Final Phase 6 Land Use Database
Project Plan

July, 06 2016

Peter Claggett, Fred Irani, Quentin Stubbs, Renee Thompson
US Geological Survey
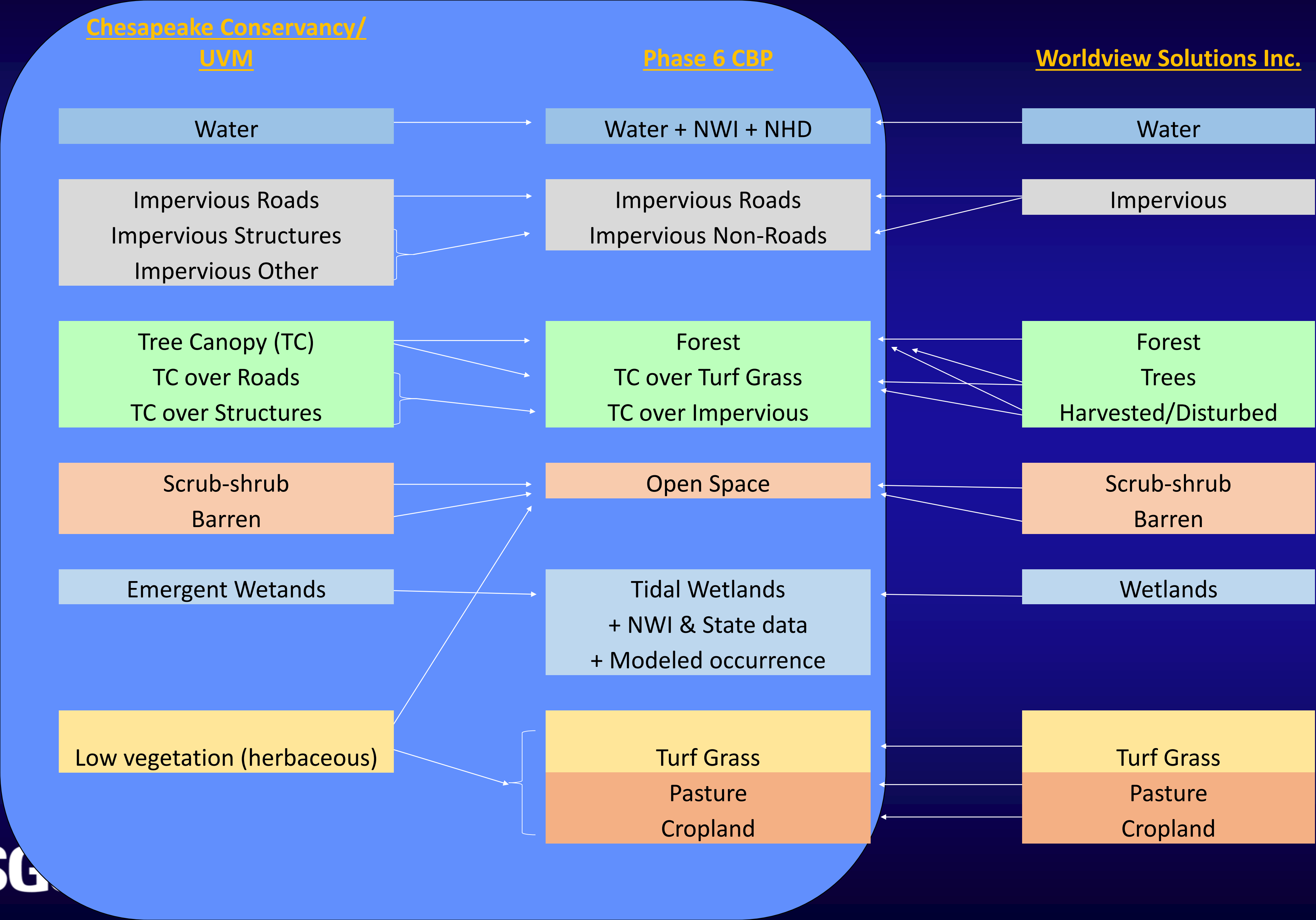**Eastern Geographic Science Center**

