

## **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 2014, Owen H. Dugan was reelected to a three-year term to the Board of Public Works. The Board reorganized, effective July 1, 2014, with Owen H. Dugan as Chairman of the Board of Public Works, David A.T. Donohue 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 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 2014.

#### **DPW Park / Highway Building**

During FY14, the DPW worked with the Permanent Building Committee (PBC), the designer, Weston & Sampson Engineers, and the contractor, Thomas E. Snowden, to complete the installation of new heating, ventilation and air conditioning (HVAC) for the DPW Park/Highway Building. This project replaced the existing systems, which were largely original to the building constructed in 1945. The project improves the air quality and efficiency of energy consumption in a very active and much used facility. The project also converted the hardware and software to be consistent with HVAC controls for most of the other Town owned buildings including the DPW Operations Building. The project was initiated last fiscal year and the heating components were installed in time for the winter season. Substantial completion was achieved in the early winter. The total project cost was \$761,306.

#### **Fuller Brook Park Project – Phase 4**

Phase 3 of the Fuller Brook Park Planning and Preservation Project concluded at this year's Annual Town Meeting. This work brought the project through design and permitting and resulted in a successful public bid in mid February at a value of \$4,324,647, just below engineering estimates. The next and final phase of the project is the construction which will be managed by the DPW. The project includes path replacement for the Fuller Brook and Caroline Brook pathways, stream improvements, bank stabilization, boardwalk construction, dredging and stream

relocation. Early activities by the Engineering Division included filing for a “319” water quality grant and the Massachusetts Environmental Trust grant. Work is expected to continue until late 2016.

#### **Linden Street Improvements**

The final segment of the Linden Street corridor project was substantially completed during the last quarter of the fiscal year. The work included some drainage upgrades, street profile adjustments and new pavement surfaces for the roadway and sidewalk. The project limits were between Curve and Everett Streets and included 1,800 feet of variable width pavement.

#### **Wales Street / Walnut Street Bridge Project**

The Town of Wellesley worked in conjunction with the City of Newton to secure a contract with R. Bates and Sons of Sterling, MA to replace the parapet walls, add guardrails, sidewalks and other safety improvements to the bridge. Ownership of the bridge is shared between the communities and the repairs included in the contract were based on safety concerns raised during bridge inspections. The contract is for \$647,530. Work was initiated in late April and is expected to continue until November 2014.

#### **Rockland, Linden and Washington Streets Improvement Project**

In response to a fully reimbursable state grant, the DPW contracted for street improvements immediately adjacent to the recently completed MassDOT bridge project. The work includes realigning the Linden Street approach to add a pedestrian crosswalk and to improve driver sight lines. The work will include replacing some sidewalk sections, replacing the handicap ramps and the traffic lights. Minor Washington Street profile adjustments will be made to improve grading on the bridge approach. The contract was awarded to Charles Contracting of Watertown, MA at a value of \$556,942 and is expected to be completed by November 2014.

#### **Other Projects**

The Engineering Division was involved with several important Town projects during FY14 including due diligence investigations related to the possible acquisition of 900 Worcester Street, and the northerly portion of the Cochituate Aqueduct. Engineering staff are involved with the Town’s Bike Safety Committee, the Traffic Safety Committee, the North 40 Committee, the Fuller Brook Park Planning and Preservation Committee, the Land Use Committee, the Playing Fields Task Force and the 900 Worcester Street Committee.

#### **Storm Water Management Program**

During FY14, 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 11<sup>th</sup> 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 Recycling and Disposal Facility 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 in the near future. In anticipation the Engineering Division, together with GIS and Highway, has undertaken an effort to inventory the entire storm water system working from watershed to watershed. This has resulted in some changes to our record maps as well as increased outfall sampling.

