

Making Federal Facility Investment Decisions Simple and Compelling

A Multi-Billion Dollar Army National Guard Example



June 18th, 2015 presentation to the
Federal Facility Council's
Committee on Sustainable Design & Construction and the
Committee on Sustainable Operations & Maintenance



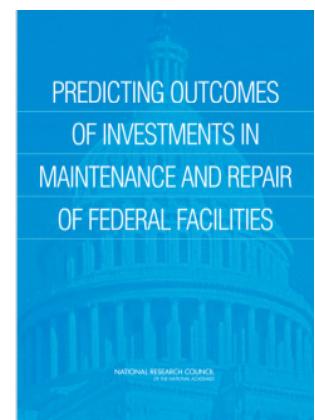
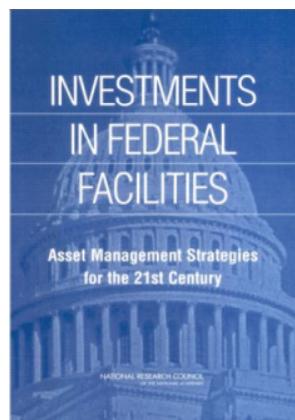
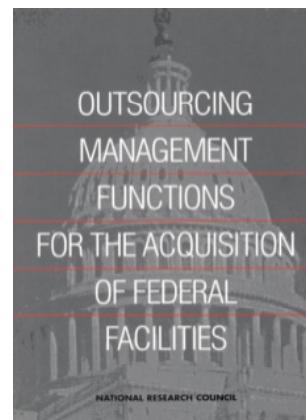
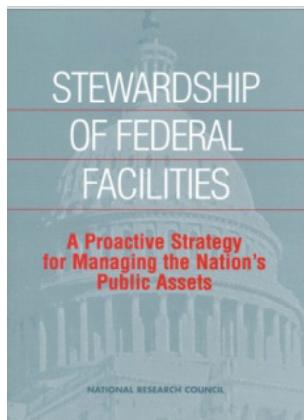
JACOBS



Agenda



- Problem Statement
- Simple & Compelling Business Cases
- Army National Guard Readiness Center Transformation Master Plan (RCTMP) Example
- Key Analysis Advancements
- Relevance to Federal Facilities



Problem Statement

Need for Simple, Compelling Business Case



- Failing Infrastructure
 - ASCE Scorecard – D+...
- Limited Resources
 - US Gov't Book Value **-\$11.8T**
- Competing Priorities
 - US Debt > US GDP
 - Labor participation rate declining last 15 years

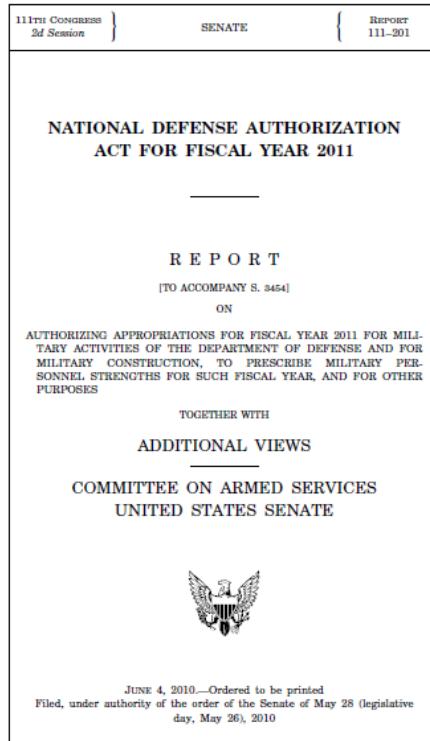
This requires a better business case analysis methodology!



ASCE – Save America's Infrastructure App

Readiness Center Transformation Master Plan

A Call for Action & A Plan



Defense
Authorization
Act – 2011



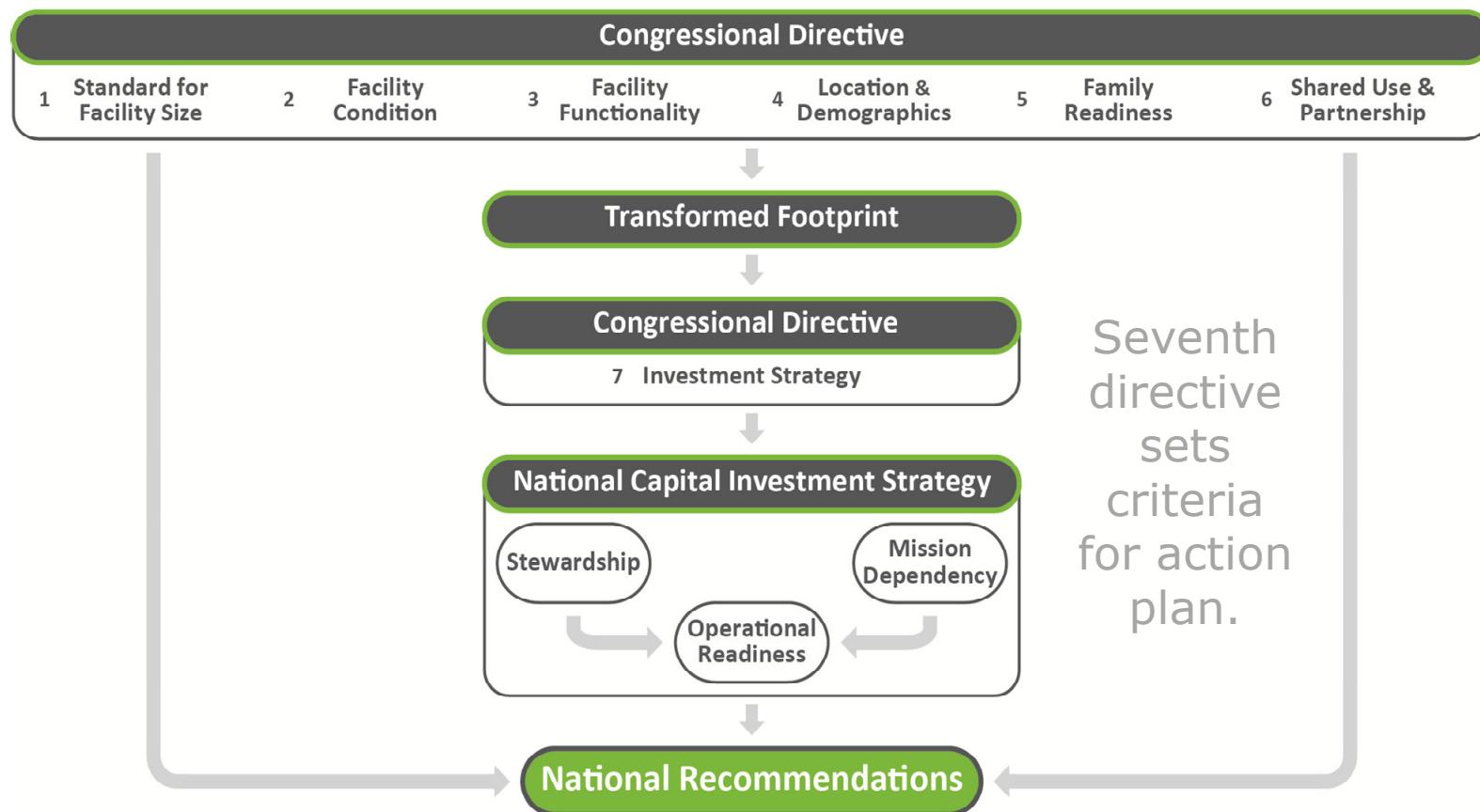
Readiness Center Transformation
Master Plan – 2014

Readiness Center Transformation Master Plan

Senate Armed Services Committee Directives



First six directives set analysis criteria.



