



Low Impact Development

By Jeff McCormick, Town Manager, Town of Pima

Low-Impact Development is a concept that began in Prince George’s County, Maryland in 1990, as a practical alternative to traditional stormwater management practices. Low-Impact Development (LID) includes a series of land engineering and development features that minimize infrastructure, control stormwater runoff near its origin, and help recharge aquifers, watersheds, and other groundwater sources; in addition to playing an important role in Smart Growth, Green Building, and helping with compliance of the Clean Water Act. LID emphasizes both land and water conservation, and with its minimalistic dependence on infrastructure, LID utilizes on-site natural features which help protect water quality, while retaining the natural hydrology of the site and preserving its before-development water runoff characteristics. LID minimalizes the use of impervious surfaces such as asphalt or concrete, which enhances the ability to control water runoff and improves the water’s capacity to infiltrate into the soil.

A primary feature of LID is its capacity to help recharge aquifers, watersheds, and other groundwater sources. Using minimal infrastructure, LID enhances the natural

hydrology of a parcel being developed, and helps maximize the natural infiltration, filtering, evaporation, and storage of water at the site. Using specific engineering features, water runoff is typically directed toward small retention basins, or rain gardens, where the water is temporarily captured until it infiltrates into the sub-surface soil. As the water runoff infiltrates deeper into the soil, and passes through the various layers of material, significant portions of pollutants, such as ammonia, phosphorus and hydrocarbons, are removed from the water before it reaches the water table and eventually settles in a permanent groundwater storage site.

In addition to utilizing rain gardens, LID also features on-site rainwater harvesting, so a portion of the water runoff can be reused for irrigation purposes. Another essential feature of LID is the use of pervious surfaces. While conventional concrete and asphalt allow little water to infiltrate into the soil, alternative versions of concrete and asphalt contain larger rocks and aggregate materials which provide

enough space between the rocks to allow water to infiltrate through the pervious material, and thereby allow the water to infiltrate the soil below. Using pervious materials further enhances the removal of pollutants in water, helping reduce a portion of the pollutants infiltrating the soil below the concrete or asphalt, and since little water is retained on pervious surfaces, driving conditions measurably improve.

The economic incentives of utilizing LID appeals to developers and captures the attention of engineers. Curbside gutters are typically unnecessary, as other engineering techniques are utilized to direct water runoff. Underground piping is minimalized, as the water is contained on-site and allowed to infiltrate into the soil. Small retention basins replace larger basins, which increases the number of lots in a development project and often increases the value of those lots. With the reduced infrastructure, impact fees are usually lower, sometimes significantly lower.

Developers and engineers integrating LID principles into development projects often see higher profit margins. LID is virtually maintenance free, and its use of native vegetation and less land disturbance enhances the property's aesthetics and conserves its



natural features. What's more, LID has demonstrated a remarkable capacity to manage the substantial runoff volumes involved in major storm events, and reduce or prevent property damage.

Editor's Note: Jeff McCormick will be speaking at the February meeting of the Gila Watershed Partnership, and giving us more information on low-impact development and how it can have a positive impact on our community.

Business After Hours Special Event!

The Gila Watershed Partnership, in cooperation with the Graham County Chamber of Commerce, will be hosting a get together on February 11th from 5:30pm to 7pm at the Safford BLM office in the Aravaipa Room.

- Refreshments will be served
- Door prizes will be awarded

Current Project Updates

FOR MORE INFO, SEE WWW.GILAWATERSHEDPARTNERSHIP.COM

ONGOING GRANTS:

Apache Grove Project

...funded by the Arizona Water Protection Fund (AWPF) and the U.S. Fish and Wildlife Service (USFW)

- removed levies in order to restore optimal river flow, control erosion, and manage invasive species, while preserving agricultural land
- the new pipeline to a deeper well is complete
- in continuous monitoring, need to replace regrowing invasives

Clifton Restroom Project

...funded by the Arizona Department of Environmental Quality (ADEQ)

- will install restroom facilities in a recreational area along the San Francisco River

Eagle Creek Riparian Restoration at Filleman Crossing Project

...funded by the Arizona Water Protection Fund (AWPF) and the U.S. Fish and the USFW Partners program

