

Town of Holliston
Project 1 – Kitchen Hood Controls
Holliston High School, Middle School, and Elementary School

Current Consumption

In 2018, according to MassEnergyInsight.net, the Town of Holliston consumed 50,434 MMBTUs of energy of which 34,418 MMBTUs came from buildings. The Schools contributed 27,190 MMBTUs of that total (9,408 MMBTUs in electricity and 17,783 MMBTUs in gas/oil).

Purpose

It is the intention of the Town, during this competitive grant period, to request funding to purchase and install Kitchen Hood Controls at all the Schools. This project came about as a result of the Town evaluating what appeared to be high gas usage (per square footage) at Pinecrest (the Town owned Golf Course and Restaurant) during both the winter and summer months.

In November 2018, the Town of Holliston contacted RISE Engineering to conduct an Energy Audit on numerous buildings. Their findings was the Kitchen Hoods in all the Town buildings with commercial kitchens are being turned on when the Food Service Staff arrive and stay on until they are finished for the day, resulting in excessive air loss throughout the day as the fans have 1 speed and are constantly on no matter if 1 hamburger is being cooked or food for a large banquet is being prepared.

The purpose of this request is to install a Kitchen Hood Control Kit in each of the School's Kitchens. This kit will monitor the ambient air temperature around the cooking area and adjust the speed of the exhaust fan based on the temperature of the cooking area. Even though this project concept started with the Golf Course, that building is currently being reviewed by a Golf Course Committee for a complete renovation. The Town has forwarded the Golf Course Energy Audit to this Renovation Committee to incorporate the Kitchen Hood Controls (along with the other energy recommendations) into the Golf Course renovation project.

Timeline

If approved, the Kitchen Hood Controls would be purchased and installed in August of 2019, when Schools are on summer break, and should take a few days to install. The project will be purchased through MGL C. 30B Procurement Laws as well as MGL C. 25A, s. 14 with contractors from RISE Engineering performing the installation.

Cost

The total project cost is estimated to be \$25,960 at the Middle School. Eversource incentives are estimated to be \$465 in electrical and \$7,896 in gas bringing the total requested Middle School funding to \$17,599. The Middle School, in 2018, used 2,578 MMBTU's of electricity along with 4,319 MMBTU's of gas and oil. RISE anticipates a combined savings of 400 MMBTU's (1,550 Kwh and 3,948 therms) which is a 9% reduction in overall building usage with an annual cost savings of \$4,131 averaging about a 4.3 year payback.

The second Kitchen Hood install would be at the High School. The project is estimated to cost \$25,960 with Eversource incentives estimated to be \$767 in electrical and \$13,162 in gas bringing the total requested High School funding to \$12,031. The reason the incentives are higher at the High School is the cooking time is slightly

higher throughout the year at the High School as there are more students to feed. The High School in 2018 used 4,021 MMBTU's of electricity along with 7,142 MMBTU's of gas and oil. RISE anticipates a combined savings of 667 MMBTU's (2,558 Kwh and 6,581 therms) which is about a 9.4% reduction in overall building usage with an annual cost savings of \$6,922 averaging about a 1.7 year payback.

The last Kitchen Hood project is slated for the Elementary School. The cost is estimated to be \$53,100 at the Elementary School. The Elementary School has two serving lines to handle food preparation for the both the Placentino Elementary School and the Miller Elementary School but all the food is cooked under one split exhaust Kitchen Hood on the Miller side. Due to the Split Exhaust Fan, 2 Kitchen Hood Controls will need to be purchased and installed increasing the cost of the project. Eversource incentives are estimated to be \$558 in electrical and \$7,896 in gas, bringing the total requested Elementary School funding to \$44,646. The Elementary School in 2018 used 2,809 MMBTU's of electricity along with 6,322 MMBTU's of gas and oil. RISE anticipates a combined savings of 401 MMBTU's (1,860 Kwh and 3,948 therms) which is a 9.5% reduction in overall building usage with an annual cost savings of \$3,937 averaging about an 11 year payback.

Licensed electricians and mechanical contractors will be required to install the Kitchen Hood Kits and an electrical permit will need to be filed for each location. The Green Community Team will request a waiver from the Building Department for the cost of the permits and inspections.

