

Marion County  
Solid Waste Management Advisory Council  
GBB Draft / Final Report  
November 28, 2017



# GBB Draft / Final Report



October 20, 2017  
- DRAFT

Marion County, Oregon  
Solid Waste and Energy Final Report

Prepared for:  **Marion County**  
OREGON

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## Table of Contents

1. Background
2. Overview
3. Solid Waste Projects
4. Landfill Options
5. Resource Recovery Options
6. Conclusions
7. Recommendations



# 1 – Background



## GBB – Phase I

- Complete an analysis of Marion County solid waste management systems and prepare findings and recommendations. The analysis will include:
  - Consideration of options to meet the state established goal of 64% recovery rate;
  - Evaluate and address special waste options including medical waste; and
  - Provide current cost of disposal options and available landfill capacity.
- Review, validate and update the “Solid Waste System Assessment Report 2016” with any new information regarding medical waste and other emerging issues.
- Monitor state and regional policy considerations that might impact Marion County’s system.
- Analyze and advise the county regarding current and future markets for power and other trends impacting the EfWF.
- Provide advice and support to the county during negotiations with Covanta and PGE (Phase II).

# 1 – Background



# GBB – Guiding Principles

- After consideration of technical and economic feasibility, establish an integrated solid waste management system that will:
  - **reduce** the amount of solid waste generated
  - **reuse** material for the purpose for which it was originally intended
  - **recycle** material that cannot be reused
  - **compost** material that cannot be reused or recycled
  - **recover energy** from solid waste that cannot be reused, recycled or composted
  - **dispose** of solid waste that cannot be reused recycled, composted or from which energy cannot be recovered by landfilling.
- Continue to lead the state in recovery by increasing our recovery rate from 54% towards the state's 2025 goal of 64% for Marion County.
- Continue to develop comprehensive programs and facilities to manage waste generated in the county while:
  - Maintaining local control of material flow
  - Using technology with a proven successful track record
  - Assuring programs and facilities are cost effective and maintain long-term rate stability for residents and businesses
  - Being environmentally sound
- Consider alternative strategies that are most cost effective and minimally impact the current rate structure.
- Continue a cooperative effort working with local governments, citizens, businesses, and the solid waste franchisees that support Marion County's integrated solid waste system.
- Assure that solid waste generated by Marion County residents and businesses is prioritized first when considering approaches and strategies for managing solid waste.

## 2 – Overview



## Existing Facilities

- EfWF - Owned and operated by Covanta
- MRRF – Owned and operated by Mid-Valley Garbage & Recycling Association
- SKRTS – Operated by Republic Services
- North Marion County Disposal Facility (NMCDF) – Owned by Marion County
- Browns Island Inert Landfill (BI)– Owned by Marion County
- Garten Foundation (GF)

# 2 – Overview



# Covanta EfWF

- Capital Improvement Program Summary

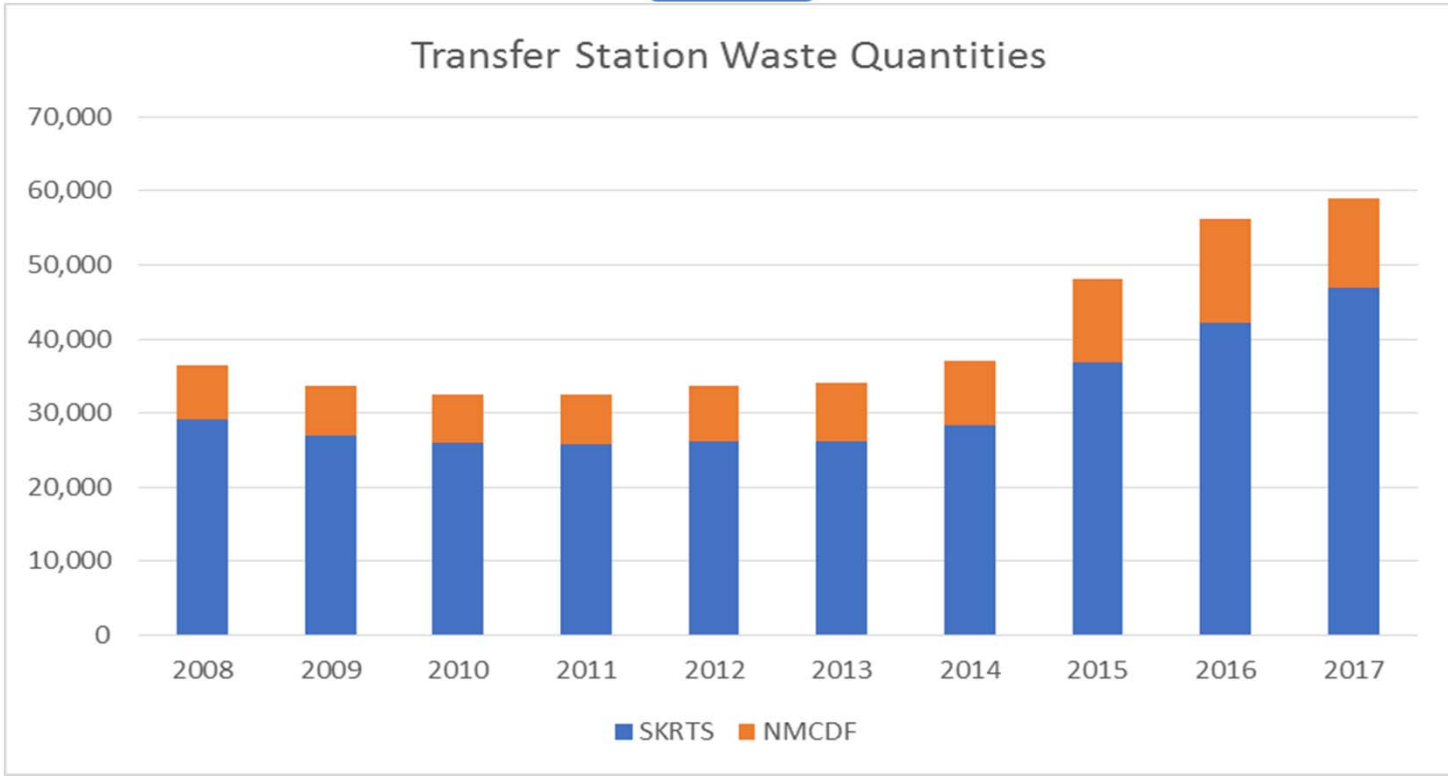
▫ Tier One (2 to 5 Years)	\$29,950,000
▫ Tier Two (4 to 6 Years)	\$11,100,000
▫ Tier Three (6 to 10 Years)	<u>\$ 8,950,000</u>
	\$50,000,000



# 2 – Overview



# Transfer Stations





## 2 – Overview

- Construction & Demolition (C&D)
  - 150 to 200 tons per day
    - Recovery of wood, metal, cardboard, paper, concrete and other items
      - Gypsum wallboard is also removed to reduce emission concerns at Covanta
- Transfer Materials
  - Commingle Recycling
    - Shipped to Garten and Pioneer Recycling (Clackamas, Oregon)
  - Yard Debris / Wood Waste
    - Pacific Region Compost (PRC) / Freres Lumber Company
- Diversion Materials
  - Excess Municipal Solid Waste (MSW)
  - Transfer Station Materials – SKRTS & NMMS



