INTERNAL AUDIT REPORT

James W. Henderson, Financial/ Accounting Controls Analyst

Town of Trumbull, CT

Performance Audit of the Leaf Pick-up Program

April 21, 2011

James W. Henderson
Financial/Accounting Controls Analyst

Tel (203) 452-5064
Fax (203) 452-5083
jhenderson@trumbull-ct.gov

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Mr. Mark Smith, Chairperson
Board of Finance
Town of Trumbull
5866 Main Street
Trumbull, CT. 06611

Dear Mr. Smith,

I respectfully submit the enclosed report entitled **Performance Audit of the Leaf Pick-up Program.**

The audit examines program performance and the operation of the Trumbull Leaf Pick-up Program.

The audit reviewed the operation of the 2009-10 Leaf Pick-up Program and the costs associated with the program as it is currently structured. This audit makes observations of the existing operation and possible alternatives to the current program.

I would like to thank the Director of Public Works John Marsilio and his staff for their assistance in the completion of this audit. I would also like to thank Tom Baldwin for his assistance during my field observations.

Respectfully submitted,

James Henderson
Financial/Accounting Controls Analyst

Table of Contents

I. Executive Summary

This performance audit reviewed the efforts of the Public Works Department and the effectiveness and efficiency of program operations associated with Leaf Pick-up management.

The term efforts as defined by Government Auditing Standards:

Efforts are the amount of resources (in terms of money, material, personnel, etc.) that are put into a program. These resources may come from within or outside the entity operating the program. Measures of efforts can have a number of dimensions, such as cost, timing, and quality. Examples of measures of efforts are dollars spent, employer-hours expended, and square feet of building space.

The term effectiveness and efficiency of program operations as defined by Government Auditing Standards:

Controls over program operations include policies and procedures that the audited entity has implemented to provide reasonable assurance that a program meets its objectives while considering cost-effectiveness and efficiency. Understanding these controls can help auditors understand the program operations that convert inputs and efforts to outputs and outcomes.

Performance audits are defined as engagements that provide assurance or conclusions based on evaluation of sufficient, appropriate evidence against stated criteria, such as specific requirements, measures, or defined practice. A performance audit also provides objective analysis so that management and those charged with governance and oversight can use the information in this report to improve program performance and operations, reduce costs, facilitate decisions by those who are responsible to oversee or initiate corrective action and contribute to public accountability.

II. Introduction & Background

I conducted a limited scope performance audit of the Trumbull Leaf Pick-up Program during the months of March and April 2011. The time period examined was (54) fifty-four days of activity from November 5, 2009 to March 12, 2010. The audit also included field observations conducted during the month of March 2011.

The nature and profile of a program include:

A.) Visibility, sensitivity, and relevant risks associated with the program under audit;
B.) Age of the program or changes in its conditions;
C.) The size of the program in terms of total dollars, number of citizens affected, or other measures;
D.) Level and extent of review or other forms of independent oversight;
E.) Program's strategic plan and objectives; and
F.) External factors or conditions that could directly affect the program.

The Trumbull Public Works Department utilized approximately 20 employees per day during the duration of this program accounting for (160) one hundred sixty man hours per day. Over the (54) fifty-four days (8,640) eight thousand six hundred forty man hours were expended at an average per employee of $26.00 dollars per hour for a total expenditure of $224,640.00 for the time period reviewed.

The leaf pick-up program generated revenue over the same period in the amount of $49,860.00 from the sale of composted leaf material and leaf tickets.

Four seasonal workers were hired and put on the town payroll. The seasonal workers were utilized for (1,280) one thousand two hundred eighty man hours resulting in a cost to the program of $11,840.00. At the conclusion of this program the seasonal workers were laid off and able to collect unemployment compensation incurring an additional expense for their services. The cost to the Town for unemployment compensation charges for seasonal help during this time period amounted to approximately $ 7,934.

Eleven temporary workers were also hired from an agency at a cost of $22,681.12 to supplement the manpower for the collection program. Three supervisors and a foreman spent 75% of their work day devoted to this program during this time period resulting in a cost of $46,202.40. Mechanics spent approximately (362) three hundred sixty two man hours repairing and maintaining equipment used during the program period at a cost of $10,505.24.

Public works administrative personnel worked (216) two hundred sixteen man hours on answering calls and assisting in the scheduling of pick-ups at a cost of $4,752.00.

Composting and processing of the material collected resulted in additional cost of $27,801.60.

The Public Works facility during this time period worked 50% of its time on the leaf pick-up program. The overhead charge for utilities which was based on this allocation cost the program $36,413.47.

Program related supplies such as leaf rakes, gloves, pitch forks, safety vests, etc. totaled $11,285.45.

The cost of fuel for all the various vehicles used in the leaf pick-up program came to a total of $39,100.56. Repairs to those vehicles during this time period totaled $37,112.40.

The program utilized twenty vehicles during the four month period as follows:

3 Loaders capacity size each 3 CY
3 Trucks
4 Tri-Axle Vehicles capacity size each 18 CY
10 Leaf Trucks capacity size each 18 CY

The vehicles were used for eight hours per day for the duration of the program at a cost of $477,360.00. The hourly rates used for each vehicle were obtained from the FEMA Schedule of Equipment Rates. **(See Attachment).**

FEMA's Schedule of Equipment Rates

DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
DISASTER ASSISTANCE DIRECTORATE
PUBLIC ASSISTANCE DIVISION
WASHINGTON, D.C. 20472

The rates on this Schedule of Equipment Rates are for applicant-owned equipment in good mechanical condition, complete with all required attachments. Each rate covers all costs eligible under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5121, et seq., for ownership and operation of equipment, including depreciation, overhead, all maintenance, field repairs, fuel, lubricants, tires, OSHA equipment and other costs incidental to operation. Standby equipment costs are not eligible.

Equipment must be in actual operation performing eligible work in order for reimbursement to be eligible. LABOR COSTS OF OPERATOR ARE NOT INCLUDED in the rates and should be approved separately from equipment costs.

Information regarding the use of the Schedule is contained in 44 CFR § 206.228 *Allowable Costs*. Rates for equipment not listed will be furnished by FEMA upon request. Any appeals shall be in accordance with 44 CFR § 206.206 *Appeals*.

THESE RATES ARE APPLICABLE TO MAJOR DISASTERS AND EMERGENCIES DECLARED BY THE PRESIDENT ON OR AFTER MAY 1, 2008.

