CHESAPEAKE BAY PROGRAM LAND USE WORKGROUP

Meeting Summary
December 7, 2016
10:00AM-12:00PM

Meeting Materials: http://www.chesapeakebay.net/calendar/event/23318/

Actions & Decisions:
ACTION: Peter Claggett will generate and make available a tabular dataset by LRSEG and county of the Phase 6 land use data, and will include a brief description of how turf grass and low vegetation classes were differentiated in the models. Lindsey Gordon will distribute this in the form of an email announcement to local county contacts and LUWG members.
ACTION: Peter and the Land Data Team will post the corrected, final land use data to the FTP and USGS websites once it is available, and will develop a summary document listing the major comments that were submitted, and any changes to the decision-rules in the models that were either a result of those comments or resulting from internal review. This document will also include a summary of the methodology for adjusting acreage totals based on relative error in the final Phase 6 model and a generic description of how turf grass and mixed open were parsed out for low vegetation.
DECISION: The LUWG recommended that the USWG and state jurisdictions work to provide the most accurate and consistently defined MS4 coverage data for use in the Phase 6 land use database and Watershed Model.
DECISION: The LUWG agreed to hold monthly meetings on the first Wednesday of each month through 2017.

10:00 Welcome and introductions/Review of meeting minutes – K. Berger, MWCOG

Minutes from the November 2nd meeting were approved.

10:10 Summary of Comments Received on Phase 6 Land Use – Q. Stubbs, USGS
Quentin summarized the comments received on the Phase 6 land use database to date.

Discussion:

- Peter Claggett: Do you think in general, that comments on wetlands indicated they were over- or under-represented?
    - Quentin Stubbs: It depends on which version you're referencing, but I would estimate they felt they were under-represented. There were issues differentiating between forests and forested wetlands. On the whole, it seems there was agreement that the wetlands existed, but questions on what land use class they were.

    - Claggett: Tidal wetlands will be put into the water quality model. The ramifications are fairly minor. If there's a misclassification of tidal areas, wetlands load very low anyway so it's not a major source of nutrients. The misclassification of wetlands would have more influence on other uses people may have for the data than loading rates.
    - James Davis-Martin: Is tidal wetland going to be treated like water in terms of air deposition?
    - Claggett: I don't think so. We would need Gary or another modeler to weigh in on how the water quality model is handling wetlands. I don't think they're handled just like water – they should have some unique characteristics.
    - Davis-Martin: But that's a change in the way we've done things. When they're part of the watershed, states are responsible for reductions associated with those lands. As it shifts to the water quality model, it would essentially become tidal water which should be the responsibility of EPA and the air deposition sector.
    - Claggett: I think you're right, but we definitely need some clarification on that.
- Claggett: The deadline for submitting fatal flaw comments for the last counties was yesterday. Did you receive any comments that were specified as fatal flaw?
    - Stubbs: The concern about turf grass and cropland was an issue for some counties. The question then becomes if it's an isolated issue to that county, or whether it's a problem with the entire model. That would be the closest thing to a fatal flaw.
- Jim Cannistra: We're going to send out comments via memo today, but we had identified two things: the overlapping data in the imagery doesn't enable us to do much analysis by land cover categories, and then having total square mileage equal the square mileage in the county. We also feel like the impervious data is oversampled in terms of the comparison we did with our vector data. This is true for Prince George's County, specifically.
    - Claggett: We will definitely investigate the issue with impervious.
    - Karl Berger: Have we checked with other jurisdictions and representatives to see whether this is a pervasive issue? And this issue of overlapping land uses – the tabular data will be released eventually, correct?
    - Claggett: So we need to check our categorical classifications from the land cover dataset for the impervious issue. The problem with the 1-meter is that we can't provide it online. We could provide it for select counties, though. For the tabular data, I have a dataset by specific modeling segment zones that's available online. We could post on our FTP site a raster of the different zones that we used, combined with the table. Alternatively, we could collapse the data to LRSEG and county level tabular values.

ACTION: Peter Claggett will generate and make available a tabular dataset by LRSEG and county of the Phase 6 land use data, and will include a brief description of how turf grass and low vegetation classes were differentiated in the models. Lindsey Gordon will distribute this in the form of an email announcement to local county contacts and LUWG members.

