

Trade-off in Pavement Management

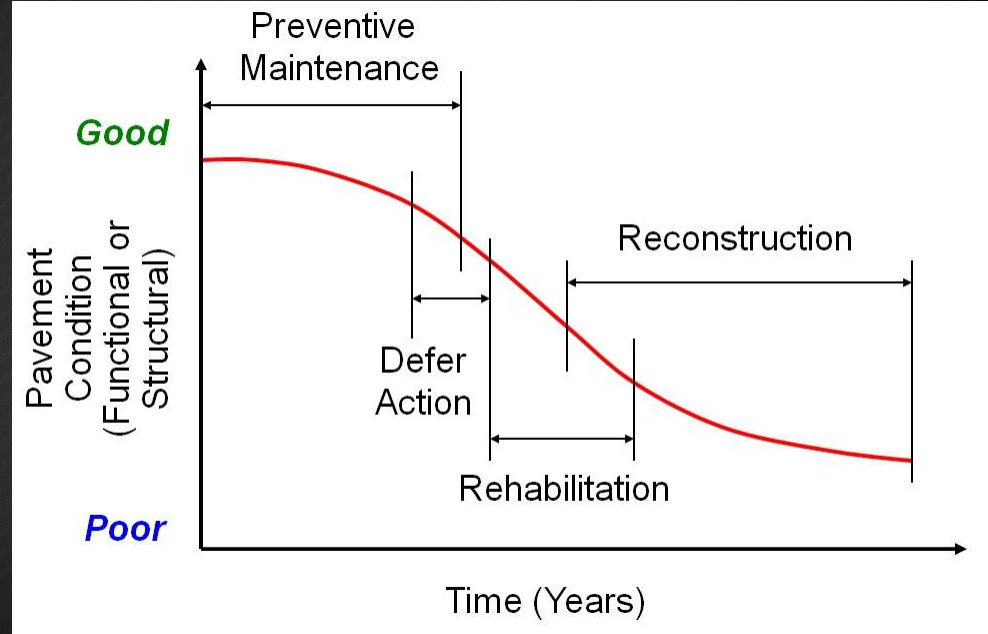
Trade-off Considerations within the context of Pavement Management

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Background

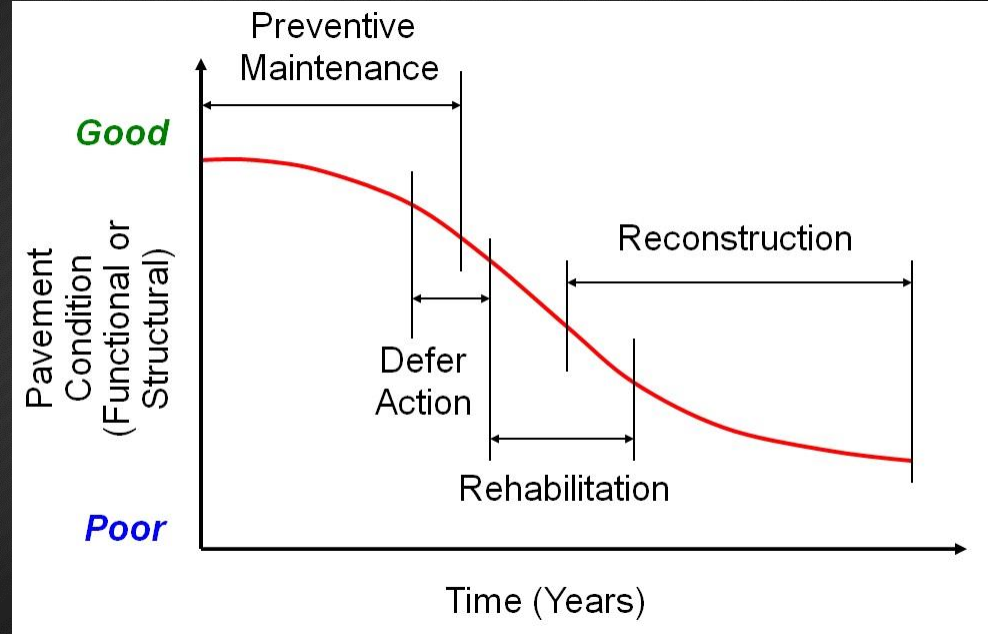
- We've all seen the standard graph – preservation at top, reconstruction at the bottom



