

West Jordan City

Low Impact Development Standards



Low Impact Development (LID) Standards

Water resources both surface and subsurface can be significantly impacted by development of all types. In West Jordan our water resources include culinary water aquifers, Bingham Creek, the Jordan River, and private canal systems. Responsible and sustainable development is important to West Jordan City, we are committed protecting our waterways and remaining compliant with State and Federal environmental regulations.

The purpose of LID is to improve the quality of our water resources and their beneficial use. The principle behind the LID regulation is to mimic natural hydraulic and geologic processes as much as reasonably possible. Before development, especially modern urban development, a significant portion of precipitation infiltrated back into to the ground and much of the excess runoff was filtered by plants essentially pre-treating the runoff before reaching surface drainage ways. Much of today's modern urban development drainage systems are more polluted and significantly by-passes these natural processes resulting in increased flooding and polluted waterways.

Reference regulation can be found mostly in sections 3.2 and 4.2.5 of the Municipal Separate Storm Sewer System Permit (MS4):

Flood and Water Quality Standard Details for Publicly Maintained Roadways

In order to, adequately manage runoff, cost and liability of publicly maintained roads the City must hold to standards resulting in drainage infrastructure the City has the means and ability to maintain. The Riverton City standard LID approach is based on replicating natural processes by pre-treating runoff using plants to capture and remove urban pollutants. The excess runoff volume is then managed on the surface and or below the ground. There are five main standard variations depending on development choice and site conditions. The City understands unique site conditions can justify some variations, but the principles behind the low impact flood and water quality control systems should remain constant. Ultimately, for LID to work best, development must manage the project runoff impact locally. However, with any flood control system including LID, precipitation events can exceed their capacity and downstream systems must be designed to accommodate these excess flows to the City's master planned risk levels.

Low Impact Development Urban Swale Drywell Standard

This urban swale system does not require storm drain pipe, additional land dedication for conventional detention or retention ponds. The swales evenly distribute the runoff impact across the site and the drywells drain excess runoff into the ground as nature did previously. The roadway and drywell are maintained by the City and the property owner maintains the park-strip swale just as property owners do with park strips today.

Low Impact Development Urban Swale Detention Tank Standard

This urban swale and tank system does not require, additional land dedication for conventional detention or retention ponds. The swales evenly distribute the runoff impact across the site, the drywells drain excess UPDES retention volume into the ground, resulting in the cleaner runoff discharged to water ways as nature did previously. The system allows development the choice of separating the UPDES regulation retention volumes from flood volumes by detaining the excess runoff volume in underground tanks for release to City storm drain systems. It will also accommodate various levels of drainage infeasibility where portions the UPDES regulation retention volume cannot be retained to the UPDES regulation amounts.

Low Impact Development Urban Swale Detention Pond Standard

This urban swale and pocket pond system requires, additional land dedication for conventional detention ponds. The swales evenly distribute the runoff impact across the site, the drywells drain excess UPDES retention volume into the ground, resulting in the cleaner runoff discharged to water ways as nature did previously. The system allows development the choice of separating the UPDES regulation retention volumes from flood volumes by detaining the excess runoff volume in traditional pocket ponds for release to City storm drain systems. It will also accommodate various levels of drainage infeasibility where portions the UPDES regulation retention volume cannot be retained to the UPDES regulation amounts. However, this system concentrates more runoff to a small area increasing risk of nuisance water issues and increased maintenance. Pocket

ponds must be located on private property with a public easement and owner's or HOA must enter into a long-term stormwater management agreement with City. Ponds qualifying for public ownership and maintenance must comply with Park Department requirements.

Low Impact Development Urban Swale Retention Pond Standard

This urban swale and pocket pond system requires, additional land dedication for conventional retention ponds. The swales evenly distribute the runoff impact across the site, the drywells drain excess UPDES retention volume into the ground, resulting in cleaner runoff discharged to the ground as nature did previously. The system allows development the choice of separating the UPDES regulation retention volumes from flood volumes by retaining the excess runoff volume in traditional pocket ponds for release to ground. It will also accommodate various levels of drainage infeasibility where the UPDES retention volume cannot be achieved in the frontage swales. However, this system concentrates more runoff to a small area increasing risk of extended surface water, nuisance issues and increased maintenance. Pocket ponds must be located on private property with a public easement and owner's or HOA must enter into a long-term stormwater management agreement with City. Ponds qualifying for public ownership and maintenance must comply with Park Department requirements.

Low Impact Development High-back Curb Drywell Detention-Retention Pond Standard

This standard is consist of traditional drainage infrastructure, including; high back curb, inlets, pipe, and detention or retention ponds. Although this system doesn't fully conform with the intent of the UPDES regulation it is intended to accommodate various levels of drainage infeasibility. However, this system concentrates more runoff to a small area increasing risk of extended surface water, nuisance issues and increased maintenance. Ponds must be located on private property with a public easement and the owner's or HOA must enter into a long-term stormwater management agreement with City.

Ponds qualifying for public ownership and maintenance must comply with Park Department requirements.

Private Low Impact Development

This includes commercial, industrial, institutional and private residential developments and subdivisions. Flood and water quality infrastructure LID can vary but must conform to the minimum flood and water quality criteria with the intent to equal public infrastructure in accordance to Riverton Standard Specifications and Plans. In addition to flood and water quality control, these systems must be maintainable and perform equally to the standard details of public LID infrastructure.

In addition, to the suggested public infrastructure standards above, the following links are local resources for reference.

[A Guide to Low Impact Development in Utah](#)

[Utah City Engineers Association Storm Water Standards](#)

[Low Impact Development Database](#)