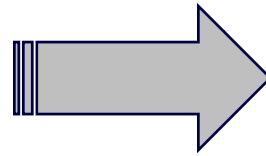


- Roles up traditional Q, C & F scores into Stewardship
- Mission Dependency Index to consider operational risks
 - Makes it compelling
- Operational Readiness Index combines both to focus on Mission Readiness
 - Simplifies analysis



Readiness Center Transformation Master Plan

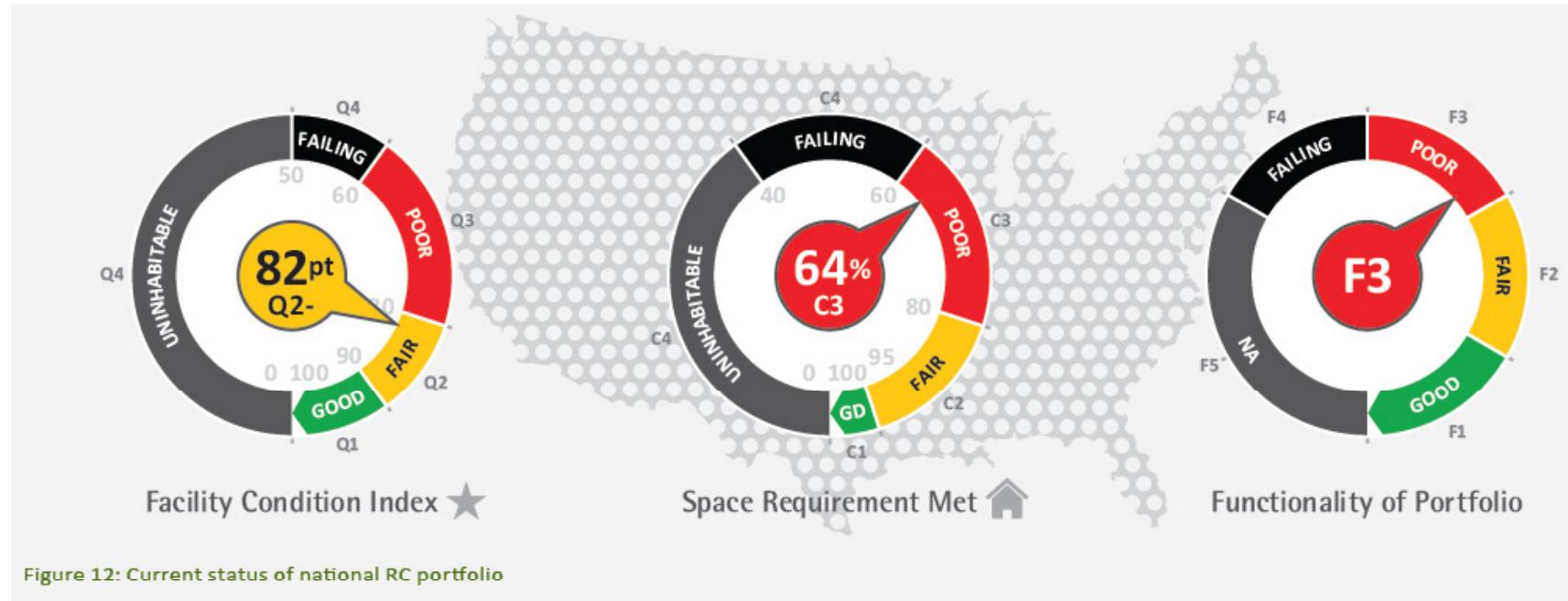
Simple & Compelling Business Case



What provides a more simple and compelling reason to invest in Army National Guard readiness?

Readiness Center Transformation Master Plan

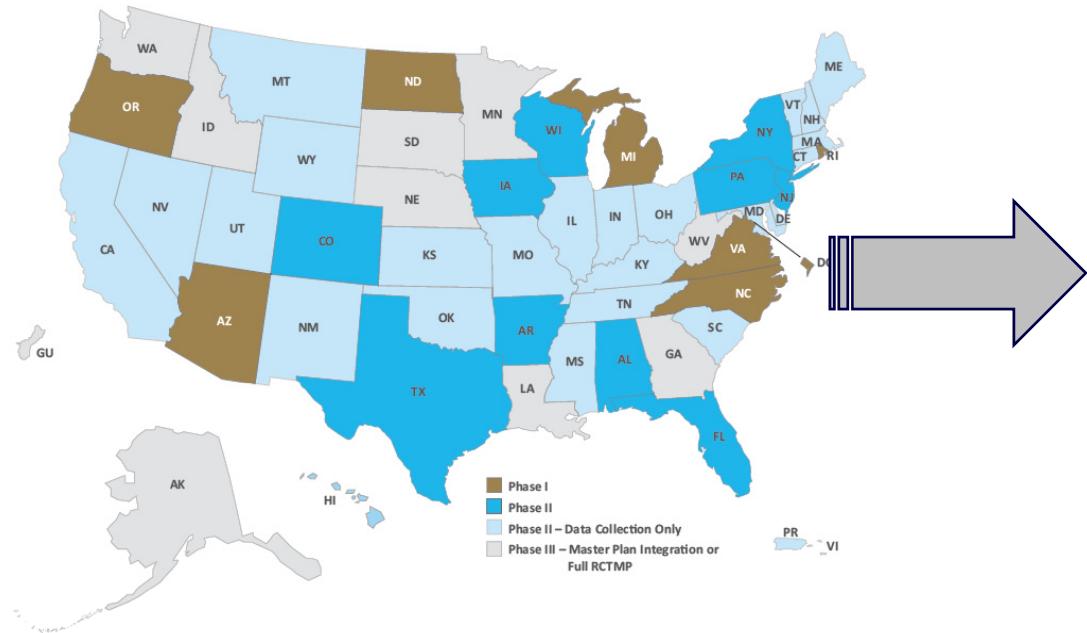
Current State



The burning platform:
Current funding does provide a sustainable solution.

Readiness Center Transformation Master Plan

One Army – One Fight



Business Case Analysis needed to focus 54 RCTMPs and thousands of facility investment actions into a single investment strategy.

