



Chesapeake Bay Program
A Watershed Partnership



Land Use 6.0



Chair:

Karl Berger, Metropolitan Washington Council of Governments

Coordinator:

Peter Claggett, U.S. Geological Survey



**Water Quality Goal Implementation Team Meeting
December 14-15, 2015
Shepherdstown, WV**

Purpose of Today's Discussion

- **Review data source assumptions and land use coverage across watershed**
- **WQGIT agreement on 2016 review timeline and process for finalizing Phase 6 dataset**

High-resolution Land Cover Data

Three Sources:

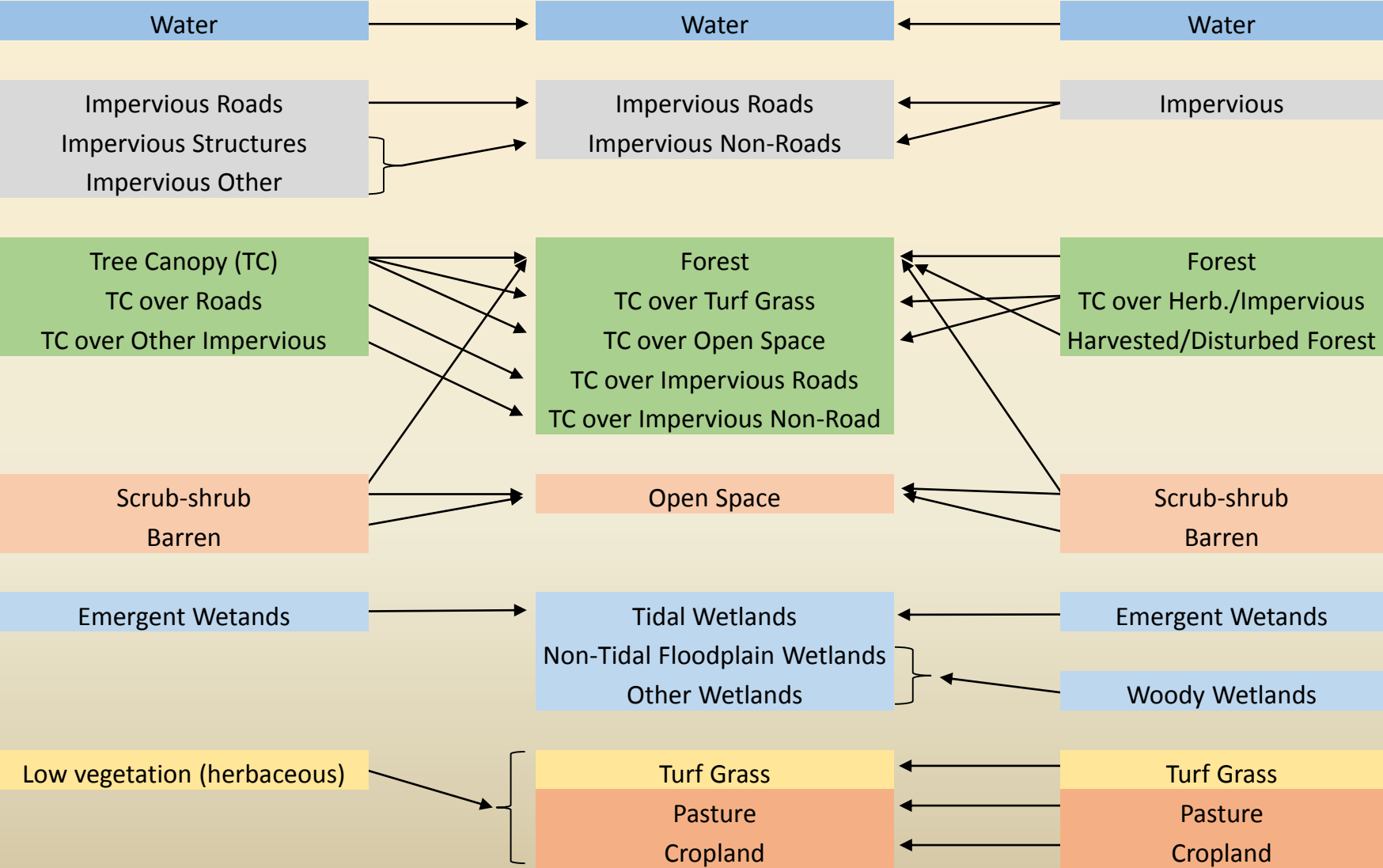
- **Chesapeake Conservancy (CC)**
 - Maryland, District of Columbia, New York, and West Virginia (59 Counties)
- **University of Vermont (UVM) Subcontractor**
 - Pennsylvania and Delaware Counties (46 counties)
- **Worldview Solutions Incorporated**
 - All Virginia Counties (102 counties/cities)

