Final Report
Lake Atalanta LID Demonstration Project in the Beaver Lake Watershed
Project #20-500 FY 2020 CWA Section 319(h)

Low Impact Development – Parking Lot Project, Lake Atalanta Park, Rogers, AR

Executive Summary

The Beaver Watershed Alliance project, titled "Lake Atalanta LID Demonstration Project in the Beaver Lake Watershed," aimed to implement recommendations from the Beaver Lake Watershed Protection Strategy to reduce nonpoint sources including sediment and nutrient loads going into Beaver Lake, through the implementation of a demonstration Low Impact Development (LID) project. Key program activities included Best Management Practice (BMP) Implementation, Demonstration and Education. The project location was within the Beaver Reservoir watershed (HUC 11110001), where segments of waterways are impaired (Arkansas Department of Energy and Environment). Components of this project addressed the Arkansas Nonpoint Source Management (NPS) program's Section 7 and Section 12 from the 2018-2023 NPS management plan.

The Beaver Watershed Alliance (Alliance) works collaboratively with communities in the watershed to proactively protect a drinking water supply for 500,000 people in Northwest Arkansas. The Alliance mission is to proactively protect, enhance and sustain Beaver Lake and the integrity of its watershed, and works to evaluate and inform the greatest possible benefits of conservation efforts and investments. Conservation, restoration, and enhancement of natural areas in the watershed can be realized by installing Low Impact Development features and demonstrating a broad approach to treating urban nonpoint source runoff in urban areas.

The Beaver Lake watershed is located in the Ozark Highlands of northwest Arkansas in Benton, Carroll, Madison, and Washington counties. The watershed is 1,192 square miles and includes seventeen incorporated municipalities. Historically, the watershed has been characterized by

forest and pastureland use with little development; however, over the last two decades nearly one quarter of the watershed land use has changed with significant increases in residential, commercial, and industrial development that have replaced forest and pastureland. The Beaver Reservoir is one of the priority watersheds in the Arkansas NPS Management Program. Several stream segments within the watershed are listed on the Arkansas Department of Energy and Environment's 2018 303 (d) list. The Beaver Lake watershed is also a designated nutrient surplus area by Arkansas Dept of Agriculture – Natural Resources Division. Reducing nonpoint source sediment and nutrient inputs associated with land use change by incorporating Low Impact Development projects into the Beaver Lake watershed can improve water quality.

Population density increases within a watershed lead to increased runoff volume from the urbanized areas (Paul and Meyer, 2001). As with most urban areas, impervious surfaces dominate the landscape increasing the potential for nutrients, sediment, metals, hydrocarbons, pesticides, and litter to flow rapidly and untreated into storm drains and directly to creeks and streams. Within this watershed project area those "pollutants" flow downstream into Beaver Lake. Low Impact Development can be used as a BMP to address hydrologic modification resulting from rapid land use change by reducing runoff volume and improving the retention of nutrients and sediment.

In addition, training workshops, field days, and education programs were conducted, and water quality improvements were achieved through institutionalizing Low Impact Development features as a water quality Best Management Practice (BMP) for voluntary implementation by individuals and organizations within the project area. Project partners included US EPA, Arkansas Department of Agriculture – Natural Resources Division, Beaver Water District, City of Rogers, University of Arkansas Extension Services, and multiple program partners that made this project possible.

The timeframe for implementation was October 1, 2020 through October 1, 2022. Project costs included $232,000 in federal funding, with $175,832 in matching nonfederal funding, for a total of $407,832.

