

**TOWN OF HANOVER FACILITIES DEPARTMENT
GREEN COMMUNITIES FUNDED PROJECTS 2012-2020**

SUMMARY OF GREEN COMMUNITIES ENERGY CONSERVATION MEASURES INSTALLED

			Energy Data				Financial Data					Reference 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 (\$)	Funding Source(s) for Net Costs and Other Comments
ROUND 1 (2012)												
Police Department Headquarters	Hybrid Command Vehicle (fund upgrade to hybrid)	Vehicle	0	0	352	0	9,358	24,000	24,000	0	0	Hybrid upgrade for scheduled replacement of Public Safety Vehicle N/A
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 6 Overhead Garage Doors with Insulated Doors	Building	0	1,650	0	0	4,950	34,100	34,100	0	0	N/A
	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	N/A
Cedar Elementary School	Building Envelope Weatherization	Building	0	724	0	0	905	7,868	3,934	3,934	0	N/A
Cedar Elementary School	Exterior Lighting Retrofits	Lighting	21,598	0	0	0	3,434	13,110	10,712	2,398	0	N/A
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	N/A
Center Elementary School	Building Envelope Weatherization	Building	0	1,612	0	0	2,015	13,720	6,860	6,860	0	N/A
Center Elementary School	Exterior Lighting Retrofits	Lighting	12,382	0	0	0	1,820	10,082	6,986	3,096	0	N/A
Middle School	Walk-in Freezer/Cooler Control Retrofits	Motor Controls	8,503	0	0	0	1,301	9,080	5,853	3,227	0	N/A
Middle School	Exterior Lighting Retrofits	Lighting	46,805	0	0	0	7,161	36,081	24,380	11,701	0	N/A
Fire Department Headquarters	Exterior Lighting Retrofits	Lighting	2,453	0	0	0	429	3,611	2,811	800	0	N/A
Police Department Headquarters	Exterior Lighting Retrofits	Lighting	16,075	0	0	0	2,331	16,001	11,982	4,019	0	N/A
Middle School	Building Envelope Weatherization	Building	0	3,102	0	0	3,878	30,328	15,164	15,164	0	N/A
John Curtis Free Library	Building Envelope Weatherization	Building	0	327	0	0	409	3,887	3,397	1,944	0	N/A
Salmond School/Admin.	Exterior Lighting Retrofits	Lighting	5,563	0	0	0	807	4,426	3,035	1,391	0	N/A
Sylvester Elementary School	Exterior Lighting Retrofits	Lighting	8,519	0	0	0	1,499	7,207	5,066	2,141	0	N/A
Cedar Elementary School	Retrocommissioning Project	HVAC	0	6,212	0	0	6,212	25,000	20,341	0	0	N/A
Middle School	Retrocommissioning Project	HVAC	0	3,939	0	0	3,939	15,000	12,046	0	0	N/A
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	N/A
Fire Department Headquarters	Building Envelope Weatherization	Building	0	2,051	0	0	2,564	50,894	41,394	9,500	0	N/A
Police Department Headquarters	Building Envelope Weatherization	Building	1,025	645	0	0	1,101	6,864	3,432	3,432	0	N/A

