

# Materials Innovation and Recycling Authority

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Materials Innovation and Recycling Authority  
Regular Board of Directors  
**Supplemental Information**  
April 31, 2017

## I. Finance

Informational Reports (Period ending March, 2017 (Attachment A).

CSWS Financials	CSWS Improvement Fund
CSWS Electricity	Property Division Financials
CSWS Solid Waste Summary	MIRA Cash Flow
CSWS Recycling Summaries	Authority Budget

## II. Summary of Project Activities

1. An update is provided on each project's monthly operations for the period ending April 30, 2017 (Attachment B).
2. An update is provided on waste deliveries to all the projects for the period ending April 30, 2017 (Attachment C).

## III. Communications

1. Legal Expenditure Report FY'17 (Attachment D).
2. Final Activity report for the MIRA Connecticut Solid Waste System Facility (Attachment E).

**TAB A**



*CSWS Financials* - This report reflects the budget versus actual financial performance of the CSWS for the current month and on a year to date basis. This is an accrual basis report in that revenues are recognized when earned and expenses are recognized when incurred.

As indicated in this report, total operating revenue for March was \$5.16 million (6% below budget). Deficits were primarily experienced in electricity sales and spot waste. Deficits in spot waste were partially offset by surplus hauler and other contract waste deliveries. Total operating expenses were \$4.11 million (10% under budget) in March. Note that CSWS legal spending on "Resource Rediscovery" totaled \$38,333 in March (\$38,333 year to date) and is included within CSWS Operational Expenses. Year to date the CSWS has an operating loss of \$0.16 million which is \$5.30 million worse than budget. Contributions to the CSWS Improvement Fund were \$0.82 million in March and \$8.59 million year to date (on budget). See "MIRA Cash Flow" for additional information.

*CSWS Electricity* - This report reflects CSWS budget versus actual electricity production, revenue and price for the current month and year to date. Energy revenue reconciles to CSWS Financials. Effective September 1, 2016 through March 31, 2017, the first 20 MW of CSWS energy is sold under fixed contract at the rate of \$.03836 / Kwh. Effective December 1, 2016 through March 31, 2017 a second 10 MW hedge of CSWS energy is sold under fixed contract at the rate of \$.04293 / Kwh. Remaining energy is sold in the wholesale energy market pending execution of any additional fixed price energy transactions pursuant to MIRA's flexible energy hedging program with Nextera.

As indicated in this report, the CSWS total average energy price including hedged and wholesale prices was \$0.0398 per kwh in March which is \$0.0043 per kwh below budget. Plant production of energy was 3.1 million kwh (9.0%) below budget in March. The plant ran at full capacity for 11 out of 31 days. Boiler 11 was off line during 8 days for derails, grate failures and a head end plug. Boiler 12 was off line during 9 days for tube leaks, an RDF conveyor problem and a 3 day scheduled outage that extended to 4 days. Boiler 13 was off line during 5 days for tube leaks and an unscheduled cleaning outage. Turbine 5 was uninterrupted for the full month. Turbine 6 was off line during 3 days due to boiler unavailability. Price and production combine to produce a \$0.3 million (18%) shortfall in electricity revenue for the month of March. On a year to date basis, in comparison to this period of fiscal year 2016, energy price, production and revenue are down 15%, 8% and 22% respectively.

*CSWS Solid Waste Summary* - This report reflects the budget versus actual MSW tons delivered, revenue and price per ton for participating towns, other contracts, waste haulers and spot.

March deliveries totaled 58,978 tons which is 2,634 tons (4.3%) under budget. Spot waste, which is curtailed due to plant performance, was 4,917 tons under budget. Participating town waste deliveries were 913 tons under budget. Spot and town deficits were partially offset by a 2,006 ton surplus in waste hauler deliveries and a 1,190 ton surplus in other contract deliveries. Prices for the 5,765 tons of spot waste accepted in March averaged \$37.40 per ton which is \$2.60 per ton under budget. The per ton prices for Other Contract waste are \$0.06 per ton below budget year to date and up in comparison to FY 2016. Prices for Waste Hauler tons are steady at \$64 consistent with CSWS established tip fees. Price and delivery volume by contract type combine to produce total solid waste delivery revenue presently 7.6% below budget on a year to date basis.



BOARD OF DIRECTORS FINANCIAL REPORT  
PERIOD ENDING ..... March 31, 2017

CSWS Recycling Summary - This report reflects current month and year to date recyclable tons delivered to and exported from the CSWS recycling center including the rate per ton and corresponding revenue reconciled to CSWS financials. Deliveries and exports are stated in terms relevant to the contract operation of this facility.

As indicated in this report, total recycling facility revenues were 86% above budget in March. Delivery revenue was 16% above budget due to FCR paid residue being 84 tons (36%) above budget and CSWS sourced single stream deliveries being 572 tons (16%) above budget. Export revenue was 257% above budget primarily due to CSWS sourced ONP & OCC being well above budget in terms of exported tons and price in March. Year to date recycling revenues are 51% above budget. As indicated separately on the Metal Sales report, metal sales revenue was 22% above budget in March due to strong pricing. Tonnage was 2.5% above budget in March. The average price in March was \$60.53 per ton which is \$9.75 per ton (16%) above budget. Total Metal Sales and Excess Residue was 22% above budget in March.

Property Division Financials - This report reflects the budget versus actual financial performance of the Authority's Property Division for the current month and on a year to date basis. This is an accrual basis report in that revenues are recognized when earned and expenses are recognized when incurred irrespective of the timing of cash receipts or payments.

As indicated in this report, revenue to the Property Division was 16% below budget in March primarily due to inactivity in the reserve and real time markets. The deficit in budget versus actual Capacity Payments will be made up in the month of June when the capacity payment rate increases. Operating expenses were 47% below budget in March which resulted in operating income being 13% above budget for the month. Total operating income for the Property Division is 37% above budget year to date.

MIRA Cash Flow - This "cash basis" report reflects the monthly flow of cash through the bank accounts and STIF reserve funds that represent all of the Authority's ongoing operations. The flow of funds is executed monthly in accordance with Board approved criteria.

As indicated in this report, Property Division cash receipts were sufficient to distribute \$209,932 to the Tip Fee Stabilization Fund in March. Year to date distributions to this fund are \$2,992,045 in comparison to the maximum authorized distribution of \$3.0 million. CSWS cash receipts were not sufficient to execute planned distributions to the CSWS Operating and Improvement funds causing a \$1,316,013 draw from the Tip Fee Stabilization Fund. After the distribution of March receipts, \$11,365,471 remained contingently due to the Tip Fee Stabilization Fund from CSWS. Note that the Cash Flow statement includes all accounts related to the Authority's ongoing operations. Accounts held pending final distribution pursuant to the closeout of the Mid Connecticut and Southeast projects, as well as customer security deposits, are not shown.

Segmented Income Statements - This report reflects the revenues and expenses of each of the Authority's projects and divisions in the format ultimately to appear in the Authority's annual independent audit report. The report includes a summary reconciliation to budget versus actual variance report formats.

Materials Innovation and Recycling Authority  
 FY 2017 Board of Directors Financial Report

[Narrative](#)

CSWS Monthly Financial Report

Period Ending: **March 31, 2017**

	Current Month		Variance Better (Worse) than Budget		Year to Date		Variance Better (Worse) than Budget	
	Budget	Actual	\$	%	Budget	Actual	\$	%
<b>REVENUES</b>								
<i>Member Towns</i>	\$ 1,953,520	\$ 1,893,302	\$ (60,218)	-3%	\$ 18,107,130	\$ 17,809,513	\$ (297,617)	-2%
<i>Other Contracts</i>	\$ 450,724	\$ 507,795	\$ 57,071	13%	\$ 3,563,028	\$ 2,512,234	\$ (1,050,795)	-29%
<i>Hauler Contracts</i>	\$ 776,832	\$ 905,268	\$ 128,436	17%	\$ 6,808,704	\$ 8,379,346	\$ 1,570,642	23%
<i>Spot Waste</i>	\$ 427,252	\$ 215,600	\$ (211,652)	-50%	\$ 2,900,336	\$ 293,875	\$ (2,606,461)	-90%
Other Operating Charges	\$ -	\$ -	\$ -	n/a	\$ -	\$ -	\$ -	n/a
Member Service Fee	\$ 3,502	\$ 3,174	\$ (328)	-9%	\$ 30,208	\$ 29,968	\$ (240)	-1%
<i>Metal Sales &amp; Excess Residue</i>	\$ 103,599	\$ 126,351	\$ 22,752	22%	\$ 918,594	\$ 682,226	\$ (236,368)	-26%
Bulky Waste	\$ 23,155	\$ 8,089	\$ (15,066)	-65%	\$ 210,180	\$ 112,004	\$ (98,176)	-47%
<i>Recycling Facility</i>	\$ 69,953	\$ 130,445	\$ 60,492	86%	\$ 747,275	\$ 1,127,513	\$ 380,238	51%
<i>Electricity Sales</i>	\$ 1,498,189	\$ 1,230,448	\$ (267,741)	-18%	\$ 13,331,838	\$ 8,145,473	\$ (5,186,365)	-39%
Other Energy Markets	\$ 186,000	\$ 125,411	\$ (60,589)	-33%	\$ 1,674,000	\$ 1,334,821	\$ (339,179)	-20%
Misc. (Interest, Fees, Other)	\$ 5,000	\$ 17,348	\$ 12,348	247%	\$ 32,745	\$ 65,967	\$ 33,222	101%
<b>TOTAL ACCRUED REVENUES</b>	\$ 5,497,727	\$ 5,163,233	\$ (334,494)	-6%	\$ 48,324,038	\$ 40,492,940	\$ (7,831,099)	-16%
<b>EXPENDITURES</b>								
Administrative Expenses	\$ 234,202	\$ 226,145	\$ 8,057	3%	\$ 2,341,388	\$ 2,061,582	\$ 279,806	12%
Operational Expenses	\$ 224,667	\$ 198,225	\$ 26,442	12%	\$ 2,195,414	\$ 1,809,438	\$ 385,976	18%
PILOTS & Fees	\$ 225,000	\$ 223,905	\$ 1,095	0%	\$ 2,040,000	\$ 1,922,715	\$ 117,285	6%
Waste Transport	\$ 1,149,019	\$ 1,078,590	\$ 70,429	6%	\$ 10,131,307	\$ 9,180,846	\$ 950,461	9%
Recycling Facility	\$ 44,351	\$ 41,628	\$ 2,723	6%	\$ 436,039	\$ 383,914	\$ 52,125	12%
Murphy Road Operations	\$ 10,608	\$ 10,608	\$ -	0%	\$ 95,472	\$ 95,473	\$ (1)	0%
MIRA Facilities Operating Exp.	\$ 64,580	\$ 53,259	\$ 11,321	18%	\$ 581,220	\$ 888,749	\$ (307,529)	-53%
NAES Contract Operating Charges	\$ 2,277,248	\$ 1,944,366	\$ 332,882	15%	\$ 22,466,988	\$ 21,443,961	\$ 1,023,027	5%
NAES On-Site Incentive Comp.	\$ 76,086	\$ 76,086	\$ -	0%	\$ 684,774	\$ 762,658	\$ (77,884)	-11%
NAES Management Fees	\$ 102,750	\$ 120,363	\$ (17,613)	-17%	\$ 924,750	\$ 867,275	\$ 57,475	6%
Transfer Station - Ellington	\$ 1,875	\$ 598	\$ 1,277	68%	\$ 16,875	\$ 9,136	\$ 7,739	46%
Transfer Station - Essex	\$ 47,542	\$ 44,210	\$ 3,332	7%	\$ 427,878	\$ 416,577	\$ 11,301	3%
Transfer Station - Torrington	\$ 45,616	\$ 43,278	\$ 2,338	5%	\$ 410,544	\$ 394,183	\$ 16,361	4%
Transfer Station - Watertown	\$ 47,208	\$ 44,302	\$ 2,906	6%	\$ 424,872	\$ 413,819	\$ 11,053	3%
<b>TOTAL ACCRUED EXPENDITURES</b>	\$ 4,550,752	\$ 4,105,563	\$ 445,189	10%	\$ 43,177,521	\$ 40,650,326	\$ 2,527,195	6%
<b>OPERATING INCOME</b>								
(Before Reserves / Transfers)	\$ 946,975	\$ 1,057,670	\$ 110,695	12%	\$ 5,146,517	\$ (157,386)	\$ (5,303,903)	-103%
<b>DISTRIBUTION OF CSWS OPERATING INCOME</b>								
<i>Debt Service Fund</i>	\$ -	\$ -	\$ -	n/a	\$ -	\$ -	\$ -	n/a
<i>CSWS Improvement Fund</i>	\$ 820,000	\$ 820,000	\$ -	0%	\$ 8,585,000	\$ 8,585,000	\$ -	0%
<i>CSWS Risk Fund</i>	\$ -	\$ -	\$ -	n/a	\$ -	\$ -	\$ -	n/a
<i>CSWS Legal Reserve</i>	\$ -	\$ -	\$ -	n/a	\$ -	\$ -	\$ -	n/a
<i>MIRA Severance Reserve</i>	\$ -	\$ -	\$ -	n/a	\$ -	\$ -	\$ -	n/a
<b>TOTAL DISTRIBUTIONS</b>	\$ 820,000	\$ 820,000	\$ -	0%	\$ 8,585,000	\$ 8,585,000	\$ -	0%
<b>SURPLUS / (DEFICIT)</b>	\$ 126,975	\$ 237,670	\$ 110,695	87%	\$ (3,438,483)	\$ (8,742,386)	\$ (5,303,903)	154%

Materials Innovation and Recycling Authority  
 FY 2017 Board of Directors Financial Report

Narrative

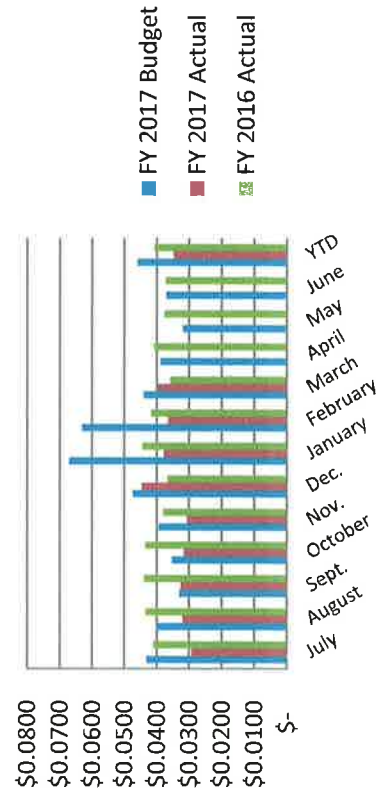
CSWS Electricity Production

Period Ending:

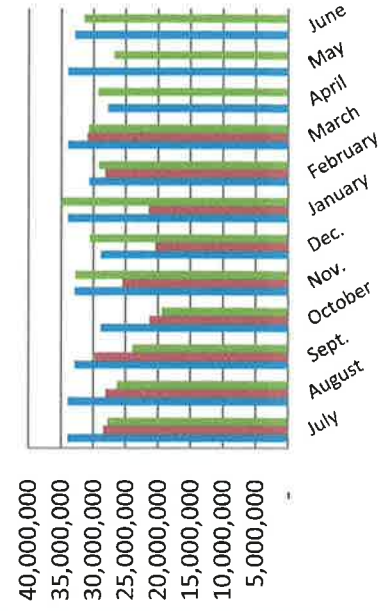
March 31, 2017

	Price			Production			Generation Revenue		
	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance
FY 2017	\$ 0.0432	\$ 0.0293	\$ (0.0138)	34,002,849	28,425,370	(5,577,479)	\$ 1,468,438	\$ 834,139	\$ (634,299)
July	\$ 0.0401	\$ 0.0320	\$ (0.0082)	34,002,849	28,086,860	(5,915,989)	\$ 1,365,047	\$ 898,470	\$ (466,576)
August	\$ 0.0331	\$ 0.0326	\$ (0.0005)	32,905,983	29,814,770	(3,091,213)	\$ 1,089,871	\$ 973,368	\$ (116,503)
September	\$ 0.0354	\$ 0.0316	\$ (0.0038)	28,884,140	21,289,440	(7,594,700)	\$ 1,022,654	\$ 672,865	\$ (349,789)
October	\$ 0.0396	\$ 0.0307	\$ (0.0089)	32,905,983	25,485,690	(7,420,293)	\$ 1,301,692	\$ 782,211	\$ (519,480)
November	\$ 0.0473	\$ 0.0445	\$ (0.0028)	28,884,141	20,456,800	(8,427,341)	\$ 1,366,791	\$ 911,189	\$ (455,602)
December	\$ 0.0671	\$ 0.0379	\$ (0.0292)	34,002,849	21,445,220	(12,557,629)	\$ 2,280,486	\$ 811,929	\$ (1,468,558)
January	\$ 0.0631	\$ 0.0366	\$ (0.0265)	30,712,251	28,162,870	(2,549,381)	\$ 1,938,670	\$ 1,030,853	\$ (907,817)
February	\$ 0.0441	\$ 0.0398	\$ (0.0043)	34,002,849	30,945,080	(3,057,769)	\$ 1,498,189	\$ 1,230,448	\$ (267,741)
March	\$ 0.0390	\$ -	n/a	27,787,274	-	n/a	\$ 1,082,547	\$ -	n/a
April	\$ 0.0320	\$ -	n/a	34,002,849	-	n/a	\$ 1,087,981	\$ -	n/a
May	\$ 0.0371	\$ -	n/a	32,905,983	-	n/a	\$ 1,222,035	\$ -	n/a
June	\$ 0.0459	\$ 0.0348	\$ (0.0111)	290,303,894	234,112,100	(56,191,794)	\$ 13,331,838	\$ 8,145,473	\$ (5,186,365)
<b>YTD</b>			<b>-24%</b>			<b>-19%</b>			<b>-39%</b>
YTD % Var.									

