



CITY OF KIRKLAND

Planning and Community Development Department
123 Fifth Avenue, Kirkland, WA 98033 425.587-3225
www.ci.kirkland.wa.us

MEMORANDUM

To: Houghton Community Council

From: David Barnes, Green Building Lead and Project Manager
Paul Stewart, Deputy Planning Director

Date: February 16, 2011

Subject: Green Codes Project
File NO. ZON10-00031

RECOMMENDATION

Staff recommends that the Houghton Community Council receive a presentation on Green Codes Project.

INTRODUCTION

The City Council was briefed on the Green Codes Project at their meeting on January 4, 2011. Consensus was reached that the project should be pursued by the interdepartmental Green Codes Workgroup (GCW) which is comprised of the Green Building Team (David Barnes and Scott Guter(Planning), Tom Jensen (Building) and Stacey Rush (Public Works)) along with Paul Stewart and Jeremy McMahan (Planning) and Rob Jammerman, and Jenny Gaus (Public Works). The City Council requested that the GCW evaluate incentive based code language to encourage the project's objectives. On January 27th 2011, a meeting was held to brief the Kirkland Planning Commission on this project and to get their feedback. Staff learned that the Planning Commission, like the City Council was interested in pursuing this project. The specific feedback that staff received from the Planning Commission was focused on creating true incentives that encouraged sustainable actions and not just Code that would eventually just become a requirement.

The items provided for the Houghton Commission to review are shown below:

- Phase One - Sustainable Actions
- Sustainable Actions Worksheet
- Work Program Schedule
- Public Outreach Plan

BACKGROUND DISCUSSION

Why are we doing this and what policies support it?

The 2010-2012 adopted Planning Work Program includes the LID/Green Codes project which began in the spring of 2010. It is an extension of several City sponsored initiatives, policies and goals to encourage Low Impact Development (LID) techniques, sustainable site development, energy efficiency for public and private facilities and responsible use of natural resources. This project is supported by policies, goals and plans identified in the Natural Resources Management Plan, the Comprehensive Plan and Kirkland's Climate Protection Action Plan.

[The Natural Resource Management Plan \(NRMP\)](#) states in the Guiding Principles section (page 34) that the City should, "Improve management of stormwater runoff from existing and new impervious surfaces by employing Low Impact Development (LID) practices where feasible through City projects, incentive programs and development standards". In addition, the implementation strategies section of the NRMP suggests on page 49, section 6 that Kirkland's Comprehensive Plan, Zoning Code and other plans and regulations should be updated to address low impact development practices.

The Comprehensive Plan emphasizes the importance of community stewardship of the environment. This vision has been translated into two framework goals, FG-5 and FG-7, which emphasize protection of environmentally sensitive areas, preservation of a healthy environment, and encouragement of low-impact development (LID) and sustainable building practices. Additionally, the Natural Environment policy NE-1.5 also suggests that the City should educate, promote, support incentives and provide resources to encourage citizens, businesses, builders and the development community to adopt sustainable building practices.

[Kirkland's Climate Protection Action Plan](#) (April 2009) also discusses the need to reduce our green house gas production for not only our public facilities, but also in private homes and businesses. These targets are referenced and were adopted in 2007 by the City Council by resolution R-4659:

- Primary: 20% below 2005 levels by 2020
- Interim: 10% below 2005 levels by 2012
- Long-term: 80% below 2005 levels by 2050

Programs and policies are in effect to address these reduction goals, but more incentives; standards and educational initiatives as suggested by the Green Code project can be adopted to help achieve them.

What is Sustainable Development?

According to the Brundtland Report, Sustainable Development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

What is Low Impact Development (LID)?

Low Impact Development is a technique to deal with the quality and quantity of stormwater on a given piece of property. It is often referred to as a sustainable development technique because it can help clean our stormwater onsite and keep more on the site instead of creating runoff that often times carries pollutants to our streams, lakes and oceans. Not dealing with stormwater can cause erosion, floods and other negative consequences that affect property values. Examples of LID are pervious pavement, green roofs, retaining or planting native vegetation and rain gardens. More information about Low Impact Development can be learned by reviewing the [Puget Sound Action Teams Technical Assistance Guide for Puget Sound](#).