Also, it is with great pride that the Engineering Division can announce that a key staff member recently achieved certification as a Storm Water Manager and won a nomination to join the American Public Works Association's Storm Water Committee. This certification is most important because there is so much going on in field storm water and water quality improvement. His involvement with leaders on a national level on this subject could be very beneficial to the Town and the Wellesley DPW.

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

The Engineering Division continues to work with the GIS Department by providing as-built plans for new projects, GPS work, updating of the Town's utility infrastructure, property monumentation and ongoing assistance with data development. In 2014, the Engineering Division, together with the GIS Department, set out to convert all mapping to a GIS-based platform. The Engineering Division participated in projects to update inventory associated with our sidewalks and guardrails during the year.

#### **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 departments 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 FY12, FY13 and FY14 are:

<b><u>Utility Permits</u></b>	<b><u>FY12</u></b>	<b><u>FY13</u></b>	<b><u>FY14</u></b>
Number of permits issued:	852	878	795
Number of permits completed as of 6/30	445	399	299
Number of outstanding permits	407	479	496

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, at the direction of the Selectmen's Office, 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 2013-2014**

This winter was notable due to the sheer number of winter events experienced this season. This made for a very long, cold, snowy winter. There were a total of 25 events this season the most the DPW crews have had to respond to since the winter season of 2005. This winter also extended into April. The last time it snowed in New England in April was April 1, 1997, when nearly two feet fell in the early morning hours on April Fool's Day. By comparison our total of 0.25 inches that day was a far cry.

The total snow accumulation measured at the DPW facility for the winter of 2013-2014 was 58.4 inches. This is above average for the region. Of the 25 events that DPW responded to, 16 required the attention of snowplowing crews. The remainder of the storms was surface treated with a combination of sand, salt and liquid calcium chloride. Responding to storms this season resulted in the use of approximately 115 tons of sand, 3,753 tons of salt, 8,360 gallons of liquid calcium chloride and 14,000 pounds of calcium chloride pellets.

Overall, this winter will be remembered for the number of storms clustered together and extreme cold temperatures causing limited snow storage. The lack of a January thaw resulted in high snow banks requiring snow removal in commercial and even some residential areas. The lack of salt supply in the region and our limited on-site storage capacity contributed to ice packed streets.

Snow removal was required 3 times this winter in business and commercial areas.

#### **Monthly Snow Accumulations - Winter 2013-2014**

November	0.0"	February	19.60"
December	15.0"	March	1.75"
January	21.75"	April	0.25"

### **Street Resurfacing**

The Street Resurfacing Program for Fiscal Year 2014 began during the summer months of 2013 with the goal of not only making improvements to Wellesley's street infrastructure, but to make choices in the application phase to improve roadway life. Over the past several years, we have experienced increases in Liquid Asphalt pricing and more recycled product being used in the Northeast. The combination of both result in using different materials and different strategies on our streets.

We made evaluations of roadways throughout Town and found 3 main connector roads in need of treatment. These roadways were selected based on their current condition, shape, and traffic counts among numerous other factors. Croton Street, Beechwood Road, and Overbrook Drive were selected. Due to wear and utility trench cuts, an asphalt leveling course was installed to re-create the crown of the road's profile for improved drainage and a better driving surface. All castings including catch basins, sewer & drain manholes, natural gas & water shutoff gate boxes were adjusted to the new grade. Finally, the surface received a rubber chip seal for the wear surface.

Both a portion of Barton Road and a portion of Forest Street were milled, rubber chip sealed, and then paved with conventional HMA. The process of chip sealing and then paving, is referred to as SAMI treatment (Stress Absorbing Membrane Interlay) and is used to strengthen the base and prevent future cracking.

After a review of Bacon Street, it was determined to overlay the roadway due to its condition. The purpose of the work was to give motorists a temporary riding surface while plans are being made for the reconstruction of the roadway with drainage improvements.

The Cracksealing Program took place in October of 2013. The following main roadways were cracksealed: Glen Road, Walnut Street, Bristol Road, River Street and 17 smaller streets. An estimated total of 3,901 gallons of cracksealing material was used.