Price / KWh



Production (KWh)



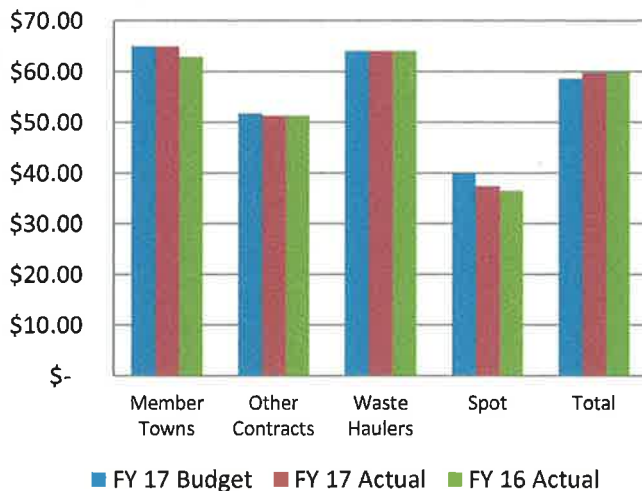
CSWS Solid Waste Summary

Period Ending:

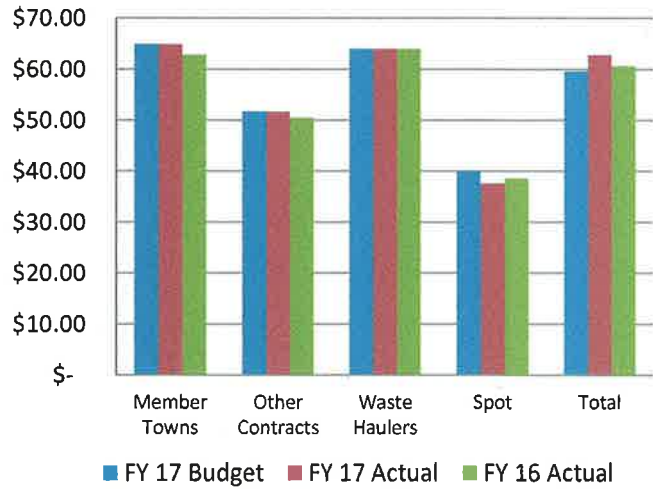
March 31, 2017

FY 17 Budget	Current Month			Year To Date		
	Tons	Revenue	Price	Tons	Revenue	Price
<u>Member Towns</u>	30,081	\$ 1,953,520	\$ 64.94	278,950	\$ 18,107,130	\$ 64.91
<u>Other Contracts</u>	8,712	\$ 450,724	\$ 51.74	68,866	\$ 3,563,028	\$ 51.74
<u>Waste Haulers</u>	12,138	\$ 776,832	\$ 64.00	106,386	\$ 6,808,704	\$ 64.00
<u>Spot</u>	10,681	\$ 427,252	\$ 40.00	72,508	\$ 2,900,336	\$ 40.00
<b>Total</b>	<b>61,612</b>	<b>\$ 3,608,328</b>	<b>\$ 58.57</b>	<b>526,710</b>	<b>\$ 31,379,198</b>	<b>\$ 59.58</b>
FY 17 Actual	Tons	Revenue	Price	Tons	Revenue	Price
Member Towns	29,168	\$ 1,893,302	\$ 64.91	274,426	\$ 17,809,513	\$ 64.90
Other Contracts	9,901	\$ 507,795	\$ 51.29	48,610	\$ 2,512,234	\$ 51.68
Waste Haulers	14,144	\$ 905,268	\$ 64.00	130,917	\$ 8,379,346	\$ 64.01
Spot	5,765	\$ 215,600	\$ 37.40	7,813	\$ 293,875	\$ 37.61
<b>Total</b>	<b>58,978</b>	<b>\$ 3,521,965</b>	<b>\$ 59.72</b>	<b>461,767</b>	<b>\$ 28,994,968</b>	<b>\$ 62.79</b>
Variance	Tons	Revenue	Price	Tons	Revenue	Price
Member Towns	(913)	\$ (60,218)	\$ (0.03)	(4,524)	\$ (297,617)	\$ (0.01)
Other Contracts	1,190	\$ 57,071	\$ (0.45)	(20,255)	\$ (1,050,795)	\$ (0.06)
Waste Haulers	2,006	\$ 128,436	\$ 0.00	24,531	\$ 1,570,642	\$ 0.01
Spot	(4,917)	\$ (211,652)	\$ (2.60)	(64,695)	\$ (2,606,461)	\$ (2.39)
<b>Total</b>	<b>(2,634)</b>	<b>\$ (86,363)</b>	<b>\$ 1.15</b>	<b>(64,943)</b>	<b>\$ (2,384,231)</b>	<b>\$ 3.22</b>
<b>Total % Var.</b>	<b>-4.3%</b>	<b>-2.4%</b>	<b>2.0%</b>	<b>-12.3%</b>	<b>-7.6%</b>	<b>5.4%</b>

**Current Month Average Price / Ton**



**YTD Average Price / Ton**



CSWS Recycling Facility (Deliveries)

Period Ending:

**March 31, 2017**

	Current Month			Year to Date		
	Budget	Actual	Variance	Budget	Actual	Variance
<b>Delivery Revenue</b>	<b>\$ 49,486</b>	<b>\$ 57,358</b>	<b>\$ 7,872</b>	<b>\$ 514,374</b>	<b>\$ 673,962</b>	<b>\$ 159,588</b>
Export Revenue	\$ 20,467	\$ 73,087	\$ 52,620	\$ 232,900	\$ 453,551	\$ 220,650
Total	\$ 69,953	\$ 130,445	\$ 60,492	\$ 747,275	\$ 1,127,513	\$ 380,238
Total % Var.			86%			51%

Current Month Budget	Deliveries CSWS Sourced			Deliveries FCR Sourced			Delivery Revenue
	Tons	Rate	Revenue	Tons	Rate	Revenue	
Residential Dual	-	\$ 8.50	\$ -	-	\$ 7.50	\$ -	\$ -
Residential Single	3,500.00	\$ 8.50	\$ 29,750	650	\$ 7.50	\$ 4,875	\$ 34,625
Commercial	6.99	\$ -	\$ -	70	\$ -	\$ -	\$ -
Total Paid Residue	n/a	n/a	n/a	232	\$ 64.00	\$ 14,861	\$ 14,861
Total	3,506.99	\$ 8.48	\$ 29,750	953	\$ 20.72	\$ 19,736	<b>\$ 49,486</b>
<b>Current Month Actual</b>							
Residential Dual	-	n/a	\$ -	-	n/a	\$ -	\$ -
Residential Single	4,071.62	\$ 8.50	\$ 34,609	337	\$ 7.50	\$ 2,525	\$ 37,134
Commercial	7.12	\$ -	\$ -	83	\$ -	\$ -	\$ -
Total Paid Residue	n/a	n/a	n/a	316	\$ 64.00	\$ 20,225	\$ 20,225
Total	4,078.74	\$ 8.49	\$ 34,609	736	\$ 30.93	\$ 22,749	<b>\$ 57,358</b>
<b>Current Month Variance</b>							
Residential Dual	-	n/a	-	-	n/a	-	\$ -
Residential Single	571.62	-	4,859	(313)	-	(2,350)	\$ 2,509
Commercial	0.13	-	-	13	-	-	\$ -
Total Paid Residue	n/a	n/a	n/a	84	-	5,364	\$ 5,364
Total	571.75	\$ 0.00	\$ 4,859	(217)	-	\$ 3,014	<b>\$ 7,872</b>

Year To Date Budget	Deliveries CSWS Sourced			Deliveries FCR Sourced			Total Revenue
	Tons	Rate	Revenue	Tons	Rate	Revenue	
Residential Dual	-	\$ 8.50	\$ -	-	\$ 7.50	\$ -	\$ -
Residential Single	37,900.00	\$ 8.50	\$ 322,150	7,820	\$ 7.50	\$ 58,650	\$ 380,800
Commercial	62.34	\$ -	\$ -	727	\$ -	\$ -	\$ -
Total Paid Residue	n/a	n/a	n/a	2,087	\$ 64.00	\$ 133,574	\$ 133,574
Total	37,962.34	\$ 8.49	322,150.00	10,634	\$ 18.08	\$ 192,224	<b>\$ 514,374</b>
<b>Year To Date Actual</b>							
Residential Dual	-	n/a	\$ -	-	n/a	\$ -	\$ -
Residential Single	44,198.62	\$ 8.50	\$ 375,688	7,840	\$ 7.50	\$ 58,801	\$ 434,489
Commercial	51.67	\$ -	\$ -	759	\$ -	\$ -	\$ -
Total Paid Residue	n/a	n/a	n/a	3,751	\$ 63.84	\$ 239,473	\$ 239,473
Total	44,250.29	\$ 8.49	375,688.27	12,350	\$ 24.15	\$ 298,274	<b>\$ 673,962</b>
<b>Year To Date Variance</b>							
Residential Dual	-	n/a	-	-	n/a	-	\$ -
Residential Single	6,298.62	-	53,538	20	-	151	\$ 53,689
Commercial	(10.67)	-	-	32	-	-	\$ -
Total Paid Residue	n/a	n/a	n/a	1,664	(0)	105,898	\$ 105,898
Total	6,287.95	0.00	53,538.27	1,716	\$ 6.08	\$ 106,049	<b>\$ 159,588</b>



CSWS Recycling Facility (Exports)

Period Ending:

**March 31, 2017**

	Current Month			Year to Date		
	Budget	Actual	Variance	Budget	Actual	Variance
Delivery Revenue	\$ 49,486	\$ 57,358	\$ 7,872	\$ 514,374	\$ 673,962	\$ 159,588
<b>Export Revenue</b>	<b>\$ 20,467</b>	<b>\$ 73,087</b>	<b>\$ 52,620</b>	<b>\$ 232,900</b>	<b>\$ 453,551</b>	<b>\$ 220,650</b>
Total	\$ 69,953	\$ 130,445	\$ 60,492	\$ 747,275	\$ 1,127,513	\$ 380,238
Total % Var.			86%			51%

Current Month Budget	Exports CSWS Sourced			Exports FCR Sourced			Export Revenue
	Tons	Rate	Revenue	Tons	Rate	Revenue	
Residential ONP	1,509.38	\$ -	\$ -	327	\$ -	\$ -	\$ -
Residential OCC	591.82	\$ 10.00	\$ 5,918	127	\$ 2.00	\$ 254	\$ 6,172
Residential Containers	856.26	\$ 15.00	\$ 12,844	180	\$ 3.00	\$ 539	\$ 13,383
Commercial	6.99	\$ 50.00	\$ 350	70	\$ 8.00	\$ 563	\$ 912
Total	2,964.45	\$ 6.45	\$ 19,112	704	\$ 1.93	\$ 1,356	<b>\$ 20,467</b>
<b>Current Month Actual</b>							
Residential ONP	1,602.77	\$ 16.50	\$ 26,446	133	\$ 3.30	\$ 437	\$ 26,883
Residential OCC	758.21	\$ 39.00	\$ 29,570	63	\$ 7.80	\$ 489	\$ 30,059
Residential Containers	1,054.10	\$ 13.45	\$ 14,175	87	\$ 2.69	\$ 234	\$ 14,409
Commercial	7.12	\$ 108.57	\$ 773	83	\$ 11.61	\$ 963	\$ 1,736
Total	3,422.20	\$ 20.74	\$ 70,964	365	\$ 5.81	\$ 2,123	<b>\$ 73,087</b>
<b>Current Month Variance</b>							
Residential ONP	93.39	\$ 16.50	26,446	(194)	\$ 3.30	437	\$ 26,883
Residential OCC	166.39	\$ 29.00	23,652	(64)	\$ 5.80	235	\$ 23,887
Residential Containers	197.84	\$ (1.55)	1,331	(93)	\$ (0.31)	(305)	\$ 1,026
Commercial	0.13	\$ 58.57	424	13	\$ 3.61	400	\$ 824
Total	457.75	\$ 14.29	\$ 51,852	(339)	\$ 3.89	\$ 767	<b>\$ 52,620</b>

Year To Date Budget	Exports CSWS Sourced			Exports FCR Sourced			Total Revenue
	Tons	Rate	Revenue	Tons	Rate	Revenue	
Residential ONP	16,387.52	\$ -	\$ -	3,942	\$ -	\$ -	\$ -
Residential OCC	6,425.43	\$ 10.00	\$ 64,254	1,533	\$ 2.00	\$ 3,065	\$ 67,319
Residential Containers	9,972.10	\$ 15.00	\$ 149,582	2,355	\$ 3.00	\$ 7,064	\$ 156,646
Commercial	62.34	\$ 50.00	\$ 3,117	727	\$ 8.00	\$ 5,818	\$ 8,935
Total	32,847.39	\$ 6.60	\$ 216,953	8,557	\$ 1.86	\$ 15,948	<b>\$ 232,900</b>
<b>Year To Date Actual</b>							
Residential ONP	19,096.90	\$ 9.04	\$ 172,600	3,407	\$ 1.69	\$ 5,750	\$ 172,600
Residential OCC	8,322.22	\$ 23.90	\$ 198,874	1,462	\$ 4.49	\$ 6,559	\$ 198,874
Residential Containers	12,101.79	\$ 4.64	\$ 56,177	2,152	\$ 0.89	\$ 1,912	\$ 56,177
Commercial	51.67	\$ 81.88	\$ 4,231	759	\$ 9.81	\$ 7,448	\$ 4,231
Total	39,572.58	\$ 10.91	\$ 431,882	7,780	\$ 2.79	\$ 21,669	<b>\$ 453,551</b>
<b>Year To Date Variance</b>							
Residential ONP	2,709.38	\$ 9.04	172,600	(535)	\$ 1.69	5,750	\$ 178,350
Residential OCC	1,896.79	\$ 13.90	134,620	(71)	\$ 2.49	3,493	\$ 138,113
Residential Containers	2,129.69	\$ (10.36)	(93,404)	(202)	\$ (2.11)	(5,152)	\$ (98,557)
Commercial	(10.67)	\$ 31.88	1,114	32	\$ 1.81	1,630	\$ 2,743
Total	6,725.19	\$ 4.31	\$ 214,929	(776)	\$ 0.92	\$ 5,721	<b>\$ 220,650</b>

Period Ending: **March 31, 2017**

**Metal Sales**

FY 2017	Budget			Actual			Variance Better (Worse) than Budget		
	Tons	Revenue	Rate per Ton	Tons	Revenue	Rate per Ton	Tons	Revenue	Rate per Ton
July	1,862.50	\$ 94,583	\$ 50.78	1,689.09	\$ 55,930	\$ 33.11	(173.41)	\$ (38,653)	\$ (17.67)
August	1,862.50	\$ 94,583	\$ 50.78	1,930.28	\$ 61,026	\$ 31.62	67.78	\$ (33,557)	\$ (19.17)
September	1,862.50	\$ 94,583	\$ 50.78	1,816.38	\$ 50,145	\$ 27.61	(46.12)	\$ (44,439)	\$ (23.18)
October	1,862.50	\$ 94,583	\$ 50.78	1,490.40	\$ 31,132	\$ 20.89	(372.10)	\$ (63,451)	\$ (29.89)
November	1,862.50	\$ 94,583	\$ 50.78	1,826.80	\$ 63,185	\$ 34.59	(35.70)	\$ (31,399)	\$ (16.20)
December	1,862.50	\$ 94,583	\$ 50.78	1,393.92	\$ 64,638	\$ 46.37	(468.58)	\$ (29,945)	\$ (4.41)
January	1,862.50	\$ 94,583	\$ 50.78	1,321.54	\$ 90,662	\$ 68.60	(540.96)	\$ (3,922)	\$ 17.82
February	1,862.50	\$ 94,583	\$ 50.78	1,580.94	\$ 76,717	\$ 48.53	(281.56)	\$ (17,866)	\$ (2.26)
March	1,862.50	\$ 94,583	\$ 50.78	1,909.14	\$ 115,561	\$ 60.53	46.64	\$ 20,978	\$ 9.75
April	1,862.50	\$ 94,583	\$ 50.78	-	\$ -	n/a	n/a	n/a	n/a
May	1,862.50	\$ 94,583	\$ 50.78	-	\$ -	n/a	n/a	n/a	n/a
June	1,862.50	\$ 94,583	\$ 50.78	-	\$ -	n/a	n/a	n/a	n/a
<b>YTD</b>	<b>16,762.50</b>	<b>\$ 851,250.00</b>	<b>\$ 50.78</b>	<b>14,958.49</b>	<b>\$ 608,996</b>	<b>\$ 40.71</b>	<b>(1,804.01)</b>	<b>\$ (242,254)</b>	<b>\$ (10.07)</b>

**Excess Ferrous Residue**

FY 2017	Budget			Actual			Variance Better (Worse) than Budget		
	Tons	Revenue	Rate per Ton	Tons	Revenue	Rate per Ton	Tons	Revenue	Rate per Ton
July	158.70	\$ 6,348	\$ 40.00	292.30	\$ 11,692	\$ 40.00	133.60	5,344.00	\$ -
August	209.30	\$ 8,372	\$ 40.00	293.10	\$ 11,724	\$ 40.00	83.80	3,352.00	\$ -
September	204.70	\$ 8,188	\$ 40.00	253.11	\$ 10,124	\$ 40.00	48.41	1,936.40	\$ -
October	193.20	\$ 7,728	\$ 40.00	119.77	\$ 4,791	\$ 40.00	(73.43)	(2,937.20)	\$ -
November	200.10	\$ 8,004	\$ 40.00	267.87	\$ 10,715	\$ 40.00	67.77	2,710.80	\$ -
December	197.80	\$ 7,912	\$ 40.00	246.11	\$ 9,844	\$ 40.00	48.31	1,932.40	\$ -
January	149.50	\$ 5,980	\$ 40.00	88.75	\$ 3,550	\$ 40.00	(60.75)	(2,430.00)	\$ -
February	144.90	\$ 5,796	\$ 40.00	-	\$ -	n/a	(144.90)	(5,796.00)	n/a
March	225.40	\$ 9,016	\$ 40.00	269.74	\$ 10,790	\$ 40.00	44.34	1,773.60	\$ -
April	218.50	\$ 8,740	\$ 40.00			n/a			
May	172.50	\$ 6,900	\$ 40.00			n/a			
June	225.40	\$ 9,016	\$ 40.00			n/a			
<b>YTD</b>	<b>1,683.60</b>	<b>67,344.00</b>	<b>\$ 40.00</b>	<b>1,830.75</b>	<b>73,230.00</b>	<b>\$ 40.00</b>	<b>147.15</b>	<b>5,886.00</b>	<b>-</b>

