Creating Phase 6 Land Segments

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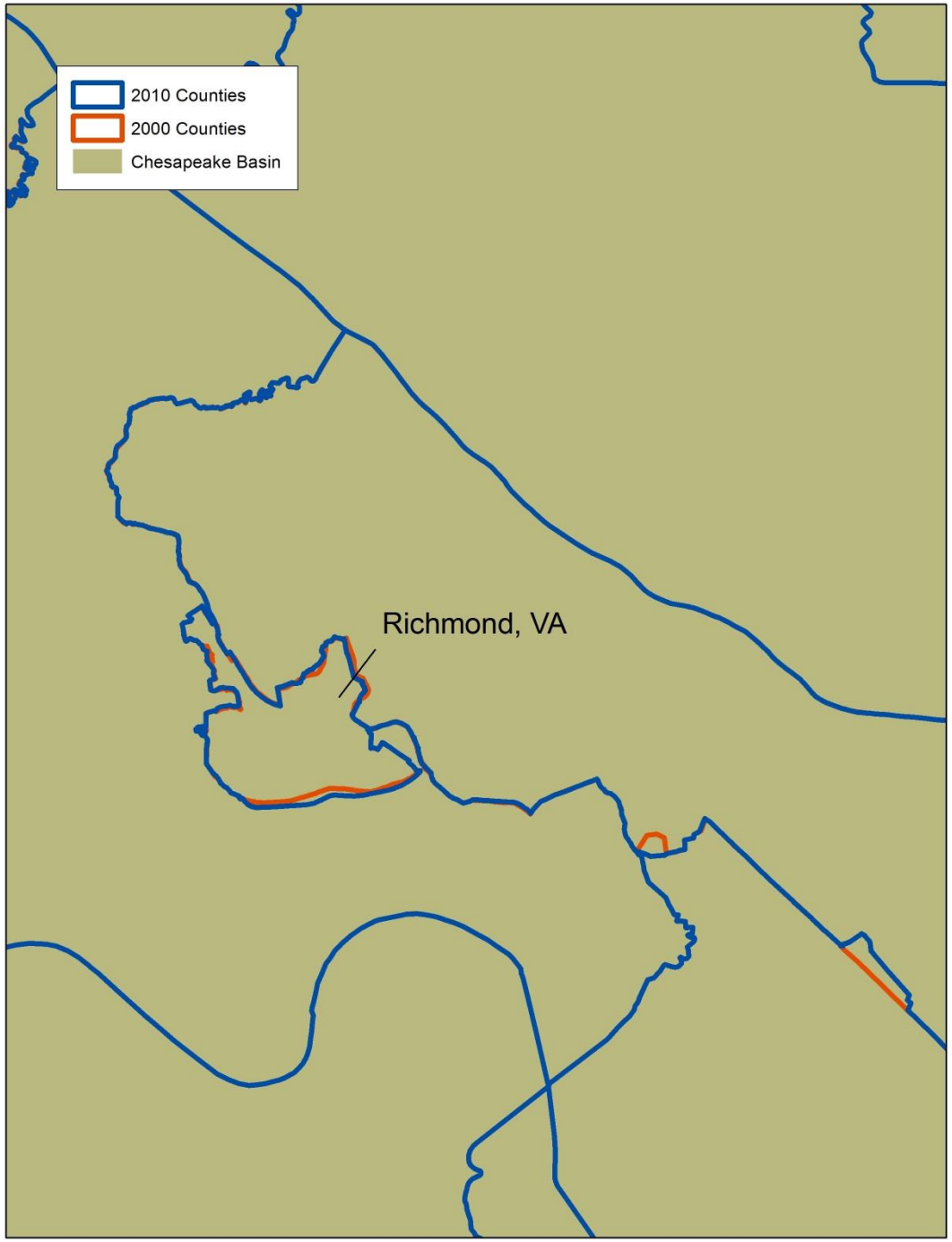
Proposed Phase 6 Land Segment Changes

- Do not include Phase 5.3.2 Federal segments.
- Update county boundaries with newer GIS Data.
- Update county subdivisions based on actual precipitation data.

