



CITY OF KIRKLAND
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MEMORANDUM

To: Planning Commission and Houghton Community Council

From: David Barnes, Green Building Team Lead and Project Manager
Stacey Rush, Senior Surface Water Engineer
Paul Stewart, AICP, Deputy Planning Director

Date: January 4, 2012

Subject: Green Codes Project, Phase I – PUBLIC HEARING
FILE ZON10-00031

RECOMMENDATION

Hold a public hearing on the Phase I Green Codes Project amendments to the Kirkland Zoning Code (KZC) and Kirkland Municipal Code (KMC). After considering the proposed amendments, and public comment, make a recommendation to the City Council for their consideration.

The Houghton Community Council (HCC) will meet on January 23, 2012 to consider their recommendation and the Planning Commission (PC) will meet on February 9, 2012 for their recommendation. The recommendations from both the HCC and PC will be reviewed by the City Council at their March 6, 2012 regular meeting.

BACKGROUND DISCUSSION

In January 2011, the City Council was briefed on the Green Codes Project. The purposes of this project are to encourage Low Impact Development (LID), promote sustainable site development and consider methods to make public and private facilities more energy efficient which in turn would support responsible use of natural resources. The primary intent is to provide flexible development standards and incentives to encourage the use of LID techniques and energy efficient development.

The City policies that support the Green Codes project were identified in the Natural Resources Management Plan, Comprehensive Plan and Kirkland's Climate Protection Action Plan (APR 2009). A Phase One- Sustainable Actions Matrix (see Attachment 1) was provided to the City Council that identified City Council policy items for their consideration as separate items for the Planning Commission and Houghton Community Council to review. At the conclusion of this meeting, staff was directed by the City Council to pursue the Green Codes Project.

The Planning Commission and the Houghton Community Council (HCC) conducted total of six study sessions each and one jointly held study session, that spanned a period from January 2011 to November 2011, to discuss the Planning Commission review items. The meeting packets for those meetings are available on the City's Planning Department website: <http://www.ci.kirkland.wa.us/department/Planning.htm>. Based on feedback from these study

sessions, staff has prepared draft code language for review and discussion at the public hearing.

The HCC and Planning Commission were in agreement on the majority of the issues and proposed code amendments. There were only two topics on which the HCC differed from Planning Commission recommendations and these are identified later in the staff memo. Audio from the joint meeting can be heard at the Houghton Community Council webpage (audio link is located just above the start of the agenda and memo listing). Select the November 28th 2011 meeting to hear the discussion.

<http://www.ci.kirkland.wa.us/depart/Planning/HCC.htm>

The Green Code amendments affect the following Zoning and Municipal Code chapters:

Chapters 5, 18, 95, 105, 110, 114(new chapter), and 115 of the Zoning Code and Chapters 15 and 22 of the Municipal Code.

The following sections of this memo will outline those changes which will correspond with attachments of the revised or new draft code. Revised code language for pre-existing code will be shown by striking out the old language and underlining the new language. For entirely new chapters such as KZC 114 or new sections such as KZC 115.33, the new language is shown in black, but the most current versions of the language will show a strikethrough for the revised language and the new language will be shown in red and underlined. All draft code language has been revised to show the most current version based on previous meetings and discussions with the Planning Commission and the Houghton Community Council.

PROPOSED CODE AMENDMENTS

The proposed code amendments fall under three broad categories:

- Stormwater and Landscaping
- Green Infrastructure
- Energy Efficiency and Independence

A. Stormwater and Landscaping

Stormwater runoff when uncontrolled from impervious surfaces such as roofs and paved surfaces can lead to channel and soil erosion. The increasing area of impervious surfaces in Kirkland due to urban development contributes to the increased volume and velocity of polluted runoff. This draft code language in

this section considers changes to how land is developed and improvements are made on a subdivision level with a new chapter 114, Low Impact Development and also how lot coverage is calculated in chapter 115. In addition, there are changes proposed to Chapters 95, 105 and 110 that eliminate barriers in the Zoning Code to allow and encourage applicants to use more low impact development techniques on their projects and properties.

1. NEW Chapter 114 – Low Impact Development

Low Impact Development (LID) project draft code described in KZC 114 (Attachment 2) is a voluntary development option that requires the use of LID stormwater facilities such as rain gardens, vegetated swales and permeable surfaces to infiltrate stormwater on the project site. Lot size flexibility and clustering is an incentive that allows lots to be 50% smaller than the underlying zones minimum lot size.

However, the allowed reductions in lot size provide a mechanism for common open space within the project site. The requirement for common open space is designed to work hand in hand with the LID facilities as LID needs additional land to function effectively. Another benefit of the required common open space is an opportunity to retain mature vegetation and to accommodate passive uses by the residents of the development.

Staff retained the services of Makers, an urban planning and architectural services firm, to produce some examples of how the proposed LID chapter could influence the development of a traditional 4-lot short plat and a larger 25-lot subdivision. Attachment 3 shows the traditional site plan and then a new site plan and an axonometric drawing (bird's eye view) of the same site after applying the proposed code from Chapter 114. These drawings are only representations of the flexibility of the proposed code for illustrative purposes.

a. KZC 114.05 - User Guide (see Attachment 2)

This section is provided each time a new chapter is written in the Zoning Code. It briefly tells the reader about the chapter and why they might want to read the entire chapter.

b. KZC 114.10 – Voluntary Provisions and Intent

This section explains that this code is an alternative to the typical development pattern. More detail is provided to explain LID, why it is important to the City and the purpose of the chapter.

c. KZC 114.15 – Parameters for Low Impact Development

The actual specifications for the program are laid out in a matrix format which is easier to read than text. Each parameter is shown below and explained in more detail.

Permitted Housing Types - The use of Detached Dwelling Units and Accessory Dwelling units are allowed. A recent addition has been to allow attached two and three unit homes (2/3 unit home) with certain design guidelines similar to those allowed in KZC 113. A 2/3 unit home is not proposed to allow an ADU within it or attached to it.

Discussion and Direction:

The Planning Commission (PC) and the Houghton Community Council (HCC) both expressed interest in including 2/3 unit homes as an option. They both felt that there would need to be some standards regulating the appearance of the 2/3 unit homes in relation to predominantly detached dwelling unit environment. In addition, the PC and the HCC both suggested higher review process (IIB) in order to evaluate the inclusion of a 2/3 unit home in an LID project.

It was agreed that the design requirements that were previously created for 2/3 homes in cottage projects could be used. Staff recommended and the PC and HCC agreed that a process I review (Planning Director Decision) could be used if one 2/3 unit home was proposed. If more than one 2/3 unit home was proposed a Process IIA would be required (Hearing Examiner Decision).

Minimum Lot Size – Lot sizes can be reduced to 50% of the underlying Zone. For example, in an RS 7.2 zone where 7,200 square feet is the minimum lot size, an LID project can have lots as small as 3,600 square feet.

Maximum Density – This parameter is new and makes it clear that density is not being increased for LID projects and that the applicant should refer to the underlying zones use chart to determine maximum density. However, a bonus density was discussed and is being considered by the PC and HCC as noted below.

Discussion and Direction:

A density bonus was proposed by Staff earlier in the process. Both the PC and the HCC felt that there were adequate incentives being given without adding a density bonus. Staff held a meeting with local developers in November 2011 and at that meeting a bonus density of 10% was suggested as a pivotal incentive to encourage developers to use the LID project code. Both the PC and the HCC agreed to consider the bonus density option and have it available for the public hearing.

In this option a bonus density of 10% is proposed. However, if a fraction of .5 or higher is obtained then it would be rounded to the next highest whole number for units. For example, if a pre-bonus density of 5 lots was possible then bonus density would be calculated as follows: 5 lots X 1.1 = 5.5, round to 6 lots or units.

Low Impact Development – The requirement for using LID facilities and techniques is explained and refers to Public Works Stormwater development regulations.

Locations – The Use Zones where this chapter is allowed is shown along with the Use Zones or overlays where this chapter does not apply. Staff determined that that this chapter is not compatible with the RSA 1 Use Zone as clustered housing and open space is already a requirement of that zone. The RS 35 and RSX Use Zones in the Bridal Trails neighborhood do not work well with this chapter as the properties are meant to be larger for equestrian uses and in some cases may not be made smaller than 35,000 square feet.

The Holmes Point Overlay is also excluded as the lot coverage requirements in that portion of the City are

very restrictive and much lower than proposed under this chapter. The Shoreline jurisdiction as described in KZC 83 does not allow new lots to be made smaller than the minimum lot size, or units per acre to be increased and therefore would not work with the provisions of Chapter 114.

Review Process – This parameter says that Staff will use the short plat (9 lots or less) or the Subdivision (more than 9 lots) process as outlined in the Municipal Code. This means that the time line for review of an LID project will follow the land use decision timeline. Staff intends for the decision on the short plat or subdivision to be made by the Planning Director or Hearing Examiner. The LID project approval is separate but will be reviewed concurrently with the land use decision.

Discussion and Direction: There is agreement for the review processes if a short plat or subdivision is used in conjunction with the LID project code. If a condominium project is used with the LID project code then a Process I timeline will be applicable (see condominium ownership section for additional information).

Parking Requirements – The standards for parking follow current development regulations for the types of housing allowed in this chapter. However, some new provisions are allowed such as reduction in parking pad width, tandem parking and shared garages. These parameters are designed to reduce impervious surfaces.

Discussion and Direction: The PC had previously suggested that parking pads in front of garages should count as a parking space. This measure was suggested because a parking pad serves as a parking stall. Both the PC and the HCC agreed on parking requirements for Detached Dwelling Units and Accessory Dwelling units. However, there was considerable time spent discussing the parking requirements for multi/Unit homes. For multi-unit homes, the PC suggested the following calculation: Multiply number of units X 1.5 and round up to next whole number to determine

parking requirements. For example, a 2 unit home would require 3 parking spaces: $2 \times 1.5 = 3$. And a 3 unit home would require 4.5 parking stalls: $3 \times 1.5 = 4.5$ which would round up to 5 stalls. In addition, KZC 105.20 can require up to .5 guest parking stalls per detached dwelling unit or multi-family unit.

Ownership Structure – This chapter is intended to work with a subdivision that will produce individual lots that can be sold, but that have common ownership and maintenance of LID facilities and common open space.

Discussion and Direction: Staff has questioned whether a condominium ownership structure could work with the LID project code. The PC, HCC and developers felt that it is an option that should be allowed. Staff expressed some concern for keeping track of lot coverage, floor area ratio (F.A.R.) and setbacks. After further discussion, the PC and HCC recommended allowing a condominium ownership structure along with a Process I review. The Process I review is necessary as a condominium does not need to go through the short plat or subdivision process. After further internal discussion, Staff believes that the condominium ownership structure can work, but will need to have a site plan recorded with the LID project to memorialize the lot coverage and floor area ratio percentages and to ensure that internal setbacks meet minimum building/ fire codes and access requirements are met.

Minimum Required Yards (Exterior Property lines) – The LID project is intended to appear comparable to the surrounding neighborhood and therefore requires similar setbacks for exterior project property lines. Most all residential Zones require 20 foot front yards and 10 foot rear yards.

Minimum Required Yards (Interior Property lines) – The lots within LID project boundaries have reduced setbacks internally to reduce pervious surfaces and allow buildings to cluster closer together and share common infrastructure such as driveways and LID stormwater facilities such as rain gardens. 2/3 Unit homes may have zero lot lines between units.

Discussion and Direction: There are several issues that have come up regarding internal property lines and setbacks. For example, if a condominium structure is chosen, there are not any platted lot lines from which to take measurements. In addition, developers asked if internal property lines could be reduced to less than 10 feet if the rear yard setback of the parcel was increased by the same amount of the front yard reduction. The Developer's rationale is that consumers are not as concerned by a small front yard, but are still requesting back yards to be larger. After further discussion with the PC and the HCC, staff has provided an option for reducing front property line setbacks and has developed a technique for measuring setbacks for structures that does not have internal property lines, such as a condominium development.

Front Porches – This provision allows front entry porches to be within the reduced front yard. The Zoning Code currently allows front entry porches to lie within the front yard setback.

Discussion and Direction: The front yard setback for porches as originally proposed would allow a porch to be built within 5 feet from a front property line. Developers would like the option to allow the front porch to be built as close as possible to the front property line. After further discussion with the PC and HCC, the draft language will remain as originally proposed. However, note that there is an option provided to reduce the 10 foot setback for structures (not including porches) in the section above (Minimum Required Yards – Interior property lines).

Garage Setbacks – The Zoning Code currently requires that a garage be setback an additional 8 feet from the front façade of a dwelling unit, so that the garage is not the most prominent portion of a dwelling unit. This parameter acknowledges the intent of the Zoning Code and that a driveway depth of 18 feet is the minimum necessary to allow for parking a car outside of a garage and not have it encroach into the sidewalk or restrict vehicular access.

Discussion and Direction: The draft code is acceptable to the PC and HCC.

Lot Coverage – The maximum impervious surfaces allowed is equal to 50% of the underlying zone's minimum lot size. For example, in a zone where 7,200 square feet is the minimum lot size, the maximum lot coverage for the individual lot is 3,600 square feet. For some of the lots that are smaller than the minimum lot size (as allowed in the minimum lot size parameter), the maximum impervious percentage could be higher than 50% and as much as 100% of the reduced lot size.

Discussion and Direction: Staff originally proposed that lot coverage would be calculated separately for each individual lot. However, after the last meeting with the PC and HCC, it was suggested that lot coverage should be averaged over the entire development site. In addition, developers mentioned that they would like the flexibility to average the lot coverage over an entire site and that it could lead to providing more common open space. Staff has revised the draft code to follow this direction from the PC and HCC.

Common Open Space – This parameter is intended to show the amount of open space required. It also defines the amount of encroachment into that open space and tells the reader how the open space will be protected in the future.

Discussion and Direction: The PC and HCC discussed the merits of requiring more common open space versus less. The result was a percentage that supports the Low Impact Development facilities and the overall functioning of the site. Also, both the PC and HCC felt there should be some provisions for using the space so that it will be maintained, but that it should have low impact surfaces within it and have limited encroachments.