**Total Metal Sales and Excess Residue**

FY 2017	Budget			Actual			Variance Better (Worse) than Budget		
	Tons	Revenue	Rate per Ton	Tons	Revenue	Rate per Ton	Tons	Revenue	Rate per Ton
July	2,021.20	100,931	\$ 49.94	1,981.39	67,622.25	\$ 34.13	(39.81)	(33,309.08)	(15.81)
August	2,071.80	102,955	\$ 49.69	2,223.38	72,750.33	\$ 32.72	151.58	(30,205.00)	(16.97)
September	2,067.20	102,771	\$ 49.72	2,069.49	60,268.96	\$ 29.12	2.29	(42,502.37)	(20.59)
October	2,055.70	102,311	\$ 49.77	1,610.17	35,922.96	\$ 22.31	(445.53)	(66,388.37)	(27.46)
November	2,062.60	102,587	\$ 49.74	2,094.67	73,899.38	\$ 35.28	32.07	(28,687.95)	(14.46)
December	2,060.30	102,495	\$ 49.75	1,640.03	74,482.47	\$ 45.42	(420.27)	(28,012.86)	(4.33)
January	2,012.00	100,563	\$ 49.98	1,410.29	94,211.73	\$ 66.80	(601.71)	(6,351.60)	16.82
February	2,007.40	100,379	\$ 50.00	1,580.94	76,716.97	\$ 48.53	(426.46)	(23,662.36)	(1.48)
March	2,087.90	103,599	\$ 49.62	2,178.88	126,351.02	\$ 57.99	90.98	22,751.69	8.37
April	2,081.00	103,323	\$ 49.65	-	-	n/a			
May	2,035.00	101,483	\$ 49.87	-	-	n/a			
June	2,087.90	103,599	\$ 49.62	-	-	n/a			
<b>YTD</b>	<b>18,446.10</b>	<b>918,594.00</b>	<b>\$ 49.80</b>	<b>16,789.24</b>	<b>682,226.07</b>	<b>\$ 40.63</b>	<b>(1,656.86)</b>	<b>(236,367.93)</b>	<b>(9.16)</b>

Materials Innovation and Recycling Authority  
 FY 2017 Board of Directors Financial Report

*Narrative*

Property Division Monthly Financial Report

Period Ending: **March 31, 2017**

	Current Month		Variance Better (Worse) than Budget		Year to Date		Variance Better (Worse) than Budget	
	Budget	Actual	\$	%	Budget	Actual	\$	%
<b>REVENUES</b>								
Jets Electric:								
Capacity Payments	\$ 479,528	\$ 445,247	\$ (34,281)	-7%	\$ 4,315,752	\$ 4,155,423	\$ (160,329)	-4%
VARs Payments	\$ 4,014	\$ 3,606	\$ (408)	-10%	\$ 36,126	\$ 71,292	\$ 35,166	97%
Reserve Credits	\$ 50,000	\$ -	\$ (50,000)	n/a	\$ 450,000	\$ 751,952	\$ 301,952	67%
Real Time Energy	\$ 19,916	\$ -	\$ (19,916)	n/a	\$ 179,244	\$ 385,199	\$ 205,955	115%
Total Jets Electric	\$ 553,458	\$ 448,853	\$ (104,605)	-19%	\$ 4,981,122	\$ 5,363,867	\$ 382,745	8%
Lease Income:								
CSWS Murphy Road	\$ 10,608	\$ 10,608	\$ -	0%	\$ 95,475	\$ 95,475	\$ -	0%
Golf Center	\$ 1,513	\$ 1,513	\$ -	0%	\$ 13,613	\$ 13,613	\$ -	0%
Wheelabrator Lease	\$ 35,946	\$ 35,946	\$ -	0%	\$ 323,511	\$ 323,511	\$ -	0%
Jets Billboard	\$ -	\$ -	\$ -	n/a	\$ 45,350	\$ 45,350	\$ -	0%
Total Lease Income	\$ 48,067	\$ 48,067	\$ -	0%	\$ 477,949	\$ 477,949	\$ -	0%
South Central Facility Capacity	\$ 5,083	\$ -	\$ (5,083)	n/a	\$ 45,747	\$ -	\$ (45,747)	n/a
Education & Trash Museum	\$ -	\$ 825	\$ 825	n/a	\$ -	\$ 1,908	\$ 1,908	n/a
Interest Income	\$ 2,500	\$ 14,451	\$ 11,951	478%	\$ 7,500	\$ 27,663	\$ 20,163	269%
<b>TOTAL ACCRUED REVENUES</b>	\$ 609,108	\$ 512,196	\$ (96,912)	-16%	\$ 5,512,318	\$ 5,871,387	\$ 359,069	7%
<b>EXPENDITURES</b>								
MIRA Non-Personnel Services	\$ 19,727	\$ 10,843	\$ 8,884	45%	\$ 186,543	\$ 153,202	\$ 33,341	18%
MIRA Personnel Services	\$ 57,884	\$ 51,740	\$ 6,144	11%	\$ 578,681	\$ 479,939	\$ 98,742	17%
Railroad Maintenance	\$ 833	\$ -	\$ 833	n/a	\$ 7,497	\$ 9,551	\$ (2,054)	-27%
211 Murphy Road Ops. Center	\$ 16,333	\$ 14,512	\$ 1,821	11%	\$ 146,997	\$ 96,511	\$ 50,486	34%
1410 Honey Spot Road	\$ 7,250	\$ (144)	\$ 7,394	102%	\$ 65,250	\$ 20,054	\$ 45,196	69%
171 Murphy Road	\$ 2,913	\$ 2,271	\$ 642	22%	\$ 26,217	\$ 16,865	\$ 9,352	36%
Education & Trash Museum	\$ -	\$ -	\$ -	n/a	\$ -	\$ -	\$ -	n/a
South Central Facility Operating C	\$ 5,083	\$ -	\$ 5,083	n/a	\$ 45,747	\$ -	\$ 45,747	n/a
Jets Operating Charges	\$ 182,859	\$ 75,345	\$ 107,514	59%	\$ 1,648,418	\$ 1,261,838	\$ 386,580	23%
<b>TOTAL ACCRUED EXPENDITURES</b>	\$ 292,882	\$ 154,567	\$ 138,315	47%	\$ 2,705,350	\$ 2,037,960	\$ 667,391	25%
<b>OPERATING INCOME</b>								
(Before Reserves / Transfers)	\$ 316,226	\$ 357,629	\$ 41,403	13%	\$ 2,806,968	\$ 3,833,427	\$ 1,026,460	37%
<b>DISTRIBUTION OF PD OPERATING INCOME</b>								
PD Improvement Fund	\$ 79,167	\$ 79,167	\$ 0	0%	\$ 712,500	\$ 712,503	\$ 3	0%
<b>TOTAL DISTRIBUTIONS</b>	\$ 79,167	\$ 79,167	\$ 0	0%	\$ 712,500	\$ 712,503	\$ 3	0%
<b>SURPLUS / (DEFICIT)</b>	\$ 237,059	\$ 278,462	\$ 41,403	17%	\$ 2,094,468	\$ 3,120,924	\$ 1,026,457	49%

Property Division and CSWS Flow of Funds

Period Ending: March 31, 2017  
 Transfer Date: April 6, 2017  
 Funding: May 2017

Property Division Receipts	Beginning Balance	Interest [+]	Receipts [+]	Adjustments [+(-)]	Net Receipts to Distribution [-]	Ending Balance
Clearing Account	\$ 1,000.00		\$ 501,626.05		\$ 501,626.05	\$ 1,000.00
<b>Property Division Disbursements</b>						
Property Division Disbursements	Beginning Balance	Interest [+]	Expenditures [-]	Adjustments [+(-)]	Distribution of Net Receipts [+(-)]	Ending Balance
Operating Fund	\$ 1,878,372.11	\$ 1,110.29	\$ 143,758.22		\$ 291,693.63	\$ 2,027,417.81
PD General Fund	\$ 1,655,128.97	\$ 3,542.97		\$ 4,797,775.32		\$ 6,456,447.26
PD Improvement Fund	\$ 33,099.91		\$ 16,302.00			\$ 16,797.91
Severance Fund	Combined Below					Combined Below
CSWS Improvement Fund	Combined Below					Combined Below
CSWS Tip Fee Stabilization	Combined Below				\$ 209,932.34	Combined Below
<b>Total</b>	\$ 3,566,600.99	\$ 4,653.26	\$ 160,060.22	\$ 4,797,775.32	\$ 501,625.97	\$ 8,500,662.98
<b>CSWS Division Receipts</b>						
CSWS Division Receipts	Beginning Balance	Interest [+]	Receipts [+]	Adjustments [+(-)]	Net Receipts to Distribution [-]	Ending Balance
Clearing Account	\$ 40,000.00		\$ 3,692,833.33		\$ 3,692,833.33	\$ 40,000.00
<b>CSWS Division Disbursements</b>						
CSWS Division Disbursements	Beginning Balance	Interest [+]	Expenditures [-]	Adjustments [+(-)]	Distribution of Net Receipts [+(-)]	Ending Balance
Operating STIF	\$ 10,095,585.99	\$ 5,998.53	\$ 5,350,705.22		\$ 4,550,846.47	\$ 9,301,725.77
Debt Service Fund	\$ 3,875.01					\$ 3,875.01
General Fund	\$ 1,042.40	\$ 0.64				\$ 1,043.04
CSWS Risk Fund	\$ 444,308.82	\$ 273.34				\$ 444,582.16
CSWS Legal Fund	\$ 604,580.64	\$ 371.94				\$ 604,952.58
Severance Fund	Combined Below					Combined Below
CSWS Improvement Fund	Combined Below				\$ 458,000.00	Combined Below
CSWS Tip Fee Stabilization	Combined Below				\$ (1,316,013.14)	Combined Below
<b>Total</b>	\$ 11,149,392.86	\$ 6,644.45	\$ 5,350,705.22	\$ -	\$ 3,692,833.33	\$ 10,356,178.56
<b>Combined</b>						
Severance Fund	\$ 733,185.46	\$ 450.38	\$ 3,842.75		\$ -	\$ 729,793.09
CSWS Improvement Fund	\$ 1,841,485.72		\$ 493,632.00		\$ 458,000.00	\$ 1,805,853.72
CSWS Tip Fee Stabilization	\$ 4,792,885.58	\$ 3,208.15			\$ (1,106,080.80)	\$ 3,690,012.93
<b>Other Division Balances</b>						
Other Division Balances	Beginning Balance	Interest [+]	Receipts [+]	Expenditures [-]	Adjustments [+(-)]	Ending Balance
General Fund Checking	\$1,157,759.90		\$ 976,870.54	\$ 1,110,163.12		\$ 1,024,467.32
Landfill Operating Account	\$3,365,313.75			\$ 21,618.30		\$ 3,343,695.45

Mark T. Daley, Chief Financial Officer

Ending balances include the fund transfers represented on this flow of funds as a distribution. Excludes receipt of customer security deposits / guarantees of payment, Mid-Connecticut and Southeast reserves not subject to disbursement or funding in accordance with adopted flow of funds. The PD General Fund received the AMEC purchase payment of \$4,797,775.32 as part of the sale of 1410 Honeyspot road. At the beginning of January, CSWS received \$7,579,550 in prepaid tip fees from waste haulers. This revenue flowed to the CSWS Operating STIF account and was used to reimburse the Tip Fee Stabilization Fund. As of March 31, 2017, \$2,454,514 in prepaid tip fees have been applied to pay customer invoices and \$5,125,036 remained available on customer accounts. After the distribution of March receipts, \$11,365,471 remained due to the Tip Fee Stabilization Fund from CSWS. YTD \$2,992,044.95 has been contributed to the CSWS Tip Fee Stabilization reserve from receipts.

**Materials Innovation and Recycling Authority  
 FY 2017 Board of Directors Financial Report  
 CSWS Improvement Fund Status**

[Narrative](#)

Period Ending:

**March 31, 2017**

<b>Budget Analysis</b>		
Adopted Annual CSWS Contribution <sup>(1)</sup>		\$ 10,320,705
Adopted PD General Fund Transfer <sup>(2)</sup>		\$ -
Total Contributions		\$ 10,320,705
Less: Year to Date Purchase Orders:		
Waste Processing Facility	\$ 673,357	
Power Block Facility	\$ 8,463,123	
Recycling	\$ 6,754	
Transfer Stations		
Rolling Stock		
True Up Amounts Returned		
Total Net YTD Purchase Orders		\$ 9,143,234
Equals: Unencumbered Year to Date Budget		\$ 1,177,471

<b>Cash Reserve Analysis</b>		
Period End Improvement Fund Cash Balance		\$ 1,347,854
+ FY Remaining Contributions	\$ 915,705	
- Approved Expenditures Not Paid	\$ (933,029)	
- Unencumbered Budget (-)	\$ (1,177,471)	
Projected Year End Improvement Fund Balance		\$ 153,059
Period End Debt Service Fund Cash Balance <sup>(3)</sup>		\$ 3,875
+ FY Remaining Contributions	\$ -	
Projected Year End Debt Service Fund Balance		\$ 3,875
Projected Year End Carry Forward		\$ 156,934

<b>Reconciliation To Flow Of Funds Statement</b>		
Period End Improvement Fund Cash Balance		\$ 1,347,854
Funding Due From Period End Receipts	\$ 458,000	
Flow of Funds Statement Balance		\$ 1,805,854

<sup>(1)</sup> Represents the initial annual adopted budget for CSWS contributions to the CSWS Improvement Fund of \$10,320,705.

<sup>(2)</sup> The FY 2017 adopted budgets do not include a transfer of funds from Property Division General Fund to CSWS Improvement Fund.

<sup>(3)</sup> Funds were required for payment of final FY 2015 turbine outage expense.

Materials Innovation and Recycling Authority  
 FY 2017 Board of Directors Financial Report

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Segmented Income Statement

Period Ending: March 31, 2017

	General Fund	Connecticut Solid Waste System	Mid-Connecticut Project	Southwest Project	Property Division	Landfill Division	Eliminations	Total
<b>Operating Revenues</b>								
Service charges:								
Members	\$ -	\$ 17,810	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,810
Others	-	11,289	-	-	-	-	-	11,289
Energy sales	-	9,480	-	-	5,364	(38)	-	14,806
Other operating revenues	-	1,868	-	-	384	-	-	2,252
<b>Total Operating Revenues</b>	-	40,447	-	-	5,748	(38)	-	46,157
<b>Operating Expenses</b>								
Solid waste operations	-	36,920	17	-	1,284	33	(606)	37,648
Maintenance and utilities	-	703	-	-	511	(2)	-	1,212
Legal services - external	-	41	1,286	16	17	9	-	1,369
Administrative and Operational services	76	2,946	164	-	480	83	-	4,849
Distribution to SCRREA	-	-	-	-	-	-	-	-
<b>Total Operating Expenses</b>	76	40,610	1,467	16	2,292	123	(606)	45,078
<b>Operating Income (Loss) before Depreciation and Amortization</b>	(76)	(163)	(1,467)	(16)	3,456	(161)	606	1,079
Depreciation and amortization	22	-	103	-	16,474	-	-	16,599
<b>Operating Income (Loss)</b>	(98)	(163)	(1,570)	(16)	(13,018)	(161)	606	(15,520)
<b>Non-Operating Revenues (Expenses)</b>								
Investment income	10	46	54	4	28	-	-	142
Settlement costs	-	-	-	-	-	-	-	-
Other income (expenses)	-	-	-	-	2,560	-	-	2,560
<b>Non-Operating Revenues (Expenses), net</b>	10	46	54	4	2,588	-	-	2,702
Income (Loss) before Transfers	(88)	(117)	(1,516)	(12)	(10,430)	(161)	606	(12,818)
Transfers in (out)	-	(9,969)	-	-	10,574	-	-	-
<b>Change in Net Position</b>	(88)	(10,085)	(1,516)	(12)	144	(161)	(606)	(11,718)
<b>Total Net Position, beginning of period</b>	1,831	14,827	9,808	1,085	94,953	19,556	-	142,060
<b>Total Net Position, end of period</b>	\$ 1,743	\$ 4,742	\$ 8,292	\$ 1,073	\$ 95,097	\$ 19,395	\$ -	\$ 130,342
<b>RECONCILIATION TO VARIANCE REPORT:</b>								
Add: Expenses paid from reserves	76	-	-	-	316	-	-	392
Add: revenue/Murphy road lease	-	-	-	-	95	-	-	95
Less: expense: Murphy road lease	-	95	-	-	-	-	-	95
Add: Amortization	22	-	-	-	16,474	-	-	16,496
less: GAAP Exp (Deferred for Budget)	-	-	-	-	-	-	-	-
add: Spare parts and fuel inventory adjustment	-	(55)	-	-	(62)	-	-	(117)
add: Capitalized expenses net of asset disposals	(10)	-	-	-	(2,560)	-	-	(2,570)
Add: rounding	-	-	-	-	-	-	-	-
<b>Operating Income (Loss) per Variance report</b>	-	(157)	-	(12)	3,893	-	-	3,664

ties with CSWS financials tab

ties with PD financials tab

Note: Monthly variance report produced for General fund, Property Division and CSWS only.

Note: Eliminations are preliminary amount.