Overview

- **USGS Process Development Status**
- **Work Plan**
- **Schedule**

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High Resolution LU Process

- Dec '15 – July '16 Automate Steps to:
  - Perform Cross Walk to Create 13 Classes at 1 Meter Resolution:
    - Impervious Road,
    - Impervious Non-Road
    - Tree Canopy over Impervious
    - Tree Canopy over Turf Grass
    - Turf Grass
    - Forest
    - Mixed Open
    - Pasture,
    - Crop
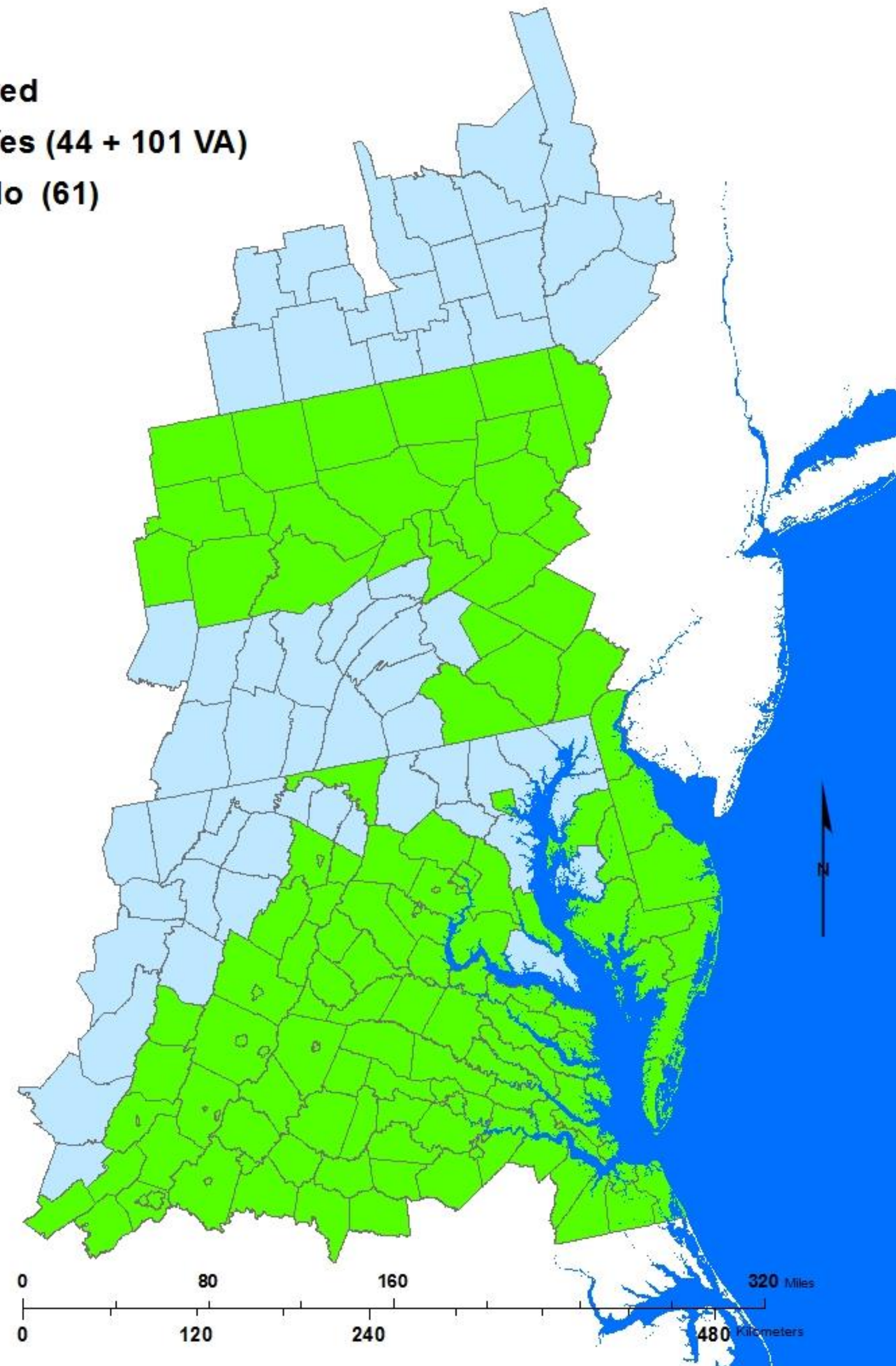   - Tidal, Floodplain, and Other Wetlands (3 Layers)
    - Water