Readiness Center Transformation Master Plan

Business Case Analysis Methodology

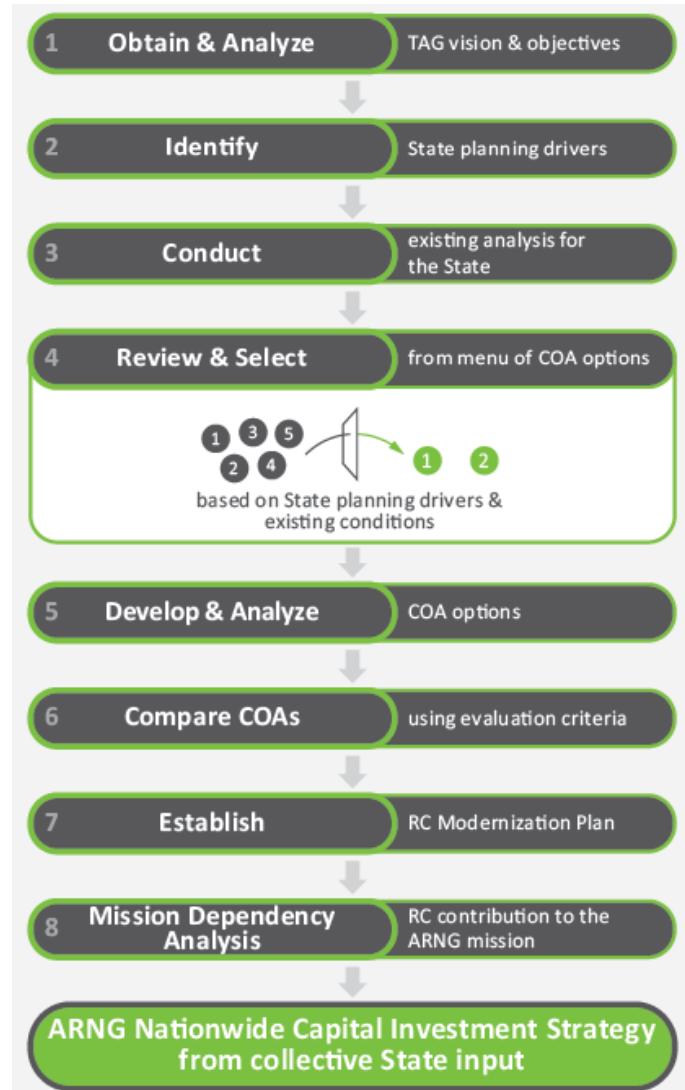


■ Four Scenarios

- Current Funding
- Baseline Funding
- Affordable Readiness
- Getting to Green

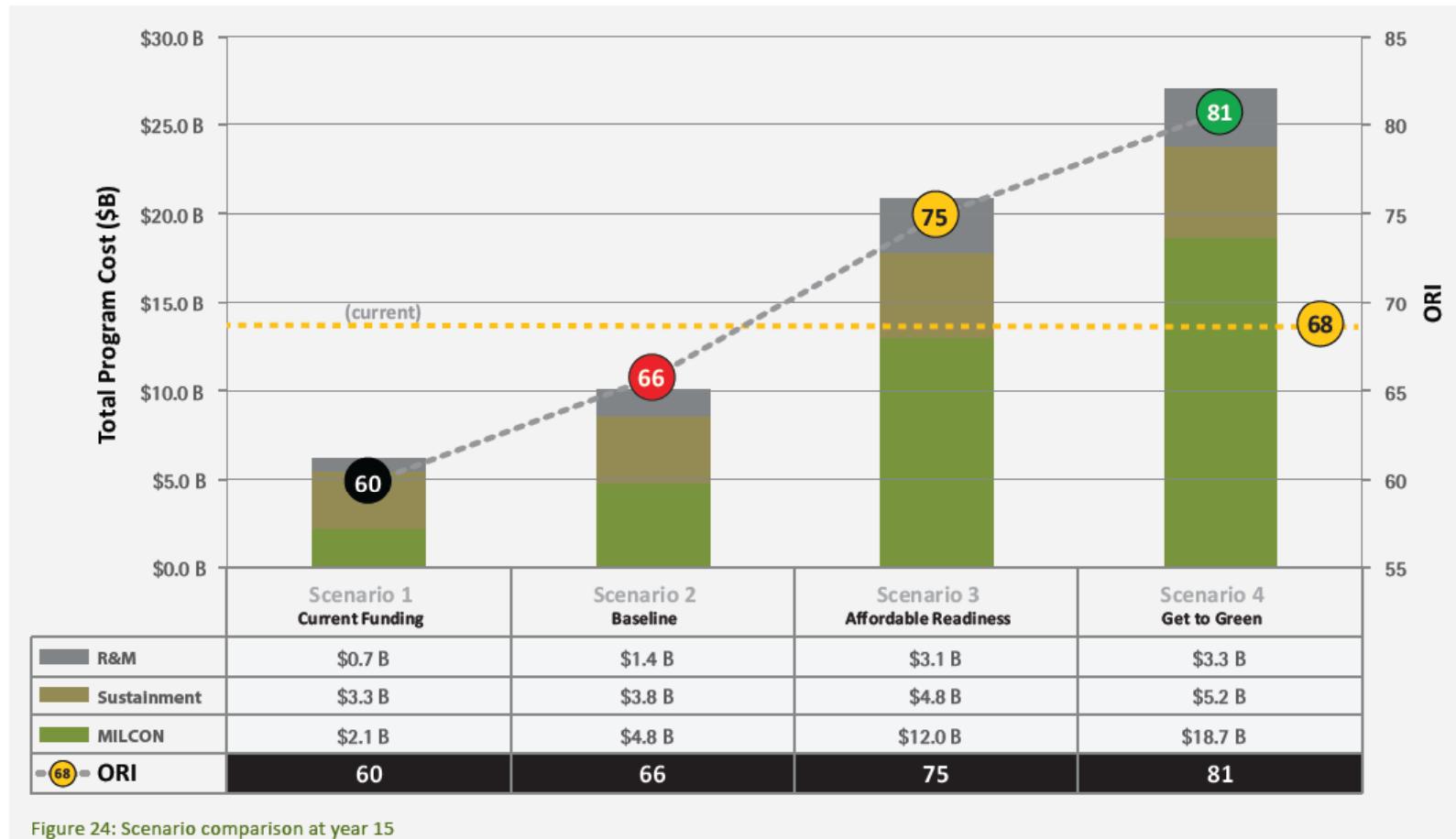
■ Four Future States (after 15 years)

- Different Inputs
 - ♦ MILCON, SRM Priorities & Funding
- Different Outputs
 - ♦ Portfolio Q, C, F & MDI scores
- Different Outcomes
 - ♦ Portfolio Operational Readiness Index



Readiness Center Transformation Master Plan

Business Case Analysis Comparison



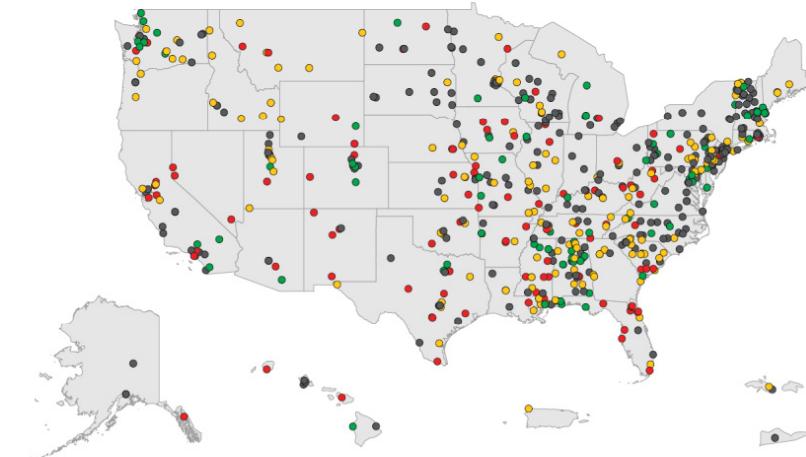
Analysis considered over 1,600 capital projects and full SRM funding requirements in the simulation