**THE AUTHORITY - FINANCIAL RESULTS**

*For the Period Ending March 31, 2017*

Line	DETAILS	MONTH TO DATE				YEAR TO DATE			
		Budget	Actual	Variance		Budget	Actual	Variance	
	<b>EXPENDITURES</b>								
	<b>PERSONNEL SERVICES ALLOCATION</b>								
1	Total Personnel Services	\$ 351,716	\$ 335,233	\$ 16,483	4.69%	\$ 3,516,209	\$ 3,230,997	\$ 285,212	8.11%
2	LESS: MIRA Direct Personnel	\$ 138,606	\$ 94,874	\$ 43,732	31.55%	\$ 1,385,681	\$ 981,004	\$ 404,677	29.20%
	<b>AUTHORITY BUDGET</b>								
3	Authority Indirect Personnel	\$ 213,110	\$ 240,359	\$ (27,249)	-12.79%	\$ 2,130,528	\$ 2,249,994	\$ (119,465)	-5.61%
4	ADD: Authority Indirect Non-Personnel Services	\$ 93,597	\$ 56,729	\$ 36,868	39.39%	\$ 935,722	\$ 452,226	\$ 483,495	51.67%
5	LESS: Miscellaneous Income	\$ -	\$ -	\$ -	0.00%	\$ -	\$ 4,871	\$ (4,871)	0.00%
	<b>SUBTOTAL AUTHORITY BUDGET</b>	<b>\$ 306,708</b>	<b>\$ 297,088</b>	<b>\$ 9,620</b>	<b>3.14%</b>	<b>\$ 3,066,250</b>	<b>\$ 2,697,349</b>	<b>\$ 368,901</b>	<b>12.03%</b>
	<b>TOTAL ALLOCATION</b>								
6	Mid-Connecticut Post Project Closure	\$ 18,740	\$ 18,079	\$ 661	3.53%	\$ 187,348	\$ 164,809	\$ 22,539	12.03%
7	Property Division	\$ 56,564	\$ 51,740	\$ 4,824	8.53%	\$ 565,487	\$ 479,938	\$ 85,549	15.13%
8	Landfill Division	\$ 10,060	\$ 9,705	\$ 355	3.53%	\$ 100,573	\$ 88,473	\$ 12,100	12.03%
9	Connecticut Solid Waste System (CSWS)	\$ 359,949	\$ 311,236	\$ 48,713	13.53%	\$ 3,598,523	\$ 2,945,131	\$ 653,392	18.16%
	<b>SUBTOTAL TOTAL ALLOCATED</b>	<b>\$ 445,313</b>	<b>\$ 390,760</b>	<b>\$ 54,553</b>	<b>12.25%</b>	<b>\$ 4,451,931</b>	<b>\$ 3,678,352</b>	<b>\$ 773,579</b>	<b>17.38%</b>

**Line YTD VARIANCE EXPLANATION**

- 1 Reflects total amount for MIRA Direct and Authority Indirect Personnel; Favorable due to reduction in budgeted positions.
- 2 Favorable due to reduction in budgeted positions and benefits costs being charged 100% to the Authority budget.
- 4 Favorable due to lower than budgeted customer service, IT and other consulting services, legal fees, and operational contingency; and timing of IT maintenance and auditor fees.

**TAB B**



# MATERIALS INNOVATION AND RECYCLING AUTHORITY

## Monthly Operational Summary

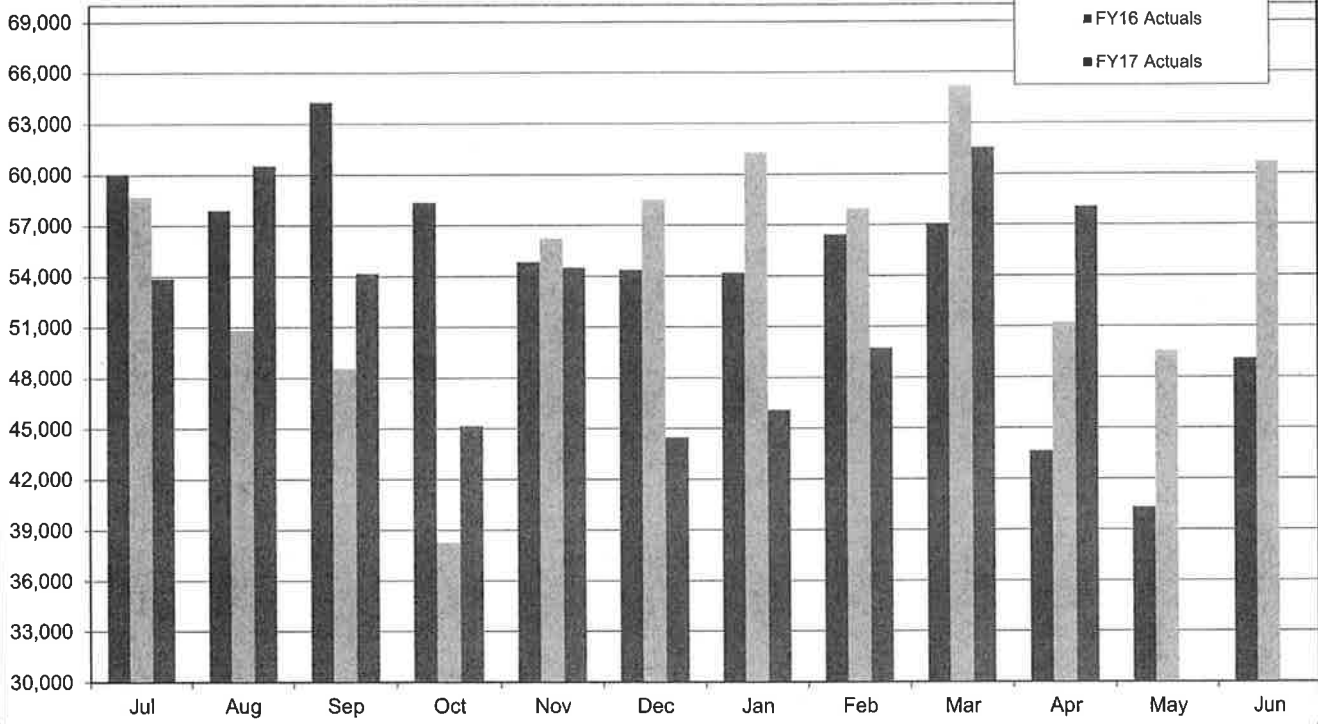
April-17

This report provides information on the operations of the CSWS waste-to-energy plant along with the South Meadows Jets. The following table provides a summary of key operating parameters.

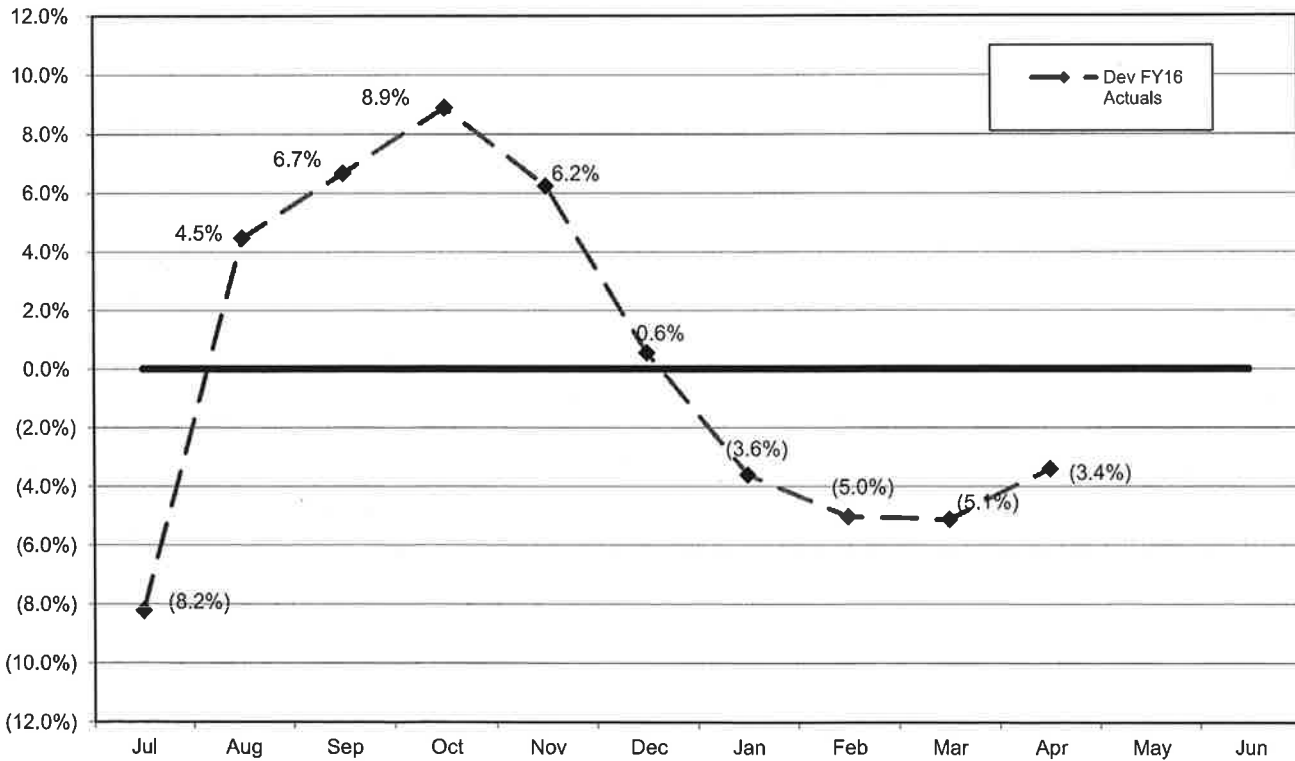
Project/ Item	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Change	2016	2017	Change	Apr 16	Apr 17	Change
<b>CSWS</b>									
Tons MSW Processed	650,642	656,915	1.0%	546,687	528,255	(3.4%)	51,221	58,072	13.4%
Steam (klbs)	4,125,108	4,324,840	4.8%	3,579,331	3,418,138	(4.5%)	366,390	338,531	(7.6%)
(% MCR)	68.0%	71.2%		70.6%	67.6%		73.4%	67.8%	
Power Net MWhr)	331,356	343,284	3.6%	284,928	263,328	(7.6%)	29,280	27,060	(7.6%)

<b>South Meadow Jets</b>									
Net MWH	1,837	1,635	(11.0%)	1,613	1,161	(28.0%)	99	48	(51.6%)

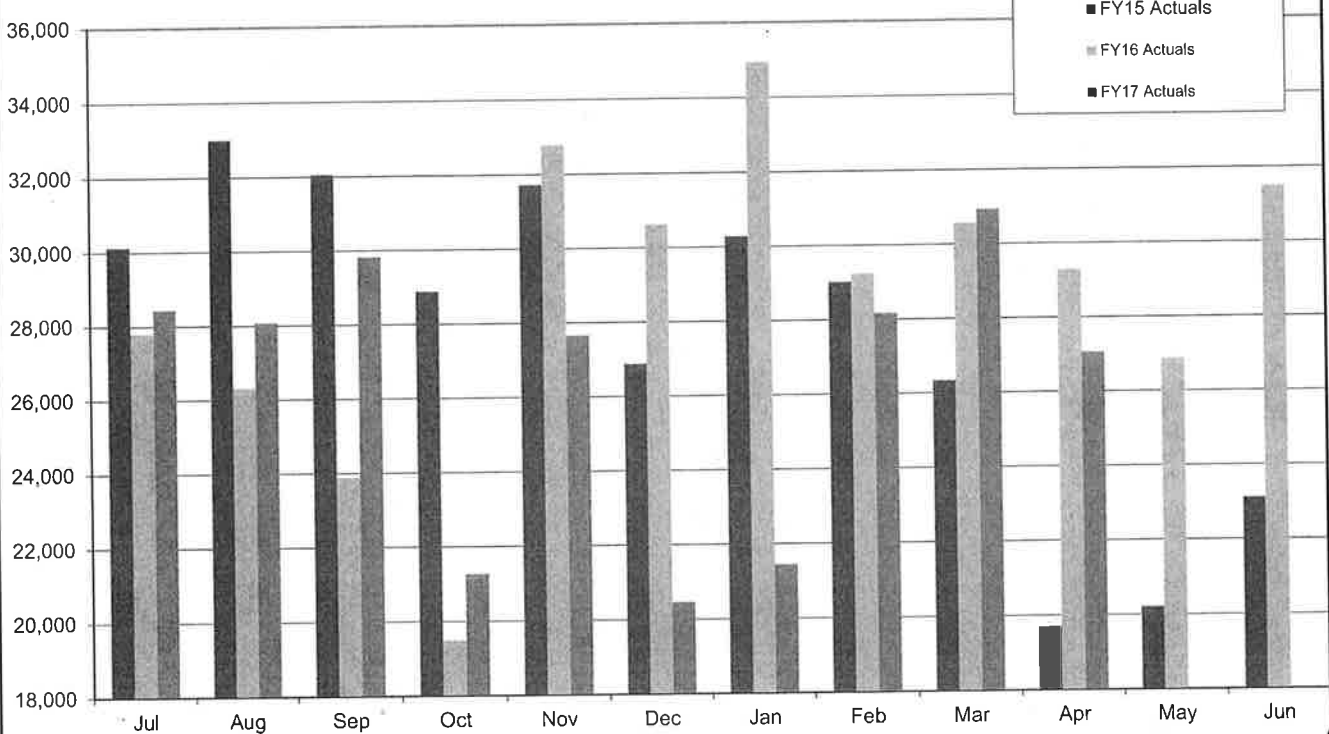
**CSWS - MSW Tons Processed**



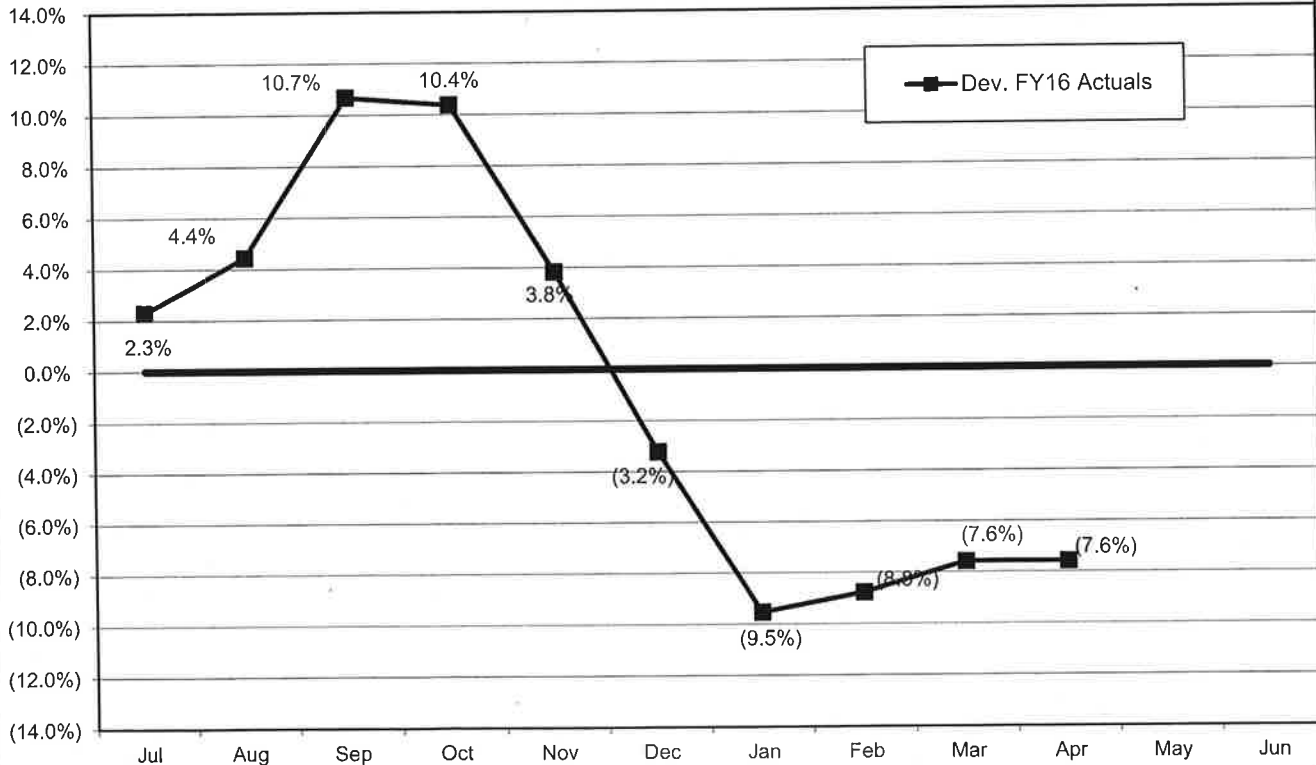
**CSWS Fiscal Year-to-Date Tons Processed - Deviation from Prior Year**



**CSWS - Net Power Produced**



**CSWS Fiscal Year-to-Date Power Sold - Deviation from Prior Year**



## CSWS Waste to Energy Plant Monthly Operational Summary

### Unit Capacity Factors

Month	Boiler 11	Boiler 12	Boiler 13
Jul 16	70%	71%	79%
Aug 16	73%	74%	73%
Sep 16	73%	75%	89%
Oct 16	54%	48%	61%
Nov 16	56%	92%	67%
Dec 16	47%	67%	48%
Jan 17	38%	62%	66%
Feb 17	85%	74%	62%
Mar 17	74%	68%	80%
Apr 17	38%	75%	91%

