



Sustainable Infrastructure Planning *Dashboard at the Touch of a Button*

Presented by

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AMBC 2025 Conference

Outline

HOW DID WE GET HERE?

THE SIRP DASHBOARD

DISCUSSION

How did we get here?

2022 — Long term financial plan (LTFP)

- Developed the "Sustainable Infrastructure Replacement Plan" (SIR Plan).
- Created LTFP model in Excel from 3x AM data sources:
 - TCA
 - GIS
 - Appraisals
- Integrated recommendations into 5-yr financial plan.
- Other AM Program improvements...



=IF(AND(\$BK13<>0,BS\$3-\$BL\$3<='UnitRate&EUL'!\$E\$1),\$BK13/'UnitRate&EUL'!\$E\$1)+IF(AND(\$BK13<>0,BS\$3-\$BL\$3>\$V13),IF(COUNTIF(\$A013:\$AW13,BS\$3)>=1,\$S13*\$A013:\$AW13,BS\$3+1)>=1,\$S13*VLOOKUP(\$F13,'Distn Curves'!\$C\$19:\$K\$59,8,FALSE),IF(COUNTIF(\$A013:\$AW13,BS\$3+2)>=1,\$S13*VLOOKUP(\$F13,'Distn Curves'!\$C\$19:\$K\$59,5,FALSE),IF(COUNTIF(\$A013:\$AW13,BS\$3-1)>=1,\$S13*VLOOKUP(\$F13,'Distn Curves'!\$C\$19:\$K\$59,6,FALSE),0)))))+IF(\$BB13*VLOOKUP(\$F13,'Distn Curves'!\$C\$19:\$K\$59,7,FALSE),IF(COUNTIF(\$BE13:\$BG13,BS\$3+1)>=1,\$BB13*VLOOKUP(\$F13,'Distn Curves'!\$C\$19:\$K\$59,8,FALSE),IF(COUNTIF(\$BE13:\$BG13,BS\$3-2)>=1,\$BB13*VLOOKUP(\$F13,'Distn Curves'!\$C\$19:\$K\$59,5,FALSE),IF(COUNTIF(\$BE13:\$BG13,BS\$3-1)>=1,\$BB13*VLOOKUP(\$F13,'Distn Curves'!\$C\$19:\$K\$59,9,FALSE),IF(COUNTIF(\$BE13:\$BG13,BS\$3-2)>=1,\$BB13*VLOOKUP(\$F13,'Distn Curves'!\$C\$19:\$K\$59,5,FALSE),IF(COUNTIF(\$BE13:\$BG13,BS\$3-1)>=1,\$BB13*VLOOKUP(\$F13,'Distn Curves'!\$C\$19:\$K\$59,9,FALSE))))))

AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN
												-	-	-
												639	639	639
										(j)=(c)x(i)		2022	2023	2024
(h)										<-(INCLUDES SIDEWALK COSTS)->		2	3	4
												20	21	22

RB = BASE COAT

Useful Life - Base Layer	Base Unit Rate x Length (\$)	Base Unit Rate x Area (\$)	Base Unit + Top Coat Rates x Area (\$)	Replacement Year 1 (RB)	Replacement Year 2 (RB)	Replacement Year 3 (RB)	Replacement Year 4 (RB)	Checking RT for 2022 Balance	Checking RB for 2022 balance	Checking Total for 2022 balance	Backlog-items from before 2022
0.2	90	21,546	129,276	2002	2092	2182	2272	86184	129276	215460.38	129276
0.2	90	26,279	157,677	2002	2092	2182	2272	105118	157677	262794.26	157677
	90	19,393	135,749	2002	2092	2182	2272	90500	135749	226249.13	135749
		17,748	106,489	2037	2127	2217	2307	70993	106489	177481.77	70993
		5,112	34,287	2050	2140	2230	2320	22858	34287	57145.76	22858
				2044	2134	2224	2314	33045	49567	82611.49	33045
					2092	2182	2272	93945	140917	234862.01	

What now?