Project Chronology

Introduction

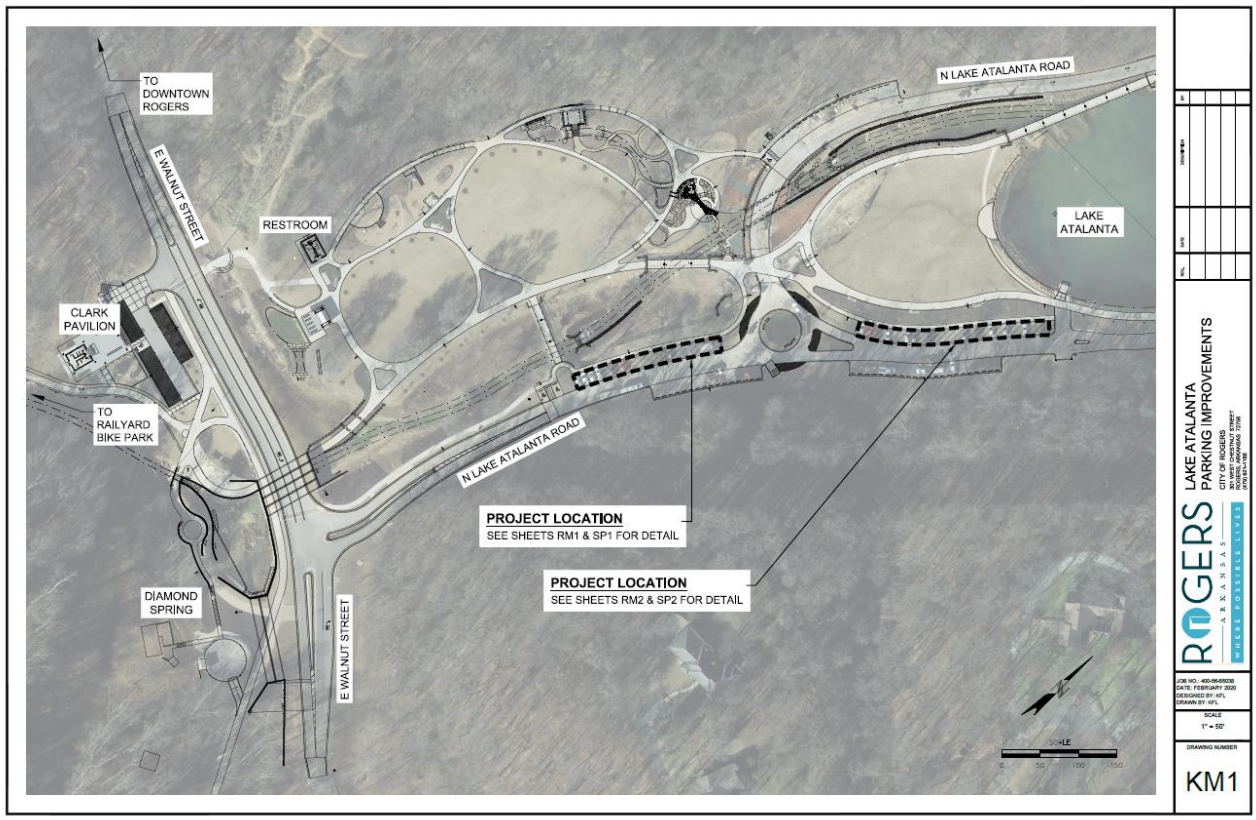
This project had two goals. One, demonstrate LID, and encourage thoughtful growth/development in an effort to minimize hydrologic modification. Two, institutionalize and promote LID as a common water quality Best Management Practice (BMP) for voluntary implementation by individuals and organizations.

Prior to this project, the City of Rogers and H2Ozarks partnered on 319(h) project 15-500 to install 2,600 square feet of pervious parking as part of the "Sediment Reduction and LID Demonstration Project at the Lake Atalanta Park Clark Pavilion" project. Although H2Ozarks monitoring data recorded a marked decline in total phosphorus in the discharge water from Lake Atalanta, the gravel pave area had shown a great deal of wear and tear and required a significantly larger proportion of maintenance effort from the City of Rogers. This project addressed the need for a more stable parking lot material that also provided water quality benefits. In July of 2021, goals were accomplished by installing 49 interlocking concrete

pervious parking lot spaces at Lake Atalanta Park in Rogers, retrofitting 8,519 square feet of parking area to pavers. Educational signage was also installed to educate the public on the project and benefits to water quality.

In addition to the installation, technology transfer occurred. The Alliance, in partnership with cities, agencies, design firms, and other nonprofit groups, hosted a total of 52 educational field days, training sessions, events, and outreach meetings throughout the course of the project timeframe, reaching over 1,202 stakeholders.

