

Organizational Sustainability— Planning and Realizing a More Resilient Future

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Competitive Advantage

4 x the sales growth and **8 x** the employment growth.

(11-year Harvard study)

Companies that lead in sustainability have stock prices **25% greater.** *(Goldman Sachs)*

Outperformed industry averages by **15%** during the recession. *(AT Kearney)*

Competitive Advantage

- Drive Down Operating Costs
 - Improve performance and efficiencies
 - Minimize business risk, improve safety
 - Improve recruitment and retention
 - Improve employee morale and productivity



Competitive Advantage

- Generating Growth
 - Increase revenue – learning and innovation
 - Enhance recognition and reputation
 - Improve customer loyalty; access to capital; supply chain management
 - Enhance strategic planning



Characteristics of Sustainable Organizations

- Top-down and bottom up structure
- Shared vision
- Motivation
- Measure and continually improve



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maisonbisson.com/blog/post/11526

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Integrating Sustainable Practices into Ground Based Space Facilities



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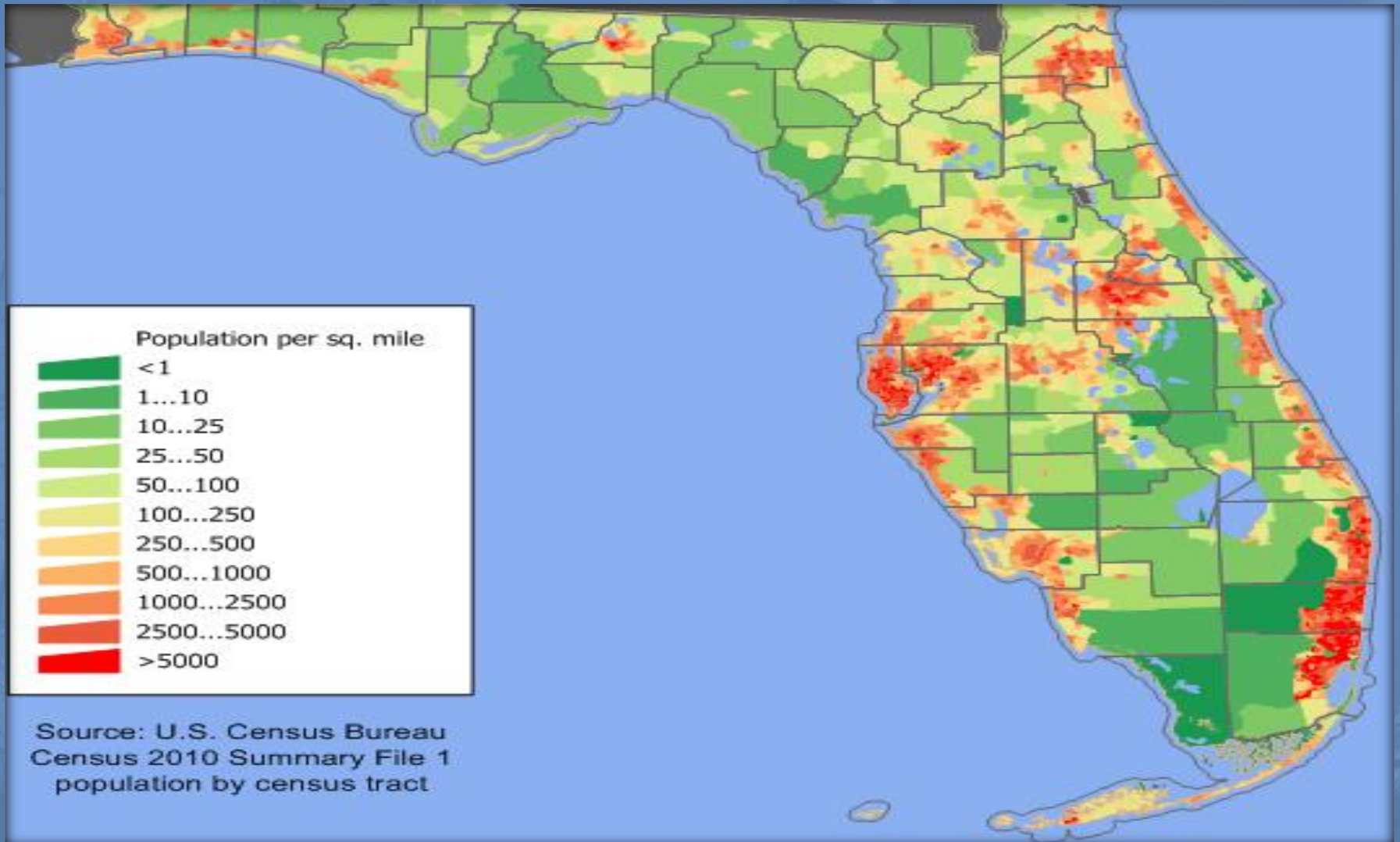
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More than Launch Pads



