



# Phase 6 Land Use Database versions 1, 2, and 3

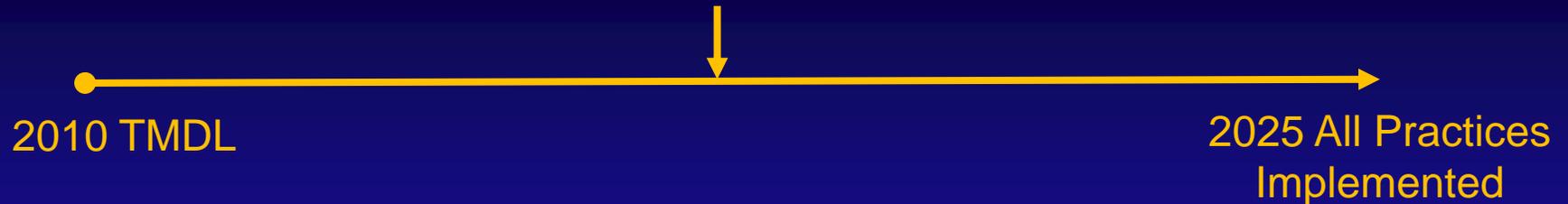
**Peter Claggett, Fred Irani, Quentin Stubbs, Renee Thompson,  
and Howard Weinberg**

**October 26, 2015**

**MDE & MDP Webinar**

U.S. Department of the Interior  
U.S. Geological Survey

# 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.

## 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  $\geq 1$  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).

**Pasture/Hay** (% PAS): all non-natural, undeveloped herbaceous lands that were classed as pasture at least once from 2008 – 2013 (in the NASS Cropland Data Layer).

