Land Use Regulatory Control in the Tankerhoosen Watershed
Material Set 3

Town of Vernon

In Association With:

Friends of the Hockanum River Linear Park
North Central Conservation District

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146 Hartford Road
Manchester, CT 06040

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1 Overview and Purpose

Although low impact development (LID) has been in use for over 20 years, it continues to be considered a relatively new approach to managing stormwater. Like many new things, widespread acceptance of LID by municipalities and the development community has been relatively slow. The apparent resistance to the implementation of LID is largely due to two principal issues:

1. LID requires codification into governmental policy before achieving widespread use.
2. LID must overcome economic forces in a development market which relies on strict predictability of time and profit.

Material Sets 1 and 2 focused on the first of these constraints by identifying existing policy that impedes the use of LID in the Town of Vernon (Town). Material Set 3 continues this work by recommending specific new LID policies. Material Set 3 also identifies ways to overcome market inertia by incentivizing LID. In particular, Material Set 3 identifies potential LID incentives that can reduce permitting time and increase profitability for projects that employ LID best management practices (BMPs).

2 Proposed Policy Revisions

This section provides proposed policy revisions for the Town of Vernon based on the analysis presented in Material Set 1 and 2. Recommendations from Material Set 1 and 2 included changes to policy related to:

- Preservation of Natural Areas and Riparian Buffers
- Tree Protection
- Landscaping Islands for Stormwater
- Limits of Disturbance
- Open Space and Cluster Development
- Streets and Driveways
- Parking Areas
- Sidewalks
- Unconnected Impervious Surfaces
- Vegetated Open Channels

During the workshop following development of Material Set 1, participants determined that the proposed recommendations for tree protection, limits of disturbance, and vegetated open channels were included in Town policy to the extent practicable and recommended no further changes. Therefore, these recommendations are not addressed further in this material set. Recommendations for streets, driveways, parking areas, sidewalks, and unconnected impervious surfaces have been combined as "Standards for Impervious Surfaces and Disconnection." Recommended policy changes have been limited to *Subdivision Regulations* and *Zoning Regulations*.

In the sections below, policies of interest from the Town's *Subdivision Regulations* and *Zoning Regulations* are presented by topic. Double underline is used to show added text. No deletions were recommended. An 11 point font is used to set aside proposed policy changes from contextual discussion of the proposed changes. In some instances, we have included comments on existing regulatory language in brackets and 12 point font. We also discuss approaches to developing LID applicability standards and our recommendations for the Town.

2.1 Applicability of Low Impact Development Policy

On November 29, 2011, a combined workshop was held with the project steering committee and Town land use commissions. As part of the workshop, attendants discussed applicability thresholds for requiring LID such as a new impervious surface threshold. Attendants also discussed whether the use of LID should be mandatory or more flexible or even optional. A third concern was raised regarding how an applicability threshold should be written into Town policy. This section of Material Set 3 discusses our findings related to applicability of LID and our recommendations for the Town of Vernon.

2.1.1 Firm or Flexible LID Requirements

In the recent development of LID appendices for the *Connecticut Stormwater Quality Manual*, a review of LID policy around the country was conducted to investigate, in part, requirements for the amount of LID on development sites. Some examples of policies found include:

- No requirement, LID is optional.
- LID must be implemented to the maximum extent practicable (MEP).
- LID must be implemented to manage up to the first ½-inch of runoff.
- LID must be implemented to manage up to the first inch of runoff.

The term MEP is used in a variety of federal and state policies, often without specific definition, as it is meant to give reviewers and applicant's maximum flexibility in meeting narrative environmental goals.

Generally, MEP can be thought of as weighing the advantages and disadvantages of doing additional implementation activities with consideration for the amount of implementation provided by other applicants in similar situations, and the abilities and capacities of the applicant proposing work.