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Mega-Scale Benefits



Meso-Scale Benefits



Micro-Scale Benefits



NASA's Sustainability Plan (SSPP)

Key Performance Goals

- Increase energy efficiency....
- GHG inventories and reduction...
- Leverage green acquisition...
- Minimize waste.....
- Support communities....
- Raise employee awareness.....

Climate Adaptation = Risk Management



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GHG Mitigation-- Strategic Elements

Reduce GHG Emissions

- Increase energy efficiency
- Increase renewable & alternative energy
- Decrease fleet petroleum use
- Increase the percentage of green buildings

Increasing Energy Efficiency



Space Coast Solar Energy Center



NASA Goddard Landfill Gas



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NASA Langley Waste to Energy



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Alternative Fuel Vehicles



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KSC Propellants North



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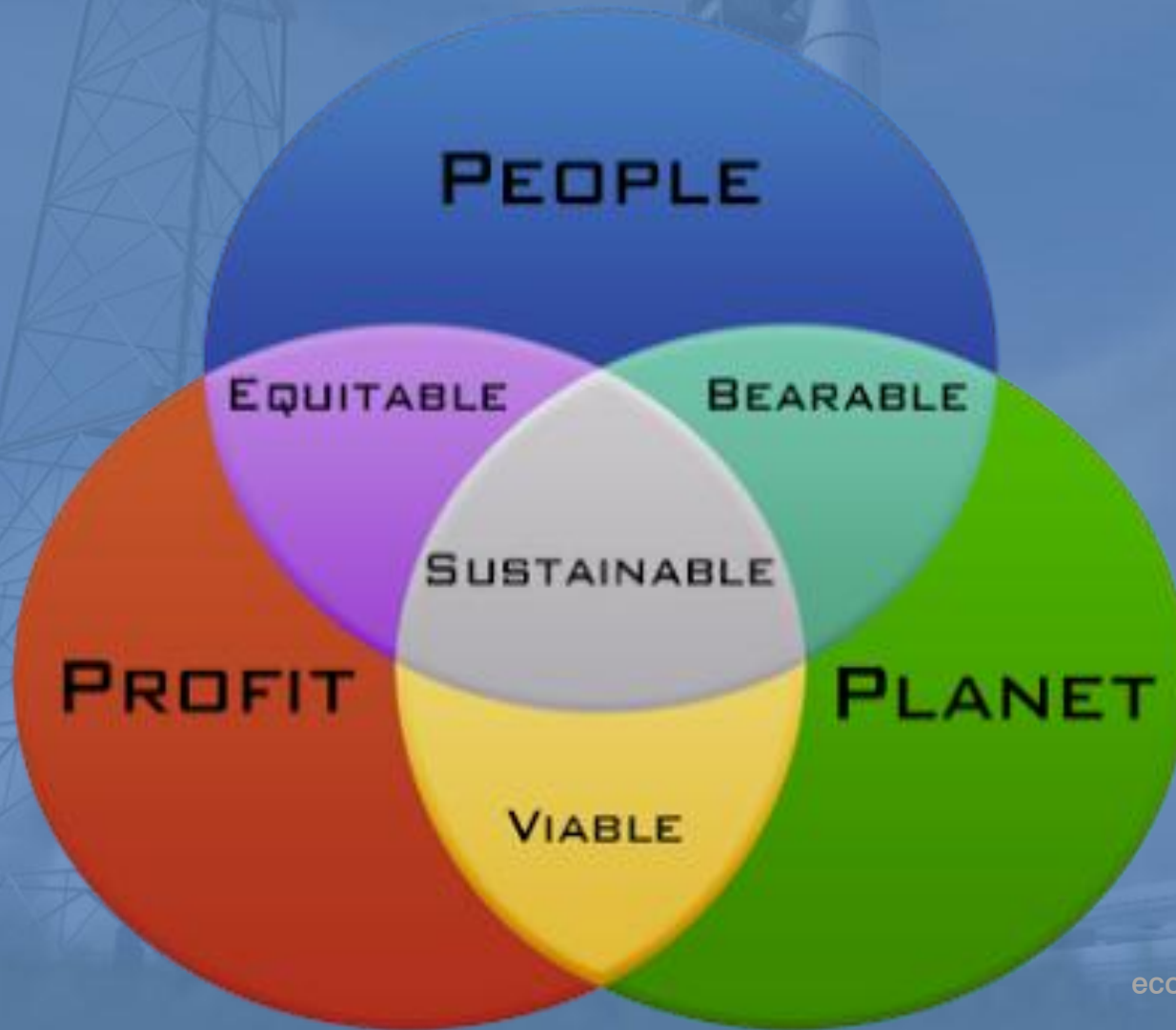
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NASA and US Agency Approach

