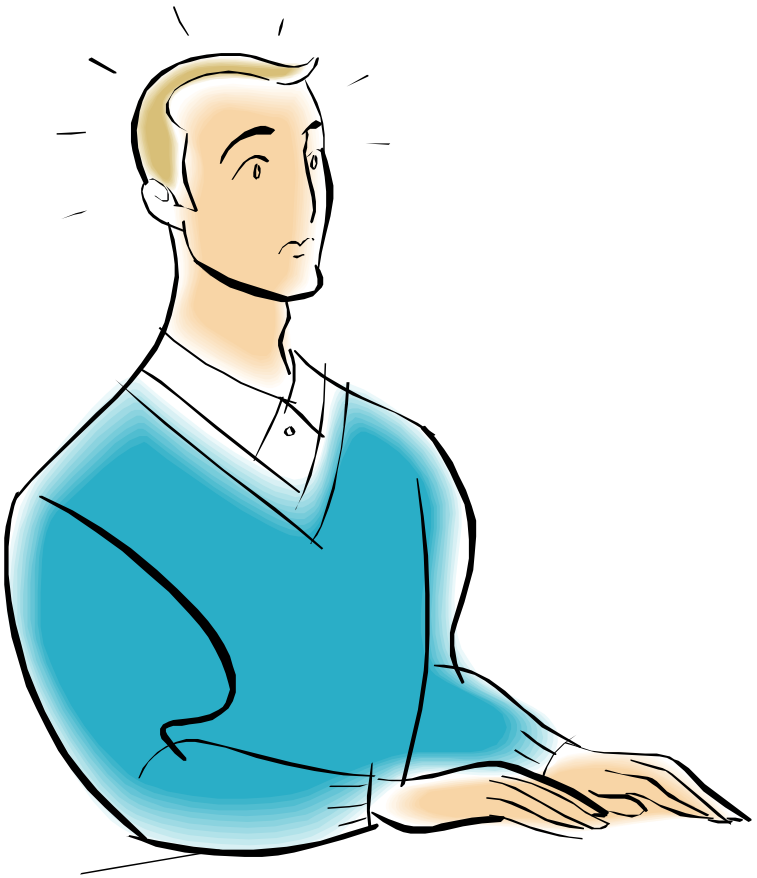
Fundamentals of Asset Management

Step 9. Determine Funding Strategy

A Hands-On Approach

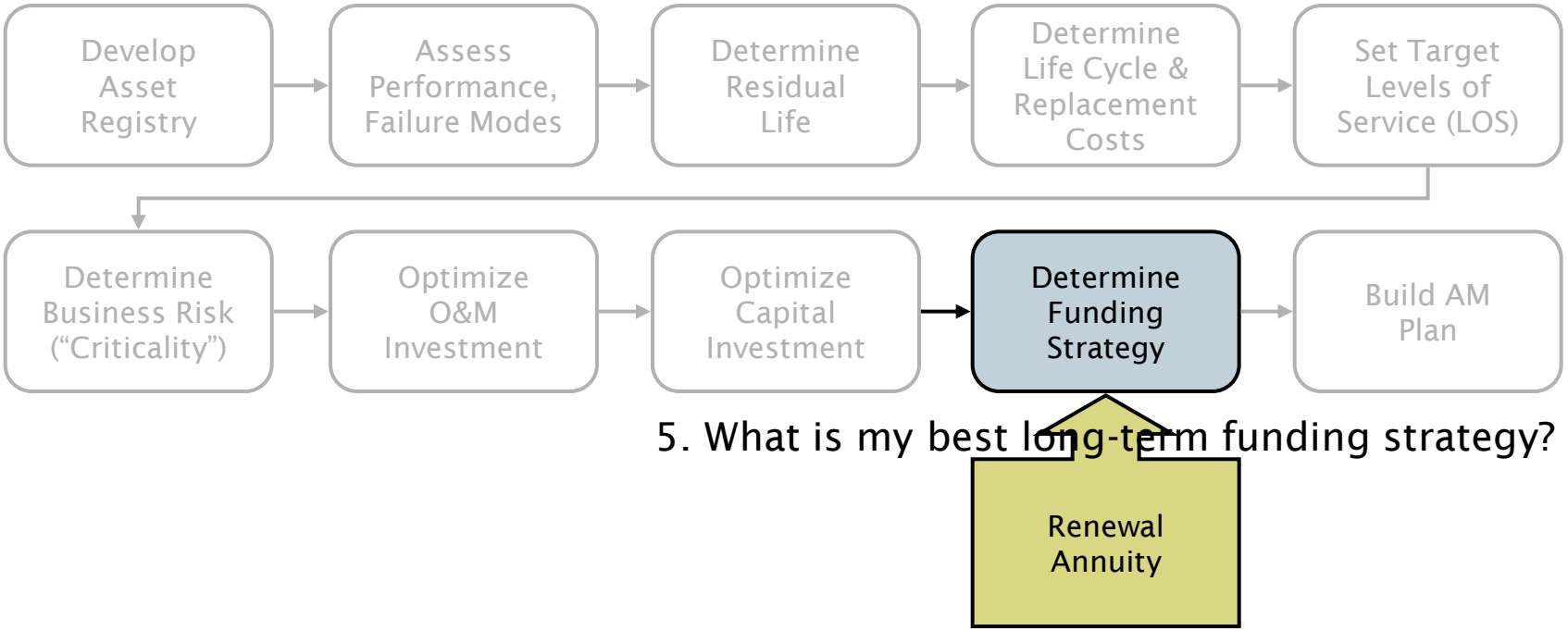
Tom’s bad day…



Fifth of 5 core questions

5. What is my best long-term funding strategy?

AM plan 10-step process



Asset management investment planning elements

- Capital investment
  - Renewal (repair, refurbish, replace)
  - Augmentation (capacity, functionality)
- Maintenance investment
  - Planned
    - Preventive
    - Predictive
    - Corrective
  - Unplanned
- Operations investment

