



September 11, 2025 | Region Six Conference (hosted by Tennessee SWANA)

SOLID WASTE COST OF SERVICE & RATE DESIGN

Foundations & Strategies for Local Government Utilities



KEY PRESENTATION TOPICS



Cost of Service Overview



Cost of Service Methodology & Examples



Case Studies



Policy Issues

NEWGEN AT A GLANCE

TURNING COMPLEX UTILITY CHALLENGES INTO CLEAR SOLUTIONS

Who We Are



2012

established

**MANAGEMENT & ECONOMIC
CONSULTING FIRM SERVING
UTILITIES AND LOCAL GOVERNMENTS**



10+

locations nationwide



60+

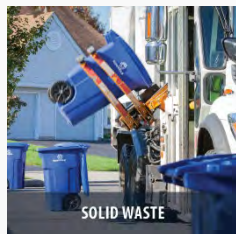
employees



\$840K+

donated since 2015 to **140+** organizations

Who We Serve



**NEWGEN PARTNERS WITH
COMMUNITIES TO ENHANCE
SOLID WASTE AND RECYCLING
SERVICES, INCREASE
DIVERSION, AND MAINTAIN
REVENUE SUFFICIENCY.**

We guide them through operational, financial, and environmental assessments to align diversion goals with service realities, supporting confident long-term decision-making.



500+

clients served nationwide

3,000+

projects completed

How We Work



Tailored Strategy

We always start by listening — every client's situation is unique, and we design strategies that fit their goals.



Trusted Expertise

We've built a strong reputation in the industry — our team includes experts who have testified in hundreds of cases and some of the nation's top utility appraisers.



Operational Insights

We don't just crunch numbers — we make data actionable, linking dollars to day-to-day operations.



Stakeholder Communications

We're known for making complex issues easy to explain — whether to regulators, elected officials, or customers.

WHY IS A COST OF SERVICE STUDY NEEDED?



FINANCIAL SUSTAINABILITY

Ensure full cost recovery, stable revenues, and funding for future infrastructure.



FAIRNESS & EQUITY

Allocate costs fairly among customer classes and provide a clear, defensible rate basis.



POLICY ALIGNMENT

Meet legal requirements, support financial and non-financial goals, and demonstrate accountability.



RATE STRUCTURE IMPROVEMENTS

Modernize rates, encourage waste reduction, and design affordability programs.



OPERATIONAL INSIGHTS

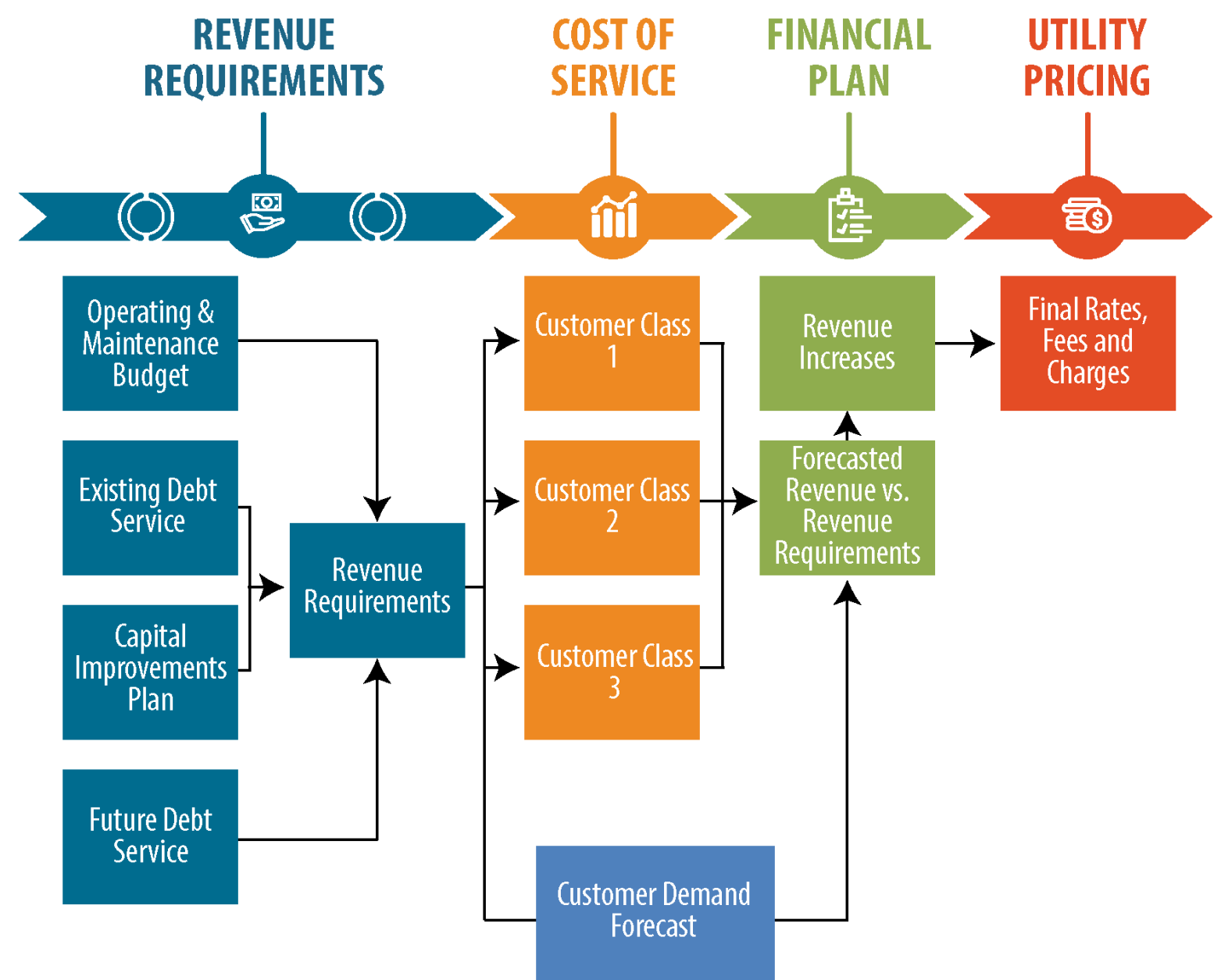
Identify efficiencies, compare in-house vs. contracted service costs, and guide long-term planning.



