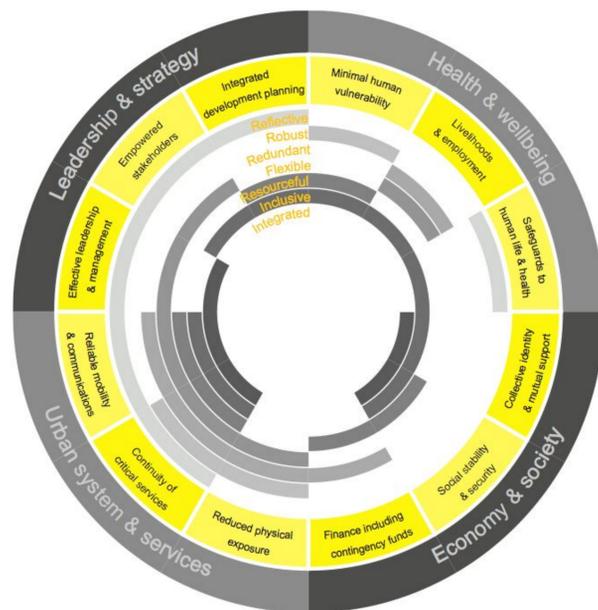


# Capturing Rain and Resilience at UCLA

Mission: (1) Research municipal and university resilience strategies to emulate best practices and form a resilience planning task force.  
 (2) Design and install a large-scale stormwater capture system to capitalize on a free, local water source and increase UCLA's water security.

## Resilience Planning

*“Resilience is the capacity of individuals, communities and systems to survive, adapt, and grow in the face of stress and shocks, and even transform when conditions require it.”*  
 – The Rockefeller Foundation



The Rockefeller Foundation's Twelve Resilience Indicators

- Goals:** Our short-term goal is to establish a task force of individuals to head resilience planning at UCLA. Ultimately, we want to facilitate UCLA's first comprehensive resilience planning process.
- Indices:** We began by investigating the Rockefeller Foundation's resilience indicators. We then mapped each indicator to UCLA and evaluated the university's performance. We found mixed success in many areas, and definite room for improvement across all indicators.
- Best Practices:** We then researched actions other universities across the country had taken, specifically regarding climate resilience planning. All universities have disaster management plans, but very few have comprehensive resilience plans, and only a small handful have undertaken climate resilience planning. During winter quarter, we presented our research to a group of UCLA stakeholders in order to start the conversation of climate and resilience planning.

## Stormwater Capture System



Resilience Team displaying three capture systems

- Goals:** Our goal is to save water by capturing rain and increase water security through on-site water storage.
- 1st Application:** We applied for funding through The Green Initiative Fund during winter quarter. We did not receive funding, but the council encouraged us to develop our project and reapply in the spring.
- 2nd Application:** After meeting with UCLA Capital Programs and several faculty, we developed three scalable options for stormwater capture systems. We reapplied and received \$18,000 to pursue our most ambitious proposal: a 200,000-gallon underground cistern.
- Next Steps:** We will use this funding to create a better cost analysis and a more technically robust plan. We are continuing to search for additional grants.

Budgets for each of our three different proposed cistern sizes.

OPTION ONE		
Item	Cost	Request
55 Gal. Rain Barrel with Brass Spigot x12 Link: <a href="http://www.homedepot.com/p/FreeGarden-RAIN-55-Gal-Rain-Barrel-with-Brass-Spigot-EWC-10704841191">http://www.homedepot.com/p/FreeGarden-RAIN-55-Gal-Rain-Barrel-with-Brass-Spigot-EWC-10704841191</a> Calculation: (12 barrels)\$89.99/barrel + \$8.10tax=\$1177.08	\$1177.08	\$1180
Enclosure and construction site renovation costs	\$1000	\$1000
Installation labor costs Calculation: (\$20/hr/worker)(2 workers)(12 hours) + (\$60/hr/manager)(1 manager)(12 hours)	\$720	\$720
Piping, sealant, elbow, and valve costs	\$500	\$500
Contingency costs	\$1500	\$1500
<b>Total:</b>	<b>\$4897.08</b>	<b>\$4900</b>

OPTION TWO		
Item	Cost	Request
Cistern: Xerxes fiberglass 5,165 gallon cistern, below ground Visual Representation of polyethylene cistern by Core-Roison: <a href="http://www.polyprocessing.com/pdf/tank_offerings/11004925.pdf">http://www.polyprocessing.com/pdf/tank_offerings/11004925.pdf</a>	\$12,000	\$12,000
Shipping cost	\$1,000	\$1,000
A) Installation costs B) Estimation: (\$20/hr/worker)(6 workers)(40 hours) + (\$60/hr/manager)(1 manager)(40 hours) + (\$85/hr/plumber)(1 plumber)(15 hours)	\$6,075	\$0
Piping, sealant, elbow, and valve costs	\$500	\$500
Contingency costs	\$1,500	\$1,500
<b>Total:</b>	<b>\$21,075</b>	<b>\$15,000</b>

OPTION THREE (PARTIALLY FUNDED)		
Item	Cost	Request
200,000 below ground Xerxes cistern	\$38,000	\$20,000
Shipping cost	\$3,000	\$0
A) Capital Programs Planning Costs B) Calculation: (\$100/hr/engineer)(1 engineer)(40 hours) + (\$100/hr/architect)(1 architect)(10 hours)	\$5,000	\$0
Installation costs Calculation: (\$20/hr/worker)(6 workers)(120hours) + (\$60/hr/manager)(1 manager)(120hours) + (\$85/hr/plumber)(1 plumber)(40 hours)	\$25,000	\$0
Piping, sealant, elbow, and valve costs	\$2,000	\$0
Contingency costs	\$10,000	\$0
<b>Total:</b>	<b>\$83,000</b>	<b>\$20,000</b>



View of the Boelter Hall interior courtyard, the planned site for the underground cistern. The catchment system will capture water from roof drains on all buildings in the court of sciences and route the water flow to the cistern. The water will then be integrated with UCLA's irrigation system.