



MEETING AGENDA

KELSO STORMWATER ADVISORY COMMITTEE

DATE: July 29, 2015

TIME: 4:00 pm – 5:00 pm

LOCATION: Kelso City Hall, Suite 203

Old Business

- 1) Meeting minutes for 01/28/2015

New Business

- 1) KSAC president/vice-president vote
- 2) Behavior Change educational program: target audience and BMP – group discussion
- 3) LID Code update process



Kelso Stormwater Advisory Committee Meeting
July 29, 2015 @ 4:00 p.m.
City Hall Conference Room 203
203 S. Pacific Ave.

Attendees:

1. Gloria Nichols
2. Stephanie Taylor
3. Yvonne Conwell
4. Jay Funder
5. Van McKay
6. Tom Wain
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____



Engineering Department

203 S. Pacific Avenue, PO Box 819 Kelso, WA 98626



Stormwater Advisory Committee Meeting

January 28, 2015

Call to Order:

Gloria called the meeting to order at 4:05 p.m., at City of Kelso City Hall, 203 S. Pacific Ave., Conference Room 203

Those present were as follows:

Advisory Committee Members:

Gloria Nichols
Gary Fredricks
Tim Wines
Erik Olson
Alexandria Barg
Dan Howell

Staff:

Van McKay, City of Kelso
Nina Caulfield, Recording Secretary

Excused Absences:

Unexcused Absences:

Steffanie Taylor

Approval of Minutes:

Gary made the motion, seconded by Dan to approve the minutes of October 29, 2014. Motion carried, all in favor.

Open Discussion:

1. Draft Stormwater Management Program Plan

Van explained that the Stormwater Management Plan will be the umbrella plan for the next 5 years. It, and the supporting documents, were drafted by OTAK whose work was paid through the Stormwater Capacity Grant funds. The job of KSAC is to review the plan, address needed changes, and recommend a final version to Council for adoption.

The group reviewed the most recent acronym and grammatical changes, as well as some minor changes in detail. Discussion followed. Ideas for advertising, education, and planned activities were generated. It was suggested that flyers, emails, and bill stuffers be sent to groups such as the Contractors Association and to be posted in public places, fairs. Such advertising/educational efforts should address questions like, "What does it mean to me?" "How does it impact me?" "What is the cost?"



Engineering Department

203 S. Pacific Avenue, PO Box 819 Kelso, WA 98626



Tim wanted to discuss paragraph 2 of 2.4. He was concerned with what we were going to comply with and which manual was going to be adopted. Discussion followed and it was decided that text changes would be sent to the group by 9 am the next morning for consideration of inclusion into the draft plan.

Tim requested LID training. Van will compile materials for LID training and will put it on the next agenda.

Next Meeting:

Committee discussed and agreed the next meeting shall be held April 29, 2015.

Dan made a motion to adjourn the meeting, Gary seconded, with all in favor the meeting adjourned at 5:04 pm.

Approved:

Steffanie Taylor, Chairperson

~~Stephanie Helem~~, Recording Secretary

Nina Caulfield



Engineering Department

203 S. Pacific Avenue, PO Box 819 Kelso, WA 98626



Stormwater Advisory Committee Meeting

April 29, 2015

Open discussion began at 4:05 p.m., at City of Kelso City Hall, 203 S. Pacific Ave., Conference Room 203.

A quorum was not present and no official business was conducted.

Those present were as follows:

Advisory Committee Members:

Gloria Nichols
Erik Olson
Tim Wines
Steffanie Taylor

Staff:

Van McKay, City of Kelso
Stephanie Helem, Recording Secretary

Excused Absences:

Dan Howell
Gary Fredricks

Unexcused Absences:

Alexandria Barg

Open Discussion:

1. KSAC President/Vice President Election Discussion
2. Low Impact Development PowerPoint Presentation by Van McKay

Next Meeting:

Attendees discussed and agreed the next meeting shall be held July 29, 2015.

Open discussion ended at 5:02 pm.