At the Rosemary Water Pumping Station, Highway Division crews prepared the site with new curbing and other repairs prior to an HMA overlay by our Contractor.

### **Storm Water Improvements**

The Wellesley Highway Division provided services to the Engineering Division for the completion of a drainage project on Forest Street, Park Avenue, and Seaver Street. The purpose of this project was to prevent flooding, and to make improvements to the water quality of stormwater runoff to Caroline Brook and Fuller Brook. The job consisted of the installation of approximately 1,480 linear feet of a combination of 12", 15", 18", and 24" drain pipe and installation or rebuild of 28 drainage structures. The project was started in the summer and was completed in the fall season. A final section of this drainage system will be completed by the Fuller Brook Project contractor and will upgrade the pipe from this system to a new discharge point in Caroline Brook.

Under the Facilities Maintenance Division (FMD), Highway Division employees made drainage improvements at the Calvin Road driveway of the Middle School. A new catch basin was installed with a double sized frame and a back-inlet. A new low point was established to prevent flooding of the Middle School's gymnasium newly installed wood floor. In addition, approximately 25 feet of new 8" drain was installed to tie the new catch basin into the existing drainage system. Using the Highway Division paving contractor, the entire driveway was paved. This work was completed in August and passed the test of the Labor Day rain storm which produced flash flooding in Town. The new system performed well and the gymnasium was spared any water damage according to the FMD director.

The surveying of the Town wide drainage system continued and inspections were completed in the Fuller Brook Basin. All changes to the drainage layer in GIS are underway with the cooperative effort of the GIS Department and the Engineering Division. This survey effort will continue in future years so that all of the watershed basins are accounted for and the entire drainage system will be accurately captured in GIS.

During the winter, the Highway, Water and Sewer Divisions, along with the Engineering Division, applied for and received grant funding to assist in purchasing a crawler-mounted TV inspection camera for both sewer and stormwater needs. This camera will provide a service the Town has previously contracted out. Owning a camera will provide vital information as in the past but will also be available immediately during emergency situations. The availability of the camera will also allow for more inspections of the Town's drainage system to identify pipes in need of repair.

#### **Linden Street Reconstruction**

Immediately after the 2014 Boston Marathon, Highway Division crews were assigned to assist the Engineering Division in the reconstruction of the final portion of Linden Street from Weston Road to Everett Street. The work included the installation of a larger drain pipe adjacent to 68 Linden Street and adding additional catch basins. Drainage was also corrected at the intersection of Linden Street and Crest Road after an inspection with the inspection camera found the existing drain had collapsed. After completing all drainage work, the roadway was milled enabling a contractor to reset and install granite curbing and new handicap compliant wheelchair ramps. Paving was completed in June 2014. Highway crews are expected to complete the remainder of the project during the summer of 2014. This work will include the improvement of all sidewalks and driveway entrances.

#### **Other Activities**

The Highway Division coordinated with a subcontractor to make repairs on the guardrail systems throughout Town. Guardrails were replaced on Cedar Street adjacent to the Schofield School and on River Street adjacent to the Charles River. Guardrails on Hundreds Road and Bacon Street were replaced due to vehicle accidents. Highway crews installed a wooden guardrail system adjacent to the High School Football Field over Fuller Brook. Highway Division staff also made permanent asphalt repairs to temporary water pipe trenches during the late summer and early fall of 2013.

### HVAC Study for DPW Highway Building

In an effort to make needed improvements and updates to the Highway Division Building & Garages, the capital project for reconstructing the heating, ventilation & air conditioning (HVAC) system was put out to bid and the work performed during the year. The contract was based on a study and assessment previously performed by Weston & Sampson and its subcontractor, SED Associates. The Engineering Division worked closely with Weston and Sampson Engineers to inspect and evaluate the condition of the existing facility and to develop recommendations for the HVAC system modifications and to the building itself to enhance air quality, safety and improve energy efficiency.