Excel Workbook - 42MB

1. Operationalize & update...
2. Communicate...

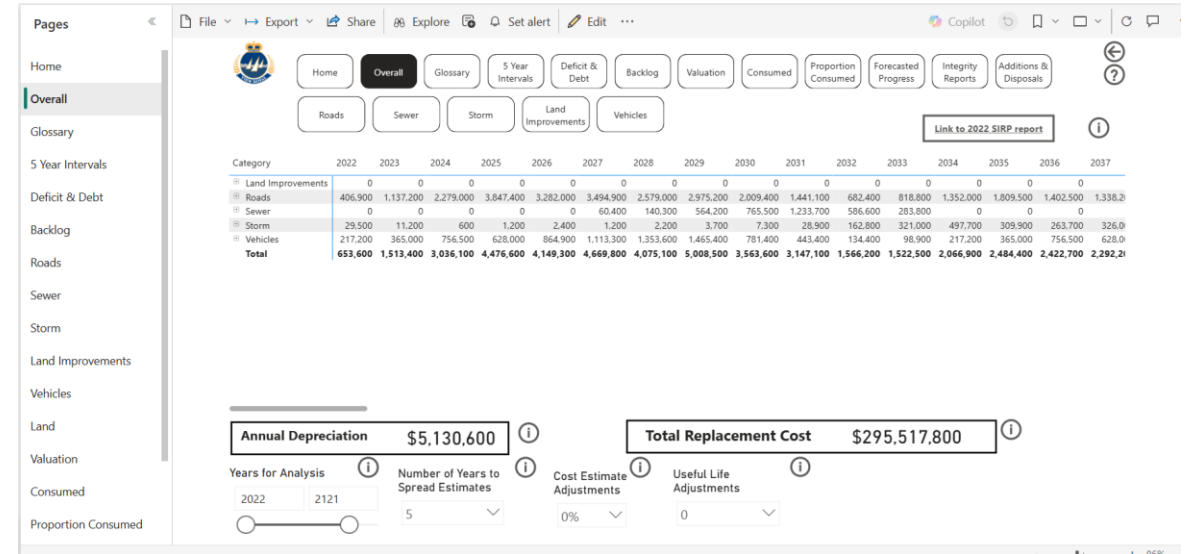
THE SIRP DASHBOARD

using PowerBI

WHAT IT IS - FUNCTIONALITY

DATA PROCESS FLOW

PROS & CONS



The Overview Page



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[Proportion Consumed](#)
[Forecasted Progress](#)
[Integrity Reports](#)
[Additions & Disposals](#)

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[Contributions](#)
[Sensitivity](#)



Category	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	
Land Improvements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Roads	7,048,400	1,580,200	4,595,700	1,087,200	4,494,000	1,684,800	1,634,700	4,500	0	1,852,100	2,831,700	444,500	2,166,900	393,500	201,	
Sewer	0	0	0	0	604,100	193,900	2,836,300	0	0	0	0	0	0	0	0	
Storm	0	5,700	0	0	0	16,100	3,800	0	238,600	1,120,200	7,600	0	579,700	336,000	263,	
Culverts	0	0	0	0	0	0	0	0	0	429,300	0	0	554,200	223,700	260,	
Laterals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Storm Inlet Outlets	0	5,700	0	0	0	3,800	3,800	0	0	20,900	7,600	0	0	0	0	
Catch basin	0	5,700	0	0	0	3,800	3,800	0	0	20,900	7,600	0	0	0	0	
Storm Mains	0	0	0	0	0	12,300	0	0	224,600	650,400	0	0	22,700	109,500		
Storm Manholes	0	0	0	0	0	0	0	0	14,000	19,600	0	0	2,800	2,800	2,	
Vehicles	55,000					100	140,000	326,400	81,600	85,000	55,000	50,000	1,600,000	55,000	900,000	1,010,
Specialized Vehicle						100	70,000	146,400	81,600	85,000	0	0	1,450,000	0	900,000	850,
Fire						100	0	90,000	0	85,000	0	0	1,450,000	0	900,000	850,
Parks						0	70,000	56,400	81,600	0	0	0	0	0	0	
1996 Kubota-23126						0	0	0	81,600	0	0	0	0	0	0	
2006 John Deere #2305-23131						0	70,000	0	0	0	0	0	0	0	0	
Total	7,103,400					2,034,800	4,801,200	86,100	323,600	3,027,300	2,889,300	2,044,500	2,801,600	1,629,500	1,475,	

This value is determined by the replacement cost of each depreciable asset divided by its adjusted useful life (+/- Useful Life Adjustment as chosen in the dropdown at the right). So with Total Replacement Cost of \$295,034,800 divided by average estimated useful life (difficult to show here because it is a weighted value) with an adjustment of 0.0% from the slicer to the right the Annual Depreciation is \$5,124,200.

