

## 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.