

Financial Modelling and Business Planning

JME Maxwell and Angus Keir

September 2014



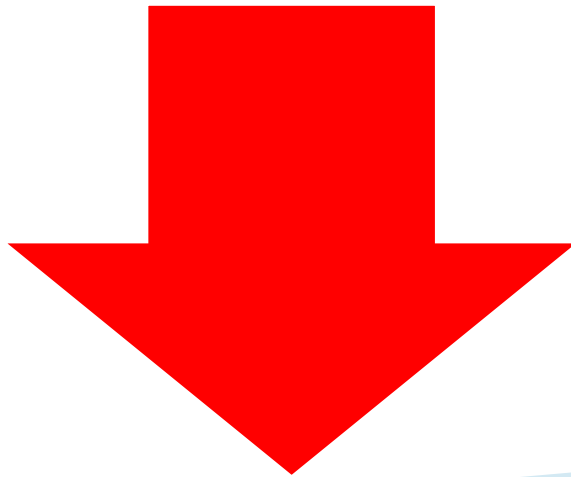
AECOM

Overview

- Knowing your system
- Case study
- Business planning and benchmarking



Three Fundamental Questions



1. What are the costs?



2. What are the revenues?

3. Who pays?



Getting to Know

Know Your System

Know the Waste

- What is being generated – type and volume
- Where does it come from, where does it go
- How is it handled

Know the Flows

- Between facilities
- Via modes & channels
- Within the service area beyond the service area



Getting to Know (continued)



Know the Parts

- Assets – land, facilities, equipment
- Labour – levels and costs
- Administration – requirements
- Purchased Services

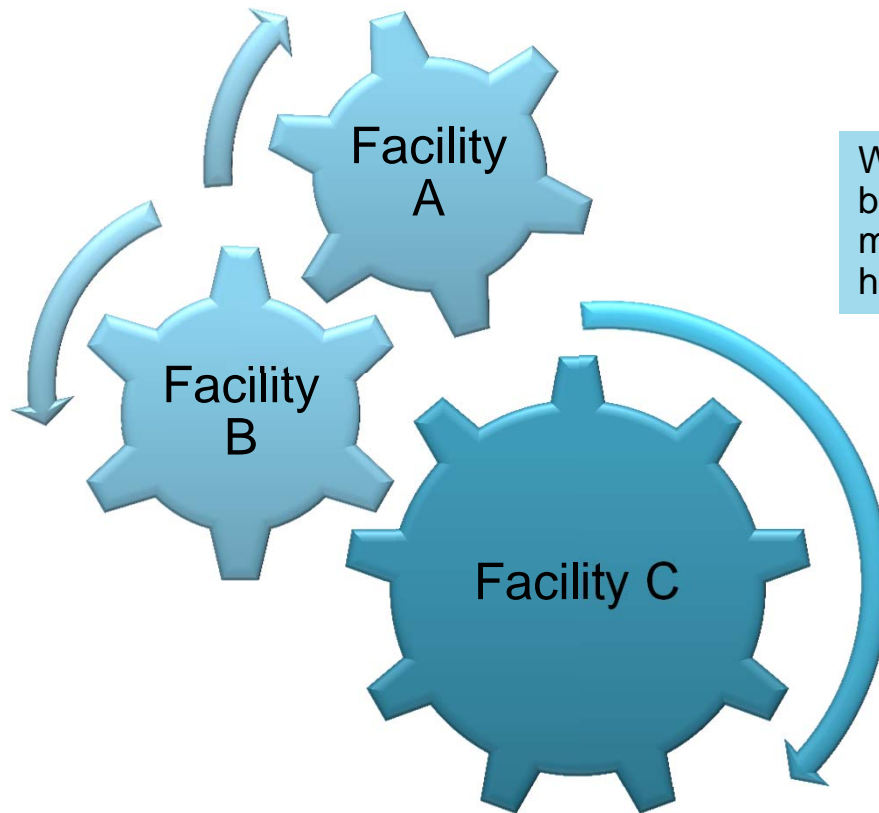


Know the \$

- What are the costs – capital, operating
- When do costs occur – now, upfront, ongoing, backend
- Are there revenues, where are they, what are they
- How does cash flow



Think Systems, Think Interactions



Waste management requires a broad perspective. A systems view may yield solutions beyond the horizon of a single facility.



Going Green – we all want to do it but...



Going Green is not without cost. Find the money and implementation is a lot easier



Solid Waste System Modelling Case Study

Scope: Full view of the Regional District's solid waste management system

Objectives:

- Determine current and projected cash flows
- Identify cash flow issues
- Examine alternative means of system financing

Scenario 1: Baseline system capture with 58% diversion by 2022

Scenario 2: Baseline system capture including 30,000 tonnes per year of out of District garbage beginning in 2019

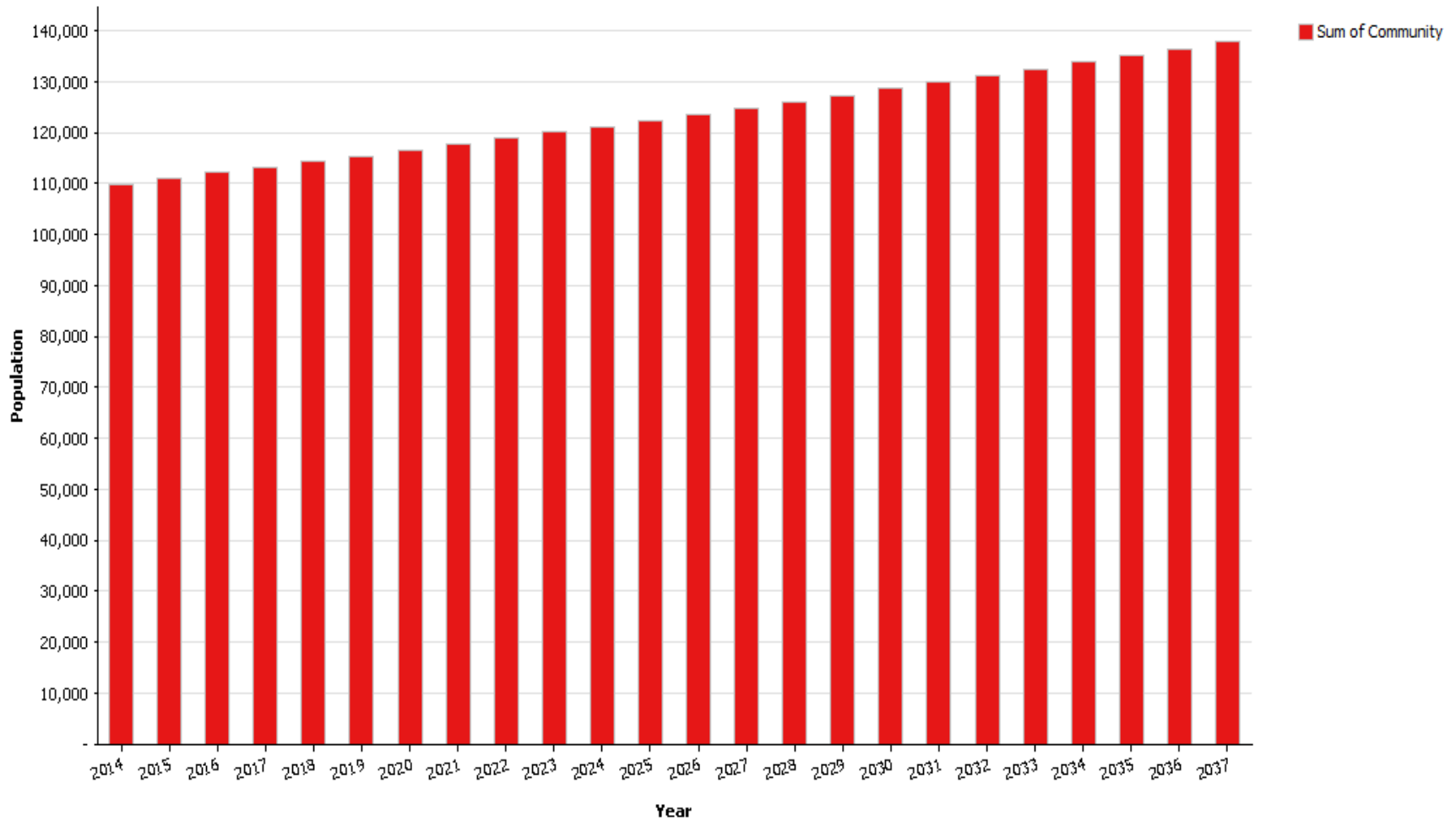


Methodology

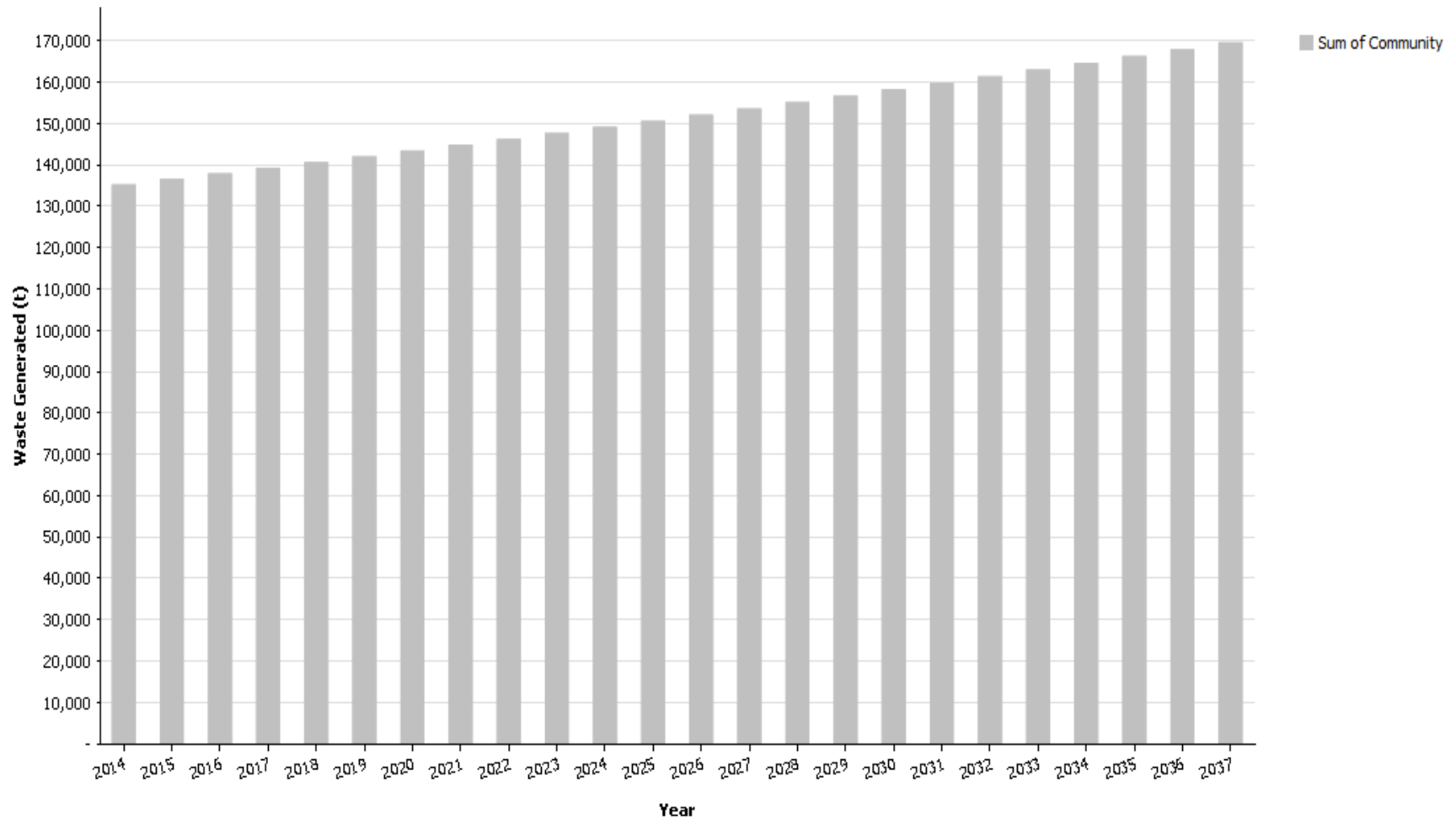
- ❑ Develop population and waste generation projections
- ❑ Review of Solid Waste Master Plan
- ❑ Map system components and flows
- ❑ Forecast revenues
- ❑ Forecast operating cost and capital costs
- ❑ Examine cash flows and test alternative financial strategies



