PLANNING COMMISSION
REGULAR MEETING AGENDA

CALL TO ORDER & ROLL CALL 7:30 PM

APPEARANCES
This is the time set aside for members of the public to speak to the Commission about issues of concern. If you wish to speak, please consider the following points:
- Speak audibly into the podium microphone
- State your name and address for the record
- Limit your comments to three minutes
(Note: The Commission may limit the number of speakers and modify the time allotted. Total time for appearances: 15 minutes)

APPROVAL OF MINUTES Minutes from October 21, 2009

REGULAR BUSINESS 7:50 PM
Agenda Item #1
Removal of regulatory barriers to sustainable redevelopment practices.

Agenda Item #2 (If time allows)
Shoreline Master Program update workshop – Review of Shoreline Use Regulations

OTHER BUSINESS Council Liaison Report
Staff Comments
Planned Absences for Future Meetings
Announcements & Communications
Next Regular Meeting: November 18, 2009

ADJOURN

AGENDA TIMES ARE APPROXIMATE
CALL TO ORDER:
Chair Cooper called the meeting to order at 7:34 PM in the Council Chambers, at 9611 SE 36th Street, Mercer Island, Washington.

ROLL CALL:
Chair Adam Cooper, Commissioners Kristen White, Bryan Cairns, Jon Friedman, Steve Marshall and Council Liaison El Jahncke were present. Vice-Chair Eric Laschever was excused. City staff was represented by Shane Moloney, Assistant City Attorney; George Steirer, Principal Planner; and Travis Saunders, Planner.

APPEARANCES:
Rita Moore of 4509 Ferncroft Road provided comment regarding the Shoreline Master Program update.
Dean Patterson, Futurewise, of 814 2nd Avenue, Suite 500 Seattle, WA 98104 provided comment regarding the Shoreline Master Program update.

MINUTES:
Commissioner White motioned to approve the minutes from October 7, 2009. Commissioner Cairns seconded the motion. The Commission approved the minutes unanimously.

REGULAR BUSINESS:

Agenda Item #1: Shoreline Master Program update workshop – Review of Shoreline Environment Designations

Travis Saunders, Planner, provided a staff presentation.

The Commission preliminarily recommended draft language presented in Exhibit 1 for shoreline vegetation standards, with minor edits. The commission directed staff to make the requested edits and to present the language at a future meeting.

The Commission discussed shoreline environment designations and asked questions of staff.

The Commission provided staff with the following work items to address at the November 4, 2009 meeting:

- Review the Luther Burbank Park Master Plan for any conflicts with the shoreline designation of the park.
- Review a two designation system: Urban Residential Environment and Urban Park Environment
- Review requirements for designating areas waterward from the ordinary high water mark as Aquatic Environment.
Agenda Item #: Shoreline Master Program update workshop – Review of Shoreline Use Regulations

Due to the lateness of the evening, this agenda item was not heard.

COUNCIL LIAISON REPORT:
Pedestrian and Bicycle Facilities Plan is coming forward; Temporary Encampment public meeting at the Community Center on October 22, 2009.

STAFF COMMENTS:
Staff presented a draft schedule of remaining 2009 work items.

PLANNED ABSENCES FOR FUTURE MEETINGS:
None

ANNOUNCEMENTS AND COMMUNICATIONS:
None

NEXT REGULAR MEETING:
The next regular meeting is scheduled for November 4, 2009.

ADJOURNMENT:
The Planning Commission meeting was adjourned at 10:32 PM.

Respectfully submitted by Travis Saunders, Planner
To: Planning Commission and Deputy Mayor Jahncke

From: George Steirer, Principal Planner

Re: November 4, 2009 GREEN/LID Barriers

Date: October 29, 2009

On November 19, 2008 staff presented speakers in response to the Planning Commission’s request to assemble a group of industry professionals to present on GREEN and Low Impact Development for new or remodeled municipal buildings and schools. Each speaker provided a presentation on their area of expertise, followed by questions and answers with the Commission. With City Council’s approval, the Planning Commission set as its highest priority in 2009 (after required land use applications such as Comprehensive Plan Amendments and Conditional Use Permits) the “removal of regulatory barriers to sustainable redevelopment practices.”

On April 20, 2009, the Planning Commission examined potential barriers in the Mercer Island Municipal Code related to GREEN and Low Impact Development standards. The Planning Commission then requested staff to return with specific changes to the existing code to remove any barriers.

Enclosed in this packet is a memorandum and specific code changes from Patrick Yamashita, City Engineer, which would remove the identified barriers to Low Impact Development. Also enclosed is a memorandum and specific code changes from Don Cole, Building Official, which would remove the identified barriers to GREEN building code standards.

Next Steps
Following Planning Commission’s review and discussion at the November 4th meeting, the Planning Commission can choose to:

1. Move to: Recommend to City Council the proposed code changes of Title 17 and 19 of the Municipal Code, as presented in the staff report to the Planning Commission on October 27, 2009; or
2. Amend the proposed changes to Title 17 and 19, and make a motion to recommend changes to City Council; or
3. Move to: Recommend to City Council that proposed code changes to Title 17 and 19 of the Municipal Code, as presented in the staff report to the Planning Commission on October 27, 2009 be denied.

Attachments
Memorandum from Patrick Yamashita, City Engineer
1. Code analysis
2. Draft code amendments
3. Updated Mercer Island Erosion Hazard Map
4. LID supplemental information

Memorandum from Don Cole, Building Official
A. Construction Code Barriers to GREEN Building Practices - Analysis & Recommendations
B. Proposed Code Changes to Remove Unwarranted Code Barriers to Green Building.
C. Process to obtain WSBCC approval of proposed code changes
To: Planning Commission and Deputy Major Jahncke
From: Patrick Yamashita, City Engineer
Subject: Follow up to May 20, 2009 Meeting Discussion of Zoning Code Barriers to Low Impact Development Draft Code Amendment
Date: October 29, 2009

The Planning Commission and City Council set the removal of regulatory barriers to sustainable redevelopment practices as a priority item on the Commission’s 2009 work plan. As part of this effort, I provided the Commission with a briefing on existing code barriers to Low Impact Development on May 20, 2009. I indicated that there weren’t specific “barriers” to LID but rather, sections in the code that could be modified to either encourage the use of LID techniques or specifically allow them. These are described in Attachment 1 and include a recommendation for cost updates.

Planning Commission Direction to Staff
The Commission directed staff to modify two sections of title 19.

1. MICC 19.02.020D2(d): Increase the width of pedestrian-oriented walkways exempted from the maximum impervious surface limits from a maximum width of 36 to 60 inches when using gravel or pavers.
2. MICC 19.09.030C: Clarify that curbs on residential streets may be eliminated in conjunction with the use of LID techniques when approved by the city engineer.

Attachment 2 includes proposed code text language in response to the Commission’s direction to staff. It also includes additional revised code text if the Commission wishes to modify other sections of the code identified in Attachment 1.

Practical Challenges to Implement LID on Mercer Island
There are practical challenges to implement LID on Mercer Island. Most of the island is already developed. Construction is predominantly redevelopment with some in-fill. The in-fill development is typically on challenging lots with steep slopes and other critical areas. Most may not be conducive to the use of many LID practices. The redevelopments (“teardowns”) will likely have greater LID opportunities. One of the most significant challenges for large scale implementation of LID on Mercer Island is the underlying geology. Much of the soils are not conducive to stormwater infiltration and would require significant soil amendment for the purposes of absorption and evapotranspiration. Infiltration can also be a risk to slope stability depending on the
underlying geology and existing slope stability. I do not recommend using LID techniques that rely on infiltration in areas within or near erosion or landslide hazards. I provide some restrictions to consider at the bottom Attachment 1. DSG has recently obtained new hazard maps. The updated erosion hazard map is provided as Attachment 3 for reference. It identifies erosion hazards, slope classifications, and areas with good infiltration potential. This map could be utilized to identify the most suitable areas on Mercer Island to utilize LID techniques.

Refer to Attachment 4 for supplemental information regarding LID. It provides helpful information about what LID is, typical strategies, and common practices/techniques.

Attachments
1. Code analysis
2. Draft code amendments
3. Updated Mercer Island Erosion Hazard Map
4. LID supplemental information
## Attachment 1

### Low Impact Development (LID) Preliminary Code Analysis

#### Impediments to the use of low impact development techniques

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Code Summary</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.02.020(D)(2)b</td>
<td>Pavers considered 75% impervious when slope&lt;5% and covering&lt;10% of lot.</td>
<td>Consider as exempt if drained to rain garden, bioretention, or other additional LID facility.</td>
</tr>
<tr>
<td>19.02.020(D)(2)b</td>
<td>Porous pavements and pervious pavers are considered impervious in areas such as driveways, private streets and parking lots.</td>
<td>When slope&lt;5%, allow credit of 50% impervious as stand alone LID or exempt if drained to rain garden, bioretention, or other additional LID facility.</td>
</tr>
<tr>
<td>19.02.020(D)(2)d</td>
<td>Gravel or paver walkways&lt;36” in width are considered pervious. All other materials and/or greater width considered impervious.</td>
<td>Code modified pursuant to direction from Planning Commission.</td>
</tr>
<tr>
<td>19.09.030(C)</td>
<td>Requires concrete or asphalt pavement and curbing or asphalt thickened edge for residential access streets</td>
<td>Code modified pursuant to direction from Planning Commission.</td>
</tr>
<tr>
<td>19.12.040(B)(11)</td>
<td>Covers general standards for landscaped areas. Requirements for curbs around planting areas in vehicle use areas.</td>
<td>Allow openings in curb and vegetative LID techniques within landscape areas when approved by the code official.</td>
</tr>
</tbody>
</table>

#### Clarifications to allow LID techniques

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Code Summary</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.11.050(B)(1)</td>
<td>Plazas/courtyards in town center are options that a developer can use to satisfy requirements for major/minor site features. Courtyards are required to use “special” paving material but not specifically pervious pavers or porous pavement. Plazas have no requirements regarding pavement type.</td>
<td>Allow management of runoff with LID techniques (ie. pavers, pervious pavement, rain gardens, etc.) when allowed by the code official.</td>
</tr>
<tr>
<td>19.11.100(B)(3)</td>
<td>New surface parking lots (ie. not underground) in the town center require some landscaping.</td>
<td>Allow the landscaping to be designed with LID techniques (ie. rain garden/bioretention) to manage the parking lot runoff when allowed by the code official.</td>
</tr>
</tbody>
</table>
Allow management of runoff with LID techniques (ie. pavers, pervious pavement, rain gardens, etc.) when allowed by the code official.

Note: LID techniques that rely on Infiltration or dispersion should only be sited in locations where soils have suitable infiltration potential and will not affect slope stability. Areas identified as having infiltration potential on Mercer Island's Erosion Hazard map. Infiltration and dispersion shall not be allowed within the following areas:

- Erosion Hazard or Landslide Hazard Areas without a site specific geotechnical analysis.
- Within 200 feet of an Erosion Hazard or Landslide Hazard Areas. A site specific geotechnical analysis is required within this range.
- Within 5 feet from property line (excluding property line abutting the right-of-way) without written agreement from neighboring property owner
- Within 100 feet of drinking water supply wells or springs
- Within a groundwater protection area
- Within 10 feet (horizontal) of underground storage tanks
- Within 100 feet upgradient of a septic tank or drain field
- Within 100 feet of confirmed or suspected contaminated sites
- Where groundwater is within one foot (vertical) of the bottom of the finished infiltration facility
19.02.020(D)(2)b and d:

19.02.020 Lot requirements.

D. Lot Coverage.

1. Maximum Impervious Surface Limits for Lots. The total percentage of a lot that can be covered by impervious surfaces (including buildings) is limited by the slope of the lot for all single-family zones as follows:

<table>
<thead>
<tr>
<th>Lot Slope</th>
<th>Lot Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 15%</td>
<td>40%*</td>
</tr>
<tr>
<td>15% to less than 30%</td>
<td>35%</td>
</tr>
<tr>
<td>30% to 50%</td>
<td>30%</td>
</tr>
<tr>
<td>Greater than 50% slope</td>
<td>20%</td>
</tr>
</tbody>
</table>

*Public and private schools, religious institutions, private clubs and public facilities (excluding public parks or designated open space) in single-family zones with slopes of less than 15 percent may be covered by the percentage of legally existing impervious surface that existed on May 1, 2006, as determined by the code official.

2. Exemptions. The following improvements will be exempt from the calculation of the maximum impervious surface limits set forth in subsection (D)(1) of this section:

a. Decks/Platforms. Decks and platforms constructed with gaps measuring one-eighth inch or greater between the boards which provide free drainage between the boards as determined by the code official shall be exempt from the calculation of maximum impervious surface limits so long as the surface below the deck or platform is not impervious.

b. Pavers. Pavers installed with a slope of five percent or less and covering no more than 10 percent of the total lot area shall be exempt from the maximum impervious surface limits if runoff is drained to a rain garden, bioretention, or other low impact development facility (as defined by the current stormwater manual adopted by the City) will be calculated as only 75 percent impervious. Provided, however, that all pavers placed in driveways, private streets, access easements, parking areas and critical areas shall be considered 400-50 percent impervious if installed with a slope of five percent or less or considered 100 percent pervious if runoff drains to a rain garden, bioretention, or other low impact development facility (as defined by the current stormwater manual adopted by the City).

c. Patios/Terraces. Uncovered patios/terraces constructed of pavers shall be exempt from the maximum impervious surface limits.

d. Pedestrian-Oriented Walkways. Uncovered pedestrian walkways constructed with gravel or pavers not to exceed 36-60 inches in width shall be exempt from the maximum impervious surface limits.
e. Public Improvements. Open storm water retention/detention facilities, public rights-of-way and public pedestrian trails shall be exempt from the maximum impervious surface limits.

f. Rockeries/Retaining Walls. Rockeries and retaining walls shall be exempt from the maximum impervious surface limits.

19.09.030 Public and private streets. (Property Development)

A. Standards Adopted by Reference. Residential access streets (local access streets), curbs, gutters, sidewalks and drainage and utility facilities in the public right-of-way shall be constructed in accordance with "City and County Design Standards for Low Volume Roads and Streets, Adopted February 10, 1994, per RCW 35.78.030 and RCW 43.32.020" which was enacted by Ordinance 98C-07, and which is on file in the city clerk’s office, and by this reference made a part of this section as if fully set forth, and the plans and profiles for any such construction shall be submitted to and approved by the city engineer prior to the commencement of any grading, excavation or other phase of such construction.

B. Acceptance of Improvements. Upon certification by the city engineer that the construction has been completed in compliance with the provisions of this section and to his or her satisfaction, the city council may formally accept the improvements for maintenance by the city.

C. Construction Specifications. Residential access streets (local access streets) shall be constructed of six-inch cement concrete pavement or two-inch asphaltic concrete with cement concrete curbs and gutters, rolled cement concrete curbs or thickened asphaltic concrete edges, and shall be a minimum of 16 feet in width with minimum one-foot-wide gravel shoulders, measured from the outside edges of thickened asphaltic concrete edges or of rolled cement concrete curbs and from the inside faces of cement concrete curbs. Cement concrete curbs and thickened asphaltic concrete edges may be eliminated in conjunction with the use of low impact development stormwater management techniques and porous pavement and/or pavers may be considered acceptable pavement alternatives when approved by the city engineer. All construction materials and workmanship shall be in accordance with the Washington State Department of Transportation and American Public Works Association current “Standard Specifications for Road, Bridge, and Municipal Construction” as amended by the city engineer for city of Mercer Island public works projects, and shall be subject to inspection and approval by the city engineer.

19.12.040 Landscape design and outdoor spaces. (Design standards for zones outside of the Town Center)

B. Standards. Any quantitative standards contained in MICC 19.12.040(B) that specify types of plant material, quantities, spacing, and planting area widths are not intended to dictate a rigid and formal landscape. The applicant should incorporate the
quantitative standards into a quality landscape and planting design that meets the stated objectives and standards of this section.

11. General Planting, Irrigation and Maintenance Standards. The following standards apply to the planting requirements set forth above.

   a. Coverage. Planting areas should be completely covered with trees, shrubs, mulched areas, and/or ground covers.

   b. Berms and Landforms. Earth berms and landforms in combination with shrubs and trees may be used to achieve the initial planting height requirement.

   c. Minimum Width. All planting areas should be a minimum of five feet in width. Planting areas should be wider wherever possible.

   d. Sight Clearance. At intersections, plantings shall not create sight obstructions that may compromise pedestrian or traffic safety.

   e. Planting Coverage. All required planting areas should extend to the ditch slope, curb line, street edge, or area of sidewalk.

   f. Curbs Required. Permanent curbs or structural barriers/dividers should enclose planting areas in vehicle use areas except when draining runoff from pavement to rain gardens or other low impact development facilities. Wheel stops should also be used to protect planting areas from damage due to cars overhanging the curb.

   g. Plantings Near Utilities. Trees shall not be planted within eight feet of a water or sewer pipeline. Shrubs shall be at least four feet from hydrants. A full screen will be required to screen above-ground utilities from adjacent uses and public rights-of-way. Perimeter plantings shall be clustered in areas to screen structures, utility structures, loading areas, trash enclosures, storage areas and mechanical equipment. This paragraph shall not apply to utilities, structures, loading areas, enclosures or equipment unless the utility, structure, loading area, enclosure or equipment is being added as part of the regulated improvement being reviewed.

   h. Drainage. Planting areas shall be provided with adequate drainage.

   i. Maintenance Requirements. All required landscaping shall be maintained in good condition. Plant material should be cared for in a way that allows their natural form to be maintained, even when the plant reaches maturity. Performance guarantees to ensure maintenance or required landscaping may be required pursuant to MICC 19.01.060. (Ord. 04C-08 § 1).

19.11.050(B)(1):

19.11.050 Site features.

d. Courtyards. An outdoor covered or uncovered area easily accessible to the public at the same level as the public sidewalk or pedestrian connections which should:

   i. Be at least 10 feet in width, with a building facade on at least one side;
   ii. Be covered with trees, groundcover, or other landscaping over at least 50 percent of its area; and
   iii. Include seating, special paving material, pedestrian-scale lighting and other pedestrian furnishings;

   iv. Runoff from courtyard pavement may be managed with low impact development techniques when allowed by the code official.
iv. The courtyard may not be covered by a roof, story or skybridge; provided portions of the courtyard may be covered for weather protection, but not enclosed.

19.11.100(B)(3):

19.11.100 Landscaping and outdoor spaces. (Town Center Development and Design Standards)

B. Development and Design Standards.

1. Suitable Plant Species. Indigenous, drought tolerant or plant species proven adaptable to the local climate should be used.

2. Trees and Groundcover.
   a. Prominent trees should be preserved.
   b. Trees planted near public curbs or in paved areas shall be installed in such a manner as to prevent physical damage to sidewalks, curbs, gutters, pavement and other public or private improvements.
   c. Groundcover should be planted to have 100 percent groundcover in two years.
   d. Any tree cutting or pruning shall be consistent with Chapter 19.10 MICC.

3. Surface Parking Lots. Surface parking lots should be landscaped to reduce and break up large areas of asphalt and paving.
   a. The landscape design may incorporate low impact development techniques to manage runoff from parking lot pavement when allowed by the code official.
   b. A minimum four-foot wide (interior dimension) landscape bulb should be provided at the end of parking aisles.
   bc. A ratio of one tree for every six parking spaces should be provided throughout any surface parking lot. Of the total number of trees required, 50 percent shall be a minimum of 24-inch box in size, and 50 percent shall be a minimum of 15-gallon in size.
   dc. Planting areas for trees required within the parking rows of a surface parking lot should be achieved by one of the following:
      i. A continuous landscape strip, at least four feet wide (interior dimension), between rows of parking spaces; or
      ii. Tree wells, eight feet wide, resulting from the conversion of two opposing full sized spaces to compact spaces; or
      iii. Tree wells, at least five feet square, placed diagonally between standard or compact spaces.

19.11.110(B)5:

19.11.110 Vehicular and pedestrian circulation. (Town Center Development and Design Standards)

B. Development and Design Standards.

5. Through-Block Circulation. Through block connections, when proposed as part of a project, should provide for vehicular access and/or publicly accessible pedestrian connections through mid-blocks and between properties. Pedestrian connections, when proposed as part of a project, should provide amenities such as alternative paving methods, seating and planters to encourage pedestrian circulation. Lighting for both
vehicular and pedestrian connections shall provide for pedestrian safety. Runoff may be managed with low impact development techniques when allowed by the code official.
Mercer Island Erosion Hazard Assessment

Erosion hazards areas include those areas greater than 15% slope and subject to a severe risk of erosion due to wind, rain, water, slope and other natural agents including those soil types and/or areas identified by the U.S. Department of Agriculture’s Natural Resource Conservation Service as having a "severe" or "very severe" rill and inter-rill erosion hazard.

