Town of Douglas
Energy Reduction Plan

Adopted October 2017

This Energy Reduction Plan (ERP), in accordance with Criterion 3 of the Massachusetts Green Communities Program, outlines proposed energy efficiency measures to reduce costs and environmental impacts of municipal energy use in the Town of Douglas, Massachusetts. The intent of this plan is to assist Douglas in its energy reduction goals and help the Town achieve Green Communities designation through the Massachusetts Department of Energy Resources (DOER) Green Communities Program.

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I. PURPOSE AND ACKNOWLEDGEMENTS

This Energy Reduction Plan (ERP) outlines proposed energy efficiency measures to the reduce costs and environmental impact of municipal energy use in the Town of Douglas. The intent of the Plan is to assist the Town of Douglas in its ongoing conservation efforts, including the Town's goal of achieving *Green Communities* designation through the Massachusetts Department of Energy Resources (DOER) Green Communities Program. In accordance with Criterion 3 of the Massachusetts Green Communities Program, the ERP allows municipal officials to identify energy-efficiency opportunities and establish a timeline with specific targets to reduce energy use in municipal facilities and vehicles by twenty (20) percent over a five-year period. Douglas's energy baseline is computed from Fiscal Year 2016 energy usage and will be discussed in Section III of this plan. The energy conservation recommendations draw upon information from energy audits performed by Energy Conservation Incorporated (ECI) and the Central Massachusetts Regional Planning Commission (CMRPC). These strategies provide a realistic path for implementation that will evolve with the Town's priorities and changes in technology. The decreased energy use realized as a result will reduce energy usage, associated greenhouse gas emissions, and Town operating costs.

A. LETTERS VERIFYING THE ADOPTION OF THE ENERGY REDUCTION PLAN

- **General Government-** A letter of approval of this Energy Reduction Plan by the Board of Selectmen is attached in Appendix A, Adoption Verification Letters.
- **Schools**- A letter of approval of this Energy Reduction Plan by the School Superintendent is attached in Appendix A, Adoption Verification Letters.

B. CONTRIBUTORS TO THE ENERGY REDUCTION PLAN

- Town Engineer
- Board of Selectmen's Office
- Accounting Office
- Fire Department
- Police Department
- Building Department
- Highway Department
- Water and Sewer Departments
- Energy Conservation Incorporated (ECI)
- Department of Energy Resources ((DOER)
- Central Massachusetts Regional Planning Commission (CMRPC)

II. EXECUTIVE SUMMARY

A. NARRATIVE SUMMARY OF THE TOWN

The Town of Douglas is situated in southern Massachusetts, bordered by Oxford and Sutton on the north; Uxbridge on the east; Burrillville, Rhode Island on the south; and Webster on the west. A rural community of 8,471 (U.S. Census Bureau 2010), Douglas lies eighteen (18) miles south of Worcester and forty (40) miles southwest of Boston. The population density of Douglas is low, with 220 persons per sq. mile. Between 1980 and 2010, the town's population more than doubled, growing from 3,730 to 8,471.

Douglas' 37.7 square miles are comprised of 36.4 sq. miles of land and 1.3 sq. miles of water. The Town is home to the 3,752 acre Douglas State Forest, managed by the Massachusetts Department of Conservation and Recreation, as well as Wallum Lake and Whittins Reservoir. Most of Douglas is part of the Blackstone River Valley National Heritage Corridor.

Douglas has an open town meeting form of government, with a Board of Selectmen comprised of 5 members as well as a Town Administrator. The Town's median household income is $85,313 (ACS 2011-2015) – twenty (20) percent higher than the statewide average of $68,563. Nevertheless, balancing public safety, education, and other expenses with energy-saving improvements remains a challenge in this era of fiscal constraint. Green communities designation is an important step for Douglas as it strives to become a more sustainable, environmentally friendly community.

B. SUMMARY OF MUNICIPAL ENERGY USES

Municipal Buildings
The Town of Douglas operates eighteen (18) municipal buildings that will be assessed in this Energy Reduction Plan. These buildings include the Town Hall/ Police Station, four (4) schools, Senior Center/Post Office, Fire Station, Public Library, Highway Complex, VFW, Transfer Station building, Wastewater Treatment Plant, and six water and sewer pump houses. Of these buildings, seven (7) are heated exclusively with oil, three (3) are heated with oil and propane, six (6) are heated exclusively with propane, and two (2) are unheated.

Building Additions and New Construction
Since baseline year the Town has undertaken no new construction or building addition projects in its municipal facilities.

