



94 Reservoir Park Drive
Rockland, MA 02370
(617)-544-3200

November 5, 2024

Solution: New Steam Traps

Site: City Hall, 93 Highland Ave., Somerville, MA 02145

Presented To:
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City of Somerville
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Prepared By:
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Business
Development
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Inovis Energy, Inc, is a turn-key implementer of energy efficiency measures. We provide our clients with a streamlined approach to energy conservation projects that makes the process efficient, clear, and successful

We have included the necessary information for review of the above-mentioned project in this report. We hope you find our analysis clear and concise. If there are any specific questions, or additional information requested, please let us know.

Tony Parente

Tony Parente
Director of
Business
Development
Inovis Energy, Inc.

Proposed Scope of Work:

Inovis Energy proposes to supply and install (41) new steam traps per the findings in separately provided steam trap survey. Significant energy and maintenance savings will result.

Clarifications and Assumptions:

1. Work to be performed during normal, first shift hours, Monday through Friday, prevailing wage.
2. No existing code violations to be corrected.

Proposal:

Description	Total Cost	Utility Incent -ive	Total Cost less Incentive	Annual Therms Savings	Annual Cost Savings	Payback (yrs)
Supply & Install (41) Steam Traps	\$25,500	\$9,428	\$16,072	3,083	\$5,395	3.0

*Cost savings based on Natural Gas cost of \$1.75/Therm

Due to current supply chain volatility, this proposal is valid for 30 days from date of submittal.



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AGREEMENT TO PROCEED

Customer: City of Somerville
Site Address: 93 Highland Ave.

Solution: New Steam Traps

Terms & Conditions:

This is a turnkey proposal unless otherwise agreed upon by the customer and Inovis Energy, Inc. Labor, materials, and waste disposal are included in the project cost. The total installed cost is based on the included 'Scope of Work'. Any fixtures not included in the 'Scope of Work', or uncounted fixtures or areas that the customer would like to add to the contract are treated as a Change Order. Change Orders must be approved by the customer prior to installation. Any available rebates/incentives will be paid to Inovis Energy, Inc. unless otherwise noted, and will be considered partial payment for the project as outlined below.

Upon acceptance of this proposal (unless financing), the customer shall pay a deposit of 50% of the contract price. The customer understands that Inovis will incur certain mobilization expenses as a result of its undertaking this project. If the customer seeks to cancel the contract, Inovis will be entitled to 10% of the contract price to cover these mobilization expenses. If the customer cancels the project within three (3) days of signature, Inovis shall waive said mobilization expenses.

Acceptance of Terms:

Somerville approved the terms & conditions outlined above as well as the scope of work as provided. New Somerville agrees to the following payment terms and amounts outlined below. Any unpaid invoices that exceed 30 day terms will accrue late fees of 2% per month.

Payment Terms: Total Cost less Incentive due Net 30.

Client Accepted By:

Inovis Energy, Inc Accepted By:

Name: _____

Name: _____

Title: _____

Title: _____

Signature: _____

Signature: _____

Date: _____

Date: _____

Review of Recorded Data

Table 1: Summary of Audit Results

		Failing Status						
Fully Operational	Blowing By	Leaking	Plugged	Not In Service (NIS)	Retired in Place (RIP)	Total		
55	3	24	14	1	0	97		

An estimated 11,680 therms/year could be saved by making repairs to faulty traps.

Table 2: Audit Results

TRAP	APPLICATION	BLDG/ROOM/FLOOR	LOCATION/ELEVATION	MFG	MODEL	TRAP TYPE	PIPE SIZE (IN.)	PSIG	TRAP STATUS	
1	14674	Radiator	City Hall/2nd/217	Window left side	Barnes & Jones	122	Thermostatic Angle	1/2	0	Not In Service
2	14675	Univent	City Hall/2nd/Council chambers	Left window wall fro t left side	Barnes & Jones	134	Thermostatic Straight	3/4	7	Blowing by
3	14676	Univent	City Hall/2nd/Council Chambers	Left center window left side	Barnes & Jones	134	Thermostatic Straight	3/4	7	Fully Operational
4	14677	Univent	City Hall/2nd/Council Chambers	Unit 3 back left corner left side	Barnes & Jones	134	Thermostatic Straight	3/4	7	Fully Operational
5	14678	Univent	City Hall/2nd/Council Chambers	Unit 4 back left corner left side	Barnes & Jones	134	Thermostatic Straight	3/4	7	Plugged
6	14679	Univent	City Hall/2nd/Council Chambers	Back right corner unit 5	Barnes & Jones	134	Thermostatic Straight	3/4	7	Leaking
7	14680	Univent	City Hall/2nd/Council Chambers	Back right corner unit 6	Barnes & Jones	134	Thermostatic Straight	3/4	7	Leaking
8	14681	Univent	City Hall/2nd/Council Chambers	Front right window unit 7	Barnes & Jones	134	Thermostatic Angle	3/4	7	Fully Operational
9	14682	Radiator	City Hall/2nd/210	First office to the right window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
10	14683	Radiator	City Hall/2nd/210	Reception window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
11	14684	Radiator	City Hall/2nd/210	Mayor confrence right window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
12	14685	Radiator	City Hall/2nd/210	Mayor confrence back window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking

13	14686	Radiator	City Hall/2nd/Left of Mayor	Window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
14	14687	Radiator	City Hall/2nd/Summerstat	Back left corner left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
15	14688	Radiator	City Hall/2nd/Summerstat	Back window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
16	14689	Radiator	City Hall/2nd/Mens	Window stall right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
17	14690	Radiator	City Hall/2nd/Womens	Stall right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
18	14691	Radiator	City Hall/2nd/220	Window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
19	14692	Radiator	City Hall/2nd/220	Right office window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
20	14693	Radiator	City Hall/2nd/201	First office to left window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
21	14694	Radiator	City Hall/2nd/201	Middle office back windows left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
22	14695	Radiator	City Hall/2nd/201	Middle office right windows left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
23	14696	Radiator	City Hall/2nd/201	Reception right window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
24	14697	Radiator	City Hall/2nd/201	Right front office left window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
25	14698	Radiator	City Hall/2nd/201	Right front office front window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
26	14699	Radiator	City Hall/1st/Switchboard	Window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
27	14700	Radiator	City Hall/1st/102 Clerk	Left window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
28	14701	Radiator	City Hall/1st/102 Clerk	Center window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
29	14702	Radiator	City Hall/1st/102 Clerk	Right window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
30	14703	Radiator	City Hall/1st/102 Clerk	Office left window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
31	14704	Radiator	City Hall/1st/102 Clerk	Office back window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
32	14705	Radiator	City Hall/1st/125	Left office window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
33	14706	Radiator	City Hall/1st/125	Left window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking

34	14707	Radiator	City Hall/1st/125	Center window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
35	14708	Radiator	City Hall/1st/125 Accounting	Window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
36	14709	Radiator	City Hall/1st/125 Payroll	Window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
37	14710	Radiator	City Hall/1st/Center stairs	Right radiator left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
38	14711	Radiator	City Hall/1st/Center stairs	Left radiator right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
39	14712	Radiator	City Hall/1st/Womans	Stall left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Blowing by
40	14713	Radiator	City Hall/1st/Assessors	Office window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
41	14714	Radiator	City Hall/1st/Assessors	Right window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
42	14715	Radiator	City Hall/1st/Assessors	Center window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
43	14716	Radiator	City Hall/1st/Assessors	Left window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
44	14717	Radiator	City Hall/1st/Director procurement	Window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
45	14718	Radiator	City Hall/1st/Procurement	Window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
46	14719	Radiator	City Hall/1st/Tax collection	Office window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
47	14720	Radiator	City Hall/1st/Tax collection	Left window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
48	14721	Radiator	City Hall/1st/Tax collection	Right window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
49	14722	Radiator	City Hall/1st/Tax collection	Right office window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
50	14723	Radiator	City Hall/Basement/Main stairs	Rear entry left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
51	14724	Drip Leg	City Hall/Basement/Main stairs	At rear entrance	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
52	14725	Drip Leg	City Hall/Basement/Mail	Window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
53	14726	Radiator	City Hall/Basement/Mail	Window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
54	14727	Drip Leg	City Hall/Basement/Custodian	Left of entry 10'	Barnes & Jones	122	Thermostatic Angle	1/2	7	Blowing by
55	14728	Drip Leg	City Hall/Basement/IT	Left office window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking

56	14729	Radiator	City Hall/Basement/IT	Left office window left side	Spirax Sarco	T125	Thermostatic Angle	1/2	7	Fully Operational
57	14730	Radiator	City Hall/Basement/IT	Left center office right side	Barnes & Jones	5000	Thermostatic Angle	1/2	7	Fully Operational
58	14731	Radiator	City Hall/Basement/IT	Center office back right corner	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
59	14732	Drip Leg	City Hall/Basement/IT	Center office back right corner	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
60	14733	Drip Leg	City Hall/Basement/IT	Center office right of window	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
61	14734	Drip Leg	City Hall/Basement/IT	Computer room back corner 10' above tiles	Spirax Sarco	T125	Thermostatic Angle	1/2	7	Leaking
62	14735	Radiator	City Hall/Basement/HR 014	Left window left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
63	14736	Drip Leg	City Hall/Basement/HR 014	Far left office left corner window	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
64	14737	Radiator	City Hall/Basement/HR 014	Far left office windows right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
65	14738	Radiator	City Hall/Basement/HR 014	Directors office window right side	Barnes & Jones	3500	Thermostatic Angle	1/2	7	Leaking
66	14739	Drip Leg	City Hall/Basement/HR 014	Back left corner behind radiator	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
67	14740	Radiator	City Hall/Basement/HR 014	Right office left left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
68	14741	Drip Leg	City Hall/Basement/Census 009	Back left corner	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
69	14742	Radiator	City Hall/Basement/Census 009	Back left corner right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
70	14743	Drip Leg	City Hall/Basement/Census 009	Above tiles galley corner	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
71	14744	Drip Leg	City Hall/Basement/Mechanical	Right wall before pit 3'	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
72	14745	Drip Leg	City Hall/Basement/Mechanical	Above pit	Watson McDaniel	WFT-15	Float & Thermostatic	3/4	7	Fully Operational
73	14746	Drip Leg	City Hall/Basement/Mechanical	In pit	Dunham Bush	FT58	Float & Thermostatic	2	0	Fully Operational
74	14747	Drip Leg	City Hall/Basement/Mechanical	In pit	Spirax Sarco	FT-15	Float & Thermostatic	1 1/2	0	Fully Operational
75	14748	Drip Leg	City Hall/Basement/Census	Right office left wall	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
76	14749	Radiator	City Hall/Basement/Census	Right office left wall	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational

77	14750	Drip Leg	City Hall/Basement/Hall	End wall outside bathrooms	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
78	14751	Drip Leg	City Hall/Basement/Hall	Between bathroom entry's above third tile back	Hoffman	17C	Thermostatic Angle	1/2	7	Fully Operational
79	14752	Radiator	City Hall/Basement/Bathroom 1	Right wall right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
80	14753	Drip Leg	City Hall/Basement/Bathroom 1	Back left corner 10'	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
81	14754	Radiator	City Hall/Basement/Bathroom 2	Back wall left side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
82	14755	Drip Leg	City Hall/Basement/Bathroom 2	Back right corner 10'	Barnes & Jones	122	Thermostatic Angle	1/2	7	Leaking
83	14756	Radiator	City Hall/Basement/Communications	First off left back wall left side	Dunham Bush	1E	Thermostatic Angle	1/2	7	Plugged
84	14757	Drip Leg	City Hall/Basement/Communications	First off left center back wall	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
85	14758	Drip Leg	City Hall/Basement/Communications	2nd office left side back wall	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
86	14759	Radiator	City Hall/Basement/Communications	2nd office left side back wall	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
87	14760	Drip Leg	City Hall/Basement/Communications	Back wall behind door with blind	Barnes & Jones	134	Thermostatic Straight	3/4	7	Fully Operational
88	14761	Drip Leg	City Hall/Basement/Communications	Office back right corner blue	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
89	14762	Radiator	City Hall/Basement/Communications	Office back right corner blue	Barnes & Jones	122	Thermostatic Straight	1/2	7	Fully Operational
90	14763	Radiator	City Hall/Basement/311	Left of exit door back wall	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
91	14764	Drip Leg	City Hall/Basement/311	Left of exit door back wall	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
92	14765	Drip Leg	City Hall/Basement/311	Back wall right corner	Barnes & Jones	134	Thermostatic Angle	3/4	7	Plugged
93	14766	Drip Leg	City Hall/Basement/311	Back wall right corner	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
94	14767	Drip Leg	City Hall/Basement/Break	Back right corner	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational
95	14768	Radiator	City Hall/Basement/Break	Back right corner left side	Barnes & Jones	122	Thermostatic Straight	1/2	7	Plugged
96	14769	Radiator	City Hall/Basement/Break galley	Window right side	Barnes & Jones	122	Thermostatic Angle	1/2	7	Plugged
97	14770	Drip Leg	City Hall/Basement/Fire alarm	Front right corner 10'	Barnes & Jones	122	Thermostatic Angle	1/2	7	Fully Operational

Recommendations

- 1) It is recommended that all 41 failed traps be replaced as soon as possible. Running a steam system with failing traps leads to unnecessary steam loss and potential damage to condensate return pumps.
- 2) The ratio of traps leaking to the total number of traps is 42%. To compare, the Department of Energy estimates that between 10% - 15% of steam traps fail per year.
- 3) Trap #14680 will require carpentry (soffit removal) ahead of scheduling repairs as it is currently inaccessible to our technicians
- 4) Master traps (#14746 and #14747) are water logging the condensate coming back to the receiver. While these traps are not failing, it is recommended that the traps be removed from the condensate line and re-piped to remedy water logging
- 5) The TRV head associated with trap #14763 is missing; replace TRV to remedy