

# Bellevue LID Principles Project City Council Study Session

October 24, 2016

# Project Team

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Engineering  
Utilities Department  
Wayne Carlson (AHBL)  
Brittany Port (AHBL)

Low Impact Development  
Principles Project

# Why We Are Here

1. Why We Are Here
2. Study Session on Amendment Proposals
3. Next Steps

# Why We Are Here

- \* Continued discussion on the Planning Commission's Recommendation for the Low Impact Development (LID) Principles Project.
- \* Review proposed revisions to hard surface standards
- \* Review as required recommendations from the Transportation Commission

# Why We Are Here

## \* Permit Goals:

- Minimize native vegetation loss
- Minimize impervious surface coverage
- Minimize stormwater runoff

# Study Session on the Amendment Proposals



# Transportation Commission Recommendations

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# Transportation Commission Recommendations

## Two Recommendations:

- \* Allow bioretention within landscape areas along planter strips and medians
- \* Encourage native and adapted vegetation that can survive in an urban environment encouraged





# Planning Commission Recommendations

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# Proposals: Impervious Surfaces

## Nutshell:

- \* Establish a hard surface limit
- \* Reduce impervious surface limit
- \* Provide off-ramp for sites where permeable pavement is infeasible

# Proposals: Impervious Surfaces

Under the 2012 Ecology Stormwater Manual, new developments that add more than 5,000sf of hard surfaces will be required to evaluate the use of permeable pavement.

- If permeable pavement is not technically feasible on the site, then maximum impervious surface coverage is unchanged from today's standard (*Alternative Maximum Impervious Standard*)

**Result: Encouraging the use of permeable pavement in lieu of impervious surfaces, where feasible**

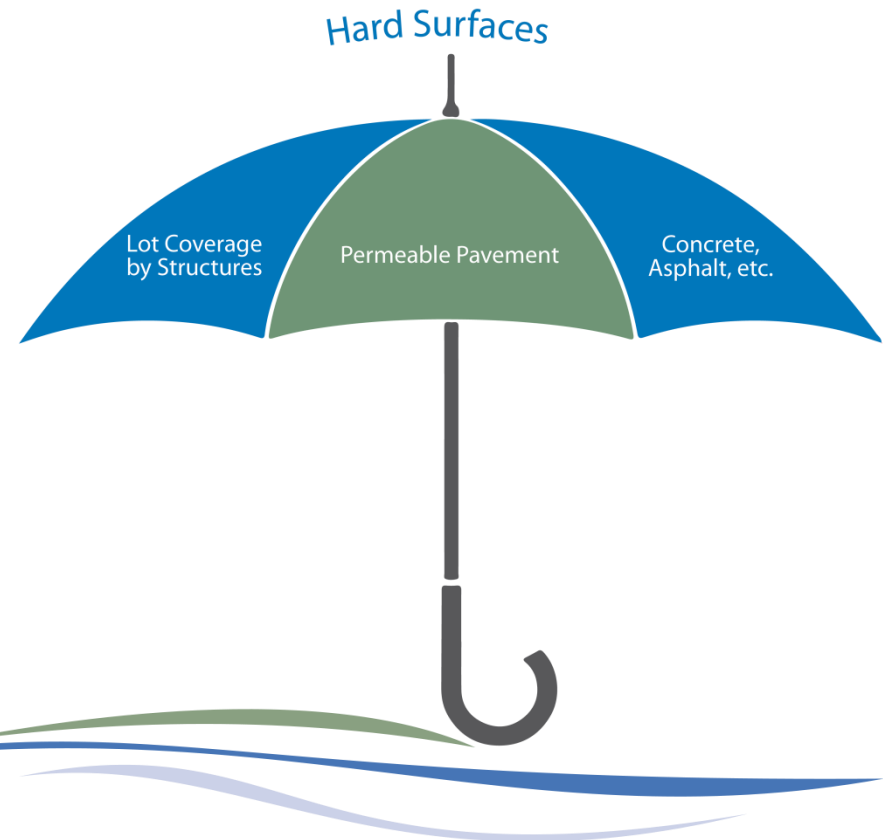
# Proposals: Impervious Surfaces

- \* **Hard surfaces include:**

- \* Impervious surfaces
  - \* (Solid surfaces like roofs, roads, walkways, driveways)

**AND**

- \* Permeable pavement
  - \* (pervious concrete, porous asphalt, permeable pavers or other paving materials intended to allow water to pass through)

