WHY?

Habitat friendly development practices affect the quality of life for fish and wildlife and human populations by:

- supporting the needs and movement of wildlife through preserving, enhancing and maintaining habitat benefit areas,
- improving surface and sub-surface water quality through preservation of habitat benefit area and implementation of low impact development techniques, and
- reducing the degree that fish and wildlife habitat and private property improvements are impacted by storm events through lessening peak stormwater flow discharges.

Watchable Wildlife. Courtesy: Tualatin River National Wildlife Refuge, US Fish and Wildlife Service, June 2006

Purpose of this Brochure

This brochure serves as an introduction to the effects that development has on hydrology.

HABITAT FRIENDLY DEVELOPMENT PRACTICES

BROCHURE SERIES:

- **WHY?**
- HABITAT BENEFIT AREAS (HBA)
- SITE ASSESSMENT
- CLEARING & GRADING
- SITE DESIGN & SOLUTIONS
- LOW IMPACT DEVELOPMENT TECHNIQUES (LID)
- CREDITS
- OPERATIONS & MAINTENANCE

City of Beaverton
Planning Services Division

March 2007

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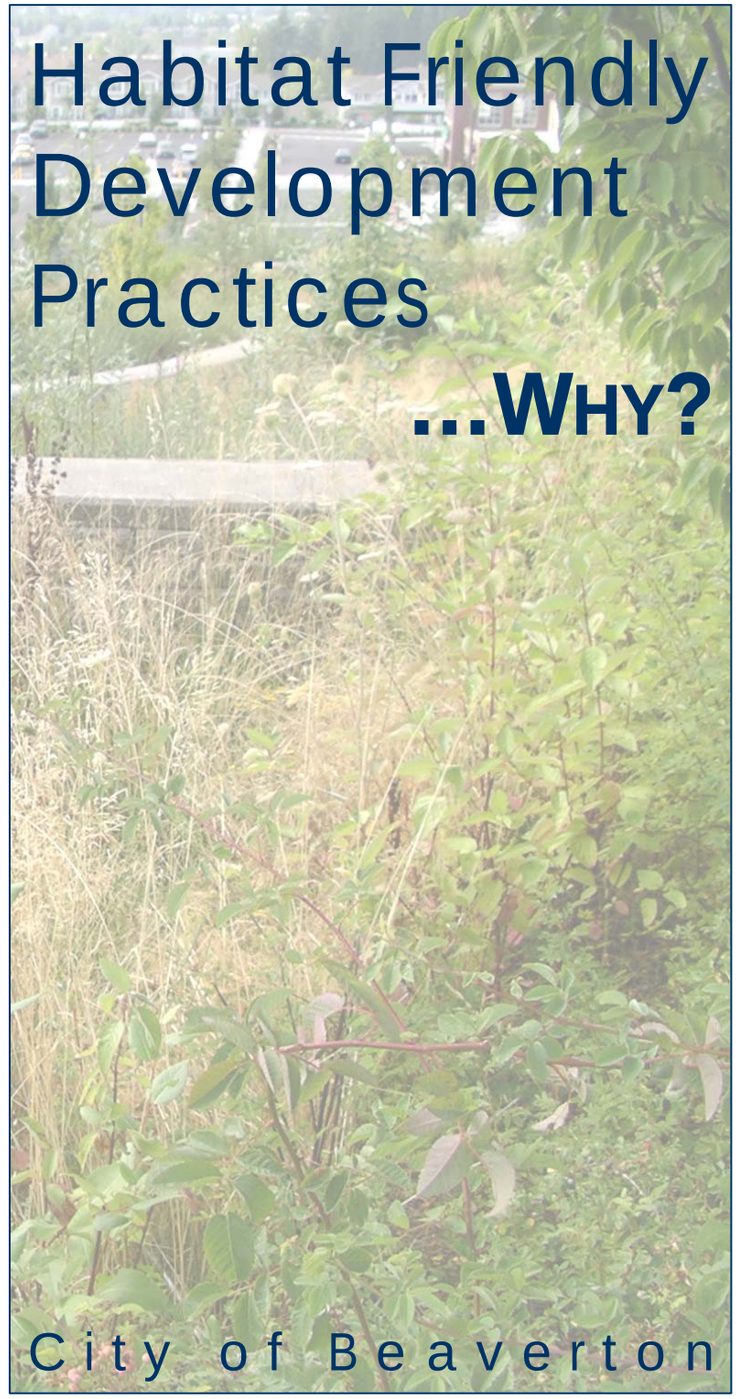
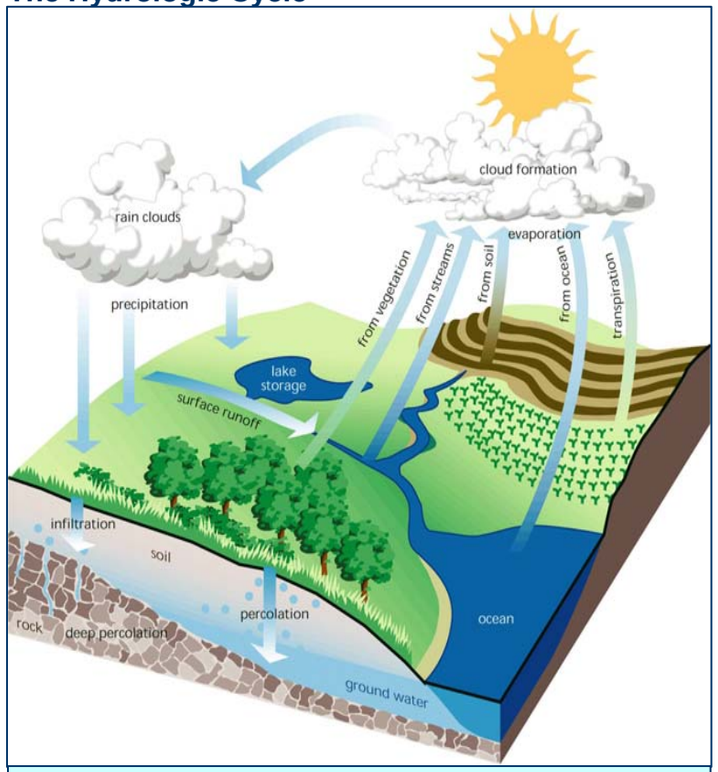