Annual Depreciation \$5,124,200

Total Replacement Cost \$295,034,800

Years for Analysis

2025 2124

Number of Years to Spread Estimates

1

Cost Estimate Adjustments

0%

Useful Life Adjustments

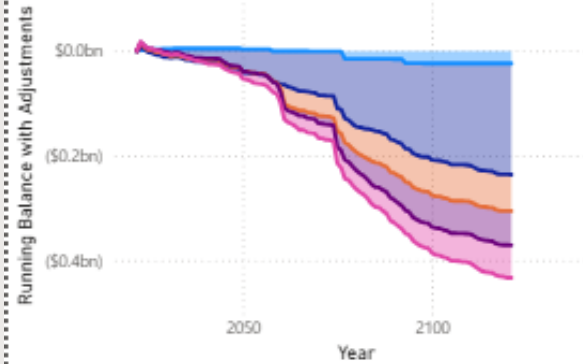
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Scenario Forecasting / Planning



Running Balance with Adjustments by Year and Category

Category ● Land Improvements ● Roads ● Sewer ● Storm ● Vehicles



- Category
- Land Improvements
 - Roads
 - Sewer
 - Storm
 - Vehicles

Years for Analysis

2022 2121

Number of Years to Spread Estimates

1

Cost Estimate Adjustments

0%

Useful Life Adjustments

0

Additional Contributions

\$500,000

Property Tax Increa...

\$200,000

Prop Tax Change-No of Years

10

Annual Utility Tax Increase

200,000

Utility Tax Change-No of Years

10

Year	Initial Balance	Annual Contributions (Forecasted)	Additional Contributions	Property Tax Increase	Utility Tax Increase	Cumulative Contributions	Cumulative Replacement Costs	Interest Income by Year	Interest Expense by Year	Running Balance with Adjustments
2022	\$0			\$0	\$0	0		\$0	\$0	\$0
2023	\$6,531,900	2,493,487	500,000	\$200,000	\$200,000	7,431,900	\$280,900	\$410,487	\$0	\$7,561,487
2024	\$0	1,111,450	500,000	\$200,000	\$200,000	1,300,000	\$3,222,000	\$138,297	\$0	(\$1,783,703)
2025	\$0	924,200	500,000	\$200,000	\$200,000	1,700,000	\$10,325,400	\$0		(\$8,625,400)
2026	\$0	724,200	500,000	\$200,000	\$200,000	2,100,000	\$12,811,300	\$0		(\$10,711,300)
2027	\$0	753,000	500,000	\$200,000	\$200,000	2,500,000	\$18,417,000	\$0		(\$15,917,000)
2028	\$0	789,000	500,000	\$200,000	\$200,000	2,900,000	\$20,823,200	\$0		(\$17,923,200)
2029	\$0	811,000	500,000	\$200,000	\$200,000	3,300,000	\$28,521,300	\$0		(\$25,221,300)
2030	\$0	830,000	500,000	\$200,000	\$200,000	3,700,000	\$30,556,100	\$0		(\$26,856,100)
2031	\$0	856,000	500,000	\$200,000	\$200,000	4,100,000	\$35,357,300	\$0		(\$31,257,300)
2032	\$0	895,000	500,000	\$200,000	\$200,000	4,500,000	\$35,443,400	\$0		(\$30,943,400)
2033	\$0	929,000	500,000	\$0	\$0	4,500,000	\$35,767,000	\$0		(\$31,267,000)
2034	\$0	952,000	500,000	\$0	\$0	4,500,000	\$38,794,300	\$0		(\$34,294,300)
2035	\$0	980,000	500,000	\$0	\$0	4,500,000	\$41,683,600	\$0		(\$37,183,600)
2036	\$0	1,004,000	500,000	\$0	\$0	4,500,000	\$43,728,100	\$0		(\$39,228,100)
2037	\$0	1,033,000	500,000	\$0	\$0	4,500,000	\$46,529,700	\$0		(\$42,029,700)
2038	\$0	1,062,000	500,000	\$0	\$0	4,500,000	\$48,159,200	\$0		(\$43,659,200)
2039	\$0	1,083,000	500,000	\$0	\$0	4,500,000	\$49,634,200	\$0		(\$45,134,200)
2040	\$0	1,106,000	500,000	\$0	\$0	4,500,000	\$51,495,100	\$0		(\$46,995,100)
2041	\$0	1,129,000	500,000	\$0	\$0	4,500,000	\$54,321,800	\$0		(\$49,821,800)
2042	\$0	1,146,000	500,000	\$0	\$0	4,500,000	\$54,469,400	\$0		(\$49,969,400)
2043	\$0	1,165,000	500,000	\$0	\$0	4,500,000	\$54,959,000	\$0		(\$50,459,000)
2044	\$0	1,197,000	500,000	\$0	\$0	4,500,000	\$56,306,000	\$0		(\$51,806,000)
2045	\$0	1,217,000	500,000	\$0	\$0	4,500,000	\$62,219,000	\$0		(\$57,719,000)
2046	\$0	1,241,000	500,000	\$0	\$0	4,500,000	\$66,175,000	\$0		(\$61,675,000)