Readiness Center Transformation Master Plan

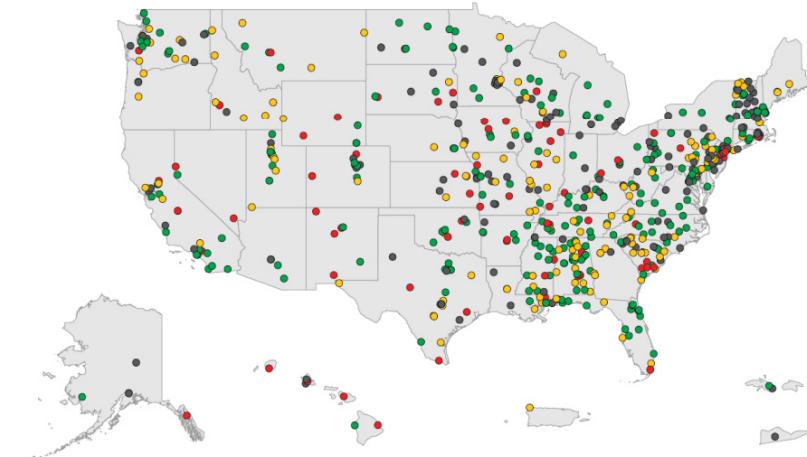
Business Case Analysis Comparison (Tier 1 RCs)



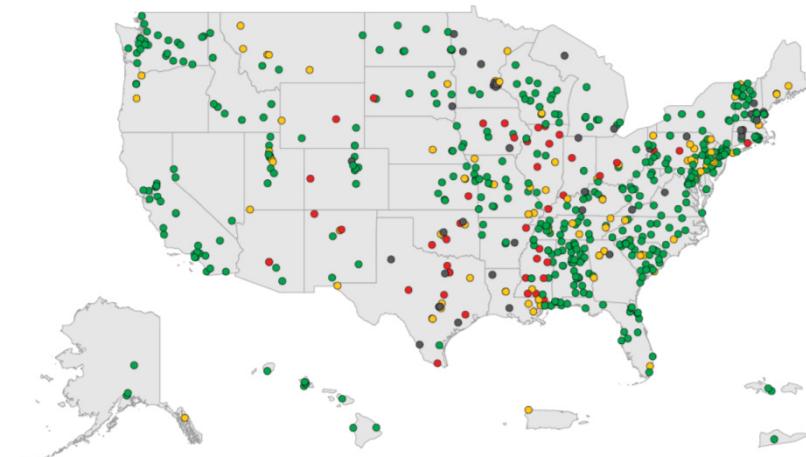
Current State ORI = 68, below scores are for the end of the 15 year investment period.



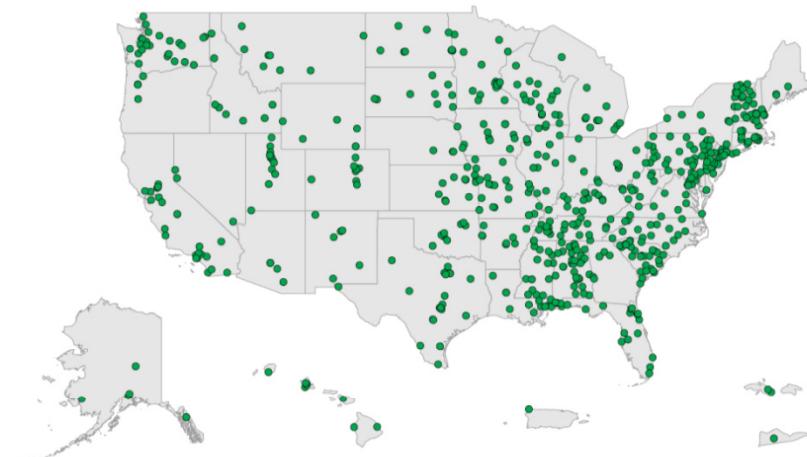
Scenario 1: Current Funding > ORI = 60



Scenario 2: Base Funding > ORI = 66



Scenario 3: Affordable Readiness > ORI = 75



Scenario 4: Getting to Green > ORI = 81

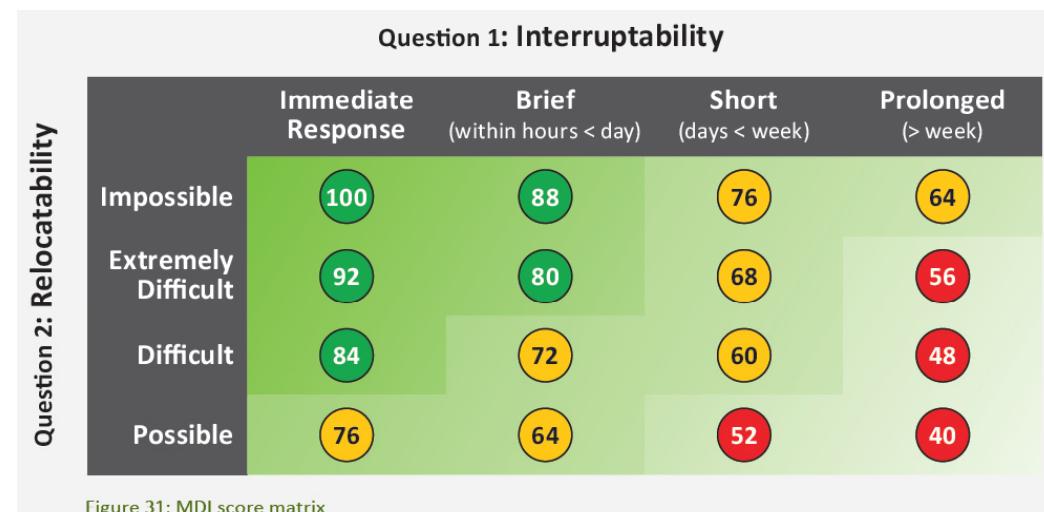


Key Analysis Advancements

- Portfolio Mission Dependency Index
 - Current & future state comparisons
 - Makes analysis compelling
- MILCON-SRM Sensitivity Analysis
 - Makes analysis real & credible
- Operational Readiness Analysis
 - Focuses on investment outcomes
 - Simplifies the analysis
- Operational Readiness Frontier
- Mission Readiness Modeling
- Business Case Analysis – Simulation Engine



- Used Mission Dependency Index
 - For current and future state
- Evaluates Risk & Operational Readiness
- Aligns with
Federal
Real
Property
Council
Guidance