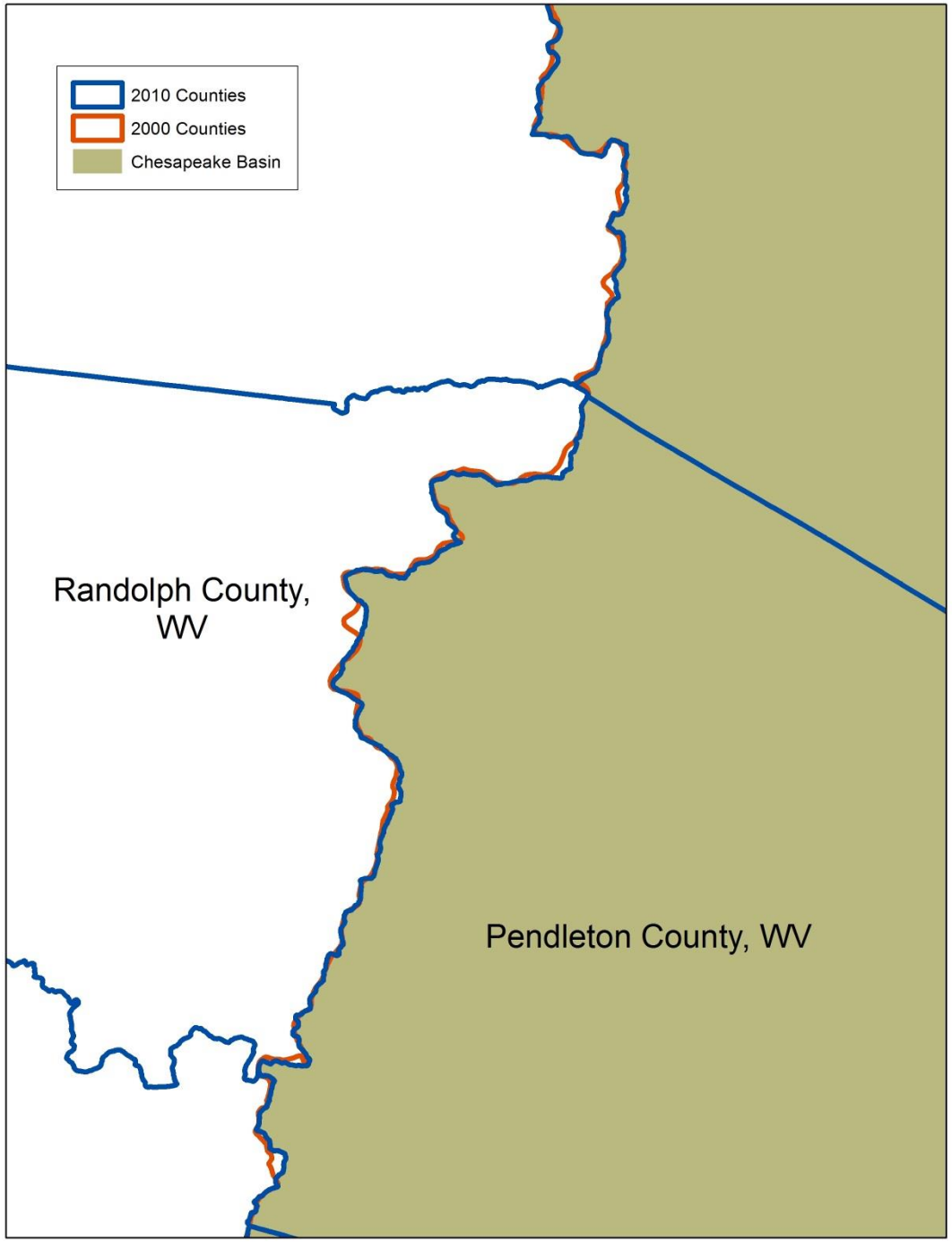
Update County GIS Data

- 2010 TIGER file available from Census Bureau.
- Numerous changes from 2000 data used in Phase 5, albeit most are minor.
- Newer county boundaries now match the western Chesapeake basin boundary between VA and WV and within WV where they are coincident.

2010 county data compared with county data used in Phase 5.

