



January 14, 2016

Carole Richmond, Chair  
Olympia Planning Commission  
c/o Todd Stamm, Principal Planner  
City of Olympia  
PO Box 1967  
Olympia, WA 98507-1967

Dear Chair Richmond:

**SUBJECT: Utility Advisory Committee (UAC) Review of Low Impact Development Code Revisions**

The UAC has reviewed the twenty-two elements of the City's proposed Low Impact Development (LID) Code Revisions during the course of our four meetings this fall. These were developed through a collaboration between SCJ Alliance, Public Works and Community Planning & Development. Public Works staff Eric Christensen, Engineering and Planning Supervisor, and Laura Keehan, Senior Planner, collaborated in facilitating our discussions, with contributions from several other staff.

The UAC supports staff's recommendations for these revisions. However, we hope this letter helps the Olympia Planning Commission and the City Council spend their time and energy efficiently on the potentially important issues in this rather dense and complicated Low Impact Development (LID) Elements document that was provided to the UAC during our review (hereafter referred to as the "Elements document").

Low impact development's fundamental goal is easy to state, though it's not easy to implement (and it's not easy to decide what's really needed to meet it.) The City is supposed to "make LID the preferred and commonly used approach to site development" in order to conform to a new requirement from the Department of Ecology (DOE). DOE administers the federal Clean Water Act in our state, and this requirement is part of the 2013-2018 Western Washington Phase II Municipal Stormwater Permit, which the City is now implementing.

The UAC thinks that a few of the twenty-two elements discussed in the Elements document involve significant policy decisions. They discuss techniques that might be widely applied and that might also deal with significant amounts of water in the locations where they were applied. They also imply increased trouble, and sometimes increased costs, for City staff and/or for developers. In these cases, the City has to decide how much more it wants to require, how "preferred" it wants these techniques to be, and how "commonly used" the City is going to insist on making them.

The UAC would like to see the City utilize LID treatment wherever feasible. From that point of view, the main question is whether it might be possible to adopt a more ambitious requirement than staff currently recommends in any of these potentially significant areas.

At present, staff estimates that at locations in the City that are actively managed for stormwater,

approximately 30 to 40% use LID techniques. The other approximately 60 - 70% of stormwater is managed using traditional techniques, such as treatment ponds and catch basins with filters in storm drains. Overall, roughly 65% of the City's development predates stormwater management requirements and is not treated or it drains to the wastewater collection system and is treated at LOTT's regional wastewater facility. If the City adopts the draft recommendations, staff estimates that the stormwater system can manage roughly 75% of the water in *newly* developed areas with low impact techniques.

However, there's limited development on completely new sites in the City. The proposals won't affect areas that are already developed, unless they are projects with over 5,000 square feet of new or replaced hard surfaces that are being significantly redeveloped. Although they are not discussed in the Elements document, City staff also intends to change their Drainage Design and Erosion Control Manual to alter the thresholds at which a project will be required to retrofit existing impervious surfaces on the site, and that will increase the number of projects requiring retrofits compared with Ecology's standards.

## **Review of the LID Elements**

**Administrative Elements** - Elements that do not seem to involve significant policy decisions include the following:

***Elements #16 - #21*** are administrative steps needed to implement the LID actions. They would "help provide consistency and clarity for the design, review procedure and the post construction requirements" for techniques recommended in other sections. (Procedures, Process and Codes Overview, p. 1)

***Element 18, Site Assessment***, would require evaluating the potential of sites for LID techniques earlier in the application review process. This will likely increase ongoing costs for staff and for developers. For example, increased soils, vegetation, and topography information will be needed early in the project proposal process.

Costs will also increase for construction inspections and ongoing maintenance inspections proposed in Elements #19, Pre and During Construction Inspections and #20 Maintenance Standards and Inspections. However, these seem to be necessary prerequisites to successfully implementing any significant LID techniques.

**Minor Elements** - Some elements would only make minor changes, because they result in small changes to things the City already requires, because they would only be applied in a few situations, and/or because they would only handle small amounts of water. These elements include:

***Element #5 Reduce Impervious Surfaces Associated with Parking Lots***. Option 1, as identified by staff, is no change. Option 4 (making it easier to get a variance to install fewer stalls) "would only minimally result in reduced impervious surface." Staff recommends Option 2 (basing required aisle widths on more recent studies) which would reduce required aisle widths by 3%, from our current 61 foot requirement to 59 feet.

Option 3 (requiring pervious paving for “extra” parking above the normal allowance) which would not produce significant reductions since “in many cases” these increases already have to be pervious to meet the zoning limits on total impervious surfaces (Element #5, p. 4). Of course, one might produce larger reductions by requiring permeable pavement in *all* new parking areas, not just “extra” areas; this possibility is one aspect of Element #14, which is discussed in a subsequent section.

