BRIDGING THE GAP

Increasing Social and Economic Resilience within Government Agencies

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Cadets from the United States Air Force Academy (USAFA) work with the United States Forest Service (USFS) to build a pedestrian bridge in the Maroon Bells-Snowmass Wilderness area.

One purpose of the cooperation between agencies is to model social and economic resilience:

- The USFS has been experiencing difficulty maintaining the National Forest infrastructure in recent years due to forest fire-driven budget constraints.
- USAFA seeks to provide cutting-edge academic programs while under similar budgetary limits.
- By working together, both agencies benefit and taxpayer investments are maximized.
Establishing the U.S. Forest Service
- February 1, 1905 under President Roosevelt
- The agency’s mission is to sustain the health, diversity, and productivity of the nation’s forests and grasslands to meet the needs of present and future generations.

Recent Forest Fires
- 6 major wild fires since 2012 encompassing nearly 250,000 acres of land

Budget Constraints

Maroon Bells Scenic Area
- White River National Forest
- Over 300,000 visitors every season
- ADA (Americans with Disabilities Act) accessible
- 10 Civil Engineering Majors (3rd year students)
  - 5 Construction Management Emphasis
  - 2 Structural Engineering Emphasis
  - 1 Geotechnical Engineering Emphasis
  - 1 Environmental Engineering Emphasis
- 1 Operations Research Major (2nd year student)
- Cadets had minimal experience and little knowledge of how to design a bridge of any sort
  - This project gives the cadets an opportunity to see each step of the design process
  - This also gives the cadets an opportunity to think critically about how to deal with certain constraints, such as aesthetics and construction constraints
- 1 Academic Advisor
Interagency Agreement

- A 13 page document outlining the roles and responsibilities of the team consisting of the United States Air Force Academy cadets and advisor, and well as the contributions of the employees of the United States Forest Service

Budget & Funding Contributions

- The agreement states that the US Forest Service and USAFA shall work together to identify grants and partnerships which could assist with the cost of materials procurement
- This action is meant to increase the economic resilience of both the USFS and USAFA
DIFFICULTIES

- Communication
  - Schedule alignment

- Legal Constraints
  - Responsibility
  - Division of Labor
  - USFS Limitations

- Funding
  - Outsourcing vs Insourcing
  - Allotment and division of funds

- Collaboration of Resources
  - Professionals and Equipment

- Lack of Experience and Knowledge of the Cadets
  - Learn-as-we-go approach
Hands-On Learning Experience
- Cradle to grave engineering

Introduction to Real World Engineering Processes

Precursor to Deployed/Contingency Operations?
- Critical thinking/problem solving skills

Interagency Experience for Future Joint Operations Duty

Foundations for Future Collaborations
Savings
- Consulting engineer fees and/or in-house design time
- Construction labor costs

Seed Project for future USFS infrastructure assistance from USAFA

Model to encourage other agencies/citizens to contribute to the maintenance and protection of our national forests and grasslands
The result of the interagency agreement for this project allows the USFS and USAFA to collaborate use of resources and produce a product benefiting both agencies. This increases social and economic resilience by allowing the USFS to continue working on other projects under severe budget constraints driven by the recent increase in forest fires. This experience helps the cadets deal with adversity and allows them to think about how they will cope with various types of constraints and challenges in the future. The project provides a model for future collaboration between other government agencies.
QUESTIONS?