Cost Code	Equipment	Specification	Capacity/Size	HP	Notes	Unit	Rate
8490	Aerial Lift, Self-Propelled	Max. Platform Height	37 ft	to 15	Articulated, Telescoping, Scissor.	hour	$8.25
8491	Aerial Lift, Self-Propelled	Max. Platform Height	60 ft	to 30	Articulated, Telescoping, Scissor.	hour	$12.25
8492	Aerial Lift, Self-Propelled	Max. Platform Height	70 ft	to 50	Articulated, Telescoping, Scissor.	hour	$22.50
8493	Aerial Lift, Self-Propelled	Max. Platform Height	125 ft	to 85	Articulated and Telescoping.	hour	$60.00
8494	Aerial Lift, Self-Propelled	Max. Platform Height	150 ft	to 130	Articulated and Telescoping.	hour	$70.00
8486	Aerial Lift, Truck Mntd	Max. Platform Height	40 ft		Articulated and Telescoping. Add to Truck rate for total rate.	hour	$6.75
8487	Aerial Lift, Truck Mntd	Max. Platform Height	61 ft		Articulated and Telescoping. Add to Truck rate for total rate.	hour	$12.25
8488	Aerial Lift, Truck Mntd	Max. Platform Height	80 ft		Articulated and Telescoping. Add to Truck rate for total rate.	hour	$23.50
8489	Aerial Lift, Truck Mntd	Max. Platform Height	100 ft		Articulated and Telescoping. Add to Truck rate for total rate.	hour	$34.00
8010	Air Compressor	Air Delivery	41 cfm	to 10	Hoses included.	hour	$1.50
8011	Air Compressor	Air Delivery	103 cfm	to 30	Hoses included.	hour	$8.75
8012	Air Compressor	Air Delivery	130 cfm	to 50	Hoses included.	hour	$11.25
8013	Air Compressor	Air Delivery	175 cfm	to 90	Hoses included.	hour	$26.00
8014	Air Compressor	Air Delivery	400 cfm	to 145	Hoses included.	hour	$35.00
8015	Air Compressor	Air Delivery	575 cfm	to 230	Hoses included.	hour	$48.00
8016	Air Compressor	Air Delivery	1100 cfm	to 355	Hoses included.	hour	$65.00
8017	Air Compressor	Air Delivery	1600 cfm	to 500	Hoses included.	hour	$105.00
8040	Ambulance			to 150		hour	$33.00
8041	Ambulance			to 210		hour	$41.00
8060	Auger, Portable	Hole Diameter	16 in	to 6		hour	$1.60
8061	Auger, Portable	Hole Diameter	18 in	to 13		hour	$4.10
8062	Auger, Tractor Mntd	Max. Auger Diameter	36 in	to 13	Includes digger, boom and mounting hardware. Add to Tractor rate for total rate.	hour	$1.30
8063	Auger, Truck Mntd	Max. Auger Size	24 in	to 100	Includes digger, boom and mounting hardware. Add to Truck rate for total rate.	hour	$35.00
8070	Automobile			to 130	Transporting people.	mile	$0.56
8071	Automobile			to 130	Transporting cargo.	hour	$16.50
8072	Automobile, Police			to 250	Patrolling.	mile	$0.63
8073	Automobile, Police			to 250	Stationary with engine running.	hour	$18.00
8110	Barge, Deck	Size	50'x35'x7.25'			hour	$34.00
8111	Barge, Deck	Size	50'x35'x9'			hour	$49.00
8112	Barge, Deck	Size	120'x45'x10'			hour	$60.00
8113	Barge, Deck	Size	160'x45'x11'			hour	$75.00
8050	Board, Arrow			to 8	Trailer Mounted.	hour	$3.40
8051	Board, Message			to 5	Trailer Mounted.	hour	$8.75
8133	Boat, Push	Size	45'x21'x8'	to 435	Flat hull.	hour	$180.00
8134	Boat, Push	Size	54'x21'x8'	to 525	Flat hull.	hour	$235.00
8135	Boat, Push	Size	58'x24'x7.5'	to 705	Flat hull.	hour	$300.00
8136	Boat, Push	Size	64'x25'x8'	to 870	Flat hull.	hour	$345.00