A contractor along with several subcontractors performed the work under the direction of the Permanent Building Committee (PBC). The Engineering Division, along with Weston & Sampson, was responsible for project management. Areas of improvement included air quality, heat loss and air temperature control problems.

The work on this project was substantially completed by December 2013. This included the installation of two new boilers, the replacement of the roof top A/C unit and removal of all window air conditioning units, installation of a CO sensor with ventilation trigger in garages, makeup air units (MAU) in garages needing ventilation and setup of all new devices on a central controller for interface with software (Metasys).

<b>Comparative Statistics</b>	<b>FY13</b>	<b>FY14</b>
<b><u>Street Resurfacing &amp; Cracksealing (public ways)</u></b>		
Hot Mix Asphalt (HMA) Overlay	1.6 mi	.13 mi
Roadway cold planed & HMA Overlay	0.3 mi	0 mi
Stress absorbing membrane interlayer treatment (SAMI)	0.6 mi	.6 mi
Asphalt rubber surface treatment	2.12 mi	1.532 mi
Streets cracksealed	0.0 mi	5.94 mi
<b><u>Curbing</u></b>		
Granite curbing	0 lf	0 lf
HMA curbing	820 lf	398 lf
<b><u>Sidewalks</u></b>		
Sidewalks resurfaced	715 lf	1430 lf
New sidewalk construction	0 lf	0 lf
Sidewalks reconstructed	0 lf	0 lf
<b><u>Guardrail fencing</u></b>		
Highway steel guardrail fencing installed	384 lf	853 lf

**Winter Maintenance**

Winter weather events requiring DPW response	17	25
Total snowfall, inches	64.5	58.4
Salt used for ice control on roads and walks, tons	2,889	3753
Calcium chloride (liquid) for ice control on roads, gallons	2,000	8360
Sand used for ice control on roads and walks, tons	40	115
Calcium chloride (pellets) ice control in School Lots*, lbs	7,000	14000
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	3662

**PARK & TREE DIVISION**

The Park & Tree Division of the Department of Public Works 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 3 Wellesley 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 on Natural Resource Commission and School Department properties. Sites including the Hunnewell and Sprague Field complexes totaling 47 acres of natural grass and 4 acres synthetic turf.
- 17 Tennis Courts at 4 locations (Hunnewell, Sprague, Schofield, Kelley).
- 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.
- 2 Reservoirs and 7 Water & Sewer Pumping Stations
- Over 6,000 inventoried public shade trees and vegetation management along town roadways.
- The Division responded to 636 resident's service requests related to the above responsibilities.

During the fiscal year **2014**, the Park & Tree Division also completed the following tasks and capital improvement projects:

- **Hunnewell Field Capital:** Renovated the Hunnewell Football Field by installing 73,000 square feet of new sod. Supplemented the natural grass maintenance program with extra aeration and seeding of natural grass fields.
- **Elementary School Capital:** Supplemented the natural grass maintenance program with extra aeration and seeding of natural grass fields.
- **Playground Capital:** Continued with playground surfacing improvements and edging at all school and park playgrounds. Also replaced a cracked slide and hand rails discovered during routine inspections at the Warren Park.
- **Sprague Field Capital:** Supplemented the natural grass maintenance program by contracting out extra aeration to all the natural grass fields.
- **Tennis & Basketball Court Capital:** Replaced 5 basketball hoops and backboards at the Hardy School and 4 basketball hoops and backboards at the Upham School. Also, in cooperation with the Facilities Maintenance Department and Highway Division, the Bates School basketball court area was renovated to improve safety by removing areas of granite berm and replacing with a low profile asphalt berm and fencing.
- **FY 14 Tree Planting Program:** During the fall of 2013 and spring of 2014 planted and maintained 129 new trees and 119 shrubs town-wide with funding provided by the Natural Resources Commission and other various capital project funds and donations.
- **A.D.A. Capital:** Renovated stone dust paths at Brown and Ouellette Parks.
- **Traffic Island Capital:** Completed Standish & Priscilla Roads traffic island by installing new sod, mulch and shrubs.
- **Winter Moth Spraying Program:** In the spring of 2014 held off on spraying 1,096 public shade trees that were sprayed in 2013. The reason for this strategy is due to a team of scientists led by Joseph Elkinton at the University of Massachusetts Amherst. This team released approximately 1,000 parasitic flies at Centennial Park in Wellesley on May 9<sup>th</sup>, 2008, to help biologically control this invasive caterpillar. In eastern Massachusetts this caterpillar has been stripping the foliage from many kinds of deciduous trees in towns that stretch from the North Shore to Cape Cod.

