

**TOWN OF HANOVER FACILITIES DEPARTMENT
GREEN COMMUNITIES FUNDED PROJECTS 2012-2017**

| | | | Energy Data | | | | Financial Data | | | | |
|---|--|----------------|--|---|--|--|------------------------------------|---------------------------|----------------------------|-------------------------|---------------|
| Building/Site Name | Energy Conservation Measure (ECM) Description | ECM Type | Projected Annual Electricity Savings (kWh) | Projected Annual Natural Gas Savings (therms) | Projected Annual Gasoline Savings (gal.) | Projected Annual Diesel Savings (gal.) | Projected Annual Cost Savings (\$) | Total Installed Cost (\$) | Green Community Grant (\$) | Utility Incentives (\$) | Net Cost (\$) |
| ROUND 1 (2012) | | | | | | | | | | | |
| Police Department Headquarters | Purchase Hybrid Command Vehicle (fund upgrade to hybrid) | Vehicle | 0 | 0 | 352 | 0 | 9,358 | 24,000 | 24,000 | 0 | 0 |
| Sylvester & Salmond Schools | Replacement of Steam Traps | HVAC | 0 | 5,300 | 0 | 0 | 15,900 | 18,229 | 18,229 | 0 | 0 |
| Hanover Town Hall | Replace Boiler with High Efficiency Boiler | HVAC | 0 | 2,340 | 0 | 0 | 7,000 | 42,400 | 42,400 | 4,500 | 0 |
| Fire Department Headquarters Station #4 | Replace six (6) Overhead Garage Doors | Building | 0 | 1,650 | 0 | 0 | 4,950 | 34,100 | 34,100 | 0 | 0 |
| | Subtotal, Round 1: | | 0 | 9,290 | 352 | 0 | 37,208 | 118,729 | 118,729 | 4,500 | 0 |
| ROUND 2 (2013) | | | | | | | | | | | |
| Cedar Elementary School | Walk-in Freezer/Cooler Control Retrofits | Motor Controls | 8,158 | 0 | 0 | 0 | 1,297 | 6,245 | 2,751 | 3,494 | 0 |
| Cedar Elementary School | Building Envelope Weatherization | Building | 0 | 724 | 0 | 0 | 905 | 7,868 | 3,934 | 3,934 | 0 |
| Cedar Elementary School | Exterior Lighting Retrofits | Lighting | 21,598 | 0 | 0 | 0 | 3,434 | 13,110 | 10,712 | 2,398 | 0 |
| Center Elementary School | Walk-in Freezer/Cooler Control Retrofits | Motor Controls | 8,499 | 0 | 0 | 0 | 1,249 | 7,644 | 4,128 | 3,516 | 0 |
| Center Elementary School | Building Envelope Weatherization | Building | 0 | 1,612 | 0 | 0 | 2,015 | 13,720 | 6,860 | 6,860 | 0 |
| Center Elementary School | Exterior Lighting Retrofits | Lighting | 12,382 | 0 | 0 | 0 | 1,820 | 10,082 | 6,986 | 3,096 | 0 |
| Middle School | Walk-in Freezer/Cooler Control Retrofits | Motor Controls | 8,503 | 0 | 0 | 0 | 1,301 | 9,080 | 5,853 | 3,227 | 0 |
| Middle School | Exterior Lighting Retrofits | Lighting | 46,805 | 0 | 0 | 0 | 7,161 | 36,081 | 24,380 | 11,701 | 0 |
| Fire Department Headquarters | Exterior Lighting Retrofits | Lighting | 2,453 | 0 | 0 | 0 | 429 | 3,611 | 2,811 | 800 | 0 |
| Police Department Headquarters | Exterior Lighting Retrofits | Lighting | 16,075 | 0 | 0 | 0 | 2,331 | 16,001 | 11,982 | 4,019 | 0 |
| Middle School | Building Envelope Weatherization | Building | 0 | 3,102 | 0 | 0 | 3,878 | 30,328 | 15,164 | 15,164 | 0 |
| John Curtis Free Library | Building Envelope Weatherization | Building | 0 | 327 | 0 | 0 | 409 | 3,887 | 3,397 | 1,944 | 0 |
| Salmond School/Admin. | Exterior Lighting Retrofits | Lighting | 5,563 | 0 | 0 | 0 | 807 | 4,426 | 3,035 | 1,391 | 0 |
| Sylvester Elementary School | Exterior Lighting Retrofits | Lighting | 8,519 | 0 | 0 | 0 | 1,499 | 7,207 | 5,066 | 2,141 | 0 |
| Cedar Elementary School | Retrocommissioning Project | HVAC | 0 | 6,212 | 0 | 0 | 6,212 | 25,000 | 20,341 | 0 | 0 |
| Middle School | Retrocommissioning Project | HVAC | 0 | 3,939 | 0 | 0 | 3,939 | 15,000 | 12,046 | 0 | 0 |
| Hanover High School | Walk-in Freezer/Cooler Control Retrofits | Motor Controls | 9,045 | 0 | 0 | 0 | 1,438 | 8,812 | 5,220 | 3,592 | 0 |
| Fire Department Headquarters | Building Envelope Weatherization | Building | 0 | 2,051 | 0 | 0 | 2,564 | 50,894 | 41,394 | 9,500 | 0 |
| Police Department Headquarters | Building Envelope Weatherization | Building | 1,025 | 645 | 0 | 0 | 1,101 | 6,864 | 3,432 | 3,432 | 0 |
| John Curtis Free Library | Exterior Lighting Retrofits | Lighting | 4,490 | 0 | 0 | 0 | 780 | 6,937 | 5,815 | 1,122 | 0 |
| | Subtotal, Round 2: | | 153,115 | 18,612 | 0 | 0 | 44,569 | 282,797 | 195,306 | 81,331 | 0 |
| | | | | | | | | | | | |