Population Forecast



Waste Generation Forecast

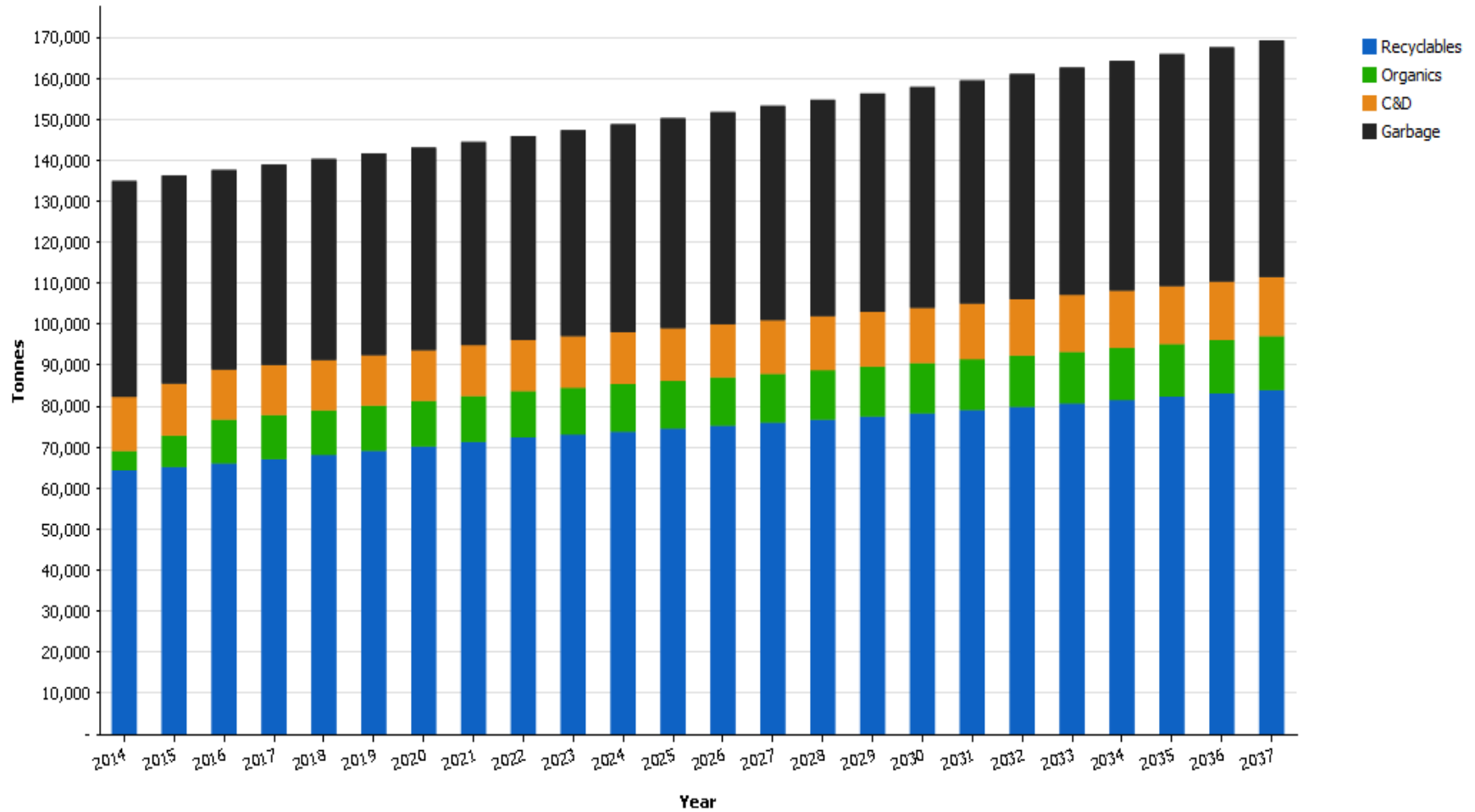


Solid Waste Master Plan

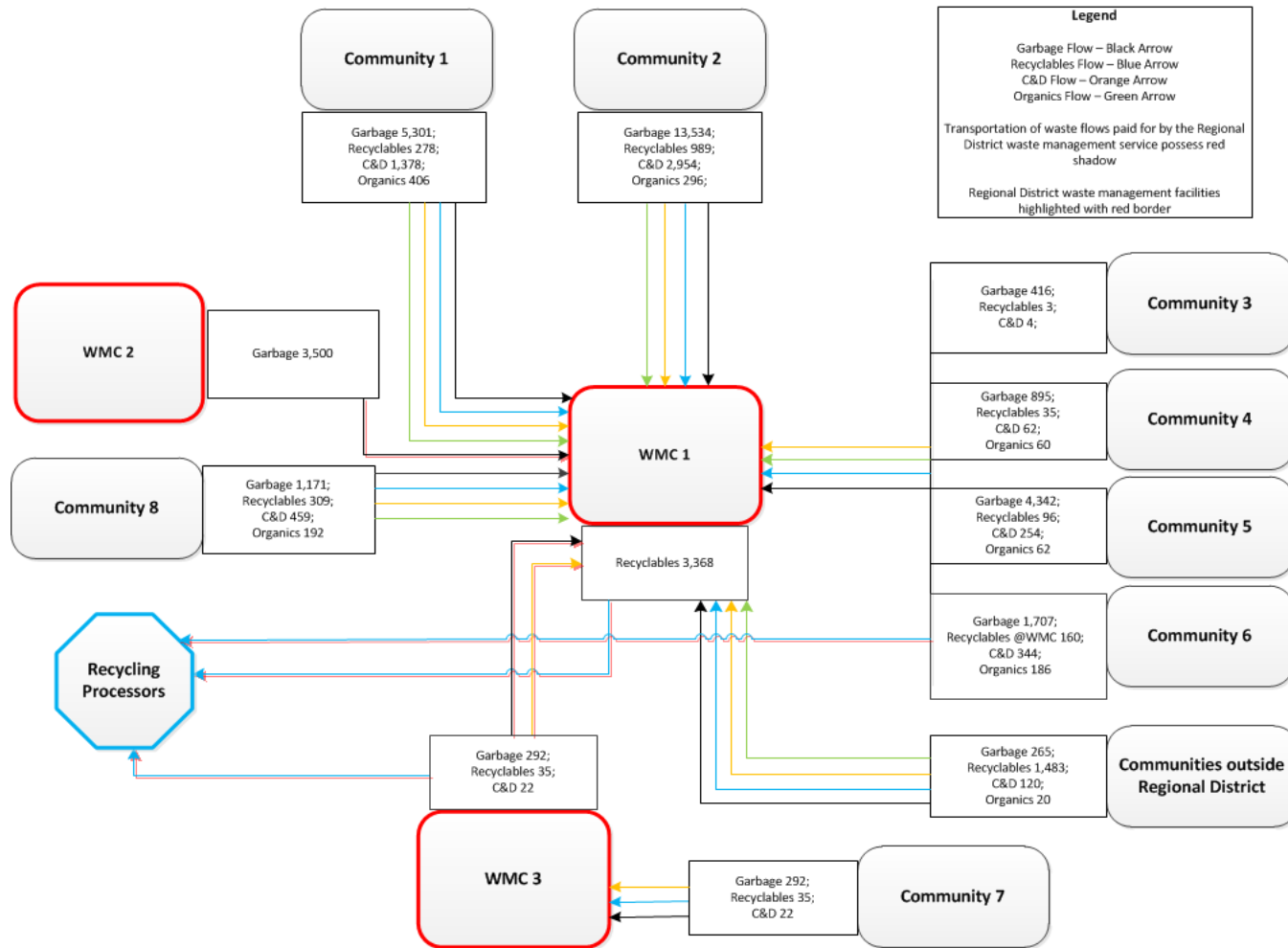
- ❑ The Regional District intends to increase diversion from 51% to 58% by year 2022
- ❑ Diversion is to be achieved the following programs:
 - Reduce and Reuse
 - Food Waste Collection
 - Improved Multi-Family Recycling
 - Improved Recycling by ICI Sector
 - Organic Waste Disposal
 - HHW and EPR programs