### Unscheduled Downtime

Date Began	Date Ended	Boiler	Duration (Hrs.)	Reason
07/01/16	07/01/16	11	11.00	Fuel Feed Problems
07/02/16	07/03/16	12	0.20	Broken Coupling
07/05/16	07/09/16	11	24.20	Unscheduled Cold Iron
07/05/16	07/09/16	12	12.80	Unscheduled Cold Iron
07/05/16	07/09/16	13	18.60	Unscheduled Cold Iron
07/16/16	07/17/16	12	8.10	Low drum level
07/16/16	07/19/16	13	73.00	Plugged baghouse compartments
07/16/16	07/17/16	12	8.10	Low drum level
07/16/16	07/19/16	13	73.00	Plugged baghouse compartments
08/02/16	08/02/16	13	3.00	Pans w/flat tires
08/09/16	08/10/16	11	25.70	Unscheduled Cold Iron
08/09/16	08/10/16	12	22.60	Unscheduled Cold Iron
08/09/16	08/11/16	13	43.10	Unscheduled Cold Iron
08/15/16	08/15/16	11	3.40	Fuel Feed Problems
08/15/16	08/19/16	12	50.10	Air Heater Tube Leak
08/22/16	08/22/16	11	15.60	Auger Drive coupling bad
08/25/16	08/25/16	12	1.40	Air Heater Tube Leak
08/27/16	08/31/16	11	83.00	Waterwall and tube leaks
08/31/16	08/31/16	12	0.10	Auger screw bearing and Air Heater Plug
08/31/16	08/31/16	13	22.90	SSC Repairs
09/01/16	09/03/16	12	63.20	Auger screw bearing and Air Heater Plug/Sleeving, Outlet damper
09/01/16	09/01/16	13	15.00	Broken Grate, SSC derailed
09/07/16	09/08/16	12	29.70	Outlet damper
09/21/16	09/21/16	12	9.90	RDF Feed chute
09/28/16	09/30/16	11	51.90	PSH & SSH Leaks
09/29/16	09/30/16	13	27.60	Waterwall leak
10/01/16	10/03/16	11	61.00	PSH & SSH Leaks
10/01/16	10/01/16	13	13.10	Waterwall leak
10/06/16	10/07/16	11	8.40	S02 Removal-Debris in slurry piping
10/23/16	10/26/16	13	67.90	Rear Waterwall Tube Leak
10/24/16	10/27/16	11	84.20	15K Superheater leak
11/03/16	11/03/16	11	0.30	Hotwell level issue
11/22/16	11/22/16	11	1.40	Reduced Airflow
11/29/16	11/30/16	11	37.90	PSH & SSH Tube Leaks

## Unscheduled Downtime Continued

Date Began	Date Ended	Boiler	Duration (Hrs.)	Reason
11/16/16	11/16/16	12	5.10	Cold Iron after RDF Plug
11/02/16	11/02/16	13	8.90	Rack Failure
11/16/16	11/17/16	13	29.20	Cold Iron after RDF plug and minor grate repair
11/21/16	11/22/16	13	26.10	Waterwall Tube Leak
11/25/16	11/27/16	13	38.00	Derailed SSC and "A" furnace grate
12/01/16	12/03/16	11	58.10	PSH & SSH Tube Leaks
12/09/16	12/10/16	11	14.50	TG#6 exciter collector ring bushing fire
12/11/16	12/14/16	11	83.90	PSH & SSH Tube Leaks
12/15/16	12/15/16	11	4.00	High baghouse delta P
12/26/16	12/31/16	11	129.30	ruptured SSH Tube & high baghouse delta P
12/05/16	12/10/16	12	132.10	Broken "A" Grate down in SSC
12/11/16	12/11/16	13	13.10	Airflow restricted-high baghouse delta P
12/28/16	12/31/16	13	57.00	High baghouse delta P
01/01/17	01/04/17	11	96.00	ruptured SSH Tube & high baghouse delta P
01/05/17	01/06/17	11	22.00	Waterwall Tube Leak
01/24/17	01/25/17	11	24.00	Failed Induced Draft Fan
01/26/17	01/28/17	12	50.00	Waterwall Tube Leak
01/01/17	01/02/17	13	35.80	High baghouse delta P
01/01/17	01/08/17	13	127.30	B&C Furnace Grate Chain Failure
01/09/17	01/09/17	13	1.10	RDF Distribution Spout
01/31/17	01/31/17	13	24.00	Waterwall & minor SSH leaks
02/04/17	02/04/17	11	19.70	Missing Grate Bar on "B" Grate
02/13/17	02/13/17	11	1.20	Reduce load due to RDF Inventory
02/28/17	02/28/17	11	3.00	Reduce load due to Steam Turbine. Deraill of ash Conveyor SSC
02/17/17	02/18/17	12	0.70	Wet RDF. Holes in inlet duct/Treed bags
02/26/17	02/24/17	12	60.10	Waterwall and SSH Tube Leaks
02/01/17	02/01/17	13	22.00	Waterwall and minor SSH leaks
02/06/17	02/06/17	13	0.10	High baghouse delta P
02/20/17	02/21/17	13	14.10	Wet RDF. RDF Fuel train feed loss
03/01/17	03/02/17	11	44.10	Derailed ash conveyor SSC feedwater station by-pass line repairs
03/05/17	03/06/17	11	8.20	RDF Feed Conveyor w/CV-519 & CV-512
03/07/17	03/10/17	11	57.50	Broken Chain on "B" Gate
03/27/17	03/27/17	11	8.60	RDF Feed train plug on CV-511
03/01/17	03/04/17	12	86.60	Waterwall and SSH Tube Leaks
03/05/17	03/06/17	12	4.30	RDF Feed Conveyor w/CV-519 & CV-512
04/05/17	04/06/17	11	44.00	RDF Feed Auger Screw
04/07/17	04/07/17	11	24.00	RDF Feed Auger Screw / Waterwall Tube Leak
04/08/17	04/11/17	11	55.60	Waterwall Tube Failure
04/16/17	04/16/17	11	0.10	Hole in economizer side wall
04/16/17	04/20/17	12	84.40	RDF Feed Auger Screw
04/21/17	04/21/17	12	0.70	RDF Auger Bin Plug

## CSWS Waste to Energy Plant Monthly Operational Summary

### Scheduled Downtime

Date Began	Date Ended	Boiler	Duration (Hrs.)	Work Performed
07/12/16	07/15/16	12	75.90	Scheduled Cleaning Outage
07/25/16	07/29/16	11	112.90	Scheduled Cleaning Outage

### Scheduled Downtime Continued

07/12/16	07/15/16	12	75.90	Scheduled Cleaning Outage
09/12/16	09/15/16	11	94.90	Scheduled Cleaning
10/08/16	10/13/16	11	129.20	Cold Iron Outage
10/03/16	10/18/16	12	369.00	Annual Major Outage
10/08/16	10/13/16	13	127.40	Cold Iron Outage
11/14/16	11/20/16	11	148.10	Scheduled Cleaning
11/28/16	11/30/16	13	72.00	Scheduled Annual Major Outage
12/01/16	12/10/16	13	240.00	Scheduled Annual Major Outage
01/07/17	01/19/17	11	296.00	Scheduled Annual Major Outage (revised)
01/17/17	01/20/17	12	97.30	Scheduled Cleaning Outage (early for low boiler capacity)
02/11/17	02/18/17	13	172.10	Scheduled extended cleaning along with major grate overhaul
03/20/17	03/21/17	12	47.90	Scheduled Cleaning / low baghouse temp
03/22/17	03/23/17	12	28.80	Scheduled Cleaning
03/23/17	03/25/17	13	40.80	Scheduled Cleaning (moved earlier due to low RDF inventory, Waterwall Tube, high convection temps)
04/17/17	04/28/17	11	269.20	Scheduled Annual Major Outage

## SOUTH MEADOWS JETS Monthly Operational Summary

Date	Net Generation (MWH)	Comment
07/06/16	62.48	Summer CCA Testing
07/06/16	46.46	Summer CCA Testing
07/06/16	32.96	Dispatched by ISO-NE
07/07/16	52.38	Summer CCA Testing
07/25/16	50.48	Summer CCA Testing
08/01/16	136.20	MVAR testing
08/11/16	223.57	Dispatched by ISO-NE
09/07/16	89.31	Dispatched by ISO-NE
10/18/16	48.94	Dispatched by ISO-NE
11/12/16	60.19	Dispatched by ISO-NE
11/14/16	0.16	Vibration Testing
11/17/16	10.27	Vibration Testing
11/21/16	3.51	Vibration Testing
11/30/16	12.87	Vibration Testing
12/01/17	11.64	Vibration Testing
12/07/17	62.79	Dispatched by ISO-NE
12/07/17	60.46	Dispatched by ISO-NE
12/21/17	60.94	Leading VAR Testing
01/05/17	10.54	Dispatched by ISO-NE
01/06/17	3.58	Vibration Testing
01/10/17	10.24	Vibration Testing
01/11/17	5.10	Vibration Testing
01/19/17	18.26	Vibration Testing
01/23/17	6.37	Vibration Testing
01/25/17	6.10	Vibration Testing
01/27/17	27.77	Vibration Testing
04/30/17	47.76	Dispatched by ISO-NE

**TAB C**



# MATERIALS INNOVATION AND RECYCLING AUTHORITY

## Monthly Customer MSW and Recyclables Deliveries

April-17

### Monthly Customer Delivery Report

Project/Contract	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Growth	2016	2017	Growth	Apr 16	Apr 17	Growth
<b>CSWS MSW</b>									
Tier 1	343,044	346,503	1%	286,213	279,453	(2%)	27,078	27,140	0%
Tier 2	25,423	13,214	(48%)	10,869	10,781	(1%)	1,051	1,081	3%
Tier 3	2,481	2,413	(3%)	1,992	2,077	4%	193	213	11%
Tier 4	0	9,502	-	6,777	11,749	73%	1,165	1,203	3%
Non-Processible MSW	700	1,299	86%	973	1,538	58%	271	277	2%
Hauler Contract	255,136	251,700	(1%)	210,894	203,032	(4%)	20,007	23,478	17%
Contract (FCR Residue)	5,531	6,258	13%	5,153	6,694	30%	534	650	22%
Ferrous Residue (excess)	3,726	3,792	2%	3,220	2,108	(35%)	282	277	(2%)
In-State Spot	24,533	15,104	(38%)	15,104	10,110	(33%)	1,162	2,318	100%
Out-of-State Spot	1,669	477	(71%)	477	21	(96%)	0	0	-
<b>MSW TOTAL</b>	<b>662,243</b>	<b>650,262</b>	<b>(2%)</b>	<b>541,672</b>	<b>527,563</b>	<b>(3%)</b>	<b>51,742</b>	<b>56,637</b>	<b>9%</b>

<b>CSWS Recyclables</b>									
Tier 1	43,193	44,722	4%	37,079	36,937	(0%)	3,436	3,628	6%
Tier 3	561	623	11%	513	523	2%	53	51	(4%)
Tier 4	0	2,333	-	1,733	2,782	61%	276	281	2%
Hauler Contract	8,326	9,711	17%	8,050	8,528	6%	692	814	18%
Contractor Sourced	12,506	14,896	19%	12,460	9,564	(23%)	1,255	1,528	22%
In-State Spot	0	0	-	0	0	-	0	0	-
Out-of-State Spot	0	0	-	0	0	-	0	0	-
<b>RECYC. TOTAL</b>	<b>64,586</b>	<b>72,284</b>	<b>12%</b>	<b>59,834</b>	<b>58,333</b>	<b>(3%)</b>	<b>5,712</b>	<b>6,302</b>	<b>10%</b>

### CSWS MSW Diversions And Exports

Type	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Growth	2016	2017	Growth	Apr 16	Apr 17	Growth
TOTAL TONNAGE	9,758	4,947	(49%)	4,947	5,020	1%	0	0	-

Breakdown of Participating towns attached

## Connecticut Solid Waste System Monthly Customer MSW Deliveries

<b>CSWS Tier 1 Participating Municipality MSW</b>									
Town	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Growth	2016	2017	Growth	Apr 16	Apr 17	Growth
Avon	11,120	11,268	1%	9,278	9,228	(1%)	821	890	8%
Beacon Falls	3,024	2,635	(13%)	2,141	2,012	(6%)	244	151	(38%)
Bethlehem	1,551	1,508	(3%)	1,263	1,202	(5%)	110	113	2%
Bloomfield	14,795	15,679	6%	13,143	13,201	0%	1,090	1,193	9%
Canaan	430	441	3%	364	325	(11%)	32	31	(2%)
Canton	4,481	4,680	4%	3,829	4,106	7%	378	405	7%
Clinton	4,790	4,803	0%	4,037	4,265	6%	367	435	19%
Colebrook	622	602	(3%)	498	514	3%	42	55	31%
Cornwall	493	505	3%	417	430	3%	33	39	17%
Deep River	3,639	3,489	(4%)	2,921	2,571	(12%)	253	210	(17%)
Durham/Middlefield	5,751	6,295	9%	5,092	6,244	23%	498	524	5%
East Granby	3,129	2,869	(8%)	2,361	2,436	3%	219	263	20%
East Hampton	6,122	6,146	0%	5,004	5,214	4%	502	503	0%
Ellington	5,253	5,139	(2%)	4,215	4,379	4%	406	423	4%
Essex	3,062	3,078	1%	2,481	2,597	5%	195	229	17%
Farmington	14,329	14,661	2%	12,043	12,063	0%	1,206	1,196	(1%)
Glastonbury	18,836	19,255	2%	15,910	15,619	(2%)	1,495	1,541	3%
Goshen	1,307	1,345	3%	1,105	1,067	(3%)	92	98	7%
Granby	5,413	4,791	(11%)	4,020	3,465	(14%)	344	304	(12%)
Haddam	3,193	3,372	6%	2,796	2,648	(5%)	284	236	(17%)
Hartford	85,433	84,428	(1%)	69,847	68,817	(1%)	6,843	6,970	2%
Harwinton	1,904	2,030	7%	1,678	1,575	(6%)	146	153	5%
Killingworth	1,912	1,919	0%	1,593	1,542	(3%)	164	139	(15%)
Litchfield*	0	4,860	-	3,997	3,876	(3%)	372	379	2%
Lyme	751	755	1%	620	622	0%	54	65	20%
Marlborough	2,431	2,276	(6%)	1,901	1,760	(7%)	164	175	6%
Middlebury	2,611	2,349	(10%)	1,953	1,912	(2%)	193	183	(5%)
Naugatuck	14,993	15,157	1%	12,381	12,538	1%	1,259	1,196	(5%)
Norfolk	762	728	(4%)	602	596	(1%)	45	56	24%
North Canaan	2,241	2,232	(0%)	1,877	1,699	(9%)	159	158	(1%)
Old Lyme	3,275	3,276	0%	2,669	2,583	(3%)	220	222	1%
Old Saybrook	9,744	9,852	1%	8,166	7,017	(14%)	762	655	(14%)
Oxford	7,730	6,204	(20%)	5,489	3,131	(43%)	300	319	7%
Portland	3,619	3,510	(3%)	2,933	2,976	1%	280	284	1%
Rocky Hill	11,671	11,458	(2%)	9,504	8,958	(6%)	985	908	(8%)
Roxbury	710	704	(1%)	584	567	(3%)	49	53	8%
RRDD#1	10,878	11,014	1%	9,033	8,932	(1%)	832	899	8%
Salisbury/Sharon	3,224	3,292	2%	2,723	2,665	(2%)	258	229	(11%)
Simsbury	14,348	13,698	(5%)	11,364	10,697	(6%)	1,062	1,066	0%
Torrington	24,005	23,792	(1%)	19,675	18,987	(3%)	1,861	1,860	(0%)
Watertown	10,816	11,204	4%	9,225	8,856	(4%)	917	872	(5%)
Wethersfield	14,025	14,634	4%	11,711	11,880	1%	1,201	1,107	(8%)
Woodbury	4,624	4,569	(1%)	3,770	3,679	(2%)	339	354	4%
<b>TOTAL TIER 1 PARTICIPATING MUNICIPALITIES</b>	<b>343,044</b>	<b>346,503</b>	<b>1%</b>	<b>286,213</b>	<b>279,453</b>	<b>(2%)</b>	<b>27,078</b>	<b>27,140</b>	<b>0%</b>

\*Litchfield switched from Tier 2 to Tier 1 Municipality 7/1/2015

### CSWS Tier 2 Participating Municipality MSW

Town	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Growth	2016	2017	Growth	Apr 16	Apr 17	Growth
Litchfield*	5,201	0	(100%)	0	0	-	0	0	-
Manchester	12,955	13,214	2%	10,869	10,781	(1%)	1,051	1,081	3%
South Windsor**	7,267	0	(100%)	0	0		0	0	-
<b>TOTAL TIER 2 PARTICIPATING MUNICIPALITIES</b>	<b>25,423</b>	<b>13,214</b>	<b>(48%)</b>	<b>10,869</b>	<b>10,781</b>	<b>(1%)</b>	<b>1,051</b>	<b>1,081</b>	<b>3%</b>

