



# EVERYTHING IN ITS PLACE: TOOLS AND RULES FOR SETTING ROBUST PERFORMANCE TARGETS

Mackinac Bridge, Michigan, USA

ROYCE GREAVES CPENG NDIA M

INTPEMIPENZ OPUS DETROIT



# OVERVIEW

Kicking Horse Canyon Park Bridge, Canada



# Overview

- Introduction
- Defining Performance Targets
- Tools and Rules
- The Future
- Acknowledgements
- Questions and Discussion





# INTRODUCTION

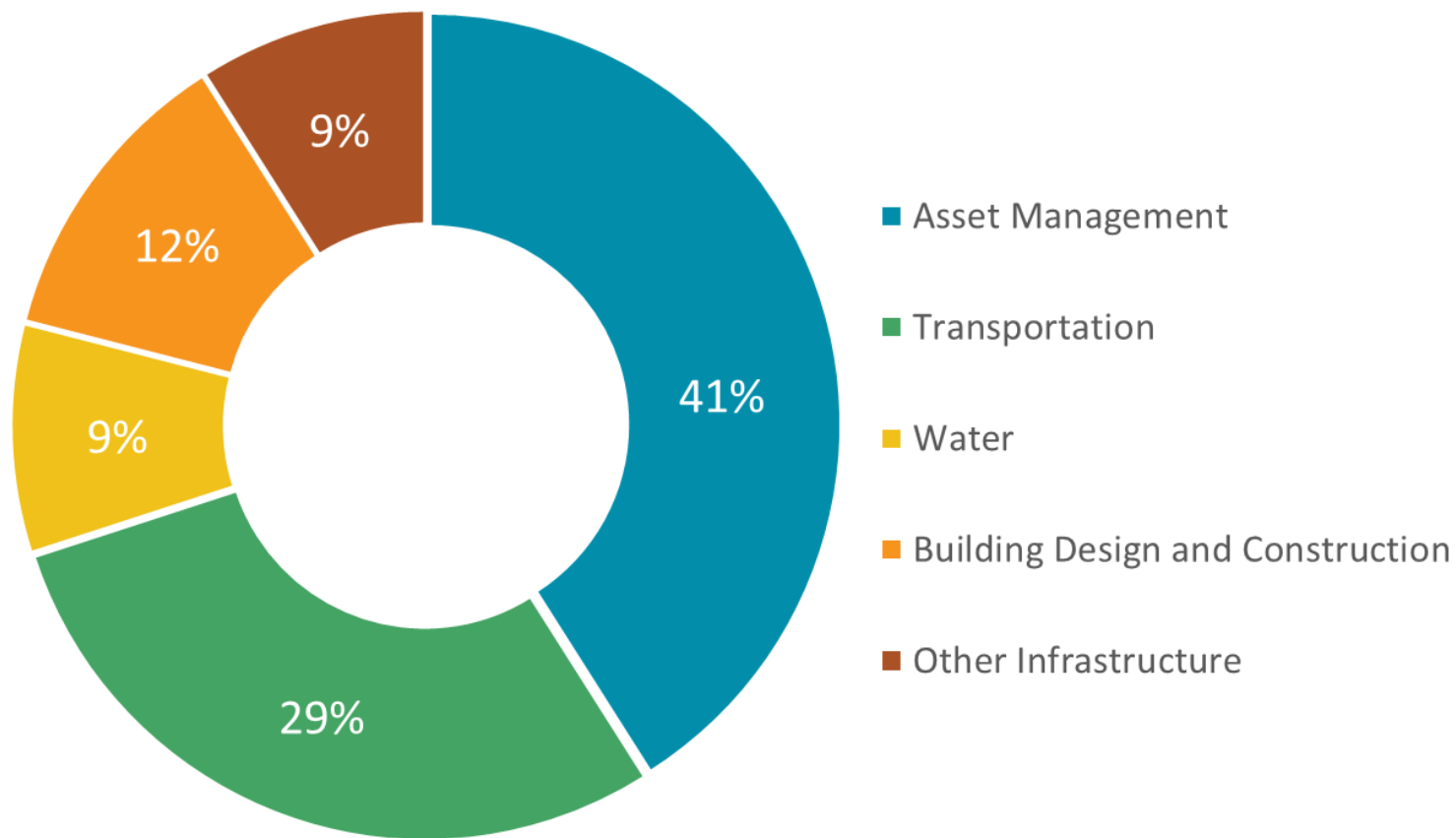
Auckland Highway Alliance, New Zealand



# Who is Opus?



# Who is Opus?





# A quick bit about me...



14 Jan 2015



19 Jan 2015



# DEFINING PERFORMANCE TARGETS

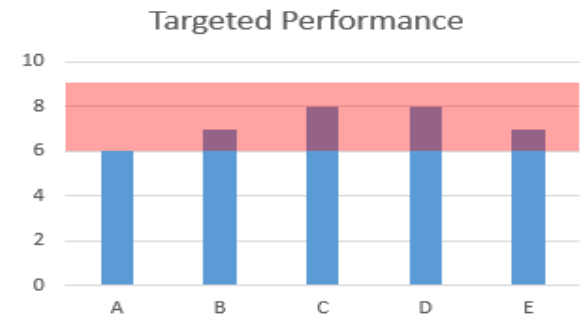
Panmure Station, Auckland, New Zealand