Vehicles
Douglas has a total of thirty-nine (39) municipally owned vehicles. These vehicles belong to the Highway Department, Fire Department, Police Department, School Department, Water and Sewer Department, Maintenance Department, and Community Development Department. Of these vehicles, all but four (4) are exempt from the fuel-efficient vehicle policy.

Street Lights and Traffic Lights
The Town of Douglas has 414 streetlights. All of these lights are owned by National Grid and are on an S-2 rate. S-2 rate includes energy and a limited maintenance fee which covers replacement of the photo cell and bulb if the light is not working and this equipment needs replacement. The Town also operated one flashing intersection light.

Water and Sewer
The Town of Douglas operates a municipally-owned water and sewer system. There is one (1) wastewater treatment plant and eight (8) pumping stations.

The number of municipal buildings, vehicles, traffic lights, and street lights are summarized in Table 1 on page 8.

Table 1: Summary of Municipal Energy Users		
Municipal Energy User	**Number**	**Ownership**
Buildings Heat Source		
Oil Heat	10	Town of Douglas
Natural Gas Heat	0	N/A
Propane Heat	9	Town of Douglas
Propane for Kitchen Use	0	N/A
Biomass Heat	0	N/A
Other Heat Type (electric)	0	N/A
Vehicles		
Non-Exempt	4	Town of Douglas
Exempt	35	Town of Douglas
Street Lights and Traffic Lights		
Street Lights	414	National Grid
Traffic Lights	1	Town of Douglas
Water and Sewer		
Wastewater Treatment Plant	1	Town of Douglas
Pumping Stations	8	Town of Douglas
Open Space		
Parks Department Fields	2	Town of Douglas

C. SUMMARY OF ENERGY USE BASELINE AND PLANS FOR REDUCTIONS

During baseline year FY16 the total energy use in municipal vehicles and facilities in the Town of Douglas was 26,585 MMBtus. Table 2 below depicts an overall summary of the Town's municipal energy usage during the baseline year, including projected savings. Figure 1, also below, shows overall energy usage by facility category for FY16 as determined by MassEnergyInsight.

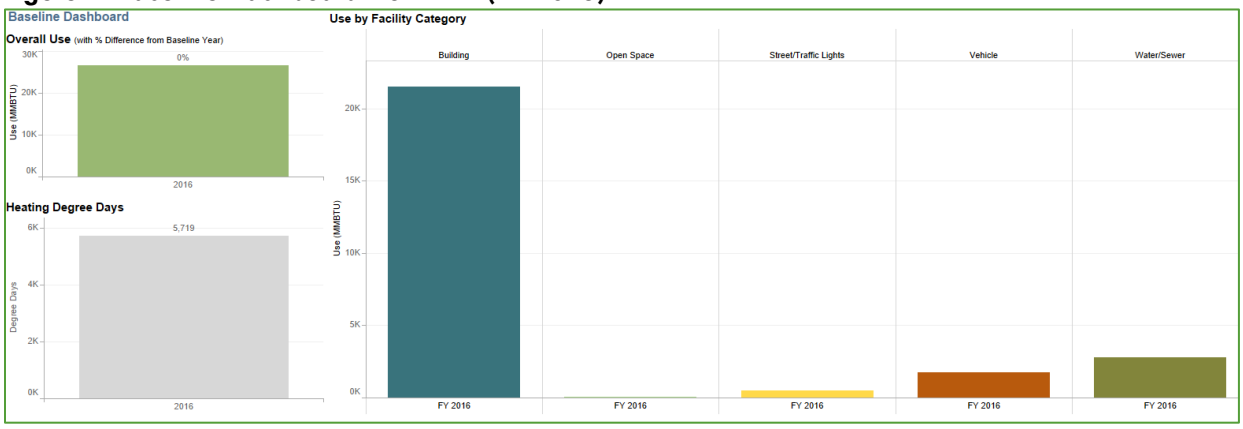
The majority of energy consumed in Douglas is used by municipal buildings (80.9%). The remaining usage is split between water and sewer (10.39%), street and traffic lights (1.9%), vehicles (6.6%), and open space (-0.16%).

At the request of the Town of Douglas, Energy Conservation Incorporated assessed and documented energy conservation opportunities at nine (9) Douglas facilities. Energy Conservation Incorporated's finding are based upon several site visits, inspections, staff interviews, and data collected through the course of ASHRAE Level 2[1] audits. In conjunction with one previously competed project and behavioral and vehicular changes, the measures will reduce Douglas's municipal energy use by at least twenty (20) percent from the baseline year. Specific actions are detailed in Section IV of this plan. The complete energy audit from Energy Conservation Incorporated is included as Appendix C.