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Data Cross walk

Chesapeake Conservancy/ UVM

Phase 6 CBP

Worldview Solutions Inc.

| Chesapeake Conservancy/ UVM	Phase 6 CBP	Worldview Solutions Inc.
Water	Water + NWI + NHD	Water
Impervious Roads Impervious Structures Impervious Other	Impervious Roads Impervious Non-Roads	Impervious
Tree Canopy (TC) TC over Roads TC over Structures	Forest TC over Turf Grass TC over Impervious	Forest Trees Harvested/Disturbed
Scrub-shrub Barren	Open Space	Scrub-shrub Barren
Emergent Wetlands	Tidal Wetlands + NWI & State data + Modeled occurrence	Wetlands
Low vegetation (herbaceous)	Turf Grass Pasture Cropland	Turf Grass Pasture Cropland

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Delivered
- Yes (44 + 101 VA)
- No (61)

P6LU Delivery Dates
- By End June 2016 (Have)
- 7/1/2016
- 7/14/2016
- 7/15/2016
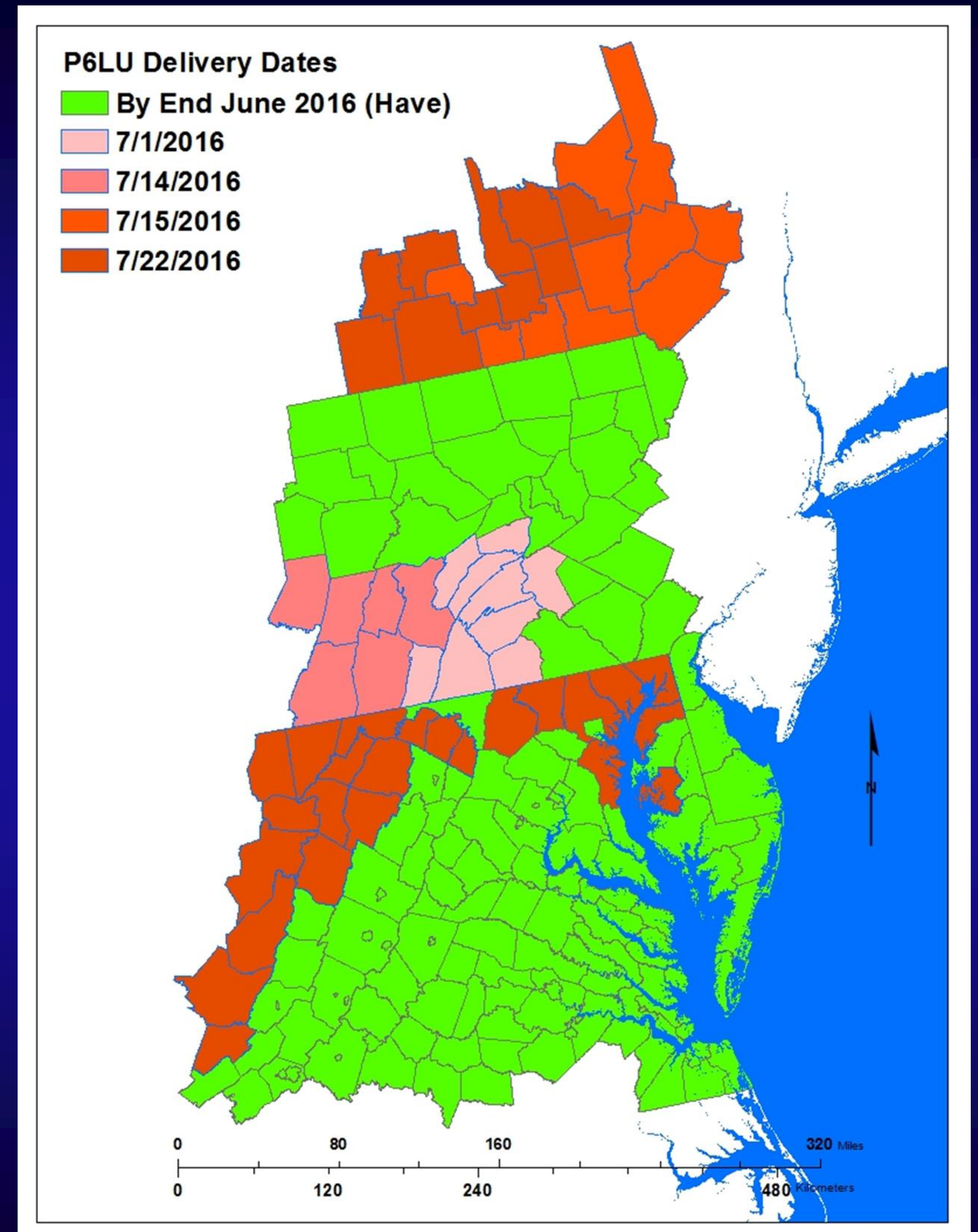- 7/22/2016
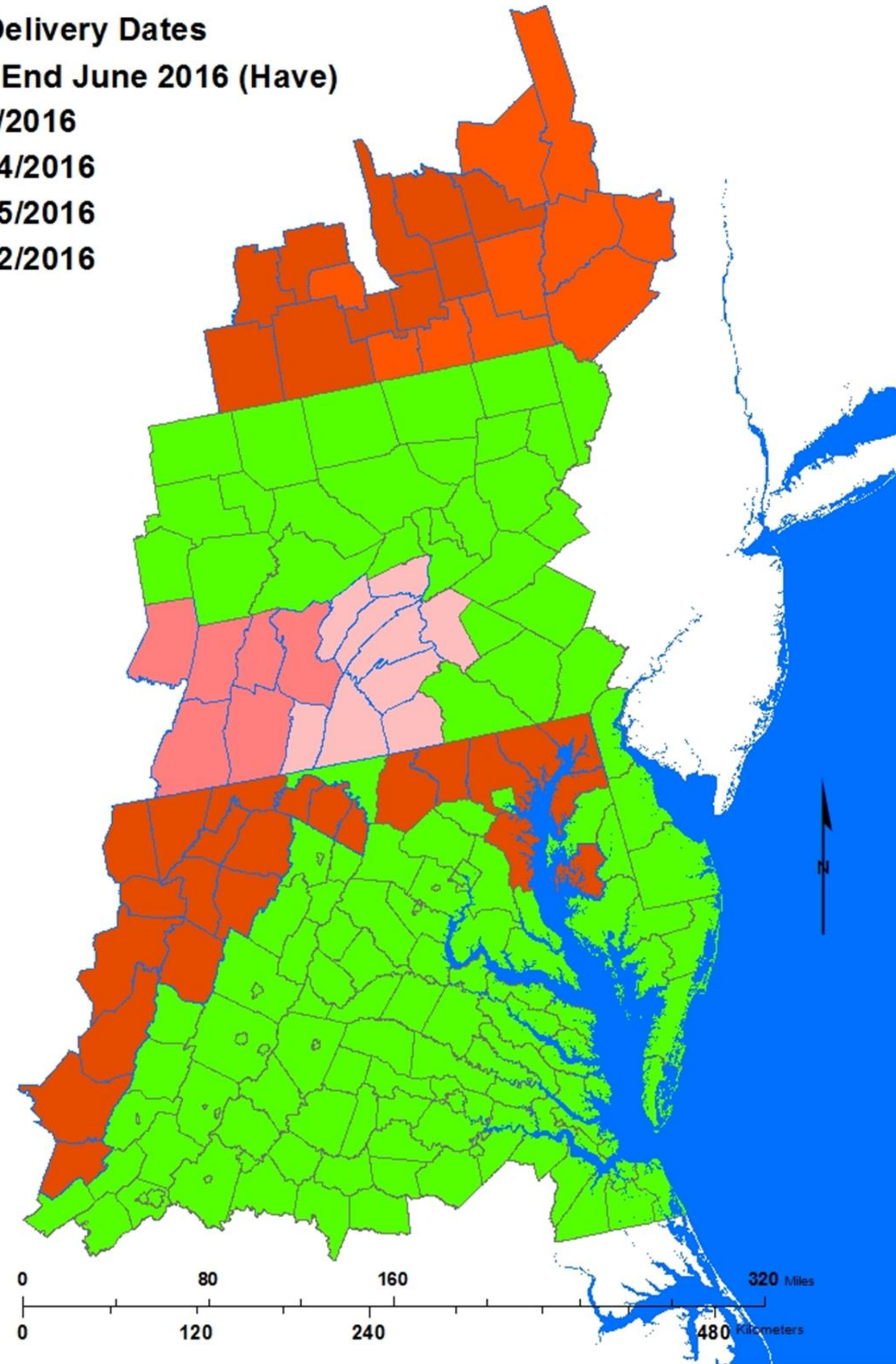
- **For Each of 206 Counties Masks**
  Rasterized from Derived Regional Vector Data:
  - Rail RoW
  - Extractive / Land Fill
  - Federal Lands
  - Nav Tec Turf
  - Nav Tec Fractional
  - Nav Tec Beach (Mixed Open)
  - Open Water (NWI)
  - Street Right of Ways
  - Crop and Pasture Masks