Maximum Floor Area – The maximum floor area is 50% of the underlying Zones minimum lot size. This provision works similar to the lot coverage parameter. In a zone where 7,200 square feet is the minimum, the maximum floor area allowed on a lot is 3,600 square feet. This means that if a lot size was reduced under the minimum lot size parameters shown above, the Maximum Floor Area ratio could exceed 50%. This allows applicants to have the same amount of floor area as under the current regulations and provides some incentive to

create smaller lot sizes and put the difference toward the Open Space requirement.

Discussion and Direction: The PC would like to have the Maximum Floor Area calculated separately for each platted lot. Developers would like the Maximum Floor Area averaged over the entire site. The HCC does not support having Maximum Floor Area regulations for this draft code. Staff will keep the regulations as shown with a footnote that the Maximum Floor Area provisions are not required in the disapproval jurisdiction of Houghton.

d. KZC 114.20 – Design Standards and Guidelines

Required Low Impact Development Facilities - This section describes what the requirements are for an LID project and standards under which they should be designed.

Discussion and Direction: The discussion in this section centered on where LID or conventional stormwater facilities should be allowed. Developers thought that any type of stormwater facilities should be allowed in the Common Open Space area. Their logic was that more land could be devoted to Common Open Space if the stormwater facilities could also be located there. Questions were also raised about tree removal for the purposes of installing LID or conventional stormwater facilities. The resolution proposed by the PC and HCC is to clarify in the code where the stormwater facilities are allowed and under which conditions can trees be removed for their placement. The allowance and conditions for approval of the location of Stormwater facilities is also referenced in the Required Open Space section 114.20.2.

Required Common Open Space – Common Open Space (COS) is required primarily because it helps the LID surface water facilities work more effectively. The exact percentage of COS should be in 35 - 65% range to support a Low Impact Development project. In addition, a common open space area that includes a mix of native trees and vegetation is necessary to help retain water and promote on site infiltration.

Discussion and Direction: The key discussion points for Common Open Space (COS) have focused on the following:

1. Percentage of COS
2. Allowance of shelters or recreational structures in COS
3. Providing a native vegetation plan and standards for COS's that is devoid of vegetation.

Much of the discussion about the percentage of COS considered if 35% was enough and what a LID project needs to be considered successful. Developers said their preference was to scale the COS with the size of the development. However, that is problematic and in some cases could produce less COS than is desired. The Planning Commission ultimately suggested 40% COS because they also thought that there would be encroachments into that space and the HCC agreed.

The PC proposed to allow encroachments such as paths, shelters or other recreational structures calculated by multiplying the COS area by 1%. The HCC agreed. Both the PC and HCC agreed that native species in Common Open Space was preferable and COS devoid of native vegetation needs some standards in the code to produce the quality of COS that works effectively with a Low Impact Development project.

- e. KZC 114.25 – Review Process

This section explains the approval process for an LID project and tells the reader that the LID project does not necessarily need a land use permit, but is reviewed concurrently with a short plat or subdivision land use decision. The lapse of approval criteria and the ability to allow minor modifications to this chapter are also provided in this section.

- f. KZC 114.30 – Additional Standards

This section explains that the approval of an LID project under this chapter does not grant approval for a short plat or subdivision or a condominium project. It also tells the reader which portions of the code should be followed when there is conflict.

- g. KZC 114.35 - Required Application Documentation

This section shows which additional documents are required with a LID project.

h. KMC 22.28.042 – Lots – Low Impact Development

This new Municipal Code section was created to allow the lots sizes to be reduced for LID projects. It allows the lot sizes for an LID project to be reduced to 50% of the underlying zone in the new RSA zones. This is an important amendment as lots in the RSA Zones are not defined by lot size, but rather dwelling units per acre.

i. KZC 18.10 – RSA Use Zone Special Regulations

A portion of the RSA Use Zone special regulations were amended to allow lots to be smaller than previously allowed. A **discussion** about these minimums was necessary to determine if lot sizes should be reduced to as small as 1,900 square feet in the RSA8 Use Zone.

Discussion and Direction: After further examination, the PC requested that the RSA8 Use Zone be removed from consideration for the code amendment because the lot sizes would be as small as 1,900 square feet after being reduced in size. The RSA8 Zone does not exist in the HCC's jurisdiction.

j. KZC 5.10.490.5 Low Impact Development and KZC 5.10.610 Open Space Definitions.

2. KZC 115.90 – Calculating Lot Coverage

The amendments proposed in KZC 115.90 specifically relate to how lot coverage is calculated and what types of materials are permitted to be counted as less than 100% coverage. Prior to these amendments, gravel and brick materials were the only materials in the Zoning Code counted as 50% instead of 100% lot coverage. The Department of Ecology has studied different types of material and provided data on their permeability as shown in the adopted 2009 King County Stormwater Design Manual. These materials have been listed in the draft Zoning Code and Staff believes they provide a more scientific basis for the types of pervious materials the Zoning Code allows to count as less than 100% lot coverage (see Attachment 4 for draft Code).

Discussion and Direction: The 2009 King County Stormwater Design Manual has provided the basis for materials that will count as less than 100% lot coverage. Both the PC and HCC agreed on this. However, the current version of KZC 115.90 allowed an outright exemption for

swimming pools and does not count them in the lot coverage calculation. Staff suggested removing this exemption and the Planning Commission agreed. **The HCC did not agree with the removal of this exemption.**

Staff suggested an option for Houghton that provided the exemption as long as the pool had a pool cover that drained into the pool and did not promote runoff. The HCC agreed to pursue this option. This means that swimming pools in Houghton will not be exempt from lot coverage calculations unless a self-draining swimming pool cover that drains into the pool is used. The specifications for the self-draining pool cover must be shown on the building permit plan and inspected by and approved by a Planning official.

3. **KZC 95.32 – Incentives and Variations to Development Standards**
This section allows reductions to setback standards for retention of moderate value trees (see Attachment 5)
4. **KZC 95.44 – Internal Parking Lot Landscaping Requirements**
This section puts examples of natural drainage solutions into the Zoning Code and also provides for gaps in the vertical curbing of parking islands to help control stormwater runoff (see Attachment 5).
5. **KZC 95.50 - Installation Standards for Required Plantings**
This section provides specifications for amending soil to help with infiltration and to promote healthy vegetation (see Attachment 5)
6. **KZC 105.10 – Vehicular Access Easement or Tract Standards**
Pervious materials have not been allowed previously in driveways, private roads and parking lots as Zoning Code has required that these surfaces be comparable to the surface materials of the right-of-way (see Attachment 6).
7. **KZC 105. 77 – Parking Area Design – Curbing**
This section allows gaps in vertical curbing located between parking areas and driveways which helps control stormwater runoff (see Attachment 6).
8. **KZC 105.100 – Parking Area Design – Surface Materials**
Pervious surfaces were not previously allowed materials for parking areas and driveway and this permits the use of pervious materials (see Attachment 6).
9. **KZC 110.25 – Required Public Improvements**

Applicants must currently pave the outward 20 feet from the curb adjacent to their property when redeveloping it. Pervious materials will now be allowed in this situation, but not in the driving portion of the road as pervious materials for roadways is not permitted (see Attachment 7).

10. **KZC 110.27 – Alleys** (see Attachment 7)
Pervious pavement in alleys will be considered by Public Works Director on a case by case basis.
11. **KMC 15.52.060 – Design and Construction standards and requirements** It is not always the best management practice to allow stormwater structures in the right-of- way for various reasons. However, this provision can allow privately maintained stormwater structures on a case by case basis with approval from the Public Works Director (see attachment 8).

B. Energy Efficiency and Independence

Certain barriers to increase energy efficiency for structures in Kirkland that can be removed by amending Chapters 5 and 115 in the Zoning Code (see Attachment 9). Direction was previously given by the Planning Commission on [June 9, 2011](#) for these code amendments and the Houghton Community Council on [June 27, 2011](#).

1. **KZC 115.60.2.a.4 and KZC 115.60.2.b.4, Height Regulations-Exception** – This section allows exemptions to the height regulations for solar panels on sloped and flat roofs. Solar panels installed in our region function most efficiently facing south and at an angle of 30-32 degrees. It is much easier to achieve this angle on sloped roofs mounted six inches above the roof to which they are attached. Flat roofs need a greater allowance to the height regulations to achieve the same angle of 30-32 degrees. Therefore, the height allowance for flat roofs has been proposed at 20 inches maximum above the height limit of the zone in which they are installed.

Discussion: The PC found staff's recommendation of a solar panel height exemption of six inches for sloped roofs and twenty inches for flat roofs to be acceptable.

Some concern was expressed by a HCC member that the 20 inch height exception for solar panels on flat roofs would be too much of an allowance, promoted visual pollution and view blockage and that there

were panels available in the market place that were lower profile and therefore recommended a 8.37 inch height allowance in low density residential areas for solar panel installation on flat roofs. In addition, a second recommendation was made about limiting the solar panel height exemption on flat roofs in multi-family zones to a height not taller than the roof's parapet. The narrative dated November 28, 2012 and related documentation is provided as Attachment 10a. The HCC requested that some addition research be done to ensure that by using the lower profile solar panels that a consumer would be forced to purchase more expensive panels and to have a choice of only one solar panel manufacturer to meet the 8.37" height allowance. The HCC member has responded to this request and a new narrative dated January 4, 2012 and documentation is provided as Attachment 10b.

Staff research shows that the 20 inch height allowance that is provided for solar panels on flat roofs is reasonable from a standpoint of solar panel efficiency and for economic reasons. Staff documentation is provided as Attachment 11.

Direction: The public hearing will provide an opportunity to discuss these issues and staff would like direction on this proposed code amendment.

2. **KZC 5.10.881.1 - Solar Panel Definition**
3. **KZC 5.10.817 – Rooftop Appurtenance Definition**
4. **KZC 115.115.3.q – Required Yards**
This section allows existing buildings to encroach into required yards for the purposes increasing the wall thickness and thus providing more insulation to the structure's walls.

C. Green Infrastructure

Electric Vehicle Infrastructure (EVI) is starting to be built and the State of Washington has required that its Cities make provisions to allow this form of alternative transportation the capabilities to expand. A new section in the Zoning Code (115.33) has been added to address the EVI requirements and along with that new definitions (Chapter 5) are proposed. In addition, there are provisions that can be added to the Zoning Code to promote other forms of transportation such as bicycles, alternative fuel vehicles and preferential parking. Direction was previously given by the Planning Commission on [June 9, 2011](#) and the Houghton Community Council on [June 27, 2011](#) for these code amendments.

1. **New Section KZC 115.33 (EVI)**

The required allowances are shown to permit Electric Vehicles and the required infrastructure (see Attachment 12)

2. Chapter 5 - Definitions

New terms related to EVI are provided as recommended by the State of Washington (see Attachment 12).

3. New Section KZC 105.67 – Parking Area Design – Preferential Parking Allowance

Kirkland's Parking regulations have been amended to encourage priority parking for hybrid, low emission or fuel efficient vehicles (see Attachment 12).

4. New Definition 5.10.682 – Preferential Parking (see Attachment 12)

5. New Section KZC 105.34 – Covered Bicycle Storage

Code language has been provided to encourage both covered bicycle storage and provide reductions in required parking which recognizes bicycle commuting as a valued transportation option (see Attachment 13).

6. New Definition KZC 5.10.177 – Covered Bicycle Storage

Covered bicycle storage is defined in Attachment 13.

PUBLIC OUTREACH

With the Green Codes Project, stakeholders were either informed or asked for input utilizing the following methods:

- 2011/2012 Green Codes Project – Parties of Record list
- Technical Advisory Board
- Developer Meeting
- Kirkland Alliance of Neighborhood Presentation
- City Website
- Green E-List Serv
- Neighborhood list-serv
- Master Builders of King and Snohomish Counties
- Built Green of King/Snohomish County

- Kirkland Developer's Partnership list-serv

Technical Advisory Board Meetings (TAB):

Staff invited various development professionals (landscape architects, a stormwater engineer and several architects) to attend and contribute their expertise at three meetings held at City Hall. The meetings were meant to obtain input from the perspective of the various professional to help staff identify opportunities for Code changes. Over the course of three meetings and engaging discussions during February and March 2011, staff was able to utilize ideas from the TAB meeting to develop the first iteration of proposed Code Changes. Attachment 14 contains a summary of the topics and questions raised by those in attendance and the resulting document, TAB Draft Alternatives.

A presentation about the Green Codes project and its intent was made to the Kirkland Alliance of Neighborhoods on November 9th 2011. The presentation was well received and the neighborhood attendees were very supportive of the approach.

On November 17th 2011, staff convened local developers and an engineering firm to review and brainstorm about a major project component, a new LID projects chapter. The meeting was very effective in giving staff feedback on what developers liked and did not like and which incentives were the most attractive. The developer's comments were passed on to the Planning Commission and the Houghton Community Council and several new ideas emerged (see Discussion section of [Staff Memo for Houghton Community Council meeting dated November 28th 2011](#)).

Staff has also provided the draft code language for the new LID project chapter 114 to the Master Builders of King and Snohomish Counties for their review and comment.

KZC 135.25 CRITERIA FOR AMENDING THE TEXT OF THE ZONING CODE

KZC 135.25 establishes the criteria by which changes to the Zoning Code text must be evaluated. These criteria and the relationship of the proposal to them are as follows:

1. *The proposed amendment is consistent with the applicable provisions of the Comprehensive Plan*

The proposed amendments are consistent with the Comprehensive Plan. The proposed amendments are intended to incentivize and remove barriers to sustainable actions that reduce stormwater runoff, increase energy efficiency in both public and private structures, promote Electric Vehicle Infrastructure and the utilization of renewable energy and do not fundamentally change the City's policies. The proposed amendments are consistent with the following goals/policies of the Comprehensive Plan, Chapter V Natural Environment:

- Goal NE-1: Protect natural systems and features from the potentially negative impacts of human activities, including, but not limited to, land development.
- Goal NE-1.5: The City should educate, promote, support incentives and provide resources to encourage citizens, businesses, builders and the development community to adopt sustainable building practices.
- Goal NE-3: Manage the natural and built environments to protect and, where possible, to enhance and restore vegetation.
- Policy NE-3.2: Preserve healthy mature native vegetation whenever feasible.

- Policy NE-3.3: Ensure that regulations, incentives, and programs maximize the potential benefits of landscaping.

