

EUGENE CITY COUNCIL

AGENDA ITEM SUMMARY



Work Session: Low Impact Development - Results of Review

Meeting Date: September 17, 2008
Department: Public Works
www.eugene-or.gov

Agenda Item Number: A
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ISSUE STATEMENT

The purpose of this work session is to report on the results of a review of opportunities and barriers to increase implementation of Low Impact Development (LID) practices in Eugene. Policy issues include: whether to pursue required use of LID practices, where practicable, or to continue to encourage use of LID as an option within existing development standards; and, how best to balance and integrate LID objectives with other council priorities and initiatives.

BACKGROUND

In a work session on January 17, 2007, the Eugene City Council directed a review of the City's implementation of LID practices. The focus of the comprehensive review was to identify barriers and regulatory or incentive-based approaches to increase the use of low impact development practices for stormwater management. The original impetus for this review was public comment related to the City's adoption of stormwater development standards within the land use code by Ordinance 20369, effective June 12, 2006.

For purposes of the review, Low Impact Development was defined as a stormwater management and site development strategy that emphasizes use of on-site natural features to mitigate impacts of increased stormwater runoff and pollution. This is achieved by using stormwater management practices and site design techniques that infiltrate, filter, store, evaporate, reduce and detain runoff close to its source.

Completion of this review was added to City's Stormwater Management Team and Planning Division work plans for FY08 and completed by an interdisciplinary staff team. The review team identified areas of regulation and programs with strong relevance to LID objectives, identified the extent to which existing regulations and programs already implemented LID practices, and then identified the potential opportunities and barriers to increase use of LID practices. Resulting findings, options and barriers to increasing use of LID practices are provided in the Review of Low Impact Development Practices for Stormwater Management report included as Attachment A to the AIS. Key findings of review include:

- The City has adopted and implemented a broad spectrum of policies, plans, regulations, standards and programs which promote the use of LID practices.
- While the degree of the City's existing LID implementation is substantial, a variety of opportunities exist to increase use of LID in the areas of potential land use code amendments, continued education and outreach efforts, modifications to public improvement design standards, and further development of incentive programs.

- Modest incentives for increasing LID practices currently exist; more substantive incentives may be feasible with commitment of additional resources.
- Barriers to increasing use of LID practices generally include competing demands for resources, complexities of implementing changes to regulations and existing programs, and challenges to balancing and integrating LID objectives with other City initiatives and priorities.

Table A within Attachment A summarizes areas of review with moderate to high potential for increasing use of LID practices for stormwater management.

Because LID includes principles of an integrated site design approach, it can have broad implications and complex inter-relationships to other community standards and objectives beyond stormwater management, affecting other land use and development standards. Due in part to these inter-relationships, opportunities likely to have the greatest overall potential for increasing use of LID have significant barriers to their implementation, such as substantial complexities of modifying land use regulations, competing objectives, and resource requirements.

However, a number of opportunities to better encourage, integrate and improve LID implementation have relatively minor barriers. Staff can proceed to implement some administrative adjustments not requiring policy direction or requiring significant change to resource allocation. Additional integration of LID practices with other existing initiatives and program development efforts may also be feasible. Using LID objectives as a screening and filtering mechanism, along with other objectives, when evaluating the effects of code and policy change may assist in incrementally increasing LID implementation.

The primary policy issue emerging from this review is the degree to which to further pursue increased use of LID practices considering relative priorities for pursuit of other council priorities and initiatives. Should council direct that elements of the land use code be considered for modification to further use of LID practices, staff recommends that, as an initial step in the process, development of proposed changes be considered in the context of the Planning Division Work Plan and Planning Commission priorities for land use code amendments.

RELATED CITY POLICIES

In completing the review it was noted that increasing use of LID practices is aligned with a number of existing City plans and policies including the Metro Plan Facilities and Services element, the Comprehensive Storm Water Management Plan, Stormwater Basin Plans, and Growth Management Policies 9 and 17.

COUNCIL OPTIONS

Direct the City Manager to move forward with efforts to increase implementation of LID practices through:

- A. Administrative adjustments and additional integration of LID practices with other existing priorities and initiatives; or,
- B. Administrative adjustments, additional integration of LID practices with other initiatives, and development of proposals for land use code amendments; or,
- C. Administrative adjustments, additional integration of LID practices with other initiatives, development of proposals for land use code amendments, and development of proposals for other program enhancements.

Direct the City Manager to alter suggested efforts to increase implementation of LID practices.

Direct the City Manager not to move forward with efforts to increase implementation of LID practices at this time.

CITY MANAGER'S RECOMMENDATION

The City Manager recommends that the Mayor and City Council direct the City Manager to move forward with efforts to increase implementation of LID practices through administrative adjustments, additional integration of LID practices with other initiatives, development of proposals for land use code amendments, and development of proposals for other program enhancements.

SUGGESTED MOTION

Move to direct the City Manager to move forward with efforts to increase implementation of LID practices through administrative adjustments, additional integration of LID practices with other initiatives, development of proposals for land use code amendments, and development of proposals for other program enhancements.

ATTACHMENTS

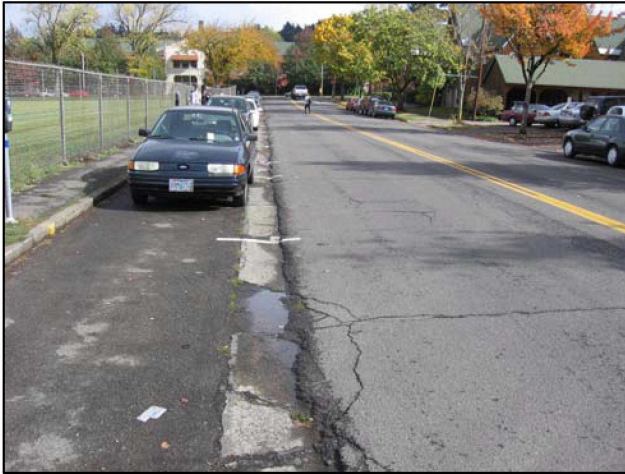
A. Review of Low Impact Development Practices for Stormwater Management

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Review of Low Impact Development Practices for Stormwater Management

September 2008, City of Eugene, Oregon



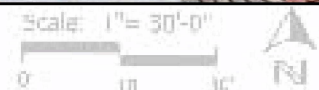
EXISTING

Prepared by City of Eugene Public Works / Engineering

With the participation of staff representing the Public Works Department's Parks & Open Space, Maintenance, and Wastewater Divisions and the Planning & Development Department's Building & Permit Services, Planning, and Community Development Divisions



PROPOSED



Acknowledgements

This Low Impact Development Review report was prepared by an interdisciplinary staff team consisting of representatives from the City of Eugene's Public Works and Planning & Development Departments. Public Works Director Kurt Corey and Planning & Development Director Susan Muir supported the dedication of departmental staff resources to complete the review and report.

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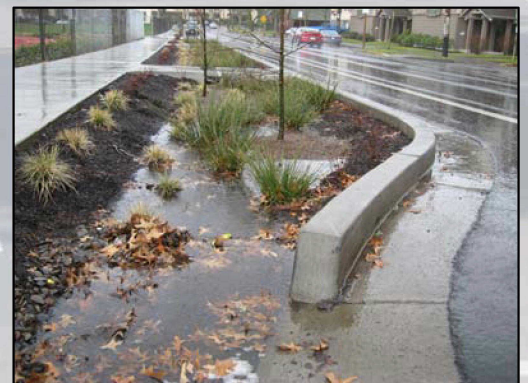


Table of Contents

Acknowledgements

Overview & Executive Summary1

Section 1: Background & Context for Review2

A. *City Council Direction to Complete Review2*

B. *LID – Definition and Key Elements & Practices2*

C. *Framework and Methodology for Review.....3*

**Section 2: LID Practices in Eugene and
Potential Opportunities & Barriers4**

A. *Land Use Code4*

B. *Local Policy and Regulatory Compliance.....10*

C. *Green Building Program11*

D. *Stormwater Education Program12*

E. *Street and Other Public Improvement Standards.....12*

F. *Public Capital Projects and Facilities Practices13*

G. *Operations and Maintenance Practices16*

Section 3: Potential Incentives16

A. *LID Incentives Used in Other Communities16*

B. *Current Incentives in Eugene18*

C. *Incentive Opportunities & Barriers19*

Section 4: Conclusion & Recommendations.....20

Appendices

A. *Reviewed Regulations and Standards22*

B. *Low Impact Development Fact Sheets25*

C. *Other LID Web Links and References26*



Overview & Executive Summary

In early 2007 the Eugene City Council directed a review of the City's implementation of Low Impact Development (LID) practices. The focus of the comprehensive review was to identify barriers and regulatory or incentive-based approaches to increase the use of low-impact development practices for stormwater management. The original impetus for this review was public comment related to the City's adoption of stormwater development standards within the land use code.

For purposes of the review, Low Impact Development was defined as: *A stormwater management and site development strategy that emphasizes use of on-site natural features to mitigate impacts of increased stormwater runoff and pollution. This is achieved by using stormwater management practices and site design techniques that infiltrate, filter, store, evaporate, reduce and detain runoff close to its source.*

Completion of this review was added to City's Stormwater Management Team and Planning Division work plans for FY08 and completed by an interdisciplinary staff team. The review team identified areas of regulation and programs with strong relevance to LID objectives and elements, identified the extent to which existing regulations and programs already implemented LID practices, and then identified the potential opportunities and barriers to increase use of LID practices. Resulting findings of review and options for increasing use of LID practices are included in report.