Another factor in evaluating erosion potential is infiltration potential. If sandy material is present at the ground surface, rain water can infiltrate and loosen material for removal by erosion. Therefore the areas of sandy material have also been added to this hazard map for consideration along with the slope and erodible soils subclass.

Contributing factors not shown on the map include rainfall, areas of shallow groundwater, ground cover, wind, impervious surfaces, and changes to the ground surface. These factors and the all categories shown on the map should be used together to assess erosion potential. Individual areas less than 0.3 acres in size have been excluded.

**Supplemental Data**

- **Infiltration Potential**
  - High - Coarse-grained deposits; e.g. gravel and clean sand
  - Medium - Silty sandy deposits
  - Mixed - Interbedded or mixed fine and coarse-grained deposits

- **Slope Class**
  - Slope 80+% (highlighted areas)
  - Slope 40-79%
  - Slope 15-39%

**GENERAL NOTES FOR GEOLOGICAL HAZARDS MAPS**

This map is one of a suite of revised Geologic Hazard Maps for the City of Mercer Island. This suite includes maps showing Seismic Hazards, Landslide Hazards, and Erosion Hazards.

Other geologic and/or natural hazards may exist and geologic events may occur on Mercer Island that are not specifically identified on these maps. Examples of geologic hazards and hazardous events that are not identified on these maps include, but are not limited to, tsunami and reaches in Lake Washington.

These maps are for the sole use of the staff of the City of Mercer Island’s Development Services Group (DSG) for the purposes of permit application evaluation. These maps provide DSG staff a general assessment of known or suspected geologic hazards for which the City will require site-specific or project-specific evaluated by a Washington State-licensed engineer, geologist or engineering geologist prior to issuing a permit for site development. All areas have not been exactly evaluated for geologic hazards and there may be locations that are not correctly represented on these maps. It is the responsibility of individual property owners and permit applicants to evaluate the risks associated with their property site and to conduct their own geologic assessment of risk if implied or otherwise indicated by the City of Mercer Island by these maps.

The City of Mercer Island is using guidance provided by the State of Washington regarding the definition of geologically hazardous areas in accordance with WAC 365-90-550 and the Growth Management Act. "Geologically hazardous area" is defined by state regulation. "Geologically hazardous area" includes areas susceptible to erosion, volcanic, earthquake or other geologic event. "Geologically hazardous area" refers to areas that have potential for causing damage to life or property. The City of Mercer Island is exercising prudent precautions and taking steps to ensure public safety by restricting or prohibiting development in areas of significant hazard.

This new set of maps represents an update of the 2002 Geologic Hazard Map Series and is based on a review of all available data. The City of Mercer Island is in the process of revising its Comprehensive Plan to reflect changes in city boundaries, in accordance with the Growth Management Act and the Geologic Hazard Map Series. This new set of maps is accompanied by a data file containing pertinent information about each map.

These data and maps are all available on the City of Mercer Island website.
LID supplemental information

BACKGROUND

LID refers to development techniques intended to more closely mimic natural processes in managing stormwater. Urbanization and associated changes in the movement of stormwater over and through the landscape are some of the greatest and most complex threats to water quality, water supplies, and aquatic habitat in our region. The transition from a forested landscape to a built-out environment increases impervious surfaces such as roads, driveways, sidewalks, roofs, and compacted soils. Native vegetation and the upper soil layers that evaporate, transpire, store or infiltrate stormwater are typically removed. The quantity and timing of stormwater flows also change dramatically. Overland flows, shallow sub-surface flows, and associated stream discharges increase significantly. The design of stormwater runoff controls often do not protect streams and wetlands from increased water volume discharges. The change in the quantity, velocity, and timing of stormwater runoff can significantly alter stream channels.

WHAT IS LID?

LID is an approach to land development that focuses on how water enters a site, is stored on-site, and leaves a site. Land development that incorporates LID practices minimizes impervious surface, protects and enhances native vegetation and soils, and manages stormwater at its source. It emphasizes conservation and use of existing natural site features integrated with small-scale stormwater controls to more closely mimic natural hydrologic patterns in residential, commercial and industrial settings.

LID practices can be valuable tools to reduce the adverse effects of stormwater runoff on streams, lakes, wetlands, and Puget Sound. However, questions remain regarding relative cost, design, maintenance, and long-term performance. LID can be designed for use on porous soils such as glacial outwash and alluvium soils, as well as soils with low infiltration rates, such as the denser soils commonly found on Mercer Island.

WHAT'S THE DIFFERENCE BETWEEN CONVENTIONAL STORMWATER MANAGEMENT AND LID?

Conventional tools to manage stormwater are mitigation-based and flood-control focused. This strategy emphasizes the efficient collection and rapid conveyance of runoff from residential and commercial development. LID presents a significant conceptual shift from a purely structural approach. LID is primarily a source reduction approach. Site planning and stormwater management are integrated at the initial design phases of a project to maintain a more hydrologically functional landscape. Hydrology and natural site features that influence water movement guide road, structure, and other infrastructure layout. Native soil and vegetation protection areas and landscaping that are strategically distributed throughout the project to slow, store, and infiltrate storm flows are designed into the project as amenities, as well as hydrologic controls.
LID STRATEGIES & PRACTICES
The following are several typical LID strategies and practices.

LID Strategies
- Conserve and Restore Vegetation and Soils
  - Retain stretches of native forest cover on undeveloped sites. Restore vegetation on land previously cleared. Vegetation captures, infiltrates and evaporates precipitation.
  - Preserve well-draining native soil. Use compost to restore the health of soil disturbed by construction. Healthy soils store and infiltrate stormwater and produce healthy plants that require less watering.
  - Use the existing topographic features of a site to slow, store and infiltrate stormwater.
  - Protect and incorporate natural drainage features and patterns into site design.
- Design Site to Minimize Impervious Surfaces
  - Minimize impervious surfaces such as roofs, roads, driveways, and parking lots.
  - Eliminate as much impervious surface as possible that conveys stormwater directly to streams or other surface waters. Vegetated roofs can replace asphalt roofs. Pervious pavement can replace impervious pavement.
  - Locate homes, other buildings, roads and parking away from critical areas and soils that do not infiltrate well.
- Manage Stormwater Close to Where the Rain Falls
  - Use small-scale, integrated management practices such as bioretention, permeable pavement and vegetated roofs - rather than one large pond or tank.
  - Create a landscape that slows storm flows and increases the amount of time storm flows stay on the site. LID tries to mimic the slow movement of water typical in a forested landscape.
  - Increase reliability of the stormwater management system by providing multiple, redundant facilities. This reduces the likelihood of system failure.
  - Integrate stormwater facilities into a site design to create a landscape that’s attractive and also protects the environment. For example, a bioretention area can be a lush garden that beautifies the neighborhood or yard and manages stormwater.
  - Reduce reliance on and use of traditional storm sewers, pipes, and ponds.
- Provide Maintenance and Education
  - Develop reliable and long-term maintenance programs with clear and enforceable guidelines.
  - Educate homeowners, building owners and landscapers on the proper maintenance requirements for LID facilities.
  - Involve residents and neighborhoods in caring for their systems and in protecting their streams, wetlands, and the lake.

LID Practices/Techniques
- Rain Gardens (also called “bioretention areas”) – Shallow landscaped depressions with a specialized soil mix and plants adapted to the local climate and soil moisture conditions that receive stormwater from a small contributing area. The soil structure and vegetation promote the infiltration, storage, and slow release of stormwater flows. Small scale facilities are integrated into the site as a landscape amenity. The best performance is achieved when integrated with other LID practices.
Amending Construction Site Soils – Mixing organic matter with soil increases the absorbency of the soil. Construction activity removes the upper layers of soil, compacts exposed sub-soils low in organic matter, and alters the site’s hydrologic characteristics by converting the predominantly subsurface flow to overland flow.

Permeable Pavers and Porous Pavements – These pavements allow for infiltration, treatment and storage of stormwater. They can virtually eliminate surface flows for low intensity storms common in the Pacific Northwest.

Infiltration Trenches – Trenches filled with porous media such as gravel that exfiltrates runoff into the surrounding soils.

Vegetated ("green") Roofs – Roofs designed to have soil and vegetation planted on top.

Roof Rainwater Collection ("harvesting") Systems – Collection of roof runoff reduces the stormwater contribution from rooftops. To collect and remove adequate storm flows during the winter months, large storage reservoirs or cisterns are required. Rain barrels are a small scale example of these systems. The runoff collected in the barrels is typically used for irrigation purposes. However, during the winter months when precipitation falls, there is no need for irrigation.

POTENTIAL BENEFITS OF LID

LID provides a number of benefits to the environment, developers, local governments and communities.

- Maintains natural hydrology, stream flows, and water levels in wetlands.
- Protects streams and fish from high storm flows.
- Reduces pollution in runoff.
- Encourages preservation and restoration of trees and other vegetation.
- Provides new options for site layout and stormwater facilities.
- Reduces flooding.
- Increases groundwater recharge.
To: Planning Commission and Deputy Mayor El Jahncke  
From: Don Cole, Building Official  
Subject: Study of Mercer Island Construction Codes for Barriers to the Green Building Practices within the 2008 National Green Building Standard - Phase 2: Eliminating Unwarranted Barriers from the Construction Codes  
Date: October 29, 2009

OVERVIEW  
According to the National Association of Home Builders (NAHB), the results of a National survey report that 65% of respondents have not included a green alternative within their project because they suspected it would not be approved by the jurisdictional authority. In order to give the development community confidence to employ Green Building practices, this study intends to clarify which Green Building techniques will be approved on Mercer Island.

SCOPE  
The first phase was a preliminary study of the Green Building practices within the 2008 National Green Building Standard (NGBS) for the purpose of identifying potential barriers contained within the Mercer Island Construction Codes. The barriers were presented to the Planning Commission last Spring. The Planning Commission directed staff to propose code revisions as necessary for the removal of unwarranted barriers.

Using a tabular format, this second phase of the study presents each Green Building Practice, identifies potential code barriers and presents an analysis with staff recommendations as to whether Construction Code Barriers to each Green Building practice are warranted. If unwarranted, code changes are proposed. This study is provided as Exhibit A and proposed code changes as Exhibit B.

The timing of this second phase was to coincide with the conclusion of a Regional Study that intended to identify Construction Code barriers, discern whether such barriers are legitimate, and remove the unnecessary barriers. However, due to the large scale of the project the regional study will not likely conclude until summer 2009. The Regional Study intends to engage participation from the development community and other stakeholders and strives to gain more consistent regulation within the Puget Sound Region.
REQUESTED ACTION
Staff seeks approval of the proposed Code Changes (Exhibit B) from the Planning Commission. If approved by the Planning Commission, staff will seek approval from the City Council. If the City Council approves the code changes then the proposed changes must be submitted to the Washington State Building Code Council (WSBCC) for their approval (this is a requirement by Washington State Law when amending code affecting single family home construction). See Exhibit C for more information about the WSBCC approval process.

SUMMARY
Mercer Island’s Construction Codes present few barriers to the most common Green Building methods and allow development projects to utilize the overwhelming majority of Green Building practices while remaining compliant with the Construction Codes.

If the recommended code changes are adopted and approved by WSBCC, then the only significant Green Building practice that cannot be implemented on Mercer Island is onsite wastewater treatment/disposal systems. The Health Department does not recommend such systems within the urban setting of Mercer Island and the barriers are deemed warranted for health safety reasons.

Although code changes are proposed to remove barriers to allow installation of the following systems, there are partial barriers that remain for public health reasons:

- **Rainwater collection and distribution systems** require a connection to the storm drain system and uses are limited to irrigation (surface and subsurface), water features, toilet flushing, clothes washing & hose uses identified as “non-potable” only. Protection of City water requires premise isolation and in-premises cross-connection control must be an air gap.
- **Gray water collection and distribution systems** require a connection to the sanitary sewer and are limited to subsurface irrigation (exception - toilet flushing is only accepted with a Health Department approved fixture). Protection of City water requires premise isolation and in-premises cross-connection control must be an air gap.
- **Alternative toilets (compost toilets)** require a readily available connection to the sanitary sewer and disposal of the composted end product must be by an approved domestic septage pumper/hauler or other offsite methods when approved by the Health Department and the Building Official (onsite burial is prohibited).

Staff recommendations regarding the regulation of these Green Building Practices were based upon health, life safety, and possible unwanted secondary effects.

MERCER ISLAND TODAY
Mercer Island has many Green Building techniques incorporated into development projects:
• Rural nature of Mercer Island - the rural nature and the difficulty to build on many sloped sites results in the implementation of many green aspects such as narrow roadways, steeper driveways, absence of sidewalks/curb/gutter, etc.
• A predominant builder practice on Mercer Island is to place the heat distribution system (ducts, radiant heat, etc.) within the conditioned space which results in a substantial heat loss reduction.
• Green roofs are not uncommon.
• Waterless urinals are accepted with approval from King County Health Department.
• Green Demolition practices that salvage and/or recycle old building materials are accommodated.
• Photovoltaic (PV) panel permits are now applied for on a weekly basis.
• City Ordinance generally aligned with Green Practices. Many adopted regulations are consistent with Green Building practices such as:
  o Energy Code - the Washington State Energy Code (WSEC) and the Ventilation & Indoor Air Quality Code (VIAQ) are some of the most stringent in the Nation. Many of the energy efficiency requirements of the WSEC & VIAQ meet or exceed the NGBS baseline efficiencies for the thermal envelope, building and duct sealing measures, low emission building materials, whole house ventilation systems, spot fan provisions, commissioning reports, vapor barriers, maximum water consumption and minimum energy efficiency requirements. Additionally, proposed State legislation for a 30% reduction in home energy usage will be resolved via improvements to the State Energy Code.
  o Tree ordinance – tree code preservation measures require construction projects to take reasonable best efforts to avoid taking a tree.
  o Land Use Ordinance – NGBS Site Design goals are consistent with MICC Land Use goals (impervious surface limitations, critical area regulations to minimize slope disturbance, erosion control mitigation, wet season grading restrictions, etc.).
  o Mercer Island’s adopted building codes are published by the International Code Council (ICC) which created the 2008 NGBS and is actively working to resolve code conflicts with green building methods and materials.

Such Green Building practices will continue to be approved on Mercer Island. Also, any of the Green Building practices can be utilized as listed on Exhibit A if approved by the Planning Commission, City Council and WSBCC.

CHALLENGES THAT ARE NOT CODE RELATED
Although Mercer Island has some Green Building practices in use today, there are practical challenges to the widespread use of Green Building practices which are not code related:
• Limited Opportunities: Most of Mercer Island is already developed; consequently the majority of today's permit applications consist of alterations and additions which do not provide the opportunity to incorporate many of the Green Building practices. New
projects and Redevelopment projects (“tear-downs”) allow a greater spectrum of Green Building techniques, however, these projects comprise less than one quarter of issued building permits.

- **Low Demand:** Presently, demand for Green Building from Property owners and Developers appears low on Mercer Island.

- **Overcoming Initial Costs of Building Green:** The initial hard costs of Green Building materials/methods are highly variable and depend on the green methods utilized. These costs are still considered a barrier by many consumers even though these costs are often offset by long term energy or water savings, government rebates or tax incentives.

- **Certification concerns**
  - Certification Cost: Various studies report the soft cost of the LEED administration and certification process ranges from 1.5 – 5.0% of the project cost (with the average project reporting about 2.5%).
  - Uncertainty of obtaining LEED certification and its consequences: For example, Southern Builders vs. Shaw Development; a Developer sued their General Contractor for $635,000 to recover a tax incentive that was lost when building failed to meet the LEED Silver standard.

- **Owner/Builder Reluctance to Go Green:**
  - Materials and Methods Concerns
    - No proven track record for new products.
    - Special Installation requirements (training): Unfamiliar materials and methods may lead to project delays and unexpected costs.
    - Availability, lead time and scheduling questions.
    - Lack of confidence based on Industry lessons: Early Green Building gone wrong (e.g. - storm water drainage concerns at Cooper Crest, consumer dissatisfaction with waterless urinals and dual flush toilets).
    - Uncertainty of long term performance
  - Continuity concerns: Post-construction elimination of Green Building Features can create significant problems. For example, the removal or paving over of soft/wet compost amended soils increases the likelihood of surface water moving into crawlspaces, basements, adjacent lots or onto slopes (increasing landslide potential).
  - Correction can be expensive: Some “Green Gone Wrong” lessons required expensive corrections (Cooper Crest – high cost of post-installed storm water features; Sammamish – replacing waterless urinals and post-installed water supply; Alaska- Structural Insulated panel System (SIPS) roof structure failure and replacement.

Some of these challenges are addressed during other phases of this work plan. However, many of these challenges must be addressed through time as methods become more familiar, as materials/methods improve and gain consumer confidence, as purchase and installation costs are reduced or the future cost savings are better realized, and as education of consumers increases the demand for Green Buildings.
Mercer Island staff has made application for grant money which is to be directed towards the development of a Green Building program that intends to address many of the previous listed challenges. Program goals would be developed to instill builder confidence to build green, to increase consumer demand, and to provide a resource for information about green materials, methods, and rebate availability. The program would include free training, informational posters, billing inserts, web site and handouts, and act as a resource for those planning to Build Green.

EXHIBITS

Exhibit A - Construction Code Barriers to GREEN Building Practices - Analysis & Recommendations

Exhibit B – Proposed Code Changes to Remove Unwarranted Construction Code Barriers to GREEN Building Practices

Exhibit C – Process to obtain WSBCC approval of proposed code changes.
Using the following Tabular format, this analysis presents each Green Building Practice, identifies potential code barriers and presents an analysis with staff recommendations as to whether Construction Code Barriers to each Green Building Practice is warranted. Each category of Green Building Practices is based on the 2008 National Green Building Standard. The Construction Codes referred within the analysis are adopted by Mercer Island City Code (MICC) Chapter 17 and include the 2006 International Building Code, 2006 International Residential Code, 2006 International Mechanical Code, 2006 Uniform Plumbing Code, 2008 National Electrical Code, and Washington State’s 2006 Energy, Ventilation and Indoor Air Quality Codes.

<table>
<thead>
<tr>
<th>Green Building Category</th>
<th>Potential Code Barriers Identified</th>
<th>Analysis &amp; Recommendations (e.g. – unwarranted barrier removed from code, etc.).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Design and Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Site Selection (infill sites, etc.)</td>
<td>No Construction Code Barriers found.</td>
<td>For infill sites this Green Building Practice can be utilized without interference from construction code barriers. However, brownfield or greyfield sites have warranted health and safety regulations that must be met.</td>
</tr>
<tr>
<td>2. Minimize Slope Disturbance</td>
<td>No Construction Code Barriers found. Many green methodologies are already required by MI Construction Codes (e.g. – critical area ordinance provisions mitigating development on slopes, slope stability reports, wet season grading limitations, etc.).</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>3. Natural Resource Conservation</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>4. Building Orientation</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers.</td>
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<tr>
<td>5</td>
<td>Erosion Control &amp; Limited Soil Disturbance</td>
<td>No Construction Code Barriers found. Many green methodologies are already required by MI Construction Codes (e.g. – erosion control plan, wet season grading limitations, etc.). This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
</tbody>
</table>
| 6 | Storm Water Management;  
   - Permeable Pavers & Pavement  
   - Rain gardens & Bioswales | See LID Analysis of potential Barriers within MICC Chapter 19 (required connection to storm drain system, etc.).  
No Construction Code Barriers found. However, rain gardens and bioswales must meet code requirements to deter runoff away from the building foundation and from crossing property lines. Additionally, suitable soils allowing infiltration are necessary. Within geologic hazardous areas, the design of such features must be addressed within the geotechnical engineering report for the site.  
See LID Analysis of Barriers within MICC Chapter 19.  
This Green Building Practice can be utilized with attention to the following warranted regulations. The rain garden and bioswale design must direct storm water away from the building foundation and from crossing any property line. Additionally, suitable soils allowing infiltration are necessary. Within geologic hazardous areas, the design of such features must be addressed within the geotechnical engineering report for the site. |
| 7 | Landscape Plan  
   - Limited Areas for Turf Grass & Lawns  
   - Native plant landscaping | No Construction Code Barriers found. However, a perceived barrier may be the inability for a building to utilize the frontage increase when determining the maximum floor area for the building (except single family homes). This Green Building Practice can be utilized without interference from construction code barriers. |
| 8 | Preservation of Trees and Natural Terrain | No Construction Code Barriers found. Many of the green practices are already requirements within the MI Tree Ordinance (e.g. – reasonable This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category. |
best efforts to avoid tree removal, tree protection, alternative methods for installing utilities near trees, etc.).