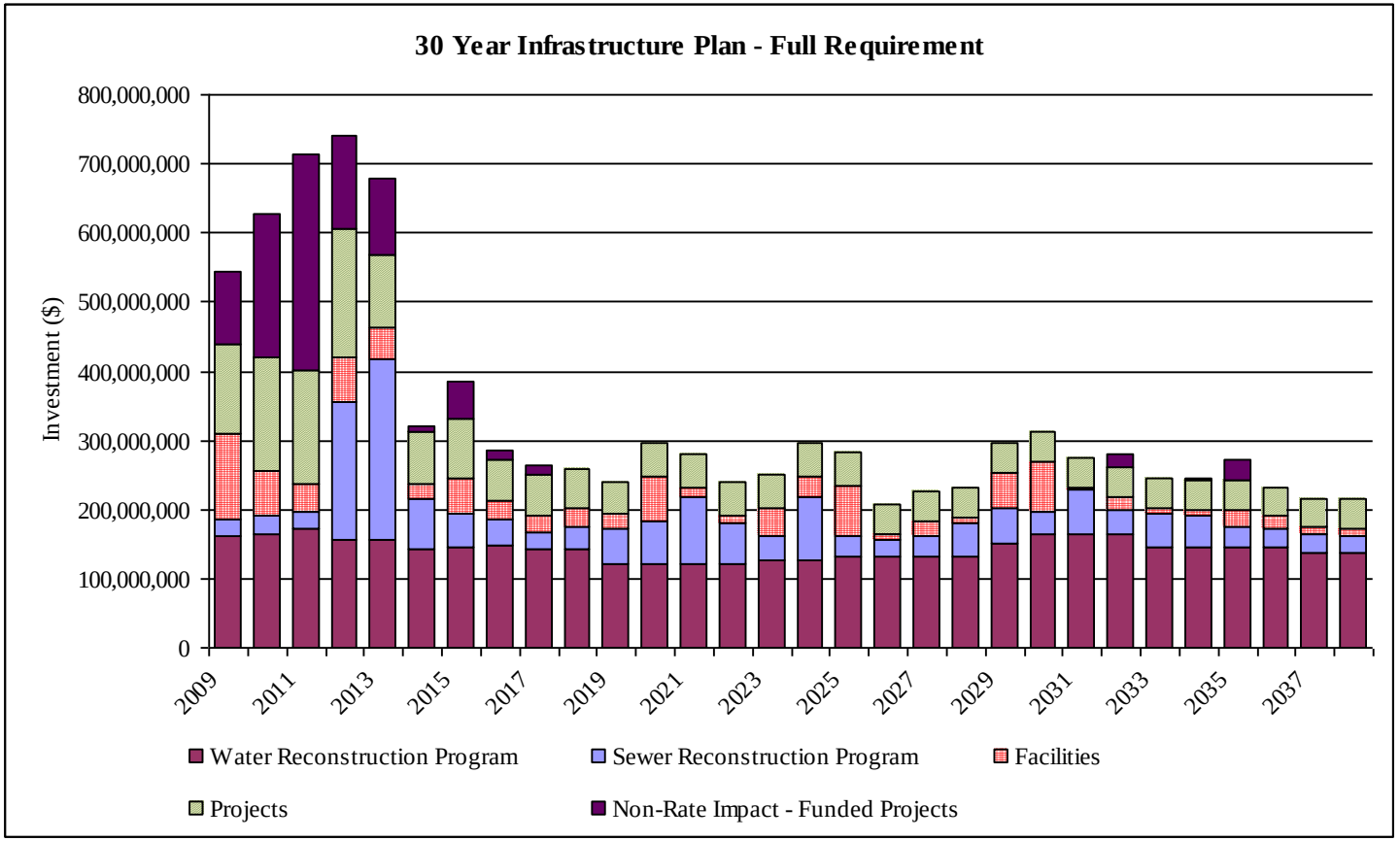
  Operations cost trends

Life-cycle projected costs

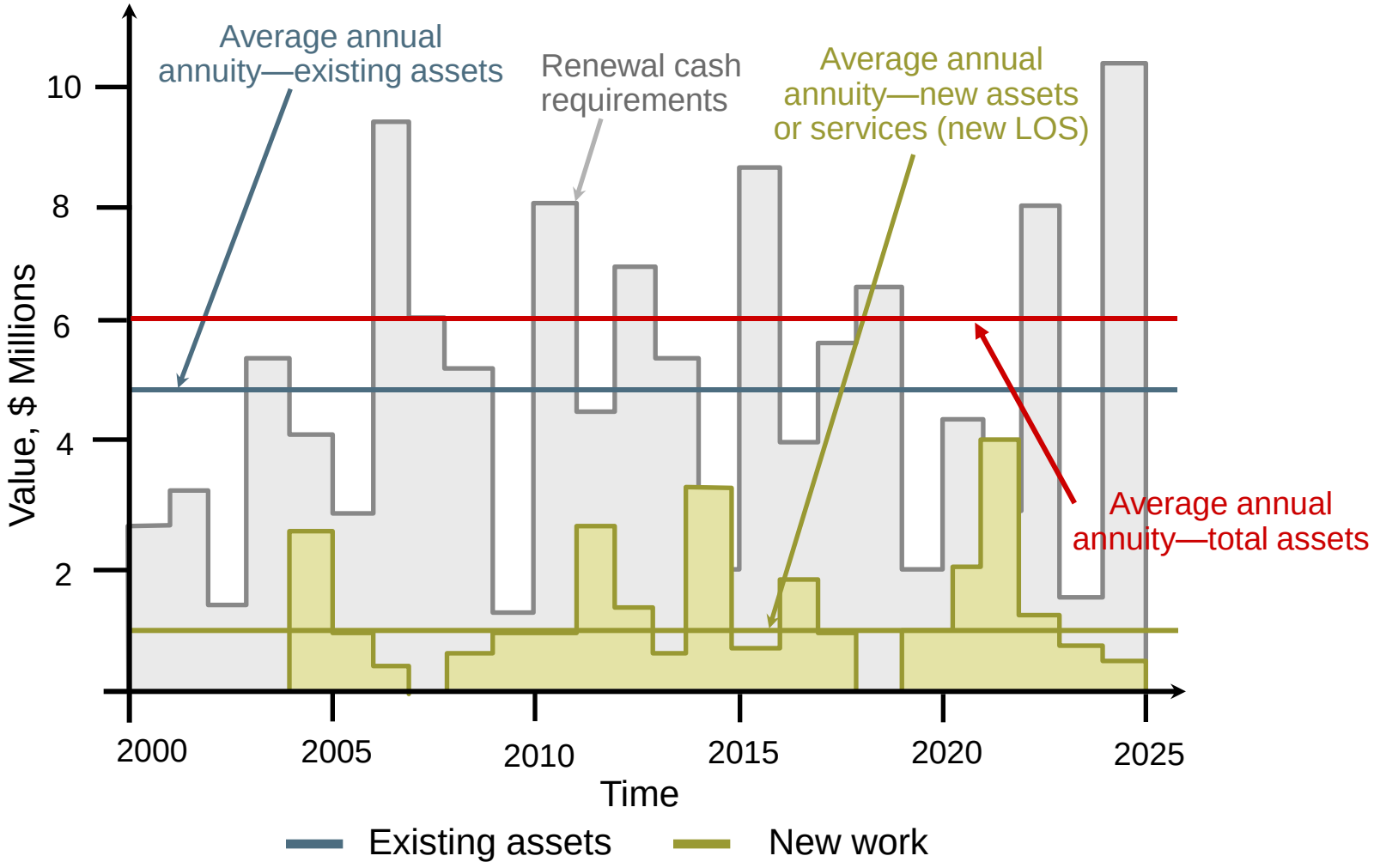
From the strategic AM funding perspective

- From a strategic AM funding perspective, two separate fundamental management questions:
  - How many/when – how many assets of a particular class are likely to fail within a specific timeframe? (used to build the "nessie curve – a projection of future expected costs)
  - Which/when – which specific assets are likely to fail in a given timeframe? (used to build the detailed CIP budget)

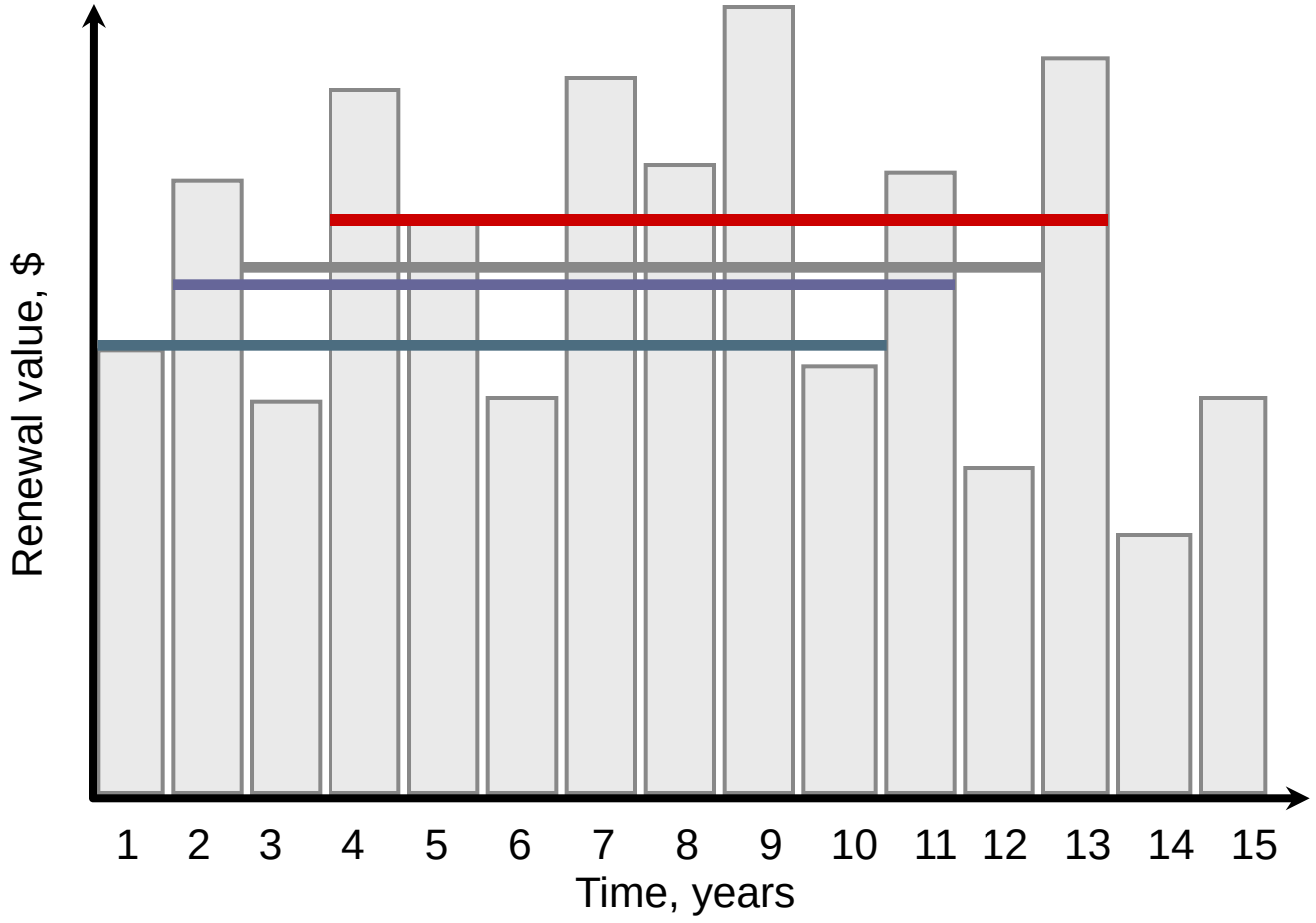
Strategic level - *how many* assets in timeframe period and at what cost each (this sets funding framework)