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|---------------------------------|--|----------|--|---|--|--|------------------------------------|---------------------------|----------------------------|-------------------------|---------------|
| Building/Site Name | Energy Conservation Measure (ECM) Description | ECM Type | Projected Annual Electricity Savings (kWh) | Projected Annual Natural Gas Savings (therms) | Projected Annual Gasoline Savings (gal.) | Projected Annual Diesel Savings (gal.) | Projected Annual Cost Savings (\$) | Total Installed Cost (\$) | Green Community Grant (\$) | Utility Incentives (\$) | Net Cost (\$) |
| ROUND 3 (2014) | | | | | | | | | | | |
| Cedar Elementary School | Energy Management System | HVAC | 4,675 | 3,524 | 0 | 0 | 4,229 | 41,685 | 32,733 | 8,952 | 0 |
| Cedar Elementary School | Exhaust Fan Controls | HVAC | 3,264 | 2,349 | 0 | 0 | 3,374 | 27,357 | 4,801 | 22,556 | 0 |
| Center Elementary School | Energy Management System | HVAC | 12,319 | 780 | 0 | 0 | 3,030 | 41,814 | 30,328 | 11,486 | 0 |
| Salmond School | Steam Trap Replacement | HVAC | 0 | 1,608 | 0 | 0 | 2,203 | 6,427 | 3,214 | 3,213 | 0 |
| Sylvester Elementary School | Steam Trap Replacement | HVAC | 0 | 5,850 | 0 | 0 | 8,015 | 21,353 | 10,677 | 10,677 | 0 |
| Hanover Middle School | Energy Management System & VFDs | HVAC | 45,131 | 2,444 | 0 | 0 | 5,229 | 92,609 | 75,919 | 16,690 | 0 |
| Hanover Middle School | Exhaust Fan Controls | HVAC | 17,142 | 1,879 | 0 | 0 | 5,169 | 53,399 | 25,045 | 28,354 | 0 |
| | Subtotal, Round 3: | | 82,531 | 18,434 | 0 | 0 | 31,249 | 284,644 | 182,716 | 101,928 | 0 |
| ROUND 4 (2015) | | | | | | | | | | | |
| Water Dept Bldg (219 Winter St) | Interior Lighting Retrofit to LED | Lighting | 19,048 | 0 | 0 | 0 | 2,895 | 33,310 | 16,780 | 9,530 | 7,000 |
| Hanover Cedar School | Retrofit Gym Lights to LED | Lighting | 17,147 | 0 | 0 | 0 | 2,743 | 18,191 | 14,141 | 4,050 | 0 |
| Hanover Center School | Retrofit Gym & Cafeteria Lights to LED | Lighting | 10,953 | 0 | 0 | 0 | 1,643 | 14,554 | 11,644 | 2,700 | 210 |
| Highway Dept Bldg, Ames Way | Lighting Retrofit to LED, Interior/Exterior | Lighting | 25,498 | 0 | 0 | 0 | 4,080 | 24,725 | 20,295 | 4,640 | -210 |
| Hanover Middle School | Retrofit Gym Lights to LED | Lighting | 17,147 | 0 | 0 | 0 | 2,743 | 18,803 | 14,753 | 4,050 | 0 |
| Hanover High School | Retrofit Gym Lights to LED | Lighting | 20,531 | 0 | 0 | 0 | 3,285 | 23,988 | 17,988 | 6,000 | 0 |
| Hanover Senior Center | Lighting Retrofit to LED, Pole Lights Outside & Inside Main Hall | Lighting | 27,342 | 0 | 0 | 0 | 4,539 | 20,380 | 15,966 | 2,700 | 1,714 |
| Hanover Water Treatment Plant | Boiler Reset Controls | HVAC | 0 | 1,629 | 0 | 0 | 1,955 | 3,940 | 1,970 | 1,970 | 0 |
| Hanover Fire Department HQ | Replace Boiler with High Efficiency Boiler | HVAC | 0 | 1,428 | 0 | 0 | 1,714 | 42,704 | 38,704 | 4,000 | 0 |
| | Subtotal, Round 4: | | 137,665 | 3,057 | 0 | 0 | 25,597 | 200,595 | 152,241 | 39,640 | 8,714 |
| ROUND 5 (2016) | | | | | | | | | | | |
| JC Library | Lighting Retrofit | Lighting | 32,536 | 0 | 0 | 0 | 4,880 | 53,454 | 40,624 | 12,830 | |
| Middle School | Lighting Retrofit | Lighting | 51,055 | 0 | 0 | 0 | 7,658 | 97,990 | 54,804 | 43,186 | |
| Middle School | Demand Control Ventilation (DCV) | HVAC | 14,967 | 2,666 | 0 | 0 | 4,761 | 48,788 | 40,330 | 8,458 | |
| | Subtotal, Round 5: | | 98,558 | 2,666 | 0 | 0 | 17,299 | 200,232 | 135,758 | 64,474 | 0 |
| | | | | | | | | | | | |
| | TOTAL, ALL ECMS: | | 471,869 | 52,059 | 352 | 0 | 155,922 | 1,086,997 | 784,751 | 291,872 | 8,714 |

