



UD-WATER 2011 Interns (L to R): Rina Binder-Macleod, Dakota Laidman, Kimberly Teoli, Melissa Luxemburg, Melanie Allen

UD WATER 2010-2011 Interns
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For more on UD WATER see:
<http://www.udel.edu/water/>

Project Goals:

- Continue the work of the UD WATER watershed restoration project along Cool Run, a tributary of the White Clay Creek Wild and Scenic River
- Recommend Funding and Education for the EPA Section 319 Grant to restore Cool Run

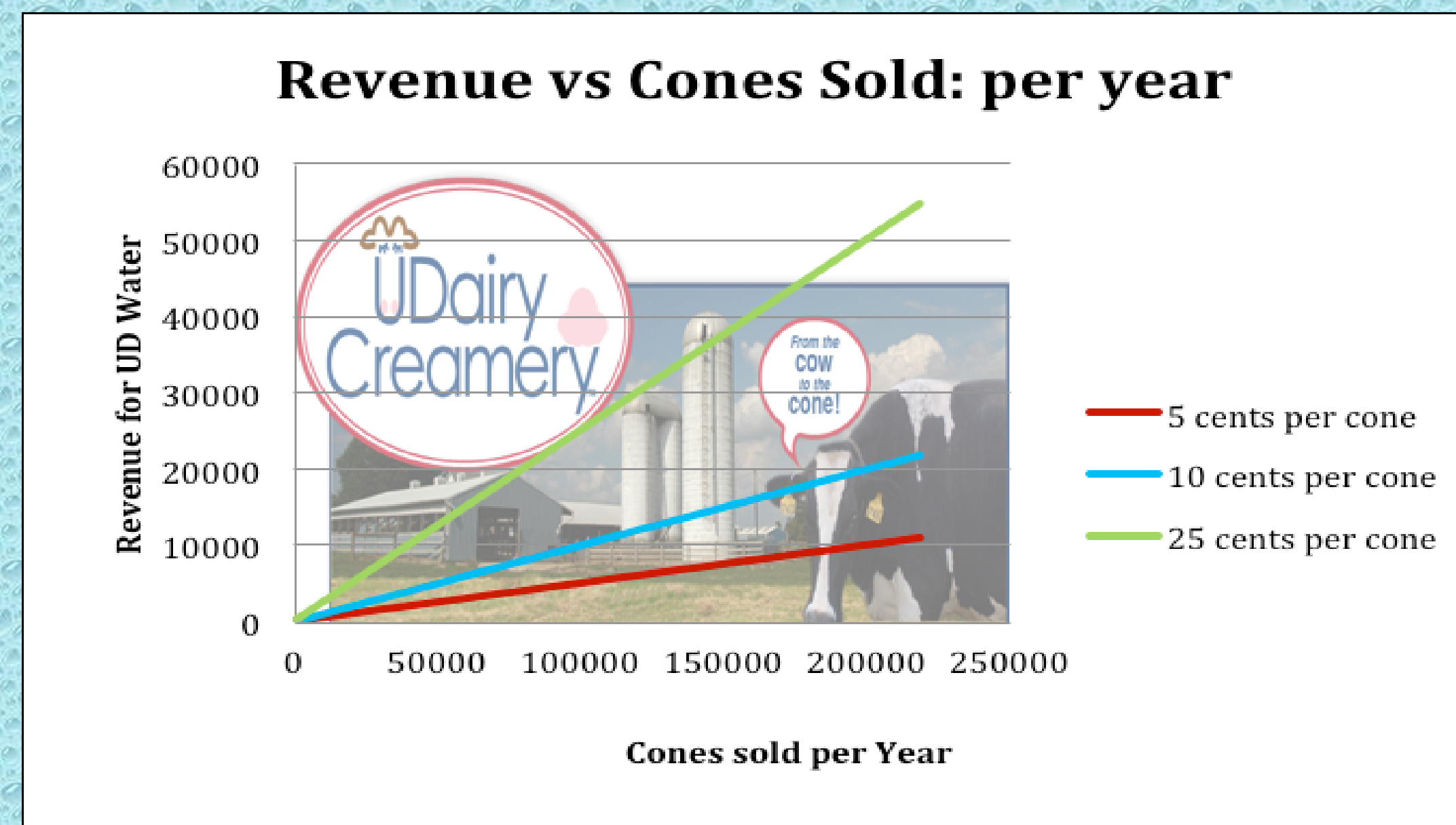
Funding Recommendations

1. UDairy

Appropriate \$0.10 from ever cone sold to UD WATER restoration Why?