Ultimately, the Connecticut Department of Energy and Environmental Protection (CTDEEP) and its project partners selected an MEP standard and did not establish a specific requirement for the "amount" of LID to be applied to development sites. Why was this decision made? While LID offers very powerful stormwater management approaches that can be applied in a wide variety of circumstances, Connecticut design engineers and regulators are in the early stages of learning to use these techniques. Rather than requiring and indirectly[1] constraining the use of LID without the benefit of experiential wisdom, CTDEEP and its partners took an open approach. Flexibility in this standard was found to be more palatable to the development community and

[1] Applications to regulatory programs tend to adhere to what is minimally required.

environmental advocates as both were concerned about misapplication of a rigid standard at either an unattainably high or undesirable low level.

The MEP standard is not without foibles. It leaves regulators and the regulated community in a somewhat uncertain position. However, open communication in the early stages of the application process can eliminate much of this uncertainty. Given the apparent cooperative relationship between the Town regulators and the regulated community, we recommend the MEP standard as a starting point for LID policy implementation. If a firmer standard becomes desirable, it can be set in the future.

For the purposes of LID policy, we recommend requiring that applicants to demonstrate MEP compliance by:

- Documenting reasonable efforts to include LID for management of at least the water quality volume (i.e., equal one inch times the area of impervious surface).
- Documenting use of BMPs as described in the Town Stormwater Design Manual.
- Documenting the highest reasonable level of stormwater management if full compliance with this standard cannot be practicably achieved.

2.1.2 Applicability Thresholds

An applicability threshold refers to that point at which policy invokes a regulatory oversight. Commonly this is done through regulatory review. For LID, applicability thresholds dictate the types of projects that would require regulatory review and adherence to specific performance standards through the use of LID. Towns and states around the country have developed a wide range of applicability thresholds for LID. Some examples include size and nature of developments (e.g., area of disturbance, proposed increase of impervious surface, subdivision vs. single-family development, new development vs. redevelopment, etc.); and proximity to sensitive receptors such as critical habitats and impaired waters.

In the recent development of LID appendices for the *Connecticut Stormwater Quality Manual*, the Connecticut Department of Energy and Environmental Protection (CTDEEP) did not establish an applicability threshold. From the state's perspective, LID could be attempted as part of any development and limitations on the application of LID, if desired, are left to the auspices of individual regulatory authorities.

Some Connecticut towns have established applicability thresholds on their own. For example, Plainville, CT set a standard for residential development requiring LID on all new single-family residential development projects of greater than 5 acres and all multifamily residential development projects greater than 2 acres. Greenwich, CT, on the other hand, requires LID for all new development, with an exemption from regulatory review for projects of less than 500 square feet provided certain conditions are met.

Some form of LID could probably be applied to virtually any development site in Vernon regardless of the development size; however, the water quality protection value added by including LID on very small developments may be limited. With this in mind, we recommend an approach similar to the Town of Greenwich, which requires LID for all projects that fall within current Town regulatory jurisdiction, but exempts stormwater regulatory review for projects creating less than 500 square feet of new impervious surfaces provided that the following conditions are met:

- The project drainage design will not have an adverse effect on offsite properties or offsite drainage infrastructure, as certified by a professional engineer.

- LID measures in accordance with the Town manual are implemented on the site to the maximum extent practicable to mitigate the effects of site disturbance and new impervious cover.

- The project proponent submits an exemption request, including professional engineer certification.

We further recommend availability of this exemption only until the cumulative addition of unreviewed impervious surface on a site reaches 500 square feet, regardless of ownership changes. Residential "teardowns"—demolition and reconstruction or replacement of an existing residential dwelling with another residence of any size—should not be allowed to exercise this exemption.

2.1.3 Location of a LID Applicability Statement

A LID applicability statement or set of statements will need to address each potential circumstance where LID might be included in a development project. An applicability statement will also need to fit within the context of existing land-use policy thresholds as the Town wishes to adjust its policy to encourage and allow for LID, but is not otherwise intending to change its existing standards as part of this project. We understand that for purposes of practicality the Town intends to set a threshold that allows for limited development without requiring LID. Some examples of limited development may include building a garage or shed or building a small addition to an existing single-family house.

