

Product Name: Public Draft: Birch Bay Low Impact Development Manual and Habitat Mitigation Fund
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Document (LID, Mit Fund)	Page	Section	Comment/Concern and Recommended Change	Source of Comment (e.g., Agency, person)	Response/Resolution
General - Watershed Check Watershed Characterization			"Lake Terrell East - I think it was missed that portions of this watershed have highly impermeable underlying soils - heavy and deep layers of clay"	Anonymous from 11/21/09 Open House	Will make change to the watershed portfolio to recognize impermeable soils
General			"The previous planning efforts were based on a variety of planning area boundaries. As a result, there are gaps in the "vision" for the future growth and development of the watershed. More work needs to be done to establish a unified vision for the planning area"	Anonymous from 11/21/09 Open House	Boundaries for the planning area have been changed to align with the BBWARM subzone for consistency and clarity.
General			"Please include Birch Point West in your project/recommendations"	Keats Garman from 11/21/09 Open House	Birch Point was added, see note above.
General			"Re: Birch Point West I noticed the tree cover represented must be early 2008 before trillium did extensive logging. Since then, we have noticed a significant increase in stormwater run-off, despite the building of detention ponds. Damage has resulted - washing out down slope properties and Carey Lane. All this before any impervious surfaces from development is done. How can this be zoned UR4? Damage from development would be disastrous. We need UR(4) changed to R5."	Gail Garman from 11/21/09 Open House	Much of the area was rezoned in 12/2009.
General - Watershed portfolios			"SW Corner of Thornton and Olson water flows east to Nooksack - not to the lake."	Anonymous from 11/21/09 Open House	This confirms our mapping, we show that corner outside the Birch Bay watershed.

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General			"I would like to remind that the community has earlier identified the need for a tree retention ordinance and the need for low impact development standards. To date, some developers have not been allowed to do low impact stuff because it's not mentioned in the regulations. I know some stuff is happening now re: LID, just want to be sure it is coordinated with your process. Staff Peterson presented info to BBWARM on the 2005 Stormwater manual that is going to be adopted by Whatcom County, also want to be sure of coordination of that effort."	Kathy Berg from 11/21/09 Open House	We are working with engineering, fire, subdivision, and critical areas staff to ensure that recommended practices are not prevented through existing code. Stormwater treatment meets or exceeds the Ecology 2005 Stormwater Manual, but flow control and retention or "large scale" projects (>10,000 of impervious) are still to Whatcom County stormwater standards (WCDS Ch. 2).
LID	7	Stages of Certification	Under #1, it seems like there will need to be some sort of application involved with the pre-certification meeting. State something like; "A 'Pre-certification application' will need to be submitted to initiate this process. These applications will be available at WC PDS".	Staff	Good point, we will have to put together a basic application to set up the appointment and let them know what information they should bring.
LID	8	Stages of Certification	The timeline with the stages is OK until #5. You have already said that information required to produce the pre-cert letter (point checklist, etc.) will be submitted with the building permit (stage #3). Then in #5, it is stated that the applicant will submit the pre-certification letter at the time of building permit. This is not feasible if you are submitting the information for the pre-cert letter. That is, the information for the pre-cert letter and the pre-cert letter cannot be submitted at the same time. It seems like if the applicant submits the info with the building permit, then we review it and issue a pre-cert letter. If any changes are made to the building permit, the changes should be re-reviewed by the LID staff. It almost seems like you could get rid of #5 all together and insert the comment that if anything changes, it may effect the certification process.	Staff	I will remove the duplication, thanks.
LID	9	Site Assessment	In this section is listed different types of site assessments that may be needed. A few links, such as the NRCS soil mapping database, or the WC wetland maps should be included. In my experience, people have a difficult time figuring out the suitability of their soils. It looks like the link is farther on in chapter 3. However, repeating some of the information from page 58 couldn't hurt.	Staff	We will add links to our wetland mapping, We have added a soils map as Appendix B to the Manual.
LID	10	Site Assessment	Paragraph that starts "Once the site attributes are assessed..." I feel like this is a little unfair to the applicant. They are coming to us so that we can help them with things like Density and Uses. The code is very daunting to people. I don't think that they will be able to, or be willing to research all of this stuff on their own.	Staff	Right, we will change to say "next step is to contact WC PDS for applicable development regulations, including..." "This information can be discussed at a LID prescreening meeting..."

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LID	41	planting on center diagram	I don't understand this diagram. There should be some explanation with it.	Staff	This figure should go in the "Planting Techniques" section. Will add a better caption.
LID	52-53	reduction of setbacks	Can these setbacks be reduced without variances? If they require variances, you may want to inform the applicant of such.	Staff	Setbacks will be the same as allowed in Water Resource Overlay District - 20' front yard, 5' sideyard
LID	58	Soil Types	The link to the NRCS website goes to a general web page. This is confusing for people who are looking for maps or the ability to find soil information specific to their property. Change the link to be more specific.	Staff	Working the NRCS soil mapper is not intuitive, we have added the soils map as Appendix B.
LID	63	Submittal materials for vegetated swales	Applicants should probably include slope or topo information as well since swales can only have a 1-6% slope.	Staff	We can work on a detailed contour map of the watershed, that applicants can view online. Good suggestion.
LID	65	Site factors (dispersion)	It is stated that dispersion trenches may not be placed within 500 feet of shoreline erosional bluffs. I think that this is supposed to be 50 feet (500 seems a bit extreme).	Staff	Staff geologist noted that in certain cases 200' may be too close to infiltrate. Could be done closer than 500' with a geohazard report.
LID	65	Design Requirements	bullet no. 3 - "65% of the site must be aside as open space" Must be SET aside.	Staff	Corrected
LID	66	Sizing Chart for Dispersion Trenches	The chart is based on impervious surfaces in multiples of 500. The Dev. Stds. (and the DOE manual) say that dispersion trenches can accommodate 700 sq. ft impervious surface. Change from 500, 1000, etc. to 700, 1400, 2100, etc.	Staff	We will revise per current standards. A conservative approach to sizing BMPs was taken given that engineering would not be required.
LID	66	Dispersion	For longer trenches, notched grade boards can be used to evenly disperse the water. Add notched grade boards into the "Cross section requirements" section.	Staff	Will make change
LID	69	Infiltration site factors	Again, infiltration facilities should cannot be placed 50 feet from erosional bluffs, not 500.	Staff	
LID	70	Infiltration sizing chart	These numbers are different than the Dev. Stds. However, I am beginning to suspect that you have a different set of numbers that you are confident in. If so, ignore this comment.	Staff	A conservative approach to sizing BMPs was taken given that engineering would not be required in most circumstances.
LID	81	Site Evaluation	"...Undisturbed soils should <u>BE</u> avoided..."	Staff	Thanks