Best Management Practices Implemented



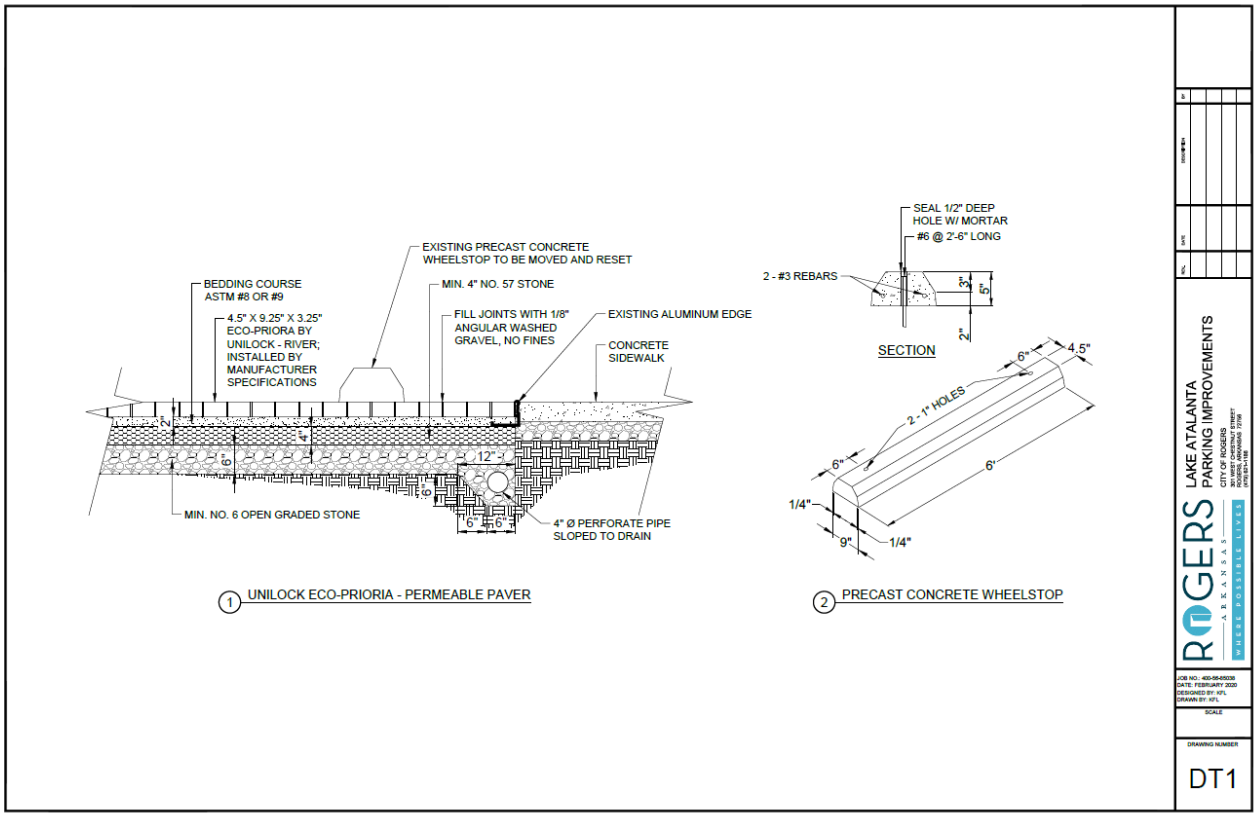
Lake Atalanta Park is a highly used 236-acre public park near downtown Rogers, AR. The park features include fishing on the lake, off-road bike trails, playgrounds, trail systems, pavilions, and more, all of which require parking lot access.

The Alliance worked with the City of Rogers Engineering Department to complete design and construction plans to help achieve the design aspect of this project. By March 31, 2021, City of Rogers completed all design and construction documents. Designs included removal of 1" porous paving matt materials and replacing 49 parking stalls with interlocking concrete pervious pavers, with pavers measuring at 4.5" X 9.25" X 3.25". According to the Interlocking Concrete Paver Institute, (ICPI), stormwater benefits that can be achieved by using these paver systems include, but are not limited to:

- Up to 100% reduction of runoff from common stormwater events

- 50-year life-cycle for this surface
- Compatibility with underground stormwater storage, and can eliminate the need for storm drains
- Increased site infiltration that helps maintain pre-development runoff volumes, peak flows and time of concentration
- Heat island reduction

Subbasin materials include 2” of bedding course ASTM #8, 4” of #57 stone and 6” of open graded stone, with a 4” perforated drainpipe as overflow. The pervious parking lot area was designed to collect 128 cubic yards of stormwater storage under the pavers that will collect stormwater runoff and reduce sediment and nutrients from entering the adjacent Lake Atalanta.