Key findings include:

- The City has adopted and implemented a broad spectrum of policies, plans, regulations, standards and programs which promote to the use of LID practices.
- While the degree of the City's existing LID implementation is substantial, a variety of potential opportunities exist to increase use of LID. Primary options for increasing the use of LID practices for stormwater management include:
 - Potential land use code amendments in the areas of stormwater development standards, lot coverage with impervious areas, existing landscape & tree preservation, and waterway protection;
 - Continued implementation of green building and stormwater education programs;
 - Modifications to public improvement design standards and manuals;
 - Development and enhancement of incentive programs.
- Modest incentives for increasing LID practices currently exist; more substantive incentives may be feasible with commitment of additional resources.
- Barriers to increasing use of LID practices include competing demands for resources, complexities of implementing changes to regulations and existing programs, and challenges to balancing and integrating LID objectives with other City initiatives and priorities.

Table A on page 5 summarizes regulatory and program areas which review found to have moderate to high potential to increase use of LID practices for stormwater management.

This report is to be presented to City Council for consideration of options to increase the use of LID practices in the community.

Section 1: Background & Context for Review

A. City Council Direction to Complete Review

Low Impact Development (LID) involves practices that seek to mimic a site's hydrology before development, thereby reducing negative effects of stormwater runoff on nearby rivers, lakes, streams and wetlands. LID practices use design approaches which promote natural systems for stormwater retention, infiltration and conveyance. These practices have been employed by the City of Eugene and other communities for many years and yet, only recently have been defined as LID and emphasized by environmental agencies such as the Environmental Protection Agency (EPA) as recommended Best Management Practices (BMPs) for management of stormwater under the National Pollutant Discharge Elimination (NPDES) program.

As part of the City of Eugene's Comprehensive Stormwater Management Plan (CSWMP) and stormwater system NPDES permit, new stormwater standards incorporating LID practices were adopted as additions to the city's land use code, effective in July 14, 2006. During the adoption process of these stormwater development standards, public comments were received suggesting that LID practices should be required, rather than made optional, in certain areas of the City. In response to these public comments, Council directed staff to research issues related to green infrastructure and low impact development and return to Council in a work session to consider possible amendments to the stormwater development standards.

City Engineer Mark Schoening presented results of research and options related to further action on LID in a work session with Council in early 2007. At the conclusion of this work session, Council unanimously passed a motion directing the City Manager to:

"Include in the FY08 Planning Division work program and the Stormwater Management Team work program a comprehensive review of the Eugene Code and administrative policies and procedures to identify barriers and regulatory or incentive-based approaches to increase the use of low-impact development practices for stormwater management practices that are consistent with densification policies and code provisions within the urban growth boundary."

Following inclusion of LID review in the Public Works Department's Stormwater Management Team and the Planning and Development Department's Planning Division FY08 work plans an inter-disciplinary staff team was formed in January 2008 to complete the review. The team consisted of representatives from the Public Works Department (Engineering, Parks & Open Space, Wastewater and Maintenance divisions) and the Planning & Development Department (Planning, Community Development, and Building & Permit Services divisions). The team met regularly over a period of seven months to complete the review, the results of which are summarized in this report.

B. LID – Definition and Key Elements & Practices

The team's first step was to research and review LID principles and practices, including other organizations' LID materials available (see Appendix B) relative to the Council's motion, and create an LID definition that would provide the framework by which the team could then analyze current Eugene LID practices. The LID definition and context developed by the team is provided below:

*LID is a stormwater management and site development strategy that emphasizes use of on-site natural features to mitigate impacts of increased stormwater runoff and pollution. This is achieved by using stormwater management practices and site design techniques that **infiltrate, filter, store, evaporate, reduce and detain runoff close to its source.***

Almost all components of the urban environment have the potential to incorporate LID. This includes not only open space, but also rooftops, streetscapes, parking lots, sidewalks, and medians. LID approaches can be used to reduce the impacts of development and redevelopment activities on water resources. In the case of new development, LID is typically used to achieve or pursue the goal of maintaining or closely replicating the predevelopment hydrology of the site. In areas where development has already occurred, LID can be used as

a retrofit practice to reduce runoff volumes, pollutant loadings, and the overall impacts of existing development on the affected receiving waters.

Typical LID practices or facilities were found to include use of swales, rain gardens, infiltration trenches, green roofs, pervious pavements, reduction of paving widths (skinny streets), impervious surface reductions, and open space preservation.

C. Framework and Methodology for Review

The team developed a framework for a systematic review of all relevant City regulations, policies and procedures related to green infrastructure and LID. This framework was modeled in part from methods used by other jurisdictions in completing LID review and evaluation of their LID implementation, and consisted of the following key steps:

- a. Scan existing regulations, policies, standards and programs to identify those potentially relevant to LID
- b. Evaluate and rank potentially relevant areas for degree of relevance to LID elements and contribution to meeting LID objectives
- c. Identify areas with moderate to high potential for increasing implementation of LID practices
- d. Identify barriers to increasing implementation of LID practices
- e. Identify incentives to increasing implementation of LID practices

An initial scan of code, regulations, policies, procedures, standards, plans, program areas and incentives was performed to identify potentially relevant areas and specific provisions. This initial scan resulted in a comprehensive list which, over several months, was reviewed in detail and discussed by the team; items were added and removed from the list by consensus of the team. This list of regulations and practices potentially relevant to LID was ultimately refined and condensed into the working summary document located in Appendix A.

Potentially relevant regulations and programs were then evaluated for degree of LID relevance based on their potential for meeting the council-directed objective to “increase the use of low-impact development practices for stormwater management.” A ranking system was developed and applied by team members to each area of regulation or program element based on its contribution to the key elements of LID (infiltration, filtering, storage, evaporation, reduction, and detention of stormwater runoff); the team average ranking was determined for each area. The final inventory of relevant regulations and programs consisted of those items on the comprehensive list which ranked with moderate to high overall relevancy, per average of individual team member responses, to meeting LID objectives.

These relevant areas were then evaluated for potential modification to increase the use of low impact development practices for stormwater management in Eugene. The basic question asked by the review team was “could we do more”. This evaluative process considered the degree to which existing regulations, programs and practices were already focused and optimized for meeting LID objectives, the frequency of application of the regulation or program to LID objectives, the magnitude of impact on LID, comparison to best practices in other communities, and the scope of resources required for change versus degree of gain in LID practices. Based on these considerations, areas were determined to have Low, Medium, or High potential for increasing Eugene’s use of LID practices. Potential barriers to changes in each area were then identified and documented. The results of this evaluation are summarized in Table A and presented in more detail in Appendix A of this report.

In addition, incentive-based approaches as utilized in other communities were researched and evaluated for potential for increasing use of LID.

The intended outcomes of review included determination of regulations and programs currently in place with a significant contribution to LID and identification of areas where the city could do more to increase use of LID. The following sections summarize the result of the review.

Section 2: LID Practices in Eugene and Potential Opportunities & Barriers

Research and review identified broad areas of regulation and practice which typically establish a framework for implementing LID in a community. These broad categories include Land Use (Zoning) Code, Stormwater Development Standards, Green Building Program, Stormwater Education Program, Street and Other Public Improvement Standards, Public Capital Projects and Facilities Practices and supporting Operations & Maintenance Practices. The City of Eugene currently has a broad spectrum of regulations, policies, procedures, standards, plans, and program areas related to green infrastructure and LID. In many areas LID objectives are already being implemented and achieved and low potential exists in these areas for further increasing the use of LID practices. Other areas have been identified to have moderate to high potential to further achieve LID objectives as summarized in Table A on page 5. Review of Eugene's regulations and practices within each LID category, the potential for increasing use of LID beyond current practice, and potential barriers are discussed below.

A. Land Use Code

General elements of LID that are typically affected by a zoning or land use code include those that provide for stormwater development standards, impervious surface limits, parking standards, open space requirements, and site design and landscape standards. The team's review of these aspects of Eugene's land use code is summarized below:

Stormwater Development Standards

Overall, stormwater development standards are the provisions of the land use code most directly related to LID. Both local plans (The Eugene-Springfield Metropolitan Area General Plan or Metro Plan, Eugene's Comprehensive Stormwater Management Plan and Stormwater Basin Plans) and federal/state regulations (Clean Water Act and Eugene's NPDES municipal stormwater permit) provide the framework for the city's currently-adopted stormwater development standards that regulate the location, design, construction, and operation/maintenance of stormwater facilities as they apply to new or expanding development. Stormwater destination, pollution reduction, headwater flow control, oil control, and source control requirements are currently regulated within the stormwater development standards. The first three components, destination, pollution reduction, and flow control, are most relevant to LID practices. While existing stormwater standards support and encourage use of LID practices, potential exists for increasing use of LID through modification of aspects of these standards.

- Medium Potential: Require that LID stormwater management practices and facilities be implemented, to extent practicable, prior to structural stormwater facilities.
- Barriers: complexities of implementing changes to regulations and existing standards; challenges to balancing and integrating LID objectives with other City initiatives and priorities; potential to increase both project and on-going maintenance costs; potential to decrease available site areas for other proposed uses.

Elements of stormwater standards were reviewed in further detail as follows.

- Applicability- land use application and development permit compliance with Stormwater Development Standards – Low Potential
All land divisions, site reviews, conditional use permits, and planned unit developments (PUDs) are required to comply with the stormwater development standards. Stormwater standards are required to be met at both land use/division stage as well as development/building permit stage. The current size of development threshold (1000 sq ft of new or replaced impervious surface area (ISA)) to which the standards apply captures most significant opportunities to apply LID practices.