Terms of Office and Timetable

Date	Chair Term	Vice-Chair Term	Member 2-year term	Member 2-year term
January 2012	Mike Dyer One year Term begins Jan 1, 2012 and ends Dec. 31, 2012	Gloria Nichols One year Term begins Jan 1, 2012 and ends Dec. 31, 2012	Two years Term begins Jan. 1, 2011 and ends Dec. 31, 2012	Gary Fredricks Dan Howell Student Member: Mike Dyer
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
January 2013	Gary Fredricks One year Term begins Jan 1, 2013 and ends Dec. 31, 2014	Steffanie Taylor One year Term begins Jan 1, 2013 and ends Dec. 31, 2014	Two year term Term begins Jan. 1, 2012 and ends Dec. 31, 2013 Steffanie Taylor Tim Wines Gloria Nichols	Two year term Term begins Jan. 1, 2012 and ends Dec. 31, 2013
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
January 2014	Steffanie Taylor One year term Term begins Jan 1, 2014 and ends Dec. 31, 2014	Gloria Nichols One year term Term begins Jan 1, 2014 and ends Dec. 31, 2014	Two year term Term begins Jan. 1, 2013 and ends Dec. 31, 2014	Dan Howell Gary Fredricks Erik Olson Alexandrea Barg
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
January 2015			Two year term Term begins Jan. 1, 2014 and ends Dec. 31, 2015 Steffanie Taylor Tim Wines Gloria Nichols	Two year term Term begins Jan. 1, 2014 and ends Dec. 31, 2015
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				

LID Development Code Update Process and Summary Report Checklist

Table 1: Overview of time expected to complete WWA code update tasks - according to Integrating LID into Local Codes Guidebook (2012)

Task	Expected time to complete (months)	Check-in timing w/ WWA Permittees
Assemble comprehensive proj. team	1-3	Should be complete by 3/1/2015
Determine topics to address – work program	1-3	April 2015
Review (ex.) codes	1-3	
Amend/develop new codes	3-9	
Public review & Adoption	3-9	September 2015 & December 2015
Total time	Min= 10 Max= 27	

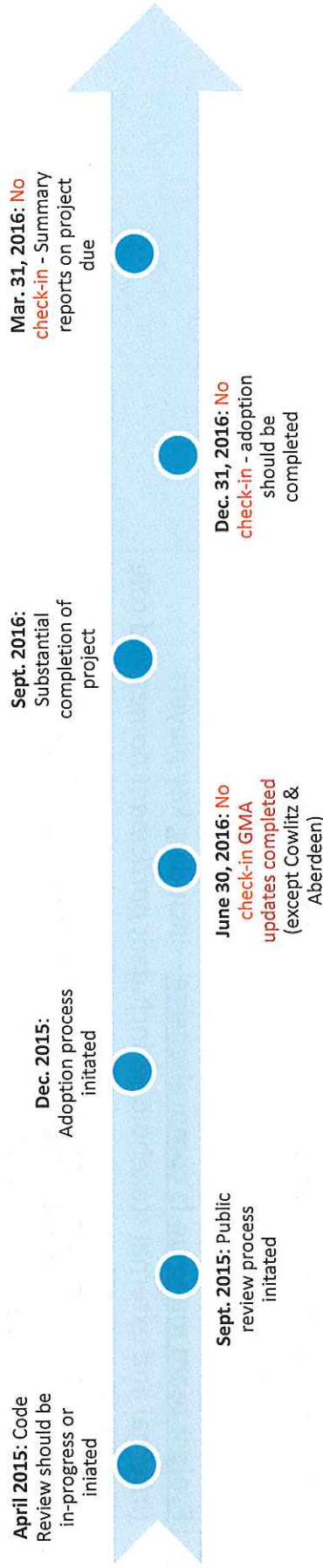


Figure 1: Permit Manager- WWA Permittee check-in schedule for LID code updates*

*Permit managers may also ask Permittees for their schedule and use that to advise a check-in schedule.

Below is a checklist based on of permit requirements and some lessons learned from the Integrating LID into Local Codes: A Guidebook for Local Governments (2012). This is intended to be used by Ecology staff while reviewing LID Code Update submittals. The links contained within the Summary report table connect to a more detailed checklist that may be used for review.

Summary report	Comments
<input type="checkbox"/> List of the participants included in the review (project) team (including: <i>participant name</i> , job title, brief job description, and department represented)	
<input type="checkbox"/> <u>Project team make-up is comprehensive</u> – including key players (internal and external stakeholders included; <i>participant names</i> and role on team described)	
<input type="checkbox"/> <u>List or description of documents reviewed</u> codes, rules, standards, and other enforceable doc. e.g gap analysis tool	
<input type="checkbox"/> Review of code/documents is comprehensive	
<input type="checkbox"/> <i>Document lists name of reviewer</i>	
<input type="checkbox"/> Revised codes/doc provided – and address:	
(a) <u>Measures to minimize impervious surfaces;</u>	
(b) <u>Measures to minimize loss of native vegetation;</u> and	
(c) <u>Other measures to minimize stormwater runoff.</u>	
<input type="checkbox"/> Revisions match list of codes identified for updates	
<input type="checkbox"/> Process for addressing gaps explained	

NOTE: Not all items listed are required to be submitted with the Annual Report, these items are included so that regional permit specialists can get a deeper understanding of the Permittees process and outcomes in order to better assess whether the intent to make LID the “preferred and commonly used approach” was followed.

