Future Urbanization in the Chesapeake Bay Watershed

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Water Quality Goal Implementation Team
July 10, 2017

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

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Next Steps (from May 8th WQGIT call)

- ✓ Regionalize regression variables
- ✓ Add new regression variables
  - ✓ Distance to all roads
  - ✓ Travel distance to regional employment centers
  - ✓ Travel distance to lacustrine, estuarine, and ocean waterbodies
- ✓ Continue collecting of zoning, permit, and/or comp plan data.
- ✓ Organize joint LGAC/LUWG workshop to ensure future scenarios are plausible and useful for informing local government decisions.
- TBD: Review of historic trends by Land Use Workgroup members.
- TBD: Aggregate and reallocate demand by commuter shed; compare with county-level controls
- TBD: Post raster outputs and NHD+ aggregates on Phase 6 Land Use Viewer website to solicit rapid feedback from LUWG on model runs.

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Alternative Futures Production Schedule

Schedule	Deliverable / Decision
End of April 2017	"Historical Trends" Scenario results available. LUWG works to develop Alternative Future Scenarios.
May 31 2017	Deadline for receipt of zoning, planning, and/or permit data to be incorporated into the "Current Policy" Scenario. Refinement of "Historical Trends" scenario.
June 7, 2017 LGAC/LUWG Forum	Joint LUWG-LGAC forum on future scenarios. Finalization of Alternative Future Scenarios. WQGIT invited!
July (TBD) LUWG Call	Results of "Historical Trends", "Current Policy", and alternative future scenarios presented to LUWG.
~~**July 2017**~~	~~LUWG and WQGIT review scenarios.~~ Issues identified during the review are resolved.
August 2017	Draft future scenario results available.
September 6, 2017	LUWG approves draft final future scenarios.
September 11, 2017	WQGIT approves draft final future scenarios.
Early October 2017	Management Board approves draft final future scenarios.
Late October 2017	Principal's Staff Committee approves draft final future scenarios.

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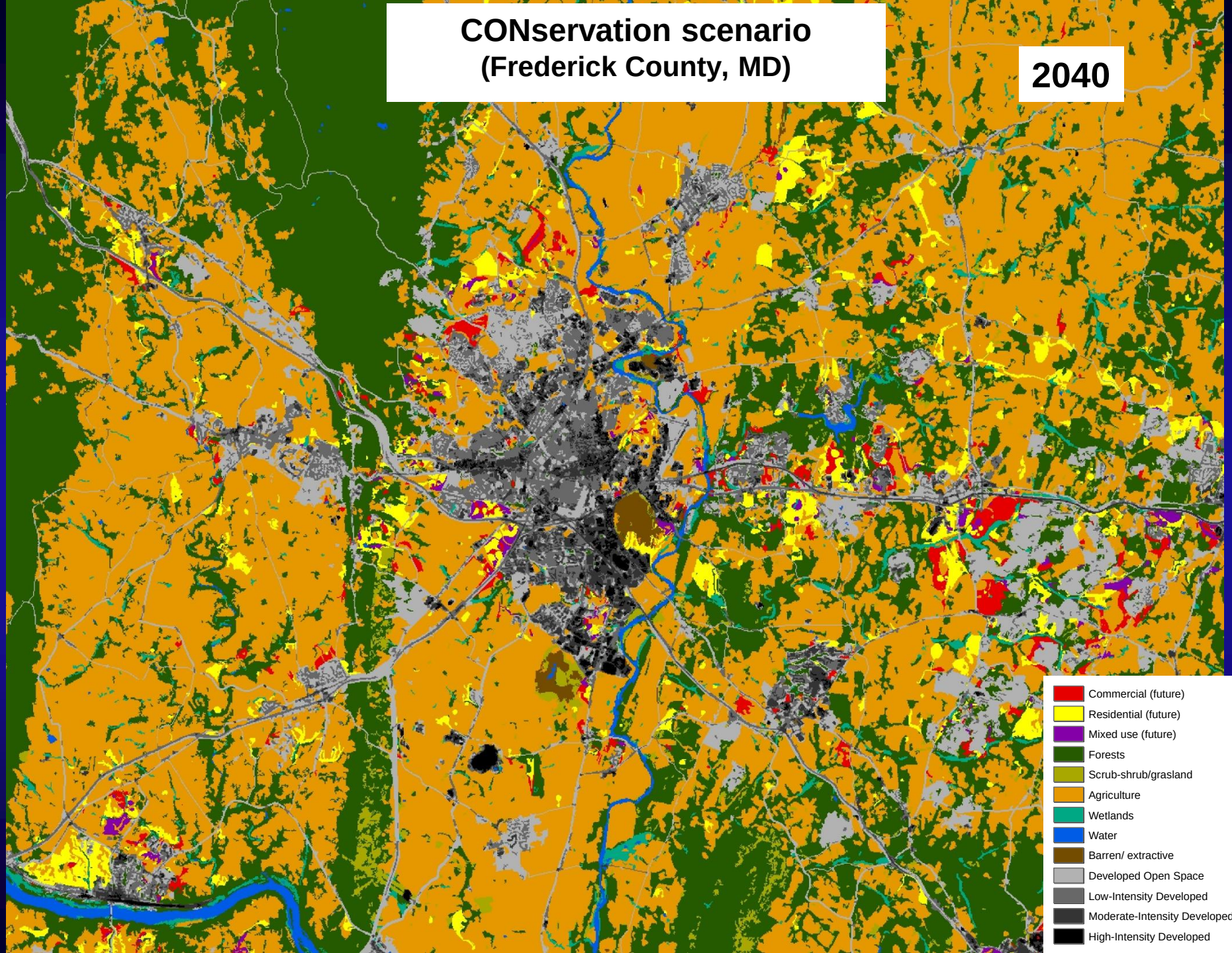
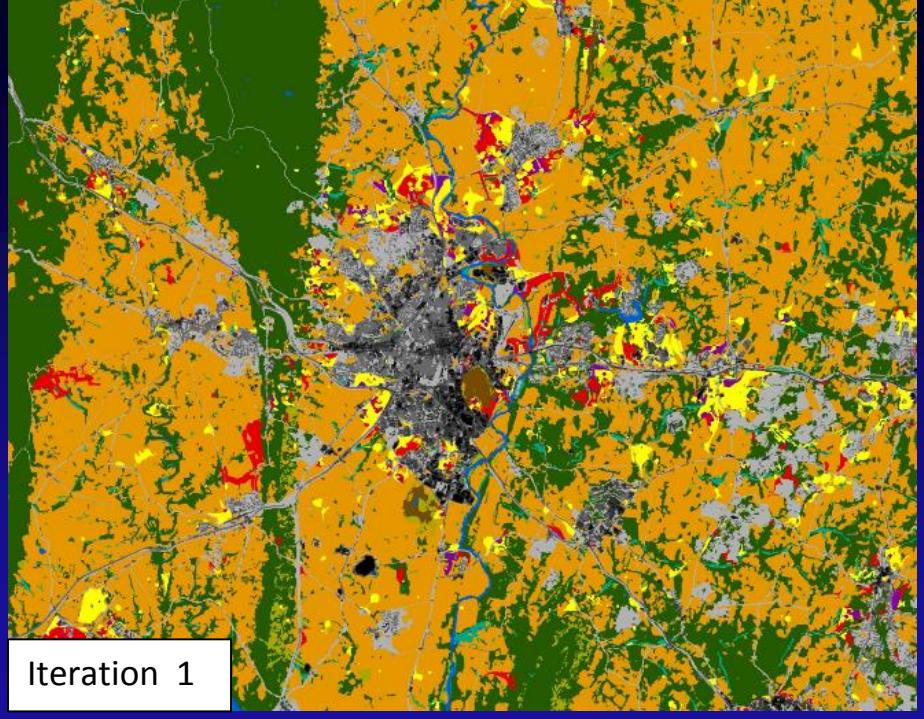
CONservation scenario
(Frederick County, MD)