- Gary Hicks I believe

Condition Distribution

- Pavements are often in a range of conditions
- Some in relatively good condition; some not so much...



- Gary Hicks I believe

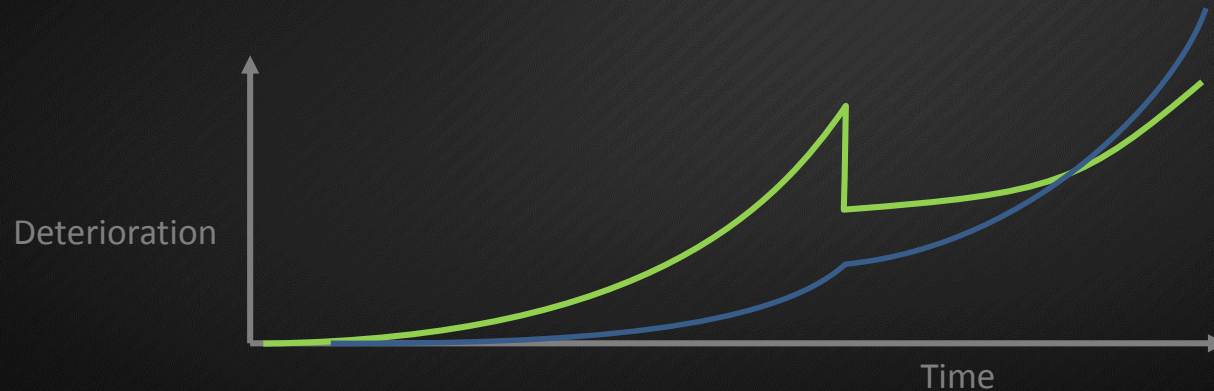
Mix of Fixes

- Need to take care of poor conditions
- But as importantly, we **KNOW** we still need to keep up with preservation



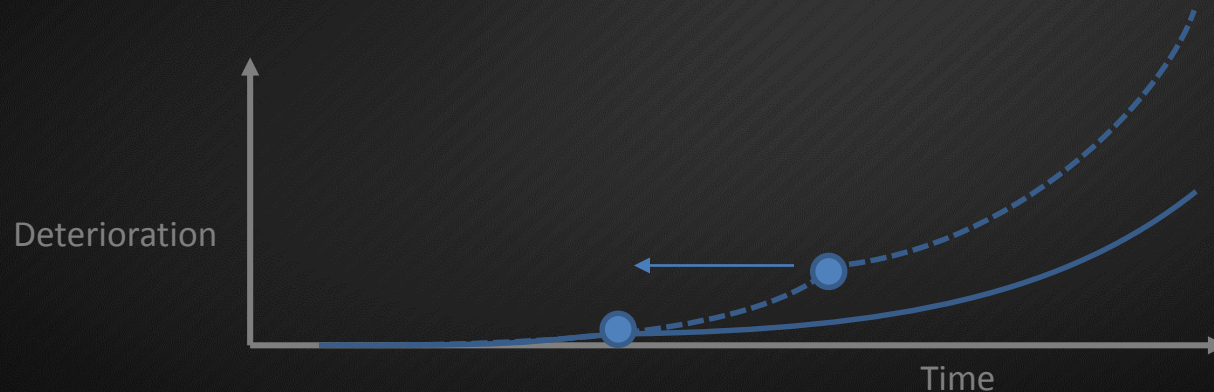
How do we justify this?