The project will be overseen by the Green Community Team of Town Administrator, Jeff Ritter, Fire Chief, Michael Cassidy, Assistant to the Town Administrator, Andrea Minihan, and Technology Director, Christopher Meo, and the School Business Manager, Keith Buday.

As with past projects, the Town Administrator Jeff Ritter would continue to update the Board of Selectmen every Monday night about the status of this Green Community project. In addition, Keith Buday will update the School Committee during their monthly meetings on this project. These meetings are broadcast on the local Public Access Cable to all town residents, as well as detailed in the minutes for the meeting for all the public to view. In addition, once a project is completed a Press Release will be issued and posted to the Town's website.

Location	Cost	Incentive	Net Cost	Kwh Saving	Therm Saving	Cost Savings	ROI
Middle School	\$25,960	\$8,361	\$17,599	1,550	3,948	\$4,131	4.3
High School	\$25,960	\$13,929	\$12,031	2,558	6,581	\$6,922	1.7
Elementary School	\$53,100	\$8,454	\$44,646	1,860	3,948	\$3,937	11
Total	\$105,020	\$30,744	\$74,276	5,968	14,807	\$14,990	5.6

Town of Holliston
Project 2– Exterior Lights
Holliston High School, Middle School, and Elementary School

Current Consumption

In 2018, according to MassEnergyInsight.net, the Town of Holliston consumed 50,434 MMBTUs of energy of which 34,418 MMBTUs came from buildings. The Schools contributed 27,190 MMBTUs of that total (9,408 MMBTUs in electricity and 17,783 MMBTUs in gas/oil).

Purpose

It is the intention of the Town, during the competitive grant period, to request funding to purchase and install new exterior light fixtures and LED bulbs at all three Schools. During the past few years the Schools have made a concerted effort to retrofit most of their florescent and halogen bulbs within their building. The Green Community Team is looking to continue this conversion by replacing the exterior 175W Metal-Halogen fixtures around all three buildings to 30W WEP1 LED Fixtures. These exterior safety lights are programmed to turn on at dusk and remain on until dawn resulting in numerous hours of operation (especially in the winter time in New England).

Cost

The total project cost at the Middle School to replace 27 exterior fixtures is estimated to be \$13,342. Eversource incentives are estimated to be \$5,322 in electrical incentives bringing the funding request to \$8,020. The Middle School, in 2018, used 755,540 kWh (2,578 MBTU's) of electricity and RISE anticipates a savings of 17,739 kwh (61 MMBTU's) which equates to an annual cost savings of \$3,452 averaging about a 2.2 year payback.

The total project cost at the High School to replace 36 exterior fixtures is estimated to be \$16,374. Eversource incentives are estimated to be \$7,096 in electrical incentives bringing the funding request to \$9,278. The High School, in 2018, used 1,178,511 kWh (4,021 MBTU's) of electricity and RISE anticipates a savings of 23,652 kwh (81 MMBTU's) which equates to an annual cost savings of \$4,369 averaging about a 2 year payback.

The total project cost at the Elementary School complex to replace 27 exterior fixtures is estimated to be \$13,342. Eversource incentives are estimated to be \$5,322 in electrical incentives bringing the funding request to \$8,020. The Elementary School in 2018 used 823,350 kWh (2,809 MBTU's) of electricity and RISE anticipates a savings of 17,739 kwh (61 MMBTU's) which equates to an annual cost savings of \$3,665 averaging about a 2 year payback.

A licensed electrician will be required to install the LED exterior light fixtures and an electrical permit will need to be applied for. The Green Community Team will request waivers from the Building Department for the cost of all three permits and all inspections.

Benefits

There are numerous benefits for performing the lighting project at all three Schools. First, the LED bulbs can last up to 100,000 hours versus the existing lights which last only 1,000 hours. Changing the fixtures from 175W Metal-Hi bulbs to 35W LED bulbs will have an 80% decrease in electrical usage and lastly, the new bulbs will offer a sense of safety and security around the building at night. If approved, the new lights would hopefully be

scheduled for installation in August of 2019 or over the December 2019 school vacation as to have the least disruption to the Schools.

The project will be overseen by the Green Community Team of Town Administrator, Jeff Ritter, Fire Chief, Michael Cassidy, Assistant to the Town Administrator, Andrea Minihan, and Technology Director, Christopher Meo, and School Business Manager, Keith Buday.

