

Shapefile	Function	How/What	Metadata
UW Land Cover 2002	Delivery (both day time and night time)	Used to estimate natural light delivery. Used with impervious surface to find highly developed areas that could deliver artificial light at night.	University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM">http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM</a>
Impervious Surface	Delivery (night time)	Estimate artificial light produced at night; used in conjunction with landcover	KC data from 2000 orthophotos. <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html">http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html</a>
Docks	Loss	Docks block light and alter predator/prey relationships based on visibility.	KC data from 2002 orthophotos; used only first pixel landward from the shoreline.

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Impervious Surface	Delivery	Broken into categories and based on percentage of impervious, it was used to determine whether an area would deliver LWD by windthrow or mass wasting.	KC data from 2000 orthophotos. <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html">http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html</a>
UW Land Cover 2002	Delivery/Loss	Used in conjunction with the impervious layer to determine the potential of LWD recruitment; Used also to determine loss of LWD based on landcover type, degree of development and property owner shoreline maintenance practices.	University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM">http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM</a>
Docks	Movement	Docks hinder movement of LWD along the lake shore; docks also represent development where people are more likely to clear LWD from the shoreline as part of home maintenance.	KC data from 2002 orthophotos.
Road Crossings	Movement	Bridges and/or culverts can impede the flow of LWD to a lake from streams flowing into the lake.	KC data: intersection of KC roads and waterbody layers.
Boat Launch	Loss	Boat launches are routinely cleared of LWD for recreational safety.	Boat Launches-from the Washington Interagency Committee (Xydbo_boat.shp)

Shapefile	Function	How/What	Metadata
Agriculture	Delivery	Agriculture categories can be ranked by probability of contributing nitrogen.	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True</a>
Sewers	Delivery	Nonsewered areas may contribute more nitrogen to nearby waterbodies than areas served by sewer systems.	<a href="http://dnr-web.metrokc.gov/dnrtech/dnrpgislib/dnrplib_detail.cfm?DS_PID=510">http://dnr-web.metrokc.gov/dnrtech/dnrpgislib/dnrplib_detail.cfm?DS_PID=510</a>
UW Land Cover 2002	Delivery	Used with sewers to determine areas with concentrations of septic systems, which may contribute increased nitrogen inputs.	University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM">http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM</a>
Wetland loss	Movement/Loss	Wetlands retain or slow the movement of nitrogen. Loss thus represents increased nitrogen movement.	Made by intersections of hydric soils with areas of <2% slope to estimate historic wetlands, then compared with current wetlands shapefile to determine probable wetland loss.
Channelized waterways	Movement/Loss	Used to indicate channelization of runoff, including road side ditches.	G:\InternalMetadata\DNRPlibMetadataDocs\Fish and Ditch Documentation - King County DDES GIS.htm

Shapefile	Function	How/What	Metadata
Agriculture	Delivery	Agriculture categories can be ranked by probability of contributing phosphorus.	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True</a>
Sewers	Delivery	Nonsewered (on-site septic systems) areas may contribute more phosphorus to nearby waterbodies than areas served by sewer systems.	<a href="http://dnr-web.metrokc.gov/dnrtech/dnrpgislib/dnrplib_detail.cfm?DS_PID=510">http://dnr-web.metrokc.gov/dnrtech/dnrpgislib/dnrplib_detail.cfm?DS_PID=510</a>
UW Land Cover 2002	Delivery/Movement	Used with sewer data to determine shoreline development and the likelihood of increased phosphorus generation; used with soils data to determine if clay soils are present to retain phosphorus. Land cover also used as a proxy for the effect of wind: the more developed areas have increased windiness, leading to phosphorus recycling from the bottom.	University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM">http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM</a>
Wetland loss	Movement	Wetlands retain or slow the movement of phosphorus. Loss thus represents increased phosphorus movement. Used with soils to estimate loss of clay soil retention.	Made by intersections of hydric soils with areas of <2% slope to estimate historic wetlands, then compared with current wetlands shapefile to determine probable wetland loss.
Soils	Movement	Clay soils retain phosphorus.	Selected clay soils from NRCS soils data set. <a href="http://gisdw/intranet/sdc/nonkcgis/content/enviro_ext/nda_soils_kc.htm">http://gisdw/intranet/sdc/nonkcgis/content/enviro_ext/nda_soils_kc.htm</a>
CAO Basin Layer	Basin Context	%TIA in sub basin used to estimate increases in phosphorus contribution.	<a href="http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro">http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro</a>

