

# CHESAPEAKE BAY PROGRAM LAND USE WORKGROUP

## *Meeting Minutes*

June 17, 2013

Chesapeake Bay Program Office  
Joe Macknis Memorial Conference Room  
Annapolis, Maryland

### MINUTES:

#### 1. Welcome and Introductions

- a. Jenny Tribo, LUWG Co-Chair, welcomed everyone to the meeting and confirmed participants.

#### 2. Mapping Low Density Residential Development and Estimating Septic Systems

- a. Stephanie Martins, MDP, presented on mapping low density residential development and septic systems ([presentation link](#)).
- b. Steve Stewart (Baltimore County): Is it possible to pick up redevelopment?
  - i. Martins: Sometimes.
- c. Steve Stewart: Did you use actual population numbers from census data?
  - i. Martins: Yes.
- d. Peter Claggett (USGS): For developments outside of single family homes, how do you determine sewer vs. septic?
  - i. Martins: It is possible to query that out of the database, and to look at the county level to check what is captured.
- e. Claggett: Did you generally find that septic systems are over-estimated (when comparing against local data)?
  - i. Martins: Yes, generally over estimating
- f. Pat Buckley (PA DEP): Requested explanation of relevance to other jurisdictions?
  - i. Claggett: MD has a state planning office, therefore their data are often used to parameterize and/or ground-truth CBP models and assumptions. Will use MD to determine assumptions, which can then be applied to other jurisdictions.
- g. Buckley: Noted a concern regarding 2020 land use projections, when MD patterns were being used in other jurisdictions. (e.g. PA does not experience the same growth as MD.)
- h. Dana York (MDA): Is it a requirement to switch to sewer if it becomes available after a home is built?
  - i. Martins: Up to the jurisdictions
- i. Jeff White, MDE, Presented how MD determines nitrogen delivery factors for septic systems.
- j. Steve Stewart: Is the delivery to edge of stream?
  - i. White: Yes.
- k. Ning Zhou (VT): Noted that a current Wastewater Treatment Workgroup expert panel focuses on BMP efficiencies, a second panel will focus on delivery and soil attenuation.
- l. Note that the critical area can extend beyond 1000ft
- m. Dave Montali (WV): What percentage of septic systems are in each category?

- i. White: Have to check the amount
- ii. Zhou: Estimate about half of septic systems are located within 1000ft of streams
- n. Montali: When projection loads from future growth of septic systems, did you consider attenuation distribution?
  - i. Martins: No, when looking at potential reductions, looked at on a county basis with specific rates by county. However could work with MDE to make these estimates.

### 3. Mapping Residential Development in Baltimore County

- a. David Newburn, UMD, presented mapping and modeling residential development in Baltimore county ([presentation link](#)).
- b. Newburn noted that in some cases development happens below zoning capacities.

### 4. Low Density Residential and Septic Systems in Phase 5.3.2 & Possibilities for Phase 6

- a. Peter Claggett, USGS, presented on mapping low density residential development and estimating number of septic systems ([presentation link](#)).
- b. Used sampling data in each state to come up with median average per residential lot for each state.
- c. Montali: Did you receive WV data, and is that what was needed?
  - i. Claggett: Will check the WV data. Update: CBPO has received the WV Potomac sewer service area data and will use it in the simulation of growth for the 2015 milestones in September 2013.
- d. Buckley: Why are there more impervious acres in the rural than suburban?
  - i. Claggett: Due to long driveways, out buildings, some larger houses.
- e. Dana York: Recommend using data from a recent survey by the conservation district in Howard County, they reviewed every agricultural lot to determine pervious vs. impervious.
- f. Bloch: Recommend Wicomico Mercy Response dataset
- g. Ning Zhou: Reviewed how Wastewater Treatment is currently being handled. Expert panel with TetraTech on BMP efficiency. Second expert panel to review delivery of treated water. Factors to be reviewed include soil type, distance, spatial delivery, and others suggested by the future panel.
  - i. Claggett: What soil attributes are being considered?
    - 1. Zhou: Soil type is the current priority
  - ii. Claggett: Recommend the panel discuss 24k vs 100k network,
    - 1. Zhou: Transport in stream may require different expertise
  - iii. Tribo: What is on the table for stream network in the model?
    - 1. Claggett: No stream network in model calibration. In terms of watershed model calibration, using cfs and where the segment drains.
  - iv. Montali: If factoring in distance to channel, also have distance from channel to edge of stream. Panel has to also determine attenuation in the stream to the pour point.
    - 1. Claggett: As long as those factors are considered. Might be possible to weight the land uses differently depending on where they are in location to the stream as a model input.
  - v. White: How are delivery factors for other land uses determined?
    - 1. Claggett: Land uses in the model are based on literature target loading rates.
  - vi. White: Recommendation to base the delivery factor for septic systems on the same