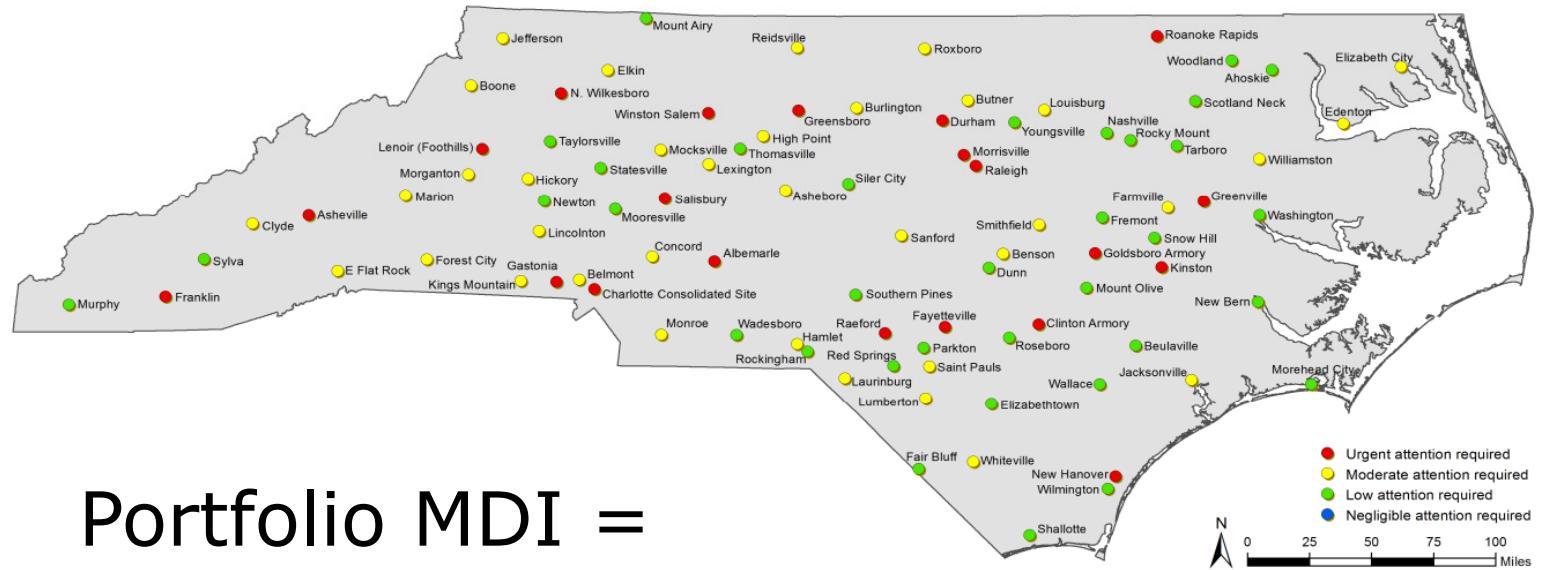


Key Analysis Advancements

Operational Readiness Analysis



MDI results for North Carolina's current state inventory:



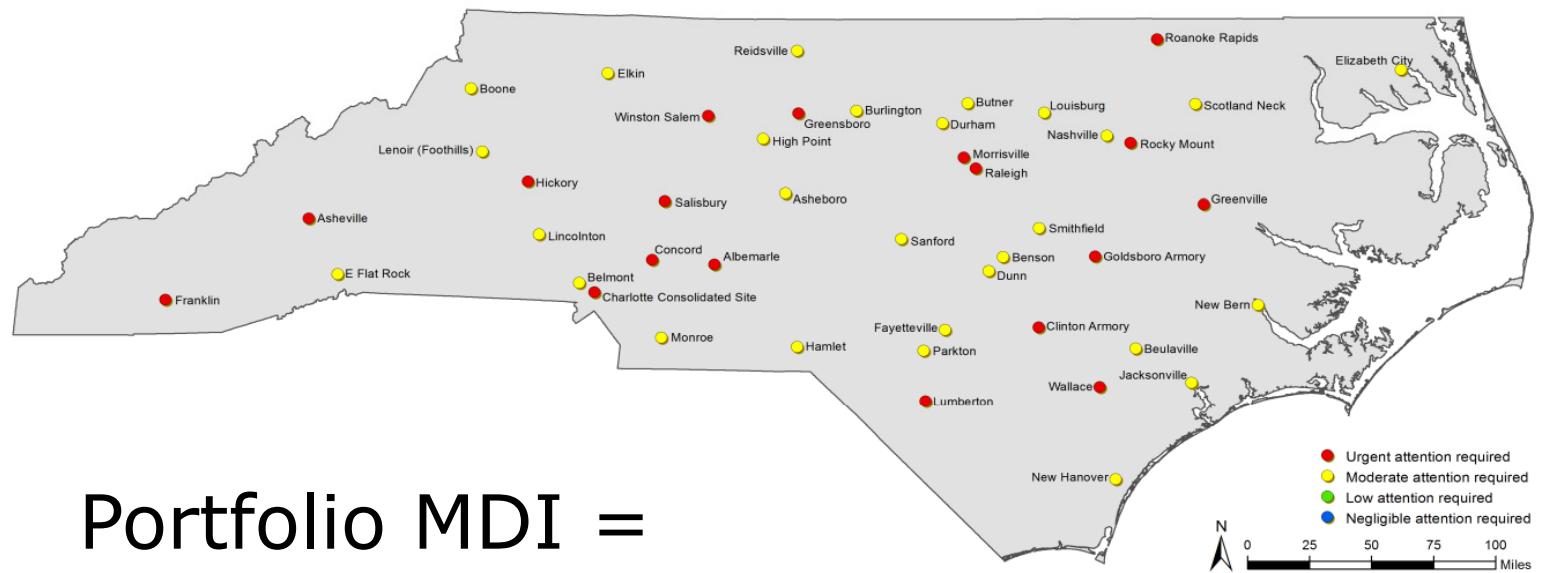
Portfolio MDI =
63

Key Analysis Advancements

Operational Readiness Analysis



MDI results for North Carolina's future state inventory:



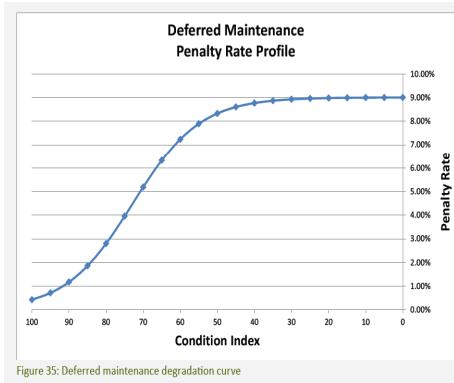
Portfolio MDI =
78

Key Analysis Advancements

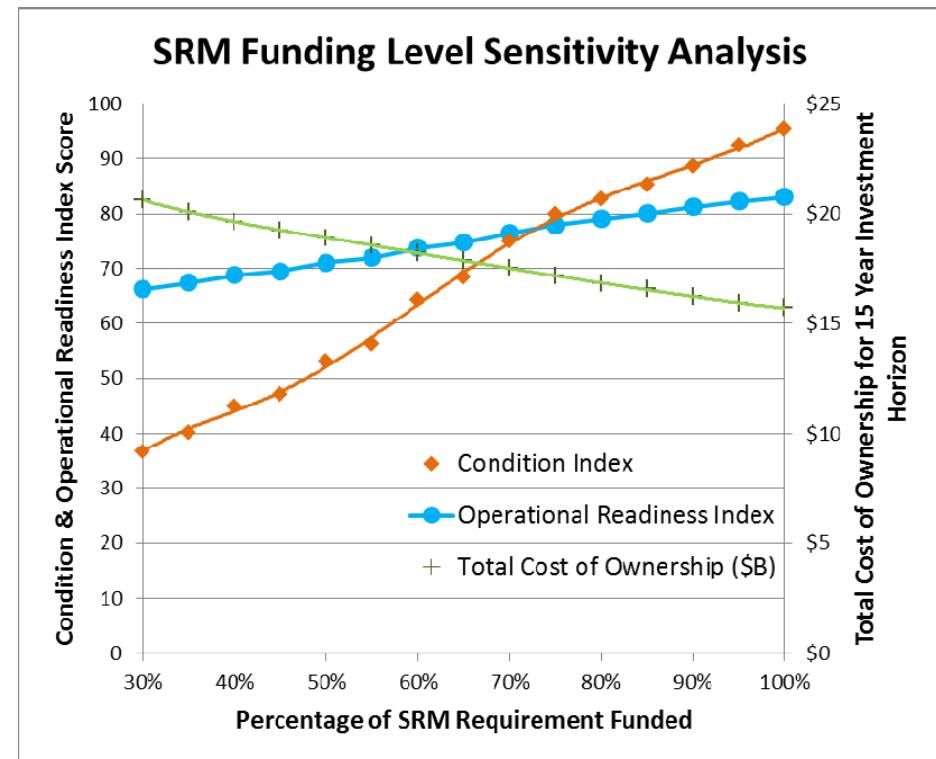
MILCON-SRM Sensitivity Analysis



- Uses a condition-based degradation analysis to calculate cumulative deferred maintenance penalties

