

## CHESAPEAKE BAY PROGRAM LAND USE WORKGROUP

**Meeting Summary**  
**February 1, 2017**  
**10:00AM-12:00PM**

**Meeting Materials:** <http://www.chesapeakebay.net/calendar/event/24790/>

### Actions & Decisions:

ACTION: Following finalization of the Phase 6 land use database and back-casted land use results, data and accompanying methodology and error estimates will be posted publicly online and notice will be distributed to the LUWG and interested parties via email.

ACTION: The LUWG agreed to hold a lengthy review of lessons learned from the development of the Phase 6 land use database, to be scheduled for summer 2017.

ACTION: Peter Claggett will develop a proposed timeline for developing and reviewing the land use forecasting data products, and will present it back to the workgroup for review and input.

ACTION: Karl Berger and Norm Goulet will submit a formal request to the CBP for an informational session to be held covering the Phase 6 sediment modeling framework.

### Welcome and introductions/Review of meeting minutes – K. Berger, MWCOG

The LUWG approved the minutes from the December 7<sup>th</sup> meeting.

### Phase 6 Land Use Wrap-Up – P. Claggett, USGS

Peter Claggett briefed the workgroup on the recently completed land use database that will be used to inform the final Phase 6 Chesapeake Bay Model. Issues identified through local and internal review of the data were highlighted.

- A summary of comments received during the local review will be posted to the LUWG website. Notice will be sent out via email.
- Karl Berger: In preparation for the fatal flaw review later this year, it would be helpful to be able to review error estimates for some of these land use classes and to understand the scope of some of the issues identified. It would also be good to understand the timelines of some of these other projects – the Chesapeake Conservancy’s grant to develop a better streams layer won’t be implemented in the Phase 6 model, correct?
  - Peter Claggett: We won’t be able to implement any further changes in the land use data for the model until 2019, in accordance with the 2-year milestone updates. We can do adjustments to these data in the meantime for other Bay Program purposes, but all watershed model-related fixes are locked out for the next two years.
- Sebastian Donner: In regards to the MS4 geographic extent data, did you post it to the viewer?

- Peter Claggett: We have not yet done that; we will, but we've been working to complete the land use data first.
- The Phase 6 land use tabular data will be released and posted online next week. Data will be split out by land-river segment, MS4, CSO, and federal lands.
- Karl Berger: Ag census error estimates vary by county, so if you have a 20% error estimate for crop and pasture in Lancaster County, turf and mixed open will have the same error rate. But will that error rate adjust with other counties that have different error rates?
  - Peter Claggett: Yes. And all the land uses will adjust to accommodate any adjusted acreage based on these error rates.
  - Karl Berger: Is that adjusting methodology documented anywhere?
  - Peter Claggett: When we roll out the data, we will include that information, both in written documentation and in the land use tables.
  - Karl Berger: Also in terms of documentation, I think we should do the same for the back-casting procedure. And where will this information and data be available?
  - Peter Claggett: I don't know if it will be on our FTP site or another site, but we'll be sending out a notification via email.

ACTION: Following finalization of the Phase 6 land use database and back-casted land use results, data and accompanying methodology and error estimates will be posted publicly online. Notice will be distributed to the LUWG and interested parties via email.

- Karl Berger: There are a lot of lessons to be learned in doing this, and since this process will be repeated into the future I think it would be worthwhile in the future to have a 'lessons learned' session on this entire process.
  - Norm Goulet agreed that this would be a worthwhile endeavor.
  - Peter Claggett: Regardless of whether people want it or not, I'll be publishing the methodology and lessons learned internally, so there will be a formal write-up of this entire process.
  - Karl Berger: Agreed. I think we should pencil in a lengthy review session of this sometime in summer 2017.

ACTION: The LUWG agreed to hold a lengthy review of lessons learned from the development of the Phase 6 land use database, to be scheduled for summer 2017.

#### Land Use Forecasts Schedule – P. Claggett, USGS

Peter facilitated a discussion on the steps and timeline needed to produce a baseline -trend forecast by mid-March using the CBLCM and MDP Land Use models. (A more detailed land use forecast will be produced later. The discussion encompassed the need for vetting/validating the forecasts.

- Norm Goulet: I'd recommend moving forward with 2050 instead of 2070 as the end date for any future forecasts. Last time we did this, we had a lot of opposition with

looking out too far. In terms of gathering local zoning and comprehensive plans, it's going to be very difficult.