\*Litchfield switched from Tier 2 to Tier 1 Municipality 7/1/2015

\*\* Municipality left MIRA after FY15

### CSWS Tier 3 Participating Municipality MSW

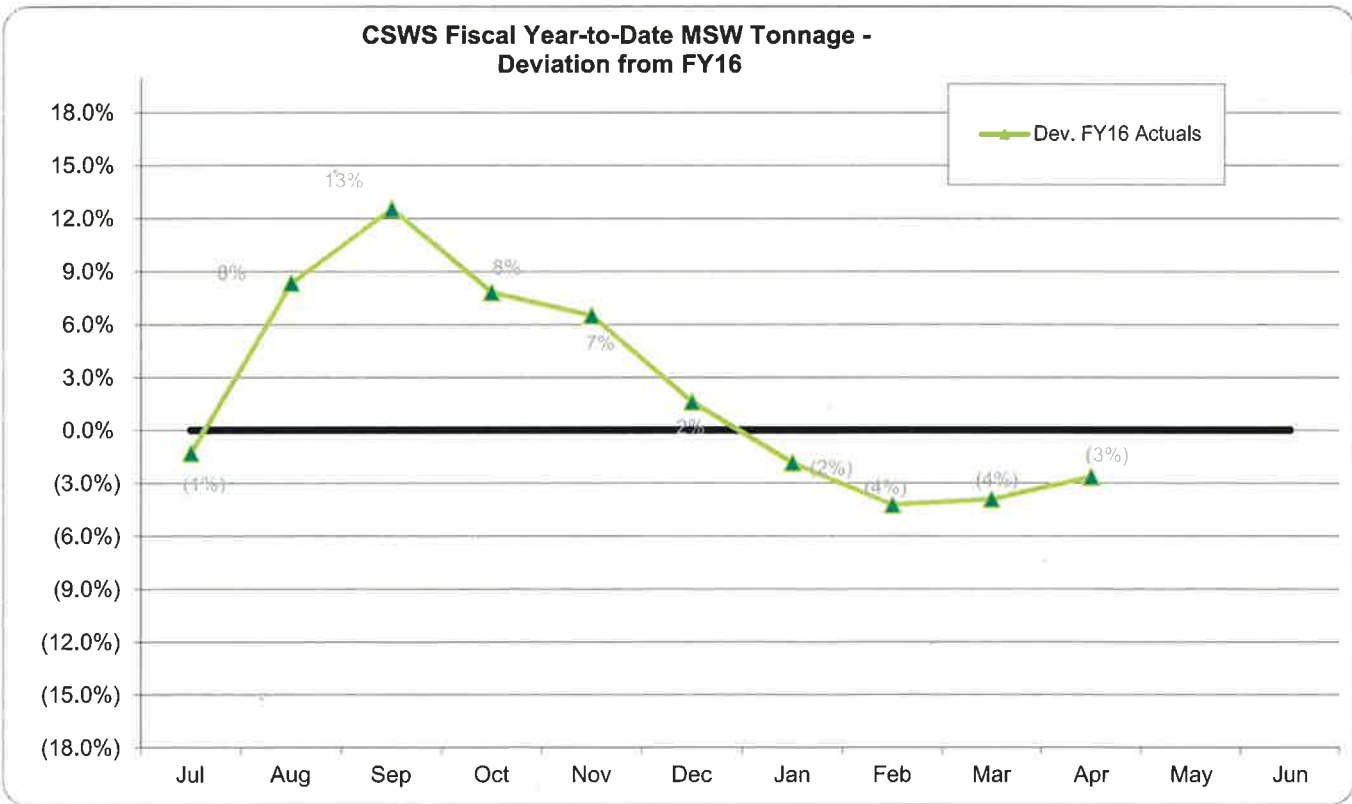
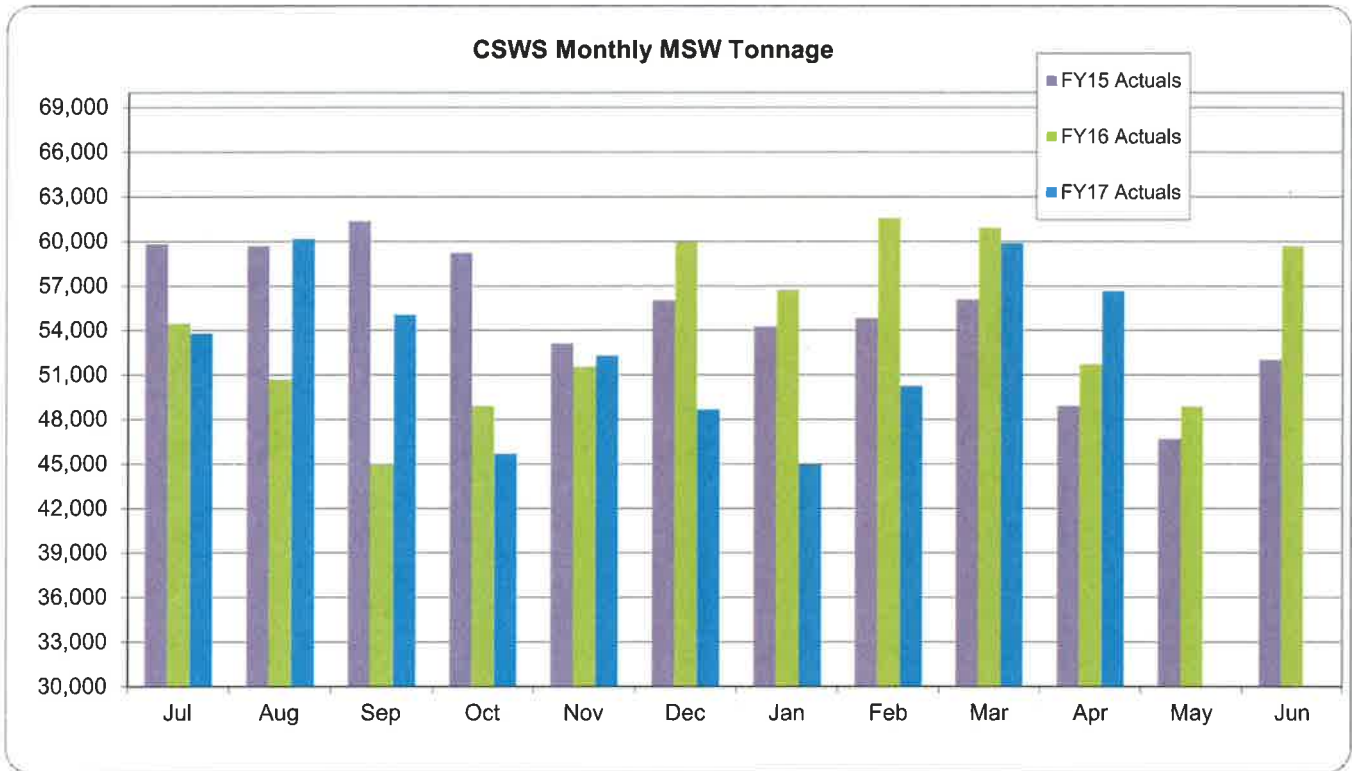
Town	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Growth	2016	2017	Growth	Apr 16	Apr 17	Growth
Chester	19	14	(28%)	11	12	6%	1	1	65%
Thomaston	2,462	2,400	(3%)	1,981	2,065	4%	192	212	10%
<b>TOTAL TIER 3 PARTICIPATING MUNICIPALITIES</b>	<b>2,481</b>	<b>2,413</b>	<b>(3%)</b>	<b>1,992</b>	<b>2,077</b>	<b>4%</b>	<b>193</b>	<b>213</b>	<b>11%</b>

### CSWS Tier 4 Participating Municipality MSW

Town	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Growth	2016	2017	Growth	Apr 16	Apr 17	Growth
East Hartford***	0	9,502	-	6,777	11,749	73%	1,165	1,203	3%
<b>TOTAL TIER 4 PARTICIPATING MUNICIPALITIES</b>	<b>0</b>	<b>9,502</b>	<b>-</b>	<b>6,777</b>	<b>11,749</b>	<b>73%</b>	<b>1,165</b>	<b>1,203</b>	<b>3%</b>

\*\*\* Municipality signed with MIRA beginning 11/1/15

## CSWS MSW Trends



**Connecticut Solid Waste System**  
**Monthly Customer Recyclables Deliveries**  
**CSWS Tier 1 Participating Municipality Recycling**

Town	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Growth	2016	2017	Growth	Apr 16	Apr 17	Growth
Avon	2,096	2,115	1%	1,746	1,658	(5%)	168	155	(8%)
Beacon Falls	321	373	16%	311	333	7%	29	36	25%
Bethlehem	330	346	5%	287	281	(2%)	23	28	21%
Bloomfield	1,717	1,733	1%	1,430	1,390	(3%)	134	136	1%
Canaan	90	90	0%	76	73	(4%)	6	5	(16%)
Canton	971	981	1%	820	763	(7%)	76	68	(11%)
Clinton	1,148	1,181	3%	985	937	(5%)	97	93	(4%)
Colebrook	188	179	(5%)	147	150	2%	15	16	5%
Cornwall	147	148	1%	126	135	7%	6	15	148%
Deep River	425	510	20%	433	377	(13%)	44	30	(31%)
East Granby	442	465	5%	390	681	75%	30	92	204%
East Hampton	948	1,012	7%	846	845	(0%)	89	72	(20%)
Ellington	1,415	1,426	1%	1,169	1,096	(6%)	106	108	2%
Essex	658	734	12%	607	595	(2%)	52	52	0%
Farmington	2,281	2,697	18%	2,232	2,215	(1%)	218	211	(3%)
Glastonbury	3,687	3,637	(1%)	3,051	2,954	(3%)	280	283	1%
Goshen	320	323	1%	273	272	(0%)	22	25	12%
Granby	1,461	1,457	(0%)	1,228	1,129	(8%)	117	115	(1%)
Haddam	645	683	6%	565	569	1%	51	50	(2%)
Hartford	5,373	5,600	4%	4,597	4,730	3%	443	487	10%
Harwinton	515	504	(2%)	416	428	3%	38	41	6%
Killingworth	464	472	2%	384	400	4%	34	41	20%
Litchfield	0	814	-	672	719	7%	69	67	(3%)
Marlborough	684	654	(4%)	557	488	(12%)	45	46	3%
Middlebury	873	840	(4%)	689	719	4%	61	76	25%
Norfolk	168	169	1%	136	142	4%	13	11	(10%)
North Canaan	231	235	2%	193	204	5%	19	21	12%
Old Lyme	8	0	(100%)	0	0	-	0	0	-
Old Saybrook	1,105	1,082	(2%)	875	880	1%	78	77	(1%)
Oxford	780	668	(14%)	552	574	4%	49	58	18%
Portland	610	573	(6%)	473	483	2%	43	60	40%
Rocky Hill	1,656	1,692	2%	1,400	1,319	(6%)	130	129	(1%)
Roxbury	184	182	(1%)	153	143	(6%)	15	8	(45%)
RRDD#1	1,799	1,815	1%	1,504	1,465	(3%)	122	151	24%
Salisbury-Sharon	1,079	1,053	(2%)	873	897	3%	87	85	(3%)
Torrington	3,004	2,956	(2%)	2,455	2,323	(5%)	220	237	8%
Watertown	1,758	1,706	(3%)	1,435	1,604	12%	132	161	22%
Wethersfield	2,710	2,775	2%	2,300	2,222	(3%)	219	218	(0%)
Woodbury	901	840	(7%)	690	744	8%	58	66	14%
<b>TOTAL TIER 1 MUNICIPALITIES</b>	<b>43,193</b>	<b>44,722</b>	<b>4%</b>	<b>37,079</b>	<b>36,937</b>	<b>(0%)</b>	<b>3,436</b>	<b>3,628</b>	<b>6%</b>

\*Litchfield became a Tier 1 Municipality 7/1/2015.

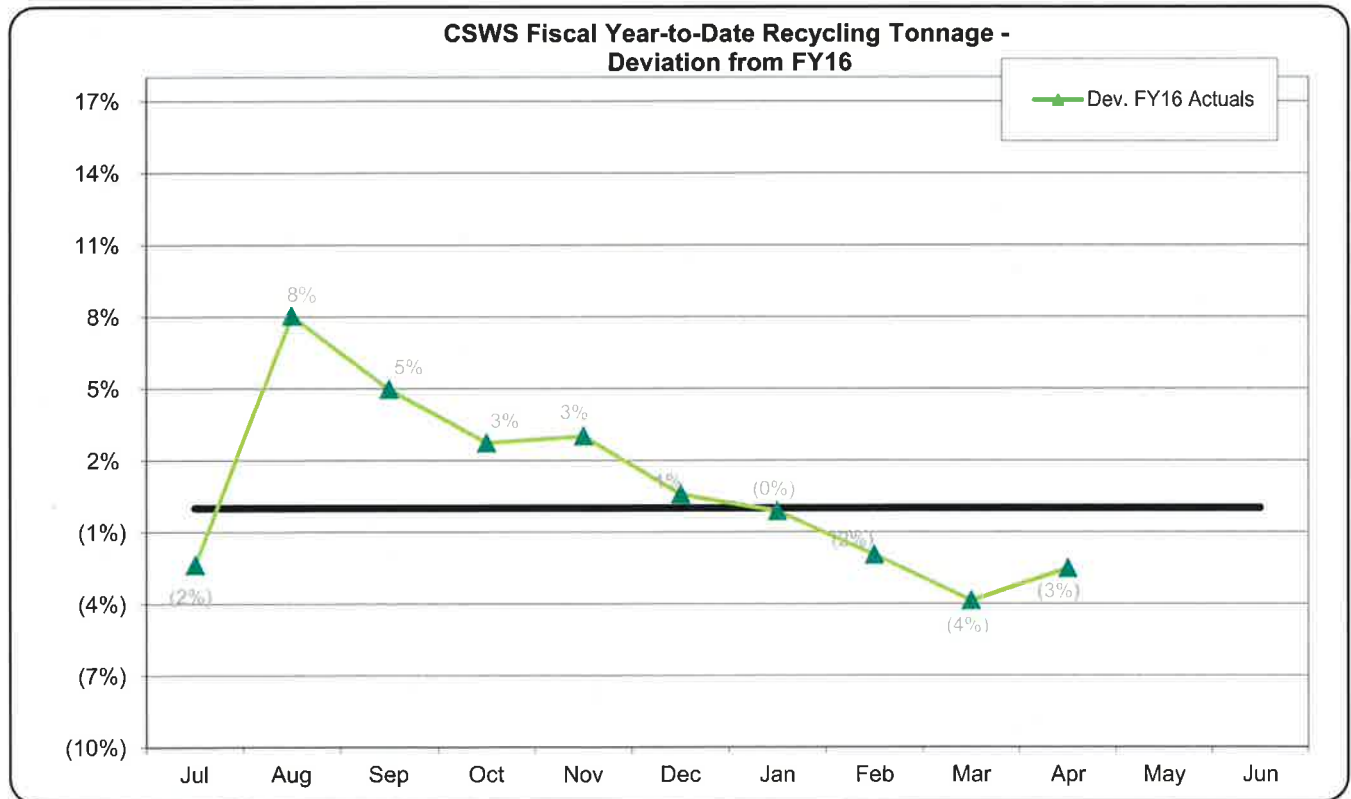
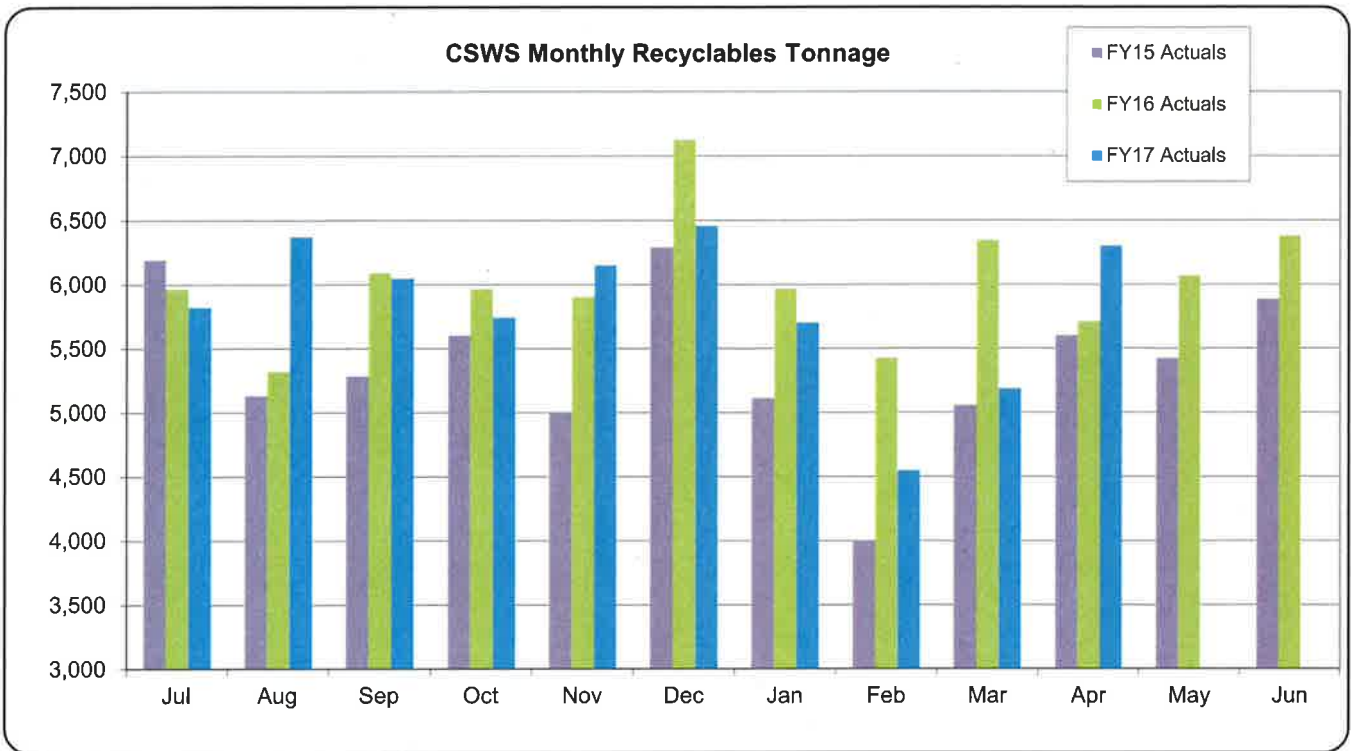
### CSWS Tier 3 Participating Municipality Recycling

Town	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Growth	2016	2017	Growth	Apr 16	Apr 17	Growth
Chester	0	0	-	0	0	-	0	0	-
Thomaston	561	623	11%	513	523	2%	53.35	50.99	(4%)
<b>TOTAL TIER 3 MUNICIPALITIES</b>	561	623	11%	513	523	2%	53	51	(4%)

### CSWS Tier 4 Participating Municipality Recycling

Town	Fiscal Year			Fiscal Year-To-Date			Monthly		
	2015	2016	Growth	2016	2017	Growth	Apr 16	Apr 17	Growth
East Hartford	0	2,333	-	1,733	2,782	61%	276	281	2%
<b>TOTAL TIER 4 MUNICIPALITIES</b>	0	2,333	-	1,733	2,782	61%	276	281	2%