[1] An ASHRAE Level 1 assessment determines how much energy a building uses and how that compares to other similar buildings, includes a short walk-through of the facility and identifies potential efficiency measures. The costs and savings of the measures are usually identified with low precision. An ASHRAE Level 1 assessment is often referred to as a scoping audit. An ASHRAE Level 2 assessment expands on a Level 1 by identifying much more accurate costs and savings for the recommended efficiency measures. Note that these costs are still not bid-level construction costs but generally are within 15-20 percent of accuracy. Cost and energy savings from operational and behavioral measures are also quantified in an ASHRAE Level 2 assessment. For more complex facilities, an end-use breakdown of how a facility uses its energy (i.e., 30 percent of electricity use is for lighting, 60 percent for HVAC, and 10 percent for plug load) is typically included.

Table 2: Summary of Municipal Energy Use Baseline				
Baseline Year: FY 2016	**MMBtu Used in Baseline Year**	**% of Total MMBtu Baseline Energy Consumption**	**Projected Planned Documented MMBtu Savings[2]**	**Savings as % of Total MMBtu Baseline Energy Consumption**
Buildings	21,521	80.9%	6,569	24.70
Vehicles	1,756	6.6%	53	0.19
Street/Traffic Lights	505	1.9%	0	0%
Water/Sewer	2,761	10.39%	0	0%
Open Space	42	.16%	0	0%
Total	**26,585**	**100%**	**6,622**	**24.89%**

Figure 1. Baseline Dashboard from MEI (FY 2016)



[2] Projected planned energy savings are discussed in more detail later in this plan and are presented in Table 3.

III. ENERGY USE BASELINE INVENTORY

A. IDENTIFICATION OF THE INVENTORY TOOL USED

The Town of Douglas will use the MassEnergyInsight (MEI) database as the inventory tool for this Energy Reduction Plan.

B. IDENTIFICATION OF THE BASELINE YEAR

The Town of Douglas intends to complete its twenty (20) percent reduction as outlined in this Energy Reduction Plan in a 5-year period starting in fiscal year 2016 and ending in fiscal year 2021. Fiscal Year 2016 will serve as the baseline year, starting on July 1, 2015 to June 30, 2016. The total consumption of energy in FY 2016 was 26,585 MMBtus as shown Tables 3a and Table 3b on the following pages.

C. MUNICIPAL ENERGY CONSUMPTION FOR THE BASELINE YEAR

During baseline year FY 2016, the total energy in municipal vehicles and facilities in the Town of Douglas totaled 26,585 MMBtus. Tables 3a and 3b, shown on pages 11 and 12, present energy use for each municipal facility in Native Units and MMBtus, respectively. The information shown in Figure 2 below is provided by the DOER to explain how MMBtu's are calculated.

Figure 2. MMBTu Conversion Chart

1 kilowatt hour of electricity	= 0.003412 MMBtu
1 therm	= 0.1 MMBtu
1 ccf (100 cubic foot) of natural gas	= 0.1028 MMBtu[3]
1 gallon of heating oil	= 0.139 MMBtu
1 gallon of propane	= 0.091 MMBtu
1 cord of wood	= 20 MMBtu
1 gallon of gasoline	= 0.124 MMBtu[3]
1 gallon of E100 ethanol	= 0.084 MMBtu
1 gallon of E85 ethanol	= 0.095 MMBtu
1 gallon of diesel fuel	= 0.139 MMBtu
1 gallon of B100 biodiesel	= 0.129 MMBtu
1 gallon of B20 biodiesel	= 0.136 MMBtu2[4]
1 gallon of B10 biodiesel	= 0.137 MMBtu9
1 gallon of B5 biodiesel	= 0.138 MMBtu9[4]
1 barrel of residual fuel oil	= 6.287 MMBtu

Fuel Energy Content of Common Fossil Fuels per DOE/EIA[5]
BTU Content of Common Energy Units – (1 million Btu equals 1 MMBtu)

[3] Based on U.S. consumption, 2007
[4] Calculated Values from those of diesel and B100 biodiesel

Table 3a. Municipal Energy Use for Baseline (Native Fuel Units)

