October 24, 2016

CITY COUNCIL STUDY SESSION ITEM

SUBJECT

Continuing discussion of the Planning Commission's recommendation to amend the Land Use Code to incorporate Low Impact Development (LID) principles, and if desired, discussion of the Transportation Commission's Recommendation. The LID Principles Project is required under the Washington State Department of Ecology's 2013-2018 National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit (Permit).

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POLICY ISSUES

If the City should revise its Land Use Code (LUC) to incorporate LID principles with the intent to minimize impervious surfaces, native vegetation loss, and stormwater runoff related to new development and redevelopment by amending the LUC to reduce impervious surfaces in certain land use districts; incorporate a new hard surface coverage limit; allow zero-lot line development in planned unit developments; and incorporate other measures to make LID the preferred and commonly used approach to site development? The following Comprehensive Plan Policies support this policy issue:

Land Use Element

- LU-20. Support Downtown's development as a regional growth center, with the density, mix of uses and amenities, and infrastructure that maintain it as the financial, retail, transportation, and business hub of the Eastside.
- LU-21. Support development of compact, livable and walkable mixed use centers in BelRed, Eastgate, Factoria, Wilburton and Crossroads.

Housing Element

- HO-16**.** Provide opportunities and incentives through the Planned Unit Development (PUD) process for a variety of housing types and site planning techniques that can achieve the maximum housing potential of the site.

Environmental Element

- EN-20. Maintain surface water quality, defined as meeting federal and state standards and restore surface water that has become degraded, to the maximum extent practicable.
- EN-24. Reduce runoff from streets, parking lots and other impervious surfaces and improve surface water quality by utilizing low impact development techniques in new development and redevelopment.

- EN-26. Manage water runoff for new development and redevelopment to meet water quality objectives, consistent with state law
- EN-45. Implement the city-wide use of low impact development techniques and green building practices.
- EN-46. Make low impact development the preferred and commonly-used approach to site development to minimize impervious surfaces, native vegetation loss, and stormwater runoff.

DIRECTION NEEDED FROM COUNCIL

ACTION	DIRECTION	INFORMATION ONLY
☐	☒	☐

This Study Session will continue discussion of the Planning Commission's Recommendation to amend the Land Use Code (LUC) to incorporate LID principles (reduce impervious surfaces, reduce native vegetation loss, and reduce stormwater runoff). This memorandum also addresses questions the Council raised during the October 10 Study Session. If Council desires, staff will be prepared to further discuss the Transportation Commission's Recommendation, which is included as Attachment A. At the conclusion of the Study Session, staff seeks direction from Council to either: (1) return with additional information on either the proposed LUC amendments (LUCAs) or amendments to the Transportation Development Code; or (2) prepare final ordinances for adoption on November 21, to meet the Permit's December 31, 2016 deadline. Staff and the City's consultants from AHBL (Wayne Carlson and Brittany Port) will be present to answer any questions the Council may have regarding the LID Principles Project or other related requirements under the NPDES Permit.

BACKGROUND/ANALYSIS

Regulatory Background.

The NPDES Permit is a requirement of the Federal Clean Water Act and is intended to protect and restore water for "fishable, swimmable" uses. Bellevue is one of approximately 100 municipalities in Western Washington required to obtain a municipal stormwater discharge permit.

The federal Environmental Protection Agency (EPA) delegated their permit authority to the state environmental agencies. In Washington, the NPDES-delegated permit authority is the Washington State Department of Ecology (Ecology). Ecology issued the Phase II municipal stormwater permit in January 2007, and revised the permit in August 2013. Under authority of the City Council, the City Manager accepted the revised and reissued Permit from Ecology in 2013.

The NPDES Permit authorizes discharge of stormwater runoff from municipal storm drainage systems into the state's surface waters (i.e.: streams, rivers, lakes, wetlands, etc.) as long as municipalities implement the Stormwater Management Program required by the Permit. The Program consists, in part, of LID principles and best management practices intended to protect water quality and reduce the discharge of pollutants from the municipal storm system to the "maximum extent practicable."

The NPDES Permit requires Phase II municipalities like Bellevue to review and, if necessary, revise their development-related codes and standards to comply with permit requirements to reduce and control stormwater discharges related to new development, redevelopment and construction.