## CSWS Recyclables Trends



**TAB D**



FISCAL YEAR 2017 LEGAL REQUESTS FOR SERVICES  
July 2016- March 2017

FIRM/BOARD APPROVAL	Matter	INFORMATION FROM LEGAL DEPARTMENT				INFORMATION FROM ACCOUNTING DEPARTMENT								
		RFS Amount	Amount Incurred - On a Cash Basis	Status O (Ongoing) C (Concluded) A (Anticipated)	FY17 expenses paid from FY17 PO	FY17 expenses paid from FY16 PO	FY17 accrued estimates	Prior year expenses Paid from FY17 PO, (not accrued in FY16)	Prior year expenses Paid from FY16 PO (not accrued in FY16)	FY16 over/under accrual	Total per General Ledger			
Brown Rudnick	Compliance Matters	\$ -	\$ -	A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$10,000.00		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Brown Rudnick		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cohn Birnbaum & Shea	South Meadows Exit Strategy	\$ 30,000	\$ 15,868	O	\$ 19,954	\$ 178	\$ -	\$ -	\$ 13,559	\$ -	\$ -	\$ -	\$ -	\$ 33,690
\$75,000.00	Sale of Stratford Property	\$ 10,000	\$ 11,436		\$ 2,816	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,816
Total Cohn Birnbaum & Shea		\$ 40,000	\$ 27,304		\$ 22,770	\$ 178	\$ -	\$ -	\$ 13,559	\$ -	\$ -	\$ -	\$ -	\$ 36,506
\$20,000.00		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Day Pitney	NPDES Permitting Support	\$ 2,000	\$ 1,960	A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$950,000.00		\$ 50,000	\$ 18,274	O	\$ 7,920	\$ -	\$ 7,673	\$ -	\$ 193	\$ -	\$ -	\$ -	\$ -	\$ 14,285
Halloran & Sate	GC - Authority Budget	\$ 25,000	\$ 8,102	O	\$ 8,102	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,102
\$200,000.00	MDC Arbitration	\$ 700,000	\$ 580,720	O	\$ 505,293	\$ -	\$ 116,466	\$ -	\$ 335	\$ -	\$ -	\$ -	\$ -	\$ 621,929
\$75,000.00	CSWS	\$ 50,000	\$ 5,118	O	\$ 5,118	\$ -	\$ 38,833	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,657
\$25,000.00	FOIA Complaint	\$ 25,000	\$ 6,215	O	\$ 6,215	\$ -	\$ 6,100	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,315
\$25,000.00	Landfill Division	\$ 5,000	\$ 3,988	O	\$ 3,988	\$ -	\$ 3,100	\$ -	\$ 2,503	\$ -	\$ -	\$ -	\$ -	\$ 9,591
\$25,000.00	MDC appeal	\$ 50,000	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$25,000.00	Contract Negotiation	\$ 25,000	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$20,000.00	Southeast Project	\$ 20,000	\$ 17,544	O	\$ 17,544	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16,544
\$950,000.00	Southeastdows matter	\$ 950,000	\$ 639,961		\$ 554,179	\$ -	\$ 172,171	\$ -	\$ 3,030	\$ -	\$ -	\$ -	\$ -	\$ 721,884
\$400,000.00		\$ 25,000	\$ 3,774	O	\$ 3,774	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,774
\$600,000.00	Employment	\$ 600,000	\$ 401,438	O	\$ 514,222	\$ -	\$ 22,474.08	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 525,959
\$625,000.00	MDC Arbitration	\$ 625,000	\$ 495,212		\$ 518,096	\$ -	\$ 22,474	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 529,733
\$5,000.00	Bond Counsel - General Counsel	\$ 5,000	\$ -	O	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$10,000.00	Bond Counsel - Southeast	\$ 10,000	\$ -	C	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
American Arbitration		\$ -	\$ -	O	\$ 75,000	\$ -	\$ -	\$ -	\$ 23,164	\$ -	\$ -	\$ -	\$ -	\$ 98,164
\$25,000.00	Tremont	\$ 25,000	\$ -	C	\$ 1,957	\$ -	\$ -	\$ -	\$ 23,164	\$ -	\$ -	\$ -	\$ -	\$ 25,121
Total Melick & Porter		\$ -	\$ -		\$ 1,957	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,957
\$1,480,000.00	TOTALS:	\$ 1,627,000	\$ 1,074,437		\$ 1,172,002	\$ 178	\$ 194,646	\$ -	\$ 16,589	\$ -	\$ -	\$ -	\$ -	\$ 1,388,243

Status\*

O = Ongoing

C = Concluded

A = Anticipated

# **TAB E**

**FINAL ACTIVITY REPORT  
FOR THE  
MATERIALS INNOVATION  
AND  
RECYCLING AUTHORITY (MIRA)  
CONNECTICUT SOLID WASTE  
SYSTEM FACILITY**

**Final Report  
April 2017**

*Submitted by:  
United States Department of Agriculture  
Animal and Plant Health Inspection Service  
Wildlife Services  
463 West Street  
Amherst, MA 01002  
(413) 253-6684*

*Timothy S. Cozine Staff Wildlife Biologist, Amherst, Massachusetts*

*Project was monitored by:  
Donald J. Wilda, District Supervisor*

*Assistance Provided by: Wildlife Specialists James A. Streeter, Jr. and Justin Sypek,  
Massachusetts, Rhode Island and Connecticut*

## **Introduction**

The United States Department of Agriculture, Animal Plant Health Inspection Service, Wildlife Services (USDA/APHIS/WS) has a long standing working relationship with Connecticut Resources Recovery Authority (CRRA) now the Materials Innovation and Recycling Authority (MIRA) by providing assistance in the management of migratory bird species causing damage to property and posing a threat to human health and safety.

WS began assisting CRRA in the management of migratory birds at the Hartford Landfill in 2003. When the Hartford Landfill closed in 2008, WS transitioned operational control activities to the Mid-Connecticut Project, now referred to as the Connecticut Solid Waste System Facility, for the remainder of the agreement. During this time WS provided operational control to reduce threats to human health and safety at the facility. WS also worked closely with Hartford-Brainard Airport to reduce threats to aviation. WS regularly communicated with the airport when performing operational control activities at the facility to prevent any added risk to aircraft.

On July 1, 2016 WS renewed the cooperative agreement with MIRA. The purpose of this agreement was to facilitate APHIS/WS conducting operational control at the Connecticut Solid Waste System Facility to reduce the number of birds and other wildlife that pose a threat to human health and safety and pose a threat to aviation at the adjacent Hartford-Brainard Airport for one year.

## **Legal Authority of Wildlife Services**

The USDA is directed by law to protect American agriculture and other resources from damage associated with wildlife. APHIS, WS has statutory authority under the Act of March 2, 1931 (46 Stat. 1468; 7 U.S.C.426-426b) as amended, and the Act of December 22, 1987 (101Stat. 1329-331, 7 U.S.C. 426c), to cooperate with States, local jurisdictions, individuals, public and private agencies, organizations, and institutions while conducting a program of wildlife service's involving mammal and bird species that are reservoirs for zoonotic diseases, or animal species that are injurious and/or a nuisance to, among other things, agriculture, horticulture, forestry, animal husbandry, wildlife, and human health and safety

The WS program is a non-regulatory, federal cooperative wildlife management program whose mission is to provide leadership in reducing conflicts between people and wildlife. WS has the primary responsibility for responding to threats caused by migratory birds. A growing focus of WS is to help promote the safe operation of aircraft by working with airport management to document, monitor and manage wildlife hazards at airports throughout the country.

## **Legal Status of Wildlife Species**

Federal, state, or municipal laws protect most forms of wildlife and their habitats. Before conducting any control action at the Connecticut Solid Waste System Facility, whether lethal or non-lethal, the identification and legal status of the target species should be determined. Regulatory agencies governing wildlife issue permits to trap or kill wild animals depending on the species and method of control involved. MIRA is responsible for adhering to the current regulations regarding wildlife control and for obtaining the appropriate permits to take or harass specific types of wildlife. Potential non-target animals should be identified, as well, to aid in determining the appropriate control methods that would avoid killing or harassing these species.

## **Federal Regulations**

The U.S. Congress has passed several acts for the protection of wildlife including the Migratory Bird Treaty Act (MBTA), the Lacey Act, the Endangered Species Act, Bald and Golden Eagle Protection Act, the National Environmental Policy Act (NEPA), the Federal Insecticide, Fungicide, and Rodenticide Act

(FIFRA) and the Clean Water Act regulated by the U.S. Army Corps of Engineers. These are the basis of most wildlife regulations that have been issued in the Codes of Federal Regulations (CFR). Several agencies are responsible for implementing these regulations and many of these regulations affect wildlife management. Federal wildlife laws are administered by the U.S. Fish and Wildlife Service (USFWS) and primarily involve migratory birds protected under the MBTA and all species protected under the Endangered Species Act. Permits from the USFWS must be updated annually unless otherwise stated on the permit.

MIRA is currently managing wildlife under U.S. Fish and Wildlife Service Depredation Permit Number MB 826758-0 (Appendix 1). This permit authorizes MIRA and those listed as a sub-permittee to kill “non-endangered and non-threatened species of migratory birds only after non-lethal techniques have been tried.” To avoid lapses in permits, MIRA should “submit a written application at least 30 days prior to the expiration date of the permit.” Depredation permits are also subject to the conditions stated in 50 CFR § 21.27 Special Purpose Permits. Under these guidelines MIRA is required to document the permitted activity including type of action, species and numbers involved, and disposition of carcasses. These records should be readily available when needed.

USDA Wildlife Services has long been excluded from activities to control urban rodents under our enacting legislation. However, no definition of urban rodents was provided and Wildlife Services has operated with definition of urban rodents to mean commensal rodents, specifically Norway and black/roof rats and house mice. Due to conflicts with the National Pest Management Association and others, Wildlife Services has redefined and clarified the definition of urban rodents as follows.

*For the purposes of activities authorized under the Act of December 22, 1987 (7 U.S.C. 426c), the term "urban rodent control" shall mean actions to directly control mice, rats, voles, squirrels, chipmunks, gophers, woodchucks, and groundhogs in a city or town with a population greater than 50,000 inhabitants and the urbanized area contiguous and adjacent to such a city or town, except actions involving: (1) federal agencies; (2) government entities engaged in a cooperative service agreement with APHIS to provide direct control of rodents as of October 1, 2013; (3) a state in which direct control of the rodent species has been expressly authorized by state law, rulemaking, or a local jurisdiction's ordinance promulgated by public notice and an opportunity for public comment or as otherwise promulgated as required and authorized by the respective state or local law; and (4) railways and airport air sides areas. APHIS will refer all requests for operational assistance with "urban rodent control" from private entities such as home and business owners and associations to the private sector.*

Due to the population of the City of Harford and its clear urban setting, Wildlife Services will remain unable to conduct control of woodchucks, also known as groundhogs, on MIRA property in the absence of a state law or local ordinance specifically authorizing Wildlife Services to conduct rodent control. However, woodchuck damage management is currently a minor part of Wildlife Services activities.

## **State and Local Regulations**

Connecticut state wildlife laws generally follow the federal regulations for migratory bird species and further regulate actions concerning mammals, upland game birds and other vertebrates. The Connecticut Department of Energy and Environmental Protection Wildlife Division (CT DEEP WD) state permit issued to Hartford-Brainard Airport allows for the harassment and lethal removal of game and fur bearing species to protect public safety: white-tailed deer, Eastern wild turkey, coyote, red fox, grey fox, and raccoon. This permit further allows that mammals interfering with bird control measures may be trapped and euthanized from the Connecticut Solid Waste System Facility (MIRA) at 300 Maxim Road in Hartford, CT.”

The permit letter is issued by the state to protect property and human health and safety. Wildlife in Connecticut is regulated primarily by Connecticut General Statutes (CGS), Title 26: Chapter 460 Fisheries and Game and Chapter 495 Connecticut Endangered Species.

## **WILDLIFE SURVEYS RESULTS AND ANALYSIS**

### **Wildlife Service's Employed Methods**

WS utilized a variety of equipment to perform operational control at the Connecticut Solid Waste System facility to manage migratory bird species and mammals. WS completed surveys during each visit to the facility. The data gathered during the surveys was used to create wildlife population indices. Indices, unlike true population counts, loosely represent wildlife populations and are useful in showing changes in populations over time or comparing one population to another. The survey information is not intended to represent the total wildlife population at Connecticut Solid Waste System Facility, but the technique allows Wildlife Services to build an index of species presence and behavior which satisfies the intent of this study. Because there was no hypothesis being tested, other statistical analysis was not necessary.

WS did not need to utilize propane cannons to harass wildlife due to overall lower bird numbers. WS maintained a decoy trap in the load out area of the yard to capture European starlings and house sparrows to help reduce overall starling and house sparrow numbers. This kind of trap is baited with food and a few European starlings and also provides water and shelter. Birds can enter the trap but cannot escape. Captured birds were euthanized and non-target species were released unharmed. All captured starlings and house sparrows were euthanized with carbon dioxide gas, cervical dislocation, or other AVMA approved methods.

WS utilized two types of pyrotechnics to harass wildlife at the Connecticut Solid Waste System Facility. One type emits a loud scream while the other emits a loud bang after discharge. WS would sometimes follow up harassment with the use of an air rifle to target specific American crows and herring gulls at the Connecticut Solid Waste System Facility which did not respond to the harassment. WS utilized vehicle chasing to disperse crows and starlings at the Connecticut Solid Waste System Facility.

### **Observations**

The Connecticut Solid Waste System Facility is highly attractive to a wide variety of wildlife. WS identified three groups of birds that congregate in numbers and pose a threat to human health and safety, property damage, and pose a serious threat to aviation. These birds are blackbirds (European starlings), Corvids (American crows), and gulls (great black-backed, herring, and ring-billed gulls). Rock pigeons also occur in small numbers and pose a minor threat to human health on site and to aviation safety.

Other bird species are attracted to the site due to the volume of other bird species. These include a wide variety of hawk species. These birds do not pose a threat to human health and safety on property at the Connecticut Solid Waste System Facility, but instead pose a serious threat to aviation at the adjacent Hartford-Brainard Airport.

WS has also identified raccoons as another species of wildlife that pose a serious threat to property damage and human health and safety at the Connecticut Solid Waste System Facility.

### **Gull Guild:**

**Description:** Gulls are large bodied, robust birds with webbed feet, long pointed wings, and stout bills. Most adults are white with a gray or black back and wings, however, juveniles are typically mottled brown or gray for the first two to three years of life. Gulls are commonly attracted to areas when food or water is available. Food sources may include refuse from dumpsters or nearby landfills, shellfish, fish,

earthworms, insects, or carrion. These birds become habituated quickly to easy sources of food such as handouts at construction sites and parking areas.

**Legal Status:** Gulls are classified as migratory non-game birds and can be killed with a USFWS depredation permit and a concurrent state depredation permit.

**Control Measures:** Habitat modifications are the most effective methods for controlling gulls. Clean and contained trash areas, elimination of standing water, and prevention of food handouts will usually deter gulls, especially if combined with an active hazing and shooting program. However, gulls quickly habituate to dispersal techniques (pyrotechnics, bioacoustics and visual scare devices) and individuals may need to be shot to reinforce non-lethal methods.

**Damage Threat to Aircraft:** Gulls are hazardous to aircraft due to their large body size, abundance, expanding distributions, flocking behavior, and relatively slow flight characteristics. Nationally, gulls account for 12.23% of known species bird-aircraft strikes and 20.62% of damaging strikes with known species in the United States resulting in \$58,887,723 in damage from 1990 to 2015 (Dolbeer et al. 2016). Gulls are the third most commonly struck species group reported to the National Wildlife Strike Database, and when struck they are ranked 10<sup>th</sup> out of the 21 species causing significant damage to aircraft (Dolbeer et al. 2000).

**Observations:** WS noted a significant decline in gull numbers between 2009 and 2016. Low numbers of gulls continued into 2017. There was a decrease of 28.8%, from 572 gulls (571 herring gulls and one great black-backed gull) observed during 2015-16 to 225 gulls (117 herring gulls, 100 ring-billed gulls, and eight great black-backed gull) observed during 2016-17. The highest recorded single day observations were 46 gulls on January 3, 2017, 30 gulls January 12, 2017 and 11 gulls on November 22, 2016 and February 27, 2017. Observations of 20 or more gulls occurred on only two occasions. Gulls were observed on 25 of 98 visits from May 1, 2016 to April 27, 2017. The average and median number of gulls surveyed daily, during the 25 days when gulls were observed, was 9.0 and 7.0 respectively. This is a decrease from last year when an average of 17.3 gulls were observed per visit. This breaks a two year trend of increasing gull numbers.

WS's harassment program continued to benefit from the change in practices, including closing of doors, implemented by NAES. Overall gulls respond well to harassment and therefore, can account for continuing low gull numbers. However, there were two herring gulls, two ring-billed gulls, and two great black-backed gull lethally removed using an air rifle.

## **Blackbirds:**

**Description:** The blackbird guild at MIRA consisted solely of European starlings again during 2016-17. Brown-headed cowbirds and common grackles have not been observed in significant numbers since July 1, 2013.

European starlings are gregarious or flocking birds, and are known to form large flocks, sometimes mixed with other black-bird species, which can range in the thousands during the winter months. Flocks typically form near areas with suitable roosting sites and adequate foraging habitats. European starlings are opportunistic feeders and consume a variety of foods, including fruits, grains, weed seeds, and insects. Starlings were introduced into the United States in the 1890's and quickly spread throughout North America. The European starling is a cavity nester and seeks out nesting areas with both suitable nesting cavities, usually near buildings, and short grass areas for foraging.

