REPORT OF THE SUSTAINABLE ENERGY COMMITTEE

Town Meeting established the Sustainable Energy Committee (SEC) in 2010, to lead efforts to accomplish the goal adopted at the 2009 Annual Town Meeting to reduce Town-wide greenhouse gas (GHG) emissions 10 percent below 2007 levels by 2013, to monitor and report progress toward that goal, and to propose further goals for emissions reductions to Town Meeting. The 2014 Annual Town Meeting adopted the SEC proposal to establish a new goal to reduce Town-wide emissions 25 percent below 2007 levels by 2020.

The SEC has seven appointed members, with staggered terms of three years. The Board of Selectmen (BOS), Municipal Light Plant (MLP), and School Committee each appoint one board member, officer, official, or paid employee. The BOS appoints the remaining four members from among residents or others with relevant interests and expertise. Traditionally, Babson and Wellesley College have held one of the at-large seats on a rotating basis.

MEASUREMENT OF 2018 EMISSIONS AND TRENDS

Each year the SEC measures the Town's "carbon footprint" and tracks the change against earlier years. This carbon footprint measurement is an estimated number calculated from a variety of inputs, some actual and some estimated. It is based on actual municipal and college energy use data, actual electric and natural gas use by households and businesses, and estimates for heating oil consumption, fuel efficiency in the transportation sector and the conversion factors that translate energy use into GHG emissions. The methodology is guided by the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions established in October 2012 and calculated using ICLEI – Local Governments for Sustainability software.

As discussed below, the values in Table 1 reflect important updates the SEC has made to its electricity emissions factor and transportation data. Table 1 also includes revised 2017 data for Babson College. Year 2018 shows a nearly 1% increase in total emissions, driven largely by a 2% increase in transportation-related emissions, and a slight decrease in total building emissions. The small increase in building-related emissions in the municipal and residential sectors could reflect a cold winter and high summer temperatures. Despite the weather, however, the colleges and commercial sectors experienced a decrease in building emissions. Transportation emissions are based on traffic counts on Wellesley streets and these emissions continue to rise at a rate commensurate with (or even below) what the Massachusetts Department of Transportation (MassDOT) and traffic consultants generally predict for annual changes in traffic volume. The 12.2% increase in the waste sector emissions mirrors a similar increase in the tonnage of solid waste accepted at Wellesley's Recycling and Disposal Facility (RDF). In 2018 emissions from commercial waste increased approximately 50% over 2017. This increase was due in large part to new but temporary commercial customers who sought out the Wellesley RDF when their local transfer station experienced difficulties and could not accept them. Waste is a small sector and, in general, waste amounts fluctuate with the economy, building demolition waste and fees for waste disposal in Wellesley and the surrounding area.

Table 1:

Greenhouse Gas Emissions (CO2e) in metric tons						
Electricity/Natural Gas/Fuel Oil	**Share of Total 2018 Emissions**	**2018 Emissions**	**2017 Emissions**	**2017 - 2018 Percent Change**	**2007 Emissions**	**2007 - 2018 Percent Change**
Residential	29.6%	108,945	108,422	0.5%	136,236	-20.0%
Commercial	11.4%	41,859	42,192	-0.8%	61,203	-31.6%
Colleges	10.2%	37,494	38,720	-3.2%	46,668	-19.7%
Municipal	2.0%	7,383	7,201	2.5%	9,723	-24.1%
Building Subtotal	**53.1%**	**195,681**	**196,536**	**-0.4%**	**253,830**	**-22.9%**
Waste	0.5%	1,837	1,637	12.2%	2,027	-9.4%
Gas/Diesel	46.4%	170,751	166,892	2.3%	160,468	6.4%
Total Emissions	**100.0%**	**368,269**	**365,064**	**0.9%**	**416,325**	**-11.5%**

While emissions in the building sector have decreased almost 23% since 2007 (with even higher emission reductions in commercial and municipal buildings), Wellesley is not on target to meet its goal of reducing emissions 25% below 2007 levels by 2020. This shortfall is due primarily to the transportation sector, which has seen a 6.4% increase since 2007. As described below, the SEC is taking steps to address both building and transportation emissions.