RISK MANAGEMENT

Prepare for cost volatility, regulatory changes, and ensure resiliency.

COST OF SERVICE METHODOLOGY OVERVIEW



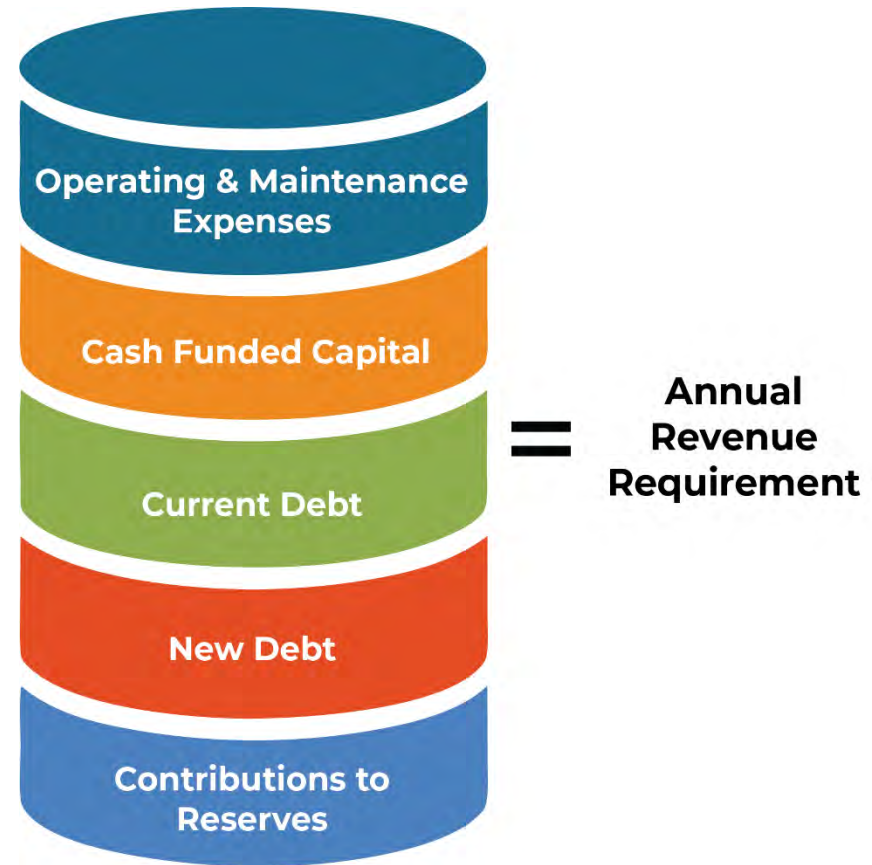
CASE STUDY EXAMPLE

- City provides:
 - Residential refuse collection
 - Residential recycling collection
 - Brush & bulky collection (residential and limited commercial)
 - Commercial dumpster refuse collection
- Hauls to a privately-operated landfill nearby
- No current debt service, but \$1,000,000 of new debt service in Year 3 for improvements to the collection yard
- Number of residential and commercial customers increases at 1% per year
- Solid waste operation is an enterprise fund