Table A

Eugene's Current LID Practices	Overall LID Enhancement Potential	POTENTIAL LID STORMWATER MANAGEMENT ELEMENTS AFFECTED BY REGULATION OR PROGRAM					
		Infiltration	Filtering	Evaporation	Storage	Runoff Retention	Runoff Detention
Local Land Use Code							
Stormwater Development Standards							
Required Hierarchy of Stormwater Practices	Medium	X	X	X	X	X	X
Impervious Surface Area Limitations							
Lot Coverage	Medium	X	X			X	
Parking Standards	Medium	X	X			X	
Parking Surfacing	Medium	X	X			X	
Landscape Requirements							
Other Requirements/Credits	Medium	X	X	X		X	
Buffers / Overlay Zones							
Proposed Water Quality Protected Waterways	Medium	X	X	X		X	
Regulatory Compliance - NPDES Permit Renewal	Medium	X	X	X	X	X	X
Green Building Program	High	X	X	X	X	X	X
Stormwater Education Program	Medium	X	X	X	X	X	X
Street & Other Public Improvement Standards							
Design Standards & Guidelines for Eugene Streets, Sidewalks, Bikeways, & Accessways	Medium	X	X	X		X	
Public Capital Project Practices							
PW / Eng Division's Project Manager's Manual	High	X	X	X		X	X
River Road/Santa Clara Stormwater Basin Plan	Medium	X	X	X	X	X	X
Incentives							
Marketing & Recognition as Green/Low Impact Development (certification)	Medium	X	X	X	X	X	X
<p>Definitions of Low Impact Development (LID) Elements:</p> <p>Infiltration: Percolation of surface water into the ground (recharge ground water).</p> <p>Filtering: Water quality treatment of stormwater runoff to filter out sediments & pollutants.</p> <p>Evaporation: Movement of water to air from sources such as water bodies, tree canopies.</p> <p>Storage: Collection & storage of rainwater for future use.</p> <p>Runoff Retention: Infiltration of stormwater runoff with use of plants, soil to provide add'l pollutant removal and filtering.</p> <p>Runoff Detention: Storage and slow release of stormwater after precipitation event.</p>							

- **Stormwater Development and Design Standards (Stormwater Management Manual) – Medium Potential**
There is potential to further enhance LID practices by modification of the current land use regulatory framework by incorporating in the development standards and the SMM a required hierarchy of stormwater management practices and facility types to implement LID practices whenever feasible prior to use of stormwater structural facilities. The stormwater standards in the Land Use Code require that stormwater management facilities be selected from and designed utilizing the City's adopted Stormwater Management Manual (SMM). The SMM provides the administrative tool by which staff, developers, and design professionals implement and comply with the city's stormwater development standards. Currently, the development standards and manual allow selection of facility types that are both consistent with LID practices and facility types which do not incorporate LID objectives (structural facilities). As such it is an applicant's option whether or not to implement LID-compatible stormwater management facilities. While this allows flexibility in methods for meeting stormwater management objectives at the site level, it does not maximize use of LID practices for stormwater management.
- **Additional Stormwater Standards – Low Potential**
Tentative PUDs are required to demonstrate how stormwater runoff from the site will not create significant negative impacts on natural drainage courses either on-site or downstream including, but not limited to, erosion/scouring. PUDs generally achieve greater degree of LID objectives than development outside of the PUD process. Opportunities may exist to more specifically expand the use of LID practices within the PUD process through focused requirements and/or considering additional incentives.

Impervious Surface Area (ISA) Limits

Reducing the amount of impervious area created with new development is a direct LID practice. Forms of ISA limits addressed within the land use code are summarized below. Note that parking and landscaping requirements also affect the magnitude of ISA and are discussed separately. Impervious area reduction is a desirable LID element to pursue given its potential to meet multiple LID objectives, e.g. reduction and infiltration of runoff.

- **Medium Potential:** Expand definition of Lot Coverage to include impervious surface areas in addition to buildings.
- **Barriers:** complexities of implementing changes to regulations and existing standards; challenges to balancing and integrating LID objectives with other City initiatives and priorities (could affect lot size/density objectives); potential to decrease available site areas for desired uses.

Elements of impervious surface area limitations were reviewed in further detail as follows.

- **Lot Coverage – Medium Potential**
This is defined by Eugene Code (EC) to be the portion of a lot which, when viewed directly from above would be covered by a building or structure or any part thereof (with some exception, see glossary).
 - R-1 Low Density Residential and R-2 Medium Density Residential zones allow up to 50% lot coverage while Row Houses in any residential zone allow up to 75% coverage.
 - Nonresidential development has no regulated minimum/maximum ISA; however, many zones do require that a percentage of the development site be landscaped.

Currently EC only regulates the lot coverage of structures. The primary opportunities would be to include additional zones and other types of ISA coverage; e.g. concrete driveways and walkways, in calculation of total lot coverage allowed. Use of pervious pavements could be indirectly encouraged. To preserve density objectives and standards, the percentages of lot coverage allowed would need to be reviewed to consider the modified bases for measurement.

- **Floor Area Ratio (FAR) Calculation – Low Potential**
The FAR calculation applies to Downtown (within the /TD Transit Oriented Development Overlay Zone) and nodal development areas (within the /ND Nodal Development Overlay Zone). Current code establishes a minimum FAR, calculated as area of floors in buildings divided by land area of development

site, which is intended to regulate minimum density of development. A maximum ratio is not set but rather is influenced by market demand for location, size and height of buildings. It was noted that other communities may use maximum FAR a mechanism to regulate building height and mass in relationship to a development site – building height is directly regulated in Eugene Code. A minimum FAR may tend to increase lot coverage with ISA. Incentives could be developed to allow a lower FAR if pervious areas or ISA reduction techniques or other LID practices such as green roofs are used. Council direction was to consider LID practices consistent with densification policies and code provisions; within these parameters adjustments to FAR have a relatively low potential for increasing use of LID practices.

- **Parking ISA – Low Potential**

Currently all required parking is allowed to be compact in dimension and limits are placed on the minimum and maximum number of parking spaces allowed. Reductions to minimum required parking are allowed under certain development types and conditions. Greater reductions to minimum parking requirements risk parking demand exceeding parking capacity on a development site, impacting parking in adjacent areas. Higher density objectives resulting in a greater number of minimum required spaces, coupled with optimal use of available site area, may present barriers to minimizing ISA, thus a low LID potential exists in this area. These limitations in potential could be partially offset by use of pervious pavements for parking areas (see Parking Standards below).

Parking Standards

Parking standards regulate the physical characteristics of required parking, including surface types, landscaping, and maximums per size of development.

- **Medium Potential:** Expand on acceptable pervious surfaces allowed. Standardize planting allowed that will meet landscaping for parking requirements as well as those required per stormwater development standards.
- **Barriers:** complexities of implementing changes to regulations and existing standards; potential to increase both project and on-going maintenance costs; competing objectives between the two types of planting requirements.

Elements of parking standards were reviewed in further detail as follows.

- **Parking Surfacing – Medium Potential**

All parking areas that contain three or more parking spaces, except those in conjunction with one- or two-family residences, are currently required to have durable, dust free surfacing of asphaltic concrete, Portland cement concrete, or other approved materials which may include (but don't require) pervious paving materials. In addition, new parking areas are required to meet the stormwater development standards which encourage LID practices. Landscape requirements for parking contain planting requirements somewhat compatible with stormwater development standards are but may have competing objectives; some potential exists for better-integrating landscape standards. Potential also exists to refine the impervious surface types allowed and required for parking areas. Requirements for use of pervious pavements would necessarily be limited to areas where soil and site conditions allow and may present higher construction costs; while long-term viability of pervious pavement as an LID technique requires commitment of ongoing maintenance resources.

- **Parking Space Thresholds – Low Potential**

Current maximum off-street space count does not allow the number of spaces for nonresidential uses to exceed 125% of the minimum space count, allowing only a modest amount of additional parking area beyond the minimum required. Setting a lower maximum space count helps constrain total ISA. As the standard is currently structured, lowering minimum space count in turn lowers the maximum space count allowed since the maximum is expressed as a percentage of minimum. Minimum space count is somewhat flexible and has been reduced in the recent past; however, risks and impacts of lower minimum parking space requirements limit the LID potential of this area of regulation as currently structured.

Landscape Requirements and Preservation of Existing Vegetation

Preservation of existing vegetation within new developments is a common LID practice. Minimum landscape requirements are complimentary to LID practices. Preservation of existing vegetation is currently encouraged by provision of credit towards required landscaping. Some opportunity exists to better integrate acceptable planting specifications which meet both LID and zoning-related landscaping objectives. Increases in minimum landscape areas could have effects contrary to densification policies and code provisions, resulting in a lower potential for modification to this area for LID purposes. There may be potential to further encourage or require planting to meet LID objectives and consider requirements for greater preservation of existing vegetation.

- Low/Medium Potential: Integrate planting standards to meet LID objectives along with other landscape requirements and require increased preservation of existing vegetation.
- Barriers: complexities of implementing changes to regulations and existing standards; challenges to meet multiple objectives for landscape planting; preservation requirements could adversely affect site design for multiple functions.

Elements of landscape standards were reviewed in further detail as follows.

- Landscaping in commercial, campus industrial and other zones – Low Potential
 - For all commercial zones but C-3 Major Commercial: a minimum of 10% of the development site must be landscaped. Other landscaping requirements apply to parking areas and areas abutting residential zones.
 - I-1 Campus Industrial zone: a minimum of 20% of the development site. Other landscaping requirements apply to parking areas and areas abutting residential zones. Consider evaluation of balance of minimum landscape versus density/effective use of the land.
 - S-DW Downtown Westside Special Area zone: a minimum of 20% of the development site. Consider evaluation of balance of minimum landscape versus density/effective use of the land.
 - Multifamily development in residential zones: 20% of the development site or 25% of the livable floor area unless exempted based on density. Consider eliminating competing density/landscaping requirements for multifamily development and stricter landscape guidelines overall for residential parking standards.
- Additional landscaping requirements and credits for preserving existing vegetation – Medium Potential
 - All Industrial zones: other landscaping requirements apply to front yard setbacks and areas abutting residential zones.
 - Landscape requirements apply to parking areas that provide 3 or more spaces except for single family dwellings, secondary dwellings, duplexes, row houses, or structured parking. In most cases landscape strips at least 7-feet in width must be provided between the parking area and the street and along the perimeter of the parking area. Landscaping within the interior of parking areas is also required if a certain amount of spaces is exceeded.
 - Preservation of existing vegetation within new developments is encouraged by provision of credit towards required landscaping. There may be potential to further encourage or require planting to meet LID objectives and consider requirements for greater preservation of existing vegetation.