**There are 18 different agricultural land uses representing distinct sources.**

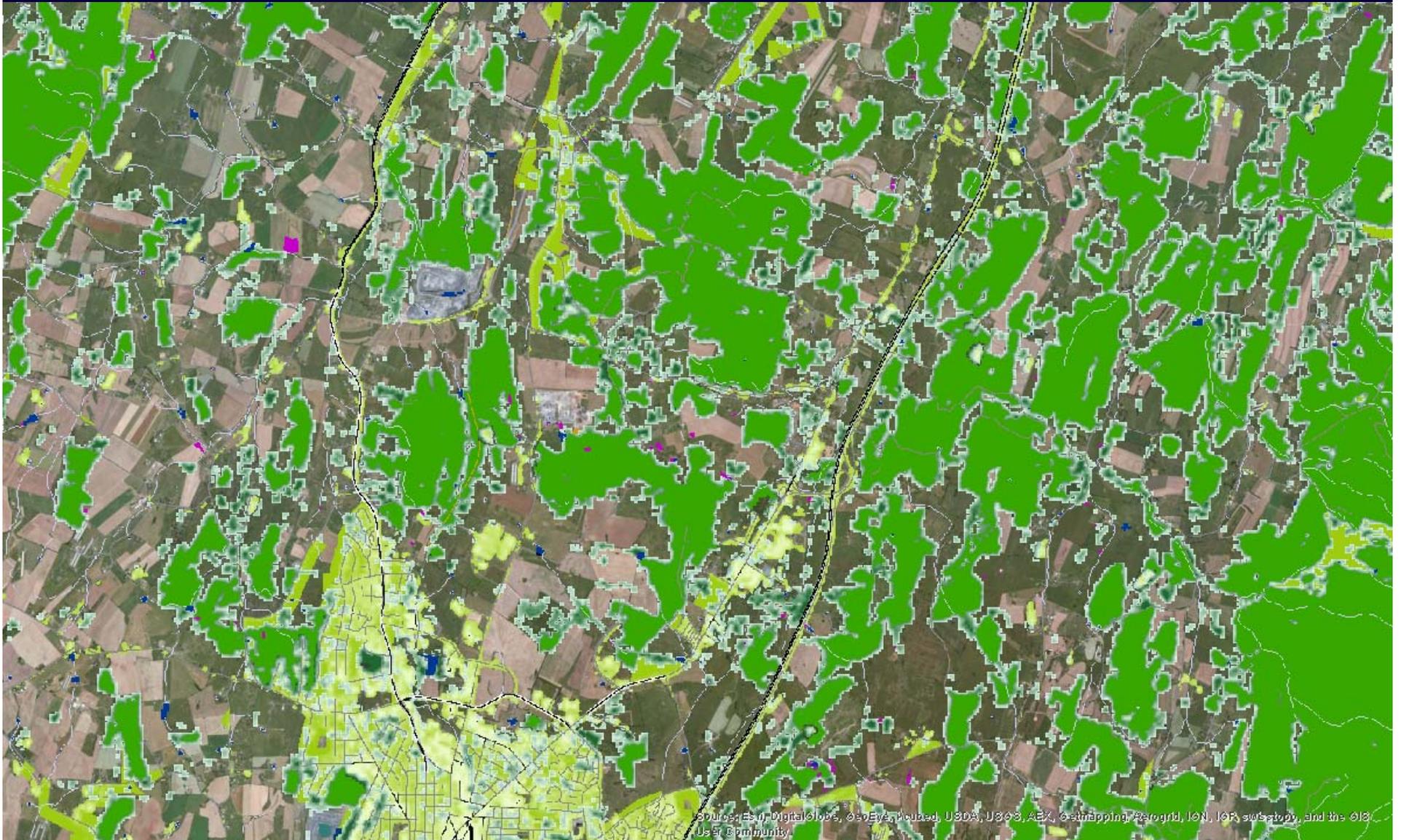
**Only 2 can be mapped.**

## P6 v1: Suburbs of Richmond, VA (I-64 W of Dumbarton)



WAT + WET + FOR + OS + IR + INR + TG + TCH

## P6\_v1: Suburbs of Harrisonburg, VA (I-81 N)



WAT + WET + FOR + OS + IR + INR + TG + TCH

# CBP Partner Review of Phase 6 Land Use Data v1



## Chesapeake Bay Phase 6 Land Use Viewer

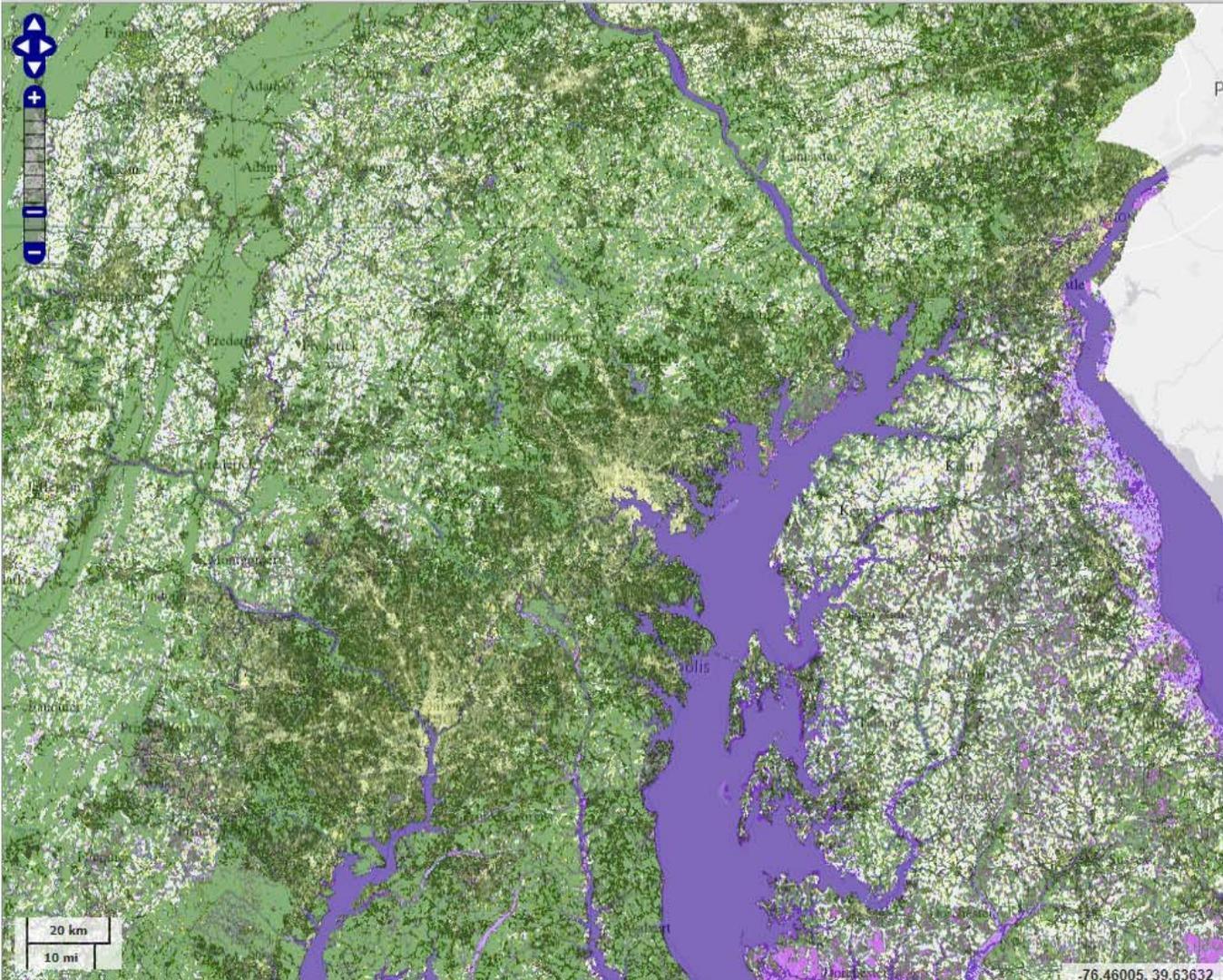


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### Map Layers

#### ▼ 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

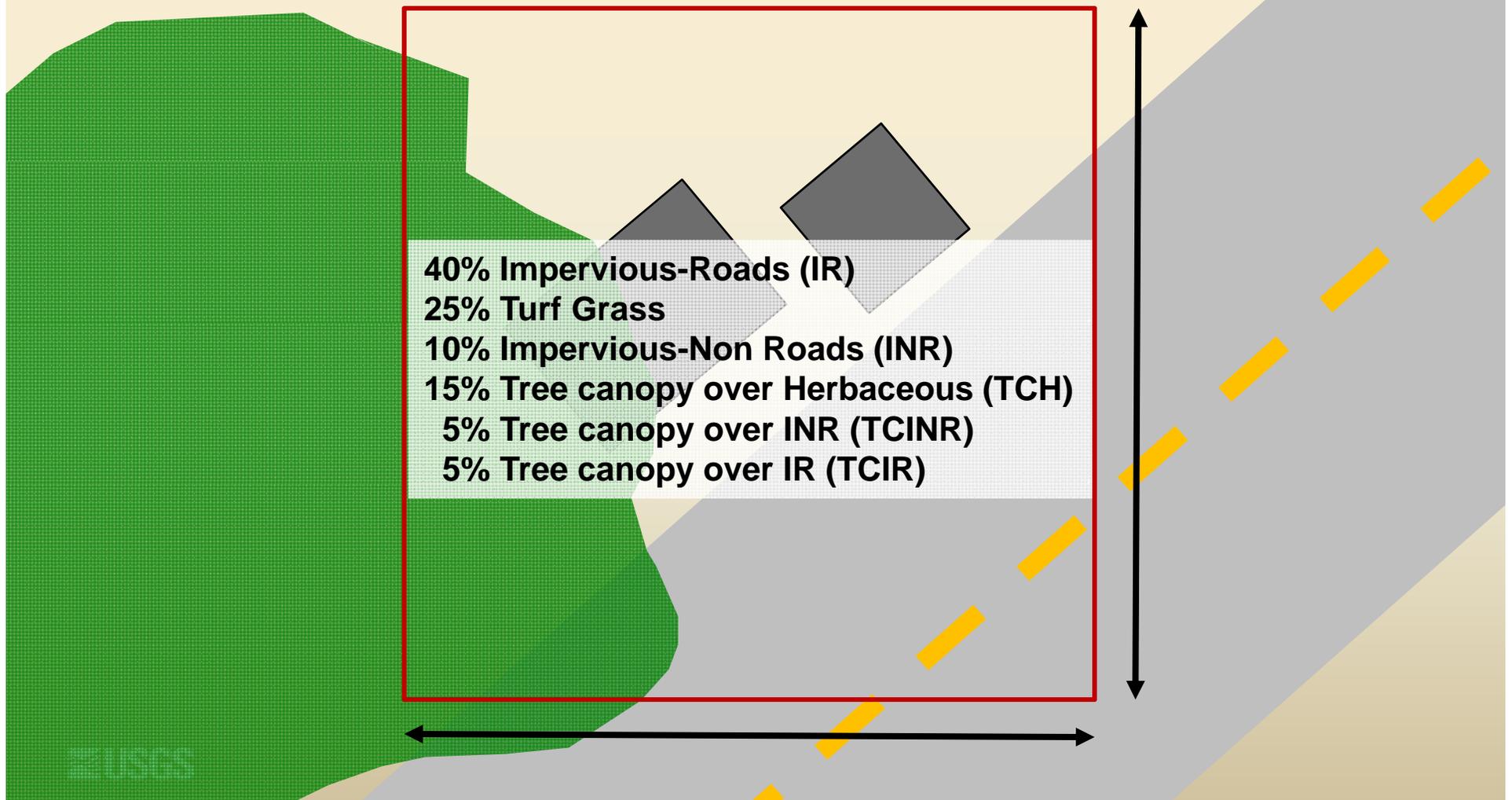
#### ▶ County Phase 6

#### ▶ Overlays

#### ▶ Base Map

## Phase 6 Land Use Database v2 – from local & high-res data

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



# P6 Land Use Version 3

By May 2016,  
high-resolution 1m land  
cover will be developed  
for all MD counties from:

2013 Leaf-on NAIP;  
2013-2014 Leaf-off  
ortho-imagery; and  
LiDAR (2005-2015)



## Quality of Most Recent LiDAR Data

Acquired/planned (2014-2015)



QL2

Chesapeake Bay Watershed



Available (2004-2014)



QL1



QL2



QL3

Leica imagery available in 2015

