

Alaska Climate Change Strategy Public Infrastructure Research Needs

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Research Needs Workgroup

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Summary of Policy Advice

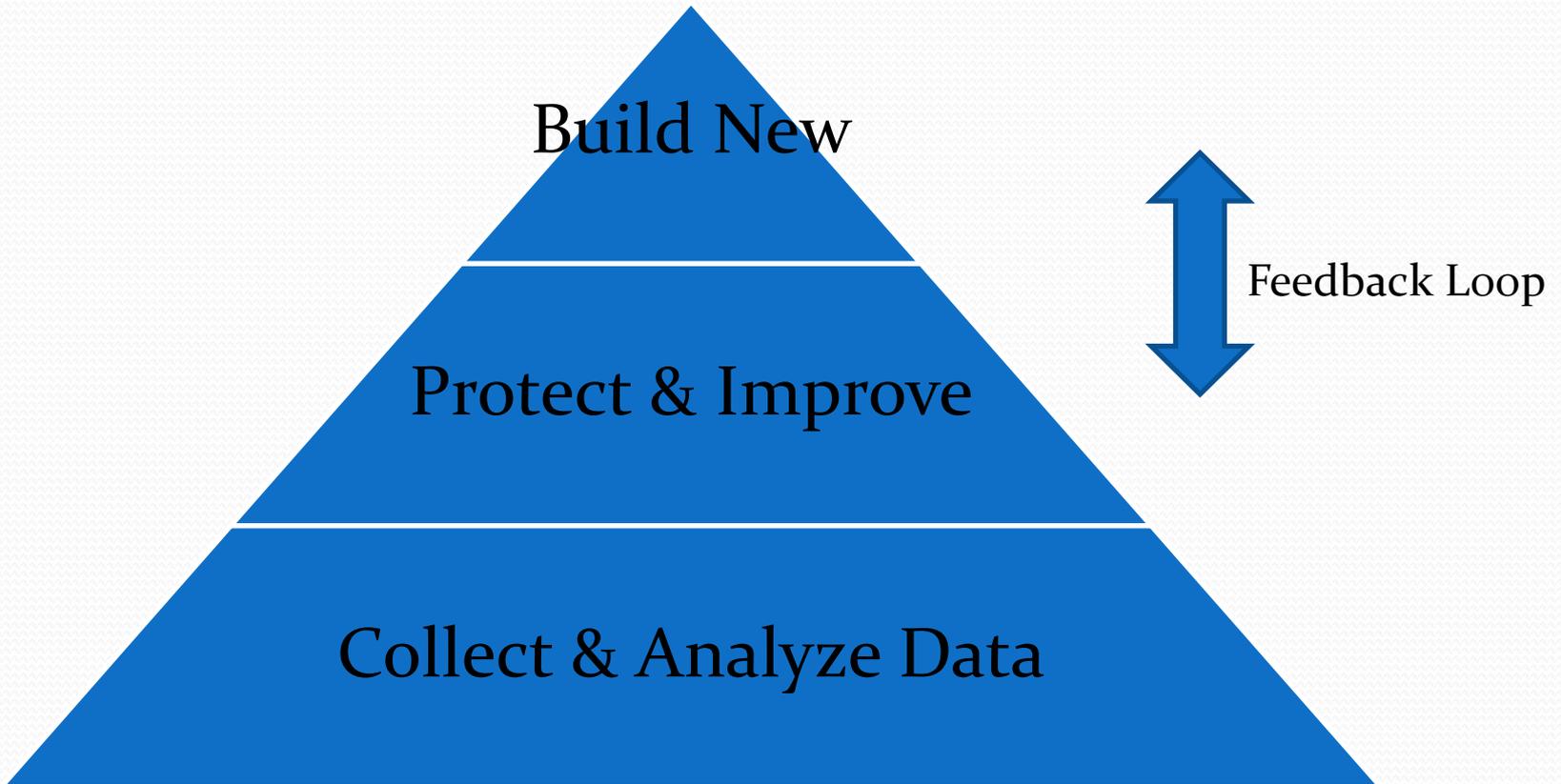
- Public Infrastructure Technical Work Group
 - Systems Approach
 - System vs. project-by-project development
 - Investment vs. Expense
 - Adaptive
 - Vision
 - Sustainable infrastructure that supports communities in an uncertain environment.

PI TWG Vision

Sustainable infrastructure that supports communities in an uncertain environment.

1. Accomplish systematic data collection, analysis, and use.
2. Implement a “no regrets” policy for existing public infrastructure.
3. Build to last. Build resiliency into Alaska’s public infrastructure.

Integrated Decision Making



Insights from AK Forum on Environment

- Need for an Integrated Approach
 - “In Alaska we create plans and then ignore them.”
 - Development of Transit
 - Land Use Planning
 - Spending Imbalances (Regions and modes)
 - “Agencies don’t coordinate .”
 - Highway vs. Rail
 - Independent Energy Utilities
 - Implementation of best practices - (inter)national coordination.
 - “We Don’t Maintain our Investments.”
 - “We often don’t know we have a problem until it has failed.”

PI Research Needs

Planning

1. Update climate change models and develop tools for practitioners.
 - SNAP (include flood level forecasts)
 - Alaska Environmental Atlas (AEDIS)
2. Link Planning w/ Execution
 - Identify barriers to implementing mitigation and adaptation strategies.

PI Research Needs (continued)

Engineering

1. Update engineering codes and standards.
 - Hydrology & Hydraulics
 - Coastal Erosion (Beach nourishment)
- Develop Probabilistic design tools & methods
 - Identify critical parameters.
 - Collect the data to produce probability distribution functions.

PI Research Needs (continued)

Operation

1. Monitor infrastructure investments
 - Use Smart Sensors.
 - Effects of permafrost degradation.
 - Changes in hydrology

PI Research Needs (continued)

Maintenance

1. Establish baseline public infrastructure inventory.
 - Condition, location, remaining value/life.
 - Enhance & Use RAPIDS database.
 - Integrate with DOT&PF Maintenance Management System