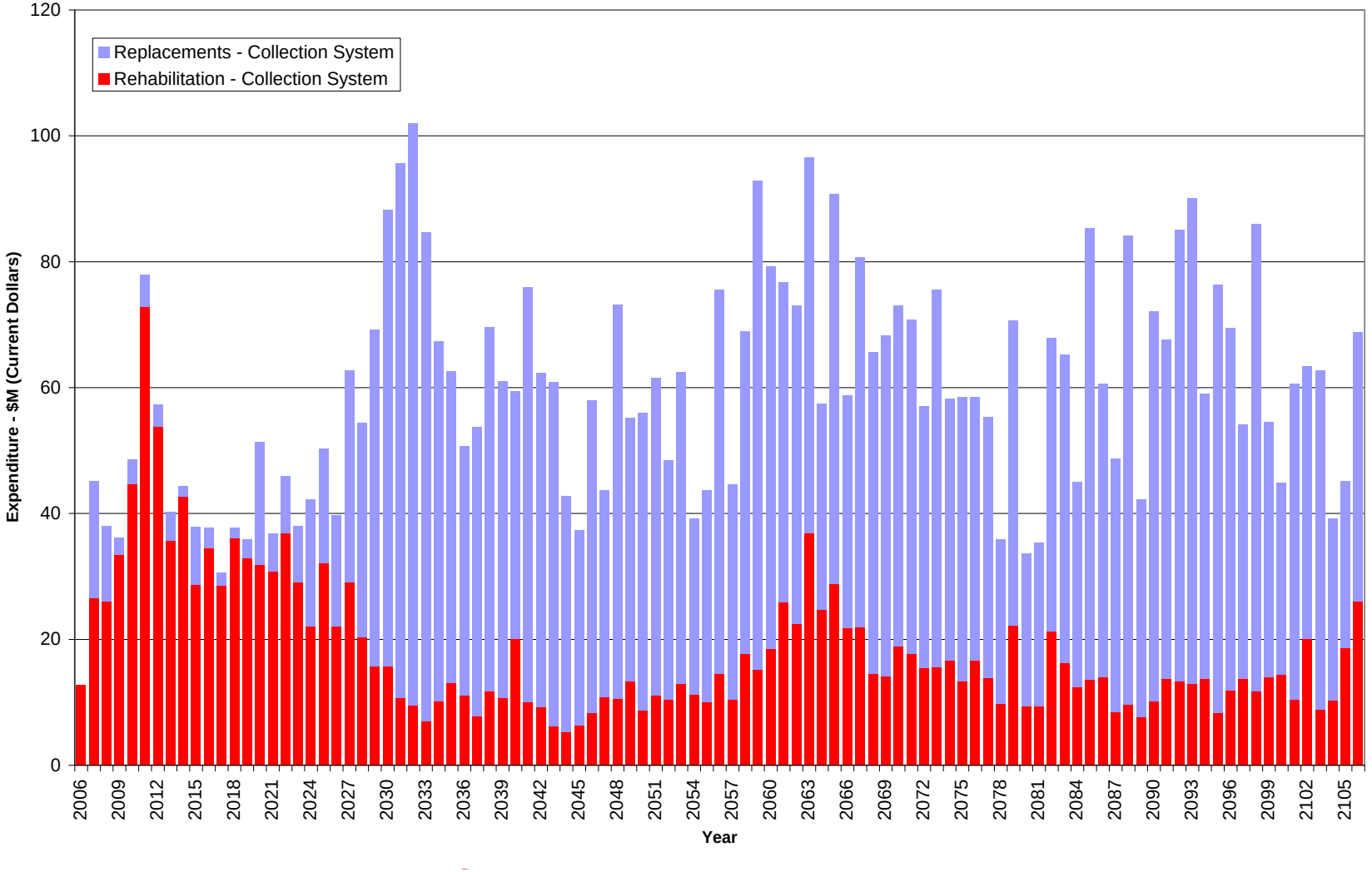
Renewal programs



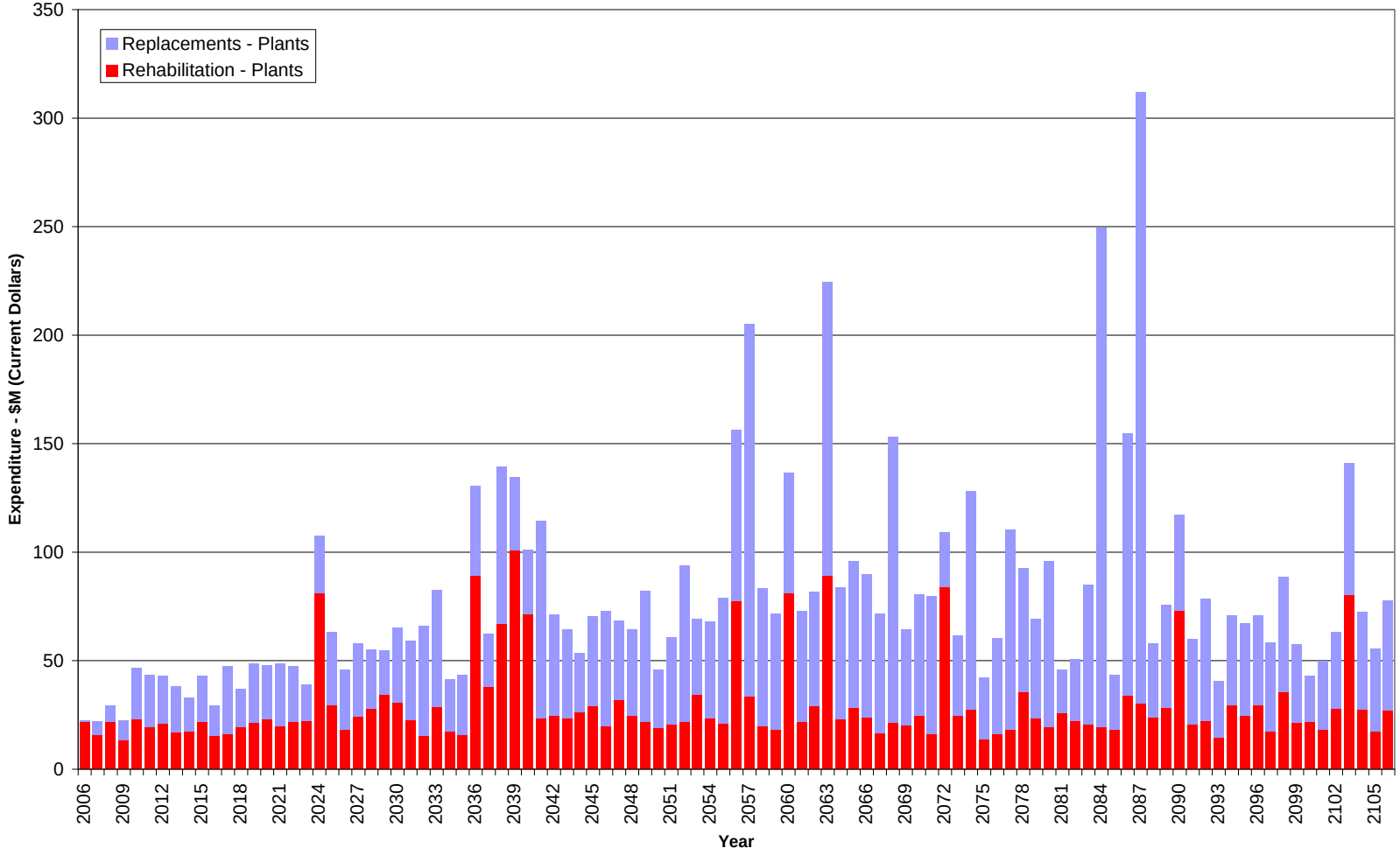
Rolling annuities – 10 year example



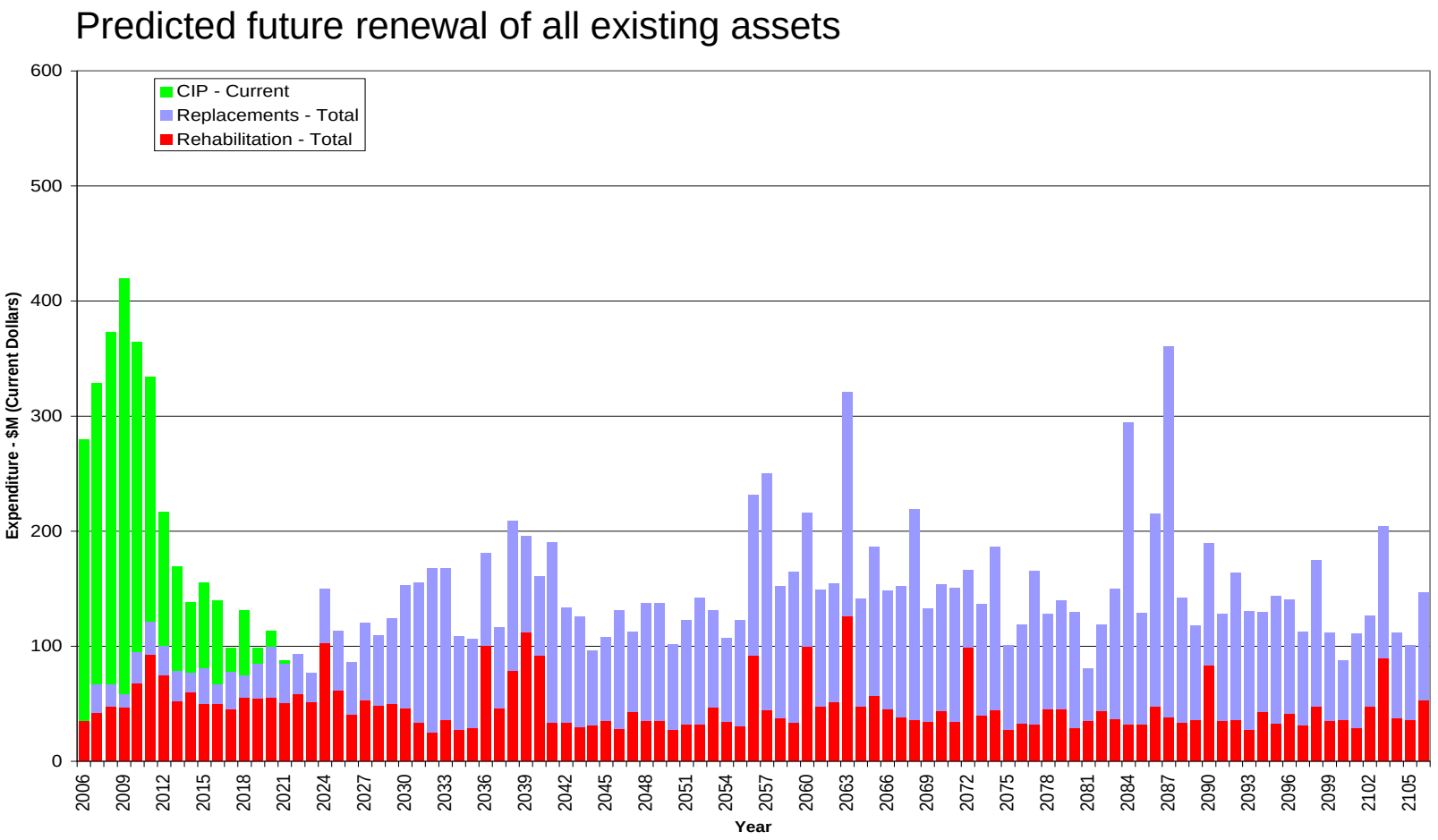