## 2 – Overview



## Brown's Island Landfill

- Construction & Demolition (C&D)
  - Historical Average of approximately 35,000 yards per year
  - Current Volumes exceeding 55,000 yards per year
- Remaining Life of Landfill
  - 12.5 years – Using an average of 50,000 yards per year
- Composting Operation
  - Process Yard Debris into Compost
    - City of Salem, NMTS and Marion County Parks

## 2 – Overview



## Garten Foundation

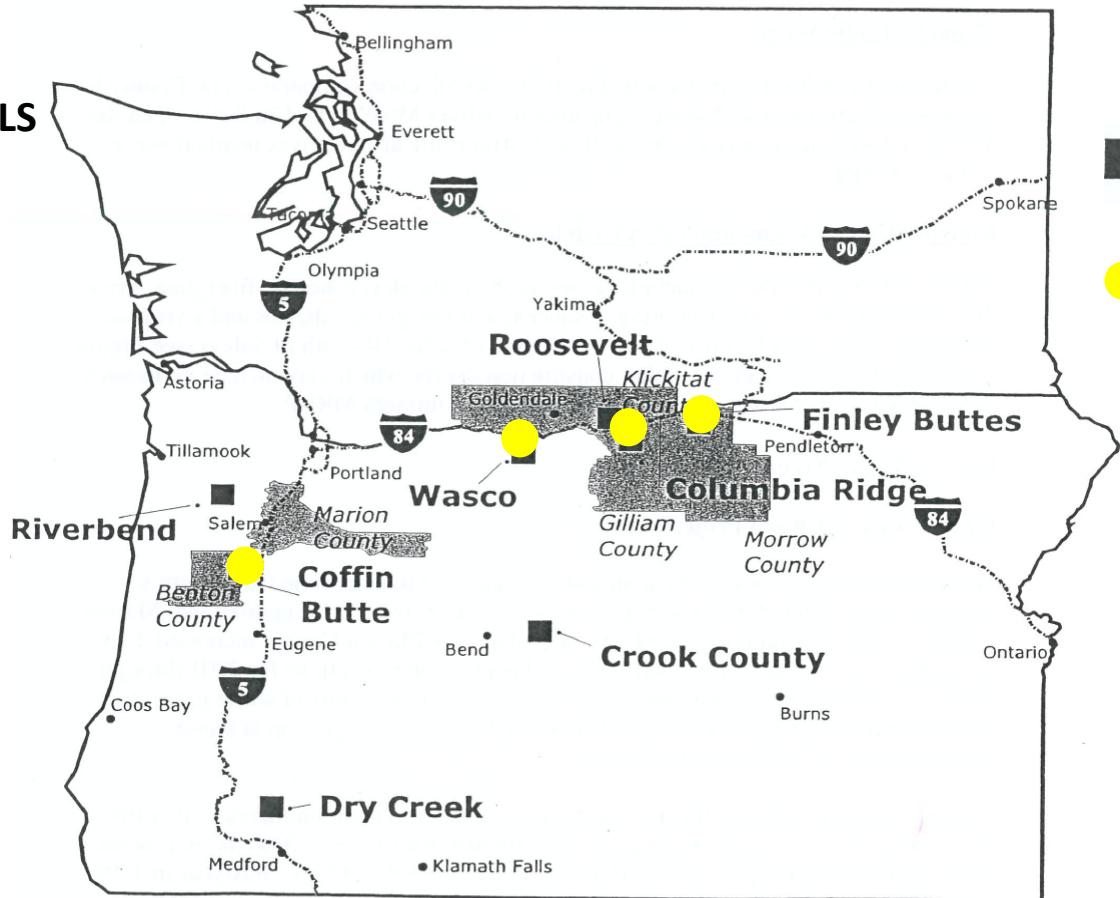
- Material Recovery Facility
  - Processes Blue Bin Material – Curbside Collected Commingle Recycling
    - Marion County Volumes
      - 48% Handled by Garten
      - 52% Handled by Pioneer Recycling
- System Upgrades
  - Operational November 2017
    - Designed to recover smaller fiber materials, remove glass and improve aluminum recovery
    - Enhances the quality of material recovered
    - Improved throughput

# 2 – Overview



# Regional Disposal

## REGIONAL LANDFILLS IN NORTHWEST



- Landfill Location
- Landfills Evaluated



## 2 – Overview



## Power Markets

- Covanta Marion entitled to sell its net output to PGE as QF under PURPA
- 10 MW and below QFs sell power at OPUC approved rates (Schedule 201)
- Above 10 MWs QFs sell power at negotiated rates (Schedule 202)
  - Negotiated rates are similar but lower than Schedule 201 rates
- Currently 13 MW selling at market prices
  - Should be selling at much higher negotiated price
- Covanta has proposed to de-rate its facility to 10 MW and Schedule 201 prices
  - Covanta never attempted to sell power with 13 MW and Schedule 202 prices
  - PGE and Covanta have not reached an agreement and Covanta filed a FERC petition
  - Even if successful, Covanta will loose 3 MW of net output