P6LU Delivery Dates
- By End June 2016 (Have)
- 7/1/2016
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- 7/15/2016
- 7/22/2016

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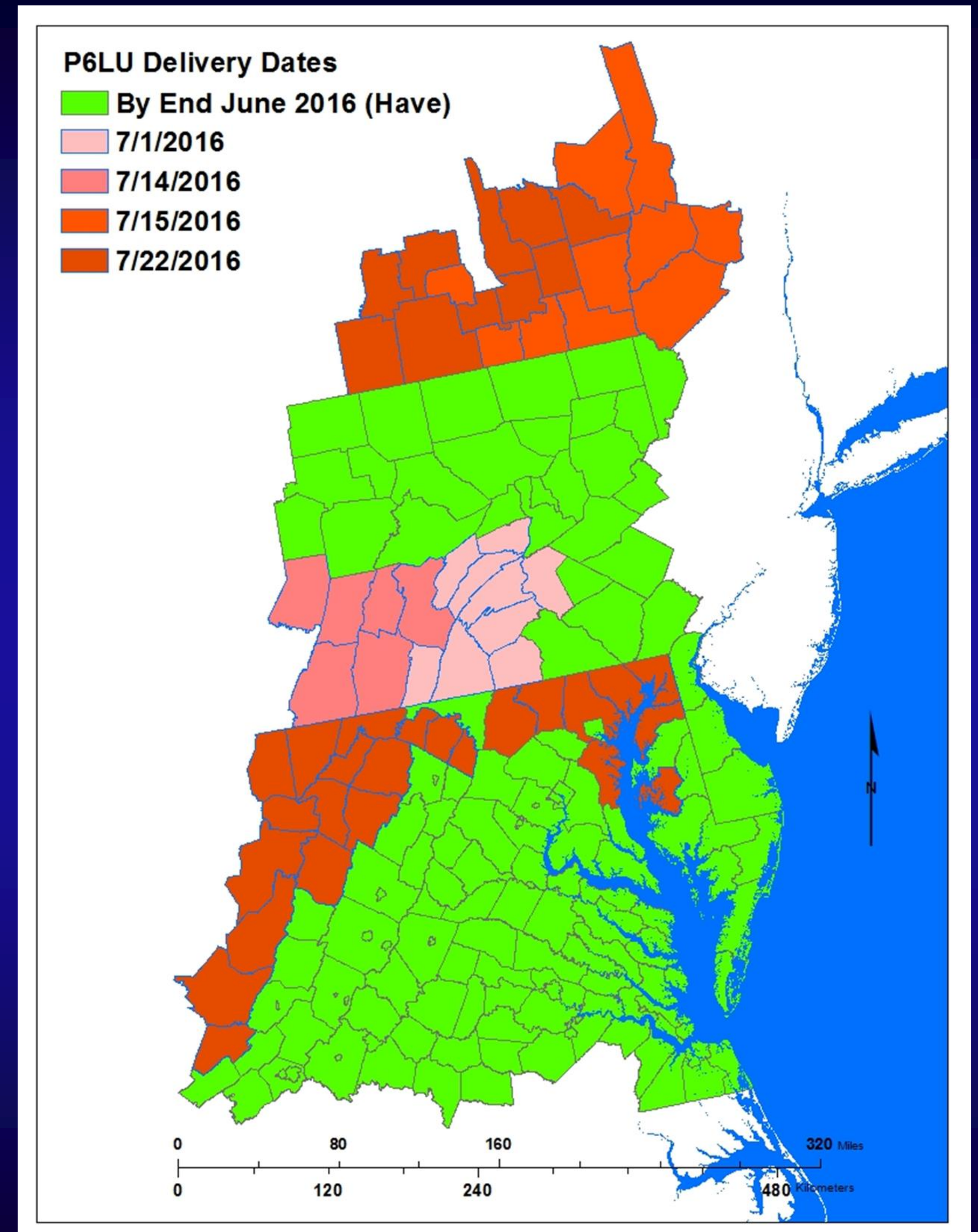
- For Each of 41 Delivered Data Counties Intermediate and Final 1 Meter Masks:
  - Non-Road Impervious Density
  - Developed Area Masks
  - Floodplain, Tidal, Other and All Wetland Masks
  - Impervious Rail (Running)
  - Water
  - Tree Canopy Over Impervious
  - Other intermediate Masks