2040

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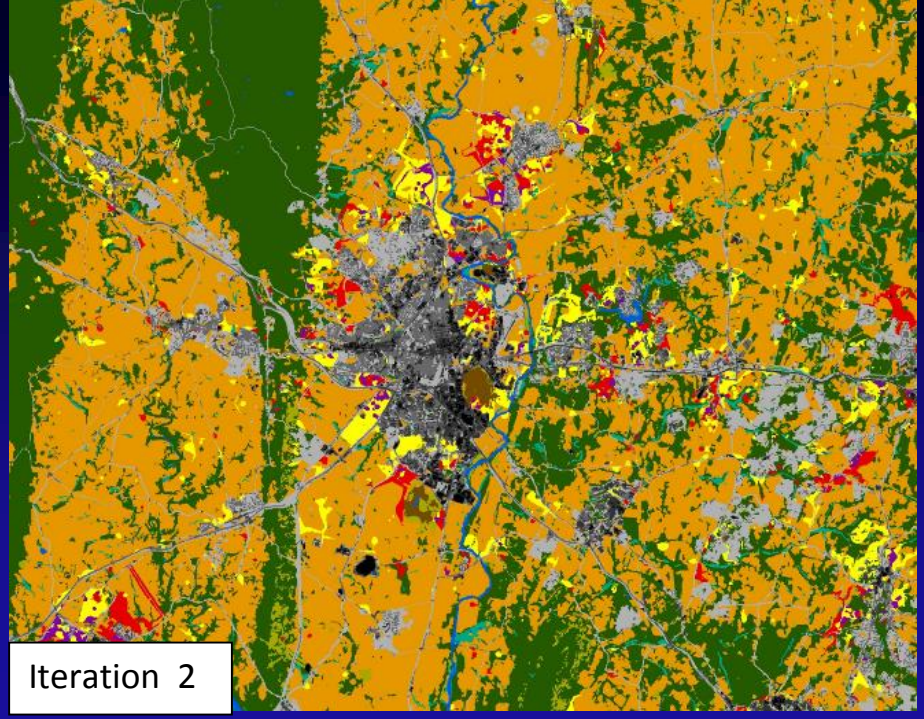
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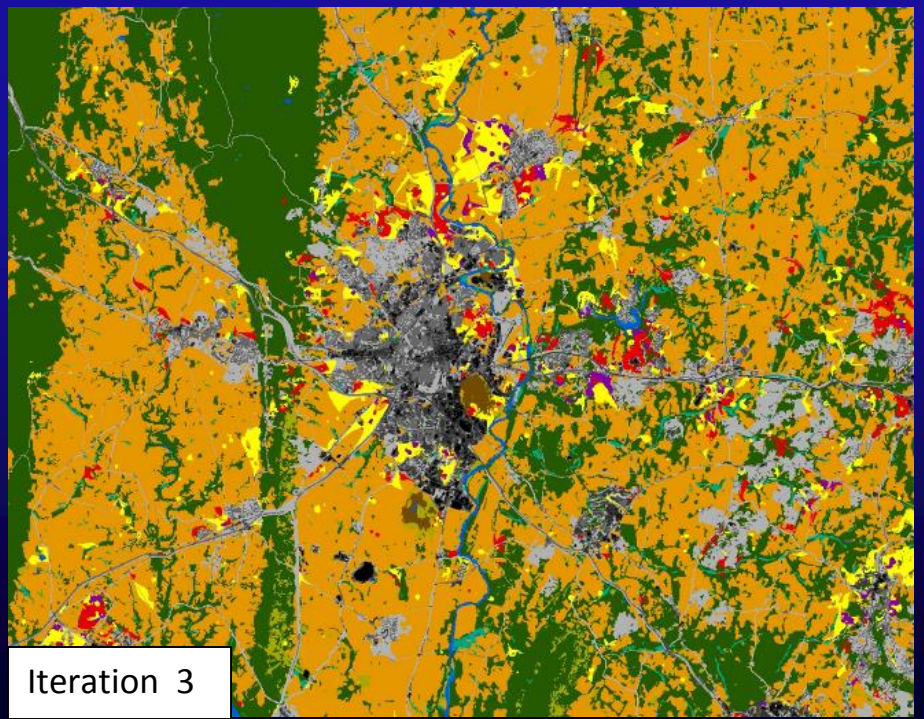
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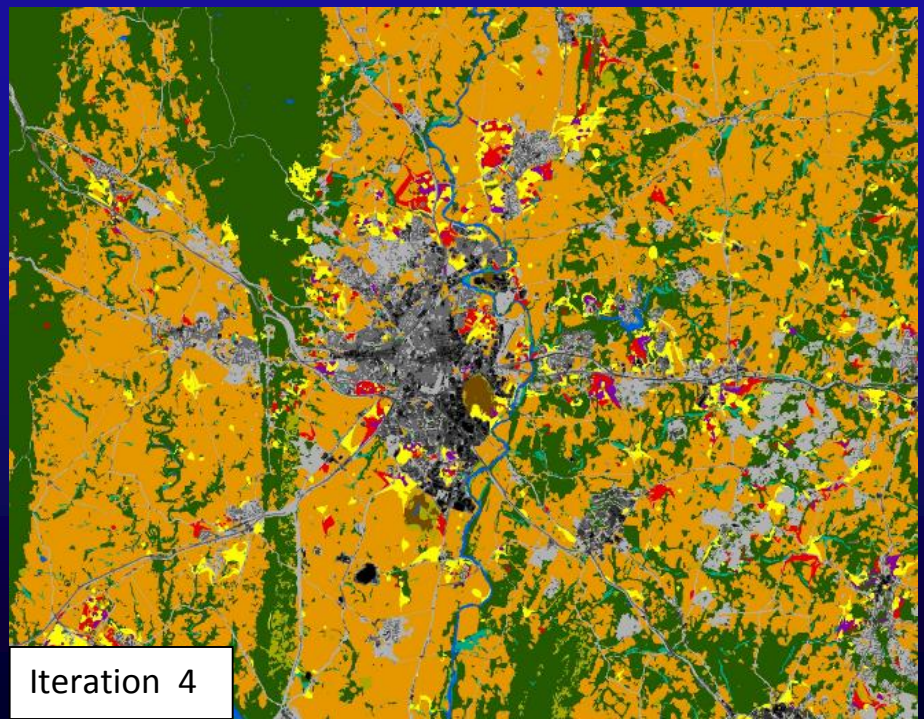