Project team make-up is comprehensive – includes key players:

Note that jurisdictions differ in their organization, so some roles may fall under departments differently than shown below.

KEY PLAYERS	COMMENTS
<ul style="list-style-type: none"> <input type="checkbox"/> Public Works (Lead staff member) <ul style="list-style-type: none"> • Engineering (public project design) • Engineering review (private project design) • Stormwater maintenance (inspectors and operations staff) • Roads • Utilities (power, water, wastewater – as applicable) <input type="checkbox"/> Planning and Development (Lead staff member) <ul style="list-style-type: none"> • Planners • Engineering review (private project design) • Site Inspectors • Building inspectors • Code Enforcement 	
<ul style="list-style-type: none"> <input type="checkbox"/> Fire Marshall <input type="checkbox"/> Health Department <input type="checkbox"/> Planning Commission <input type="checkbox"/> Elected officials and City/County Administrator <input type="checkbox"/> External stakeholders (as applicable): <ul style="list-style-type: none"> • State/local health department (State Ag, DFW, Parks or DNR?) • Utility providers (power, water, sewer, etc.) • Agencies owning and maintaining streets (County, WSDOT) • Site designers/engineers • Major property owners/developers • Citizen's or neighborhood groups • Environmental groups • Special districts (Ports, Colleges, Drainage Districts) <input type="checkbox"/> Other: 	

NOTE: Not all items listed are required to be submitted with the Annual Report, these items are included so that regional permit specialists can get a deeper understanding of the Permittees process and outcomes in order to better assess whether the intent to make LID the "preferred and commonly used approach" was followed.

Codes, Rules, Standards and Other Enforceable Documents Reviewed

- Comprehensive Plan goals and policies**
 - o Remove barriers to LID
 - o LID is preferred method where feasible
 - o Preference for minimizing and disconnecting impervious areas (avoidance of tight-lining systems)
- Landscaping**
- Clearing and grading**
- Erosion and sediment control during construction**
- Tree preservation**
- Vegetation protection and management**
- Open Space regulations**
- Bulk and dimensional**
- Street and road engineering standards**
- Parking standards**
- Zoning**
 - o LID competing needs? More detail under SW code
- Clustering (may be in the Zoning code section)**
- Design guidelines, including for special zoning districts**
 - o Developers must meet the LID Performance standard for new development and redevelopment outside the UGA on a parcel of 5 acres or larger
 - o Review for ways to reduce barriers and allow for LID
- Stormwater code**
 - o Manual
 - o Definitions
 - o Require Site inventory & assessment incl.: vegetation survey, soil info & infiltration testing to determine LID feasibility
 - o Develop site planning requirements consistent with Chapter 3, Vol. 1 of the SWMMWW
 - o LID Competing Needs – superseded when conflicts w/:
- State/ Fed. Law: historic preservation, Arch., superfund/toxic clean ups, FAA, ADA
- Special zoning design criteria (thru community plg process)
 - Public health & safety
 - Transportation regs to maintain future expansion or multi-modal use in ROW
 - CAO that provides tree protection
 - Wellhead protection or Critical Aquifer Recharge Area (est. appropriately)
- o Construction site erosion and sediment control
- o Maintenance requirements
- Subdivision and Planned Unit Development codes**
- Critical areas and shoreline management (review to remove barriers)**
- Site plan review process**
 - o Pre-application consultation with applicants to review preliminary feasibility evaluation
 - o Submission / review of List #1, List #2, or LID performance standard during application process
 - o Outline construction sequencing to protect pervious areas and soils
 - o Consider mechanisms for long-term protection and maintenance of LID facilities
- Administrative tools**
 - o Application procedures
 - o Financial surety and bonds
 - o Long-term maintenance - mechanisms to ensure long-term inspection and notification of future owners
 - o Other codes, standards, regulations

NOTE: Not all items listed are required to be submitted with the Annual Report, these items are included so that regional permit specialists can get a deeper understanding of the Permittees process and outcomes in order to better assess whether the intent to make LID the "preferred and commonly used approach" was followed.