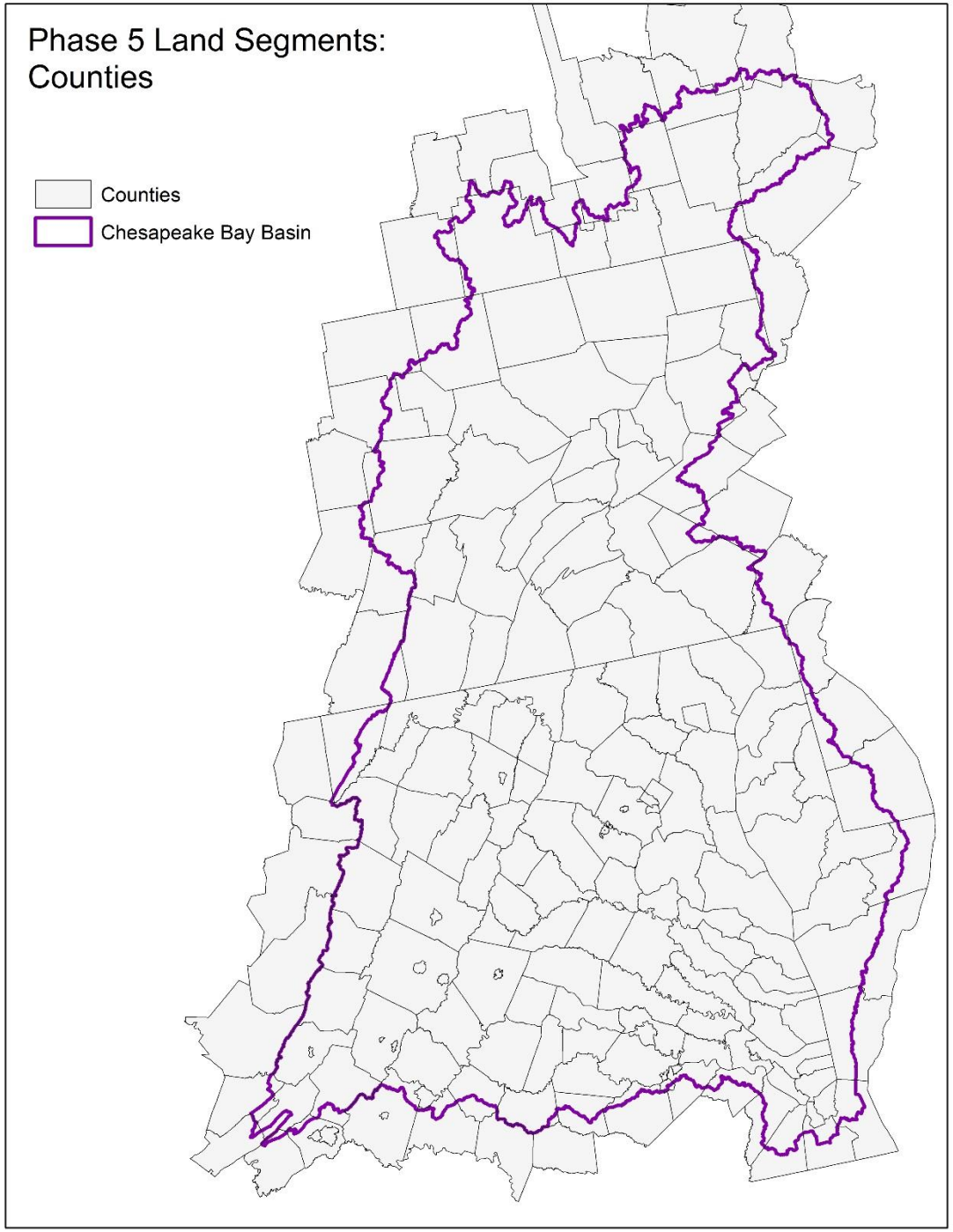


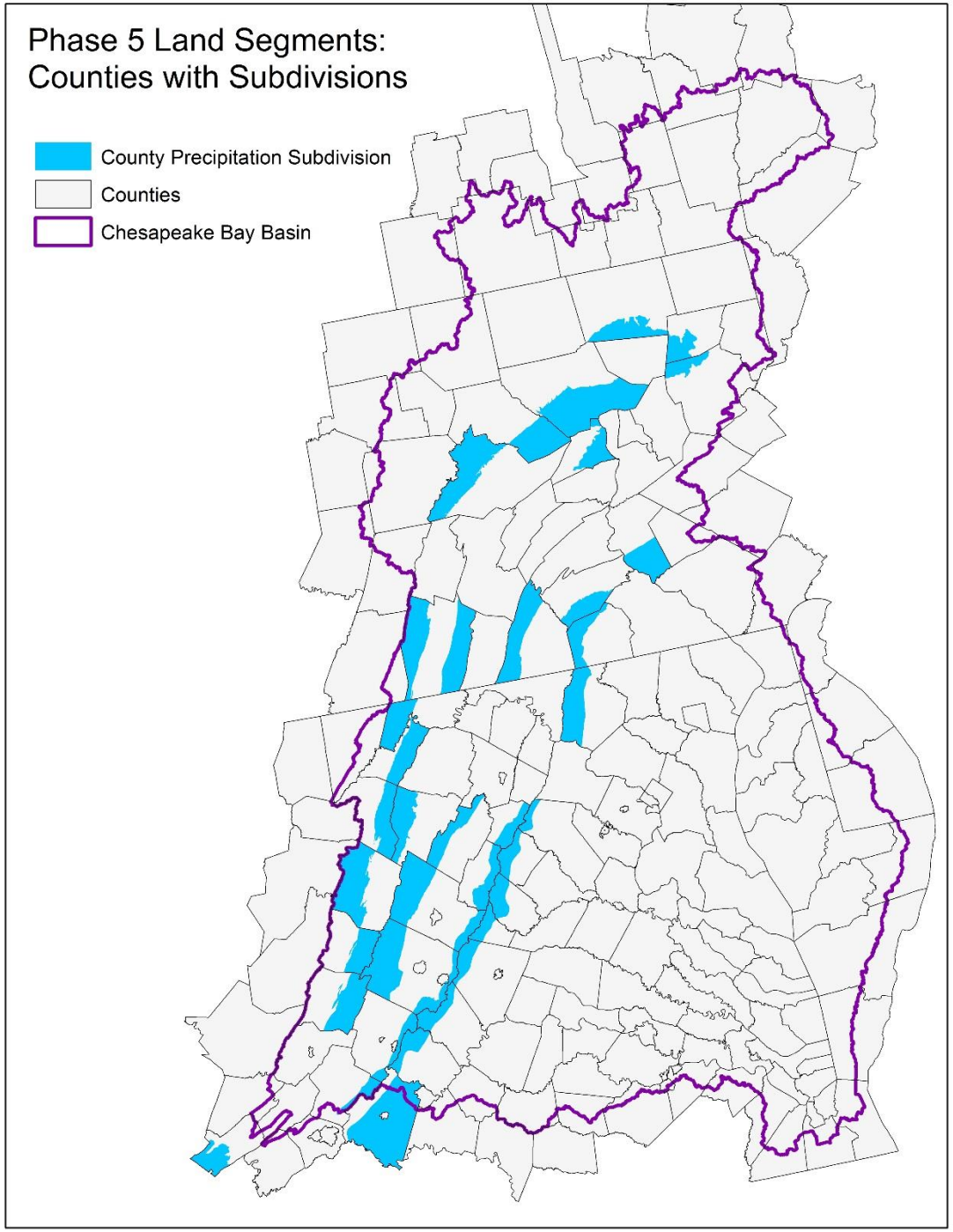
2010 county data match the western basin boundary.



Update County Subdivisions Based on Precipitation

- Phase 5 subdivisions were based on physiography and topography to mimic orographic effects that would create higher or lower precipitation, not on actual precipitation data.
- Whether there was higher or lower than normal precipitation was not indicated in the segment name. ‘B’ or ‘C’ segment prefixes only denoted that there should be a sizeable precipitation difference.