The dairy cows within the UD Farm drink the waters within Cool Run. Also, manure is a source of nitrate pollution.

Fee per cone	Revenue for UD Water Per Year (\$)		
	5¢	10¢	25¢
# Sold Daily			
100	1825	3650	9125
200	3650	7300	18250
300	5475	10950	27375
400	7300	14600	36500
500	9125	18250	45625



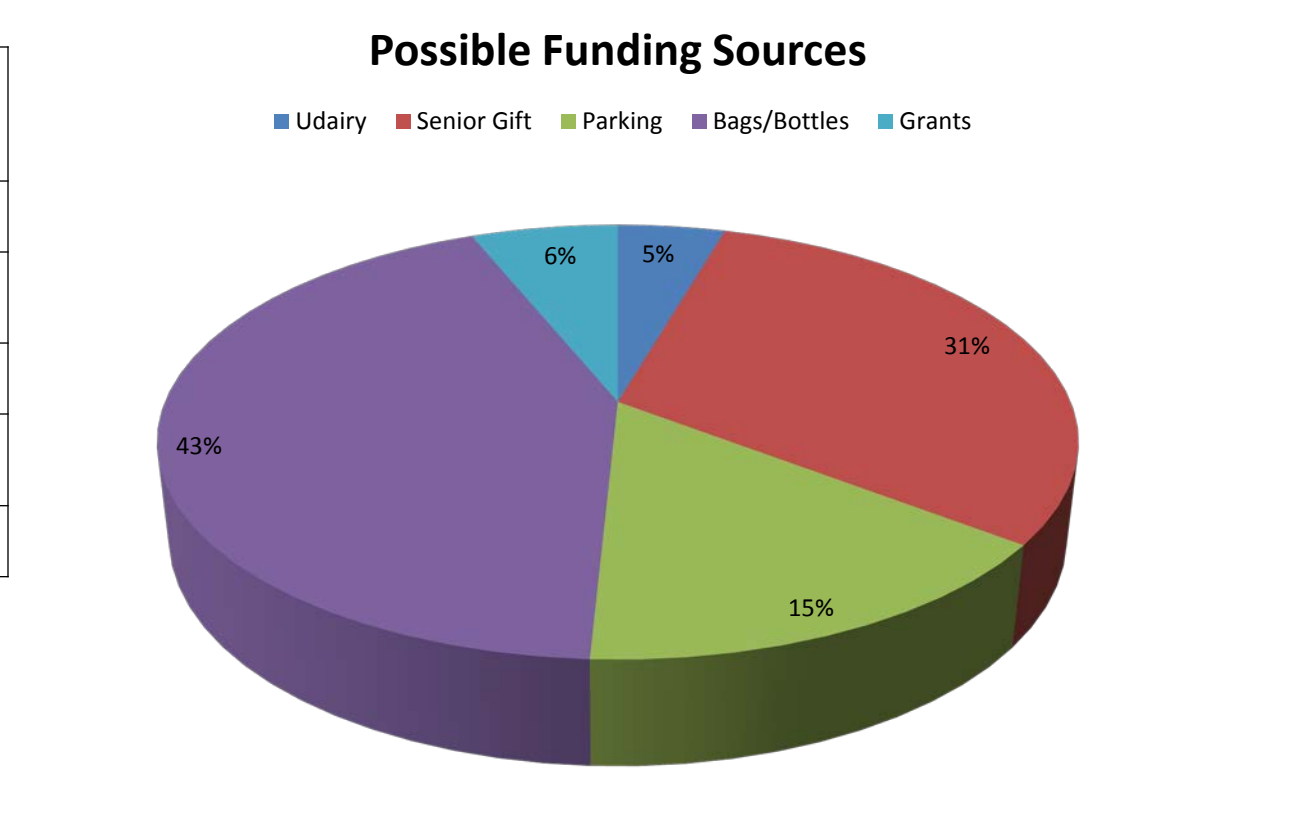
2. Senior Class Gift

Appropriate Senior Class Gift to UD WATER restoration Why?

