| Shapefile | Function | How/What | Metadata |
|---|---|---|---|
| UW Land Cover 2002 | Delivery (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: http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM |
| Impervious Surface | Delivery (night time) | Used to estimate artificial light production; used in conjunction with landcover. | KC data from 2000 orthophotos. http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html |
| Docks | Loss | Docks block light and can alter predator/prey relationships based on visibility. | Points digitized from 2002 orthophotos; used first pixel landward only in analysis |

| Shapefile | Function | How/What | Metadata |
|---|---|---|---|
| Impervious Surface | Delivery | Used with landcover to estimate LWD delivery potential by windthrow or mass wasting; used with channel confinement for probablility of LWD presence. | KC data from 2000 orthophotos. http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html |
| Armoring | Delivery/Movement | Armoring prevents bank erosion and limits the possibility for LWD delivery. | • KC_riverfac - King County maintained reventments and levees<br>• RWT-hydromod - Data on the Snoqualmie mainstem<br>• GreenRiver Mainstem - data on the Green River (Anchor produced) |
| Channel Confinement | Delivery/ Movement | Without armoring, channel migration affects LWD delivery to the system. Channel confinement used with channel size to assess LWD movement or retention. | SSHIAP data. |
| UW Land Cover 2002 | Delivery/Loss | Used with armoring to estimate sources for LWD; used to estimate loss with landcover (development) and with channel confinement (LWD retention after delivery). | University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM |
| Dam presence | Movement | Dams impede movement of LWD downstream. | KC data: layer marking as impacted those reaches of rivers located downstream from large dams. |
| Road Crossings | Movement | Bridges and culverts can impede the flow of LWD downstream. | Kc data: layer made by interstecting KC road layers and waterbodies. |
| Channel size | Movement | Channel size, along with channel confinement, affects LWD movement downstream. | SSHIAP data. |
| Floodplain | Movement | Used in conjunction with channel size, confinement and gradient to assess ability of LWD to move downstream. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=fldplain&XMLAvail=True |
| 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 | Areas of agricultural land use contribute nitrogen. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&XMLAvail=True |
| Sewers | Delivery | Nonsewered areas may contribute more nitrogen to nearby waterbodies than areas served by sewer systems. | http://dnr-web.metrokc.gov/dnrtech/dnrpgislib/dnrplib_detail.cfm?DS_PID=510 |
| UW Land Cover 2002 | Delivery | Used with sewers to determine areas with many septic systems, which may contribute increased nitrogen inputs. | University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM |
| 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, which speed movement. | G:\InternalMetadata\DNRPlibMetadataDocs\Fish and Ditch Documentation - King County DDES GIS.htm |

| Shapefile | Function | How/What | Metadata |
|---|---|---|---|
| Agriculture | Delivery | Assumed that areas of agricultural land use are contributing phosphorus. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&XMLAvail=True |
| Sewers | Delivery | Nonsewered (on-site septic system) areas may contribute more phosphorus to nearby waterbodies than areas served by sewer systems. | http://dnr-web.metrokc.gov/dnrtech/dnrpgislib/dnrplib_detail.cfm?DS_PID=510 |
| 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. | University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM |
| 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. http://gisdw/intranet/sdc/nonkcgis/content/enviro_ext/nda_soils_kc.htm |
| CAO Basin Layer | Basin Context | %TIA in sub basin used to estimate increases in phosphorus contribution. | http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro |

| Shapefile | Function | How/What | Metadata |
|---|---|---|---|
| Agriculture | Delivery | Agriculture categories can be ranked by probability of contributing pathogens. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&XMLAvail=True |
| Sewers | Delivery | Separates septic from sewered areas: septic systems may contribute pathogens locally. | http://dnr-web.metrokc.gov/dnrtech/dnrpgislib/dnrplib_detail.cfm?DS_PID=510 |
| 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: http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001Landcover UWPRISM |
| Goose and Dog Poop | Delivery | Identified lawns and parks where dog and goose poop can contribute pathpgens. | King County data. 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. | http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro |
| Roads Layer | Movement/Loss | Road runoff can increase pathogen rate of movement. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&XMLAvail=True |
| 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. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&XMLAvail=True |
| 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: http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM |
| Roads | Delivery | Roads contribute toxins; considered only roads within jurisdictional area along shoreline. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&XMLAvail=True |
| Motorized boats | 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<br>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. | http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html |

