

Initial Land Use and Wastewater Classification for 2017 Mid-point Assessment

1. Developed

- a. Impervious developed
 - i. Connected vs. Disconnected (connection via storm drains, drainage ditches, curbs/gutters, or proximity to waterways)
 - 1. Regulated vs. Unregulated (inside vs outside NPDES Stormwater Permit Area)
 - a. Rural Residential, Low-density Residential, Medium-density Residential, High-density Residential, Commercial/Industrial/Residential, Institutional
- b. Pervious developed (e.g., turf grass, landscaped areas, and woodlands)
 - i. Connected vs. Disconnected (connection via storm drain or proximity to waterway)
 - 1. Regulated vs. Unregulated (inside vs outside NPDES Stormwater Permit Area)
 - a. Open space, Low-density Residential, High-density Residential, Mixed Commercial/Industrial/Residential, Institutional
 - i. Low risk turf grass
 - ii. High risk turf grass
 - 1. Golf courses
 - iii. Unfertilized turf, scrub/shrub, fallow developed
 - iv. Urban tree canopy (tree canopy in dense urban areas)
 - v. Residential woodlands (trees with managed understory)
- c. Roads
 - i. Connected vs Disconnected (based on proximity to streams)
 - 1. 1-lane, 2-lane, 4-6 lanes, 8+ lanes (to infer impervious area and size of medians and shoulders)
 - ii. Federal vs. state vs. other (to assign responsibility)
 - iii. Traffic volume ranges (linked to dry atmospheric deposition)
- d. Construction (disturbed area requiring general or individual NPDES E&S permits)
 - i. Residential, Commercial, Industrial Development
 - ii. Shale gas pads and associated infrastructure

Note: The separation of these two classes may be needed due to differences in the duration of disturbance).

2. Barren

- a. Disturbed permitted surface mine acreage (including quarries/gravel pits, surface coal mines, reclaimed mines, and rock outcrops)

3. Natural

- a. Forests (with unmanaged understory"; previous "mixed open" land would be removed from this class)
 - i. Upland forest
 - ii. Riparian/floodplain forest (defined by LULC, 1:24K streams, SSURGO soils, FEMA DFIRMS, and DEM modeling)
 - iii. Harvested, scrub/shrub (undergoing managed succession)
 - iv. Disturbed forest (defoliated due to fire, insects, disease, or acid rain)
- b. Wetlands (currently considered "Woody/Open" in Phase 5.3.2)
 - i. Floodplain wetlands

- ii. Forested wetlands (outside the floodplain)
 - iii. Tidal emergent wetlands
 - c. Beaches
 - d. Water (all non-tidal water area)
- 4. Agriculture**
 - a. Animal Feeding Operations (converted to acres based on animal density assumptions)
 - i. Regulated (CAFOs)
 - ii. Unregulated (AFOs)
 - b. Row Crop
 - c. Vegetable
 - d. Hay
 - e. Pasture
 - f. Nursery
 - g. Orchard
 - h. Forestry
 - i. Sod
 - j. Farmstead
 - k. Idle/fallow farmland and open grasslands
- 5. Wastewater**
 - a. Population on Sewer
 - i. Improve maps of areas served by sewer and relate areas to individual plants and their efficiencies.
 - b. Households on septic
 - i. Distinguish different types of systems: commercial/retail, mass drain fields, shallow drain fields, failing systems, and direct discharges
 - ii. Adjust soil attenuation rates based on distance to waterways
 - iii. Examine relationship between household size assumptions, # of systems, and loads.