FEMA's Schedule of Equipment Rates

Cost Code	Equipment	Specification	Capacity/Size	HP	Notes	Unit	Rate
8130	Boat, Row				Heavy duty.	hour	$0.85
8131	Boat, Runabout	Size	13'x5'	to 50	Outboard.	hour	$18.50
8132	Boat, Tender	Size	14'x7'	to 100	Inboard with 360 degree drive.	hour	$33.00
8120	Boat, Tow	Size	55'x20'x5'	to 870	Steel.	hour	$310.00
8121	Boat, Tow	Size	60'x21'x5'	to 1050	Steel.	hour	$370.00
8122	Boat, Tow	Size	70'x30'x7.5'	to 1350	Steel.	hour	$540.00
8123	Boat, Tow	Size	120'x34'x8'	to 2000	Steel.	hour	$950.00
8140	Boat, Tug	Length	16 ft	to 100		hour	$42.00
8141	Boat, Tug	Length	18 ft	to 175		hour	$70.00
8142	Boat, Tug	Length	26 ft	to 250		hour	$90.00
8143	Boat, Tug	Length	40 ft	to 380		hour	$185.00
8144	Boat, Tug	Length	51 ft	to 700		hour	$285.00
8419	Breaker, Pavement, Hand-Held	Weight	25-90 lb			hour	$0.65
8420	Breaker, Pavement			to 70		hour	$35.00
8150	Broom, Pavement	Broom Length	72 in	to 35		hour	$14.00
8151	Broom, Pavement	Broom Length	96 in	to 100		hour	$23.00
8153	Broom, Pavement, Mntd	Broom Length	72 in	to 18	Add to Prime Mover rate for total rate.	hour	$6.50
8154	Broom, Pavement, Pull	Broom Length	84 in	to 20	Add to Prime Mover rate for total rate.	hour	$11.25
8270	Bucket, Clamshell	Capacity	1.0 cy		Includes teeth. Does not include Clamshell & Dragline.	hour	$3.60
8271	Bucket, Clamshell	Capacity	2.5 cy		Includes teeth. Does not include Clamshell & Dragline.	hour	$6.75
8272	Bucket, Clamshell	Capacity	5.0 cy		Includes teeth. Does not include Clamshell & Dragline.	hour	$11.25
8273	Bucket, Clamshell	Capacity	7.5 cy		Includes teeth. Does not include Clamshell & Dragline.	hour	$14.50
8275	Bucket, Dragline	Capacity	2.0 cy		Does not include Clamshell & Dragline.	hour	$2.90
8276	Bucket, Dragline	Capacity	5.0 cy		Does not include Clamshell & Dragline.	hour	$6.50
8277	Bucket, Dragline	Capacity	10 cy		Does not include Clamshell & Dragline.	hour	$10.50
8278	Bucket, Dragline	Capacity	14 cy		Does not include Clamshell & Dragline.	hour	$13.50
8180	Bus			to 150		hour	$26.00
8181	Bus			to 210		hour	$29.00
8182	Bus			to 300		hour	$33.00
8190	Chain Saw	Bar Length	16 in			hour	$2.00
8191	Chain Saw	Bar Length	25 in			hour	$3.70
8192	Chain Saw, Pole	Bar Size	18 in			hour	$1.60
8200	Chipper, Brush	Chipping Capacity	6 in	to 35	Trailer Mounted.	hour	$8.50
8201	Chipper, Brush	Chipping Capacity	9 in	to 65	Trailer Mounted.	hour	$16.50
8202	Chipper, Brush	Chipping Capacity	12 in	to 100	Trailer Mounted.	hour	$26.00
8203	Chipper, Brush	Chipping Capacity	15 in	to 125	Trailer Mounted.	hour	$37.00
8204	Chipper, Brush	Chipping Capacity	18 in	to 200	Trailer Mounted.	hour	$55.00
8210	Clamshell & Dragline, Crawler		149,999 lb	to 235	Bucket not included in rate.	hour	$100.00
8211	Clamshell & Dragline, Crawler		250,000 lb	to 520	Bucket not included in rate.	hour	$145.00
8212	Clamshell & Dragline, Truck			to 240	Bucket not included in rate.	hour	$145.00
8712	Cleaner, Sewer/Catch Basin	Hopper Capacity	5 cy		Truck Mounted. Add to Truck rate for total rate.	hour	$16.00
8713	Cleaner, Sewer/Catch Basin	Hopper Capacity	14 cy		Truck Mounted. Add to Truck rate for total rate.	hour	$21.50
8220	Compactor			to 10		hour	$11.75
8221	Compactor, Towed, Vibratory Drum			to 45		hour	$19.00
8222	Compactor, Vibratory, Drum			to 75		hour	$28.00
8223	Compactor, Pneumatic, Wheel			to 100		hour	$33.00
8225	Compactor, Sanitation			to 300		hour	$110.00
8226	Compactor, Sanitation			to 400		hour	$185.00
8227	Compactor, Sanitation			to 535		hour	$260.00
8228	Compactor, Towed, Pneumatic, Wheel		10000 lb		Add to Prime Mover rate for total rate.	hour	$7.50

FEMA's Schedule of Equipment Rates

Cost Code	Equipment	Specification	Capacity/Size	HP	Notes	Unit	Rate
8229	Compactor, Towed, Drum Static		20000 lb		Add to Prime Mover rate for total rate.	hour	$12.25
8500	Crane	Max. Lift Capacity	8 MT	to 80		hour	$31.00
8501	Crane	Max. Lift Capacity	15 MT	to 150		hour	$65.00
8502	Crane	Max. Lift Capacity	50 MT	to 200		hour	$100.00
8503	Crane	Max. Lift Capacity	70 MT	to 300		hour	$175.00
8504	Crane	Max. Lift Capacity	110 MT	to 350		hour	$230.00
8496	Crane, Truck Mntd	Max. Lift Capacity	24000 lb		Add to Truck rate for total rate.	hour	$10.00
8497	Crane, Truck Mntd	Max. Lift Capacity	36000 lb		Add to Truck rate for total rate.	hour	$16.00
8498	Crane, Truck Mntd	Max. Lift Capacity	60000 lb		Add to Truck rate for total rate.	hour	$30.00
8195	Cutter, Brush	Cutter Size	8 ft	to 150		hour	$100.00
8196	Cutter, Brush	Cutter Size	8 ft	to 190		hour	$110.00
8197	Cutter, Brush	Cutter Size	10 ft	to 245		hour	$130.00
8670	Derrick, Hydraulic Digger	Max. Boom Length	60 ft		includes hydraulic pole alignment attachment. Add to Truck rate.	hour	$21.00
8671	Derrick, Hydraulic Digger	Max. Boom Length	90 ft		includes hydraulic pole alignment attachment. Add to Truck rate.	hour	$39.00
8580	Distributor, Asphalt	Tank Capacity	500 gal		insulated tank, and circulating spray bar.	hour	$13.00
8581	Distributor, Asphalt	Tank Capacity	1000 gal		Truck Mounted. Includes burners, insulated tank, and circulating spray bar. Add to Truck rate.	hour	$20.00
8582	Distributor, Asphalt	Tank Capacity	4000 gal		Truck Mounted. Includes burners, insulated tank, and circulating spray bar. Add to Truck rate.	hour	$25.00
8250	Dozer, Crawler			to 75		hour	$35.00
8251	Dozer, Crawler			to 105		hour	$45.00
8252	Dozer, Crawler			to 160		hour	$70.00
8253	Dozer, Crawler			to 250		hour	$110.00
8254	Dozer, Crawler			to 360		hour	$150.00
8255	Dozer, Crawler			to 565		hour	$275.00
8256	Dozer, Crawler			to 850		hour	$385.00
8260	Dozer, Wheel			to 300		hour	$85.00
8261	Dozer, Wheel			to 400		hour	$125.00
8262	Dozer, Wheel			to 500		hour	$175.00
8263	Dozer, Wheel			to 625		hour	$240.00
8280	Excavator, Hydraulic	Bucket Capacity	0.5 cy	to 45	Crawler, Truck & Wheel. Includes bucket.	hour	$21.00
8281	Excavator, Hydraulic	Bucket Capacity	1.0 cy	to 90	Crawler, Truck & Wheel. Includes bucket.	hour	$44.00
8282	Excavator, Hydraulic	Bucket Capacity	1.5 cy	to 160	Crawler, Truck & Wheel. Includes bucket.	hour	$75.00
8283	Excavator, Hydraulic	Bucket Capacity	2.5 cy	to 265	Crawler, Truck & Wheel. Includes bucket.	hour	$135.00
8284	Excavator, Hydraulic	Bucket Capacity	4.5 cy	to 420	Crawler, Truck & Wheel. Includes bucket.	hour	$220.00
8285	Excavator, Hydraulic	Bucket Capacity	7.5 cy	to 650	Crawler, Truck & Wheel. Includes bucket.	hour	$270.00
8286	Excavator, Hydraulic	Bucket Capacity	12 cy	to 1000	Crawler, Truck & Wheel. Includes bucket.	hour	$465.00
8240	Feeder, Grizzly			to 35		hour	$17.00
8241	Feeder, Grizzly			to 55		hour	$30.00
8242	Feeder, Grizzly			to 75		hour	$44.00
8300	Fork Lift	Capacity	6000 lb	to 60		hour	$14.00
8301	Fork Lift	Capacity	12000 lb	to 90		hour	$20.50
8302	Fork Lift	Capacity	18000 lb	to 140		hour	$28.00
8303	Fork Lift	Capacity	50000 lb	to 215		hour	$60.00
8310	Generator	Prime Output	5.5 kW	to 10		hour	$4.10
8311	Generator	Prime Output	16 kW	to 25		hour	$9.75
8312	Generator	Prime Output	43 kW	to 65		hour	$22.00
8313	Generator	Prime Output	100 kW	to 125		hour	$46.00
8314	Generator	Prime Output	150 kW	to 240		hour	$70.00
8315	Generator	Prime Output	210 kW	to 300		hour	$80.00
8316	Generator	Prime Output	280 kW	to 400		hour	$115.00