A perceived barrier may be the fire code requirement for fire hydrants, access roads and turnarounds which may result in less natural terrain or tree removal. Also, for commercial and multifamily projects a perceived barrier may be providing accessibility features for the disabled (parking spaces, accessible routes of travel – paths, ramps, etc.) as such features may conflict with maintaining natural terrain.

9. Preservation and Reuse of Existing Buildings & Structures

<table>
<thead>
<tr>
<th>Construction Code barriers include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining portions of existing buildings must be suitable for intended purpose (e.g. – existing damaged foundation must be appropriately repaired, existing structural members must be capable of supporting added loads, etc.).</td>
</tr>
<tr>
<td>An existing building’s change of occupancy to a higher risk category may require life-safety and structural upgrades (for example, life safety and seismic upgrades would be required for a Theatre assembly use wanting to occupy an old unreinforced</td>
</tr>
</tbody>
</table>

The perceived barriers (fire access roads, turnarounds, accessible routes and ramps) are warranted for fire safety and accessibility purposes.

The construction code barriers are warranted for structural & life safety purposes.
<table>
<thead>
<tr>
<th>10. Support &amp; Maintain Wildlife Habitat</th>
<th>No Construction Code Barriers found. MICC 19.07 addresses wildlife habitat.</th>
<th>This Green Building Practice can be utilized without interference from construction code barriers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Avoid Environmentally Sensitive Areas</td>
<td>No Construction Code Barriers found. MICC 19.07 addresses Environmentally Sensitive Areas.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>12. Density of Dwelling Units</td>
<td>No Construction Code Barriers found. MICC title 19 addresses density.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers. Must meet Zoning Code density requirements (removal of Zoning Code barriers is beyond the scope of this analysis).</td>
</tr>
<tr>
<td>13. Street Widths Minimized</td>
<td>See LID Analysis of Barriers within MICC Chapter 19. No Construction Code Barriers found. However, a perceived barrier may be</td>
<td>See LID Analysis of Barriers within MICC Chapter 19. This Green Building Practice can be utilized without interference from construction code barriers. Exception: Although the Street Widths from NGBS Table 405.2 are acceptable to the Fire Marshal, the Alley and one lane street width from the Table would require that the building be provided with additional protection (e.g. – fire sprinklers).</td>
</tr>
<tr>
<td>14. Minimize Parking, Shared Driveways or Parking areas</td>
<td><strong>No Construction Code Barriers found. However, a perceived barrier may be the continued requirement for accessible parking for the disabled (except for single family homes).</strong></td>
<td><strong>Zoning Code parking requirements may be a barrier and must be met (beyond the scope of this analysis). This Green Building Practice can be utilized without interference from construction code barriers. However, accessible parking requirements cannot be reduced below the minimum required by law.</strong></td>
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<tr>
<td>15. Clustered Home Development</td>
<td><strong>Clustering to protect wooded, steep areas, or other natural features is allowed by MICC 19.08.030(G). No Construction Code Barriers found. However, fire resistive construction requirements of the International Building Code must be provided to separate dwellings if the code minimum building separation distance requirements are not met. Also, Fire sprinklers are required when the building area exceeds 5,000 square feet.</strong></td>
<td><strong>This Green Building Practice can be utilized without interference from construction code barriers. Note – warranted regulations for fire resistive separation &amp; fire sprinklers may be required (depending on the building configuration and total floor area).</strong></td>
</tr>
<tr>
<td>16. Innovative Zoning Practices</td>
<td><strong>Permissible adjustments to zoning code to promote green methodologies. Community based amenities allow for increased dwelling density.</strong></td>
<td><strong>Zoning Code barrier; MICC 19 does not allow adjustments to promote green methodologies.</strong></td>
</tr>
<tr>
<td>Resource Efficiency</td>
<td>Potential Construction Code Barriers to Building Green</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>17. Minimize Conditioned Floor Area</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers. Habitable rooms must be heated as per the construction codes adopted by the State of Washington. The code as it relates to small residential buildings cannot be amended without approval by the Washington State Building Code Council. Therefore, it is recommended that the code section remain unchanged and that any request to omit heat from a habitable room will be considered if a written request is made for a code modification or code alternate.</td>
<td></td>
</tr>
<tr>
<td>18. Advanced Framing Techniques or Structural Systems</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers. However, and engineered design may be required for nonprescriptive and/or nontraditional systems.</td>
<td></td>
</tr>
<tr>
<td>19. Stacked Stories</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers.</td>
<td></td>
</tr>
<tr>
<td>20. Building Dimensions / Layout to Reduce Material Cuts &amp; Waste</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers.</td>
<td></td>
</tr>
<tr>
<td>21. Pre-cut or Pre-Assembled Components and Systems</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers. However, pre-assembled components may require special inspection or fabrication shop approval.</td>
<td></td>
</tr>
<tr>
<td>22. Pre-finished Materials or Assemblies</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers. However, pre-finished materials may require special inspection or fabrication shop approval.</td>
<td></td>
</tr>
<tr>
<td>23. Alternate Foundation Systems; Pier &amp; Pad systems, Frost-Protected Shallow Foundations</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers. However, and engineered design may be required for non-prescriptive and/or nontraditional systems.</td>
<td></td>
</tr>
<tr>
<td>24. Above Grade Wall Systems;</td>
<td>For Concrete, Masonry, or Log construction the Green Building Practices can be utilized without</td>
<td></td>
</tr>
</tbody>
</table>
Adobe, Concrete, Masonry, or Logs. However, there are Construction Code barriers for Adobe and Rammed Earth due to structural limitations of these materials:

- Code limitations for Adobe (single story or engineered).
- Rammed Earth must be submitted for approval as alternate material/method requiring engineer’s evidence of structural adequacy and equivalent performance within seismic zone.

Interference from construction code barriers. However, the construction code barriers for Adobe and Rammed Earth construction are warranted for structural safety and therefore their limiting regulations must be met.

Protection Measures to Enhance Durability and Reduced Maintenance; Roof Overhangs, Roof Porch, Recess Exterior Doors

No Construction Code Barriers found. However, a perceived barrier could be code required fire resistive construction of overhangs when in close proximity to property lines or other buildings.

This Green Building Practice can be utilized without interference from construction code barriers. Note - for fire safety purposes, fire resistive construction remains warranted when projections are within close proximity of adjacent property lines.

Similarly, eave overhangs & porches must meet zoning code setbacks from property lines. Note - the removal of zoning code barriers is beyond the scope of this analysis.

Foundation Drainage

No Construction Code Barriers found. Many green methodologies are already required by MI Construction Codes (e.g. – perimeter drains).

This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.

Drip Edge at Roofs

No Construction Code Barriers found. Many green methodologies are already required by MI Construction Codes (e.g. – drip edges.).

This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.

Roof Water Discharge

See LID Analysis of Barriers within MICC Chapter 19 (required connection to storm drain system, etc.).

This Green Building Practice can be utilized with attention to the following warranted regulations. The rain garden and bioswale design must direct storm water away from the building foundation and from...
<table>
<thead>
<tr>
<th>No Construction Code Barriers found. However, rain gardens and bioswales must meet code requirements to deter runoff away from the building foundation and from crossing property lines. Additionally, suitable soils allowing infiltration are necessary. Within geologic hazardous areas, the design of such features must be addressed within the geotechnical engineering report for the site.</th>
<th>Potential Construction Code Barriers to Building Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Construction Code Barriers found. Many green methodologies are already required by MI Construction Codes.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>No Construction Code Barriers found if barrier system is tested/listed per recognized standard.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers if the water-resistive barrier system is tested/listed per a recognized standard. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>No Construction Code Barriers found if the waterproofing system is tested/listed per recognized standard.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers if the water-resistive barrier system is tested/listed per a recognized standard. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>No Construction Code Barriers found if roofing system is tested/listed per recognized standard.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers if the roofing system is tested/listed per recognized standard.</td>
</tr>
</tbody>
</table>

See LID Analysis of Barriers within MICC Chapter 19.
MICC Chapter 19 (required connection to storm drain system, etc.).
No Construction Code Barriers found. However, perceived barrier is that roof structure must be designed for roof live and dead load including the weight of saturated soil in addition to snow load. Also, since only thermal transmittance requirements are specified within the construction codes, green roofs are still required to meet construction code minimum insulation values.

This Green Building Practice can be utilized without interference from construction code barriers if the roofing structure is designed for roof live and dead load, including the weight of saturated soil in addition to snow load. Note - green roofs must meet thermal transmittance requirements specified within the construction codes unless a reduced value is approved as a code alternate.

<table>
<thead>
<tr>
<th>35. Built-in Recycling &amp; Composting</th>
</tr>
</thead>
<tbody>
<tr>
<td>A perceived Construction Code barrier for IBC buildings is the recycling room may be considered an incidental storage room which requires a 1-hr. fire separation or an automatic fire extinguishing system within the space. Exception – this is not a requirement for IRC single family, duplex, or townhomes.</td>
</tr>
<tr>
<td>This perceived construction code barrier for a 1-hr. fire resistive enclosure is warranted for fire &amp; life safety purposes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>36. Reuse and Salvage Building Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deconstruction in Lieu of Demolition</td>
</tr>
<tr>
<td>Sorting and Reuse of Scrap Building Materials</td>
</tr>
<tr>
<td>Recycled-Content Building Materials</td>
</tr>
<tr>
<td>No barriers to Deconstruction in lieu of demolition.</td>
</tr>
<tr>
<td>With regard to material reuse, Construction Code barriers include:</td>
</tr>
<tr>
<td>Used Building materials that meet the minimum code requirements for new materials are permitted. Used equipment/devices must</td>
</tr>
<tr>
<td>Deconstruction in lieu of demolition can be utilized without interference from construction code barriers.</td>
</tr>
<tr>
<td>The following construction code regulations for material reuse are warranted for structural, fire &amp; life safety purposes:</td>
</tr>
<tr>
<td>Used Building materials that meet the minimum code requirements for new materials are permitted.</td>
</tr>
<tr>
<td>Used equipment/devices must meet the minimum code requirements for new equipment/devices and must have prior approval by the Building Official. A 3rd party inspection may be required (for example - re-grading of used lumber, etc.).</td>
</tr>
</tbody>
</table>
- Recycled Construction Waste
- Resource-Efficient Materials
- Life Cycle Analysis
- Indigenous Materials
- Building Materials Derived from Renewable Resources; bamboo, straw

Meet the minimum code requirements for new equipment/devices and must have prior approval by the Building Official. A 3rd party inspection may be required (re-grading of lumber, etc.).

- Building materials from Renewable Resources, Recycled content or Resource Efficient materials do not have Construction Code Barriers if materials are tested/listed per recognized standard.
- Materials or methods that are not tested/listed per recognized standards or specifically approved within the Construction Codes can be approved as a code alternate material or method. The applicant must submit a written request to the Building Official which establishes the alternative material/method satisfactorily complies with the intent of code provisions with at least equivalent quality, strength, effectiveness, fire resistance, durability, and safety.

- Building materials from Renewable Resources, Recycled content or Resource Efficient materials do not have Construction Code Barriers if materials are tested/listed per recognized standard.
### Energy Efficiency

<table>
<thead>
<tr>
<th>No.</th>
<th>Practice Description</th>
<th>Construction Code Barriers Found</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>Exceed Baseline Minimum Performance Path Requirements</td>
<td>No Construction Code Barriers found. However, some MI Construction Code requirements have more restrictive energy efficiencies than the NGBS Baseline.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>39</td>
<td>Exceed Baseline Minimum Prescriptive Path Requirements</td>
<td>No Construction Code Barriers found. However, some MI Construction Code requirements have more restrictive energy efficiencies than the NGBS Baseline.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>40</td>
<td>Ducts Designed and Sealed to Reduce Leakage</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>41</td>
<td>Properly Sized Heating &amp; Cooling System / Equipment</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>42</td>
<td>Insulated Crawlspace</td>
<td>No Construction Code Barriers found. However, a perceived barrier is that a radon mitigation system must be installed if the crawlspace is not ventilated.</td>
<td>This Green Building Practice can be utilized if an approved radon mitigation system is installed. Note – State Ventilation and Air Quality Code cannot be amended by jurisdictions without approval from the State Building Code Council.</td>
</tr>
<tr>
<td>43</td>
<td>Complete Insulation and Air Sealing</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>44</td>
<td>Energy Star or Equivalent Fenestration (Windows, Doors, Skylights)</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>No.</td>
<td>Description</td>
<td>Code Barriers Found</td>
<td>Note</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------</td>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>45</td>
<td>Energy Star or Equivalent Programmable Thermostats Installed</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>46</td>
<td>Energy Star or Equivalent Lighting &amp; Appliances</td>
<td>No Construction Code Barriers found.</td>
<td>Note - MI cannot require higher appliance efficiencies as Federal law prohibits jurisdictions from setting higher energy efficiency standards for dishwashers, furnaces, clothes washers, and other large appliances.</td>
</tr>
<tr>
<td>47</td>
<td>Automatic Lighting Controls; photo or occupancy sensors</td>
<td>No Construction Code Barriers found.</td>
<td>Note - MI cannot require higher appliance efficiencies as Federal law prohibits jurisdictions from setting higher energy efficiency standards for dishwashers, furnaces, clothes washers, and other large appliances.</td>
</tr>
<tr>
<td>48</td>
<td>Solar Orientation &amp; Day-lighting</td>
<td>No Construction Code Barriers found.</td>
<td>Note - MI cannot require higher appliance efficiencies as Federal law prohibits jurisdictions from setting higher energy efficiency standards for dishwashers, furnaces, clothes washers, and other large appliances.</td>
</tr>
<tr>
<td>49</td>
<td>Sun-tempered Design; Awning or overhang shading</td>
<td>No Construction Code Barriers found.</td>
<td>Note - MI cannot require higher appliance efficiencies as Federal law prohibits jurisdictions from setting higher energy efficiency standards for dishwashers, furnaces, clothes washers, and other large appliances.</td>
</tr>
<tr>
<td>50</td>
<td>Solar Water Heating</td>
<td>No Construction Code Barriers found.</td>
<td>Note - MI cannot require higher appliance efficiencies as Federal law prohibits jurisdictions from setting higher energy efficiency standards for dishwashers, furnaces, clothes washers, and other large appliances.</td>
</tr>
</tbody>
</table>

Page 12 of Exhibit A
Potential Construction Code Barriers to Building Green
S:\DSG\Planning\Grants\2007 SMP\Planning Commission - SMP\11-4-09 PC Meeting\Green Building\Don\Unwarranted Code Barriers Eliminated 102809.doc
<table>
<thead>
<tr>
<th>No.</th>
<th>Feature</th>
<th>Code Barriers</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>51.</td>
<td>Passive Cooling Design Features</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers.</td>
</tr>
<tr>
<td>52.</td>
<td>Passive Solar Heating Design</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers.</td>
</tr>
<tr>
<td>53.</td>
<td>Onsite Renewable Energy Sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Photovoltaic (PV) Panels</td>
<td>No Construction Code Barriers found. However, manufacturer and installation must meet recognized standards. On existing buildings a perceived barrier may be verification that roof structure is adequate for additional load imposed by new equipment.</td>
<td>Must meet zoning code requirements (for example - restrictions when located within setback yards, impervious surface limitations, building height limitations, design review, etc.). Removal of this Zoning Code barrier is beyond the scope of this analysis. These Green Building Practices can be utilized without interference from construction code barriers. However, verification that the roof structure is adequate for additional loads imposed by equipment may be required (depending on the weight of the system and method of installation). Fire Department concerns regarding fire fighter access to buildings/rooftops and firefighter safety may result in limitations to the locations of PV panels and electrical disconnecting equipment.</td>
</tr>
<tr>
<td></td>
<td>Wind Energy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Micro-hydro Power</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Active Solar Space Heating System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54.</td>
<td>Third Party Verification of Energy Related Features</td>
<td>No Construction Code Barriers found. However, City inspection may be required in addition to 3rd Party inspection,</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers. The existing codes are aligned with this green practice and compliance with existing regulations would achieve significant performance level points for this Green category. Note - City inspection may be required in addition to 3rd Party inspection,</td>
</tr>
<tr>
<td>55.</td>
<td>Energy Monitoring Devices and Management Control System</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers.</td>
</tr>
<tr>
<td>56.</td>
<td>Renewable Energy Service Plan from the Utility</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers.</td>
</tr>
</tbody>
</table>
## Water Efficiency

<table>
<thead>
<tr>
<th>Practice</th>
<th>Construction Code Barriers</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>57. Reduce Indoor Hot Water Piping Distance</td>
<td>No Construction Code Barriers found.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers.</td>
</tr>
<tr>
<td>58. Install Tankless Water Heater</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers if equipment is tested/listed.</td>
</tr>
<tr>
<td>59. On Demand Hot Water Recirculation System</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers.</td>
</tr>
<tr>
<td>60. Energy Star or Equivalent Water-Conserving Appliances</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
<td>This Green Building Practice can be utilized without interference from construction code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>61. Water-efficient Showerheads, Faucets, and Toilets</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
<td>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</td>
</tr>
<tr>
<td>62. Waterless Urinals</td>
<td>Use of this fixture requires approval from King County Health Department. K.C. Health/Plumbing has a code barrier within UPC 405.2, which requires the washing of fixture walls. However, the Health Department accepts waterless urinals as alternate fixtures if they have UPC approval. MI Construction Code has the same barriers (UPC 405.2) Similarly, UPC approved fixtures can be accepted (if tested/listed per exception of UPC 601.1).</td>
<td>MI can accept this Green Building Practice with the continued approval of local health department (King County Health currently accepts waterless urinals if the fixtures are UPC approved). Similarly, there is a MI Construction Code Barrier (UPC 405.2 - code requirement to rinse the fixture walls). However, there is an exception if the fixture is UPC approved and waterless urinals are allowable as a code alternate fixture. Cautionary note- there has been significant reporting of dissatisfaction with some of these fixtures.</td>
</tr>
<tr>
<td>63.</td>
<td>Low-volume Irrigation Systems</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
</tr>
<tr>
<td>64.</td>
<td>High distribution uniformity (DU) rotating spray heads.</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
</tr>
<tr>
<td>65.</td>
<td>Drip irrigation</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
</tr>
<tr>
<td>66.</td>
<td>Bubblers</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
</tr>
<tr>
<td>67.</td>
<td>Drip Emitters</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
</tr>
<tr>
<td>68.</td>
<td>Soaker hose</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
</tr>
<tr>
<td>69.</td>
<td>Subsurface irrigation</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
</tr>
<tr>
<td>70.</td>
<td>Separately Zoned Irrigation Systems with Controls</td>
<td>No Construction Code Barriers found if equipment is tested/listed.</td>
</tr>
<tr>
<td>71.</td>
<td>Rainwater Collection and Distribution</td>
<td>See LID Analysis of Barriers within MICC Chapter 19 (i.e. - required connection of roof drains to storm drain system, etc.). Must meet zoning code requirements (for example - restrictions when equipment is located within setback yards, impervious surface limitations, design review, etc.). Removal of this Zoning Code barrier is beyond the scope of this analysis. Use of a rainwater collection and MI can accept this Green Building Practice with the continued approval of the local health department. The King County Health Department currently accepts rainwater systems if all the following are met: 1. The systems are installed per an approved standard; and 2. Approved uses are limited to irrigation (surface and subsurface), water features, toilet flushing, clothes washing &amp; identified “non-potable” hose uses only; and 3. Necessary permits are obtained from the local jurisdiction. (Note – a separate permit from the county is not required if the above items are met). Rainwater collected from a typical roof structure is exempt from obtaining a water rights permit from the Department of Ecology. However, a DOE permit must be obtained if rainwater is collected from any other surface (decks, patios, roads, etc.). Therefore, storm water detention tanks cannot be used for rainwater collection and distribution unless a water rights permit is obtained from DOE and prior approval to connect to the storm drain system is obtained from the City Engineer.</td>
</tr>
</tbody>
</table>
distribution system requires approval from King County Health Department. The Health/Plumbing Department administratively adopted an installation standard and currently allows such systems.

Connections to the public water system need approval from other Public Agencies (e.g. – King County Health Dept.). Their current approval requires backflow prevention consisting of premise isolation (via an RBPA) and in-premises protection (via an air gap).

Similarly, the City water purveyor requires premises isolation (backflow protection via an RPBA) and cross-connections are prohibited within the premises as per MI Construction Codes (an air gap is required).