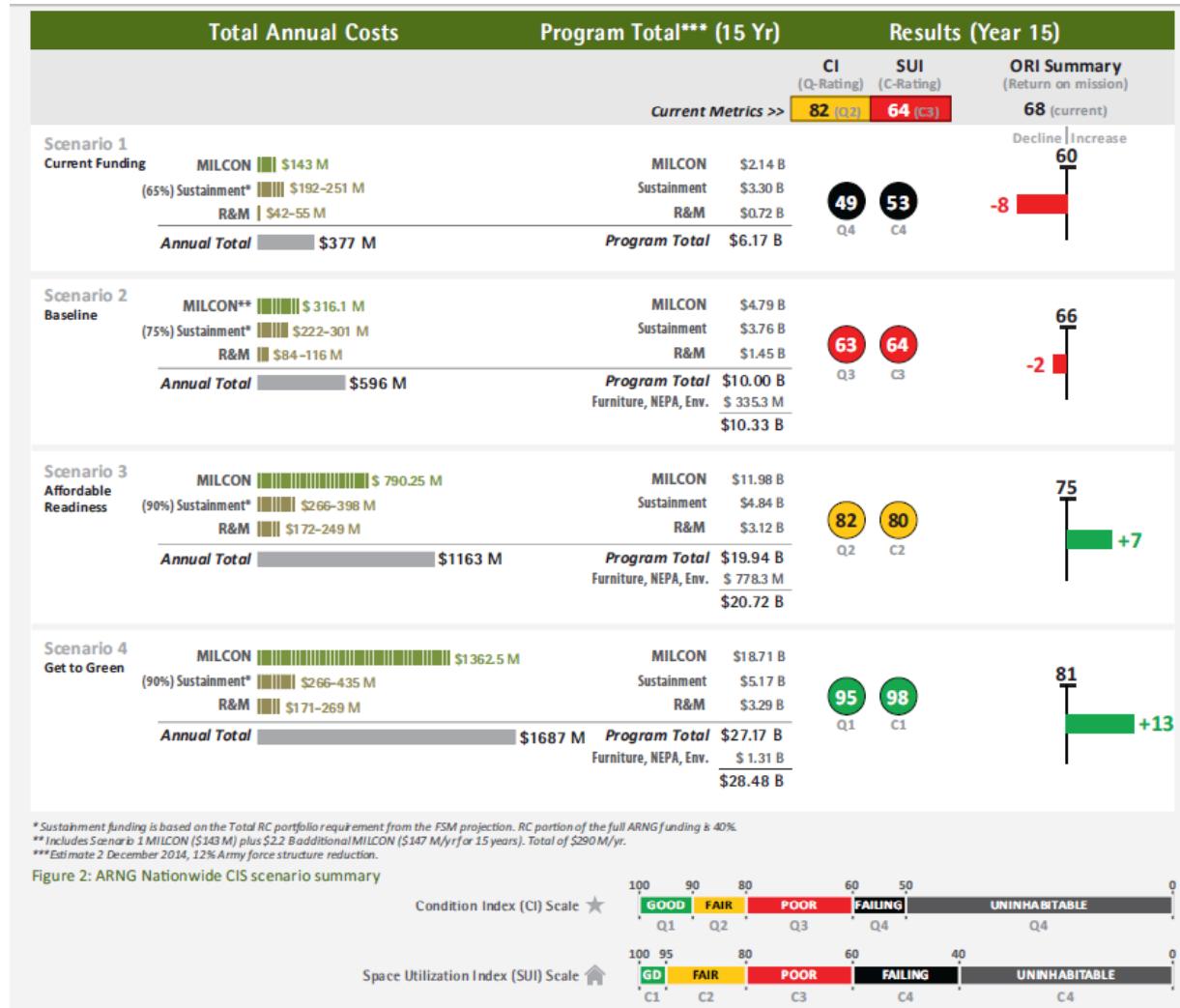


- As percentage of SRM increases, CI and ORI increase while total cost of ownership including MILCON requirements decreases due to avoiding deferred maintenance penalties