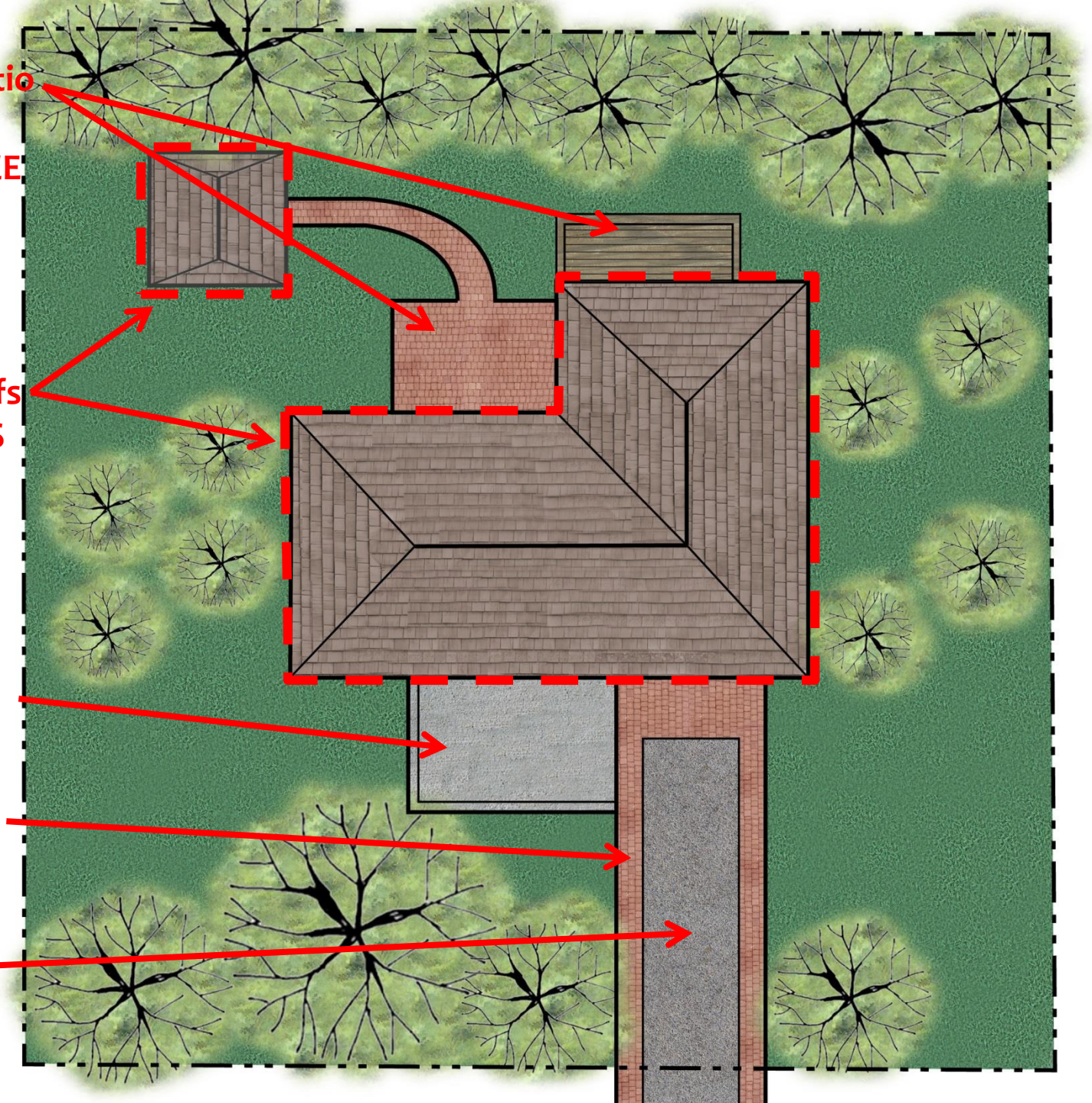




**Permeable Patio  
& Deck =  
HARD SURFACE**

**Buildings/Roofs  
= IMPERVIOUS**

**Concrete porch  
=  
IMPERVIOUS**  
**Permeable  
Paver Driveway  
=  
HARD SURFACE**  
**Concrete  
Driveway =  
IMPERVIOUS**