This fly, known as *Cyzenis albicans*, is an important natural enemy of the winter moth and has successfully controlled the moth in earlier invasions of Nova Scotia and the Pacific Northwest. Elkinton and his colleagues are confident that this fly will eventually suppress winter moth populations in Massachusetts to harmless levels. That is what happened in Nova Scotia, where the fly was introduced in the 1950s, and where winter moths have been at low levels ever since. It will take a few years, however, for a few thousand flies to catch up with a population of winter moths that numbers in the trillions. In Nova Scotia it took six years.

The research team is also confident that the fly will not cause other problems. Research has shown that it attacks only the winter moth, and will not attack other species of caterpillars.

Also, in cooperation with the Natural Resources Commission provided public information to town residents on this program along with 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 Health Department with treating over 3,200 catch basins with larvicide to help reduce the mosquito population in the town during July of 2013.
- **Aquatic Weed Harvesting:** In July of 2013 continued annual mechanical weed harvesting of invasive aquatic plants at Longfellow and Rockridge Ponds. Then during the months of August and September 2013 and May and June 2014 continued annual mechanical weed harvesting of invasive aquatic plants at Morses Pond. Also provided support to the Phosphorus Inactivation System at Morses Pond during May and June 2014.
- **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 and removed numerous hazardous and/or invasive trees during FY13.
- **School Landscaping & Grounds Program:** In cooperation with the Facilities Maintenance and School Departments, removed overgrown trees and shrubs from around school buildings to improve public safety and security standards. This program includes phasing in new landscape designs that will be more cost effective to manage and creating a policy for the School Department to fund and better manage any new donated landscape designs.

- **Railroad & River Street Municipal Parking Lot improvements:** With funding from the Selectmen's office the division made landscape improvements to the Railroad Parking Lot along the Crest Road hill and the back area of the River Street Parking Lot. Improvements included removal of hazardous trees and invasive plants, followed by planting of new trees and shrubs.
- **Holiday Lighting:** In cooperation with Selectmen's office, donors provided funding to light 8 additional trees. This created a total of 31 lighted trees which the Park Division and Municipal Light Plant set up throughout Wellesley's commercial areas during the holiday season.

### **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 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 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 and running smoothly.

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 \$1,700 a year) and the fact that we are doing our part in helping to improve literacy around the world.

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. Contaminants 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 whenever possible. 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 recycling statistics:

Product Sales Revenue	\$	380,544
Compost Sales	\$	5,264
Appliance Fees	\$	12,075
Commercial Yard Waste Fees*	\$	16,540
Commercial Recycling Fees**	\$	6,927
Recycling Container Sales	\$	265
<b>Sub Total</b>	<b>\$</b>	<b>421,615</b>
Cost Avoidance Benefits***	\$	1,016,713
<b>Total Recycling Benefit</b>	<b>\$</b>	<b>1,438,328</b>

\*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 FY14, a total of 7,586 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 developed and enforces the State's waste ban. This is a list of 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 4, 2014. A total of 282 residents participated in bringing in a total of 14,240 lbs or 7.12 tons of hazardous material. In addition, the RDF sponsored the second annual paper shredding event that brought in almost 10 tons of confidential documents from Wellesley residents and commercial businesses. The feedback from the residents was very positive.