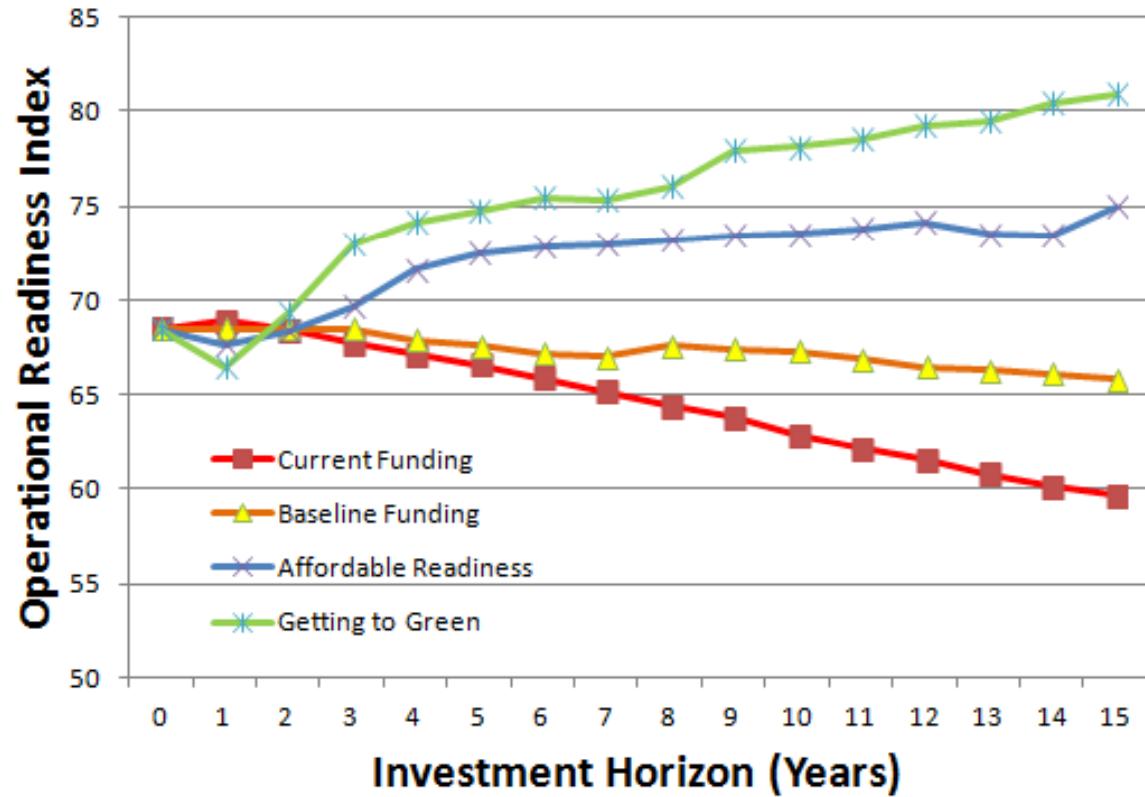
Key Analysis Advancements

The Range of Investment Strategies





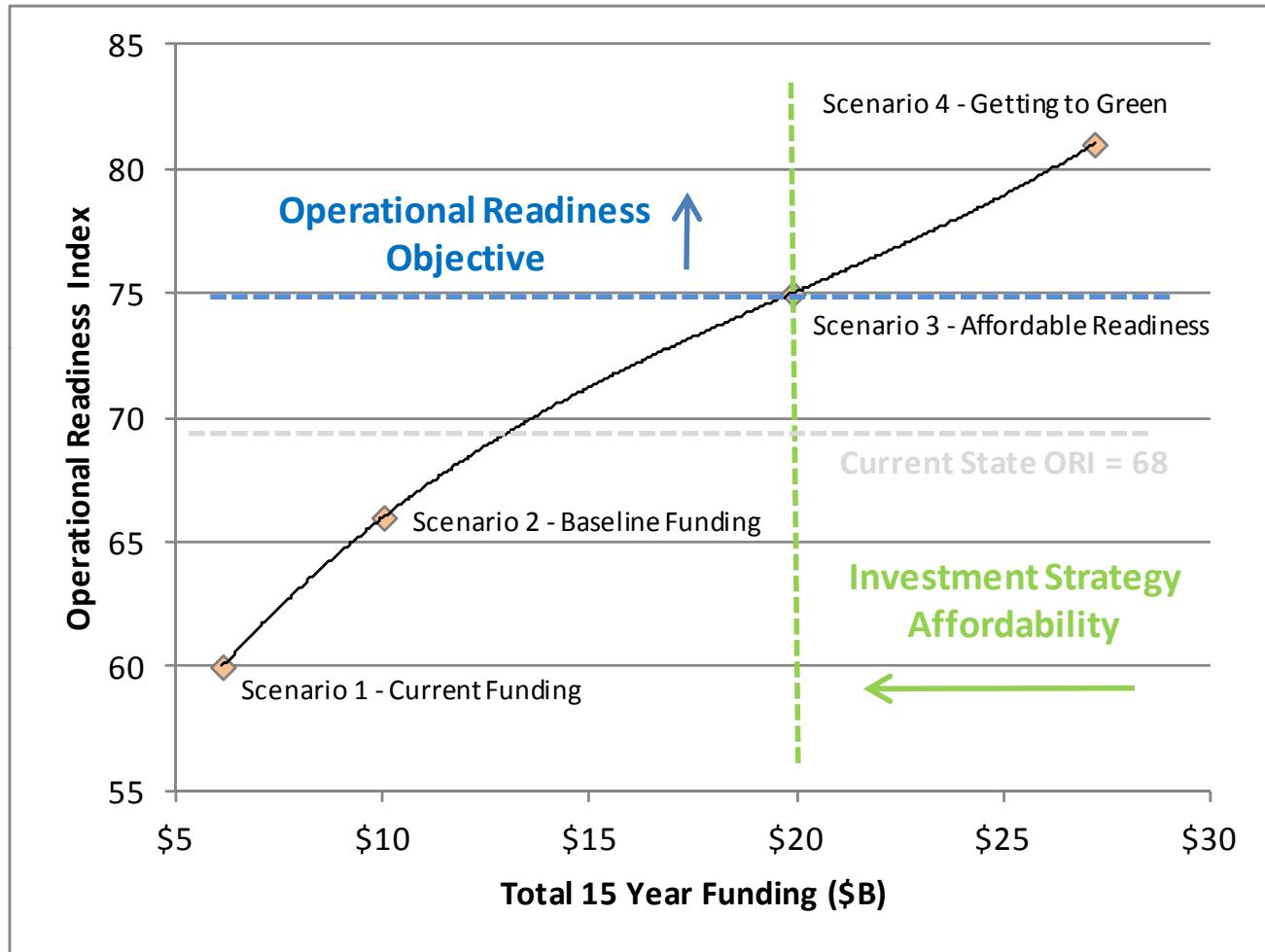
Changing Operational Readiness Indices



Shows the change in ORI over time for different investment strategies

Key Analysis Advancements

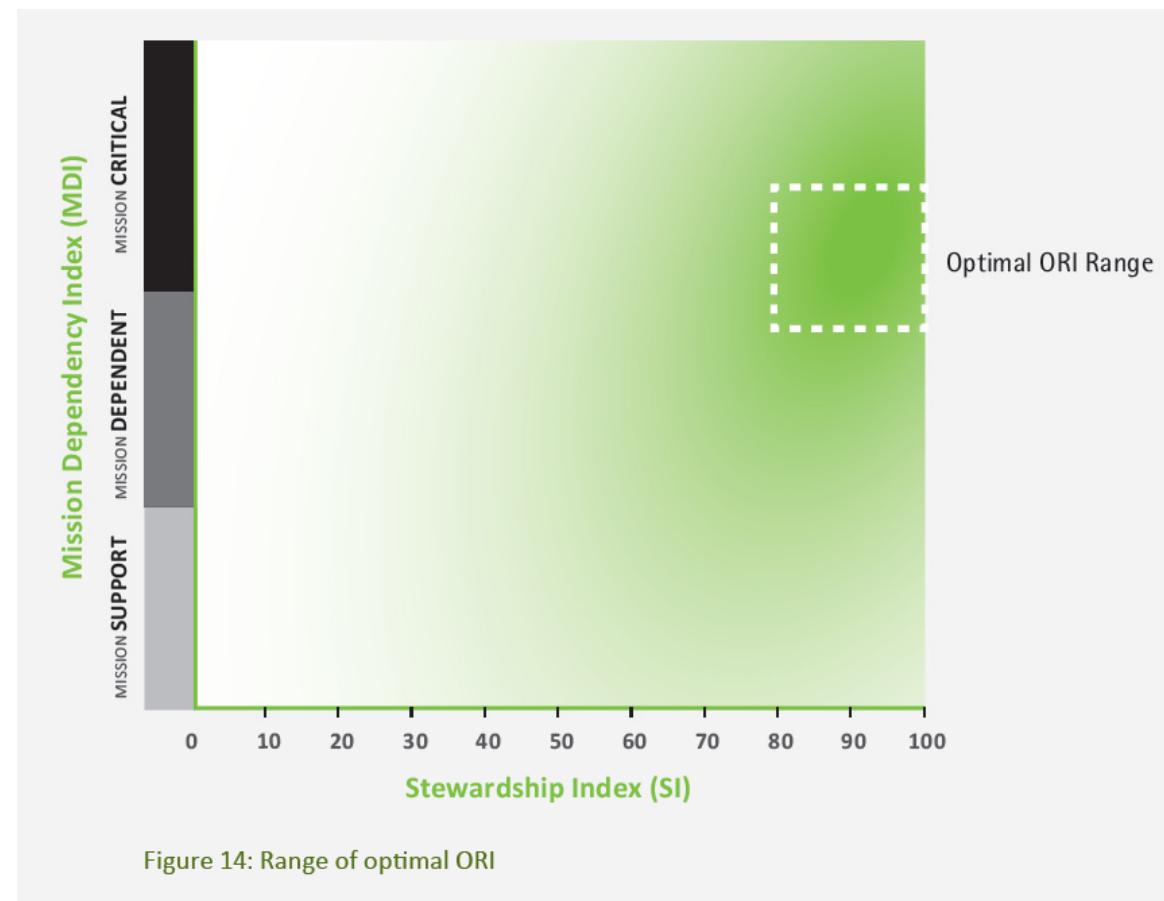
Operational Readiness Frontier



Different investment strategies fit along a continuum to evaluate benefit-to-costs