2. *The proposed amendment bears a substantial relation to public health, safety, or welfare*

The proposed amendments bear a substantial relation to public health, safety, and welfare. As described in the introduction to the new chapter KZC 114(Low Impact Development), new section 115.33 (Electric Vehicle Infrastructure), KZC Chapter 95 and Comprehensive Plan, Chapter V Natural Environment, sustainable actions provide a number of benefits which include environmental, aesthetic, and economic benefits which affect the public as a whole. The amendments further promote sustainable actions and regulations which are based on the goals and policies of the Comprehensive Plan.

3. *The proposed amendment is in the best interest of the residents of Kirkland*

The proposed amendments are in the best interest to the residents of Kirkland. The amendments seek to promote low impact development, provide Electric Vehicle Infrastructure provisions, and increase energy efficiency in structures and the production of renewable energy. The amendments were created based on balancing the needs of various stakeholder groups and the policies of the Comprehensive Plan. The result of the changes should create more opportunities for incorporating sustainable techniques and actions for both the residential and development community.

ENVIRONMENTAL REVIEW

A Draft and Final Environmental Impact Statement (EIS) on the City's Comprehensive Plan 10-year Update was published in 2004. The EIS addressed the 2004 Comprehensive Plan, Zoning Code and Zoning Map updates required by the Washington State Growth Management Act (GMA). An EIS Addendum was issued on January 4, 2012 for the Green Codes project (see Attachment 15). According to SEPA rules, an EIS addendum provides additional analysis and/or information about a proposal or alternatives where their significant environmental impacts have been disclosed and identified in a previous environmental document. An addendum is appropriate when the impacts of the new proposal are the same general types as those identified in the prior document, and when the new analysis does not substantially change the analysis of significant impacts and alternatives in the prior environmental document. The EIS Addendum fulfills the environmental requirements for the proposed changes.

Project Schedule

The proposed schedule for the remainder of this code amendment process is shown on Attachment 16.

ATTACHMENTS

1. Phase One - Sustainable Actions Matrix
2. New Low Impact Development (LID) Chapter 114, related draft code for KZC 5.490.5, KMC 22.28.042 and KMC 18.10
3. LID Project Drawings produced by Makers
4. Draft Code for KZC 115.90 – Calculating Lot Coverage
5. Draft Code for KZC 95.32, 95.44, 95.50
6. Draft Code for KZC 105.10, 105.77, 105.100
7. Draft Code for KZC 110.25 and KZC 110.27

8. Draft Code for KMC 15.52.060
9. Draft Code for 115.60.2.a.4, KZC 115.60.2.b.4, KZC 5.10.881.1, KZC 5.10.817 and KZC 115.115.3.q
10. HCC member Narrative and documentation for solar panels dated November 28, 2011 and January 4, 2012.
11. Staff documentation for solar panel allowance for flat roofs
12. Draft Code for new section KZC 115.33 (EVI), related chapter 5 definitions and KZC 105.67
13. Draft Code for new section 105.34 – Covered Bicycle Storage and KZC 5.10.177
14. Technical Advisory Board Alternatives
15. SEPA EIS Addendum issued January 4, 2012
16. Project Schedule

PHASE ONE - SUSTAINABLE ACTIONS			
CITY COUNCIL REVIEW			
		PROJECT TEAM	REQUIRED ACTION
A SUSTAINABLE "GREEN" INFRASTRUCTURE			
1	LEED Gold certification for all new facilities and LEED Silver for all renovated facilities	Green Building Team (GBT)	Policy Decision/Ordinance
	Create ordinance requiring all new City facilities to achieve a LEED Gold certification and all renovated facilities to meet LEED Silver certification and/ or meet Energy Star requirements. Currently, policy is to achieve LEED Certification, but the level is not defined.	Scott Guter/Green Building Intern	
2	Evaluate existing policies for City Capital Improvement Roads Projects and consider comparing to Green Roads program or similar rating program.	GBT, CIP Department	
	Currently, best management practices are used and certification programs are being tested for possible use as a standard.		
3	Develop measurable goals for the Green Building Section of the Climate Protection Action Plan with an emphasis on GHG reduction.	Green Building Team	Policy Decision
	Revise Green Building section of the Climate Protection Action Plan to include new Green Building Program goals. The Green Building Program will establish goals for GHG reduction through updated program incentives. Possible program amendments to include a deconstruction v.s.demolition program.		
4	Require all project applicants to complete a Sustainability and/or Carbon Footprint checklist with building permit applications.	GBT	Policy Decision
	Require all building permit applicants to complete a Sustainability Feasibility Checklist (Pierce Co), or Carbon Calculator Checklist (King Co) prior to submitting building permit. New SEPA rules may require this.		
B POTABLE WATER CONSERVATION			
1	Develop tools to help manage gray water and its reuse by creating an educational program	GBT	Educational Program
C STORMWATER & LANDSCAPING			
1	Adopt the the City of Seattle's "Green Factor" list after comparing with current landscaping standards.	GBT	Policy Decision/Ordinance
	Need to compare with existing landscape standards and note differences. Green Factor will require additional City staff time in review and inspection.		
2	Modify Surface Water Utility Rate to give discounts for storm Low Impact Development (LID) installed on site	GBT, Jenny, Rob	Policy Decision
	Consider a discounted rate for new single-family, Multi-family and Commercial development based on actual impervious area. We would need to increase basic rate, and require verification of discount eligibility.		
3	Provide a rebate ("Treebate") to residential homeowners to encourage them to plant trees on their private property.	GT, UF	Policy Decision/Program

PHASE ONE - SUSTAINABLE ACTIONS, CONTINUED			
PLANNING COMMISSION REVIEW			
		PROJECT TEAM	REQUIRED ACTION
A	SUSTAINABLE "GREEN" INFRASTRUCTURE		
1	Modify design regulations to incorporate bicycle storage and low-emission & fuel-efficient vehicle parking.	Green Building Team (GBT)	Zoning Code Amendment
	Increase ratio of bicycle racks to required parking stalls. Require a portion of parking areas to include stalls for low emission & fuel efficient vehicles (much like requirements for ADA stalls). LEED Req. for commercial & multi-family.		
2	Create regulations for Electric Vehicle Infrastructure (EVI) in Use Zones as required by WA State Law	GBT	Zoning Code Amendment
	Amend Zoning Code Chapter 115 for allowed zones and chapter 5 for definitions for EVI.		
B	STORMWATER & LANDSCAPING		
1	Promote LID through lot coverage/open space standards. Incorporate vegetated roof provisions into KZC Chapter 5 (definitions) and KZC 115.90 (lot coverage exemptions).	GBT, UF, PW and PCD	Zoning Code Amendment
	The issue is that most storm LID uses more open space than traditional sw structures (like dispersion and rain gardens vs. underground pipes). Possibly reduce standard lot coverage from 50% to 40% (or other), but allow 50% if the applicant uses stormwater LID. Goal is to keep more existing trees and existing landscape. Trees and existing landscape detain more runoff. Reducing allowable lot coverage to 40% would help keep some existing landscape. Use KC definition for compatibility with KMC standards. Example: Reduce lot coverage from 50 to 40%, but then allow back up to 50% if structure has vegetated roof.		
2	Provide incentives for single family use regulations to encourage clustered housing (like King County).	GBT, Jeremy	Zoning /Municipal Code Amendment
	Consider modifying subdivision regulations removing minimum lot size requirements and replacing with units per acre.		
3	Revise standards to encourage pervious surfaces for driveways, private roads and parking lots.	GBT, Jenny, Rob	Zoning Code Amendment
	Modular grid pavement, grassed modular grid pavement, or ribbon grass strips for residential driveways or private streets - incorporate into KZC Chapter 105? Recently added LID section to 2010 Pre-Approved Plans, with rain gardens and porous concrete sidewalks. Could be expanded to include other pervious pavement, bioinfiltration boxes, etc. Verify if other standards should be updated.		
4	Revise landscape regulations to incorporate natural drainage structures and native plants requirements for commercial and multi-family sites	GBT	Zoning Code Amendment
	Incorporate natural drainage landscapes (bioswales, rain gardens, and bioengineered planting strips) within parking lots in KZC Chapter 105 and 95.		
5	Incorporate soil amendment provisions into KZC Chapter 95	GBT, Jenny, Rob	Zoning Code Amendment
	Zoning code requires amended soil for tree installation, but does not define amended soil. Apply Ecology definition of amended soil for consistency with stormwater KMC.		
C	ENERGY EFFICIENCY & INDEPENDENCE		
1	Create regulations and incentives for small scale wind, photovoltaic, solar hot water, and passive solar design.	GBT	Zoning Code Amendment
	1. Possible incentives: height exemption for solar equipment installations 2. Add code language to prevent development from impeding the solar access of neighboring properties. 3. Allow height and setback encroachments for small scale wind energy systems (KZC 115.60 and 115.115)		
	Allow building envelopes to encroach into required setback yards for exterior rigid insulation	GBT	Zoning Code Amendment
2	Add language to allow reasonable encroachment into required yards to exceed energy code in new construction or to retro fit existing structure. Consider using Passive House concepts as a guideline.		

Chapter 114 – LOW IMPACT DEVELOPMENT

Sections:

- 114.05 User Guide
- 114.10 Voluntary Provisions and Intent
- 114.15 Parameters for Low Impact Development
- 114.20 Design Standards and Guidelines
- 114.25 Review Process
- 114.30 Additional Standards
- 114.35 Required Application Documentation

114.05 User Guide

This chapter provides standards for an alternative type of site development that ensures low impact development (LID) facilities are utilized to manage stormwater on project sites in specified low density zones. If you are interested in proposing detached dwelling units or two unit home that reduce environmental impacts or you wish to participate in the City's decision on a project including this type of site development, you should read this chapter.

114.10 Voluntary Provisions and Intent

The provisions of this chapter are available as alternatives to the development of typical lots in low density zones.. In the event of a conflict between the standards in this chapter and the standards in KZC Chapters 15, 17 or 18, the standards in this chapter shall control except for the standards in KZC 83 and 141.

The goal of LID is to conserve and use existing natural site features, to integrate small-scale stormwater controls, and to prevent measurable harm to streams, lakes, wetlands, and other natural aquatic systems from development sites by maintaining a more hydrologically functional landscape. LID may not be applicable to every project due to topography, high groundwater, or other site specific conditions.

The LID requirements in this code do not exempt an applicant from stormwater flow control and water quality treatment development requirements. LID facilities can be counted toward those requirements, and in some cases may meet the requirements without traditional stormwater facilities (pipes and vaults).

The purpose of this chapter is to allow flexibility, establish the development guidelines, requirements and standards for low impact development projects. Because all projects are required to use some form of LID techniques and facilities as feasible, the use of LID techniques does not necessarily fulfill all the requirements for a LID project. This chapter is intended to fulfill the following purposes:

- (1) Manage stormwater through a land development strategy that emphasizes conservation and use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely mimic predevelopment hydrologic conditions.
- (2) Encourage creative and coordinated site planning, the conservation of natural conditions and features, the use of appropriate new technologies and techniques, and the efficient layout of streets, utility networks and other public improvements.
- (3) Minimize impervious surfaces.
- (4) Encourage the creation or preservation of permanent forested open space.

- (5) Encourage development of residential environments that are harmonious with on-site and off-site natural and built environments.
- (6) Further the goals and the implementation of the policies of the Comprehensive Plan.

114.15 Parameters for Low Impact Development

Please refer to KZC 114.30 and 114.35 for additional requirements related to these standards.

Permitted Housing Types	<ul style="list-style-type: none"> • Detached Dwelling Units • Accessory Dwelling Units • 2/3 Unit Homes
Minimum Lot Size	<ul style="list-style-type: none"> • Individual lot sizes must be at least 50% of the minimum lot size for the underlying Zone.
Minimum Number of lots	<ul style="list-style-type: none"> • 4 lots
Maximum Density	<ul style="list-style-type: none"> • As defined in underlying zone's Use Zone Chart • Bonus Density of 10% is under consideration
Low Impact Development	<ul style="list-style-type: none"> • LID techniques must be employed to control stormwater runoff generated from 50% of all hard surfaces. This includes all vehicular and pedestrian access. LID facilities must be designed according to Public Works stormwater development regulations as stated in KMC 15.52.
Locations	<p>Allowed in Low density Residential Zones with the exception of the following:</p> <p>PLA 16, PLA 3C, RSA 1, RSA8 , RS 35 and RSX 35 zones in the Bridle Trails neighborhood, and the Holmes Point Overlay zone. Any property or portion of a property with shoreline jurisdiction must meet the regulations found in Chapter 83 KZC, including minimum lot size or units per acre and lot coverage.</p>
Review Process	<ul style="list-style-type: none"> • <u>Short Plats shall be reviewed under KMC 22.20.15 and Subdivisions shall be reviewed under KMC 22.12.015.</u> • <u>Condominium Projects shall be reviewed under KZC 145, Process I</u>
Parking Requirements	<ul style="list-style-type: none"> • 2 stalls per detached dwelling unit • 1 stall per accessory dwelling unit • 1.5 stalls per unit in multi-unit home, rounded to next whole number • See KZC 105.20 for guest parking requirements • Parking pad width required in KZC 105.47 may be reduced to

	<p>10 feet.</p> <ul style="list-style-type: none"> • Parking Pad may be counted in required parking • Tandem Parking is allowed where stalls are share by the same dwelling unit. • Shared garages in separate tract are allowed • All required parking must be provided on the LID project site.
Ownership Structure	<ul style="list-style-type: none"> • Subdivision • Condominium
Minimum Required Yards (from exterior property lines of the LID project)	<ul style="list-style-type: none"> • 20 feet for all front yards • 10 feet for all other required yards
Minimum Required Yards (from internal property lines)	<ul style="list-style-type: none"> • Front: 10 feet • Option: Required front yard can be reduced to 5 feet, if required rear yard is increased by same amount of front yard reduction • Side and Rear: 5 feet • Zero Lot line for 2/3 unit homes between internal units.
Front Porches	<ul style="list-style-type: none"> • Must comply with KZC 115.115.3.(n), except that Front Entry porches may extend to within 5 feet of the interior required front yard.
Garage Setbacks	<ul style="list-style-type: none"> • Must comply with KZC 115.43, except that attached garages on front façade of dwelling unit facing internal front property line must be setback 18 feet from internal front property line.
Lot Coverage (All impervious surfaces)	<ul style="list-style-type: none"> • Maximum lot coverage for entire site is based on maximum lot coverage percentage of underlying zone.
Common Open Space	<ul style="list-style-type: none"> • Minimum of 40% of entire development • Native & undisturbed vegetation is preferred • Allowance of 1% of common open space area for shelters or other recreational structures • Paths connecting and through open space to development must be pervious • Landscape Greenbelt Easement is required to protect and keep open space undeveloped in perpetuity
Maximum Floor Area	<ul style="list-style-type: none"> • Maximum Floor Area is 50% of the minimum lot size of the underlying zone.¹

Footnotes:

1. The Maximum Floor Area for LID projects does not apply within the disapproval jurisdiction of Houghton.

114.20 Design Standards and Guidelines

1. Required Low Impact Development Stormwater Facilities

Low Impact Development (LID) Stormwater facilities shall be designed to control stormwater runoff from 50% of all hard surfaces created within entire development. This includes all vehicular and pedestrian access. LID facilities shall be designed according to Public Works stormwater development regulations, as stated in KMC 15.52.060. The maintenance of LID facilities shall be maintained in accordance with requirements in KMC 15.52.120. The proposed site design shall incorporate the use of LID strategies to meet stormwater management standards. LID is a set of techniques that mimic natural watershed hydrology by slowing, evaporating/transpiring, and filtering water, which allows water to soak into the ground closer to its source. The design should seek to meet the following objectives:

- 1) Preservation of natural hydrology.
- 2) Reduced impervious surfaces.
- 3) Treatment of stormwater in numerous small, decentralized structures.
- 4) Use of natural topography for drainage ways and storage areas.
- 5) Preservation of portions of the site in undisturbed, natural conditions.
- 6) Restoration of Disturbed Sites
- 7) Reduction of the use of piped systems. Whenever possible, site design shall use multifunctional open drainage systems such as rain gardens, vegetated swales or filter strips that also help to fulfill landscaping and open space requirements.

