



Main Street Little Rock Water Quality Demonstration & Educational Program Phase 2



Arkansas Department of Agriculture
2019 Annual Nonpoint Source Stakeholder and Project Review Meeting

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GREENING AMERICA'S CAPITALS LITTLE ROCK, ARKANSAS





DOWNSPOUT RAIN GARDEN

Runoff from the roofs of Mnu1Street t>ulcliniJ., cou1c1 he dirOCtV COIHCCt!(l hJ rllrl g arti(on ltt lrcetltliOU{lh downspouts Il attractive y de agned thP downspouts cou d lle pub 1Cott TleOO att-Stlc downspouts wou1c1 create r urama11c vstblo sign to vsttors and ruslc011ts n1XJtt tho 1xesenco of wa1ck 11tthe cly and hov. 11ts managed lronn 1ools to str;>ets

GREEN ROOFS

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PERMEABLE PAVERS

Pe!meatle ravers cou d provide structured surfaces lor on srrcot parkmg let stormvator l)Qrcolat(ltnlo thf1ground anc11nlo nearby m n gardens nmJ mako lthe sirOOTlll{ro attillct1ve



THE CREATIVE CORRIDOR

A Main Street Revitalization



University of Arkansas Community Design Center + Marlon Blackwell Architect
for
The City of Little Rock









ONE
WAY
←

ONE WAY
←

E 6th St
100

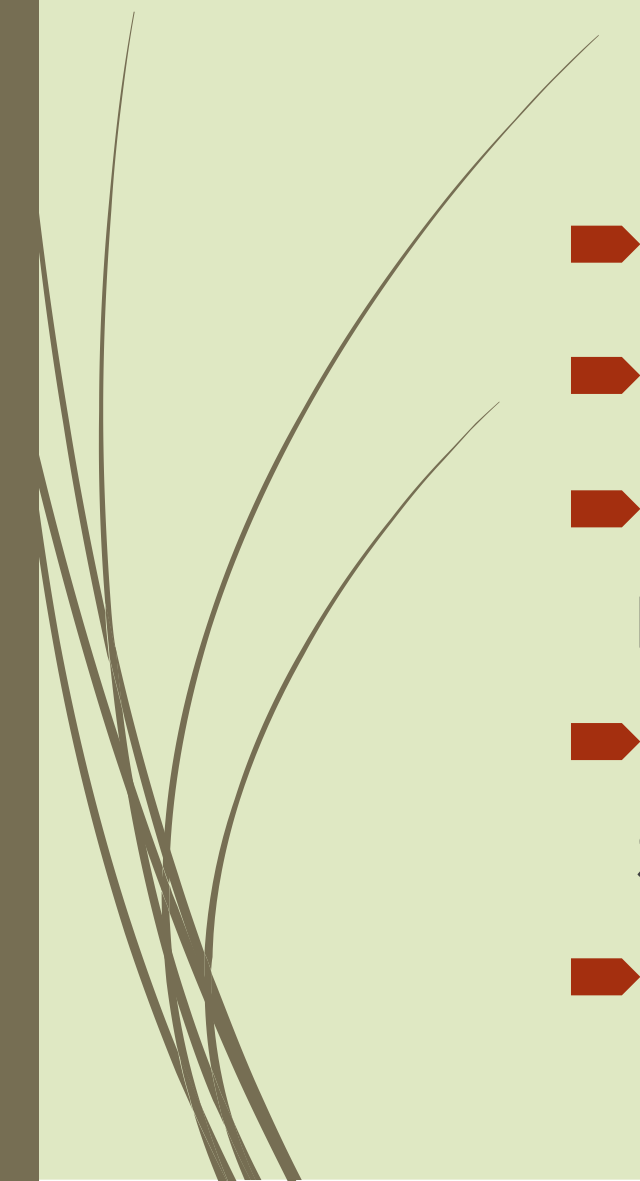


Purpose of Phase 2:

-  To demonstrate the benefits of raingardens and other water filtrations and educate the community about how they work
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Methods Used