### **Step Up! Program**

The Step Up! Program is an effort to encourage all residents to increase their participation in waste reduction, regardless of where they are today, by increasing 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, she would take a step up. The top step is community education and outreach, encouraging family and friends to also Step Up!. 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 1,434 tons of recycled products from neighboring communities and recycling haulers. The gross revenue from the Business Initiative Program in FY14 was \$120,643. The cost of doing business was \$63,743 for a net benefit of \$56,900. The eight-year net benefit to the Town is \$673,265. 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, accommodate increased tonnage from the Business Initiative Program, and 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*	FY13	FY14	FY14 (\$Sales)**
Paper	1,832	1,398	108,701
Cardboard	1,244	1,068	139,807
Glass: Clear	156	131	2,612
Brown	56	61	911
Green	207	203	N/A
Ferrous Metal	306	353	71,750
Non-Ferrous Metal	26	5	2,538
Aluminum Foil and Plates	3	3	1,612
Steel Cans	33	29	6,581
Refundable Containers	28	16	11,375
Plastics	306	256	29,980
Single Stream	N/A	339	N/A

Books	23	20	N/A
Wood Products	520	505	N/A
Stone/Brick/Concrete	902	939	N/A
Batteries (Automotive)	2	6	2,449
Waste Oil	12	8	1,918
Tires	13	12	N/A
Textiles (Used Clothing)	151	143	N/A
Paint	12	4	N/A
Hazardous Products	113	117	N/A
Miscellaneous	115	118	N/A
Recycling Containers	29 units	25 units	280
Used Medical Equipment	193 units	216 units	N/A
Mobile Phones	565 units	490 units	N/A
Eye Glasses	375 units	192 units	N/A
<b>(A) Total Recyclables</b>	<b>6,061</b>	<b>5,735</b>	<b>380,544</b>
<b>Subtotal by source (estimated)</b>			
Residential	4,113	3,805	220,521
Municipal	122	122	7,071
Commercial	289	271	15,706
Business Initiatives	1537	1537	137,247

<b>(B) Solid Waste</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>
Residential	6,868	6,447	6,298
Municipal	244	238	238
Commercial	1,372	1,260	1,021
<b>(B) Total Solid Waste</b>	<b>8,484</b>	<b>7,945</b>	<b>7,557</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 FY13

<b>(C) Yard Waste (tons)</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>
Residential	4,475	4,506	5,000
Municipal	1,816	1,860	1,428
Commercial	329	515	312
<b>(C) Total Yard Waste</b>	<b>6,620</b>	<b>6,881</b>	<b>6,740</b>

<b>All Waste Materials</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>
<b>Total Weight (A+B+C)</b>	<b>21,718</b>	<b>20,887</b>	<b>20,032</b>

#### Recycling Percentages

<b>Excluding Yard Waste</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>
Residential	38.5%	38.9%	37.7%
Municipal	33.0%	33.9%	33.9%
Commercial	61.6%	59.2%	63.9%

<b>(C) Total Excluding Yard Waste</b>	<b>43.8%</b>	<b>43.3%</b>	<b>43.1%</b>
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<b>Including Yard Waste</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>
Residential	56.1%	57.2%	58.3%
Municipal	88.8%	89.3%	86.7%
Commercial	64.8%	65.0%	67.5%
<b>(C) Total including Yard Waste</b>	<b>60.9%</b>	<b>62.0%</b>	<b>62.3%</b>

### **Per Capita Recycling**

<b>Per Capita Recycling (tons) ***</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>
Residential	307	294	272
Municipal	9	9	9
Commercial	157	131	129
<b>Total Per Capita Recycling</b>	<b>473</b>	<b>433</b>	<b>410</b>

\*\*\* Does not include yard waste.