What are we doing?

Project Definition: The purpose of this project is to develop specific sustainable development action items that can be translated into additions and amendments to the Zoning and Municipal Codes that should help incentivize citizens, developers and property owners in Kirkland to protect and enhance our water, energy and material resources. In addition, these new standards and practices will contribute to more sustainable building sites by creating healthier buildings, reducing their carbon footprints and in turn helping Kirkland grow into a healthier community.

Specific items have been identified as being “doable” in the first phase for 2010/2011. These are noted in Attachment 1. There are four general categories each with individual subtasks. The categories are noted as:

- Sustainable Green Infrastructure

This can include things like requiring that City facilities be [LEED](#) certified when building new structures or a major remodel. It could also mean that the City consider programs and certifications that promote development and redevelopment of roads using green technologies. Electric Vehicle charging stations and parking stalls for high performance/low emission vehicles are also important to reduce green house gasses and help reinforce the alternative fuel/energy grid.

- Potable Water

The Pacific Northwest has a very good source of clean drinking water. Our drinking water is referred to as potable water. Unfortunately, because water is not costly, we use our drinking water for things like flushing toilets and watering lawns and gardens. However, rainwater can be harvested and stored and used instead of valuable drinking water and fixtures in our homes and businesses can be replaced or retrofitted to use much less valuable potable water.

- Stormwater and Landscaping

Stormwater is water that lands on our roofs and yards and parking lots and roads and continues to run and collect pollutants along the way. In many cases this stormwater causes flooding, erosion to stream banks and damage to public and private property. There are many Low Impact Development (LID) techniques that can and should be used to reduce and or prevent the negative consequences of stormwater. These are different from the traditional ways of collecting stormwater from downspouts and catchment basins in our driveways and parking lots. Some of the LID techniques can be simple and some are more difficult. But whether it is putting in a rain garden, cistern, green roof, planting or preserving native vegetation or just using pervious walking or driving surfaces, they all add up and make a positive contribution by improving our community's storm water quality and decreasing the quantity of stormwater. In addition, our aquatic ecosystems such as our streams and lakes receive valuable benefits that help preserve our quality of life in Kirkland.

- Energy Efficiency and Independence

One of the best ways to reduce the amount of energy needed to heat or cool a home or business is to improve the efficiency of the building envelope. Sometimes that means sealing cracks on the outside of the structure, adding more insulation or changing out the windows. After these types of improvements are made, it is feasible to consider solar panels to capture the sun's energy to create electricity or heat water. Other appurtenances such as small scale wind turbines are small and efficient enough to be effective in urban settings such as residential properties.

Sustainable Actions Worksheet

Sustainable Action items have been developed by the Green Codes work group consisting of staff from Planning, Public Works and Building. The entire worksheet for all actions is attached (see Attachment 2). It has been organized by actions, degree of difficulty and value. The worksheet also cross references the specific natural resource that is being enhanced. Some action items influence several other categories and have been given a point value which is summed to provide an objective total. For example, zoning code regulations that incorporate a low impact development technique such as a green roof have the potential to reduce stormwater runoff, increase water quality, reduce energy use and minimize the heat island effect. All of these contribute to a more sustainable building site. This particular action item meets four objectives and therefore scores four points. The action items have also been prioritized and grouped into 3 separate phases based on evaluation by the Green Codes work group. The phase one actions were pulled from the larger worksheet to create the smaller Phase One Sustainable Actions Matrix (see Attachment 1). Specific items are organized by reviewing body (either the City Council or Planning Commission). It is recognized that all code changes will go through the required review process which includes the Planning Commission and Houghton Community Council. The City Council will have final approval on all actions.

How and when are we proposing to do this?

Process: The process by which an action item goes from conception to approval and then adoption will involve several entities outside of the Green Codes workgroup (GCW). The Green Codes project has already received Council direction and approval to pursue its objectives. The Planning Commission will be needed to review and make recommendations on the proposed code amendments and public outreach plan. The GCW will convene a technical advisory group comprised of local professionals to help determine best management practices, and flesh out or add some ideas that will help the project achieve its objectives. The GCW will also meet with the Houghton Community Council, A public hearing will be held on any proposed Zoning Code additions and amendments. Staff intends to survey other cities for their best management practices as well. The project timing is outlined in the Work Program schedule (see Attachment 3).