Forecasted Interest Income Rate over 100 years

- 1.00%
- 1.50%
- 2.00%
- 2.50%
- 3.00%
- 3.50%
- 4.00%
- 4.50%

Forecasted Interest Expense Rate over 100 Years

- 2.00%
- 2.50%
- 3.00%
- 3.50%
- 4.00%
- 4.50%
- 5.00%
- 5.50%



Backlog – Assets overdue for Replacement



Years

2025

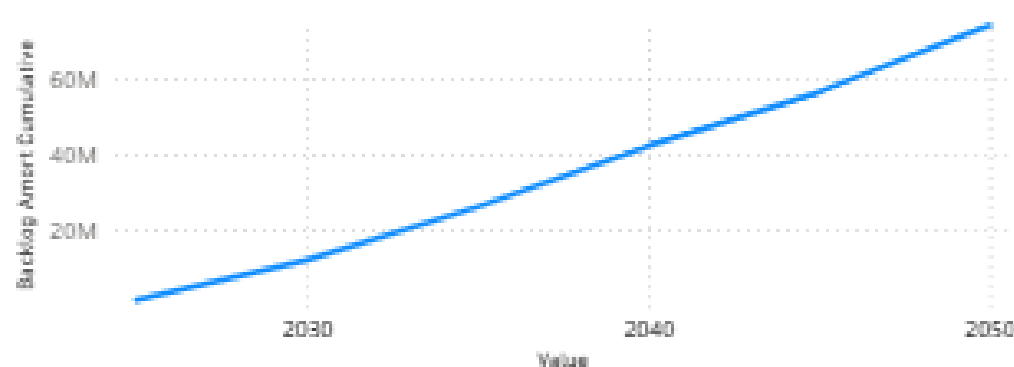
2124



Backlog Amortization Schedule

Category	2025	2026	2027	2028	2029
Land Improvements					
Roads	896,300	896,300	896,300	896,300	896,300
Sewer					
Storm	4,100	4,100	4,100	4,100	4,100
Vehicles	310,100	310,100	310,100	310,100	310,100
Total	1,210,500	1,210,500	1,210,500	1,210,500	1,210,500

Backlog Amort Cumulative by Value



Note: This chart assumes assets are replaced at the end of adjusted useful life.

Number of Years to Amortize Backlog



25



Category

- Land Improvements
- Roads
- Sewer
- Storm
- Vehicles

Backlog & Consumed \$'s & %'s

Category	Description	Replacement Cost	Backlog %	Backlog \$	Consumed %	Consumed \$
Land Improvements		\$28,706,000	0.0%	\$0	35%	\$10,160,700
Roads		\$120,898,400	18.5%	\$22,407,100	62%	\$75,030,900
Sewer		\$70,606,600	0.0%	\$0	48%	\$34,152,700
Storm		\$66,601,800	0.2%	\$100,700	38%	\$25,276,600
Vehicles		\$8,222,000	94.3%	\$7,753,000	99%	\$8,108,100
Total		\$295,034,800	10.3%	\$30,260,800	52%	\$152,729,000