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Birch Bay Site Design Workshop			Are these changes intended to become the standard for development in Birch Bay or are they to be considered "optional" to the existing Development Standards	Tom Fenton at 6/24/10 Site Design Workshop	We intend Conservation Design and Low Impact Development to be optional standards that would come with incentives to land owners that employed these methods
Birch Bay Site Design Workshop			Has County Engineering dedicated staff to oversee these proposals? If so, who?	Tom Fenton at 6/24/10 Site Design Workshop	Whatcom County Engineering and Planning and Development have trained staff that would review the proposals. One option for implementation is a specific LID trained review team. At that time we would know specifically who would be reviewing LID projects

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Birch Bay Site Design Workshop			<p>Low Impact Development BMP's have been tried throughout the State with mixed results. Most failures are the result of poor soil conditions or a lack of options due to constraints. How do birch Bay and Blaine soils play into these proposals? (TOM - You have the most history with ACTUAL soil conditions in this area - you should weight in here). For instance, infiltration or bio-infiltration do not work well if the majority of soils underneath these facilities are clay or impervious in nature. DOE requirements for infiltration rates and groundwater seperation also often preclude the use of these methods</p>	Tom Fenton at 6/24/10 Site Design Workshop	<p>I agree clay soils and high groundwater are impediments to infiltration practices. Management practices for the birch Bay Watershed will focus on minimizing impact, cleaning and retaining water. LID is not just infiltration but involves preservation, reduction of disturbance, reduction of impervious areas, maximizing vegetation and soil quality and disconnection of impervious areas all of which reduce the volume of runoff from a site and thus reduces the reliance on infiltration alone. We will work to vet recommendations with engineers, contractors, and scientists on the feasibility of recommended practices included in the manual.</p> <p>Washington State University has compiled flow volume and water quality resurllts from bioretention facilities with varying soil infiltration rates here: http://www.ecy.wa.gov/programs/wq/stormwater/municipal/LID/BioretenctionWaterQualityTreatment.pdf</p>

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Birch Bay Site Design Workshop			DOE has only adopted a minimal amount of LID mechanisms for use as BMP's on development sites. Of the methods that are accepted, the devil is in the details (for instance, dispersion options can be limited by the proposed size of lots or intensity of land use, facilities cannot be located or be coincident with critical areas/buffers). Does the County intend to permit others that are not listed or accepted by the State?	Tom Fenton at 6/24/10 Site Design Workshop	We will use the most current accepted manual, currently the LID Technical Guidance Manual for Puget Sound, 2005, unless we have alternative standards already adopted. Locating facilities in critical area buffers may be an option. Is there a particular BMP that you are interested in? If there is a technically sound option, viable in Birch Bay conditions, we can explore its use
Birch Bay Site Design Workshop			Will these proposals include measures to reduce roadway cross-section standards (much like Lake Whatcom Watershed standards or other optional road sections) to limit impervious surfaces? If so, has the Fire Marshall been consulted on these ideas to make sure that emergency access is still feasible?	Tom Fenton at 6/24/10 Site Design Workshop	The Fire Marshall was involved in early discussions about LID at Whatcom County. His concerns about access will be part of any final recommendations. Public safety considerations will be part of any practices that come out of this work
Birch Bay Site Design Workshop			What sort of "credits" might be offered to a developer to make use of LID methods more economically feasible? Who will assess what these credits should be and how they are calculated	Tom Fenton at 6/24/10 Site Design Workshop	Credits or incentives proposed include a dedicated point of contact at PDS for moving permit through department reviews, use of the Habitat Mitigation Fund for mitigating buffer impacts, flexibility from standard lot dimensions, and buffer size reductions. We are working now to assess what these credits should be and how to qualify. Please send us your suggestions or come to the next public meeting.

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Birch Bay Site Design Workshop			Are there options available in Birch Bay for stormwater management "banking" or regional facilities construction? If so, how would the County or community manage and maintain these facilities?	Tom Fenton at 6/24/10 Site Design Workshop	Low Impact Development attempts to reduce the amount of stormwater runoff created and treat it close to the source. A centrally managed system for retention of runoff matched with stormwater BMPs on site may make sense in Birch Bay. If it were to work it should be done through a mitigation bank, an In-lieu-fee mitigation sponsor, or the birch bay Stormwater District (BBWARM).
Birch Bay Site Design Workshop			Although LID measures are encouraged in Bellingham and other towns, they often run into roadblocks when in conflict with City Code, Development Standards, and Building Code requirements. Will the County's new LID manual seek to alleviate some of these conflicts?	Tom Fenton at 6/24/10 Site Design Workshop	We are working with engineering, fire, subdivision, and critical areas staff to ensure that recommended practices are not prevented through existing code. Where there are conflicts we will take steps to get flexibility in the code within the Birch Bay Watershed
DRAFT LID Manual for Birch Bay	57	Small scale residential projects	<p>The text on page 57 defines small scale residential projects as:</p> <p style="padding-left: 40px;">"The project is a single-family or duplex residential project; and The project will result in less than 10,000 square feet of impervious surface, and less than 3/4-acre of clearing and grading"</p> <p>To be consistent with the NPDES municipal storm water Phase II permit and the Stormwater Manual for Western Washington, the project must also result in less than 5,000 square feet of pollution-generating impervious surface. Because this manual is intended for residential projects, the PGIS is probably restricted to roads, driveways, and any parking areas. So, if you just want to list those surfaces rather than using the term, PGIS, that should be acceptable. List roads, driveways, and parking areas, rather than using the term PGIS</p>	Ed O'Brien, Washington Department of Ecology	Will add for consistency with state standards.