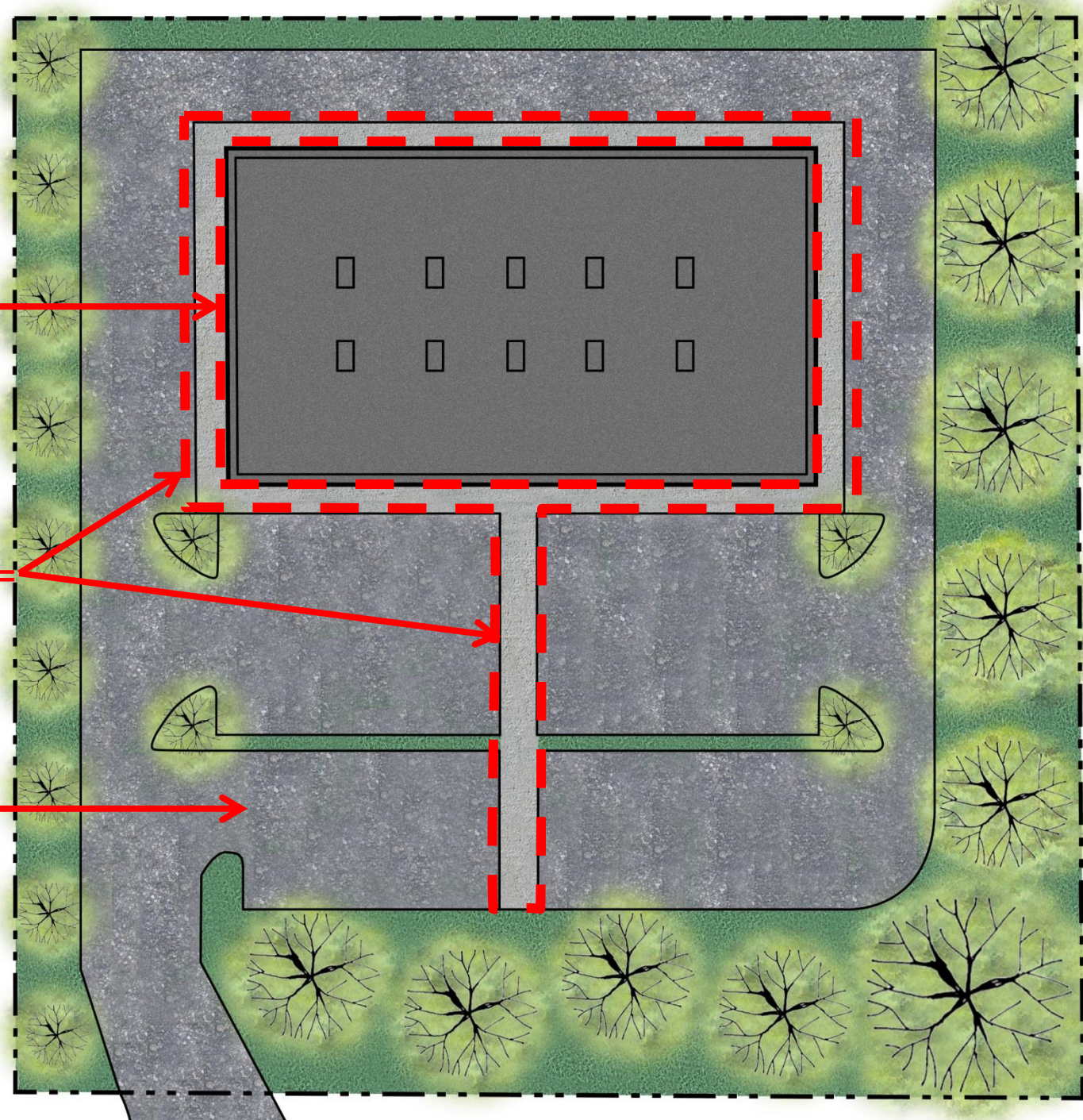




**Building/Roof =  
IMPERVIOUS**

**Walkway/Path =  
IMPERVIOUS**

**Parking Lot =  
PERMEABLE**



# Proposals: Impervious Surfaces

- No change in amount of allowed building coverage
- New hard surface coverage limit is proposed
- Existing impervious surface coverage is reduced
- Sites that cannot infiltrate (per Ecology standards) use **existing** impervious surface coverage limit



# Proposals: Impervious Surfaces

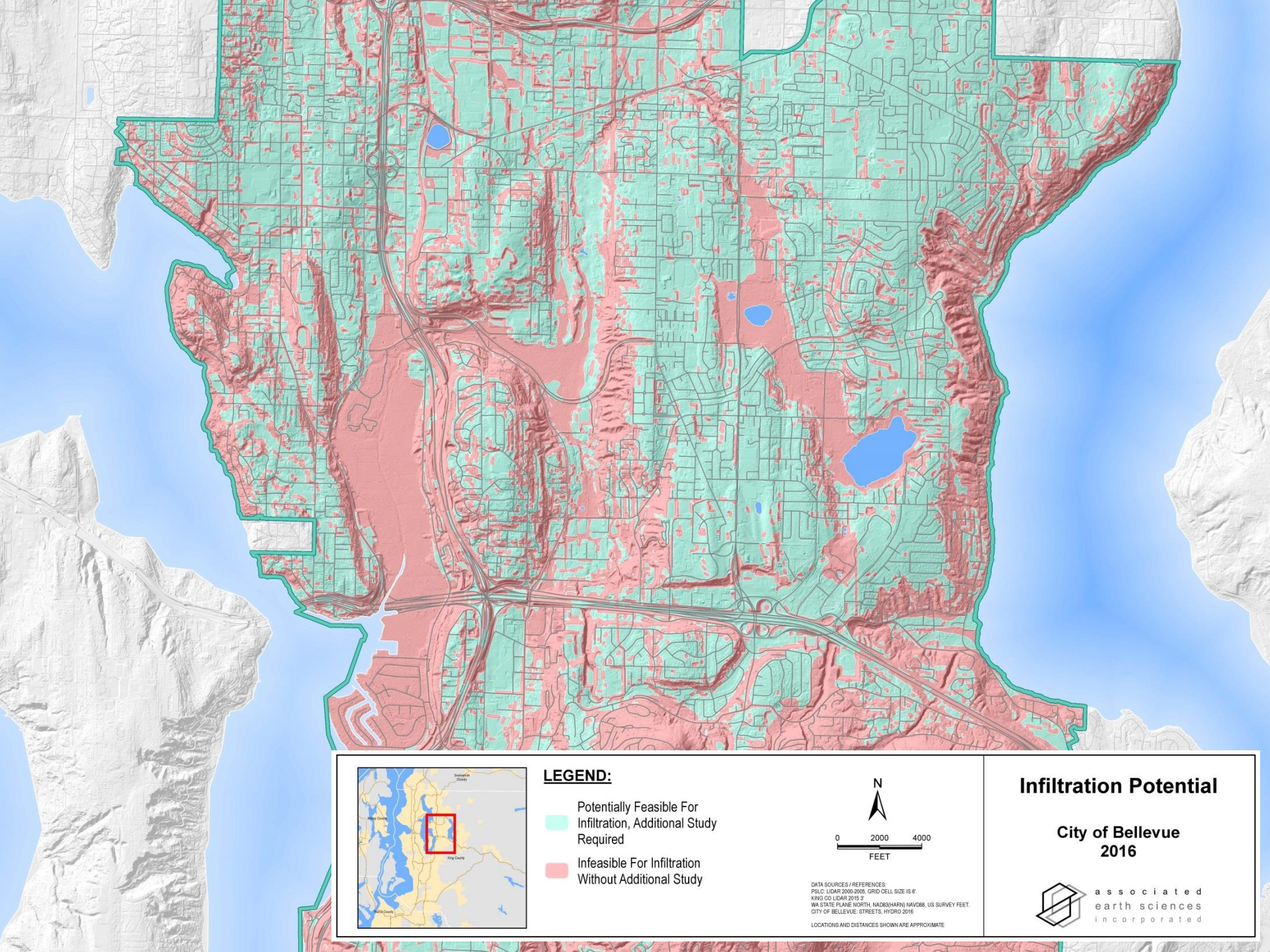
- \* Proposed hard surface limit provides for amenities
- \* Retains Innovative Techniques with a cap
- \* Consistent with the City's Comprehensive Plan and neighborhood plans (reducing impervious surfaces)