The LID Principles Project not only meets NPDES Permit requirements, its intended purpose is also consistent with other Council goals and objectives, such as Utilities Stormwater System Plan's Strategic

Initiatives – the overarching goal of which is to control damage from storms, protect surface water quality, support fish and wildlife habitat, and protect the environment.

Discussion – Planning Commission Recommendation. The purpose of the October 24 Study Session is to further discuss the LID Principles Project, specifically the Planning Commissions' Recommendation, which comprises the majority of the proposed amendments to the City Code. The proposed LUCAs are included as Attachment B. The Planning Commission Recommendation consists of four parts:

1. Reducing the allowed amount of impervious and pervious surface coverage on a lot and adding a new hard surface category, which is a combination of both impervious and permeable surfaces, for certain land use districts;
2. Allowing zero-lot line development in Planned Unit Development provisions; and
3. Minor amendments to certain subareas to incorporate LID Principles;
4. Amendments to LUC definitions for consistent LID terminology and to avoid unintended consequences.

Lot Coverage by Impervious and Permeable Surfaces.
The Planning Commission's Recommendation includes an overall limit on the proportion of a site that can be covered with hardened surfaces that limit or prevent rain water from soaking into the ground. These hardened surfaces, called impervious surfaces, impact waterways by changing the nature, amount, and velocity of the runoff entering waterbodies. Limits on the amount of total impervious surface on a site helps minimize impacts by ensuring that some land remains available to absorb water and decrease runoff.

Maximum allowed surface coverage was reduced to levels consistent with existing development, based on GIS analysis, with the goal of not creating nonconforming sites. Encouraging the use of permeable surfaces on feasible sites and reducing impervious surface limits consistent with what has been historically developed are two techniques to minimize impervious surfaces and retain vegetation, thus reducing stormwater runoff from development and redevelopment.

The proposal to reduce impervious surfaces includes three changes to the dimensional chart in the Land Use Code. The dimensional chart specifies by land use district the allowed setbacks, lot coverage, and impervious surface limits allowed on a lot. Table one (1) below is a representation of the dimensional chart for four single-family land use districts. Starting at the top of Table 1, the first proposed change is the addition of a new column "Maximum Hard Surface Coverage," and corresponding coverage limits. Hard surfaces are the total of allowed impervious surfaces plus permeable surfaces. The second change is the reduction of the "Maximum Impervious Surface Limits". Finally, a second new coverage limit "Alternative Impervious Surface" was added to address sites where infiltration is infeasible. Together, these three proposed amendments for impervious and hard surface coverage limits support the use of permeable surfacing materials where feasible without penalizing sites where the practices will not work.

Table below demonstrates the Planning Commission's recommended amendments to the general dimensional chart (changes in italics) to assist the Council in its review of the recommendation. The thresholds as modified by the Planning Commission are reflected in the draft LUCA included as Attachment B.1. Surface coverage limits are expressed as a percentage of total site area. A description of the table and its contents follows.

TABLE 1: Examples of Proposed Amendments for Hardened Surfaces

LAND USE CLASSIFICATION	RESIDENTIAL			
	R-1	**R-1.8**	**R-2.5**	**R-3.5**
DIMENSIONS	(43)	(43)	(43)	(43)
Maximum Lot Coverage by Structures (percent) (13) (14) (16) (26) (27) (37) (39)	35	35	35	35
Maximum Hard Surface Coverage (percent) (37) (39) (49)	*75*	*75*	*75*	*75*
Maximum Impervious Surface (percent) (35) (37) (39) [Note: These values are 50% in current code]	45(36)	45(36)	45(36)	45(36)
Alternative Maximum Impervious Surface (percent) (35) (37) (39)(50)	50	50	50	50

Maximum Lot Coverage (No Change – Information Only). The City also regulates maximum lot coverage by structures. For residentially zoned lots, the allowed lot coverage limits the overall foot print of the house and any accessory structures, such as sheds and garages, to 35 percent of the total site area. The proposed maximum hard surface coverage limit is 75 percent (for the examples in Table 1 above), allowing for the structure to achieve the maximum lot coverage and still providing for other hard surfaces (like driveways, patios, and walkways). Hard surface limits for commercially zones properties also considered allowed lot coverage and required landscaping. In most cases, the area required for landscaping will approximate the amount of land required to be free of hard surfaces. No changes are proposed to maximum lot coverage limits.