Renewal - Collection



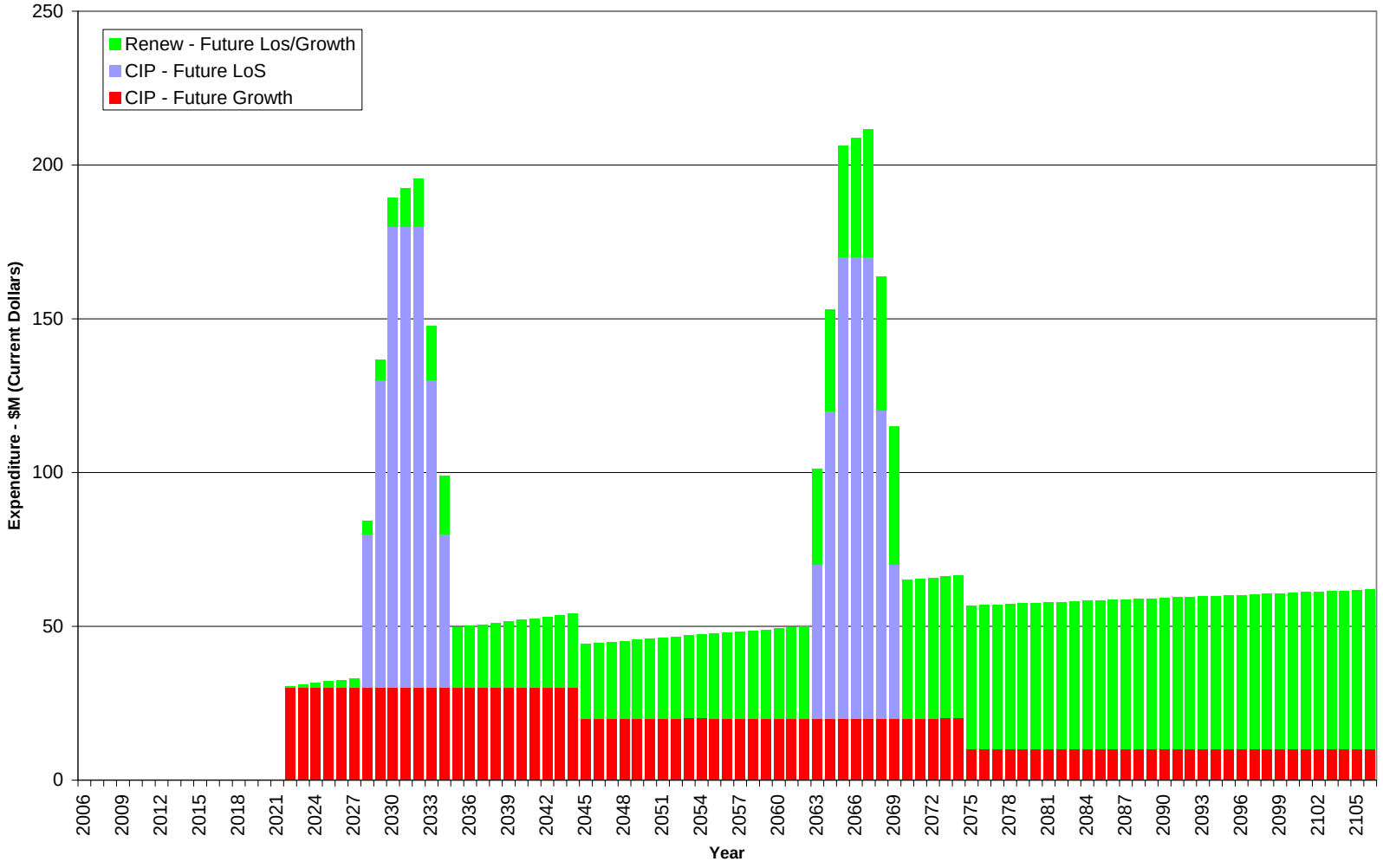
Renewal – Treatment Plants



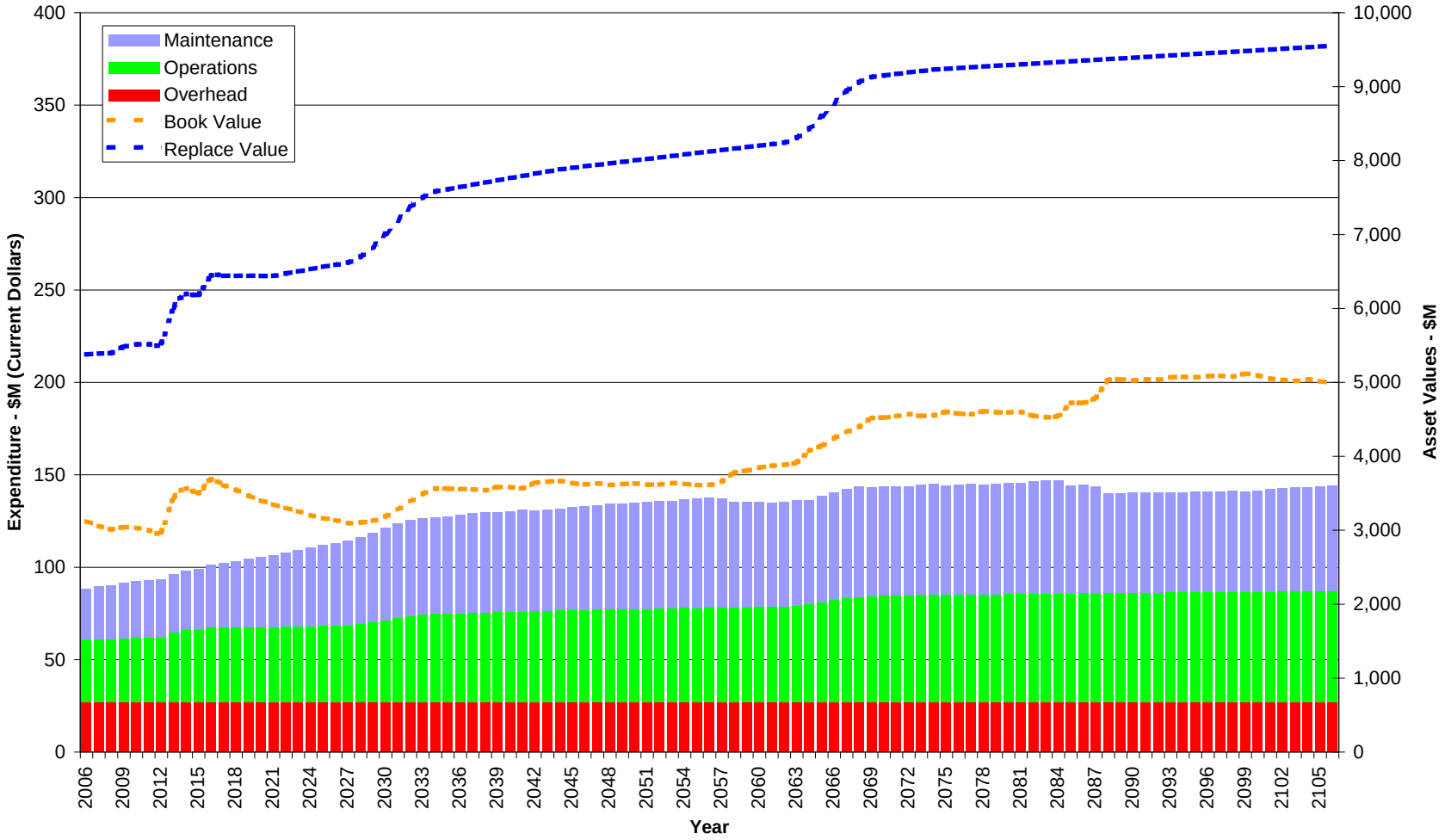
Total projected renewal costs – “legacy costs”