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DRAFT LID Manual for Birch Bay			Please do not refer to vegetated swales as “bioswales.” We have an engineered treatment practice that is referred to as “biofiltration swales.” Some shorten this name to “bioswales.” The result is confusion between swales that are intended to be engineered treatment systems (with specific design criteria) and swales that are intended to provide some unspecified amount of flow reduction and treatment. We have encouraged others to use the term, “bioretention swales” to refer to the type of swales that you describe. You may want to put a note in this section that alerts the reader that these swales are not “biofiltration swales” as described in the West. Wash. Stormwater Manual.	Ed O'Brien, Washington Department of Ecology	We will remove any reference to bioswales in order to eliminate confusion.
DRAFT LID Manual for Birch Bay	65	Design Requirements for Dispersion	The text mentions that to manage all of the storm water through dispersion, 65% of the site must be set aside. If you want to retain this reference, I suggest that you also state the other critical design criteria (impervious area covering 10% or less of the site) and reference BMP 5.30 in the Stormwater Manual for Western Washington for additional design requirements.	Ed O'Brien, Washington Department of Ecology	BMPs are geared toward "small-scale residential projects." The 65/10 ratio is not part of our standards for these projects.
DRAFT LID Manual for Birch Bay	70		The sizing chart for infiltration trenches is too gross. There is a wide range of soil types in A and B categories that should have different minimum trench lengths. See the Western Washington Stormwater Manual on pages 3-5 and 3-6 for the Dept. of Ecology’s recommendations. These sizes were developed for the area around Seattle. That area has similar rainfall as the Birch Bay watershed. So, those size recommendations could be used for your area.	Ed O'Brien, Washington Department of Ecology	The infiltration trench sizing chart represents the minimum standard. For infiltration, Level 3 is sized to meet Ecology standards (Vol 3, pg 3-5) and the mapped soils types in the watershed.
DRAFT LID Manual for Birch Bay	77		The recommended sizing for cisterns will result in cisterns that will be full in the first month of the rainy season. The text should acknowledge that. The County should require designers to use proper dispersion or infiltration techniques to manage roof runoff even if these recommended cisterns are employed. The text could include references to more detailed rainwater harvesting design guidance if a designers wants cisterns to meet a significant part or all of their dry season irrigation needs, and/or internal, non-potable water needs.	Ed O'Brien, Washington Department of Ecology	Good point, we will make these revision/additions to the cistern section of the manual.
DRAFT LID Manual for Birch Bay	77		The reference to Texas rainwater harvesting should be replaced with a reference to the updated LID manual for the Puget Sound Basin (due out later this year), and the state plumbing code (WAC 51-56-1600) The code will be referenced and may be included in the updated PUget Sound LID manual. If you have any question whether the extent of information that will be included in the PS LID manual will be sufficient guidance, you can contact the editor, Curtis Hinman. chinman@wsu.edu	Ed O'Brien, Washington Department of Ecology	Assuming approval by the county council, the manual will be in effect within the next few months. Therefore, we'd prefer not to reference a document that isn't yet available to the public. However, we will add a sentence advising the applicant to use the guidance within the revised PS LID Manual, when it is published. We will add the reference to the state plumbing code.

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DRAFT LID Manual for Birch Bay	81	Soil Amendment	<p>The text is not consistent with BMP 5.13 in the Stormwater Manual for the Puget Sound Basin, and therefore would not comply with the NPDES Phase II municipal storm water permit requirements. We suggest that you refer to the excellent guidance provided by the Washington Organic Recycling Council at:</p> <p>http://www.soilsforsalmon.org/pdf/soil_BMP_Manual.pdf</p> <p>This guidance provides all the information Whatcom County, builders, and landscapers need to implement this requirement, including: how to write project specifications, how to calculate amount of soil amendments, design calculation sheets to submit to the County project reviewer, how to verify whether the materials were delivered, and simple inspection procedures to confirm compliance.</p>	Ed O'Brien, Washington Department of Ecology	We will revised section, in accordance with the stormwater manual.
			<p>One question I had after Monday's meeting is what design standard for stormwater requirements are used in the Birch Bay LID manual. The summary sheet said LID practices will be based on Birch Bay watershed characteristics as well as , "review of existing LID manuals from around the Country".</p> <p>When Ecology reviews LID projects, we look at the Ecology 2005 Stormwater manual, the PSAT 2005 Low Impact Development Technical Manual or the WSU raingarden handbook to see how the LID technique was designed to handle flow control and treatment of the water. If design standards are not referenced, we ask for how the designer complies with one of these 3 above mentioned references.</p> <p>If individual LID techniques described in the Birch Bay manual reference what existing LID or stormwater manual the design standard is adapted from, it will help provide a crosswalk to the WA state LID and stormwater manuals currently used in site design plans to address stormwater runoff and flow control.</p>	Christina Maginnis, Washington Department of Ecology	Good point. In general, the bulk of the LID practices described in the manual (including both stormwater and site development BMPs) were based upon the references that you listed. The stormwater BMP design standards were written to comply with both Washington state and Whatcom County standards. The stormwater section of the manual will be reviewed and revised (as necessary) to insure compliance with these standards (re: Ed O'Brien's comments).