- will construct a river crossing to stop frequent wash-outs, benefiting both residents and wildlife

Upper Gila Watershed Riparian Restoration Project

...funded by The Walton Family Foundation (WFF)

- will replace invasive tamarisk with native species to restore natural habitats
- Alex Dragotakes, our Plant Propagation Manager, is cutting cottonwood poles to root out in the greenhouse in a hydroponic solution to ready them for planting in the coppice fields in a few weeks
- we are currently identifying potential restoration sites

Youth Pathway Project

...from the National Fish and Wildlife Foundation (NFWF) Great American Outdoors Grant, and USFW Partners

program

- to encourage careers in conservation and land management on public lands, through on-the-ground activities for school age kids high school through college
- the local youth crews have started and are cutting cottonwoods and wills for planting at the native plant nursery
- a youth summit has been planned for April 22nd at Discovery Park

Water Conservation Project

... funded by Freeport McMoRan Copper & Gold, Inc.

- this project is performing home and business water evaluations to help us all save water and money

Upper Gila Water Appraisal Study

... funded by the US Bureau of Reclamation

- this project will help us to better understand the water supplies and demands in the watershed

Greenlee County Watershed Steward Program

... funded by Freeport McMoRan Copper & Gold, Inc.

- Workshops are being conducted at two local ranches

Developing Greenlee County as a Bird Watching Destination

... funded by Freeport McMoRan Copper & Gold, Inc.

- A project that will develop bird watching in Greenlee County
- A coordinator for the project will be hired soon

WRRC Water Needs Assessment and Planning Project

... funded by the BOR Landscape Conservation Cooperative

- a project to assess baseline water needs and potential impacts of future change and develop alternative scenarios to address impacts identified by stakeholders



NEW GRANT APPLICATIONS NEWLY AWARDED BY ADEQ:

Menges Ranch Water System Maintenance
... funded by the Arizona Department of Environmental Quality (ADEQ) and the Arizona Water Protection Fund (AWPF)

- a project that will replace diesel pumps with solar pumps and add a telemetry system that will send a message to the landowner when the water system has a problem

San Francisco River Restroom Project
... funded by the Arizona Department of Environmental Quality (ADEQ)

- a project that will install a second restroom for recreation on the San Francisco River Greenlee County to reduce the *E.coli* levels on the river



Arizona is so dry, senators, that the trees look around for dogs - Senator Barry Goldwater

Calendar of Events

Tuesday, February 11, 5:30pm to 7pm - The GWP Business After Hours at the Safford BLM office in the Aravaipa Room.

Wednesday, March 12, 7 p.m. – The Gila Watershed Partnership’s regular monthly meeting will be all about Rainwater Harvesting, with a talk by Cado Daily, Water Wise Coordinator from Arizona Cooperative Extension.

Wednesday, April 9, 7 p.m. – Susan & Doug Syfert as land owners will present on the completed Wildlife Watering Hole and will show pictures the game camera has captured of local wildlife using the watering hole



Our partners include:

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| Arizona Department of Agriculture | Town of Duncan |
| Arizona Department of Environmental Quality | Eastern Arizona College |
| Arizona Department of Transportation | Farm Bureau |
| Arizona Game and Fish Department | Gila Valley NRCD |
| Arizona Geological Survey | Freeport McMoRan Copper and Gold Inc. |
| Arizona State Land Department | Graham County |
| Bureau of Land Management | Greenlee County |
| Chamber of Commerce | Gila Valley Irrigation District |
| City of Safford | Natural Resource Conservation Service |
| Town of Thatcher | University of Arizona Cooperative Extension |
| Town of Pima | University of Arizona NEMO Project |
| Town of Clifton | U.S. Fish and Wildlife Service |
| | U.S. Forest Service – Apache-Sitgreaves and Coronado Forests |
| | U.S. Bureau of Reclamation |
| | And many community members |

Get involved in your watershed

For more information, contact Jan Holder at the Gila Watershed Partnership, 711 S. 14th Avenue, 85546, or email gilawatershed@gmail.com
 Join us on Facebook “[Facebook.com/gilawatershedpartnership](https://www.facebook.com/gilawatershedpartnership)”

www.gilawatershedpartnership.com