Pictured: Pervious Paver Details, by City of Rogers

Site plans were submitted and approved by Arkansas Dept of Ag – Natural Resources Division. Bid advertisements were also completed, with three bids submitted. Steep Creek, LLC was selected for project implementation. Steep Creek, LLC sub-contracted paver installation to 4G, a locally based business in Springdale, AR with expertise in mechanical installation methods of pervious pavers.

The 8,519 square feet of pervious pavers are estimated to be at around $21.84 per square foot, installed. In comparison, other local pervious paver projects have varied in costs per square foot, with a range of $15/SF to $30/SF.

Pictured: 4G completing the mechanical installation of pervious pavers, Lake Atalanta, Rogers, AR.

By July 31, 2021, the interlocking pervious pavers were installed at 49 parking spaces, ahead of schedule.

In its entirety, the features at Lake Atalanta now include pervious paver parking lots, flush curbs to allow stormwater to travel across surfaces and into treatment systems such as bioswales with native plants, and educational signage to educate visitors on these techniques. Together these features will work to reduce flooding/pooling issues, reduce runoff from vehicle pollutants, and help protect the water quality of Lake Atalanta and Beaver Lake.

We encourage others that are looking to install best management practices to learn successes and failures of previous projects. Case studies and historical data can be key to understanding what features work best in a potential location, based on geographical data, climate data, and current developments. Placement of features is also key in the success. Pervious pavers are not suitable in steep slope locations, nor suitable in areas that receive fines (small aggregates and sediments) that may clog the pavers and reduce its ability to soak in rainfall. Using multiple features, also known as a treatment train approach, to treat rain runoff is the ultimate combination. Pervious pavers collecting parking lot runoff, which drain to a bioretention with native plants and perhaps a secondary bioretention area or planted green space can be a

strategic way to capture, collect, store and slowly release urban runoff. Features do not have to take up a lot of space as well, they can make up for storage on a horizontal plane by deepening the capacity area to vertical storage, depending on soil types. Residents can also learn from these projects as they are scalable. Driveways, patios, and sidewalks can use pervious materials, and accompanying features like rain gardens, bioswales and native plant filter strips can be scaled down to a homeowner lot.

Technology Transfer

Education and technical assistance remain critical components to advance implementation of Low Impact Development in our communities. We are thankful for the opportunities to increase living classrooms in the Beaver Lake watershed to continue to educate and physically, as well as scientifically, show how the features can benefit communities and water quality. US EPA is a leading source for materials, guides, and resources for Low Impact Development, which the Alliance continues to share, as well as develop in-house materials for local use.

The Alliance, in partnership with cities, agencies, design firms, and other nonprofit groups, hosted a total of 52 educational field days, training sessions, events, and outreach meetings throughout the course of the project timeframe, reaching over 1,202 stakeholders.

The project aimed to reach a variety of primary stakeholders, including cities, designers, developers, and contractors, with the second target audience being residential homeowners. Collectively, these two groups can both have a positive impact on water quality by implementing practices on their properties.

The first annual workshop and tour was completed on June 22, 2021. The event was held at Lake Atalanta, Rogers, AR with 30 participants, including large group of International Erosion Control Association members/designers/engineers, with guest speakers from Environmental Design Group (talking on LID and how it was incorporated in original designs), City of Rogers (spoke on LID use throughout City infrastructure), and UAEX and Alliance (discussed values of LID for water quality). A tour was conducted throughout Lake Atalanta Park, to view multiple LID projects completed, but also to discuss use of appropriate materials for LID parking stalls. Following the workshop, the Alliance had several requests from local design firms to assist with design reviews for native plants and LID materials, which was a measure of success.

For the second annual workshop, the Alliance partnered with Illinois River Watershed Partnership (IRWP) to co-host a 1-Day event on June 21, 2022, focused on LID. The workshop was titled "Stormwater Discussion and Field Tour." Topics included presentations on water quality and watershed management, stormwater utility fees, discussion of development via panel of local professionals, and tour of local LID projects. 80 people attended the event, with various backgrounds in municipal, state, design, education, development, conservation and engineering fields. Attendees toured the Lake Atalanta previous paver installation project, with guided presentations by Lance Jobe, City of Rogers, and Brahm Driver, Environmental Design Group.