Key Analysis Advancements

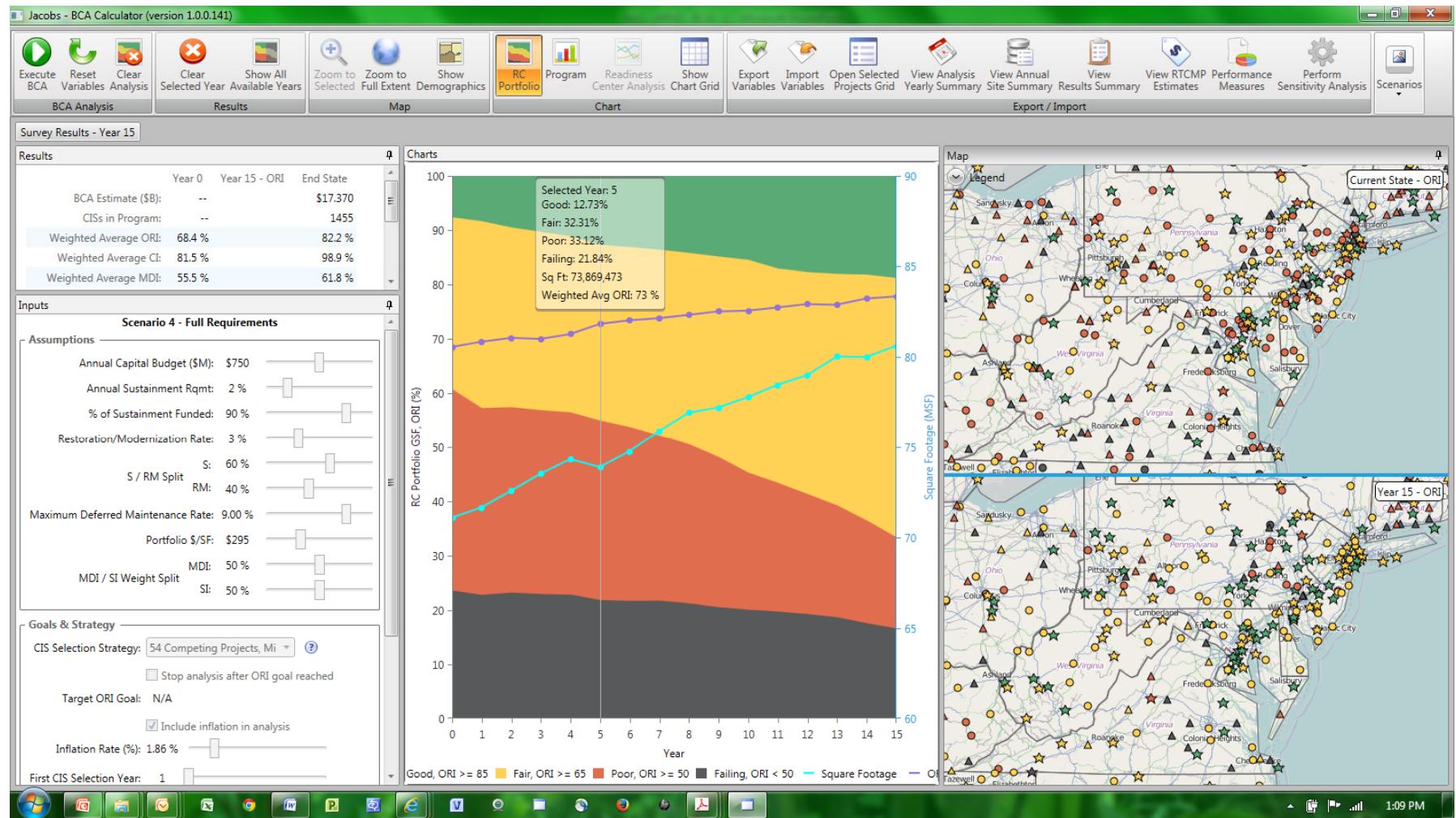
Mission Readiness Modeling



ORI heat map used to develop optimization strategies balancing mission readiness and affordability

Key Analysis Advancements

Business Case Analysis Simulation Engine



Key Analysis Advancements

Business Case Analysis Simulation Engine (Video)



Jacobs - BCA Calculator

BCA Analysis Results Map Chart Export / Import Scenarios

Execute BCA Variables Clear Analysis Selected Year Available Years Show All Available Years Zoom to Selected Zoom to Full Extent Demographics Show Demographics RC Portfolio Program Readiness Center Analysis Export Variables Import Variables Open Selected Projects Grid View Analysis Yearly Summary View Annual Site Summary Results Summary View View View RTCMP Performance Measures Perform Sensitivity Analysis Load Scenario and Execute BCA Scenarios

Survey Results

No results available

Results

No results available

Inputs

Assumptions

- Annual Capital Budget (\$M): \$500
- Annual Sustainment/Restoration Rqmt: 3 %
- Average Modernization Rate: 2 %
- % of SRM Requirement Funded: 80 %
- SR: 60 %
- SR / M Split M: 40 %
- Maximum Deferred Maintenance Rate: 8.00 %
- Portfolio \$/SF: \$320

Goals & Strategy

CIS Selection Strategy: 54 Competing Projects

- Stop analysis after ARI goal reached
- Target ARI Goal: N/A
- Include inflation in analysis
- Inflation Rate (%): N/A
- First CIS Selection Year: 1
- % Force Change: 0 %
- Allow annual budget overage
- Allow best fit CIS selection

Charts

No data to plot

Map

Legend Current State End State

Good, ARI >= 85 Fair, ARI >= 65 Poor, ARI >= 50 Failing, ARI < 50 Square Footage ARI

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Relevance to Federal Facilities

- Supports multiple decision making objectives
 - Defense BRAC
 - Civilian Property Realignments
 - Freeze the Footprint
 - Climate Action / Resiliency Investment Strategies
 - Etc.
- Compelling business case
 - Directly links mission performance to facility investments via Portfolio Mission Dependency Index
- Simplifies the business case
 - Operational Readiness Index links mission performance, risk, resource investments with asset performance
 - Simplifies cause and effect relationships for complex problems
- Systematic, Scalable, Repeatable & Auditable
 - Supports President's 'National Strategy for the Efficient Use of Real Property'
 - Supports Federal Real Property Council objectives
 - Conforms to ISO 55000 – Asset Management & 31000 Risk Management Standards



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