## Robust Asset Management answers eight questions:

- What do we have?
- What condition is it in?
- What is it worth?
- What do we want it to do?
- What do we need to do to it?
- When do we need to do it?
- How much will it cost?
- How will we deliver it?

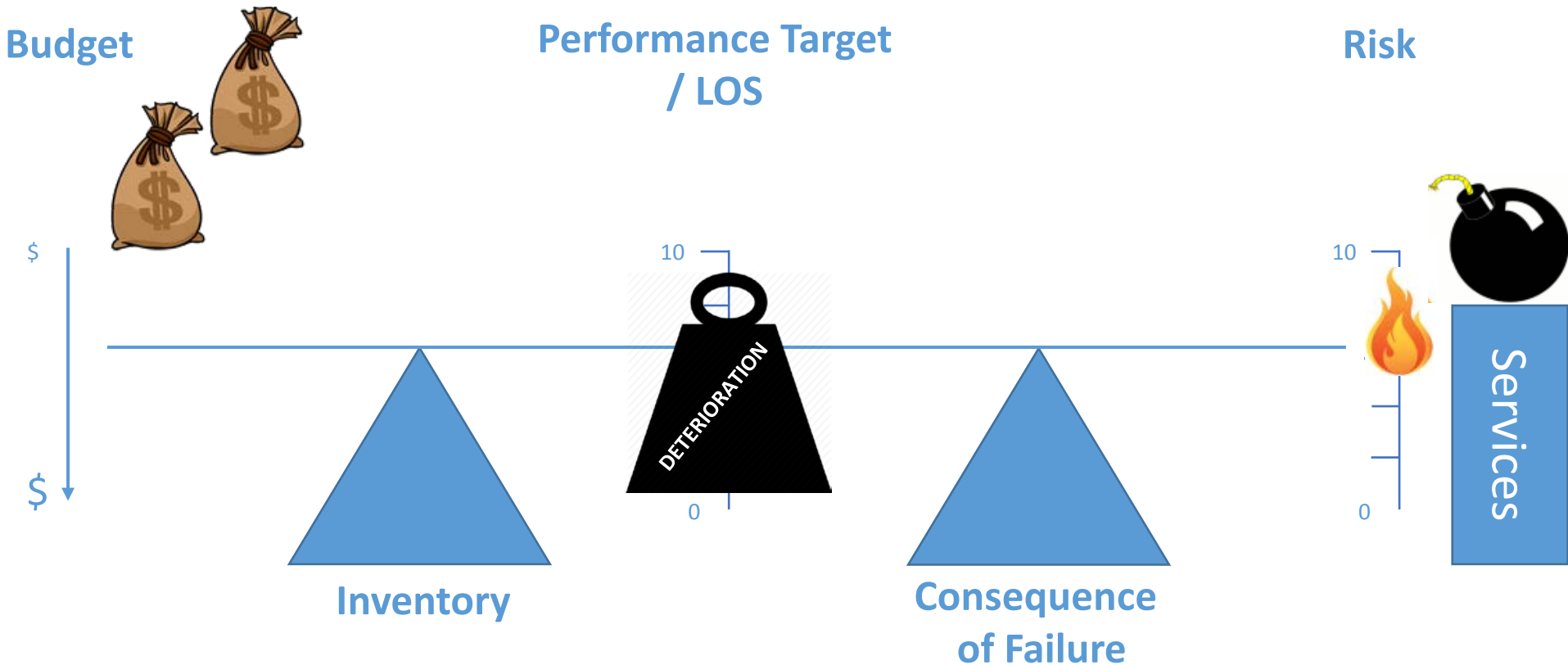


# Challenging the paradigm....

- Currently...
  - “Trust us, your money is in safe hands.”
- Ideally...
  - “What do you want to buy with your money?”
- Which means...
  - “Here is what you have got for your money.”
- To do this we must:
  - Understand cost of service
  - Understand risk of service
  - Have clear linkage between performance measures and community expectations



