

# Community Based Restoration Initiatives



A USDA CSREES  
National Integrated  
Water Quality Program  
Project

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Extension System

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# Situation

- Rural communities in Alabama are rapidly undergoing land use changes associated with urban and suburban growth.
- Wish to maintain ‘Quality of Life’ ... however there is also
  - Lack of knowledge
  - Lack of funding
  - Fear of the unknown



# Our plan ...

- Go to communities at the urban-rural interface and **LISTEN**
- What are their concerns?
- What are their priorities?
- How can we partner to help meet their goals and improve water quality?



Work with local partners to identify community interests and educational needs



Coordinate Watershed Restoration workshops to address problems (or perceived problems)



Identify potential projects that will improve local water quality and serve to educate stakeholders



AU Landscape Architecture Environmental Studio students prepare draft designs and plans



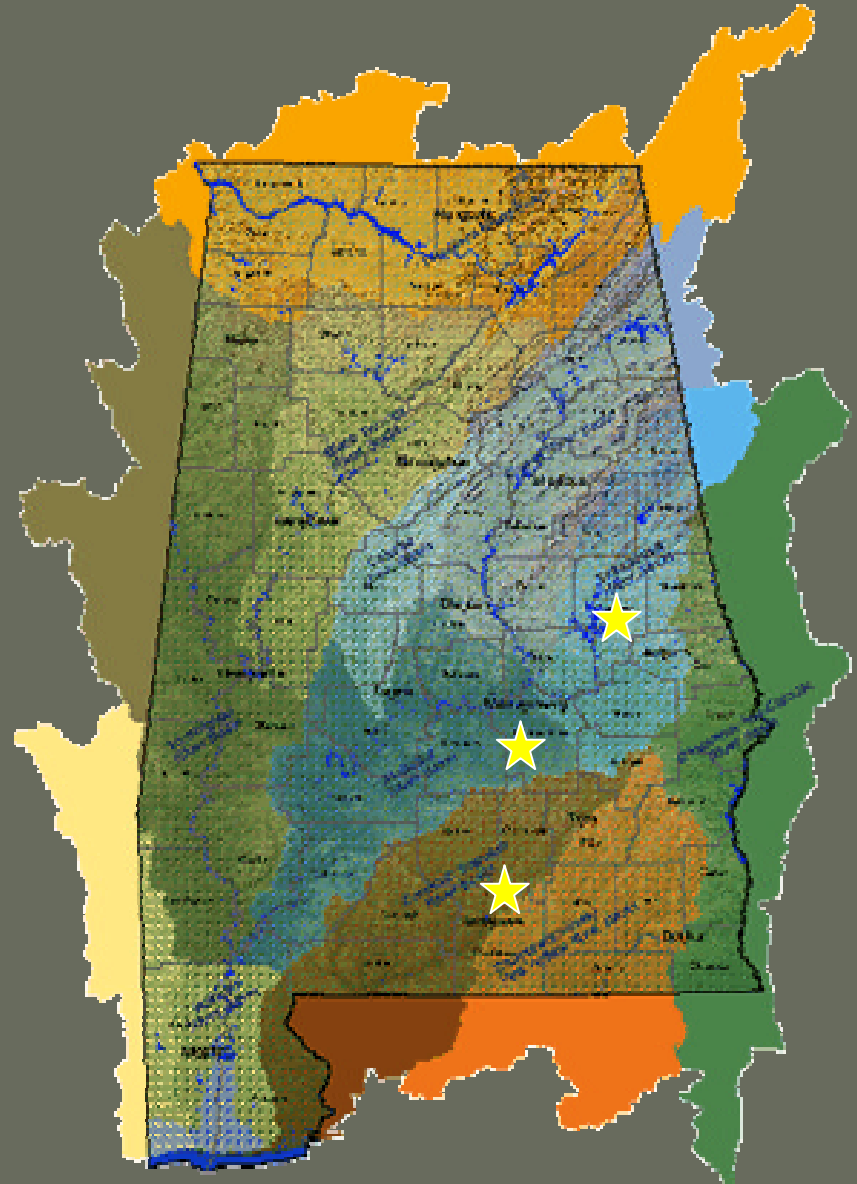
Implement projects, evaluate success, & document lessons learned to share with other communities



# Working with Alabama Communities

Spotlight communities at the urban-rural interface

- City of Alexander City
- Town of Pike Road
- City of Brewton



# Alabama Cooperative Extension System

- Information on watershed planning & management techniques
- Make available workshops, seminars, web sites and other educational programs requested by communities



# Watershed Restoration Workshops

- Stormwater BMP Academy (2)
- Introduction to Stream Restoration (2)
- Watershed Academy (1)