Shapefile	Function	How/What	Metadata
Agriculture	Delivery	Agriculture categories can be ranked by probability of contributing pathogens.	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True</a>
Sewers	Delivery	Separates septic from sewer areas: septic systems may contribute pathogens locally.	<a href="http://dnr-web.metrokc.gov/dnrtech/dnrpgislib/dnrplib_detail.cfm?DS_PID=510">http://dnr-web.metrokc.gov/dnrtech/dnrpgislib/dnrplib_detail.cfm?DS_PID=510</a>
UW Land Cover 2002	Delivery	Used in conjunction with sewers to determine the degree of development and potential for pathogen contributions.	University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001Landcover">http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001Landcover</a> UWPRISM
Goose and Dog Poop	Delivery	Identified lawns and parks where dog and goose poop are likely contributors of pathogens.	King County Staff 2007; Goose_Dog_Pooh.shp
Wetland Loss	Movement/Loss	Wetlands retain or slow the movement of pathogens. Loss thus represents increased pathogen movement.	Made by intersections of hydric soils with areas of <2% slope to estimate historic wetlands, then compared with current wetlands shapefile to determine probable wetland loss.
CAO Basin Layer	Movement/Loss	% TIA used to estimate pathogen movement through overland flow and stormwater runoff.	<a href="http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro">http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro</a>
Roads Layer	Movement/Loss	Road runoff can increase pathogen rate of movement.	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&amp;XMLAvail=True</a>
Channelized waterways	Movement/Loss	Used to indicate channelization of runoff, including road side ditches.	G:\InternalMetadata\DNRPlibMetadataDocs\Fish and Ditch Documentation - King County DDES GIS.htm

Shapefile	Function	How/What	Metadata
Agriculture	Delivery	Agriculture categories can be ranked by probability of contributing toxins.	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True</a>
UW Land Cover 2002	Delivery	Used in conjunction with agricultural areas to determine the degree of development and potential for contribution of toxics.	University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM">http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM</a>
Roads	Delivery	Roads contribute toxins; considered only roads within jurisdictional area along shoreline.	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&amp;XMLAvail=True</a>
Motorized boats allowed	Delivery	Internal combustion engines contribute toxins	King County data.
CSO/Discharge	Delivery	Toxin delivery to shoreline from other areas or sources.	Combination of three sources: Anchor data : anchor_outfalls.shp; Terralogic data: terralogic_outfalls.shp; Coastal geologic data: cg_outfalls.shp cso.shp, sde_npdespts.shp.
Wetland loss	Movement	Wetlands retain or slow the movement of toxins. Loss thus represents increased toxin movement. Used with soils to estimate loss of clay soil retention of toxins.	Made by intersections of hydric soils with areas of <2% slope to estimate historic wetlands, then compared with current wetlands shapefile to determine probable wetland loss.
Impervious Surface	Movement	Impervious coverage can affect how quickly toxins move through the system.	<a href="http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html">http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html</a>