Phase 5 Land Segments:
Counties
Counties
Chesapeake Bay Basin

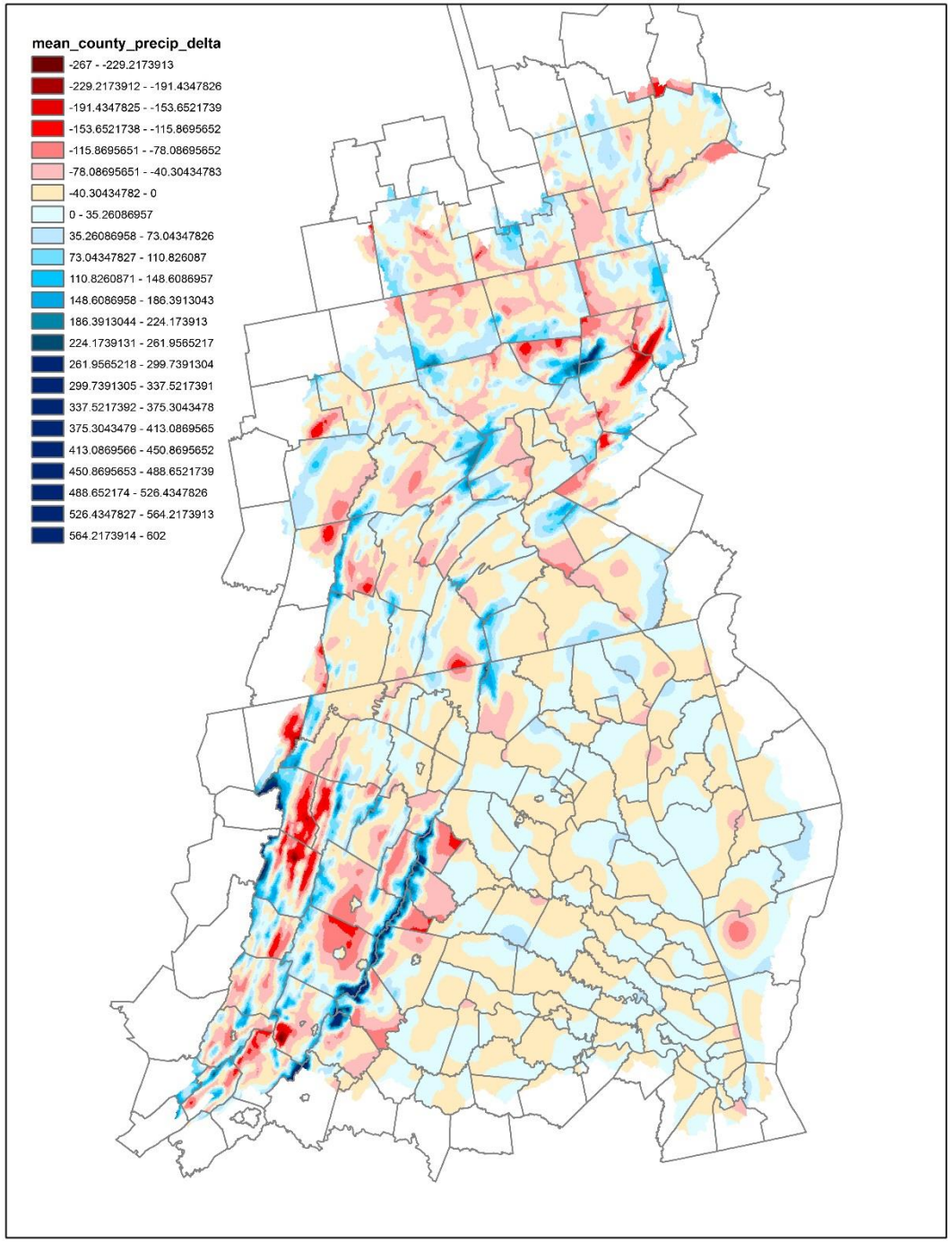

Phase 5 Land Segments:
Counties with Subdivisions
County Precipitation Subdivision
Counties
Chesapeake Bay Basin

Update County Subdivisions Based on Precipitation

- Use PRISM Climate Group "Normals" data.
- 30 year long term average data (1981-2010).
- 30 sec (~800m) modeling resolution.
- http://www.prism.oregonstate.edu/documents/PRISM_datasets.pdf

