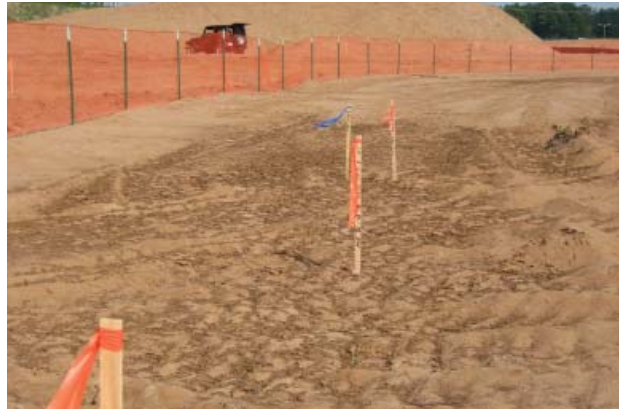


## 15. AVOIDING COMMON MISTAKES: A Sub-Chapter Summary

### 3. Verification of Siting and LID Practice Design:

**Physical site inspection** is often the most overlooked aspect of LID. Surveys, aerial photography, and incomplete or old mapping is often unsatisfactory for a fully functional LID design and construction.

- Soil borings and test pits
- Understanding the site's context
- Knowing contributing watersheds



### 4. Tendering and Ownership:

**Emergency Erosion Control Measures** to address major storm events and flooding are difficult to predict and budget for. A separate line item for emergency erosion control is one strategy to ensure EC is performed properly and contractors are paid for their additional work.



### 5. Site Preparation:

**Insufficient marking of protected areas** can lead to natural resource destruction and mass sediment loss due to large, unprotected areas of bare soil exposed to storm events. Clearing activities must be coordinated with the construction schedule to limit the duration and size of disturbed areas. Down gradient perimeter control must be in place prior to conducting any up gradient activities.

**Placement and maintenance of perimeter controls** is critical throughout the construction process:

- Infiltration practices are resources that should be protected with perimeter controls.
- A failure of a single portion of any perimeter control can cause sedimentation of the LID practice.
- Perimeter controls are only effective with routine inspection and maintenance.



### 6. Mass Grading:

Mass grading can occur in LID with precautions to protect future BMPs.

- Below ground BMP facilities *can be* constructed during mass grading *if* bulkheaded for remainder of construction.
- Using BMPs as temporary sediment basins during mass grading requires planning and contractor communication.



### 7. Utility Installations:

If possible, avoid locating utilities within LID features. Communication and coordination with utility companies is critical to integrating LID and utility corridors

- Lighting installations within or above BMPs which may require special structural support considerations.
- Water and sewer utilities in or below BMPs may require insulation and/or anti-seepage measures.
- Electrical utility routes may conflict with water conveyance and standing water/ponding areas.



### 8. Buildings and Pavement:

Building contractors generally have the least amount of knowledge and concern for stormwater BMPs.

- Clearly mark all BMPs in plans and on site; avoid compaction or contamination of LID areas from machinery or materials storage over BMP footprints.
- Inspect the site at least once a week and after every rainfall to ensure LID protection measures are in place.





### 9. Finish Grading:

**Conveyance of runoff into BMPs is one of the most common errors in LID.**

- Inlets (sod, rip rap, or pretreatment measure) are installed higher than the contributing impervious surface, runoff then bypasses the practice.
- Inadequate scour protection is provided at the practice's inlet leading to erosion and scouring.
- Pretreatment can prolong the life of a practice and make maintenance easier.
- Inlet, outlet, and emergency overflow elevations are often only centimetres apart - requiring precise grading.



### 10. LID Practice Materials:

**Bioretention soil medium and installation is new to many contractors.**

- Soil medium should be premixed, and samples should be pre-approved to ensure proper material.
- Settling should be accounted for, both in quantities and process.



### 11. Permeable Pavement:

**Permeable paving should be protected in all phases of construction.**

- Protect paving area from surrounding drainage area with perimeter controls.
- Keep all construction equipment off permeable areas because sediment tracking can clog permeable pavement.



**12. Permanent Vegetation Establishment:**

**Plant establishment is often overlooked but is critical to long term LID success.**

- Seed is difficult to establish in online stormwater practices.
- Establishing vegetation is often more successful if facilities are kept offline the first growing season.
- The first few years of establishment will require greater maintenance.
- Plant the right plant. Beware of uncommunicated plant substitutions.



**13. Overwintering:**

**The winter construction period - October 15th to April 1st - will require special construction measures.**

- Unstabilized natural heritage features should be protected within 30 metres of their boundary by Oct. 15th.
- Areas cleared and exposed should be limited to 0.4 hectares
- Seeding is not recommended during winter construction, unless dormant seeding.
- Mulch should be applied at higher rates and anchored when overwintering.



**14. Certification:**

**Final certification is the last chance to identify and solve potential issues before the owner takes over.**

- Issues should be resolved before the owner takes over maintenance responsibilities.
- Assessment and maintenance of stormwater treatment practices can be divided into four main categories: visual inspection, capacity testing, synthetic runoff testing, and monitoring.

