CHESAPEAKE BAY PROGRAM LAND USE WORKGROUP

Meeting Summary
November 2, 2016
10:00AM-12:00PM

Meeting Materials: http://www.chesapeakebay.net/calendar/event/23317/

Actions & Decisions:
ACTION: Peter Claggett will send the CBP's interpretation of DE local land use and parcel data to Lori Brown, DNREC.

DECISION: The LUWG agreed on a proposal for the data team to re-run all counties implementing a rule change so that all federal and state park land greater than 10 acres will be classified as 100% mixed open, and the same lands less than 10 acres would remain as fractional turf grass (70% turf and 30% mixed open). Peter will then update the Federal Facilities Workgroup of this change during its meeting on Tuesday, November 8. This decision was made without official workgroup representation from PA, NY, and VA.

ACTION: Peter Claggett will verify that pad areas in unconventional oil and gas areas are classified as impervious, and not erroneously classified as mixed open.

DECISION: The LUWG agreed that the data team should move forward with using the synthetic streams dataset in the final land use dataset. This decision was made without official workgroup representation from NY, PA, and VA.

DECISION: The workgroup agreed to make a formal recommendation that the 4-week review period for the Phase 6 land use data be maintained in the event that it conflicts with Partnership deadlines.

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

Meeting minutes from the September 7th face-to-face meeting were approved.

Update on Phase 6 Land Use Database – P. Claggett, USGS

Peter provided an update on the Phase 6 Land Use Database, which is currently being processed and distributed for review. Comments on the land use data are to be submitted through the following link, with fatal flaw comments due 2 weeks after the posting of the data: http://chesapeake.usgs.gov/phase6/

Discussion of low vegetation classes:

- Lee Epstein: If we've started reviewing the MD data that was recently pulled from the site, should we stop reviewing it?
    - Claggett: We will be reposting the MD data and restarting the clock on the local review
- Megan Grose: Is Jefferson County data also pulled from the site?
    - Claggett: Yes. We had noticed issues with the interpretation of the local land use data. Areas that were agriculture were potentially classified as turf grass. This meant that if there was herbaceous vegetation in the potential turf areas, then it was classified as turf. So in Allegheny County, MD, we noticed these swaths of turf grass adjacent to forests. This was a result of the generalized land use for MD: the polygon for forest encroached on the cropland. Since that forest polygon was called potentially turf, then the swath of crop adjacent to the woods was called turf. We've corrected that and wanted to institute those corrections across the entire state. We also wanted to ensure our classification of the land use was consistent. So we're re-doing all of DE and MD.
- Lori Brown: Were there any other major issues with the DE data? Or was it the turf issue only?
    - Claggett: Nothing specific to DE. I'm expecting the DE data to look really good because we're using your land use and parcel data to the extent possible. Because there's so much local data informing the land use, I expect the final product to meet your expectations. I can share with you our interpretation of some of the land uses in a spreadsheet.
    - Brown: That would be great.

ACTION: Peter Claggett will send the CBP's interpretation of DE local land use and parcel data to Lori Brown, DNREC.

- Berger: I want to circle back to what these delays mean for the schedule in terms of review time, etc.
- Claggett: In response to Sebastian Donner's comments, the crop/pasture separation comes from the NASS cropland data layer. So all areas that we consider agricultural are split out based on the NASS data, and unless we get another spatially explicit source of information on crop versus pasture, I'm not sure how we can correct that. The same applies to harvested forests and transmission lines. Regarding the sprinkling of crop and pasture in forested areas, if we redo some of the land use data we could implement a size threshold for crop or pasture in forested areas so that this phenomenon would get filtered out.
- Sebastian Donner commented that turf grass may be overly classified.
    - Claggett: We've noticed two things: 1) In rural areas with farmsteads and a lot of outbuildings, there's enough impervious to trigger a wide buffering of turf grass. Fixing this would require a change in the script. 2) We also have a layer of federal lands and park lands, and the workgroup agreed that public parks and federal lands would be classified as fractional – part turf and part mixed open. In rural parts of PA, there are very large state parks, and these are all getting classified as 70% turf grass when in reality they're more likely mixed open. I'm proposing to

institute a new rule in the model, that federal lands and park lands >10 acres would have their herbaceous areas classified as 100% mixed open. If the federal lands and parks are <10 acres, then we consider them fractional. This 10 acre threshold is also applied to parcels.