Impervious Surface Limits (Change Proposed). The goal for the proposed amendment is to minimize impervious surfaces by encouraging the use of permeable surfacing materials where they are technically feasible. Where the use of permeable surfaces are infeasible, property owners will retain the impervious coverage limits currently allowed for the underlying zoning. As discussed above, no reduction in lot coverage is proposed, rather a mix in the type of surfaces that may be used on a lot is proposed.

Maximum Hard Surface Limit (New Limit Proposed).
As an alternative to the current impervious surface coverage limit, a hard surface coverage limit is proposed. "Hard surfaces" are the combination of impervious surfaces and permeable surfaces. The maximum hard surface coverage limit equals the maximum impervious surface limit for the underlying land use district with the remaining balance in permeable surfaces. For example, using the values for the R 3.5 land use district listed in Table 1 above:

R 3.5	**Maximum Hard Surface Limit**	**75%**
	Less Maximum Impervious Surface Limit	-45%

Balance of Permeable Surfaces Allowed 30%

The maximum hard surface coverage limit is proposed to provide for reduced impervious and pervious surfaces, while providing for a reasonable percentage of permeable hard surfaces. This will allow a property owner to construct desired amenities, such as patios and sports courts. If a site does not infiltrate, the site will qualify for the Alternative Maximum Impervious Surface limit, which is the impervious surface limit available today for the underlying land use district. Thus, a property owner is not penalized if a site is deemed technically infeasible for infiltration, making the Hard Surface limits unattainable. A copy of Utilities' draft Infeasibility Map is included as Attachment C.

Alternative Impervious Surface Limit (Continuation of Existing Limit Proposed).
If a site cannot infiltrate stormwater, then the Alternative Impervious Surface limit applies. The Alternative Impervious Limit is the same limit for impervious surface coverage enjoyed by property owners today. If the use of permeable surfacing is deemed technically infeasible, the applicant may use impervious surfaces up to the maximum impervious surface allotment as it currently exists in the code. An applicant may also choose to use the Innovative Technique provision (LUC 20.20.460.G), discussed below, to use engineered permeable solutions for additional coverage if desired.

A new footnote, note 50, defines the Alternative Maximum Impervious Surface: "The alternative maximum impervious surface limit for sites only where the use of permeable surfacing techniques is determined to be infeasible according to criteria in the 2014 Department of Ecology Stormwater Management Manual for Western Washington, or the City's Storm and Surface Water engineering and design standards, now or as hereafter amended."

Other Facts about the Recommendations to Amend Impervious Surfaces

- Innovative Techniques (LUC 20.20.460.G)

  The Innovative Techniques provision (LUC 20.20.460.G), has been revised to allow paved surfaces that mimic permeable surfaces, which are designed by a licensed professional engineer and are approved by the Director. These designed surfaces will not be included in the calculation of impervious surfaces; however; these surfaces would be included in the calculation of the hard surface limit. Finally, the Innovative Technique provision cannot be used to exceed the maximum hard surface limit established for the underlying land use district.

- The amendment is designed to avoid creating nonconforming uses.

- No reduction of impervious surfaces in BelRed because of requirements for natural drainage practices and reductions of impervious surfaces required as part of 2009 update.

- No reduction of impervious surfaces in Downtown because of it highly-urbanized character and direct-discharge status.

- Includes limits for new Eastgate land use districts consistent with similar land use districts.

- Adds the following new footnotes to the dimensional chart to alert and advise project applicants:

- All areas of lot coverage by structures are included in the calculation of maximum impervious surface, and all areas of impervious surface are included in the calculation of maximum hard surface.
- References (new) section LUC 20.20.425, performance standards for hard surfaces, which is similar to those for impervious surfaces.
- Includes criteria for when permeable surfacing is infeasible and provides that impervious surfaces may be used up to the maximum hard surface limit.

Other Proposed Amendments in Chapter 20.20 LUC:

LUC 20.20.025 Intrusions into required setbacks

- Allows bioretention facilities as improvements that may be located within setbacks.

LUC 20.20.425 Hard surface (Permeable and Impervious Surfaces)

- Adds purpose and applicability statements for Hard Surfaces similar to those found under LUC 20.20.460 (Impervious surface).
- Adds exemptions to the calculation of hard surfaces for decks/platforms, rockeries, shoreline stabilization measures and landscape features, consistent with those found under LUC 20.20.460.