As with past projects, the Town Administrator Jeff Ritter would continue to update the Board of Selectmen every Monday night about the status of this Green Community project. In addition, Keith Buday will update the School Committee during their monthly meetings on this project. These meetings are broadcast on the local Public Access Cable to all town residents, as well as detailed in the minutes for the meeting for all the public to view. In addition, once a project is completed a Press Release will be issued and posted to the Town's website.

	Cost	Incentive	Net Cost	kWh Savings	Cost Savings	ROI
Middle School	\$13,342	\$5,322	\$8,020	17,739	\$3,452	2.2
High School	\$16,374	\$7,096	\$9,278	23,652	\$4,369	2
Elementary School	\$13,342	\$5,322	\$8,020	17,739	\$3,665	2
Total	\$43,058	\$17,740	\$25,318	59,130	\$11,486	2.06

Town of Holliston
Project 3 – Holliston Town Hall
Weatherization and Insulation

Current Consumption

In 2018, according to MassEnergyInsight.net, the Town of Holliston consumed 50,434 MMBTUs of energy of which 34,418 MMBTUs came from Buildings. The Town Hall contributed 1,334 MMBTUs of that total (335 MMBTUs in electricity and 999 MMBTUs in gas).

Purpose

One of the biggest complaints from the Town Hall employees and visitors is that during the winter, they are freezing from the drafts in the building. Under every desk there is a portable heater running in the winter. The Town Hall building is constructed of a drafty wood framed exterior and interior. Even with improvements in weatherization back in 2016, the Town Hall has continued to experience numerous frozen pipes over the past two winters. During the latest freeze-up, a large gap was noticed running from one end of the building to the other where the sub-floor meets the wall. The air that was rushing through this gap measured 16 degrees on a temperature gun blowing directly onto the heating pipe. In the boiler room, gaps of daylight can clearly be seen around the old heating vents and new condensation pipes, resulting in the condensation pipes freezing and water backing up into the boiler room. This was also documented and can clearly be seen on a recent audit conducted by the Town's Insurance Carrier due to the numerous water damage losses the Town has sustained. Lastly, another large complaint over the years have been the icicles overhanging the door entrance resulting in the entrance being closed repeatedly throughout the winter when the icicles become dangerous. An inspection by both RISE and an independent contractor found the area above the stage ceiling had little insulation resulting in substantial heat loss which is forming the icicles.

One of the Town goals is to solve some of these issues by sealing up these spaces through air-sealing the sub floor gaps and wall cavities from below and above so air no longer runs through these cavities. The plan is to close off the wall space on the first floor throughout the entire building with rigid foam. The plan also calls to pull back the carpet on the first floor and seal the gap where the subfloor meets the wall. Also, in the two areas that constantly freeze year after year, the plan is to also seal around the foundation. This will require cutting holes into the drywall and sealing up the foundation. As explained in the report, further work will need to be performed on the remaining parts of the building at a future time, but RISE is recommending this procedure on the two areas that are experiencing reoccurring issues.

RISE is also recommending installing R-38 insulation above the Stage and installing attic hatches by the two openings above the air handlers, as well as, filling voids in the walls where previous insulation was missed and in the chimney voids on the third floor.

The last air sealing item RISE is recommending is to seal around the 1st and 2nd floor windows by sealing tight the upper windows and weather-stripping the bottom windows and sealing around the lower casement. Being a historic building, the windows have not been replaced and drafts can be felt on any cold windy day through the sides of the windows.

Based upon the RISE Audit, the Town expects to realize a decrease in gas usage of 1374 therms (137 MMBTUs) per year, for a combined yearly savings of \$1,369. If this project is approved, it will continue the process of

reducing our gas consumption, and will help to achieve our goal of attaining a reduction of 10,267 MMBTUs in five years as well as make the Town Hall hopefully a much more comfortable place to work in the middle of winter and heat of the summer.

The total cost of the project is projected at \$40,337 with a Gas Utility incentive estimated at \$360. The town is asking for the remaining \$39,977 as part of the Green Community Grant. The ROI is estimated to be around 8% with a simple payback of 13 years. As a relatively small project once underway, the Town is not requesting any additional costs or administrative fees for this project.