Shapefile	Function	How/What	Metadata
Agriculture	Delivery	Agriculture categories can be ranked by probability of contributing sediment.	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&amp;XMLAvail=True</a>
Erodable soils	Delivery	Data used in combination with slope and landcover to look at the potential for different soil types to contribute sediment to aquatic resources.	Based on NRCS soils data. <a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=erode&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=erode&amp;XMLAvail=True</a>
UW Land Cover 2002	Delivery	Landcover combined with erodable soils and slopes to look at the potential for different soil types to contribute sediment to aquatic resources.	shoreline edge. Original: <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM">http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM</a>
Roads	Delivery	Roads contribute sediment; considered only roads within jurisdictional area along shoreline.	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&amp;XMLAvail=True</a>
Slope	Delivery	Steepness of slope used to evaluate potential of sediment delivery	<a href="http://www.metrokc.gov/gis/sdc/raster/elevation/LiDAR_Digital_Ground_Model_Elevation.html">http://www.metrokc.gov/gis/sdc/raster/elevation/LiDAR_Digital_Ground_Model_Elevation.html</a>
Impervious Surface	Delivery	Used with landcover data to rectify areas where landcover wasn't accurate.	based on 2000 orthos <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html">http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html</a>
Docks	Delivery	Used as a proxy for shoreline development features, such as armoring.	KC data from 2002 orthophotos.
Road Crossings	Movement	Bridges and/or culverts can block the transport of sediment to the system; considered those crossings within the jurisdictional area.	KC data. Created by intersecting KC road layers and waterbodies
Wetland loss	Movement	Wetlands retain or slow the movement of sediment. Loss thus represents increased sediment movement.	Made by intersections of hydric soils with areas of <2% slope to estimate historic wetlands, then compared with current wetlands shapefile to determine probable wetland loss.
Steep Slopes	Basin Context	Used with forest cover and road density to estimate basin level contribution to sediment delivery.	KC data. Categorized by percentages across basins
Forest cover	Basin Context	Used with steep slopes to estimate basin level sediment delivery.	KC data. Categorized by percentages across basins
% ag in the basin	Basin Context	Used percent area of agriculture to estimate basin level sediment delivery.	KC data. Categorized by percentages across basins
road density	Basin Context	Used with steep slopes to estimate sediment delivery in basin.	KC data. Categorized by percentages across basins

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Rain on Snow	Delivery	Used in combination with landcover for impact of logging practices on water delivery. Rain falling on snow in open areas produces more water for runoff than rain falling on snow in forested areas.	WADNR data. Created 2004. <a href="http://gisdw/intranet/sdc/nonkcgis/content/enviro_ext/snr_rainsnow.htm">http://gisdw/intranet/sdc/nonkcgis/content/enviro_ext/snr_rainsnow.htm</a>
UW Land Cover 2002	Delivery/Movement/Loss	Used with rain on snow zones - water delivery is altered by logging practices. Used with TIA and Impervious surfaces to estimate likelihood of increased runoff.	University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM">http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM</a>
Impervious Surface	Movement	Used with subbasin TIA and landcover to assess overland flow and sub-surface flow	based off of 2000 orthos <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html">http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html</a>
CAO TIA	Movement	Depending on TIA used in conjunction with impervious surface because both contribute to increased overland flow	<a href="http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro">http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro</a>
Wetland loss	Movement	Used to estimate loss of water storage, thus increased movement, due to loss of wetlands.	Made by intersections of hydric soils with areas of <2% slope to estimate historic wetlands, then compared with current wetlands shapefile to determine probable wetland loss.
Roads	Movement	Roads increase rate of surface runoff and alter groundwater recharge rates..	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&amp;XMLAvail=True</a>
Wells	Loss	Wells alter subsurface recharge rates.	<a href="http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=qwsources&amp;XMLAvail=True">http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=qwsources&amp;XMLAvail=True</a>
% trees	Basin Context	Trees contribute to evaporation/transpiration rates.	CAO Basin layer - % tree cover in sub basin
% wetland loss	Basin Context	Evaluated for loss of storage at the subbasin level.	CAO Basin layer - % of change in wetlands present in any sub basin
% basin impervious	Basin Context	Total basin impervious surface contributes to overland flow and loss of subsurface recharge.	% categories of imperviousness

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Motorized boats	Delivery	Data indicates lakes where motorized boats are allowed and therefore an increase in wave energy .	King County 2007; wave_pathogen_motorized_boats.shp
UW Land Cover 2002	Delivery	Used to determine development and protection of the lake from wind. The more developed, the fewer trees providing wind protection.	University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: <a href="http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM">http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM</a>
Docks	Movement/Loss	Docks act as indicators of shoreline armoring, which dissipate and deflect energy of waves differently than natural shorelines. This affects movement and loss.	KC data from 2002 orthophotos.