- Need to model (and take out of the realm of intuition...)
- Not just immediate jump – but long term prediction



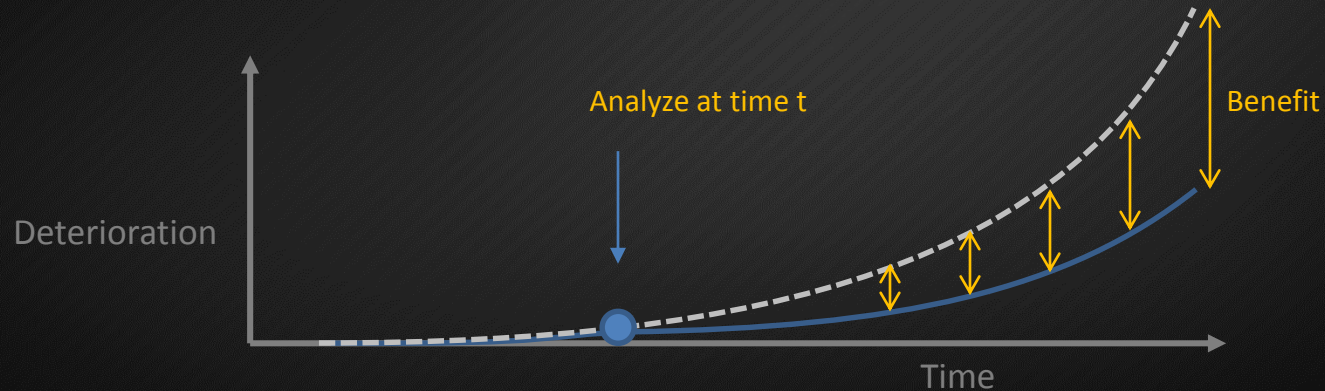
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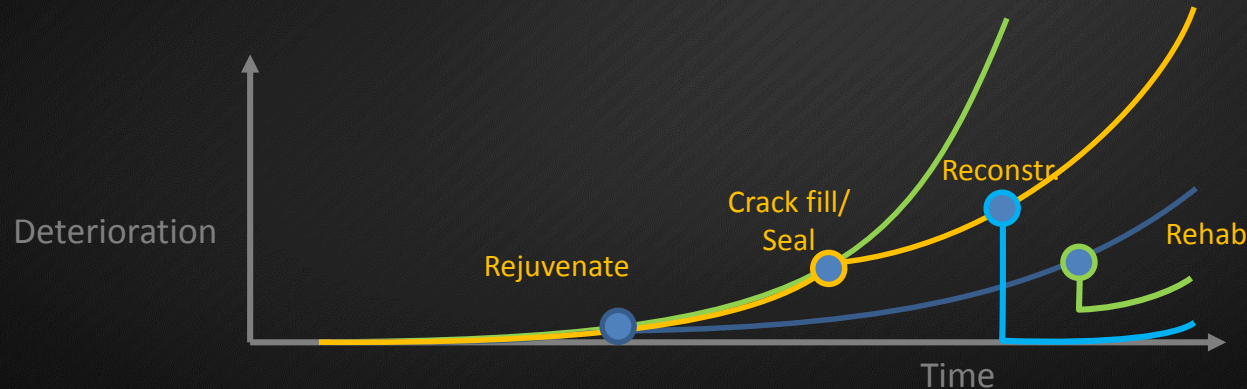
Tradeoff on year by year basis