method used to determine delivery factors for other land uses, to resolve 24k vs 100k.

#### 5. Short-term Forecasting of Agriculture and Urban Growth for 2015 Milestones

- a. Peter Claggett gave an overview of short term urban area forecasts supporting 2015 milestone development. ([presentation link](#))
- b. Stewart: How did actual 2010 data match up with the projections for 2010?
  - i. Claggett: Have not checked that yet. Have checked housing projections against American Community Survey data for 2007, and found to be very close.
- c. Stewart: Recommend checking projections against actual data in a few of each type of county (urban, rural, etc.).
  - i. Update: CBP has compared trend forecasted total housing units by modeling segment with those reported in the 2010 Census. The R2 value between the total numbers is 0.996 and the R2 value between the forecasted amount of change and estimated actual change is 0.875.
- d. Matt Johnston (ppt link) gave an overview of short term agricultural forecasting methods ([presentation link](#)).
- e. White: Is AgWG deciding to include annual NASS data?
  - i. Johnston: Still an open question, and is being discussed by AgWG
- f. Stewart: Are load changes expected as a result of changing the projections?
  - i. Johnston: Clarified that there are load changes every year, because the TMDL requires offsetting for growth and new land uses are developed every year.
- g. Stewart: Noted the challenge of timing with the milestone submissions and resubmissions from a local government perspective.
  - i. Tribo: There will always be variability, and with updated projections it is possible to predict some of the variability ahead of time.
  - ii. Stewart: Local governments will be interested in these land use change decisions.
  - iii. Claggett: As projection decisions continue over the next few months, how best to engage others at the right times?
    1. Stewart: Depends on what states decide to do with projections, and if local governments are asked to change based on the projections.
  - iv. Claggett: Noted importance of making small adjustments
    1. Stewart: Difficult to make these small adjustments at the local government level with limited resources.

#### 6. STAC Workshop Proposal

- a. Tribo announced that the latest version of the USWG STAC proposal will be posted to the calendar for this meeting
- b. Claggett: The STAC proposal was to discuss impervious surface connectivity. STAC has narrowed the proposals but have not made the decision yet.
  - i. Update: STAC has accepted the USWG proposal.

#### 7. Status Update of Local Land Use Data Collection Efforts

- a. Bloch: Most DE data is posted, and there may be a few additional data sets coming.
- b. Claggett: In PA, Burks, Chester and Lancaster counties have submitted data, York will be submitting soon. Expecting additional data from southeast PA. Recently presented this local data collection effort in PA, any localities can submit data directly to the CBPO.

- c. Claggett: Received Jefferson county dataset from WV
- d. Claggett: Queen Anne County in MD posted their data.
  - i. White: Within the next two months will only be missing full GIS data from two counties in MD. Expect to submit fully by end of summer.
- e. Claggett: HRPDC, AFO data from VA, proposed roads, Fairfax County, Campbell County, Chesapeake Beach, Virginia Beach, Bedford, Region 2000.
  - i. Beverly Quinlan: Have posted everything received so far.
- f. Claggett: Potential of targeting VA PDCs to fill in the gaps? Given that it may be the only data set for some areas.
  - i. Quinlan: 911 data would be by jurisdiction as well.
- g. Claggett: Noted that there are extensive data gaps in some areas, and the possibility for filling in the gaps in more rural areas with tax parcel data.
- h. White: Noted that localities should have digitized buildings in their 911 database
- i. Claggett: Who would have 911 databases?
  - i. Bloch: Public works will digitize everything on a parcel.
  - ii. White: Eastern Shore of MD will submit impervious addressable buildings layer and impervious non addressable data layer. Access Geospatial is the contractor they use.

