

Low-Impact Development Techniques

The Jordan Valley Municipalities Permit No. UTS000001 requires that Cottonwood Heights shall consider Low Impact Developments (LIDs) for the community referenced in sections 4.2.1.6, 4.2.5.3.2, 4.2.6.4, and 4.2.4.3.3. If the designer determines that an LID approach cannot be utilized the designer shall document and explain the reasons that LID will not work on the specific site and provide the rationale for the chosen alternative controls that will be used to obtain the same water quality objectives. This evaluation shall be completed on a case by case basis. As a minimum, the evaluation shall document:

1. Why LID won't work.
2. Rational for the chosen alternative controls on a case by case basis for each project.

The following 7 categories with associated links are intended to assist in proper planning and construction to encourage LID procedures.

BMPs for post-construction stormwater control pollution prevention in new development or redevelopment sites shall utilize the Urban Storm Drainage Criteria Manual Volume 3 – Best Management Practices 2011. <http://www.udfcd.org/> for selection and design of long-term controls.

Bio-retention areas: designed for site specific conditions to optimize the effectiveness of water filtration and retention. There is no standard. Creativity, ingenuity and dedication are the key to success.

- Aquatic Buffers
- Green Parking Lots
- Bioretention
- Soil Amendments
- Soil Restoration
- Created Wetlands
- Dispersal Trench
- Conveyance Furrow
- Urban Forestry
- Vegetation Restoration
- Biofiltration
- Stormwater Planters

Green Roofs: a bio retention area as well as a form of rain water collection; it also adds a public place and social element.

- Green Roofs
- Biofiltration

Permeable Pavements: allow for water to permeate through the surface, yet still give a hard surface for pedestrian and vehicular traffic.

- Break up flow directions from paved surfaces
- Use alternative surfaces
- Green Parking Lots

Rain water collection: Utah law allows for re-use on site. For larger buildings such as offices and malls this is an impact that could greatly reduce storm drain usage in the area.

- Water harvesting and reuse
- Parking Lot and Street Storage
- Slope dumpster enclosure pads towards landscaping
- Connect roof drains to landscaping
- Minimize concentrating runoff. Distribute runoff to multiple sumps or open areas
- Dispersal Trench
- Po-up emitter

Riparian Buffers: applied along watershed by restricting development along creeks, streams, washes, etc.... This keeps the natural flow of water, mitigates erosion and contamination, as well as provides an interconnected habitat for animals, and recreation opportunities.

- Protect Natural Site Functions
- Preserve Natural Corridors
- Aquatic Buffers

Green Street System: includes the different aspects of rain gardens and swales along roads into an incorporated system for retention and filtration of storm water.

- Reduced clearing and grading
- Functional Grading
- Locate Impervious surfaces to drain to natural systems
- Minimize directly connected impervious areas
- Break up flow directions from paved surfaces
- Train and path network
- Narrow roadways
- Reconfigure driveways
- Alternative turnarounds
- Green parking lots
- Stormwater planters
- Urban forestry
- Alternative street layouts

Zoning/Alternative Development Configurations and Standards: creative zoning and development standards directed towards minimizing disturbances of the natural habitat and hydrology of the area.

- Site fingerprinting
- Fit development to the natural gradient
- Alternative development configurations
- Define development envelope
- Identify sensitive areas
- Alternative lot configuration
- Reconfigure driveways
- Alternative turnarounds
- Alternative street layouts
- Larger lot sizes – higher pervious are percentage
- Cluster zoning – consolidating development – fewer impacted areas
- Considering conservation easements
- Limit maximum directly connected impervious areas.

References:

www.lid-stormwater.net (Tool created through Cooperative Assistance Agreement under the US EPA Office of Water 104b(3) Program)

<http://www.epa.gov/owow/NPS/lid/lid.pdf>

http://deq.idaho.gov/water/data_reports/storm_water/catalog/sec_3/text.pdf

<https://www.draper.ut.us/DocumentCenter/View/1952>

http://www.loganutah.org/1%20-%20Storm%20Water%20Design_Standards-Final.pdf

<http://www.rivertoncity.com/departments/Stormwater%20Design%20Standards%20and%20Regulations.pdf>

SWMP Update 2018

Permit Reference #: 4.2.1.6, 4.2.5.3.2, 4.2.6.4, 4.2.4.3.3