- Treatment by year using benefit (area) is good



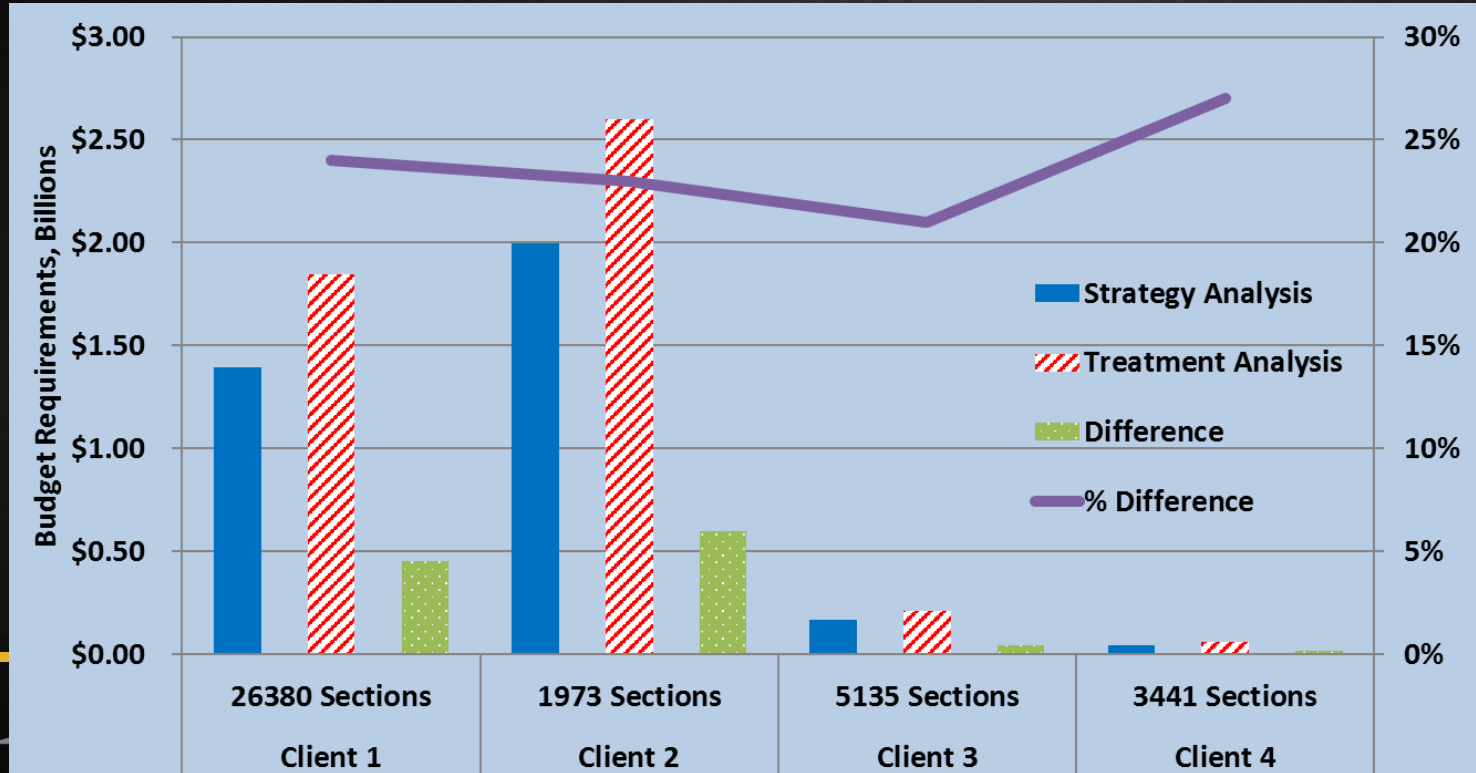
Strategy Tradeoff

- But trading off between whole life strategies is better
- How much better?
 - Want to show some results from a study we did...