#### **8. Agricultural Modeling Workshop**

- a. Claggett gave an overview of the Agricultural Forecasting breakout sessions hosted during the workshop held May 22-23 in College Park.
  - i. One topic of discussion was factors affecting agricultural land vulnerability to conversion.
  - ii. The livestock group had recommendations regarding long term forecasting, which included using ERS 10 year national forecast and downscaling it to the Chesapeake Bay region.
  - iii. The crop groups were less convinced of the utility of long term crop forecasts due to less capital investment, and shorter term decisions.
  - iv. Purpose was to discuss non BMP methods of reducing nutrients. With the livestock community, possible to engage the group for continued recommendations.
    - 1. York: Noted that genetics will have more effect on future livestock than on crops. Irrigation will have the larger effect on crops.

#### **9. Upcoming Meeting Topics (brainstorming session)**

- a. Claggett: Upcoming topics include
  - i. Backcasting & forecasting methodologies
  - ii. Impervious surface connectivity
  - iii. Status of local data and gaps
- b. Tribo: Will also have an update on the STAC proposal in July.
- c. Claggett: Will present an update on local data gathering in July but may need to move call to July 22<sup>nd</sup>. Date change approved by LUWG.
- d. Johnston: Recommend keeping track of literature from Healthy Watersheds STAC workshop.
- e. Claggett: All workgroup members welcome to assist with analyses.
- f. Claggett outlined the LUWG workload, which is to inventory local land use information where available, and review the data to determine what can be applied at a larger scale.

Then, overlay this with MS4, measure of connectivity, soils, floodplain to tease out the other types of land uses. This will then be the proposal for Phase 6.0. LUWG will need to conduct extensive analyses before making Phase 6.0 recommendations. Are there any suggestions for how best to approach this task?

- i. Stewart: Recommend determining if there are differential loading rates.
  - ii. Newburn: Recommend mapping residential septic vs. sewer, which would have differential loading rates.
  - iii. Stewart: Stream scale issue should also be discussed. Consider a “stream corridor” land use.
  - iv. Claggett: Recommending adopting a few case studies in specific counties to do in depth analyses on 24k vs. 100k.
- g. Stewart: How to define connected vs. disconnected impervious cover?
- h. Stewart: Recommend drafting a list of LUWG proposed urban land uses for Phase 6.0 model.
- i. Claggett: A list was drafted with initial LUWG meetings.
  - ii. Tribo: Can revisit it in comparison with local data received so far.
- i. York: Recommend bringing AgWG land use proposal to LUWG.
- i. Claggett: Note that this group is focused on the high level mapping, not the lower detailed levels.
  - ii. York: Does LUWG need to approve the AgWG proposed land use?
    - 1. Claggett: If there is a spatial component, it will need to be reviewed by LUWG.
  - iii. Tribo: Is there need to separate the sectors?
    - 1. Johnston: Yes.

**Adjourned**

**Upcoming Meetings:**

- July 22, 2013 – Call
- August 19, 2013 – Call
- September, 2013 – Annapolis meeting TBD
- October 21, 2013 – Call

**Participants**

Bryan Bloch	DNREC
Jeff White	MDE
Stephanie Martins	MDP
Steve Stewart	Baltimore County
Ted Tesler	DEP
Beverly Quinlan	DCR
Darold Burdick	Fairfax County
Megan Grose	WV DEP
David Newburn	UMD
Laura Muhs	DoD/DoN
Dana York	MDA/Green Earth Connection
Peter Claggett	USGS
Matt Johnston	UMD
Rob Hirsch	Baltimore County

Chris Brosch	VT/VADCR
Michael Schwartz	
Pat Buckley	PA DEP
Pat Gleason	EPA
Jenny Tribo	HRPDC
Dave Montali	WV
Emma Giese	CRC