FEMA's Schedule of Equipment Rates

Cost Code	Equipment	Specification	Capacity/Size	HP	Notes	Unit	Rate
8317	Generator	Prime Output	350 kW	to 500		hour	$130.00
8318	Generator	Prime Output	530 kW	to 750		hour	$205.00
8319	Generator	Prime Output	710 kW	to 1000		hour	$270.00
8320	Generator	Prime Output	1100 kW	to 1500		hour	$435.00
8321	Generator	Prime Output	2500 kW	to 3000		hour	$985.00
8755	Golf Cart	Capacity	2 person			hour	$3.30
8330	Graders	Moldboard Size	10 ft	to 110	Includes Rigid and Articulate	hour	$40.00
8331	Graders	Moldboard Size	12 ft	to 150	Includes Rigid and Articulate	hour	$55.00
8332	Graders	Moldboard Size	14 ft	to 225	Includes Rigid and Articulate	hour	$80.00
8350	Hose, Discharge	Diameter	3 in		Per 25 foot length. Includes couplings.	hour	$0.13
8351	Hose, Discharge	Diameter	4 in		Per 25 foot length. Includes couplings.	hour	$0.19
8352	Hose, Discharge	Diameter	6 in		Per 25 foot length. Includes couplings.	hour	$0.50
8353	Hose, Discharge	Diameter	8 in		Per 25 foot length. Includes couplings.	hour	$0.75
8354	Hose, Discharge	Diameter	12 in		Per 25 foot length. Includes couplings.	hour	$1.35
8355	Hose, Discharge	Diameter	16 in		Per 25 foot length. Includes couplings.	hour	$2.20
8356	Hose, Suction	Diameter	3 in		Per 25 foot length. Includes couplings.	hour	$0.23
8357	Hose, Suction	Diameter	4 in		Per 25 foot length. Includes couplings.	hour	$0.43
8358	Hose, Suction	Diameter	6 in		Per 25 foot length. Includes couplings.	hour	$0.90
8359	Hose, Suction	Diameter	8 in		Per 25 foot length. Includes couplings.	hour	$1.35
8360	Hose, Suction	Diameter	12 in		Per 25 foot length. Includes couplings.	hour	$2.45
8361	Hose, Suction	Diameter	16 in		Per 25 foot length. Includes couplings.	hour	$3.90
8517	Jackhammer (Dry)	Weight Class	25-45 lb			hour	$1.00
8518	Jackhammer (Wet)	Weight Class	30-55 lb			hour	$1.15
8380	Loader, Crawler	Bucket Capacity	0.5 cy	to 32	Includes bucket.	hour	$13.00
8381	Loader, Crawler	Bucket Capacity	1 cy	to 60	Includes bucket.	hour	$22.50
8382	Loader, Crawler	Bucket Capacity	2 cy	to 118	Includes bucket.	hour	$48.00
8383	Loader, Crawler	Bucket Capacity	3 cy	to 178	Includes bucket.	hour	$85.00
8384	Loader, Crawler	Bucket Capacity	4 cy	to 238	Includes bucket.	hour	$125.00
8540	Loader, Skid-Steer	Operating Capacity	1000 lb	to 35		hour	$12.25
8541	Loader, Skid-Steer	Operating Capacity	2000 lb	to 65		hour	$21.00
8542	Loader, Skid-Steer	Operating Capacity	3000 lb	to 85		hour	$26.00
8401	Loader, Tractor, Wheel			to 81		hour	$25.00
8390	Loader, Wheel	Bucket Capacity	0.5 cy	to 38		hour	$17.50
8391	Loader, Wheel	Bucket Capacity	1 cy	to 60		hour	$25.00
8392	Loader, Wheel	Bucket Capacity	2 cy	to 105		hour	$34.00
8393	Loader, Wheel	Bucket Capacity	3 cy	to 152		hour	$47.00
8394	Loader, Wheel	Bucket Capacity	4 cy	to 200		hour	$80.00
8395	Loader, Wheel	Bucket Capacity	5 cy	to 250		hour	$80.00
8396	Loader, Wheel	Bucket Capacity	6 cy	to 305		hour	$95.00
8397	Loader, Wheel	Bucket Capacity	7 cy	to 360		hour	$110.00
8398	Loader, Wheel	Bucket Capacity	8 cy	to 530		hour	$160.00
8570	Loader-Backhoe, Wheel	Loader Bucket Capacity	0.5 cy	to 40	Loader and Backhoe Buckets included.	hour	$15.60
8571	Loader-Backhoe, Wheel	Loader Bucket Capacity	1 cy	to 70	Loader and Backhoe Buckets included.	hour	$28.00
8572	Loader-Backhoe, Wheel	Loader Bucket Capacity	1.5 cy	to 95	Loader and Backhoe Buckets included.	hour	$39.00
8573	Loader-Backhoe, Wheel	Loader Bucket Capacity	1.75 cy	to 115	Loader and Backhoe Buckets included.	hour	$44.00
8410	Mixer, Concrete Portable	Batching Capacity	10 cft			hour	$3.80
8411	Mixer, Concrete Portable	Batching Capacity	12 cft			hour	$5.00
8412	Mixer, Concrete, Trailer Mntd	Batching Capacity	11 cft	to 10		hour	$8.75
8413	Mixer, Concrete, Trailer Mntd	Batching Capacity	16 cft	to 25		hour	$17.00
8075	Motorcycle, Police					mile	$0.40
8633	Mulcher, Trailer Mntd	Working Capacity	7 tph	to 35		hour	$12.00
8634	Mulcher, Trailer Mntd	Working Capacity	10 tph	to 55		hour	$18.50
8635	Mulcher, Trailer Mntd	Working Capacity	20 tph	to 120		hour	$31.00
8430	Paver, Asphalt, Towed				Does not include Prime Mover.	hour	$7.00
8431	Paver, Asphalt			to 50	Includes wheel and crawler equipment.	hour	$70.00
8432	Paver, Asphalt			to 125	Includes wheel and crawler equipment.	hour	$120.00
8433	Paver, Asphalt			to 175	Includes wheel and crawler equipment.	hour	$130.00
8434	Paver, Asphalt			to 250	Includes wheel and crawler equipment.	hour	$150.00
8436	Pick-up, Asphalt			to 110		hour	$60.00
8437	Pick-up, Asphalt			to 150		hour	$85.00
8438	Pick-up, Asphalt			to 200		hour	$115.00
8439	Pick-up, Asphalt			to 275		hour	$145.00
8660	Plow, Cable	Plow Depth	24 in	to 30		hour	$12.00