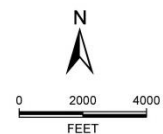
# Proposals: Impervious Surfaces

LAND USE CLASSIFICATION	RESIDENTIAL										
	R-1	R-1.8	R-2.5	R-3.5	R-4	R-5	R-7.5*	R-10	R-15	R-20	R-30
Maximum Lot Coverage by Structures (percent)	35	35	35	35	35	40	40	35	35	35	35
<u>Maximum Hard Surface Coverage (percent) (37) (39) (49)</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>80</u>	<u>80</u>	<u>90</u>	<u>90</u>	<u>90</u>	<u>90</u>
Maximum Impervious Surface (percent) (35) (37) (39)	<u>50</u> <u>45</u> (36)	<u>50</u> <u>45</u> (36)	<u>50</u> <u>45</u> (36)	<u>50</u> <u>45</u> (36)	<u>50</u> <u>45</u> (36)	<u>55</u> <u>50</u> (36)	<u>55</u> <u>50</u> (36)	<u>80</u> <u>65</u> (36)	<u>80</u> <u>65</u> (36)	<u>80</u> <u>65</u> (36)	<u>80</u> <u>65</u> (36)
<u>Alternative Maximum Impervious Surface (percent) (35) (37) (39) (50)</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>55</u>	<u>55</u>	<u>80</u>	<u>80</u>	<u>80</u>	<u>80</u>



**LEGEND:**

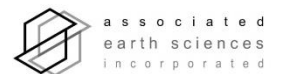
- Potentially Feasible For  
Infiltration, Additional Study  
Required
- Infeasible For Infiltration  
Without Additional Study



DATA SOURCES / REFERENCES:  
PISC: LIDAR 2000-2005, GRID CELL SIZE IS 6'  
KING CO LIDAR 2016  
WA STATE PLANE NORTH, NAD83/HARN NAVD83, US SURVEY FEET  
CITY OF BELLEVUE: STREETS, HYDRO 2016  
LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE

**Infiltration Potential**

**City of Bellevue  
2016**





# Proposals: Impervious Surfaces

- \* Example Under Current Code (R-4)
  - \* 50% maximum impervious surface limit
  - \* 50% of the front setback must be “greenscape” (no pavement)
  - \* The remainder of the site can be permeable pavement per 20.20.460.G (Innovative Techniques)
  - \* On a 10,890 sf lot (in the R-4 zone), with a 75’ lot width:
    - \* 5,445sf of the lot could be impervious surfaces
    - \* 1,500 sf of the front yard must be greenscape (no hard surfaces)
    - \* A total of 9,390 sf of hard surface coverage could be achieved (86% of the lot)

# Proposals: Impervious Surfaces

- \* In practice, however, the City is finding that new developments are typically using a combination of hard surfaces for a total of 60-70% coverage
- \* If permeable pavement is not technically feasible on the site, then maximum impervious surface coverage is unchanged from today's standard (*Alternative Maximum Impervious Standard*)
- \* Encouraging the use of permeable pavement in lieu of impervious surfaces, where feasible