2. Required Common Open Space

Common open space shall support and enhance the project's LID stormwater facilities; secondarily to provide a sense of openness, visual relief, and community for Low Impact Development projects. The minimum percentage for common open space is 40% (~~35-40%, exact % is to be determined~~) and is calculated using the size of the whole development. The common open space must be outside of wetlands, streams and their buffers, and developed and maintained to provide for passive recreational activities for the residents of the development.

- 1) Conventional Surface water management facilities, such as vaults and tanks shall be limited within common open space areas and shall be placed underground at a depth to sufficiently allow landscaping to be planted on top of them. Low Impact Development (LID) features are permitted, provided they do not adversely impact access to or use of the common open space for passive recreation. Neither conventional or LID stormwater facilities can result in the removal of healthy native trees, unless a positive net benefit can be shown and there is no other alternative for the placement of stormwater facilities. The

Public Works Director must approve locating conventional stormwater facilities within the Common Open Space.

- 2) Existing native vegetation, forest litter and understory shall be preserved to the extent possible in order to reduce flow velocities and encourage sheet flow on the site. Invasive species, such as Himalayan blackberry, must be removed and replaced with native plants (see Kirkland Native Plant List). Undisturbed native vegetation and soil shall be protected from compaction during construction.
- 3) If no existing native vegetation, then applicant may propose a restoration plan that shall include all native species. No new lawn is permitted and all improvements installed must be of pervious materials.
- 4) Vegetation installed in common open space areas shall be designed to allow for access and use of the space by all residents, and to facilitate maintenance needs. However, existing mature trees should be retained.

114.25 Review Process

1. Approval Process – Low Impact Development Projects

- a. The City will review and process an application for a LID project concurrent with and through the same process as the underlying subdivision proposal (Process I, Chapter 145 KZC for Short Plats; Process IIA, Chapter 150 KZC for Subdivisions. However, public notice for LID projects shall be as set forth under the provisions of Chapter 150 KZC (Process IIA). A Process I **and site plan** review will be required for projects that use a condominium ownership structure and do not subdivide the property into individually platted lots.

- b. Lapse of Approval

Unless otherwise specified in the decision granting Process I approval, the applicant must begin construction or submit to the City a complete building permit application for development of the subject property consistent with the Process I approval within four years after the final decision granting the Process I approval or that decision becomes void. The applicant must substantially complete construction consistent with the Process I approval and complete all conditions listed in the Process I approval decision within six years after the final decision on the Process I approval or the decision becomes void. "Final decision" means the final decision of the Planning Director.

2. Approval Process – 2/3 Unit Homes

The City will review and process a LID project application that includes a 2/3 unit home with an additional land use process as follows:

One 2/3 unit home requires a Process I review

More than one 2/3 unit home requires a Process IIA review

3. Approval Process – Requests for Modifications to Standards

- a. Minor Modifications

Applicants may request minor modifications to the general parameters and design standards set forth in this chapter. The Planning Director under a Process I, KZC 145 or Hearing Examiner under Process IIA, KZC 150 may modify the requirements if all of the following criteria are met:

- 1) The site is constrained due to unusual shape, topography, easements or sensitive areas, and
- 2) The modification is consistent with the objectives of this chapter, and
- 3) The modification will not result in a development that is less compatible with neighboring land uses.

114.30 Additional Standards

1. The City's approval of a Low Impact Development project does not constitute approval of a subdivision or short plat. An applicant wishing to subdivide in connection with a development under this chapter shall seek approval to do so concurrently with the approval process under this chapter.
2. To the extent there is a conflict between the standards set forth in this chapter and Title 22 of the Kirkland Municipal Code, the standards set forth in this chapter shall control.

114.35 Required Application Documentation

1. Site Assessment documents to be submitted with application include:
 - a. Survey prepared by a registered land surveyor or civil engineer.
 - b. Location of all existing and proposed lot lines and easements.
 - c. Location of all sensitive areas, including lakes, streams, wetlands, flood hazard areas, and steep slope/erosion hazard areas.
 - d. Landscape Plan showing existing and proposed trees and other vegetation.
2. Soil report prepared by a licensed civil engineer, geotechnical engineer, or engineering geologist.
3. Stormwater Drainage Report/Technical Information Report

Chapter 5 Amendments:

- 5.490.5 Low Impact Development
- A stormwater management and land development strategy applied at the parcel and the subdivision scale that emphasizes conservation and the use of on-site

natural features integrated with engineered, small-scale hydrologic controls to more closely mimic predevelopment hydrologic functions.

New - Kirkland Municipal Code Amendment

22.28.042 Lots---Low Impact Development

In multiple lot subdivisions (4 lots or more) not located in an RSA 1 zone or in the Holmes Point Overlay and not subject to Sections 22.28.030 and 22.28.040, the minimum lot area shall be deemed to have been met if the minimum lot area is not less than 50% of the lot area required of the zoning district in which the property is located as identified on the zoning map; provided that all lots meet the following standards:

- (a) Within the RSA 6 zone, the lots shall be at least 2,550 square feet.
- (b) Within the RSA 4 zone, the lots shall be at least 3,800 square feet.
- (i) The lots within the Low Impact Development meet the design standards and guidelines and approval criteria as defined in Chapter 114 of the Kirkland Zoning Code.

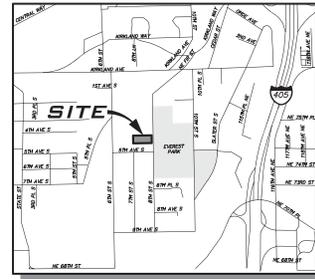
KZC 18.10 Special Regulation Amendments

1. Maximum units per acre is as follows:
 - a. In RSA 1 zone, the maximum units per acre is one dwelling unit.
 - b. In RSA 4 zones, the maximum units per acre is four dwelling units.
 - c. In RSA 6 zones, the maximum units per acre is six dwelling units.
 - d. In RSA 8 zones, the maximum units per acre is eight dwelling units.

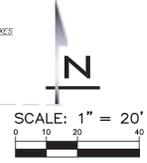
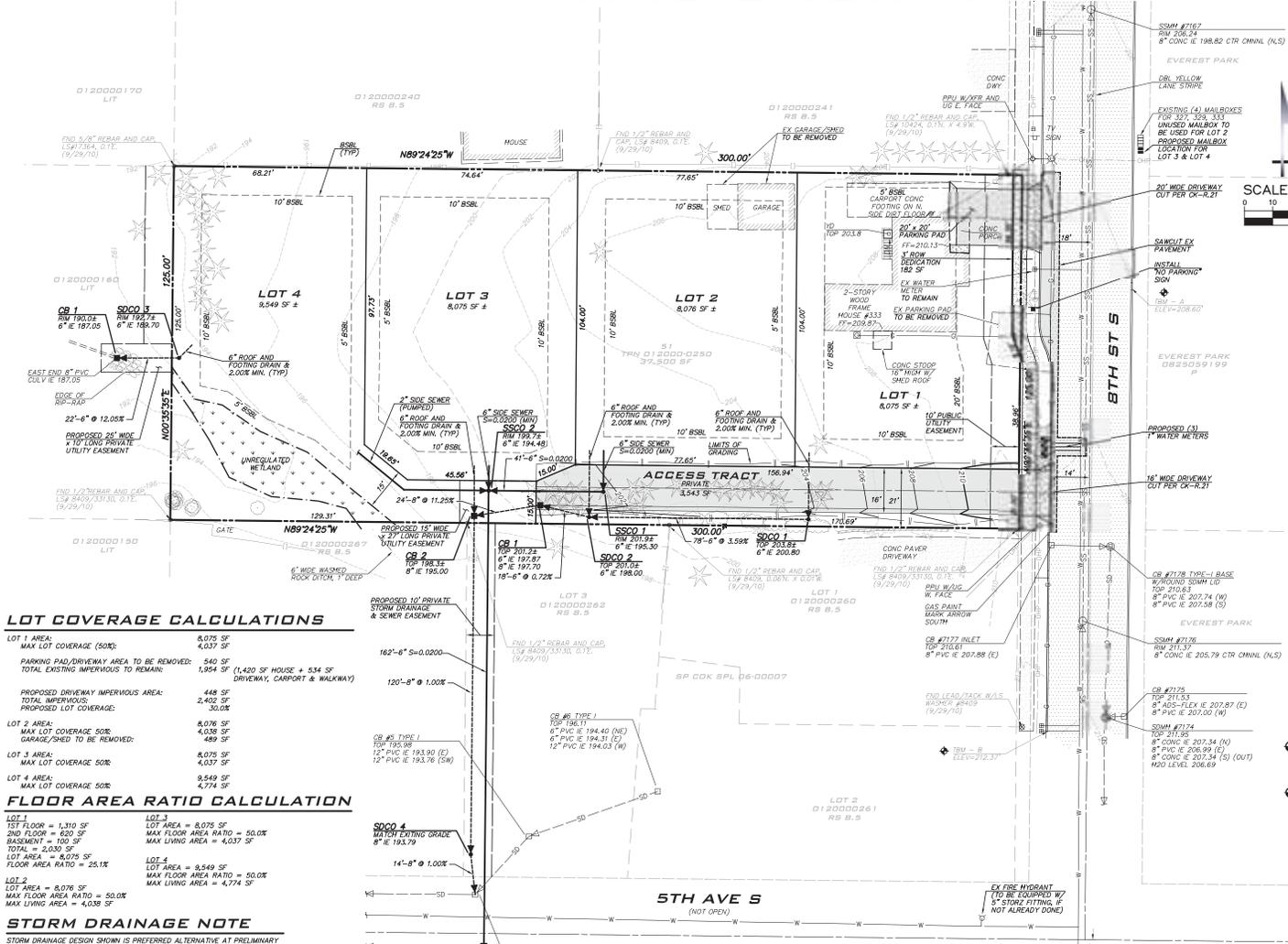
In RSA 1, 4, 6 and 8 zones, not more than one dwelling unit may be on each lot, regardless of the size of the lot.
2. Minimum lot size per dwelling unit is as follows:
 - a. In RSA 1 zone, newly platted lots shall be clustered and configured in a manner to provide generally equal sized lots outside of the required open space area.
 - b. In RSA 4 zones, the minimum lot size is ~~7,600~~ 3,800 square feet.
 - c. In RSA 6 zones, the minimum lot size is ~~5,400~~ 2,550 square feet.
 - d. In RSA 8 zones, the minimum lot size is 3,800 square feet.
3. Road dedication and vehicular access easements or tracts may be included in the density calculation, but not in the minimum lot size per dwelling unit.
4. Floor Area Ratio (F.A.R.) allowed for the subject property is as follows:
 - a. In RSA 1 zone, F.A.R. is 20 percent of lot size.
 - b. In RSA 4 zones, F.A.R. is 50 percent of lot size.
 - c. In RSA 6 zones, F.A.R. is 50 percent of lot size.
 - d. In RSA 8 zones, F.A.R. is 50 percent of lot size; provided, that F.A.R. may be increased up to 60 percent of lot size for the first 5,000 square feet of lot area if the primary roof form of all structures on the site is peaked, with a minimum pitch of four feet vertical to 12 feet horizontal.

F.A.R. is not applicable for properties located within the jurisdiction of the Shoreline Management Act regulated under Chapter 83 KZC.
See KZC 115.42, Floor Area Ratio (F.A.R.) Calculation for Detached Dwelling Units in Low Density Residential Zones, for additional information.
5. On corner lots, only one front yard must be a minimum of 20 feet. All other front yards shall be regulated as a side yard (minimum five-foot yard). The applicant may select which front yard shall meet the 20-foot requirement.
6. Garages shall comply with the requirements of KZC 115.43, including required front yard.
7. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities and activities associated with this use.