Cisterns need to meet minimum requirements of MI Zoning Code (restrictions within setback yards, height, design review, etc.).

The State Dept. of Ecology has limitations and permit requirements for surface water collection. Note – a

The following MI Construction Code barriers exist: 1 The plumbing code mandates that plumbing fixtures can only be connected to potable water. 2. There is not an adopted material/installation standard allowing for and regulating the installation of rain water systems.

In regard to the potable water requirement for fixtures, the Health Department deems that rainwater is an acceptable health risk if connection is limited to the following uses; outdoor irrigation (surface and subsurface), water features, toilet flushing, clothes washing & identified “non-potable” hose uses only. Therefore DSG staff propose that this MI Construction Code barrier can be removed. See Exhibit B.

Also, adoption of a material/installation standard is warranted to protect public health against hazards posed by improper use or application of reclaimed rainwater. Therefore, it is recommended that Mercer Island adopt the King County installation standard by reference. See Exhibit B for the adopting language and [http://www.kingcounty.gov/healthServices/health/ehs/plumbing/guidelines.aspx](http://www.kingcounty.gov/healthServices/health/ehs/plumbing/guidelines.aspx) to view the installation standard titled, “Rainwater Harvesting and Connection to Plumbing Fixtures”, Seattle King County Department of Public Health, Document Code No. 07-001, dated January 30, 2007. Note – approval by the Washington State Building Code Council is required for the proposed Code amendment.

If adopted, Rainwater System reuse would be limited to irrigation (surface and subsurface), water features, toilet flushing, clothes washing & hose uses identified as "non-potable" only. The systems would be installed per the adopted standard. The installations would require a plumbing permit for the rainwater system and an electrical permit (for motors, pumps and controls) from the City of Mercer Island. Exception – permits are not required for simple rainwater systems that collect rainwater directly from roof drains into approximately 55 gallon rain barrels which are only used for outdoor irrigation purposes and are not provided with electrical power, pumps, pressurization, or a connection to potable water. Note – although a permit is not required MI Zoning regulations must still be met.

Backflow prevention to protect the City water supply from contamination is warranted to protect public health. Backflow protection requirements are as follows: Premises isolation consisting of an RPBA at the City connection and an air gap is required for in-premises protection.

Rainwater overflow must drain into an approved storm drain system.
<table>
<thead>
<tr>
<th></th>
<th>DOE permit is not required if rainwater collection is from a roof structure only. MI Construction Code barriers include:</th>
<th>See LID Analysis of Barriers within MICC Chapter 19 (i.e. - required connection of roof drains to storm drain system, etc.). Must meet MI Zoning Code requirements (for example - restrictions when equipment is located within setback yards, design review, etc.). Removal of this Zoning Code barrier is beyond the scope of this analysis.</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.</td>
<td><strong>Gray Water Reuse for Toilets &amp; Irrigation</strong></td>
<td>MI can accept this Green Building Practice with the continued approval of the local health department. The County has barriers within their code (e.g. - require a connection to sewer when available, prohibit onsite wastewater system if sewer provided) but have an administrative ruling to accept gray water systems as a code alternate system. The King County Health Department accepts gray water systems if all the following are met: 1. An onsite waste water permit is obtained from King County Environmental Health and the system is installed per their regulations; and 2. Approved uses are limited to subsurface irrigation (exception - toilet flushing is accepted with approved system only – Brack, etc). 3. All necessary permits are obtained from the local jurisdiction (e.g. – permit for the gray water system connection, electrical equipment &amp; wiring, backflow devices). Similarly, the MI Construction Codes contain the same barriers to gray water systems (e.g. - require a connection to sewer when available, prohibit onsite wastewater system if sewer provided). These barriers are warranted to protect public health against hazards posed by improper use or application of reclaimed gray water. However, the public health department maintains that gray water systems can provide for adequate public health if installed per County Health Department regulations. Therefore,</td>
</tr>
<tr>
<td></td>
<td>See LID Analysis of Barriers within MICC Chapter 19 (i.e. – require a connection to public sewer system, etc.). Must meet Zoning Code requirements (for example - setbacks when equipment is located within setback yards, design review, etc.). Removal of Zoning Code barriers is beyond the scope of this analysis. The use of a gray water collection and distribution system requires approval from the King County Health Department. The Environmental Health/Plumbing Department requires a permit for these systems</td>
<td></td>
</tr>
</tbody>
</table>
with their regulation similar to onsite wastewater disposal systems (e.g. – septic tanks & drain fields). Their adopted regulations allow subsurface application of gray water only. However, they accept an approved alternate fixture (Brack system) which allows for toilet flushing with gray water. This system does not have a cross-connection to potable water. Note – County staff expressed concern about their ability to efficiently service permits if there is a significant increase in applications for gray water systems.

DOE approves only subsurface distribution of gray water at this time. However, rule-making is currently underway which addresses gray water use for other applications (toilet flushing).

DOE staff anticipate that County regulation/inspection of the subsurface irrigation system (e.g. - setbacks from sensitive areas, etc.) and the new detergent restrictions will limit adverse impacts of these systems on Lake Washington water quality.

Staff proposes the alteration of MI Construction Code barriers to allow for gray water systems.

Staff recommends adding an exception and code alternate that allows gray water systems when installed with an onsite waste water permit from King County and a permit from the City. The exception will be to the code section which prohibits the installation of an on-site waste water system when a public sewer connection is provided. This will allow for an approved gray water system but still require a sanitary sewer connection (which provides for water reuse but still protects health concerns if systems do not function properly). See Exhibit B for the proposed adopting language and http://www.doh.wa.gov/EHP/ls/WW/Water_Conervation_8-29-07.pdf to view the proposed installation standard (titled, “Water Conserving On-Site Wastewater Treatment Systems”, Washington State Department of Health, dated July 2007). Note - DSG staff does not intend to extend gray water reuse to toilet fixtures until approved by DOE (rule making is currently underway which addresses gray water use for other applications - toilet flushing).

The proposed ordinance to allow gray water systems includes the following elements:

1. An onsite wastewater permit shall be obtained from King County Environmental Health and the system is installed per their regulations and inspection; and
2. Approved uses are limited to subsurface irrigation (exception - toilet flushing is only accepted with a Health Department approved fixture); and
3. All necessary permits are obtained from the City of Mercer Island (i.e. - permits for the gray water system installation/connection, electrical permit, and permit for the backflow devices); and
4. A sanitary sewer connection is required; and
5. The gray water overflow must drain into an approved sanitary sewer system; and
6. Backflow prevention to protect the City water supply from contamination is warranted to protect public health. The backflow protection requirements are premises isolation consisting of an RPBA at the City connection and an air gap is required for in-premises protection.

Note – approval by the Washington State Building Code Council is required for the proposed Code amendment.

DSG Staff acknowledges the concern expressed by Staff within the Lake Washington Steward Program regarding the potential adverse impacts that increased nutrients from gray water systems could have...
Similarly, County staff anticipates their regulation of the gray water subsurface system (setbacks from sensitive areas, etc.) and the new detergent restrictions will limit adverse impacts on Lake Washington water quality.

Staff with the Lake Washington Steward Program expressed a potential concern and will study the potential adverse affects on Lake Washington water quality (e.g., number of gray water systems installed, effectiveness of county regulation of on-site gray water and compost toilet regulations, new detergent legislation, etc.).

Connections to the public water system need approval from other Public Agencies (e.g., King County Health Dept.). The Health/Plumbing Department currently requires that gray water system backflow protection consists of premises isolation via an RBPA and in-premises protection via an air gap.

Similarly, the City water purveyor requires premises isolation (backflow protection via an RPBA) and in-... upon the water quality of Lake Washington (especially considering our urban and geologic settings). With the related concern of County staff regarding their ability to efficiently service a workload increase from gray water permits, DSG staff recommended that the requirement for a sewer connection remain (which provides for easy correction if necessary). The cost of this requirement is offset since the County does not require a secondary drain field when a sewer connection is provided. Additionally, homes with gray water systems must still provide some means for the removal of black water and with nearly all MI homes already connecting to the public sewer, this requirement is reasonable. Although providing a sewer connection may be an unwanted cost, the cost to install during the construction of a home is far less than the cost to retrofit a connection.

See LID Analysis of Barriers within MICC Chapter 19 (i.e., required connection to public sewer system, etc.).

Must meet Zoning Code requirements (for example, setback yard restrictions for equipment, design review, etc.). Removal of this potential Zoning Code barrier is beyond the scope of this analysis.

Note – Other barriers that are not code related are likely to limit the use of this green method. For example, gray water systems can be difficult to incorporate into existing construction, or the poor infiltration rate of many Island soil types and the required setbacks that drain fields must have from ecologically sensitive areas.
premises cross-connections are prohibited by MI Construction Codes (an air gap is required).

MI Construction Code barriers include:

- 2006 UPC Code barrier that requires connection to public sewer. Also, UPC does not allow on-site system if sewer is provided to the site.
- Jurisdiction must specifically adopt a material and installation standard for Gray Water Systems.
- If 2006 UPC Ch.16 is adopted, the wastewater from kitchen sinks and dishwashers are not considered gray water and cannot be collected as such.
- If 2006 UPC Ch.16 is adopted, Gray water cannot supply fixtures including toilet flushing (Potable water required for plumbing code fixtures). Gray water use is limited to underground landscape irrigation for single family dwellings.

Reportedly, the 2009 UPC authors formed a Gray Water and Water Reuse task group to propose...
modifications to Chapter 16 with proposed changes to include the following:
- Harvested rainwater for both residential and non-residential structures
- Provisions regarding manufactured gray water systems for recycling wastewater to serve toilets in residences

The State began the review and adoption process in March 2009 for implementation statewide on July 1, 2010.

### 73. Composting or Waterless Toilets

<table>
<thead>
<tr>
<th>Construction Code barriers include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Potable water requirement for plumbing code fixtures.</td>
</tr>
<tr>
<td>- Required connection to sewer or MI can accept this Green Building Practice with the continued approval of the local health department.</td>
</tr>
</tbody>
</table>

The King County Health Department accepts compost toilets if all the following are met:
1. An onsite waste permit is obtained from King County Environmental Health and the system is installed per their regulations; and
2. An acceptable means for hand washing must be provided (subsequently, a gray water system must be provided); and
3. Disposal of the composted end product must be by an approved domestic septage pumper/hauler or on-site burial with very specific disposal practices; and
4. Cross-connections to potable water systems are prohibited; and
5. All necessary permits are obtained from the local jurisdiction (e.g. – permit for the addition of an alternate toilet fixture, etc.).
 Similarly, the MI Construction Codes contain the same barriers to compost toilets (e.g. - require a connection to sewer when available, prohibit onsite wastewater system if sewer provided). These barriers are warranted to protect public health against hazards posed by improper installation or disposal of the composted end product. However, the public health department maintains that approved alternate toilet systems can provide for adequate public health if installed per County Health Department regulations. Therefore, staff proposes the alteration of MI Construction Code barriers to allow for Health Department approved alternate toilets when installed per the Health Department regulations.

Staff recommends adding an exception and code alternate that allows approved alternate toilets when installed with an onsite waste permit from King County and a permit from the City. The exception will be to the code section that prohibits the installation of an on-site waste system when a public sewer connection is provided. This will allow for an approved compost toilet but still require a sanitary sewer connection (providing for compost toilets but still protecting health concerns if systems do not function properly). See Attachment C for the proposed adopting language and http://www.doh.wa.gov/EHP/ts/WW/Water_Conservation_8-29-07.pdf to view the proposed installation standard (titled, “Water Conserving On-Site Wastewater Treatment Systems”), Washington State Department of Health, dated July 2007).

The proposed MI Construction Code amendments to allow approved alternate toilets include the following elements:

1. An onsite waste permit shall be obtained from King County Environmental Health and the system is installed/inspected per their regulations; and
2. An acceptable means for hand washing must be provided (and subsequently a gray water system must be provided); and
3. Disposal of the composted end product must be by an approved domestic septage pumper/hauler (onsite burial is prohibited); and
4. Cross-connections to potable water systems are prohibited; and
5. All necessary permits are obtained from the local jurisdiction (e.g. – permit for the addition of an alternate toilet fixture, etc.).
6. A sanitary sewer connection is required to the property.
compost toilet installations (e.g. – setbacks from sensitive areas, etc.) will limit adverse impacts of these systems on Lake Washington water quality.

Similarly, County staff anticipates their regulation of compost toilets (setbacks from sensitive areas, etc.) will limit adverse impacts on Lake Washington water quality.

Staff with the Lake Washington Steward Program expressed a potential concern and will study the potential adverse affects on Lake Washington water quality (e.g. – number of compost toilet systems installed, effectiveness of county regulation of compost toilets, etc.)

MI Construction Code barriers include:

- UPC Code barrier that requires connection to public sewer. Also, UPC does not allow on-site system if sewer is provided to the site.
- Jurisdiction must specifically adopt a material and installation standard for compost toilets.

Note – approval by the Washington State Building Code Council is required for the proposed Code amendment.

DSG Staff acknowledges the concern expressed by Staff within the Lake Washington Steward Program regarding the potential adverse impacts that increased nutrients from onsite disposal of septage could have upon the water quality of Lake Washington (especially considering our urban and geologic settings). Therefore, DSG staff recommended that the requirement for a sewer connection remain (which provides for easy correction if necessary). Homes with compost toilets must still provide a means for the removal of gray water and with nearly all MI homes already connecting to the public sewer, this requirement is reasonable. Although providing a sewer connection may be an unwanted cost, the cost to install during the construction of a home is far less than the cost to retrofit a connection. For similar reasons, onsite disposal of the composted end product is not recommended (urban setting, etc.).

See LID Analysis of Barriers within MICC Chapter 19 (i.e. – required connection to public sewer system, etc.).

Must meet Zoning Code requirements (for example – setback yard restrictions for equipment, design review, etc.). Removal of this potential Zoning Code barrier is beyond the scope of this analysis.
<table>
<thead>
<tr>
<th></th>
<th>Onsite Wastewater Treatment &amp; disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>74.</td>
<td>There are significant MI Construction Code barriers as the UPC requires a connection to public sewer and does not allow onsite system if sewer is provided to the site. Also, since wastewater treatment is beyond the scope of the MI Construction Codes and an appropriate standard would need adoption.</td>
</tr>
<tr>
<td></td>
<td>Onsite Wastewater Treatment/disposal or the use of treated wastewater requires approval from the King County Health Department. At this time the County does not recommend onsite wastewater treatment/disposal within an urban environment such as Mercer Island.</td>
</tr>
<tr>
<td></td>
<td>County staff predicts that such systems would not perform well within an urban environment (small lot size, increased population, setbacks from sensitive areas, etc.) and that adverse impacts on Lake Washington water quality may result.</td>
</tr>
<tr>
<td></td>
<td>Connections to the public water system need approval from other Public Agencies (e.g. – King County Health Dept.). The Health/Plumbing MI Construction Codes contain barriers to onsite wastewater treatment/disposal systems (e.g. - require a connection to sewer when available, prohibit onsite wastewater system if sewer provided). These barriers are warranted to protect public health against hazards posed by improper use or application of onsite wastewater systems. The public health department recommends against these systems within an urban setting such as Mercer Island. Therefore, staff concludes the Construction Code barriers are warranted and no code changes are proposed.</td>
</tr>
<tr>
<td></td>
<td>Additionally, DSG Staff acknowledges the concern expressed by the County regarding the potential adverse impacts that increased nutrients from such systems could have upon the water quality of Lake Washington (especially considering our urban and geologic settings). DSG staff recommended that the requirement for a sewer connection remain and that onsite wastewater treatment/disposal systems remain prohibited.</td>
</tr>
<tr>
<td></td>
<td>See LID Analysis of Barriers within MICC Chapter 19 (i.e. – required connection to public sewer system, etc.).</td>
</tr>
<tr>
<td></td>
<td>Must meet Zoning Code requirements (for example – setback yard restrictions for equipment, design review, etc.). Removal of this potential Zoning Code barrier is beyond the scope of this analysis.</td>
</tr>
</tbody>
</table>
Department currently requires that such systems are provided with backflow protection (consisting of premise isolation via an RBPA and in-premises protection via an air gap).

Similarly, the City water purveyor requires premises isolation (backflow protection via an RPBA) and in-premises cross-connections are prohibited by MI Construction Codes (an air gap is required).

See LID Analysis of Barriers within MICC Chapter 19 (i.e. – require a connection to public sewer system, etc.).

Must meet Zoning Code requirements (for example - setback yard restrictions for equipment, design review, etc.). Removal of Zoning Code barriers is beyond the scope of this analysis.

### Indoor Environmental Quality

<table>
<thead>
<tr>
<th>Pollutant Source Control</th>
<th>No Construction Code Barriers found. Many of the green methodologies are already required by construction</th>
<th>This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space and Water Heating</td>
<td></td>
<td></td>
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<tr>
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- Low VOC materials and products
- Low VOC carpet and floor finishes
- Low VOC wall coverings and coatings
- Low VOC adhesives and Sealants
- Low Urea Formaldehyde Emissions in Composite Wood
- Low Formaldehyde Emissions in Insulation
- Carbon Monoxide Alarm

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<th>Pollutant Control and Moisture Management</th>
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<td>Spontaneous exhaust fans</td>
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<td>Whole Building Ventilation</td>
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<td>Moisture Control and Vapor Barriers</td>
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<td>Pipe and Duct Insulation</td>
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- No Construction Code Barriers found. Many of the green methodologies are already required by construction codes. However, a perceived barrier is that a radon mitigation system must be installed beneath crawlspaces that are conditioned.

- This Green Building Practice can be utilized without interference from construction code barriers. However, a radon mitigation system must be installed beneath crawlspaces that are conditioned.

- The existing codes are aligned with this green practice and compliance with existing regulations would achieve significant performance level points for this Green category.
Humidity Control & Monitoring System

Operation, Maintenance, and Building Owner Education

77. Homeowner’s Binder
- Green building program certificate
- List of green building features
- Product manufacturer’s manuals or product data sheet
- Local recycling programs information
- Local Utility programs information
- Explanation of energy efficient lighting systems
- Water and energy conservation information
- Local public transportation options
- Diagram of safety valves

No Construction Code Barriers found. Much of this information is required by construction codes already (e.g. – Product manufacturer’s manuals, HVAC information, etc.).

This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.
and controls for major building systems
- HVAC service and maintenance information
- Frost protected shallow foundation information
- Photo record of framing with utilities installed
- Maintenance checklist
- Common hazardous materials information
- Organic pest control and cleaning products information
- Native landscape materials information and water requirements
- Humidity control information
- Pest control inspection information
- Gutter and downspout maintenance
- Summary of attributes of a green-built building

78. Training of Building Owners on Building Operation & Maintenance
- HVAC filters
- Thermostat operation and programming

No Construction Code Barriers found. This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.
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<td>Fan controls</td>
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79. **Record Drawings of the Building**

No Construction Code Barriers found. This Green Building Practice can be utilized without interference from MI Construction Code barriers. The existing codes are in general alignment with this green practice and compliance with the existing MI Construction Codes could result in significant performance level points earned for this Green category.
Exhibit B

Proposed Code Changes to Remove Unwarranted Code Barriers to Green Building

Note - Existing code language is presented with italicized type while the proposed amendments are regular type and underlined.

Uniform Administrative Code Amendments

Section 17.08.010 Adoption.
The 2006 Edition of the Uniform Plumbing Code (UPC), as adopted and amended by the State Building Code Council in Chapter 51-56 WAC, as published by the International Association of Plumbing and Mechanical Officials, is adopted by reference with the following additions, deletions and exceptions: Provided that Chapter 1, Administration, is not adopted and the Construction Administrative Code, as set forth in Chapter 17.14 MICC, shall be used in place of UPC Chapter 1, Administration. Provided that Chapters 12 and 15 of the Uniform Plumbing Code are not adopted. Provided that those requirements of the Uniform Plumbing Code relating to venting and combustion air of fuel-fired appliances as found in Chapter 5 and those portions of the code addressing building sewers are not adopted. Provided that UPC Table 6-4 shall be amended to delete “Lawn Sprinkler, each head” for “Private” use only.


The following documents are adopted by reference to serve as installation standards:

Uniform Plumbing Code Amendments

UPC Section 405.0 Prohibited Fixtures
Water closets having an invisible seal or an unventilated space or having walls which are not thoroughly washed at each discharge shall be prohibited. Any water closet that might permit siphonage of the contents of the bowl back into the tank shall be prohibited. Drinking fountains shall not be installed in public toilet rooms.
Exception: Alternate toilets (compost toilets) approved by the King County Health Department when installed with an onsite waste permit from the King County Health Department.