Land Use Application Criteria

Land use application approval criteria allow standards incorporating LID practices to be applied at the time of overall site planning and conceptual design for a site. Because LID often relies on an integrated site design approach, land use application criteria can be a valuable mechanism for increasing the use of LID. Application types for which LID-related standards are particularly relevant include subdivision, partition, planned unit development, site review, and conditional use permit applications. The most relevant areas of application criteria are the LID-related land use code standards listed in this section, particularly the Stormwater Development Standards. These standards are applicable to all relevant application types. In addition, all tentative subdivisions, site reviews, conditional use permits (CUPs), and planned unit developments (PUDs) are required to demonstrate

that the proposal is designed and sited to minimize impacts to the natural environment by addressing protection of natural features.

- Low Potential: Appropriate types of standards are currently associated with conditions of approval for land use applications. Refinements to increase use of LID practices are better addressed within specific standards.
- Barriers: complexities of implementing changes to regulations and existing standards; potentially competing objectives between various conditions of approval.

Overlay Zones

Three overlay zones (/WP Waterside Protection Overlay zone, /WB Wetland Buffer Overlay zone, and /WR Water Resource Conservation Overlay zone) have been established along designated waterways, wetlands, and riparian areas with the purpose of protecting, maintaining, and improving water quality as well as protecting and conserving riparian areas, wetlands, and wildlife habitat. Each contains a list prohibited practices and uses permitted outright or which are subject to site review, standards review or conditional use permit. While each zone may incidentally and significantly contribute to LID it would be difficult to open these up to broader LID stormwater management objectives. Some work on reconciling or integrating areas of overlap may be feasible, e.g. planting lists.

- Low Potential: Reconcile areas of zone overlay overlapping regulation; e.g. compatible planting lists.
- Barrier: complexities of implementing changes to regulations and existing standards; potentially competing objectives between these types of overlay zones.

In addition to existing waterway-related overlay zones, a proposed overlay zone, the Water Quality Protected Waterway was being considered but was not yet adopted during the LID review effort. Currently in the final phase of Council review and potential adoption, the City has initiated a proposal for protecting waterways for water quality purposes. Based on extensive public feedback provided to date, the proposed water quality protections would be applied to approximately 13.6 miles of waterways of concern within the Urban Growth Boundary that currently have no existing protections from existing overlay regulations. The proposed protections would provide for 40-foot setbacks on each side of headwater streams and 25-foot setbacks on each side of all other waterways.

- Medium Potential: Protection of the natural functions of additional existing waterways promotes LID objectives, albeit on a relatively small percentage of area waterways.
- Barriers: Complexities of developing and implementing land use regulations; concerns with the impacts of additional regulation compared to relative benefits.

Tree Preservation and Removal Standards

Tree preservation and removal restrictions are a common LID practice. Eugene's current tree preservation and removal standards are established to:

- Implement Metro Plan and refinement plan policies related to vegetation preservation;
- Maintain a minimum level of tree canopy cover throughout the city while addressing the city's goals for a healthy economy, affordable housing, and reduced sprawl;
- Mitigate the impacts of development on the essential functions of the urban forest through requirements for preservation and replacement of tree canopy cover;
- Ensure a healthy future urban forest by encouraging protection of mixed age stands of trees and promoting a diversity of tree species; and
- Maintain a safe and attractive environment for residents and workers by requiring the integration of urban forestry principles into the design of new development.

These standards are generally consistent with LID practices to encourage preservation of vegetation and tree cover. Some potential may exist in the form of more stringent tree preservation requirements. Existing standards are applicable, with certain exceptions, to development permits and development activity that would result in the

removal of significant trees and subsequent actions impacting trees on property subject to an approved conditional use permit, planned unit development, site review, or subdivision that includes a tree removal/preservation plan or conditions related to tree removal or preservation. Exemptions from standards include development activity not subject to land use conditions on certain residential lots under 20,000 square feet. For lots of 20,000 or more square feet and not subject to land use conditions, removal of up to 5 significant trees within a period of 12 consecutive months is exempt.

- Low Potential: Develop more restrictive standards or reduce exemptions to provide for additional tree preservation. Existing standards already attempt to balance various objectives.
- Barriers: Complexities of developing and implementing land use regulations. Additional preservation requirements could adversely affect utilization of area for site design, and impact density/lot sizes.

Standards for Driveways and Internal Circulation

Driveways and access isles typically represent a small percentage of impervious areas on developed sites. There may be some potential to review for consistency between LID practices and private driveway and internal circulation standards; e.g. reduce driveway widths or allow adjustments to encourage use of pervious surfaces and ribbon wheel paths.

- Low Potential: Encourage, allow or require reductions in impervious area within driveway standards.
- Barriers: Complexities of developing and implementing land use regulations; potentially competing objectives between LID practices and elements of the standards.

B. Local Policy and Regulatory Compliance

Both local policy (Eugene's CSWMP and Stormwater Basin Plans) and compliance with State and Federal regulations (Clean Water Act and Eugene's NPDES municipal stormwater permit) provide the framework for the city's adopted stormwater management approach and stormwater development standards, and thus guide implementation of LID practices.

- Comprehensive Stormwater Management Plan (CSWMP)
CSWMP forms the local policy framework to respond to stormwater quality mandates of the Clean Water Act as well as other stormwater-related community values such as the protection/enhancement of wetlands and other natural resources that provide stormwater functions. CSWMP incorporates a multiple-objective stormwater management approach which is wholly consistent with the implementation of LID practices in the community. No changes to CSWMP are necessary to remove barriers or increase use of LID practices in the community.
 - Low Potential: CSWMP is already consistent with the implementation of LID practices.
 - Barriers: Complexities of modifying land use plans/policies (CSWMP was adopted as a refinement to the Metro Plan).
- National Pollutant Discharge Elimination System (NPDES) Permit
Eugene's NPDES permit, a municipal stormwater (MS4) permit administered by Oregon Department of Environmental Quality (DEQ) for direct discharge into the Willamette River and related indirectly draining waterways, is currently undergoing a periodic renewal application process. As part of the renewal requirements Eugene is required to review its programs and activities to make sure that they collectively reduce pollutants to the maximum extent practicable, contain certain program elements, and address certain problem pollutants.

While the current NPDES permit provisions generally support and complement LID practices, the permit itself does not mandate or implement use of LID practices. It is anticipated for renewal of the City's NPDES MS4 permit that DEQ will incorporate additional permit conditions related to LID practices including requirements to:

- Review codes and development standards and, where possible, remove barriers to LID practices.

- Regulate new and redevelopment projects to control stormwater discharge rates, volumes, velocities and durations.
- Maintain or restore, to the maximum extent practicable, a development site's predevelopment hydrology with regard to rate, volume and duration of flow.
- Require onsite retention (flow volume control) facilities and infiltration to the maximum extent practicable.

While actual permit renewal conditions are not yet fully established, these potential new conditions may present a mandate for additional implementation of LID practices.

- Medium Potential: NPDES permit conditions may further require or encourage implementation of LID practices.
- Barriers: Complexities of developing and implementing land use regulations; challenges to balancing and integrating LID objectives with other City initiatives and priorities.

C. Green Building Program

The City's Green Building Program, housed in the Planning Department's Building and Permit Services Division, was established to encourage more sustainable building practices in all phases of development from project design to deconstruction. This program continues to grow in depth and expertise; in 2008 a full-time Green Building Analyst position was created and filled. The current focus of the program is to promote green building in the community, identify and address barriers to wider application of green building strategies, and facilitate green building via technical assistance and incentives.

- High Potential: The green building program shares many common elements and practices with LID and as a relatively new program has great potential for increasing the use of LID practices through collaborative outreach, education and development of incentives.
- Barriers: Funding of additional level of effort and budget for outreach materials (no funding currently allocated).

Addressing Barriers to LID Implementation

In developing the green building program, staff have been researching other programs and soliciting feedback from the local development community regarding barriers to green building and potential incentives. Barriers to wider adoption of green building strategies include: lack of green building expertise, upfront cost of green design, regulations, permitting fees and timelines, and costs of green certification programs. One often-cited barrier to implementation of LID techniques is confusion about code and regulatory requirements. To address regulatory barriers, green building program staff maintains current information on green building technologies, trends and policies, help identify state building code and other regulations that inhibit adoption of green building techniques, and recommend changes to policy, procedures and regulations to resolve issues. Strategies to address other barriers are discussed below.

Outreach and Education

The City is developing a comprehensive green building outreach and education program. LID strategies are a key component of green building and will be incorporated into the program through:

- Green Building web site with green building information, strategies, and resources.
- Educational materials on green building topics displayed at the City's permit information counter and the green building kiosk in the Planning & Development building. This area receives a high volume of traffic from building professionals and members of the public seeking permits.
- Targeted outreach events for designers, builders, contractors, homeowners and remodelers, neighborhood associations, and industry and stakeholder groups, such as the Home Builder's Association, American Institute of Architects, Eugene Branch, Cascadia Green Building Council, and Northwest Ecobuilding Guild.

- Booths and presentations at community events, including Green Home Show, Spring Home Show, Earth Day, Solar and Green Building Tour, and others.

Specific LID-related topics could include benefits of LID, overview of LID strategies, and “how to” technical assistance (companion pieces to the Stormwater Management Manual). Implementation of stormwater demonstration projects could showcase and stimulate interest in LID strategies.