DEVELOPING THE REVENUE REQUIREMENT

- **Operating & Maintenance Costs**
 - Direct departmental costs
 - Reimbursement for support services (e.g., admin, finance, HR, purchasing, IT, etc.)
 - Payments to general fund
- **Equipment / Collection Costs**
 - Collection vehicles
 - Carts
 - Dumpsters
- **Other Capital Costs**
 - Offices and collection yards
 - Drop-off facility
 - Transfer stations, landfills
- **Reserves!**



EXAMPLE

TEST YEAR / REVENUE REQUIREMENT

Account	Budget Amount	Adjustments	Test Year
Salaries	\$1,320,000		\$1,320,000
Benefits	\$660,000		\$660,000
Supplies	\$50,000		\$50,000
Fuel	\$197,000		\$197,000
Equipment Maintenance	\$592,500		\$592,500
Equipment Replacement	\$400,000	\$493,125	\$893,125
Disposal	\$1,125,000		\$1,125,000
General Fund Transfer	\$650,000		\$650,000
Payment in Lieu of Taxes (PILOT)	\$240,000		\$240,000
Debt Service	\$0		\$0
Total Revenue Requirement	\$5,234,500	\$493,125	\$5,727,625

CHALLENGES FACING THE SOLID WASTE INDUSTRY

Equipment

- Supply Chain
- Price of Steel



Cities need more time for vehicle delivery

Staffing

- High Demand for CDL Drivers



CDL driver shortage nationwide

Inflation

- Fuel Volatility



Inflation impacting cost of everything

INDEX AND EQUIPMENT INCREASES

Metric	Time Period	Avg Annual Increase
CPI – All Urban Consumers	2019-2024	4.2%
CPI – Garbage and Trash	2019-2024	5.0%
PPI – Solid Waste Collection	2019-2024	5.7%
Equipment Purchases		
Automated Side Loaders	2020-2023	16.0%
Rear-Loaders	2019-2025	7.1%
Roll-off Vehicles	2019-2024	11.0%

EXAMPLE

REVENUE REQUIREMENT FORECAST

Account	Test Year	Avg. Increase	Year 1	Year 2	Year 3	Year 4	Year 5
Salaries	\$1,320,000	2.5%	\$1,353,000	\$1,386,825	\$1,421,496	\$1,457,033	\$1,493,459
Benefits	\$660,000	4.0%	\$686,400	\$713,856	\$742,410	\$772,107	\$802,991
Supplies	\$50,000	2.5%	\$51,250	\$52,531	\$53,845	\$55,191	\$56,570
Fuel	\$197,000	4.0%	\$204,880	\$213,075	\$221,598	\$230,462	\$239,681
Equip. Maintenance	\$592,500	4.0%	\$616,200	\$640,848	\$666,482	\$693,141	\$720,867
Equip. Replacement	\$893,125	4.0%	\$928,850	\$966,004	\$1,004,644	\$1,044,830	\$1,086,623
Disposal	\$1,125,000	3.5%	\$1,164,656	\$1,205,710	\$1,248,212	\$1,292,211	\$1,337,762
General Fund Transfer	\$650,000	2.5%	\$666,250	\$682,906	\$699,979	\$717,478	\$735,415
PILOT	\$240,000	2.5%	\$246,000	\$252,150	\$258,454	\$264,915	\$271,538
Debt Service	\$0	N/A	\$0	\$0	\$73,582	\$73,582	\$73,582
Total	\$5,727,625		\$5,917,486	\$6,113,906	\$6,390,701	\$6,600,950	\$6,818,487

ALLOCATE COSTS TO SERVICE CATEGORIES

What service is being provided?

- Refuse Collection
- Bulky Item Pickup
- Recycling Collection
- Disposal

Who is receiving the service?

- Residential Customers
- Commercial Customers

What vehicle is being used?

- Automated Side Load
- Grapple Trucks
- Rear Load
- Front Load

What personnel is being used?

- Drivers
- Operations Manager
- Laborers
- Administrative
- Supervisors

EXAMPLE

YEAR 1 ALLOCATION (PERCENT)

Account	Year 1	Admin	Res. Refuse	Res. Recycling	Brush Bulky	Comm. Refuse	Disposal
Salaries	\$1,353,000	12.5%	35.5%	18.5%	13.2%	20.3%	
Benefits	\$686,400	12.5%	35.5%	18.5%	13.2%	20.3%	
Supplies	\$51,250	12.5%	35.5%	18.5%	13.2%	20.3%	
Fuel	\$204,880	2.4%	33.7%	17.9%	21.9%	24.1%	
Equip. Maintenance	\$616,200	1.0%	36.1%	18.1%	15.5%	29.3%	
Equip. Replacement	\$928,850	1.0%	37.6%	19.5%	10.0%	31.9%	
Disposal	\$1,164,656						100.0%
General Fund Transfer	\$666,250	100.0%					
PILOT	\$246,000	100.0%					
Debt Service	\$0						
Total	\$5,917,486						