UPC 405.2 Prohibited Urinals
Floor-type and wall-hung type trough urinals shall be prohibited. Urinals that have an invisible seal or that have an unventilated space or wall that is not thoroughly washed at each discharge shall be prohibited.
Exception: Waterless urinals approved by the Uniform Plumbing Code or the King County Health Department as an approved alternate fixture.

UPC 601.0 Running Water Required
601.1 Except where not deemed necessary for safety or sanitation by the Authority Having Jurisdiction, each plumbing fixture shall be provided with an adequate supply of potable running water piped thereto in an approved manner, so arranged as to flush and keep it in a clean and sanitary condition without danger of backflow or cross-connection. Water closets and urinals shall be flushed by means of an approved flush tank or flushometer valve. In jurisdictions that adopt Chapter 16, water closets, urinals, and trap primers in designated non-residential buildings may be provided with reclaimed water as defined and regulated by Chapter 16 of this code.
Exception: Exceptions:
1. Listed fixtures that do not require water for their operation and are not connected to the water supply.
2. Alternate toilets (compost toilets) approved by the King County Health Department and installed with an onsite waste permit from the King County Health Department.
3. Waterless urinals approved by the Uniform Plumbing Code or the King County Health Department as an approved alternate fixture.

UPC Section 713.7 Gray water systems
Gray water collection and distribution systems are acceptable with all the following:
1. An onsite wastewater permit shall be obtained from King County Environmental Health and the system is installed per their regulations and inspection; and
2. Approved uses are limited to subsurface irrigation (exception - toilet flushing is only accepted with a Health Department approved fixture); and
3. All necessary permits are obtained from the City of Mercer Island (i.e., permits for the gray water system installation/connection, electrical permit, and permit for the backflow devices); and
4. A sanitary sewer connection is required; and
5. The gray water overflow must drain into an approved sanitary sewer system;
6. Backflow prevention to protect the City water supply from contamination is warranted to protect public health. The backflow protection requirements are premises isolation
consisting of an RPBA at the City connection and an air gap is required for in-premises protection.

UPC Section 713.8 Alternate toilets (compost toilets)
Alternate toilets (compost toilets) are acceptable with all the following:
1. An onsite waste permit shall be obtained from King County Environmental Health and the system is installed/inspected per their regulations; and
2. An acceptable means for hand washing must be provided (and subsequently a gray water system must be provided and approved by King County Environmental Health); and
3. Disposal of the composted end product must be by an approved domestic septage pumper/hauler or other offsite methods approved by the Health Department and Building Official (onsite burial is prohibited); and
4. Cross-connections to potable water systems are prohibited; and
5. All necessary permits are obtained from the local jurisdiction (e.g. – permit for the addition of an alternate toilet fixture, etc.).
6. A sanitary sewer connection is required to the property.
Exhibit C

Process to obtain WSBCC approval of proposed code changes

Residential Amendments: Amendments by local jurisdictions which affect the construction of single family and multi-family residential buildings must be reviewed and approved by the State Building Code Council before such amendments can be enforced.

The Council is required by RCW 19.27.074 to approve or deny all county or city local amendments that impact single family or multifamily residential buildings before they can be enforced. The jurisdiction is required to submit residential amendments in writing after the amendment/ordinance has been adopted by the city/county legislative body.

“Multifamily residential building” is defined as common wall residential buildings that consist of four or fewer units, that do not exceed two stories in height, that are less than five thousand square feet in area, and that have a one-hour fire-resistive occupancy separation between units.

Local amendments may not reduce the minimum performance standards and objectives of the state building code. Amendments that affect only administrative or departmental procedure do not need Council approval.

Recent amendments to the policy for review of local amendments require the local government to adopt findings of fact in its ordinance showing what unique conditions exist within the jurisdiction. These should be based on the five criteria outlined in the Council’s Policies and Procedures:

1. Climatic conditions that are unique to the jurisdiction.
2. Geologic or seismic conditions that are unique to the jurisdiction.
3. Environmental impacts such as noise, dust, etc., that are unique to the jurisdiction.
4. Life, health, or safety conditions that are unique to the local jurisdiction.
5. Other special conditions that are unique to the jurisdiction.
To: City of Mercer Island Planning Commission and Deputy Mayor Jahncke
From: Travis Saunders, Planner
Re: November 4, 2009 Shoreline Master Program (SMP) Update Workshop
Date: October 29, 2009

Commissioners and Deputy Mayor Jahncke:

This evening’s Shoreline Master Program update workshop contains the following agenda items:

Agenda item 2 (Carried over from October 21, 2009):
The Commission will be reviewing shoreline uses (WAC 173-26-241). A staff presentation will provide information on the WAC guidelines and existing use regulations. A staff member from the Parks Department will also be in attendance to answer any questions the Commission may have regarding City Parks. Following the presentation, discussion, and deliberation, the Commission’s preliminary recommendation is requested for shoreline use regulations.

During the course of the September 16, 2009 meeting, the Commission requested of staff the following items:

1. **Request:** Review a two designation system: Urban Residential Environment and Urban Park Environment. **Staff findings:** An email from Barbara Nightingale, Department of Ecology is attached as Exhibit 1. The email addresses the Commission’s inquiry, indicating the possibility of having a two designation system. A revised map is provided as Exhibit 2, visually displaying a two designation system.

2. **Request:** Review requirements for designating areas waterward from the ordinary high water mark as Aquatic Environment. **Staff findings:** An email from Barbara Nightingale, Department of Ecology (DOE) is attached as Exhibit 1. The email addresses the Commission’s inquiry, indicating that an Aquatic Environment is not necessarily required, subject to appropriate management policies.

3. **Request:** Review the Luther Burbank Park Master Plan (LBPMP) for any conflicts with the shoreline designation and uses of the park. **Staff findings:** After review of the LBPMP and WAC 172-26-211(e), staff finds the LBPMP and WAC criteria, management policies and designation criteria are harmonious. A copy of WAC 172-26-211 Designation Guidelines is attached as Exhibit 3. A copy of the LBMP is attached as Exhibit 5.

A copy of Existing Mercer Island Code – Use Table is attached as Exhibit 6, which demonstrates that no use conflicts would occur with the LBPMP. Should the Commission recommend changes be made to allowed uses in the
Environment, additional analysis would be needed to identify potential conflicts; if no use changes are proposed, no use conflicts would occur.

At the October 21st meeting, the Commission recommended to not adopt the LBPMP as part of the SMP, as it would require approval by DOE. The Commission acknowledged that Luther Burbank Park is a City owned park, and any development in the park would be consistent with the LBPMP.

Itemized below are the Shoreline Master Program update Exhibits for the November 4, 2009 Planning Commission meeting:

**Exhibit 1:** October 27, 2009 email from Barbara Nightingale, Department of Ecology

**Exhibit 2:** Proposed Environment Designations Map

**Exhibit 3:** WAC 172-26-211 Designation Guidelines

**Exhibit 4:** WAC Guidelines 173-26-241 for Shoreline Uses

**Exhibit 5:** Luther Burbank Park Master Plan (LBPMP)

**Exhibit 6:** Existing Mercer Island Code - Use Table (Shown in a strike and delete, incorporating the Commission’s request for a two designation system.

**Exhibit 7:** September 24, 2009 Letter from Sound Transit

Should you have questions regarding the materials or the update process, feel free to contact me.
Travis Saunders

From: Nightingale, Barbara (ECY) [bnig461@ECY.WA.GOV]
Sent: Tuesday, October 27, 2009 4:27 PM
To: Travis Saunders
Subject: Designations and development standards

Travis,

There is general agreement in this office that as I said yesterday, you can limit your designations to whatever numbers you would like 2 (parks and residential) or 3 (urban conservancy, residential, parks) and you can choose to have Aquatic designation or not. What matters is that you are able to ensure management requirements.

The Mercer island inventory recommends: that those areas allowing single family uses should be designated as Urban Residential; continue the Conservancy environment designation for Luther Burbank Park to encourabe the enhancement of ecological functions for the undeveloped portions of the shoreline and retaining future options for passive and active shoreline recreation and public access; continue the Urban Park designation for all other city-owned parks, street ends, and public access points. Assign this designation for any future park or street end developments along the shoreline to provide and maintain additional public access to the city’s shoreline areas. and consider adding a new Aquatic environment designation for jurisdictional shoreline waterward of the ordinary high-water mark (page 52 June 2009 inventory version).

If the city wishes to expand Parks designation to include the existing Conservancy designation, then the following management policies need to be ensured: to protect ecological functions, conserve existing natural resources and valuable historic and cultural areas in order to provide for sustained resource use, achieve natural flood plain processes, and provide recreational opportunities.

(ii) Management policies.

(A) Uses should be limited to those which sustain the shoreline area's physical and biological resources and uses of a nonpermanent nature that do not substantially degrade ecological functions or the rural or natural character of the shoreline area.

Water-dependent and water-enjoyment recreation facilities that do not deplete the resource over time, such as boating facilities, angling, hunting, wildlife viewing trails, and swimming beaches, are preferred uses, provided significant adverse impacts to the shoreline are mitigated.

Except as noted, commercial and industrial uses should not be allowed. Agriculture, commercial forestry, and aquaculture when consistent with provisions of this chapter may be allowed. Low-intensity, water-oriented commercial and industrial uses may be permitted in the limited instances where those uses have located in the past or at unique sites in rural communities that possess shoreline conditions and services to support the development.

Water-dependent and water-enjoyment recreation facilities that do not deplete the resource over time, such as boating facilities, angling, hunting, wildlife viewing trails, and swimming beaches, are preferred uses, provided significant adverse impacts to the shoreline are mitigated.

Mining is a unique use as a result of its inherent linkage to geology. Therefore, mining and related activities may be an appropriate use within the rural conservancy environment when conducted in a manner consistent with the environment policies and the provisions of WAC 173-26-241 (3)(h) and when located consistent with mineral resource lands designation criteria pursuant to RCW 36.70A.170 and WAC 365-190-070.

(B) Developments and uses that would substantially degrade or permanently deplete the biological resources of the area should not be allowed.
(C) Construction of new structural shoreline stabilization and flood control works should only be allowed where there is a documented need to protect an existing structure or ecological functions and mitigation is applied, consistent with WAC 173-26-231. New development should be designed and located to preclude the need for such work.

(D) Residential development standards shall ensure no net loss of shoreline ecological functions and should preserve the existing character of the shoreline consistent with the purpose of the environment. As a general matter, meeting this provision will require density, lot coverage, vegetation conservation and other provisions.

Scientific studies support density or lot coverage limitation standards that assure that development will be limited to a maximum of ten percent total impervious surface area within the lot or parcel, will maintain the existing hydrologic character of the shoreline. However, an alternative standard developed based on scientific information that meets the provisions of this chapter and accomplishes the purpose of the environment designation may be used. (A) Uses that preserve the natural character of the area or promote preservation of open space, flood plain or sensitive lands either directly or over the long term should be the primary allowed uses. Uses that result in restoration of ecological functions should be allowed if the use is otherwise compatible with the purpose of the environment and the setting.

Master programs may allow greater lot coverage to allow development of lots legally created prior to the adoption of a master program prepared under these guidelines. In these instances, master programs shall include measures to assure protection of ecological functions to the extent feasible such as requiring that lot coverage is minimized and vegetation is conserved.

(E) New shoreline stabilization, flood control measures, vegetation removal, and other shoreline modifications should be designed and managed consistent with these guidelines to ensure that the natural shoreline functions are protected. Such shoreline modification should not be inconsistent with planning provisions for restoration of shoreline ecological functions.

Designation criteria. One suggestion is that criteria of assignment of Parks environment designation should include:

(A) The shoreline is supporting human uses but subject to environmental limitations, such as properties that include or are adjacent to steep banks, feeder bluffs, or flood plains or other flood-prone areas;

(B) The shoreline is of high recreational value or with unique historic or cultural resources; or

(C) The shoreline has low-intensity water-dependent uses.

(D) They are suitable for water-related or water-enjoyment uses;

(E) They are open space, flood plain or other sensitive areas that should not be more intensively developed;

(F) They have potential for ecological restoration;

(G) They retain important ecological functions, even though partially developed; or

(H) They have the potential for development that is compatible with ecological restoration.

Similarly for not using the Aquatic designation, the city needs to ensure that management of submerged lands waterward of OHWM are clearly stated.

Ensuring management for aquatic environments. If the city does not want to have an Aquatics designation, the following language can ensure management policies:

1) New over-water structures should be prohibited except for water-dependent uses, public access or ecological restoration; 2) the size of new over-water structures should be limited to the minimum necessary to support the structure’s intended use; 3) in order to reduce the impacts of shoreline development and increase effective use of water resources, multiple uses of over-water facilities should be encouraged; 4) provisions for the aquatic environment should be directed towards maintaining and restoring habitat for aquatic species; 5) uses that cause significant ecological impacts to critical freshwater habitats should not be allowed. Where those uses are necessary to achieve the objectives of RCW 90.58.020, their impacts shall be
mitigated; 6) shoreline uses and modifications should be designed and managed to prevent degradation of water quality and alteration of natural hydrographic conditions; and 7) abandoned and neglected structures that cause adverse visual impacts or are a hazard to public health, safety, and welfare should be removed or restored to a usable condition consistent with this master program.

A quick overview of what other jurisdictions are doing on Lake Washington, Lake Sammamish and other urban lakes in King County:

Docks and Piers are generally consistent with ACOE RGP 3.

Buffers/setbacks – generally 35, 50, 75, 100 and 115ft buffers with some reductions through the application of incentives and some variations for smaller buffers for smaller lots than cannot accommodate large buffers.

Hope this is helpful. I look forward to your future planning commission meetings.

Please don’t hesitate to call, if you have any questions.

Thanks,

Barbara Nightingale

Regional Shoreline Planner

425-649-4309

Shorelands and Environmental Assistance

Department of Ecology
Appendix F - Proposed Shoreline Environment Designations

Shoreline Master Program - City of Mercer Island

All areas within shoreline jurisdiction that are not mapped and/or designated are automatically assigned the "Urban Conservancy" designation until the shoreline can be redesignated through a master program amendment. In the event of a mapping error, the City of Mercer Island shall rely upon common boundary descriptions and the criteria contained in RCW 90.58.030(2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, rather than the incorrect or outdated map.

Waterward extent of jurisdiction is measured to the middle of Lake Washington, pursuant to RCW 35.21.160.

^Waterward extent of Management Area is measured from the Ordinary High Watermark to the middle of Lake Washington.

Landward extent of Management Area is measured 200 ft landward of the Ordinary High Water Mark.
(1) **Applicability.**

This section applies to the establishment of environment designation boundaries and provisions as described in WAC 173-26-191 (1)(d).

(2) **Basic requirements for environment designation classification and provisions.**

(a) Master programs shall contain a system to classify shoreline areas into specific environment designations. This classification system shall be based on the existing use pattern, the biological and physical character of the shoreline, and the goals and aspirations of the community as expressed through comprehensive plans as well as the criteria in this section. Each master program's classification system shall be consistent with that described in WAC 173-26-211 (4) and (5) unless the alternative proposed provides equal or better implementation of the act.

(b) An up-to-date and accurate map of the shoreline area delineating the environment designations and their boundaries shall be prepared and maintained in the local government office that administers shoreline permits. If it is not feasible to accurately designate individual parcels on a map, the master program text shall include a clear basis for identifying the boundaries, physical features, explicit criteria, or "common" boundary descriptions to accurately define and distinguish the environments on the ground. The master program should also make it clear that in the event of a mapping error, the jurisdiction will rely upon common boundary descriptions and the criteria contained in RCW 90.58.030(2) and chapter 173-22 WAC pertaining to determinations of shorelands, as amended, rather than the incorrect or outdated map.
(c) To facilitate consistency with land use planning, local governments planning under chapter 36.70A RCW are encouraged to illustrate shoreline designations on the comprehensive plan Future Land Use Map as described in WAC 365-195-300 (2)(d).

(d) Pursuant to RCW 90.58.040, the map should clearly illustrate what environment designations apply to all shorelines of the state as defined in RCW 90.58.030(2)(c) within the local government’s jurisdiction in a manner consistent with WAC 173-26-211(4) and (5).

(e) The map and the master program should note that all areas within shoreline jurisdiction that are not mapped and/or designated are automatically assigned a "rural conservancy" designation, or "urban conservancy" designation if within a municipality or urban growth area, or the comparable environment designation of the applicable master program until the shoreline can be re-designated through a master program amendment.

(f) The following diagram summarizes the components of the environment designation provisions.

(3) Consistency between shoreline environment designations and the local comprehensive plan.

As noted in WAC 173-26-191(1)(e), RCW 90.58.340 requires that policies for lands adjacent to the shorelines be consistent with the Shoreline Management Act, implementing rules, and the applicable master program. Conversely, local comprehensive plans constitute the underlying framework within which master program provisions should fit. The Growth Management Act, where applicable, designates shoreline master program policies as an element of the comprehensive plan and requires that all elements be internally consistent. Chapter 36.70A RCW also requires development regulations to be consistent with the comprehensive plan.

The following criteria are intended to assist local governments in evaluating the consistency between master program environment designation provisions and the corresponding comprehensive plan elements and development regulations. In order for shoreline designation provisions, local comprehensive plan land use designations, and development regulations to be internally consistent, all three of the conditions below should be met:

(a) Provisions not precluding one another.

The comprehensive plan provisions and shoreline environment designation provisions should not preclude one another. To meet this criteria, the provisions of both the comprehensive plan and the master program must be able to be met. Further, when considered together and applied to any one piece of property, the master program use policies and regulations and the local zoning or other use regulations should not conflict in a manner that all viable uses of the property are precluded.

(b) Use compatibility.

Land use policies and regulations should protect preferred shoreline uses from being impacted by incompatible uses. The intent is to prevent water-oriented uses,
especially water-dependent uses, from being restricted on shoreline areas because of impacts to nearby non-water-oriented uses. To be consistent, master programs, comprehensive plans, and development regulations should prevent new uses that are not compatible with preferred uses from locating where they may restrict preferred uses or development.

(c) Sufficient infrastructure.

Infrastructure and services provided in the comprehensive plan should be sufficient to support allowed shoreline uses. Shoreline uses should not be allowed where the comprehensive plan does not provide sufficient roads, utilities, and other services to support them. Infrastructure plans must also be mutually consistent with shoreline designations. Where they do exist, utility services routed through shoreline areas shall not be a sole justification for more intense development.


(a) Requirements

For each environment designation, the shoreline master program shall describe:

(i) Purpose statement.

The statement of purpose shall describe the shoreline management objectives of the designation in a manner that distinguishes it from other designations.

(ii) Classification criteria.

Clearly stated criteria shall provide the basis for classifying or reclassifying a specific shoreline area with an environment designation.

(iii) Management policies.

These policies shall be in sufficient detail to assist in the interpretation of the environment designation regulations and, for jurisdictions planning under chapter 36.70A RCW, to evaluate consistency with the local comprehensive plan.

(iv) Regulations.

Environment-specific regulations shall address the following where necessary to account for different shoreline conditions:

(A) Types of shoreline uses permitted, conditionally permitted, and prohibited;

(B) Building or structure height and bulk limits, setbacks, maximum density or minimum frontage requirements, and site development standards; and

(C) Other topics not covered in general use regulations that are necessary to assure implementation of the purpose of the environment designation.

(b) The recommended classification system.

The recommended classification system consists of six basic environments:
"High-intensity," "shoreline residential," "urban conservancy," "rural conservancy," "natural," and "aquatic" as described in this section and WAC 173-26-211(5). Local governments should assign all shoreline areas an environment designation consistent with the corresponding designation criteria provided for each environment. In delineating environment designations local government should assure that existing shoreline ecological functions are protected with the proposed pattern and intensity of development. Such designations should also be consistent with policies for restoration of degraded shorelines.

(c) Alternative systems

(i) Local governments may establish a different designation system or may retain their current environment designations, provided it is consistent with the purposes and policies of this section and WAC 173-26-211(5).

(ii) Local governments may use "parallel environments" where appropriate. Parallel environments divide shorelands into different sections generally running parallel to the shoreline or along a physical feature such as a bluff or railroad right of way. Such environments may be useful, for example, to accommodate resource protection near the shoreline and existing development further from the shoreline. Where parallel environments are used, developments and uses allowed in one environment should not be inconsistent with the achieving the purposes of the other.

(5) The Designations

(a) "Natural" environment.

(i) Purpose.

