

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. Urban & Community tree canopy (over impervious surfaces)
 - 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. 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. Impervious Farmsteads
 - i. Regulated (CAFOs)- the production areas (housing, feed, and litter storage)
 - 1. Dairy, Swine, Poultry, Beef, Equine, Goats & Sheep
 - ii. Unregulated
 - 1. Dairy, Swine, Poultry, Beef, Equine, Goats & Sheep, Non-livestock
- b. Pervious Farmsteads
 - i. Regulated (CAFOs)- the production areas (housing, feed, and litter storage)
 - 1. Dairy, Swine, Poultry, Beef, Equine, Goats & Sheep
 - ii. Unregulated (AFOs)
 - 1. Dairy, Swine, Poultry, Beef, Equine, Goats & Sheep, Non-livestock
- c. Cropping systems
 - i. Rotated forage/grain (includes alfalfa)
 - 1. + manure
 - 2. – manure
 - ii. Long-term forage with manure
 - iii. Long-term grain
- d. Vegetable
- e. Hay
- f. Pasture
 - i. Upslope
 - ii. Near stream
- g. Nursery
 - i. Container
 - ii. Field Grown
 - iii. Greenhouse
- h. Orchard (e.g., fruits and berries)
- i. Agro-forestry
 - i. Windbreaks, Christmas trees
- j. Sod
- k. Farmstead (e.g., structures and adjacent lands)
- l. Idle/fallow (may include other 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.