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- Permeable pavers
 - Rain gardens
 - Planting of drought- and flood-resistant trees and plants
 - Installation of 3 types of filtration systems
 - Installation of vegetative wall



Filtration Systems





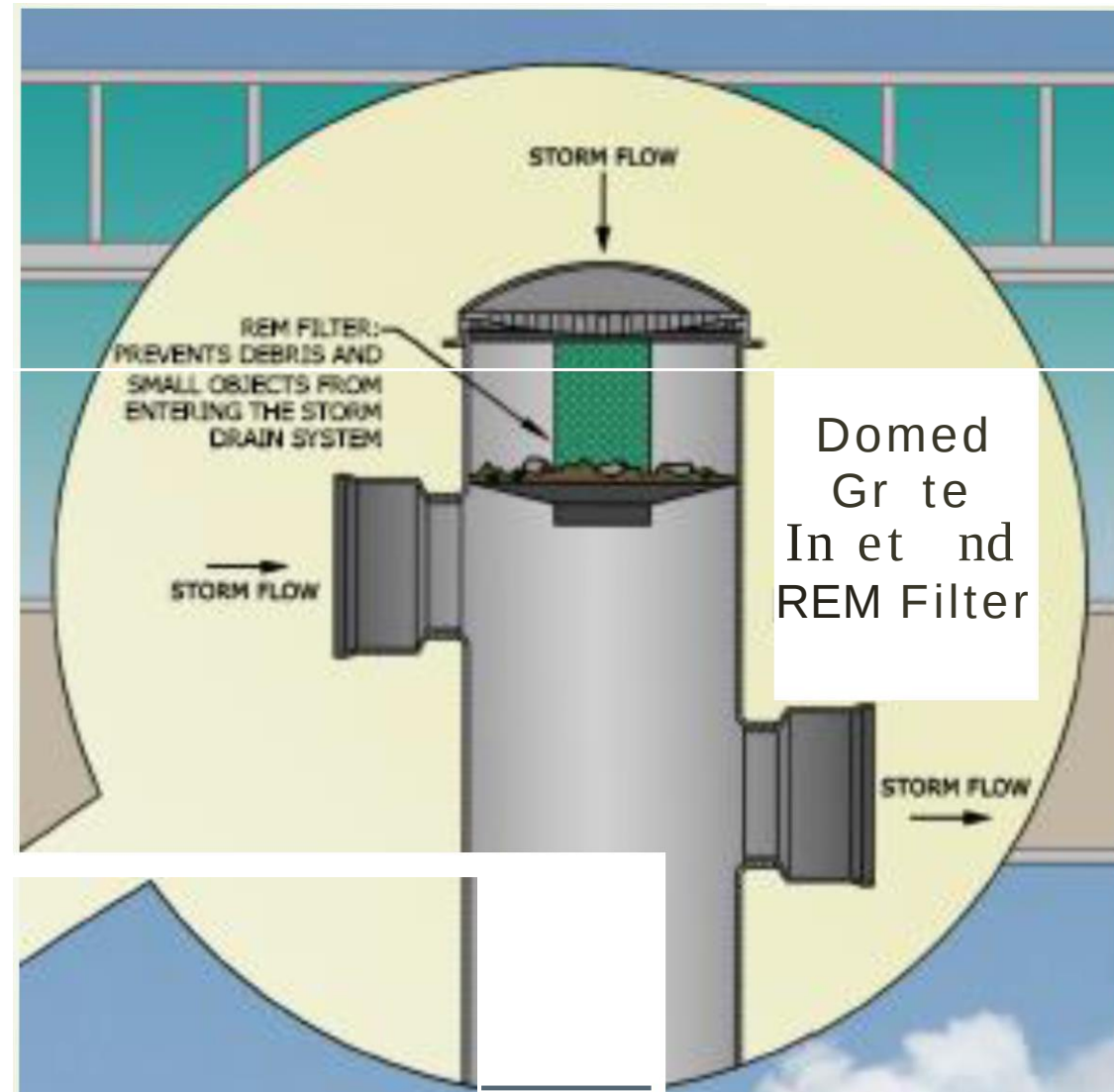
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- Trash guards were used over some drains in the project. In some cases, a removable fabric filter was used inside the drain to catch trash and debris, and to absorb oils and other typical pollutants contained in runoff from a city road.