Summary of Existing LID Requirements and Revisions to Documents Reviewed

Minimize impervious surfaces

- Parking standards**
 - o Reduced amount of required parking (number of spaces)
 - o Maximum parking standards for certain land uses where parking is underutilized
 - o Reduced size of stalls or drive aisles
 - o Permeable pavement options
 - o Design to reduce EIA
 - o Shared driveways – also in residential or subdivision
 - o Other BMPs or design options to reduce impervious area
- Street and Road standards**
 - o Reduce width/size of road
 - o Permeable pavement options
 - o Design options
 - Curb and gutter
 - LID BMPs in right of way
 - Landscaping includes trees and LID facilities such as bioretention
 - Cul de sac design – to reduce size
 - o Other BMPs to reduce impervious area
- Zoning**
 - o Impervious surface limits for both total and effective impervious area (TIA & EIA).
 - By zoning classifications
 - By watershed/catchment
 - o Increased height limits – when linked to reducing impervious surface
 - o Clustering – when linked to reducing impervious surface
 - o Higher density – when linked to reducing impervious surface
- o Flexible setbacks to reduce impervious surface
- o Smaller lot size – when linked to reducing impervious area
- o Tree or vegetation area protection
- o Open space requirement or incentive
- o Other measures to reduce impervious surface
- Bulk and dimensional (may be in zoning)**
 - o Flexible setbacks – when linked to reducing impervious surface
 - o Height limits increased to reduce impervious or hard surface
 - o Building size limits reduced to limit size of footprint
 - o Other measures to reduce impervious surface
- Subdivision code**
 - o Street and road standards (see also street and roads, above)
 - o Shared driveways
 - o Smaller lot size when linked to reduced impervious surface
 - o Clustering
 - o Tree or vegetation area protection
 - o Landscaping
 - o Open space – orient as corridors to disconnect impervious surface
- o Other measures to reduce impervious surface
- Development standards**
 - o Permeable pavement for sidewalks, patios, driveways, walkways.
 - o Shared driveways and reducing minimum width
 - o Other methods for reducing impervious surface
- Other codes, standards and rules**
 - o Permeable pavement options for fire lanes

NOTE: Not all items listed are required to be submitted with the Annual Report, these items are included so that regional permit specialists can get a deeper understanding of the Permittees process and outcomes in order to better assess whether the intent to make LID the “preferred and commonly used approach” was followed.

Minimize loss of native vegetation

- Encourage/require retention of native vegetation
- Prioritize full dispersion on SFR lots >1 acre or other threshold based on zoning?)
- Clearing and grading
 - Tree retention, especially significant conifer trees
 - Protection of existing trees and drip/root zones
- Landscaping
 - Post-Construction Soil Quality and Depth
 - Native or drought-tolerant plant species
 - Allow for bioretention in landscaping
 - Allow dual use of landscaping for screening, aesthetics, buffers, LID
- Parking standards
 - Landscaping with bioretention or other BMPs
 - Other BMPs
- Road standards
 - Curb cuts to allow for watering of vegetation
 - Landscaping with bioretention
 - Other BMPs to reduce vegetation loss
- Tree protection
 - Retain and replace trees and native vegetation in development
 - Tree species list of native species appropriate to different settings
 - Options for tree credits
- Open Space – combine requirements
- Critical areas – combine with buffer requirements – only for low quality wetlands & BMPs limited to SWMMWW, App 1-D
- Other codes, standards and rules

NOTE: Not all items listed are required to be submitted with the Annual Report, these items are included so that regional permit specialists can get a deeper understanding of the Permittees process and outcomes in order to better assess whether the intent to make LID the “preferred and commonly used approach” was followed.

Minimize stormwater runoff

Adopt Appendix I requirements (Clear exception/ variance process?)

Landscaping

- Native plant list
- Allow for bioretention to count toward landscaped areas
- Post-Construction Soil Quality and Depth

Clearing and grading

- Tree retention standards
- Protection of soils from disturbance
- Protection of LID facility sites from compaction
- Phased clearing and grading to protect LID facilities

Development standards

- Downspout Dispersion Systems.
- Perforated Stub-out Connections
- Sheet Flow Dispersion

Other measures to reduce stormwater runoff

NOTE: Not all items listed are required to be submitted with the Annual Report, these items are included so that regional permit specialists can get a deeper understanding of the Permittees process and outcomes in order to better assess whether the intent to make LID the "preferred and commonly used approach" was followed.