Land Cover to Phase 6 Land Use

Chesapeake Conservancy/ UVM

Phase 6 CBP

Worldview Solutions Inc.



Ancillary Data

State/Local

- Impervious planimetrics
- Land use
- Parcels
- Wetlands
- Sewer service areas
- Regulated areas (MS4, CSO)

National

- Water features
- National Wetlands Inventory
- Roads
- Cropland Data Layer (2008 – 2014)

Fitting the Ag Census into Mapped P6 Land Uses

Current Approach: reduce other land use acreages sequentially

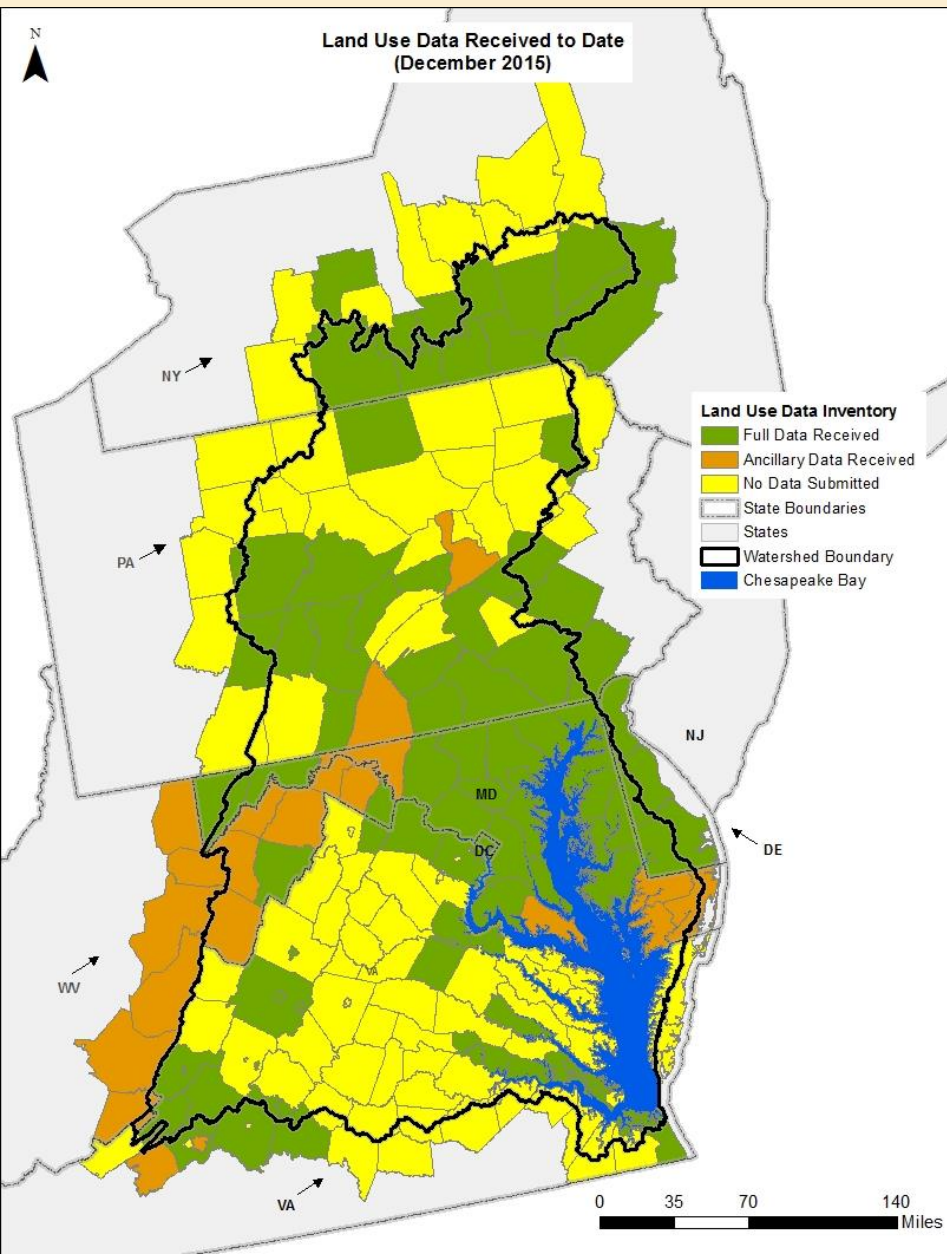
1. open space
2. non-regulated tree canopy scrub shrub
3. forest(not harvested)
4. non-regulated impervious + turf
5. ms4 impervious + turf
6. agriculture