In 2018, the SEC employed two technical changes to improve the calculation of the town's emissions. First, SEC changed the source of its electricity emissions factor[1] from the U.S. Environmental Protection Agency's (EPA's) Emissions & Generation Resource Integrated Database (eGRID) to ISO-New England (ISO-NE).[2] Electricity emissions for all years in Table 1 are based on the ISO-NE factor. The SEC also updated the transportation data used in calculating transportation-related emissions for the Wellesley community.[3]

[1] An emissions factor is the average emission rate of a given greenhouse gas for a given source. Two authorities publish emissions factors for electricity generation in New England: (1) the U.S. Environmental Protection Agency, and (2) ISO-NE, the regional electricity grid operator.

[2] Since the Town established a GHG inventory, Wellesley has employed eGRID in calculating electricity-related emissions. Historically, the electricity emissions factors from the two sources have had comparable values. A recent divergence in the eGRID and ISO-NE values, however, prompted the SEC to label emissions results for 2018 Annual Town Meeting "preliminary" and to take a closer look at the attributes of these factors, including the data and assumptions underlying them. Based on its analysis, the SEC decided to switch to ISO-NE for two reasons: (1) ISO-NE uses more actual emissions data in calculating its emissions factor for New England, and (2) the ISO-NE factor is published annually while the eGRID factor is updated only every other year. Given these two advantages, the SEC has decided to use the ISO-NE emissions factor for current, future, and past GHG inventories.

[3] The SEC relied on the Massachusetts Department of Transportation (MassDOT) 2017 Road Inventory Report to refine its road classification and road mileage values. The SEC also used traffic counts from the MassDOT Transportation Management System interactive map, and from traffic studies for the Route 9 Enhancement Study and for 40B and other proposed projects in Wellesley to further update and expand its traffic count database. The SEC has included new traffic data in FY18 GHG estimates. Where newly-found traffic counts are available for previous years, the SEC is re-calculating transportation-related emissions for those years as well.

COMMITTEE ACTIVITIES IN 2018 and 2019

In addition to tracking and analyzing the GHG emissions as described above, the SEC led and contributed to a number of initiatives aimed at reducing the Town's carbon footprint, detailed below.

Green Communities

The SEC coordinated the Town's Green Communities activities and its reporting to the Massachusetts Department of Energy Resources. The Committee continued to use MassEnergyInsight software to track Wellesley's municipal energy use. The SEC worked with the Facilities Management Department (FMD) and the Department of Public Works (DPW) to implement two projects funded by Wellesley's Green Communities Designation Grant of $137,250. A portion of this grant supported an exterior light-emitting diode (LED) retrofit on the DPW campus, led by FMD. The grant also supported a DPW-led energy evaluation of the Town's water and wastewater infrastructure. The SEC is working with Town departments to identify projects eligible for the remaining $61,000 of designation grant funds and to identify energy conservation measures to propose in the Town's 2020 application to the Green Communities Competitive Grant Program. Green Communities grants regularly fund heating, ventilation and air conditioning upgrades, lighting improvements, variable frequency drives, solar panels, electric vehicles and electric vehicle charging stations, education programs, and certain consultant services to support renewable energy and energy efficiency in qualifying cities and towns.

WasteWise Wellesley

The SEC launched WasteWise Wellesley to identify and capitalize on win-win opportunities associated with sustainable materials management, as part of the 3R (Reduce, Reuse, Recycle) Working Group (DPW, Natural Resources Commission (NRC) and SEC). The EPA estimates that the provision of goods and food in the United States contributes approximately 42% of the country's carbon footprint. Currently, the SEC's current tracking system does not reflect decreases in GHG emissions associated with reducing, reusing and recycling materials (including food) but we have implemented these programs to improve our emissions reductions nevertheless.[4] WasteWise Wellesley initiatives involve collaborations with Wellesley Public Schools (WPS), WPS Food Services, FMD, DPW, NRC, Health Department, Green Schools, Sustainable Wellesley, EPA, and the Massachusetts Department of Environmental Protection, and include:

- **Cafeteria recycling, food rescue, and food waste diversion at Bates, Fiske and Sprague Elementary Schools.** This year these schools added food donation to their established cafeteria recycling and food recovery programs. Uneaten packaged food and whole fruit from school lunches is either shared with students in the school or is donated to the Wellesley Food Pantry. Bates School also participates in EPA's Food Recovery Challenge (FRC).
- **A Metrowest Food Recovery Program.** The SEC spearheaded the Metrowest Food Recovery Program through which the Cambridge-based nonprofit, Food For Free, picks up kitchen leftovers from Wellesley Public Schools, Olin, Wellesley and Babson

[4] The SEC is reviewing and contemplating revisions to its methodology for calculating GHG emissions in the future.

Colleges and Bentley University and packages these leftovers into single-serve frozen dinners to distribute to food insecure individuals and families. Food for Free delivers some of these meals to MassBay Community College in Wellesley where a recent survey found that up to 52% of MassBay students are food insecure. The EPA provided generous guidance and support to this endeavor and an SEC volunteer worked closely with Wellesley's Heath Department to develop detailed Standard Operating Procedures to ensure food safety. In September 2018, The Metrowest Food Recovery Program (including the Town of Wellesley and other participants) received an EPA Environmental Merit Award at Faneuil Hall in Boston for its work.

- **Food Recovery Education and Outreach.** Wellesley's food recovery operations serve as a model for other towns and organizations. In May 2018, WPS, the SEC and the EPA hosted Whitsons Culinary Group for a day-long visit of observations and presentations to showcase Wellesley's cafeteria programs and the Metrowest Food Recovery Program, and to encourage adoption of similar sustainable practices in the more than 100 districts that Whitsons serves. EPA asked the SEC to arrange a similar Wellesley visit day for representatives from other school districts. In October 2018, Wellesley hosted a Food Waste and Food Rescue Workshop that attracted 40 participants from seven neighboring communities. Together they represented 70 schools interested in replicating Wellesley's programs. The SEC has also met with retirement communities and others in response to their requests to learn more about Wellesley's programs. This outreach work helps Wellesley to fulfill some of its goals as endorser of the EPA's FRC program.
- **The Repair Cafe** continues to offer free fixes for broken items**.** On two separate dates, the Rotary Club provided tools and materials, along with skilled volunteers, to help residents fix clothes, furniture, electrical appliances, bicycles, crockery, gadgets, toys and more.
- The SEC encouraged the residential **food waste drop-off** program at the RDF and helped lay the groundwork for a successful pilot that diverts Wellesley Middle School kitchen food waste to the RDF food waste drop-off. The program is now fully integrated with RDF services and the RDF transports approximately 125 pounds of food waste per week from WMS.

As discussed above, it is well established that reducing, reusing, and recycling materials (including food) decreases GHG emissions but unfortunately, the SEC's current carbon footprint accounting methodology does not reflect such efforts.

Sustainable Building Guidelines and Sustainability Support for Hunnewell, Hardy, Upham (HHU) Projects

The SEC serves as a resource to the School Committee and School Building Committee (SBC) on sustainability-related topics and the SEC supports liaison efforts between the HHU process and interested community members. The Hunnewell School Feasibility Study Request for Qualifications and the SBC's Owner's Project Manager Request for Services for the Upham/Hardy project included sustainability language and criteria drafted by the SEC. SEC members attended SBC meetings, participated in Hunnewell Feasibility Study public forums, and met with the Hunnewell Feasibility Study team to discuss sustainability considerations. The SEC researched energy, GHG emission and cost-related elements of building design, and participated in webinars workshops, and conferences on zero net energy and sustainable building design.

The SEC has prepared Sustainable Building Guidelines for municipal building projects and private development on Town-owned land. The SEC is working closely with FMD to refine the draft Guidelines prior to presenting them to Town departments, boards and committees for additional feedback. The SEC anticipates seeking approval for such Sustainable Building Guidelines from Town Meeting at the next available opportunity.

