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. Farmsteads
        i. Impervious vs Pervious
        ii. Regulated (CAFOs) vs Unregulated
    b. Crops
        i. Grain/forage
        ii. Vegetables
        iii. Hay
            1. Grass
            2. Legumes
    c. Pasture
    d. Nurseries
        i. Covered
        ii. Uncovered
    e. Orchards
    f. Sod farms
    g. Idle/fallow land

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.