EXAMPLE

YEAR 1 ALLOCATION (DOLLARS)

Account	Year 1	Admin	Res. Refuse	Res. Recycling	Brush & Bulky	Comm. Refuse	Disposal
Salaries	\$1,353,000	\$169,125	\$480,213	\$250,613	\$178,863	\$274,188	\$0
Benefits	\$686,400	\$85,800	\$243,620	\$127,140	\$90,740	\$139,100	\$0
Supplies	\$51,250	\$6,406	\$18,190	\$9,493	\$6,775	\$10,386	\$0
Fuel	\$204,880	\$4,992	\$69,056	\$36,608	\$44,928	\$49,296	\$0
Equip. Maintenance	\$616,200	\$6,240	\$222,560	\$111,540	\$95,420	\$180,440	\$0
Equip. Replacement	\$928,850	\$9,100	\$349,700	\$180,700	\$92,950	\$296,400	\$0
Disposal	\$1,164,656	\$0	\$0	\$0	\$0	\$0	\$1,164,656
General Fund Transfer	\$666,250	\$666,250	\$0	\$0	\$0	\$0	\$0
PILOT	\$246,000	\$246,000	\$0	\$0	\$0	\$0	\$0
Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$5,917,486	\$1,193,913	\$1,383,338	\$716,093	\$509,676	\$949,809	\$1,164,656