# Defining Robust Performance Targets is a Balancing Act!



# TOOLS AND RULES



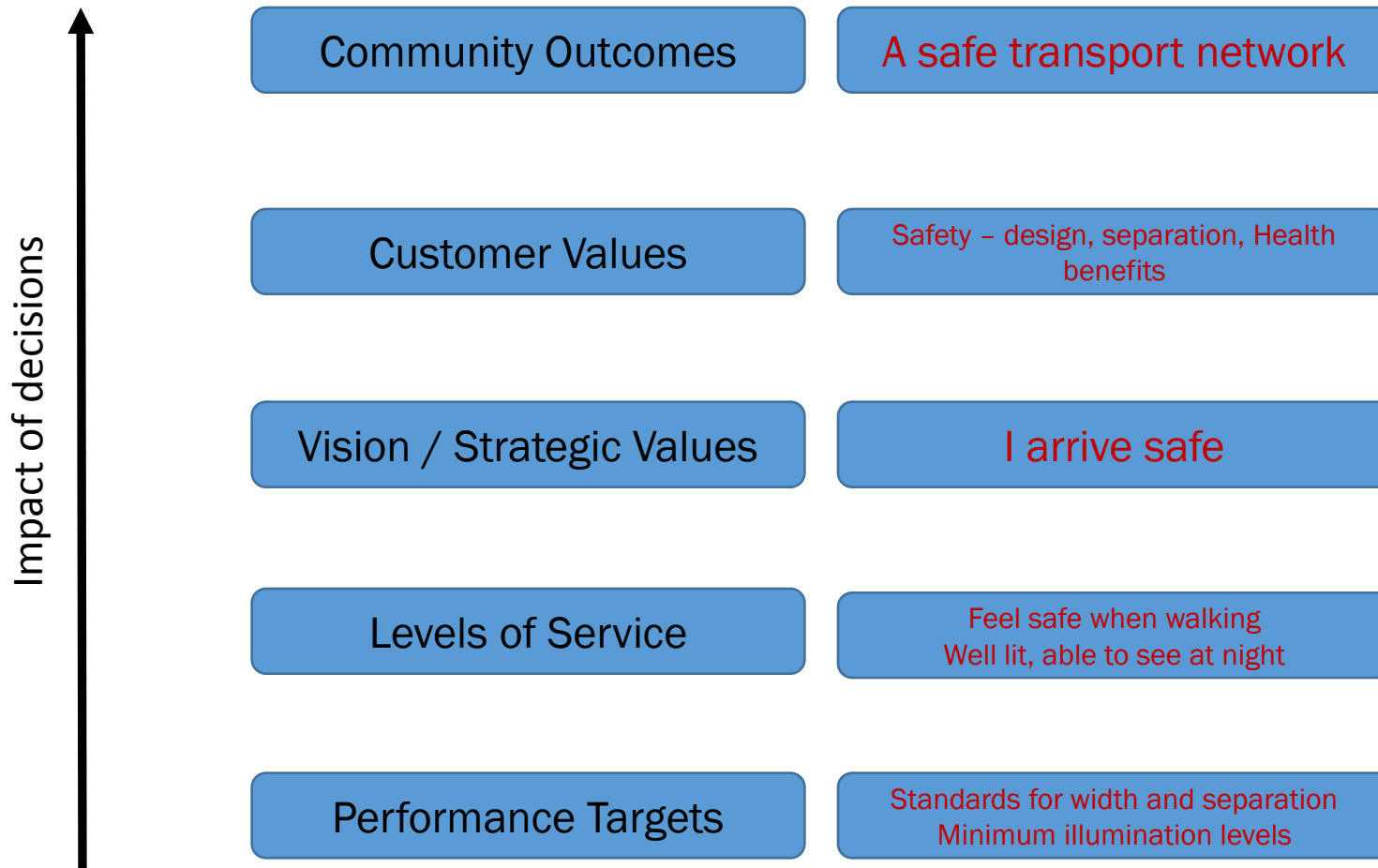
Northern Busway, Auckland, New Zealand



OPUS



# The Hierarchy



# Basic Steps

1. Decide on levels of service
2. Translate levels of service into performance measures
3. Decide on the metrics
4. Set the targets
5. Understand the cost of meeting targets



# Monitor service levels through performance targets

- A number of targets may be linked to each outcome
- Achieving the targets must align with achieving our outcomes
- Ask yourself: “So what if we didn’t achieve our annual rutting target?”

# When selecting performance targets...

- Can the condition indicator clearly be traced back to asset performance?
- Does the condition element significantly influence performance?
  - Think falling weight
- If we achieve our targets, does it mean the strategy is being delivered?
- Do we have confidence in our performance data?