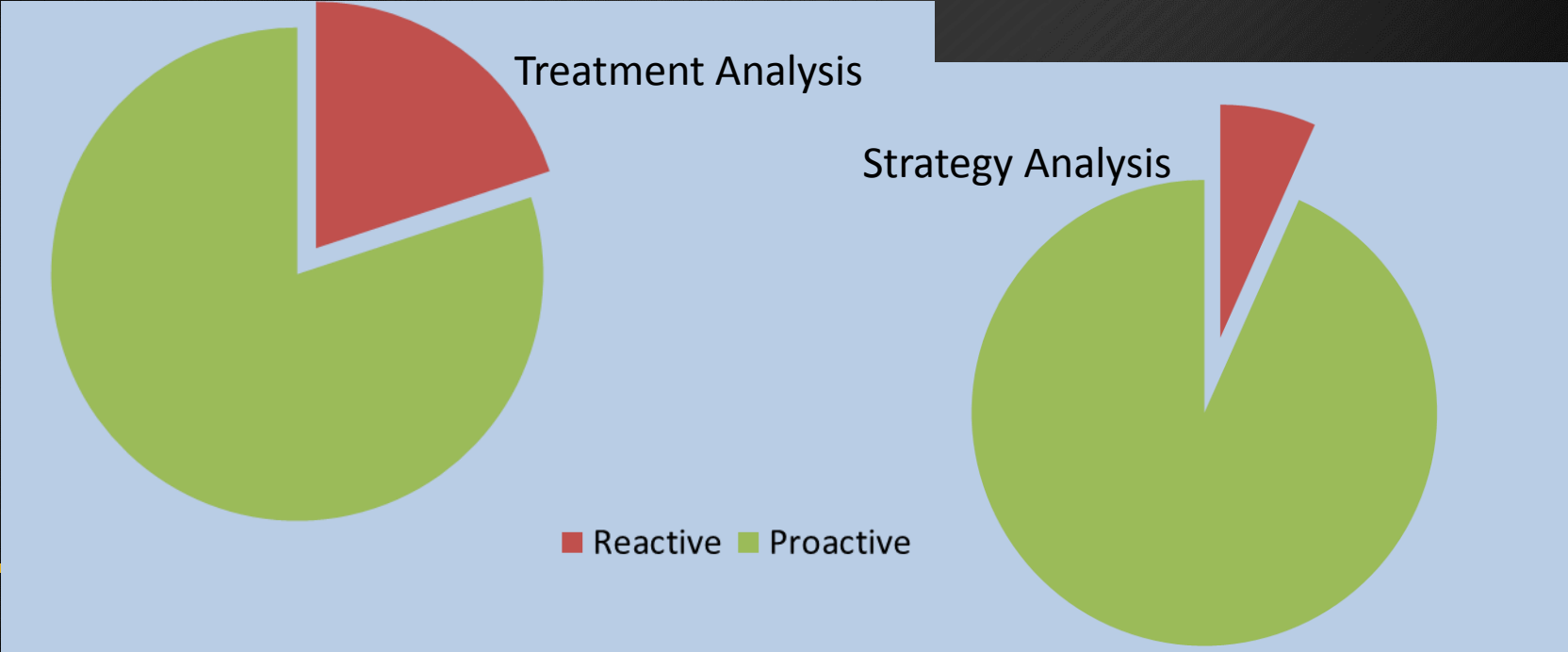
Strategy Tradeoff

Strategy Analysis Savings vs Treatment Analysis model
when keeping network in the same condition