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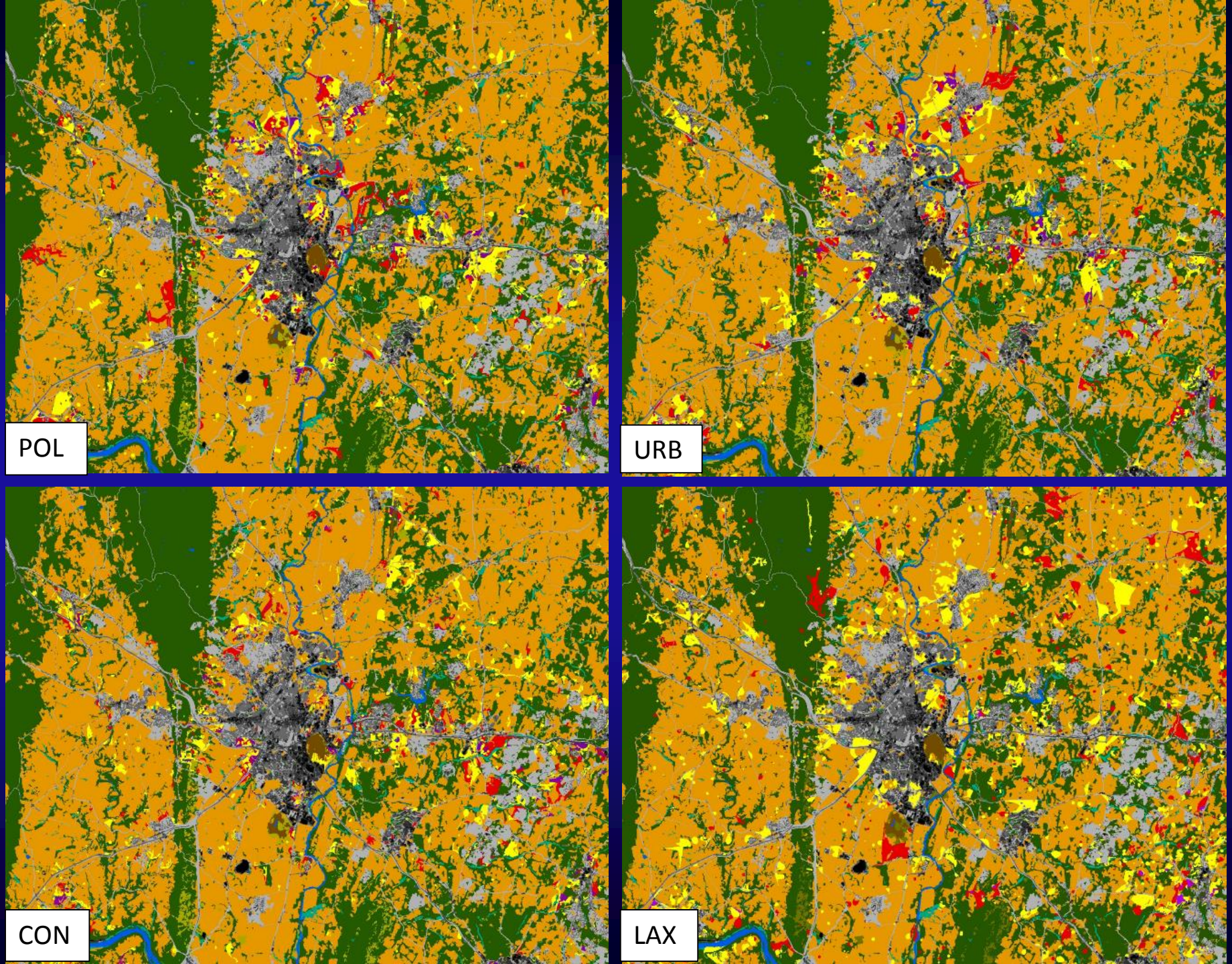
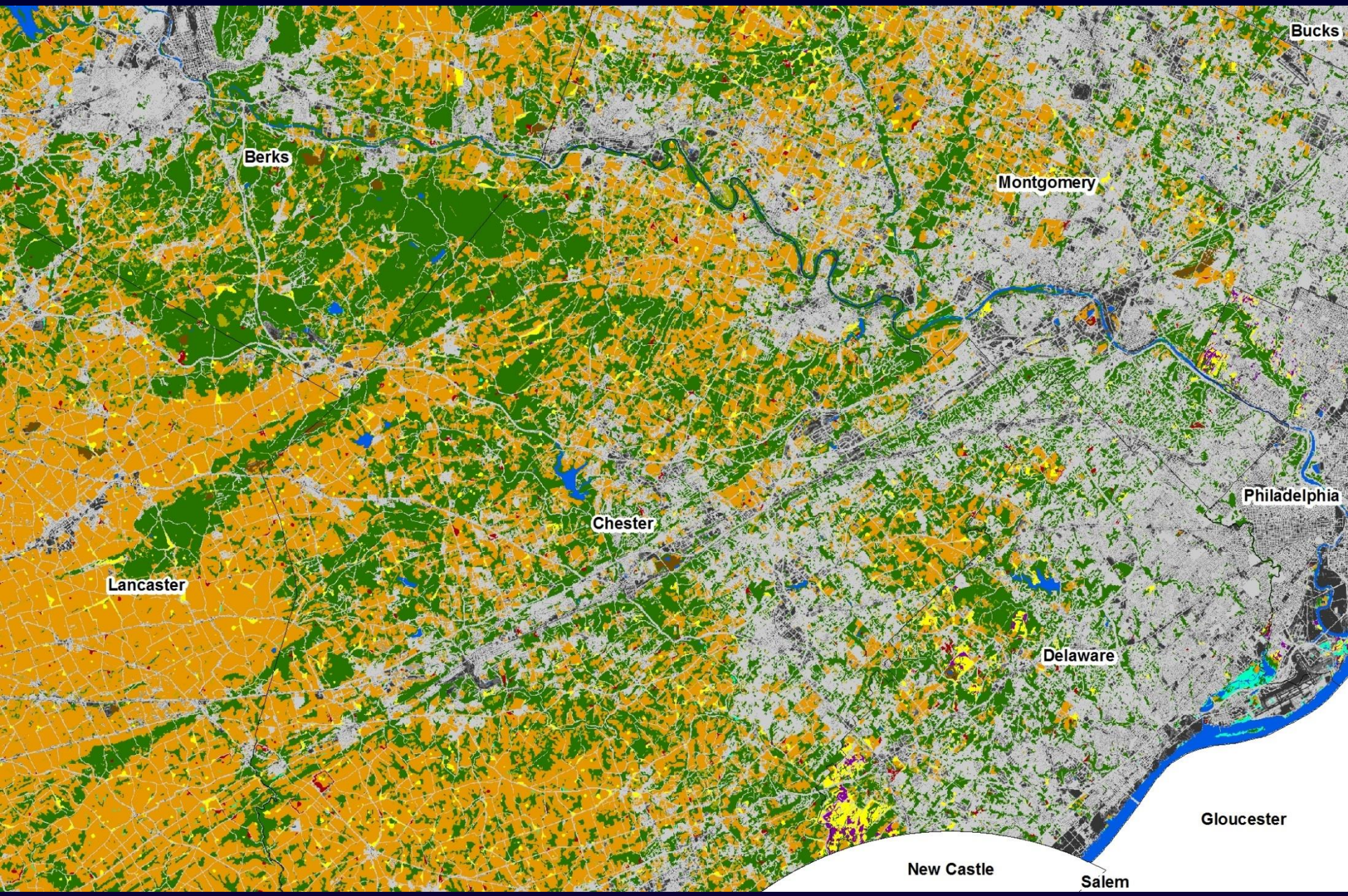

POL
URB
CON
LAX

Chesapeake Bay Future Land Use Scenario Domain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Montgomery
Philadelphia
Chester
Lancaster
Delaware
Gloucester
New Castle
Salem