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HMF		6.0 Review Team	<ul style="list-style-type: none"> • Change sentence 2: “The Review Team will consist of either the Birch Bay Watershed and Aquatic Resources Management District Advisory Committee, the Whatcom County Planning Commission, or a new group consisting of three persons:” • Provide explanation after 1st bullet for specific team roles. For example, “Review restoration site plans for _____” Are restoration site plans defined somewhere earlier? What exactly is a restoration site plan? Is it the same as the mitigation plan referred to in section 8? It appears that restoration site plan and mitigation site plan are used interchangeably in the document. Use only one to avoid confusion. It states later that the Director of Whatcom County PDS will approve the site plans. Explain the difference between review and approve. • How will the review team have the information they need to recommend adjustments to the fee schedule? Will they be provided a recommendation by a technical expert to approve? Will they be expected to have the expertise to determine when changes are necessary? It states that the Director will work with Whatcom County Council to adjust the fee schedule. Provide more information on the Review Team’s role. 	Staff	<p>We will be doing restoration plans for a particular site that will then serve as mitigation for impacts elsewhere in the watershed.</p> <p>We will be more consistent with our use the Restoration Plan in the coming draft and I will add the restoration plan to the glossary. The review team will make recommendation to the sponser for changes to the plan, they will serve an advisory role. The PDS director will provide final approval only on projects that need permit approval.</p> <p>The annual Fund report will provide information on how much money has been collected and how much spent, the area of required mitigation, costs to construct, monitor, and maintain sites during the year. The report will also parse out administration and land costs. If there is a fund balance or unaccounted for impacts, the Sponsors will recommend a change to the fee schedule to the Review Team.</p>
HMF		7.0 Determining Fees	<p>--1st paragraph : #3 how will the functional attributes of the buffer impact area be quantified? Does this imply that impacts to a "high quality" buffer (like perhaps impacts to a mature confer forest) will cost more for offsite mitigation than a "low quality" buffer (like perhaps impacts to a field where native vegetation no longer exists)? Does the example mitigation fee schedule table need to include another column for this functional attribute factor or is this what the tree canopy removal yes/no is meant to be</p> <p>--6th bullet: Will any monitoring occur after 10 years? What tuype of assurances will be in place to protect the restoration stie for the long term? 20-50 years plus?</p> <p>--Who in the county will do the work of determining the fund fee schedule?</p>	Staff	<p>Assessment reports per the Critical Areas Ordinance will provide information on impacts to buffer functions. Since hydrologic and water quality functions will be mitigated onsite per the LID manual, the main functional impact will be habitat. The cost structure adds cost if there is loss of a forested buffer and if the area is providing a higher level of function as assessed in the</p>

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HMF		9.3 Monitoring	<ul style="list-style-type: none"> How long the receiving site will be monitored is a critical component of this program and should be addressed in this section. There should be a plan for long-term monitoring/auditing that the receiving site continues to provide the planned ecological benefit for a long period of time (checked every time the title changes owners? Checked every 5 years , 10 years? For perpetuity? 	Staff	Monitoring will be done for the first ten years and then when property changes hands (If mitigation is done within an easement). Reporting will be done annually for the first three years, then year five and year ten.
LID Manual and Mitigatin Fund drafts			First, my compliments on including Semiahmoo West as within the BB watershed boundaries. This has been my request for some time as you know. This designation will prove to be very important over time, as development resumes in this area	Keats Garman via e-mail on 2/28/11	Yes, consistency with existing regulatory boundaries is important.
LID Manual and Mitigatin Fund drafts	pg 5		Second, your diagram of the watershed on pg. 5 of the Mitigatino draft is misleading with respect to tree cover -- it shows much more than now remains after the Trillium clear cutting over the past few years. Your chart on pg 6 may be a more accurate portrayal of tree cover -- now less than 50%--most of it in the northern part of S West.	Keats Garman via e-mail on 2/28/12	Map is for illustrative purposes only. Maps are no longer part of portfolio, see appendix B of Habitat Mitigation Plan.
LID Manual and Mitigatin Fund drafts			Third, again in reference to the Mitigation draft, as I have expressed previously, long term maintenance of artificial wetlands can be expensive--replacing of amended soils, plantings, etc. The in-lieu fees must be adequate for this long range cost, rather than cost shifting to taxpayers. In some cases, developers have shifted these costs to a HOA, and so long as this arrangement is effective, it is probably acceptable. On-going monitoring of these installations will be critical, whether on pub lic or private property. Who will assume this responsibility over time, and how will it be paid for? What mechanism for enforcement will there be in the event of property owner's refusal to maintain these?	Keats Garman via e-mail on 2/28/13	Please note, the mitigation plan only applies to buffer habitat, not direct wetland mitigation. If a development proposal that utilizes the LID manual will require direct wetland mitigation, the project will be subject to the current mitigation standards in the County's CAO. For buffer impacts that will be mitigated through the Habitat Management Fund, the Fund sponsors (the County and the Whatcom Conservation District) will be responsible for long-term monitoring and maintenance. These costs will be included within the per-SF impact fee.

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LID Manual and Mitigatin Fund drafts		Stormwater	Fourth, in reference to the LID Manual draft--stormwater section, while filtration of stormwater from development is extremely important for water quality, both fresh and marine, the infiltration of it via stormwater detention ponds, rain gardens, bioswales, etc. may not be advisable near the fragile high bluffs on the west side of the watershed--Birch Point, Whitehorn, etc., because this may increase groundwater migration and erosion of these features. I do not know whether you should reference this problem in the manual, or whether it would be carefully reviewed as part of permitting process?	Keats Garman via e-mail on 2/28/14	Will revise for consistency with Ecology 2005 Manual: Infiltration trenches should not be built on slopes steeper than 25 percent (4:1). A geotechnical analysis and report may be required on slopes over 15 percent or if located within 200 feet of the top of steep slope or landslide hazard area.
Draft Birch Bay LID Manual	4	Regulatory Context	Add references to WCC and WCDS provisions that categorically apply in Birch Bay Watershed, i.e., WCC 20.80.630 – 636, WCDS Chapter 2, and in particular Section 221.	Staff 1/27/11	Will add more references back to County code