**Legal Status:** European starlings are an introduced species and are not protected by federal law and are minimally protected by Connecticut law. They may be killed at any time of year without a permit when concentrated in a manner that constitutes a threat to human health and safety. Other black-birds such as brown-headed cowbirds and common grackles are protected by the Migratory Bird Treaty Act, but may

be taken under the Federal Crow and Blackbird Depredation Order. Under the order, cowbirds “may be taken when causing or about to commit damage to...or when concentrated in numbers or in a manner as to constitute a health hazard or nuisance”. There is a newly required reporting requirement under the blackbird depredation order, which is currently being handled by Wildlife Services.

**Control Measures:** Habitat management (i.e., grass management, roost removal, etc.) and exclusion are usually the most cost effective methods because they serve as long term deterrents. Exclusion can be considered as covering trailers full of residue material awaiting transport and closing roll-up bay doors to prevent access to the interior of the facility. If doors cannot be closed due to safety or fire concerns, bird barriers such as clear plastic barrier straps or forced air barriers can be installed in the door way.

Habitat management alone is not enough to discourage European starlings. Often birds simply move to another location at the facility so it is important to be persistent in harassing this bird species. Shooting as reinforcement to harassment, toxicant applications, or trapping can also be used as population control methods if the birds become habituated to pyrotechnics or other non-lethal methods. Other black-birds are much less common on site and they are generally controlled in conjunction with starlings when necessary.

**Damage Threat to Aircraft:** European starlings and black-birds are considered hazardous to aviation because of the large flocks they form and their relatively dense body (Seaman et al. 1995). Blackbirds and European starlings rank 2<sup>nd</sup> out of the 21 wildlife species most often reported struck by aircraft and 19<sup>th</sup> of 21 species causing damage when reported struck by aircraft (Dolbeer et al. 2000). European starlings are the fifth most commonly struck species and were responsible for \$7,127,433 in damage between 1990 and 2015 (Dolbeer et al. 2016). In October of 1960, a Lockheed Electra turbo-prop aircraft ingested European starlings into all engines during takeoff at Logan Airport and crashed resulting in 62 human fatalities.

**Observations:** The number of European starlings harassed in 2016-17 increased 32.3% from 2015-16, up to 23,275 from 16,832. Starlings were observed on 89 of 98 visits from May 1, 2016 to April 27, 2017.

WS used a combination of harassment and trapping to manage starling numbers at the facility. There were 618 starlings lethally removed using the decoy trap.

## **Corvids:**

**Description:** The corvid guild at MIRA consists entirely of American crows. American crows are large sized passerine birds of the family Corvidae. The Corvidae family includes American and fish crows, blue jays and common ravens. All are considered highly intelligent and social. American crows are omnivores and capable of consuming a wide range of food types including: fruits, grains, seeds, nuts, small vertebrates, insects and other invertebrates, refuse and carrion. Studies show that crows consume over 600 different food items. Crows commonly feed in open areas, especially when there is dense cover nearby such as trees or heavy brush.

**Legal Status:** American crows are protected by the Migratory Bird Treaty Act, but certain species may be taken under the Federal Crow and Blackbird Depredation Order. American and fish crows are included in the blackbird depredation order and “may be taken when causing or about to commit damage to...or when concentrated in numbers or in a manner as to constitute a health hazard or nuisance”. As with other blackbirds, there is now a reporting requirement under the blackbird depredation order which will be handled by Wildlife Services. American crows may be hunted with a valid Connecticut state hunting license on Monday through Saturday during the open season from July 1<sup>st</sup> through March 1<sup>st</sup> and October 18<sup>th</sup> through December 31<sup>st</sup>; ½ hour before sunrise to ½ hour after sunset. These regulations may vary each year, so be sure to check each year for changes.



**Control Measures:** The most effective method to prevent crows from using an area is habitat modification. This method includes allowing the grass to grow taller than 7 inches, removing trees used for roosting and structures used for perching. If crows continue to use the facility, they should be dispersed with pyrotechnics and reinforced with an air rifle.

**Damage Threat to Aircraft:** Crows can inflict severe damage to aircraft. Fortunately, most crows are somewhat adept when it comes to avoiding aircraft, and are generally not considered a great threat to aviation. However, this does not mean they can be dismissed as a hazard altogether. They are known to form large flocks, especially during the fall and winter which increases the potential for damaging strikes. There were 442 American crow strikes responsible for \$1,833,405 in damage to civil aircraft between 1990 and 2015 (Dolbeer et. al 2016). Crows and ravens rank 14<sup>th</sup> out of the 21 most struck species groups and rank 18<sup>th</sup> out of 21 species based on the number of strikes resulting in major damages (Dolbeer et al. 2000).

**Observations:** The number of American crows harassed in 2016-17 increased 152.6% from 2015-16, to 4,833 from 1,913. Crows were observed on 73 of 98 visits from May 1, 2016 to April 27, 2017. American crows tend to gather at the facility starting late in October and disperse by late March. American crows congregate in large numbers during winter months as they travel to and from winter roosting sites. There were 18 American crows lethally removed using an air rifle.

## **Other Wildlife of Concern:**

### **Rock pigeons:**

**Description:** Feral pigeons, commonly referred to as rock pigeons or rock doves, are familiar birds that are abundant in cities and farms throughout Connecticut. Pigeons are powerful fliers with robust bodies, small heads, and short beaks. Feral pigeons tend to fly at higher altitude, descending to their destination in a rapid circling pattern with their wings spread back. Although both species are primarily granivorous, they will occasionally consume protein rich animal mater such as insect larvae. Pigeons are known for readily accepting handouts from humans.

**Legal Status:** Rock pigeons, like European starling, are an introduced species and are not protected by federal law and are minimally protected by Connecticut law. They may be killed at any time of year without a permit when concentrated in a manner that constitutes a threat to human health and safety.

**Control Measures:** Exclusion by closing roll-up bay doors to prevent access to the interior of the facility and lethal control using an air rifle are the primary methods available for controlling pigeons. Trapping can be effective, but is best when conducted on a rooftop or similar structure near feeding or roosting sites.

**Damage Threat to Aircraft:** Although pigeons are not as large-bodied as many species considered dangerous to air safety, they are still a concern because of their flocking behavior, which increases the risk of collision with aircraft. Nationally this species is the 7<sup>th</sup> most commonly struck species and has accounted for \$12,036,517 in damage between 1990 and 2015 (Dolbeer et al. 2016). Pigeons ranked 11<sup>th</sup> out of the top 21 species resulting in major damage to aircraft (Dolbeer et al. 2000).

**Observations:** WS observed and non-lethally dispersed 11 rock pigeons at the Connecticut Solid Waste System Facility during the duration of the operational control program. Although recent observations have been low, this species could return in larger numbers at any time due to the large population in the Hartford area.

## **House Sparrows**

**Description:** House sparrows are small brown granivorous (seed-eating) birds with thick, heavy bills for opening seed husks that form loose flocks, especially during the winter months. Males have a distinct black facial mask and females are uniformly streaked brown.

**Legal Status:** House sparrows, like both European starlings and rock pigeons, are an introduced species and are not protected by federal law and are minimally protected by Connecticut law. They may be killed at any time of year without a permit when concentrated in a manner that constitutes a threat to human health and safety.

**Control Measures:** Exclusion by closing roll-up bay doors to prevent access to the interior of the facility and lethal control using an air rifle are the primary methods available for controlling pigeons. Trapping can be effective, but is best when conducted on a rooftop or similar structure near feeding or roosting sites. House sparrows are cavity nesters; they build straw and grass nests in holes and confined spaces, commonly in buildings and other structures. These nests can result in clogged rooftop drains or result in fires when nests are made in electrical devices such as lights or circuit boxes. These nests should be removed, along with any eggs or chicks, and excluded whenever possible.

**Damage Threat to Aircraft:** Due to their small size and loose flocking behavior, house sparrows are not a significant threat to aviation safety. House sparrows have been identified in 236 strikes resulting in \$2,226.00 worth of damages from 1990 to 2015 (Dolbeer et al. 2016).

**Observations:** WS did not observe significant enough numbers of house sparrows to require harassment or lethal control during the duration of the operational control program. No house sparrows were captured in the starling decoy trap.

## **Mammals:**

WS live captured a stray/feral cat at the Connecticut Solid Waste System Facility at the request of MIRA staff and transferred custody of the cat to a licensed animal shelter. Assistance was not requested for any other mammal species during the 2016-17 period.

## **Summary**

WS used a variety of methods to manage wildlife at the Connecticut Solid Waste System Facility including trapping to reduce overall bird populations. This harassment was combined with alternative methods to reduce the overall starling and other bird populations.

In total, WS removed a total of two herring gulls, two ring-billed gulls, two great black-backed gulls, 618 European starlings, and nine American crows as reinforcement to harassment and/or to reduce property damage and threats to human health and safety and aviation safety at neighboring Hartford-Brainard Airport.

The two herring gulls, two ring-billed gulls, two great black-backed gull, and 18 American crows were taken with air rifle during 2016-17. The take of herring gulls was the same as during the 2015-16 agreement. These are the first ring-billed gulls taken since 2012, the first great black-backed gull taken since 2011, and an eighteen fold increase in the number of crows taken.

WS experienced continued success with the decoy trap and removed 618 starlings. This was a 34.35% increase in starling take from 2015-16 to 2016-17. As previously discussed, no house sparrows were taken in the decoy trap.

In total, WS used a total of 307 pyrotechnics, 101 bird bombs and 206 whistler/screamers to disperse 27,613 birds and vehicle harassment to disperse 89 birds from the Connecticut Solid Waste System Facility.

## **Recommendations**

WS recommends a continuation of a proactive wildlife management program at the Connecticut Solid Waste System Facility to reduce the threat to human health and safety caused by birds and their droppings. Proactive management of wildlife at the facility shows a due-diligence and can reduce or eliminate liabilities if a damaging bird strike were to occur at Hartford-Brainard Airport. Furthermore, direct communication with Hartford-Brainard Airport must occur when conducting operational control at the facility to reduce further threats to aviation.

Recommendations at this time would be to ensure that personnel loading residue material in trailers continue to cover the trailers while they sit awaiting transport. Birds feed from the trailers regardless of the time of year. Covering trailers prevents easy access of birds to the residue material. This will help to prevent a habituation of birds to the site and reduce bird numbers overall. To date, most trailers get covered, but more trailers have been left uncovered while awaiting transport as the bird numbers have declined.

WS recommends the installation of a pigeon trap to reduce the numbers of pigeons using the power generation portion of the facility if this becomes an issue of concern during 2017-18. WS believes the pigeons roost and nest at the power generation side of the plant. In past years these birds have been observed flying over and feeding on the waste processing side of the facility. Accumulations of pigeon droppings are known to harbor diseases that can be transferred to humans. Furthermore, pigeon droppings are corrosive and can lead to damage to the facilities.

WS recommends keeping roll-up doors closed as much as possible or installing barriers which will help prevent birds from entering the facility. WS observed high numbers of starlings flying into all open bay doors to access the interior of the facility. The most widely used doors are East and West RDF and doors facing the west side of the facility.

WS recommends continued live trapping of raccoons, opossums, skunks, and other medium and small mammals that occur within the facility as the need arises. These mammal species can carry a variety of diseases that are transmittable to humans. WS recommends that MIRA either hire a private nuisance wildlife control operator or pest control operator to manage woodchucks and other rodents. Alternatively, WS can provide technical assistance so MIRA staff can manage woodchucks and other rodents without outside assistance.

WS would like to thank MIRA and NAES for allowing WS to conduct operational control at the Connecticut Solid Waste System Facility. WS looks forward to working with MIRA in the future to reduce wildlife conflicts and development of more effective management techniques.

## Appendix 1



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DEPREDAATION

COPY

Permit Number: MB826758-1  
Effective: 01/01/2017 Expires: 12/31/2017

**Issuing Office:**

Department of the Interior  
U.S. FISH AND WILDLIFE SERVICE  
Migratory Bird Permit Office  
P.O. Box 779  
Hadley, MA 01035-0779  
Tel: 413-253-8643 Fax: 413-253-8424

CHIEF, MIGRATORY BIRD PERMIT OFFICE - REGION 5

**Permittee:**

MATERIAL INNOVATION AND RECYCLING AUTHORITY  
200 CORPORATE PLACE  
SUITE 202  
ROCKY HILL, CT 06067  
U.S.A.

**Name and Title of Principal Officer:**

PETER W. EGAN - DIRECTOR OF ENVIRONMENTAL SERVICES

Authority: Statutes and Regulations: 16 USC 703-712; 50 CFR Part 13, 50 CFR 21.41.

**Location where authorized activity may be conducted:**

Connecticut Solid Waste System Facility, 300 Maxim Road, Hartford, CT and Regional Recycling Center, 211 Murphy Road, Hartford, CT

**Reporting requirements:**

ANNUAL REPORT DUE WITH NEXT RENEWAL or IF NOT RENEWING 30 days after permit expiration even if you had no activity.  
Forms at: <http://www.fws.gov/forms/3-202-9.pdf>

**Conditions and Authorizations:**

- A. General conditions set out in Subpart B of 50 CFR 13, and specific conditions contained in Federal regulations cited above, are hereby made a part of this permit. All activities authorized herein must be carried out in accord with and for the purposes described in the application submitted. Continued validity, or renewal of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.
- B. The validity of this permit is also conditioned upon strict observance of all applicable foreign, state, local tribal, or other federal law.
- C. Valid for use by permittee named above
- D. Authorized to kill by means of shotgun, rifle, or air rifle, using non-toxic shot, no more than ONE-HUNDRED (100) Herring, Great Black-backed, Glaucous, Ring-billed, Icelandic, Laughing, or Lesser Black-backed gulls in any species combination and MUST destroy all carcasses. Lethal take is not to be the primary means of control. Active hazing, harassment or other non-lethal techniques must continue in conjunction with any lethal take of migratory birds.

**State Restrictions:** No species may be taken which is State listed as Endangered, Threatened or Special Concern without prior authorization from the Connecticut Department of Environmental Protection Commissioner Tel: (860) 424-3011. Included on the State list, among other species, are Peregrine falcon, Short-eared owl, Northern harrier, Upland sandpiper and Grasshopper sparrow.

- E. The following subpermittees are authorized: Employees of Connecticut Resources Recovery Authority and employees of USDA/APHIS Wildlife Services. In addition, any other person who is (1) employed by or under contract to you for the activities specified in this permit, or (2) otherwise designated a subpermittee by you in writing to the Federal permit issuing office, may exercise the authority of this permit.



## Standard Conditions Migratory Bird Depredation Permits 50 CFR 21.41

All of the provisions and conditions of the governing regulations at 50 CFR part 13 and 50 CFR part 21.41 are conditions of your permit. Failure to comply with the conditions of your permit could be cause for suspension of the permit. The standard conditions below are a continuation of your permit conditions and must remain with your permit. If you have questions regarding these conditions, refer to the regulations or, if necessary, contact your migratory bird permit issuing office. For copies of the regulations and forms, or to obtain contact information for your issuing office, visit: <http://www.fws.gov/migratorybirds/mbpermits.html>.

1. To minimize the lethal take of migratory birds, you are required to continually apply non-lethal methods of harassment in conjunction with lethal control.  
*[Note: Explosive Pest Control Devices (EPCDs) are regulated by the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). If you plan to use EPCDs, you require a Federal explosives permit, unless you are exempt under 27 CFR 555.141. Information and contacts may be found at [www.atf.gov/explosives/how-to/become-an-fel.htm](http://www.atf.gov/explosives/how-to/become-an-fel.htm).]*
2. Shotguns used to take migratory birds can be no larger than 10-gauge and must be fired from the shoulder. You must use nontoxic shot listed in 50 CFR 20.21(j).
3. You may not use blinds, pits, or other means of concealment, decoys, duck calls, or other devices to lure or entice migratory birds into gun range.
4. You are not authorized to take, capture, harass, or disturb bald eagles or golden eagles, or species listed as threatened or endangered under the Endangered Species Act found in 50 CFR 17, without additional authorization.

For a list of threatened and endangered species in your state, visit the U.S. Fish and Wildlife Service's Threatened and Endangered Species System (TESS) at: <http://www.fws.gov/endangered>.

5. If you encounter a migratory bird with a Federal band issued by the U.S. Geological Survey Bird Banding Laboratory, Laurel, MD, report the band number to 1-800-327-BAND (2263) or <http://www.reportband.gov>.
6. This permit does not authorize take or release of any migratory birds, nests, or eggs on Federal lands without additional prior written authorization from the applicable Federal agency, or on State lands or other public or private property without prior written permission or permits from the landowner or custodian.
7. Unless otherwise specified on the face of the permit, migratory birds, nests, or eggs taken under this permit must be:
  - (a) turned over to the U.S. Department of Agriculture for official purposes, or
  - (b) donated to a public educational or scientific institution as defined by 50 CFR 10, or
  - (c) completely destroyed by burial or incineration, or
  - (d) with prior approval from the permit issuing office, donated to persons authorized by permit or regulation to possess them.

(page 1 of 2)

8. A subpermittee is an individual to whom you have provided written authorization to conduct some or all of the permitted activities in your absence. Subpermittees must be at least 18 years of age. As the permittee, you are legally responsible for ensuring that your subpermittees are adequately trained and adhere to the terms of your permit. You are responsible for maintaining current records of who you have designated as a subpermittee, including copies of designation letters you have provided.
9. You and any subpermittees must carry a legible copy of this permit, *including these Standard Conditions*, and display it upon request whenever you are exercising its authority.
10. You must maintain records as required in 50 CFR 13.46 and 50 CFR 21.41. All records relating to the permitted activities must be kept at the location indicated in writing by you to the migratory bird permit issuing office.
11. Acceptance of this permit authorizes the U.S. Fish and Wildlife Service to inspect any wildlife held, and to audit or copy any permits, books, or records required to be kept by the permit and governing regulations.
12. You may not conduct the activities authorized by this permit if doing so would violate the laws of the applicable State, county, municipal or tribal government or any other applicable law.

(DPRD - 12/3/2011)