Problem: results in substantial reductions or elimination of the above listed land uses in some areas.

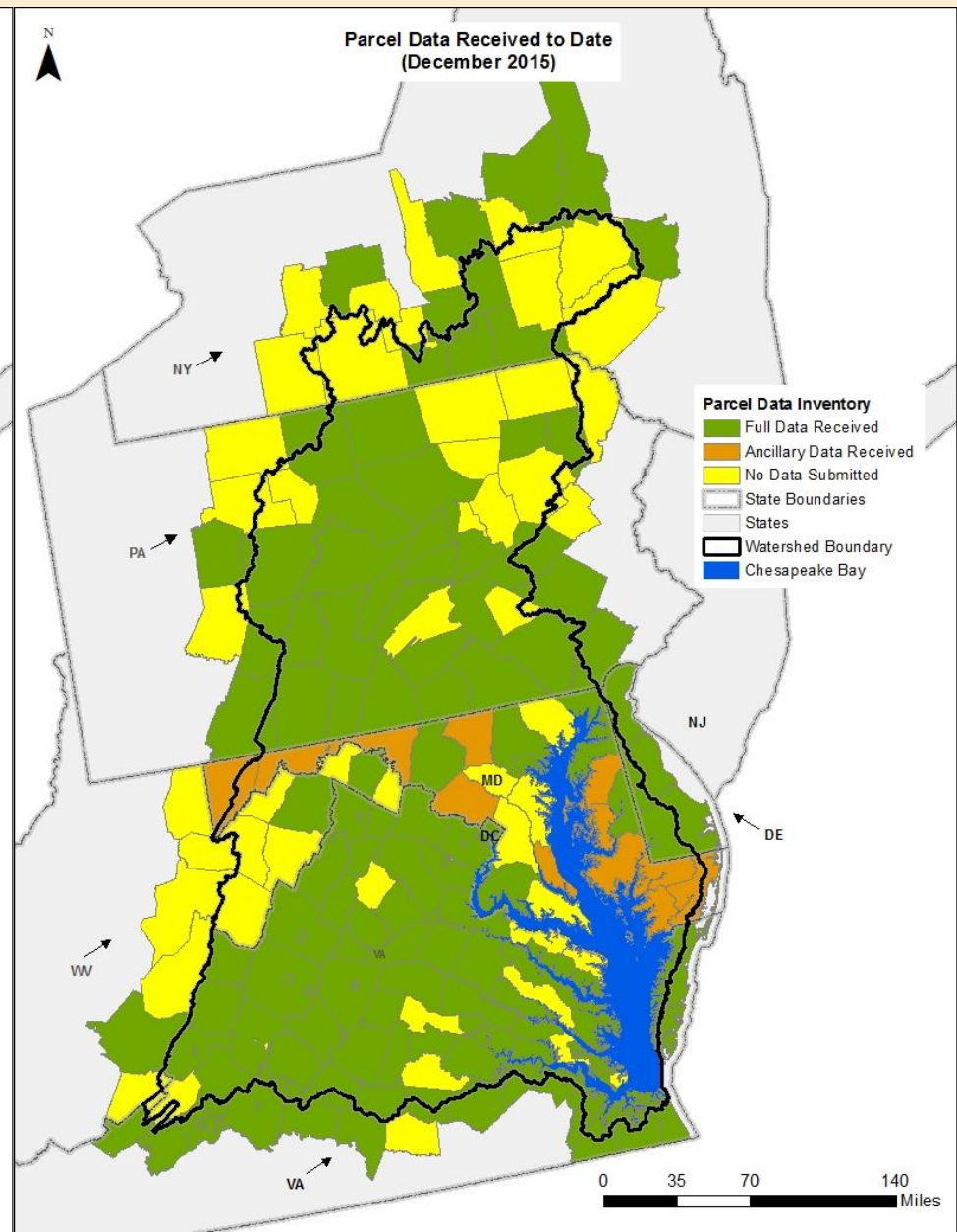
Solution: Reduce all land uses simultaneously in proportion to their error and for non-ag classes, no more than their margin of error.