- Karl Berger: I know that some counties have local forecasts that they develop, so could we incorporate any of that into this process?
  - Peter Claggett: One of the obvious things we can do is try and start the model runs in the year 2000, and then compare them with what 2010 looks like. The only problem there is that some of the data we use only started to get collected at later dates (~2003). In general, it's really difficult to validate these models, so that's something I would appreciate a lot of feedback on from the workgroup. Regional models are typically parameterized based on Landsat data, but from experience with the Phase 6 model, Landsat underestimates urban areas to a large degree. I estimate this will be the focus of the workgroup from roughly April-July 2017.
- Karl Berger: I thought you were going to compare your forecasts to the MDP forecasts?
  - Stephanie Martins: We're willing to do as much as we can to help with that. Our model by default goes out to 2040, so we'd have to adjust to 2025 to make it comparable to this model. That might take us into March to do that.
  - Karl Berger: Aren't there some county forecasts as well that we might be able to look at?
  - Peter Claggett: Outside of what MD's done, there was some work done in DE but I don't know how up to date that is. I do agree that comparing our model to MDP's is something we will pursue, but I'm not aware of anything in terms of county models.
- Lee Epstein: What's your reaction to bringing the date back to 2050 or 2040?
  - Peter Claggett: I think that makes a lot of sense – it becomes more speculative the further out you go in time. For our purposes, the Modeling Team may have a separate timeframe for looking into climate change.
  - Norm Goulet: I see those as two separate things – the land use support for climate modeling shouldn't be related to developing the forecast products. If MD goes out to 2040, and they're already going to be a huge part of the validation process, then I would suggest we go out to 2040. But it's worth talking to the Modeling Team.
  - Peter Claggett: Once we get the model set up, there's no reason why we can't make different products for different applications.
  - Karl Berger: In terms of WIP development, 2025 is the key date for us.
  - Peter Claggett: We basically simulate averages over time periods, and we find a decadal time period is the best for getting the average amount of change correct. 2025 is a bit difficult, because it's essentially a 7-8 year forecast.
- Lee Epstein: At one point, you had talked about running several different scenarios. Is that still the plan?
  - Peter Claggett: Right – and this workgroup will decide what those scenarios are. By the end of the summer, we'll have a template for a middle-of-the-road scenario, and two other scenarios.

- Robert Hirsch: Looking at this schedule, I'm thinking about how we're going to recommend whether WIPs be based on 2025 projections. We've done so much work to get local governments involved in the land use, and I don't see any effort to get local governments involved in the land use projections. I also have concerns about compiling and interpreting the zoning data, and I think that will be key in getting acceptance and buy-in from the localities on the 2025 projections.
  - Stephanie Martins: We've tried to work with local planning departments in MD to develop a process to review local zoning categories and develop reasonable density yields in terms of projected growth. We'll work to compile the information we have, and can supply it to Peter and anyone else who wants to review it in the next couple of weeks.
- Greg Evans: We've been talking with localities for the past few months, and we're finding a lack of uniformity in policy and zoning. So I don't know how you're going to be able to coherently pull all of that information into one cohesive model.
- Peter Claggett: The general constraints we already have in the model work pretty well for Frederick County in a test run that I did. I think if we put something out there, and don't label it as a final product, but allow people to react to it and ask for zoning or comprehensive plan data in a very specific format. That way, localities would have the option to have their data incorporated. How does the workgroup feel about that?
  - Lee Epstein: I would not downplay the complexity of combining classes into one uniform set, and the ownership with which local governments feel about their own classification. We tried to do this some time ago, and it's very difficult. MWCOCG has also tried to do it. It's one thing to do it if you're showing a current generalized zoning/land use plan for a region, but it's another level of concern if you're trying to forecast.
- Karl Berger: In my mind, it's not up to the LUWG to recommend what growth scenario to use in forecasting for WIP development, but rather it's up to us to document pros and cons of each approach. One concern sounds like it will be difficult if not impossible to get local government buy-in on future forecasts. So whether that means we should or shouldn't move forward, folks up the line from us will have to decide.
  - Peter Claggett: Right – and we are not a policy workgroup. Our job is to consider whether the methodology being used in MD and elsewhere seems technically sound considering the state of the science. And are the forecasts that are produced plausible and realistic? Regarding credibility, one thing to consider is the scale at which we disseminate results of the forecasts – we don't want reviewers to nitpick the data. So if we roll out a coarser scale representation of growth (i.e. LRSEG-scale), it might be easier for people to accept those results if they don't get hung up on individual features.
- Darold Burdick: Do you take into account counties like Fairfax where we're mostly built-out versus other counties that are still growing?
  - Peter Claggett: We have infill and redevelopment in our model, and we estimate that based on the proportion of housing absorbed by current infrastructure. So we do try to account some estimate of absorbing/accommodating change in population through vertical growth, etc.