Benefits

The main benefit of weatherizing the Town Hall is to minimize air exchange with the outside and therefore increase the efficiency on the heating and air conditioning equipment by keeping the conditioned air inside the building as well as to solve the biggest complaint of air drafts in the building making it a more comfortable place to work and hopefully requiring less space heaters which is consuming a significant amount of electricity in the winter months.

Timeline

If approved, the Town plans to work with RISE and have the weatherization accomplished in the summer of 2019. The project will be purchased through MGL C. 30B Procurement Laws as well as MGL C. 25A, s. 14.

The project will be overseen by the Green Community Team of Town Administrator, Jeff Ritter, Fire Chief, Michael Cassidy, Assistant to the Town Administrator, Andrea Minihan, and Technology Director, Christopher Meo who successfully completed seven projects along this same scope in the last two grant rounds.

As with past projects, the Town Administrator Jeff Ritter would continue to update the Board of Selectmen every Monday night about the status of this Green Community project. This meeting is broadcasted on the local Public Access Cable to all town residents, as well as detailed in the minutes for the meeting for all the public to view. In addition, once a project is completed, a Press Release will be issued and posted to the Town's website.

	Cost	Incentive	Net Cost	Therm Savings	Cost Savings	ROI
Chimney Sealing/Insulation	\$1,401		\$1,401	5	\$5	9
Weatherstripping	\$350	\$114	\$236	57	\$57	4
Attic Insulation	\$2,225	\$246	\$1,979	123	\$123	9
1 st & 2 nd Floor Air Sealing	\$16,891		\$16,891	610	\$608	15
1 st & 2 nd Floor Windows	\$19,470		\$19,470	579	\$577	18
Total	\$40,337	\$360	\$39,977	1,374	\$1,369	15

Town of Holliston Green Community Project 4
Holliston Community Center
Lighting and Lighting Controls

Current Consumption

In 2018, according to MassEnergyInsight.net, the Town of Holliston consumed 50,434 MMBTUs of energy of which 34,418 MMBTUs came from buildings. The Community Center contributed 607 MMBTUs of that total (151 MMBTUs in electricity and 456 MMBTUs in gas).

Purpose

The purpose of installing light-emitting diode (LED) bulbs, fixtures and occupancy sensors, is to reduce the electricity consumption of the Community Center. The new equipment being proposed will automatically adjust light levels depending on outside sunlight, allow for lights to automatically power off when a room is unoccupied, as well as, the new bulbs are designed to use less watts than the existing lights. Due to budget constraints in the Park and Recreational budget, the Town does not have the funds to perform this retrofit of lights on its own.

Based upon RISE's Energy Audit, the Town expects to realize electric savings of 31,100 kWh per year for a yearly electrical savings of \$8,469. If this project is approved, it will continue the process of reducing our electrical consumption and will help to achieve our goal of attaining a reduction of 10,267 MMBTUs in five years and lower the Town's electrical costs.

The plan calls to replace the 282 existing interior and exterior fixtures with LED Fixtures and an additional 48 occupancy sensors. The total cost of the project is projected at \$73,579, with an Electric Utility incentive estimated at \$9,330.00. The Town is asking for the remaining \$64,249 as part of the Green Community Competitive Grant.

A licensed electrician will need to be hired and electrical permits will need to be applied for. The Green Community Team will request waivers from the Building Department for the cost of the permit and inspections.

Benefits

There are numerous benefits with performing the lighting project. First, the LED bulbs can last up to 100,000 hours versus the existing lights which last only 1,000 hours. This will have a reduction in the time Highway staff is needed to change out light bulbs so they can concentrate on the roads. LEDs also use 60-90% less energy than the existing bulbs and run cooler which allows the air-conditioning system to run more effectively. The use of occupancy sensors will be implemented to automatically turn off lights when a room becomes unoccupied.

Timeline

If approved, the Town plans to work with RISE and have the Lights and Lighting Equipment installed and configured by the end of December 2019, using MGL C. 30B Procurement Laws as well as MGL C. 25A, s. 14 as a procurement policy.

The project will be overseen by the Green Community Team of Town Administrator, Jeff Ritter, Fire Chief, Michael Cassidy, Assistant to the Town Administrator, Andrea Minihan, and Technology Director, Christopher

Meo who successfully completed eight projects along this same scope in the last competitive round. Since this project is electrical, the Building Inspector, Chris Canney will play an integral role in this project. In addition, Park and Rec Director, Mark Frank, will be the point of contact at the Community Center when the project starts.

