ACRP Problem Statement 17-02-16

Green Revolving Fund Toolkit for Airports

ACRP Staff Comments

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TRB Aviation Committee Comments

ENVIRONMENTAL IMPACTS OF AVIATION: Supported. Reviewers were supportive of learning more about this topic and disseminating this funding opportunity to airports, as they may not be aware of it. Reviewers were concerned about how this service would be "hosted" and who would be responsible for maintaining it (similar to SAGA website concerns). In addition, recommend including organizational challenges that may be encountered.

Review Panel Recommendation and Comments

Recommended. Some on the panel saw value in a tool for airports of all sizes to track cost savings from conservation projects. Others felt the proposed research was duplicative with ACRP Report 141: Renewable Energy as an Airport Revenue Source, it would be hard to develop something for different sized airports, and that large airports would do their own engineering studies. The problem statement more or less defines what a mechanical engineer does—and that does not reduce to a toolkit. There was also concern about how this would work relative to federal policy on the use of airport revenues/funds. Nevertheless, a tool would promote a long-term view of savings.

AOC Disposition

This problem statement received an average rating of 3.3 points out of a possible 5 points among voting AOC members. The research proposed under this problem statement could build on ACRP Report 41: Renewable Energy as a Airport Revenue Source and Synthesis 66: Lessons Learned from Airport Sustainability Plans. Approved and funded at $350,000 as ACRP Project 02-77.
Problem Title: Green Revolving Fund Toolkit for Airports

Potential Focus Area(s): Environment, Operations, Asset Mgmt.

Background

There is limited funding available to airports to cover sustainability projects. Airports can finance energy and water efficiency projects either from their capital budgets, or with the help of external funds such as rebates and subsidies from utilities. FAA’s Voluntary Aviation Low Emission (VALE) program provides competitive grants to fund local air quality improvement projects. For larger projects, performance---contracting options, such as Energy Savings Performance Contracts (ESPCs), may be available to airports located in states with such programs. All these sources of funding have their challenges.

Capital budgets are finite and have many possible uses, and external funding limits what expenses can be covered (for example, utility rebates cover a portion of equipment and typically do not cover labor costs). VALE funding only supports projects in EPA non-attainment areas. These grants focus on direct emissions, and actions that reduce electricity and water consumption are usually not eligible. Emerging Section 512 Energy Efficiency grants compete with other discretionary funding, and often do not score well under FAA selection criteria. Energy performance contracting requires extensive and complex procurement support, and may not be viable for projects under 100,000 square feet. Moreover, after an action is completed, there may be limited ability to measure the cost savings resulting from the project. Recent ACRP research findings (e.g., Synthesis 66) reveal that many airports with strong commitments to sustainability are not tracking operational cost savings from energy and water use reduction.

Similarly, few airports have implemented a formalized a process to evaluate whether to pursue a utility cost reduction activity based on its projected competitive return on investment. Often, teams implementing sustainability programs and projects do not have utility bill oversight. Other airport lines of business, or even external agencies, monitor and pay for electricity, water, and building natural gas. Without tracking of savings, organizations do not clearly see the financial and environmental benefits of such projects.

A Green Revolving Fund toolkit tailored to airport facilities will address these problems by creating a process for airports capture the financial benefits of resource conservation projects, then leverage savings into flexible self-financing for further green projects. There is a range of resources available for airports to identify potential utility cost saving projects from ACRP and other sources. The toolkit will synthesize the information from these resources and provide a single go-to mechanism to help airports prioritize potential efficiency projects, track savings once they are implemented, and account for the allocation of operational cost reductions back to future investments. Gaining the ability to take savings and reinvest in new energy and other efficiency measures will reduce the demand on capital budgets. The toolkit creates a transparent and centralized system that engages stakeholders across all relevant airport lines of business. Airports and implementation teams will gain a method to monitor the energy, water and GHG saving actions. Establishing a Green Revolving Fund provides an effective framework for continuous improvement and efficiency.

Objective

Develop a Green Revolving Fund toolkit for airports to establish a new source of efficiency project funding and create an effective performance tracking mechanism.

Proposed Tasks

The research plan should include appropriate interim deliverables for ACRP panel review and approval.
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that include, at a minimum:

- Identify at least 6 airports representing diverse geographies and sizes to serve as the research partners. Interview the airports and provide a summary memo of findings. Research will include engaging airport Chief Financial Officer’s and their departments.
- Review Literature and Guidance on both Green Revolving Funds and airport energy, water, and other resource efficiency measures.
- Establish a comprehensive, integrated framework for comparing potential efficiency projects on metrics such as environmental outcomes, cost savings, and return on investment using existing relevant ACRP tools and other resources.
- Draft guidance for an accounting system to identify, track, and bank savings associated with efficiency actions. Guidance will include debt service requirements for pre-existing loans in relation to energy conservation and other potential operational saving sources.
- Draft guidance on administrative requirements for operating a GRF, including a user-friendly Frequently Asked Questions (FAQs) brochure explaining the program to airport stakeholders. Include detailed explanation for finance departments and airport Chief Financial Officers.
- Create beta version of spreadsheet toolkit to test with partner airports.
- Optional task – build web portal functionality for spreadsheet tool that could be hosted on an ACRP website (this might require project budget at higher end of cost estimate).
- Refine final version of GRF spreadsheet based on airport user feedback.
- Complete an Airport Green Revolving Fund Toolkit guidebook incorporating all findings and include a list of best practices to address common barriers to successful GRF implementation.
- Produce brief video explaining toolkit components and features for airport audience.

### Estimated Funding and Research Duration

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<tr>
<th>Estimated Funding</th>
<th>$400,000 – $500,000</th>
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<tr>
<td>Estimated Research Duration</td>
<td>15 months, including 3 months for review</td>
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### Related Research:

- ACRP Report 69: Asset and Infrastructure Management for Airports – Primer and Guidebook
- ACRP Report 80: Guidebook for Incorporating Sustainability into Traditional Airport Projects
- ACRP Report 117: Airport Escalators and Moving Walkways – Cost Savings and Energy Reduction Technologies
- ACRP Report 139: Optimizing Airport Building Operations and Maintenance Through Retro-commissioning
- ACRP Report 141: Renewable Energy as an Airport Revenue Source
- ACRP CD-ROM 178: The Airport Terminal Building Energy Use Intensity Benchmarking Tool
- ACRP 02---30: Enhancing the Airport—Industry SAGA Website
- ACRP 02---59: Water Efficiency Management Strategies on Airports (publication pending)
- ACRP 02---74: Integrating Climate Change Risk into Airport Asset Management Systems (project start pending)
- Sustainable Endowment Institute: Green Revolving Funds – A Guide for Implementation and Management

### Person(s) Developing the Problem:

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Process Used to Develop Problem Statement:

This research was developed in partnership between Nashville International, and RMI/Carbon War Room based on mutual interest in establishing an accessible, functional and robust Green Revolving Fund mechanism for U.S. airports.

Date and Submitted by:

Date: March

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