The Alliance also co-hosted the AR Water Resources & Watersheds Conference in Fayetteville on July 14, 2022 with the Arkansas Water Resources Center and AR Forest and Drinking Water

Collaboration. The Alliance presentation included updates on LID in the area with a tour component to view the LID parking lot project in Fayetteville at Kessler Mountain Regional Park, also funded by the 319(h) program. 124 stakeholders attended the event.

Other educational and outreach events included presentations on Low Impact Development to groups including Landscape Architecture students, West Fork Golden Age Club, and Lost Bridge Village Gardening Club, POAs, Utility Boards, Alliance Board of Directors, and local horticultural clubs. Several trainings on invasive plant removal and the use of native plants for LID were held at Lake Atalanta, with local volunteers stewarding and receiving hands-on trainings.

The Alliance also conducted a podcast with Becky Roark, Alliance Executive Director and Kent Laughlin, Project Manager for City of Rogers, on the topic of pervious pavers, how they work for cities, the benefits and challenges. City of Rogers, AR is utilizing pervious paving throughout their community to reduce flooding and because it helps to protect city infrastructure. The podcast can be heard at: https://open.spotify.com/episode/4npuyO9YeCyBsw1SdJEgBJ?si=2xdZ5HJtTLOwRsjVxuZ_Zw&dl_branch=1 (published June 22, 2021)

A video was produced in partnership with the University of Arkansas Extension Service and the City of Rogers and featured a virtual tour of Lake Atalanta. Video link: https://youtu.be/nVCCKBQ3nXs

Three fact sheets, multiple presentations, and flyer templates were developed as part of the project. Fact sheets include information on Water Smart Development, Pervious Pavers and the Lake Atalanta project details. A vendor lists for LID contractors was also maintained during this period. The Alliance designed educational signage at the project location to continue to educate on the pervious pavers, native plants, watershed facts and incorporated elements of the LID parking lot.

As Low Impact Development concepts grow in the Northwest Arkansas region, the Alliance looks to be a trusted source of information for cities, communities, residents, and developers looking to implement these technologies. The Alliance has a strong library of resources for technology transfer as a result of this project.

Educational outreach efforts included:

Number of Programs	Program	Participants
2	Field Days; Included on-site tours at project location	155
10	Training Sessions; Native Plant Walks, Invasive Species Removal events, and virtual trainings	149
3	General Events/Outreach and Education; including Watersheds & Water Resources Conference	212
37	Outreach Meetings; project management meetings, E-news articles, presentations to clubs, civic groups, schools, churches, businesses, cities	686

Fact Sheets Developed:

WATER SMART DEVELOPMENT

BEAVER WATERSHED ALLIANCE

www.beaverwatershedalliance.org

Water-Friendly development is essential as our region is experiencing exponential growth. Developers play a vital role in protecting the water quality of Northwest Arkansas. Below are ways that can contribute to source water protection for Beaver Lake, and smart development that can prevent flooding, increase property value, and increase the life-span of developments by decreasing maintenance needs. For more information on any of these topics, or for a free site visit to determine areas for land management practices, call or email the Alliance to set up a meeting!

No-Mow Riparian Zones
Areas around waterways can be designated as "no-mow zones" to filter pollutants, decrease maintenance costs associated with mowing, and prevent erosion.

Urban Drainage Solutions
Porous pavement, green roofs, bio-retention features, and rain gardens are just a few features that can slow and absorb storm water runoff to decrease nutrient runoff.

Designated Green Spaces
Green space allows for increased pervious cover, slows stormwater run-off, increases tree canopy, and increases home values & quality of life.

Prevent Sediment Runoff
Insure proper placement of silt fences to retain soil on disturbed land during construction thus preventing runoff into water bodies.

Storm Water Flow Review
Effective stormwater management will maintain the natural patterns of runoff within a watershed. Reduced peak flow, groundwater recharge, and reduced pollution are all positive outcomes of an effective review and plan.

Green Roads & Parking Lots
Roads tend to capture and export more stormwater pollutants than other land covers. Smart roads and parking lots can significantly decrease nutrient runoff.

BEAVER WATERSHED ALLIANCE

Beaver Watershed Alliance is formed of a diverse stakeholder group representing agricultural, recreation, conservation, water utility, business, and private landowner perspectives who all work together for the benefit of Beaver Lake and its watershed.