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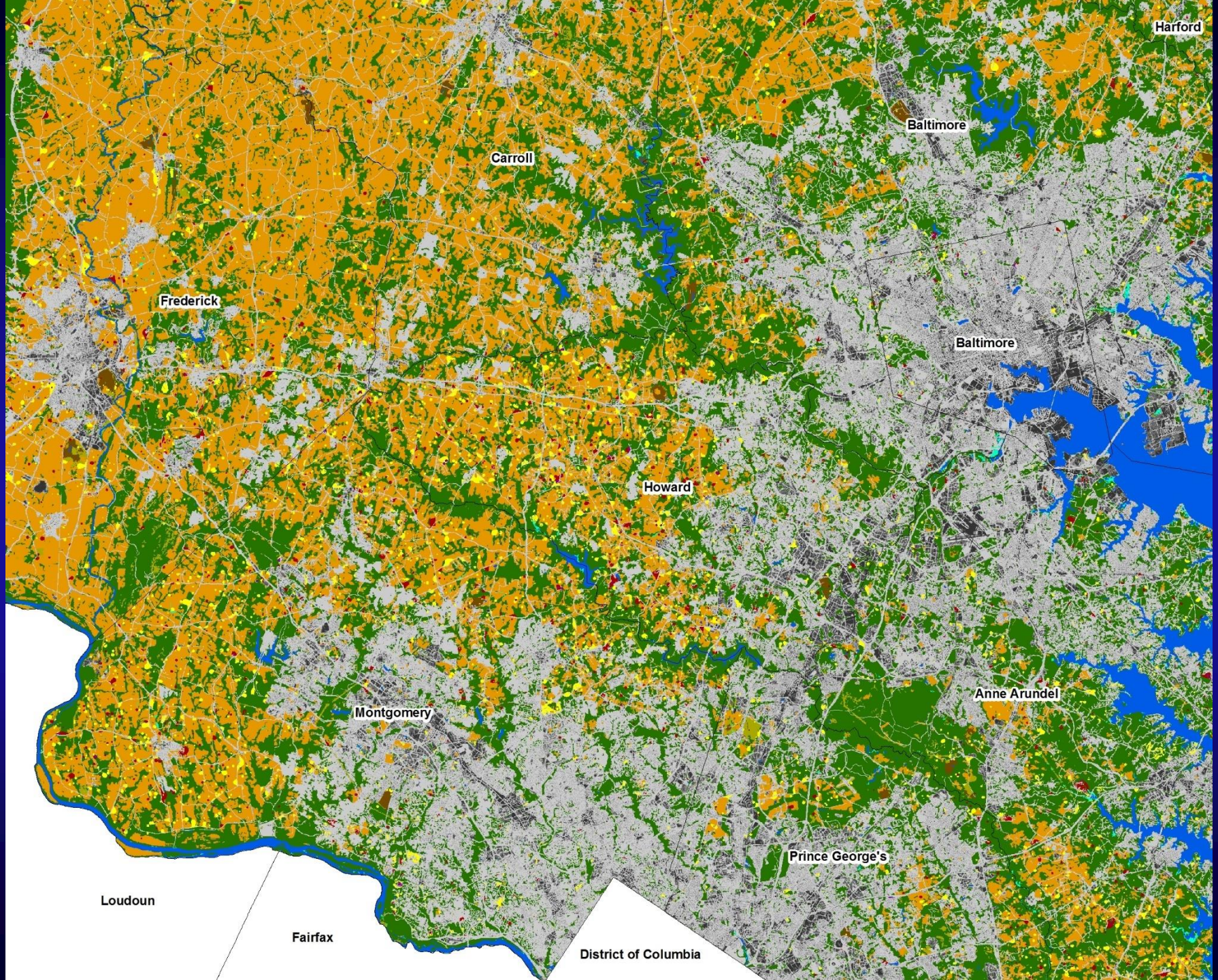
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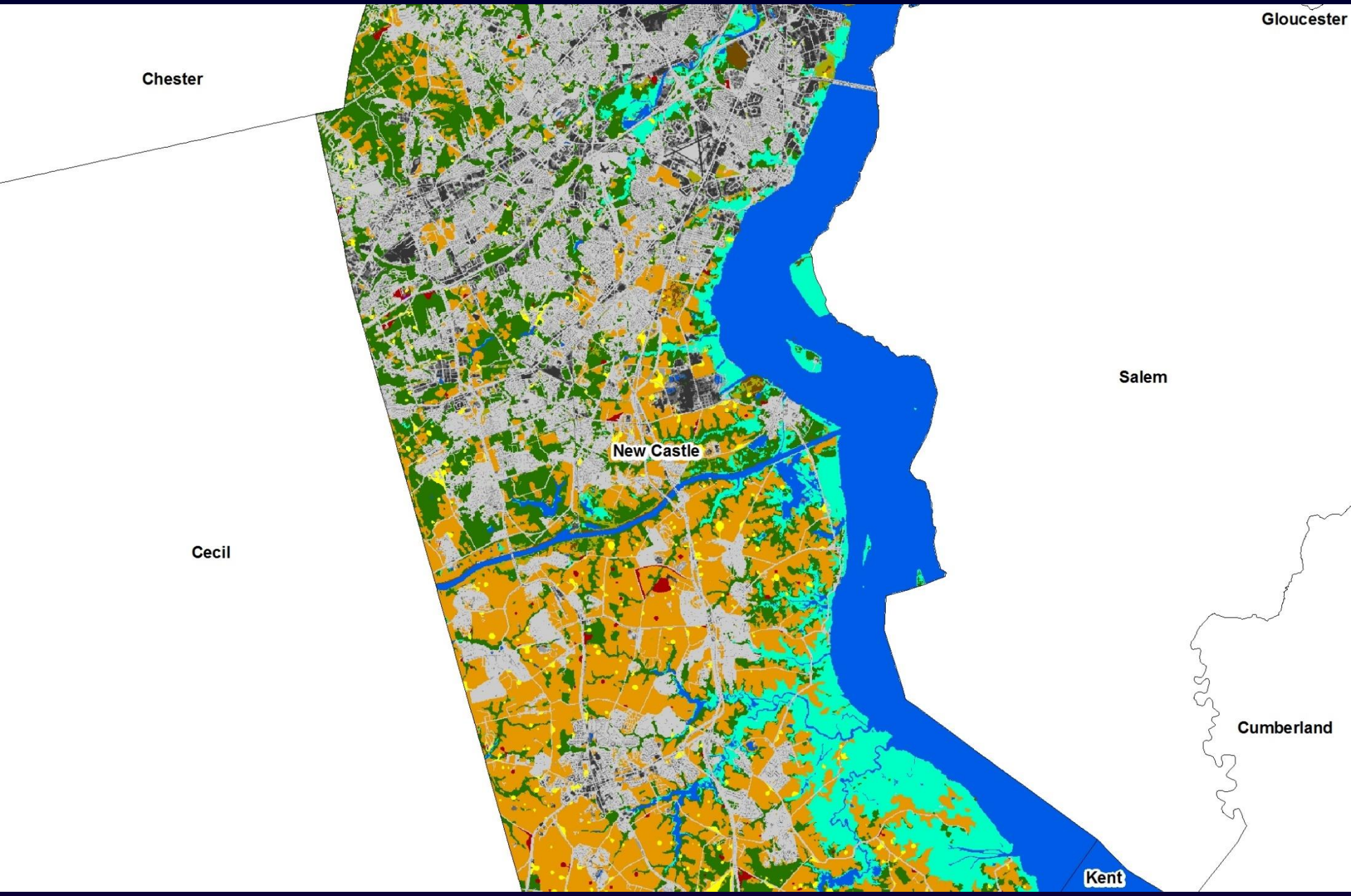
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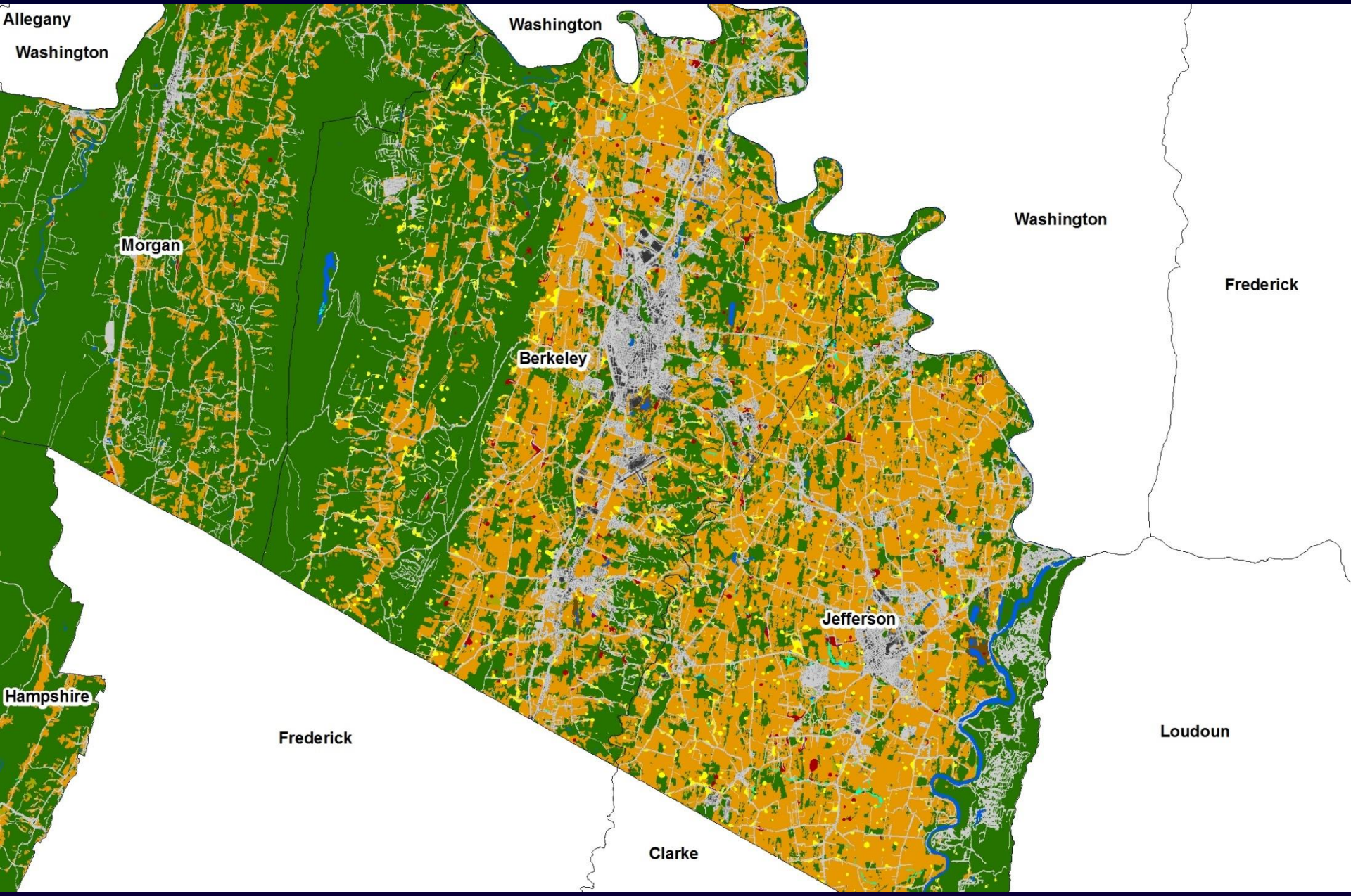
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Clarke
Loudoun