LUC 20.20.460 Impervious surface

- Amends the exemption for pervious pavement under innovative techniques by specifying that permeable surfaces will be included in the calculation of hard surface and limiting the total hard surface coverage to that allowed for the underlying land use district.

LUC 20.20.590 Parking, circulation and walkway requirements

- Including permeable pavement as an acceptable surfacing material for walkways

Other Proposed Amendments

The remaining proposed amendments relate to the following sections of the LUC:

- Part 20.25 Special Overlay Districts
- Part 20.30 D. Planned Unit Developments
- Chapter 20.50 LUC (Definitions)

The amendments to the Special Overlay Districts include the following: (1) requires the use of natural drainage practices unless infeasible; (2) requires 50 percent of the plantings within required stream buffers to be native; (3) allows bioretention facilities to be placed within required landscape buffer areas; and (4) allows the placement of bioretention facilities within the planter strips between the curb and sidewalk.

The amendments to the Planned Unit Development provision allows for zero-lot line development. This means that a residence could be sited on its side lot line provided that the separation between the residence and the adjacent residence maintained the same separation as would be required with standard setbacks. For example, two, five-foot side yard setbacks could be made into a zero-lot line adjacent to a 10-foot side yard. The PUD provision that would allow zero-lot line development only applies to interior side yard setbacks meaning that the side yard setbacks on the exterior of a project shall be required to comply with the minimum standards in the zoning code (see LUC 20.30D.165.C.1). This will prevent a zero-lot line home from encroaching on an abutting residence.

The definition for impervious surface has been amended to avoid unintended consequences related to solid decks and a new definition is proposed for hard surfaces, which is consistent with the SWMMWW.

Tree Retention Proposal Not Recommended by the Planning Commission

Staff Tree Retention Recommendation. Staff had recommended amending the tree retention provisions in the LUC (LUC 20.20.900), which Council adopted in 2007 as part of the Neighborhood Livability initiative. The proposal would have refined the tree retention provisions by:

1. Establishing landmark trees by size and species;
2. Prioritizing tree retention beginning with landmark trees, significant trees, and others; and
3. Amending the definition of significant tree by removing the modifier "healthy" so that the definition was consistent with the definition used by arborists.

A copy of the proposed amendments to the tree retention provisions are included as Attachment D. The reasoning behind this recommendation was to support retention of the trees most beneficial to stormwater – typically native conifers and hardwoods that can store and slowly release stormwater—in locations where the trees are most likely to survive. The provision retains the off-ramps for when the trees are located in a position on the lot that would preclude development (LUC 20.20.900.G: Alternative Tree Retention or Replacement Option). The provision would also require a survey denoting retained trees and recordation of the survey to notify potential buyers that the trees are required to be maintained.

The Planning Commission voted to not recommend the proposed amendments to the tree retention provisions based on the variety of public comments concerning trees and concerns that a larger conversation regarding how trees are regulated in Bellevue was required first. Comments received about trees included protecting views, requiring permits for cutting trees, a time-limit for cutting trees, similar to the Bridle Trail Tree regulations, having a public process to establish Landmark Trees, providing incentives for tree-planting, and providing flexibility and predictability when requiring that trees be retained.

Council Questions and Responses.

At the October 10 Study Session, Council staff to return with additional information related to zero lot line development and costs related to LID. Staff has responded to Council's questions below.

1. *Zero-Lot Line Provisions: Council wanted to understand if there were risks that zero-lot line proposals would impact adjacent properties.*
   Staff Response: Zero lot line setbacks are not proposed to be permitted for the side yards of the perimeter of a Planned Unit Development or PUD (see LUC 20.30D.165.C.1). Zero lot line setback flexibility is only being proposed for side yard setbacks internal to a PUD.

2. *Costs Associated with Low Impact Development. Council wanted to understand the costs associated with LID, including potential impacts on City transportation projects.*
   Staff Responses: LID Best Management Practices (BMPs): Under the NPDES Permit and the SWMMWW, there is limited flexibility regarding the use of the LID BMPs. As such, bioretention, permeable pavement, and other LID BMPs will be required unless the BMPs are

deemed technically infeasible. This requirement applies, not only in Bellevue, but also in the other cities and counties covered under the NPDES Permit in Western Washington.