# On-line Resources

Water Quality Information System - Environmental Restoration - Microsoft Internet Explorer


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Address <http://www.aces.edu/waterquality/nemo/alex.htm> Go



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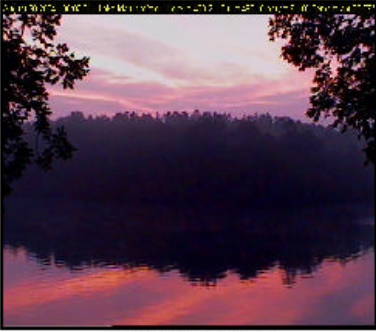


Photo credit: Mad wind

The [City of Alexander City](#) is located on Lake Martin in the Middle Tallapoosa watershed. The city's economy has historically relied on industrial manufacturing from the Russell Corporation. Alexander City is working to also capitalize on the recreational opportunities offered by Lake Martin, one of Alabama's healthiest reservoirs.

[Rain Gardens](#)

When it rains, pollutants like oil, pet waste, clay, and excess pesticides may wash into our streams, rivers, and lakes. These pollutants can harm aquatic life and make our waters less desirable for activities like swimming, fishing, and boating.



Simple, attractive practices such as rain gardens treat stormwater before it reaches our



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## Low Impact Development

### What is Low Impact Development?

Web Resources & Fact Sheets


Low Impact Development or LID is the practice of taking steps during development design to minimize changes to the hydrologic cycle (runoff and infiltration after a storm). LID strategies integrate green space, native landscaping, natural hydrologic functions, and various other techniques to generate less runoff from developed land (NRDC, Stormwater Strategies 2001 Report).

Watershed management resources, demonstration projects, and local contacts that may help communities and watershed groups


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Address: http://www.aces.edu/waterquality/nemo/ld.htm




## What is NEMO?



### Nonpoint Education for Municipal and Elected Officials

The goal of NEMO is to develop a process for educating professional and volunteer municipal officials about the impacts of land use on water quality and about the options available for managing those impacts.





Nonpoint source pollution, or polluted stormwater runoff, is the major cause of water quality problems in Alabama's streams, rivers, and bays.

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- ToolBase Services - The Home Building Industry's Technical Information Resource
- Residential LID in Action ...
- Grassy Pave Driveway, Dadeville, Alabama
- LID in Action ...
- Auburn University Building Science, Sherman Concrete and the Alabama Concrete Industry partnered on several demonstration projects.

Contact Tony McCullough, Director of Engineering, Alabama Concrete Industries Association for more information on pervious concrete in Alabama.  
 (800) 732-9118  
 Email: tmcullough@alci-concrete.org  
 Website: www.skconcrete.org

# LID Play

- Interactive land use & planning activity




**PERMEABLE PAVEMENT**



ALLOWS WATER TO INFILTRATE THROUGH THE CONSTRUCTION MATERIAL BACK INTO THE GROUND

**BIORETENTION (RAIN GARDENS)**

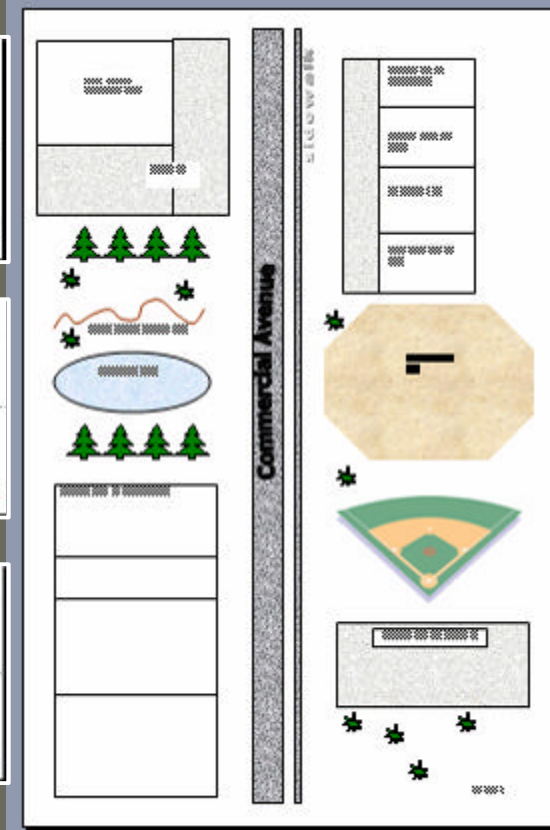
Provides a storage area, away from buildings and roadways, where stormwater collects and filters into the soil



**GRASS SWALES**

Function as alternatives to curb and gutter systems

Uses grass or other vegetation to reduce runoff velocity and allow filtration, while high volume flows are channeled away safely