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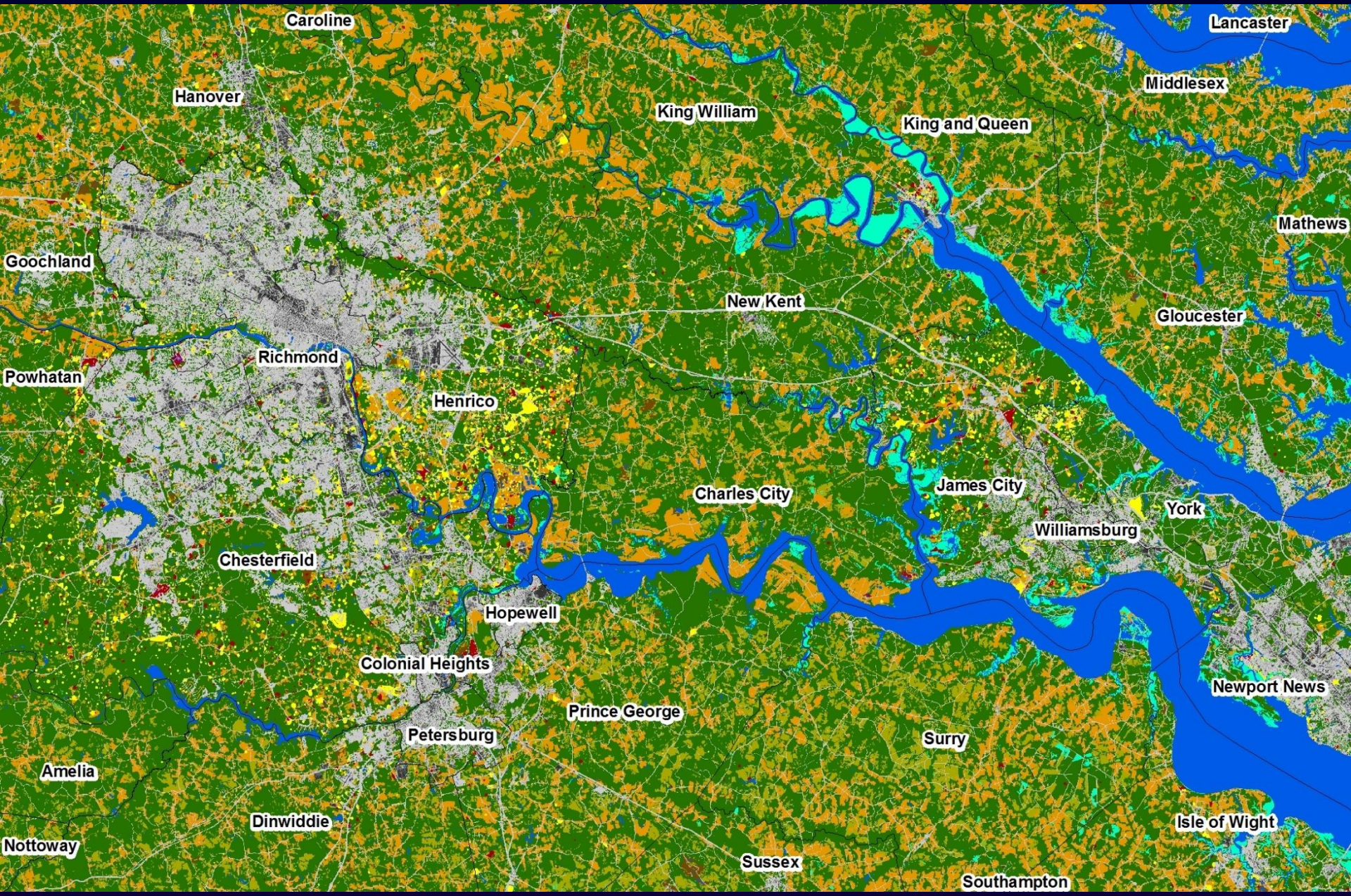
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Mathews
Goochland
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Gloucester
Richmond
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James City
York
Williamsburg
Chesterfield
Hopewell
Colonial Heights
Newport News
Prince George
Petersburg
Surry
Amelia
Dinwiddie
Isle of Wight
Nottoway
Sussex
Southampton