As with past projects, the Town Administrator, Jeff Ritter would continue to update the Board of Selectmen every Monday night about the status of this Green Community project. This meeting is broadcast on the local Public Access Cable to all Town residents, as well as detailed in the minutes for the meeting for all the public to view. In addition, once a project is completed a Press Release will be issued and posted to the Town’s website.

	Cost	Incentive	Net Cost	kWh Saving	Cost Savings	ROI
Community Center	\$73,579	\$9,330	\$64,249	31,100	\$8,469	6.5

Town of Holliston Green Community Project 5
Holliston Middle School
Lighting Controls

Current Consumption

In 2018, according to MassEnergyInsight.net, the Town of Holliston consumed 50,434 MMBTUs of energy of which 34,418 MMBTUs came from buildings. The Schools contributed 27,190 MMBTUs of that total (9,408 MMBTUs in electricity and 17,783 MMBTUs in gas/oil).

Purpose

The Schools, over the past few years, have converted most of their lights to LED's but a few Halogen and Florescent lights still remain. The purpose of this request is to finish the remaining lights at the Middle School and install occupancy sensors in classrooms to reduce the electricity consumption of those areas by automatically turning off lights when not in use and to replace 75 13W CFL's with 6W LED and another twenty-five (25) 400W Metal Halogen bulbs with 23W LED's. The new equipment being proposed will allow for lights to automatically power off when a room is unoccupied, as well as the new bulbs are designed to use less watts than the existing lights. Due to budget constraints in the School budget, the Town does not have the funds to perform this retrofit lighting project on our own.

Based upon the RISE audit, the Town expects to realize electric savings of 56,888 kWh (194 MMBTUs) per year for a yearly electrical savings of \$11,070. If this project is approved, it will continue the process of reducing our electrical consumption and will help to achieve our goal of attaining a reduction of 10,267 MMBTUs in five years and to lower the Town's electrical costs.

The plan calls to replace the 100 interior bulbs in the Main Entrance and Library with LED equivalents. In addition, 187 occupancy sensors will be installed to better control the lights in classrooms and offices. The total cost of the project is projected at \$61,875, with an Electric Utility incentive estimated at \$17,066. The Town is asking for the remaining \$44,809 as part of the Green Community Competitive Grant.

A licensed electrician will need to be hired and electrical permits will need to be applied for. The Green Community Team will request waivers from the Building Department for the cost of the permit and inspections.

Benefits

There are numerous benefits with performing the lighting project. First, the LED bulbs can last up to 100,000 hours versus the existing lights which last only 1,000 hours. This will have a reduction in the time School Maintenance Staff is needed to change out light bulbs so they can concentrate on other needs of the buildings. LEDs also use 60-90% less energy than the existing bulbs and run cooler which allows the air-conditioning system to run more effectively. The use of occupancy sensors will be implemented to automatically turn off lights when a room becomes unoccupied or less light is needed.

Timeline

If approved, the Town plans to work with RISE and have the Lights and Lighting Equipment (Sensors) installed and configured by the end of December 2019, using MGL C. 30B Procurement Laws as well as MGL C. 25A, s. 14 as a procurement policy.

The project will be overseen by the Green Community Team of Town Administrator, Jeff Ritter, Fire Chief, Michael Cassidy, Assistant to the Town Administrator, Andrea Minihan, and Technology Director, Christopher Meo, and Keith Buday, School Business Manager, who successfully completed seven projects along this same scope in the non-competitive round. Since this project is electrical, the Building Inspector, Chris Canney will play an integral role in this project.

As with past projects, the Town Administrator, Jeff Ritter would continue to update the Board of Selectmen every Monday night about the status of this Green Community project. In addition, Keith Buday will update the School Committee during their monthly meetings on this project. These meetings are broadcast on the local Public Access Cable to all town residents, as well as detailed in the minutes for the meeting for all the public to view. In addition, once a project is completed a Press Release will be issued and posted to the Town’s website.

	Cost	Incentive	Net Cost	kWh Saving	Cost Savings	ROI
Lights & Sensors	\$61,875	\$17,066	\$44,809	56,888	\$11,070	3.8