



SIRF:

Sustainability Initiatives Revolving Fund

FY 2014 Annual Report



SIRF provides energy savings opportunities, makes good business sense

The Arizona State University Sustainability Initiatives Revolving Fund (SIRF) invests in large energy conservation and small campus-oriented projects across its four campuses that keep the university at the forefront of sustainability initiatives. ASU is a leader in sustainable practices across its campuses and within academia.

The SIRF mission is to invest in projects that have a direct impact on expanding campus sustainability, energy conservation and renewable-resource development. It is our goal to:

- **Invest wisely in projects that promote sustainability**
- **Accelerate a sustainable campus culture**
- **Reinvest savings in future energy-savings projects**

SIRF seeks projects that address the four overarching goals of the ASU Strategic Plan for Sustainability Practices and Operations:

- **Climate neutrality**
- **Zero solid/water waste**
- **Active engagement**
- **Principled practice**

SIRF demonstrates that sustainability *should* be and *is* good business. During FY 2014, six student campus-oriented projects were funded.

Since SIRF inception in FY 2010:

- **Rebates improved the average internal rate of return to more than 50 percent and contributed \$491,286 to the fund.**
- **The FY 2015 annual budget includes utility savings of nearly \$1 million for reinvestment in future SIRF-funded projects.**
- **Through June 30, 2014, SIRF project investments total \$5.6 million. Most projects will repay the fund completely within three to five years from the time of approval.**

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The SIRF revolving fund structure is based on the premise that large investments will result in cash-flow savings to repay the fund within a reasonable period.

Fund Structure

The SIRF funding structure segregates proposed projects by investment size:

- **Tier 1 – University Community Sustainability Grants**
(maximum \$50,000 in grants annually)
Investments are made in small projects to promote engagement and to expand a sustainable campus culture. The maximum individual award is \$5,000. No tangible return on investment is required.
- **Tier 2 – Fund Matching and Efficiency Loans**
(maximum \$500,000 in grants annually)
Investments are medium-scale, capital improvements for space and equipment upgrades and/or renovations to improve energy efficiency. An ASU department is required to invest 50 percent of the required outlay. In return, the department shares in an equivalent portion of the benefits for up to five years; the remaining 50 percent of the net savings is returned to the fund.
- **Tier 3 – Capital Expansion Loans**
(no maximum amount; available funds limit investments)
Investments have a significant and measurable impact on ASU's sustainability profile and provide a return on investment. All investment savings are returned to the fund. Investments may involve strategic partnerships to reduce carbon emissions.

Oversight

SIRF funds are available to all ASU students, faculty and staff through an application process. The Office of Planning and Budget in the ASU Business and Finance organization manages SIRF with oversight from a multidisciplinary review committee. Projects requiring funds in excess of \$100,000 require the Chief Financial Officer's approval.

SIRF investments are thoroughly vetted, and their results are integrated into the university's annual planning process. The Facilities Development and Management Business Operations office validates the Tier 2 and Tier 3 project utility commitments for all ASU campuses. The director of University Sustainability Practices approves all Tier 1 submissions.

A committee of eight ASU senior administrators from the following disciplines provides SIRF oversight:

- **Facilities Development and Management**
- **Financial Services**
- **Planning and Budget**
- **University Business Services**
- **University Sustainability Practices**
- **W.P. Carey School of Business – Department of Economics**

As of June 30, 2014, the SIRF committee has approved \$5.6 million in investments.
This table summarizes those investments.

ARIZONA STATE UNIVERSITY Sustainability Initiatives Revolving Fund

As of June 30, 2014

	Year Approved	Total Investment	Expected FY15 Investment Returns to Fund	Expected Investment Returns through FY15
TIER 1 Grants				
School of Sustainability Residential Community Upgrades	FY14	\$ 5,000		
Spatial Tree Database Handheld Device	FY14	5,000		
Water Fountain/Bottle Refill Stations				
Downtown Phoenix Campus Historic Post Office	FY14	5,000		
Memorial Union Third Floor	FY14	5,000		
West Campus Faculty Office/Administration Building	FY14	5,000		
West Campus Undergraduate Student Government	FY14	5,000		
Custom Aeroponics™	FY13	5,000		
School of Nutrition & Health Instructional Garden	FY13	5,000		
Spatial Database of Trees	FY13	5,000		
Memorial Union and University Services Building				
Special Collection Bins	FY13	5,000		
Memorial Union Secret Garden Power Source	FY13	4,089		
Residential Life Special Collection Bins	FY13	3,293		
Memorial Union Water Fountain Retrofits	FY12	5,000		
Poly Gardens Wall Project	FY11	508		
TIER 2 Grants				
Irrigation Master Plan	FY10	96,191		
TIER 3 Investments				
Downtown University Center Lighting Retrofit	FY13	154,249	\$ 37,691	\$ 75,382
Walter Cronkite/8 Lighting Retrofit	FY13	114,963	29,246	58,492
Mercado Lighting Retrofit	FY13	106,777	38,659	77,318
NHI 1 Lighting Retrofit	FY13	51,862	14,962	29,924
NHI 2 Lighting Retrofit	FY13	38,035	11,769	23,538
Central Plant Variable Speed Drive Retrofit	FY13	1,383,325	234,000	468,000
Downtown University Center Window Film	FY13	73,945	16,190	16,190
ASU Energy Metering Project	FY12	1,096,613	245,000	735,000
Insultech Thermal Insulation	FY12	350,919	69,000	207,000
Weatherup Center Video Room AC Units	FY12	48,321	10,000	30,000
Central Plant Cooling Towers Separator Pumps	FY12	15,240	66,000	198,000
NHI 1 Garage Lighting Retrofit	FY12	22,565	5,412	10,824
Hayden Library Lighting Controls	FY12	174,468	30,000	90,000
West Campus Cooling Tower Nanofiltration	FY12	49,186	10,104	20,208
Mona Plummer Pool Lighting Replacement (LED)	FY12	31,088	7,358	14,716
Energy Conservation Distributed Billing	FY11	1,774,089	164,802	329,604
Total Investments		\$ 5,644,726	\$ 990,193	\$ 2,384,196



Project Highlight

Tier 1: School of Sustainability Residential Community Upgrades

Rebecca Folk | School of Sustainability Residential Community Advisor

What sparked your project idea?