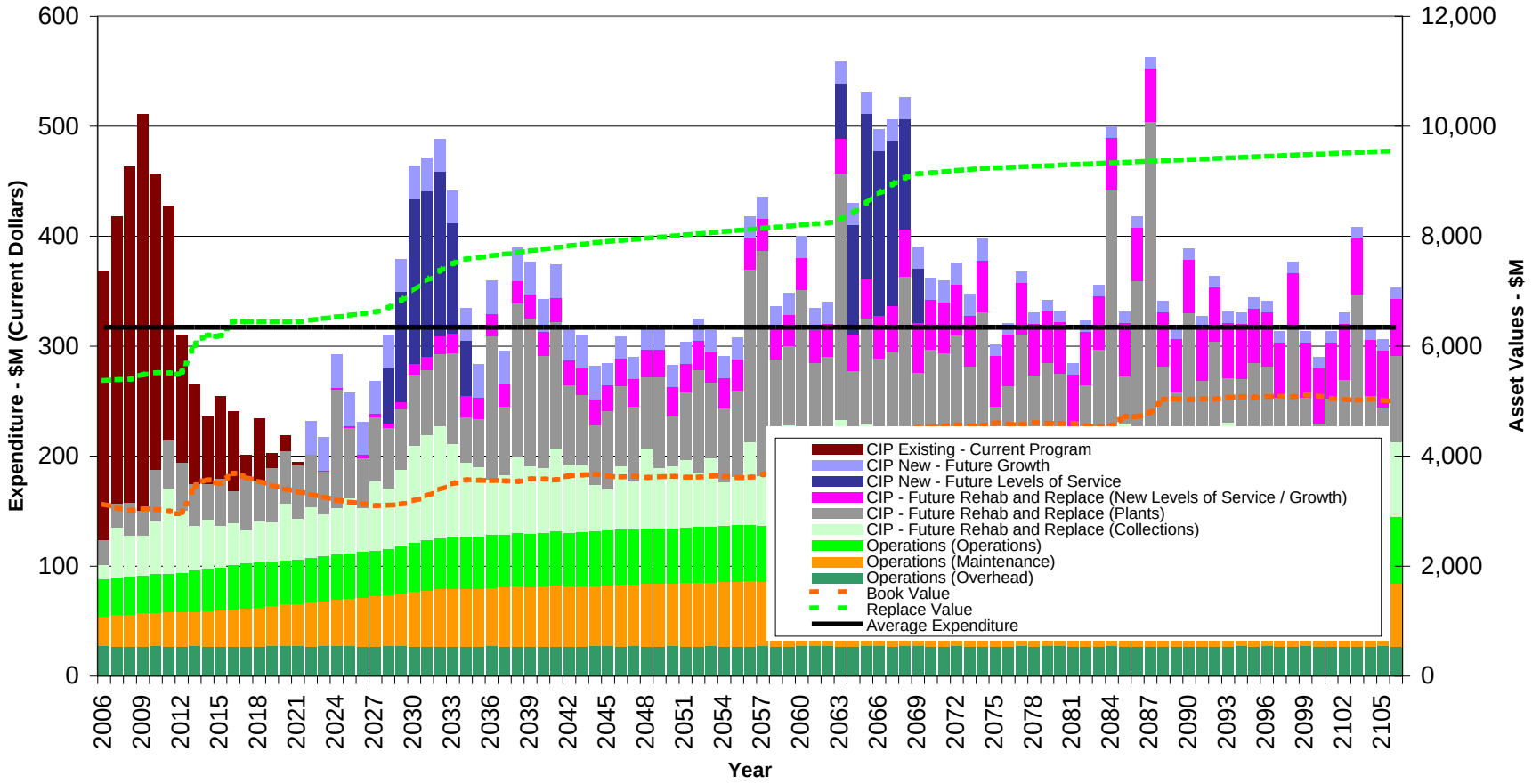
Future Growth and LOS



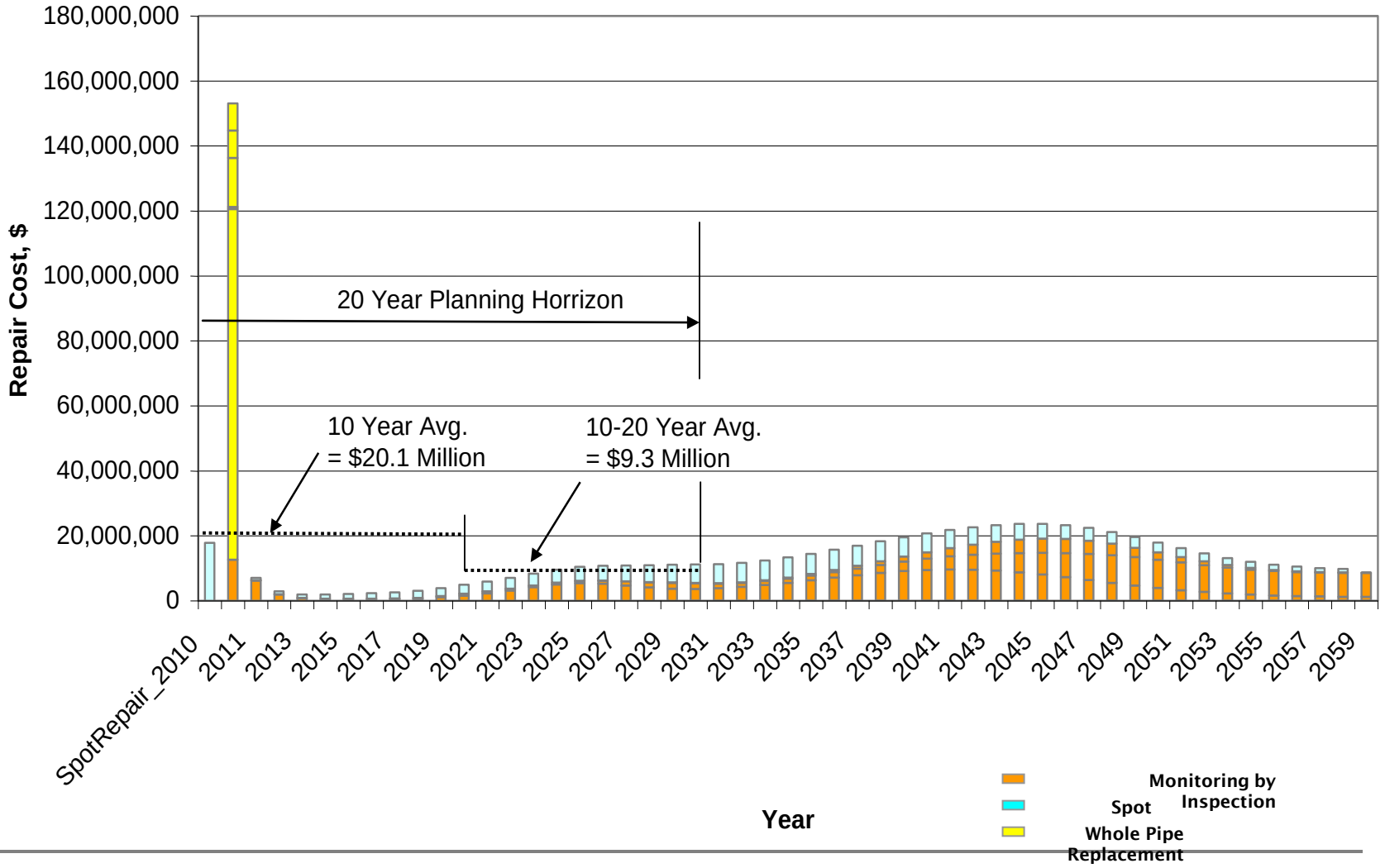
Operations and Maintenance



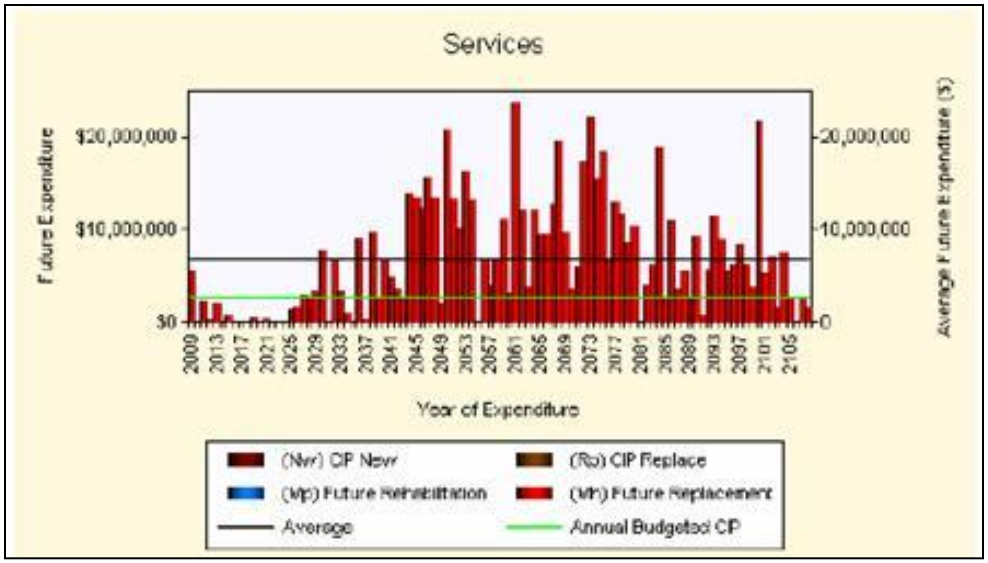
Total projected (optimized) costs



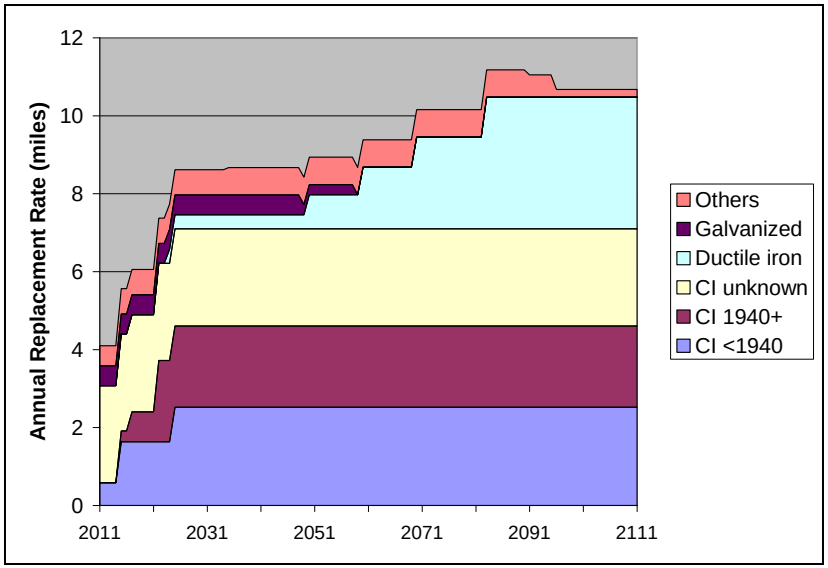
Estimated *Long Term* Pipe Rehabilitation Costs



Projected service line replacement need



Estimate of a sustainable level of pipeline replacement



Tactical level – *which* assets *within a CIP cycle* (list of capital projects)

ID	District	Facility	Process Area	Involved Assets	BRE of Asset	Description of Project	Source
DISTRICTS 1, 4 AND 5							
1	1	Collection System	Various	Collection System		I/I Rehabiliation	Existing CIP
2	1	Pump Station	Industrial Parkway	Ind Pkwy PS - Below Ground Structure	63	Perform vibration analysis, pumping evaluation, design new pumps, replace pumps, evaluate control system	At-Risk Assets
3	1	Pump Station	Cayuga	Cayuga PS - HVAC	45	Replace Wet well Roof AHU	At-Risk Assets
		Pump Station	Industrial Parkway	Ind Pkwy PS - HVAC	45	Replace Wet and Dry Well Roof AHU	
4	1	Pump Station	Cayuga	Wet Well Chain Pull	50	Redesign wet well chain pull to remove comminutors	At-Risk Assets
	4	Pump Station	Depew	Cranes	21	Redesign crane system	
		Pump Station	Vanderbilt	Cranes	30	Redesign crane system	