## 2 – Overview



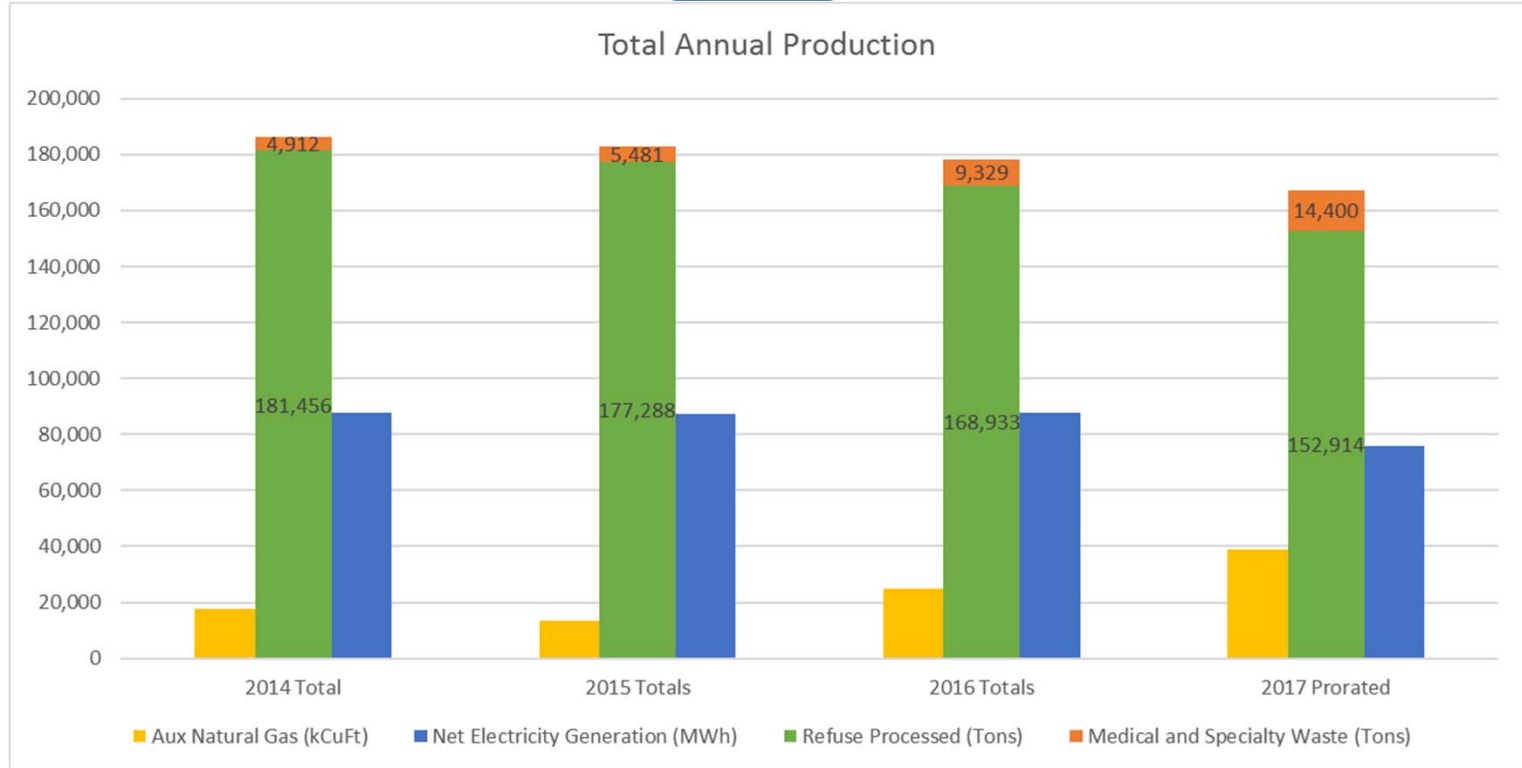
## PPA Agreement

- Other options to sell power
  - PURPA sale to another utility (e.g., PacifiCorp)
  - Wholesale market sale
  - Direct sale to end use consumers
- Forecasted market prices. Electricity prices are based on:
  - Gas prices, which are forecast to be low
  - The need for new power, which is generally low
    - Load growth is expected to low to negative
    - Renewable resource acquisition needs, which there is a short and long term need, but likely not a medium term need
    - The one exception is PGE has a 500 MW+ capacity need, and PGE is likely to run a request for proposal for short and medium term resources prior to a new major gas plant

# 2 – Overview



# EfWF Performance



## 2 – Overview



## Environmental Reg's

- August 3, 2015 – EPA issued the Clean Power Plan to reduce carbon emissions
  - Requires states to develop plans for reduction carbon emissions and allows for emission credits from the biogenic emissions from EfW facilities such as Covanta Marion.
  - President Trump has signed an executive order that requires the EPA to review the CPP – calling the CPP a “job-killing regulation”
    - CPP was also the mechanism by which the United States could achieve greenhouse gas emission standards agreed to under the Paris Agreement. Trump announced that the United States is withdrawing from the Paris Agreement in June of 2017.
  - The State of Oregon has joined 12 other states and Puerto Rico to form a coalition that is committed to upholding the objectives of the Paris Agreement and meeting the GHG targets of the CPP. Oregon has committed to reduce GHG emissions below 1990 levels by 10% in 2020 and by 75% in 2050. At this time, the potential impact of the state requirements to the existing EfWF or future expansions are unclear and will depend heavily on the model calculation methodologies used to establish GHG emissions from EfW facilities in comparison to other solid waste disposal methods

## 2 – Overview



## Environmental Reg's

- **Maximum Achievable Control Technologies (MACT)** for Large Municipal Waste Combustors – Last year the EPA initiated promulgating updated rules for large municipal waste combustors (MWCs). The rules are intended to be revisited every five (5) years to determine if improvements in control technology for various regulated pollutants have been developed and if stricter emissions limitations should be considered based on new developments. The review of MACT for Large MWCs are widely considered overdue. A draft of the rule was expected in the summer of 2017. However, the status is not clear under the new Trump administration. At this time, we do not expect any potential rule change to require additional emissions control equipment be added to the EfWF



# 3 – Solid Waste



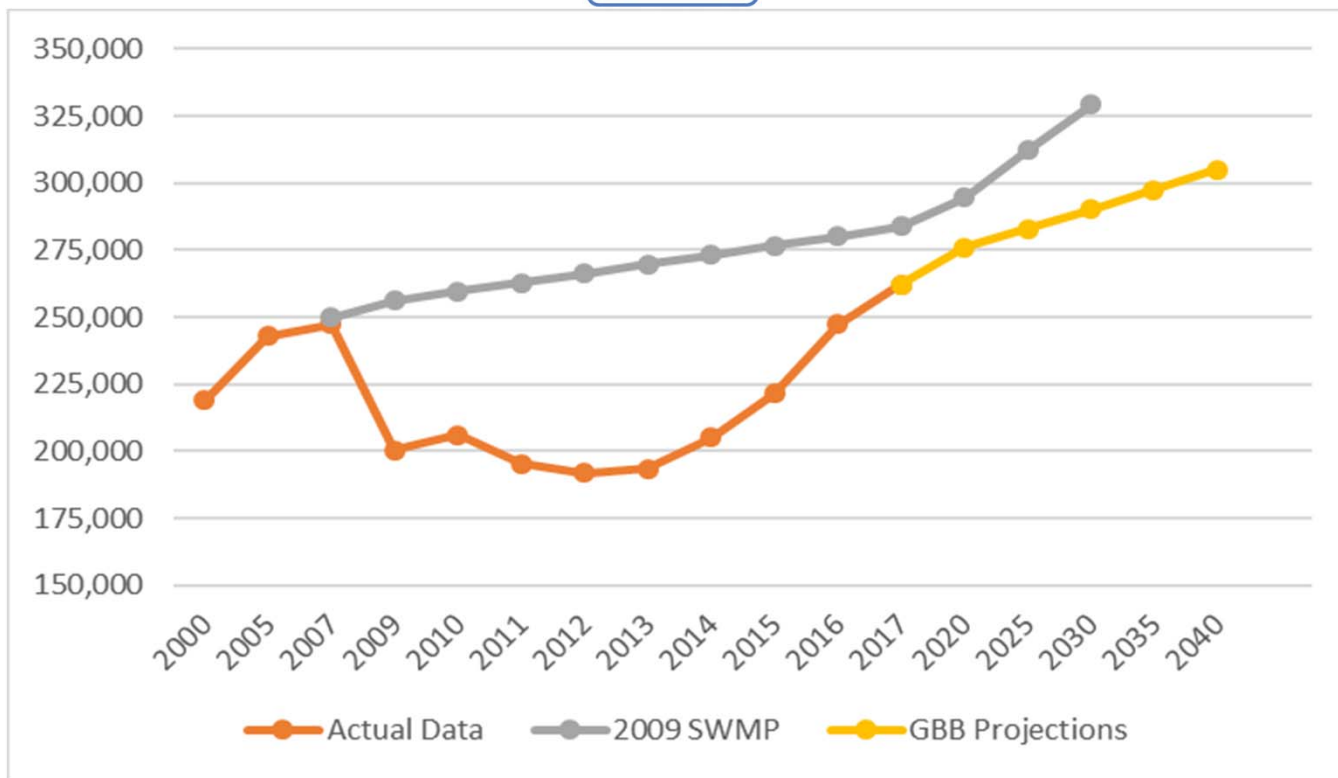
# Projections

Year	2014 Actual	2015 Actual	2016	2017
Population *	328,381	331,643	336,352	341,061
Total Solid Waste Generated	443,108	461,256	520,895	548,846
Total Material Recovered	238,117	239,926	273,577	286,646
Total Material Disposed	204,991	221,600	247,318	262,200
Per Capita Generated (lb)	2,699	2,801	3,097	3,218
Per Capita Recovered (lb)	1,450	1,456	1,627	1,681
Per Capita Disposed (lb)	1,248	1,365	1,471	1,538

