

**EXECUTIVE SUMMARY**

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**Item Name:**           **Approval of Regents' Grants Proposal #5 – An Economic Feasibility Study to Manage Recycling by Municipality Size with Detailed Recycling Options for Arizona and Highlight Pros and Cons for Each Community Size**

Action Item

**Requested Action:** The universities and the board office ask the board for approval of its Regents' Grants Proposal for An Economic Feasibility Study to Manage Recycling by Municipality Size with Detailed Recycling Options for Arizona and Highlight Pros and Cons for Each Community Size.

**Background/History of Previous Board Action**

Arizona law established TRIF from Proposition 301 state sales tax revenue and gives ABOR the authority to administer the fund on the universities' behalf. The board manages and administers the TRIF revenues through awarding and allocating revenues.

One of the options the board has to award TRIF revenues to the universities is through the recently developed Regents Grant process.

The purpose of Regents Grants is to address and deliver solutions to critical issues facing the State of Arizona and its citizens.

The board office engaged with Governor's Office, the Department of Administration, and the Department of Environmental Quality (AzDEQ), Department of Health Services (AzDHS) and Department of Water Resources (AzDWR) to develop a list of problem statements.

The universities received ADEQ's initial problem statements in November of 2021 and engaged in a Q&A session held in January to answer faculty questions regarding the problem statements. ADEQ's problems statements are:

1. Currently we do not understand how the unique southwest natural environment and potential ozone precursor sources in Arizona--nitrogen oxides (NOx), volatile organic compounds (VOCs), and biogenic volatile organic compounds (BVOCs) impact or assist in the production of ozone in Arizona. Thus, it is not clear which types of controls can be put in place or voluntary actions Arizonans can take to reduce ozone and improve air quality. Beyond the existing photochemical air

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- modeling and analysis, Arizona needs a better predictive method to establish the independent and reasonably controllable variables influencing ozone in Arizona.
2. Arizona would benefit from a cost-effective solution and/or options to identify an optimal fallow field plan that minimizes wind-blown PM10 (~dust) emissions and Valley Fever spores.
  3. Need cost effective technology to remediate PFAS contaminated water and need a cost-effective means to replace current AFFF supplies with a more benign but effective fire suppressant.
  4. Arizona needs a comprehensive assessment identifying potentially hazardous mine features impacting surface and groundwater. Arizona needs a cost-effective solution or mitigation technology that can limit the spread of contaminants via water and air.
  5. Arizona would benefit from an economic feasibility study to manage recycling by municipality size. The study should detail recycling options for Arizona and highlight pros and cons for each community size.

The universities submitted their proposals in response to the State's problem statements in February and ADEQ, AzDHS and ABOR reviewed the proposals.

### **Discussion**

Based on the reviews of the multi-university proposals submitted in response to Problem Statement #5 regarding an economic feasibility study to manage recycling by municipality size with detail recycling options for Arizona and highlight pros and cons for each community size.

The board is asked to review and approve for Regents' Grant Funding the following proposal in response to this problem statement:

#### Context:

As a result of China's decision to end global recycling imports in 2018, larger Arizona municipalities have invested millions of dollars on infrastructure to avoid siting new landfills. Smaller municipalities, however, have few viable solutions. Many municipalities are skeptical of the investment required and the risks associated with new approaches.

#### Team:

Arizona State University: Dr. Rajesh Buch  
Northern Arizona University: Dr. Richard Rushforth

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Proposal Summary

The proposed collaborative project will pilot test hub and spoke recycling systems in Arizona communities validated with four scalable and adaptable computer models/tools to evaluate the economic impact of recycling in Arizona counties and communities and provide viable financial scenarios for implementing regional recycling systems around Arizona. The models/tools are: An Arizona Recycling Potential model to estimate the amount of recyclable material available in communities based on size and demographics, The Arizona Recycling Economics Information model to assess the economic impact of recycling for the State of Arizona, and then scaled down to county-level, A Cost Benefit Analysis model to evaluate the viability of recycling services for communities based on size, logistics and financial considerations and A data visualization system summarizing project findings that allows users to generate customized reports on the challenges to and opportunities for further developing the recycling industry in their community.

Why it Matters to Arizona

Many smaller municipalities are skeptical of the investment, returns and risks associated with recycling approaches. This study will compare, contrast and help validate different recycling strategies.

Budget

Annual	Three-Year
\$533,333	\$1,600,000

Project Length

Three years.

**Committee Review and Recommendation**

The Research and Health Sciences Committee reviewed this item at its March 25, 2022 meeting and recommended forwarding the item to the full board for approval.

**Statutory/Policy Requirements**

A.R.S. § 15-1648 “Technology and Research Initiative Fund”

ABOR Policy 3-412 “Administration of Technology and Research Initiative Fund”