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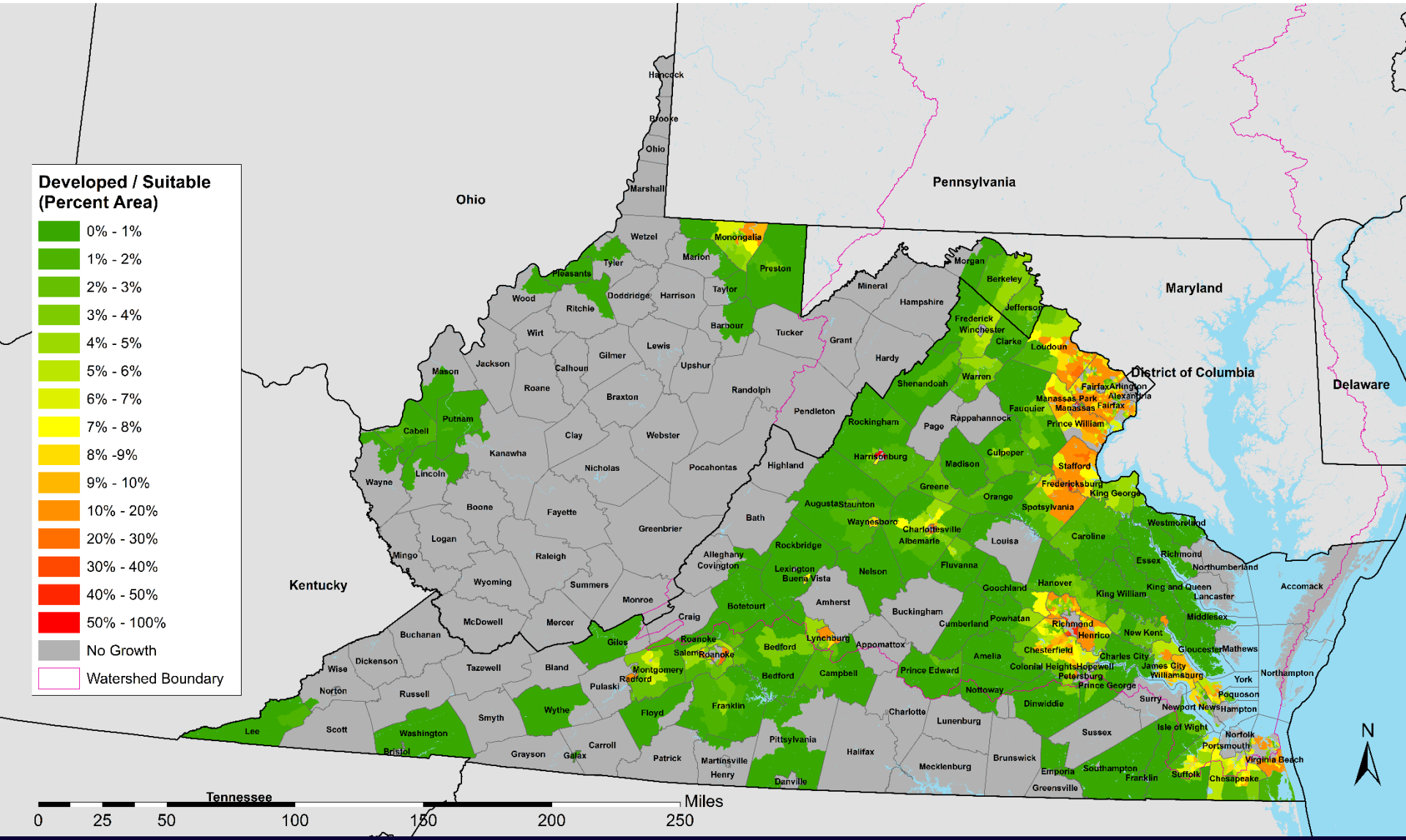
New Development in Virginia and West Virginia (2030) as a Percentage of Land Suitable for Development



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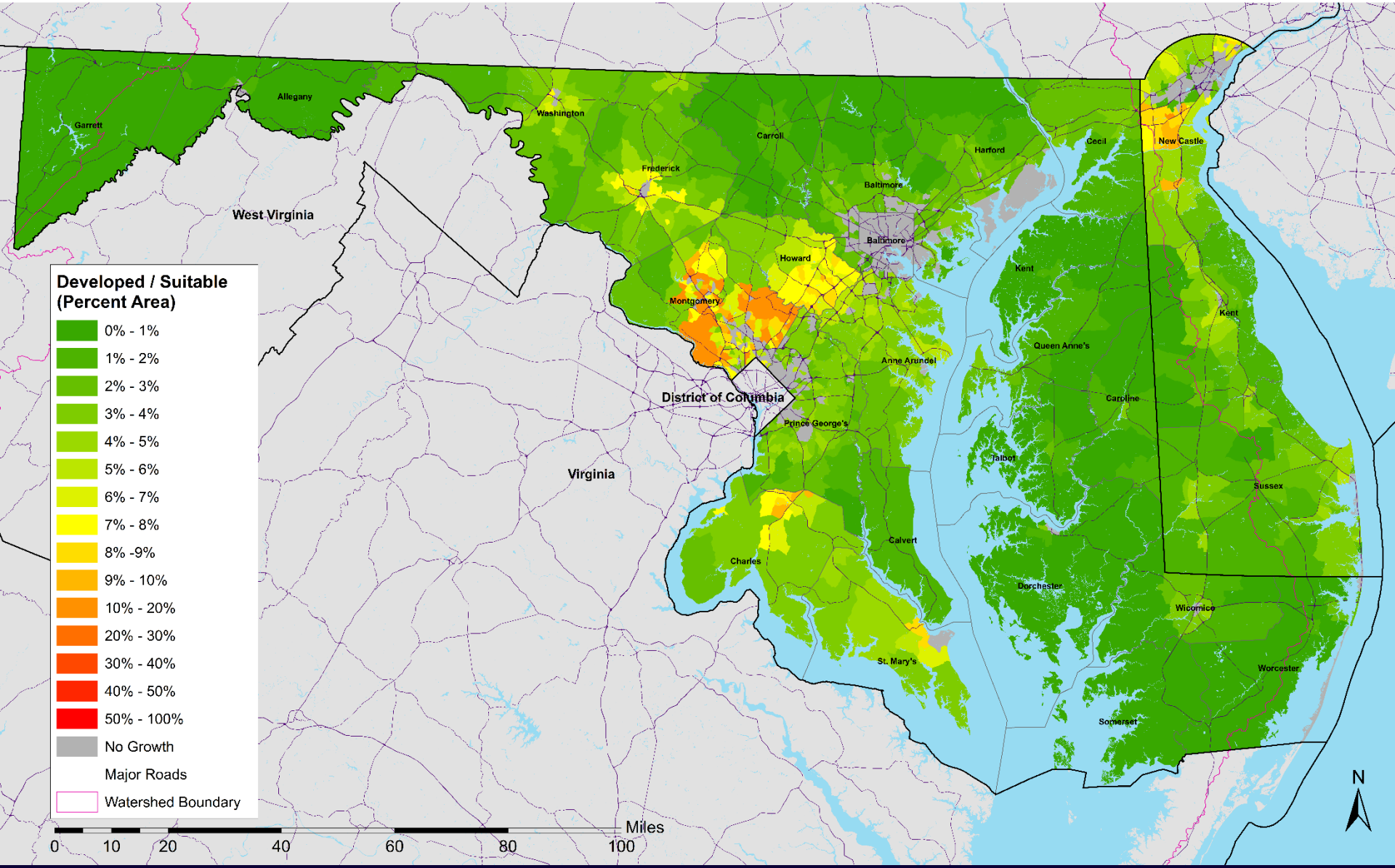
New Development in Maryland (2030) and Delaware (2040) as a Percentage of Land Suitable for Development



