2013/14 to 2017/18 Land Use Change Product
How to Interpret it?

This document redefines the Phase 6 classes based on the roll-up of the 60+ 2017/18 land use classes to the 13 Phase 6 classes, and it describes how change in the Phase 6 classes is quantified for the 2013/14 to 2017/18 period. This document incorporates and re-organizes information already presented in "LU_Change_Methods_20210505.pdf" and "LU_Classification_ProposedFinal_20210505 revised.pdf" so that one can more easily interpret the causes of gains or losses in a particular Phase 6 class.

Impervious Roads (IR) = paved and unpaved roads and bridges.

Gains: new impervious cover interpreted from imagery aligned with roads as they were mapped in the original 2013 imagery.

Losses: impervious cover change to a non-impervious class interpreted from imagery

Impervious Non-Roads (INR) = structures, driveways, sidewalks, parking lots, airport runways, some private roads, open space lands within 3 meters of rail centerlines, and solar panel arrays in fields.

Gains: new impervious cover interpreted from imagery not intersecting roads. Note that new structures are identified as new impervious cover intersecting ancillary building data or interpreted as elevated above ground level from LiDAR imagery.

Losses: impervious cover change to a non-impervious class interpreted from imagery

Tree Canopy over Impervious Surfaces (TCI) = trees over roads and non-road impervious surfaces and trees within 3 meters of rail centerlines.

Gains: new tree canopy interpreted from imagery.

Losses: tree canopy change to a non-tree canopy class interpreted from imagery

Water (WAT) = all surface water and water conveyance features including estuaries, lakes, ponds, streams (open, shaded, or buried), ditches (open, shaded, or buried), and bare shore areas that are not classed as any of the three wetland types.

Gains: new water or bare shore interpreted from imagery.

Losses: water or bare shore change to a non-water, non-bare shore class interpreted from imagery

Tidal Wetlands (WLT) = This class is not in CAST but is mapped so that the information can be used in the Chesapeake Bay estuarine model and by the Wetlands Workgroup. Tidal wetlands include barren and herbaceous vegetation within 1-ft of the nearest water level and tree canopy covered areas within 1-ft of nearest water level if they are also classified in the National Wetlands Inventory as estuarine, marine, or palustrine wetlands.

Gains: none. Computing gains would require tide-coordinated LiDAR or NAIP imagery which does not yet exist.

Losses: new development or fill may convert tidal wetlands to another class.

Floodplain Wetlands (WLF) = Non-tidal riverine wetlands including National Wetlands Inventory (NWI) non-pond, non-lake wetlands, emergent wetlands mapped from high-resolution imagery, state

designated wetlands, and state identified potential non-tidal wetlands that are within the Riverine network. The Riverine network is defined by a DEM-derived 60-acre minimum drainage area stream network, FEMA designated 100-year floodplain, and frequently flooded and hydric soils (SSURGO).

Gains: none. Computing gains requires new ancillary wetland data representing either created or more accurately mapped wetlands.

Losses: new development or fill may convert non-tidal wetlands to another class.

Other Wetlands (WLO) = Non-tidal terrene wetlands including National Wetlands Inventory (NWI) non-pond, non-lake wetlands, emergent wetlands mapped from high-resolution imagery, state designated wetlands, and state identified potential non-tidal wetlands that fall outside the Riverine network. These are typically isolated wetlands.

Gains: none. Computing gains requires new ancillary wetland data representing either created or more accurately mapped wetlands.

Losses: new development or fill may convert non-tidal wetlands to another class.

Forest (FOR) = all contiguous patches of tree canopy that are greater or equal to one acre in size AND have sufficient width (72-meters) to contain a 1-acre circle, providing at least some area free of edge effects. Added to this class for 2017 are small or narrow patches of trees in rural agricultural areas (e.g., wind breaks and riparian buffers).

Gains: new tree canopy interpreted from imagery in patches of sufficient size, girth, or rural agricultural context to qualify as "Forest".

Losses: tree canopy within "Forest" changes to a non-tree canopy class interpreted from imagery.

Tree Canopy over Turf Grass (TCT) = tree canopy in small patches that do not qualify as forest and within 20 meters of structures or turf grass image segments within densely developed areas and within 10 meters of structures or turf grass image segments in rural agricultural and forested areas.

Gains: new tree canopy interpreted from imagery in small patches that are not adjacent to agriculture.

Losses: tree canopy classed as "Tree Canopy over Turf Grass" changes to a non-tree canopy class, interpreted from imagery.

Mixed Open (MO) = active, abandoned, and reclaimed mines, landfills, unconventional oil and gas pads, beaches and bare waterbody margins, open space undergoing natural succession, areas with a recent timber harvest, pervious lands surrounding and between solar panel arrays, and utility and road rights-of-way. Note that change among these component classes of "mixed open" will not appear as change in Phase 6 land uses.

Gains: new ancillary data indicate the addition of roads, landfills, solar fields, etc. or recent tree clearings in areas with a history of rotation or recent tree clearings with no clear purpose (e.g., natural succession).

Losses: recently harvested or unmanaged open space areas transition back to forest or become developed.

Turf Grass (TG) = herbaceous and barren land within airports, amusement parks, cemeteries, golf

courses, hospitals, harbors, shopping centers, sports complexes. Herbaceous and barren land within small, developed parcels (<= 1 acre with at least 55 square meters of structure (a single-wide mobile home).

Gains: new commercial or residential development results in converting pervious lands within the newly developed parcel to turf grass.

Losses: growth of trees converts the land to "Tree Canopy over Turf Grass" or further development converts the land to water or an impervious class.

Cropland (CRP) = barren, herbaceous, or scrub-shrub lands within a parcel with a minimum area of 1 hectare and with 20% of the open lands mapped by USDA's Cropland Data Layer as cropland

Gains: new tree clearings with no history of rotation that qualify as cropland or are adjacent to persisting cropland.

Losses: growth of trees converts the land to "Forest" or development converts the land to turf grass, water, or an impervious class.

Pasture/Hay (PAS) = barren, herbaceous, or scrub-shrub lands within a parcel with a minimum area of 1 hectare and with 20% of the open lands mapped by USDA's Cropland Data Layer as pasture or mapped by USGS' National Land Cover Dataset as pasture/hay. Note that hay is grouped with pasture because they are difficult to differentiate through image interpretation.

Gains: new tree clearings with no history of rotation that qualify as pasture or are adjacent to persisting pasture.

Losses: growth of trees converts the land to "Forest" or development converts the land to turf grass, water, or an impervious class.