# 3 – Solid Waste



# Projections



# 3 – Solid Waste

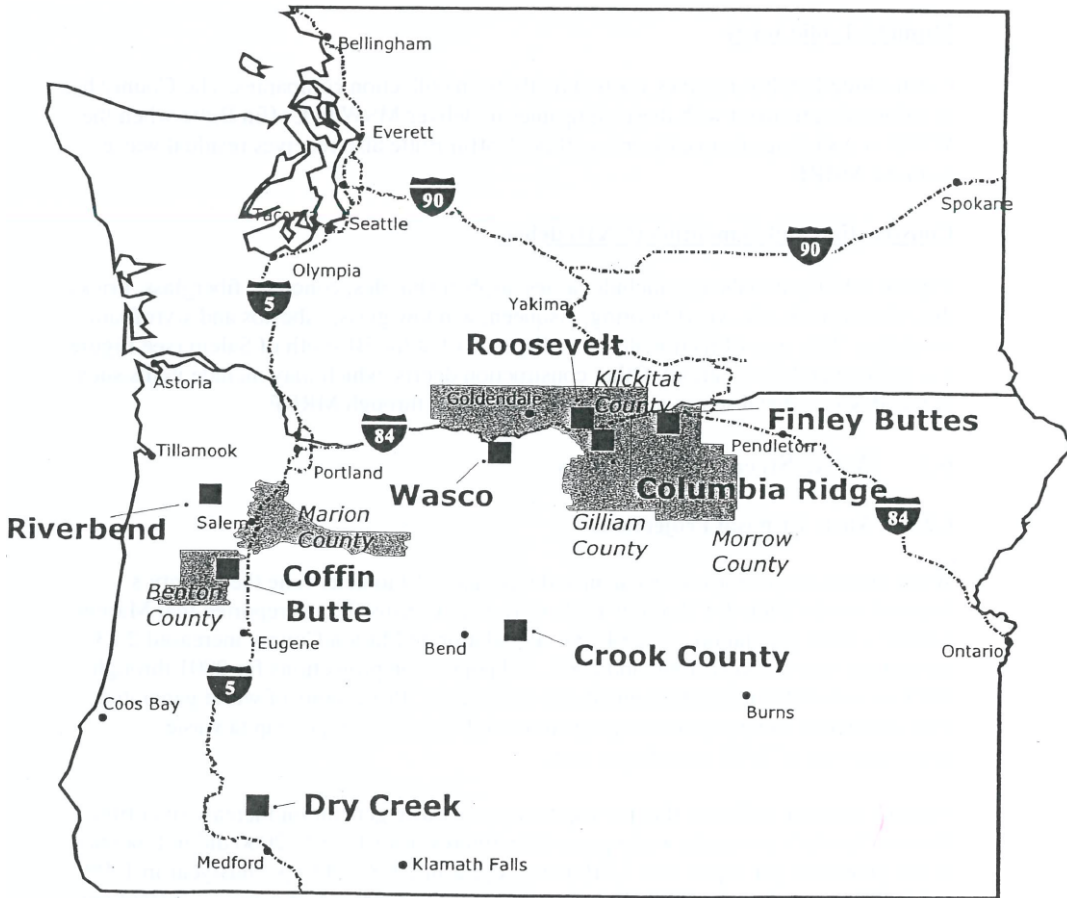


# Projections

Year	2017	2020	2025	2030	2035	2040
Population*	341,061	355,543	381,058	408,404	437,713	469,125
Total Solid Waste Generated	548,846	588,690	603,588	618,863	634,524	650,582
Total Material Recovered	286,646	312,812	320,729	328,845	337,167	345,700
Total Material Disposed	262,200	275,877	282,859	290,017	297,357	304,882
Per Capita Generated (lb)	3,218	3,312	3,168	3,031	2,899	2,774
Per Capita Recovered (lb)	1,681	1,760	1,683	1,610	1,541	1,474
Per Capita Disposed (lb)	1,538	1,552	1,485	1,420	1,359	1,300