		Pump Station	Broadway East	Cranes		Redesign crane system	
5	4	Pump Station	Depew	ORF Chlorine Chamber/Gates	30	Add additional gates to drain CCT	At-Risk Assets
				ORF Washwater Fill Pump Station	30	Redo submersible pump station and creek intake	
				ORF Washwater Pumps	21	Replace ORF washwater pump	
				Flow meters/Force Main Ball Valve	30	Remove and replace valve stem, repair flow meter, modify valve chamber so valve can be easily lifted out	
				Flow Meters/ORF Ball Valve	30	Repair flow meter, modify valve chamber so valve can be easily lifted out	
6	4	Pump Station	Bowmansville	Wastewater Pumps	20	Evaluate pumps and piping and replace as necessary	At-Risk Assets
7	4	Pump Station	Vanderbilt	Pumping System/Force Main Evaluation	40	Evaluate capacity of pumping system, resize pumps if necessary.	At-Risk Assets
8	4	Pump Stations	Aurora N/Aurora S	Pump Stations		Various Improvements	Existing CIP
9	5	Pump Station	Eastern Hills	EHPS - Below Ground Structures	81	Replace below-ground steel structures with FRP	At-Risk Assets
10	5	Collection System	Transit Road	Collection System		Replacement of ACP	Existing CIP
11	5	Collection System	Goodrich Road	Collection System		Various Improvements	Existing CIP
12	5	Collection System	Spaulding Lakes	Collection System		Various Improvements	Existing CIP