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John Curtis Free Library	Exterior Lighting Retrofits	Lighting	4,490	0	0	0	780	6,937	5,815	1,122	0	N/A
Stipend for Project Administration:									18,054			
	Subtotal, Round 2:		153,115	18,612	0	0	44,569	282,797	213,360	81,331	0	
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	N/A
Cedar Elementary School	Exhaust Fan Controls	HVAC	3,264	2,349	0	0	3,374	27,357	4,801	22,556	0	N/A
Center Elementary School	Energy Management System	HVAC	12,319	780	0	0	3,030	41,814	30,328	11,486	0	N/A
Salmond School	Steam Trap Replacement	HVAC	0	1,608	0	0	2,203	6,427	3,214	3,213	0	N/A
Sylvester Elementary School	Steam Trap Replacement	HVAC	0	5,850	0	0	8,015	21,353	10,677	10,677	0	N/A
Hanover Middle School	Energy Management System & VFDs	HVAC	45,131	2,444	0	0	5,229	92,609	75,919	16,690	0	N/A
Hanover Middle School	Exhaust Fan Controls	HVAC	17,142	1,879	0	0	5,169	53,399	25,045	28,354	0	N/A
Stipend for Project Administration:									324			
	Subtotal, Round 3:		82,531	18,434	0	0	31,249	284,644	183,040	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	Town share paid via NGRID On-Bill Repayment (OBR)
Hanover Cedar School	Retrofit Gym Lights to LED	Lighting	17,147	0	0	0	2,743	18,191	14,141	4,050	0	N/A
Hanover Center School	Retrofit Gym & Cafeteria Lights to LED	Lighting	10,953	0	0	0	1,643	14,554	11,644	2,700	210	N/A; paid from Highway ECM balance
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	applied to cost of Center ECM
Hanover Middle School	Retrofit Gym Lights to LED	Lighting	17,147	0	0	0	2,743	18,803	14,753	4,050	0	N/A
Hanover High School	Retrofit Gym Lights to LED	Lighting	20,531	0	0	0	3,285	23,988	17,988	6,000	0	N/A
Hanover Senior Center	Lighting Retrofit to LED: Pole Lights Outside & Lights Inside Main Hall	Lighting	27,342	0	0	0	4,539	20,380	15,966	2,700	1,714	Town share paid via NGRID On-Bill Repayment (OBR)
Hanover Water Treatment Plant	Boiler Reset Controls	HVAC	0	1,629	0	0	1,955	3,940	1,970	1,970	0	N/A
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	N/A
Stipend for Project Administration:									5,000			
	Subtotal, Round 4:		137,665	3,057	0	0	25,597	200,595	157,241	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		

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Stipend for Project Administration:									0			
	Subtotal, Round 5:		98,558	2,666	0	0	17,299	200,232	135,758	64,474	0	
ROUND 6 (2017)												
Police	LED Lighting Conversion	Lighting	65,079	0	0	0	9,762	64,451	42,091	22,360	0	
Fire Department	LED Lighting Conversion	Lighting	33,376	0	0	0	5,006	40,975	29,305	11,670	0	
Middle School (Cafeteria,	LED Lighting Conversion	Lighting	14,492	0	0	0	2,408	29,812	22,742	7,070	0	
Middle School	Retrocommissioning	HVAC	20,910	1,251	0	0	4,722	41,595	41,595	0	0	
High School	Energy Analytics Software	HVAC	44,642	1,089	0	0	7,894	64,363	64,363	0	0	
Salmond School	Interior Storm Windows	Building	1,231	1,142	0	0	1,453	22,321	17,321	1,898	5,000	
Stipend for Project Administration:									9,355			
	Subtotal, Round 6:		179,730	3,482	0	0	31,245	263,517	226,772		5,000	
ROUND 7 (2018)												
Salmond School	Steam System Upgrades	HVAC	8,357	6,405	0	0	8,424	87,977	76,280	11,697	0	
Middle School	Lighting Retrofit to LED	Lighting	38,835	0	0	0	6,214	93,376	67,871	25,505	0	
Hanover Streetlights	Procure & Retrofit Hanover Streetlights to LED	Lighting	136,186	0	0	0	27,342	199,621	41,704	36,843	0	
Middle School	Primary Loop	HVAC	35,663	2,804	0	0	7,720	41,586	29,867	11,719	0	
Cedar School	Boiler Controls	HVAC	0	3,927	0	0	4,320	26,193	20,302	10,050	0	
Facilities Building Garage	Lighting Retrofit to LED	Lighting	3,518	0	0	0	563	9,070	3,670	2,400	0	
Stipend for Project Administration:									10,000			
	Subtotal, Round 7:		222,559	13,136	0	0	54,583	457,823	249,694	98,214	0	
ROUND 8 (2020)												
High School	LED Lighting Conversion in Cafeteria and Library	Lighting	32,040		0	0	6,728	47,019	37,407	9,612	0	
Middle School	Demand Control Ventilation, Gym & Cafeteria	HVAC	9,387	3,361	0	0	5,910	56,824	47,924	8,900	0	
Stipend for Project Administration									8,533			
	Subtotal, Round 8:		41,427	3,361	0	0	12,638	103,843	93,864	18,512	0	
	TOTAL, ALL ECMS:		915,585	72,038	352	0	254,388	1,912,180	1,378,459	408,598	13,714	
TOTAL OF GREEN COMMUNITIES GRANTS + UTILITY INCENTIVES:										\$1,787,057		
TOTAL OF GREEN COMMUNITIES PROJECTS:										\$1,912,180		
TOTAL GREEN COMMUNITIES REIMBURSEMENT FOR PROJECT ADMINISTRATION:										\$51,266		