Public Outreach Plan

The outreach for this project will involve conferring with local development professionals such as architects, landscape architects and stormwater engineers (referred to as a technical advisory board) as shown in Attachment 4. Local and regional subject matter experts may also be consulted to provide additional background, context and rationale for proposed changes. The Kirkland Chamber of Commerce, Kirkland's Alliance of Neighborhoods and the King & Snohomish County Master Builders may also be brought into this discussion of proposed changes and used as a sounding board in order to gain feedback on this project and ensure good public involvement. An open house is also proposed to get as much input from the general public prior to any public hearings.

Attachments

1. Phase One - Sustainable Actions Matrix
2. Sustainable Actions Work Sheet
3. Work Program Schedule
4. Technical Advisory Board

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.		

ACTIONS	Value	Difficulty	WATER RESOURCES			ENERGY RESOURCES		SUSTAINABLE SITES			HEALTHY COMMUNITY			MATERIAL RESOURCES				OBJECTIVE TOTALS
			Reduce the amount of potable water use	Reduce the amount of stormwater runoff	Increase Water Quality Treatment	Reduce Existing Energy Use	Increase Use of Renewable Energy Sources	Reduce Heat Island Effect	Increase Open Space	Increase Tree Canopy	Increase Use of Local Food Source	Increase Modes of Alternative Transportation	Reduce Light Pollution	Increase Reuse of Existing Buildings	Divert Building Waste	Support the Use of Local Materials	Reduce the Use of Hazardous Materials	
A SUSTAINABLE "GREEN" INFRASTRUCTURE																		
1 Develop "green" policies for City owned facilities	h	h	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
2 Develop measurable goals for climate change within the Climate Protection Action Plan	h	m	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
3 Require all project applicants to consider Sustainability and/or Carbon Footprint	h	e	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
4 Create flexible and consistent code language to address BMPs for smart growth.			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
5 Create lighting zones to reduce light pollution.						1						1						2
6A. Amend parking regulations to create parking maximums.	h	h		1		1		1	1				1					5
6B. Modify design regulations to incorporate bicycle storage and low-emission & fuel-efficient vehicle parking.	h	e		1		1		1	1				1					5
7 Modify current zoning code regulations to provide access to community/local agriculture. Common space is required for some development, allow it to be used for "pea-patch" or other agricultural use.	l	e		1						1								3
8 Modify current zoning code regulations to allow chickens on SFR lots smaller than 1 acre	h	e								1								1
9 Create comprehensive development regulations that align with the City's active Transportation Plan goals and polities.											1							1
B POTABLE WATER CONSERVATION																		0
1 Encourage water conservation by addressing rainwater harvesting, low flow valves etc.	m	m	1															1
2 Increase water rates to subsidize water conservation programs	h	h																
3 Include standards for m/f & Commercial that require landscaping that is appropriate to local and micro-climate, with limitations on conventional turf.	m	m	1															1
4 Develop incentives and tools to allow gray water for irrigation.	h	e	1															1
5 Develop incentives and tools to allow gray water for non-potable uses.	h	m	1															1
C STORMWATER & LANDSCAPING																		0
1 Revise lot coverage/open space standards to increase opportunities for LID	h			1					1	1	1							4
2 Reduce lot coverage to more clearly work with tree regulations and Landscaping requirements	h	m		1					1	1	1							4
3 Provide incentives for single family use regulations to encourage clustered housing.	h	h		1					1	1								3
4 Revise or remove KZC 115.35 erosion and sediment control in zoning code to meet current adopted stormwater standards	m	e		1	1													2
5 Revise KMC Title 29 (Land Surface Modification) to include current adopted stormwater standards	m	e		1	1													2
6 Revise stormwater regulations to apply to smaller sites: soil ammendment. Define "amended soil" in zoning code. Use Ecology definition adopted by stormwater regulations.	h	m		1	1													2
7 Revise stormwater regulations to apply to smaller sites: enhanced water quality treatment.	l	m		1	1													2
8 Adopt the the City of Seattle's "Green Factor" list.	h	h		1	1	1			1		1							5
9 Revise street/roadway standards to incorporate stormwater LID				1	1				1									3
10 Incorporate natural drainage landscapes (bioswales, rain gardens, and bioengineered planting strips) within parking lots in KZC Chapter 105 and 95				1	1				1									3
11 Incoprporate soil ammendment provisions into KZC Chapter 95				1	1													
12 Incoprporate permeable pavement provisions into KZC Chapter 105				1	1													