When a specific goal for the gift has been set, more seniors have donated and raised more money. Therefore, if we educate the 2012 senior class about the benefits of the UD WATER project, they can choose to fund UD WATER.



Source:	Annual Funding Projection:
Udairy	\$7,300
Senior Gift	\$50,000
Parking	\$25,000
Bags/Bottles	\$69,700
Grants	\$10,000



3. Parking Fees

Allot a percentage of parking revenues towards UD WATER restoration. Why?

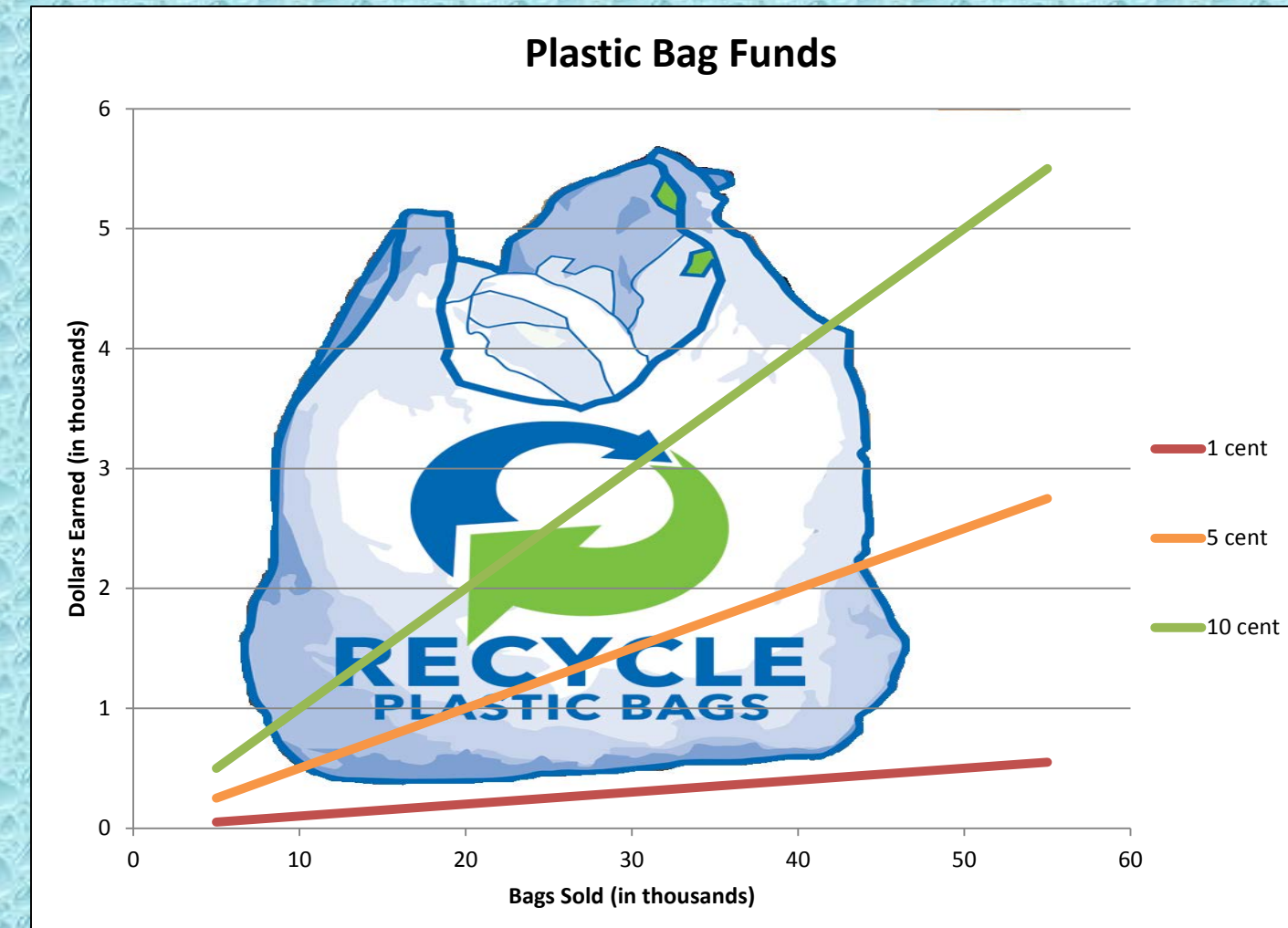
Parking lots can severely impair water by increasing impervious cover and pollutant runoff.