We reviewed Vernon's ordinances, regulations and planning policy to identify applicability thresholds in current land-use policy. With the exception of the *Inland Wetlands and Watercourses Regulations*, which, in accordance with state requirements, define "regulated activity" to include "any activity that alters the existing rate or quality of any stormwater discharge," we did not find specific thresholds for regulatory applicability based on land disturbance, addition of impervious area, or increased stormwater discharge flow.

Given our findings related to applicability statements in existing policy and the nature of our proposed policy revisions, we do not believe that addition of LID applicability statements will work well in the context of existing Town enforceable policy. However, a draft LID standards

manual has been developed that the Town will use as part of its land-use, development, and environmental reviews. We recommend inclusion of an applicability statement in that manual. In addition to fitting with policy structure, this approach will limit potential confusion associated with applicability statements in several enforceable policies.

2.2 General LID Requirements

To ensure that applicants are aware of the larger need to include LID on all possible projects to the maximum extent practicable, we recommend including general MEP requirements to manage stormwater with LID.

2.2.1 Subdivision Regulations

The following are recommended changes to the Town's *Subdivision Regulations* to promote the use of LID on projects whenever practicable:

Section 6.9.1 General Requirements [for Drainage and Storm Sewers]
The developer shall be fully responsible for constructing adequate facilities for the control, collection, conveyance and acceptable disposal of storm water, other surface water and subsurface water, whether originating within the sub-division area or in a tributary drainage area. All drainage facilities shall include LID to the maximum extent practicable and shall be designed in accordance with the [insert name of Town LID Stormwater Design Manual] by a registered professional engineer and be subject to the approval and final acceptance of the Town Engineer.

2.2.2 Zoning Regulations

The following are recommended changes to the Town's Zoning Regulations to promote the use of LID on projects whenever practicable:

Section 13.9 Performance Standards for Existing and Proposed Drainage
Stormwater management systems shall include LID to the maximum extent practicable and shall be designed and maintained to renovate stormwater through mechanical or natural means before discharging into storm sewers, wetlands, watercourses, or infiltrating into the ground. The stormwater management system shall comply with the practices recommended in the latest edition of the "Stormwater Quality Manual" of the State of Connecticut Department of Environmental Protection (DEP) and with the [insert name of Town LID Stormwater Design Manual].

2.2.3 Inland Wetlands and Watercourses Recommendations

The following are recommended changes to the Town's Inland Wetlands and Watercourses Regulations to promote the use of LID on projects whenever practicable:

Section 7.5 All applications shall include…
The purpose and a description of the proposed activity and proposed erosion and sedimentation controls and other management practices and mitigation measures which may be considered as a condition of issuing a permit for the proposed regulated activity including, but not limited to, measures to (1) prevent or minimize pollution or other environmental damage, (2) maintain or enhance existing environmental quality, or (3) in the

following order of priority: restore, enhance and create productive wetland or watercourse resources; management practices shall include low impact development to the maximum extent practicable in accordance with the [insert name of Town LID Stormwater Design Manual].

2.3 Preservation of Natural Areas and Riparian Buffers

2.3.1 Subdivision Regulations

If the Town plans to provide enhanced on-line mapping of environmental features and resources, it may wish to revise its "Site Development Plan" requirements to include the following:

Section 5.2.5 and 5.2.9 – Site Development Plan
Site plan should include:

- Existing and proposed water courses and ponds, conservation areas, and easements and right-of-way; base flood elevation data, wetland soils, other land subject to potential flooding; the location and limits of all swamps, flood plains including those within 2001 [The use of "2001" appears as though it may be a typographic error in the copy of the *Subdivision Regulations* with which we are working] beyond subdivision boundaries.
- Principal wooded areas and the approximate location of any large, isolated trees.
- Areas adjacent to streams, rivers, lakes, and wetlands that support native vegetation species, which are adapted to saturated or moderately saturated soil conditions.
- Drinking water aquifers and aquifer recharge areas.
- Critical wildlife habitat areas for protection.
- Two-foot elevation contours, soil types, non-aquatic habitat and vegetation.
- Scenic points and vistas, ridgelines.