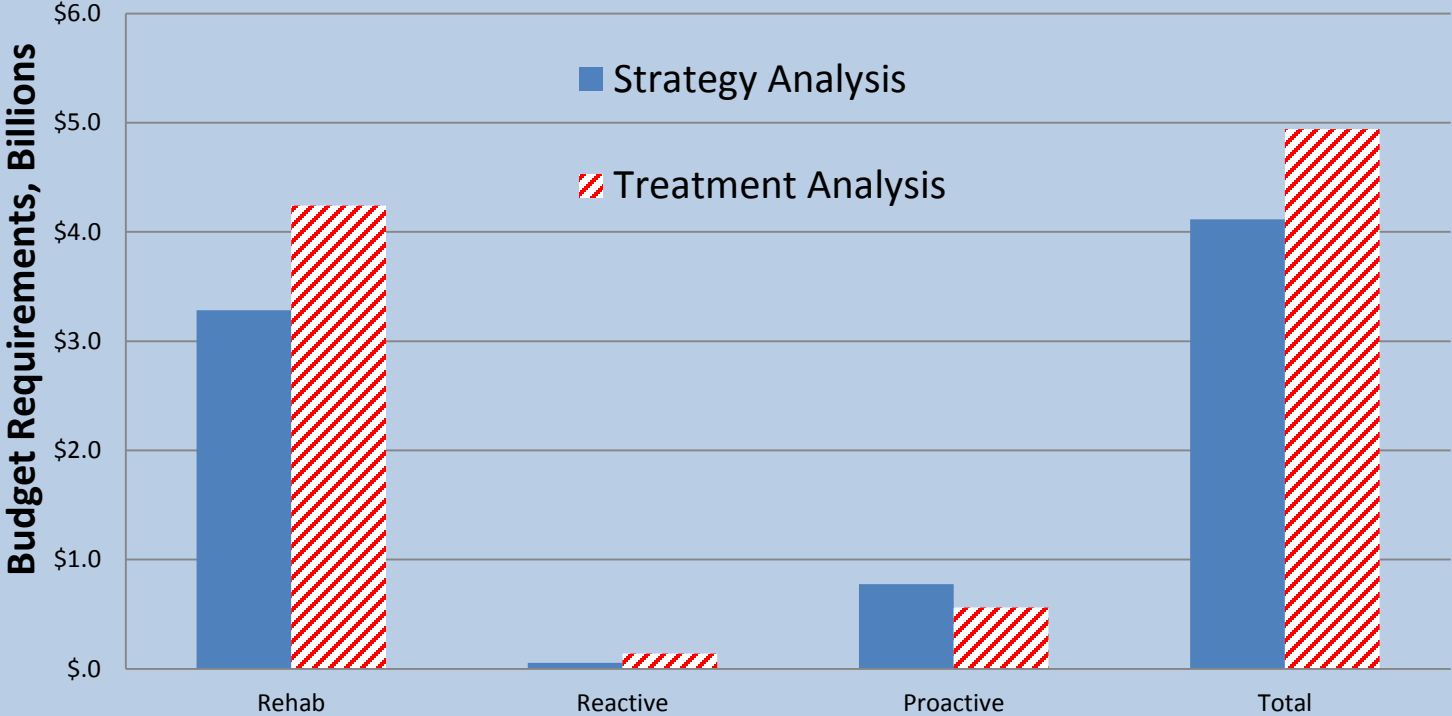
Strategy Tradeoff

Strategy Analysis better identifies and uses preventive treatments vs Treatment Analysis



Strategy Tradeoff

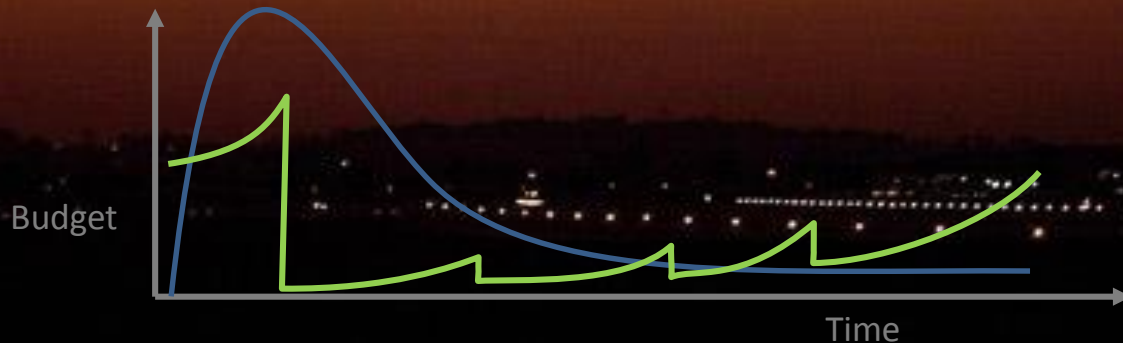
Spending distribution across budget groups