Cost Estimate Adjustments

Useful Life Adjustments

0%

0

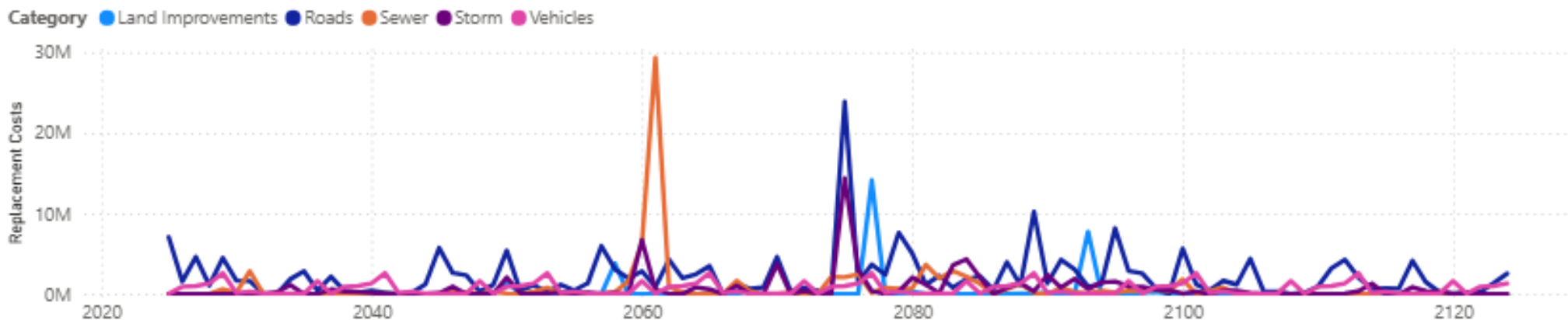


Deficit & Debt

Category

- Land Improvements
- Roads
- Sewer
- Storm
- Vehicles

Replacement Costs by Year and Category (Not including Land)



Note: This chart assumes assets are replaced at the end of adjusted useful life.



Category	Replacement Cost	Consumed %	Sustainable Reserve Target	Proportionate Share of Actual Reserve Balances	Accumulated Infrastructure Funding Gap
Land Improvements	\$28,706,000	35%	\$10,160,300	\$434,600	\$9,725,700
Roads	\$120,898,400	62%	\$74,958,000	\$3,206,300	\$71,751,700
Sewer	\$70,606,600	48%	\$34,194,700	\$1,462,700	\$32,732,000
Storm	\$66,601,800	38%	\$25,282,100	\$1,081,400	\$24,200,700
Vehicles	\$8,222,000	99%	\$8,108,100	\$346,800	\$7,761,300
Total	\$295,034,800	52%	\$152,703,100	\$6,531,900	\$146,171,200