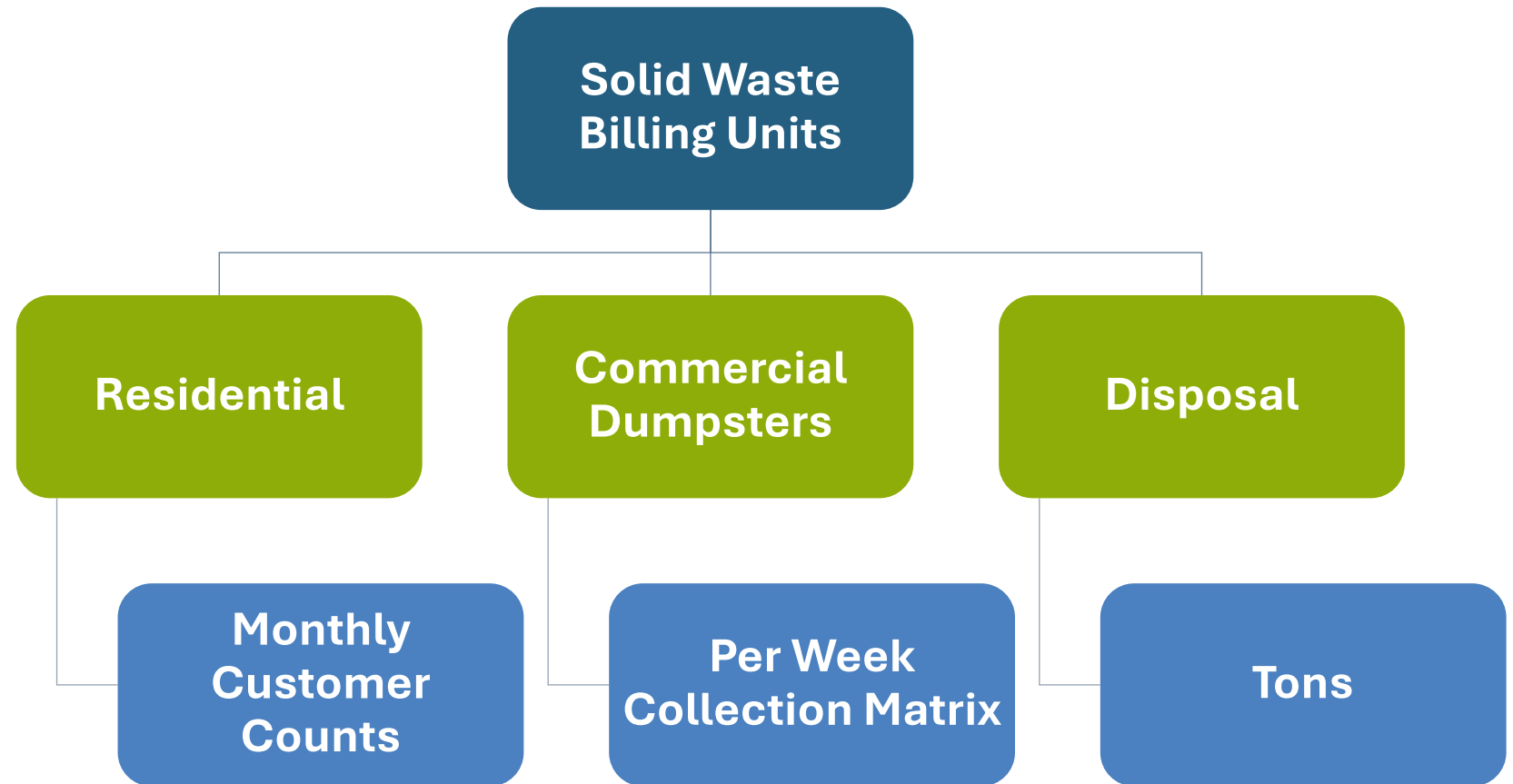
EXAMPLE

ALLOCATING SERVICE CATEGORIES TO CUSTOMERS

- Determine which customers will recover the costs associated with each service category

Account	Year 1	Residential	Commercial
Administration	\$1,193,913	66.1%	33.9%
Residential Refuse	\$1,383,338	100%	
Residential Recycling	\$716,093	100%	
Brush & Bulky	\$509,676	75%	25%
Commercial Refuse	\$949,809		100%
Disposal	\$1,164,656	55%	45%

DETERMINATION OF BILLING UNITS



COST OF SERVICE CALCULATION



EXAMPLE

RESIDENTIAL COST OF SERVICE

	Year 1	Year 2	Year 3	Year 4	Year 5
Administration	\$789,168	\$809,782	\$879,568	\$901,298	\$923,615
Residential Refuse	\$1,383,338	\$1,431,196	\$1,480,781	\$1,532,157	\$1,585,393
Residential Recycling	\$716,093	\$740,836	\$766,470	\$793,030	\$820,549
Brush & Bulky	\$382,257	\$395,459	\$409,136	\$423,308	\$437,991
Commercial Refuse	\$0	\$0	\$0	\$0	\$0
Disposal	\$640,561	\$663,141	\$686,516	\$710,716	\$735,769
Total	\$3,911,418	\$4,040,413	\$4,222,471	\$4,360,509	\$4,503,316
Number of Customers	12,000	12,120	12,241	12,364	12,487
Residential Cost of Service	\$27.16	\$27.78	\$28.74	\$29.39	\$30.05

Current Rate = \$28 per month

EXAMPLE

COMMERCIAL COST OF SERVICE

	Year 1	Year 2	Year 3	Year 4	Year 5
Fixed Monthly Cost	\$404,745	\$415,571	\$451,656	\$463,089	\$474,834
Number of Customers	723	730	738	745	752
Monthly Cost per Customer	\$46.65	\$47.42	\$51.03	\$51.81	\$52.59
Collection Costs	\$1,077,228	\$1,115,353	\$1,154,878	\$1,195,857	\$1,238,345
Annual Collections	64,480	65,125	65,776	66,434	67,098
Cost per Collection	\$16.71	\$17.13	\$17.56	\$18.00	\$18.46
Disposal Costs	\$524,095	\$542,570	\$561,695	\$581,495	\$601,993
Annual Cubic Yards Collected	419,952	424,152	428,393	432,677	437,004
Cost per Cubic Yard	\$1.25	\$1.28	\$1.31	\$1.34	\$1.38

$$8 \text{ CY, Once a Week Collection} = \$46.65 + \$16.71 \times (52/12) + 8 \times \$1.25 \times (52/12) = \$162.39$$

Fixed
Collection
Disposal

EXAMPLE

COMMERCIAL COST OF SERVICE (YEAR 1)

Cost of Service	1	2	3	4	5	6
4 Cubic Yards	\$140.68	\$234.70	\$328.73	\$422.76	\$516.78	\$610.81
6 Cubic Yards	\$151.49	\$256.34	\$361.18	\$466.02	\$570.86	\$675.70
8 Cubic Yards	\$162.39	\$277.97	\$393.63	\$509.28	\$624.94	\$740.60
Current Rates	1	2	3	4	5	6
4 Cubic Yards	\$120.00	\$200.00	\$300.00	\$375.00	\$450.00	\$550.00
6 Cubic Yards	\$175.00	\$250.00	\$335.00	\$430.00	\$525.00	\$600.00
8 Cubic Yards	\$190.00	\$280.00	\$380.00	\$475.00	\$560.00	\$660.00
Over / (Under) Recovery	1	2	3	4	5	6
4 Cubic Yards	(\$20.68)	(\$34.70)	(\$28.73)	(\$47.76)	(\$66.78)	(\$60.81)
6 Cubic Yards	\$23.51	(\$6.34)	(\$26.18)	(\$36.02)	(\$45.86)	(\$75.70)
8 Cubic Yards	\$27.61	\$2.03	(\$13.63)	(\$34.28)	(\$64.94)	(\$80.60)