D. Stormwater Education Program

As part of its overall stormwater management effort, the Public Works Department provides a stormwater education program that provides a multi-faceted and comprehensive community outreach effort regarding the importance of clean water and how individually and collectively we all can make an impact on water quality.

Medium Potential: The stormwater education program includes elements which provide information and education on LID practices.

- Medium Potential: Additional potential exists for targeted information/outreach items and efforts related to LID, particularly in collaboration with the Green Building program.
- Barriers: Funding of additional level of effort and budget for outreach materials (some resource already exists).

Elements of the program include the following:

- Stormwater Connections – a twice-yearly newspaper insert that provides a variety of stormwater-related articles of interest; e.g. healthy lawns without overuse of fertilizers and pesticides, wetland restoration efforts/results, and an educational page specifically targeted for children.
- Stormwater Pollution Learn and Share (SPLASH) – educational outreach which incorporates Lily the Pacific green tree frog, a popular mascot. SPLASH curricula, handouts, videos, and classroom presentations are offered free of charge to schools and vary in design/content depending upon the targeted age group.
- Clean Water Business Partnership Program – The City partners in a voluntary educational program with local cleaning businesses to educate their customers in the prevention of stormwater pollution while demonstrating proper wastewater disposal practices. Participating businesses gain recognition as responsible stewards of the environment and are included in our program promotional campaign.
- Eugene Stream Team – A city-organized volunteer effort to create and support the protection and enhancement of Eugene’s watersheds. This program includes an Adopt A Waterway component.
- Targeted information & outreach materials – the program has produced several LID-related fact sheets and/or brochures covering topics such as planting for stormwater benefit and rainwater harvesting.

E. Street and Other Public Improvement Standards

Design Standards & Guidelines for Eugene Streets, Sidewalks, Bikeways, & Accessways (Resolution 4608)

Street and other public improvement design standards can be supportive of a number of LID practices, including reductions in impervious area and use of LID-related facilities for stormwater management. Eugene’s current standards/guidelines were adopted November 22, 1999 as an independent design document for streets and were subsequently incorporated as appendices within two other documents; the Arterial Collector Street Program (ACSP) and the Public Improvement Design Standards Manual (PIDS). Some elements of LID are accommodated within the current standards and are sometimes incorporated into street improvements. The existing standards were developed in conjunction with the ACSP which purposely reduced the impervious surface areas of roadways while maintaining mobility and safety. A review and update of these standards could provide for additional opportunities to more specifically incorporate aspects of LID, e.g. paving widths, types of stormwater drainage methods.

- Medium Potential: Review and update standards for opportunities to further meet LID objectives; e.g. street paving widths, types of stormwater drainage facilities/methods.
- Barriers: Complexities of implementing changes to existing standards (could be time-intensive staff/public/council work effort); potentially competing objectives between elements of design (competing needs for space within the right-of-way and the possible need for additional right-of-way to allow for LID stormwater facilities); impacts to maintenance methods and related costs would also need to be considered.

Standards for Construction of Public Sidewalk, Curb Cuts & Driveway Connections (EC Chapter 7)

Existing requirements for and limitations to construction and placement of sidewalks, driveway connections and other features within the public right-of-way were developed without specific attention to LID practices. There may be some potential to review and modify these standards for consistency with LID practices. In addition, the potential for private stormwater facilities in the rights-of-ways; e.g. rainwater gardens, or potential public LID stormwater facilities referenced above in Design Standards & Guidelines, may necessitate revision of adopted standards in EC Chapter 7.

- Low Potential: Review standards for opportunities to meet LID objectives; e.g. use of pervious surfaces, narrower curb cut widths, placement of stormwater facilities within the public way.
- Barriers: Complexities of implementing changes to existing standards (could be time-intensive staff/public/council work effort); potentially competing needs for space within the right-of-way; impacts to maintenance methods and related costs would also need to be considered.

F. Public Capital Projects and Facilities Practices

A variety of practices related to the planning and development of City capital projects have potential to incorporate and support the implementation of LID s. The following practices were reviewed to assess potential for increase use of LID practices.

Public Works / Engineering Division's Project Manager's Manual

This internal manual provides guidance to project managers of Public Works capital improvement projects through the various steps of a project from design through construction and project completion. There is opportunity to administratively update this manual to more formally recognize and emphasize LID consideration as a standard element of the City's capital project implementation process.

- High Potential: Update this manual to emphasize inclusion of LID practices in capital projects.
- Barriers: Commitment of staff resources to evaluation and completion of revisions.

Erosion Prevention & Construction Site Management Program

This program is currently achieving its full potential for construction site management consistent with LID objectives; additional opportunities to further implement LID strategies are limited. Modifications or incorporation of additional elements, such as further preservation of existing vegetation, resulting from changes in other areas of regulatory requirements could increase program resource requirements.

- Low Potential: Program is currently achieving its full potential for construction site management consistent with existing LID objectives; program adjustments could be made to support other potential regulatory changes.
- Barriers: Resource requirements for program adjustments to support other potential regulatory changes.

City Facility Projects & Management

The Central Services Department's Facility Management Division is currently achieving its potential as it plans, builds, maintains and operates City facilities and embraces a green and sustainable building policy which is supported by the following:

- Resolution No. 4884 which adopts a sustainable buildings policy for buildings owned and occupied by the City (paragraph 5 subsequently amended by Resolution No. 4887) and which incorporates the definition of sustainable buildings policy noted below;
- Definition of a Sustainable Buildings Policy for City which incorporates the LEED (Leadership in Energy and Environmental Design) Green Building Rating System as the verifiable standard for measuring the implementation of sustainable building practices. This policy is implemented by including sitting analysis, integrated design, life cycle assessment and commissioning as standard operating practices in the design, construction, and operation of City buildings.
- Resolution No. 4893 which commits the City to sustainable practices (and to businesses that produce sustainable products and services);
 - Low Potential: program is generally achieving its potential for planning, constructing and operating city facilities consistent with LID objectives.
 - Barriers: None.

Parks & Open Space Programs

The Public Works Department's Parks & Open Space Division (POS) manages several relevant programs, the Natural Resources Program and Urban Forest Management Program, which contribute to meeting LID objectives as summarized below. These programs provide a variety of private and public benefit related to the environment including LID elements such as enhancement of water quality (natural areas reduce the sediment load that enters waterways and filter out toxins and excess nutrients and the reduction of flooding and erosion), enhancement of air quality (natural vegetated areas reduce the amount of carbon dioxide in the air and produce oxygen), and protection of biological diversity.

- Low Potential: programs are generally achieving their potential for planning, preserving, operating and maintaining natural resources consistent with LID objectives.
- Barriers: None.
- Natural Resources Program

The Natural Resources program area consists of the following LID-related elements:

- West Eugene Wetlands Program – multiple-objective wetlands management and land use plan that includes administration of a wetlands mitigation bank for local development projects, wetland restoration and enhancement, monitoring of restoration site vegetation and hydrology, coordination with POS's Natural Resources Maintenance Program to maintain existing sites.
- Open Waterways Program – manages all City urban streams and open waterways with multiple objectives for conveyance, water quality, and natural resource values; assists with development of related capital improvement projects and stream corridor acquisition.
- Eugene Stream Team – see description and attributes above.
- Natural Resources Maintenance Program – coordinates wetland maintenance activities, seeds and plants native species, maintains stormwater conveyance of open waterways, streams, and roadside ditches.
- Urban Forest Management Plan & Program

The Plan contains goals and policies that guide the City in managing its urban forest. Street trees are required in all land development projects which involve the creation of new streets, per the adopted Local Street Plan. In addition the Urban Forestry program partners with the community in the following ways:

- NeighborWoods Program – partnership between City and neighbors, local businesses, and community organizations to plant and care for street trees in the rights-of-ways. Within this program are two additional elements:

- Trees for Concrete – in partnership with the Eugene Tree Foundation to create green downtown environments by replacing concrete with trees along sidewalks in the City’s urban core.
- Tree Stewards – a team of neighborhood-based trained volunteers who help the City prune young street trees and contribute to the ongoing health of the community’s trees.

Stormwater Basin Master Plans

As identified in its Comprehensive Stormwater Master Plan, the City has adopted multiple stormwater basin master plans within the Urban Growth Boundary which focus on a "multiple objective" (flood control, water quality enhancement, and stormwater-related natural resource protection) approach to managing stormwater. The basin plans guide long range planning for capital stormwater improvement projects and stream corridor acquisition in addition to providing a framework for stormwater management requirements for new development. These existing basin plans are generally consistent with and incorporate LID principles, but as planning documents do not directly regulate or implement practices, rather provide context and implementation strategies. The recommended strategies include:

- Long term stormwater capital improvement needs for flood control, water quality, and stormwater-related natural resource protection
 - Enhanced stream corridor acquisition program
 - Proposed stormwater quality design requirements for new development
 - Proposed stormwater-related natural resource protection measures
- Pending River Road / Santa Clara basin master plan

The River Road / Santa Clara basin master plan is the final basin to be developed and is scheduled for completion by late 2008. This basin includes both incorporated and unincorporated lands and is being developed jointly with Lane County. Public feed back to date has indicated a strong desire to promote LID practices and preserve existing natural drainage systems. This factor is being incorporated in to the analysis of this unique basin’s integrated stormwater management strategy for flood control and water quality.

- Low & Medium Potential: With the exception of River Road/Santa Clara basin plan (medium potential, not yet complete), existing basin plans are generally achieving their potential for planning, preserving, operating and maintaining natural resources consistent with LID objectives. The River Road/Santa Clara basin has potential to further promote and provide context for implementing LID objectives on a large scale.
- Barriers: Basin plans do not regulate development activities, thus in and of themselves are limited in scope and applicability to providing strategies and context for implementation of LID practices.