The purpose of the "natural" environment is to protect those shoreline areas that are relatively free of human influence or that include intact or minimally degraded shoreline functions intolerant of human use. These systems require that only very low intensity uses be allowed in order to maintain the ecological functions and ecosystem-wide processes. Consistent with the policies of the designation local should include planning for restoration of degraded shorelines within this environment.

(ii) Management policies.

(A) Any use that would substantially degrade the ecological functions or natural character of the shoreline area should not be allowed.

(B) The following new uses should not be allowed in the "natural" environment:

- Commercial uses.
- Industrial uses.
- Nonwater-oriented recreation.
- Roads, utility corridors, and parking areas that can be located outside
of "natural"-designated shorelines.

(C) Single family residential development may be allowed as a conditional use within the "natural" environment if the density and intensity of such use is limited as necessary to protect ecological functions and be consistent with the purpose of the environment.

(D) Commercial forestry may be allowed as a conditional use in the "natural" environment provided it meets the conditions of the State Forest Practices Act and its implementing rules and is conducted in a manner consistent with the purpose of this environment designation.

(E) Agricultural uses of a very low intensity nature may be consistent with the Natural Environment when such use is subject to appropriate limitations or conditions to ensure that the use does not expand or alter practices in a manner inconsistent with the purpose of the designation.

(F) Scientific, historical, cultural, educational research uses, and low-intensity water-oriented recreational access uses may be allowed provided that no significant ecological impact on the area will result.

(G) New development or significant vegetation removal that would reduce the capability of vegetation to perform normal ecological functions should not be allowed. Do not allow the subdivision of property in a configuration that, to achieve its intended purpose, will require significant vegetation removal or shoreline modification that adversely impacts ecological functions. That is, each new parcel must be able to support its intended development without significant ecological impacts to the shoreline ecological functions.

(iii) Designation Criteria.

A "natural" environment designation should be assigned to shoreline areas if any of the following characteristics apply:

(A) The shoreline is ecologically intact and therefore currently performing an important, irreplaceable function or ecosystem-wide process that would be damaged by human activity;

(B) The shoreline is considered to represent ecosystems and geologic types that are of particular scientific and educational interest; or

(C) The shoreline is unable to support new development or uses without significant adverse impacts to ecological functions or risk to human safety.

Such shoreline areas include largely undisturbed portions of shoreline areas such as wetlands, estuaries, unstable bluffs, coastal dunes, spits, and ecologically intact shoreline habitats. Shorelines inside or outside urban growth areas may be designated as "natural."

Ecologically intact shorelines, as used here, means those shoreline areas that retain the majority of their natural shoreline functions, as evidenced by the
shoreline configuration and the presence of native vegetation. Generally, but not necessarily, ecologically intact shorelines are free of structural shoreline modifications, structures, and intensive human uses. In forested areas, they generally include native vegetation with diverse plant communities, multiple canopy layers, and the presence of large woody debris available for recruitment to adjacent water bodies. Recognizing that there is a continuum of ecological conditions ranging from near natural conditions to totally degraded and contaminated sites, this term is intended to delineate those shoreline areas that provide valuable functions for the larger aquatic and terrestrial environments which could be lost or significantly reduced by human development. Whether or not a shoreline is ecologically intact is determined on a case-by-case basis.

The term "ecologically intact shorelines" applies to all shoreline areas meeting the above criteria ranging from larger reaches that may include multiple properties to small areas located within a single property.

Areas with significant existing agriculture lands should not be included in the "natural" designation, except where the existing agricultural operations involve low very intensity uses where there is no significant impact on natural ecological functions, and where the intensity or impacts associated with such agriculture activities is unlikely to expand in a manner inconsistent with the "natural" designation.

(b) "Rural conservancy" environment.

(i) Purpose.

The purpose of the "rural conservancy" environment is to protect ecological functions, conserve existing natural resources and valuable historic and cultural areas in order to provide for sustained resource use, achieve natural flood plain processes, and provide recreational opportunities. Examples of uses that are appropriate in a "rural conservancy" environment include low-impact outdoor recreation uses, timber harvesting on a sustained-yield basis, agricultural uses, aquaculture, low-intensity residential development and other natural resource based low-intensity uses.

(ii) Management policies.

(A) Uses in the "rural conservancy" environment should be limited to those which sustain the shoreline area's physical and biological resources and uses of a nonpermanent nature that do not substantially degrade ecological functions or the rural or natural character of the shoreline area.

Except as noted, commercial and industrial uses should not be allowed. Agriculture, commercial forestry, and aquaculture when consistent with provisions of this chapter may be allowed. Low intensity, water-oriented commercial and industrial uses may be permitted in the
limited instances where those uses have located in the past or at unique sites in rural communities that possess shoreline conditions and services to support the development.

Water-dependent and water-enjoyment recreation facilities that do not deplete the resource over time, such as boating facilities, angling, hunting, wildlife viewing trails, and swimming beaches, are preferred uses, provided significant adverse impacts to the shoreline are mitigated.

Mining is a unique use as a result of its inherent linkage to geology. Therefore, mining and related activities may be an appropriate use within the rural conservancy environment when conducted in a manner consistent with the environment policies and the provisions of WAC 173-26-241(h) and when located consistent with mineral resource lands designation criteria pursuant to RCW 36.70A.170 and WAC 365-190-070.

(B) Developments and uses that would substantially degrade or permanently deplete the biological resources of the area should not be allowed.

(C) Construction of new structural shoreline stabilization and flood control works should only be allowed where there is a documented need to protect an existing structure or ecological functions and mitigation is applied, consistent with WAC 173-26-231. New development should be designed and located to preclude the need for such work.

(D) Residential development standards shall ensure no net loss of shoreline ecological functions and should preserve the existing character of the shoreline consistent with the purpose of the environment. As a general matter, meeting this provision will require density, lot coverage, vegetation conservation and other provisions. Scientific studies support density or lot coverage limitation standards that assure that development will be limited to a maximum of ten percent total impervious surface area within the lot or parcel, will maintain the existing hydrologic character of the shoreline. However, an alternative standard developed based on scientific information that meets the provisions of this chapter and accomplishes the purpose of the environment designation may be used.

Master programs may allow greater lot coverage to allow development of lots legally created prior to the adoption of a master program prepared under these guidelines. In these instances, master programs shall include measures to assure protection of ecological functions to the extent feasible such as requiring that lot coverage is minimized and vegetation is conserved.

(V) New shoreline stabilization, flood control measures, vegetation removal, and other shoreline modifications should be designed and managed consistent with these guidelines to ensure that the natural shoreline functions are protected. Such shoreline modification should not be
inconsistent with planning provisions for restoration of shoreline ecological functions.

(iii) Designation Criteria

Assign a "rural conservancy" environment designation to shoreline areas outside incorporated municipalities and outside urban growth areas, as defined by RCW 36.70A.110, if any of the following characteristics apply:

(A) The shoreline is currently supporting lesser-intensity resource-based uses, such as agriculture, forestry, or recreational uses, or is designated agricultural or forest lands pursuant to RCW 36.70A.170;

(B) The shoreline is currently accommodating residential uses outside urban growth areas and incorporated cities or towns;

(C) The shoreline is supporting human uses but subject to environmental limitations, such as properties that include or are adjacent to steep banks, feeder bluffs, or flood plains or other flood-prone areas;

(D) The shoreline is of high recreational value or with unique historic or cultural resources; or

(E) The shoreline has low-intensity water-dependent uses.

Areas designated in a local comprehensive plan as "rural areas of more intense development," as provided for in chapter 36.70A RCW, may be designated an alternate shoreline environment, provided it is consistent with the objectives of the Growth Management Act and this chapter. "Master planned resorts" as described in RCW 36.70A.360 may be designated an alternate shoreline environment, provided the applicable master program provisions do not allow significant ecological impacts.

Lands that may otherwise qualify for designation as rural conservancy and which are designated as "mineral resource lands" pursuant to RCW 36.70A.170 and WAC 365-190-070 may be assigned a designation within the "rural conservancy" environment that allows mining and associated uses in addition to other uses consistent with the rural conservancy environment.

(c) "Aquatic" environment.

(i) Purpose.

The purpose of the "aquatic" environment is to protect, restore, and manage the unique characteristics and resources of the areas waterward of the ordinary high-water mark.

(ii) Management policies.

(A) Allow new over-water structures only for water-dependent uses, public
access, or ecological restoration.

(B) The size of new over-water structures should be limited to the minimum necessary to support the structure's intended use.

(C) In order to reduce the impacts of shoreline development and increase effective use of water resources, multiple use of over-water facilities should be encouraged.

(D) All developments and uses on navigable waters or their beds should be located and designed to minimize interference with surface navigation, to consider impacts to public views, and to allow for the safe, unobstructed passage of fish and wildlife, particularly those species dependent on migration.

(E) Uses that adversely impact the ecological functions of critical saltwater and freshwater habitats should not be allowed except where necessary to achieve the objectives of RCW 90.58.020, and then only when their impacts are mitigated according to the sequence described in WAC 173-26-201(2)(e) as necessary to assure no net loss of ecological functions.

(F) Shoreline uses and modifications should be designed and managed to prevent degradation of water quality and alteration of natural hydrographic conditions.

(iii) Designation Criteria

Assign an "aquatic" environment designation to lands waterward of the ordinary high-water mark.

Local governments may designate submerged and intertidal lands with shoreland designations (e.g., "high-intensity" or "rural conservancy") if the management policies and objectives for aquatic areas are met. In this case, the designation system used must provide regulations for managing submerged and intertidal lands that are clear and consistent with the "aquatic" environment management policies in this chapter. Additionally, local governments may assign an "aquatic" environment designation to wetlands.

(d) "High-intensity" environment.

(i) Purpose.

The purpose of the "high-intensity" environment is to provide for high-intensity water-oriented commercial, transportation, and industrial uses while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded.

(ii) Management policies.

(A) In regulating uses in the "high-intensity" environment, first priority should be given to water-dependent uses. Second priority should be given to water-related and water-enjoyment uses. Non-water oriented
uses should not be allowed except as part of mixed use developments. Non-water oriented uses may also be allowed in limited situations where they do not conflict with or limit opportunities for water oriented uses or on sites where there is no direct access to the shoreline. Such specific situations should be identified in shoreline use analysis or special area planning, as described in WAC 173-26-200 (3)(d).

If an analysis of water-dependent use needs as described in WAC 173-26-201(3)(d)(ii) demonstrates the needs of existing and envisioned water-dependent uses for the planning period are met, then provisions allowing for a mix of water-dependent and non-water dependent uses may be established. If those shoreline areas also provide ecological functions, apply standards to assure no net loss of those functions.

(B) Full utilization of existing urban areas should be achieved before further expansion of intensive development is allowed. Reasonable long-range projections of regional economic need should guide the amount of shoreline designated "high-intensity." However, consideration should be given to the potential for displacement of non-water oriented uses with water oriented uses when analyzing full utilization of urban waterfronts and before considering expansion of such areas.

(C) Policies and regulations shall assure no net loss of shoreline ecological functions as a result of new development. Where applicable, new development shall include environmental cleanup and restoration of the shoreline to comply with any relevant state and federal law.

(D) Where feasible, visual and physical public access should be required as provided for in WAC 173-26-221(4)(d).

(E) Aesthetic objectives should be implemented by means such as sign control regulations, appropriate development siting, screening and architectural standards, and maintenance of natural vegetative buffers.

(iii) Designation Criteria

Assign a "high-intensity" environment designation to shoreline areas within incorporated municipalities, urban growth areas, and industrial or commercial "rural areas of more intense development," as described by RCW 36.70A.070 if they currently support high-intensity uses related to commerce, transportation or navigation; or are suitable and planned for high-intensity water-oriented uses.

(e) "Urban conservancy" environment.

(i) Purpose.

The purpose of the "urban conservancy" environment is to protect and restore ecological functions of open space, floodplain and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses.
(ii) Management policies.

(A) Uses that preserve the natural character of the area or promote preservation of open space, floodplain or sensitive lands either directly or over the long term should be the primary allowed uses. Uses that result in restoration of ecological functions should be allowed if the use is otherwise compatible with the purpose of the environment and the setting.

(B) Standards should be established for shoreline stabilization measures, vegetation conservation, water quality, and shoreline modifications within the "urban conservancy" designation. These standards shall ensure that new development does not result in a net loss of shoreline ecological functions or further degrade other shoreline values.

(C) Public access and public recreation objectives should be implemented whenever feasible and significant ecological impacts can be mitigated.

(D) Water-oriented uses should be given priority over non-water oriented uses. For shoreline areas adjacent to commercially navigable waters, water-dependent uses should be given highest priority.

(E) Mining is a unique use as a result of it inherent linkage to geology. Therefore, mining and related activities may be an appropriate use within the urban conservancy environment when conducted in a manner consistent with the environment policies and the provisions of WAC 173-26-240 (h) and when located consistent with mineral resource lands designation criteria pursuant to RCW 36.70A.170 and WAC 365-190-070.

(iii) Designation Criteria

Assign an "urban conservancy" environment designation to shoreline areas appropriate and planned for development that is compatible with maintaining or restoring of the ecological functions of the area, that are not generally suitable for water-dependent uses and that lie in incorporated municipalities, urban growth areas, or commercial or industrial "rural areas of more intense development" if any of the following characteristics apply:

(A) They are suitable for water-related or water-enjoyment uses;

(B) They are open space, flood plain or other sensitive areas that should not be more intensively developed;

(C) They have potential for ecological restoration;

(D) They retain important ecological functions, even though partially developed; or

(E) They have the potential for development that is compatible with ecological restoration.

Lands that may otherwise qualify for designation as urban conservancy and which are designated as "mineral resource lands" pursuant to RCW
36.70A.170 and WAC 365-190-070 may be assigned a designation within the "urban conservancy" environment that allows mining and associated uses in addition to other uses consistent with the urban conservancy environment.

(f) "Shoreline residential" environment.

(i) Purpose.

The purpose of the "shoreline residential" environment is to accommodate residential development and appurtenant structures that are consistent with this chapter. An additional purpose is to provide appropriate public access and recreational uses.

(ii) Management policies

(A) Standards for density or minimum frontage width, setbacks, lot coverage limitations, buffers, shoreline stabilization, vegetation conservation, critical area protection, and water quality shall be set to assure no net loss of shoreline ecological functions, taking into account the environmental limitations and sensitivity of the shoreline area, the level of infrastructure and services available, and other comprehensive planning considerations.

Local governments may establish two or more different "shoreline residential" environments to accommodate different shoreline densities or conditions, provided both environments adhere to the provisions in this chapter.

(B) Multifamily and multi-lot residential and recreational developments should provide public access and joint use for community recreational facilities.

(C) Access, utilities, and public services should be available and adequate to serve existing needs and/or planned future development.

(D) Commercial development should be limited to water-oriented uses.

(iii) Designation Criteria

Assign a "shoreline residential" environment designation to shoreline areas inside urban growth areas, as defined in RCW 36.70A.110, incorporated municipalities, "rural areas of more intense development," or "master planned resorts," as described in RCW 36.70A.360, if they are predominantly single-family or multifamily residential development or are planned and platted for residential development.
WAC 173-26-241  Shoreline Uses.

(1) Applicability.

The provisions in this section apply to specific common uses and types of development to the extent they occur within shoreline jurisdiction. Master programs should include these, where applicable, and should include specific use provisions for other common uses and types of development in the jurisdiction. All uses and development must be consistent with the provisions of the environment designation in which they are located and the general regulations of the master program.

(2) General use provisions.

(a) Principles.

Shoreline master programs shall implement the following principles:

(i) Establish a system of use regulations and environment designation provisions consistent with WAC 173-26-201(2)(d) and 173-26-211 that gives preference to those uses that are consistent with the control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon uses of the state's shoreline areas.

(ii) Ensure that all shoreline master program provisions concerning proposed development of property are established, as necessary, to protect the public's health, safety, and welfare, as well as the land and its vegetation and wildlife, and to protect property rights while implementing the policies of the Shoreline Management Act.

(iii) Reduce use conflicts by including provisions to prohibit or apply special conditions to those uses which are not consistent with the control of pollution and prevention of damage to the natural environment or are not unique to or dependent upon use of the state's shoreline. In implementing this provision, preference shall be given first to water-dependent uses, then to water-related uses and water-enjoyment uses.

(iv) Establish use regulations designed to assure no net loss of ecological functions associated with the shoreline.

(b) Conditional uses.

(i) Master programs shall define the types of uses and development that require shoreline conditional use permits pursuant to RCW 90.58.100(5). Requirements for a conditional use permit may be used for a variety of purposes, including:

- To effectively address unanticipated uses that are not classified in the master program as described in WAC 173-27-030.
- To address cumulative impacts.
To provide the opportunity to require specially tailored environmental analysis or design criteria for types of use or development that may otherwise be inconsistent with a specific environment designation within a master program or with the Shoreline Management Act policies.

In these cases, allowing a given use as a conditional use could provide greater flexibility within the master program than if the use were prohibited outright.

(ii) If master programs permit the following types of uses and development, they should require a conditional use permit:

(A) Uses and development that may significantly impair or alter the public's use of the water areas of the state.

(B) Uses and development which, by their intrinsic nature, may have a significant ecological impact on shoreline ecological functions or shoreline resources depending on location, design, and site conditions.

(C) Development in critical saltwater habitats.

(iii) The provisions of this section are minimum requirements and are not intended to limit local government’s ability to identify other uses and developments within the master program as conditional uses where necessary or appropriate.

(3) Standards.

Master programs shall establish a comprehensive program of use regulations for shorelines and shall incorporate provisions for specific uses consistent with the following as necessary to assure consistency with the policy of the act and where relevant within the jurisdiction.

(a) Agriculture

(i) For the purposes of this section, the terms agricultural activities, agricultural products, agricultural equipment and facilities and agricultural land shall have the specific meanings as provided in WAC 173-26-020.

(ii) Master programs shall not require modification of or limit agricultural activities occurring on agricultural lands. In jurisdictions where agricultural activities occur, master programs shall include provisions addressing new agricultural activities on land not meeting the definition of agricultural land, conversion of agricultural lands to other uses, and other development on agricultural land that does not meet the definition of agricultural activities.

(iii) Nothing in this section limits or changes the terms of the current exception to the definition of substantial development. A substantial development permit is required for any agricultural development not specifically exempted by the provisions of RCW 90.58.030(3)(e)(iv).

(iv) Master programs shall use definitions consistent with the definitions found in WAC 173-26-020 (3).

(v) New agricultural activities are activities that meet the definition of agricultural activities but are proposed on land not currently in agricultural use. Master
programs shall include provisions for new agricultural activities to assure that:

(A) Specific uses and developments in support of agricultural use are consistent the environment designation in which the land is located.

(B) Agricultural uses and development in support of agricultural uses, are located and designed to assure no net loss of ecological functions and to not have a significant adverse impact on other shoreline resources and values.

Measures appropriate to meet this requirements include provisions addressing water quality protection, and vegetation conservation, as described in WAC 173-26-220(5) and (6). Requirements for buffers for agricultural development shall be based on scientific and technical information and management practices adopted by the applicable state agencies necessary to preserve the ecological functions and qualities of the shoreline environment.

(vi) Master programs shall include provisions to assure that development on agricultural land that does not meet the definition of agricultural activities, and the conversion of agricultural land to non-agricultural uses, shall be consistent the environment designation, and the general and specific use regulations applicable to the proposed use and do not result in a net loss of ecological functions associated with the shoreline.

(b) Aquaculture.

Aquaculture is the culture or farming of food fish, shellfish, or other aquatic plants and animals. This activity is of statewide interest. Properly managed, it can result in long-term over short-term benefit and can protect the resources and ecology of the shoreline. Aquaculture is dependent on the use of the water area and, when consistent with control of pollution and prevention of damage to the environment, is a preferred use of the water area. Local government should consider local ecological conditions and provide limits and conditions to assure appropriate compatible types of aquaculture for the local conditions as necessary to assure no net loss of ecological functions.

Potential locations for aquaculture are relatively restricted due to specific requirements for water quality, temperature, flows, oxygen content, adjacent land uses, wind protection, commercial navigation, and, in marine waters, salinity. The technology associated with some forms of present-day aquaculture is still in its formative stages and experimental. Local shoreline master programs should therefore recognize the necessity for some latitude in the development of this use as well as its potential impact on existing uses and natural systems.

Aquaculture should not be permitted in areas where it would result in a net loss ecological functions, adversely impact eelgrass and macroalgae, or significantly conflict with navigation and other water-dependent uses. Aquacultural facilities should be designed and located so as not to spread disease to native aquatic life, establish new nonnative species which cause significant ecological impacts, or significantly impact the aesthetic qualities of the shoreline. Impacts to ecological functions shall be mitigated according to the mitigation sequence described in WAC
(c) Boating facilities.