# Proposals: Impervious Surfaces

LAND USE CLASSIFICATION	Professional Office	Office	Office/Limited Business	Office/Limited Business 2	Light Industry	General Commercial	Neighborhood Mixed Use	Neighborhood Business
	PO	O	OLB	OLB 2	LI	GC	NMU	NB
Maximum Lot Coverage by Structures (percent)	35(24)	35(24)	35(24)	35	50		35	35(24)
<u>Maximum Hard Surface Coverage (percent) (37) (49)</u>	<u>85</u>	<u>85</u>	<u>85</u>	<u>85</u>	<u>90</u>	<u>85</u>	<u>80</u>	<u>80</u>
Maximum Impervious Surface (percent) (35) (37)	<u>80</u> <u>60</u>	<u>80</u> <u>60</u>	<u>80</u> <u>60</u>	<u>80</u> <u>60</u>	<u>85</u> <u>65</u>	<u>85</u> <u>65</u>	<u>80</u> <u>60</u>	<u>80</u> <u>60</u>
<u>Alternative Maximum Impervious Surface (percent) (35) (37) (50)</u>	<u>80</u>	<u>80</u>	<u>80</u>	<u>80</u>	<u>85</u>	<u>85</u>	<u>80</u>	<u>80</u>

# Proposals: Impervious Surfaces

## *Impervious Surface Footnotes:*

- \* (37) Maximum hard surface, maximum impervious surface and maximum lot coverage by structures are independent limitations on allowed development. All areas of lot coverage by structures are included in the calculation of total maximum impervious surface, unless such structures are excepted under LUC 20.20.460. All areas of impervious surface coverage shall be included in the calculation of total maximum hard surface coverage.
- \* (49) See LUC 20.20.425 for exceptions and performance standards relating to hard surfaces.
- \* (50) Maximum impervious surface limit **only for sites** where the use of permeable surfacing techniques is determined to be infeasible according to the criteria in the 2014 Department of Ecology Stormwater Management Manual for Western Washington, now or as hereafter amended.



# Proposals: Impervious Surfaces

## 20.20.460 Impervious surface.

### \* G. Innovative Techniques.

- \* Surfaces paved with pervious permeable pavement or other innovative techniques designed to mimic the function of a pervious surface shall not be included in the calculation of impervious surface areas, so as long as the technique is designed by a professional engineer licensed by the State of Washington and the plans are approved by the Director. These surfaces, however, shall be included in the calculation of maximum hard surface areas. The Director may require a maintenance plan and long-term performance assurance device to ensure the continued function of the pervious permeable pavement or other innovative technique. In no case, may the use of innovative techniques exceed the maximum hard surface coverage limit for the underlying use zone.

# Proposals: Impervious Surfaces

Newport Hills Site Statistics	Area (Sq. Ft.)	% of Site
Total Site Area (sf)	256,732.74	100%
Building Coverage (residential)	85,895.36	33.5%
Building Coverage (commercial)	13,712.36	5.3%
Landscaping	39,168.10	15.3%
Parking Lot	117,956.92	45.9%
Total Impervious Surfaces	217,564.64	84.7%
Impervious Surfaces Required to be Permeable	50,688.36	19.7%



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# Proposals: Impervious Surfaces

## **Proposal:**

- \* Establish a hard surface limit (for permeable paving techniques)
- \* Reduce impervious surface limit
- \* Provide off ramp for sites where permeable pavement is infeasible
- \* Revise Innovative Techniques to allow permeable surfaces consistent with hard surface limit for land use zone

# Proposals: Impervious Surfaces

The impervious surface proposals are supported by the following Comprehensive Plan policies:

- \* **Policy EN-43.** Maintain land use regulations that limit impervious surface area in new development and redevelopment
- \* **Policy EN-44.** Provide incentives to minimize impervious surface area
- \* **Policy LU-13.** Support neighborhood efforts to maintain their character

# Proposals: Clustering

- \* Conservation of on-site soils and the minimization of impervious surface coverage will be criteria for PUD approval.
- \* Zero lot line development allowed to facilitate clustering of buildings for conservation of open spaces and vegetation as long as the combined width of the side yard setbacks met minimum requirements.

# Proposals: Clustering

## 20.30D.150 Planned Unit Development plan – Decision criteria.

...

- B. The Planned Unit Development accomplishes, by the use of permitted flexibility and variation in design, a development that is better than that resulting from traditional development. Net benefit to the City may be demonstrated by one or more of the following:

...

5. Conservation of natural features, vegetation and on-site soils, or  
6. Reduction in hard surfaces, or

...