Years

2025 2124



Useful Life Adjustments

0 v



Cost Estimate Adjustments

0% v



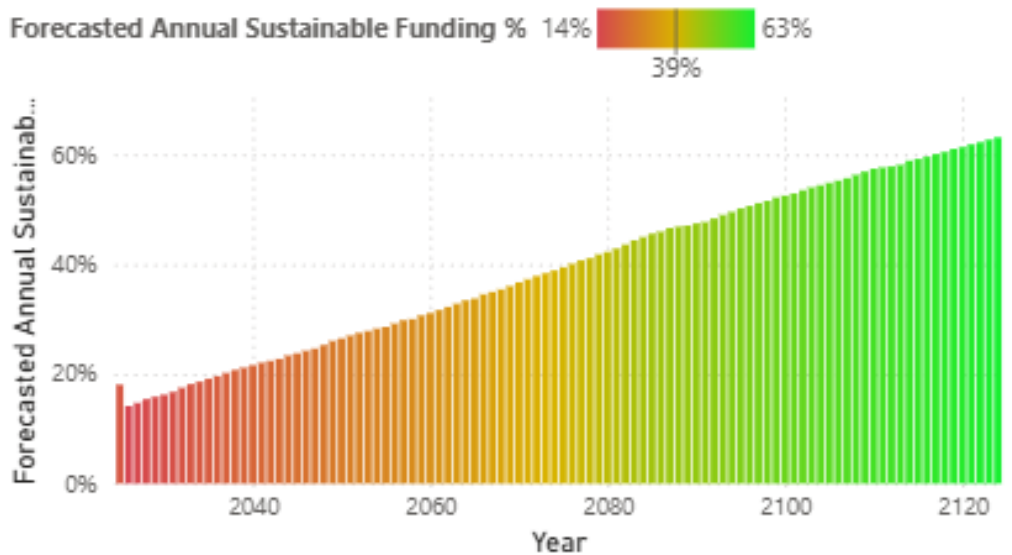
Number of Years to Spread Estimates

1 v





Forecasted Progress for the Years 2025-2124



The Town's Accumulated Infrastructure Funding Gap is estimated to be \$146.2M. Since assets are estimated to be 51.8% consumed, the sustainable reserve value would be the replacement value of depreciable assets (\$295.M) x consumption (51.8%) less actual reserves of \$6.5M equaling \$146.2M.

Years

2025 2124



Useful Life Adjustment Options

0

Cost Estimate Adjustments

0%

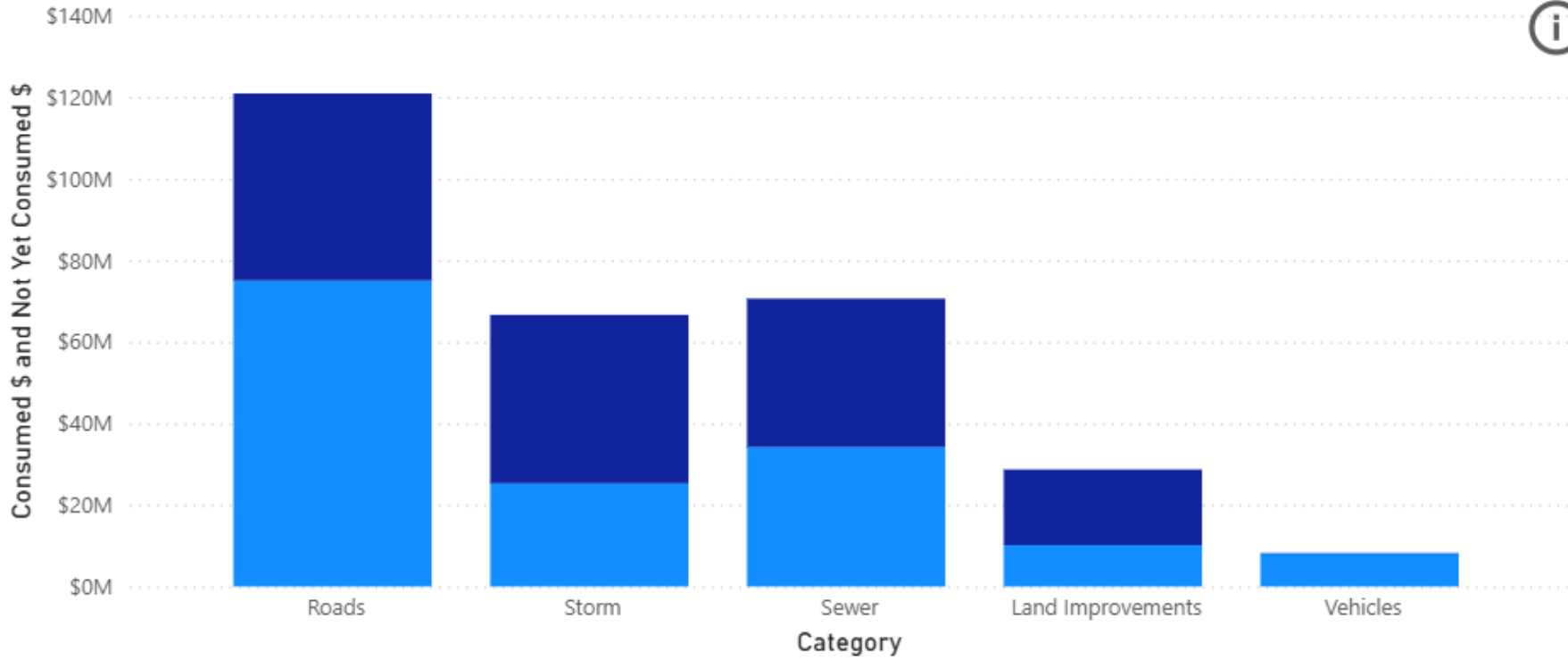
Year	Annual Contributions	Annual Depreciation
2025	924,200	\$5,124,200
2026	724,200	\$5,124,200
2027	753,000	\$5,124,200
2028	789,000	\$5,124,200
2029	811,000	\$5,124,200
2030	830,000	\$5,124,200
2031	856,000	\$5,124,200
2032	895,000	\$5,124,200
2033	929,000	\$5,124,200
2034	952,000	\$5,124,200
2035	980,000	\$5,124,200
2036	1,004,000	\$5,124,200
2037	1,033,000	\$5,124,200
2038	1,062,000	\$5,124,200
Total	200,438,400	\$5,124,200



