

LID ELEMENT #5: REDUCE IMPERVIOUS SURFACE ASSOCIATED WITH ON-SITE PARKING

OBJECTIVE

Minimize the amount of impervious surfaces associated with surface parking lots.

CONSIDERATIONS

This element is closely related to Element 10 (Restrict Impervious Surface Coverage) and will have many of the same benefits and drawbacks. This paper focuses on reductions in parking lot impervious area. Impervious areas associated with parking can be reduced by either reducing the amount of parking or by reducing the size of parking spaces and drive aisles.

The driveway portion of a parking lot from the edge of the right-of-way to the building or parking area is not considered in this paper. This area is discussed as part of Element 17 (Minimize Driveway Surface).

RELATED ELEMENTS

Element 4 Restrict Maximum Impervious Surface Coverage

Element 14 Permeable Paving

Element 15 Impervious Pavement with Underdrains

Element 10 Minimize Driveway Surface

TRADITIONAL APPROACH TO PARKING

The amount of parking required on a project site is dictated by OMC 18.38 (Parking & Loading) which specifies a target number of parking and loading spaces for each type of development within the City. The number of parking spaces is based on the use and its size, which roughly correlates to the number of anticipated staff and customers or residents, expected to use parking. In some cases, developers will indicate that the code required parking is inconsistent with the needs of their project and a parking study will be performed to establish a project specific demand for parking. Most studies justify reductions in parking spaces, but occasionally parking studies are performed to increase parking over code requirements. In Olympia these increases are usually for churches, schools and medical offices.

“There may be language within codes and standards that discourages or prohibits LID strategies. For example, existing lot setback, street width standards, parking requirements, and density standards may lead to excessive impervious surface coverage.

*Low Impact Development
Technical Guidance Manual for
Puget Sound, Puget Sound
(2012)*

CODES AND STANDARDS REVIEWED

Olympia Municipal Code (OMC) Section 18.38 (Parking and Loading)

BENEFITS OF REDUCING IMPERVIOUS SURFACES ASSOCIATED WITH ON-SITE PARKING

The benefits related to reducing the impervious surfaces associated with on-site parking are the same as those with Element 4 (Restrict Maximum Impervious Surface Coverage). Reducing impervious area allows opportunities for increasing green space that can be used for infiltration, water quality treatment, and opportunities to retain mature trees that facilitate interception of rainfall and evapotranspiration.

OLYMPIA CODE ANALYSIS

Parking requirements are located in OMC 18.38. The parking code specifies:

- Required parking ratios by use,
- Variance procedures for varying from the ratios,
- Disabled parking requirements,
- Shared parking options, and
- Parking lot design standards including dimensioning.

Specified parking ratios for various land uses are not absolute; variance criteria allow for administrative increases and decreases of 10% to 40% or more. Targets are reduced by 10% in high density areas. To minimize the numbers of spaces, the City also offers a variety of options for sharing parking. The current code allows reductions for parking on adjacent streets, sharing of parking, and up to 30% of required parking to be composed of smaller “compact” spaces.

The current parking ratios within the Olympia are based on nationwide and local demand studies.

HURDLES TO REDUCING IMPERVIOUS AREAS ASSOCIATED WITH PARKING

Many of the challenges associated with reducing impervious area in parking lots are similar to the challenges of Element 4 (Restrict Maximum Impervious Surface Coverage) including conflicts with other codes and enforcement. In addition, this element presents the following challenges:

Current Parking Ratios Are Based On Estimated Parking Demand – The current parking ratios within the City of Olympia code are based on nationwide and local demand studies done over 20 years ago. In general, the “targets” are based on the 85th percentile of demand, i.e., that 15% of the time when there may be insufficient on-site parking. Given that the parking ratios in the current code are based on estimated demand, restricting the allowed parking ratios may result in some sites having insufficient parking. On-site parking shortages can lead to overflow problems, such as parking outside approved parking spaces, or in objectionable neighboring locations such as on streets in residential areas. The insufficiency of parking could also have economic impacts to the associated development including lower property values, or as a worst case scenario, financial failure of the development if tenants refuse to locate on sites that do not have sufficient parking to support their needs.

Current Parking Lot Dimensions Are Standard – The current City of Olympia parking lot design standards including parking stall width/length and drive aisle width requirements are based on what is needed to accommodate standard passenger vehicles. Reducing the dimensions of parking spaces or drive aisles could lead to functional problems – spaces that are too narrow do not allow for passengers to easily exit the vehicle and could lead to increased damage from car doors bumping into vehicles parked in adjacent spaces. Drive aisles that are too narrow can create maneuverability problems for drivers entering or exiting the space. Reducing parking stall or aisle dimensions or providing unusual parking configurations can both confuse and frustrate the driving public, and sometimes leads to a vehicle using two spaces.

OPTIONS CONSIDERED

We have focused the options for this element on reducing the impervious footprint of parking. Other LID techniques address the potential of using permeable pavements.