### **Total Sales Revenue (\$)**

<b>Sales Revenue</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>
Recycling Sales and Fees	543,603	413,921	399,586
Commercial Trash Tipping Fees	167,082	179,183	150,807
Earth Product Sales and Fees	23,683	23,827	21,589
Commercial Snow Permits	2,875	9,700	17,700
<b>Total Sales Revenue****</b>	<b>737,243</b>	<b>626,631</b>	<b>589,682</b>
<b>Total Deposits into General Fund*****</b>	<b>794,845</b>	<b>634,873</b>	<b>608,577</b>

\*\*\*\* 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 FY14 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 FY14.

### **Water Distribution**

The Skyline Drive water main of 1,220 feet was cleaned and cement lined, and also a portion of the Great Plain Avenue water main of 2,340 feet was cleaned and cement lined. The water main valve exercising program that helps maintain the useful life and operation of water system valves checked 524 valves. The distribution system flushing from the fire hydrants was done in the spring and fall. Some additional statistics:

New Replacement Hydrants	12
Hydrants Repaired	48
Services Cut Off For Home Demolition	68
New or Replaced Water Services	94

### **Water Supply**

The Morses Pond water treatment plant was placed back on line on March 28, 2013. The increased yield from the new wells has reduced the need to supplement our supply with water purchased from the MWRA to meet the Town's water demand. A copy of the annual Consumer Confidence Report (CCR) was delivered to every customer. The water supply was sampled under the direction of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) to provide EPA and other interested parties with scientifically valid data on the occurrence of contaminants in drinking water. These data serve as a primary source of occurrence and exposure information that the agency uses to develop regulatory decisions. The results of the testing will be included in next year's CCR.

### **Water Conservation**

A primary component of our water conservation program is leak detection. A leak detection survey of our entire distribution system was completed in FY14. This comprehensive survey includes surveying the system hydrants with a 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. This year 4 water main leaks and 46 service leaks were repaired.

### **Water Metering**

The water metering system consists of about 8,337 residential/commercial water meters and 3,851 irrigation meters. These customer meters have been read by an Itron radio system since 1999. The devices that accompany the meters, which encode, receive, and transmit the data by radio signal, are powered by batteries. There were 294 new/replacement meters put into service and 190 meters taken out of service.

### **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 1.18 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 FY14, the Pickerel Road sewer lift station was reconstructed and placed in service. The Division renewed the contract with National Water Main Company of Canton, MA to continue our annual program of sewer collection system rehabilitation. This year 19,986 linear feet of sewer main were TV inspected, 4,031 joints were tested, and 715 joints were sealed with grout.

In addition, 11,917 feet of vitrified clay sewer pipe were treated for root control.

**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-year 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>	
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%)
2013	3.23	(1.08%)	5.80	(1.19%)

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.

<b><u>Division Statistics</u></b>	<b><u>FY11</u></b>	<b><u>FY12</u></b>	<b><u>FY13</u></b>	<b><u>FY14</u></b>
Number of Water Accounts	12,006	12,041	12,100	12,188
Water Pumped from Local Wells, MG	639.2	675.05	482.76	796.95
Water Pumped from MWRA, MG	414.78	307.9	522.56	238.89
Total Water Pumped, MG	1,053.98	982.94	1,005.32	1,035.84
Peak-to-Average Day Water Demand	2.03	2.21	2.11	1.98
Total Water Billed, MG	871.16	846.79	864.06	876.56
Unaccounted Water, %	17.3	13.9	13.2	14.5
New Meters Installed/Replaced	213	232	225	294
New Hydrants Installed/Replaced	14	19	13	12
Number of Sewer Accounts	8,124	8,126	8,122	8,130
Number of House Services Rodded	319	332	329	352
Feet of Sewer Main Rodded/Flushed	305,337	398,951	275,776	327,635