NE SEC 8, TWP 25N, RGE 5E, W.M. WANG SHORT PLAT



BLUELINE
 SCALE: AS NOTED
 PROJECT MANAGER:
 BRIAN J. DARROW, PE
 PROJECT ENGINEER:
 BRIAN J. DARROW, PE
 DESIGNER:
 DOMINQUE GABALDON
 ISSUE DATE:
 3/31/2011



PROJECT TEAM
OWNER
 LIN WANG & YONG SHENG
 333 8TH ST S
 KIRKLAND, WA 98033
 (425) 216-8511-2222
 CONTACT: BRIAN J. DARROW, PE
 (206) 694-9523
CIVIL ENGINEER
 THE BLUELINE GROUP
 24 CENTRAL WAY SUITE 400
 KIRKLAND, WA 98033
 (425) 216-8511-2222
 CONTACT: BRIAN J. DARROW, PE

SURVEYOR
 AHS SURVEY AND MAPPING
 13005 NE 128TH PL
 KIRKLAND, WA 98034
 (425) 823-5700
 CONTACT: ALLEN W. GRISSOM, PLS

SITE DATA
 PARCEL NUMBER: 0120000350
 SITE AREA: 37,500 SF
 ACREAGE: 0.861 AC
 TOTAL NUMBER OF LOTS: 4
 ZONING: RS 8.5
 AVERAGE LOT SIZE: 8,444 SF
 PROPOSED USE: SINGLE FAMILY RESIDENTIAL
 SEWAGE DISPOSAL: CITY OF KIRKLAND
 WATER SYSTEM: CITY OF KIRKLAND
 SETBACKS: 20' FRONT, 5' SIDE (1ST 15'), 10' REAR

DATUM/BASIS OF BEARINGS
 NAD 83(91)
 MELO N89°24'25"W ALONG THE SOUTH BOUNDARY LINE BETWEEN THE SOUTHWEST CORNER AND SOUTHEAST CORNER, PER AUBRY SHORT PLAT BY AN HART, DATED OCTOBER 14, 2009 AND RECORDED IN VOLUME 268 OF SURVEYS, PAGE 41842 UNDER RECORDING NO. 2009121790013, RECORDS OF KING COUNTY, WASHINGTON.

LEGAL DESCRIPTION
 TRACT 51 OF ALEXANDER ACRE TRACTS, AS PER PLAT RECORDED IN VOLUME 12 OF PLATS, PAGE 59, RECORDS OF KING COUNTY AUDITOR;
 EXCEPT THE EAST 5 FEET THEREOF CONVEYED TO KING COUNTY FOR RIGHT OF WAY FOR FIFTH AVENUE, NE AND RECORDED UNDER RECORDING NO. 300565;
 SITUATE IN THE CITY OF KIRKLAND, COUNTY OF KING, STATE OF WASHINGTON.

ORIGINATING BENCHMARK
 CITY OF KIRKLAND MONUMENT NO. 14, AS PUBLISHED ON THE CITY OF KIRKLAND SURVEY CONTROL DATABASE WEBSITE.

VERTICAL DATUM: NAVD 88
ELEVATION: 266.76'
 * TBM - A
 SGT SCORBED SQUARE ON TOP BACK OF CURB ON SOUTH WING CONC WALK EAST TO PARK, EAST SIDE OF 8TH ST S, OPPOSITE HOUSE NUMBER 333.
 * TBM - B
 SGT SCORBED SQUARE ON TOP BACK OF CURB @ SOUTH END CURB, ADJACENT HOUSE #301 WEST SIDE OF 8TH ST.
 ELEV=216.37'

SHEET INDEX
 1 PU-D1 PRELIMINARY UTILITY PLAN
 2 PP-D1 PRELIMINARY ROAD PROFILE
 3 TR-D1 TREE RETENTION PLAN

U. S. POSTAL SERVICE
 APPROVED FOR MAILBOX LOCATIONS
 BY: ON FILE
 DATE: ON FILE

LOT COVERAGE CALCULATIONS

LOT 1 AREA:	8,075 SF
MAX LOT COVERAGE (50%):	4,037 SF
PARKING PAD/DRIVEWAY AREA TO BE REMOVED:	540 SF
TOTAL EXISTING IMPERVIOUS TO REMAIN:	1,954 SF (1,420 SF HOUSE + 534 SF DRIVEWAY, CARPORT & WALKWAY)
PROPOSED DRIVEWAY IMPERVIOUS AREA:	448 SF
TOTAL IMPERVIOUS:	2,402 SF
PROPOSED LOT COVERAGE:	30.0%
LOT 2 AREA:	8,076 SF
MAX LOT COVERAGE TO BE REMOVED:	4,038 SF
GARAGE/SHED TO BE REMOVED:	489 SF
LOT 3 AREA:	8,075 SF
MAX LOT COVERAGE 50%:	4,037 SF
LOT 4 AREA:	9,549 SF
MAX LOT COVERAGE 50%:	4,774 SF

FLOOR AREA RATIO CALCULATION

LOT 1	LOT 3
1ST FLOOR = 1,310 SF	LOT AREA = 8,075 SF
2ND FLOOR = 620 SF	MAX FLOOR AREA RATIO = 50.0%
BASEMENT = 100 SF	MAX LIVING AREA = 4,037 SF
TOTAL = 2,030 SF	
LOT AREA = 8,075 SF	
FLOOR AREA RATIO = 25.1%	
LOT 2	LOT 4
1ST FLOOR = 1,444 (NE)	LOT AREA = 9,549 SF
6" P.V.C. IE 194.40 (NE)	MAX FLOOR AREA RATIO = 50.0%
6" P.V.C. IE 194.31 (E)	MAX LIVING AREA = 4,774 SF
12" P.V.C. IE 194.03 (W)	

STORM DRAINAGE NOTE

STORM DRAINAGE DESIGN SHOWN IS PREFERRED ALTERNATIVE AT PRELIMINARY SHORT PLAT STAGE. THIS ALTERNATIVE ASSUMES THAT REQUIRED EASEMENTS CAN BE OBTAINED BY ADJACENT PROPERTY OWNERS AND THAT SUFFICIENT CAPACITY EXISTS IN DOWNSTREAM SYSTEMS WHICH WILL BE VERIFIED THROUGH A CAPACITY ANALYSIS AT L&M STAGE.

IF DOWNSTREAM SYSTEMS ARE FOUND TO BE UNDER CAPACITY, THEY WILL BE UPGRADED, IF FEASIBLE, OR DETENTION WILL BE PROVIDED. IF OFFSITE EASEMENTS CANNOT BE OBTAINED, DETENTION WILL BE PROVIDED AND STORMWATER WILL BE PUMPED TO STORM SYSTEM IN 8TH STREET SOUTH.

SANITARY SEWER NOTE

SEWER DESIGN SHOWN IS PREFERRED ALTERNATIVE AT SHORT PLAT STAGE. IF OFFSITE EASEMENT CANNOT BE OBTAINED, LOTS 2-4 ARE TO BE BUILT WITH GRINDER PUMPS WHICH WILL PUMP TO A CLEANOUT AND 6-INCH GRAVITY STUB TO SEWER MAIN IN 8TH STREET SOUTH.

FIRE HYDRANT NOTE

HOUSES ON LOTS 3 & 4 TO BE EQUIPPED WITH FIRE SPRINKLERS.

UTILITY CONNECTIONS

ALL PROPOSED ON-SITE UTILITY TRANSMISSION LINES SHALL BE UNDERGROUND.

WATER SERVICE NOTE

THE EXISTING WATER SERVICE MAY BE USED FOR LOT 1 PROVIDED THAT IT IS IN THE CORRECT LOCATION, IS NOT GALVANIZED, AND IS SIZED ADEQUATELY TO SERVE THE BUILDING (PER THE UNIFORM PLUMBING CODE) (CONTRACTOR TO VERIFY)

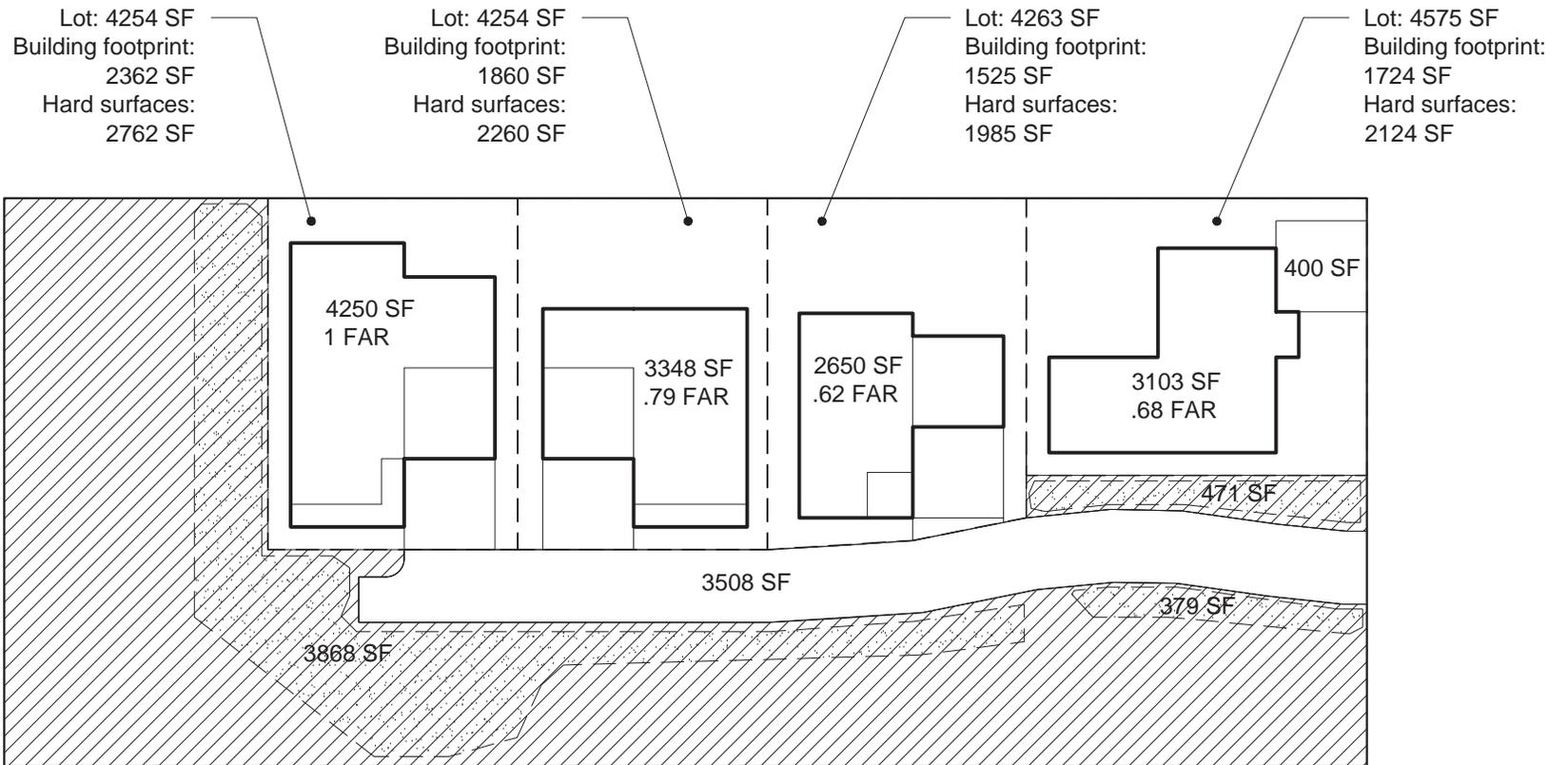
UNDERGROUND UTILITY NOTE

UNDERGROUND UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION. THERE IS NO GUARANTEE THAT ALL UTILITY LINES ARE SHOWN, OR THAT THE LOCATION, SIZE AND MATERIAL IS ACCURATE. THE CONTRACTOR SHALL UNCOVER ALL INDICATED PIPING WHERE CROSSING, INTERFERENCES, OR CONNECTIONS OCCUR PRIOR TO TRENCHING OR EXCAVATION FOR ANY PIPE OR STRUCTURES. TO DETERMINE ACTUAL LOCATIONS, SIZE AND MATERIAL, THE CONTRACTOR SHALL MAKE THE APPROPRIATE PROVISION FOR PROTECTION OF SAID FACILITIES. THE CONTRACTOR SHALL NOTIFY ONE CALL AT 1-800-424-5855 AND ARRANGE FOR FIELD LOCATION OF EXISTING UTILITIES BEFORE CONSTRUCTION.