Federal Emergency Management Agency May 1, 2008 Page 4 of 6

FEMA's Schedule of Equipment Rates

Cost Code	Equipment	Specification	Capacity/Size	HP	Notes	Unit	Rate
8661	Plow, Cable	Plow Depth	36 in	to 65		hour	$32.00
8662	Plow, Cable	Plow Depth	48 in	to 110		hour	$37.00
8450	Plow, Snow, Grader Mntd	Width	to 10 ft		Add to Grader for total rate.	hour	$16.00
8451	Plow, Snow, Grader Mntd	Width	to 14 ft		Add to Grader for total rate.	hour	$24.00
8452	Plow, Snow, Truck Mntd	Width	to 15 ft		Add to Truck rate for total rate.	hour	$10.75
8453	Plow, Snow, Truck Mntd	Width	to 15 ft		With leveling wing. Add to Truck rate for total rate.	hour	$18.50
8470	Pump			to 4	Does not include Hoses.	hour	$2.15
8471	Pump			to 6	Does not include Hoses.	hour	$3.20
8472	Pump			to 10	Does not include Hoses.	hour	$4.10
8473	Pump			to 15	Does not include Hoses.	hour	$7.75
8474	Pump			to 25	Does not include Hoses.	hour	$9.25
8475	Pump			to 40	Does not include Hoses.	hour	$19.50
8476	Pump			to 60	Does not include Hoses.	hour	$23.00
8477	Pump			to 95	Does not include Hoses.	hour	$33.00
8478	Pump			to 140	Does not include Hoses.	hour	$38.00
8479	Pump			to 200	Does not include Hoses.	hour	$45.00
8480	Pump			to 275	Does not include Hoses.	hour	$85.00
8481	Pump			to 350	Does not include Hoses.	hour	$105.00
8482	Pump			to 425	Does not include Hoses.	hour	$130.00
8483	Pump			to 500	Does not include Hoses.	hour	$155.00
8484	Pump			to 575	Does not include Hoses.	hour	$175.00
8485	Pump			to 650	Does not include Hoses.	hour	$200.00
8510	Saw, Concrete	Blade Diameter	14 in	to 14		hour	$7.00
8511	Saw, Concrete	Blade Diameter	26 in	to 35		hour	$16.50
8512	Saw, Concrete	Blade Diameter	48 in	to 65		hour	$25.00
8513	Saw, Rock			to 100		hour	$35.00
8514	Saw, Rock			to 200		hour	$70.00
8521	Scraper	Scraper Capacity	16 cy	to 250		hour	$105.00
8522	Scraper	Scraper Capacity	23 cy	to 365		hour	$150.00
8523	Scraper	Scraper Capacity	34 cy	to 475		hour	$220.00
8524	Scraper	Scraper Capacity	44 cy	to 600		hour	$270.00
8560	Snow Blower	Capacity	2,000 tph	to 400		hour	$160.00
8561	Snow Blower	Capacity	2,500 tph	to 500		hour	$180.00
8562	Snow Blower	Capacity	3,500 tph	to 600		hour	$200.00
8550	Snow Blower, Truck Mntd	Capacity	600 tph	to 75	Does not include Truck.	hour	$42.00
8551	Snow Blower, Truck Mntd	Capacity	1400 tph	to 200	Does not include Truck.	hour	$80.00
8552	Snow Blower, Truck Mntd	Capacity	2000 tph	to 340	Does not include Truck.	hour	$125.00
8553	Snow Blower, Truck Mntd	Capacity	2500 tph	to 400	Does not include Truck.	hour	$140.00
8558	Snow Thrower, Walk Behind	Cutting Width	25 in	to 5		hour	$3.60
8559	Snow Thrower, Walk Behind	Cutting Width	60 in	to 15		hour	$8.00
8630	Sprayer, Seed	Working Capacity	750 gal	to 30	Trailer & Truck mounted. Does not include Prime Mover.	hour	$10.75
8631	Sprayer, Seed	Working Capacity	1250 gal	to 50	Trailer & Truck mounted. Does not include Prime Mover.	hour	$16.50
8632	Sprayer, Seed	Working Capacity	3500 gal	to 115	Trailer & Truck mounted. Does not include Prime Mover.	hour	$32.00
8458	Spreader, Chemical	Capacity	5 cy	to 4	Trailer & Truck mounted. Does not	hour	$4.20
8423	Spreader, Chip	Spread Hopper Width	12.5 ft	to 152		hour	$60.00
8424	Spreader, Chip	Spread Hopper Width	16.5 ft	to 215		hour	$95.00
8425	Spreader, Chip, Mntd	Hopper Size	8 ft	to 8	Trailer & Truck mounted.	hour	$3.70
8455	Spreader, Sand	Mounting	Tailgate, Chassis			hour	$3.30
8456	Spreader, Sand	Mounting	Dump Body			hour	$5.50
8457	Spreader, Sand	Mounting	Truck (10 yd)			hour	$7.50
8440	Striper	Paint Capacity	40 gal	to 22		hour	$9.25
8441	Striper	Paint Capacity	90 gal	to 60		hour	$21.00
8442	Striper	Paint Capacity	120 gal	to 122		hour	$41.00
8445	Striper, Truck Mntd	Paint Capacity	120 gal	to 460		hour	$85.00
8446	Striper, Walk-behind	Paint Capacity	12 gal			hour	$3.80
8157	Sweeper, Pavement			to 110		hour	$65.00
8158	Sweeper, Pavement			to 230		hour	$85.00
8590	Trailer, Dump	Capacity	20 cy		Does not include Prime Mover.	hour	$8.00