# 4 – Landfill Options



# 4 – Landfill Options

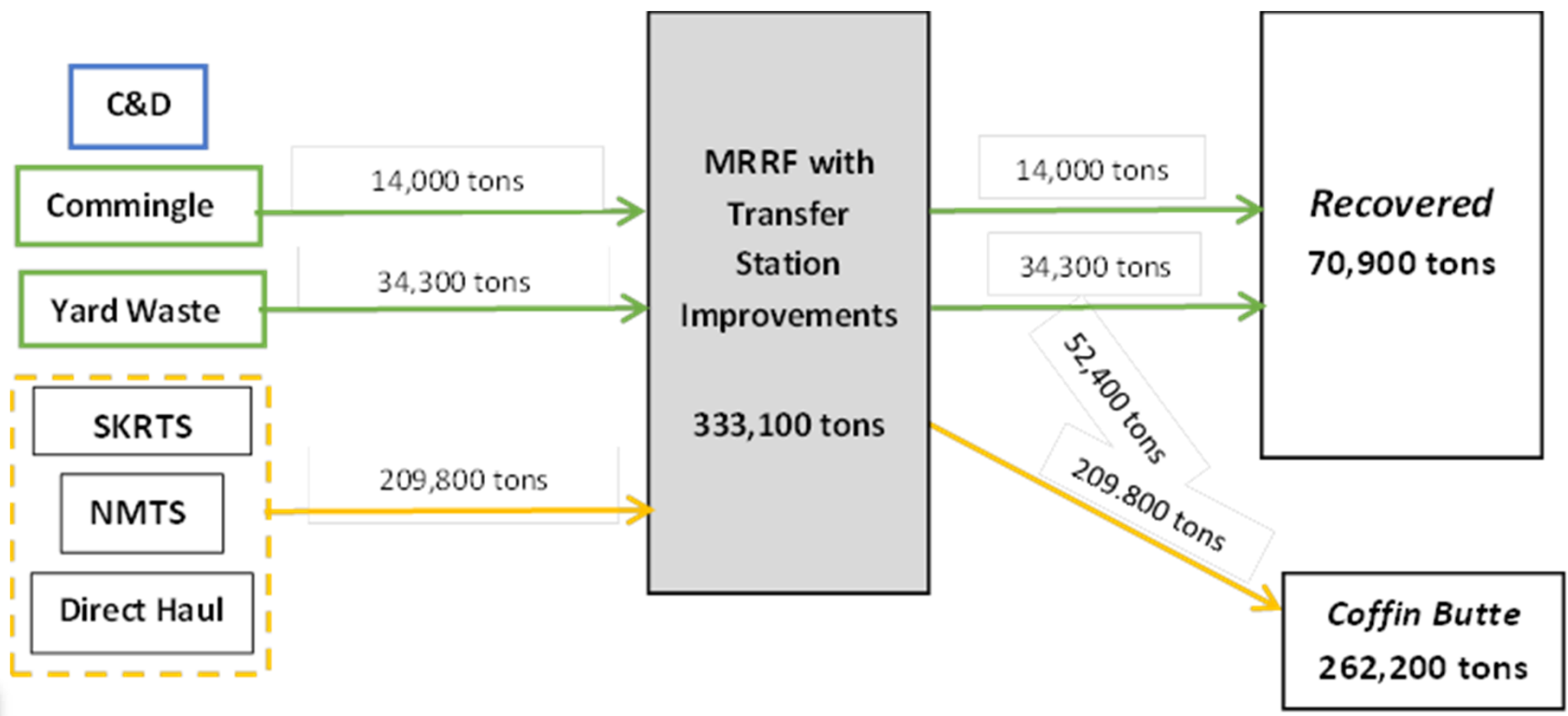


Description (miles from Salem)	Est. Cost to Build Transfer Station	Station Operating Costs \$/Ton	Transportation Costs \$/Ton	Est. Landfill Disposal \$/Ton	Total \$/Ton
1. Coffin Butte (30 miles / one way)		<b>Included in Current rates</b>	\$10	\$30.69	<b>\$40.69</b>
2. Wasco Landfill (137 miles/ one way)	\$10 M	<b>\$8 - \$12</b>	\$17	\$25	<b>\$50 - \$54</b>
3. Columbia Ridge (200 miles/ one way) (1)	\$10 M	<b>\$16</b>	\$24	\$18 (1)	<b>\$58</b>
4. Finley Buttes (230 miles/ one way)	\$10 M	<b>\$8 - \$12</b>	\$28	\$27	<b>\$63 - \$67</b>

*(1) Transportation and disposal costs are based on recent data provided by Portland Metro (3/23/17) and reflect current price of fuel that is lower in recent years. Transfer station operations include additional incentives for the contract operator to recover materials from the tip floor.*



# 4 – Landfill Options



## 5 – Resource Recovery



1. Transfer and disposal of all waste to the Coffin Butte Landfill under a long-term agreement with Republic Services. The analysis of this option is included in Section 4 of the report and is estimated to result in approximately 262,000 tons of MSW being disposed of at the Coffin Butte Landfill.
2. Construction of a mixed waste processing (MWP) facility that would process approximately 80,000 TPY of MSW or commercial waste. The facility would recover recyclable materials prior to combustion at the EfWF. Waste not recovered or processed at Covanta would be transported to the Coffin Butte landfill for disposal.
3. Addition of a third combustion unit at Covanta Marion, consistent with recent discussions, which could accommodate additional waste. Two sizes are considered in this analysis:
  - a. 270 TPD (90,000 tons annually at 91% availability).
  - b. 600 TPD (200,000 tons annually at 91% availability).

## 5 – Resource Recovery



## Policy & Programs

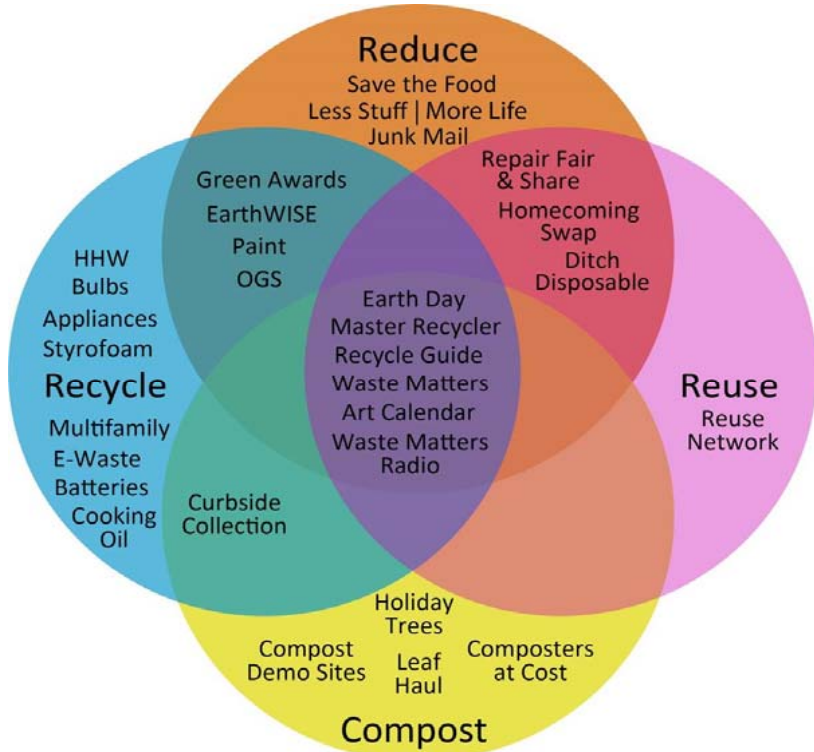
- DEQ – 2050 Vision for Materials Management
- SB 263 – the law amends the Opportunity to Recycle Act.
  - By 2020, and for subsequent years the recovery rate of;
    - Food waste is at least 25 percent; and
    - Plastic waste is at least 25 percent.
  - Multi-Family – 2022 Requirement
  - For the calendar year 2025, and subsequent years, the material recovery rate of carpet waste shall be at least 25 percent.
  - By 2025, and for subsequent years, the recovery rate will be 55% (State)



# 5 – Resource Recovery



# Policy & Programs



## 5 – Resource Recovery



## EfWF Expansion

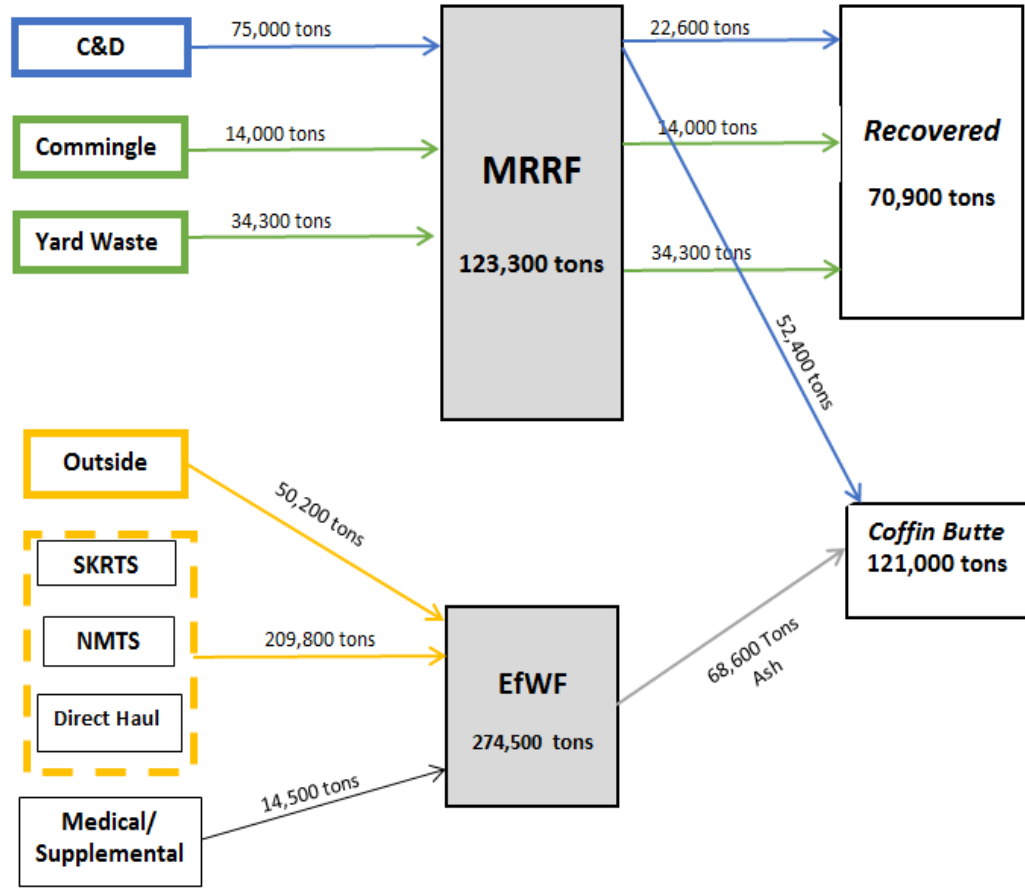
This alternative considers the option of developing new Energy from Waste (EFW) capacity at the existing Covanta Marion facility. The primary objective is to accommodate the anticipated MSW growth within Marion County. This analysis considers two sizes of facility, as proposed by Covanta, as follows:

- The small facility would consist of a single unit, approximately equal in capacity to Unit 1 and 2 (90,000 tons annually processed per unit), and integrated with the existing EfWF to the greatest extent possible.
- The larger facility would consist of a single unit sized for an annual processing capacity of 200,000 tons or 600 TPD. The larger facility would be required to be designed as a stand-alone facility with little opportunity for sharing infrastructure.

# 5 – Resource Recovery



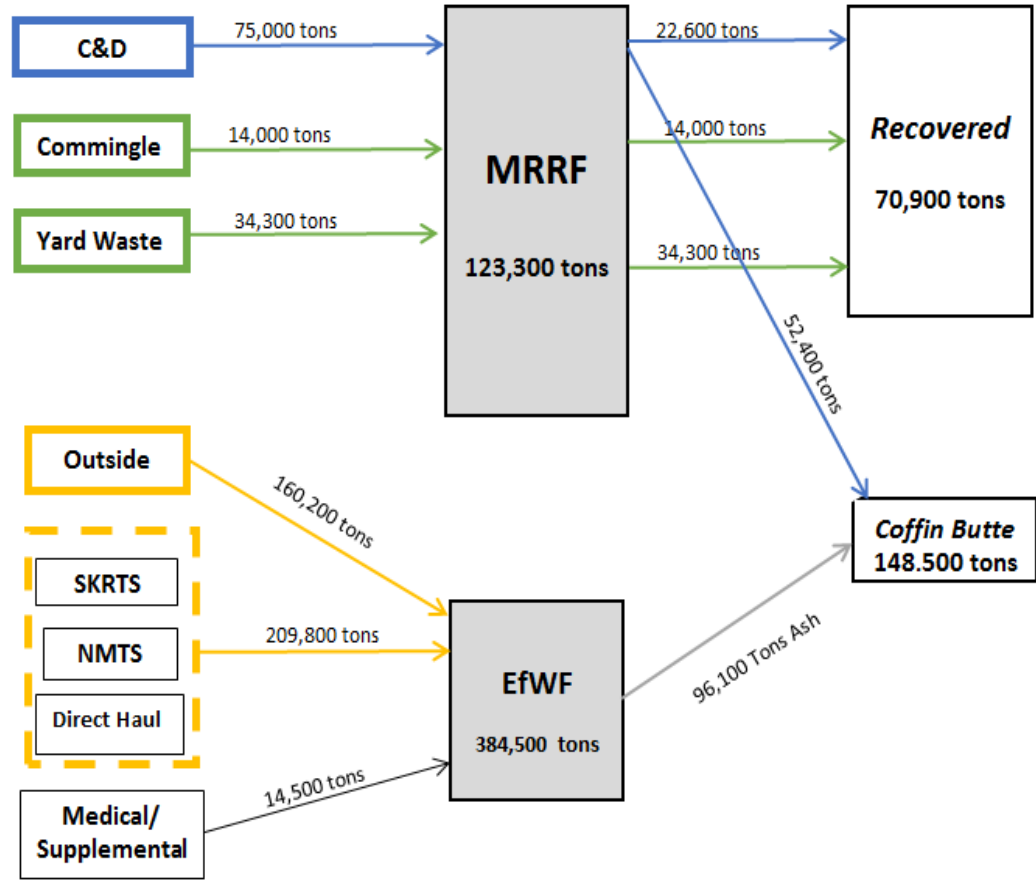
# EfWF Expansion



# 5 – Resource Recovery



# EfWF Expansion



# 5 – Resource Recovery



# EfWF Expansion

Table 9: Small EfWF Expansion

SMALL UNIT (90,000 Tons) EXPENSES		\$ / TON
Annual Operating Expense	\$ 5,363,000	\$ 60
Debt Service (On Capital - \$144,000,000)	\$ 7,829,000	\$ 87
Total Annual Operating Expenses	\$16,934,000	\$147
Estimated Revenue	\$ 1,645,000	\$ 18
Ash Disposal (22,500 Tons, \$29/Ton)	\$ 653,000	\$ 7
Net Operating Cost	\$15,289,000	\$136

Table 10: Large EfWF Expansion

LARGE UNIT (200,000 Tons) EXPENSES		\$ / TON
Annual Operating Expense	\$11,919,000	\$ 60
Debt Service (On Capital - \$233,000,000)	\$12,669,000	\$ 63
Total Annual Operating Expenses	\$30,599,000	\$123
Est. Revenue	\$ 3,979,000	\$ 20
Ash Disposal (50,000 Tons, \$29/Ton)	\$ 1,450,000	\$ 7
Net Operating	\$26,620,000	\$110



## 5 – Resource Recovery



## Beneficial Ash Use

- Combustion of MSW – Generate approximately 40,000 tons of ash annually
  - Used as Alternate Daily Cover at Coffin Butte Landfill
- Ash Generated
  - 80% Bottom Ash – Drops from combustion grates
  - 20% Fly Ash – Collected from the air pollution control equipment
- Metal Recovery
  - 80% of Ferrous Metals
  - 20% of Non-Ferrous Metals

# 5 – Resource Recovery



# Mixed Waste Processing

## Existing MWPF

Facility	Location	Material	Annual Waste	Recovered Organics	Recyclable Commodities
Newby Island Resource Recovery Park	San Jose, CA	Wet/ Dry Mixed Commercial	180,000 TPY	30,000-40,000 TPY AD	50,000-60,000 TPY
Athens Sun Valley	Burbank, CA	Mixed Commercial (2-35 TPH Lines)	300,000 TPY	Evaluating Options	60,000-70,000 TPY (Est.)

## MWPF Under Construction

Monterey Regional Waste Management District (Operational 1/18)	Marina, CA	Mixed Commercial Waste and Commingled Recyclables	100,000 TPY	30,000-36,000 TPY Compost Future AD	16,000-20,000 TPY
Los Angeles County Sanitation Districts (LACSD)	Whittier, CA	Mixed Commercial and Commingled Recyclables	85,000 TPY Commercial	12,000 TPY Evaluating Options	24,000 TPY

## 5 – Resource Recovery



## Mixed Waste Processing

The strategy of building a MWPF may have several advantages to the Marion County system.