- Reduce the Number of Models that Analysis Must Run per County, Or
- Significantly Reduce the Number of Steps to be run by each model

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Phase 6 Land Use Development Process
07/06/16

Phase 6 Land Use Development Process
07/06/16

Legend:
- Land Cover Class (1m)
- Ancillary Data Preprocessed by County
- Local data (county level)
- Intermediate Model Data
- Intermediate Data Mask Overlay (1, null)
- Semi-automated Models

Phase 6 land use interim classes (1m)

Fractional Model (Dependency Level: 1)
- Inputs: Local Land Use, NAVTEQ Land Use A & B subset, Low Vegetation, Barren, Fractional Mask
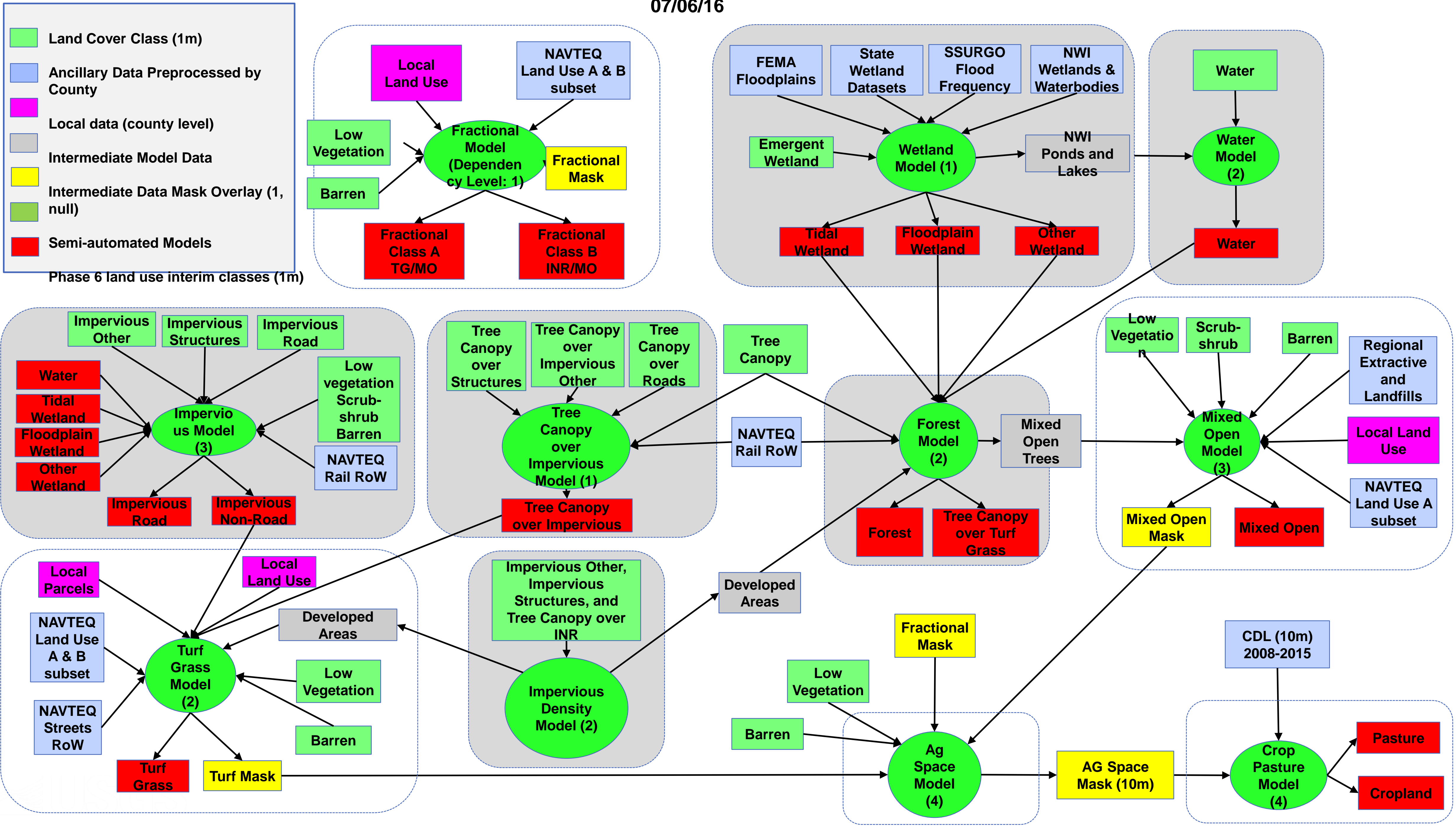- Outputs: Fractional Class A TG/MO, Fractional Class B INR/MO