4. Plastic Bag & Water Bottle Fee

Donate a small contribution of plastic water bottle and bag sales to UD WATER project Why?

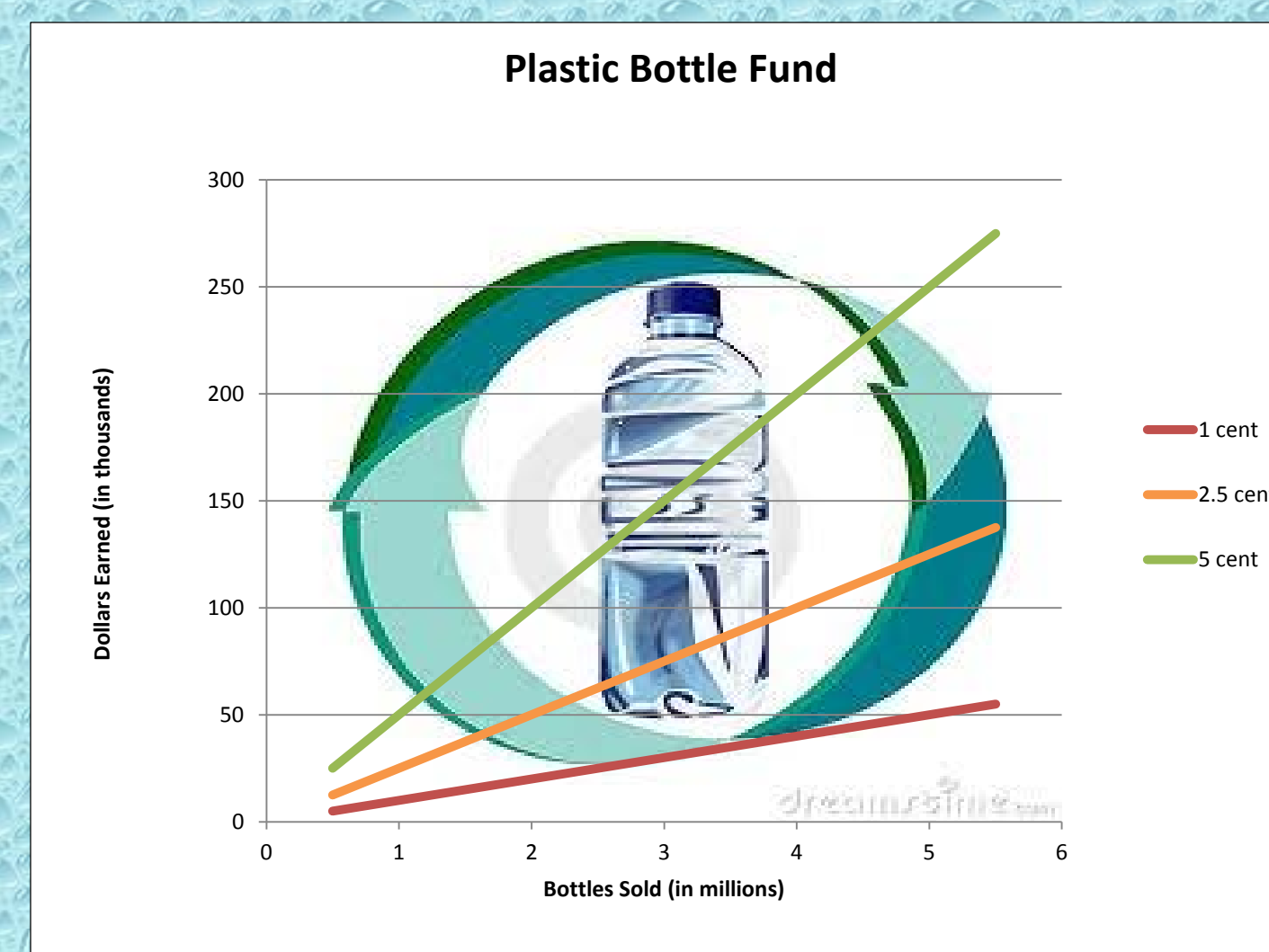
Much of the non-biodegradable garbage that end up in Cool Run are plastic bottles and plastic bags. Also, bottled water poses a serious threat to the health of the Cool Run watershed and decreases the demand for tap water.