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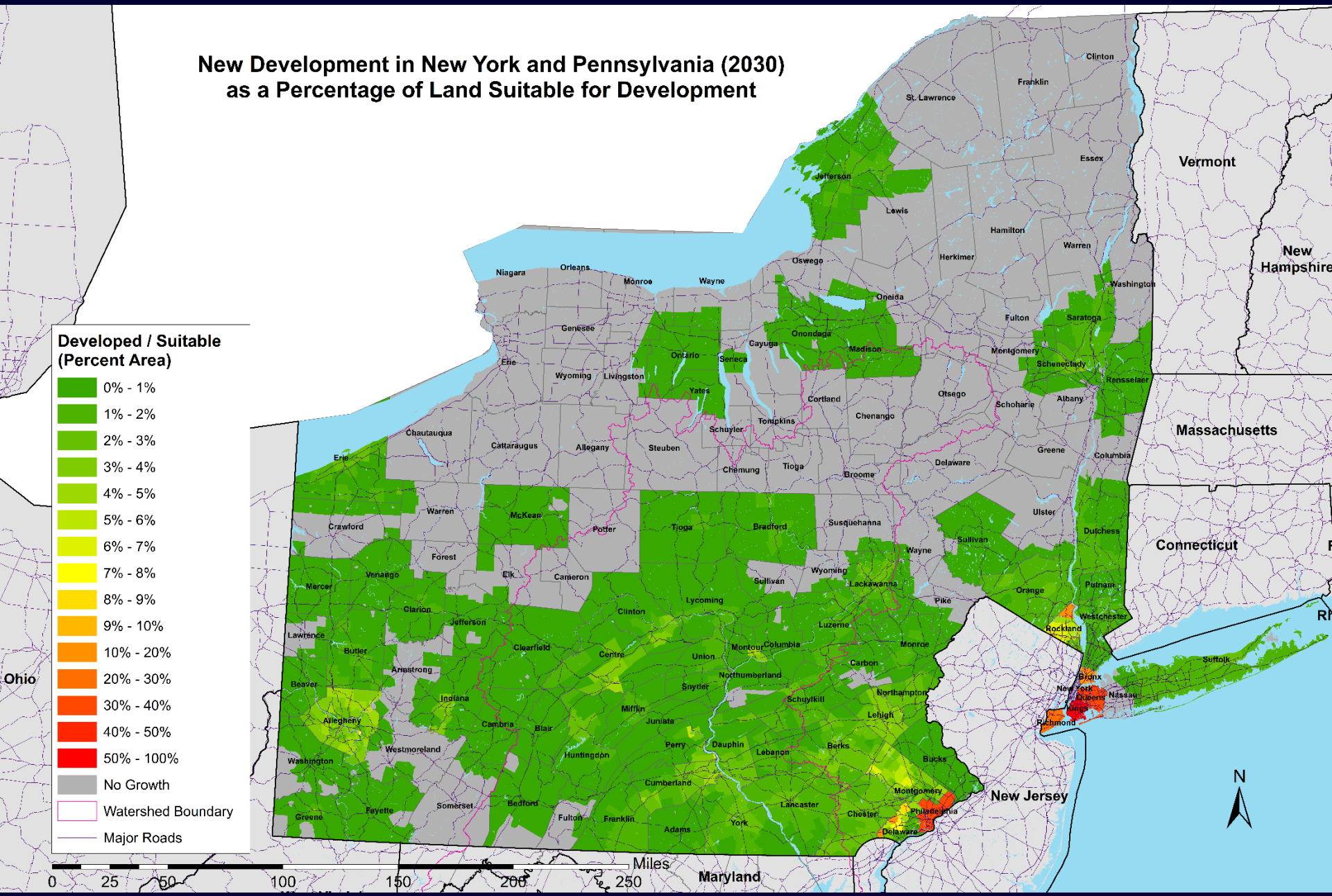
New Development in New York and Pennsylvania (2030) as a Percentage of Land Suitable for Development



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Future Land Use Scenarios:

Logically-coherent storylines and assumptions of factors influencing land use change that represent a full range of plausible futures.

Why?

To help jurisdictions account for potential future growth in pollutant loads as required by the Chesapeake Bay TMDL.

To inform long-range development, restoration, and conservation plans.

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Potential Alternative Future Scenarios

“Historical Trends”: patterns over previous decade(s) prevail.

“Current Policy”: growth focused in areas with infrastructure and capacity.

“Land Conservation”: more aggressive conservation of forests and farms.

“Rural Character”: up-zone urban areas and down-zone rural areas.

“Infill and Redevelopment”: direct more growth into urban areas.

“Transportation Corridors”: growth focused along major transportation corridors.

“Deregulated and Less Managed”: patterns driven by private sector and free market.

“Amenity based”: growth focused along coasts and adjacent to public lands.

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Potential Alternative Future Scenarios

(from June 7th "Local Government Forum")

"Historical Trends": previous patterns of growth replicated into the future.

"Current Policy Lite": growth focused towards local areas zoned or projected to accommodate it.

"Current Policy Plus": "Current Policy Lite" combined with growth focused in areas with planned infrastructure (e.g., roads, sewer, and water)

"Utopia": "Current Policy Plus" combined with aggressive land conservation, accelerated infill/redevelopment, and upzoning urban and downzoning rural areas.

Additional considerations: soil restrictions, internet access, sea-level rise, and specific state/county policies (e.g., MD's Septic Bill and Ag Preservation Act).