2.3.2 Zoning Regulations

The following are recommended changes to the Town's *Zoning Regulations* to include natural areas and riparian buffers in stormwater management:

4.26.1 Purpose
The purpose of the open space zone is to allow for the clear identification of land on the Town of Vernon Zoning Map that has been set aside from or permanently protected from development by legislation, dedication conservation or other legal means, which shall be used only for recreational, conservation, educational and agricultural purposes.
Areas zoned as open space may be used for disconnection of impervious surface to manage stormwater provided that this does not adversely affect use of the area for open space.

"Open space" may be used for disconnection, but is not required as it may be undesirable to either the Town or the developer in certain circumstances. In such circumstances other LID techniques may be applied. The term "open space" is a term used in the Zoning Regulations to describe particular zoning.

4.26.2 Permitted Uses
Uses permitted within this zone include recreation, conservation, education and agriculture. These areas may be used for disconnection of impervious surface to manage stormwater provided that this does not adversely affect use of the area for open space.. Under no

circumstances shall a use or activity ensue on a parcel of land within this zone which is contrary and/ or detrimental to the intent and purpose of open space. There are no Special Permit Uses or Special Exceptions within the OSZ.

2.4 Landscaping Islands for Stormwater

As described in Material Set 1, we recommend that the Town require or strongly encourage the use of landscape strips and parking lot islands for stormwater management in the Town's *Zoning Regulations*. Thus, we recommend the following revisions to Sections 9 and 21 of the *Zoning Regulations*. Double underline is used to show added text. No deletions were recommended.

2.4.1 Zoning Regulations

The following are recommended changes to the Town's *Zoning Regulations* to include landscape islands in stormwater management:

9.1 Provision
The Planning & Zoning Commission (PZC) may require a landscaped buffer strip to be provided along a property line to buffer adjacent property from the proposed development. The PZC may impose provision of the landscape buffer to address the following conditions:

- To minimize potential conflict between different uses;
- To assure privacy and/or the undisturbed use of property;
- To lessen potential glare from light sources or reflections;
- To screen motor vehicles, parking and loading areas, dumpsters, storage or display areas, heating, ventilating, air condition (HVAC) mechanical equipment, or other industrial equipment.
- To provide landscape transitions;
- To increase compatibility with neighboring uses, lessen the potential for nuisance, and promote the sound development of the community relative to special permit criteria of Zoning Regulations Section 17.3.1 in regard to both existing and potential development;
- To prevent blight, preserve the quality of existing development, and maintain property values;
- <u>To provide for enhanced stormwater management through the use of low impact development (LID) techniques such as bioretention in accordance with the [insert name of Town LID Stormwater Design Manual].</u>

This provision gives the PZC the authority to require LID in landscaped buffers if they determine such a requirement to be appropriate.

9.3 Composition
The landscape buffer strip, if required by the PZC.

- Shall be designed by a licensed landscape architect;
- Shall be shown on the site plan or landscaping plan in terms of the types of plants, maturities or sizes, spacing, planting schedule, and maintenance plan;
- Shall be designed to retain and incorporate existing healthy mature trees whenever possible;

- Shall contain a variety of interplanted evergreen, deciduous, trees and shrubs suitable in the judgment of the PZC or its designated agent to provide an adequate screen sufficient to buffer adjacent property from the proposed development, and to meet the following guidelines:
    - Shall contain trees and shrubs that are spaced and located as follows:
        - Evergreen trees and large deciduous trees should be spaced using accepted landscaping practices, usually 20 feet or more on center;
        - Flowering trees should be spaced using accepted landscaping practices, usually 10 or more feet on center;
        - Trees shall not be planted within 20 feet of a sewer line or area of heavy
        - equipment use;
- Shall contain plantings staggered/clustered to achieve maximum screening after 5 years, and at maturity. Evergreen trees shall be a minimum of 5 feet in height at the time of plantings; deciduous shade trees shall be a minimum of 2" caliper and 10 feet in height at the time of planting; and flowering trees shall be a minimum of 6 feet in height at the time of planting and 1–½ " caliper;
- For screening purposes, may include, but shall not be limited to, the following varieties of trees and shrubs: Canada Hemlock, Scotch Pine, White Pine, Norway Spruce, Douglas Fir, Pyramidal Arborvitae, Juniper (including Red Cedar), Rhododendron, Azalea, Holly, Forsythia, Viburnum, Lilac, Yew, Flowering Crab, Dogwood, Magnolia, Hawthorn, Flowering Quince, Mountain Ash, Flowering Cherry, Sycamore (Plane Tree), and Male Ginko;
- Shall be subject to modification, which may include an increase of depth or installation of a fence, wall, or barrier, as may be considered necessary by the PZC to fulfill the purpose of the landscaped buffer;
- Shall, whenever stormwater best management practices are incorporated, be designed in accordance with the [insert name of Town LID Stormwater Design Manual].