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Draft Birch Bay LID Manual	4	Eligibility to Participate	<p>Since the Birch Bay watershed is one of five Stormwater Special Districts (SSD) per WCC 20.80.635, WCDS Chapter 2 Section 221 therefore applies, as a minimum, to all SFR and Duplex construction or renovation projects on existing lots < 5 acres in area that create >500 SF impervious surface or where the estimated cost of work >50% assessed value of an existing structure (except interior remodels, nonpolluting roof replacements, house maintenance, and energy upgrades) where said existing lot is also not part of a larger development that provides stormwater management facilities. See WCDS Chapter 2 Section 221 Drawing 1.4. Additionally, for all SFR and Duplex projects in as SSD on existing lots > 5 acres in area, plus all other non-SFR and non-Duplex projects in an SSD (i.e., WCDS Chapter 2 Section 221 does not apply), if a project creates >5, 000 SF of pollution generating impervious surface (PGIS) area, then, per WCDS Section 219.B.2, stormwater treatment BMPs from the current version of the WSDOE Stormwater Management Manual for Western Washington apply.</p> <p>Therefore, proponents of SFR and Duplex projects in the Birch Bay watershed cannot earn LID points/credits for using dispersion on lots >2 and <5 acres in area, infiltration on lots <2 acres with qualifying soils, PNGAs, and treatment for PGIS, since WCDS Chapter 2 Section 221 requires these anyway.</p> <p>However, a new SFR project on an existing lot that is, say, 3 acres in area that infiltrates vs disperses would be eligible for LID points/credits, since infiltration provides better stormwater management than the dispersion minimum requirement, OR a new SFR project in a platted subdivision, where said subdivision provides community stormwater facilities, would also be eligible for LID points/credits if the project proponent opted to embark on an LID approach instead of connecting the community system, OR a new 4,000 SF SFR project on an existing 6 acre lot (which, per WCDS Chapter 2 Section 221, is exempt from SSD standards) would also be eligible for LID points/credits. Suggest therefore add a project LID credit/point ineligibility chart (which I believe would be easier/smaller than an eligibility chart) to the Manual. By exception then, all other projects would be eligible.</p>	Staff 1/27/11	<p>We have simplified the eligibility of small scale to include: (a) Individual detached single-family residences, duplexes and accessory development creating less than 10,000 square feet of cumulative impervious surfaces.</p> <p>(b) All other development resulting in the creation or addition of less than 5,000 square feet of impervious surface area. (c) Less than ¼-acre of clearing and grading, and (d) Less than 5,000 square feet of pollution generating impervious surface.</p> <p>The Stormwater Special District and Water Resource Special Management Area requirements apply to Birch Bay, credit is given <u>only if LID practices are utilized</u> to exceed existing requirements. The BMPs were sized by CH2M HILL in the stormwater calculator (for small scale projects only) to be conservative. <u>These should provide increased mitigation over the existing SSD requirements.</u> Full point level for each practice is sized to meet the Ecology standard for flow control (e.g. infiltration of the 100-year storm or full dispersion credit). The minimum level is meant to meet the Ecology water quality requirements. The intermediate point levels were largely meant to meet sublevels of infiltration to meet the percent annual runoff targets. In general, the 95% target is roughly equivalent to a 2-year storm, the 98% target is roughly equivalent to a 25-year storm.</p>
Draft Birch Bay LID Manual	6		What does "ASLA" stand for?	Staff 1/27/11	American Society of Landscape Architects. This acronym is spelled out in the reference section, and Chapter 1 of the manual.

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Draft Birch Bay LID Manual	35		Change all instances of "contain" to "retain"	Staff 1/27/11	Changed.
Draft Birch Bay LID Manual	57	1st decision block	Where did the 91% to 95% stormwater retention prerequisite originate from?	Staff 1/27/11	The 91% is the volume requiring treatment using LID BMPs. The 91% is consistent with the WSDOE Stormwater Management Manual Minimum Requirement #6, Runoff Treatment, in Volume I
Draft Birch Bay LID Manual	58		Add new category for credit/points (18?) for projects that can fully infiltrate per WSDOE Stormwater Management Manual for Western Washington Vol III Chapter 3 or "Fully Disperse" per WSDOE Stormwater Management Manual for Western Washington Vol V Chapter 5, BMP T5.30, given that WSDOE Stormwater Management Manual for Western Washington Vol V pg 5-2 states: "Sites that can fully infiltrate (see Volume III, Chapter 3) or fully disperse (see BMP T5.30) are not required to provide runoff treatment or flow control facilities."	Staff 1/27/11	Added in code and the manual.
Draft Birch Bay LID Manual	58	Paragraph 3	Change "the permit center" to "Planning Department front counter"	Staff 1/27/11	Changed.
Draft Birch Bay LID Manual	58	Last paragraph,	Rewrite to active tense	Staff 1/27/11	Changed.
Draft Birch Bay LID Manual	59	2nd bulleted paragraph, 1st bulleted sub-paragraph	What is the reason/logic for the 5,000 SF threshold?	Staff 1/27/11	Changed to 10,000 for consistency with Whatcom County code and others.
Draft Birch Bay LID Manual	59	2nd bulleted paragraph, 2nd bulleted sub-paragraph	Change "one" to "3/4" for consistency with WSDOE <i>Stormwater Management Manual for Western Washington Vol 1</i> Section 2.5.6.	Staff 1/27/11	Changed