Executive Order 13514

- “Federal Leadership in Environmental, Energy and Economic Performance”
- Focused on eco-efficiencies
 - environmental and economic
- Limited social focus

ESA and Sustainable Development



economicallysound.com

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Sustainable Development

- It requires that we see the world as a system –a system that connects space and a system that connects time.

Systems Thinking

Over Time:

- Mid-1900's farming practices
 - impact agriculture today
- Economic policies endorsed today
 - impact poverty in the future

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Global Reporting Initiative (GRI)



www.esa.int

European Space Agency

ESA Key Issues and Challenges

- **Build our future**
- **Improve daily life**
- **Live safely**
- **Protect the environment**
- **Stimulate our need for knowledge**
- **Boost economic growth**

GRI Reveals Social Benefits

“The overall vision for ESA’s Earth observation activities is to play a central role in developing the global capacity to understand our planet, predict change and mitigate the negative effects of climate change.....”

Comparison of Sustainable Approaches



Increased Funding for Missions

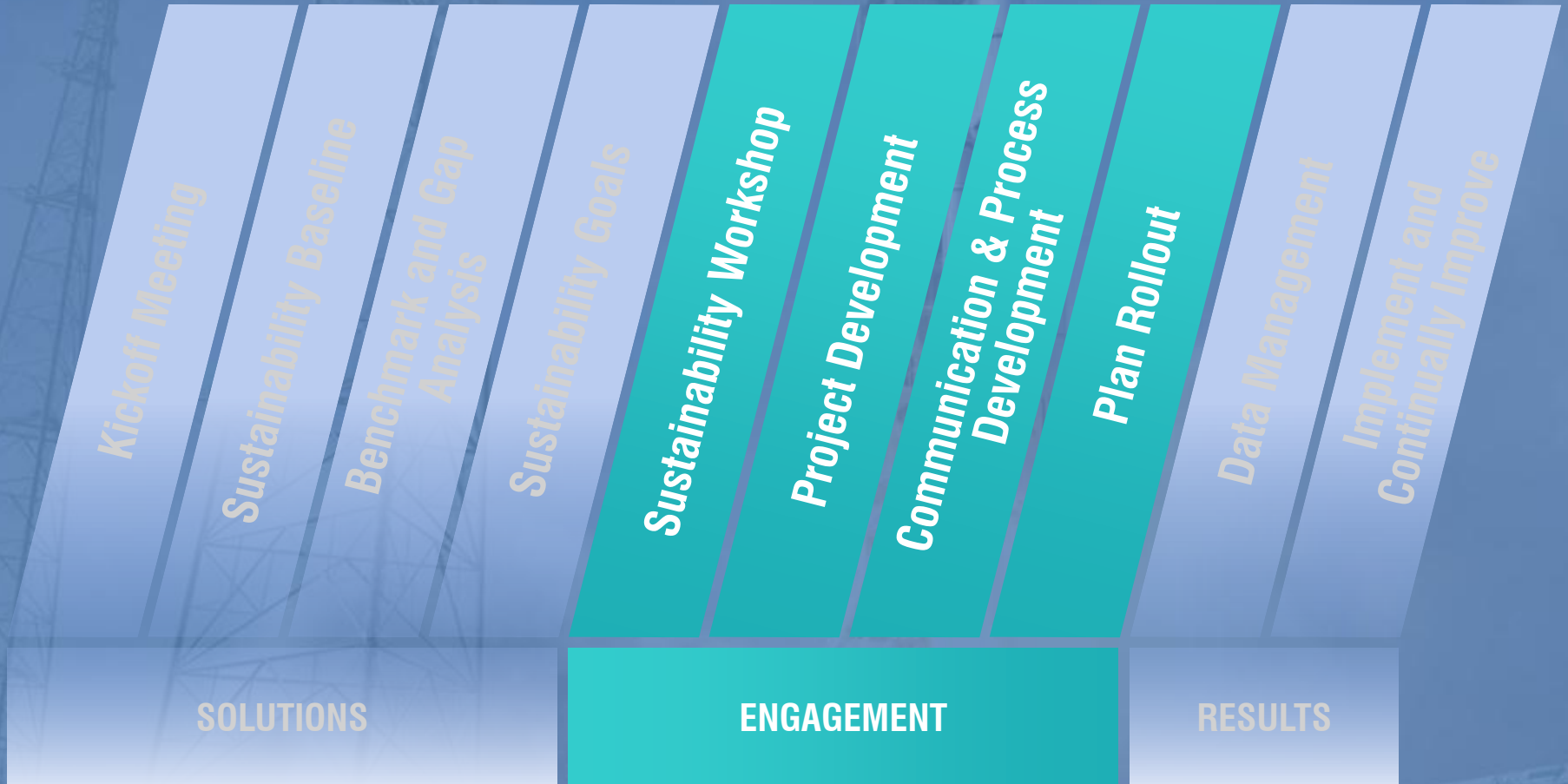


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Increase Adaptive Capacity & Value