Two Filter Sand Chamber in 600 Block

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- With this system, the runoff percolates through large layer of sand in one chamber before exiting through a filter fabric-encapsulated pipe. The round storm drain lid can be removed to allow the filter to be cleaned. This type system effectively removes hydrocarbons, as well as suspended solids.



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- In other places, an REM filter was installed inside the overflow basin. The filter can be removed to clean out trash, sand and silt so they don't enter the storm drainage system. This system also uses an envirohood mounted inside the overflow basin to help catch floating trash and oil.

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- The system of raingardens and filters used all work together to form a treatment chain that greatly improves the quality of water runoff before it leaves the project site.

Vegetative Wall

A vegetative wall was used in the 700 block. The ecomesh panel used was planted with Crossvine, a semi-evergreen plant that flowers mid-spring. The wall will help clean the air of pollutants given off by cars like carbon dioxide, but it will also help buffer wind and regulate air temperature in the area.



Cigarette Bin Ballot Box





Raingarden with Run-off Scour Prevention Area





Public Education Component





Continued Partnership with e-STEM Public Charter School

- ➤ Conducted tours along Main Street and provided appropriate environmental science curriculum to 27 classes
 - ➤ Reached students 665 times
 - ➤ Educational modules used:
 - ➤ LID Scavenger Hunt
 - ➤ Permeability Lab
 - ➤ Materials Exploration
 - ➤ Measuring Water/Soil Quality Lab
 - ➤ Find and Freeze
 - ➤ Heat Island Inquiry
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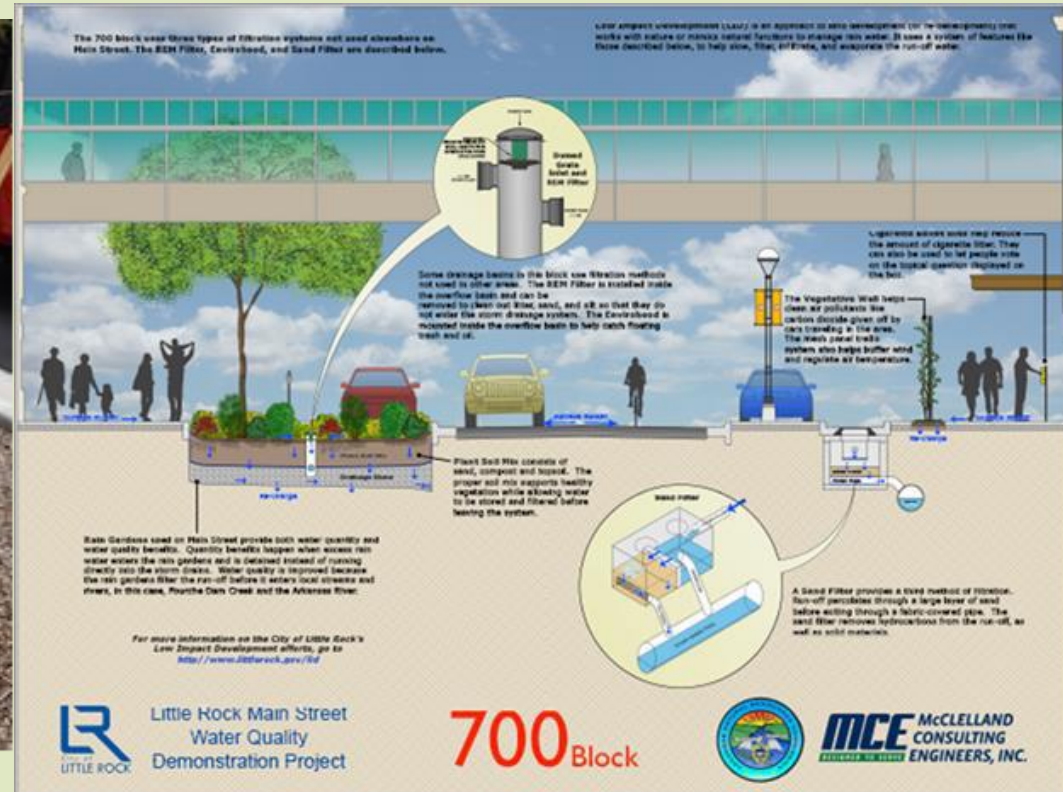