Option 6, which would require a certain percentage of compact stalls. This would produce more reductions than Option 5, which would merely allow more compact stalls. Since compact spaces are almost 25% smaller than standard stalls, going from one to the other is a significant reduction in impervious area. However, we currently allow up to 30% of the stalls to be sized for compact cars, and since the Elements document doesn't specify what percentage Option 6 would require, it's unclear whether or not it would increase actual outcomes much.

**Element #6 Minimize Size of Cul-de-sacs** would take about 600 square feet from the paved area of cul-de-sacs by increasing the radius of the required landscaped circle in their centers. This will be a minor change, particularly since the City already only allows cul-de-sacs in special circumstances where the topography interferes with a gridded street layout.

**Element #7 Minimize Street Width.** The City has already reduced street widths to the feasible minimums. Reductions of another two feet on a few streets in the Green Cove Creek basin have caused problems. According to page 3 of this section of the Elements document, Ecology now cites our street width standards as a model for low impact development.

**Element #8 Increase Street Block Spacing** states that increasing the size of allowed blocks would only produce “small, incremental changes” in the number of streets, and that the potential reduction in impervious area is “limited.” The Elements document also notes that smaller blocks help meet a number of the City's transportation goals, like reducing vehicle miles traveled, and that “a lot of work has been done to establish the current spacing requirements.” The UAC didn't have enough details to actually compare the estimated potential gains in pervious surfaces and losses in transportation goals in any quantified way, although staff may be able to provide some in the future.

**Element #12 Stormwater Use of Landscaping,** recommends Option 2, continuing to allow the use of landscaping areas to help meet stormwater requirements and removing some barriers from current codes. It also notes a number of reasons that developers are unlikely to do much more of this unless it's required, including increased complexity of construction, erosion control and site access challenges, specialized design needs, and increased maintenance costs. Option 3, which would require that some percentage of the landscaping provide stormwater services, might or might not result in significant increases in infiltration.

**Element #13 Downspout Infiltration Systems,** where staff recommends adding some details to the requirements for roof downspout controls that Olympia has had since 2005.

**Element #15 Impervious Pavement with Underdrains,** where staff recommends the status quo, which allows underdrains beneath parking lots and other on-site hardscapes. The Elements document states that Option 2, which would allow them under streets as well, has “too many risks and conflicts to be feasible.” (This is a little ironic, since the City's Decatur Street demonstration project is

apparently still working well, but the long list of potential problems in this section makes it seem pretty unlikely that either developers or the City would build roads like this even if the code allowed it.)

**Element #22 Green Roofs, Rainwater Reuse, and LID Foundations**, where even the incentives staff recommends adopting as the most supportive option “will result in relatively minor reductions in runoff City wide,” because of “limited use of the systems due to the complexity of their construction and maintenance and increased cost of installation.” (Element #22, p. 5)

**Substantive Elements** - Elements that suggest potentially more important policy and environmental implications include the following:

**Element #1 Minimize Site Disturbance.** This recommends requiring permits for any grading more than 10 feet (instead of 30) from structures, for clearing and grading of more than 7,000 feet for residential and duplex projects only (instead of 20,000), and for any clearing and grading involving more than 10 cubic yards of soil (instead of 50). Staff also intends to develop code changes to “fully implement an LID approach” to clearing and grading, though those are not yet settled. (Several possibilities are listed on page 7 of Element #1. These all involve continuing to clear and grade, but in more accordance with the natural terrain. Requiring that more of it be left untouched is considered under Element #2.)

**Element #2 Retain and Plant “Native Vegetation.”** We've put that phrase in quotes because this discussion actually uses it to mean not only “species that occur naturally” but also “species that are well adapted to current and anticipated environmental conditions in Olympia”. In other words, it means anything that's expected to grow well around here. Examples include common drought-tolerant species. (Element #2, p. 1)

Currently, the City only requires the retention of the native plants on the site in critical areas and associated buffers. Trees must be retained or planted in tree tracts in subdivisions with four or more lots. (These are roughly 10% of the site, and do not currently require preservation of “the critical understory vegetation.”) (Element #2, p. 2) The City also currently provides “many exemptions” to tree protection requirements. (Element 2, p. 5)

Option 2, which staff recommends, would add explicit language about protecting understory in tree tract areas. It would require multi-family and some commercial developments to meet the current requirement for a minimum tree density of 30 tree units per acre with trees in a tract rather than continuing to count trees anywhere on the project area toward the requirement. (However, staff also proposes making it easier to meet this expanded requirement by beginning to count stormwater treatment areas as part of any expanded landscaping requirements.) (Element #2, p. 7)

It's important to understand that in any discussion of the City's tree policies a “tree unit” is not the same as a tree. For example, the mature birch in the UAC chair's side yard, which has two trunks, is about 15 “tree units”, so preserving two trees like that on an acre project meets our current requirements. If you plant trees instead, an evergreen tree has to be at least 4 feet high, and deciduous trees have to have trunks at least 1.25 inches thick; it can take quite a while until those that survive over time look or function like what most people think of as trees.