Federal Emergency Management Agency May 1, 2008 Page 5 of 6

FEMA's Schedule of Equipment Rates

Cost Code	Equipment	Specification	Capacity/Size	HP	Notes	Unit	Rate
8591	Trailer, Dump	Capacity	30 cy		Does not include Prime Mover.	hour	$14.00
8600	Trailer, Equipment	Capacity	30 ton			hour	$10.25
8601	Trailer, Equipment	Capacity	40 ton			hour	$12.50
8602	Trailer, Equipment	Capacity	60 ton			hour	$15.00
8603	Trailer, Equipment	Capacity	120 ton			hour	$20.50
8640	Trailer, Office	Trailer Size	8' x 24'			hour	$1.70
8641	Trailer, Office	Trailer Size	8' x 32'			hour	$1.75
8642	Trailer, Office	Trailer Size	10' x 32'			hour	$2.60
8610	Trailer, Water	Tank Capacity	4000 gal		Includes a centrifugal pump with sump and a rear sprayber.	hour	$11.00
8611	Trailer, Water	Tank Capacity	6000 gal		Includes a centrifugal pump with sump and a rear sprayber.	hour	$14.00
8612	Trailer, Water	Tank Capacity	10000 gal		Includes a centrifugal pump with sump and a rear sprayber.	hour	$16.50
8613	Trailer, Water	Tank Capacity	14000 gal		Includes a centrifugal pump with sump and a rear sprayber.	hour	$20.50
8650	Trencher			to 40	Walk-behind, Crawler & Wheel Mounted. Chain and Wheel.	hour	$13.00
8651	Trencher			to 85	Walk-behind, Crawler & Wheel Mounted. Chain and Wheel.	hour	$29.00
8290	Trowel, Concrete	Diameter	48 in	to 12		hour	$5.50
8680	Truck, Concrete Mixer	Mixer Capacity	13 cy	to 300		hour	$90.00
8720	Truck, Dump	Struck Capacity	8 cy	to 220		hour	$43.00
8721	Truck, Dump	Struck Capacity	10 cy	to 320		hour	$60.00
8722	Truck, Dump	Struck Capacity	12 cy	to 400		hour	$75.00
8723	Truck, Dump	Struck Capacity	18 cy	to 400		hour	$80.00
8724	Truck, Dump, Off	Struck Capacity	28 cy	to 450		hour	$115.00
8690	Truck, Fire	Pump Capacity	1000 gpm			hour	$75.00
8691	Truck, Fire	Pump Capacity	1250 gpm			hour	$90.00
8692	Truck, Fire	Pump Capacity	1500 gpm			hour	$95.00
8693	Truck, Fire	Pump Capacity	2000 gpm			hour	$105.00
8694	Truck, Fire Ladder	Ladder length	75 ft			hour	$145.00
8695	Truck, Fire Ladder	Ladder length	150 ft			hour	$175.00
8700	Truck, Flatbed	Maximum Gvw	16000 lb	to 200		hour	$25.00
8701	Truck, Flatbed	Maximum Gvw	26000 lb	to 275		hour	$28.00
8702	Truck, Flatbed	Maximum Gvw	30000 lb	to 300		hour	$31.00
8703	Truck, Flatbed	Maximum Gvw	45000 lb	to 380		hour	$55.00
8730	Truck, Garbage	Capacity	25 cy	to 255		hour	$55.00
8731	Truck, Garbage	Capacity	32 cy	to 325		hour	$60.00
8800	Truck, Pickup				Transporting people.	mile	$0.58
8801	Truck, Pickup		½ ton			hour	$19.00
8802	Truck, Pickup		1 ton			hour	$25.00
8803	Truck, Pickup		1¼ ton			hour	$27.00
8804	Truck, Pickup		1½ ton			hour	$30.00
8805	Truck, Pickup		1¾ ton			hour	$35.00
8790	Truck, Tractor	4 x 2	30000 lb	to 220		hour	$38.00
8791	Truck, Tractor	4 x 2	45000 lb	to 310		hour	$55.00
8792	Truck, Tractor	6 x 4	50000 lb	to 400		hour	$70.00
8780	Truck, Water	Tank Capacity	2500 gal	to 175	Include pump and rear spray system.	hour	$38.00
8781	Truck, Water	Tank Capacity	4000 gal	to 250	Include pump and rear spray system.	hour	$50.00
8620	Tub Grinder			to 440		hour	$95.00
8621	Tub Grinder			to 630		hour	$140.00
8622	Tub Grinder			to 760		hour	$175.00
8623	Tub Grinder			to 1000		hour	$275.00
8753	Vehicle, Recreational			to 10		hour	$3.50
8750	Vehicle, Small			to 30		hour	$8.00
8761	Vibrator, Concrete			to 4		hour	$1.15
8770	Welder, Portable			to 16	Includes ground cable and lead cable.	hour	$6.75
8771	Welder, Portable			to 34	Includes ground cable and lead cable.	hour	$16.00
8772	Welder, Portable			to 50	Includes ground cable and lead cable.	hour	$23.00
8773	Welder, Portable			to 80	Includes ground cable and lead cable.	hour	$31.00

Federal Emergency Management Agency May 1, 2008 Page 8 of 8

III. Scope

My audit review examined the operations of the Public Works Leaf Pick-up Program during the time frame of November 5, 2000 to March 12, 2010. Present operations in the field were also observed as a part of the scope of this audit review.