- James Davis-Martin: Were there any comments that indicated the models would need a change in their rules to address issues that were identified? From my perspective, the assumptions we're making for categorizing herbaceous lands in urbanized areas lead me to wonder if we should revisit the decision rules related to this. How is herbaceous in urban areas divided?
    - Claggett: It's divided into turf grass mainly based on its proximity to non-road impervious surfaces. As comments have been coming in, we've been changing our decision rules to adapt to what we're seeing. The biggest concern I've seen is the over-estimation of turf grass, and some confusion about what mixed open is. One of the big issues with these two classes, was the way we interpreted federal and park lands, swhich has changed since the process started. – We went from having all of those areas designated as 70% turf and 30% mixed open, to now dividing up these lands into 3 categories of differing percentages based on size. We've also changed a decision used in rural areas that placed a buffer around all impervious surfaces and classified those areas as turf grass. We've since shrunken that buffer to reduce the amount of turf grass in those rural areas. All of these changes will help to minimize the over-estimation of turf grass. These results haven't been posted yet, but we're in the process of re-running every single county in the watershed with these new rules.
- Jeff White: What rule was applied inside urban areas?
    - Claggett: Rural areas use smaller buffers, and urban areas use larger buffers. We also use parcel data, and some counties have over-generalized parcel data, which we didn't realize initially. This led to errors in our automatic classifications. s We've tried to correct it with additional parcel data from these counties, but in other cases we wouldn't know the issue exists.
    - White: When you send out the LRSEG summaries, could you attach a generic description of how turf grass and mixed open were parsed out for low vegetation?

10:30 <u>Update on Phase 6 Land Use Database</u> – P. Claggett, USGS

Peter summarized changes made to the Phase 6 land use models to address comments received from localities and issues identified by USGS after reviewing the current set of land use products. To access and download the data by county, please use the following link: http://chesapeake.usgs.gov/phase6/

Discussion:

- Claggett: The differences between the VA WSI original data and our reclassification of the data is most pronounced in urbanized areas. Essentially, our decision-rules take high-loading classes and move portions of them into lower-loading mixed open classes.
    - Davis-Martin: That sounds good on paper, but then you try to treat your loads, and you might not have any more land to treat in the model.
    - Claggett: Right. So moving forward, without a more detailed accuracy assessment, do we change our decision rules in VA or do we keep it consistent and move forward, knowing that in rural counties where there is mostly ag that our changes are very minor?
    - Davis-Martin: Right, and that was just one of the assumptions that jumped out at me when I was reviewing everything. So I just wanted to raise the question as to whether other comments were the result of that same assumption, or whether it is a phenomenon unique to VA.
    - Claggett: I think it's the latter, but I would also say that with the changes we're making to the decision rules, when we re-run these counties then we should see less of a dramatic change.
- Berger: So we're trying to balance our schedule with accuracy, and at some point this whole process has to end. I just want everyone to keep this in mind, but I also think it would be good for the revised data to be posted on the FTP site and for Peter and his team to collate the comments that came in and log the decision-rules that were changed as a result.
    - Davis-Martin: I think that's a great idea.
    - Berger: Then we could revisit that document in January, and make a decision at that point whether to approve and move forward with the land use data as it is presented at that time.
    - Claggett: I want people to realize that in the final model, once the ag census is incorporated, there is a 'true-up' of the data, particularly with regard to these low-vegetation classes. So both the ag census and our dataset can flex, and there will likely be further correction to these values that will be present in revised data that can be released in January. It won't be present in the tables I can send out today.
    - Norm Goulet: I thought we were relying less heavily on the ag census.
    - Claggett: The error rates of each datasets and accounted for in our 'true-up', and the different land use classes will be adjusted according to the relative percent of error.
    - Berger: I would request that this acreage adjustment methodology be documented in this summary you're developing.

ACTION: Peter and the Land Data Team will post the corrected, final land use data to the FTP and USGS websites once it is available, and will develop a summary document listing the major comments that were submitted, and any changes to the decision-rules in the models that were either a result of those comments or resulting from internal review. This document will also include a summary of the methodology for adjusting acreage totals based on relative error in

the final Phase 6 model and a generic description of how turf grass and mixed open were parsed out for low vegetation.

- Claggett: I have a number of other updates that we've made in our most recent models. In PA, we have hand-digitized footprints for unconventional oil and gas, and overlaid those to determine that herbaceous lands in these masks would be called mixed open. PA DEP, the USC, and UVM also developed a probabilistic model for identifying wetlands. This has been incorporated into PA's land uses, which means that a lot of forested area moved to other wetlands. There's no loading ramifications to that since wetlands and forest have the same loading rate, and we'll likely need to develop a user's guide for this data outside of the TMDL context.
- Karl Berger asked if any local jurisdictional representatives had any additional comments.
    - Mark Symborski: At this point, we don't feel that it's a great land cover dataset for Montgomery County, but on the other hand we don't feel that it would be productive to start saying these are fatal flaws. There are inconsistencies with impervious areas, as well as the low-vegetation classes.
    - Karl Berger asked if these inconsistent classifications were a result of the Conservancy's land cover classification, or if it was a result of the land use models.
    - Symborski: Were these issues that we've identified supposed to be covered in the land cover review, and not at this stage with the land use?
    - Claggett: The land cover comments are mainly if there's an incorrect call between impervious, low vegetation, etc. For the land use translation, the items you've raised seem to be more land use-centric where you're concerned about how the low veg was classified.
    - Karl Berger reminded everyone that the land use inputs to the model are some of the most accurate, and that the team should document known inconsistencies in order to provide insight for future land use development efforts.
    - Berger: So hopefully the comments that have been brought up today can serve as lessons learned, and potentially not as fatal flaws at this point in the game.

