

Phase 6 Land Use Database versions 2 & 3

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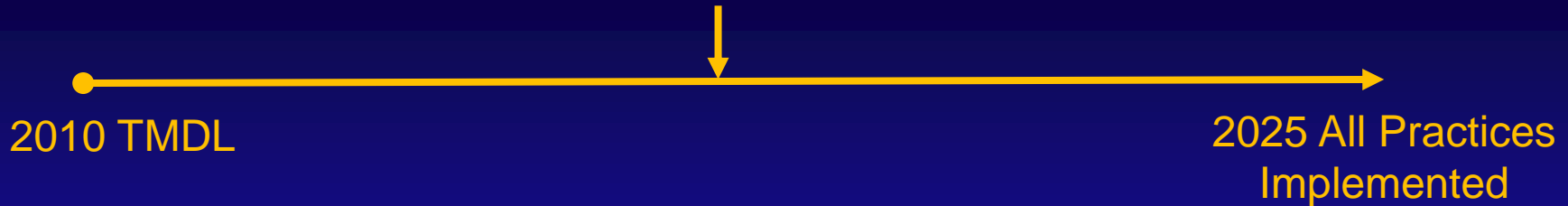
September 8, 2015

Scientific and Technical Advisory Committee

Quarterly Meeting and Retreat

Rose Haven, Maryland

Chesapeake Bay 2017 Mid-Point Assessment



Goal: Determine whether the implementation the CBP Partnership's restoration strategies by 2025 will achieve water quality standards in the Bay.

Objective: Make this determination based on the best available science data, tools, BMPs, and lessons-learned.

#1 Priority: improve accuracy of land use/cover data.

Best available data = county & municipal level land use, land cover, parcels, sewer service areas, zoning, and other relevant information.

Land Use vs. Land Cover

- Low-density Residential
- Transportation
- Agriculture
- Rural conservation

- Impervious surfaces
- Tree canopy
- Herbaceous
- Barren

Phase 6 Land Uses

- Impervious-Roads
- Forests
- Turf Grass
- Open Space

P6 Developed Land Uses (mapped)

Impervious Roads (MIR, CIR, NIR): paved and unpaved roads and bridges as mapped by NAVTEQ 2013.

Impervious Non-Roads (MNR, CNR, NNR): buildings, driveways, sidewalks, parking lots, runways, some private roads, and some swimming pools.

Turf Grass (MTG, CTG, NTG): all herbaceous lands within developed areas.

* **Developed Areas** =

- Blocks with > 0.2 du/acre (5-acre lots) (2010 Census);
- Airports, schools, shopping malls, and golf courses (NAVTEQ 2013);
- Roads (NAVTEQ 2013);
- Impervious surfaces $\geq 20\%$ (NLCD 2011).
- Parcels < 5 acres
- Residential, commercial, industrial, institutional, and recreational land uses.

P6 Developed Land Uses (mapped)

Tree Canopy over Impervious (MCI, CCI, NCI): small fragments of trees or shrubs overhanging impervious cover in developed areas.

Tree Canopy over Turf Grass (MCH, CCH, NCH): small fragments of trees or shrubs overhanging herbaceous cover in developed areas.

Reserved for Further Consideration

Extractive (ABN): abandoned and reclaimed mines.

Extractive (EXT): active quarries, surface, and strip mines.

P6 Natural Land Uses

Forest (FOR): contiguous patches of trees and shrubs ≥ 1 acre and with a minimum radius of 120-ft. Assumed to have an unmanaged understory.

Wetlands (FWT, SWT, EWT): National Wetlands Inventory (NWI) non-tidal vegetated wetlands in floodplains and in isolated, depressional, or headwater areas.

Open Space (OS): barren lands and small or narrow patches of scrub/shrub cover (e.g., beaches, vacant lots, transmission line right-of-ways, junkyards, fairgrounds, gravel roads, railroads).

Tree Canopy over Scrub-Shrub (MCS, CCS, NCS): barren lands and small or narrow patches of scrub/shrub cover in undeveloped areas.

Water (WAT): All waterbodies mapped by the National Hydrography Dataset (24K), NWI water features, and the National Land Cover Dataset (Open Water). Assumes all single-line streams are 15' wide.

P6 Agricultural Land Uses

Cropland (% CRP): all non-natural, undeveloped herbaceous lands that were classed as cropland at least once from 2008 – 2013 (in the NASS Cropland Data Layer).