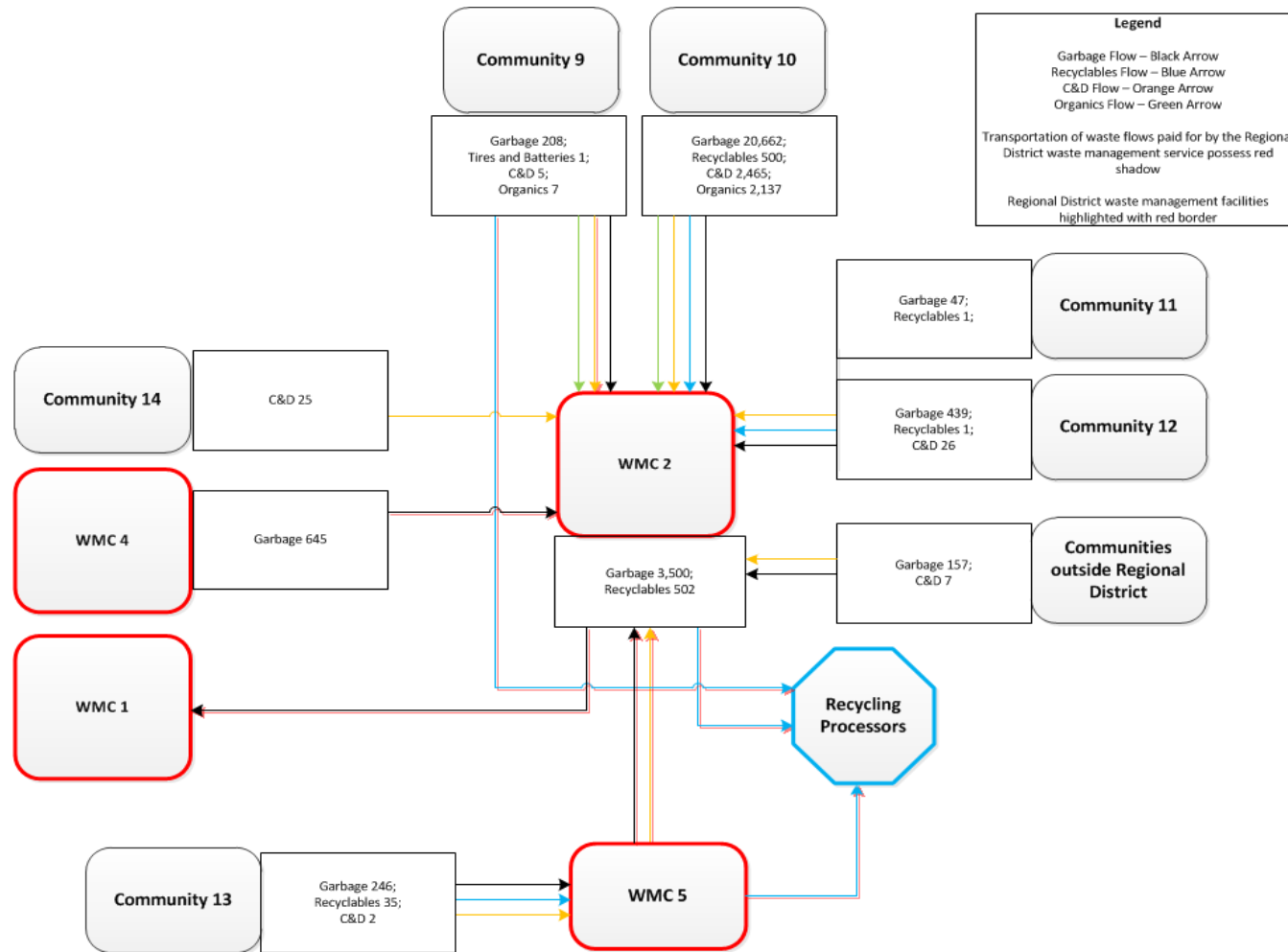
Waste Stream Forecast



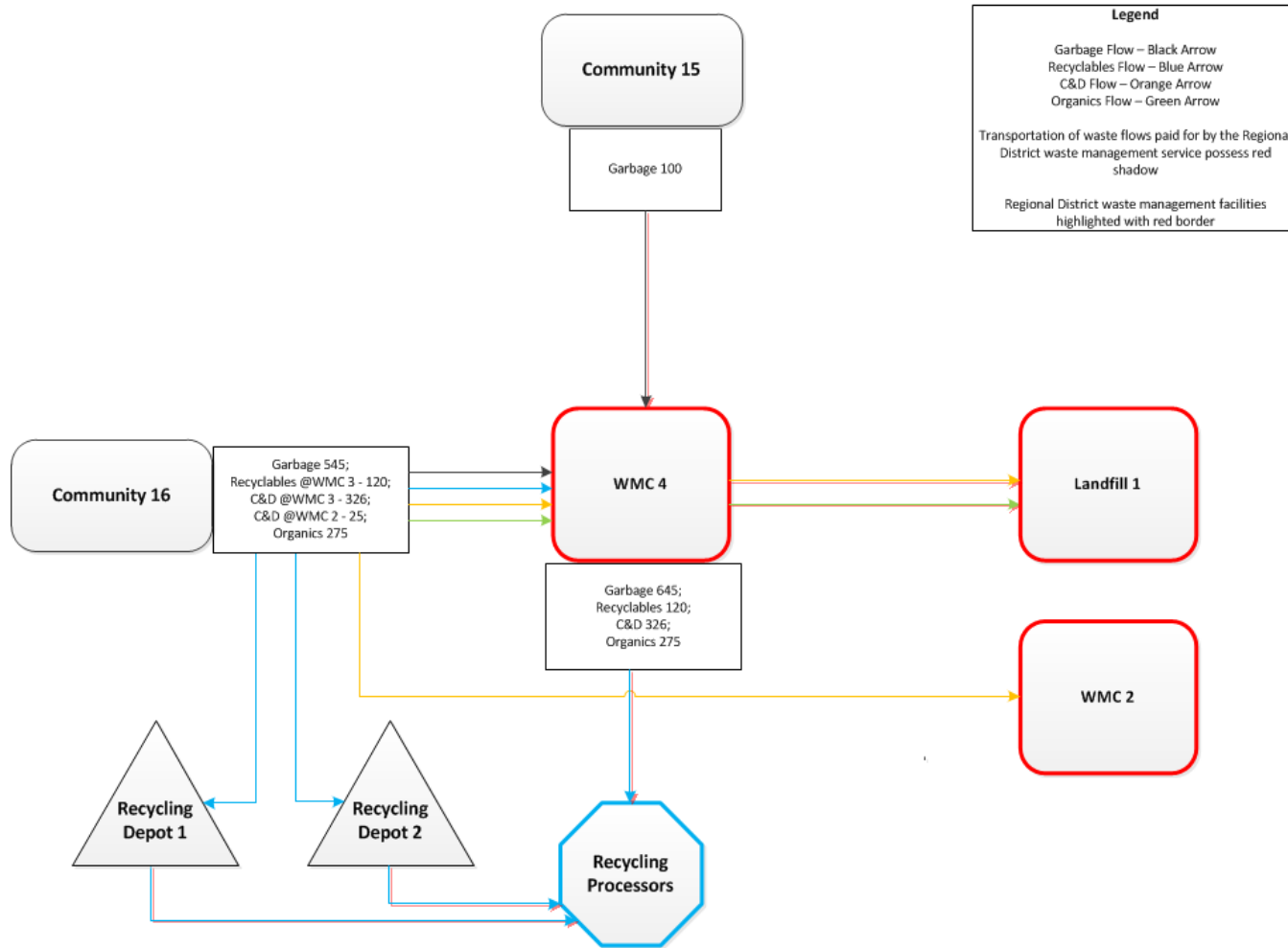
Waste Capture Mapping



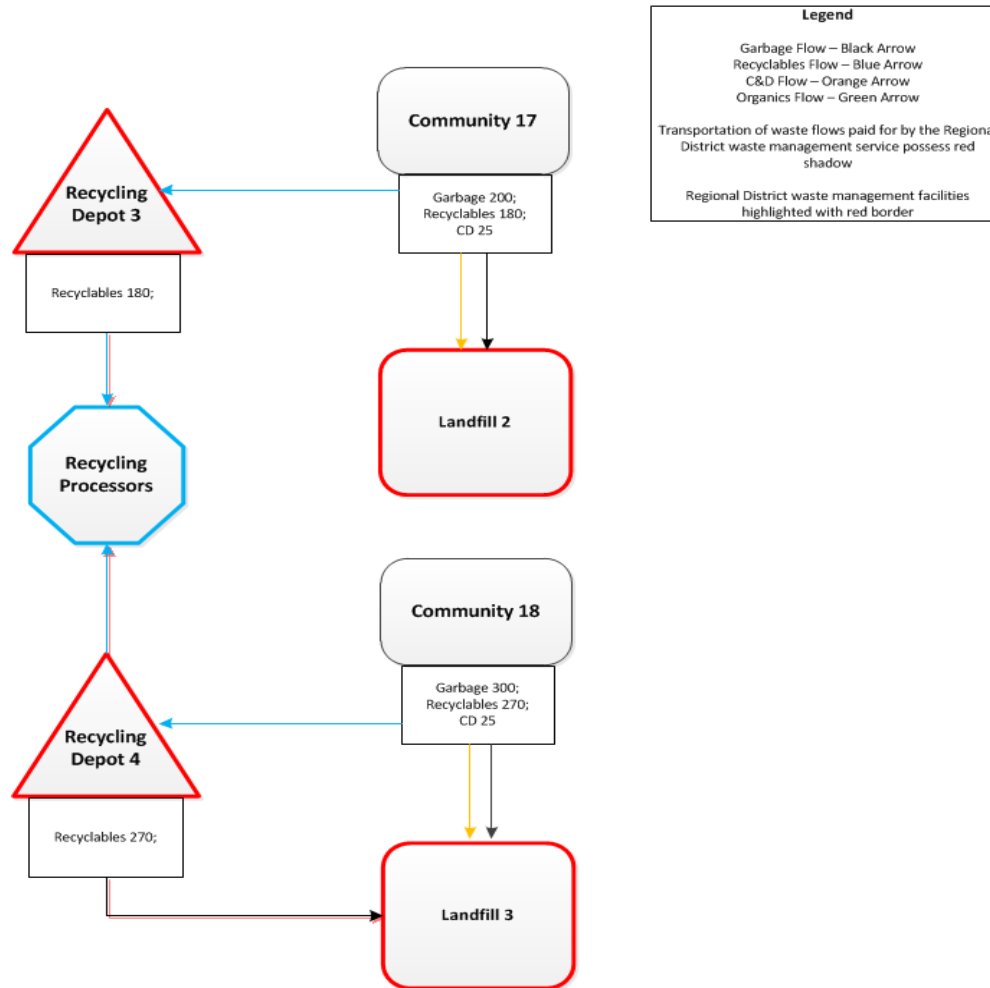
Waste Capture Mapping (continued)



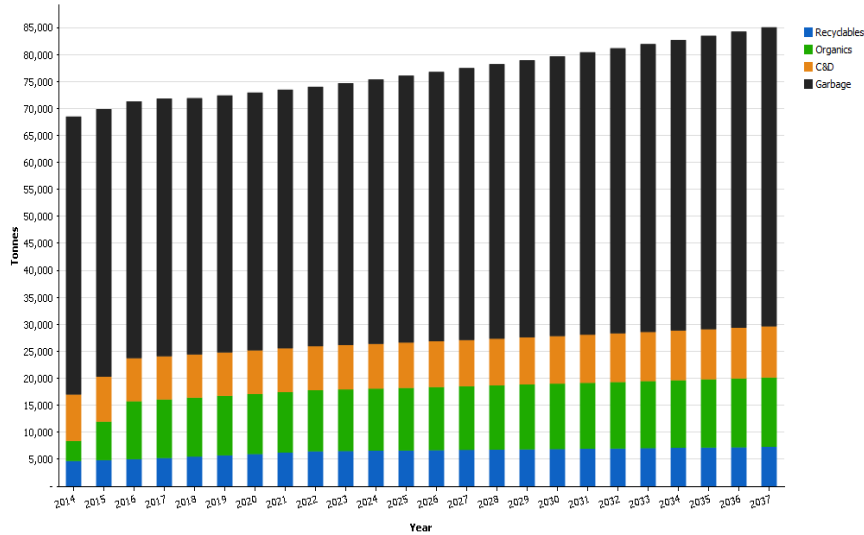
Waste Capture Mapping (continued)



Waste Capture Mapping (continued)