Stream Corridor Acquisition

Protecting water quality in high priority streams is the goal of the stream corridor acquisition program. Acquiring and protecting these corridors has many water quality and related natural resource benefits; aspects of the program which implement LID practices include bank stabilization, planting and protection of native vegetation for water temperature control and aquatic habitat protection, enhanced stormwater conveyance and storage during storm events, and facilitation of filtration and recharge of groundwater. To date this program has purchased approximately 42 acres of stream corridor. Unless a higher level of acquisition funding is requested by Council this program area is meeting its potential.

- Low Potential: Program is currently achieving its targeted potential for acquisition supporting LID objectives.
- Barriers: Resource requirements for a more aggressive acquisition program.

G. Operations & Maintenance Practices

The Public Works Department's Park and Open Space (POS) and Maintenance divisions provide operations and maintenance (O & M) of elements of the City's stormwater system. These O & M programs and practices support and sustain implementation of LID practices as follows:

POS

As noted above, the Natural Resources Program oversees operation and maintenance of open waterways throughout the City in addition to the enhancement/restoration, with other agencies that comprise the West Eugene Wetland Partnership, of almost 3000 acres of wetlands. O & M practices are compatible and complimentary to LID practices of preserving and enhancing vegetation, preservation and restoration of natural drainage courses, and open space preservation.

Maintenance

This division provides a multitude of services pertaining to the operations and maintenance of the City's transportation and stormwater systems. The majority of services focus on O & M of the structural elements of the system such as curb and gutter, catch basins, pipes and surface maintenance. As LID practices such as pervious pavements, swales and rain gardens are incorporated into traditional systems O & M practices are modified and adapted to ensure the viability of new facilities.

- Low Potential: Programs are currently achieving their potential for supporting LID practices.
- Barriers: Resource requirements for adapting O & M programs to increasing volume of LID practices.

Section 3: Potential Incentives

A. LID Incentives Used in Other Communities

A review of potential incentives to increase the implementation LID practices first examined incentives considered or implemented in other communities. One particularly helpful resource was review of work performed by the Puget Sound Partnership (PSP). The PSP defines itself as a community effort of citizens, governments, tribes, scientists, and businesses working together to restore and protect Puget Sound. Each year the PSP provides technical assistance to a selected group of local jurisdictions to help them better integrate LID into their regulations and development standards by identifying and removing local regulatory barriers. The PSP publishes a list, provided on the following page, of potential LID incentives for the communities to consider as part of their overall review of their regulatory practices to achieve LID objectives.

LID Incentives

Incentive	General Description	Justification	Costs	Developer Interest
Increased Densities	Allow greater residential densities with the implementation of LID techniques.	With more sensitive design the land is able to manage more units.	Potentially greater impacts needing mitigation.	High
Reduced Review Time / Expedited Review	Commit to a priority status on LID projects with a maximum time between receipt and review.	LID projects may need special studies and reviews that must be identified early.	Impacts to staffing resources and other project review schedules. Outside consultants could also be used to expedite.	High
Administratively Approved Rather than with Hearing	Allow LID subdivisions up to 9 lots in size to be reviewed as short plats. Allow increased SEPA thresholds for LID projects.	Lower impacts result from LID projects and all reviewers may still provide input.	Reduced process may create public perception issues.	High
Property Tax Reduction	Reduce or waive property taxes on an LID project for a given number of years.	Lower service requirements result from lower impacts.	Reduced revenues.	High
Reduced Application Fees	Waive all or a portion of the submittal fees on LID projects.	Due to lesser impacts to the community, lower fees are charged.	Impacts to jurisdiction resources. May be offset by reduced habitat restoration and environmental costs	Medium - High
Public Recognition	Emphasize LID projects on website, at Council meetings and in utility mailers.	Highlight the great development projects going on throughout the area & create public awareness.	Staff resource impacts.	Medium
Dedicated Review Team	Create an LID review team that is familiar with and dedicated to LID projects.	Specialized team with technical expertise is necessary and more efficient assistance and review.	Initial training of team members in LID techniques will be required in any event. Outside consultants could also be used - charged to applicant or paid for by jurisdiction.	Medium
Flexibility in Bulk, Dimensional & Height Restrictions	Allow greater building heights and floor area ratios as well as reduced setbacks.	Provides flexibility in overall site design. Allows reduction in building footprint. Addresses clustering needs.	Consistency/compatibility with existing development and urban design goals.	Low
Adjustments to the Required Parking	Reduce parking requirements.	Reducing parking is both an LID technique for reducing impervious surfaces as well as a way to encourage more projects.	May conflict with other community objectives.	Low
Lower Stormwater System Development Fees	Reduce charges when development meets thresholds.	Lower impacts to system capacity, so lower fees are appropriate.	Reduced capital funds. Compensate by raising charges for conventional developments.	Low

Many Oregon communities are actively implementing outreach, education and incentive programs to encourage Green Building, sustainability, and low impact development. An example is a region-wide Green Building Hotline provided to the Portland metropolitan area by the new Green Development Resource Center, a collaborative effort between the city of Portland and counties of Clackamas, Washington and Multnomah. Many communities simply provide links to national and state programs that provide tax rebates and credits for purchasing materials that are more energy efficient; a few now offer their own incentives to promote Green Building or LID objectives in their communities, some of which are noted below:

Beaverton's Community Development Department has developed a Habitat Friendly Practices Program that provides an incentive program that provides credits for Habitat Benefit Area Preservation (preservation, enhancement, mitigation, or creation) as well as LID techniques (e.g. additional street canopy, existing canopy preservation, tree migration/preservation, soil amendment, disconnect downspouts, eco-roof, rain garden, roof-top garden, integrated parking). Credits may be applied towards requirements such as building setback building height, minimum floor area, lot dimension, open space, landscape, building footprint. The quality and quantity components of Beaverton's stormwater SDC is waived with the approved installation of an on-site quality and/or quantity system. A monthly stormwater utility fee is not collected.

Bend's Public Works Department has developed a StormWaterWise public education program. While the city doesn't currently collect a stormwater SDC, stormwater user fee credits are provided for non 1- and 2- family developments that 1) exceed quantity/quality requirements; 2) treat/dispose of stormwater originating from public R-O-W; 3) provide stormwater education in school curriculums; or 4) participate in a stormwater demonstration project.

Gresham's Department of Environmental Services has developed a Green Development Practices Manual for two of its planning districts as well as Green Street Standards for local, arterial, and collector streets. Stormwater SDCs are reduced for installment of qualifying quantity and quantity best management practices. Approved on-site stormwater mitigation will also reduce monthly stormwater utility fees.

Portland's Office of Sustainable Development oversees the city's Green Building Program which currently provides a bonus Floor Ratio Area for buildings based on three ranges of ecoroof coverage (vegetated roof system) in relation to the building's footprint: 10-30%, 30-60% and 60% or greater earns one, two and three square feet of additional floor area per square foot of ecoroof respectively. However it should be noted that this incentive is not being utilized since developers are able to achieve the bonus FAR without the addition of an ecoroof. Portland otherwise provides financial assistance to developers who can meet established Leadership in Energy and Environmental Design (LEED) standards.

Portland's Bureau of Environmental Services (BES) oversees a Sustainable Stormwater Management program that includes the city's 1) Green Street Program by which the Portland City Council recently adopted a Green Street resolution to promote and incorporate the use of green street facilities in public and private development; 2) source of Ecoroof educational outreach including related seminars, case studies, local monitoring and specifications (Stormwater Management Manual); and 3) Clean River Incentive and Discount Program which provides a 35% credit towards its monthly stormwater management charge (utility fee) for registered private stormwater facilities. Stormwater SDCs may also be reduced by the reduction of on-site effective impervious surface area through incorporation of LID techniques such as use of vegetation and permeable paving.

Wilsonville is updating its Stormwater Master Plan and LID principles and practices will be encouraged. Per Wilsonville's adopted Transportation Systems Plan any alternatives to existing street design standards, for which Green Street concepts are considered viable, are approved by the Development Review Board and the City Engineer.

B. Current Incentives in Eugene

Several incentives are currently provided that accommodate goals of LID, including the following:

Stormwater System Development Charge (SDC) Credit

- Impact Reduction – two forms of separate and potentially additive credits may be provided:
 - Destination and Quantity Reduction – proportional to the reduction of runoff entering the public system from the fully developed site (detention facilities are not eligible). Must meet standards for stormwater destination as specified by EC in a manner which demonstrates ongoing reduction in impact to the public system.
 - Pollution Reduction – Reduction of stormwater pollution through water quality treatment techniques, beyond minimum requirements, may result in a single-level water quality credit of 10% of the total (gross) stormwater SDC.

Stormwater User Fee Credits

- Impact Reduction – two forms of separate and potentially additive credits may be provided:
 - Destination and Quantity Reduction – credit is proportional to the reduction of runoff entering the public system from the fully developed site (detention facilities are not eligible). Must meet standards for stormwater destination as specified by EC in a manner which demonstrates ongoing reduction in impact to the public system.
 - Pollution Reduction – Reduction of stormwater pollution through water quality treatment techniques which meet minimum requirements qualifies for an ongoing reduction of the monthly user fee equal to 10% of the impervious area portion of the charge.

Landscaping

Preservation of existing vegetation within new developments is encouraged by provision of credit towards required landscaping.

Green Building - LEED Certified Building incentives

- The City is exploring and beginning to implement incentives for green building projects, many of which incorporate LID practices. Eligible projects will qualify for specific permit review times, priority for inspections (no holdovers) and development consultation assistance.

C. Incentive Opportunities & Barriers

Opportunities to implement additional incentives to increase implementation of LID practices can be grouped into three categories, financial, expedited permitting, and recognition. Specific opportunities and barriers are discussed within each of these areas.