		2016				
		Electric (kWh)	Oil (gallons)	Gasoline (gallons)	Diesel (gallons)	Propane (gallons)
Building	Douglas Elementary School	517,400	15,000			
	Douglas High School	918,600	30,996			
	Town Hall/ Police	200,263	12,800			1,667
	Fire Department	45,355	1,000			
	Library	10,706	1,415			
	Senior Center/ Post Office	15,381	1,190			2,883
	VFW	1,120				
	Transfer Station	5,944				
	Douglas Primary School	151,440	11,739			
	Douglas Middle School	578,889	14,651			
	Highway Complex	21,889	2,500			
	Total	**2,466,987**	**91,291**			**4,550**
Open Space	Recreation	12,222				
	Total	**12,222**				
Street/Traffic Lights	Street and Traffic Lights	147,969				
	Total	**147,969**				
Vehicle	School Vehicles			591		
	Vehicle			1,395	9,050	
	Water Dept Vehicles			2,033		
	Total			**4,019**	**9,050**	
Water/Sewer	Water/Sewer Pump Stations	193,970				1,566
	29 Charles St Complex-Waste..	438,500	842			3,776
	Total	**632,470**	**842**			**5,342**
Grand Total		**3,259,648**	**92,133**	**4,019**	**9,050**	**9,892**

Table 3b. Municipal Energy Use for Baseline (MMBtu)

		2016					
		Diesel	Electric	Gasoline	Oil	Propane	Total
Building	Douglas Elementary School		1,765		2,085		**3,850**
	Douglas High School		3,134		4,308		**7,443**
	Town Hall/ Police		683		1,779	152	**2,614**
	Fire Department		155		139		**294**
	Library		37		197		**233**
	Senior Center/ Post Office		52		165	262	**480**
	VFW		4				**4**
	Transfer Station		20				**20**
	Douglas Primary School		517		1,632		**2,148**
	Douglas Middle School		1,975		2,036		**4,012**
	Highway Complex		75		348		**422**
	Total		**8,417**		**12,689**	**414**	**21,521**
Open Space	Recreation		42				**42**
	Total		**42**				**42**
Street/Traffic Lights	Street and Traffic Lights		505				**505**
	Total		**505**				**505**
Vehicle	School Vehicles			73			**73**
	Vehicle	1,258		173			**1,431**
	Water Dept Vehicles			252			**252**
	Total	**1,258**		**498**			**1,756**
Water/Sewer	Water/Sewer Pump Stations		662			143	**804**
	29 Charles St Complex-Waste..		1,496		117	344	**1,957**
	Total		**2,158**		**117**	**486**	**2,761**
Grand Total		**1,258**	**11,122**	**498**	**12,806**	**900**	**26,585**

IV. ENERGY REDUCTION PLAN

A. NARRATIVE SUMMARY

The Town of Douglas is committed to reducing baseline (FY 2016) energy consumption by twenty (20) percent over the 5-year period from FY 2016 to the end of FY 2021. A list of specific and documented strategies is presented in Table 4 (see Appendix B), which accounts for a 24.89 (henceforth rounded to twenty-five [25]) percent reduction in energy use. The energy grade audit conducted by Energy Conservation Incorporated is included in Appendix C.

Overview of Goals for Years 1 – 3

This time period runs from FY 2016 to the end of FY 2019. In FY 2017, the Town upgraded hallway lighting at Douglas Primary School. In FY 2018 and FY 2019, the town will implement additional building conservation measures recommended in Energy Conservation Incorporated's audit. As an initial step, the Town intends to focus on interior lighting projects ~~at the Primary, Middle, High, and Elementary Schools.~~ at the schools. Following completion of these priority projects the Town will pursue HVAC, Control, and Weatherization measures at multiple facilities. These projects are as follows:

- Interior Lighting at Douglas Primary School
- Interior Lighting at Douglas High School
- Interior Lighting at Douglas Middle School
- Interior Lighting at Douglas Elementary School
- General Fuel Economy at Vehicle Fleet
- DWH Heater Replacement at Douglas Primary School DWH
- ASHP in Classrooms at Douglas Primary School ASHP
- Weatherization at Douglas Primary School Hallways
- Weatherization at Douglas High School
- Weatherization at Douglas Middle School
- Weatherization at Douglas Elementary School

During this period the Town will also work on the following behavioral fuel savings measures:

- Implement the general vehicle fuel economy measures recommended and outlined in this plan~~;~~
- Implement the general conservation measures recommended and outlined in this plan~~;~~

Overview of Goals for Years 4 – 5

The goals for FY 2020 and FY 2021 are to complete any unfinished projects from the previous period as well as additional projects identified in Table 4 (Appendix B). These projects are as follows:

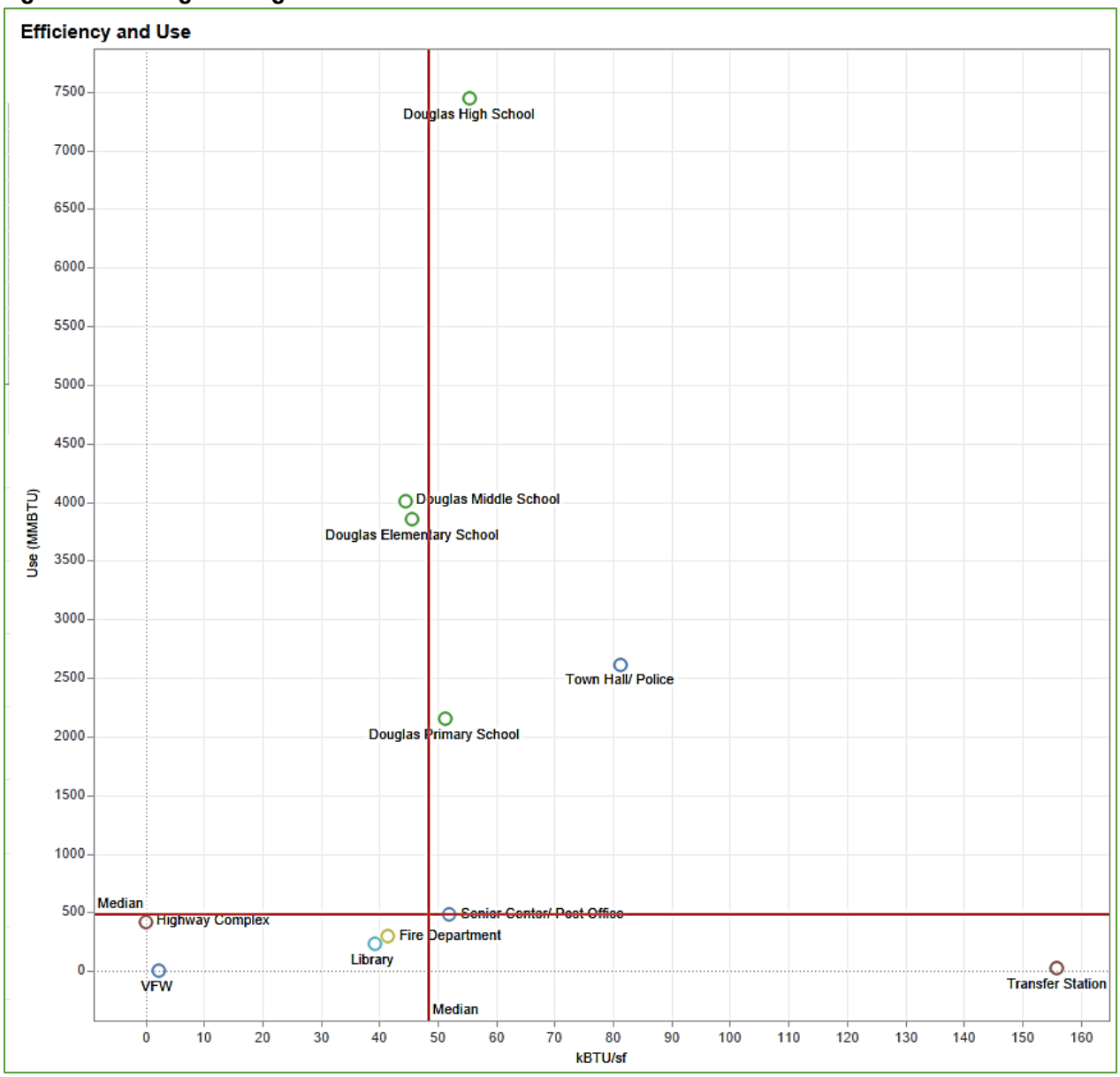
- Interior Lighting at Highway Barn
- Weatherization at Highway Barn
- Interior Lighting at Town Hall/ Police
- Weatherization at Town Hall/ Police
- Interior Lighting at Fire Department
- Interior Lighting at Library

- Weatherization at Fire Department
- RTU reset Scheduling at Town Hall/ Police
- Boiler Controls Upgrade at Town Hall/ Police
- Boiler Replacement at Library
- Weatherization at Library
- Interior Lighting at Senior Center/ Post Office
- Weatherization at Senior Center/ Post Office

Identify Areas of Least Efficiency/Greatest Waste

It is very useful to gain an understanding of how municipal facilities perform compared to each other. To do so, Douglas will identify areas of least efficiency/greatest waste using MEI's *Buildings to Target* assessment (shown in Figure 3 below). According to this assessment, the Town's median efficiency rate across facilities, expressed in energy consumption per square foot, is 51 kBTu/sf. The Douglas High School is the largest user of energy in Town (7,443 MMBtus). Its efficiency (56 kBTU/sf) falls slightly above the median. Similarly, the Douglas Middle School and High School use 4,012 and 3,850 MMBtus, respectively; however, their efficiencies are also consistent with the Town-wide median. By contrast, the Transfer Station, Town Hall/Police building, and Highway Complex represent smaller but less efficient facilities. Consequently, a strategy that targets high usage buildings as well as smaller but less efficient buildings will maximize savings and reduce unnecessary waste.