There are 18 different agricultural land uses representing distinct sources.

Only 2 can be mapped.

Farmstead Impervious: impervious features on a farmstead (e.g., silos, animal houses, barns, manure storage, homes, driveways, etc.).

Farmstead Pervious: pervious features on a farmstead (e.g., turf grass and scrub-shrub in proximity to structures).

GIS Overlays

Phase 6 Land-River Segments: Hydrologic Reporting Units for the Phase 6 HSPF Watershed Model. Include an update of high and low precipitation zones using PRISM 30-year average rainfall data. Line work cleaned to align with HUC12 boundaries.

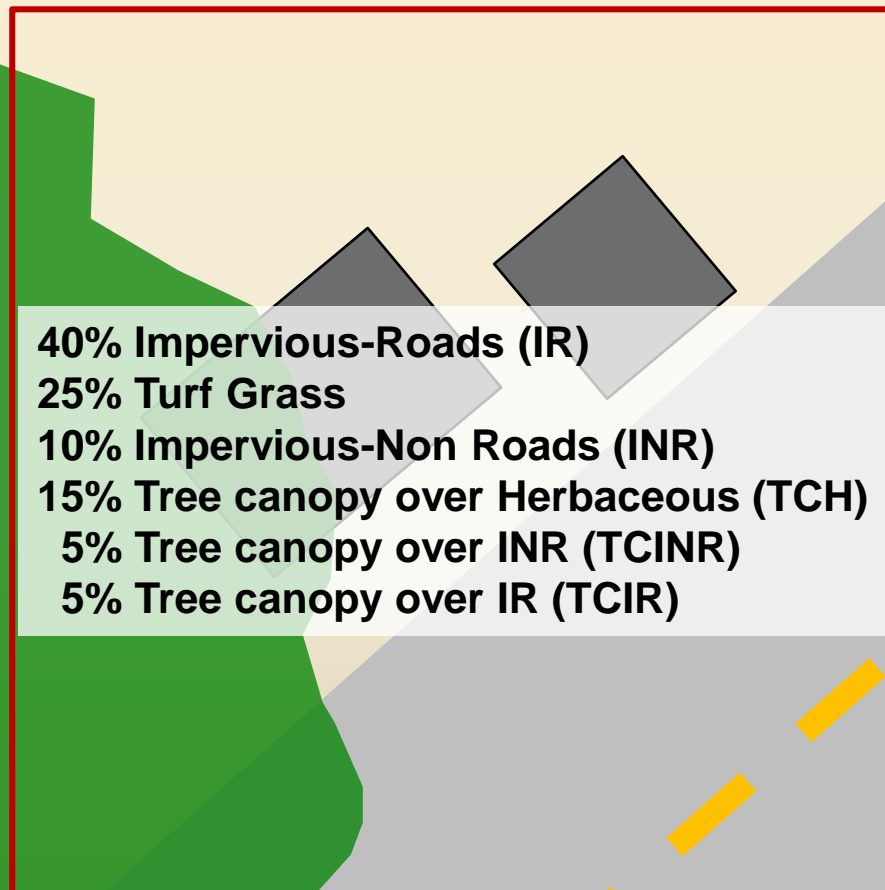
Federal Properties: Federally owned land parcels subdivided into twelve generalized agency categories.

MS4s: Municipal Separate Storm Sewer Systems, Phase I and II boundaries. understory.

CSSs: Combined Sewer Systems.