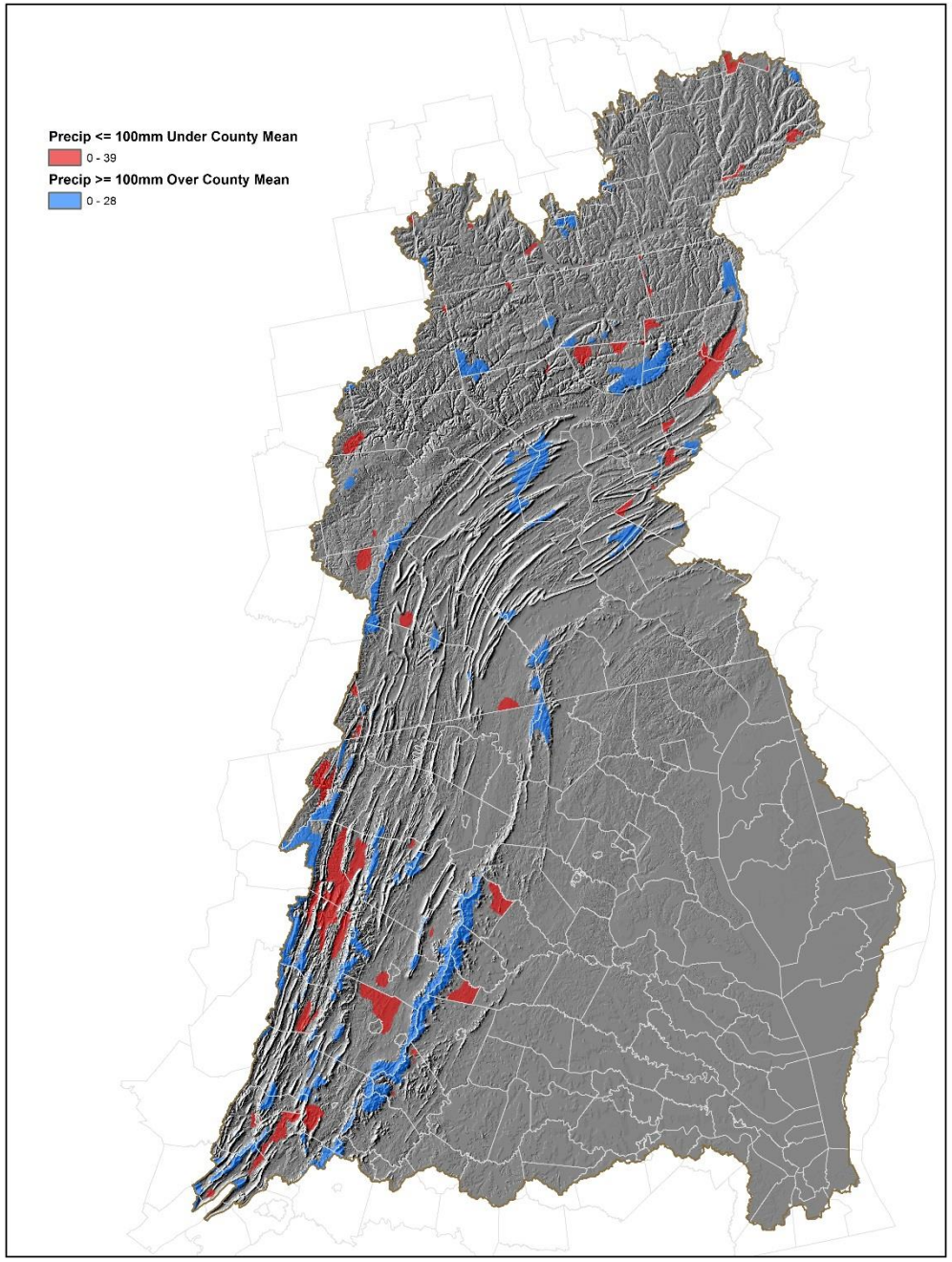
PRISM Climate Data:

Deviation from mean for each individual county.



Higher than average precipitation areas found at higher elevations, on ridges.

