

# SANITATION AND ENVIRONMENTAL SERVICES

COST OF SERVICE STUDY (COS) AND OPERATIONS DISCUSSION

January 22, 2019



# Cost of Service (COS) and Operations Evaluation

- COS scenarios for Residential, Commercial and Transfer Station
  - FY 2018 Baseline
  - FY 2018 Baseline plus Sustainable Fleet
  - FY 2018 Baseline with Modified Operations plus Sustainable Fleet
- Curbside Recycling
- Commercial Collection

# SES Organization

- Administration Division
- Collection Division
  - Defined Services:
    - Residential Service
      - MSW
      - Bulky items/white goods
      - Yard waste
      - Curbside recycling
    - Commercial Service
      - Rollout Containers
      - Dumpsters
- Transfer Station (Disposal) Division

# COS - Allocation of Operations Expenses

- Allocation of Administration based on ratio of employees per division
- Within Collection Division, allocation of expenses per defined service (i.e. MSW or yard waste) is based on the ratio of employees that provide that service within Collection Division; estimate of bulky items and white goods (10%)
- Allocation of Transfer Station Division and landfill expenses per service based on ratio of tonnage per service
- Fleet expenses based on actual purchase price of assigned vehicles for FY 2018

# FY 2018 – Allocation of Personnel

DIVISION	FY 2018 EXPENDITURES	EXPENSE ALLOCATION	DISTRIBUTED ADMINISTRATION EXPENSES	DIVISION EXPENSES - LOADED
ADMINISTRATION	\$883,013	0.0%	\$0	\$0
COLLECTION	\$3,227,291	84.2%	\$743,590	\$3,970,881
TRANSFER STATION	\$4,120,768	15.8%	\$139,423	\$4,260,191
<b>TOTAL</b>	<b>\$8,231,072</b>	<b>100.0%</b>	<b>\$883,013</b>	<b>\$8,231,072</b>

# Allocation of Fleet and Equipment Expenses

FY 2018 FLEET EXP	RESIDENTIAL MSW	BULKY ITEMS / WHITE GOODS	YARD WASTE	RESIDENTIAL RECYCLING	COMMERCIAL MSW	TRANSFER STATION	TOTAL
FY 2018 ACTUAL	\$156,305						\$156,305

# SES Production (tonnage)

- Transfer Station operational expenses based on ratio of tonnage
- Landfill expenses based on ratio of tonnage
- Tons per year data are based on COF scale house data.

PRODUCTION	RESIDENTIAL MSW	BULKY ITEMS / WHITE GOODS	YARD WASTE	RESIDENTIAL RECYCLING	COMMERCIAL MSW	TRANSFER STATION	TOTAL
TONS PER YEAR	21,902	284	3,385	3,321	8,306	56,774	<b>93,972</b>
PERCENT DISTRIBUTION	23.3%	0.3%	3.6%	3.5%	8.8%	60.4%	100%

# FY 2018 – Allocation of Personnel and Operations Expenses

SES OPERATIONS	RESIDENTIAL MSW	BULKY ITEMS / WHITE GOODS	YARD WASTE	RESIDENTIAL RECYCLING	COMMERCIAL MSW	TRANSFER STATION	TOTAL
LANDFILL DISPOSAL COST	\$768,858	\$9,973			\$291,589	\$1,993,028	\$3,063,448
TRANSFER STATION OPERATIONS	\$278,923	\$3,618	\$43,109	\$42,292	\$105,781	\$723,021	\$1,196,743
COLLECTIONS OPERATIONS	\$1,191,264	\$145,599	\$1,310,391	\$529,451	\$794,176		\$3,970,881
<b>TOTAL</b>	<b>\$2,239,045</b>	<b>\$159,190</b>	<b>\$1,353,499</b>	<b>\$571,743</b>	<b>\$1,191,547</b>	<b>\$2,716,049</b>	<b>\$8,231,072</b>

# SES Production Summary

- Monthly Customer Equivalents Definition (Commercial Service): equivalent of customers based on 1/week service. Example – 5 times per week commercial customer equals 5 Monthly Customer Equivalents.
- Customer data are derived from Revenue Management records.

