9th International Conference on MANAGING PAVEMENT ASSETS (ICMPA9)

A case for breaking down the Capital – Maintenance Barrier

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AASHTO THE VOICE OF TRANSPORTATION

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U.S. Department of Transportation Federal Highway Administration

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VDOT Virginia Department of Transportation

Icebreaker

~~I'm a Civil Engineering Asset Manager~~

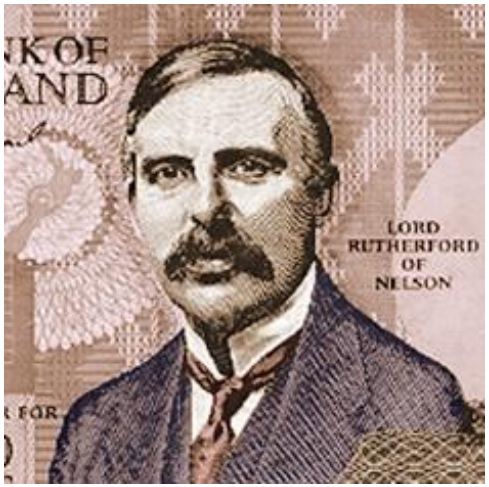
So what does that mean?

I can help you deliver more for less:

- impress your legislature!
- please your stakeholders!
- give you some certainty about your future costs!

Icebreaker

Icebreaker



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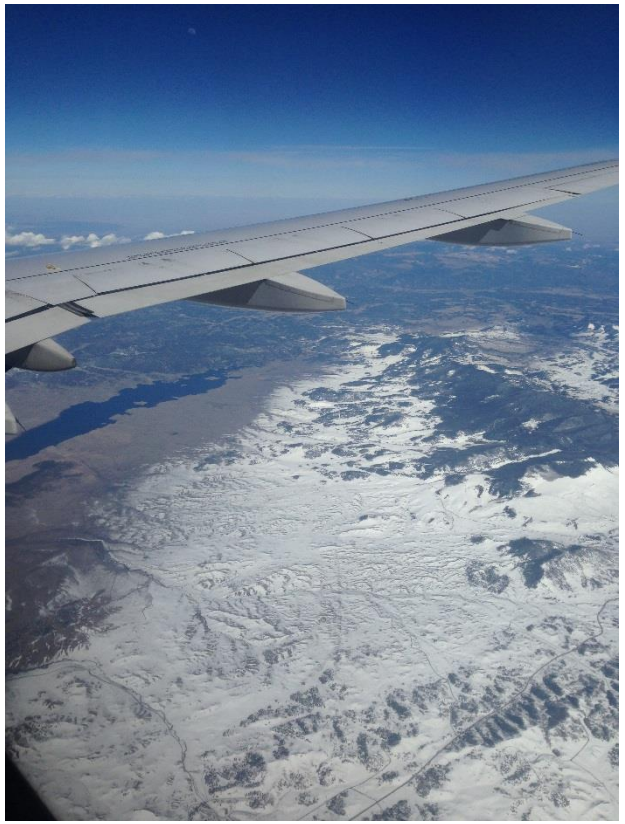
Presentation Overview

- Purpose
- Current situation
- Constraints to change
- Exploiting the constraints
- Benefits
- Summary
- Questions



Purpose

- When you are back at the office after this conference…..
  - You will challenge your organization
  - You will always consider lowest lifecycle costs when making investment decisions
  - You will talk to your CAPEX / OPEX teams!
  - You will get your OPEX / CAPEX teams talking!

Current Situation

- Significant length of highway portfolio in Condition D (fair to poor)
- Fiscally constrained environment (need > budget)
- MAP21 - driving performance based outcomes
- Capital and Maintenance seen as mutually exclusive investment alternatives
- Impact of Capital on Maintenance not always accounted for