For the purposes of this chapter, "boating facilities" excludes docks serving four or fewer single-family residences. Shoreline master programs shall contain provisions to assure no net loss of ecological functions as a result of development of boating facilities while providing the boating public recreational opportunities on waters of the state.

Where applicable, shoreline master programs should, at a minimum, contain:

(i) Provisions to ensure that boating facilities are located only at sites with suitable environmental conditions, shoreline configuration, access, and neighboring uses.

(ii) Provisions that assure that facilities meet health, safety, and welfare requirements. Master programs may reference other regulations to accomplish this requirement.

(iii) Regulations to avoid, or if that is not possible, to mitigate aesthetic impacts.

(iv) Provisions for public access in new marinas, particularly where water-enjoyment uses are associated with the marina, in accordance with WAC 173-26-221(4).

(v) Regulations to limit the impacts to shoreline resources from boaters living in their vessels (live-aboard).

(vi) Regulations that assure that the development of boating facilities, and associated and accessory uses, will not result in a net loss of shoreline ecological functions or other significant adverse impacts.

(vii) Regulations to protect the rights of navigation.

(viii) Regulations restricting vessels from extended mooring on waters of the state except as allowed by applicable state regulations and unless a lease or permission is obtained from the state and impacts to navigation and public access are mitigated.

(d) Commercial development.

Master programs shall first give preference to water-dependent commercial uses over non-water-dependent commercial uses; and second, give preference to water-related and water-enjoyment commercial uses over non-water-oriented commercial uses.

The design, layout and operation of certain commercial uses directly affects their classification with regard to whether or not they qualify as water related or water enjoyment uses. Master programs shall assure that commercial uses that may be authorized as water related or water enjoyment uses are required to incorporate appropriate design and operational elements so that they meet the definition of water related or water enjoyment uses.

Master programs should require that public access and ecological restoration be
considered as potential mitigation of impacts to shoreline resources and values for all water-related or water-dependent commercial development unless such improvements are demonstrated to be infeasible or inappropriate. Where commercial use is propose for location on land in public ownership, public access should be required. Refer to WAC 173-26-221(4) for public access provisions.

Master programs should prohibit non-water-oriented commercial uses on the shoreline unless they meet the following criteria:

(i) The use is part of a mixed-use project that includes water-dependent uses and provides a significant public benefit with respect to the Shoreline Management Act's objectives such as providing public access and ecological restoration; or

(ii) Navigability is severely limited at the proposed site; and the commercial use provides a significant public benefit with respect to the Shoreline Management Act's objectives such as providing public access and ecological restoration.

In areas designated for commercial use, non-water-oriented commercial development may be allowed if the site is physically separated from the shoreline by another property or public right of way.

Non-water-dependent commercial uses should not be allowed over water except in existing structures or in the limited instances where they are auxiliary to and necessary in support of water-dependent uses.

Master Programs shall assure that commercial development will not result in a net loss of shoreline ecological functions or have significant adverse impact to other shoreline uses, resources and values provided for in 90.58.020RCW such as navigation, recreation and public access.

(e) Forest practices.

Local master programs should rely on the Forest Practices Act and rules implementing the act and the Forest and Fish Report as adequate management of commercial forest uses within shoreline jurisdiction. However, local governments shall, where applicable, apply this chapter to Class IV-General forest practices where shorelines are being converted or are expected to be converted to non-forest uses.

Forest practice conversions and other Class IV-General forest practices where there is a likelihood of conversion to non-forest uses, shall assure no net loss of shoreline ecological functions and shall maintain the ecological quality of the watershed’s hydrologic system. Master programs shall establish provisions to ensure that all such practices are conducted in a manner consistent with the master program environment designation provisions and the provisions of this chapter. Applicable shoreline master programs should contain provisions to ensure that when forest lands are converted to another use, there will be no net loss of shoreline ecological functions or significant adverse impacts to other shoreline uses, resources and values provided for in 90.58.020RCW such as navigation, recreation and public access.

Master programs shall implement the provisions of RCW 90.58.150 regarding
selective removal of timber harvest on shorelines of statewide significance. Exceptions to this standard shall be by conditional use permit only.

Lands designated as "forest lands" pursuant to RCW 36.70A.170 shall be designated consistent with either the "natural," "rural conservancy," environment designation.

Where forest practices fall within the applicability of the Forest Practices Act, local governments should consult with the department of natural resources, other applicable agencies, and local timber owners and operators.

(f) Industry.

Master programs shall first give preference to water-dependent industrial uses over non-water-dependent industrial uses; and second, give preference to water-related industrial uses over non-water-oriented industrial uses.

Regional and statewide needs for water-dependent and water-related industrial facilities should be carefully considered in establishing master program environment designations, use provisions, and space allocations for industrial uses and supporting facilities. Lands designated for industrial development should not include shoreline areas with severe environmental limitations, such as critical areas.

Where industrial development is allowed, master programs shall include provisions that assure that industrial development will be located, designed, or constructed in a manner that assures no net loss of shoreline ecological functions and such that it does not have significant adverse impacts to other shoreline resources and values.

Master Programs should require that industrial development consider incorporating public access as mitigation for impacts to shoreline resources and values unless public access cannot be provided in a manner that does not result in significant interference with operations or hazards to life or property, as provided in WAC 173-26-221(4). Where industrial use is proposed for location on land in public ownership, public access should be required. Industrial development and redevelopment should be encouraged to locate where environmental cleanup and restoration of the shoreline area can be incorporated.

New non-water-oriented industrial development should be prohibited on shorelines except when:

(i) The use is part of a mixed-use project that includes water-dependent uses and provides a significant public benefit with respect to the Shoreline Management Act's objectives such as providing public access and ecological restoration; or

(ii) Navigability is severely limited at the proposed site; and the industrial use provides a significant public benefit with respect to the Shoreline Management Act's objectives such as providing public access and ecological restoration.

In areas designated for industrial use, non-water-oriented industrial uses may be allowed if the site is physically separated from the shoreline by another property or public right of way.
(g) **In-stream structural uses.**

"In-stream structure" means a structure placed by humans within a stream or river waterward of the ordinary high water mark that either causes or has the potential to cause water impoundment or the diversion, obstruction, or modification of water flow. In-stream structures may include those for hydroelectric generation, irrigation, water supply, flood control, transportation, utility service transmission, fish habitat enhancement, or other purpose.

In-stream structures shall provide for the protection and preservation of ecosystem-wide processes, ecological functions, and cultural resources, including, but not limited to, fish and fish passage, wildlife and water resources, shoreline critical areas, hydrogeological processes, and natural scenic vistas. The location and planning of in-stream structures shall give due consideration to the full range of public interests, watershed functions and processes, and environmental concerns, with special emphasis on protecting and restoring priority habitats and species.

(h) **Mining.**

Mining is the removal of sand, gravel, soil, minerals, and other earth materials for commercial and other uses. Historically, the most common form of mining in shoreline areas is for sand and gravel because of the geomorphic association of rivers and sand and gravel deposits. Mining in the shoreline generally alters the natural character, resources, and ecology of shorelines of the state and may impact critical shoreline resources and ecological functions of the shoreline. However, in some circumstances, mining may be designed to have benefits for shoreline resources, such as creation of off-channel habitat for fish or habitat for wildlife. Activities associated with shoreline mining, such as processing and transportation, also generally have the potential to impact shoreline resources unless the impacts of those associated activities are evaluated and properly managed in accordance with applicable provisions of the master program.

A shoreline master program should accomplish two purposes in addressing mining. First, identify where mining may be an appropriate use of the shoreline, which is addressed in this section and in the environment designation sections above. Second, ensure that when mining or associated activities in the shoreline are authorized, those activities will be properly sited, designed, conducted, and completed so that it will cause no net loss of ecological functions of the shoreline.

(i) Identification of shoreline areas where mining may be designated as appropriate shall:

(A) Be consistent with the environment designation provisions of WAC 173-26-221 and where applicable WAC 173-26-251(2) regarding shorelines of statewide significance; and

(B) Be consistent with local government designation of mineral resource lands with long term significance as provided for RCW 36.70A.170(1)(c), RCW 36.70A.130, and RCW 36.70A.131; and

(C) Be based on a showing that mining is dependent on a shoreline location in the
city or county, or portion thereof, which requires evaluation of geologic factors such as the distribution and availability of mineral resources for that jurisdiction, as well as evaluation of need for such mineral resources, economic, transportation, and land use factors. This showing may rely on analysis or studies prepared for purposes of GMA designations, be integrated with any relevant environmental review conducted under SEPA (RCW 43.21C), or otherwise be shown in a manner consistent with RCW 90.58.100(1) and WAC 173-26-201(2)(a).

(ii) Master programs shall include policies and regulations for mining, when authorized, that accomplish the following:

(A) New mining and associated activities shall be designed and conducted to comply with the regulations of the environment designation and the provisions applicable to critical areas where relevant. Accordingly, meeting the no net loss of ecological function standard shall include avoidance and mitigation of adverse impacts during the course of mining and reclamation. It is appropriate, however, to determine whether there will be no net loss of ecological function based on evaluation of final reclamation required for the site. Preference shall be given to mining proposals that result in the creation, restoration, or enhancement of habitat for priority species.

(B) Master program provisions and permit requirements for mining should be coordinated with the requirements of chapter 78.44 RCW.

(C) Master programs shall assure that proposed subsequent use of mined property is consistent with the provisions of the environment designation in which the property is located and that reclamation of disturbed shoreline areas provides appropriate ecological functions consistent with the setting.

(D) Mining within the active channel or channels (a location waterward of the ordinary high-water mark) of a river shall not be permitted unless:

(I) Removal of specified quantities of sand and gravel or other materials at specific locations will not adversely affect the natural processes of gravel transportation for the river system as a whole; and

(II) The mining and any associated permitted activities will not have significant adverse impacts to habitat for priority species nor cause a net loss of ecological functions of the shoreline.

(III) The determinations required by paragraphs I and II above shall be made consistent with RCW 90.58.100(1) and WAC 173-26-201(2)(a). Such evaluation of impacts should be appropriately integrated with relevant environmental review requirements of SEPA (RCW 43.21C) and the SEPA rules (WAC 197-11).

(IV) In considering renewal, extension or reauthorization of gravel bar and other in-channel mining operations in locations where they have previously been conducted local government shall require compliance with this subsection (D) to the extent that no such review has previously been conducted. Where there has been prior review, local...
government shall review previous determinations comparable to the requirements of this section to assure compliance with this subsection (D) under current site conditions.

(V) The provisions of this section do not apply to dredging of authorized navigation channels when conducted in accordance with WAC 173-27-231(3)(f).

(E) Mining within any channel migration zone that is within Shoreline Management Act jurisdiction shall require a shoreline conditional use permit.

(i) Recreational development.

Recreational development includes commercial and public facilities designed and used to provide recreational opportunities to the public. Master programs should assure that shoreline recreational development is given priority and is primarily related to access to, enjoyment and use of the water and shorelines of the State. Commercial recreational development should be consistent with the provisions for commercial development in (d) above. Provisions related to public recreational development shall assure that the facilities are located, designed and operated in a manner consistent with the purpose of the environment designation in which they are located and such that no net loss of shoreline ecological functions or ecosystem-wide processes results.

In accordance with RCW 90.58.100(4), master program provisions shall reflect that state-owned shorelines are particularly adapted to providing wilderness beaches, ecological study areas, and other recreational uses for the public and give appropriate special consideration to the same.

For all jurisdictions planning under the Growth Management Act, master program recreation policies shall be consistent with growth projections and level-of-service standards established by the applicable comprehensive plan.

(j) Residential development.

Single-family residences are the most common form of shoreline development and are identified as a priority use when developed in a manner consistent with control of pollution and prevention of damage to the natural environment. Without proper management, single family residential use can cause significant damage to the shoreline area through cumulative impacts from shoreline armoring, storm water runoff, septic systems, introduction of pollutants, and vegetation modification and removal. Residential development also includes multifamily development and the creation of new residential lots through land division.

Master programs shall include policies and regulations that assure no net loss of shoreline ecological functions will result from residential development. Such provisions should include specific regulations for setbacks and buffer areas, density, shoreline armoring, vegetation conservation requirements, and, where applicable, on-site sewage system standards for all residential development and uses and applicable
Residential development, including appurtenant structures and uses, should be sufficiently set back from steep slopes and shorelines vulnerable to erosion so that structural improvements, including bluff walls and other stabilization structures, are not required to protect such structures and uses. (See RCW 90.58.100(6).)

New over-water residences, including floating homes, are not a preferred use and should be prohibited. It is recognized that certain existing communities of floating and/or over water homes exist and should be reasonably accommodated to allow improvements associated with life safety matters and property rights to be addressed provided that any expansion of existing communities is the minimum necessary to assure consistency with constitutional and other legal limitations that protect private property.

New multiunit residential development, including the subdivision of land for more than four parcels, should provide community and/or public access in conformance to the local government's public access planning and this chapter.

Master programs shall include standards for the creation of new residential lots through land division that accomplish the following:

(i) Plats and subdivisions must be designed, configured and developed in a manner that assures that no net loss of ecological functions results from the plat or subdivision at full build-out of all lots.

(ii) Prevent the need for new shoreline stabilization or flood hazard reduction measures that would cause significant impacts to other properties or public improvements or a net loss of shoreline ecological functions.

(iii) Implement the provisions of WAC 173-26-211 and 173-26-221.

**Transportation and parking.**

Master programs shall include policies and regulations to provide safe, reasonable, and adequate circulation systems to, and through or over shorelines where necessary and otherwise consistent these guidelines.

Transportation and parking plans and projects shall be consistent with the master program public access policies, public access plan, and environmental protection provisions.

Circulation system planning shall include systems for pedestrian, bicycle, and public transportation where appropriate. Circulation planning and projects should support existing and proposed shoreline uses that are consistent with the master program.

Plan, locate, and design proposed transportation and parking facilities where routes will have the least possible adverse effect on unique or fragile shoreline features, will not result in a net loss of shoreline ecological functions or adversely impact existing or planned water-dependent uses. Where other options are available and feasible, new roads or road expansions should not be built within shoreline jurisdiction.

Parking facilities in shorelines are not a preferred use and shall be allowed only as
necessary to support an authorized use. Shoreline master programs shall include policies and regulations to minimize the environmental and visual impacts of parking facilities.

(1) Utilities.

These provisions apply to services and facilities that produce, convey, store, or process power, gas, sewage, communications, oil, waste, and the like. On-site utility features serving a primary use, such as a water, sewer or gas line to a residence, are "accessory utilities" and shall be considered a part of the primary use.

Master programs shall include provisions to assure that:

All utility facilities are designed and located to assure no net loss shoreline ecological functions, preserve the natural landscape, and minimize conflicts with present and planned land and shoreline uses while meeting the needs of future populations in areas planned to accommodate growth.

Utility production and processing facilities, such as power plants and sewage treatment plants, or parts of those facilities, that are non-water-oriented shall not be allowed in shoreline areas unless it can be demonstrated that no other feasible option is available.

Transmission facilities for the conveyance of services, such as power lines, cables, and pipelines, shall be located outside of the shoreline area where feasible and when necessarily located within the shoreline area shall assure no net loss of shoreline ecological functions.

Utilities should be located in existing rights of way and corridors whenever possible.

Development of pipelines and cables on tidelands, particularly those running roughly parallel to the shoreline, and development of facilities that may require periodic maintenance which disrupt shoreline ecological functions should be discouraged except where no other feasible alternative exists. When permitted, provisions shall assure that the facilities do not result in a net loss of shoreline ecological functions or significant impacts to other shoreline resources and values.
Luther Burbank Park Master Plan

City of Mercer Island, Washington

Prepared by:
The Berger Partnership PS
Landscape Architecture

April, 2006

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Luther Burbank Park Master Plan  
City of Mercer Island, Washington  
April 2006

Introduction:

Luther Burbank is a great city park! The park is a destination for all Mercer Islanders and will increasingly be a destination for residents of Mercer Islands growing downtown. The park has become a favorite location for celebrating special events, for families, young children, seniors and more.

The intent of this master plan is building on the success of the existing park and looking to the future, to identify how the park can best serve the city and its residents for decades to come. The timing of this master plan is logical, with the City having acquired the Park from King County, it is an opportunity to make Luther Burbank Park Mercer Island’s park, a place that reflects the city and its citizens.

In its later years as a King County Park, many elements deteriorated as the County Parks System dealt with shrinking budgets. Since the park was acquired from King County by the City of Mercer Island, it has been maintained with many improvements. However, many of the park’s elements are aged and in need of improvement or replacement. Work done to date has been completed without a long-term plan for how the park will function as a whole. This master plan is intended to provide a long term vision that ultimately ensures that all future improvements will work toward creating a park with better functionality, increased recreational and social opportunities, and an improved aesthetic experience.

The goals of this Long Range Master Plan are to:

• Create a memorable park experience.

• Provide strong park recognition and identity.

• Guide future maintenance and capital improvements to the park using a holistic approach to the planning process.

• Respond creatively to current park uses and facilities while anticipating future uses and facility needs.

• Provide adequate budget figures for proposed improvements, so that the Master Plan can be used as an effective decision-making tool to prioritize and justify the importance of required funding and guide the implementation of projects.

• Allow for phased construction to work within budgetary realities.
The Planning process:

The master plan is the result of a multi-step public process that is described in the Public Process Summary Prepared by Norton Arnold & Company (NAC), and included as an appendix to this document.

The design process consisted of 3 phases. The first phase, an inventory and analysis, assessed physical conditions of the site, as well as existing and future program opportunities. Information gathering included first hand observation, input from Park representatives, and site review with shoreline and wetlands ecologists. Included in this phase was a wetland reconnaissance, shoreline assessment, and permitting review. Based on this inventory and analysis, three preliminary master plan concepts were developed for the site and presented to the city and a community Town Hall for review and comment. In the next phase, these plans were consolidated into a preferred Master Plan concept based on feedback received during the initial presentation. This preferred plan was again presented in a second Town Hall and presentation to the City Council, once again receiving valuable input. The design was honed again to reflect these comments, resulting in a final master plan design. This master plan report includes plan graphics, description of the design elements and cost allowances for its implementation.

The master plan design has been completed to an adequate level of detail to identify proposed improvements and assign costs and priorities. Significant design remains as elements of the master plan are pursued, during which more cost details can be generated. It is important to note that proposed design improvements are based on GIS data and aerial photography and have been completed to a degree of detail appropriate to these sources.
**Guiding Principles:**

In addition to the visioning elements developed prior to the master plan start-up (included in the NAC summary report) the following principles emerged through the master plan process as key elements shaping the park into the future:

- **Embrace natural systems:** Improvements to the park should seek to protect and enhance natural systems in the park. These natural systems include forested steep slopes through the park. New areas of vegetation can weave existing habitats within the park together, improving both aesthetic and habitat function.

- **Maintain the character:** Luther Burbank is a much-loved park, and improvements proposed in the master plan should work toward maintaining the park’s existing character, particularly the serenity of Upper Luther and Calkins Point.

- **Manage vegetation:** Significant stands of vegetation (Upper Luther, the hill adjacent to the fishing pier, and the west hill) should be preserved as important habitat areas. Vegetation and habitat in these areas can be improved over time through the low impact- high environmental reward practice of under planting of native species and the removal of invasives.

- **Improve Park infrastructure:** Many of the park’s existing features – restrooms and irrigation for example are outdated and can be replaced or renovated. Other features, such as the park’s path network, can be improved.

- **Improve the arrival:** Whether by foot, bike or car, the arrival at the park is not the quality of experience befitting such a great park. The arrival can be improved not only at the main entry, but countless other entries to the park as well, better unifying the park into a cohesive whole.
Proposed Improvements:

The following descriptions and recommendations are a companion to the project drawings. General descriptions by each area are listed in a south to north and counter clockwise order with site-wide issues and concepts being addressed last.

Luther Burbank Park Master Plan
Area Delineations

1. Upper Luther Burbank
2. Downtown Entry
3. Burbank Lid
4. Burbank Lid Connector
5. South Entry
6. The Source Area
7. Swim Beach
8. Great Meadow
9. Main Entry
10. Campus Area
11. Dock/Boijer Building Area
12. Shoreline
13. Amphitheater
14. Off-Leash Area (OLA)
15. Calkins Point
16. The Ponds
17. West Hill
18. Vegetation Management Areas
**Upper Luther Burbank:**

Upper Luther is to maintain in its existing naturalistic character while receiving some improvements that can increase the public’s enjoyment of the area, and tying it more directly to the Burbank Lid and larger park to the north. Highlights of the proposed Upper Luther improvements include:

- Continued vegetation management (removal of invasives and restoration of natives).