PRODUCTION	RESIDENTIAL MSW	BULKY ITEMS / WHITE GOODS	YARD WASTE	RESIDENTIAL RECYCLING	COMMERCIAL MSW
MONTHLY CUSTOMERS	20,920	65	1,591	11,481	
MONTHLY CUSTOMER EQUIVALENTS (WEEKLY SERVICE)					873

# Operations Scenarios

- Baseline Operations Scenario FY 2018
- Baseline Operations with Sustainable Fleet Scenario
- Modified Operations with Sustainable Fleet Scenario
  - Eliminate use of split rear loaders
    - Majority of ground trash picked up during MSW collection
    - Majority of yard waste collected with knucklebooms
  - Enforce ground trash (buck-a-bag) program
  - Automated collection of curbside recycling
  - Use of air curtain burner for wood waste management and disposal

# FY 2018 Actual – Baseline Scenario Results

OPERATIONS SCENARIO	RESIDENTIAL MSW	BULKY ITEMS / WHITE GOODS	YARD WASTE	RESIDENTIAL RECYCLING	COMMERCIAL MSW	TRANSFER STATION	TOTAL
<b>FY 2018 ACTUAL OPERATIONS</b>	\$2,395,350	\$159,190	\$1,353,499	\$571,743	\$1,191,547	\$2,716,049	<b>\$8,387,377</b>
<b>RESIDENTIAL COSTS</b>	\$ 10.13	\$0.67	\$5.73	\$2.42			<b>\$ 18.95</b>
<b>COMMERCIAL COSTS</b>					\$ 85.35		<b>\$ 85.35</b>
<b>TRANSFER STATION COSTS</b>						\$ 47.84	<b>\$ 47.84</b>

# Sustainable Fleet Scenario – Allocation of Fleet and Equipment Expenses

- Annual expenses for sustainable fleet based on straight line replacement value over anticipated lifecycle.
- Allocation of Admin and Transfer Station fleet and equipment based on tonnage
- Allocation of Collection Division fleet based on assigned equipment and vehicles, and tonnage

SUSTAINABLE FLEET	RESIDENTIAL MSW	BULKY ITEMS / WHITE GOODS	YARD WASTE	RESIDENTIAL RECYCLING	COMMERCIAL MSW	TRANSFER STATION	TOTAL
ASSIGNED FLEET - COLLECTIONS	\$563,143	\$ 29,167	\$180,357	\$120,190	\$204,619		\$1,097,476
ADMIN FLEET	\$ 2,061	\$27	\$ 318	\$ 312	\$ 782		\$ 3,500
FLEXIBLE FLEET	\$ 7,065	\$92	\$ 1,092	\$ 1,071	\$ 2,680		\$ 12,000
DISPOSAL FLEET	\$ 60,093	\$ 779	\$ 9,288	\$ 9,112	\$ 22,790	\$155,772	\$257,833
<b>TOTAL</b>	<b>\$632,362</b>	<b>\$ 30,065</b>	<b>\$191,055</b>	<b>\$130,686</b>	<b>\$230,870</b>	<b>\$155,772</b>	<b>\$1,370,810</b>

# Sustainable Fleet Scenario – Results

OPERATIONS SCENARIO	BULKY ITEMS			RESIDENTIAL RECYCLING	COMMERCIAL MSW	TRANSFER STATION	TOTAL
	RESIDENTIAL MSW	/ WHITE GOODS	YARD WASTE				
<b>FY 2018 OPERATIONS - SUSTAINABLE FLEET</b>	\$2,871,407	\$189,254	\$1,544,555	\$702,428	\$1,422,417	\$2,871,821	<b>\$9,601,882</b>
<b>RESIDENTIAL COSTS</b>	\$ 12.15	\$0.80	\$6.53	\$2.97			<b>\$ 22.45</b>
<b>COMMERCIAL COSTS</b>					\$ 101.88		<b>\$ 101.88</b>
<b>TRANSFER STATION COSTS</b>						\$ 50.58	<b>\$ 50.58</b>

# Modified Operations, Sustainable Fleet Scenario – Proposed Fleet and Equipment Changes

CURRENT	PROPOSED
REAR END LOADER	SIDE LOADER
REAR END LOADER	SIDE LOADER
REAR END LOADER	SIDE LOADER
REAR END LOADER	NA
SPLIT REAR END LOADER	KNUCKLEBOOM
SPLIT REAR END LOADER	KNUCKLEBOOM
SPLIT REAR END LOADER	NA
SPLIT REAR END LOADER	NA
RECYCLING MINI PAC	NA
ROAD TRACTOR	NA
GRINDER	AIR CURTAIN BURNER
WALKING FLOOR TRAILER	NA

# Modified Operations, Sustainable Fleet Scenario – Allocation of Fleet and Equipment Expenses

- Annual expenses for sustainable fleet based on straight line depreciation over anticipated lifecycle.
- Allocation of Admin and Transfer Station Division fleet and equipment based on tonnage
- Allocation of Collection Division fleet based on assigned equipment and vehicles, and tonnage
- Reduction of approximately \$130,000 annually for fleet expenditures