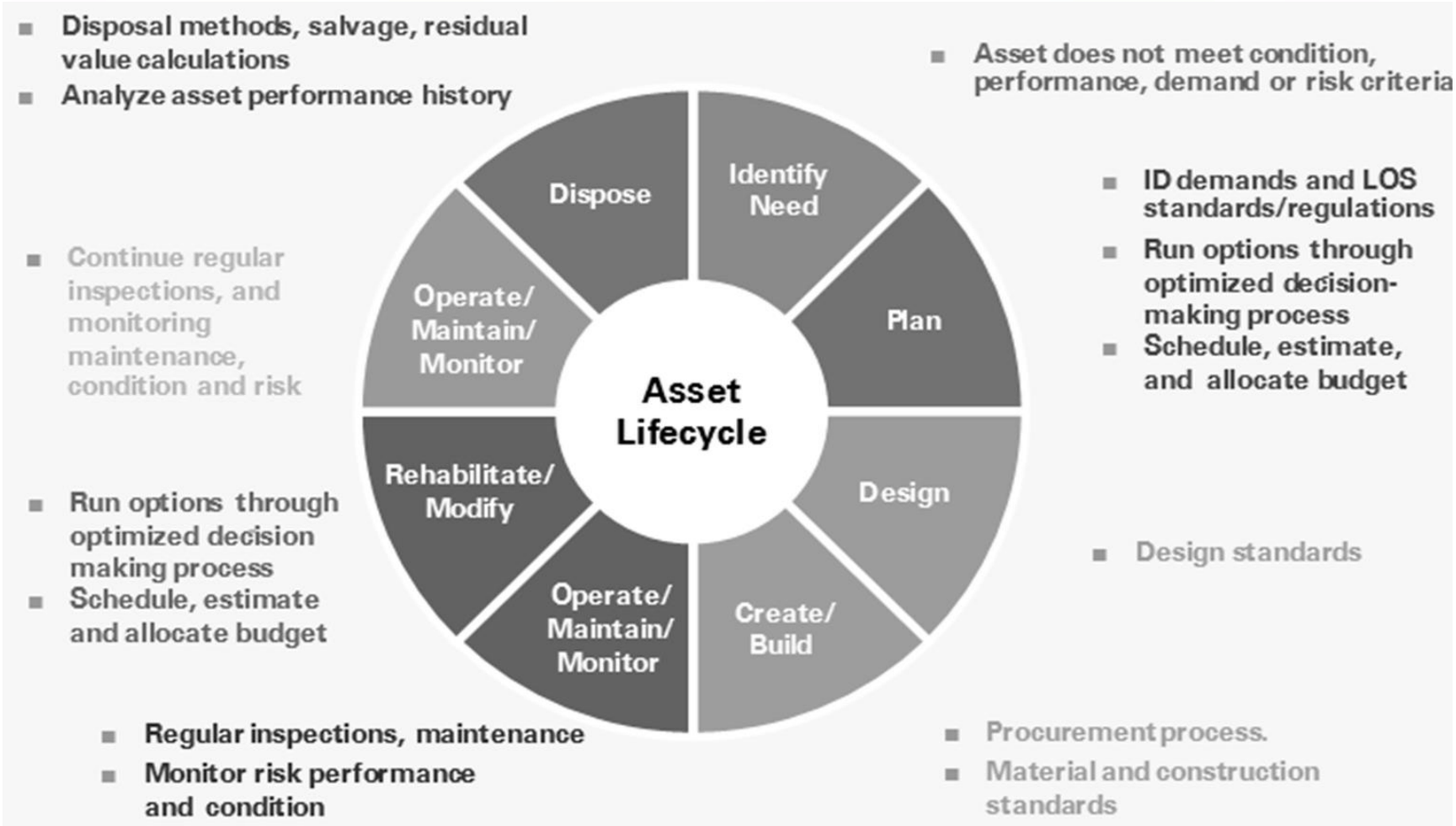
Current Situation

What needs to change?