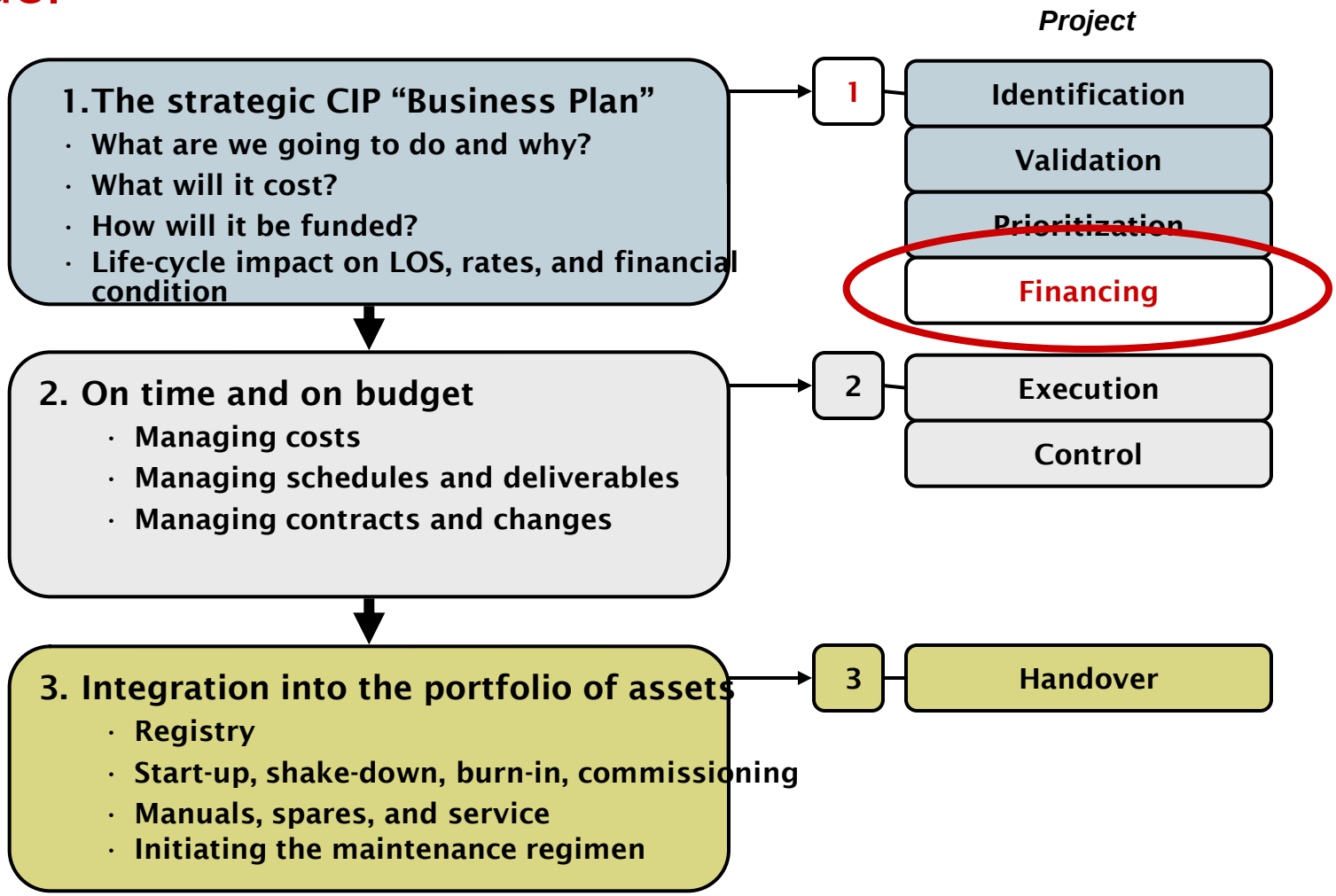
Financing strategies

- “Pay as you go” – current revenues
  - Dedicated reserve account (‘hands off”)
  - Replacement/renewal recovery fee embedded in rate structure
- “Pay as you use” – debt service
  - “slice of debt service”
  - “intergenerational equity”
  - Interest as an expense that reduces available capital

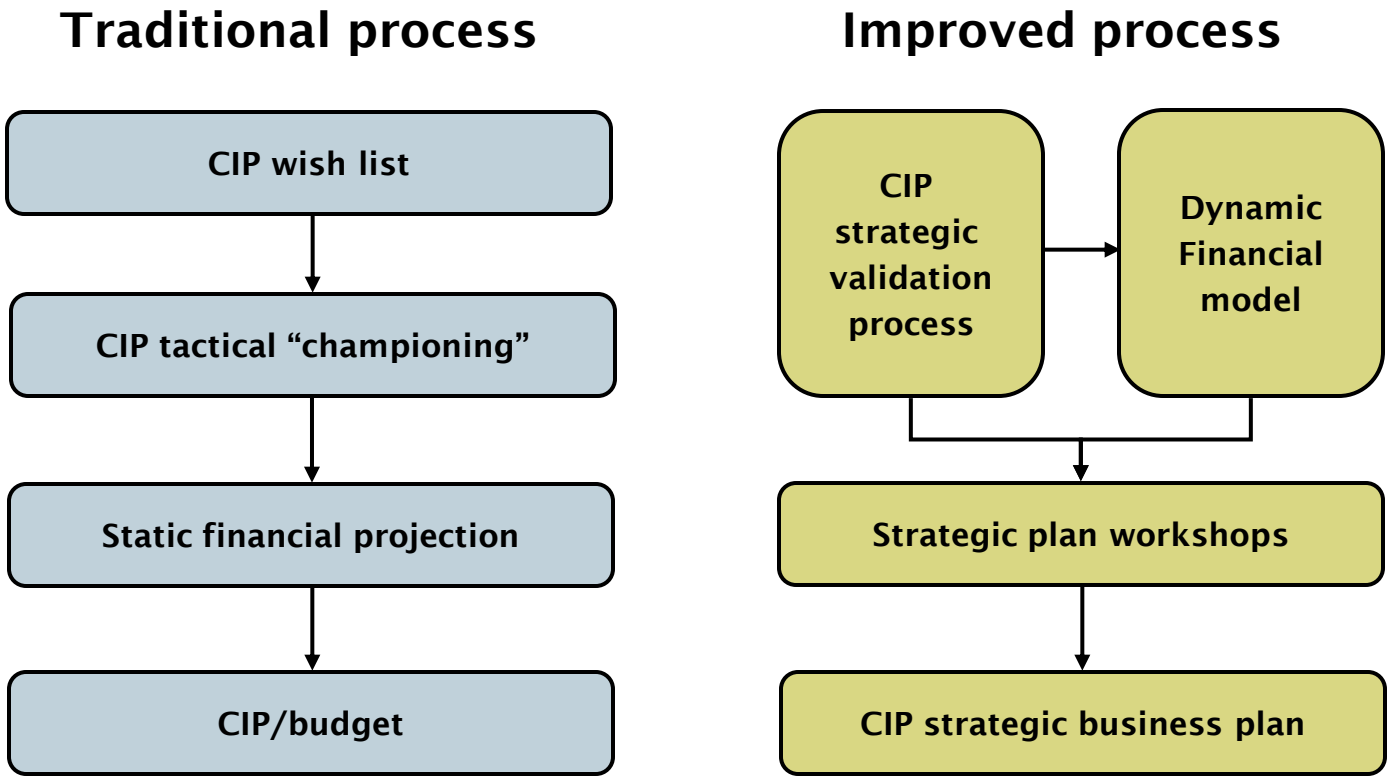
Renewal funding

- Depreciation is not a funding source unless it is specifically appropriated in the operating budget and assigned as a revenue source to a specific fund
- A more adequate renewal fund level mechanism should be based on replacement cost, ideally condition based replacement cost
- Renewal funds are a major council/commission/board target in tough budget times