The project was created to provide an opportunity for School of Sustainability Residential Community (SOSRC) students to practice urban sustainability concepts in their backyard. The \$5,000 grant enabled students to:

- create a container garden to grow herbs and produce
- install rainwater barrels to help water the garden
- set up a clothesline to air dry clothes
- deploy solar-powered lighting in the courtyard.

What are your project goals?

The primary project goal is to teach and immerse the SOSRC residents in the practices of living sustainably in an urban setting. This project provided the administration, faculty and staff of the Julie Ann Wrigley Global Institute of Sustainability and the School of Sustainability the opportunity to engage with students outside the classroom and to share their knowledge of creating a sustainable community.

What excites you the most about your project?

The most exciting part is the “hands on” experience for students. A new student cohort will move in each year and reimagine the space and materials and transform it into their sustainable backyard.

What is your advice to others who have a SIRF project idea?

Involve students in writing a SIRF grant proposal. This exercise provides students an opportunity to take ideas and concepts and craft them into a focused plan and then articulate that plan into a grant proposal. The students involved with the SIRF grant have a better understanding of the steps it takes to put together a proposal.

TIER 1 PROJECTS: University Community Sustainability Grants

Project Name	School of Sustainability Residential Community Upgrades
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Total Investment	\$5,000
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The School of Sustainability Residential Community (SOSRC) engaged students in the creation and development of the outdoor space in Adelphi Commons on the Tempe campus. The project is intended to teach and immerse SOSRC residents in the practices of living sustainably in an urban setting.

- A new pulley clothesline system allows students to dry their clothes outside, which offsets energy use.
- A student gardening club was created to plant, maintain and harvest garden produce from the new vertical garden.
- To ensure proper sustainable water use, new rainwater barrels capture water, which is used for the garden in conjunction with an irrigation system and hoses.
- Solar outdoor lighting captures solar energy during the day and allows students to relax in the outdoor space at night, which helps create a more livable space and community.

This project will educate and allow students to apply methods learned in the classroom into a living/learning sustainable urban community.



TIER 1 PROJECTS: University Community Sustainability Grants

Project Name

Spatial Tree Database Handheld Device

Total Investment

\$5,000

ASU Grounds Services collaborated with ASU faculty and students to collect geospatial data to build a Geographic Information System (GIS) database of plants and signage for the ASU Arboretum.

SIRF funds enabled the purchase of a GPS handheld device that was required to conduct this fieldwork. Students from ASU's GIS and Environmental Humanities programs helped collect and process the data. The students are developing a new campus sustainability tour that will feature an online app and signage.

Arboretum team members use the GPS handheld device to tag plant locations.

TIER 1 PROJECTS: University Community Sustainability Grants

Project Name Water Fountain/Bottle Refill Stations

Total Investment \$20,000

This project enabled the purchase and installation of water bottle filling stations on the Downtown, Tempe and West campuses. The project goals:

- promote a reusable bottle culture at ASU
- reduce plastic water bottle use
- move ASU towards its Zero Waste goal.

The eleven new water fountains/bottle filling stations are a visual representation of ASU's sustainability commitment and allow students, faculty and staff to fulfill personal sustainability goals.



ASU
refilling station
eliminates the use of
between

4,000^{1,2}
and
40,000

plastic bottles

and
diverts between

98^{3,4}
and
980

pounds of plastic
from
landfills per year

SIRF-funded water bottle filling stations reduce the university's carbon footprint and promote a culture that leads to the use of fewer plastic bottles. The stations:

- support ASU's carbon-neutrality and zero-water-waste goals
- use less power and waste less water than the water fountains and water coolers they replaced
- exceed current energy-efficiency standards
- feature refrigerants with a zero-percent ozone-depletion ratio.

Many of each station's components are made from recycled content, and the majority of them are recyclable.

Notes:

1. Depends on filling station location.
2. Based on number of 20 oz. bottles reported per currently installed filling station.
3. Based on average weight of plastic water bottle reported by <http://www.packworld.com/sustainability/recycling/pet-water-bottles-recycling-grows-while-weight-drops>
4. 16.9 oz. bottle weighs 9.9 grams, 20 oz. bottle weighs 11.12 grams (extrapolated). 11.12 grams = 0.0245 lbs.
5. Includes 2012 SIRF-funded installations.



**ASU has the potential to save
183,400 bottles
and divert
4,493 pounds
of plastic from landfills
per year with current
SIRF-funded installations.⁵**



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SIRF and Academia

ASU is a Founding Circle member of the Billion Dollar Green Challenge hosted by the Sustainable Endowments Institute, a special project of Rockefeller Philanthropy Advisors. In collaboration with 15 partner organizations, the institute launched the challenge in October 2011 to drive energy savings with green revolving funds.