Figure 3. Buildings to Target from MEI



B. REACHING 20% ENERGY USE REDUCTION WITHIN 5-YEARS FOLLOWING BASELINE

The Town of Douglas is committed to reducing baseline (FY 2016) energy consumption by twenty (20) percent over the 5-year period from FY 2016 to the end of FY 2021. A list of specific and documented strategies is presented in Table 4a (see Appendix B) and accounts for twenty-five (25) percent in projected savings, which is discussed below.

Program Management Plan for Implementation, Monitoring, and Oversight
The Town of Douglas's Chief Elected Official and Select Board's Office will be responsible for securing the funds and general oversight of the energy efficiency projects. The Town may work with the Central Massachusetts Regional Planning Commission (CMRPC) for DOER Green Communities Annual Reporting requirements, grant administration, and maintaining energy use data in MEI. The need for such assistance (which is an eligible grant expense) will be determined based on the Town's internal grant management capacity at the time of designation.

Summary of Energy Audit(s) or Other Sources for Projected Energy Savings
In 2017, Energy Conservation Incorporated audited nine (9) of Douglas's municipal facilities as part of the DOER Energy Audit Program. These buildings included: Town Hall/Police Station, Fire Department, Transfer Station, Senior Center/Post Office, Library, VFW, High School, Middle School, Elementary School, Primary School, and Highway Barn. In addition to these audits, CMRPC examined vehicular energy usage, costs, and savings, as well as policy changes that impact energy use.

Methodology
The Town of Douglas will proceed with Energy Conservation Incorporated's recommendations and vehicle efficiency measures to reduce Douglas's energy use by at least twenty (20) percent. The Town will also implement additional soft-measures, amounting to up to five (5) percent, exceeding the overall reduction target.

Buildings
Detailed audits were conducted at nine (9) municipal buildings. These audits consist of data collected during site visit walkthroughs, review of utility bills and discussions with administration officials, staff, and building occupants. The data presented in these audits includes specific Energy Conservation Measures (ECMs) with detailed information about baseline energy use, projected usage savings and annual cost data. This information is contained in individual reports for each facility as well as in an Energy Audit Summary Table. Annual usage, cost estimates and annual cost savings were taken directly from these reports to estimate energy savings. Each of these reports, including the Summary Table, is contained in Appendix C.

Vehicles
The Central Massachusetts Regional Planning Commission (CMRPC) audited Douglas's vehicular energy usage, projected usage savings, and annual cost information. CMRPC identified energy savings opportunities through general fuel economy practices, which are detailed below.

General Vehicle-Fuel Conservation Measures (All Departments)
Implementing fuel economy measures can help reduce fuel consumption without any additional cost or investment. The Town will implement the goals listed below to achieve approximately a three (3) percent reduction in fuel use. According to the US Department of Energy (DOE): fueleconomy.gov, these include the following:

- **Drive sensibly**: Avoid aggressive driving (e.g., rapid acceleration/ braking).
- **Remove excess weight**: Avoid storing unnecessary items in your vehicle. An extra 100 pounds could reduce mpg by up to two (2) percent = especially in smaller vehicles
- **Keep engine tuned**: Fixing a vehicle that is out of tune or has failed an emissions test can improve gas mileage by an average of four (4) percent.

- **Keep tires inflated**: Improve gas mileage by up to three (3) percent by inflating to proper pressure.
- **Use recommended grade of oil.** Improve gas mileage by one (1) to two (2) percent by using manufacturer's recommended grade of motor oil.

Calculations for estimating the MMBtus saved as a result of these measures are shown in Table 5a and 5b.