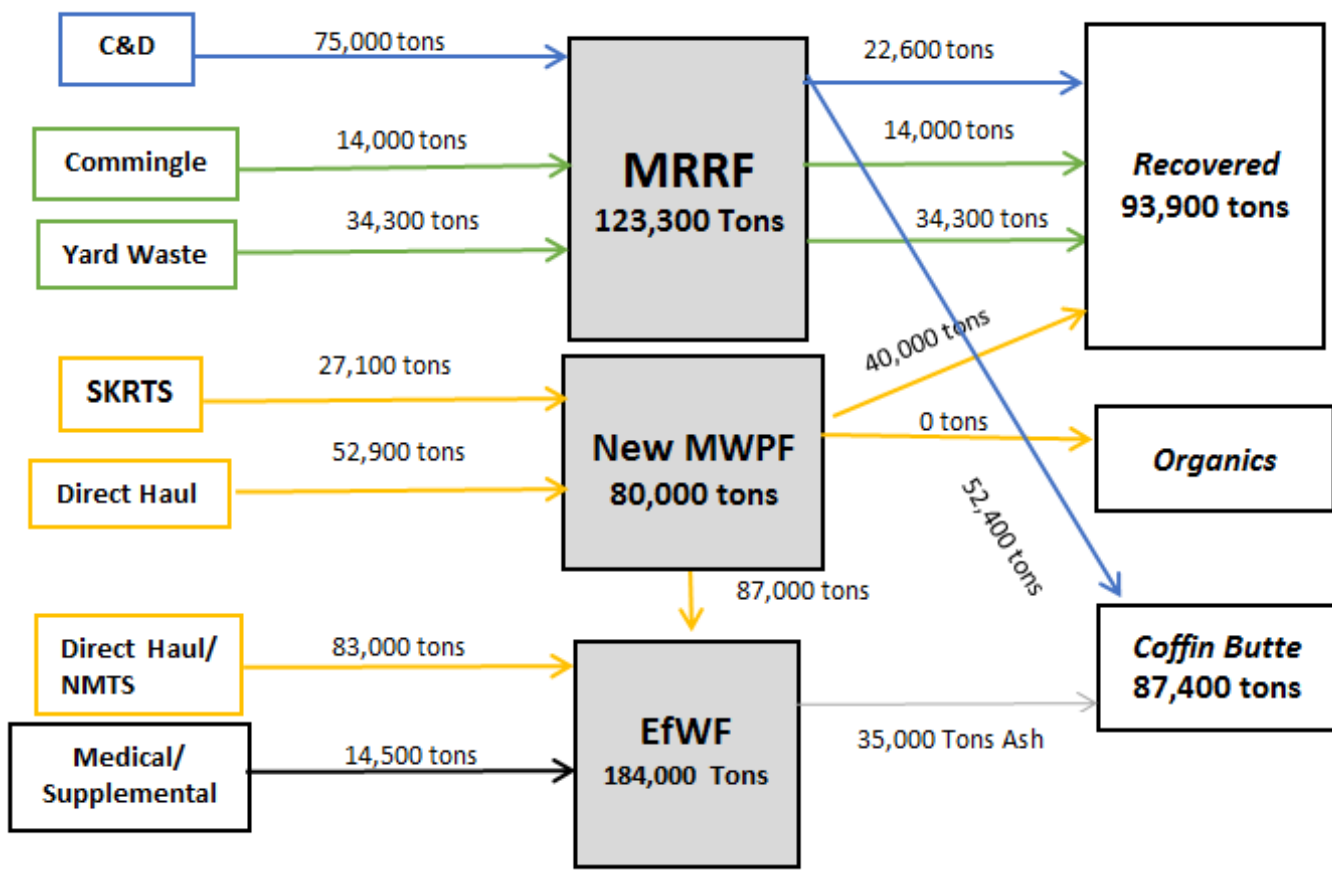
1. It will result in recycling more materials and increasing the county's recovery rate from 52% to perhaps over 64% depending how the organics are managed.
2. Processing mixed waste and recovering materials from commercial waste will provide needed capacity for the EfWF to handle future growth.
3. Separating organics from commercial waste will provide flexibility to expand composting and/or consider other options to produce renewable energy.
4. The MWPF can be designed to be easily expanded to process additional waste if necessary.



# 5 – Resource Recovery



# Mixed Waste Processing



# 5 – Resource Recovery



# Mixed Waste Processing

**Table 15: MWPF Financial Summary (80,000 TPY)**

	<b>Annual (\$)</b>	<b>Cost (revenue) (\$ / Input Ton)</b>
<b>Annual Operating Expense</b>	<b>\$ 3,700,000</b>	<b>\$ 46.25</b>
<b>Debt Service (On Capital - \$43,000,000)</b>	<b>\$ 2,340,000</b>	<b>\$ 15.60</b>
<b>Covanta Processing Residuals (\$55/ton)</b>	<b>\$ 3,135,000</b>	<b>\$ 39.18</b>
<b>Total Annual Operating Expenses</b>	<b>\$9,190,000</b>	<b>\$ 114.87</b>
<b>Estimated Revenue</b>	<b>\$ 2,500,000</b>	<b>(\$ 31.25)</b>
<b>Net Operating Cost</b>	<b>\$ 6,690,000</b>	<b>\$ 83.62</b>

## 5 – Resource Recovery



## Organics Recovery

- Recycle Programs
  - Removing the higher value marketable commodities
- Industry Focus
  - How to recover food waste
- Strategies
  - Expand food waste collection programs
    - Additional Education
    - Possible Rate Incentives
  - MWP Facility to recover the mixed organics stream
    - Compost
    - Anaerobic Digester (AD)

## 5 – Resource Recovery



## Multi-Family

- DEQ – Multi-Family Recycling
  - Currently - Owners of multi-family dwellings determine if Recycling Services are provided
  - SB 263 – By 2022 - Shifts decision to Tenants that Occupy the dwellings

# 6 - Conclusions



	Current 2017 Projections	Scenario 1 Landfill	Scenario 2 MWWPF	Efwf Expansion	
				90,000 Tons	200,000 Tons
Capital Cost, \$ (Annual)		\$544,000	\$2,340,000	\$7,829,000	\$12,669,000
O&M Cost, \$ (Annual)		(\$5,878,000) <sup>2</sup>	\$6,835,000	\$5,363,000	\$11,919,000
Landfill Savings, Tons		(170,000)	23,000	39,800	39,800
Landfill Costs/(Savings), \$40.69/Ton		\$6,917,000	(\$936,000)	(\$1,619,000)	(\$1,619,000)
Ash Disposal Costs				\$ 653,000	\$1,450,000
Revenue, \$ (Annual)		(\$2,570,000) <sup>3</sup>	\$2,500,000	\$1,645,000	\$3,979,000
Net Operating Cost, \$ <sup>5</sup>	Base Case	\$4,153,000	\$5,739,000	\$10,581,000	\$20,440,000
Recovery Rate Increase, Tons			23,000	10,000	10,000
Recovery Rate Increase, %			4.2	1.8	1.8
Recovery Rate including Organics, Tons			51,000	-	-
Recovery Rate including Organics, %			9.3	-	-
Landfill Disposal, Tons	92,200	262,200	52,400	52,400 <sup>4</sup>	52,400 <sup>4</sup>
Landfill Diversion, % <sup>(1)</sup>	83.2	52.3	90.5	90.5	90.5
Additional O&M Jobs	No Change	No Change	42	21	39

1. Total estimated waste generated in 2017 is 548,846 tons.
2. O&M cost is estimated to be \$1,360,000 of additional transfer station operations costs and an O&M savings of \$7,238,000 when not taking waste to Efwf.
3. Electrical and metals revenue loss when not going to Efwf.
4. Required landfill disposal may be lower than 52,400 if some portion of the residuals from C&D processed can be combusted at the Efwf.
5. Total costs minus revenue.