Waste Capture

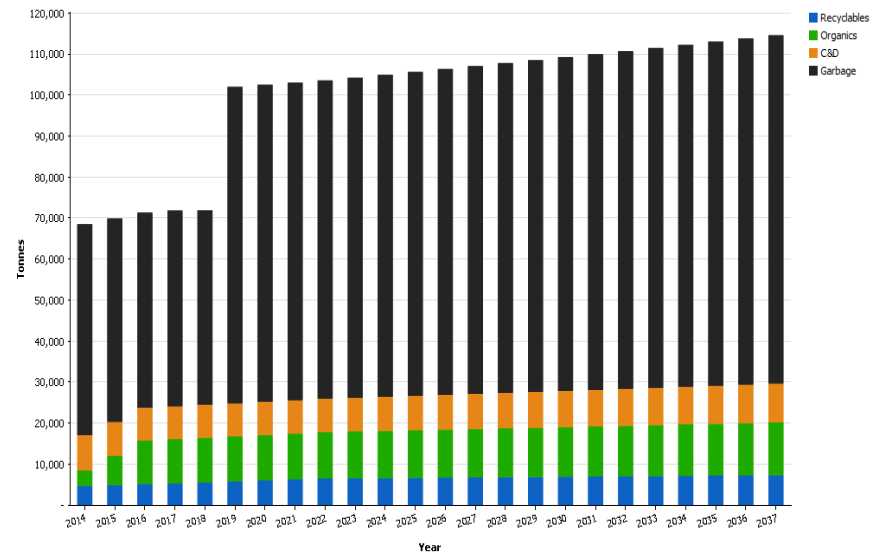


Scenario 1

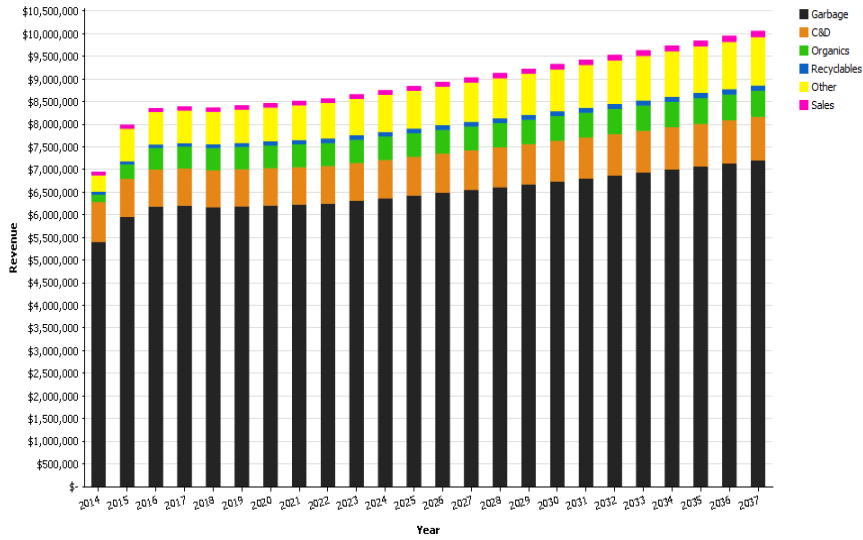
Waste Capture
 2014 - 69,000 (tn)
 2037 - 85,000 (tn)

Scenario 2

Waste Capture
 2014 - 69,000 (tn)
 2037 - 115,000 (tn)



Revenues

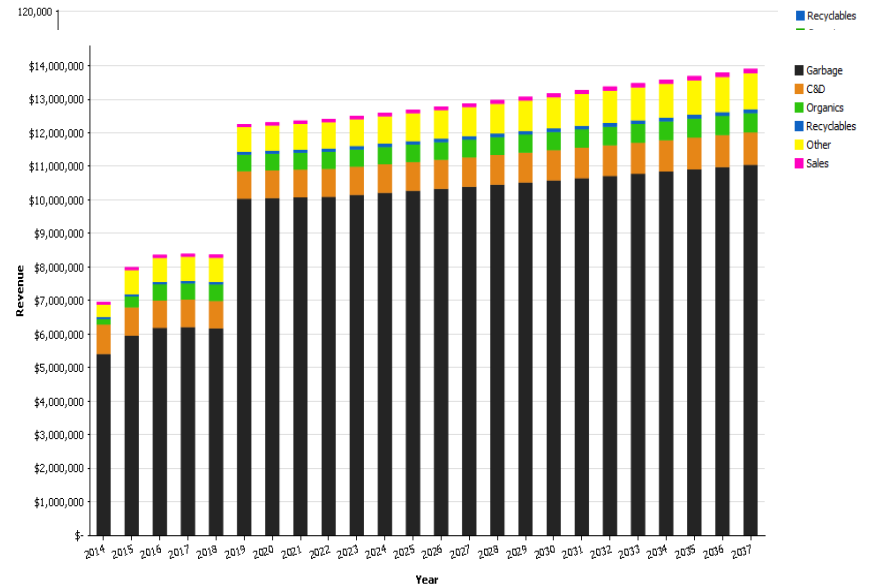


Scenario 1

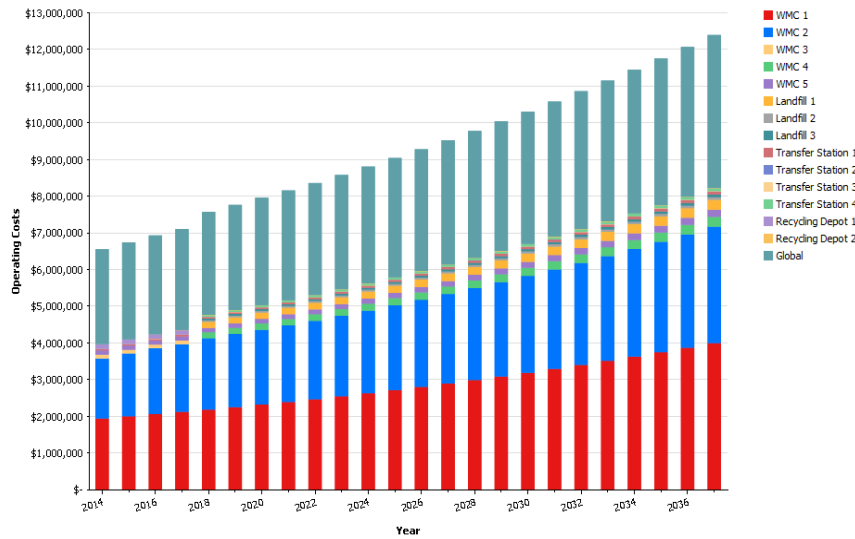
Revenue
 2014 - \$7.0 M
 2037 - \$10.1 M

Scenario 2

Revenue
 2014 - \$7.0 M
 2037 - \$13.9 M



Facility Operating Costs

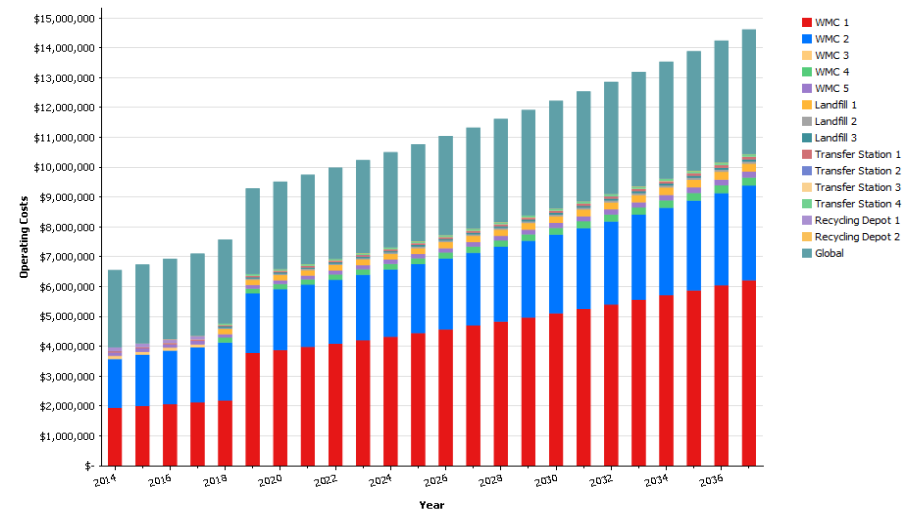


Scenario 1

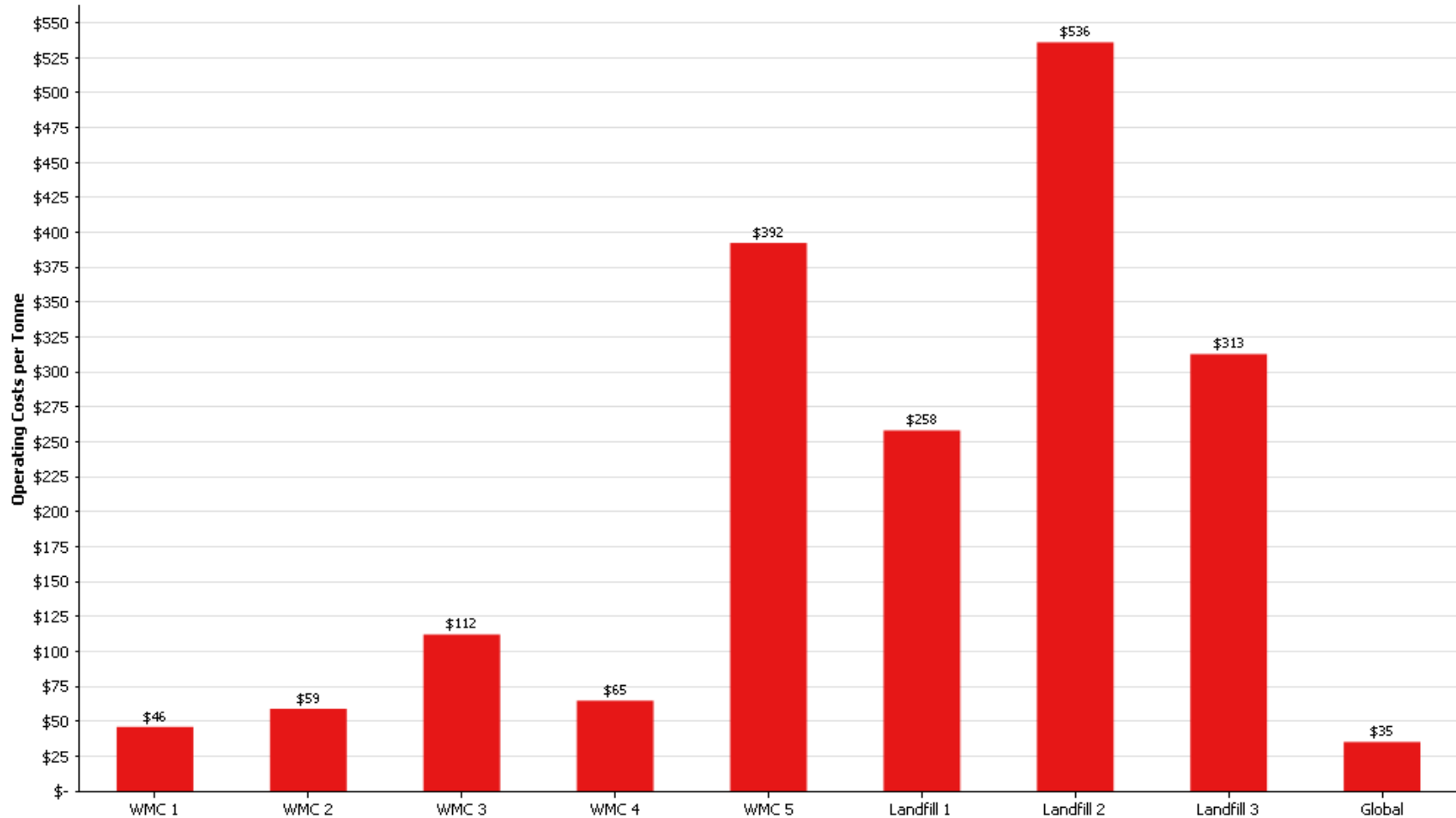
Operating Costs
 2014 - \$ 6.6 M
 2037 - \$ 12.4 M