PRELIMINARY UTILITY PLAN
 WANG SHORT PLAT
 333 8TH ST S
 CITY OF KIRKLAND
 WASHINGTON



3/31/2011
 JOB NUMBER:
 10-073
 SHEET NAME:
 PU-D1
 SHEET 1 OF 3



Open space area:
16,643 SF
Total site area:
37,500 SF
44% of site is open space

Total hard surfaces:
12,639 SF
Total rain garden area:
4718 SF

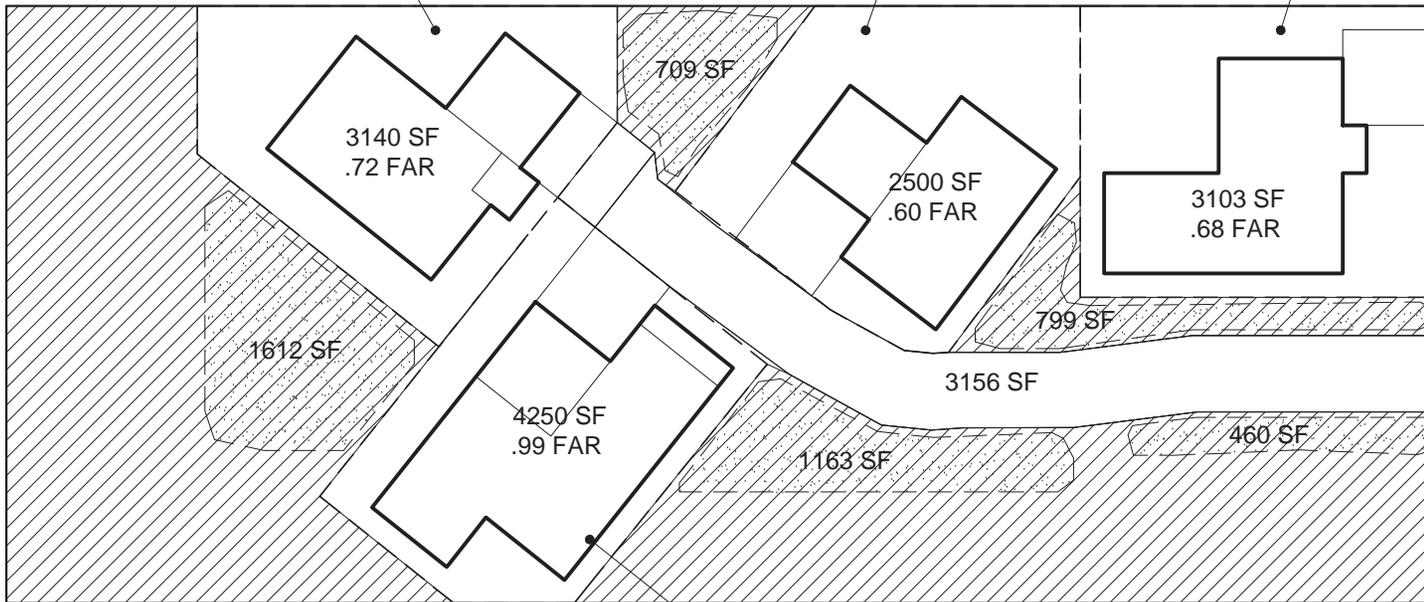


Wang Short Plat OPTION 1

Lot: 4380 SF
 Building footprint:
 1770 SF
 Total hard surfaces:
 1970 SF

Lot: 4311 SF
 Building footprint:
 1450 SF
 Total hard surfaces:
 1850 SF

Lot: 4575 SF
 Building footprint:
 1724 SF
 Total hard surfaces:
 2124 SF



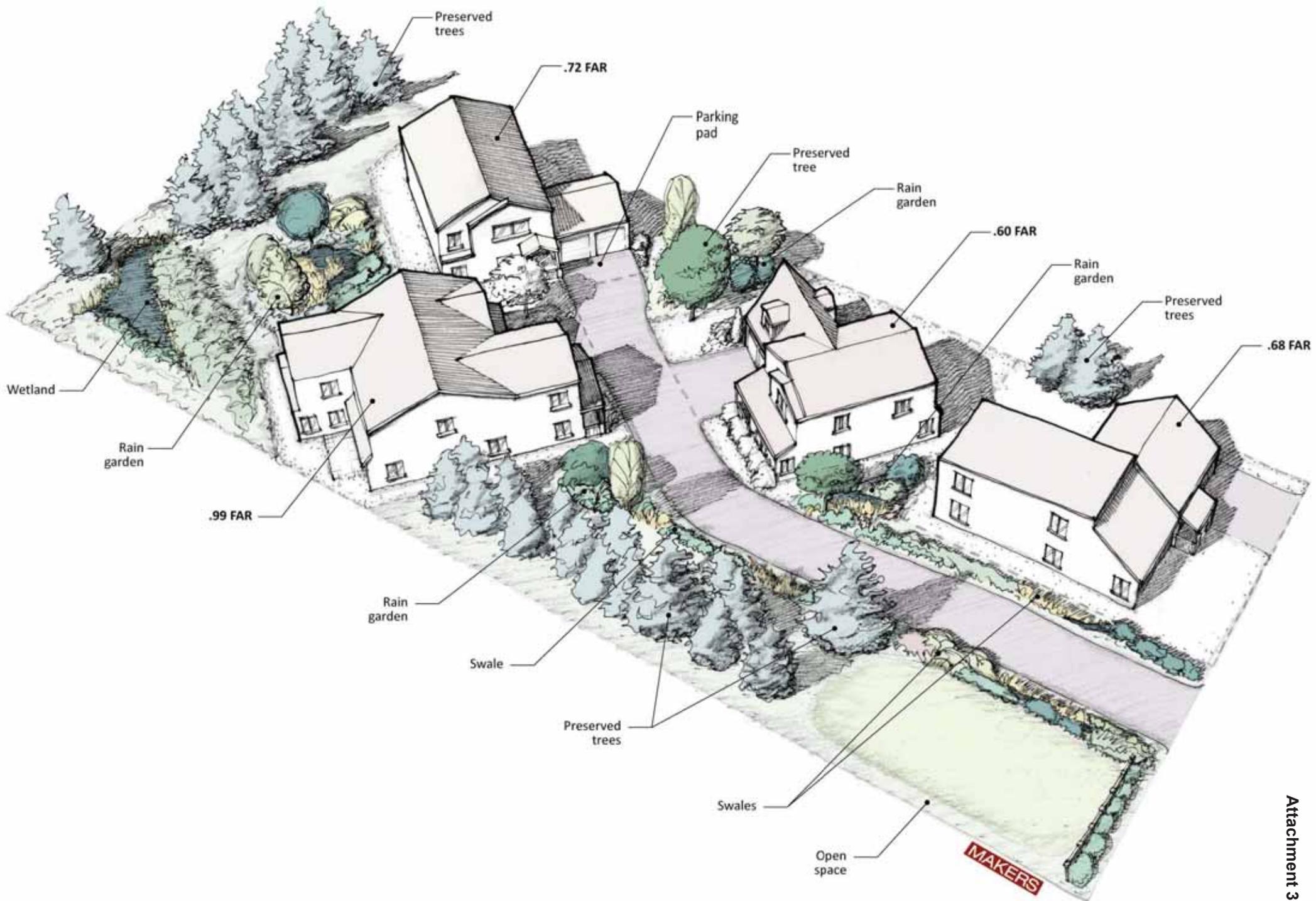
Open space area:
 16,735 SF
 Total site area:
 37,500 SF
 45% of site is open space

Total hard surfaces:
 11,792 SF
 Total rain garden area:
 4743 SF

Lot: 4309 SF
 Building footprint:
 2292 SF
 Total hard surfaces:
 2692 SF



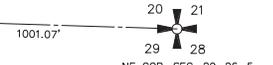
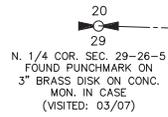
Wang Short Plat OPTION 2



GARDEN GATE

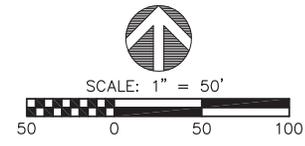
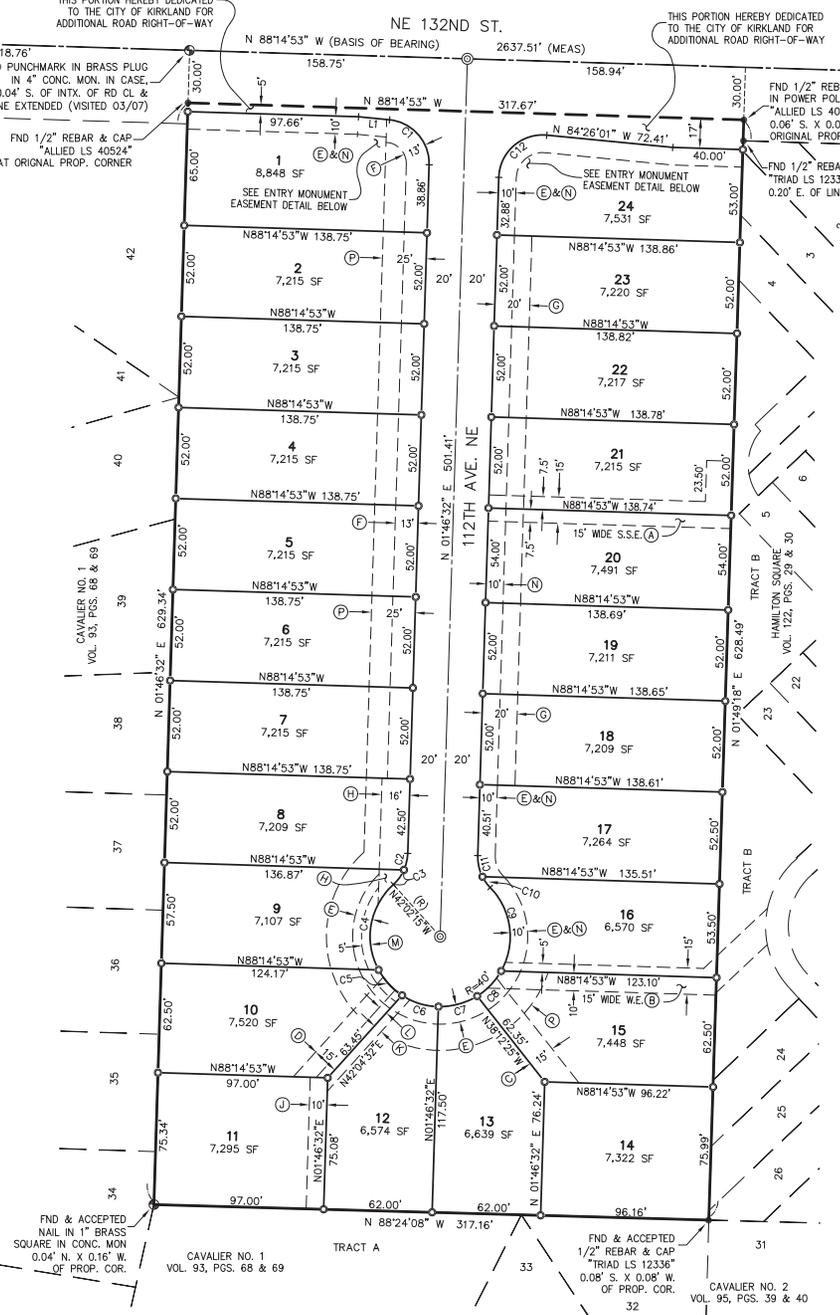
CITY OF KIRKLAND FILE NO. PSB07-00001
OF THE NORTHEAST 1/4 OF SECTION 29, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M.,
CITY OF KIRKLAND, KING COUNTY, WASHINGTON

A PORTION OF THE NORTHEAST 1/4



- LEGEND**
- ⊙ CONCRETE MONUMENT WITH PUNCHMARK IN BRASS DISK IN CASE, STAMPED "29291" (TO BE SET AS CONSTRUCTION IS COMPLETED).
 - SET 1/2" X 24" REBAR & PLASTIC CAP "SSI LS 29291", AT CORNERS AND ANGLE POINTS, AS SHOWN (TO BE SET AS CONSTRUCTION IS COMPLETED).
 - FOUND PROPERTY CORNER AS NOTED (VISITED: MARCH, 2007)
 - (R) RADIAL BEARING
 - (A) EXISTING 15' WIDE SANITARY SEWER EASEMENT PER RECORDING NO. 20080429001814
 - (B) EXISTING 15' WIDE WATER LINE EASEMENT PER RECORDING NO. 20080429001815
 - (C) 15' WIDE ACCESS & UTILITY EASEMENT AS GRANTED BY THIS PLAT & EXISTING 15' WIDE SANITARY SEWER EASEMENT PER RECORDING NO. 20080429001780
 - (D) 15' WIDE ACCESS & UTILITY EASEMENT AS GRANTED BY THIS PLAT & EXISTING 15' WIDE SANITARY SEWER EASEMENT PER RECORDING NO. 20080429001781
 - (E) 10' WIDE UTILITY & PUBLIC STORM DRAINAGE EASEMENT PARALLEL WITH AND ADJOINING THE STREET FRONTAGE ALONG THE NORTH PORTION OF LOT 1 AND PARALLEL WITH AND ADJOINING THE STREET FRONTAGE OF THE EASTERLY PORTION OF LOTS 9 AND 10, AS SHOWN, AND PARALLEL WITH AND ADJOINING THE STREET FRONTAGE OF LOTS 12 THROUGH 17 AND LOT 24, AS SHOWN.
 - (F) 13' WIDE UTILITY, PUBLIC STORM DRAINAGE & PUBLIC SIDEWALK/PEDESTRIAN EASEMENT, PARALLEL WITH AND ADJOINING THE STREET FRONTAGE ALONG THE EAST PORTION OF LOT 1 AND PARALLEL WITH AND ADJOINING THE STREET FRONTAGE OF LOTS 2 THROUGH 7, AS SHOWN.
 - (G) 20' WIDE UTILITY & PUBLIC STORM DRAINAGE EASEMENT, PARALLEL WITH AND ADJOINING THE STREET FRONTAGE OF LOTS 18 THROUGH 23, AS SHOWN.
 - (H) 16' WIDE UTILITY, PUBLIC STORM DRAINAGE & PUBLIC SIDEWALK/PEDESTRIAN EASEMENT, PARALLEL WITH AND ADJOINING THE STREET FRONTAGE OF LOT 8, OR AS SHOWN, AND THE NORTHEAST PORTION OF LOT 9, AS SHOWN.
 - (J) 10' WIDE PUBLIC SIDEWALK/PEDESTRIAN EASEMENT
 - (K) 5' WIDE PRIVATE STORM DRAINAGE EASEMENT
 - (L) 5' WIDE PUBLIC SIDEWALK/PEDESTRIAN EASEMENT
 - (M) 5' WIDE PUBLIC SIDEWALK/PEDESTRIAN EASEMENT, PARALLEL WITH AND ADJOINING THE STREET FRONTAGE OF LOTS 9 AND 10, AS SHOWN.
 - (N) 10' WIDE PUGET SOUND ENERGY EASEMENT, PER RECORDING NO. 20080807000600, PARALLEL WITH AND ADJOINING THE STREET FRONTAGE ALONG THE NORTH PORTION OF LOT 1 AND PARALLEL WITH AND ADJOINING THE STREET FRONTAGE OF LOTS 16 THROUGH 24, AS SHOWN.
 - (P) 25' WIDE PUGET SOUND ENERGY EASEMENT, PER RECORDING NO. 20080807000600, PARALLEL WITH AND ADJOINING THE STREET FRONTAGE ALONG THE EAST PORTION OF LOT 1, AS SHOWN, AND PARALLEL WITH AND ADJOINING THE STREET FRONTAGE OF LOTS 2 THROUGH 15, AS SHOWN.
 - S.S.E. SANITARY SEWER EASEMENT
 - W.E. WATER LINE EASEMENT
- NOTE: SEE EASEMENT PROVISIONS ON SHEET 2.