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Draft Birch Bay LID Manual	61	Example Drainage Plan	Suggest substitute with two ESA created example sketches (2 separate pages now) that reflect LID techniques that are probably generally applicable/usable in Birch Bay watershed based on urban vs rural settings: 1. Inside UGA/small lot - shows compact house, pervious concrete driveway, porous asphalt apron connecting driveway to street, rain garden, etc 2. Outside UGA/large lot - shows estate/ranch type house, separate barnshop, conventional gravel driveway, conventional asphalt apron connecting driveway to street, well site plus well head protection area, septic tank, septic tank drain field, septic tank drain field reserve area, stormwater infiltration trench/pit, open space, preserved forest, etc.	Staff 1/27/11	We have created a hybrid on page 64 of Manual
2011.01.11 0952 Peter Gill email			See WCDS Dwgs 505.U-1 through 505.U-4	Staff 1/27/11	Added on page 47 of Manual
2011.01.14 1652 Peter Gill email		1st bulleted question	My answer depends on whether properties that lie partially in the Birch Bay watershed pay full or prorated BBWARM fees. If full fees, then those properties should also be eligible for full credit. If prorated fees, then those properties should be eligible for the same prorated credit.	Staff 1/27/11	Commercial properties would stand to see a substantial difference in rates since they are billed according to impervious area. There is no provision for single family residential.
2011.01.14 1652 Peter Gill email		3rd bulleted question	Consistent with comment No 2 above, <u>all</u> development (unless specifically ineligible per WCDS Chapter 221) should be eligible.	Staff 1/27/11	Done
2011.01.14 1652 Peter Gill email		5th bulleted question, 1st part	Per WSDOE <i>Stormwater Management Manual for Western Washington</i> Vol III pg 3-10, Vol III Section 3.1.2 pg 3-11 Design Criteria no 2, Vol III Section 3.1.2 pg 3-12 Design Criteria No 2, Vol III Section 3.1.2 pg 3-15 para no 1, Vol III Section 3.2.1 pg 3-20 para no 4, Vol III Section 3.2.1 pg 3-23 para no 2, Vol III Section 3.2.1 pg 3-26 "Setbacks" para, Vol III Section 3.2.2 pg 3-42 "Setbacks" para, Vol III Section 3.2.3 pg 3-48 "Setbacks" para, Vol V Section 5.3.1 pg 5-4 1 st bulleted para, Vol V Section 5.3.1 pg 5-7 1 st bulleted para, Vol V Section 5.3.1 pg 5-8 1 st bulleted para, and Vol V Section 5.3.1 pg 5-9 4 th bulleted para requirements	Staff 1/27/11	Added language about shoreline bluffs to indicate a need for a geotechnical analysis if runoff is discharged toward the landslide hazard area or infiltration is proposed within 200 ft.
LID & HMF	all	all	we support the "incentive" approach and like the idea of a watershed-based plan	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	Great, us too.

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LID	all	all	Is the intent of the LID Manual to make development more responsible and consistent with the Birch Bay community's vision? If so, then The LID Manual would be more effective if it were only applicable in the areas identified as "most suitable for development" in the 2007 Adolphson study.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	Providing development that the community can support is an objective. Recommendations from the Pilot Study are for LID in areas that are most sensitive, ie. "Protection Areas." Limiting the opportunity and incentives for LID to just those "protection areas" limits its application.
LID	6	Chapter 1	10 points seems like a low threshold for use of the Habitat Mitigation Fund. Were you trying to make it available to most applicants? The Fund will likely be very attractive for developers, and is a benefit for the project. We believe it is appropriate to ask for more points to qualify.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	It is a low threshold, but needs to be adjusted upwards. Higher thresholds have been added. Participation in the LID program is required to use the Habitat Mitigation Fund as a way to quantify minimization techniques. This can be waived for outstanding circumstances by the technical administrator.
LID	30	Chapter 3	Under "Point Requirements", when you mention altering "buffers", did you mean the standard buffer or can someone apply if they do not alter a reduced or averaged buffer?	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	We are referring to standard buffers. Points will not be given in this category if buffers are reduced.
LID	30-34	Chapter 3	Is the intent that the LID Manual be consistent with WCC 16.16 requirement for mitigation sequencing? If so, it would be helpful to state this explicitly (similar to how it is stated in the Habitat Mitigation Fund).	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	Yes, you will find the sequencing priority in the Manual under the definition of Mitigation.

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LID	30	Chapter 3	The flow chart allows for impacts to a Category II wetland or its buffer (albeit with a negative point total). We believe impacting a Category II wetland should disqualify an applicant from receiving incentives allowed under the LID Manual. A Category II wetland is a highly functioning, relatively rare wetland whose functions are very difficult to replace. Impacts to these wetlands should be allowed only under extreme circumstances. Allowing impacts to these wetlands seems counter to the intent of the LID Manual and Habitat Mitigation Fund.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	Impacts to Cat II wetlands are not allowed. In the case of unavoidable impacts, LID practices could help mitigate some to the impacts. Scoring has been revised to lose significant points for the wetland impact, so would need to do more to qualify as LID. Making the LID manual unavailable to the landowner would not result in a project with less impact.
LID	31	Chapter 3	Flow chart, top of page mentions allowing an alteration to a Category I buffer. Perhaps this is not an appropriate impact if someone is attempting to use the Habitat Mitigation Fund = loss of buffer protection for the highest functional category of wetland.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	The flow chart should not include Cat 1 wetlands, I will remove.
LID	31	Chapter 3	The flow chart shows -2 points and +5 points for mitigation actions. Is the point total for Section #2 a reflection of the project's ability to protect wetlands, streams and buffers? If so, then mitigation should not enter into the equation...instead mitigation is the "penalty" you are imposed after to determine that you do not provide adequate protection. We suggest mitigation be point neutral.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	Good point, the point score was intended to provide preference for the Mitigation Fund, but this will not always be the case. Will revise to be point neutral to mitigation options.
LID	31	Chapter 3	The flow chart as it is currently written is "circular": if you mitigate impacts through the Habitat Mitigation Fund, then you get 5 points toward being able to use the fund. Mitigation should probably be point neutral (see comment above).	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	Thank you, we will revise to be point neutral to mitigation options.
LID	31	Chapter 3	The flow chart has a dis-incentive (negative points) for on-site mitigation. This is not always an accurate reflection of the "best available science". Sometimes on-site mitigation is the best way to protect functions, has the highest chance of success, etc. In addition, some functions cannot be mitigated off-site. Mitigation should probably be point neutral (see comments above).	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	On-site mitigation may be the best option when there is a degraded buffer linked to a larger system, for example. Will revise to be point neutral to mitigation options.