Wetland Model (1)
- Inputs: FEMA Floodplains, State Wetland Datasets, SSURGO Flood Frequency, NWI Wetlands & Waterbodies, Emergent Wetland
- Outputs: NWI Ponds and Lakes, Tidal Wetland, Floodplain Wetland, Other Wetland

Water Model (2)
- Inputs: Water
- Outputs: Water

Impervious Model (3)
- Inputs: Impervious Other, Impervious Structures, Impervious Road, Low vegetation Scrub-shrub Barren, NAVTEQ Rail RoW, Water, Tidal Wetland, Floodplain Wetland, Other Wetland
- Outputs: Impervious Road, Impervious Non-Road

Tree Canopy over Impervious Model (1)
- Inputs: Tree Canopy over Structures, Tree Canopy over Impervious Other, Tree Canopy over Roads, Tree Canopy, NAVTEQ Rail RoW
- Outputs: Tree Canopy over Impervious

Forest Model (2)
- Inputs: Tree Canopy
- Outputs: Mixed Open Trees, Forest, Tree Canopy over Turf Grass

Mixed Open Model (3)
- Inputs: Low Vegetation, Scrub-shrub, Barren, Regional Extractive and Landfills, Local Land Use, NAVTEQ Land Use A subset
- Outputs: Mixed Open Mask, Mixed Open

Turf Grass Model (2)
- Inputs: Local Parcels, NAVTEQ Land Use A & B subset, NAVTEQ Streets RoW, Local Land Use, Developed Areas, Low Vegetation, Barren
- Outputs: Turf Grass, Turf Mask

Impervious Density Model (2)
- Inputs: Impervious Other, Impervious Structures, and Tree Canopy over INR
- Outputs: Developed Areas

Ag Space Model (4)
- Inputs: Fractional Mask, Low Vegetation, Barren, Turf Mask
- Outputs: AG Space Mask (10m)

Crop Pasture Model (4)
- Inputs: CDL (10m) 2008-2015, AG Space Mask (10m)
- Outputs: Pasture, Cropland