The cost associated with the use of the BMPs, although not technically part of the LID Principles project, vary depending on the BMP that is used. The Washington State Department of Ecology's 2013 Cost Analysis for Western Washington LID Requirements and Best Management Practices ("Cost Analysis") includes an analysis of the costs for various development scenarios using LID and conventional stormwater management controls. The Ecology analysis found that LID stormwater practices were less costly than conventional stormwater practices. Where soils were better for infiltration, the cost savings associated with the use of LID practices were found to be greater.

It is important to note that one of the requirements under the 2014 Ecology Stormwater Management Manual for Western Washington, requires applicants to investigate the feasibility of using permeable pavement, when they are proposing to install 5,000 square feet or more of paving as part of their project. This means that regardless of LID principles, applicants meeting the threshold must investigate the feasibility of using permeable pavements.

Transportation Projects and Affordable Housing.
Council also inquired if the LID Principles project may have on transportation projects. There should be no or nominal additional costs for transportation projects because the amendments are not mandatory requirements. The Transportation Code Recommendation allows for the installation of bioretention facilities and other stormwater BMPs in street frontage improvements and landscaped islands and modifies existing landscaping requirements to establish a preference for native vegetation or vegetation demonstrated to survive in an urban environment. These measures should provide greater flexibility for the management of stormwater within the right-of-way, which may result in smaller off-site acquisitions for stormwater management.

Council also inquired about the impact on affordable housing projects. Affordable housing should not be affected by these proposals. LID principles are intended to be density neutral. The Pollution Control Hearings Board noted that the LID requirement and the Growth Management Act could be harmonized without comprising important GMA goals such as affordable housing. The emphasis on infiltration and clustering, which reduces the need for traditional stormwater infrastructure such as pipes, catch basins, detention ponds, and vaults, may result in lower construction and/or maintenance costs that may benefit affordable housing goals.

3. *Maintenance Costs for Permeable Pavements.* The Cost Analysis reports that maintenance costs for permeable pavements are comparable to those for regular pavements that are maintained by period sweeping. Permeable pavements are highly efficient in infiltrating water, and must be periodically swept (typically twice a year) to prevent clogging and maintain aesthetic appearance. The maintenance cycle for permeable sidewalks is every five years. This trend is consistent for other LID BMPs.

Next Steps:
The next steps for the project will depend on Council's direction at the conclusion of the October 24 Study Session. The table below provides a schedule with proposed topics to reach the December 31 project deadline.

Date	Proposed Topics and Tasks
October 24 Study Session	Continued discussion of Planning Commission and/or Transportation Commission recommendations (if required). Presentation to Council: Introduction of proposed code amendments to Clearing and Grading and Storm and Surface Water Codes
November 14 Study Session	Additional Study Session on Council-directed topics (optional)
November 21 Action	**Action** or additional Study Session on Council-directed topics (optional)
November 28 Action (Alternate)	Last date for Council to take action to meet deadline to have codes adopted and effective by December 31, 2016
December 6	East Bellevue Community Council Final Hearing on LID Principles Project
March 31, 2017	Summary of results of review and revision process for LID Principles Project due with NPDES Annual Report to Ecology.

ALTERNATIVES

1. Direct staff to prepare final ordinances adopting the Planning Commission's Recommendation for action on November 21, 2016.
2. Direct staff to prepare a final ordinance adopting the Transportation Commission's Recommendation on November 21.
3. Provide alternative direction to staff.

RECOMMENDATION

Nos. 1 and 2

ATTACHMENTS

A. Transportation Commission Recommendation
B. LID Principles Project Land Use Code Amendments:
    - B-1 LUC 20.20 General Requirements
    - B-2 Part 20.25 Special Overlay Districts
    - B-3 Part 20.30D Planned Unit Developments
    - B-4 LUC 20.50 Definitions
C. Utilities Draft Infeasibility Map
D. Staff Proposed Amendments to Tree Retention provisions (LUC 20.20.900)
    - D-1. Proposal
    - D-2. Landmark Tree handout

AVAILABLE IN COUNCIL DOCUMENT LIBRARY

1. Integrating LID into Local Codes A Guidebook
2. Forging the Link – Linking the Economic Benefits of Low Impact Development and Community Decisions
3. 2012 LID Technical Guidance Manual for Puget Sound
4. EPA FAQs: Costs of Low Impact Development
5. EPA FAQs: Effectiveness of Low Impact Development
6. EPA FAQs: Maintenance of Low Impact Development
7. Kitsap County Public Works: Permeable Pavement Fact Sheet
8. McIntyre et al Highway Toxics Bioretention 2015