Objective

The objective of this performance audit is to examine the leaf pick-up program operations and provide a viable alternative to the current program that is now in place.

Methodology

I conducted interviews with public works administrative personnel and examined revenue and expense records for the leaf pick-up program. I also researched alternative methods and practices for leaf collection by other communities. I also observed a leaf pick-up crew upon the resumption of service in March 2011 when weather allowed crews to go out again into the field.

I conducted this limited scope performance audit in accordance with Generally Accepted Government Auditing Standards. These standards require that I plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for my findings and conclusions based on my audit objectives. I believe that the evidence obtained provides a reasonable basis for my findings and conclusions based on my audit objectives.

In applying these generally accepted government auditing standards, I am responsible for using my professional judgment when I establish the scope and methodology for my work, determining the tests and procedures that should be performed, conducting the work, and reporting the results. I need to maintain integrity and objectivity when performing this work to make decisions that are consistent with the broader public interest in the program or activity that is under review. When reporting the results of my work, I am responsible for disclosing all material or significant facts that I know which if not disclosed could mislead knowledgeable users, misrepresent the results of my findings, or conceal improper or unlawful practices.

IV. Leaf Waste Management Alternatives

The limited scope of this audit did not take into consideration a complete routing analysis. My field observations were limited to one route. It should be noted that the high demand of time and labor spent on this program diverts resources needed for other town activities and projects.

I have researched various collection methods that can be considered in place of the existing program if the decision is made to do so. The vacuum collection method which is now in use by the Town employs truck-mounted or trailer mounted units to vacuum leaves from the curbside. The truck-mounted units are usually manned by a four person crew, while the trailer mounted units utilize a four man collection crew, five if the manpower is available. Leaves that are collected in this process are shredded by the vacuum unit. Some of the units have a flexible extension tube that can be moved over the pile of leaves to be vacuumed. Some units have fixed metal tubes which require the crews to push the leaves to the roadway to be vacuumed. This is an additional step which requires more time and effort. The major drawback of this collection method is a lack of compaction and the risk of foreign debris getting into the impellers of the vacuum unit. The collection trucks fill more rapidly than a similar size truck that can achieve compaction. This lack of compaction leads to more time off route for emptying collected leaves.

The one major advantage of vacuum unit trucks is that there is no need for street sweepers to follow the leaf collection crew since the vacuum collects just about all of the leaf debris set to the curb. The vacuum units are also more maneuverable around an obstacle which minimizes hand raking and leave minimal debris behind as a result of the collection operation process. Not all of our vacuum units though have the maneuverability because of the fixed tubes.

The next method is the brush and pan method. This type of collection utilizes the traditional rear loading garbage truck with an attached pan that leaves are pushed onto by another vehicle that has a brush or rake attachment. The brush or rake would be mounted to the front of a small tractor or truck. The brush is used to move the leaves from the curb and onto the pan. The manpower for this collection method can range from two to four man crews. In addition men with hand rakes are added to crews to assist in collecting leaves that are out of reach of equipment. The requirement for larger crews is one disadvantage of this collection method, but you gain compaction with the rear packing trucks which means a crew spends more time on the collection route and less time off loading collected leaves.

Collecting leaves that are bagged by residents is another option. This method employs a traditional garbage truck. Two or three man crews pick up the bags from the curbside and throw them into the truck hopper. Biodegradable bags should be used in this strategy. This method would require the raking of leaves and purchasing of biodegradable bags by the resident. If this method is employed the resident would have to either bag the leaves, employ a lawn service to do the job or utilize school students that are required to perform required hours of community service to the Town. If this method is used the collection of the bagged leaves could be subcontracted out to an outside hauler.

The baler method utilizes agricultural equipment to compact leaves into bales. Brushes or rakes are mounted to small tractors or trucks that move the leaves into the street to form windrows. The baler is pulled along the windrow to compact the leaves into bales for transport to the composting area.

When methods other than bagging are used many communities also use street sweepers to follow leaf collection crews to pick up any uncollected leaf debris. This additional step is implemented as a preventative measure to keep storm drains clear of leaf debris and help prevent clogging of the catch basins. If leaves were bagged this would alleviate clogged catch basins and the need for follow-up by street sweeping crews.

V. Reduction of Cost Impacts

Equipment costs along with collection crew size are the biggest impact on operating leaf pick up programs. The leaf pick up program equipment used will decide the size of the crew needed. An investment in equipment may be a viable alternative if the size of leaf collection crews can be reduced.

Leaf pick up programs that utilize compaction equipment are more cost effective than the non-compacting methods. Rear loading compactors are the best choice because they can stay on route longer and require less down time for off loading.

The number of collections town crews have to make also impacts leaf pick up programs costs. The less collections made can lead to larger volumes of material put to curbside for collection. The fewer collections the lower the program costs to the Town.

The cost of fuel is another key factor to consider when a collection method is chosen. The leaf pick-up collection method selected may reduce labor costs, but increase capital outlay and fuel costs or vice versa depending on the blend of crews and equipment used during the duration of the program.

A financial incentive for residents to increase backyard composting to decrease the need for pick up of leaf material at the curbside should also be considered as part of a revamped program. A program involving curbside vacuum service and curbside bag service can be used as a way to strike a balance between escalating costs and the level of curbside service provided. The recommendation would be to utilize curbside bag service over vacuum service.

Develop a program where property owners who need and use the curbside collection of leaves would be responsible for paying a reasonable fee for the additional level of service. This would be a **PAY-AS-YOU-THROW (PAYT)** program. Also known as unit-based or variable-rate pricing **(PAYT)** is a system in which residents pay for each unit of leaf waste discarded rather than paying a fixed fee per residential household. The more you dispose of the more you pay. As residents pay directly by how much they dispose of the incentive is to reduce waste by composting. The total quantity of material to be picked up at the curbside should decrease with a fee based system.