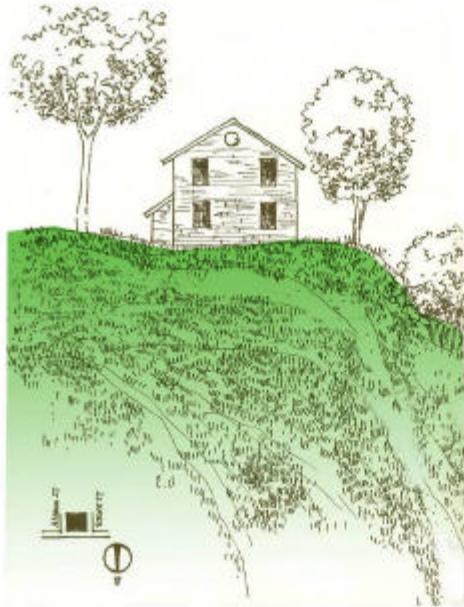


# AU Landscape Architecture

- Incorporate communities into their Environmental Studio
- Students lead Community Charrettes
- Assess existing conditions & listen to community concerns
- Prepare draft plans to address water quality issues – ‘BluePrints’

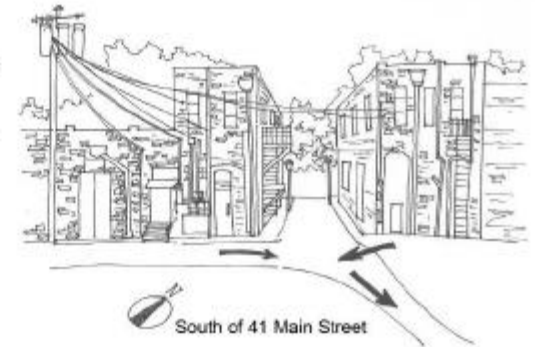


**Rain gardens** catch runoff from parking areas, driveways, walkways and roofs, allowing stormwater to slowly filter into the soil rather than flow directly into landscape, storm drains, ponds or lakes. This allows 30% more water to soak into the ground and recharge our underground water supplies. It also reduces the amount of polluted runoff entering our waterways.

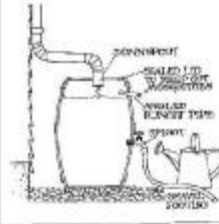


**Rain barrels** are containers or systems which collect and store water from rooftops for later use, helping stormwater drainage, which is frequently channeled into nearby streams and rivers, carrying pollutants and other contaminants into neighboring ecosystems.

Saving rainwater by rain barrels is also an ancient practice: rainwater can be used for watering landscape and other use in the house, as well.



**Permeable pavement** offers some definite advantages over traditional paving. A significant contribution is the ability to reduce effective impervious area, which has a direct connection with downstream drainage systems. When heavy rains happen, permeable pavement areas will work magnificently in help storm water drainage.



# Implementation

- Assisting with designs and outreach

Rain Garden example: City of Alexander City, Middle Tallapoosa Clean Water Partnership, Tallapoosa County Extension System, Lake Watch of Lake Martin, Boys and Girls Club, and AU Landscape Architecture Department



# Rain Gardens

- Alexander City – 3 highly visible sites
  - Radney Middle School
  - Benjamin Russell High School
  - Sport Plex



# Benjamin Russell High School



Junior Master Gardeners



# Total Costs

Items	Amount
Pipe (PVC and Slotted drain tile with sock)	\$1,140
#10 screenings (sand for soil amendments)	\$310
Organic soil amendment and Hardwood mulch	\$1,470
Mulch Hay and Bahia Grass seed	\$47.50
Native Plants	\$585.70
<i>City Crew to help ...</i>	<i>Priceless</i>
<b>TOTAL</b>	<b>\$3,553.50</b>



# Extending the Project

- BMP tours
- Presentations to City Councils, Alabama NPS Conference, University classes, Grocery Store line, just about anywhere we get invited!



# Lessons Learned

- Keep plants watered
- Follow up maintenance after big rains



# Lessons Learned

- Community Education
  - Newspaper articles
  - Tours
  - Incorporated in local school programs



# Next Steps ...

- Spring Semester 2005  
Town of Pike Road
- Fall Semester 2005  
City of Brewton



# Who Wins?

- AU Landscape Architecture students get to experience real world problems and suggest innovative solutions



# Who Wins?

- Rural communities in Alabama facing new problems associated with land use changes



# Who Wins?

- Local decision makers – they look good for partnering with students to improve their community's **Quality of Life**.



# Who Wins?

## *Local Water Quality!*



“Start small with do-able projects to build momentum, then tackle the giants.”

– John Glasier, Lake Watch of Lake Martin