Increase Adaptive Capacity & Value



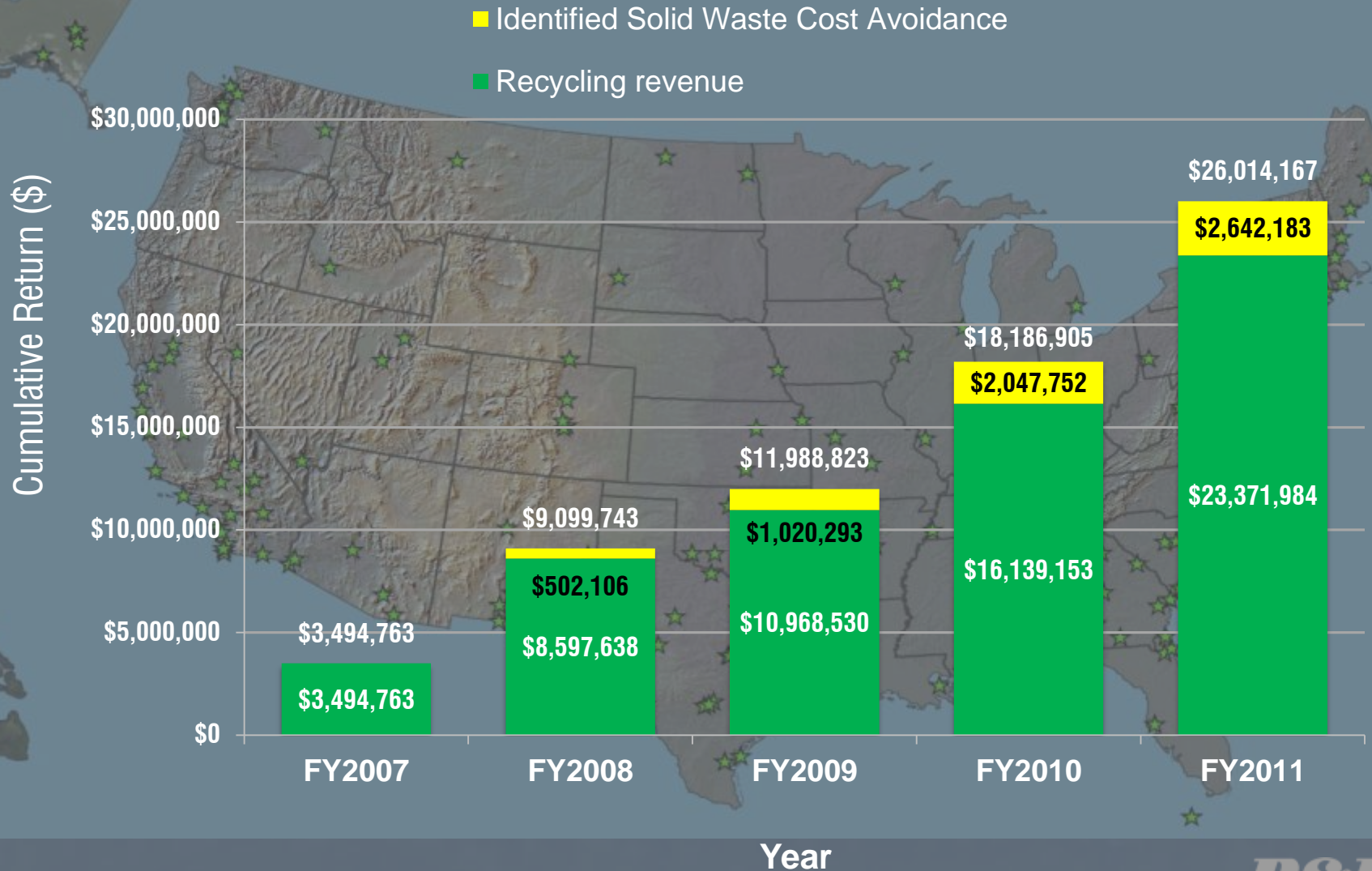
Increase Adaptive Capacity & Value



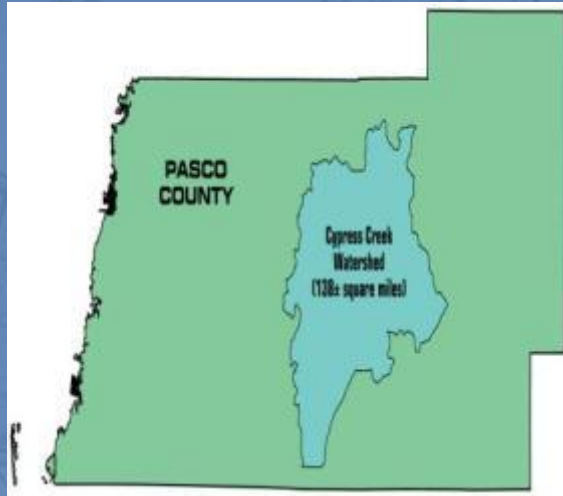