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LID		Chapter 3	In many instances the document states an applicant may "want or need" to hire a qualified consultant to assist in identifying wetlands and streams, etc. If the applicant is wanting to have the benefit of the incentives allowed under the LID manual, then a site visit should be mandatory to verify existing conditions and document a baseline.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	It is required per the CAO, clarified that delineation, rating, and assessment report need to be done by a qualified professional on page 32.
LID	32	Chapter 3	How do you want to deal with projects that have both wetland and buffer impacts? (or stream and buffer impacts) (a) The other state and federal agencies may not recognize the use of the Habitat Mitigation Fund, so should the plan have a warning that if the project requires state or federal permitting for wetland/stream impacts, the Habitat Mitigation Fund may not be acceptable to these agencies? (b) Can you do on-site wetland enhancement to mitigation for wetland impacts, then reduce that same wetland's buffer and pay into the Management Fund to off-set buffer impacts?	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	(a) Clarified, on page 5, that this mitigation program is for buffers only and other agencies get involved when there are wetland impacts (b) your scenario seems like a good solution, if enhancement will mitigate for wetland impacts at the site. With the State having a significant role in the Birch Bay "Pilot Study" applicants with wetland impacts will be encouraged to mitigate consistent with the findings in the Study. This will help with mitigation plan approval by the DOE, if they know the watershed approach is being followed.
LID	30-31	Chapter 3	Is the ultimate goal of the Habitat Mitigation Fund and the WCC 16.16 to ensure no net loss of ecological function? If so, the "Project Wetlands, Streams, and Buffers #2" section would be more effective and scientifically defensible if the point requirements were based on wetland/stream <u>functions</u> rather than Category.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	The Habitat Mitigation Fund is for buffers only. We will be looking at mitigating all functions of the buffer that are lost, ie, habitat, slope stability, hydrologic, water quality. Critical areas assessment reports written description of function and values lost.
LID	30-31	Chapter 3	The "Project Wetlands, Streams, and Buffers #2" section would be more effective and scientifically defensible if wetlands were prioritized for impact based on <u>location</u> using the 2007 Adolfson study.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	There is a disincentive to impact buffers in the most sensitive areas based on the cost of mitigation. Buffer impact fees are 20%.higher in these areas.

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LID	30-45	Chapter 3	The plan does not currently state that an application needs an impact assessment completed by a qualified professional for incentive #2. An impact assessment is currently a requirement of WCC 16.16. While this may be required by reference, the reader would have less confusion if it was stated explicitly in the LID Manual. The impact assessment is essential in determining the appropriate "credits/debits" for use in the Habitat Mitigation Fund. This problem may also be applicable to incentive #3.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	It is required per the CAO, clarified that delineation, rating, and assessment report need to be done by a qualified professional on page 32.
HMF	12	6.0 Review Team	The review team would have more scientifically defensible decisions if they included qualified professional(s) (you could use the definition in WCC 16.16). As it is currently written, it appears possible that none of the review would have credentials in wetlands, streams, fisheries or wildlife management.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	The exact construct of the Review Team is still in discussion. We agree that a technical representative knowledgeable in restoration planning should be part of the review team.
HMF	13	7.0 Determining Fees	We did not see a formula to calculate a "debit" or the corresponding "credit". In order to document "no net loss" of ecological function, these credits/debits need to be based on <u>function</u> and also separated based on <u>sub basin</u> . Instead, the HMP appears to use area and tree cover as surrogates for function. Acreage & canopy cover of a <u>buffer</u> does not allow you to uniformly calculate a functional loss of <u>wetlands or streams</u> . This would require a site-specific impact assessment.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	Critical area assessment report will document any lost function due to buffer. Restoration plans will document added function. We will revise section 10.3 "Credit Fulfillment Schedule" to account for credits and debits by watershed.
HMF	15-17	8.0 Offsetting Impacts Through Targeted Mitigation	The mitigation receiving site selection needs to be based on the credit/debit calculation of <u>functions</u> .	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	Function debits/credits will be accounted for through annual reporting. The 2007 Watershed Characterization Pilot Study assesses the greatest functional lift available to a subwatershed. Restoring the functions that have the greatest potential for ecological lift will be the focus, which may not always result in a one to one functional lift. This is the premise of the 2007 Pilot Study. This is the approach put forward by the Department of Ecology, focusing on restoring lost functions in a watershed where there is the most potential for gain.

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HMF	15-17	8.0 Offsetting Impacts Through Targeted Mitigation	The mitigation receiving site selection needs to take into account the credit/debit tally for each sub basin to ensure no net loss in each sub basin.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	
HMF	21	10.3 Credit Fulfillment Schedule	The annual report should also include the ledger for credits/debits based on <u>functions</u> and on <u>sub basin</u> .	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	Critical area assessment report will document any lost function due to buffer. Restoration plans will document added function. We will revise section 10.3 "Credit Fulfillment Schedule" to account for credits and debits by watershed.
OVERALL			We want to see both the LID Manual and the Habitat Mitigation Fund be successful. We believe they are both important and worthwhile documents. Their success; however, will depend on whether the documents are clear and predictable. Unfortunately, using the HMF as an incentive for the LID Manual creates confusion, uncertainty, and internal conflicts. Therefore, we recommend using them as independent documents. We suggest replacing the HMF incentive in the LID Manual with a different incentive. We believe that if done properly, carefully, and with significant public input; the HMF will be very attractive to developers and can be funded directly rather than through the LID Manual.	Burns, Jackson, Ninnemann, Guzman, VanLeaven, Morgan-Hill	The two programs are separate, with separate code to implement. However, the premise with the HMF is that impacts to buffers have been approved. The only way they can legally be approved is by avoiding and minimizing impacts. The LID manual provides clarity to the developer/landowner about what steps will need to be taken to approve their permit. The technical administrator will have authority to waive the requirement to use the LID manual in exceptional circumstances.
LID Manual			Do you get points for a protective convenient even if you do not meet the minimum threshold for points in a category, e.g. 30% tree cover outside of UGA?	Staff	No, if the applicant protects at a level lower than the point threshold they would not be eligible to receive the protection points.
LID Manual			Reserve tract that can later subdivided should not receive the bonus protective easement credit	Staff	Agreed, will add language to this effect.
LID Manual			Buffer restoration points should be given the % of degraded buffer that is revegetated, not a percentage of the total revegetation site	Staff	Agreed, will revise.
Scoring Worksheet		Cat #2	Add "Impacts to.." to each critical area type	Staff	Noted. Will revise
Scoring Worksheet		Cat #6	Points for Stormwater do not match the manual	Staff	Noted. Will revise

