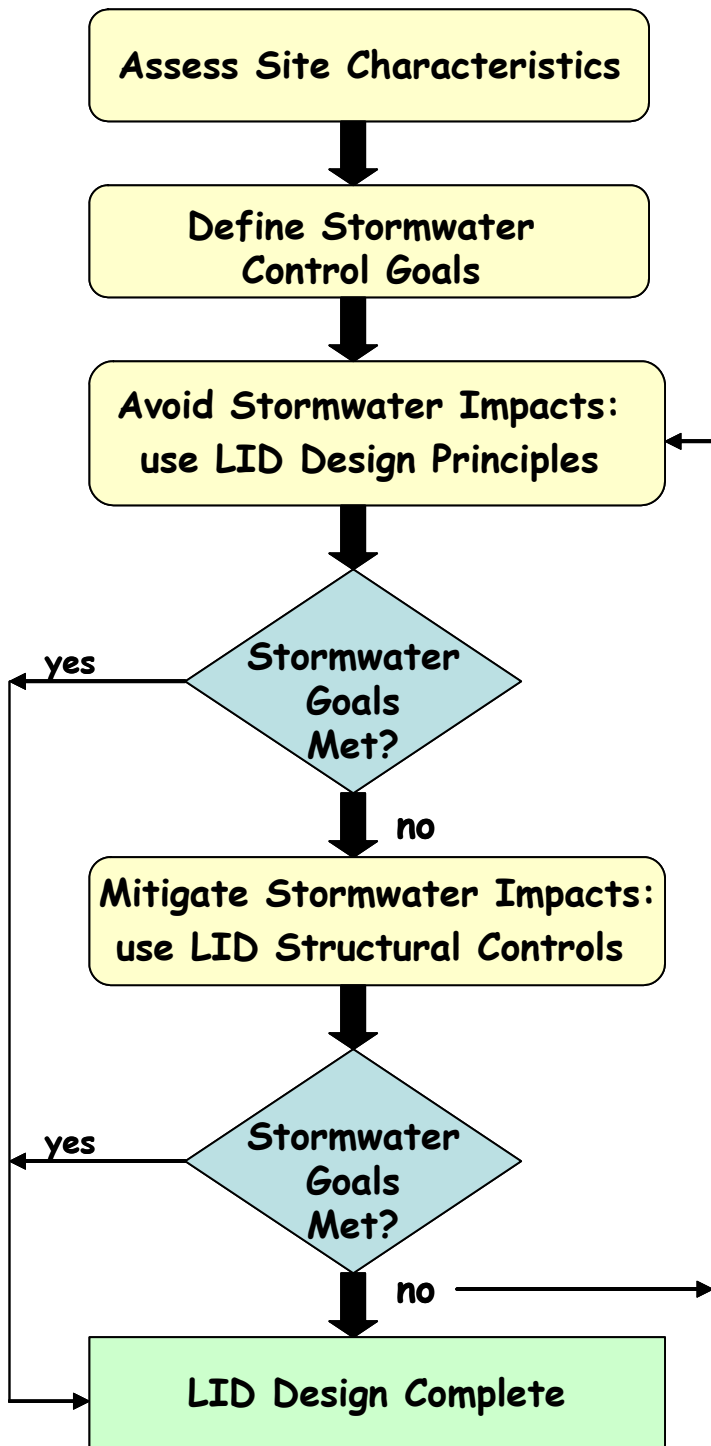


Steps for a Successful LID Design



Site characteristics will influence the LID design. Identify features such as required setbacks, existing wetlands/streams, soil types, depth to groundwater, and natural drainage routes. Also, document any existing drainage infrastructure such as pipes, vaults, and ditches. Delineate the project drainage area including offsite inputs.

Storm water control goals may include water quality treatment, hydromodification and/or flood control. The post-construction hydrology goals of the site can be set as: 1) the condition immediately prior to the proposed project (pre-project), 2) the condition existing pre-human influence (pre-development), or 3) somewhere in between pre-project and pre-development. Numerically, hydromodification and flood control goals are often stated in terms of volume, duration, peak, and/or time of concentration for one or a series of storm events.

The site planning phase provides an opportunity to avoid the creation of new storm water impacts. **LID design principles** utilized in this phase include: avoiding excessive grading and disturbance of soils; preserving natural drainage features; concentrating development where soils are least permeable; and reducing impervious surfaces (e.g., narrowing roadways, reducing parking, creating alternative road layouts, and reducing sidewalks to one side of the street).

After applying LID design principles, additional **LID structural controls** (BMPs) and practices may be necessary to meet storm water control goals. These practices are intended to be integrated throughout the site to achieve small-scale, decentralized storm water management. Practices include: routing flows (from roof drains and paved areas) to stabilized vegetated areas; rain gardens; green roofs; bioretention systems (e.g., bioswales); and pervious pavements. Often, these BMPs and practices can be coupled with other site requirements (e.g., landscaping) to leverage space and reduce cost.

The project applicant will need to **evaluate the ability of the LID design to meet the established storm water management goals**. The applicant should clarify with the project permitting agency the acceptable manner for analyzing storm and runoff scenarios. This will include the: 1) design storm to be evaluated (e.g., 2-, 5-, 10-yr, 24-hour storms); 2) runoff parameters to be estimated (e.g., runoff volumes, peak, duration, time of concentration, water quality); and 3) calculations and models to describe storm water runoff and or water quality scenarios (e.g., continuous vs. event-based simulations; Rational Method, TR-55, HSPF, SWMM).

The LID design process is often iterative in nature before reaching a final design.