Scenario 2

Operating Costs
 2014 - \$ 6.6 M
 2037 - \$ 14.6 M



Facility Operating Costs Per Tonne

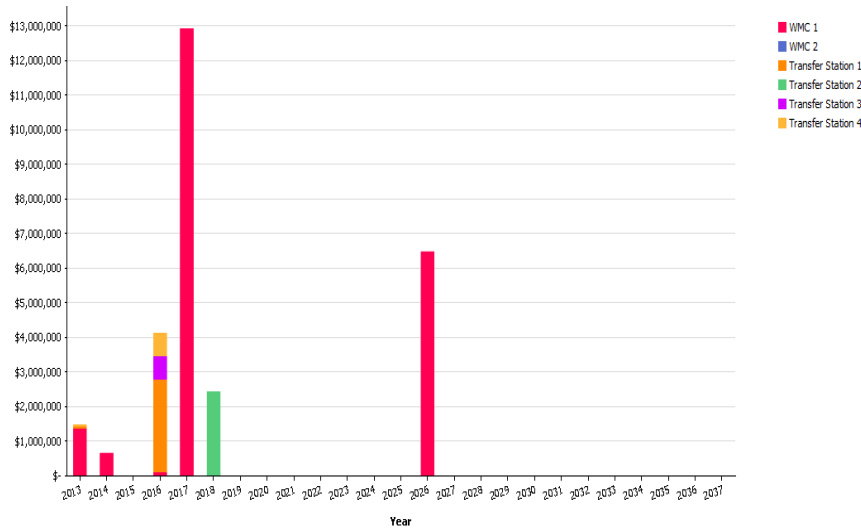


Facility Operating Cost Template

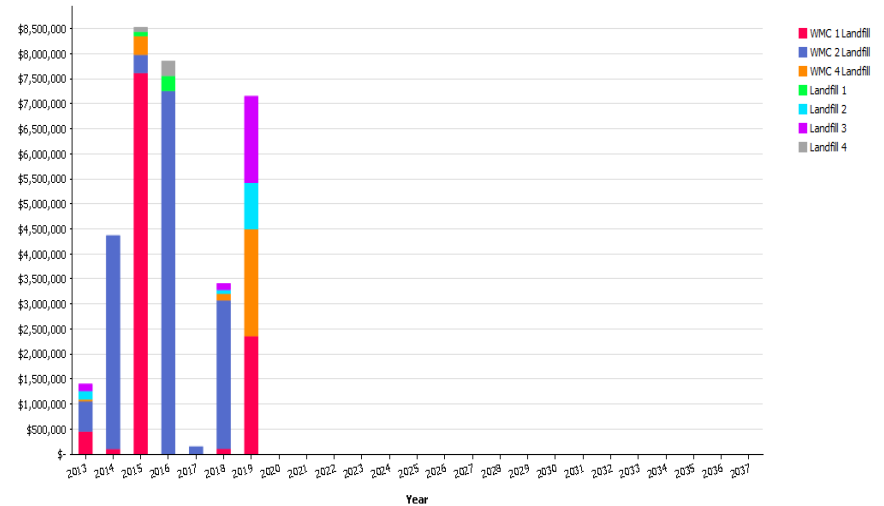
	Quantity	Units	Unit Cost	Total Cost
Salaries	1	LS	\$ 500,000	\$ 500,000
Wages and Benefits	1	LS	\$ 100,000	\$ 100,000
Operating Contracts	1	LS	\$ 300,000	\$ 300,000
Equipment	1	LS	\$ 300,000	\$ 300,000
Office Administration	1	LS	\$ 30,000	\$ 30,000
Land and Building Maintenance	1	LS	\$ 70,000	\$ 70,000
Landfill Cover Maintenance	1	LS	\$ 10,000	\$ 10,000
Utilities	1	LS	\$ 100,000	\$ 100,000
Professional Fees	40%	%	\$ 280,000	\$ 112,000
Supplies	1	LS	\$ 200,000	\$ 200,000
Minor Capital	1	LS	\$ 100,000	\$ 100,000
Recycling Activities	1	LS	\$ 150,000	\$ 150,000
Safety Equipment	40%	%	\$ 5,000	\$ 2,000
Sum of Opex Items Σ				\$ 1,974,000