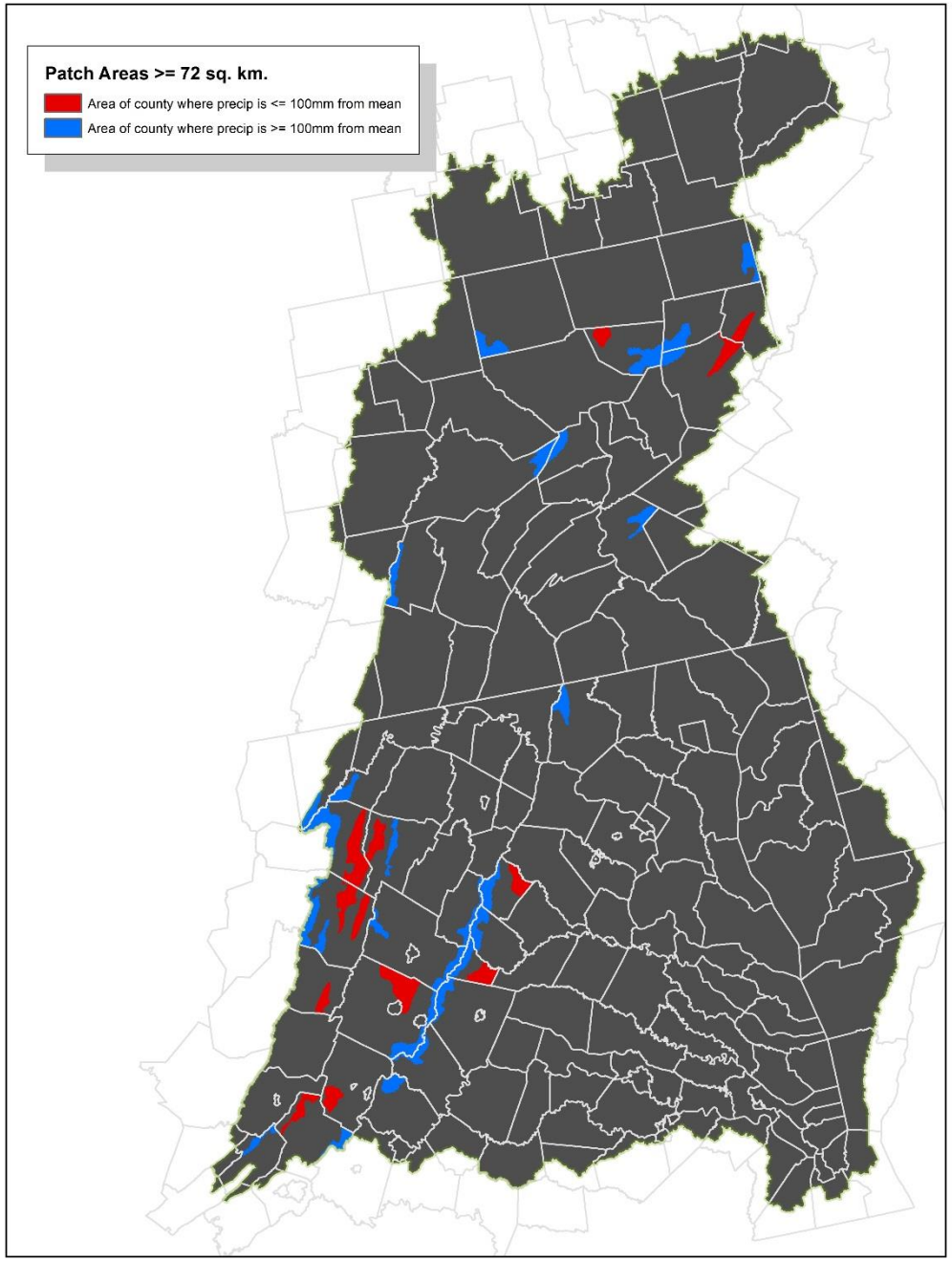
Lower than average precipitation areas found generally at lower elevations, in valleys.