9.4 Maintenance

- Maintenance shall include, but not be limited to, watering, fertilizing, weeding, cleaning, pruning, trimming, spraying and cultivating. Vegetation that dies shall be replaced as quickly as possible and within one growing season. Replacement plantings shall conform to the original intent of the landscape design;
- Clear cutting/harvesting of trees within a buffer area is expressly prohibited at any time without prior Commission approval;
- Stormwater best management practices shall be designed in accordance with the [insert name of Town LID Stormwater Design Manual] in order to facilitate operation and maintenance.

The provisions of 9.3, 9.4, and 21.4.9 do not require LID, but instead require that if LID techniques are used that they are used in accordance with Town design standards. Section 21.4.9 is revised to require LID whenever practicable in the landscaped areas of parking lots as these areas provide ideal opportunities for applying LID.

Section 21.4.9

Parking areas and traffic ways shall be enhanced with landscaped spaces containing shrubs, tree or tree groupings. Whenever practicable, landscape spaces shall be designed to incorporate stormwater best management practices and such practices shall be designed in accordance with the [insert name of Town LID Stormwater Design Manual]. Parking areas shall provide a minimum of one island for every twenty (20) parking spaces.

2.5 Open Spaces

2.5.1 Subdivision Regulations

The following are recommended changes to the Town's *Subdivision Regulations* to promote the use of open space for stormwater management:

Section 6.1.3 – Open Spaces
The Commission may require that land be reserved for parks and recreation in locations designated in the Town of Vernon Plan of Development or otherwise where such reservation would be appropriate. Each reservation shall be of suitable size, dimension, topography and general character for the particular purpose envisioned by the Commission. A maximum of 5% of the total tract proposed for subdivision may be required as park/recreation area. These areas may be used for disconnection of impervious surface to manage stormwater provided that this does not significantly interfere with other open space uses of the area. The developer shall dedicate all such recreational areas to the local government as condition of final subdivision approval.

"Open space" may be used for disconnection, but is not required as it may be undesirable to either the Town or the developer in certain circumstances.

2.6 Standards for Impervious Surfaces and Disconnection

2.6.1 Subdivision Regulations

The following are recommended changes to the Town's *Subdivision Regulations* to enhance stormwater management related to impervious surfaces:

Section 6.6.6
Cul-de-sac pavement shall be a uniform 45' radius except when an island is used then the outside radius shall be 50' and an island radius is 20' [For consistency of language consider changing to "and the island radius shall be 20']. Whenever practicable, cul-de-sacs should incorporate stormwater management in accordance with the [insert name of Town LID Stormwater Design Manual]. This should include the use of cul-de-sac islands for stormwater management practices whenever practicable.

Like landscaped areas in parking lots, it is generally anticipated that cul-de-sacs will include spaces appropriate for the inclusion of LID techniques.

Section 6.7.2 – Curbs
Curbs shall be required on all new streets and shall conform to construction and design standards as required in Appendix of these Regulations. Alternative curb designs or no-curb designs may be used for the purpose of managing stormwater and promoting the use of low impact development (LID) techniques (e.g., roadside swales in lieu of storm drainage piping) in accordance with the [insert name of Town LID Stormwater Design Manual].