For some counties, this will require adjustments to the Census of Agriculture and/or CBP's interpretations of double cropping and non-reported values.

Land Use Data Submitted



Parcel Data Submitted



P6 Land Use Production Schedule (Sep 2015 – Sep 2016)

	2015				2016								
Task	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Automate P6 classification procedures													
Land cover data production													
Local review of land cover data													
Finalization of land cover													
Production of P6 land use													
Local review of P6 land use													

Deadline for completion of high-res land cover products: May 31, 2016

Deadline for completion of additional tree canopy and wetland data: July 31, 2016

Land Cover Data Delivery to CBPO

Delivery	DEC	JAN	FEB	MAR	APR	MAY	%/State
DC	0%	<div><div>100%</div></div> 100%	0%	0%	0%	0%	100%
DE	<div><div>100%</div></div> 100%	0%	0%	0%	0%	0%	100%
MD	0%	<div><div>50%</div></div> 50%	<div><div>50%</div></div> 50%	0%	0%	0%	100%
NY	0%	0%	0%	<div><div>45%</div></div> 45%	<div><div>55%</div></div> 55%	0%	100%
PA	0%	<div><div>21%</div></div> 21%	<div><div>16%</div></div> 16%	<div><div>14%</div></div> 14%	<div><div>42%</div></div> 42%	<div><div>7%</div></div> 7%	100%
VA	0%	<div><div>37%</div></div> 37%	0%	<div><div>32%</div></div> 32%	0%	<div><div>30%</div></div> 30%	100%
WV	0%	0%	0%	0%	0%	100%	100%
%/Month	<div><div>20%</div></div> 20%	<div><div>11%</div></div> 11%	<div><div>25%</div></div> 25%	<div><div>7%</div></div> 7%	<div><div>29%</div></div> 29%	<div><div>8%</div></div> 8%	100%

P6LU Draft –Review – P6LU Final

Begin Draft	Feb-16	Mar-16	Apr-16	May-16	%/State
DC	<div><div>100%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
DE	<div><div>100%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
MD	<div><div>46%</div></div>	<div><div>4%</div></div>	<div><div>50%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
NY	<div><div>0%</div></div>	<div><div>25%</div></div>	<div><div>0%</div></div>	<div><div>75%</div></div>	<div><div>100%</div></div>
PA	<div><div>9%</div></div>	<div><div>33%</div></div>	<div><div>14%</div></div>	<div><div>44%</div></div>	<div><div>100%</div></div>
VA	<div><div>32%</div></div>	<div><div>31%</div></div>	<div><div>33%</div></div>	<div><div>3%</div></div>	<div><div>100%</div></div>
WV	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>7%</div></div>	<div><div>93%</div></div>	<div><div>100%</div></div>
%/Month	<div><div>25%</div></div>	<div><div>25%</div></div>	<div><div>26%</div></div>	<div><div>24%</div></div>	<div><div>100%</div></div>