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LID Manual			<ul style="list-style-type: none"> Is there buy-in from other County departments on reduced road width? What about the fire District? Parking in some neighborhoods includes trailers and boats, etc. Make sure there is adequate parking for new subdivisions. 	Verbal - Public Mtg 2/17	Road diagrams on pages 48 - 49 are already part of the adopted development standards.
LID Manual			<ul style="list-style-type: none"> Is there a way for neighbors to comment on development proposals that are implemented via the manual—will this be the same as for conventional development proposals? 	Verbal - Public Mtg 2/17	No change from existing notices on development projects.
LID Manual			<ul style="list-style-type: none"> What if the trees next to my house are a hazard, can they be cut down? 	Verbal - Public Mtg 2/17	We will include language for tree retention areas that maintains an adequate distance from the building envelope (so people don't have to remove the trees at a later date)
LID Manual			<ul style="list-style-type: none"> Can tree retention include small trees (dogwood?) that don't block out neighbors' views. Should tree retention be any native vegetation? 	Verbal - Public Mtg 2/17	Tree retention is about retaining trees that are already onsite. Planting new is covered in Landscaping and Revegetation, which does include the option for native shrubs rather than trees.
LID Manual			<ul style="list-style-type: none"> Why should a developer get more points for open space or impervious surface in a Urban Growth Area than outside of the Urban Growth Area? Zoning for more density should not be a factor. 	Verbal - Public Mtg 2/17	Urban Growth Areas need to accommodate appropriate levels of housing and commercial development. Fitting in open space and minimizing impervious surface is much more difficult in these areas prioritized for development.
LID Manual			<ul style="list-style-type: none"> How do we monitor whether more impervious area will be added after the landowner gets a permit? 	Verbal - Public Mtg 2/17	There will be a notice on title, adding new impervious would require removing an equivalent amount somewhere else.
LID Manual			<ul style="list-style-type: none"> Is a notice on title already required? 	Verbal - Public Mtg 2/17	Notice on title is already required to document stormwater facilities, open space, protective native growth areas, critical areas. Mitigation requires conservation easement or separate tract.

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HMF			<ul style="list-style-type: none"> Critical Areas Ordinance does not allow for mitigation outside of the watershed where the impact occurred, does the Pilot Study allow for this to happen since the Department of Ecology helped author the study? The Manual should specify. 	Verbal - Public Mtg 2/17	Mitigation would be done within the Birch Bay watershed, but not always in the same subwatershed. The Watershed Characterization Pilot Study (2007) coauthored by the DOE promotes this approach as a way to restore functions in areas that can provide the best functional lift.
HMF			<ul style="list-style-type: none"> Wetlands can be delineated differently depending on who does the delineation. All up to interpretations. 	Verbal - Public Mtg 2/17	Using a qualified professional wetland biologist should provide comparable delineations. Comment noted.
LID Manual			<ul style="list-style-type: none"> Need to make the program simpler, even than the manual. 	Verbal - Public Mtg 2/17	We can work to make it more straight forward. The LID Manual is intended to be easier to use than the County Code, but some knowledge of land use regulations is still required, e.g. zoning designation. Pages 11 - 19 are intended to provide examples of how to apply the scoring criteria.
LID Manual			<ul style="list-style-type: none"> What is the population density to qualify for NPDES stormwater standards? Will Birch Bay be part of new permit after census numbers come out? 	Verbal - Public Mtg 2/17	A population density of one thousand per square mile
HMF			<ul style="list-style-type: none"> Audit requirements for Habitat Mitigation Plan should show how much of the money being collected is used to manage the program. 	Verbal - Public Mtg 2/17	We will add this to the annual reporting requirements, percent of fund used for administration of the program.
HMF			negatively effect the most downstream landowners. This is a problem with the Habitat Mitigation Fund. Make sure there are clear minimum buffer standards so that no stream gets totally degraded.	Verbal - Public Mtg 2/17	There will be a minimum buffer requirement to make sure functions that cannot be mitigated offsite are not lost.

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LID Manual and HMF			<ul style="list-style-type: none"> • Will this process cost more for a developer/builder? Are the incentives significant enough to want to go through certification? 	Verbal - Public Mtg 2/17	<p>As an optional program the incentives put forward by the County need to adequate benefit to utilize the program, the incentives are open for further discussion. Put the best motivation for a LID project are the economic benefits that can be realized using LID techniques. LID can reduce development costs by:</p> <ul style="list-style-type: none"> • Minimizing the overall development footprint, which reduces clearing, grading, and infrastructure costs. • Reducing impervious surfaces such as roadways, curbs and gutters minimizes paving and conventional stormwater treatment costs. • Decreasing the use of storm drain piping and inlet structures, and eliminating or decreasing the size of large, engineered stormwater ponds, reduces costs.
LID Manual			<ul style="list-style-type: none"> • Make sure the language about the free initial screening process is clear and accurate. 	Verbal - Public Mtg 2/17	Noted.
LID Manual and HMF			<ul style="list-style-type: none"> • How do we get this information out to the general public, the people building homes that have little knowledge of development regulations? 	Verbal - Public Mtg 2/17	Public outreach to builders and developers is in process.