11:30 <u>Sewer Service Area, MS4, and Federal Boundary/Land Use Updates</u> – P. Claggett, USGS

- Claggett: MS4 areas have been very difficult to get information on – each jurisdiction records them differently. Trying to tease out these inconsistencies is very difficult, and because this is a regulatory issue, it doesn't seem appropriate for the GIS team to be making decisions on what is and isn't an MS4. I would recommend that this be an EPA and state issue, and that we should be the recipient of what states provide us. I would like to punt this issue to the USWG in January. We'll have to update our MS4 coverage, and the GIS team is currently

out of their comfort zone in trying to make these judgement calls in doing this work.

- Travis Stoe: We have detailed 2010 MS4s, as we've defined them, and I can send those to you very easily. This is the first I've heard of this, and I'm not sure how it's being managed but I own those data and I can send them to you.
    - Claggett: As soon as you can get it to us, the better. Thank you.
- Norm Goulet: We've talked about this issue several times at the USWG. There was a request for all the states to send their most recent available data for MS4 coverages to you. I know some states have, but we'll gladly bring it up again at our next meeting. Since this is just an overlay, I don't think it's critically important for the model calibration.
    - Claggett: True, but when we develop our 4,100 units for reporting all land uses through time, it's very influential to that because that's one layer that goes into determining what those units are. And if the areas are grossly underestimated, then all of the urban stormwater BMPs are going to be concentrated on a small portion of land.
    - Davis-Martin: This will be very important during Phase III WIP development. Is Norm's characterization of this as an overlay correct? Or are we creating regulated and unregulated land uses?
    - Claggett: We're creating regulated and unregulated land uses. We have 13 mapped land uses, but as input decks to Scenario Builder, there's about 65. So it's critical that all the land uses are carved up by that overlay of those MS4s. It's burned into the process of aggregating land use information.
    - Davis-Martin: Maybe we need to ask the modelers if we were to re-define the split between regulated and unregulated, or any other distinctions, if that causes them heartburn with regard to the calibration, and if we could do that post-calibration.
    - White: We've been told that what we provide now for those splits is locked in for the 2-year period.
    - Claggett: There should be agreement on the classification scheme moving forward for a dataset that has implications beyond the model.
    - Goulet: I think the states will want to have it in their power to define it how they want to. VA's definition is different from MD's, etc.
    - Davis-Martin: But would this have to be a spatial, GIS data layer? Could we use a tabular approach?
    - Goulet: But this would impact our BMPs that now have spatial information associated with them.
    - Claggett: Yes, this would have a big impact on our loads.

DECISION: The LUWG recommended that the USWG and state jurisdictions work to provide the most accurate and consistently defined MS4 coverage data for use in the Phase 6 land use database and Watershed Model.

11:50 Discussion of January LUWG Meeting/Wrap-Up - All

- Claggett: In January, we need to start focusing on running future land use scenarios for the Bay watershed. I propose this meeting be a call, and think we should have a discussion on the path forward for the timing on developing state-by-state forecasts, the different scenarios, data inputs, and any comparisons we want to do between Maryland's model for future forecasting and our model. These comparisons would enable other jurisdictions to have more confidence in the process we're undertaking.
    - Berger: Do we need any follow-ups during the January meeting on the action items we've discussed today, or the land use review process?
    - Claggett: I think it would be good to discuss documentation, to make sure the information is available for everyone.

DECISION: The LUWG agreed to hold monthly meetings on the first Wednesday of each month through 2017.

12:00 Adjourn

Participants:

Karl Berger	MWCOG LUWG Chair
Peter Claggett	USGS LUWG Coordinator
Lindsey Gordon	CRC
Lori Brown	DNREC
Megan Grose	WV DEP
Sebastian Donner	WV DEP
Chad Thompson	WV DEP
Quentin Stubbs	USGS
Renee Thompson	USGS
Shannon McKenrick	MDE
Jeff White	MDE
Stephanie Martins	MDP
Lee Epstein	CBF
Alisha Mulkey	MDA
Norm Goulet	NVRC
KC Filippino	HRPDC
James Davis-Martin	VA DEQ
Robert Hirsch	Baltimore County
Travis Stoe	PA DEP
Jim Cannistra	M-NPPC
Krystal Reifer	Montgomery County MD
Mark Symborski	M-NPPC
Steve Stewart	Baltimore County