Start Local	Feb-16	Mar-16	Apr-16	May-16	%/State
DC	<div><div>100%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
DE	<div><div>100%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
MD	<div><div>46%</div></div>	<div><div>4%</div></div>	<div><div>42%</div></div>	<div><div>8%</div></div>	<div><div>100%</div></div>
NY	<div><div>0%</div></div>	<div><div>20%</div></div>	<div><div>5%</div></div>	<div><div>65%</div></div>	<div><div>100%</div></div>
PA	<div><div>2%</div></div>	<div><div>28%</div></div>	<div><div>21%</div></div>	<div><div>37%</div></div>	<div><div>100%</div></div>
VA	<div><div>24%</div></div>	<div><div>34%</div></div>	<div><div>31%</div></div>	<div><div>11%</div></div>	<div><div>100%</div></div>
WV	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>79%</div></div>	<div><div>100%</div></div>
%/Month	<div><div>19%</div></div>	<div><div>25%</div></div>	<div><div>25%</div></div>	<div><div>26%</div></div>	<div><div>100%</div></div>

Start Final	Mar-16	Apr-15	May-15	Jun-16	Jul-16	%/State
DC	<div><div>100%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
DE	<div><div>100%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
MD	<div><div>46%</div></div>	<div><div>4%</div></div>	<div><div>46%</div></div>	<div><div>4%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
NY	<div><div>0%</div></div>	<div><div>25%</div></div>	<div><div>0%</div></div>	<div><div>70%</div></div>	<div><div>5%</div></div>	<div><div>100%</div></div>
PA	<div><div>5%</div></div>	<div><div>28%</div></div>	<div><div>19%</div></div>	<div><div>42%</div></div>	<div><div>7%</div></div>	<div><div>100%</div></div>
VA	<div><div>26%</div></div>	<div><div>33%</div></div>	<div><div>32%</div></div>	<div><div>8%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
WV	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>86%</div></div>	<div><div>14%</div></div>	<div><div>100%</div></div>
%/Month	<div><div>21%</div></div>	<div><div>25%</div></div>	<div><div>25%</div></div>	<div><div>26%</div></div>	<div><div>3%</div></div>	<div><div>100%</div></div>

End Final	Mar-15	Apr-15	May-15	Jun-15	Jul-15	%/State
DC	<div><div>100%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
DE	<div><div>100%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
MD	<div><div>42%</div></div>	<div><div>8%</div></div>	<div><div>33%</div></div>	<div><div>17%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
NY	<div><div>0%</div></div>	<div><div>10%</div></div>	<div><div>15%</div></div>	<div><div>55%</div></div>	<div><div>20%</div></div>	<div><div>100%</div></div>
PA	<div><div>0%</div></div>	<div><div>26%</div></div>	<div><div>26%</div></div>	<div><div>28%</div></div>	<div><div>21%</div></div>	<div><div>100%</div></div>
VA	<div><div>18%</div></div>	<div><div>36%</div></div>	<div><div>29%</div></div>	<div><div>17%</div></div>	<div><div>0%</div></div>	<div><div>100%</div></div>
WV	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>0%</div></div>	<div><div>64%</div></div>	<div><div>36%</div></div>	<div><div>100%</div></div>
%/Month	<div><div>15%</div></div>	<div><div>25%</div></div>	<div><div>25%</div></div>	<div><div>26%</div></div>	<div><div>9%</div></div>	<div><div>100%</div></div>