SUFFICIENCY OF CURRENT RATES

	Year 1	Year 2	Year 3	Year 4	Year 5
Residential Customers					
Revenue	\$4,032,000	\$4,072,320	\$4,113,043	\$4,154,174	\$4,195,715
Revenue Requirement	\$3,911,418	\$4,040,413	\$4,222,471	\$4,360,509	\$4,503,316
Over/(Under) Recovery	\$120,582	\$31,907	(\$109,428)	(\$206,335)	(\$307,601)
Commercial Customers					
Revenue	\$2,002,500	\$2,022,525	\$2,042,750	\$2,063,178	\$2,083,810
Revenue Requirement	\$2,006,068	\$2,073,493	\$2,168,229	\$2,240,441	\$2,315,171
Over/(Under) Recovery	(\$3,568)	(\$50,968)	(\$125,479)	(\$177,264)	(\$231,361)
Total					
Revenue	\$6,034,500	\$6,094,845	\$6,155,793	\$6,217,351	\$6,279,525
Revenue Requirement	\$5,917,486	\$6,113,906	\$6,390,701	\$6,600,950	\$6,818,487
Over/(Under) Recovery	\$117,014	(\$19,061)	(\$234,907)	(\$383,599)	(\$538,962)

RESERVE BALANCE PROJECTION

	Year 1	Year 2	Year 3	Year 4	Year 5
Beginning Balance	\$1,500,000	\$2,077,864	\$1,440,263	\$798,295	\$1,260,651
Over/(Under)-Recovery	\$117,014	(\$19,061)	(\$234,907)	(\$383,599)	(\$538,962)
Equipment Replacement Contributions	\$928,850	\$966,004	\$1,004,644	\$1,044,830	\$1,086,623
Equipment Purchases from Fund	(\$832,000)	(\$1,108,640)	(\$916,764)	(\$1,052,873)	(\$1,143,654)
Ending Balance	\$1,713,864	\$1,552,167	\$1,405,139	\$1,013,498	\$417,505
Target Fund Balance (25% of RR)	\$1,479,372	\$1,528,477	\$1,597,675	\$1,650,237	\$1,704,622
Difference	\$234,492	\$23,690	(\$192,536)	(\$636,739)	(\$1,287,117)