Transportation Working Group

The SEC organized a Transportation Working Group to identify opportunities for reducing transportation-related GHG emissions and to serve as a resource to the Town's Mobility Working Group. Transportation emissions comprise approximately 46% of Wellesley's carbon footprint. The Working Group includes an SEC Committee member, SEC staff, Green Schools members and interested volunteers. The group has consulted with our Town officials, transportation departments in other communities, Wellesley Public School administrators, staff from local colleges, members of grassroots organizations, public transportation experts, and staff members with the Metropolitan Area Planning Council with the aim of identifying opportunities in the following areas:

- Potential programs to streamline and improve bus transportation for Wellesley residents, the Council on Aging, colleges, and private employers;
- Technologies to reduce idling in municipal vehicles;
- Programs to reduce vehicle traffic associated with the Schools;
- Strategies to reduce traffic congestion; and
- New methodologies for calculating transportation-related emissions.

Solar

In 2018, Wellesley earned a SolSmart Silver designation through the U.S. Department of Energy. According to the SolSmart organization, "This designation is in recognition of all the hard work and leadership your community has shown to reduce soft costs and barriers to going solar."

The SEC has been working with the MLP to prepare for a residential solar campaign in 2019. This program will encourage solar installations in Wellesley under the State's new solar rebate program for municipal light plants.

Promoting Home Energy Audits for Seniors

The SEC initiated a Home Energy Seminar project to educate residents about energy conservation and home energy assessments offered by the MLP and National Grid. The SEC gave 11 seminars (nine at the Tolles-Parsons Center, one at Rotary Club and one at the Village Church). Approximately ninety (90) residents attended the seminars, learned about their energy usage and ways to reduce it, and most said they planned to get a home energy audit.

Leading by Example Award

At a ceremony in the Massachusetts State House, the Department of Energy Resources awarded a Leading by Example award to the Town of Wellesley for its energy conservation, renewable energy and sustainability efforts. Specifically, the Commonwealth recognized Wellesley's energy conservation measures, food waste diversion and food recovery efforts, its

rooftop solar installations, LED streetlight retrofit, greenhouse gas emissions reductions, and leadership in the state.

Green Collaborative

The SEC works with boards and staff members throughout the Town and with Wellesley Public Schools to advance its mission. SEC's programs also involve significant participation by other groups with common interests. To connect numerous, environmentally-interested groups across Town, the SEC facilitates "Wellesley's Green Collaborative." The Collaborative consists of nearly 30 entities including Town Departments, grass roots climate action groups, houses of faith, land conservation activists, civic organizations, and garden clubs. The Collaborative meets several times a year to discuss sustainability issues relevant to Wellesley and to share information and encourage collaboration where there are common interests. The Collaborative recently hosted a MassDOT speaker to present on its Safe Routes to School Program.

Additional Projects, Website and Staffing

In July the SEC welcomed a part-time Department Assistant, who has been a tremendous asset to the Committee especially in the areas of energy use tracking, greenhouse gas emissions accounting, and research to improve the data and methods underlying emissions estimates.

The SEC Chair served on an MLP Working Group to oversee a study of how the MLP can reduce GHG emissions from our town's electricity.

The SEC developed a comprehensive website to provide information to the public and to showcase its projects. The SEC will continue to expand the content and use of this website to promote sustainable energy, disseminate information and materials, and strengthen the Committee's public outreach, generally.

The SEC is making progress on many fronts toward lowering the community's carbon footprint, yet challenges remain. Energy conservation measures, home energy seminars, Sustainable Building Guidelines, and the promotion of solar energy facilitate cuts in energy use, emissions, and costs. WasteWise programs reduce environmental degradation and emissions through better materials management practices. The town's GHG emissions goal eludes us largely because of transportation, the sector over which we have the least control. Nevertheless, the SEC Transportation Working Group aims to reduce traffic congestion and fuel use while exploring new technologies and more accurate and useful transportation emissions estimates. At 2020 Annual Town Meeting, the SEC will update Wellesley's emissions status and propose a new emissions reduction goal.

SUSTAINABLE ENERGY COMMITTEE

Laura Olton, Chair	Ellen Korpi, Vice Chair	Thomas Ulfelder	
Fred Bunger	Katharine Gibson	Michael D'Ortenzio	Rob Lamppa