- Option 1: No change.
- Option 2: Amend codes to modify minimum and maximum parking ratios and dimensional standards, consistent with the most recent NPA and ITE (respectively) guidance.
- Option 3: Modify parking variance requirements to require use of permeable surfacing, where feasible, for parking in excess of target number.
- Option 4: Modify parking variance criteria to more readily allow reductions in the number of spaces.
- Option 5: Increase the percentage of small stall parking allowed for compact vehicles.
- Option 6: Require a minimum percentage of small (compact) stalls.



Reducing parking stall or aisle dimensions or providing unusual parking configurations can both confuse and frustrate the driving public and could result in more vehicle collisions.

ANALYSIS

Minimizing impervious surfaces is one of the three main goals of the Department of Ecology LID mandate. Parking lots constitute one of the largest drivers of impervious surface on new development sites.

Option 1 (no change) would maintain the status quo. City of Olympia code currently provides controls on allowed parking. The parking ratios within the code are based on nationwide studies and local information, although this information is over twenty years old. The “targets” for the number of spaces combined with the variance process provide substantial flexibility, especially for reducing the number of spaces. OMC 18.38 allows 30% of parking to be compact, i.e. smaller than standard sizes. Although

there would be no change with Option 1, current practice in Olympia already incorporates many of the strategies suggested by the Department of Ecology to avoid excessive parking.

Implementation of Option 2 (modify parking ratios and dimensional standards) would update Olympia's parking space numbers and dimensional standards to reflect more recent studies from the National Parking Association (NPA) and the Institute of Transportation Engineers (ITE). However, such an update might also lead to recommendations for additional spaces with some land uses.

The NPA publication "The Dimensions of Parking" published in 2010 suggests the following:

- Parking stall widths should be based on both the space needed for door opening as well as the expected turnover of the space. Low turnover spaces can be narrower than high turnover spaces. High turnover spaces should have a 9 foot width and low turnover spaces can be as small as 8.25 to 8.5 feet.
- Stall length and drive aisle width should be considered together. Because the typical vehicle is smaller than the dimensions of the parking stall, the actual resulting width of the drive aisle is wider if you include the unused stall length. Overall the recommended total width of a parking bay for 90 degree parking is 59 feet, which includes 18 foot stalls and a 23 foot drive aisle.

Therefore, implementation of Option 2 would require updates of OMC 18.38 to provide variable parking width dimensions based on stall turnover and modified drive aisle widths. Modifications to the required parking stall dimensions in 18.38.220 would also be required. The current City parking bay for 90 degree parking is 61 feet. Modification to the NPA standards would reduce this to 59 feet, eliminating 2 feet of impervious area from the aisle.

The dimensions per the NPA assume that the portion of the parking stall that is not occupied by the vehicle is actually drive aisle. This makes sense in concept but not always in application. Some vehicles are much longer than standard. Further, not all drivers pull forward to the front of the stall and often leave space at the front of the stall instead of at the rear. Therefore the reductions to the NPA standards could result in parking lots with maneuvering problems for large vehicles and potentially emergency vehicles.

Option 3 (parking increases to be permeable paving): Adding a permeable paving requirement for increases in parking would minimize impervious surfaces associated with "extra" parking. However, in many cases such increases already are pervious as a result of land use zoning impervious surface limits.

Option 4 (modifying parking variance requirements for reducing parking): Modifying the criteria for decreasing parking spaces could remove a barrier to allowing fewer parking stalls. The current approval process becomes more onerous as the reduction request gets bigger. For example, reductions of over 20% can only be granted where transit service is available. This option in practice would only minimally result in reduced impervious surfact.

Option 5 (increase compact stall allowance) would allow, but not require, a greater percentage of compact stalls. This option increases the allowed upper limit for compact stall construction. The current limit is 30%. With standard development practices, a change of the upper limit may not be well implemented. Typically compact stalls are only proposed on developments where site space is constrained and smaller parking spaces are needed to meet parking code requirements. However, increasing the upper limit for compact stalls could reduce impervious area.

Option 6 would require that at least a certain percentage of stalls are compact dimensions. This would require all proposed development to construct a specified percentage of compact parking stalls. Compact spaces are almost 25 percent smaller than standard parking spaces, so requiring more compact spaces in new parking lots could make a measurable reduction in impervious area associated with parking lots. A variance procedure would address uses with large vehicles where the use of compact stalls may not be appropriate.

RECOMMENDATION

Staff recommends Options 2, 3 and 6. These options result in a reduction of impervious area associated with on-site parking.

Option 1 would not result in any change in impervious area associated with parking lots. Parking variances are not difficult to obtain in the City of Olympia with sufficient justification and support. If the variance criteria are relaxed as with Option 4, it could result in uses that have insufficient parking. Option 5 could result in small decreases in impervious area but could also create maneuvering issues for large vehicles and potentially emergency vehicles.