| Shapefile | Function | How/What | Metadata |
|---|---|---|---|
| Agriculture | Delivery | Agriculture categories can be ranked by probability of contributing sediment. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=ag_landuse06&XMLAvail=True |
| Roads | Delivery | Roads contribute sediment; considered only roads within jurisdictional area along shoreline. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&XMLAvail=True |
| Slope | Delivery | Steepness of slope used to evaluate potential of sediment delivery | http://www.metrokc.gov/gis/sdc/raster/elevation/LiDAR_Digital_Ground_Model_Elevation.html |
| 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. http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=erode&XMLAvail=True |
| 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. | University of Washington 2002. King County edited to make 25' pixels along shoreline edge. Original: http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM |
| Impervious Surface | Delivery | Used with steep slopes (> 25%) to to rectify areas where landcover wasn't accurate. | KC data from 2000 orthophotos. http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html |
| Dam presence | Delivery | Dams prevent sediment from moving downstream. | KC data: layer marking as impacted those reaches of rivers located downstream from large dams. |
| CAO Basin Layer | Delivery | % TIA used to estimate sediment movement - especially through overland flow and stormwater runoff | http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro |
| Armoring | Delivery/Movement | Armoring prevents bank erosion and limits sediment delivery. Armoring also affects in-channel sediment deposition. | • KC_riverfac - King County maintained reventments and levees<br>• RWT-hydromod - Data on the Snoqualmie mainstem<br>• GreenRiver Mainstem - data on the Green River (Anchor produced) |
| 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. |
| Levee | Movement | Levees impact deposition of sediment in rivers | KC data. Name: KC_riverfac |
| Channelized watercourses | Movement | Channelization affects speeds movement of sediment downstream. | Combined KC data on stream channelization by past agricultural activities ( "fish and ditch" layer) with other reaches or streams known to have been channelize/straightend (eg., the Sammamish River). |
| Road Crossings | Movement | Bridges and/or culverts can slow the movement of sediment to the system; considered those crossings within the jurisdictional area. | KC data. Created by intersecting KC road layers and waterbodies |
| Steep Slopes | Basin Context | Used with forest cover and road density to estimate deterine basin contribution to sediment delivery. | KC data. Characterized by percentages across basins |
| Forest cover | Basin Context | Used with steep slope to determine sediment delivery in basin. | KC data. Characterized by percentages across basins |

| Shapefile | Function | How/What | Metadata |
|---|---|---|---|
| % ag in the basin | Basin Context | Percent area of agriculture contributing to sediment delivery in basin. | KC data. Characterized by percentages across basins |
| road density | Basin Context | Used with steep slopes to estimate sediment delivery in basin. | KC data. Characterized by percentages across basins |

| Shapefile | Function | How/What | Metadata |
|---|---|---|---|
| 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. http://gisdw/intranet/sdc/nonkcgis/content/enviro_ext/snr_rainsnow.htm |
| 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: http://www.metrokc.gov/gis/sdc/raster/landcover/Landcover_Data.htm#2001LandcoverUWPRISM |
| Impervious surface | Movement | Used with TIA and landcover to assess overland flow and sub-surface flow | KC data using 2000 orthos. http://www.metrokc.gov/gis/sdc/raster/landcover/ChgDetectionImpervious.html |
| Roads | Movement | Roads increase rate of surface runoff and alter groundwater recharge rates.. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=st_address&XMLAvail=True |
| CAO TIA | Movement | Depending on TIA used in conjunction with impervious surface because both contribute to increased overland flow | http://www5.metrokc.gov/sdc/TOC.aspx?subject=hydro |
| Floodplain | Movement | Floodplains store water. Used in conjunction with Levees data to indicate areas of the floodplain that are disconnected and not storing water. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=fldplain&XMLAvail=True |
| Levee | Movement | Levees disconnect the water from the natural floodplain | KC_riverfac |
| Wetland loss | Movement | Used to estimate loss of water storage 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. |
| Dam presence | Movement/Loss | Dams regulate movement of water downstream. | KC data: layer marking as impacted those reaches of rivers located downstream from large dams. |
| Wells | Movement/Loss | Wells alter subsurface recharge rates. | http://www5.metrokc.gov/sdc/Metadata.aspx?Layer=gwsource&XMLAvail=True |
| % trees | Basin Context | Trees contribute to evaporation/transpiration rates. | CAO Basin layer - % tree cover in sub basin |
| % wetland loss | Basin Context | Total basin impervious surface contributes to overland flow and loss of subsurface recharge. | 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 |