Completion Schedule

Completion	Mar-16	Apr-16	May-16	Jun-16	Jul-16	%/State
DC	<div><div>100%</div></div>	0%	0%	0%	0%	100%
DE	<div><div>100%</div></div>	0%	0%	0%	0%	100%
MD	<div><div>42%</div></div>	<div><div>8%</div></div>	<div><div>33%</div></div>	<div><div>17%</div></div>	0%	100%
NY	0%	<div><div>10%</div></div>	<div><div>15%</div></div>	<div><div>55%</div></div>	<div><div>20%</div></div>	100%
PA	0%	<div><div>26%</div></div>	<div><div>26%</div></div>	<div><div>28%</div></div>	<div><div>21%</div></div>	100%
VA	<div><div>18%</div></div>	<div><div>36%</div></div>	<div><div>29%</div></div>	<div><div>17%</div></div>	0%	100%
WV	0%	0%	0%	<div><div>64%</div></div>	<div><div>36%</div></div>	100%
%/Month	<div><div>15%</div></div>	<div><div>25%</div></div>	<div><div>25%</div></div>	<div><div>26%</div></div>	<div><div>9%</div></div>	100%

Local Review

1. Localities will be given 2-3 weeks to review the land cover data and 4 weeks to review the P6 Land Use for their county between February – July 2016.
2. Localities will be notified directly- via email- with the exact date of the land cover and P6 land use postings on the web.
3. USGS has built a website to host the P6 land use data and facilitate its review and dissemination.
4. CBPO will conduct a usability study of the website and recommend adjustments prior to its release in February.
5. CBPO will host a recorded webinar in January to provide a detailed overview of the review process.
6. VA localities will focus their review on MS4, CSO, and sewer service boundaries.

P6 Land Use Webinar

What: Live and recorded overview of high-res land cover and Phase 6 land use development processes, uses, and local review expectations, methods, and time frames

When: mid-late January

Who: Peter Claggett (with possible contributions from the Chesapeake Conservancy and Worldview Solutions)