| GRANTS FOR PROGRAM ADMINISTRATION & TRAINING | | | | | | | | | | | |
|---|--|--|--|--|--|--|--------|--------|--------|--|--|
| ROUND 1 (2012) | | | | | | | | | | | |
| Energy Management Services | | | | | | | 26,383 | 26,383 | 34,000 | | |
| ROUND 2 (2013) | | | | | | | | | | | |
| Project Administration Stipend | | | | | | | | 3,294 | 3,294 | | |
| ROUND 3 (2014) | | | | | | | | | | | |

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|-------------------------------------|---|----------|--|---|--|--|------------------------------------|---------------------------|----------------------------|-------------------------|---------------|
| | | | Projected Annual Electricity Savings (kWh) | Projected Annual Natural Gas Savings (therms) | Projected Annual Gasoline Savings (gal.) | Projected Annual Diesel Savings (gal.) | Projected Annual Cost Savings (\$) | Total Installed Cost (\$) | Green Community Grant (\$) | Utility Incentives (\$) | Net Cost (\$) |
| Project Administration Stipend | | | | | | | | 324 | 324 | | |
| ROUND 4 (2015) | | | | | | | | | | | |
| Training | Building Operator Certification Course | | | | | | | 1,695 | 1,695 | | |
| Project Administration Stipend | | | | | | | | 5,000 | 5,000 | | |
| ROUND 5 (2016) | | | | | | | | 0 | 0 | | |
| TOTAL, ADMIN & TRAINING: | | | | | | | 26,383 | 36,696 | 44,313 | | |
| GRAND TOTALS: | | | 471,869 | 52,059 | 352 | 0 | 26,383 | 1,123,693 | 829,064 | | |

FIVE YEAR SUMMARY

Total Reduction in Electricity Used per Year, All ECMs: 471,869 kWh
Total Reduction in Natural Gas Used per Year, All ECMs: 52,059 therms
Total Green Communities Grants Received: \$829,064
Total Utility Company Incentives Received: \$291,872
Total, All Grants & Incentives Received: \$1,120,936
Cost to Hanover for 40 ECM's: \$8,714

PROPOSED FOR 2017

| | | | Energy Data | | | | Financial Data | | | | |
|---|---|----------|--|---|--|--|------------------------------------|---------------------------|----------------------------|-------------------------|---------------|
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| ROUND 6 (2017) - PENDING APPLICATION | | | | | | | | | | | |
| Police | Lighting | Lighting | 65,079 | 0 | 0 | 0 | 9,762 | 64,451 | 42,091 | 22,360 | |
| Fire Department | Lighting | Lighting | 33,376 | 0 | 0 | 0 | 5,006 | 40,975 | 29,305 | 11,670 | |
| Middle School (Cafeteria, lobby, misc.) | Lighting | Lighting | 14,492 | 0 | 0 | 0 | 2,408 | 29,812 | 22,742 | 7,070 | |
| Library (retrofit recessed cans to LED) | Lighting | Lighting | 12,970 | 0 | 0 | 0 | 2,140 | 23,228 | 23,228 | 0 | |
| Middle School | Retrocommissioning | HVAC | 20,910 | 1,251 | 0 | 0 | 4,722 | 41,595 | 41,595 | 0 | |
| High School | Energy Analytics Software | HVAC | 44,642 | 1,089 | 0 | 0 | 7,894 | 64,363 | 64,363 | 0 | |
| Salmond School | Interior Storm Windows | Building | 1,231 | 1,142 | 0 | 0 | 1,453 | 22,321 | 15,423 | 1,898 | 5,000 |
| Administration costs | | | | | | | | | 10,000 | | |
| | Subtotal, Round 6: | | 192,700 | 3,482 | 0 | 0 | 33,385 | 286,745 | 248,747 | 42,998 | 5,000 |