PAY-AS-YOU-THROW (PAYT) programs generally involve a two-tiered pricing system that combines a flat fee and a unit-based fee. The flat fee provides revenue to the program and ensures that the fixed costs of the leaf collection program are covered. The additional unit-based fee provides financial incentive for the resident to compost more. The program has to be made revenue-neutral by reducing property taxes or flat fees by the amount of unit-based fees that are expected to be generated. Public acceptance and support will be critical if the program is to be successful.

The collection of bagged leaves can be subcontracted to an outside company. The need for expensive Town equipment and the high cost of breakdowns of equipment would be eliminated. Manpower could be used for other high priority Town projects. Some equipment currently used in the leaf pick-up program could be liquidated though the return of such sale on this aged equipment would probably be minimal.

VI. Factors to consider in selecting a Leaf Pick-up Program

The employer related costs of wages, benefits, workers compensation and unemployment compensation for seasonal workers. The high cost of labor may mean switching to more equipment and automation to reduce labor costs.

The possible cost savings of subcontracting the whole leaf collection process to an outside contractor. The value of subcontracting would be the opportunity costs of using public works personnel for other duties that do not get completed during the collection period.

The equipment and facility costs are the next major factor in deciding a final program that makes sense for the community. There are many types of equipment on the market used to collect leaves. Pieces of equipment selected should consider the labor costs that will be associated with the equipment choice. Equipment that can be used for other programs and tasks as well as leaf pick up can help justify the investment cost. The capital outlay cost of new equipment versus the subcontracting out of the leaf collection program should be of major consideration.

The number of collections made and the frequency of those collections are the next factor. It may be possible to offer collections over a number of weeks. Those who miss the final collection would be required to drop off leaves at a specified location for processing or pay an additional fee for a special collection.

Some communities have dropped to a minimal level of pick-up service and changed to drop-off sites as the only choice of leaf collection. Some communities have offered more curbside collection along with multiple drop-off locations for those who have missed collections. All of these factors should be considered in coming to a final conclusion on the level of service going forward and how that service will be provided

VII. Collections-Drop-Offs

Possible Collection Systems

Collection System 1

The Town wide vacuum collection route in the same configuration as provided now on a scheduled day in a designated district.

Collection System 2

A resident would be able to use a curbside pick-up provided they bag the leaves for collection in biodegradable bags. The service could be structured in the following way:
Residents call for service or utilize **QSCEND** on-line notification service at least one week in advance to allow sufficient time to design an efficient collection route schedule. Using the **PAY-AS-YOU-THROW (PAYT)** structure residents would pay for the collection. The curbside collection of the leaves in biodegradable bags would be completed using a vehicle with compaction capabilities. The service could be provided by either Town crews or a subcontracted service.

Collection System 3

A collection day would be provided to residents for a call-in vacuum service. Bill the residents a fee who participate in this collection. Residents would have to call a week in advance to be on the collection schedule. As a supplement to the vacuum service have resident's bag leaves for pickup at curbside, utilize the ability of compaction trucks and still impose the **PAY-AS-YOU-THROW** (**PAYT)** feature of Collection System 2.

Collection System 4

This collection would also be subcontracted out and be provided over a designated three week period. Leaves again would have to be bagged and set to the curb for pickup. An option for a fourth collection would be added if there were still a lot of bagged leaves to be picked up. Resident's with 1 plus acres of property would have the area to compost eliminating the need for large scale bagging of leaves by those residents. The **PAY-AS-YOU-THROW (PAYT)** rate structure can be implemented for this collection as well.

Recommendation

A task force/advisory committee should evaluate the available options for leaf disposal management. The committee should be made a permanent task force/advisory committee. Members from the following areas should be considered as a starting point in developing the advisory/task force committee:

- Elected officials of the Town including the First Selectman/Town Council members and Board of Finance members
- A member of the public works department
- A local hauler(s)
- A member from a local "tax watchdog" group
- Concerned citizens, senior citizens, environmentalists, members of local environmental committees

A clear understanding should be formed as to why this task force/advisory committee is being established. Goals and expectations of the task force members should be clear and detailed. The task force should also be clear as to what its role is in the decision making process.

- Who will make decisions?
- Who will the task force report to?
- What timelines and guidelines will be expected of the committee?
- What will be the timeline for a recommendation to be implemented?
- How often and where the advisory committee/task force will meet?
- Who will be appointed Chairman of the task force?

All these decisions should be in place beforehand.

VIII. Conclusions

Leaf pick-up programs are expensive and time consuming operations. Costs are rising for all types of equipment, fuel and labor. It is important that the Town evaluate the present program and make tough decisions regarding the current leaf pick-up program. The difficulty is changing the present program because of the impact the change will have on some residents particularly the elderly population of Trumbull. A majority of residents will still desire curbside leaf pick-up service of some sort whether vacuum collection or bagging collection. Some residents will probably be willing to use the **PAY-AS-YOU-THROW (PAYT)** service. Any adjustments to collection schedules, reducing the frequency or level of service will surely upset some residents.

The acceptance and support of the public are critically important components of a successful unit-based pricing structure. Key members of local Town government and from the community have to be involved in the planning process if a program such as this is to be successful.

Based on this audit performance report alternatives have been identified that can be implemented to improve the efficiency of the leaf pick-up program and help reduce costs. It will be up to the Town to make a final decision on how the leaf pick-up program changes and evolves.

The cost of leaf pick-up will continue to rise. This cost will of course have to be absorbed by the residents of Trumbull. It will be necessary to implement the most cost effective program possible.

The use of the compost that is made should be utilized more by the Town. A better marketing strategy should be developed to sell more of the compost that is made to the public. This will help offset some of the labor intensive costs of composting the collected material at the Town facility designated composting area.

The time allocated to leaf pick-up must be balanced to accommodate other Town obligations and projects of a higher priority. A program that would include three collections with an option for a fourth using the **PAY-AS-YOU-THROW (PAYT)** service should be given serious consideration. Curbside subcontracted collections using standard garbage trucks with compaction capabilities should be implemented. Biodegradable bags would be purchased from the Town or at local hardware type stores (i.e. Lowes or Home Depot).

The Town should help encourage and increase the number of residents that compost leaf waste. The Town should work with local lawn and garden suppliers such as Lowes or Home Depot to create a rebate or a discount program for those who wish to purchase compost bins.

The investment of time and resources from both the Town government and the community will help minimize confusion about how any new program will work. A citizen's advisory task force committee can assist in evaluating all the available options for leaf disposal and how it will ultimately be funded.