Table 5a. Fuel Economy Measures			
Action	**Description**	**DOE Est Savings**	**Used in this ERP**
Drive Sensibly	Avoid aggressive driving (e.g., rapid acceleration and braking).	5-33%	1%
Remove Excess Weight	Avoid storing unnecessary items in your vehicle. An extra 100 pounds could reduce mpg by up to 2% especially in smaller vehicles.	1-2%	0.5%
Keep Engine Tuned	Fixing a vehicle that is out of tune or has failed an emissions test can improve gas mileage by an average of 4%.	4%	0.5%
Keep Tires Inflated	Improve gas mileage by up to 3.3% by inflating to proper pressure.	Up to 3%	0.5%
Use Recommended Grade of Oil	Improve gas mileage by 1%-2% by using manufacturer's recommended grade of motor oil.	1 – 2%	0.5%
		Total	**3%**

Table 5b. Fuel Economy as MMBtus	
Summary	**Amount**
Total Gas MMBTu	498
Total Diesel MMBTu	1,258
Total Vehicle MMBTu	1,756
Amount Saved Gas	14.94
Amount Saved Diesel	37.74
Total MMBtus Saved	**52.68**

GENERAL CONSERVATION MEASURES

Specific strategies outlined in Table 4, in combination with the strategies identified above account for a projected energy savings of twenty-five (25) percent. The Town will also explore "soft" energy conservation measures to maximize energy savings and decrease usage by as much as an additional five (5) percent. The following strategies will help the Town of Douglas to increase projected energy savings and exceed the twenty (20) percent energy reduction target.

Municipal Buildings

Town buildings serve as the largest energy users. Consequently, the municipal buildings will continue to be an area of focus into the future. After the priority work of insulating and air sealing is underway, smaller but still significant projects can be undertaken in all buildings. Such projects would include energy conserving window treatments for smaller area windows where appropriate and upgrading storm windows.

We also view training and education of building occupants as an ongoing energy reduction strategy. We will utilize a variety of behavioral strategies to conserve energy, including:

Equipment
Municipal employees will be instructed to turn off or set computers and other electronic equipment to hibernation mode when not in use. Additionally, school equipment should be turned off when not in use during summer months. Douglas will ensure that building occupants are maintaining energy efficient practices by placing signage and/or reminder tags in each department office to encourage all occupants to power down and unplug during off hours.

Heating and Cooling
Regarding heating and cooling, building and zone thermostats shall be set to the highest comfortable temperature in summer and the lowest in winter. Employees shall be encouraged to keep warmer clothes on hand so that heating can be set at a lower level. Douglas will also establish specific guidelines for open window air exchange as may be feasible and practicable. Automatic thermostats will be considered where feasible and employees will be encouraged to dial down thermostats when leaving room or building for non-automatic systems. The Town will also evaluate energy efficient strategies for keeping IT equipment cool.

Interior Lighting
Regarding lighting systems, The Town of Douglas will ensure that public buildings are not lighted unnecessarily when in use, that buildings be upgraded to automatic light switches, and that employees be encouraged to turn off lights when exiting rooms and buildings.

Upon designation, the Town will track behavioral changes by conducting occasional, off-hours checks for monitors and lights left on and windows open in winter. We will also create an inventory of light switches that are not automatic and pursue appropriate upgrades.

Street and Traffic Lighting
The Town will continue to identify opportunities to switch to LED streetlights and to utilize solar energy as substitute for hard wired street lighting systems. The Board of Selectmen's Office will also coordinate with the Public Works and Police Department to identify additional energy savings by using passive, reflective signage rather than lighting for roadway safety where ever possible.

Operations, Maintenance, and Equipment
The Town will reduce energy consumption by working to make sure that certain operational and maintenance standards are in place. The Town should ensure that all equipment is functioning as designed, thermostats are calibrated correctly, dampers are correctly adjusted, and janitors are implementing best practices. Thermostats can also be relocated to be placed in more effective positions.

Weatherization Strategies

The town also has a serious interest in implementing weatherization strategies throughout their buildings. Weatherization is a crucial step to ensuring that energy efficiency projects can reach their maximum potential for energy savings. This may include, but is not limited to, caulking around the windows, storm windows (interior and/or exterior), combination cloth and installation fabric, and/or acrylic weatherization strategies.

Electric vehicles
The Town has several non-exempt vehicles that are excellent candidates for replacement with an electric vehicle. In addition to Green Communities funding, additional electric vehicle and charging station grants exist. As Douglas' non-exempt vehicles approach the need for replacement the Town will assess the feasibility of replacing them with electric vehicles.

D. SUMMARY OF LONG-TERM ENERGY REDUCTION GOALS – BEYOND 5 YEARS

Long term strategies are identified to pursue energy reduction past the 5-year plan outlined above. These long-term strategies will allow the Town of Douglas to reduce its energy consumption below twenty (20) percent of the established FY 2016 usage baseline. Doing so will allow the Town of Douglas to continue to benefit from increased energy reductions.