- **Low & Medium Potential:** Providing additional financial and expedited permitting incentives have relatively low potential while providing additional marketing and recognition of LID has medium potential.
- **Barriers:** Scale of available costs offset by incentives, impacts on cost recovery, availability of funding for subsidies, potential equity concerns, and limitations in degree of influence of incentives.

Financial

Financial incentives can affect construction costs and fees at the time of development or longer-term costs of ownership an operation. Additional financial incentives could be developed within the following areas:

- **Fee Reduction** – In addition to the stormwater SDC/User fee reductions noted by local communities above, some communities in Florida are providing a 50% permit fee reduction. Pasadena, CA provides a rebate from the local water and electric provider for exceeding LEED certification standards. San Antonio, TX has adopted an incentive scorecard system that authorizes waivers or reductions of certain development fees for projects reaching specified scores from the score card.
- **Reverse incentives through Additive Fees** -- Arlington, VA charges an additional cost per square foot of floor area for all non-LEED developments. These revenues are then used to fund Green Building education/outreach.
- **Grants** – Some communities such as Santa Monica, CA, Seattle, WA, and Chicago, IL provide grant money to achieve certain LEED qualifications or for the implantation of retrofit eeroofs.
- **Potentially Lower Project Costs** – An Environmental Protection Agency (EPA) study of 17 developments found that in most cases LID practices reduced project costs (compared with conventional development costs) and enhanced environmental performance. See the EPA document in the LID Fact Sheets appendix.

Barriers to the effectiveness of financial incentives include the level of development costs able to be offset by incentives, impacts on mandated cost recovery, availability of funding for subsidies, and equity concerns.

Development fees are often an initial target for financial incentives. While development fees can constitute an appreciable percentage of overall development costs, a reduction or waiver of fees may not provide a financial incentive of the magnitude required to effect a decision to choose aggressive implementation of LID. Construction costs, market conditions, costs of financing, and other factors are likely to have a greater impact on choices in the nature of a development project than the relatively modest financial incentives available through development fees.

Services such as those provided by Eugene's Planning and Development Department's Building and Permit Services Division, which provides the review/approval/inspection of development permits, are directed to be 100% fee supported. Reduction in fees as a green/LID incentive would require subsidy to ensure that the resources needed to meet development review and permitting demands are adequate and to maintain equity in permit fees.

Similarly, stormwater System Development Charge and user fee rates are developed from comprehensive analyses of actual funding needs to provide infrastructure system capacity for new development as well as for the on-going operation and maintenance of the system. A reduction in revenue above and beyond what is already in place for the recognition of actual reduced system demand would also require subsidy to ensure the city's ability to fund capital projects for which the fees are collected and to adequately operate and maintain the stormwater system.

Increased public awareness of the benefits of LID affecting the marketability of developments using LID practices, along with demonstration of potentially lower development construction costs through use of LID elements may provide the strongest and most viable financial incentives.

Expedited Permitting

Extending and enhancing expedited permitting services may provide a modest LID incentive. The timing and desired schedule for development projects often has a high value and reduced/expedited review time for development meeting certain LID objectives would likely be an effective way to encourage use of LID practices. Some communities around the country that provide expedited permitting processes include Issaquah, WA, Santa Monica, CA, and several communities in Florida. Eugene now offers special project assistance for proposed LEED-certified projects, which includes streamlined permit review times, designated staff teams, consultations with staff, and priority in inspections. This incentive program could be expanded to apply to non-LEED projects that incorporate certain LID strategies. This would require development of criteria for minimum qualification of "LID-certified" development projects.

Barriers to expedited permitting include magnitude of value in relationship other factors influencing development choices, limitations on staff resources to dedicate to such a program, impacts on other customer's permits and related equity concerns, and required timing of opportunity for public comment (e.g. land use applications).

Recognition

Being recognized as a "green" developer or business is a desirable attribute in today's world of environmental awareness and sustainability efforts and achievements. A highly visible local Green Building and LID recognition program could go hand-in-hand with other types of incentives. This would require development of criteria for minimum qualification of "LID-certified" development projects.

Barriers to recognition incentives are perceptions of the value of recognition and limitations in the degree of actual influence that such incentives may have.

Section 4: Conclusion & Recommendations

Council directed inclusion of a comprehensive review of LID in the FY08 Planning Division and Stormwater Management Team work plans to identify barriers and approaches to increase the use of LID practices for stormwater management, consistent with densification policies and code provisions. Because LID includes principles of an integrated site design, it can have broad implications and complex inter-relations to other community standards and objectives around land use, growth management and development standards. Given the breadth of LID, a cross-functional, inter-disciplinary team was employed to address the scope of work for the review. The inter-disciplinary staff team completed the review in a manner which endeavored to respond to council direction, within the general timeframe directed and utilizing existing staff resources.

Positive outcomes of the review included a thorough and open approach to the review, building of working relationships within the cross-functional team, a strong realization that the City has a broad spectrum of existing regulations and programs in place which contribute to the implementation of LID practices, surfacing of potential

areas for further implementation of LID, and identification of barriers which may limit or prevent increased implementation.

In completing the review it was noted that increasing use of LID is consistent with a number of existing City plans and policies. Increasing use of LID is aligned with the Metro Plan Facilities & Services element, CSWMP, Stormwater Basin Plans, and Growth management policies 9 and 17.

The primary recommendation emerging from this review is that Council consider findings of this report, weigh opportunities and barriers, consider relative priorities for pursuit of initiatives, and provide direction on the degree to which to further pursue increased use of LID practices. Should Council direct that elements of the land use code be considered for modification to further use of LID practices, staff further recommends that, as an initial step in the process, development of proposed changes be considered in the context of the Planning Division Work Plan and Planning Commission priorities for land use code amendments.

Opportunities likely to have the greatest overall potential for increasing use of LID have significant barriers to their implementation, such as substantial complexities, competing objectives, and resource requirements. However, a number of opportunities to better encourage, integrate and improve LID implementation have relatively minor barriers. Staff can proceed to implement some administrative adjustments not requiring policy direction or requiring significant change to resource allocation. Using LID objectives as a screening and filtering mechanism, along with other objectives, when evaluating the effects of code and policy change may assist in incrementally increasing LID implementation. Additional integration of LID practices with other existing initiatives and program development efforts may also be feasible.

APPENDIX A

REVIEWED REGULATIONS & STANDARDS

CITY OF EUGENE REVIEWED REGULATIONS & STANDARDS ~ LOW IMPACT DEVELOPMENT (LID)

City of Eugene References	Could we be doing more to increase LID practices?	SUM OF TEAM AVERAGE SCORES	Overall Potential for Meeting LID Objectives (Average scores of those who ranked as 1, 2, or 3)					
			Rank as 1 (low), 2 (med), or 3 (high)					
			Infiltration	Filtration	Storage	Evaporation	Retention	Detention
Eugene Policies & Strategies								
Eugene Environmental Policy								
Adopted Salmon Protection & Recovery Strategies								
Eugene Response to Salmon Listed as Threatened Species, Resolution No. 4615								
Eugene Growth Management Policies Resolution No. 4554								
Sustainable City Buildings Resolution No. 4884								
Policies & Strategies not ranked.								
Eugene Other Plans & Programs								
Comprehensive Stormwater Management Plan	No	6.5	2.0	2.0	0.5	0.0	0.5	1.5
Stormwater Basin Master Plans	Maybe	5.3	2.0	1.0	0.3	0.0	0.7	1.3
Eugene-Springfield Natural Resources Functional Plan	No	3.0	1.0	0.5	0.0	1.0	0.5	0.0
Proposed Water Quality Protected Waterways	Yes	8.3	2.0	1.7	2.0	0.7	0.7	1.3
West Eugene Wetlands Plan	No	10.7	2.3	1.3	1.0	2.3	2.0	1.7
Arterial & Collector Street Plan (ACSP)	Yes	5.0	2.0	0.5	0.0	0.5	1.0	1.0
Urban Forest Management Plan	No	7.3	2.0	1.0	0.0	1.7	1.7	1.0
PDD/BPS Eugene Green Building Program	Yes	11.0	2.3	1.5	2.0	2.0	1.5	1.8
PW/PWE Stormwater Education Programs	Yes	6.7	2.3	1.7	0.3	0.7	1.0	0.7
PW/POS Stormwater Natural Resources Programs	Maybe	7.0	2.3	1.7	0.7	1.3	0.3	0.7
Mixed Use Development Program	Maybe	4.0	1.0	1.0	0.0	1.0	1.0	0.0
Infill Compatibility Standards & Opportunity Siting Program	Maybe	5.7	1.3	1.3	0.7	0.7	1.0	0.7
Eugene Development & Construction Standards								
Stormwater Management Manual	Maybe	15.5	3.0	3.0	2.5	1.5	2.5	3.0
Developer's Guide to Public Works Land Development Issues	Maybe	4.0	2.0	0.5	0.0	0.5	0.5	0.5
PWE Project Manager's Manual	Yes	7.0	0.5	2.0	1.5	1.0	1.0	1.0
Public Improvement Design Standards Manual (PIDS)	No	8.5	3.0	1.5	0.5	1.0	1.0	1.5
Design Standards and Guidelines for Eugene Streets, Sidewalks, Bikeways and Accessways	Yes	13.0	5.0	2.0	1.0	2.0	2.0	1.0
Eugene Amendments to APWA Specifications	Yes	10.0	2.0	2.0	1.0	2.0	2.0	1.0
PWE Inspection Manual	Maybe	6.0	1.0	1.0	1.0	1.0	1.0	1.0
Erosion Prevention & Construction Site Management Program, Admin Order 58-03-01 F	No	7.0	1.5	2.0	0.5	0.5	1.0	1.5
Erosion Prevention & Construction Site Management Program	No	5.7	2.0	1.3	0.3	0.3	0.7	1.0
CE/Lane City IGA re Erosion Prevention and Construction Site Management Program	No	7.0	1.5	2.0	0.5	0.5	1.0	1.5
Street Tree Program Admin Order 58-04-02-F	No	6.7	1.7	1.7	0.3	1.7	1.0	0.3
Eugene City Code								
Cooperative Housing Program								
2.945 Multiple-Unit Housing - Property Tax Exemption	Maybe	7.5	1.5	1.5	1.0	1.0	1.5	1.0
Housing Development Projects								
2.1110 Housing Development Projects - Applications	Maybe	9.0	2.0	2.0	1.0	1.0	2.0	1.0
2.1120 Housing Development Projects - Eligibility Standards	Maybe	9.0	2.0	2.0	1.0	1.0	2.0	1.0
Public Contracts								
2.1415 Public Contracts - Authority of Purchasing Agent	No	6.0	1.0	1.0	1.0	1.0	1.0	1.0
Tree Preservation								
6.305 Tree Felling Prohibition	Yes	8.7	2.0	1.7	0.7	1.7	2.0	0.7
6.320 Criteria for (tree felling) Permit Issuance	Yes	8.7	2.0	1.7	0.7	1.7	2.0	0.7
Stormwater Service & Facility Maintenance								
6.615 Stormwater Facility Operation and Maintenance	No	9.0	2.3	1.7	1.0	1.3	1.0	1.7
Erosion Prevention								
6.635 Erosion Prevention - Permits	No	10.0	2.0	3.0	0.0	2.0	3.0	0.0
Open Waterways								
6.650 Open Waterways - Purpose	N/A	8.7	2.0	1.3	1.0	1.7	1.0	1.7
6.655 Open Waterways - Prohibition	N/A	9.5	1.5	2.5	1.5	1.5	0.5	2.0
6.660 Open Waterways - Exemptions	N/A	4.5	0.5	1.5	0.5	1.0	0.5	0.5
Construction Requirements for Individuals, Contractors, Franchises & Permit for use of Public Way								
7.290 Construction & Use of Public Way - Permit Required; Standard Specifications	Yes	6.0	2.0	2.0	0.0	1.0	1.0	0.0
Sidewalk, Curb and Driveway Requirements								
7.420 Driveways - General Construction Requirements	Maybe	7.0	2.0	1.0	0.0	1.0	3.0	0.0
7.430 Driveways - Areas of Limited Street Improvements	Maybe	7.0	2.0	1.0	0.0	1.0	3.0	0.0
7.445 Construction in Public Right-of-Way	Maybe	6.0	2.0	2.0	0.0	0.5	0.5	1.0

