Chesapeake Bay Program
Land Use Workgroup Face-to-Face Meeting

Meeting Minutes
January 30th, 2014
10:00 AM – 3:00 PM

Participants: Karl Berger, Jenny Tribo, Peter Claggett, Megan Grose, Andrew Brenner, Jeff White, Lee Epstein, Glenn Mohler, David Newburn, Steve Stewart, Bryan Bloch, Darold Burdick, Bill Keeling, Justin Shafer, Mary Gattis, Melissa Merritt, Robert Hirsch, Stephanie Martins, Ted Tesler, Sally Claggett

1. **Welcome and Introductions – Karl Berger, Co-Chair**

2. **Presentation: Cross-walking Local Land Use Data with Phase 6 – Darold Burdick, Fairfax County, VA**
    - Please see the PowerPoint presentation available at:
        - http://www.chesapeakebay.net/channel_files/21235/darold_burdick_-_fairfax,_va_landusefinal.pptx

    Questions:
    - Were average impervious values were applied across a whole category (e.g. "Single Family Residential") or were a range of values applied to consider factors such as location?
        - Burdick: We did not consider how location affects impervious values; however, we created multiple categories to account for some differences. For example, we created a "Multiple Family Residential" category and a "Single Family Residential" category, which were each given a unique average impervious value.
    - When projecting what your future would look like, how far out is your "future?"
        - Burdick: We did not assign a specific year to represent future conditions. Instead, we projected full build-out based on existing zoning and trends.
    - Did you use the SWMM or Water Quality models?
        - Burdick: We did not use the Water Quality piece of SWMM. However, we used EPA's STEPL model instead. We also used SWMM for modeling event, which was fed into HEC-RAS.
    - Are the impervious numbers going to be used for Fairfax's MS4 permits?
        - Burdick: No, we will use more current data from 2009.
    - For Version 6 of the model, how many categories of urban land should the Land Use Workgroup provide (e.g., should there be more than one residential category, or a distinction between connected vs. disconnected lands?).
        - Claggett: For modeling in the future, having those density classes distinguished would be useful. For loading purposes, the multiple density classes would probably not be necessary. In terms of connectivity, as a Workgroup we will need to determine how to assess that.

- When considering connectivity, did you treat "Single Family Residential" development on a ridge area the same as "Single Family Residential" development on a floodplain?
    - Burdick: We buffered streams to decide whether certain areas were connected or not.
- Did you compare your tree canopy to your open space layer?
    - Burdick: We have a tree canopy layer, but for this project's needs we focused on the open space layer.
- How did you treat sidewalks?
    - Burdick: Sidewalks were analyzed separately.

Other Discussion Points:

- At the end of his presentation, Darold shared his overall thoughts on the work done in Fairfax County. He thought that the methodology used worked well at local scale, although he also noted that many local jurisdictions may not have the data necessary to do this type of analysis. Nonetheless, similar analyses may be feasible for larger, urbanized areas.
- Land Use Workgroup members agreed that it would be useful to aggregate information on cost estimates for this type of land use assessment work at the local level.

3. **Presentation: Cross-walking Local Land Use Data with Phase 6 – Bryan Bloch, Delaware – all counties**
    - Please see the PowerPoint presentation available at:
        - http://www.chesapeakebay.net/channel_files/21235/bryan_bloch_-_delaware_luwgmeeting01302014.pptx

Questions:

- What was your minimum map unit size?
    - Bloch: We used a 2 acre mapping resolution for 2002 and 2012.
- Some areas within the Chesapeake Bay Watershed may not have data. How should the Land Use Workgroup approach this problem?
    - Claggett: We can use the best available data where we have it, and use Landsat as an additional tool where needed. However, we should discuss this in more detail and articulate a recommendation for the Water Quality Goal Implementation Team.

Other discussion points:

- Delaware has a detailed urban tree canopy layer for the entire state.
- The Land Use Workgroup, not the Agriculture Workgroup, will be responsible for distinguishing crops and pasture land uses.
- The Land Use Workgroup will also need to coordinate with the Wastewater Workgroup when addressing wastewater and septic system land uses.