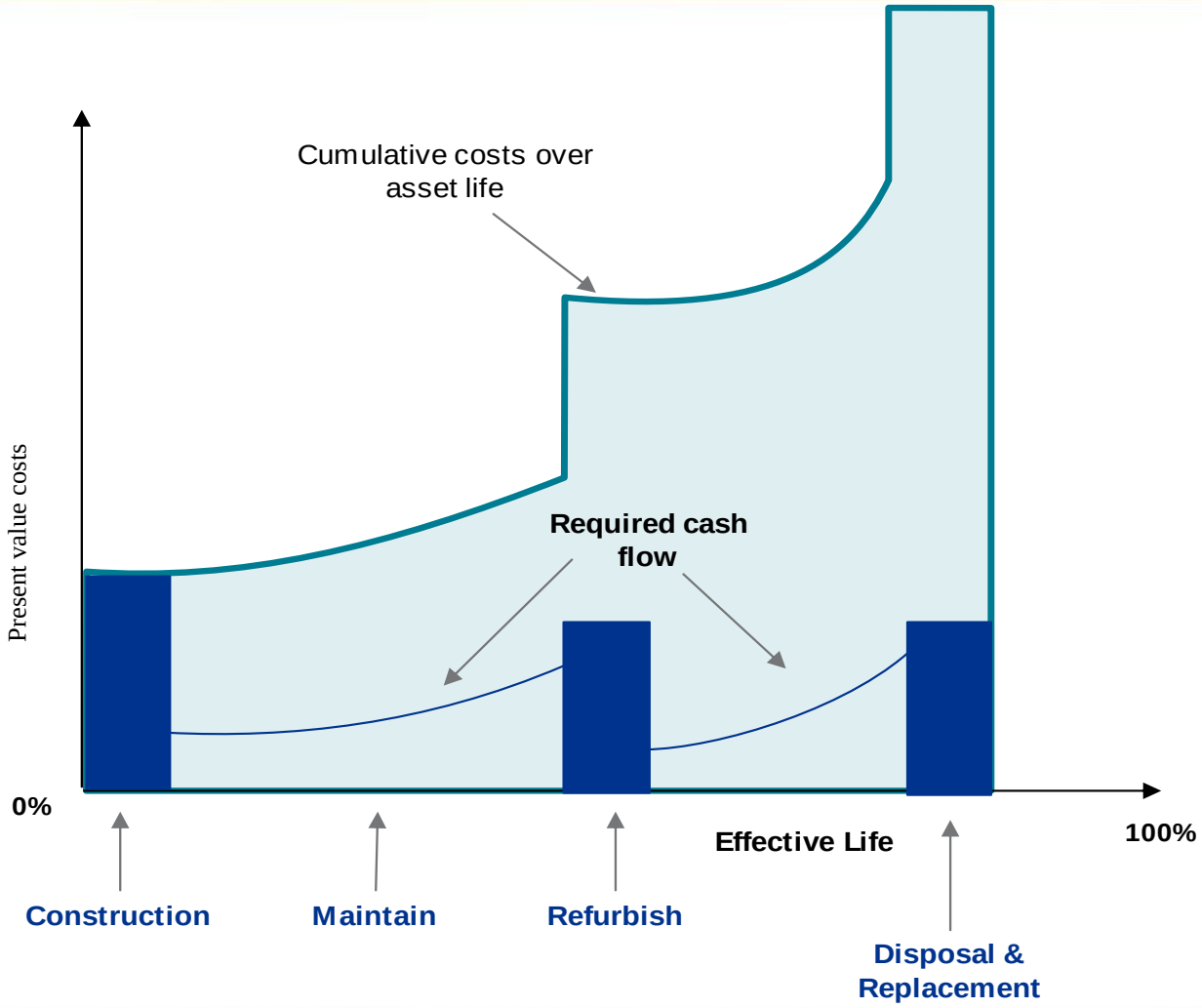
- Organizational structure
- Compartmentalizing of maintenance and capital investment
- Fixed annual, non-transferable budgets
- CAPEX decisions without downstream OPEX impacts
- Political leverage of CAPEX over OPEX

What needs to change?

Asset Lifecycle



Asset Lifecycle Cost



Bring the two together….

- ↑ CAPEX drives ↑ OPEX
- Good OPEX ↓ CAPEX
- Efficient OPEX = more $ for CAPEX
- ↓ CAPEX = ↑ OPEX
- Additionally, these are continually changing:
  - LoS, standards, regulations, technologies, budgets and political drivers
- Finding the lowest lifecycle costs can be like looking for a needle in a haystack!

What are our options?

- Work within the budget structure and do the best job possible

OR

- Challenge our funding, budgeting and organizational structures and develop a true lowest lifecycle cost approach
- So what is stopping us?