Cost profile Tradeoff

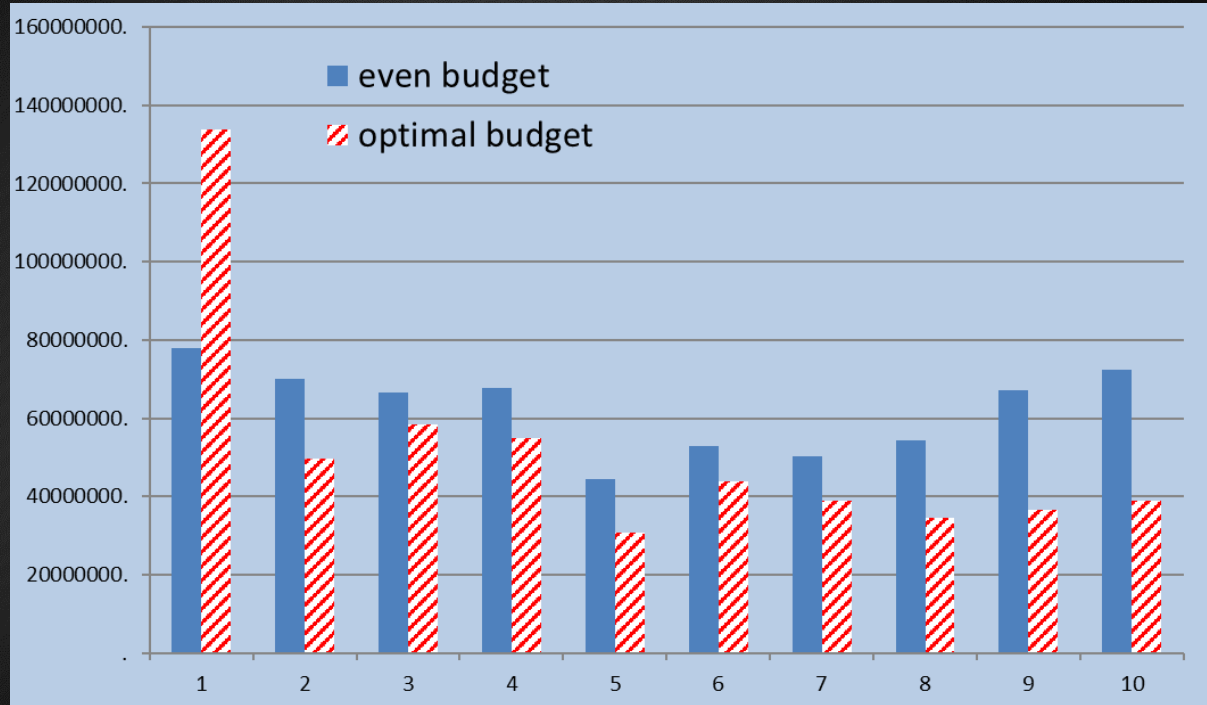


- Another type of Tradeoff
 - Imagine we could be flexible about cost/budget strategy?
 - Remember ‘Good Roads cost less’!
 - Classic ‘backlog’
 - So how much better could we do with this flexibility?



Cost profile Tradeoff

- 'Even' or continuous budget
 - \$623m (deviation <20%)
- Optimal Budget
 - \$520m



Long term...

- Based on our running of the numbers here, you can see the budgets leveling off when you get into the preservation treatments.
 - Obviously not all roads are ‘perpetual’ and under-designed roads or roads with unforeseen loads go down hill regardless because of structural issues, but...
 - If the structure and construction are good, you can keep a lot of roads going a long time if you take care of them up front!
 - Preservation treatments should really be part of Pavement Management

Thank You !

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