5. Federal Grants

Apply for federal grants Which grants?

After reviewing the available grants, the recommended grants that the UD WATER project should apply for are the "Bring Back the Natives" grant from National Fish and Wildlife Foundation and the "Nonpoint Source Implementation Grant (319 Program)" through the State of Delaware and the United States Environmental Protection Agency.



Funding Source	Revenue (Annual)	Summary
UDairy Creamery	\$7,300	Reason: Polluter Pays Approach. The cows drink and pollute the water, so a portion of the proceeds from the UDairy farm can go towards funding watershed projects. How: "Dime from UDairy"- 10 cents from every cone sold will go back to restore the Cool Run watershed.
Senior Class Gift	\$50,000	Reason: When a specific goal for the gift has been set, more seniors have donated and more money has been raised How: Educate the 2012 senior class about the benefits of the UD WATER project and they can choose to donate their money towards it
Parking Fees	\$25,000	Reason: Parking lots can severely impair the water quality in the Cool Run Watershed. The impervious cover decreases infiltration of water into the soil and increases runoff that can carry sediment, pathogens, nutrients, pesticides, and metals. These pollutants ultimately end up in our water sources. How: From the City of Newark, we recommend contributing 3% of the total parking revenues to go towards UD Water. This would amount to about \$20,000 a year. From the University of Delaware parking, we suggest allotting \$5,000 to go towards UD Water.
Plastic Water Bottles and Plastic Bags Fee	\$69,700	Reason: A lot of the non-biodegradable wastes that end up in Cool Run are plastic bottles and plastic bags. Since bottled water poses a serious threat to the health of the Cool Run watershed and decrease the demand for tap water, we propose that a small contribution of the sales of plastic water bottles be donated to the UD WATER project. How: If one-cent from each bottle sold in Newark were given to the UD WATER project, the money received would account for around \$67,000 per year. We also propose that the five-cent charge is reassessed on plastic bags sold on campus and put towards the UD WATER project.
Grants	Variable, Assume: \$10,000	Reason: Grant writing can bring in a considerable amount of funding, but it is a risky funding source because of the uncertainty of whether or not the proposed will be chosen to be funded. How: "Bring Back the Natives" grant from National Fish and Wildlife Foundation and the "Nonpoint Source Implementation Grant (319 Program)" through the State of Delaware and the United States Environmental Protection Agency (USEPA).

Educational Recommendations

1. Signage

Install Informative signs

These signs will explain the purpose of BMP's and their effect on local water quality and the environment. The signs should emphasize that everything in the storm drains ultimately arrives at the creek, the community's water source. The signage should be implemented in places like the Harrington retention basin, the new bio-retention facility, and by UDairy Creamery.

2. Social Media

Increase UD WATER's Exposure with a Facebook Fan Page

Why?