CURVE	DELTA	LENGTH	RADIUS
C1	86°12'33"	37.62'	25.00'
C2	22°20'23"	9.75'	25.00'
C3	23°50'50"	10.41'	25.00'
C4	76°21'30"	53.31'	40.00'
C5	28°38'52"	20.00'	40.00'
C6	31°32'20"	22.02'	40.00'
C7	33°19'29"	23.27'	40.00'
C8	28°38'53"	20.00'	40.00'
C9	73°51'22"	51.56'	40.00'
C10	17°32'37"	7.65'	25.00'
C11	28°38'36"	12.50'	25.00'
C12	93°47'27"	40.92'	25.00'
C13	05°08'27"	2.24'	25.00'
C14	10°07'47"	4.42'	25.00'



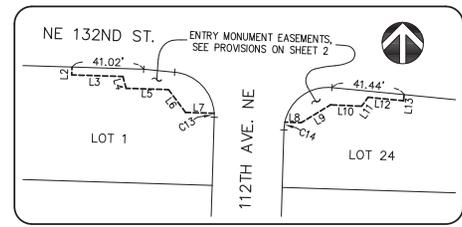
BASIS OF BEARING

HELD BEARING OF N88°14'53"W BETWEEN MONUMENTS FOUND AT THE NORTH 1/4 CORNER AND THE NE SECTION CORNER OF SECTION 29 PER THE PLAT OF HAMILTON SQUARE, REC. NO. 198209270586 RECORDS OF KING COUNTY, WA.

EQUIPMENT USED:
5-SECOND THEODOLITE W/ELECTRONIC DISTANCE METER

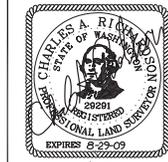
METHOD: FIELD TRAVERSE

ACCURACY:
MEETS OR EXCEEDS STANDARDS SET BY W.A.C. 332-130-090



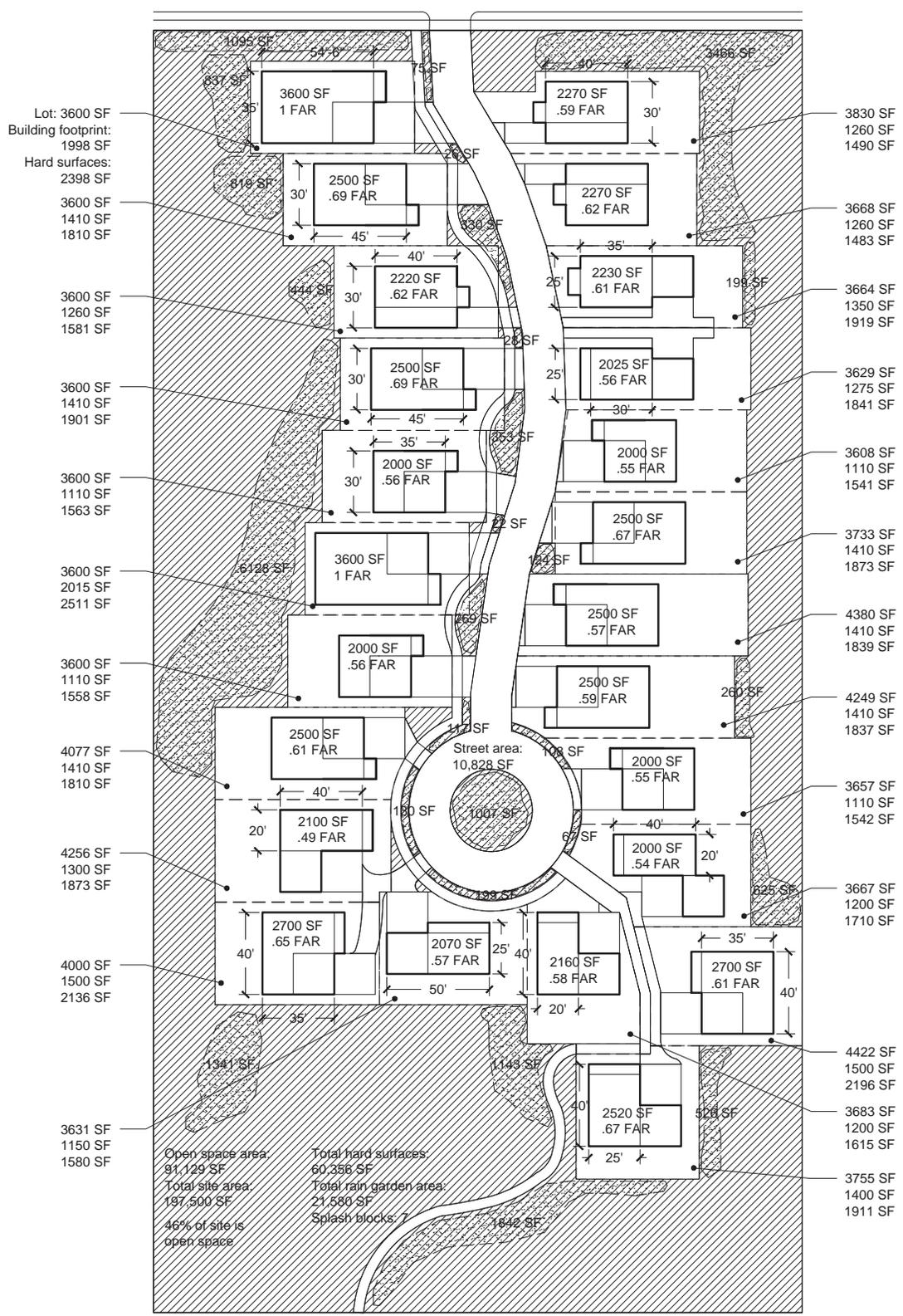
LINE	BEARING	LENGTH
L1	N84°26'01"W	17.78'
L2	N01°45'07"E	4.50'
L3	N88°14'53"W	29.22'
L4	N15°32'22"W	6.98'
L5	N88°14'53"W	24.27'
L6	N36°38'38"W	16.23'
L7	N88°14'53"W	16.39'
L8	N88°14'53"W	9.30'
L9	N58°47'20"E	19.63'
L10	N87°30'07"W	17.82'
L11	N135°24'42"E	6.24'
L12	N84°26'01"W	20.38'
L13	N05°33'59"E	3.50'

A PORTION OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 29, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M., CITY OF KIRKLAND, KING COUNTY, WASHINGTON



SUMMIT SURVEYING
12606-82ND AVE. N.E., KIRKLAND, WA 98034
(425) 814-8487

DRAWN BY: CR	DATE: MAY, 2008	JOB NO. 07109
CHECKED BY: CR/JT	SCALE: 1" = 50'	SHEET: 3 OF 3



Garden Gate OPTION 1

Lot: 3600 SF
 Building footprint: 1998 SF
 Hard surfaces: 2492 SF

3600 SF
 1410 SF
 1904 SF

3600 SF
 1110 SF
 1604 SF

3600 SF
 1410 SF
 1904 SF

3600 SF
 1110 SF
 1604 SF

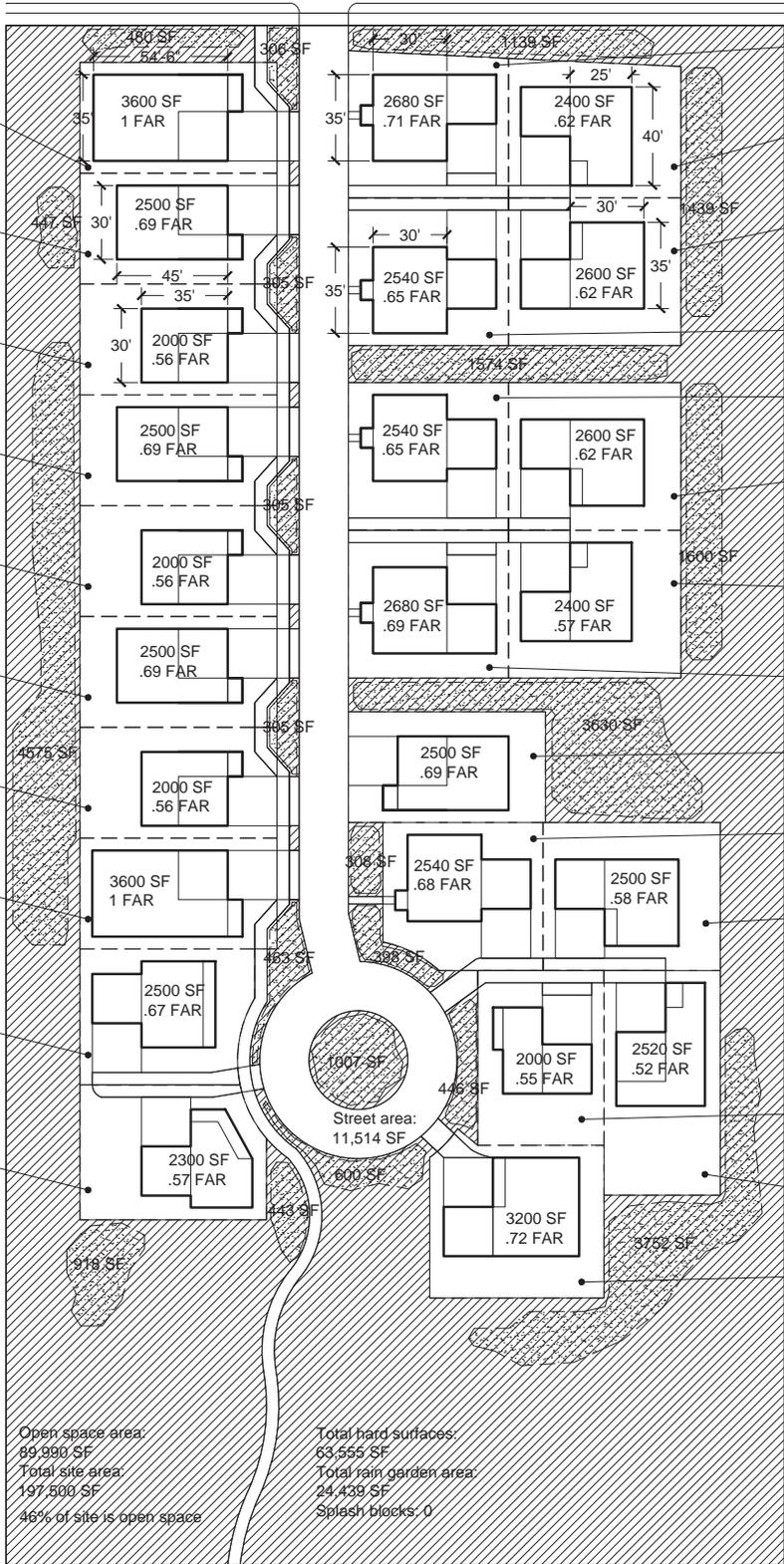
3600 SF
 1410 SF
 1904 SF

3600 SF
 1110 SF
 1604 SF

3600 SF
 2015 SF
 2509 SF

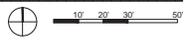
3730 SF
 1450 SF
 2158 SF

4010 SF
 1284 SF
 1971 SF

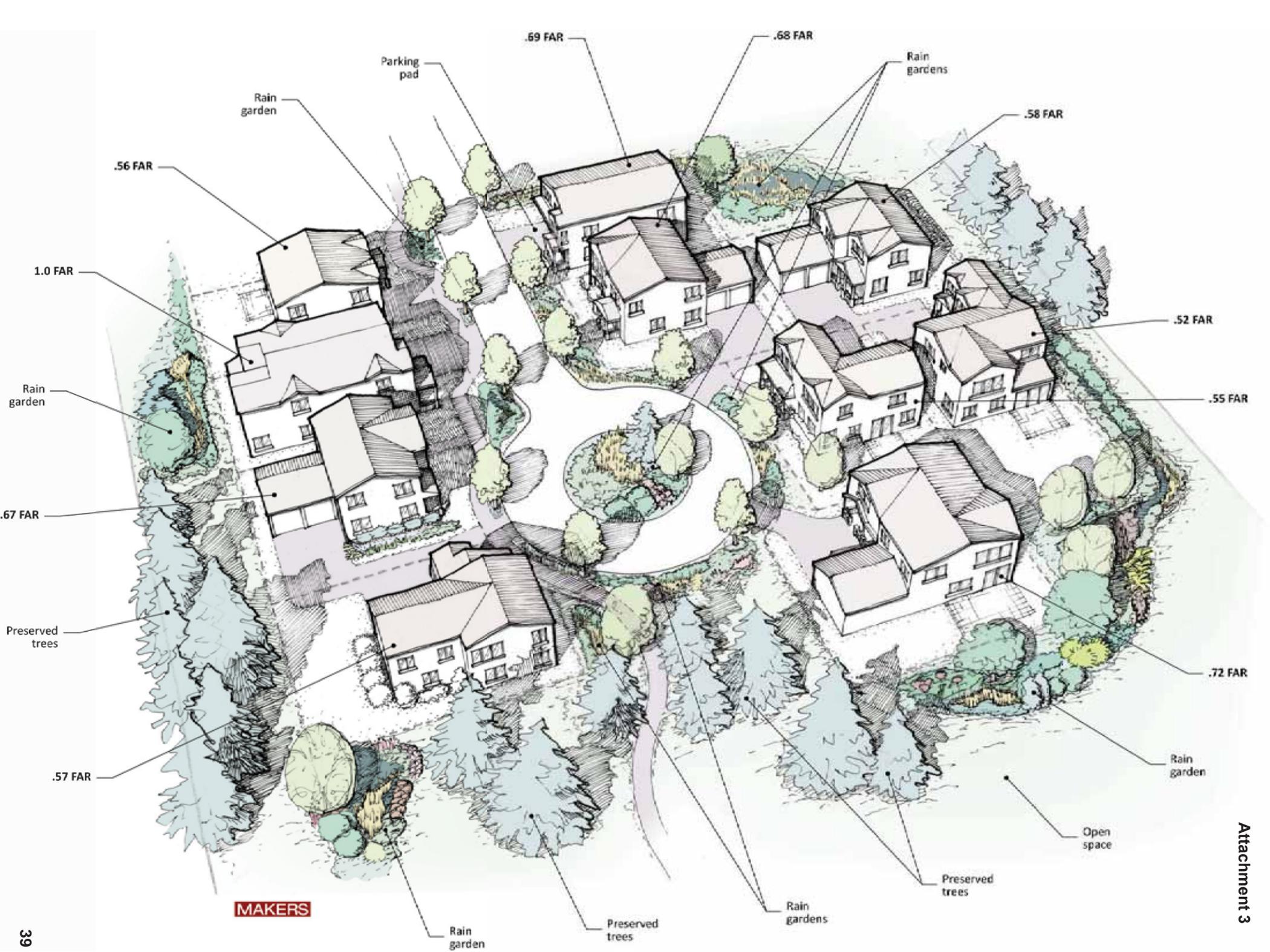


Open space area:
89,990 SF
Total site area:
197,500 SF
46% of site is open space

Total hard surfaces:
63,555 SF
Total rain garden area:
24,439 SF
Splash blocks: 0