Capital Costs



Capital Costs

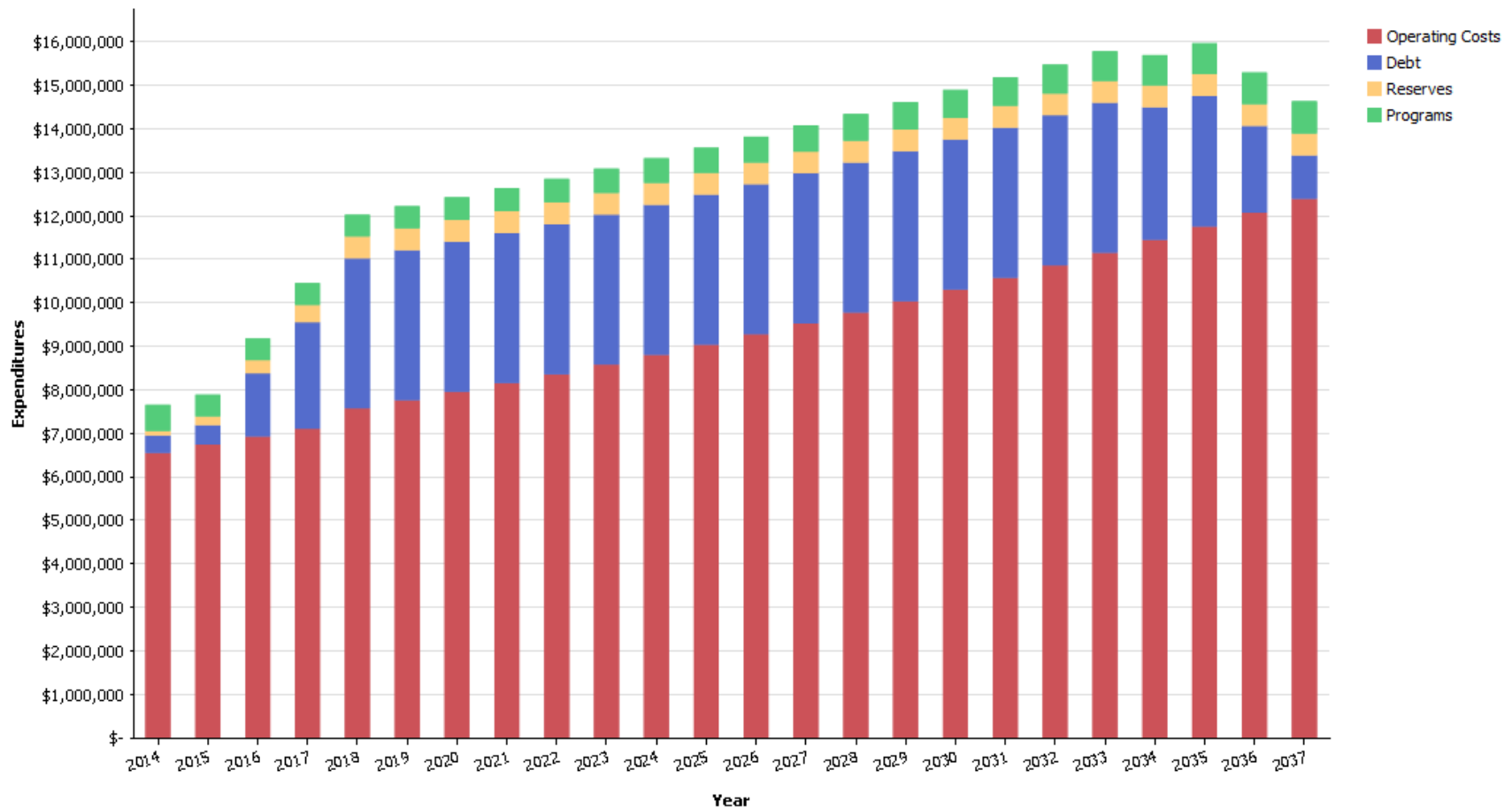


Landfill Closure Capital Costs

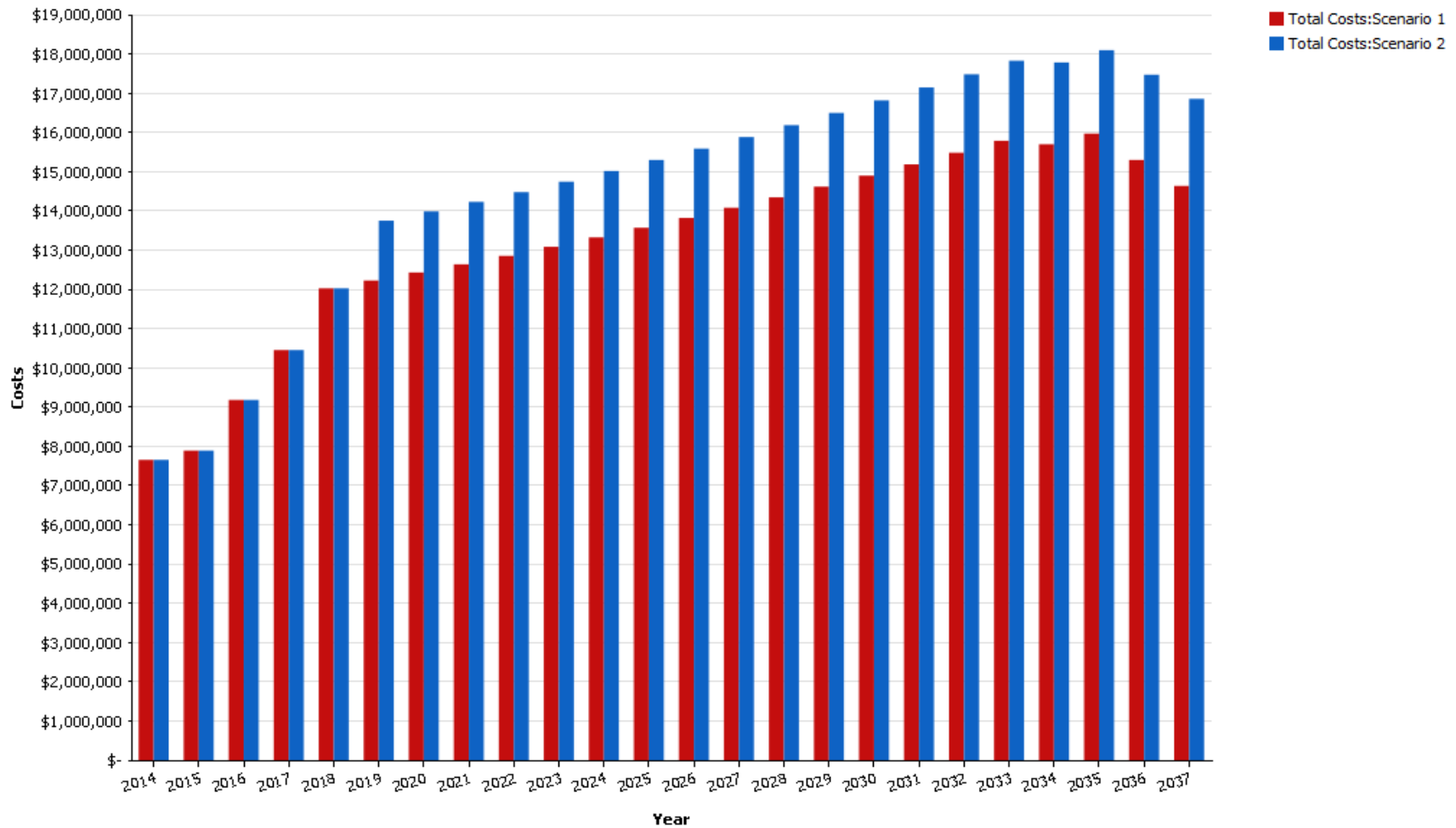


Operating Budget Breakdown

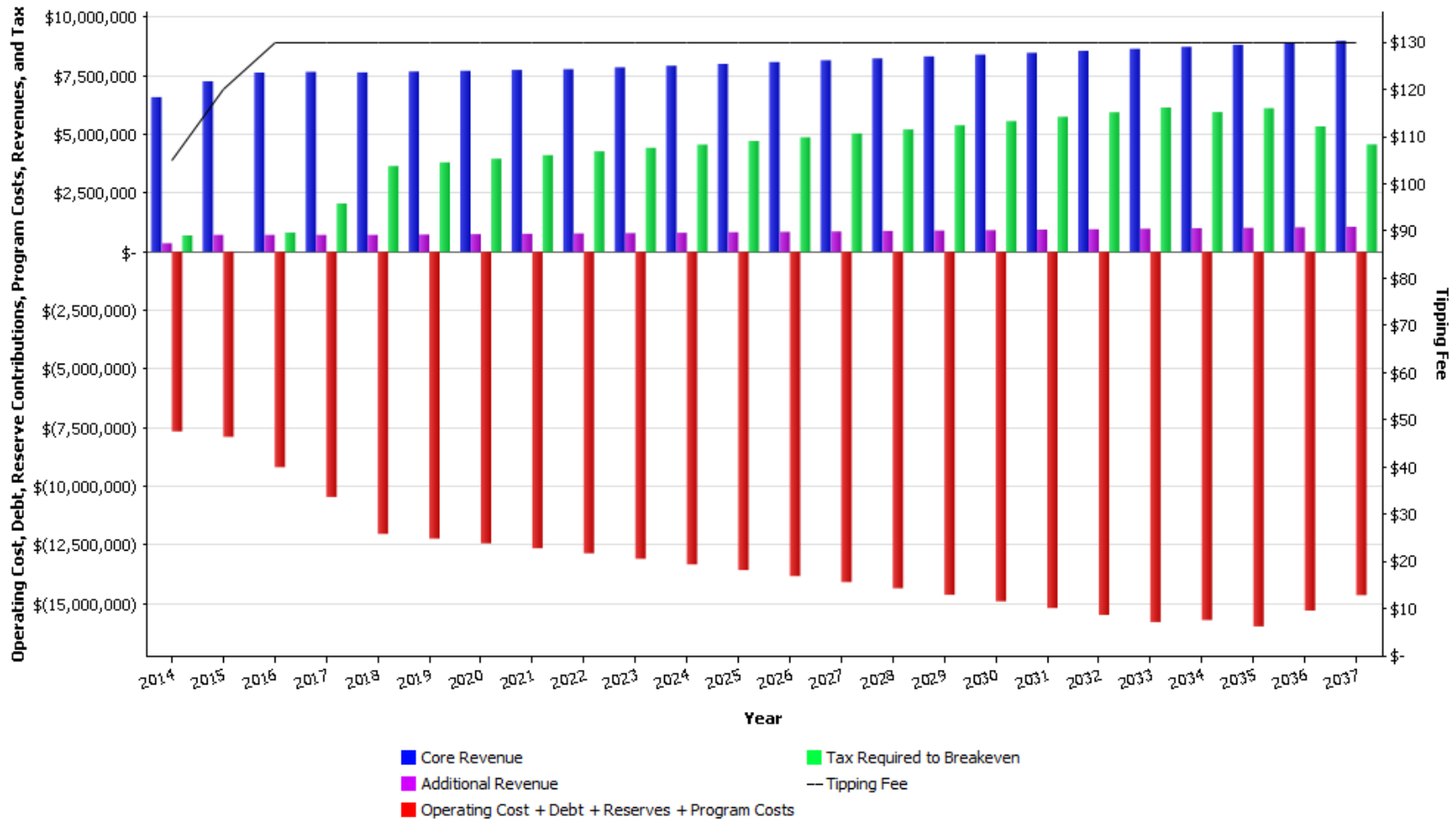
Scenario 1



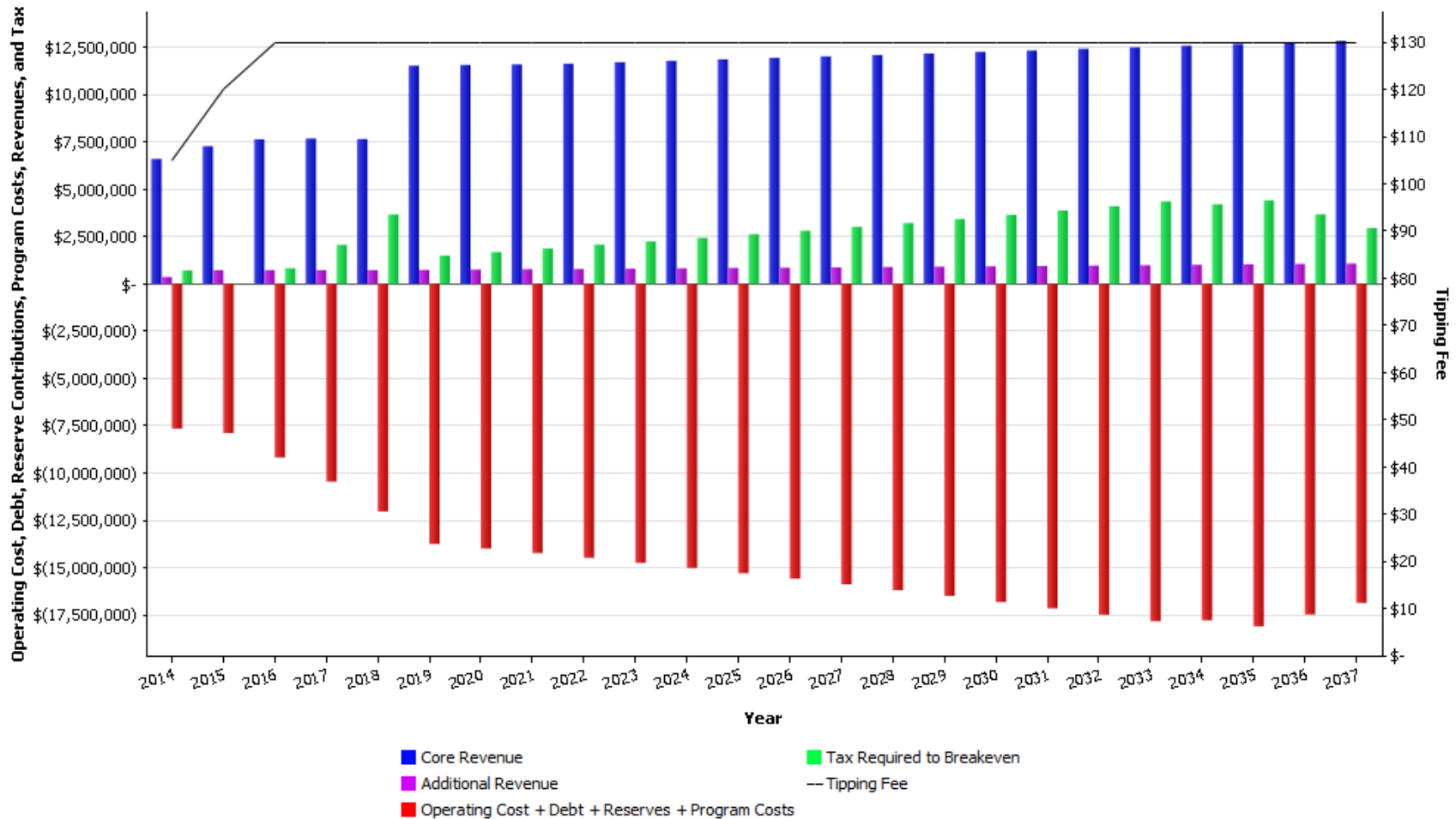
Cost Projections



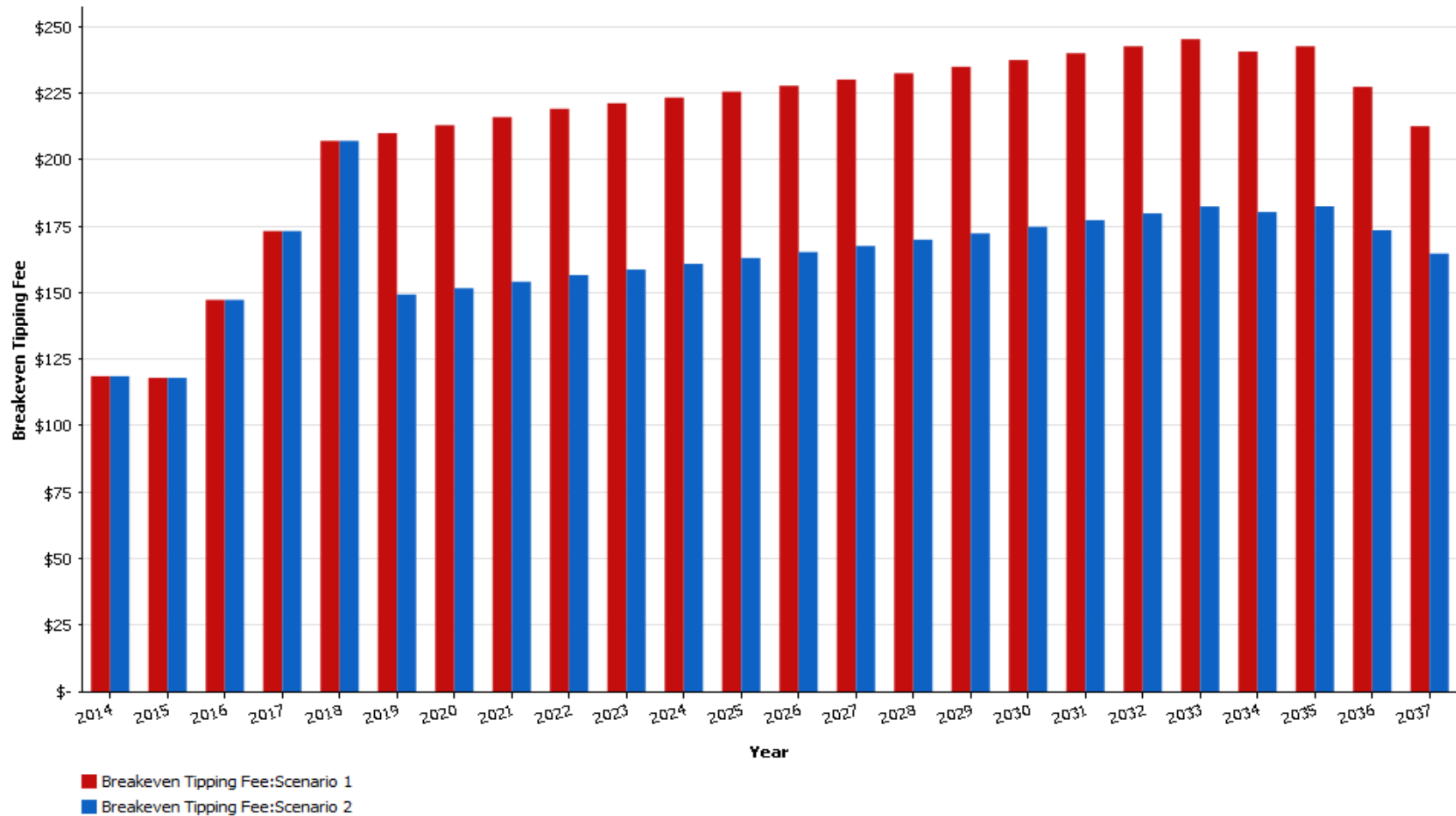
Scenario 1: Costs vs. Revenues



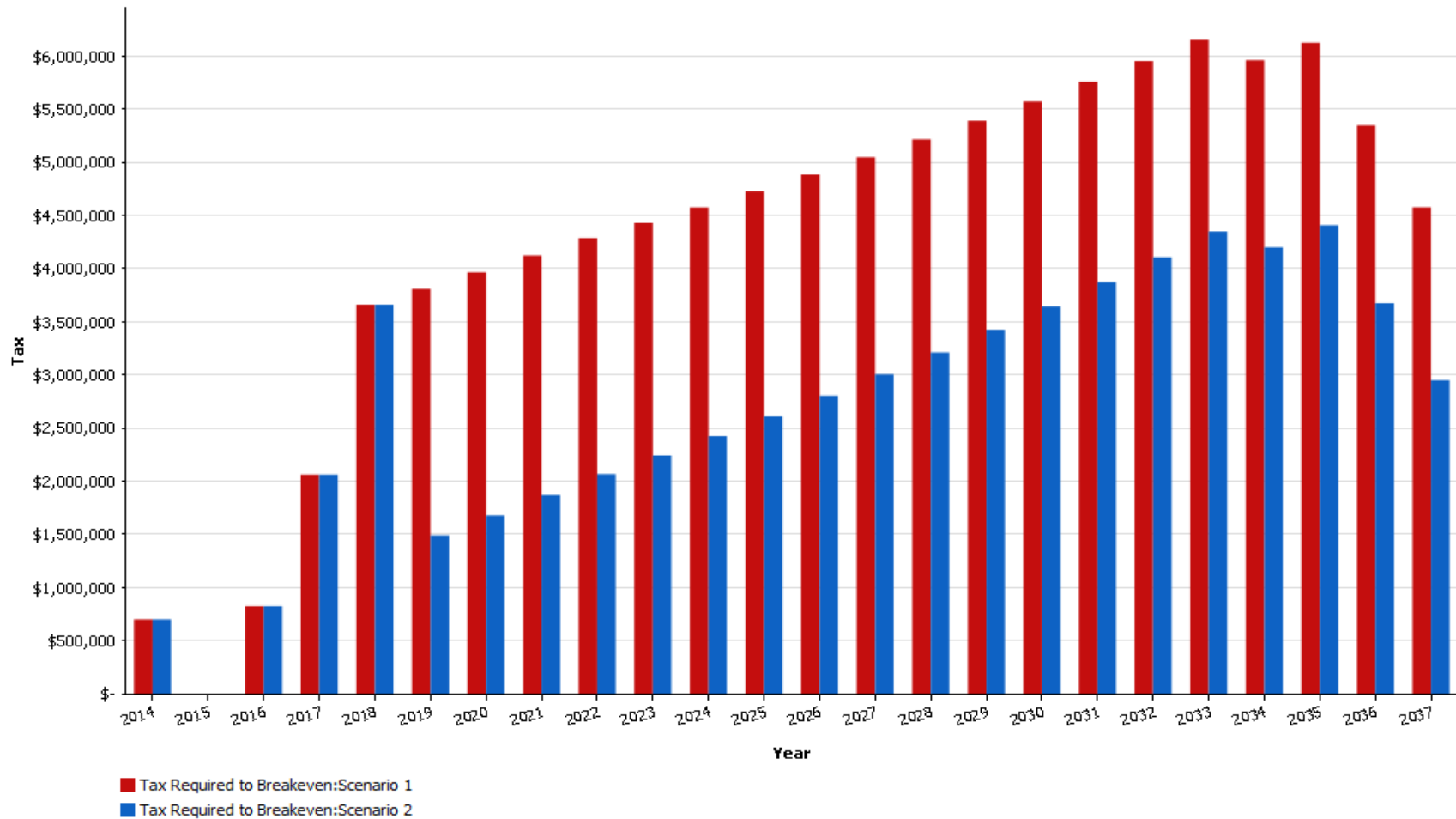
Scenario 2: Costs vs. Revenues



Breakeven Tipping Fees



Tax Requirements – with Tipping Fee at \$130 by 2016



Observations and Conclusions

- ❑ Small but very complex system with many components.
- ❑ Economies of scale are difficult to achieve.
- ❑ Tipping fees need to stay competitive.
- ❑ Tax requisition will be required to break even.
- ❑ In near term there are significant large capital expenditures associated with facility development and landfill closures.