# When selecting performance targets...

- Can a target be eliminated without significant impact on confidence in meeting outcomes?
  - Think shoulders
- Is a trend in the target meaningful in the long term?
- IS there potential for perverse behaviors?
  - Think time bound targets – delivery vs quality



# OTHER CONSIDERATIONS



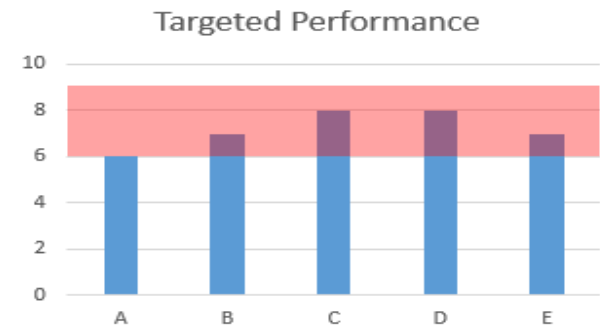
# Other Considerations

- A number of measures may be linked to each outcome
- Think urban highway corridors
  - Service level for amenity
  - Targets for:
    - Litter
    - Sweeping
    - Potholes
    - Striping
    - Roughness



# Other Considerations

- Get creative!
  - Moving Targets
  - Performance Bands
  - Time bound Targets
  - Targets by Hierarchy
- Develop collaboratively
  - Better buy in / test realism
- Understand baseline performance first
  - Ideally!





# Other Considerations

- Don't forget behavior change!
  - Our targets must influence decision-making
  - Think of metrics that enable this
  - Transparency in performance?
- Reporting
  - How? Intelligently, succinct
  - Who? Up and down, outward
  - What else? Be prepared to add narrative

# Other Considerations

- Can the target be easily understood?
  - No less than 5% by lane area of the interstate highway network have cracks > 2 inches
- OR
- >95% of interstate has no cracks > 2 inches
- Support targets with a specification
  - Drives consistency (key!)
  - Good for succession planning
  - Photos!



# Last but not least..

- If you are outsourcing....
  - Baseline performance data is critical
  - Robust targets are key
    - Save contractual arguments!
  - Linking performance to cost of service goes a long way to reducing risk pricing by Contractors...



# SO HOW IS THE INDUSTRY STACKING UP?

Sea to Sky Highway, Canada





# A leading agency from abroad...

PI Attribute	Finding	Observation
Aligned to organisational objectives	~	Align to organisational objectives in concept, but <b>do not demonstrate influence of condition metrics on objectives</b>
Trends meaningful	✓	Produce <b>Trends</b> that are meaningful
Reported for different <b>criticality</b> of asset or service	~	Have targets that reflect <b>criticality</b> (magnitude of impact of failure) of the asset or service. Typically proxies such as road hierarchy are used. Hierarchy does not necessarily reflect criticality for all types of events
Risk of meeting objectives or PI=Risk assessment score	✗	<b>Do not reflect risk</b> to performance. An exception is in geotechnical assets
Mix of <b>Input-, Output- and outcomes-based and efficiency</b> measures	~	Include a mix of <b>Input-, Output- and outcomes-based and efficiency</b> measures. Efficiency measures are typically not included, but a mix of input, output and outcomes measures are
<b>Data quality</b> , completeness, accuracy, and recentness	~	Include <b>Data quality</b> , completeness, accuracy, and recentness. Data quality is frequently considered, but is often not a distinct performance indicator
<b>Whole-of-corridor, or whole of system, performance</b>	✗	Do not appear to take account of <b>Whole-of-corridor or whole of system</b> performance
<b>Lead indicators</b>	✗	Do not include both current, or recent ( <b>Lag indicators</b> ) and future expected performance ( <b>Lead indicators</b> )
Account for likelihood of <b>Perverse behaviours</b>	✗	Do not appear to account for the likelihood of <b>perverse behaviours</b> .



# THE FUTURE OF PERFORMANCE MEASURES

Sea to Sky Highway, Canada





# Where the industry is going...

- Whole of corridor/system measures
- Better use of lead indicators
  - Proactively mitigate poor performance
  - Work planned vs work required
  - Investment vs depreciation
  - Adjusting design lives
  - Seasonal trends

# Recall: the paradigm....

- Currently...
  - “Trust us, your money is in safe hands.”
- Ideally...
  - “What do you want to buy with your money?”
- Which means...
  - “Here is what you have got for your money.”



# ACKNOWLEDGEMENTS



Northern Busway, Auckland, New Zealand



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# Acknowledgements

- Dr. Anna Robak – Opus New Brunswick
- Catherine Dallaire – Opus Vancouver



# THANK YOU FOR LISTENING

## QUESTIONS?

LINKEDIN: ROYCE GREAVES

EMAIL: [ROYCE.GREAVES@OPUSINTERNATIONAL.COM](mailto:ROYCE.GREAVES@OPUSINTERNATIONAL.COM)

Mackinac Bridge, Michigan, USA