Phase 6 Land Use Database – from local & high-res data

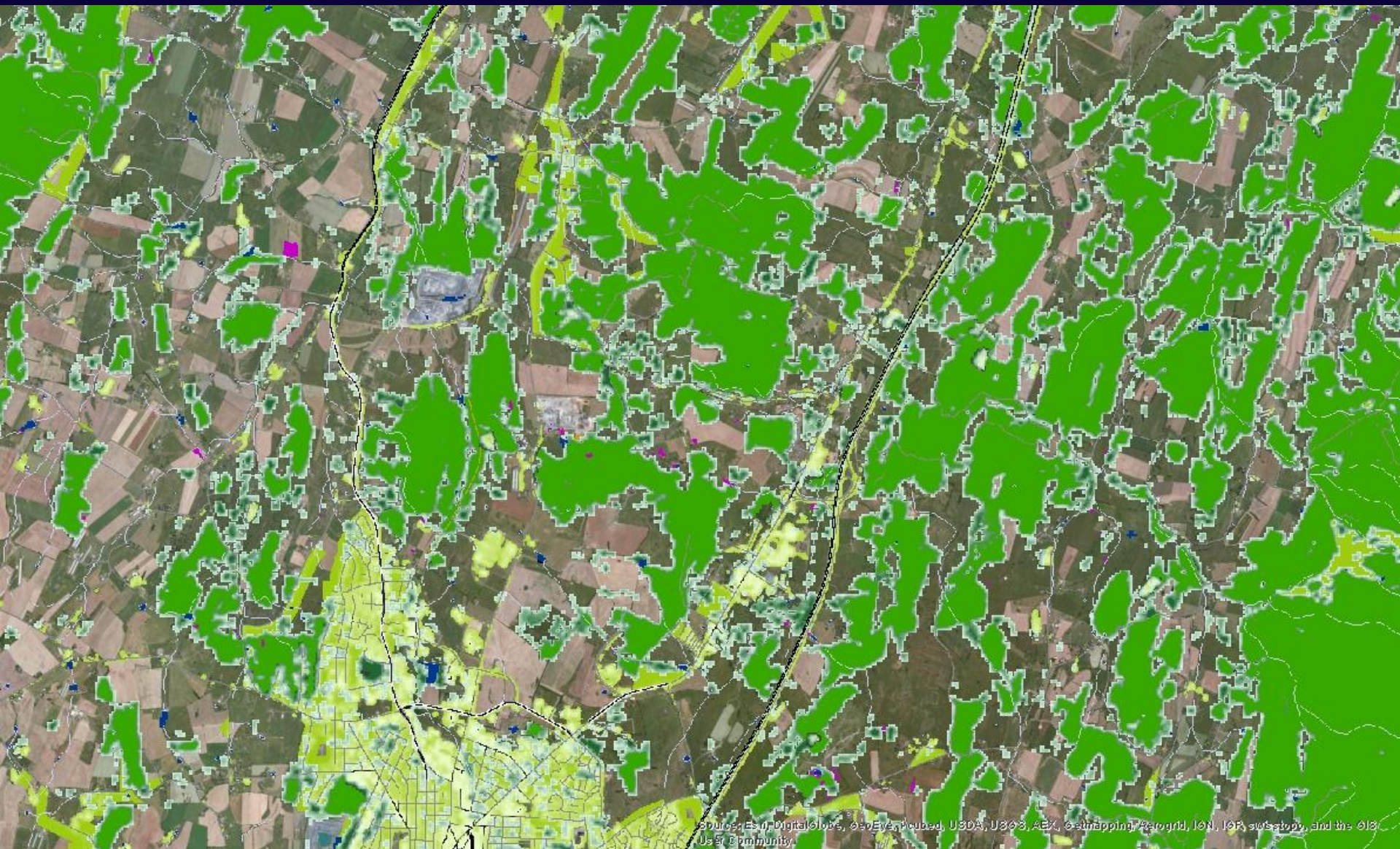
- Fourteen different 10m resolution raster datasets
- Most with fractional and continuous pixel values



Suburbs of Richmond, VA (I-64 W of Dumbarton)



Suburbs of Harrisonburg, VA (I-81 N)



P6 Land Use Development and Review Schedule

May 2015	Complete regional land use dataset using nationally available data: Phase 6 Land Use Database v1 (P6LU_v1).
Sep 2015	Deadline to incorporate local land use/cover data. Submit P6LU_v2 to CBP Modeling Team.
Aug '15 – May '16	Production, local review, and QA/QC of high-resolution land cover data.
Nov '15 – Jun '16	Production and rolling jurisdictional review of P6LU_v3
Aug 2016	Finalization of P6LU_v3 database (1985 – 2014)