RATE DESIGN

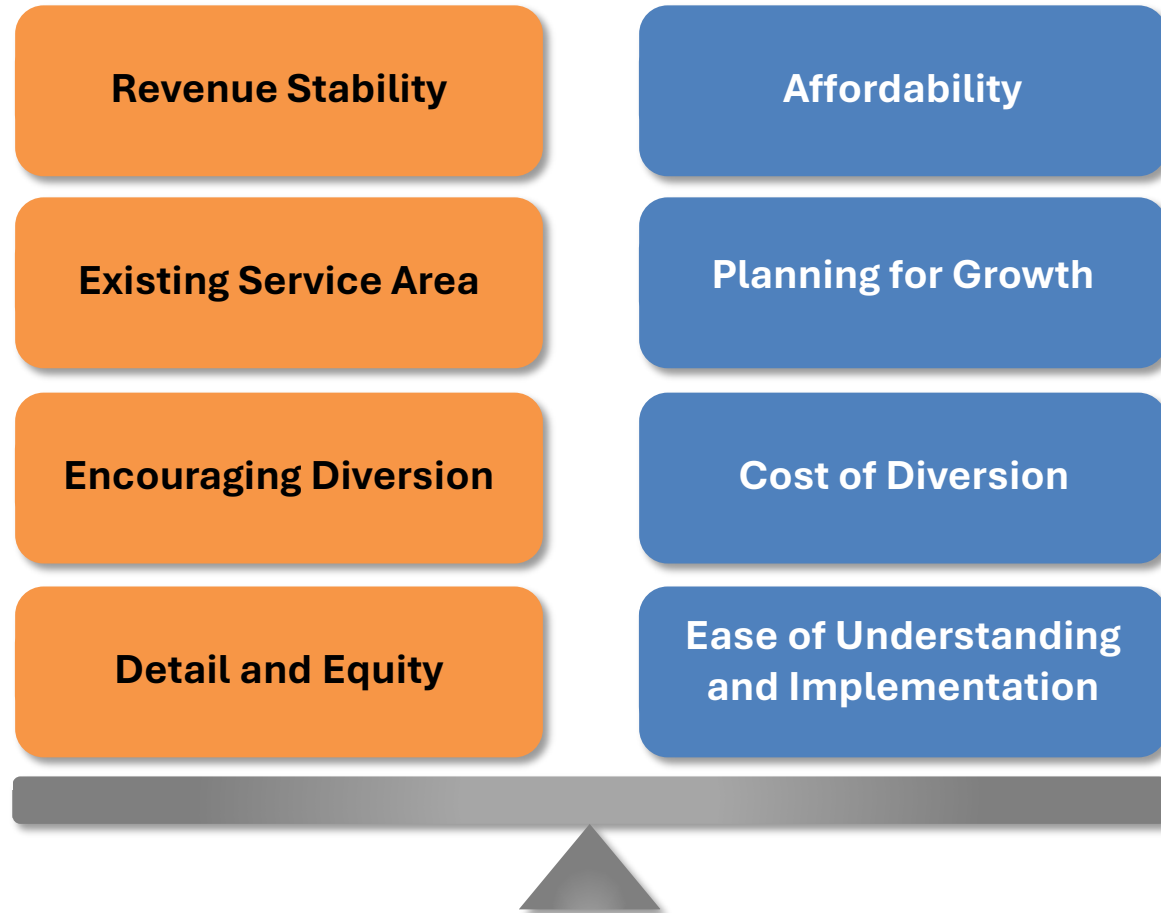
SIMPLIFY THE COMPLEX

- **Clarity & Transparency:** Rates should be simple to understand and openly communicated.
- **Cost Recovery & Financial Health:** Ensure revenues cover service costs and support long-term stability.
- **Fairness & Balance:** Distribute costs equitably while minimizing hidden subsidies.
- **Stability & Predictability:** Provide consistency for customers and utilities, avoiding sudden shocks.
- **Efficiency:** Encourage responsible, cost-conscious consumption and resource use.



RATE DESIGN - REQUIRES BALANCE

Rate design is largely influenced by policy objectives of the solid waste utility



CASE STUDY 1

COMMERCIAL DUMPSTER EXAMPLE

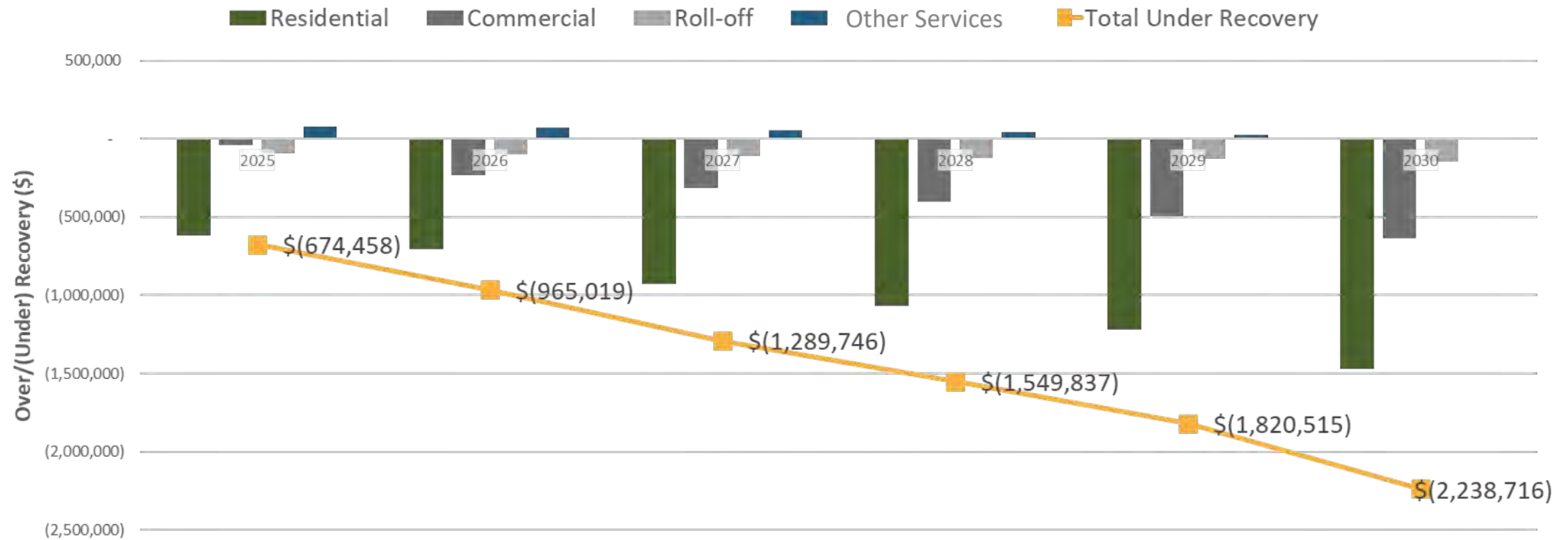
- Rates were equal for the same cubic yards collected
- Proposed rates gradually aligned with the cost of service