- Improvements along 84 maintain the existing “Country Road” character while providing new interior paths and (2) vehicle pullouts. The interior paths transition to sidewalk along 28th St, connecting to downtown entry, with a view overlook to the north.

- The southwestern-most corner of the park is highlighted with a woodland shelter, bench and interpretive and wayfinding signage.

- A series of hiking trials is integrated into the area’s topography, including an interior loop trail with suspension bridge, an east west trail connecting to Shorewood Heights, and a direct connecting trail and stair to Luther Burbank Lid.

- The existing bike track would remain and a new canopy overlook/ tree house and new ropes course are added to the site.
**Downtown Entry:**

The downtown entry makes use of existing green space to create an iconic entry to the park and improve pedestrian connections to the Burbank Lid, Upper Luther and the greater park. Portions of the downtown entry abut or are on WASHDOT property, so any improvements will take careful coordination. Highlights of the proposed downtown entry improvements include:

- A focal element, possibly art or a fountain, creates an icon and increased visibility for pedestrians drawn from the growing downtown.

- A gathering plaza invites increased activity at the park while buffering park users from the concerns of the adjacent traffic. Seating, tables, a chess board and bocce court all provide new activities for park visitors.
**Burbank Lid:**

The Burbank lid provides an excellent opportunity to better tie Upper Luther, the Downtown Entry and the greater park into a single cohesive park experience with improved pedestrian connections. The Lid is WASHDOT property, and is entirely over structural slab, so any improvements will take careful coordination and implementation.

- Because the lid is entirely constructed over structural slab there are serious consideration on any changes that might impact weight or the underlying structure (it is assumed no weight increase). For this reason, the proposed improvements improve circulation, visibility and way finding, but are relatively simple, including new benches and tables along the route, the new connection to Upper Luther Burbank Park.

- The existing overlook at the north side of the lid offers great views to the park and shoreline below and is improved with new paving, seating and interpretive signage.
Burbank Lid Connector:

The Burbank Lid Connector is a critical link between the Burbank Lid and the greater park. Creating such a pedestrian connection requires crossing steep topography and is handled through a series of stairs and terraces, while the existing east-west trail remains, providing wheeled access down the hill. The connector also provides a link of native planting from Upper Luther, across the lid and down to the greater park. Highlights include:

- A direct hill climb connection from the Lid to 84th meanders through several layers of terraces which provide the opportunity for seating or to display art.

- A “promenade” of specialty paving leads from the base of the hill climb to the intersection of 84th SE and 26th SE, making a cohesive park experience for pedestrians.
South Entry:

The South Entry to the park is highlighted as an important pedestrian and vehicular gateway. Once inside the park, improved pedestrian paths lead to the existing path system, while parking remains in its current configuration. Highlights include:

- The south entry is marked with specialty paving treatment at the intersection of 84th SE and SE 26th, slowing traffic, improving pedestrian safety and highlighting the park entry. The entry is further highlighted with iconic pedestrian entry and wayfinding signage.

- A new kayak/canoe “car-top” boat launch is added at the eastern border of the park. Path, beach and dock improvements allow easy access for boats to water, while maintaining woodland character appropriate to the site.

- The south wetland remains with a more active approach to vegetation management to improve wetland/habitat quality. A new overlook and interpretive signage are added on the periphery of the wetland with views to the interior.
The Source Area:

The Source Area, in addition to being home to one of the best earthform artworks in the region, is an important link within the park, connecting several different areas. This master plan does not add new programs to this site, but improves its passive quality as a connector. Highlights include:

- The Source is a living artwork and restoration is never ending, including mechanical maintenance and upgrades, repairs of erosion, and the instillation of irrigation to reduce erosion during the summer months when its grasses traditionally go dormant.

- The vegetation immediately surrounding the source includes and added back drop of small and intermediate sized trees, improved grading and drainage in lawn areas connecting to the great meadow, and removal of invasives along the west edge of the park with direct physical and visual connections into the park.

- The primary north/south path through the source area is upgraded to asphalt paving, for ease of maintenance and use, particularly during the wet winter months.
Swim Beach:

The Swim Beach is maintained as one of the most active areas of the park with improvement or replacement of some of the exiting amenities and introduction of some new elements. Highlights are:

- The Swim Beach itself is improved with imported aggregates to provide a nice walking surface while reducing erosion (also addressed in the shoreline section of this document). The improved swim beach provides on-grade access to the beach; an enlarged swimming/ buoy zone and a floating swim dock with ladders.

- The lifeguard shack and restroom building are combined into a single new structure with possible additional amenities such as vending and showers.

- New amenities include an upland sand area for kid’s play, a sand volleyball court (as shown on plan or further west), a small water spray park and arbors that offer shady areas for those at the beach.

- The fishing pier to the north remains and is replaced/ upgraded as needed. The current shoreline path from the fishing pier to the boiler building area remains with the same character that exists today.
**Great Meadow:**

The Great Meadow would remain aesthetically as is, with intended use not changed from current conditions of non-programmed informal use and scheduled special events. Highlights include:

- Improved grading, soils, irrigation and sub drainage in the primary lawn area to improve quality, maintenance and reduce wear and tear.

- The eastern edge of the meadow is revised, extending across the park trial to the southeast. Islands of vegetation along the trail are to be improved with vegetation management strategies to integrate more substantive evergreens and natives along the meadow edge and improve visual screening and habitat.
Main Entry:

The Main Entry to the park is improved to create an iconic entry visible from the crest of 24th with views into the park. The new community center landscape and edge is seamlessly integrated into the park to create a single cohesive experience. Highlights include:

- Specialty paving treatment at the intersection of 84th SE and SE 24th, slowing traffic, improving pedestrian safety and highlighting the park entry.

- The entry is further highlighted with an iconic overlook into the great meadow and beyond, with wayfinding signage.
Campus Area:

The campus area remains the park’s historical core, the center of greatest activity, and the busiest parking area. Highlights include:

- The existing entry road alignment remains with improvements to widen the corridor, (possibly some walls to cut/support grade) to allow a sidewalk and adequate space for passing vehicles, while also improving the aesthetic of this road, primarily through new planting.

- Parking is treated as a shared facility with community center parking and the north parking lot as a common park resource that can be shared, typically with differing peak use times. This sharing is facilitated with improved pedestrian connections between the community center and the campus area, most notably the completion of the connector stair.

- The existing playground site character remains, with selective demolition to remove some undesired elements and to allow for the installation of new play structures. The new playground provides for separate age-appropriate play zones in a cohesive single playground. (The playground could also be considered and alternate location for a small spray park if not located at the swim beach.)

- New activities to be added to the campus area include basketball hoops and tetherball, which might be freestanding elements or integrated at the existing court area. A covered group picnic area is added to the south of the tennis courts, adjacent to the meadow.

- Improved trail connections tie the campus area to all other parts of the park, including the community center, the boiler building, Calkins Point and others.

- The existing maintenance yard, critical to park operations, is maintained at its current central location with operational upgrades and screening planting.
Dock/Boiler Building Area:

The Dock and Boiler Building Area maintains much of its character and physical elements, but has added programming to return the area to its once active use. Restoration of the docks and boiler building to support a boating/rowing facility (primarily human powered boating) will bring a relatively low impact use to the area. Highlights include:

- A boating/rowing facility would make use of the existing boiler for maritime use including rental/storage of “human powered” kayaks, canoes, and small sailboats as well as being the operation center of any sailing/boating program that might be offered to serve the community.

- A shell house to serve rowing is located at the top of the boiler building access road, where it serves rowing as a functional location, but is remotely located from the docks, reducing shoreline impacts.

- Improved access from the campus areas is provided to the area with reduced grade paths (ADA access is a focus of these improvements, but may not be achieved due to site grades)

- The piers are to be restored with the north dock to remain as passive use (fishing, sunbathing, etc., no swimming) with addition of ladders. The south dock is to be replaced and straightened with lower floating dock with improved finger piers for small motor craft, “human powered” boats and motorized launch boat storage.

- The existing restroom structures receive plumbing. Security upgrades and utilities in this area present an opportunity to serve a mobile concessionaire.

- The shoreline is improved with an aggregate beach to provide direct access to the water (without bulkhead) for boat launching and a homeowner demonstration garden abutting bulkhead with interpretive signage.
Shoreline:

The Shoreline and its interaction with Lake Washington is the dominant element that shapes the lower Luther Burbank Park experience. Specific shoreline reaches associated with program elements in the park are addressed in other portions of this master plan report (such as the swim beach and off-leash area). This section of the master plan report addresses the shoreline in its entirety:

- North and south wetlands are the “bookends” to the Luther Burbank shoreline. They are functional in their current state though there is the potential to improve function, primarily through vegetation management that eliminates invasive species, replacing them with natives. There are no proposed changes to the shoreline portions of the wetlands.

- Vegetation along the shoreline is a key element to improving habitat and potentially reducing erosion. New or enlarged native vegetation areas (from 20 feet wide and up) are proposed at the shoreline, notably at the reach of shore extending from the boiler building to the OLA.

- Existing vegetative reaches of shoreline, such as between the fishing pier and the boiler building, can be improved through long term vegetation management that underplants the existing forest with native trees and shrubs (such has western red cedar), gradually transitioning vegetation to a more native palette of greater habitat value.

- Creation of beaches will improve human access to water at defined points. These beaches are specifically located at the kayak/canoe boat launch, the existing swimming beach, to the north of existing boiler building bulkhead, at the morning lawn, the off-leash area (potentially two smaller beaches), and at Calkins Point. Details of each profile are provided later in this document.

- Erosion control “mini beaches” primarily focused between the dock and OLA (and elsewhere as erosion pockets dictate). Details of each profile are provided later in this document. Erosion control beaches at or below high water mark will reduce erosion, while trying to eliminate full access and the “beaching” of jet skis.

- Two homeowner demonstration gardens are included on the shoreline. The first, immediately north of the boiler building bulkhead, will illustrate environmentally responsible shoreline development when adjacent to a bulkhead and a second will be at the foot of the morning lawn illustrating how environmentally responsible shoreline can be integrated into sweeping shoreline lawn.

- The shoreline poses a great opportunity for interpretive signage that details ecological function of the lake, and human impacts on that function. The shoreline is also a key component of an environmental learning program that could be run through the community Center.
Amphitheater:

The Amphitheater is to remain with little aesthetic or programmatic change. Changes to the amphitheater will largely be the result of maintenance concerns as the facility, largely wood structure, continues to age. Highlights include: to remain with improved drainage

- Replacement of terraces, either though cast in place concrete, precast concrete or earth sculpting.

- Replacement of the stage, allowing improvement of stage elements including cover, performance infrastructure, and incorporation of an adjacent community fire pit.
Off-Leash Area (OLA)

The Off Leash Area is a heavily used park element that is to remain. It will be improved to create an attractive area that will lure dog owners to use it over other park areas for off leash use. The proposed OLA remains in the same general location, with continued shoreline access, though it is shifted to the south to avoid a potential wetland area, and could be enlarged to the south.

- The off leash area is to be fenced and gated, with fencing screened by planting whenever possible. The surface of high traffic portions of the OLA is to receive soil and drainage improvements.

- The off leash area incorporates many amenities including added benches, covered structures, improved access from parking and dog “hitching posts” and “cleaning station” adjacent to the parking.

- The beach area is to be restored (also addressed in the shoreline portion of this document) to provide an improved beach and possibly a secondary beach.
Calkins Point

Calkins Point continues to be a valuable habitat zone in the park, with a serene character. The master plan builds on this character with improved path access to the area without introducing significant new program elements. Highlights include:

• The existing wetlands remain and are enhanced though vegetation management and the creation of new ponds and wetlands upstream. The existing boardwalk is realigned to make it loop out to the park.

• The barn relic is to remain and will be made integral to the path system with adjacent pavement reduced. The barn presents opportunities for art installations, and permanent history/environmental exhibits. A covered shelter at the barn provides seating for picnics and an environmental learning annex.

• A partially recessed Calkins Point Beach is constructed (detailed in the shoreline section of this document) with interpretive signage for lake and wetland ecology.

• Restructured paths provide access to Calkins and benches and tables (buffered with vegetation) are added for park users.
West Hill:

The West Hill has the opportunity to become a highlight of the Luther Burbank Park experience and an icon for Mercer Island. The community center and west hill are integrated into the park with trails to make an “event” out of the existing high point adjacent to the community center with access to a more formal garden and overlook of the east channel. Highlights include:

- Path connections integrate the west hill into the rest of the park, creating a loop path to hill and community center and several smaller paths that pass through the area.

- The horticultural roots of Luther Burbank are included in the blackberry and grape thickets, fruit tree orchard and enhanced P-patch with demonstration gardens and storage shelter.

- Low buffer is enhanced by grading and native plantings along west property line.

- A more formal garden area tops the existing hill with maintained planting beds and open lawn, a terraced stair connection to the community center, and a water feature.
The following table specifies the shoreline uses and developments which may take place or be conducted within the designated environments. It also specifies the type of shoreline permit required and further states the necessary reviews under the State Environmental Policy Act (SEPA). The uses and developments listed in the matrix are allowed only if they are not in conflict with more restrictive regulations of the Mercer Island development code and are in compliance with the regulations specified in subsection D of this section.

Key:
- **CE**: Categorically Exempt
- **SEP**: Shoreline Exemption Permit
- **SDP**: Substantial Development Permit
- **SEPA**: Required Review under the State Environmental Policy Act
- **NP**: Not Permitted Use

The regulations of the shoreline master program apply to all shoreline uses and development, whether or not that development is exempt from the permit requirements (CE, SEP, or SDP).

<table>
<thead>
<tr>
<th>Designated Environments</th>
<th>Conservancy Environment</th>
<th>Urban Park Environment</th>
<th>Urban Residential Environment</th>
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<tr>
<td>Single-family residential and associated appurtenances</td>
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<td>NP</td>
<td>CE or SDP if the construction is not by an owner, lessee or contract purchaser for his/her own use or if alteration applies.</td>
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<tr>
<td>Multifamily residential</td>
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<td>Commercial marinas, moorage and storage of commercial boats and ships</td>
<td>NP</td>
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<td>Bulkheads and shoreline protective structures</td>
<td>SDP, SEPA</td>
<td>SDP, SEPA</td>
<td>SEP, SEPA</td>
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<td>Breakwaters and jetties</td>
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<tr>
<td>Transportation and Parking</td>
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</table>

If a use is not listed in this matrix, it is not permitted.
September 24, 2009

City of Mercer Island Planning Commission
c/o Travis Saunders, Project Manager
Development Services
9611 SE 36th Street
Mercer Island, WA 98040

Re: Sound Transit’s comments on proposed Shoreline Master Program Update

Dear Mr. Saunders and Planning Commissioners:

I write on behalf of Sound Transit, to submit our comments and concerns on the current draft of Mercer Island’s proposed update to the Shoreline Master Program (“SMP”).

BACKGROUND TO OUR CONCERNS

Sound Transit’s concerns arise from its status as a regional essential public facility. Now that the voters have approved Proposition 1, Sound Transit will be constructing and operating its East Link light rail system from downtown Seattle across the I-90 bridge to Mercer Island and Bellevue, and then north and east to Redmond. This route will be located within the Mercer Island’s shoreline jurisdiction on the western and eastern shores, operating within the center roadway of the I-90 floating bridge. A transit stop is proposed to be located within the City near the existing METRO park-and-ride facility located outside of shoreline jurisdiction.

Sound Transit is its own lead agency for purposes of environmental review under the State Environmental Policy Act (“SEPA”), and the Federal Transit Administration (“FTA”) is lead agency for purposes of NEPA. Sound Transit issued a joint NEPA/SEPA Draft Environmental Impact Statement (“DEIS”) in November 2008. Utilizing the existing developed I-90 corridor is the only reasonable and practicable alternative for the proposed light rail segment from downtown Seattle through Mercer Island, and is the only alternative considered in the DEIS. The environmental impacts of this proposed segment of the route were addressed in the joint DEIS. The specific alignment for all segments of East Link will be selected by the Sound Transit Board of Directors after the environmental process is complete and with careful consideration of the information developed through that process. The Board comprises 18 members, 17 elected officials and the Secretary of the Washington State Department of Transportation. We hope that the City’s proposed SMP will
recognize Sound Transit’s role as the regional decision-maker for the regional light rail transit system and include requirements and standards that will facilitate the siting, permitting and development of this important regional transit system

SMP’S OF OTHER JURISDICTIONS

To date, both the City of Seattle and the City of Redmond have recently revised their SMP’s to recognize the regional nature of Sound Transit’s light rail system. Sound Transit has begun working with the City of Bellevue as they develop their new SMP. For example, Seattle’s SMP states in 23.60.090(J) that “Light rail transit facilities approved pursuant to subsection 23.80.004(C) are permitted uses in all shoreline environments, and light rail bridges and tunnels are water-dependent uses when they must cross of a body of water regulated by Chapter 23.60.” The code section referred to, 23.80.004(C), is part of the Essential Public Facilities chapter of Seattle’s Land Use Code, which recognizes in subsection C.1 that “Light rail transit facilities necessary to support the operation and maintenance of a light rail transit system are permitted in all zones and shoreline environments within the City of Seattle.” This code section then goes on to authorize the imposition of “reasonable conditions in order to lessen identified impacts on surrounding properties”.

The City of Redmond’s new SMP, adopted by Ordinance 2410 on August 19, 2008 and conditionally approved by the Department of Ecology in July 2009, makes many changes requested by Sound Transit to accommodate the regional light rail system, including an amendment to Table 1 in Redmond Municipal Code (RMC) 20D.150.50-030, which sets forth the “Permitted Uses & Activities Chart” for the City’s shoreline environments. This table adds “Regional light rail transit structures & facilities” to the list of permitted uses in the shoreline environments in which Sound Transit will potentially need to locate its regional light rail system. The City also added a new definition of Regional Light Rail Transit System to RMC 20A.20: “A public rail transit line that operates at grade level, above grade level, or in a tunnel and that provides high-capacity, regional transit service owned or operated by a regional transit authority authorized under Chapter 81.112 RCW. A Light Rail Transit System may be designed to share a street right-of-way although it may also use a separate right-of-way.”

We request that Mercer Island adopt language similar to that which Redmond and Seattle have incorporated in their SMP updates.

SPECIFIC CONCERNS OF SOUND TRANSIT

There is no definition for “water-dependent transportation” or “non-water oriented transportation” and light rail transit is not defined or listed as a permitted use.

The draft SMP proposes the “Shoreline Residential” shoreline environment for the upland portions of the I-90 corridor, and the Aquatic shoreline environment for the portion of the I-90 corridor that is waterward of the Ordinary High Water Mark. The Shoreline Use table in Chapter 5.B lists “water-dependent transportation” as a conditional use in the Shoreline Residential environment and “non-water oriented transportation” as a
conditional use in the Aquatic environment. Management Policy c.1 for the Aquatic Environment also prohibits new over-water structures “except for water-dependent uses, public access, or ecological restoration.” There is no definition proposed for either “water-dependent transportation” or “non-water oriented transportation,” and light rail transit facilities are not referred to in the use tables or the definitions.

The combined effect of these proposed regulations is to create uncertainty about the status of Sound Transit’s light rail facilities. If the facilities are deemed to be “non-water-oriented transportation,” they will be prohibited in the Aquatic Environment because they will be over-water, and if they are deemed to be “water-dependent transportation,” they will require a shoreline conditional use permit in order to be located within the Shoreline Residential environment. We believe it is inconsistent with Sound Transit’s status as a regional essential public facility for its light rail transit facilities to be either prohibited or subject to a shoreline conditional use permit. The use of the City’s shoreline environments for light rail transit should not be subject to challenge. The City, of course, will retain its full authority under both the Shoreline Management Act and SEPA to appropriately mitigate adverse impacts of the proposed light rail system.

Sound Transit requests that the City adopt code language similar to that adopted by the City of Seattle, which defines light rail transit facilities as water-dependent uses when those facilities must use a bridge to cross a body of water. This would make the proposed facilities consistent with Management Policy c.1 for the Aquatic Environment. Sound Transit also request that the use charts in Chapter 5 specifically identify light rail transit facilities as permitted uses in both the Shoreline Residential and Aquatic environments.

CONCLUSION

We would very much appreciate your consideration of our concerns, and working with us to consider new language for the SMP that responds to those concerns. I can be reached at (206) 398-5135 or ellie.ziegler@soundtransit.org.

Sincerely,

Ellie Ziegler
Senior Environmental Planner

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