# Proposals: Clustering

**20.30D.165 Planned Unit Development plan – Request for modification of zoning requirements.**

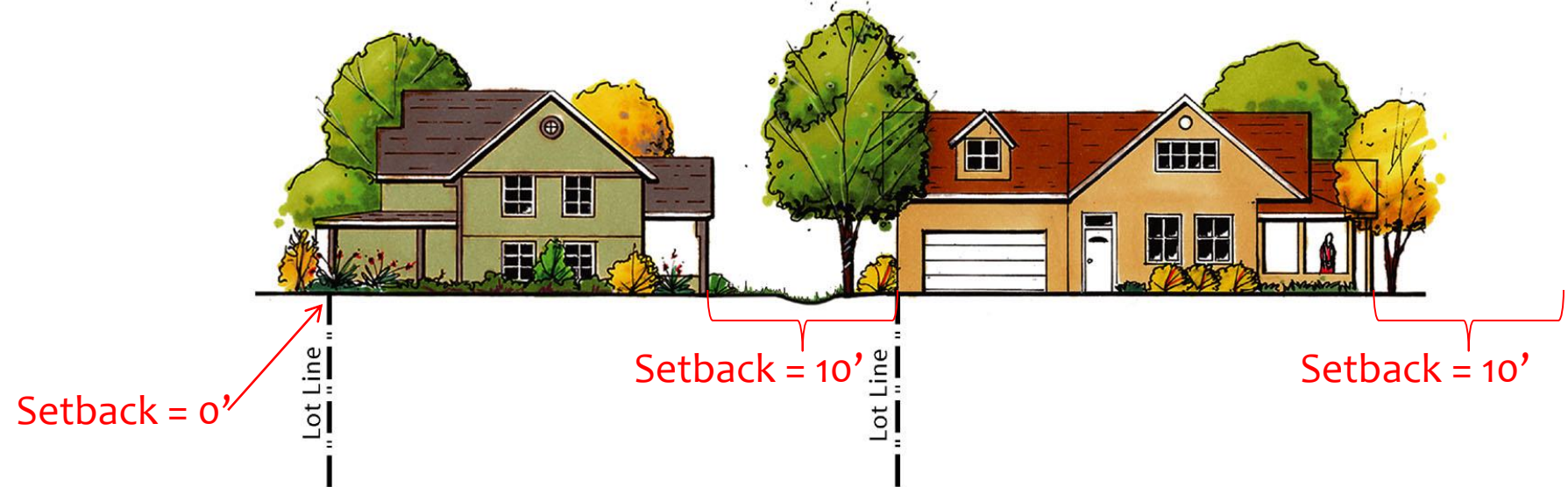
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C. Zero Lot Line. This is a configuration where the house and/or garage is built up to one of the side lot lines, providing the opportunity for more usable space in the opposing side yard.

1. General. The applicant may request a reduction in the required side setback from that required by the land use district and district specific requirements. Zero lot line setbacks are not permitted for side yards along the perimeter of the PUD.

# Proposals: Clustering

- \* Combined width of the side yard setbacks must still meet minimum requirements.



# Proposals: Clustering

The clustering proposals are supported by the following Comprehensive Plan policies:

- \* **Policy HO-16.** Provide opportunities and incentives for a variety of housing types and site planning techniques
- \* **Policy EN-49.** Provide incentives to support the implementation of low impact development practices, [and] integrated site planning with a focus on early consideration of these in the site development process.

# Proposals: Site Design

Topography

Soils

Hydrology

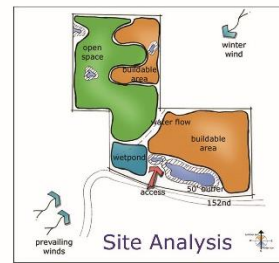
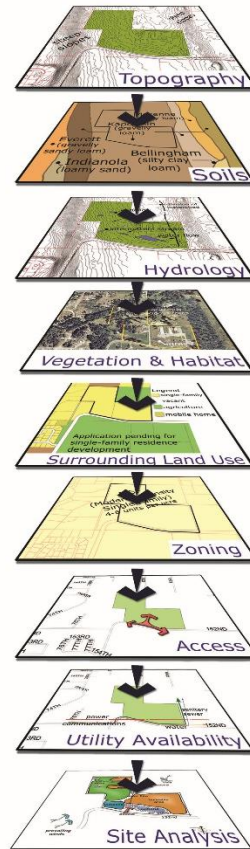
Vegetation & Habitat

Surrounding Land Use

Zoning

Access

Utility Availability



Composite Site Analysis

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# Submittal Requirements

1/1/2024/2017

## LARGE COMMERCIAL and MULTIFAMILY BUILDING PERMITS

\_\_\_\_ **Major Project:** New commercial or multifamily building or addition, 4,000 square feet or more, which does not require SEPA review or SEPA review has been done under a prior land use approval. Includes demolition work when appropriate. (BB)

\_\_\_\_ **Medium Project:** New commercial or multifamily building, addition or pool/spa, over 1,000 and less than 4,000 gross square feet. Includes clearing & grading, Land Use Exemption and/or demolition work when appropriate. (BM)

\_\_\_\_ **Shoring:** Excavation and shoring of property adjacent to the City of Bellevue right of way. (BV)

\_\_\_\_ **Detention Vault:** Stormwater detention structure. (BH)

To submit your application online use [www.mybuildingpermit.com](http://www.mybuildingpermit.com).

If you are applying in person at City Hall, submit the number of copies specified below for your application type.