CBP Partner Review of Phase 6 Land Use Data



Chesapeake Bay Phase 6 Land Use Viewer

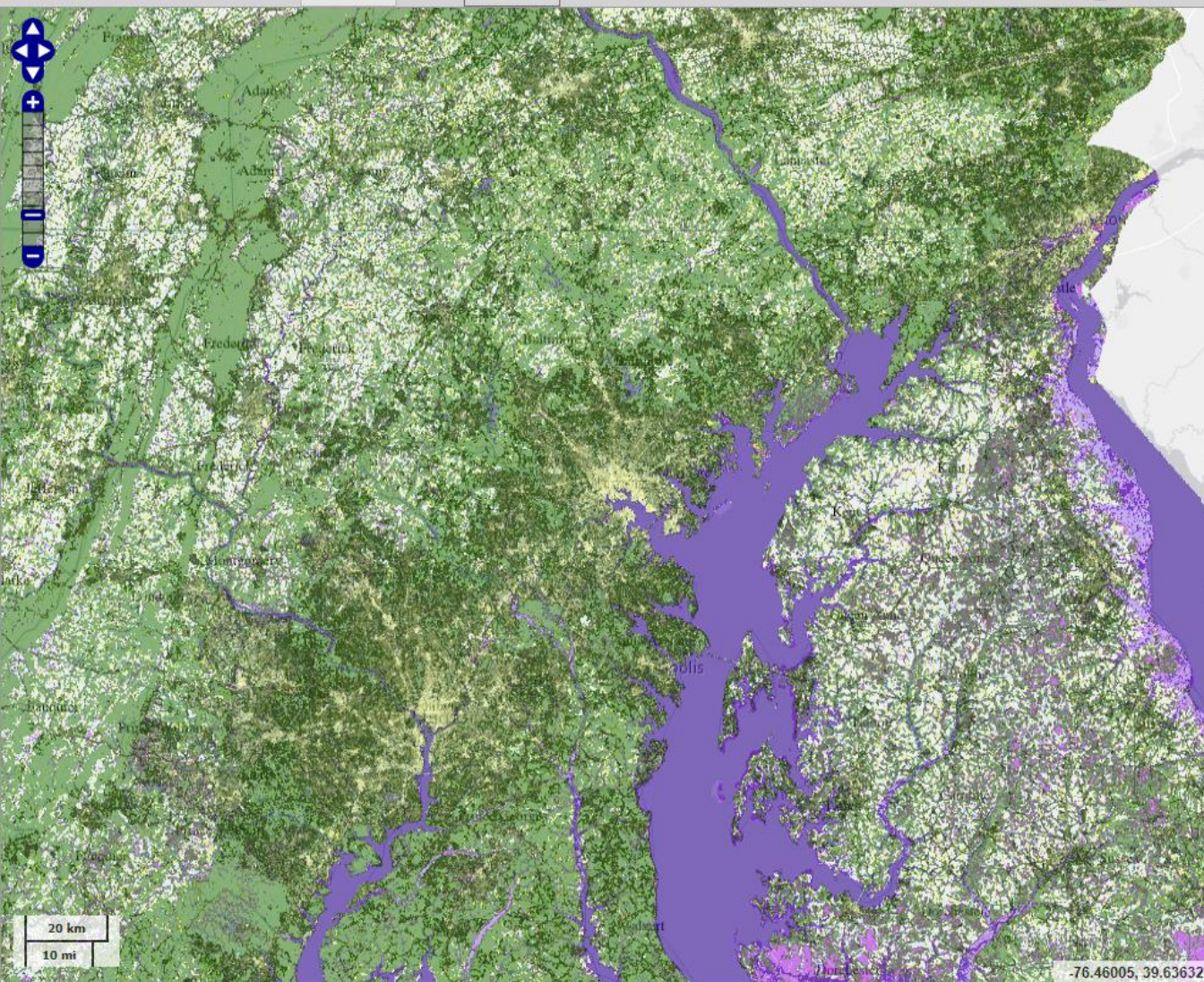


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Overlay Transparency:

Comment



Map Layers

▼ National Phase 6

Click [here](#) to see Phase 6 Local Land Use Methodology

Click [here](#) to see Regional Mapping Methodology

Click on the layer name to get information about the layer

- Developed
- Impervious Roads
- Impervious Non-Roads
- Forest
- Tree Canopy Over Herbaceous
- Water
- Wetlands
- Turf Grass
- Open Space

▶ County Phase 6

▶ Overlays

▶ Base Map

-76.46005, 39.63632

Bay Agreement Outcomes Benefiting from High-res Land Cover Data

1. Increase the proportion of “forests” along “streams” from 60% to 70% throughout the watershed.
2. Expand “urban tree canopy” by 2,400 acres by 2025.
3. Characterize the rate of “impervious surface” change at a scale relevant to County-level decisions.
4. Assess the vulnerability of “healthy watersheds” to land use and climate change.
5. Create or re-establish 85,000 acres of “wetlands”.