Chesapeake Bay Phase 6 Land Use Viewer



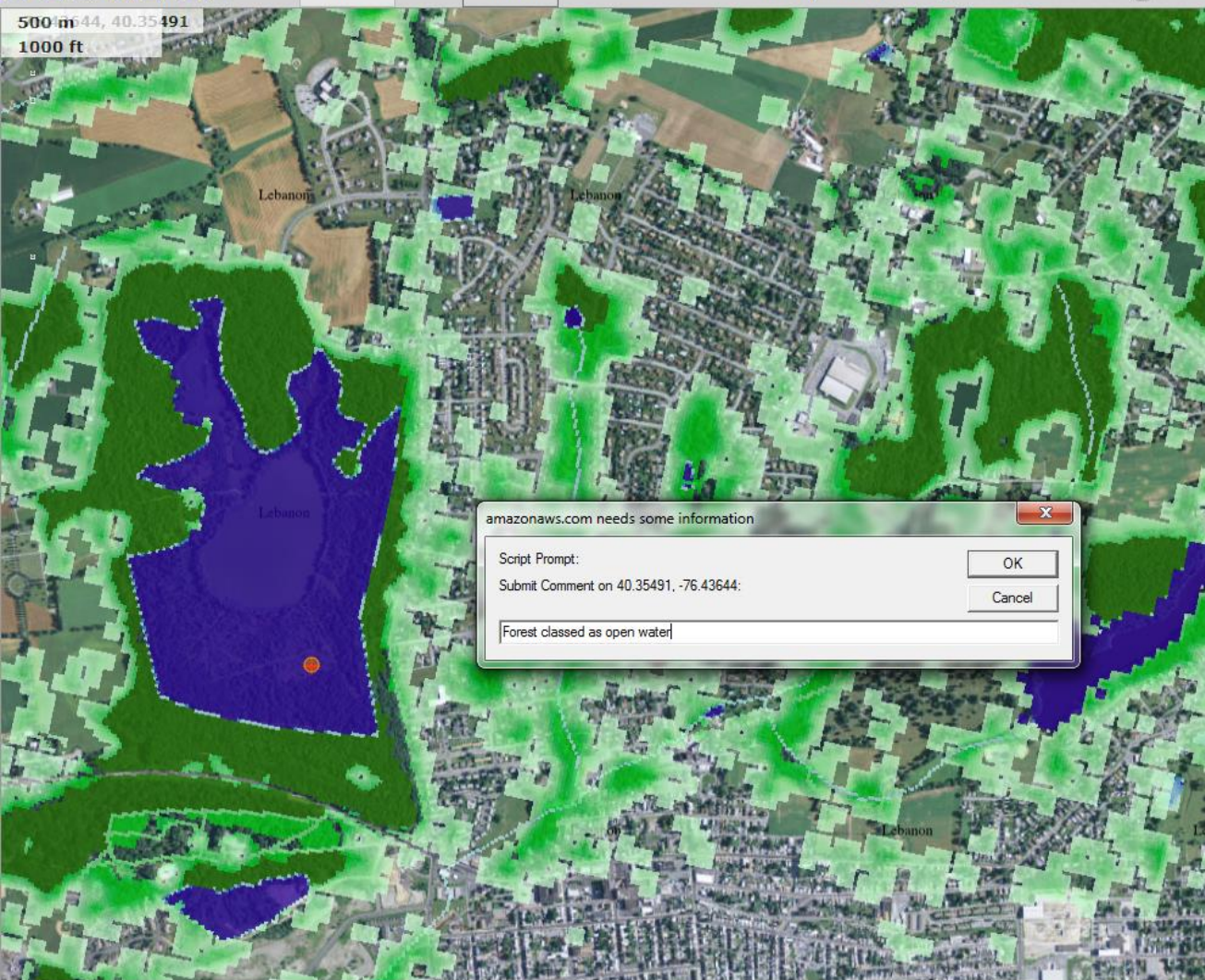
Download

Permalink

Overlay Transparency:

Comment

500 m 644, 40.35491
1000 ft



amazonaws.com needs some information

Script Prompt:

Submit Comment on 40.35491, -76.43644:

Forest classed as open water

OK Cancel

Map Layers

▼ Phase 6 Land Use Datasets

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

▼ Overlays

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

- ☐ Federal Facilities
- ☐ Phase 6 Land-River Segments
- ☐ Municipal Separate Storm Server Systems
- ☐ CSOs
- ☐ Sewer Service Areas
- ☒ Chesapeake Bay Watershed Counties

▼ Base Map

- ☐ None
- ☐ The National Map
- ☐ The National Map Imagery
- ☐ USA Topo Maps
- ☐ ESRI Topo
- ☒ ESRI Imagery
- ☐ ESRI Street Map
- ☐ ESRI Light Gray Base Map

Focus of 1m Land Cover Review*

Locations of Land Cover

- Impervious surfaces, e.g., roads, buildings, parking lots.
- Trees
- Scrub-shrub
- Herbaceous lands
- Barren
- Water
- Wetlands

IMPORTANT: Contractors will correct errors through changes in decision rules, training data, and/or manual editing. The focus of the review should be on identifying large area or systematic errors that are pervasive through the dataset.

* Virginia DEQ is engaged with localities through outreach and data dissemination. Review of the VA land cover data is being handled by VGIN, DEQ, and an independent contractor.

Focus of 10m Phase 6 Land Use Review

1. Locations of...
 - Developed areas
 - Turf Grass
 - Cropland
 - Pasture
 - Open Space
 - Sewer service areas
 - MS4's
 - CSO's
2. CBPO selection and interpretations of local data used to inform above classes.

IMPORTANT: The CBPO does not have the resources to manually edit the 10m land use data nor should such edits be needed at this stage of the process. Edits will be made through reinterpreting local datasets and/or by incorporating new local data into the CBPO classification process.

If problems, what can reviewers do?

1. Send us better data representing:
 - Land use
 - Parcels
 - MS4s
 - CSOs
 - Sewer service areas
 - Impervious surface planimetric data- if produced after review of land cover products.
2. Help us interpret local data, e.g.,
 - Land use classification
 - Parcel classification
 - Sewer service area classification



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