Avoid Costs and Generate Revenue



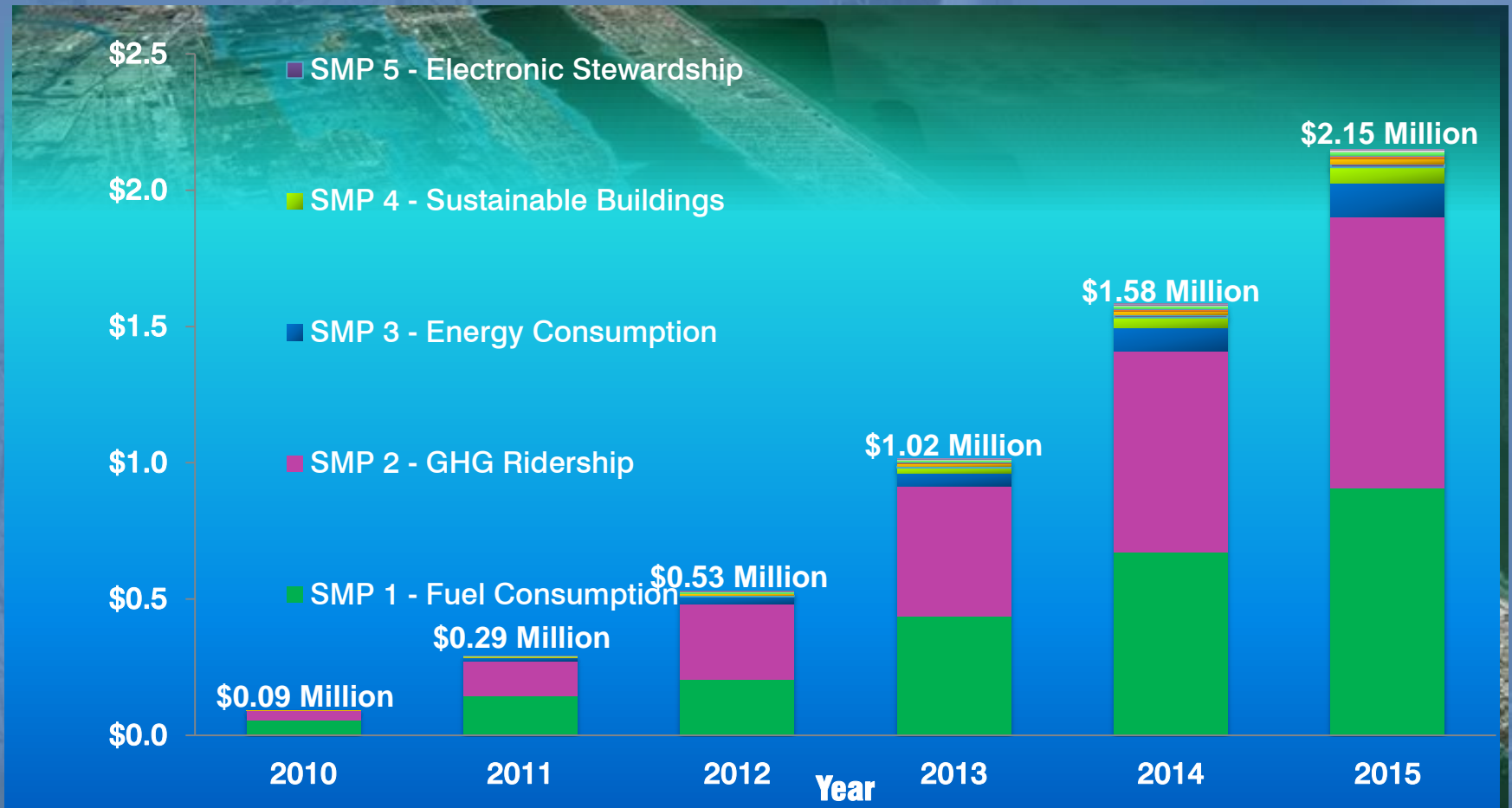
Avoid Costs and Generate Revenue



Natural Resource Stewardship