As staff notes with respect to this element “the question is to what *extent* do we regulate the retention of native vegetation?” (Element #2, p. 7) This is probably the most important policy question in the document, since everything else about LID simply attempts to imitate, to the best of our ability, the way in which storm and surface water behaves in undisturbed tracts, and since we might leave much more land undisturbed if we were willing to sacrifice potential development in order to do so.

At this point, our LID requirements for the Green Cove Creek basin “result in the protection of approximately 60% of the overall development plat.” (Element #2, p. 7) This is less onerous than it may sound, because there are extensive wetlands in that area. They can be counted toward meeting this requirement; and they can't be filled and built on in any case because of the Critical Areas Ordinance. (Element #2, p. 8)

Option 3 would “expand the amount of area required as preserved natural vegetation within new development sites.” Staff notes that “Given growth management practices and Olympia's goal of creating relatively dense land uses, the feasibility of applying [the Green Cove Creek basin] regulations to other areas of the City is limited.” However, there's considerable space between preserving roughly 10% of a single family subdivision site or “up to 30% of a multi-family site” which “must include usable space” as the City now requires (Element #3, p. 3), and preserving 60% of it undisturbed. As the Elements document says “other less rigorous preservation requirements” [than the Green Cove Creek basin's 60%] are possible. (Element #2, p. 6)

It also states that “the implications of mandating increased natural vegetation are substantial” and that they would “require extensively revisiting our expectations for future land use.” (Element #2, p. 8) As this suggests, our committee has not had the data or the time to really consider this issue. It is, however, uniformly what engaged citizens who contact the UAC about stormwater issues advocate. If the Planning Commission or Council wish to explore ways to expand LID beyond the recommendations of the Elements document, this should be looked at more.

***Element #3 Zoning Bulk and Dimension Standards.*** As the Elements document states, “a developer will typically... maximize square footages for commercial development and lot or unit count for residential projects.” City goals for increasing density are in harmony with this understandable aim; other City goals including increasing pervious areas are in conflict with it, and the current requirements are “a result of many years of adjustments” among these aims.

For multi-family housing, staff recommends the status quo, rather than increasing restrictions on coverage and/or making up for the reduction in possible units by increasing allowed heights. For single family housing, staff recommends incentives for clustering rather than increasing the requirements for open space in subdivisions. The Elements document also says that these “incentives would need to be compelling to overcome perceived objections to clustering,” which suggests that this step is unlikely to produce much change. Another option, which is not included in the Elements document, might be to incentivize smaller houses – as someone pointed out in our discussion the City currently charges almost the same fees to permit and construct a 400 square foot house and a 2,500 square foot one. Here again, these are basically political decisions about policy that the UAC has not explored in depth.

**Element #4 Restrict Maximum Impervious Surface Coverage.** This section of the Elements document basically reprises the discussion of Element #3 (above), stressing the need to balance the City's desire for denser development against its desire for more infiltration of stormwater, although these restrictions cover other surfaces like patios and driveways in addition to buildings themselves.

The Elements document recommends Option 3, reducing the limits on total impervious coverage by 5% to 10% for single family residential, multi-family, commercial and industrial zones. (Currently, some of Lacey's commercial zoning limits coverage to 70%, 15% less than we allow in "many" commercial zones.) (Element #4, p. 5)

It notes that, as in Element 3, "building height limits may need to be examined" to allow increases in height to make up for losses in development potential due to area reductions. Of course, the other paved areas included in maximum coverage units, like driveways, can't be allowed to be higher to make up for reductions in area, as the buildings discussed in Element #3 might be. The potential compromise here is that they might be made more permeable. (As noted above, this option is discussed as Element #14, although the Elements document envisions it as an important factor in arriving at the recommended option for a number of different elements.)

**Element #9 Require Sidewalks on Only One Side of the Street.** Staff recommends the status quo. Most of the discussion of hurdles centers on problems with arterials and other major roads. On local access roads, sidewalks on one side of the street would produce a significant 17% reduction in impervious surfaces. (They would also roughly double the rate at which the City could provide one sidewalk for pedestrians on the many streets where there currently aren't any, although the staff told the UAC that the City would probably still want to put a curb on the side of the street without a sidewalk, so it wouldn't be possible for stormwater to simply go off the pavement and infiltrate on that side.)