To learn more about the Alliance, best management practices for water quality, or how you can become involved in voluntary watershed protection go to www.beaverwatershedalliance.org or contact us by calling 479-750-8007 or emailing info@beaverwatershedalliance.org.

LOW IMPACT DEVELOPMENT

LAKE ATALANTA PARK

ROGERS, AR

BEAVER WATERSHED ALLIANCE

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Low Impact Development, or "LID" for short, uses vegetation, soils, and natural processes to manage rain water where it falls and can help reduce nonpoint source pollution to improve water quality. Non-point sources of pollutants can include sediment (the biggest threat to water quality in Beaver Lake), excess nutrients such as phosphorus and nitrogen, oil, grease, and heavy metals. Slowing down rain runoff before it reaches a waterway not only captures non-point source pollution, but also prevents flooding, cools the water down, helps recharge groundwater supplies and naturally filtrates the water. Using LID in our landscape can also help keep our local drinking water supplies clean and resilient.

Permeable pavers in parking lot area

Details of permeable materials

Thanks to a generous grant through the Arkansas Department of Agriculture-Natural Resources Division, the Alliance worked with the City of Rogers to install LID features at Lake Atalanta Park in Rogers, AR. City of Rogers provided designs for the features and the project was installed in Spring 2021 by Steep Creek, LLC. Educational signage is also installed to provide public education on the benefits of treating rain water using LID.

PERMEABLE PAVERS AT LAKE ATALANTA PARK:

- The **49** parking spaces located at the north side of the park provide **128** cubic yards of stormwater storage under the permeable pavers that will collect stormwater runoff.
- According to the Interlocking Concrete Pavement Institute (ICPI), stormwater benefits that can be achieved by using these paver systems include, but are not limited to:
  - Up to 100% reduction of runoff from common stormwater events
  - 50-year life-cycle for this surface
  - Compatibility with underground stormwater storage, and can eliminate the need for storm drains
  - Increased site infiltration that helps maintain pre-development runoff volumes, peak flows and time of concentration
  - Heat island reduction

To learn more about LID features like this and other best management practices for water quality, or how you can become involved in voluntary watershed protection go to www.beaverwatershedalliance.org or contact us by calling 479-750-8007 or emailing info@beaverwatershedalliance.org.

Beaver Water District

Thank you to all the partners for helping to improve the Beaver Lake watershed. Beaver Lake provides our region's drinking water.

BEAVER WATERSHED ALLIANCE

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Pervious Pavers

Low Impact Development

FACT SHEET

The term low impact development (LID) refers to systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat -*US EPA*

Source water protection is essential as Northwest Arkansas experiences exponential growth. Best management practices (BMPs) like pervious pavers are an easy way for any resident, developer, or city to help make a positive impact on the water quality of Beaver Lake, the drinking source for 1 in 6 Arkansans.

Conventional methods of designing parking lots, roads, and residential areas treat stormwater runoff by draining and directing water off the property. Low impact development practices like pervious pavers work to slow, spread, and have water soak into a site.

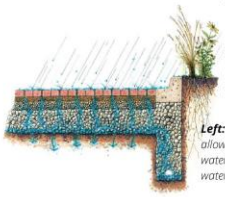
BENEFITS:

- ***Reduce the volume of stormwater leaving a site***

Prevents flooding by retaining water on site. Water can infiltrate permeable pavers to reach the soil and infiltrate into the groundwater on-site. Some parking areas direct this runoff into a bio-retention area, which can further absorb water.

- ***Protects water quality***

Parking lots and roads hold chemicals and pollution from cars. When a rain event occurs, pollutants enter our waterways. Pervious pavers allow water to soak into a site and be filtered, reducing the amount of pollutants entering our waterways.



Left: *An illustration depicting how water infiltrates permeable pavers, allowing it to reach the soil for on-site infiltration. Curb cuts can direct water to desired infiltration site. Native vegetation can slow and filter water alongside these systems.*

Pervious Paver Options

These systems can be applied in urban, suburban, or redevelopment sites. Parking lots, parks, driveways, subdivision roads/sidewalks, plazas, and brownfields are all excellent opportunities for installing LID practices.

Interlocking paver systems

These pre-fab pavers are long-lasting and allow water to permeate through them into sub-surface areas for soil infiltration. Contractors can now install these mechanically, saving time and money on installation. Maintenance includes vacuuming to remove small sediment materials that can block drainage.