ACTIONS	Value	Difficulty	WATER RESOURCES			ENERGY RESOURCES		SUSTAINABLE SITES			HEALTHY COMMUNITY			MATERIAL RESOURCES				OBJECTIVE TOTALS	
			Reduce the amount of potable water use	Reduce the amount of stormwater runoff	Increase Water Quality Treatment	Reduce Existing Energy Use	Increase Use of Renewable Energy Sources	Reduce Heat Island Effect	Increase Open Space	Increase Tree Canopy	Increase Use of Local Food Source	Increase Modes of Alternative Transportation	Reduce Light Pollution	Increase Reuse of Existing Buildings	Divert Building Waste	Support the Use of Local Materials	Reduce the Use of Hazardous Materials		
13 Incorporate vegetated roof provisions into KZC Chapter 5 (definitions) and KZC 115.90 (lot coverage exemptions)				1		1				1									
D ENERGY EFFICIENCY & INDEPENDENCE																			0
1 Create an incentive program promoting project based energy independence (Clarify what incentive is).	h	h				1	1												2
2 Create energy districts for the purpose of creating local energy independence(find Development Incentives)ParMac?	h	h				1													1
3 Consider regulations to incentivize small scale solar and Passive Solar 1. Create regulations that restrict new tree plantings that impede solar access (passive solar heat) 2. Possible incentive: height bonuses given if solar power is installed 3. Require development not to impede the solar access of neighboring properties.	m	h				1	1												2
4 Allow building envelopes to encroach 3 inches into required setback yards for exterior rigid insulation(to exceed energy code in new construction or to retro fit existing).	h	e				1													1
5 Develop regulations to incentivize wind energy systems 1. Height and Setback encroachments	m	h				1	1												2
E Materials & Resources																			0
1 Adopt the use of the International Building Institute's materials redlist.(Educational Sessions and handouts and update website)	m	e																1	1
2 Partner with other agencies and programs supporting local deconstruction effort. (Education and Code Amendments)	h	m											1	1	1	1	1		4

**Green Codes Project
Work Program
February 16, 2011**

DATE	ITEM
January 4, 2011	City Council Update and Direction
January 27, 2011	Planning Commission Study Session – Scope and Work Program
February 4, 2011	Meetings with Technical Advisory Board & internet outreach
February 28, 2011	Houghton Community Council Study Session – Review Project
March 4, 2011	Technical Advisory Board
March 10, 2011	Planning Commission Study Session – Review Draft Amendments
March 25, 2011	Houghton Community Council – Review Draft Amendments
May 2011	SEPA Review and Determination?
May 23, 2011	Houghton Community Council Study Session – Draft Amendments
May 26, 2011	Planning Commission Study Session – Draft Amendments
May 19, 2011	Public Open House
June 2011	Notice to CTED (at least 60 days prior to City action)
June 2011	Planning Commission Public Hearing
June 2011	Houghton Community Council Public Hearing
July 2011	City Council Review
August 2011	City Council Final Action

Green Codes Project

Public Outreach Plan

February 16, 2011

Technical Advisory Board*

- **Low Impact Development:**

Brian Darrow, Blue Line

David Hilger, Formerly Triad

Peg Stehealy, SVR

John Rubenkoenig, PACE Engineers

- **Energy Efficiency & Independence**

Galen Page, Page & Beard Architects

Lee Beard, Page & Beard Architects

John Kappler, Kappler Homes*

Developer – Champion

Robert Pantley**

Subject Matter Expert:

Patti Southard, King County Green Tools**

Local Community groups/organizations**

Kirkland Chamber of Commerce

Kirkland Neighborhood Alliance (KAN)

King County Sustainable Cities*

King County Master Builders*

Cascadia Green Building Council*

*Meet with Technical Advisory Members at least twice

** Meet separately with these individuals/Organizations one time