Section 6.7.4 - Road Pavement
All road pavement, shoulders, drainage, improvements and structures, curbs, turnarounds and sidewalks shall conform to all construction standards and specifications adopted by the Town of Vernon. Alternatively, permeable pavement

The provisions of 6.7.2, 6.7.4, and 6.12.1 do not require specific LID techniques, but instead require that if LID techniques are used that they are used in accordance with Town design standards.

may be substituted in accordance with the [insert name of Town LID Stormwater Design Manual].

Section 6.12.1
Sidewalks shall be required in all subdivision on at least one side of all new streets, unless waived by a three-quarter vote of all members of the Commission, and may be required on both sides at the discretion of the commission. For the purposes of managing stormwater, sidewalks should be constructed of pervious materials or be graded to front yards or other permeable surfaces whenever practicable.

2.6.2 Zoning Regulations

The following are recommended changes to the Town's *Zoning Regulations* to enhance stormwater management related to impervious surfaces:

3.15 Surfacing
In all zones, all required parking, driveways, loading areas, motor vehicle storage, and display lots and access driveways shall have an adequate paved or alternate surface approved by the Town Engineer capable of allowing free and safe movement of all vehicles. Permeable pavement may be used for surfacing If permeable pavement is used it shall be designed in accordance with the [insert name of Town LID Stormwater Design Manual].

Section 14.1.2.2.12
Where appropriate, existing and proposed drainage with invert and top of frame elevations; wherever feasible, drainage design for roof area, parking lots and driveways; shall employ low impact development (LID) techniques for stormwater management in accordance with the [insert name of Town LID Stormwater Design Manual].

3.25 Sidewalks
Sidewalks shall be installed for all new developments in all areas, unless waived by a three-quarters vote of all members of the Commission. Sidewalks and granite curbs shall be installed in those areas designated as "Sidewalk Policy Areas," which is made part of these regulations. Alternative curb designs may be used for the purpose of managing stormwater in accordance with the [insert name of Town LID Stormwater Design Manual]. For the purposes of managing stormwater, sidewalks should be constructed of pervious materials or be graded to front yards or other permeable surfaces whenever practicable.

The provisions of 3.15, 14.1.2.2.12, and 3.25 do not require specific LID techniques, but instead require that if LID techniques are used that they are used in accordance with Town design standards. Section 12.3.3 allows the use of shared parking as a stormwater management technique.

Section 12.3.3
In all districts, required parking areas for dwellings shall be on the same lot with the main dwelling. This should not be construed to prevent the use of shared parking where appropriate for the purposes of managing stormwater.

3 Commonly Used LID Incentives

A variety of LID incentives are in use by municipalities around the country. Generally speaking, these incentives have been structured to enhance marketability of LID developments,

improve profitability, or reduce start-up time for initiating LID projects. General incentive types and specific examples of incentives are discussed below.

Some regulatory policies also employ "LID credits" or "stormwater management credits," which may be presented as incentives. These "credits" typically refer to a "point system" to account for a tradeoff or reduction in the capacity or size of conventional BMPs in exchange for implementation of LID BMPs. This implies, from a stormwater design standpoint, that LID BMPs and conventional BMPs are not comparable on a unit treatment basis (i.e., they are "apples and oranges"). In reality, the unit treatment capacity of most LID and conventional BMPs can be measured using their design water quality volume.

Because of this, we advocate the use of stormwater standards that require specific treatment capacity (i.e., water quality volume)—instead of a LID credit system—and have included this in the draft LID manual for the Town. This approach is particularly utilitarian when a hybrid stormwater management approach, involving both LID and conventional BMPs, is needed. We believe this will also encourage more sensible combinations of BMPs.

3.1 Enhanced Marketability

Government agencies work to enhance the marketability of LID projects in two ways. The more common of the two approaches is to allow developers greater land-use flexibility when they employ LID BMPs as part of their development projects. Some examples include:

- Allowing open space or other conservation areas to be used for LID BMPs—This incentive allows the developer to achieve conservation and stormwater management within the same footprint thereby making more land available for marketable uses (e.g., residential and commercial real estate).

- Allowing green roofs to be used for open space credit—This incentive allows developers to meet open space and stormwater management requirements within the development footprint, leaving more of the property available for development.

