07%) |

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 FY 2013 Financial Reports of the Water and Sewer Funds. The audited financial statements for the Water and Sewer Funds are published within the Town's Comprehensive Annual Financial Report.

| <u>Division Statistics</u> | <u>FY11</u> | <u>FY12</u> | <u>FY13</u> |
|-----------------------------------|--------------------|--------------------|--------------------|
| Number of Water Accounts | 12,006 | 12,041 | 12,100 |
| Water Pumped from Local Wells, MG | 639.2 | 675.05 | 482.76 |
| Water Pumped from MWRA, MG | 414.78 | 307.9 | 522.56 |
| Total Water Pumped, MG | 1,053.98 | 982.94 | 1,005.32 |
| Peak-to-Average Day Water Demand | 2.03 | 2.21 | 2.11 |
| Total Water Billed, MG | 871.16 | 846.79 | 864.06 |
| Unaccounted Water, % | 17.3 | 13.9 | 13.2 |
| New Meters Installed/Replaced | 213 | 232 | 225 |
| New Hydrants Installed/Replaced | 14 | 19 | 13 |
| Number of Sewer Accounts | 8,124 | 8,126 | 8,122 |
| Number of House Services Rodded | 319 | 332 | 329 |
| Feet of Sewer Main Rodded/Flushed | 305,337 | 398,951 | 275,776 |