for the Public Good

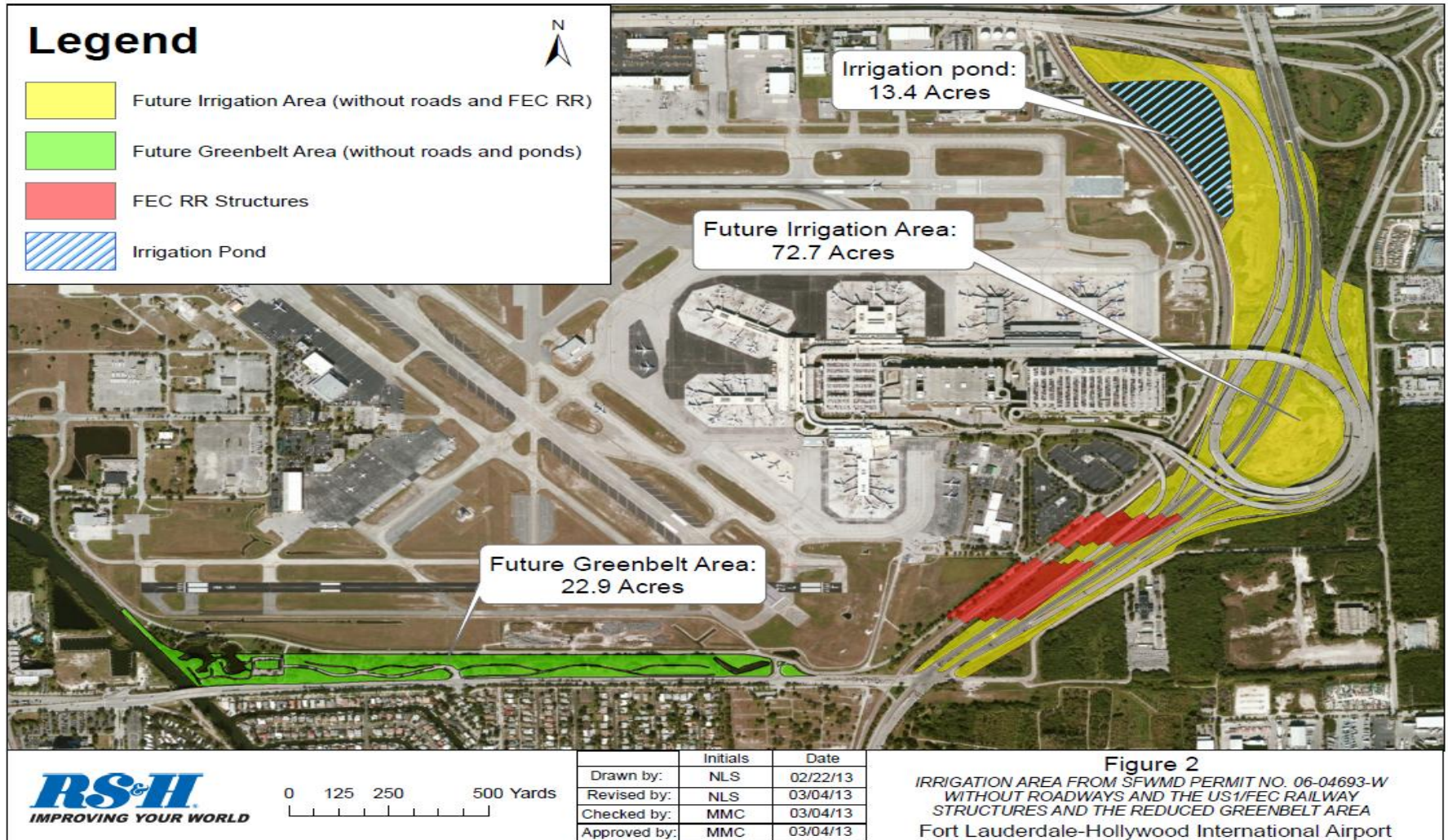


Climate Action & Increased Revenue



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Responsible Use of Available Resources



Integrate Sustainability into Operations



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