The Hydrologic Cycle



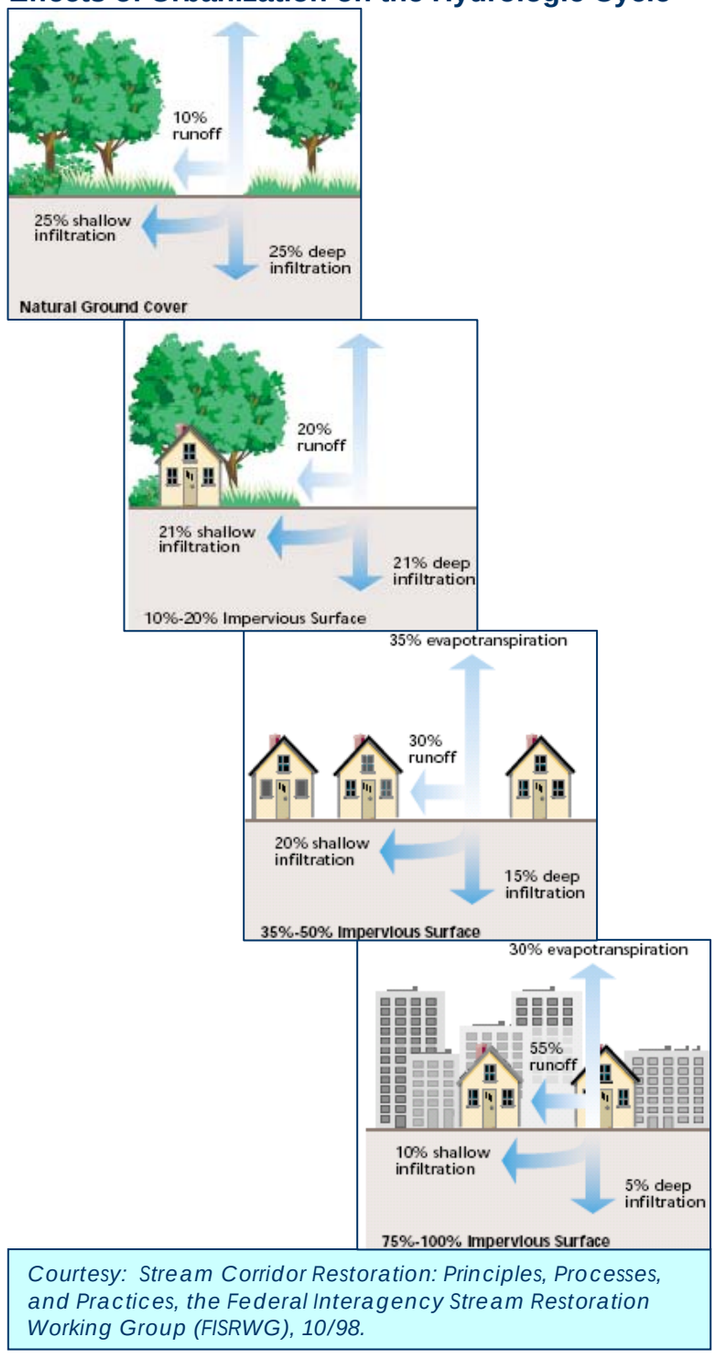
Courtesy: Stream Corridor Restoration: Principles Processes, and Practices, the Federal Interagency Stream Restoration Working Group, 10/98.

The figure, above, depicts the relationship between precipitation, evaporation, surface runoff and groundwater recharge known as the hydrologic cycle. Precipitation either evapotranspires, flows across the surface of the ground to a stream corridor or other water body, or percolates into the soil.

Surface runoff occurs when the infiltration capacity of the soil is exceeded or when materials applied to the surface do not allow water to pass through.

Pervious surfaces allow water to percolate into the soil. Impervious surfaces prevent soil from absorbing water. Examples of impervious surfaces include asphalt and concrete, hard packed soil and gravel, and roofs.

Effects of Urbanization on the Hydrologic Cycle



Courtesy: Stream Corridor Restoration: Principles, Processes, and Practices, the Federal Interagency Stream Restoration Working Group (FISRWG), 10/98.

Habitat Friendly Development Practices are intended to:

- implement designs that reduce or eliminate the amount of development disturbance to existing natural areas,
- retain mature tree canopy and plant new trees to reduce the amount of precipitation that reaches the ground,
- increase the amount of stormwater absorbed on site,
- detain/retain stormwater from entering storm sewers,
- reduce the amount of impervious surfaces,
- replace impervious materials with pervious materials in order for stormwater to percolate into sub-surfaces, and
- make use of new technologies.

Habitat Friendly Development Practices in the City of Beaverton include:

- preserving, enhancing, mitigating and creating habitat benefit areas,
- preserving existing and providing additional tree canopy,
- amending site soils,
- redirecting flows from downspouts,
- constructing eco-roofs and rooftop gardens,
- building rain gardens,
- integrating parking into the development,
- integrating tree box filters,
- using pervious pavement or reducing pavement, and
- using cutoff lighting near habitat benefit areas.

Habitat Friendly Development Practices Guidance Manual

The Guidance Manual is a larger document that includes guidelines for implementing the City's program and tools for habitat protection, tree preservation, and stormwater quality and quantity facilities.

Tools may be more effective if multiple tools are implemented on each site. Some techniques, depending upon the design, may reduce the need to provide stormwater quantity facilities on site.

City of Beaverton Development Code Section 60.12

This section of the Development Code contains credit options for applicants that choose to preserve habitat benefit area or implement certain low impact development techniques.