<b>Planner:</b> _____  <input type="checkbox"/> Include clearing & grading work in this permit (Over 1000 square feet of clearing; over 50 cubic yards of grading; over 2,000 square feet of new, replaced, or new plus replaced impervious surface; work in a Critical Area; or foundation removal) <input type="checkbox"/> Land Use Exemption	<b>Type of Critical Area:</b> <input type="checkbox"/> Geologic Hazard <input type="checkbox"/> Wetlands <input type="checkbox"/> Streams <input type="checkbox"/> Flood Hazard <input type="checkbox"/> Habitat Associated with Species of Local Importance <input type="checkbox"/> Critical Areas offsite within 100 feet <input type="checkbox"/> Shoreline	<b>Check below if applicable:</b> <input type="checkbox"/> Substantial Development <input type="checkbox"/> Shoreline Exemption with SEPA <input type="checkbox"/> Shoreline Exemption without SEPA
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Initial for waiver by City of Bellevue Planner	Major Project	Medium Project	Shoring	Detention Vault
This Chart	1	1	1	1
Building Permit Application	1	1	1	1
"Bill To" Form	1	1	1	
Preapplication Conference Letter	If a conference was held, submit 1 copy.			
Value of Improvements				1
Issaquah or Renton School District Impact Fee Notification Form	1 (multifamily projects only)			
Site Plan A			6	6
Site Plan B	8	8		
Shoring Plan and Details			6	
Geotech Shoring Design Calc			2	
Architectural Plan <sup>A</sup>	4	4		
Geotechnical Report	2	2	2	1
Soils Report <sup>H</sup>				
Boundary/Topographic Survey	7	7		
King Co. Health Dept. Approval	Footnote B			
IBC Pedestrian Protection Plan	3	3		3
Tree Protection and Preservation Plan <sup>I</sup>				
Structural Plan <sup>C</sup>	2	2		4
Structural Calculations	1	1	2	1
Civil Plan <sup>D</sup>	5	5		
Final Civil Detention Vault Detail Sheet				3
Final Landscape Plan	5	5		

## Initial for waiver by City of Bellevue Planner

This Chart

Building Permit Application

"Bill To" Form

Preapplication Conference Letter

Value of Improvements

Issaquah or Renton School District Impact Fee Notification Form

Site Plan A

Site Plan B

Shoring Plan and Details

Geotech Shoring Design Calc

Architectural Plan<sup>A</sup>

Geotechnical Report

Soils Report<sup>H</sup>

Boundary/Topographic Survey

King Co. Health Dept. Approval

IBC Pedestrian Protection Plan

Tree Protection and Preservation Plan<sup>I</sup>

Structural Plan<sup>C</sup>

Structural Calculations

Civil Plan<sup>D</sup>

Final Civil Detention Vault Detail Sheet

Final Landscape Plan

# Proposals: Tree Retention

- \* Require tree preservation in a “hierarchy” of selecting trees for retention.
- \* Require assurance devices for retained trees.
- \* Include a note on the face of the plat for trees required to be retained as a condition of approval.

# Proposals: Clustering

## 20.20.900 Tree retention and replacement.

.....

D. Retention of Significant Trees for Subdivisions, Short Subdivisions, Planned Unit Development, Change in Lot Coverage, or Change in the Area Devoted to Parking and Circulation, Excluding Areas Located in the R-1 Land Use District in the Bridle Trails Subarea and for New or Expanding Single-Family Structures.

.....

### 2. Site Interior.

- a. In areas of the site other than the required perimeter landscaping area, the applicant must retain at least 15 percent of the diameter inches of the significant trees existing in this area; provided, that alder and cottonwood trees' diameter inches shall be discounted by a factor of 0.5. In the event of a conflict between this section and Part 20.25H, Part 20.25H shall prevail. In applying the requirement for retention of significant trees, the Director shall ~~consider~~ require the preservation of the following types of significant trees in the following order of a priority:

# Proposals: Tree Retention

## 20.20.900 Tree retention and replacement (*continued*).

- i. Landmark trees as defined in LUC 20.50;
  - ii. ~~Healthy S-significant~~ trees over 60 feet in height;
  - iii. Significant trees which form a continuous canopy;
  - iv. Significant trees located within the rear yard; and
  - v. Significant trees which ~~contribute to the character of the environment, and~~ do not constitute a safety hazard.
  - ~~vi. Significant trees which provide winter wind protection or summer shade;~~
  - ~~vii. Groups of significant trees which create a distinctive skyline feature; and~~
  - ~~viii. Significant trees in areas of steep slopes or adjacent to watercourses or wetlands.~~
- b. The Director may approve retention of trees which do not meet the definition of significant trees as a contribution toward the sum of the diameter inches required under subsection D.2.a of this section if a group of trees and its associated undergrowth can be preserved.

# Proposals: Tree Retention

## 20.20.900 Tree retention and replacement (*continued*).

....

5. The applicant shall utilize tree protection techniques approved by the Director during land alteration and construction in order to provide for the continual healthy life of retained significant trees. The director may require assurance devices pursuant to 20.40.490 to ensure the continual healthy life of retained significant trees for a period of up to five years.
6. Any property where significant trees are retained to meet the requirements of this chapter shall include notice of the retained trees on the recorded survey, and shall include a reference to this section to ensure their continued retention.