- Allow increased densities for projects that utilize LID—Properties with greater densities are usually more marketable. This incentive allows developers to achieve greater marketability in exchange for implementation of LID, which provides more environmentally effective stormwater management.

- Flexible bulk, dimensional, and height restrictions for projects that utilize LID—Properties with flexible building constraints are generally more marketable. This incentive allows developers to achieve greater marketability in exchange for implementation of LID. Cluster zoning is an example of this type of approach because of the reduced setbacks it allows. Other examples include proportionally relaxing height limits when footprints are reduced; and increased density in specified growth areas.

A second, albeit less commonly used approach is improving marketability through government intervention by public recognition. Specifically, a government agency may highlight LID

projects on a web site or in public outreach materials. Although not technically advertisement, this approach may have the same essential net effect, that is, to increase demand for a specific good or service by raising consumer awareness.

3.2 Improved Profitability

Another approach to incentivizing LID is to improve profitability of LID projects either through direct financial support or reduction of costs that are typically incurred through government fees.

Cost reductions are most commonly achieved by reducing or eliminating permitting fees, fees-for-service, and taxes for projects that use LID. Reducing these fees reduces the developer's cost and increases profit. Ideally, reduction in fees parallels reduced administrative burden on the permitting agency so that the agency's processing costs remain commensurate with fee-based revenues.

3.3 Reduced Time for Project Initiation

Project initiation includes project planning, design, and permitting. Typically, planning and design of a project using LID is approximately the same as it is for a project using conventional stormwater BMPs; however, one area where timeframe may be of concern is in project permitting. Developers using LID may expect or experience longer permitting reviews because regulators are unfamiliar with assessment and effectiveness of LID—perhaps viewed as unconventional—BMPs.

To address this issue, some permitting agencies opt to prioritize review of LID projects, commit to an expedited permitting timeframe, or administratively approve LID projects. Justification includes:

- From an environmental standpoint, implementation of LID BMPs is typically better than conventional BMP implementation.
- LID BMPs tend to be relatively straightforward to design.
- LID BMPs are smaller and more decentralized and, as a result, may present a less significant consequence of failure.

The Town considered incentives related to reducing time for project permitting during Workshop 2 and determined that they would not be practicable; therefore, these approaches are not addressed further in this Material Set.

4 Summary of Developer Incentives

The following table provides a summary of potential developer incentives for LID implementation.

Table 1
Potential Incentives to be Offered by the Town to Encourage Developers to Incorporate LID

Incentive by Type	Value to Developers	Disadvantages to the Town	Implementation Issues
Enhanced Marketability			
Allow open space or other conservation areas to be used for LID BMPs	Achieve open space requirement and stormwater management in the same footprint	None	Stormwater BMPs must be carefully designed to avoid damage to open spaces
Allow green roofs to be used for open space credit	Achieve open space and stormwater management requirements within the developed footprint	Open space provided on a green roof may have limited utility	Ensuring that green roofs provide appropriate open space values
Allow increased densities for projects that utilize LID	Properties with greater densities are usually more marketable	Managing externalities[3] associated with increased density	Fairly gauging the increase in density that is allowed for projects using LID
Flexible bulk, dimensional, and height restrictions for projects that utilize LID	Greater flexibility usually improves marketability	Managing externalities associated with increased density	Ensuring that flexibility offered is appropriate and fair
Public recognition	Enhanced awareness usually raises consumer demand	Potential for controversy	Requires value judgment on candidate projects
Improved Profitability			
Eliminating permitting fees	Reduction of project cost improves profitability	Reduced revenue for Town	Loss of revenue
Eliminating fees-for-service	Reduction of project cost improves profitability	Reduced revenue for Town	Loss of revenue
Eliminating taxes	Reduction of project cost improves profitability	Reduced revenue for Town. Change in tax policy may increase administrative burden.	Loss of revenue. Need to adjust tax policy.

[3] "Externality" is a term used in economics to point out unintended adverse side effects of a revenue generating activity. For example, air pollution is an externality associated with use of automobiles.

Appendix A

Town of Vernon LID Stormwater Design Manual
(Draft January 2012)