Facebook is widely used by college students. The page will contain up-to-date information on the purpose, goals, and achievements of the UD WATER group as well as opportunities to get involved with UD WATER.

3. Storm Drain Stenciling

Increase Storm Drain Stenciling

Why?

The stenciling is to make the public aware that what is dumped down the storm drains flows to the creek and then to the bay. We believe that stencils are noticeable and easy to implement.

4. Article in the Review

Publish an Article in the Review

Why?

The Review is the second most read newspaper in the entire state of Delaware. The article will discuss information about the UD WATER project and highlight the visible achievements of the project around campus.

5. Advertise on STN49

Run a Public Service Announcement (PSA) on the Student Television Network (STN49).

Why?

This multi-media presentation will inform and educate the public about the UD WATER project.

The infographic illustrates the water cycle from pollution to the bay. It shows how pollution enters storm drains, which lead to creeks, and finally to the bay. It includes a section titled 'What is UD WATER?' and 'What you can do to help?' with bullet points: 'Don't pollute!', 'Conserve Water', and 'Save Water'. It also mentions that the amount of water we have now is all we will ever get, so it's important to save water by limiting watering, fixing leaking pipes, and turning off faucets.

A screenshot of the UD Water Facebook fan page. It shows the page name, cover photo, and basic information including the founding year (2008) and the project name (Cool Run Grant Project). The mission statement is also visible.



Educational Recommendation	Description
Increased Signage	Our first recommendation for public outreach is to increase signage around campus. We suggest putting informative signs at the locations of various best management practices, BMP's. These signs should explain what the reader is looking at and should emphasize the fact that everything that drains into storm drains ultimately arrives at the creek, the community's water source. Signs should also be put in place where large numbers of people visit. These locations include the football stadium and at the UD Creamery
Social Media- UD WATER Facebook page	Facebook is widely used by college students, so by integrating watershed education with a popular website that many college students use daily, we can increase the exposure of the UD WATER project. The Facebook fan page can be managed and updated by the undergraduate UD WATER interns. The Facebook page can contain up-to-date information on the purpose, goals, and achievements of the UD WATER group. The biggest advantage of using a Facebook page is the large potential for exposure with a variety of different groups of people
Storm Drain Stenciling	Another way to increase public education about the UD WATER project is putting stencils on the storm drains in the watershed. We want to increase the amount of signs on the drains in order to increase public awareness that what they dump down the storm drains drain to the river and then to the Bay We believe that stencils are a better idea since they are more noticeable and easier to implement.
Article in the Review	The Review is the second most read newspaper in the entire state of Delaware. If an article was published in the newspaper, we could help educate the students at the University of Delaware and the public in the surrounding areas. The article could discuss information about the UD WATER project such as the team members, the goals of the project, as well as information about the watershed.
Advertise on the Student Television Network, STN49	The final, and least preferable, educational recommendation is to have a Public Service Announcement (PSA) on the Student Television Network (STN49). Future UD WATER interns would create the video. This multi-media presentation will highlight the projects in place within Cool Run and the future goals for stream health. This video can be run as a PSA on TV and can also be posted to the UD Water Facebook fan page to increase the exposure to more people.

Acknowledgements

UD WATER Team: Tom Sims (Delaware Water Resources Center-Project Coordinator and Co-Chair UDWater), Jerry Kauffman (UD Water Resources Agency-Project Coordinator and Co-Chair UDWater), Carmine Balascio (UD Department of Bioresources Engineering), Stacey Chirnside (UD Department of Bioresources Engineering), Martha Narvaez (UD Water Resources Agency), Kelley Dinsmore (City of Newark), Andrew Homsey (UD Water Resources Agency), Dan Leathers (UD Department of Geography / Delaware Environmental Observatory System), Mike Loftus (UD Facilities), Jenny McDermott (UD College of Agriculture and Natural Resources), Tom McKenna (Delaware Geological Survey), Jennifer Pyle (UD Environmental Health and Safety), Mike Sistek (City of Newark), Tom Taylor (UD Facilities), Maria Pautler (Research Associate, Plant and Soil Sciences)