Other Public Education Components

- Official tours to
 - Arkansas Chapter of the American Planning Association,
 - Attendees at a mayoral National League of Cities conference
 - Arkansas Master Gardeners
 - Presentation given to interested Arkansas Department of Human Services employees who work near the Phase II site
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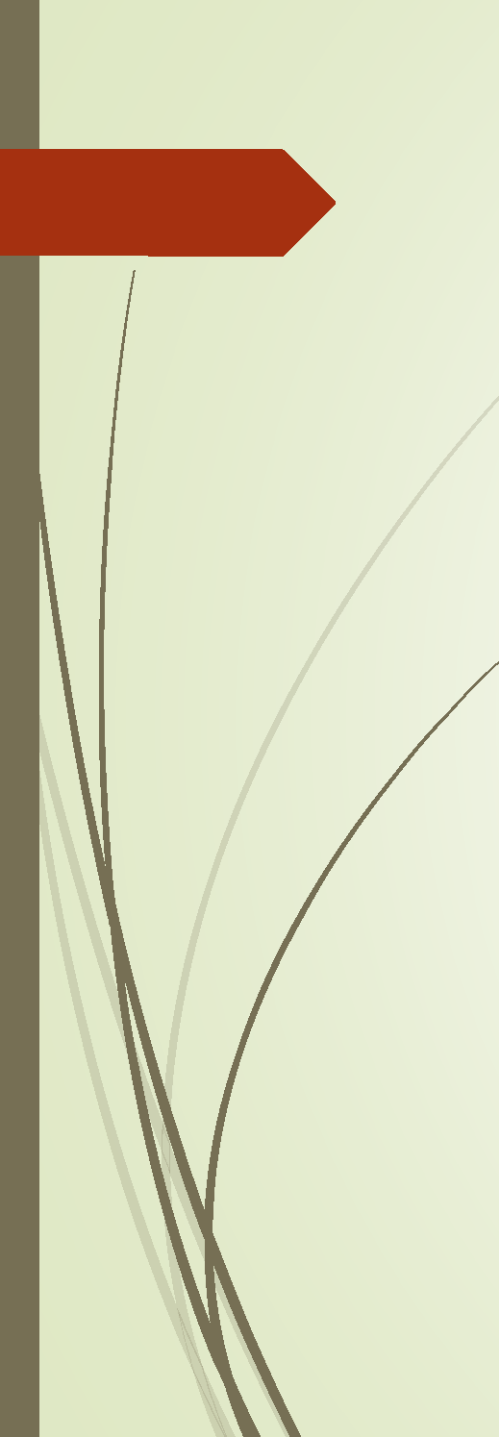
Interpretive Signs





Surveys of e-STEM Students and Downtown Stakeholders

- ▶ Students did demonstrate some learning about the project
 - ▶ Downtown stakeholders did not demonstrate learning, possibly because this was the second phase of the project and most were already familiar with LID by this time.
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Challenges

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- Construction delays made it hard to meet education deliverables
 - Changes in CLR purchasing system slowed purchase of interpretive signs
 - Despite 3 public meetings, some businesses upset they didn't know about the project/have input
 - Unexpected fiberoptic cable
 - Contractor did not follow specifications by The Rep, had to re-do the work



Lessons Learned/Technical Transfer

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- Design changes were made Phase 1 to Phase 2 to prevent some problems, like dips in 300 block and basement issues
 - Care was taken not to use invasive plants like horsetails
 - There IS a learning curve on how to maintain
 - Continuing education is needed so that new people know how to maintain



Questions?