- ⇒ Improved soil lasts for 15 to 30 years depending on climate
- ⇒ Improves water holding capacity for fast-draining soils
- ⇒ Raised beds on clay soil improve drainage and generate warmth for the first few years of decomposition



Cracks and crevices in rotting wood holds in moisture and allows roots to penetrate. Covering the wood with organic material and soil prevents the moisture from escaping.

- ⇒ Once established, hugelkultur beds can go for weeks with no irrigation
- ⇒ They work especially well for deep-rooted, thirsty plants like tomatoes, cucumbers or pumpkins, potatoes, squash or root vegetables

Photos on page two are by Bram Granger, a WSU Lewis County Master Gardener trainee and who built a hugelkultur raised bed at the WSU Lewis County Master Gardener Demonstration Garden in Fort Borst Park, Centralia WA 98531.

Some information and photos are courtesy of Paul Wheaton at rich-soil.com/ hugelkultur/ and UC Berkeley at <http://laep.ced.berkeley.edu/blakegarden/?tag=hugelkultur>.

WASHINGTON STATE UNIVERSITY
LEWIS COUNTY EXTENSION



Master Gardener Program

WSU Master Recycler
Composters of Lewis County

351 NW North Street, Chehalis WA 98532
(3600) 740-1212 <http://lewis-mg-mrc.org>

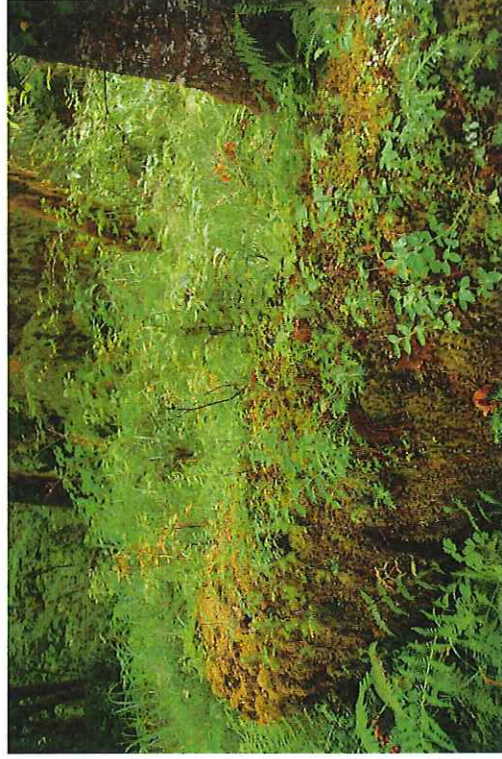
WSU Extension programs and employment are available to all without discrimination. Evidence of noncompliance may be reported through your local WSU Extension office.

Hugelkultur

(hoog-el-cull-tour - a German word for hill culture)

What is it?

Recreating the natural decaying process that occurs in nature . . .



in reverse!



1: Select a site and remove sod, setting it aside. If the bed is going to be below grade, remove soil and set it aside separate from the sod.



2: Lay logs or wood chunks into trench. Push vegetative material into cracks and crevices between woody material. Top with manure, compost, straw, hay or other organic materials.

3. Continue layering woody material with organic material, placing largest woody pieces on bottom and smallest on top of the pile until it is at the desired height.



4. Place sod on top of pile with grass side down.



5. Cover the pile with the soil removed from the trench or with other good quality soil. Plant a cover crop such as crimson clover the first year or plant directly into the soil.



- ⇒ Grow typical garden produce or ornamentals without irrigation or fertilization
- ⇒ Use up rotting logs, branches, and twigs
- ⇒ Can be flush with the ground or terraced, although raised beds are more typical
- ⇒ Can start small and be added to later
- ⇒ Creates rich organic matter with nutrients and air pockets for roots as it breaks down
- ⇒ For the first few years decomposition warms the soil slightly
- ⇒ Adding nitrogen to layers of newer wood will compensate for the nitrogen lost during the decaying process
- ⇒ The taller the hugelkultur raised bed, the less need for irrigation as the rotting wood holds moisture and allows roots to take up water and nutrients
- ⇒ Some good choices for wood are alder, maple, cottonwood, Douglas fir, or hemlock
- ⇒ Avoid cedar, locust or walnut trees as they are much slower to break down and may inhibit growth of some plants



City of Kelso

Stormwater and LID Code and Manual Update Plan