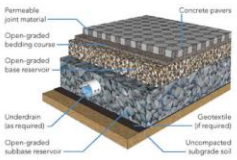
Gravel systems

These systems are low-cost and are great for more lightly-trafficked areas. They allow for water to easily permeate for soil infiltration. Use caution not to install this system in areas that may experience pooling of water or heavily sloped areas that may experience higher volumes of run-off. Maintenance includes replacing gravel after heavy use.

Grass concrete and turf pavers

These pre-fab pavers are long-lasting and allow water to permeate through them into sub-surface areas for soil infiltration. The vegetation has the added benefit of absorbing additional water and adding visual enhancement of added green space. Maintenance includes mowing or weed-eating vegetation when necessary.

Sub-surface



Below Ground

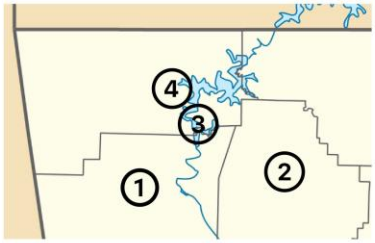
Pervious paver systems are more than meets the eye. These systems have sub-surface components to hold pavers in place and to filter and direct stormwater, as seen in the graphic to the left.

Polluntant Removal Efficiencies

Compared to impervious pavement runoff

Zinc: 62-88%
Copper: 50-89%
Total Suspended Solids: 60-90%
Total Phosphorus: 65%

Examples in Northwest Arkansas



1. 

Kessler Mountain Regional Park
2600 Wc 200, Fayetteville, AR
This parking area provides 1330 cubic feet of storage under the permeable pavers and captures the first 3/4 inch of rainfall runoff from the driveway area. Completed in 2021 by Crossland Construction.

2. 

Mitchusson Park
860 Airport Rd, Huntsville, AR
This parking area provides 532 cubic feet of storage under the permeable pavers and captures the first 3/8 inch of rainfall runoff from the driveway area. Completed in 2021 by Steep Creek LLC.

3. 

Hickory Creek Park
12800 Hickory Creek Rd, Lowell, AR
This LID parking area provides 795 cubic feet of stormwater storage under the permeable pavers and captures the first 1/4 inch of rainfall runoff from the parking lot. Completed in 2021 by Steep Creek LLC.

4. 

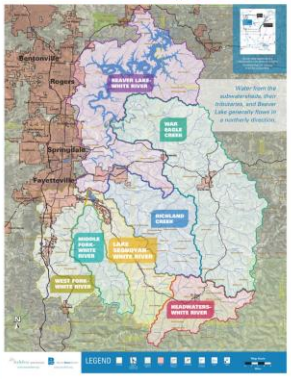
Lake Atalanta Park
500 E Walnut St, Rogers, AR
This 40-space LID parking area was completed in 2022. Water is directed to a filter strip of native vegetation before reaching the stream. Completed by Steep Creek LLC and subcontractor 4G.

WATERSHEDS

Northwest Arkansas'
Beaver Lake Watershed

Beaver Lake Watershed **is a subwatershed of the White River basin, which is a subwatershed of the Mississippi River basin.**

Beaver Lake is the drinking water source for **one in seven Arkansans.**



The Beaver Lake watershed covers 1,192 square miles and is nestled in the Ozark Highlands of NWA. It covers portions of Benton, Carroll, Crawford, Franklin, Madison and Washington Counties.

A watershed is an area of land that receives rainfall which drains to a river, lake or wetland. You are in a watershed right now!

Land use activities can impacted watershed water quality by altering the hydrologic cycle *(how the water moves through the landscape)*.

Reducing sediment, nutrients and runoff will help to protect and preserve the Beaver Lake Watershed. Contact Beaver Watershed Alliance to learn how you can have a positive impact and protect the watershed.

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Educational signage designed and installed at Lake Atalanta, Rogers, AR.