- ❑ In order to pay for annual system costs exclusively through tipping fees, tipping fees must be in excess of \$225/tonne for a 58% diversion rate with no import of waste.
- ❑ Over long term capital forecasts are likely under projected and therefore further escalations in tipping fees may be required.
- ❑ As a matter of course tipping fees on all streams should be adjusted to keep pace with inflation after near term adjustment.



Business Planning and Benchmarking Opportunities

- ❑ Evaluation and identifying areas for improvement
- ❑ Communication with stakeholders regarding projects and initiatives
- ❑ Collaboration



Identifying Areas for Improvement

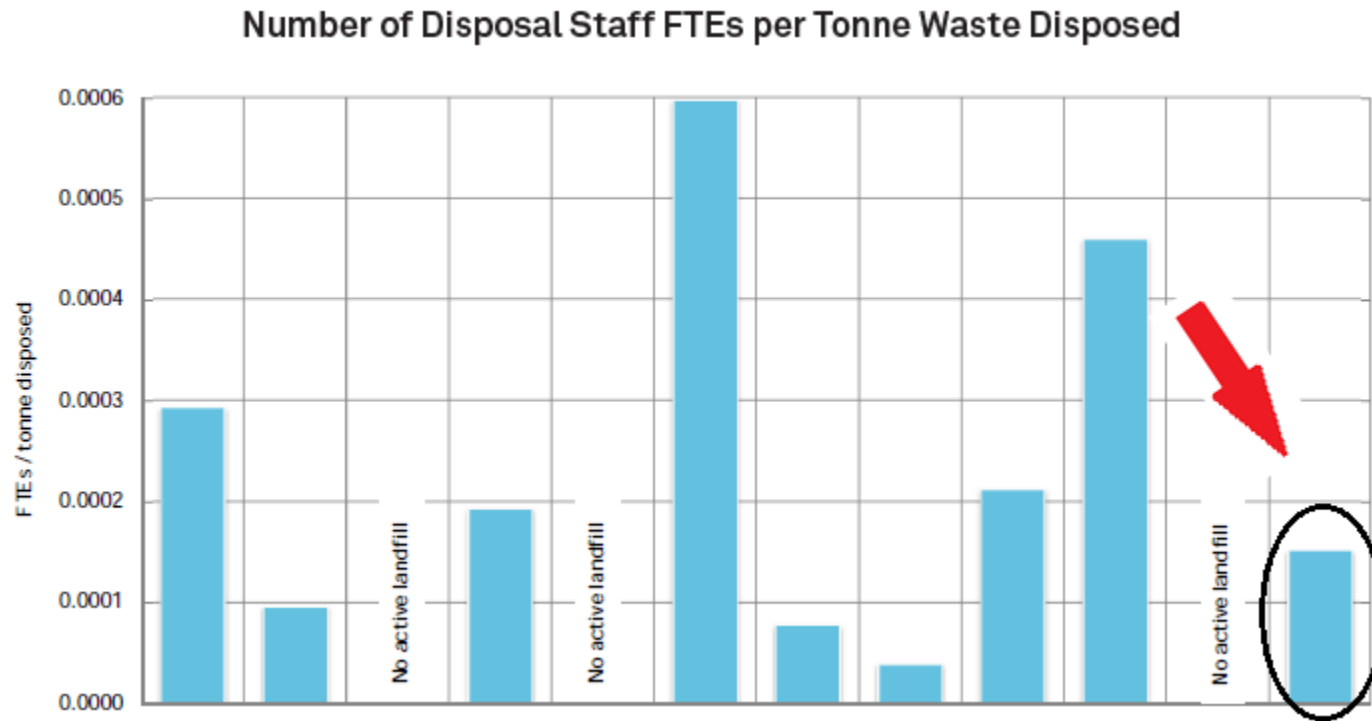
□ Targeting improvement:

- Waste Capture
- Operating costs at SWM facilities
- Diversion
- Etc...