Current Rates	1	2	3	4	5	6
2 Cubic Yards	\$43	\$86	\$129	\$172	\$215	\$258
3 Cubic Yards	\$64	\$128	\$193	\$257	\$321	\$385
4 Cubic Yards	\$86	\$172	\$258	\$344	\$430	\$516

Proposed Rates (Year 5)	1	2	3	4	5	6
2 Cubic Yards	\$63	\$126	\$175	\$234	\$292	\$351
3 Cubic Yards	\$81	\$162	\$225	\$289	\$361	\$433
4 Cubic Yards	\$100	\$177	\$258	\$344	\$430	\$516

CASE STUDY 2

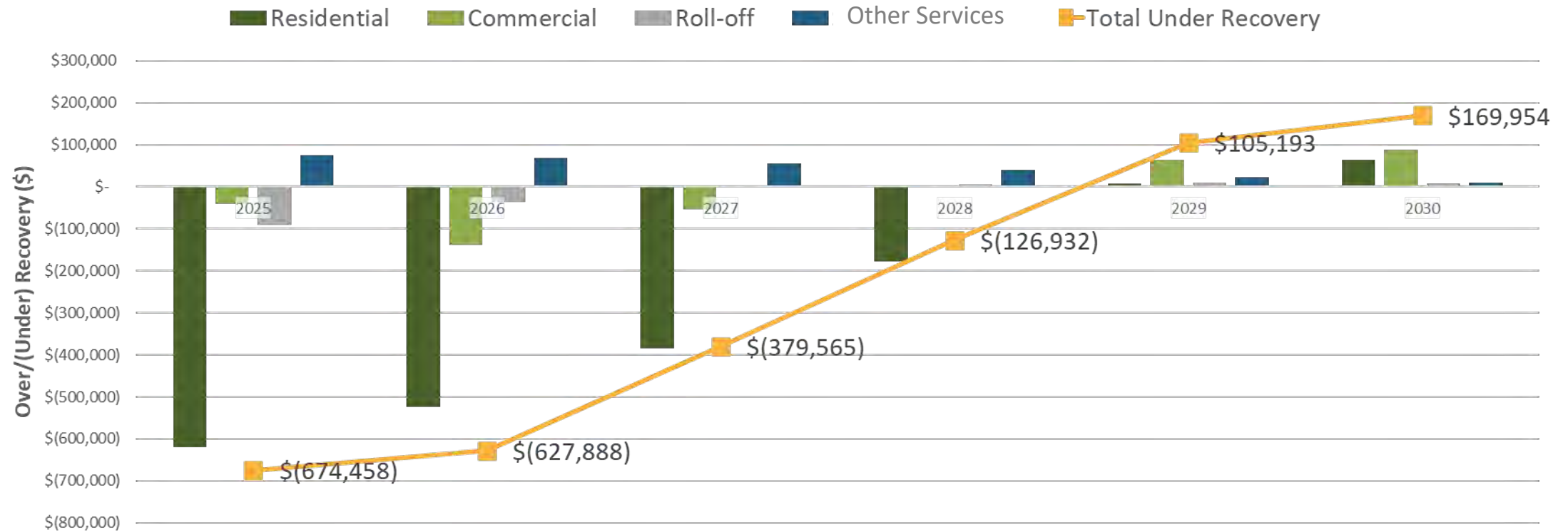
USING FUND BALANCE FOR TRANSITION (CURRENT RATES)



	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Total Fund Balance	\$2,872,250	\$1,207,231	\$(107,515)	\$(1,657,352)	\$(3,447,867)	\$(5,617,583)
Minimum Fund Balance	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000

CASE STUDY 2

USING FUND BALANCE FOR TRANSITION (PROPOSED RATES)



	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Total Fund Balance	\$2,872,250	\$1,544,361	\$1,139,796	\$1,012,864	\$1,118,058	\$1,288,012
Minimum Fund Balance	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000

POLICY ISSUES

Policy issues are the broader choices and value judgments that go beyond the analysis.

They shape what goals the community wants to achieve, who bears the costs, and how services are delivered.



- **Service Scope:** What services are included (trash, recycling, yard waste, bulky)?
- **Customer Classes:** How to allocate costs among residential, commercial, etc.?
- **Equity:** Should certain groups (low-income, seniors, schools) get subsidies?
- **Cost Recovery:** Full cost recovery vs. partial support from general funds?
- **Sustainability Goals:** Incentives for recycling, composting, waste reduction?
- **Contracting:** Impacts of hauler or facility contracts on rates and flexibility?
- **Regulatory/Administrative:** Billing method, state mandates, local policies?
- **Public Acceptance:** Communication and education to support rate changes?



THANK YOU!

NewGen
Strategies & Solutions

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