Vehicles
The Town of Douglas will continue to replace older vehicles with more fuel-efficient vehicles.

Perpetuating Energy Efficiency
The Chief Elected Official and the Board of Selectmen's office will investigate the possibility of an energy savings reinvestment plan, in which some of the energy savings are reinvested into a fund to finance future energy efficiency or renewable efficiency projects.

Alternative Modes of Transportation
The Town of Douglas will continue to encourage walking, bicycling, and carpooling as energy efficient practices to reduce use of fossil fuels. The town will also investigate the possibility of purchasing electric vehicles and installing electric vehicle charging stations at public places throughout the town. They will focus on investigating the use of electric vehicles for town use and will focus on installing electric vehicle charging stations in order to encourage the use of electric vehicles for both municipal and non-municipal staff.

V. ONSITE RENEWABLE ENERGY PROJECTS AND RENEWABLE ENERGY

At this time, the Town of Douglas does not have any plans for onsite, renewable energy generation on Town property. After completion of the energy conservation measures described, Douglas will consider onsite generation of electricity by a photovoltaic (PV) array mounted on municipally owned buildings. The Town will also investigate if there are any potential locations for biomass heating or wind turbine generation.

VI. LIST OF RESOURCES

In addition to the audits and reports referenced above in Section IV and attached to this report, the Town of Douglas used the following people and resources to create this Energy Reduction Plan:

- **Kelly Brown,** Green Communities Regional Coordinator, Western Region, Massachusetts Department of Energy Resources (MA DOER). kelly.brown@state.ma.us
- **Green Communities Grant Program Information and Guidance,** Massachusetts Department of Energy Resources (MA DOER). www.mass.gov/energy/greencommunities
- **Ronak Moradi,** Planning Assistant, Central Massachusetts Regional Planning Commission. rmoradi@cmrpc.org
- **Dominique DuTremble, Associate Planner,** Central Massachusetts Regional Planning Commission. ddutremble@cmrpc.org
- **Energy Audit:** Prepared by Energy Conservation Incorporated (ECI). 2017. Appendix C.

APPENDICES

Appendix A: Adoption of Verification Letters (adoption pending)

TOWN OF DOUGLAS

Kevin D. Morse – Chairman
David P. Cortese – Vice Chairman
Timothy P. Bonin
Harold R. Davis
Michael D. Hughes

OFFICE OF THE SELECTMEN
29 Depot Street • Douglas, MA 01516
508-476-4000
Fax: 508-476-1070
TTY 508-476-1619

Matthew J. Wojcik
Town Administrator

Suzanne L. Kane
Administrative Assistant

October 26, 2017

MA Department of Energy Resources Green Communities Division
100 Cambridge Street- Suite 1040
Boston, MA 02114

To Whom It May Concern:

Please be advised that on October 24, 2017, the Douglas Board of Selectmen met at a duly noticed special meeting and voted to approve the Energy Reduction Plan for Criterion 3 of the Green Communities Application for Designation.

The Selectmen were given copies of the plan for review prior to the meeting. The Board voted unanimously (5-0) to support the plan and the minutes of that meeting include that vote.

Thank you very much for your consideration.

Sincerely,

Matthew J. Wojcik
Town Administrator

Town of Douglas is an Equal Opportunity Employer.

Douglas Public Schools
21 Davis Street, Douglas, MA 01516 (508) 476-7901 FAX (508) 476-3719 www.douglasps.net
Kevin G. Maines, Interim Superintendent
Donna Sousa, Director of Technology
Cindy Socha, Curriculum Director
Cortney Keegan, Business & Operations Manager
Nealy Urquhart, Assistant Superintendent of Student Support Services

October 30, 2017

MA Department of Energy Resources
Green Communities Division
100 Cambridge Street – Suite 1040
Boston, MA 02114

To Whom It May Concern:

Please be advised that the town school district, Douglas Public Schools, adopts the Douglas Energy Reduction Plan as part of the Town's Green Communities Application for Designation. The Douglas School Committee has reviewed and voted to support this initiative.

Sincerely,

Kevin Maines
Interim Superintendent of Schools

Cc: Metropolitan Area Planning Committee

Excellence in Education

The Douglas Public Schools welcomes and is open to all students, and offers equal opportunities in all approved programs and courses of study without regard to race, color, sex, sexual orientation, gender identity, religion, national origin, homelessness, or disability.

Appendix B: Table 4 Energy Conservation Measures (included as a separate attachment)

Appendix C: Energy Conservation Incorporated Audit Report