Garden Gate OPTION 2



MAKERS

Chapter 115 Zoning Code Amendments

115.90 Calculating Lot Coverage

1. General – The area of all structures and pavement and any other impervious surface on the subject property will be calculated as a percentage of total lot area. If the subject property contains more than one (1) use, the maximum lot coverage requirements for the predominant use will apply to the entire development. The following exceptions shall not exceed an area equal to ten percent of the total lot area. Lot area not calculated under lot coverage must be devoted to open space as defined in KZC 5.610.
2. Exceptions¹
 - ~~a. Wood decks may be excluded if constructed with gaps between the boards and if there is pervious surface below the decks.~~
 - ~~ba. An access easement or tract that is not included in the calculation of lot size will not be used in calculating lot coverage for any lot it serves or crosses.~~
 - ~~c. For detached dwelling units in low density zones and having a front yard, 10 feet of the width of a driveway, outside of the required front yard, serving a garage or carport; provided, that:

 - ~~1) This exception cannot be used for flag or panhandle lots;~~
 - ~~2) The portion of the driveway excepted from lot coverage calculations shall not exceed 10 percent of the lot area; and~~
 - ~~3) The portion of the driveway excepted is not located in an access easement.~~~~
 - ~~d. Grass grid or brick pavers and compact gravel, when installed over a pervious surface, will be calculated as impervious surface at a ratio of 50 percent of the total area covered.~~
 - ~~e. Outdoor swimming pools.~~
 - ~~f. Pedestrian walkways required by Chapter 83 KZC and KZC 105.18.~~
 - ~~gb. Pervious areas below eaves, balconies, and other cantilevered portions of buildings.~~
 - ~~hc. Landscaped areas at least two (2) feet wide and 40 square feet in area located over subterranean structures if the Planning Official determines, based on site-specific information submitted by the proponent and prepared by a qualified expert, soil and depth conditions in the landscaped area will provide cleansing and percolation similar to that provided by existing site conditions.~~
 - ~~i. Retaining walls not immediately adjacent to other impervious areas.~~
3. Exemptions – The following exemptions will be calculated at a ratio of 50 percent of the total area covered. Exempted area shall not exceed an area equal to ten percent of the total lot area. Installation of exempted surfaces shall be done in accordance with the current adopted King County Stormwater Design Manual.

1. Permeable pavement (non-grassed).
2. Grassed modular grid pavement.
3. Open grid decking over pervious area.
4. Pervious surfaces in compliance with the stormwater design manual adopted in KMC 15.52.06.

Footnote¹: An exemption for Swimming pools is allowed in the Houghton Jurisdiction if the pool cover is self-draining into the swimming pool and does not cause surface water runoff as determined by the Planning Official.

Chapter 5 - Definitions

5.10.610 Open Space

~~– Land not covered by buildings, roadways, parking areas or surfaces through which water can percolate into the underlying soils. Vegetated and pervious land not covered by buildings, roadways, sidewalks, driveways, parking areas, plazas, terraces, swimming pools, patios, decks, or other similar impervious or semi-impervious surfaces.~~

Chapter 95

95.32.3 Incentives and Variations to Development Standards

In order to retain trees, the applicant should pursue provisions in Kirkland's codes that allow development standards to be modified. Examples include but are not limited to number of parking stalls, right-of-way improvements, lot size reduction under Chapter 22.28 KMC, lot line placement when subdividing property under KMC Title 22, Planned Unit Developments, and required landscaping, including buffers for lands use and parking/driving areas.

Requirements of the Kirkland Zoning Code may be modified by the Planning Official as outlined below when such modifications would further the purpose and intent of this chapter as set forth in KZC 95.05 and would involve trees with a high or moderate retention value.

1. Common Recreational Open Space. Reductions or variations of the area, width, or composition of required common recreational open space may be granted.
2. Parking Areas and Access. Variations in parking lot design and/or access driveway requirements may be granted when the Public Works and Planning Officials both determine the variations to be consistent with the intent of City policies and codes.
3. Required Yards. Initially, the applicant shall pursue options for placement of required yards as permitted by other sections of this code, such as selecting one (1) front required yard in the RSX zone and adjusting side yards in any zone to meet the 15-foot total as needed for each structure on the site. The Planning Official may also reduce the front, ~~or~~ side or rear required yards; provided, that:
 - a. No required side yard shall be less than five (5) feet; and
 - b. The required front yard shall not be reduced by more than five (5) feet in residential zones. There shall not be an additional five (5) feet of reduction beyond the allowance provided for covered entry porches.
 - c. Rear yards that are not directly adjacent to another parcel's rear yard but that are adjacent to an access easement or tract, may be reduced by (5) feet.
 - d. No required yard shall be reduced by more than (5) feet in residential zones.

95.44 Internal Parking Lot Landscaping Requirements

The following internal parking lot landscape standards apply to each parking lot or portion thereof containing more than eight (8) parking stalls.

1. The parking lot must contain 25 square feet of landscaped area per parking stall planted as follows:
 - a. The applicant shall arrange the required landscaping throughout the parking lot to provide landscape islands or peninsulas to separate groups of parking spaces (generally every eight (8) stalls) from one another and each row of spaces from any adjacent driveway that runs perpendicular to the row. This island or peninsula must be

surrounded by a 6-inch-high vertical curb and be of similar dimensions as the adjacent parking stalls. Gaps in curbs are allowed for stormwater runoff.

- b. Landscaping shall be installed pursuant to the following standards:
 - 1) At least one (1) deciduous tree, two (2) inches in caliper, or a coniferous tree five (5) feet in height.
 - 2) Groundcover shall be selected and planted to achieve 60 percent coverage within two (2) years.
 - 3) Natural drainage landscapes (such as rain gardens, bio-infiltration swales and bioretention planters) are allowed when designed in compliance with the stormwater design manual adopted in KMC 15.52.060.
- c. Exception. The requirements of this subsection do not apply to any area that is fully enclosed within or under a building.

95.50.4 Installation Standards for Required Plantings

- 4. Soil Specifications. Soils in planting areas shall have adequate porosity to allow root growth. Soils which have been compacted to a density greater than one and three-tenths (1.3) grams per cubic centimeters shall be loosened to increase aeration to a minimum depth of 24 inches or to the depth of the largest plant root ball, whichever is greater. Imported topsoils shall be tilled into existing soils to prevent a distinct soil interface from forming. After soil preparation is completed, motorized vehicles shall be kept off to prevent excessive compaction and underground pipe damage. The soil quality organic content of soils in any landscape area shall comply with the soil quality requirements of the Public Works Pre-Approved Plans. ~~be as necessary to provide adequate nutrient and moisture-retention levels for the establishment of plantings.~~ See subsection (9) of this section for mulch requirements.

105.10.2.d Vehicular Access Easement or Tract Standards

- d. The paved surface in an easement or tract shall have a minimum of two (2) inches of asphalt concrete over a suitably prepared base which has a minimum thickness of four (4) inches of crushed rock or three (3) inches of asphalt-treated base. The Department of Public Works is authorized to modify the standards for a paved surface on a case-by-case basis. Pervious surfaces (such as pervious concrete or asphalt, and modular or grassed modular grid pavement) can be used in compliance with the stormwater design manual adopted in KMC 15.52.060.

105.77 Parking Area Design – Curbing

All parking areas and driveways, for uses other than detached dwelling units, must be surrounded by a 6-inch high vertical concrete curb. Gaps in Curbs are allowed for stormwater runoff.

105.100 Parking Area Design – Surface Materials

1. General – The applicant shall surface the parking area and driveway with a material comparable or superior to the right-of-way providing direct vehicle access to the parking area. Pervious surfaces (such as pervious concrete or asphalt, and modular grid pavement) can be used in compliance with the stormwater design manual adopted in KMC 15.52.060.
2. Exception – ~~Grass grid pavers~~ Grassed Modular Pavement may be used for emergency access areas that are not used in required permanent circulation and parking areas.

110.25 Required Public Improvements

1. General – KZC 110.27 through 110.50 establish different improvements for the different classifications of rights-of-way listed in KZC 110.20 and 110.22. KZC 110.52 establishes specific sidewalk and other public improvement standards in Design Districts. Except as specified in subsections (2), (3) and (4) of this section, the applicant shall install the specified improvements from the center line of the right-of-way to the applicant's property line. The applicant may increase the dimensions of any required improvement or install additional improvements in the right-of-way with the written consent of the Public Works Director.
2. Half-Street Improvements – If the one-half (1/2) of the right-of-way opposite the subject property has not been improved based on the provisions of this chapter, the applicant shall install improvements in the right-of-way as follows:
 - a. Alleys. The applicant shall install the required improvements for the entire width of the alley.
 - b. All Other Rights-of-Way.
 - 1) The applicant shall install the required improvements from his/her property line to and including the curb.
 - 2) The applicant shall grade to finished grade all the required driving and parking lanes in the entire right-of-way and a 5-foot-wide shoulder on the side of the right-of-way opposite the subject property.
 - 3) The applicant shall pave outward 20 feet from the curb adjacent to his/her property or as required by the Public Works Director. Pervious pavement is permitted for this section between the edge of the road way to the private driveway.
3. Required Paved Connection – In all cases except for alleys, if the access point for the subject site is not connected to an existing improved street by an improved hard surface, the applicant shall provide a hard surface improvement, of at least 20 feet in width, to the existing improved street. Pervious pavement can be permitted as the hard surface. The applicant may request a modification, deferment or waiver of this requirement through KZC 110.70.
4. Capital Improvement Projects – If the City Council has approved a capital improvements plan for a particular public right-of-way, that plan will govern the improvements required for right-of-way. To the extent feasible, public projects shall be designed pursuant to the standards established for each Design District contained in the Public Works Pre-Approved Plans manual.

110.27 Alleys

The pavement width of an alley must be at least 12 feet but may be required to be increased by the Public Works Director or Fire Marshall. For all commercial, industrial, office, or multifamily projects, the applicant shall improve the alley abutting the subject property and extend it to the existing improved street, and may be required to improve an additional 30 feet past the property frontage to provide emergency turnaround. For single-family dwellings using the alley for primary vehicular access, the applicant shall pave a 12-foot-wide asphalt apron

extending 20 feet from the nearest improved street toward the subject property. For all types of development permits, the Public Works Director shall determine the extent and nature of other improvements required in alleys on a case-by-case basis. Typical improvements include, but are not limited to, replacement of the alley driveway apron and curb, installation of storm drainage, repair of existing paving, and installation of crushed rock in gravel alleys. The use of pervious pavement in alleys will be considered if approved by the Public Works Director.

15.52.060 Design and construction standards and requirements.

(a) The standard plans as defined in Section 15.04.340 shall include requirements for temporary erosion control measures, storm water detention, water quality treatment and storm water conveyance facilities that must be provided by all new development and redevelopment projects. These standards shall meet or exceed the thresholds, definitions, minimum requirements, and exceptions/variances criteria found in Appendix I of the Western Washington Phase II Municipal Stormwater Permit, the 2009 King County Surface Water Design Manual, and the City of Kirkland Addendum to the 2009 King County Surface Water Design Manual as presently written or hereafter amended.

(b) Unless otherwise provided, it shall be the developer's and property owner's responsibility to design, construct, and maintain a system which complies with the standards and minimum requirements as set forth in the standard plans.

(c) In addition to providing storm water quality treatment facilities as required in this section and as outlined in the standard plans, the developer and/or property owner shall provide source control ~~BMPs~~ best management practices as described in Volume IV of the 2005 Stormwater Management Manual for Western Washington, such as structures and/or a manual of practices designed to treat or prevent storm water pollution arising from specific activities expected to occur on the site. Examples of such specific activities include, but are not limited to, carwashing at multifamily residential sites and oil storage at auto repair businesses.

(d) Privately maintained stormwater structures are not allowed within the public right-of-way, except on a case by case basis with approval from the Public Works Director.

~~(d)~~(e) The city will inspect all permanent storm water facilities prior to final approval of the relevant permit. All facilities must be clean and fully operational before the city will grant final approval of the permit. A performance bond may not be used to obtain final approval of the permit prior to completing the storm water facilities required under this chapter.

~~(e)~~(f) Adjustment Process. Any developer proposing to adjust the requirements for, or alter design of, a system required as set forth in the standard plans must follow the adjustment process as set forth in the standard plans.

~~(f)~~(g) Other Permits and Requirements. It is recognized that other city, county, state, and federal permits may be required for the proposed action. Further, compliance with the provisions of this chapter when developing and/or improving land may not constitute compliance with these other jurisdictions' requirements. To the extent required by law, these other requirements must be met. (Ord. 4214 § 1, 2009; Ord. 3711 § 4 (part), 1999)

115.60.2.a.4 Height Regulations – Exceptions

- 4) Solar panels on sloped roof forms (greater than 2:12) may exceed height limits by a maximum of six (6) inches. Solar panels on flat roof forms (less than or equal to 2:12) may exceed height limits by a maximum of twenty (20) inches.

115.60.2.a.4.b.4

b. Other Structures

- 1) Rooftop appurtenances and their screens, subject to KZC 115.120, including roof forms pursuant to KZC 115.120(3).
- 2) The provisions in Chapter 117 KZC related to personal wireless service facilities supersede the provisions of this section to the extent an appurtenance falls within the definition of a personal wireless service facility.
- 3) Skylights may exceed the height limit by a maximum of six (6) inches.
- 4) Solar panels on sloped roof forms (greater than 2:12) may exceed height limits by a maximum of six (6) inches. Solar Panels on flat roof forms (less than 2:12) may exceed height limits by a maximum of twenty (20) inches.

115.115.3.q Required Yards

- q. Insulation, installed in or on an existing structure, may encroach eight (8) inches into a required yard unless precluded by Fire or Building Codes.

5.10.817 Rooftop Appurtenances

– HVAC equipment, mechanical or elevator equipment and penthouses, roof access stair enclosures, and similar equipment or appurtenances that extend above the roofline of a building, but not including personal wireless service facilities as defined by KZC 117.15. or solar panels as defined by KZC 5.10.881.1.

5.10.881.1 Solar Panel

-A panel designed to absorb the sun's rays for generating electricity or heating.