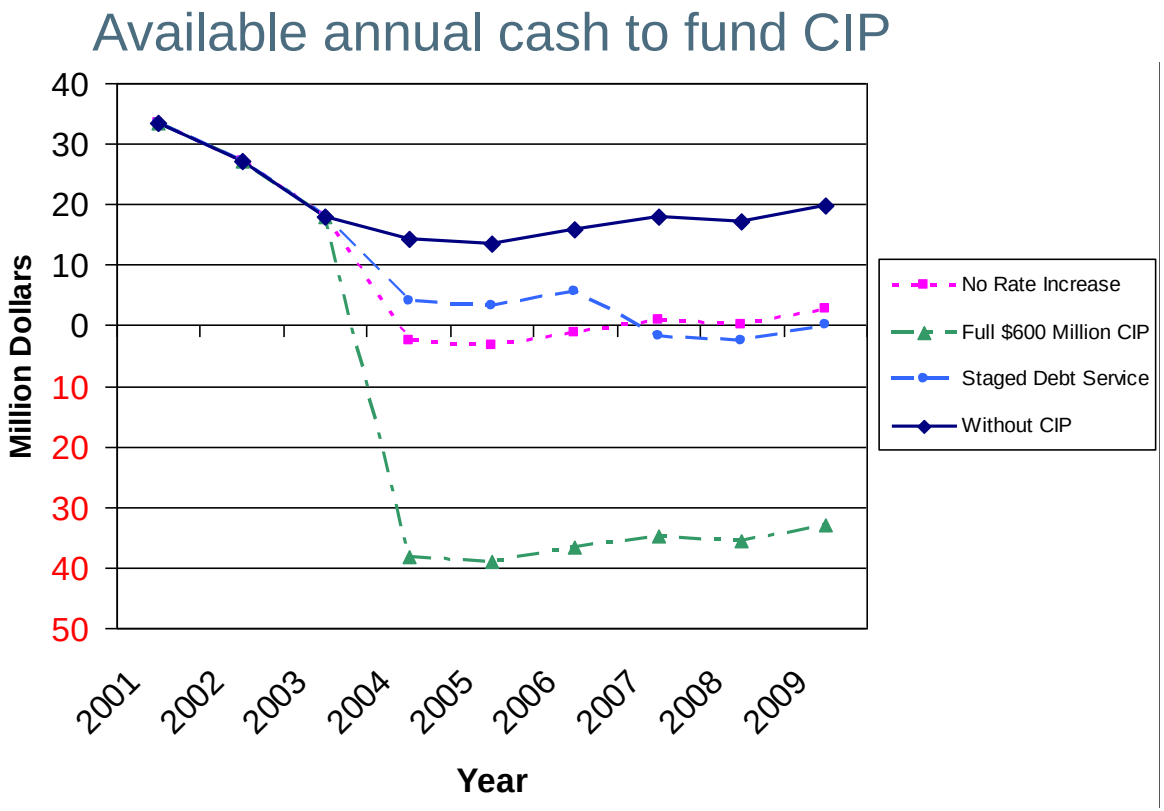
Deriving the CIP investment program – a best practice model



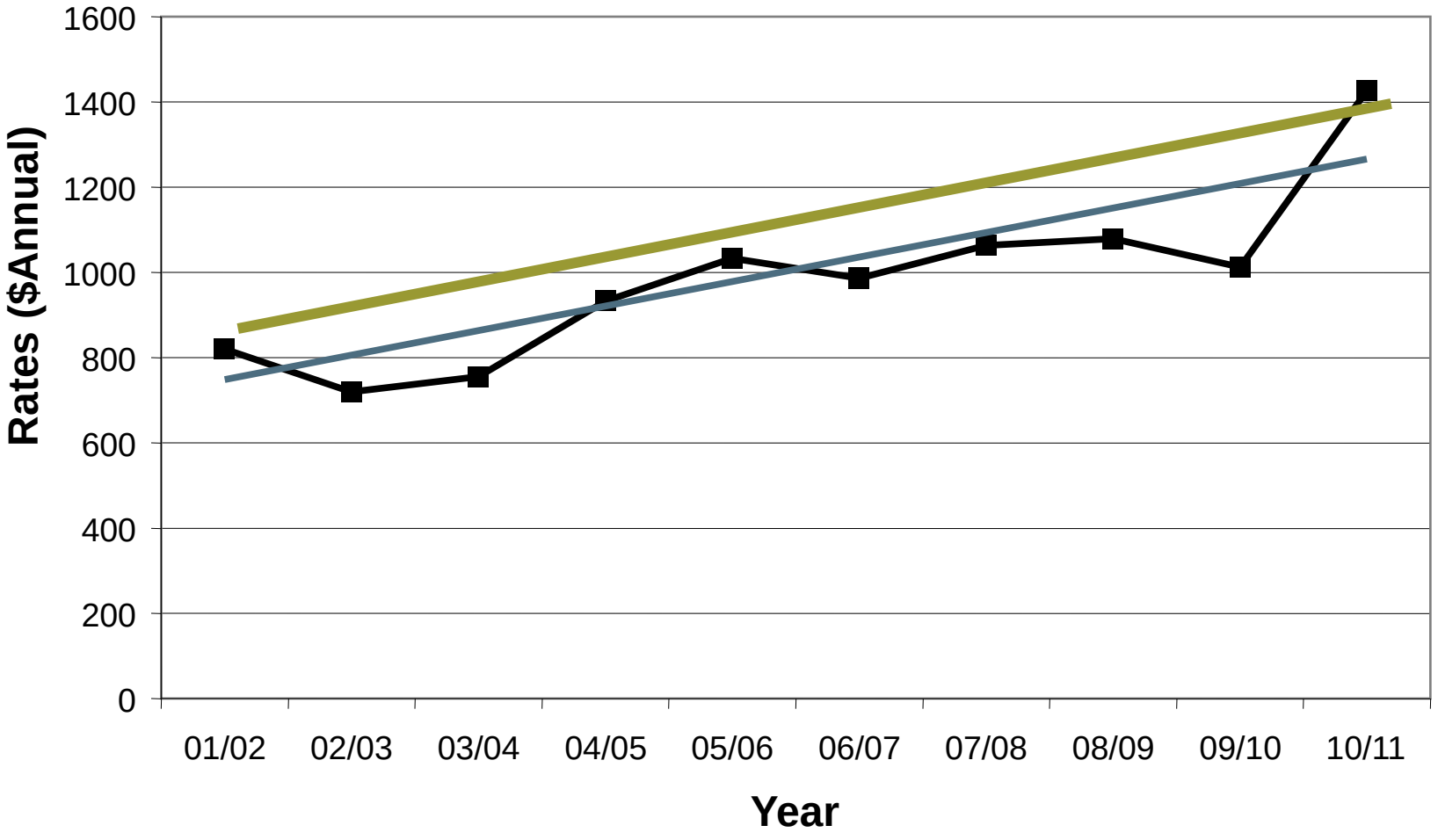
The strategic CIP financial planning model



Cash impact by scenario



Projected rates over time by financing scenario



Key points from this session

What is my best long term funding strategy?

Key Points:

- "Full economic cost" is the foundation concept from which effective financial decision-making is made.
- Replacement and refurbishment cost, not historic depreciation, is key to good financial decision-making
- "Long-term Annualized Renewal Annuity" provides the baseline funding for sustained performance.
- Telling the asset consumption "story" in simple, effective, big-picture terms sets the stage for LOS discussion and business risk based decision-making.

Associated Techniques:

- Valuation techniques
- Net Present Value
- Optimized replacement cost tables
- Optimized portfolio-wide, life-cycle financial projections
- Capital investment strategies
- Telling the story with confidence

Tom's spreadsheet