Presentation: Cross-walking Local Land Use Data with Phase 6 – Glenn Mohler, Lancaster County, PA

- Please see the PowerPoint presentation available at:

- http://www.chesapeakebay.net/channel_files/21235/glenn_mohler_-_lancastercounty_lulc.ppt

Questions:

- How do you determine the area draining into stormwater inlets?
  - Mohler: It was determined through drainage shed analysis. Q2 level data is captured by LiDAR, and Q3 level data can be used to do that analysis.
- The hydro layer seems to show a lot of stream movement when comparing one aerial image to another. Is that actual stream movement or is the difference due to different interpretations of the aerial images?
  - Mohler: The stream movement is most likely due to the latter reason.
- Are there any other counties in Pennsylvania that are working on similar efforts?
  - Mohler: Yes. Chester County is a good example. However, Lancaster is probably the most advanced with its land use data.
- How rich is your varying density residential data?
  - Mohler: There are three levels of residential data in Lancaster. This data can be retrieved from our County parcel data.
- In PA, does every county have a property assessment office?
  I would imagine so; however, these offices might be under different name or department.

Update on Land Cover Initiatives in Virginia – Jenny Tribo

- Virginia is currently considering developing state-wide land cover data from state-wide aerial photography. A recent amendment in the Senate will provide funding for this initiative if approved.
- In addition, Virginia will collect and keep a database of tax parcels for the state. Jenny will continue to update the Land Use Workgroup on these efforts over time.

Presentation: Cross-walking Local Land Use data with Phase 6 – Peter Claggett, USGS, Jefferson County and Baltimore County

- Please see the PowerPoint presentation available at:
  - http://www.chesapeakebay.net/channel_files/21235/peter_claggett_-_jeffersoncnty_lulc.pptx

Discussion Points:

- A STAC workshop in February will address the issue of connectivity. As a Workgroup, we can also start a conversation with the Modeling Team about connectivity.
- Another topic to consider is how to treat connectivity in a karst area.
- The model should be sensitive spatially and temporally to accommodate the effects of long rain events and freezing conditions.
- A member of the group suggested that developing resolution protocol for land use might be a good idea.

Presentation: Impervious Surface Connectivity and Urban Stream Corridors – Steve Stewart, Baltimore County, MD

- Please see the PowerPoint presentation available at:
  - http://www.chesapeakebay.net/channel_files/21235/steve_stewart_-_impervious_surface_connectivity_and_urban_stream_corridors.pptx

Questions:

- Did your analysis consider the different loading rates of stream corridors, since stream corridors are not all the same?
  - Stewart: Yes, that was considered in our analysis.
- How did you delineate between total cover and disconnected cover?
  - Stewart: We focused on directly connected impervious cover by using the SWMM model, and we used literature and field values to calibrate our data.

Presentation: New Methods for Mapping Land Use/ Land Cover – Andrew Brenner, Photo Science

- Please see the PowerPoint presentation available at:
  - http://www.chesapeakebay.net/channel_files/21235/andrew_brenner_-_cheapeake_bay_lu_lc_presentation.pptx

Discussion & Synthesis of Observations – Jenny Tribo, Co-Chair

- Over the next few months, the Land Use Workgroup will:
  - Explore how to address connectivity.
  - Explore how to address urban stream corridors and tree canopy.
  - Finalize land use categories and begin to determine loading rates for categories.
  - Finalize what can be mapped.
  - Sketch and finalize a recommendation to be reviewed by the Water Quality Goal Implementation Team.
- As early as the next Conference Call, the Land Use Workgroup will make decisions on some of the items listed above. In addition,:
  - The February 12th and 13th STAC Workshop in Towson, Maryland, will address topics such as urban stream corridors, tree canopy, impervious and pervious connectivity, and nutrient enrichment.
  - Through a contract with EPA, Tetra Tech will conduct a literature review and provide range of loading rates for urban lands.
  - Through a contract with EPA, Virginia Tech will conduct a literature review and guide the development of Best Management Practices (BMPs).
- Other Discussion Points:
  - Over the next year and a half, the Land Use Workgroup will review interim products and update land cover data in the model.
  - One person suggested that the Land Use Workgroup look at storm drain networks, and the availability of curbed gutters in contrast to open section roads.

- Tax parcel offices have great records, and gathering information from them may help fill significant gaps in data.
- As a Workgroup, we can strategically focus our efforts on jurisdictions with high population densities (E.g., southeastern Pennsylvania) or jurisdictions near water corridors.