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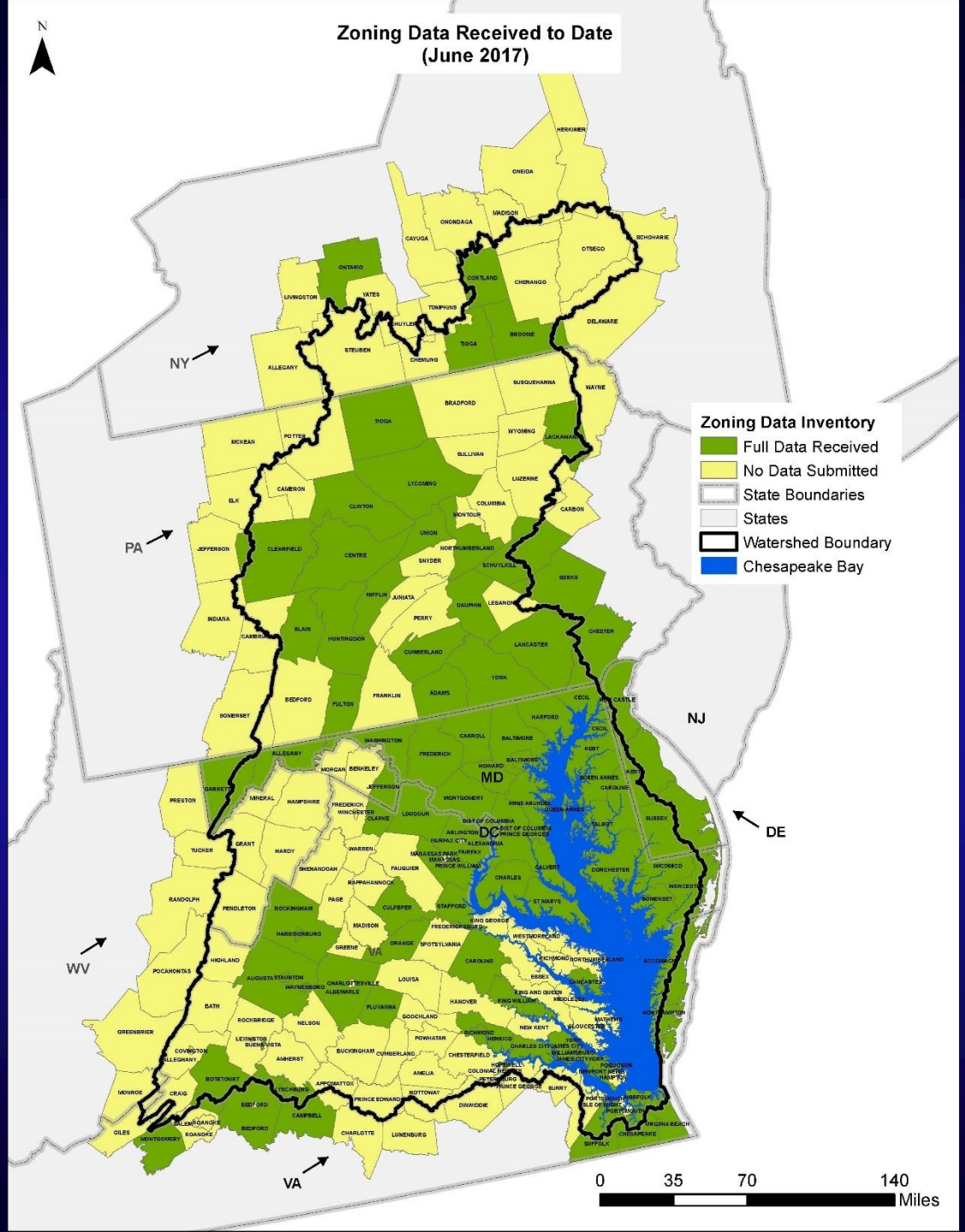
Zoning Data Received to Date
(June 2017)
N
Zoning Data Inventory
Full Data Received
No Data Submitted
State Boundaries
States
Watershed Boundary
Chesapeake Bay
NY
PA
WV
VA
MD
DC
DE
NJ
0
35
70
140
Miles

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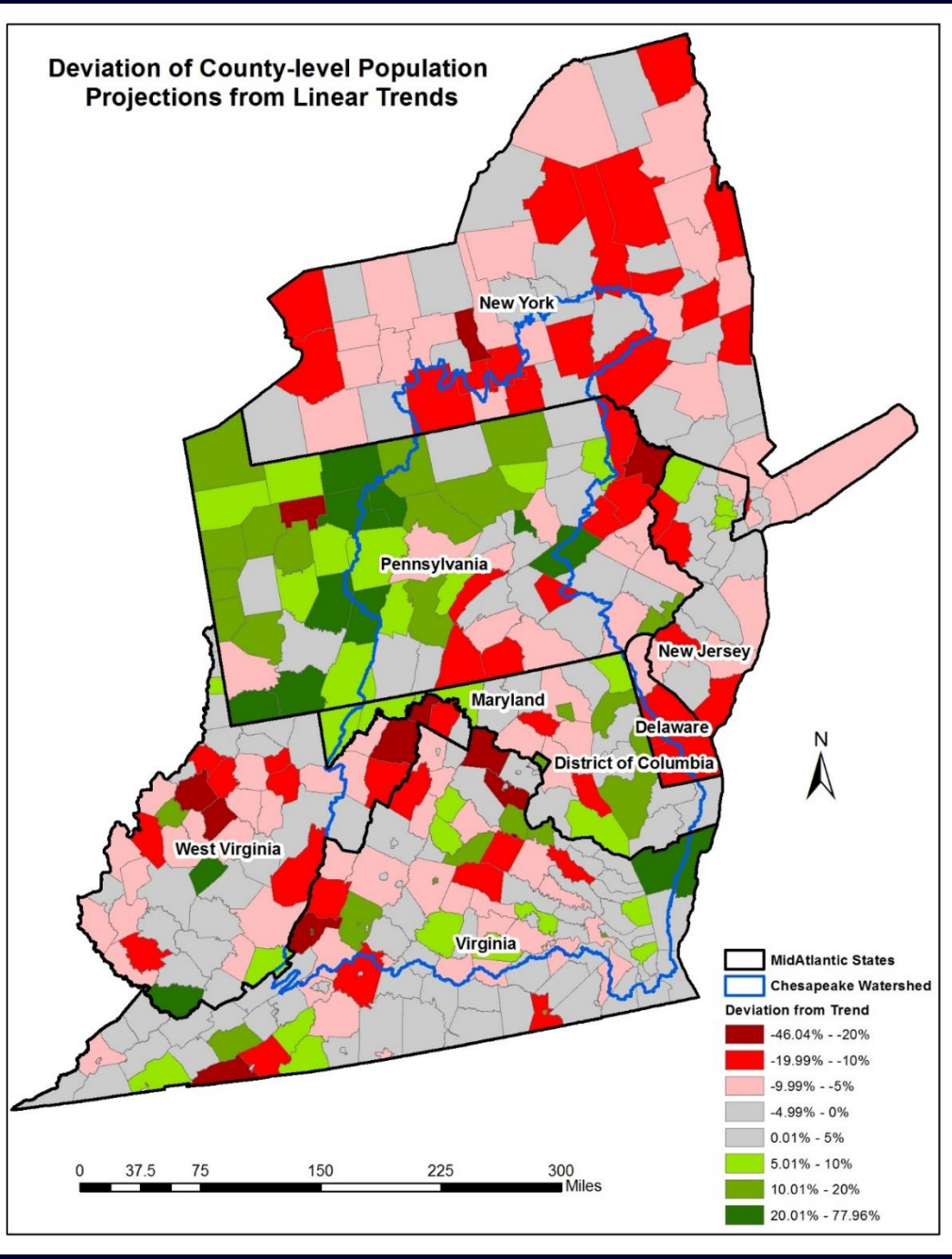
Example #1:
Growing slower than expected

Loudoun County, VA
2040 Projected Population: 492,517
2040 Trends (2000 – 2015): 715,459

Example #2:
Growing faster than expected

District of Columbia
2040 Projected Population: 940,687
2040 Trends (2000 – 2015): 811,060



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