## 6 - Conclusions



- The lowest cost alternative is status quo, with continued operation of the MRRF and Covanta Marion EfWF and all excess waste to be hauled to Coffin Butte landfill for disposal.

## 6 - Conclusions



- The best alternative for recovering additional recyclable material is to construct a MWPF identified in Scenario 2. Scenario 2 increases recovery by 7.3% and has potential for more. If the organic stream can be recovered, the rate goes up 13.8% and allows Marion County to meet the objectives set by the Oregon DEQ of 64%.

## 6 - Conclusions



- Scenarios 2 (MWPF) and 3 (EfWF expansion) accomplish the same level of landfill diversion since there is an expected quantity of waste from the C&D stream that cannot be recovered or taken to the EfWF.



## 6 - Conclusions



- The EfWF expansion alternative has the highest operating cost of options considered, exceeding \$100 per ton. The larger facility has a lower per ton operating cost and has more capacity to accommodate future increases in waste generation quantities. The economics will improve for the county if external waste is utilized at an expanded EfWF to fulfill excess capacity as the county would be generating more revenue from host or tipping fees.

## 6 - Conclusions



- When considering the project development schedule and the length of time for any new facility to become operational, the projected increase in waste disposed should also be considered in a proforma style analysis.

## 6 - Conclusions



- The best approach to meeting established objectives may be to consider a phased implementation of these scenarios. One possible scenario that would fit the projected waste stream disposal quantities would be to construct the MWPF to increase recovery rates as soon as a schedule would allow and then plan for an EfWF expansion at a point in time when the waste disposal quantities and market conditions would be supportive.

## 7 – Recommendations



Primary

- Continue relationship with Covanta Marion through negotiation of new agreement.
  - The Covanta Marion EfWF has been the keystone of the county's solid waste system since 1986. The plant has successfully processed millions of tons of MSW that would have otherwise gone into a landfill. The bonds that financed the construction of the facility initially have been retired which allows it to operate at a lower cost to Marion County. However, the current facility will require capital investment to operate reliably into the future, and may cause some incremental cost increase to the county, but at a fraction of the cost of a new facility.

## 7 – Recommendations



Primary

- Suspend current discussion of a Covanta Marion expansion.
  - The disposal cost of the MSW that would be processed with a new facility is much greater than other options such as recovery of materials through a MWPF prior to combustion at the existing EfWF. Based on solid waste disposal projections in Section 3 of this report, GBB estimates that in 2025 there may be enough waste available for a third unit, sized similar to the existing units, assuming no MWPF is added. Implementation of a MWPF that could recover 40,000 tons of material would push the time frame for needing additional EfWF capacity to about 2035. Therefore, reconsideration of new EfWF capacity should be based on a decision whether to move forward with a MWPF alternative.

## 7 – Recommendations



Primary

- Detailed analysis of a MWPF scenario.
  - The analysis contained in this report relies on assumptions about the waste streams and compositions available for a MWPF. It also relies on very preliminary information developed with regard to the facility size, location, ownership and operating parameters. Additional detailed analysis is necessary to increase confidence about the economic performance of such a facility and its impact on the overall system cost. GBB recommends a more detailed evaluation that would include a site plan, an anticipated process flow diagram and procurement of vendor budget proposals for turnkey/operate implementation. From this information, a more accurate financial model can be developed to assist the county decision making process.

## 7 – Recommendations



Primary

- Research separation and reuse of bottom ash as an aggregate.
  - This would likely be done in coordination with Covanta Marion, since equipment modifications would be required. Other locations have engaged available university research groups to conduct the testing and development of the information required for a beneficial use determination.

## 7 – Recommendations



## Primary

- Develop a financial analysis for scenarios based on added cost to existing system.
  - GBB recommends development of a model that incorporates the preliminary cost of options identified in this report into the current system budget that the Marion County Environmental Services has for its integrated solid waste management system to establish the impact to the overall system cost. There are two alternative approaches to accomplishing this:
    - Marion County inputs the information developed into their existing model.
    - GBB develops an independent comprehensive model.



## 7 – Recommendations



Primary

- Marion County should obtain legal representation to follow and influence what Covanta is seeking from PGE regarding the current/future PPA.
  - At this time, PGE and Covanta are litigating issues that could have a significant financial impact on Marion County. GBB recommends that Marion County intervene or at least monitor the OPUC proceeding, and (if Covanta files in court) similarly intervene or monitor any court proceedings.

## 7 – Recommendations



## Secondary

- Before any major investments are made, the county should work with Republic Services to prepare a master site development plan for SKRTS. The master plan should focus on updating facilities to enable a more efficient handling of materials across various waste streams, and address the potential of an increased volume of waste and traffic.

## 7 – Recommendations



## Secondary

- Attention should be paid to the function the MRRF in managing different waste streams in the future, especially considering the increase in waste that must be transferred from the county to a disposal site. Likewise, it will be necessary to continue processing C&D materials and to transfer residual waste out of county.

## 7 – Recommendations



## Secondary

- Since continued operation of Browns Island could present future liabilities due to potential environmental concerns, the county should develop a long term comprehensive strategy to handle materials - particularly construction and demolition waste - with the ultimate goal of closing the site.
  - This strategy may include policies to encourage source separation of recyclable materials by contractors as part of demolition plans and working with the MRRF to implement the necessary infrastructure to process all C&D waste materials at a single location.

## 7 – Recommendations



## Secondary

- Regarding the Covanta Power Purchase Agreement, the county should support the reduction of the turbine size from 13 MW to less than 10 MW provided it would impact neither the quantity of waste delivered nor the tipping fee at the EfWF.

## 7 – Recommendations



## Secondary

- A detailed explanation should be requested from Covanta Marion regarding the declining production at the EfWF corresponding with increasing natural gas usage.

## 7 – Recommendations



## Secondary

- Consideration of the revenue associated with recovery of metals at the EfWF should be given when contract extension discussions are undertaken.

## 7 – Recommendations



## Secondary

- It would be useful to contact a vendor such as LabUSA to understand the revenue potential and feasibility of ash processing and enhanced metals recovery.
  - Another company active in this area is Inashco, who has a system operating in Pennsylvania processing ash from two EfW facilities owned by Lancaster County Solid Waste Management Authority.



## 7 – Recommendations



## Secondary

- Upon updating the feasibility of proceeding with a mixed waste processing facility using data from DEQ and assuming there is interest in proceeding, a more detailed and statistically accurate waste composition analysis should be performed. The purpose of this more detailed analysis will be to verify the materials recovery assumptions used in the preliminary analysis and to provide information to be used for selecting the most viable processing system.

# Discussion



- Approval of Draft / Final GBB Report
- SWMAC Review
  - November 28<sup>th</sup> Meeting
    - GBB Presenting with Staff
- Board Session Timeline
  - TBD

# Next Steps