Challenges

Overall, obtaining construction and developer industry professional's time is a continuing challenge in the region. NWA development is occurring at a rapid pace, and although several groups work to reach this audience, it continues to challenge us to think of more creative ways to engage this stakeholder group. However, we have seen an uptick in qualified contractors that are using new methods to install pervious pavers more efficiently, utilizing mechanical installation equipment to cut labor costs down. Low Impact Development features are being used in both the public and private sector, including downtown developments, the Walmart Global Campus, the J.B. and Johnelle Hunt Family Ozark Highlands Nature Center and downtown Rogers, a positive sign that LID is catching on, is beneficial, and is seen as doable for Northwest Arkansas. We (Alliance) have also initiated a program for local producers to grow local genotype native plants to reduce transportation costs and increase local stock for conservation and restoration projects. We are also inspired to see cities working together to address maintenance of pervious paver systems, by sharing equipment or resources. There are also opportunities to collaborate with regional partners more to reach industry stakeholders.

Measures of Success

LID project features help to reduce rain runoff and store rainwater for slow release to recharge groundwater supplies. Rain runoff can also prevent sedimentation and nutrients entering local waterways. The City of Rogers helped to quantify reductions based on designs. The parking area at the park provides 128 cubic yards of stormwater storage under the permeable pavers.

The Alliance continues to receive inquiries from both the private and public sectors for more information on pervious pavers. This is a good sign, and measure of success to show that the interest is present and the design/construction field is wanting to learn more.

There are a number of projects building in the que for Low Impact Development. We see this as another measure of success, as more interest in cost-share projects continues to build within communities.

Lessons Learned

As the Northwest Arkansas region grows, the need for adequate resources on appropriate technologies for LID, including maintenance/management is apparent. Many cities are also evaluating their landscape codes and ordinances, and have requested model LID policies to adopt. Watershed groups can have a significant role in the education and outreach of appropriate technologies, provide technical assistance for LID projects and offer tools for cost, design, materials, native plants, management and other aspects of LID.

To add, there is still a great need for scientific and technical investigation in this watershed, particularly in identifying priority urban stormwater issues and challenges, and assessing relative loadings of other potential sources of urban pollution, such as fertilizers, pesticides, septic tank leakage, etc. We anticipate updates to the Beaver Lake Watershed Protection Strategy and other regional initiatives to reveal opportunities for prioritization, and also see areas of improvement where the Alliance can work more closely with the Soil and Water Districts, University of Arkansas, cities and other stakeholders to address urban NPS.

EPA Feedback Loop

The Beaver Watershed Alliance greatly appreciates the funding provided to Arkansas to implement NPS 319(h) programming. This program funding has continued to leverage local dollars and further support the Beaver Lake Watershed Protection Strategy. To date, over $4,638,805 for 17 projects across the Beaver Lake Reservoir has been funded by 319, leveraged by $3,603,684 from local sponsors, for a total of $7,876,362 in total investments in water quality improvement. Because of this funding, partnerships have strengthened with local communities, landowners and local partners. This has led to other program opportunities that have continued to advance the watershed management plan. This funding has also allowed the opportunity to demonstrate practices that reduce nonpoint sources, which is critical in a source water watershed that is projecting a growth of over a million people by 2045, or sooner. The regional approach to watershed management is becoming more aligned with water quality in mind, as more stakeholders are engaged in the programs and projects that proactively address nonpoint source pollution.

Conclusion/Outcomes

Overall, the project, Lake Atalanta LID Demonstration Project in the Beaver Lake Watershed, Project #20-500 of CWA Section 319(h), was a great success.

Several partner agencies and organizations contributed time and resources to this project, and the success of this project can be attributed to their efforts, as well as the emphasis on voluntary action for cities, landowners, and stakeholders – an approach which can serve as a model for future efforts by Beaver Watershed Alliance and programs by other organizations and agencies.

Pervious pavers are increasingly becoming a more utilized product in place of concrete in parking areas and other applications, furthering efforts for NPS reductions. Throughout the past decade, several pervious paver projects have been implemented that are proving to be durable and a viable material for the Northwest Arkansas region.

The investments in the Beaver Lake watershed area to install LID have produced numerous benefits, such as a better understanding of the costs, materials, designs, and maintenance that is feasible for Northwest Arkansas. It has also led to more informed stakeholders, including decision-makers, construction industry professionals, developers and communities. Ultimately, these investments have reduced nonpoint sources of pollutants, and helped to reduce peak flows in urban areas, further protecting Beaver Lake, our drinking water supply for 500,000 people.

We want to thank the US EPA and the Arkansas Department of Agriculture – Natural Resources Division for their support, funding, technical assistance, and guidance to advance water quality improvement in Arkansas, and for the Beaver Lake watershed.