City of Eugene References	Could we be doing more to increase LID practices?	SUM OF TEAM AVERAGE SCORES	Overall Potential for Meeting LID Objectives (Average scores of those who ranked as 1, 2, or 3)					
			Rank as 1 (low), 2 (med), or 3 (high)					
			Infiltration	Filtration	Storage	Evaporation	Retention	Detention
Trees and Foliage in Right-of-Way								
7.635 Foliage - Permit to Plant	Maybe	7.7	1.7	1.7	0.3	1.3	2.0	0.7
Commercial Zones								
9.2171 Special Commercial Zone Development Standards for Table 9.2170	Maybe	7.3	0.7	1.7	1.0	1.3	1.3	1.3
9.2173 Commercial Zone Development Standards - Large Commercial Facilities	Maybe	7.3	0.7	1.7	1.0	1.3	1.3	1.3
9.2175 Commercial Zone Development Standards - Large Multi-Tenant Commercial Facilities	Maybe	7.3	0.7	1.7	1.0	1.3	1.3	1.3
Industrial Zones								
9.2461 Special Development Standards for Table 9.2460	Maybe	7.0	0.7	1.3	1.0	1.3	1.3	1.3
Natural Resource Zones								
9.2530 Natural Resource Zone Development Standards	Maybe	10.0	2.3	2.0	1.3	1.3	2.0	1.0
Residential Zones								
9.2751 Special Development Standards for Table 9.2750	Maybe	9.0	2.0	1.5	1.5	1.5	1.5	1.0
9.2775 Residential Flag Lot Standards for R-1	Maybe	8.5	1.5	1.5	1.5	1.5	1.5	1.0
Special Area Zones								
Specific Special Area Zones referenced in 9.3100 - 9.3915	Maybe	8.0	1.0	2.0	0.0	2.0	2.0	1.0
Overlay Zones								
9.4050 Purpose of Residential Density Range Overlay Zone	No	8.0	1.0	2.0	0.0	2.0	2.0	1.0
9.4300 Purpose of /PD Planned Unit Development Overlay Zone	No	8.0	1.0	2.0	0.0	2.0	2.0	1.0
9.4400 Purpose of /SR Site Review Overlay Zone	No	8.0	1.0	2.0	0.0	2.0	2.0	1.0
9.4530 /TD Transit Oriented Development Overlay Zone Development Standards	No	8.0	1.0	2.0	0.0	2.0	2.0	1.0
WP Waterside Protection Zone referenced in 9.4700 - 9.4760	No	12.7	2.3	2.0	2.0	2.5	2.3	1.7
WB Wetland Buffer Zone referenced in 9.4800 - 9.4850	No	10.0	2.3	2.0	1.0	1.3	2.3	1.3
WR Water Resources Conservation Overlay Zone referenced in 4.4900 - 4.4980	Yes	11.0	2.3	2.0	1.5	1.8	2.3	1.3
Special Development Standards for Certain Uses								
9.5500 Multiple-Family Standards	Maybe	7.0	1.0	1.5	0.5	1.5	1.5	1.0
Landscape Standards								
9.6200 Purpose of Landscape Standards	Maybe	10.7	2.7	2.0	0.7	2.0	2.7	0.7
9.6240 Preservation of Existing Vegetation	Yes	9.3	2.0	1.8	0.8	1.8	2.3	0.8
Motor Vehicle Parking and Loading Standards								
9.6420 Parking Area Standards	Maybe	5.0	1.0	1.0	0.3	0.7	1.3	0.7
Public Improvement Standards								
9.6505 Improvements - Specifications	No	9.0	2.5	1.5	0.5	1.0	2.0	1.5
Site Development Standards								
9.6705 Development in Flood Plains - Purpose	Maybe	10.5	1.0	1.5	1.5	3.0	2.5	1.0
9.6730 Pedestrian Circulation On-Site	Maybe	9.0	2.0	2.0	0.0	1.0	3.0	1.0
9.6790 Stormwater Management Manual	Yes	15.0	3.0	3.0	2.3	1.7	2.0	3.0
9.6791 Stormwater Destination	Yes	11.3	2.3	1.7	2.3	1.3	1.0	2.7
9.6792 Stormwater Pollution Reduction	Yes	15.0	3.0	3.0	2.0	2.3	2.0	2.7
9.6793 Stormwater Flow Control (Headwaters)	Yes	11.3	2.3	1.3	3.0	1.0	1.3	2.3
9.6794 Stormwater Oil Control	No	7.5	2.0	1.0	1.0	1.0	1.5	1.0
9.6795 Stormwater Source Control	No	10.3	2.3	1.7	1.7	1.0	2.0	1.7
Willamette Greenway								
9.8815 Willamette Greenway Permit Approval Criteria and Standards	No	8.8	2.0	1.8	1.0	1.3	2.0	0.8
State of Oregon								
Building Codes Division (BCD)	Maybe	6.5	2.5	0.5	1.5	0.5	0.5	1.0
Existing/Potential LID Incentives								
Preferential Processing of Development Permit Applications	Maybe	4.0	1.0	1.0	0.5	0.5	0.5	0.5
Increased Densities	Maybe	3.7	0.7	0.7	0.7	0.7	0.3	0.7
Flexibility in Bulk, Dimensional & Height Restrictions	Maybe	5.0	1.0	1.0	1.0	1.0	0.0	1.0
Adjustments to Required Parking	Maybe	9.3	2.0	2.0	1.0	1.3	2.0	1.0
Reduced Property Tax	Maybe	5.0	1.0	1.0	1.0	1.0	0.0	1.0
Reduced Application Fees	Maybe	8.5	1.5	1.5	1.5	1.5	1.0	1.5
Reduced SDCs	Maybe	13.0	2.5	2.5	2.5	2.0	1.5	2.0
Enhanced User Fee Credits	Maybe	5.0	1.0	1.0	1.0	1.0	0.0	1.0
Public Recognition	Yes	5.5	1.0	1.0	1.0	1.0	0.5	1.0

LOW IMPACT DEVELOPMENT FACT SHEETS

Low Impact Development Center, MD: *Municipal Guide to LID*

www.lowimpactdevelopment.org/publications.htm#LID_Brochures

Environmental Protection Agency: *Reducing Stormwater Costs ... LID Strategies and Practices*

www.epa.gov/nps/lid/#fact

City of Beaverton, OR: *Habitat Friendly Development Practices LID Techniques*

www.beavertonoregon.gov/departments/CDD/Planning/habitat/habitat.aspx

City of Portland, OR: *Integrating Stormwater into the Built Environment*

www.portlandonline.com/bes/index.cfm?c=31870

OTHER LOW IMPACT DEVELOPMENT WEB LINKS & REFERENCES

Low Impact Development Center, MD:

www.lowimpactdevelopment.org

Urban Design Tools (LID Center, MD):

www.lid-stormwater.net

Puget Sound Partnership LID Technical Guidance Manual for Puget Sound:

www.psp.wa.gov/documents

Beaverton Habitat Friendly Practices:

www.beavertonoregon.gov/departments/CDD/Planning/habitat/habitat.aspx

Portland Green Building Program:

www.portlandonline.com/osd/index.cfm?c=41481

Portland BES Stormwater Management Program:

www.portlandonline.com/bes/index.cfm?c=34598

Environmental Protection Agency LID publications:

www.epa.gov/nps/lid