# Proposals: Tree Retention

The tree retention proposals are supported by the following Comprehensive Plan policies:

- \* **Policy LU-2.** Retain the city's park-like character through the preservation [of] tree canopy throughout the city.
- \* **Policy EN-12.** Work toward tree canopy target of 40% canopy coverage
- \* **Policy UD-2.** Preserve and enhance trees to retain the image of a "City in the Park."

# Proposals: Tree Retention

**Proposal:** Require tree preservation in a “hierarchy” of selecting trees for retention. Require assurance devices for retained trees. Include a note on the face of the plat for trees required to be retained as a condition of approval.

**Planning Commission Recommendation:** Do not include the proposal within the City’s tree retention code. Engage in a more comprehensive dialog that addresses trees in a neighborhood-by-neighborhood approach.

# Next Steps

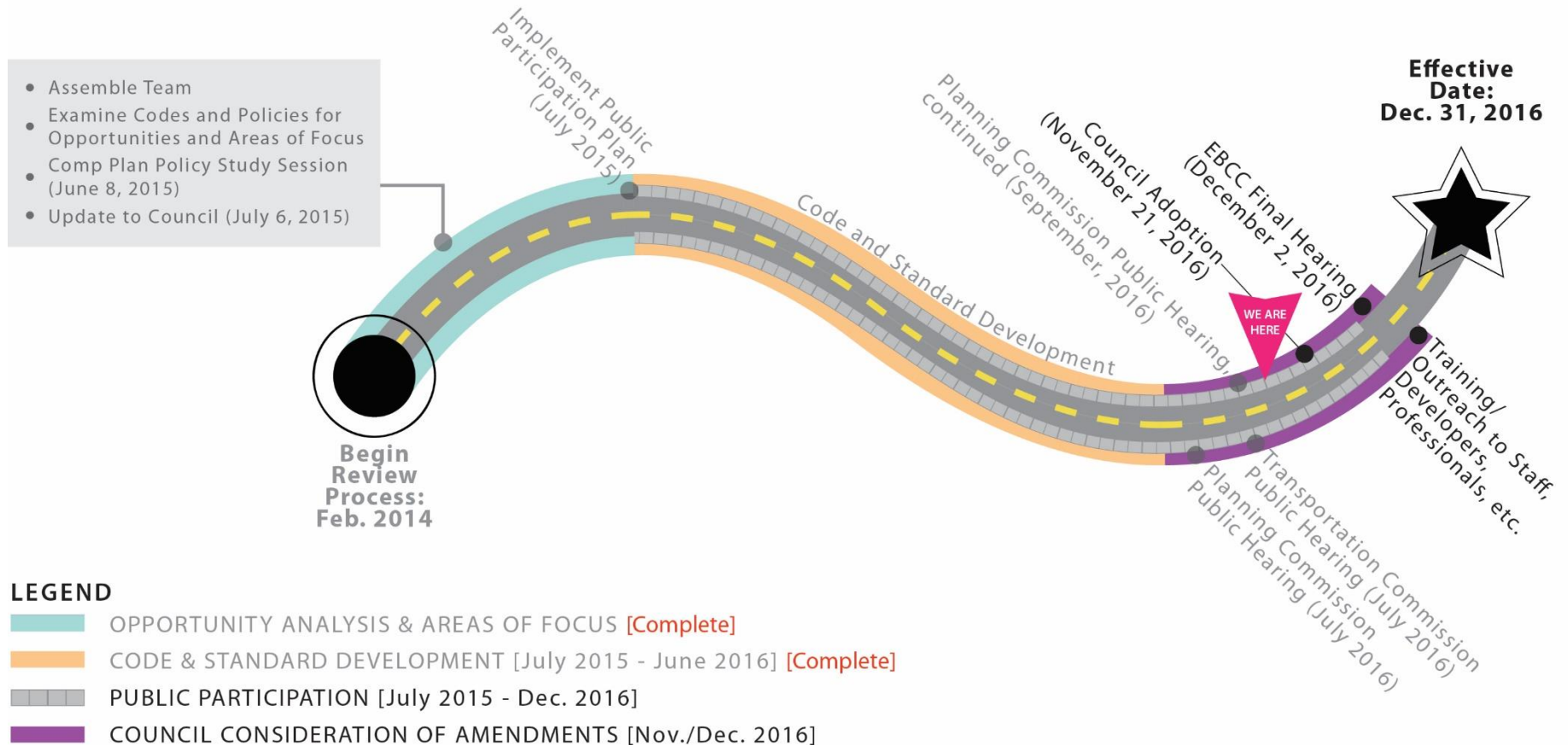


# Next Steps

## Meetings & Hearings

- \* November 14<sup>th</sup> – Study Session (if desired)
- \* November 21<sup>st</sup> – Adopt Ordinances or Study Session
- \* November 28<sup>th</sup> – Adopt Ordinances (alternate date)
- \* December 6<sup>th</sup> – East Bellevue Community Council Hearing
- \* March 2017 – Annual Compliance Report due to Ecology

# Next Steps



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# Next Steps

LID Principles Project website:

<https://www.bellevuewa.gov/low-impact-development.htm>



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# Questions?