MODIFIED, SUSTAINABLE FLEET EXP	RESIDENTIAL MSW	BULKY ITEMS / WHITE GOODS	YARD WASTE	RESIDENTIAL RECYCLING	COMMERCIAL MSW	TRANSFER STATION	TOTAL
ASSIGNED FLEET	\$470,286	\$29,167	\$145,833	\$173,333	\$204,619	\$0	\$1,023,238
ADMIN FLEET	\$2,061	\$27	\$318	\$312	\$782	\$0	\$3,500
FLEXIBLE FLEET	\$7,065	\$92	\$1,092	\$1,071	\$2,680	\$0	\$12,000
TRANSFER STATION FLEET	\$46,808	\$607	\$7,234	\$7,097	\$17,752	\$121,335	\$200,833
<b>TOTAL</b>	<b>\$526,220</b>	<b>\$29,892</b>	<b>\$154,478</b>	<b>\$181,814</b>	<b>\$225,832</b>	<b>\$121,335</b>	<b>\$1,239,571</b>

# Modified Operations – Staffing Modifications

MODIFIED STAFFING REQUIREMENT	BULKY ITEMS			RESIDENTIAL RECYCLING	COMMERCIAL MSW	TRANSFER STATION	TOTAL
	RESIDENTIAL MSW	/ WHITE GOODS	YARD WASTE				
STAFFING ("ELIMINATE" FOUR POSITIONS)	-\$76,958	\$0	-\$73,761	\$0	\$0	\$0	-\$150,718
ELIMINATE 8 RECYCLING TEMPS	\$0	\$0	\$0	-\$120,951	\$0	\$0	-\$120,951
ELIMINATE 4 YARD WASTE TEMPS	\$0	\$0	-\$60,385	\$0	\$0	\$0	-\$60,385
BUDGET ALLOWANCE FOR TEMPS	\$0	\$0	\$10,074	\$10,074	\$0	\$0	\$20,148
<b>TOTAL</b>	<b>-\$76,958</b>	<b>\$0</b>	<b>-\$124,071</b>	<b>-\$110,877</b>	<b>\$0</b>	<b>\$0</b>	<b>-\$311,906</b>

# Modified Operations, Sustainable Fleet Scenario – Results

MODIFIED, SUSTAINABLE FLEET EXP	RESIDENTIAL MSW	BULKY ITEMS / WHITE GOODS	YARD WASTE	RESIDENTIAL RECYCLING	COMMERCIAL MSW	DISPOSAL	TOTAL
<b>FY 2018 MODIFIED OPERATIONS - SUSTAINABLE FLEET</b>	\$2,688,307	\$189,082	\$1,383,906	\$642,680	\$1,417,379	\$2,837,384	<b>\$9,158,738</b>
<b>RESIDENTIAL COSTS</b>	\$11.37	\$0.80	\$5.85	\$2.72	\$0.00	\$0.00	<b>\$20.75</b>
<b>COMMERCIAL COSTS</b>	\$0.00	\$0.00	\$0.00	\$0.00	\$101.52	\$0.00	<b>\$101.52</b>
<b>TRANSFER STATION COSTS</b>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.98	<b>\$49.98</b>

# Summary of Scenarios

<b>OPERATIONS SCENARIO</b>	<b>BASELINE OPERATIONS (FY 2018 ACTUAL)</b>	<b>SUSTAINABLE FLEET</b>	<b>MODIFIED OPERATIONS, SUSTAINABLE FLEET</b>
<b>ANNUAL EXPENDITURES</b>	\$8,387,377	\$9,601,882	\$9,158,738
<b>RESIDENTIAL COSTS</b>	\$18.95	\$22.45	\$20.75
<b>COMMERCIAL COSTS</b>	\$85.35	\$101.88	\$101.52
<b>TRANSFER STATION COSTS</b>	\$47.84	\$50.58	\$49.98

# Modified Operations Scenario

- Eliminate use of split rear loaders
  - Majority of ground trash picked up during MSW collection
  - Majority of yard waste collected with knucklebooms
- Enforce ground trash (buck-a-bag) program
- Use of air curtain burner for wood waste management and disposal
  - Refer to January 8, 2019 Work Session
- Automated collection of curbside recycling

# Automated Curbside Recycling

- Status of recycling
  - Locally – processing facility has ongoing issues with processing of blue bags
  - Globally
    - Chinese market – 0.5% contamination standard
    - Shipping costs to other markets reduces profitability
    - US does not have adequate end markets or facilities to achieve contamination standard
- Employee safety
  - Five year period 2013-2017 had a total of 38 claims totaling \$265,944
- Consolidation of equipment types
  - Collection trucks and carts
- Efficiencies
  - Ability to route recycling collection
  - Reduced time at customer service location

# Commercial Collection

- Annual expenditures of over \$1.4M, assuming funding of sustainable fleet
- 873 monthly customers equivalents (~624 actual customers)
  - 486 dumpster customers eq; 387 rollout customers eq
  - Rates: Dumpster - \$95/mo (1/week service); Rollout - \$30/mo (1/week service)
  - COS - ~\$101/month

# Discussion