Consumption Analysis for the Years 2025-2124

Consumed \$ and Not Yet Consumed \$ by Category

● Consumed \$ ● Not Yet Consumed \$



Years

2025 2124



Useful Life Adjustment Options



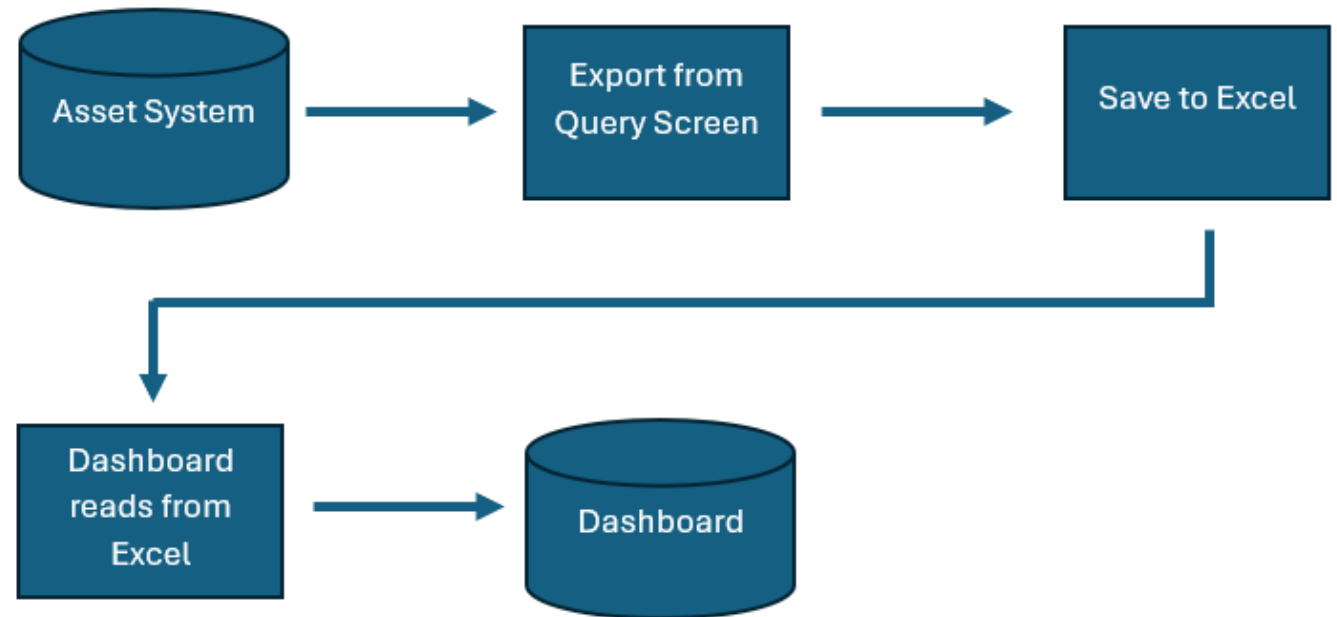
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DATA PROCESS FLOW

Asset system: PSD Citywide

1. Export as data table (Excel)
2. Data transformation (PowerBI)
3. Customize and Publish (PowerBI)

Dashboard: Teams, SharePoint, etc.



Questions & Discussion

The AI factor

Business factors

Next steps...

Data interpretation
(human vs. artificial)

AI agent

Trademark –
Method, not a
product

Ongoing
support?

Further
development

Community of
practice

CONTACTS



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