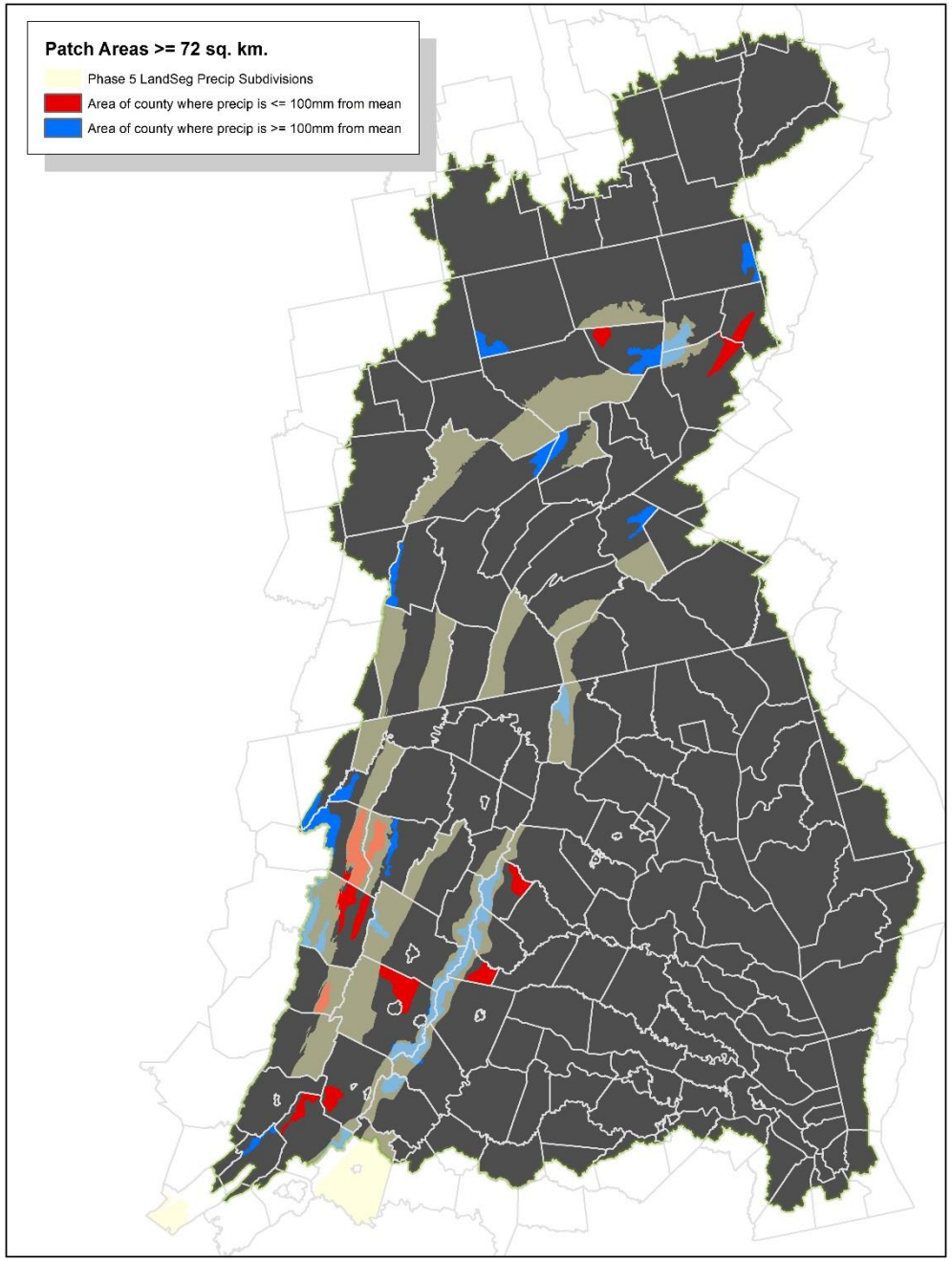
Examined different precipitation amounts from the mean thresholds.

Examined different precipitation segment size thresholds.

Ended up with 72 sq. km. minimum, which is half the area of an NLDAS-2 cell.



Comparison of Phase 6 precipitation subdivisions with Phase 5 precipitation subdivisions.



Recommendations for Phase 6 Land Segments

- Use 2010 county boundary data.
- Use precipitation subdivisions based on
  - 100 mm greater or lesser than county mean threshold and
  - Minimum 72 sq. km. patch size.
- Segment prefixes will be ‘N’ (normal), ‘H’ (high) and ‘L’ (low).