The Elements document's discussion of the issues about this option does seem somewhat contradictory. It begins with a quotation from the Low Impact Development Technical Guidance Manual for Puget Sound that says pedestrian accident rates are "similar in areas with sidewalks on one or both sides of the street," and that the limited available assessments "suggest that there's no appreciable market difference" between homes on the side of the street with a sidewalk and those on the side without one, and that the Americans with Disabilities Act "does not require sidewalks on both sides, but rather at least one accessible route from the public streets." (Element #9, p. 1)

Then the Elements document's discussion goes on to stress the importance of sidewalks on both sides for reducing accidents, says that the value of a house on the side without a sidewalk "could be diminished," and that "limitations on sidewalks do affect ADA accessibility." Since we already require sidewalks on only one side of local access streets in the Green Cove and Chambers basins, we should have some actual evidence about whether it's created problems for residents or not, although the Elements document doesn't discuss our actual experience in those areas, and our committee didn't get to that question in our discussion.

The other issue that the discussion raises, about safe walking routes to schools, might perhaps be met by requiring two sidewalks on streets where that's an issue. However, it also seems at least plausible that having a sidewalk on one side of the streets that don't have any now might meet the ADA standard

in the quote and provide safe walking for school kids better than having two sidewalks on half of them and none on the others for the foreseeable future.

**Element #10 Minimize Driveway Surfaces**, recommends Option 2, a 17% reduction in the maximum width allowed for residential driveways, from 24 feet to 20 feet. Since these represent “as much as 20% of [the] impervious cover in a residential subdivision” (Element #10, p. 1), this might be a fairly significant reduction.

Option 3 would produce “minimal” changes since it would only reduce the width of one-way driveways, and they’re infrequent. Option 4 would create maximum driveway widths for different kinds of commercial projects, but “would not have a large impact” since projects that don’t need a wider driveway generally already build one narrower than the maximum width that’s specified for any commercial project in the current code.

**Element #14 Permeable Pavement**, The City already requires permeable pavement for sidewalks where it’s feasible (Introduction to Elements #6-#10, p. 1), and is strongly opposed to its use on roadways, so this discussion is basically about whether to require it for parking lots, bikeways, and residential driveways - a good deal of surface. The problems with permeable pavement include construction challenges, uncertain durability and potential replacement costs, higher maintenance costs for regular suction cleaning and periodic testing, and limited feasibility because of factors like soils with poor drainage.

In particular, in our discussion, staff said that the City’s experience maintaining its own pervious projects according to Ecology’s standards has led to 90% reductions in their permeability over time. The Elements document recommends Option 2, which would remove code barriers to its use, but “is not likely to appreciably increase its use by developers at this time.” In fact, the discussion says that “Given the infeasibility criteria, it is likely that most private projects could opt out if desired.” (Element #14, p. 6)

It isn’t clear how these problems about widespread site infeasibility and long term maintenance fit together with the fact that in “many cases” the City allows commercial projects to build parking that would exceed the normal limits on total impervious surface by using permeable pavements, that we “routinely allow” “100% permeable parking lots” (Element #14, p. 2), or the suggestion that reducing the limits on total project coverage in Element #4 could be usefully offset by more use of permeable surfaces. (Element #4, p. 6) In fact, the discussion of Element #4 also suggests “some type of exemption or allowance be made for multi-family, commercial, and industrial sites “where soils do not support use of permeable pavement” (Element #4, p. 6), although this later discussion of the infeasibility criteria makes it sound as if such an exemption or allowance would actually excuse “most private projects” from this tightened requirement.

The City’s use of permeable sidewalks is also given as a reason that sidewalks on one side of the street are not really needed, but if they are going to lose 90% or more of their permeability over time even with careful regular maintenance, they are going to shed nearly as much water as regular concrete ones.

**Element #11 Bioretention Street Section**, The UAC's discussion indicates that the City expects to quite significantly increase its reliance on bioretention features, like swales in median strips and in the right of way between curbs and sidewalks. Staff describes the problems associated with maintaining these (and especially about dealing with residents or homeowners' associations about maintaining them as "quite challenging"), and the UAC definitely concurs in that assessment. Staff has not yet worked out a detailed plan for trying to cope with these problems, but is committed to developing one.

If you have any questions, I can be reached via e-mail at [tcurtz@ci.olympia.wa.us](mailto:tcurtz@ci.olympia.wa.us)

Sincerely,



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Chair  
Utility Advisory Committee

TC/lm

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