- Peter Claggett: There is still a question of outreach to local governments for the forecast as we've done with the land use. One question is whether we do it all, and if we have to do it- how do we build it into the timeline? We could provide LRSEG maps of growth and uncertainty publicly, and open a comment period on whether we're getting things right. If we do that, we wouldn't ask for zoning and comprehensive plan data.
  - Karl Berger: From my own perspective, I think it's good to open processes up to local review and input, but I have serious concerns about bogging down the entire forecasting process and blowing the WIP development schedule. I think this might work better if the forecasts are produced, the LUWG reviews and compares products, and we provide forthright information on local forecasts, errors and uncertainties, pros and cons, and then just present to the WQGIT for consideration. Otherwise, the process would take too long.
  - Darold Burdick: Could that process include internal comparisons against actual comprehensive plans so people could review how they align? This wouldn't have to be a public process.
  - Peter Claggett: We have been provided zoning data already from some localities, and we have MD data. That would be helpful for me to do as you suggested, and we could present the results of the comparisons to the LUWG.
  - Darold Burdick: That way if someone raised the question, you could say that you did attempt to validate against actual zoning plans.
  - Robert Hirsch: I just want to note that when you compare policy plans with what actually happens, you can find large discrepancies.
  - Darold Burdick: True, but remember that this is all just guidance.
- Norm Goulet: Most comprehensive plans, at least in VA, are unrealistic – they generally just represent the maximum development that could potentially occur. So I don't know if they would be useful for this effort anyway.
- Peter Claggett: I think then we essentially need a structure, that we review as a workgroup, to determine if the results look plausible in urban and rural areas and compare well with other data sources. If that is true, then we as a workgroup could make a recommendation to the WQGIT that the process produces plausible results at the scale in which we simulate the data. So I would propose to the workgroup we develop an outline of this entire process for completing the forecasting.
  - Karl Berger: It would be good if the workgroup could review those analyses and provide some recommendation on the issue of zoning back up to the WQGIT. It's our job to provide the best data and analysis that we can on this.

ACTION: Peter Claggett will develop a proposed timeline for developing and reviewing the land use forecasting data products, and will present it back to the workgroup for review and input.

Plan for March and April LUWG Meetings – K. Berger, MWCOG/ All

- Peter Claggett and Karl Berger suggested holding a face-to-face meeting in April and a conference call in March.

- In March, Peter will outline the data informing the forecasting model and request workgroup meeting. The April meeting will include first results of the forecasting methods.
- Karl Berger suggested reviewing the work and goals of the workgroup once the 2025 forecasts are completed, and potentially either sunseting the workgroup or reducing the frequency of meetings.
- Karl Berger: I also want to notify the LUWG that Gary Shenk recently did a presentation on sediment modeling at the USWG, and it seems like there are still some major decisions that need to be made. It relates to the LUWG in the implementation of some of these methods using GIS. Norm and I would like to propose that the CBP folks involved in this effort do a public informational session on the sediment modeling framework. I'd like to make this recommendation back to Rich Batiuk at the CBP. Are there any objections to doing that?

ACTION: Karl Berger and Norm Goulet will submit a formal request to the CBP for an informational session to be held covering the Phase 6 sediment modeling framework.

Participants:

Karl Berger	MWCOG
Peter Claggett	USGS
Lindsey Gordon	CRC
Darold Burdick	Fairfax County VA
Lori Brown	DE DNREC
George Onyullo	DC DOEE
Jonathan Champion	DC DOEE
Diane Davis	DC DOEE
Norm Goulet	NVRC
Lee Epstein	CBF
David Newburn	UMD
KC Filippino	HRPDC
Krystal Reifer	Montgomery County MD
Robert Hirsch	Baltimore County MD
Jeff White	MDE
Shannon McKenrick	MDE
Stephanie Martins	MDP
Greg Evans	VA Dept of Forestry
Sebastian Donner	WV DEP
Megan Grose	WV DEP
Chad Thompson	WV DEP
Renee Thompson	USGS
Jeff Sweeney	EPA