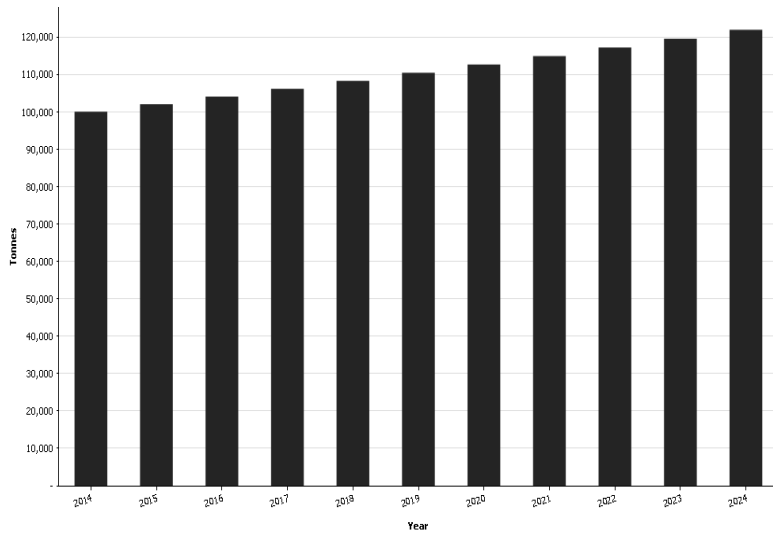
1. Identify a goal for improvement and time frame for achievement
2. Determine costs and operational impacts of the projects and initiatives required to achieve the goal
3. Remodel the system impacts based on achieving the goal



Benchmarking Example



Garbage Capture and FTEs



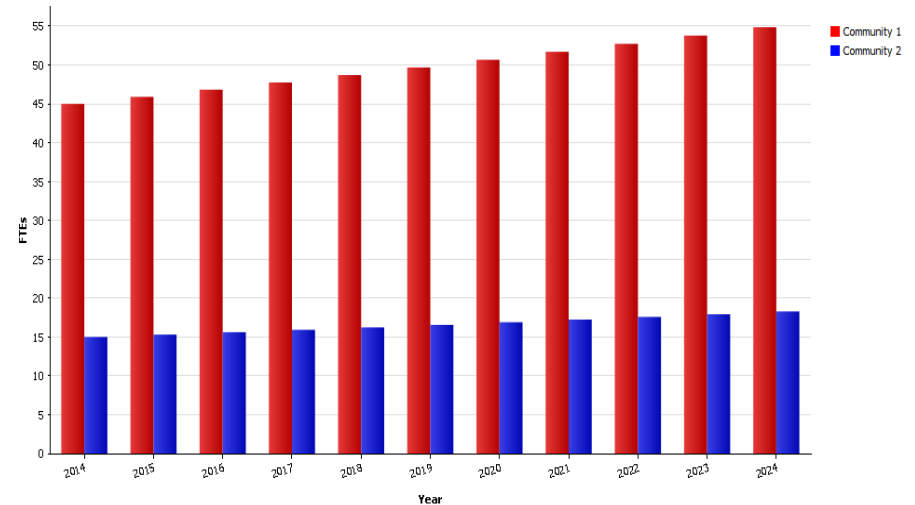
Scenario

Garbage Capture
 2014 – 100,000 (tn)
 2024 – 122,000 (tn)

FTEs Comparison

Community 1
 2014 – 45 FTEs
 2024 – 55 FTEs

Community 2
 2014 – 15 FTEs
 2024 – 18 FTEs



Goal and Financial Implications

□ Goal:

- Reduce FTEs per tonne disposed from 0.00045 to 0.00015
- Achieve target improvement by year 2022

□ Costs:

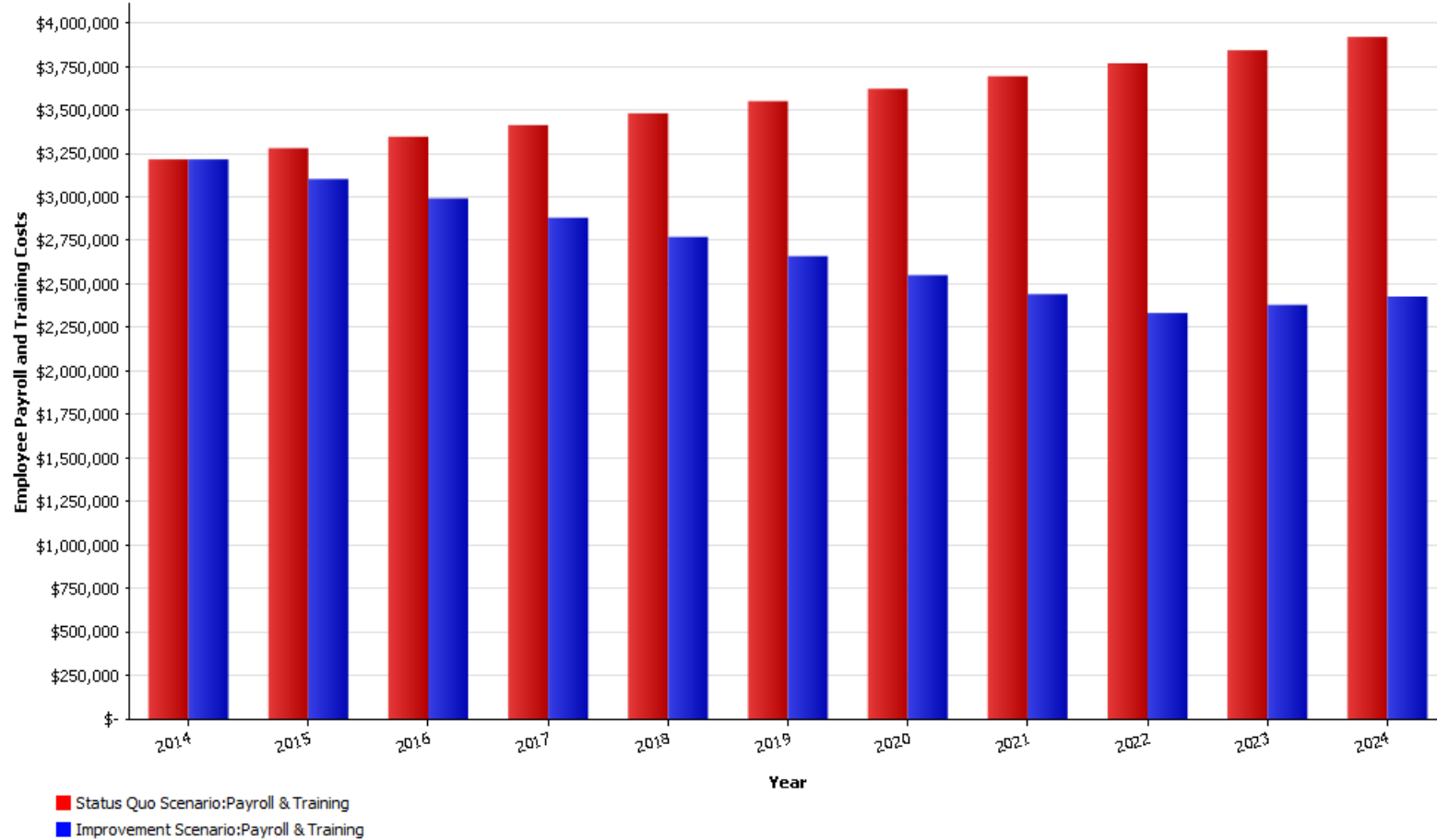
- Additional training
- Higher average salaries

□ Savings:

- Reduction in total payroll



Financial Impacts of Improvement



Communication to Stakeholders

- ❑ Getting support for your business plan involves a compelling cost benefit analysis
- ❑ NSWBI can indicate opportunities for higher level of service
- ❑ Benchmarking can be helpful in obtaining stakeholder support for projects and initiatives



Benchmarking Example

Number of Odour Complaints per Year at Composting Facility



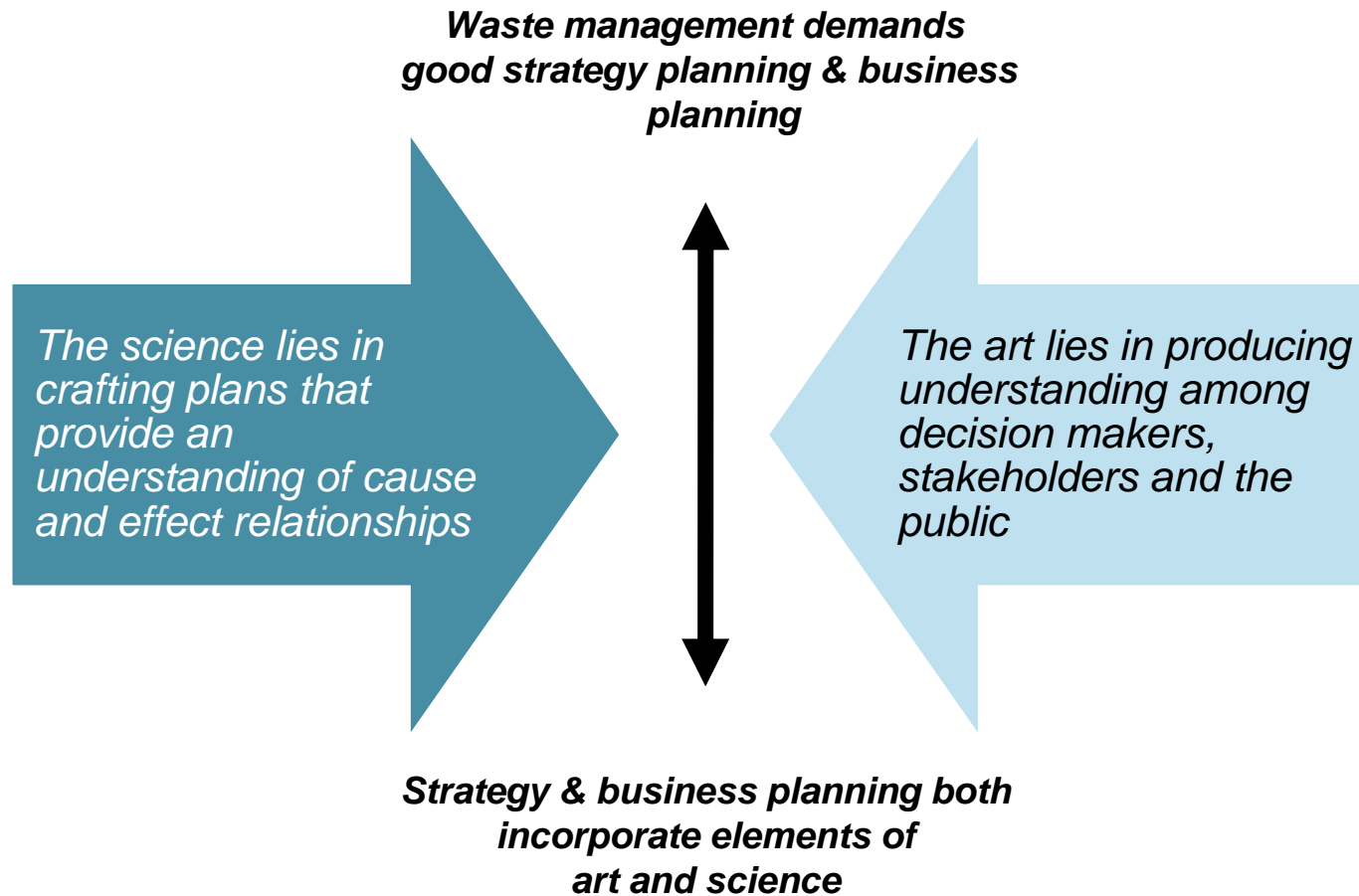
Collaboration

- ❑ Collaboration is one the foremost benefits of the NSWBI
 - Obtaining advice/ guidance/ knowledge from peers regarding areas for improvement
 - Learning from those who have gone before you, what works and what to avoid
 - Network for discussing common challenges, strategies and problem solving

- ❑ Regarding our previous examples
 - Learning how a reduction in FTEs /tonnes disposed was achieved and determining whether this is feasible for your community
 - Learning techniques for improving odor control at compost facilities and the costs associated with these



The Art and Science



Business Planning and Benchmarking

Why be bothered?

... “because if you don’t know where you are going you might end up someplace else.”

Yogi Berra