Constraints to Change

- Organizational structure does not foster consideration of Capital and Maintenance works as decisions along a continuum of an assets life
  - LH not talking to RH
  - Division of budgets
  - Different rules

Constraints to Change

- The structural inertia in large, mature, traditional organizations makes it challenging to effect positive change
- Desire to avoid loss is far greater than the desire to gain

Constraints to Change

- Capital and maintenance investments are evaluated using different criteria, creating a disconnect between different parts of the assets lifecycle

Constraints to Change

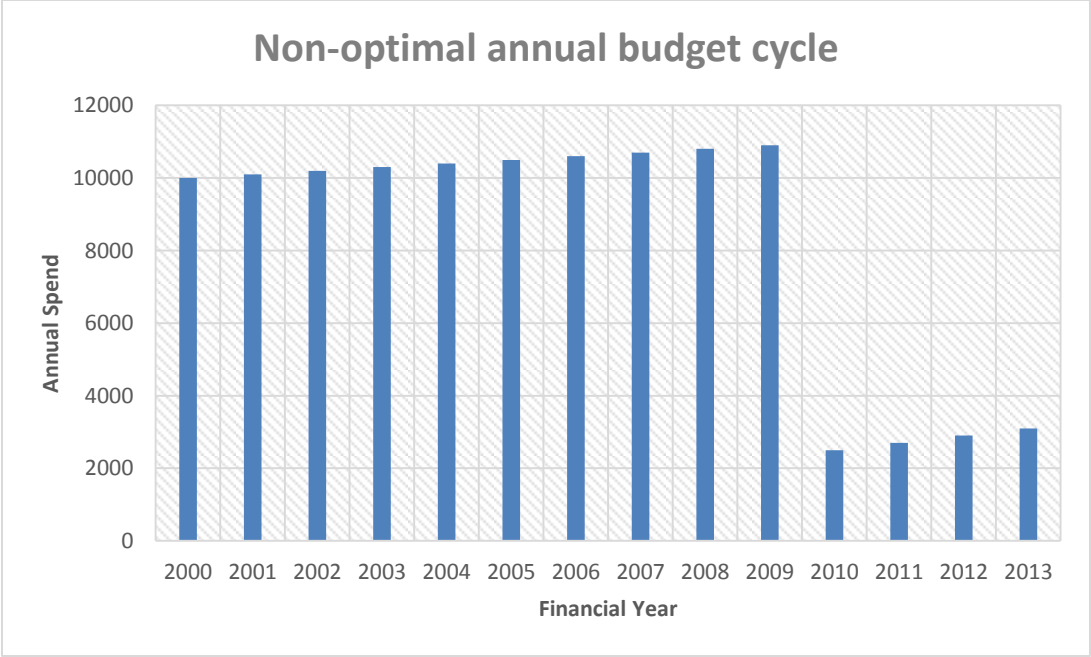
- The tendency to fund capital projects creates a future maintenance liability

Constraints to Change

- Federal and State Funding rules do not allow the transfer of funds between CAPEX and OPEX funding programs despite being able to deliver lowest lifecycle costs if this were allowed
- To say this in another way:
  - Budgets are rhythmic, need is not

Constraints to Change

- Fear of long term budget attrition
  - "We spend it all because we have it!"



Exploiting the Constraints

- Focus on the lifecycle philosophy
  - Recognize each asset has OPEX costs throughout its life, provide funding accordingly
  - Allow between CAPEX and OPEX investments so that investment is driven by lifecycle cost and delivery of LoS
  - Provide incentives for Capital and Mtce teams to recognize lower LCC strategies (currently penalized)

Exploiting the Constraints

- Recall the constraints:
  - Structure (silos)
  - Inertia (hard to effect positive change)
  - Disparate criteria
  - Limited lifecycle commitment
  - Rigid funding mechanisms
  - Fear of budget loss

Exploiting the Constraints

- Solutions to organizational constraints:
  - Structure
    - Get Capital and Maintenance teams to collaborate when considering Capital Investment
  - Inertia
    - Identify barriers
    - Introduce incentives for organizational innovation

Exploiting the Constraints

- Solutions to lifecycle investment constraints:
  - Evaluate capital investment against agreed levels of service
  - Introduce processes that require lifecycle funding committed to capital investments

Exploiting the Constraints

- Solutions to funding constraints:
  - Allow discretionary movement between CAPEX and OPEX to achieve agreed LoS
  - Incentivize staff to identify cost savings
  - Demonstrate commitment to a needs based budget

Benefits of Exploiting the Constraints

- Reduce the overall lifecycle costs of America's pavement assets
- Budget allocation based on need, not on historical expenditure

Summary and Key Points

- Capital and Maintenance investments are required throughout the life of an asset
- Capital and Maintenance Investments influence one another
- Lowest life cycle cost can only be achieved when these investments are evaluated in the same decision framework
- Our current approach does not support this philosophy
- **Break down the wall!**

Acknowledgements

- Dr Anna Robak
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- ICMPA Committee
- You!

Thank you

- **Questions?**