Production Schedule

Models Still to be Finalized Waiting on Local Data Masks:
- Mixed Open
- Turf Grass
- Ag Space
- Crop / Pasture
- Fractional
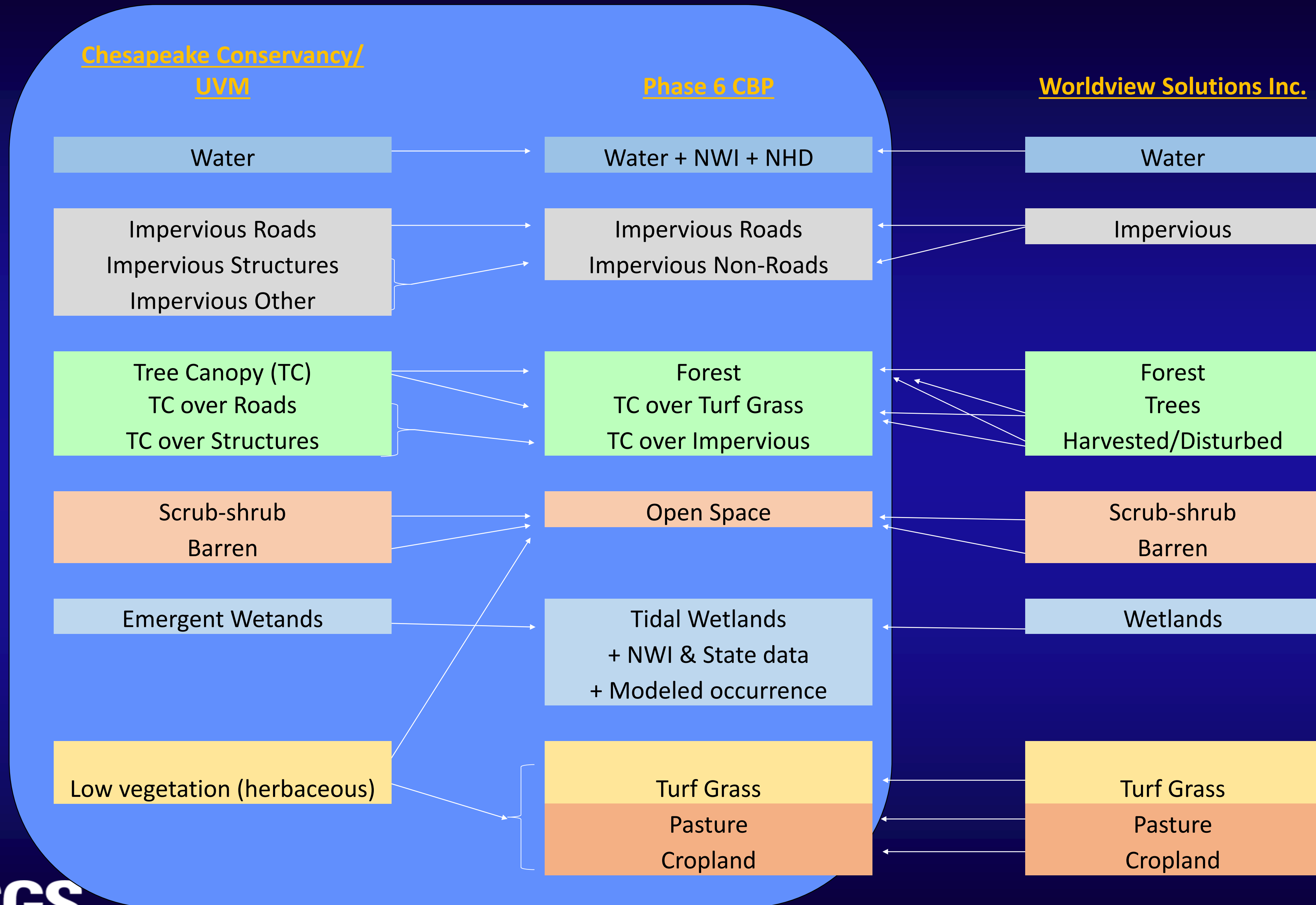- Can be completed in the next couple of days, given Data

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Production Schedule

- **Resources**
  - **2 FT + 8 PT Analysts = ~ 6 FT Analyst Hours per Week**
    - **Or ~ 12 Analyst Hours per County**
  - **Potential for More Analysts from Chesapeake Conservancy**
  - **Assume 3 COs per Week per FT Analyst = 18 COs Per Week**
    - **Prototype Delaware Cos to be completed this week to provide timing benchmark.**

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Production Schedule

- **206 Counties / 10 Weeks (July – Sept) = 20 COs per Week**
  - **Rolling Delivery – Review – Final Delivery Schedule**
- **COs to be Processed by State in the Following Order:**
  1. **Delaware**
  2. **DC**
  3. **Maryland**
  4. **Pennsylvania**
  5. **West Virginia**
  6. **New York**
  7. **Virginia**

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VA Data Cross walk

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Production Schedule

- **Full Blown Processing will Start on July 18**
- **Virginia Procedure will be Developed While Other States are Processed**

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"Final" Final Deadline

- October 2016 To Finish <u>Everything</u>
  - 10 Meter Aggregation
  - Responses to County Reviews
  - VA Tree Canopy Integration
  - PA Wetland Integration
  - Percentage per Multi-Cell Check
  - Accessible to Public

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