- Proposal on the table: federal lands and parks greater than 10 acres would have their herbaceous areas classified as 100% mixed open, and federal lands and parks less than 10 acres would remain as Fractional Turf Grass: 70% turf grass and 30% mixed open.
    - Berger: On some of these areas, don't you actually have the federal facility editor tool so that this issue could be corrected?
    - Claggett: Yes, we have this tool allowing federal managers to characterize their land uses. However, we've only received input from 20-30 federal managers, and we have 800-900 polygons of federal lands. So we're considering opening up that tool again for another two weeks to allow for additional time and hopefully more information. Outside of DoD lands, these parcels are incorrectly classified.
    - West Virginia supported the proposal.
    - Maryland suggested that this decision may be more appropriately made in the Federal Facilities Workgroup.
        - Claggett: I don't feel as though that workgroup has a good sense of the intricacies between Mixed Open and Fractional land uses.
- George Onyullo: Do you have any information on participation of federal agencies other than DoD?
    - Claggett: Not specific information.
    - Onyullo: Maybe we can coordinate offline because we are interested in the impact of that 70/30 split.
    - George Onyullo: I think participation by federal managers has always been a problem. When we initially developed data for the federal footprint in DC, it was very difficult. But if their participation is lacking, then we need to do something because they do have a large impact on DC.
- Claggett: We're about to run DE and MD counties, and I would prefer to put this change in there before we start. So can we get your permission to do that? This would also apply to Jefferson County as well. If I can get your permission to implement this change, and then present it to the Federal Facilities Workgroup and get their feedback, would that be ok with this group?
    - Berger: Would this also apply to state parks?
    - Claggett: Yes – this applies to all federal parks and state parks.
    - Burdick: Does this apply to VA too?
    - Claggett: Yes it does.
- Berger: Does anyone have a significant objection to this proposal?
- Burdick: I'm unclear as to why VA, where turf versus mixed open is explicitly mapped, would be thrown into this mix?
    - Claggett: Mixed open is not classified in VA. You have turf, crop, and pasture that was explicitly classified. We're using some of those, but it was decided previously at the GIT level that we would apply these fractional land uses universally. This is just like Road right-of-ways which we classify as turf.

- DE: How long would this take to implement?
    - Claggett: Not much time. I re-ran this split yesterday and changed the code yesterday. So we're all ready to go to implement this right away.
    - DE expressed support for implementing this change.

DECISION: The LUWG agreed on a proposal for the data team to re-run all counties implementing a rule change so that all federal and state park land greater than 10 acres will be classified as 100% mixed open, and the same lands less than 10 acres would remain as fractional turf grass (70% turf and 30% mixed open). Peter will then update the Federal Facilities Workgroup of this change during its meeting on Tuesday, November 8. This decision was made without official workgroup representation from PA, NY, and VA.

- Megan Grose commented that orchards in WV are getting classified as turf grass instead of agriculture. This is particular to Berkley County, WV.
- Karl Berger suggested developing a record of the issues identified and the rules that have been implemented and changes that were made during the process. Peter replied that Quentin Stubbs has been working to compile this information, and suggested that the workgroup revisit this at a later meeting.

Discussion of Pennsylvania data:

- Peter discussed the process used to incorporate wetlands into the PA land use. PA wetland data has not been incorporated into the currently posted data yet, but will be incorporated. Localities will be notified of this change. In addition, unconventional oil and gas information has been mapped, and will also be incorporated into the land use as mixed open.
- Lee Epstein: Are we not picking up the impervious surface of those facilities?
    - Claggett: In a lot of cases we are, but in some cases we don't pick up the dirt roads. I'll verify that we are picking up the pad areas.

ACTION: Peter Claggett will verify that pad areas in unconventional oil and gas areas are classified as impervious, and not erroneously classified as mixed open.

- DNREC: We found that our 2007 dataset severely overestimated wetlands. I noticed that this issue is still true for the land use data that was posted.
    - Claggett: We're only using 2012 land use, and we're not using land use wetland calls to define wetlands. We're using a separate state-provided dataset of updated NWI to define wetlands. I'll check with Quentin to see what was included in the previously publically available version. We'll post the new data by Friday, so if you have concerns about the wetlands layer, let us know.

Discussion of Streams data:

- Claggett: In the high-res land cover data, streams are underrepresented. What we decided to do, since we do erosion modeling with synthetic streams, is to incorporate synthetic streams into this 10-meter land use. We believe this layer is more accurate than the NHD 24k, which also doesn't have any width associated with it.
- Peter presented an example of this updated streams layer, which has been incorporated into the land use data on the website.

- Lee Epstein: How well do these replicate first, second order, etc. streams?
    - Claggett: I think it's much better than the NHD 24k. We haven't tagged these with any kind of order or attributes.
- Megan Grose: We have used it in our extreme eastern panhandle areas where it's difficult to discern small-order streams, and we find that it does a pretty good job in coverage.
- Mark Symborski: Did you do any kind of QA/QC on these streams to double check that it covers features based on any kind of topography?
    - Claggett: We didn't have time to really consider topographic factors, but if you're concerned about this then let us know. We think this is better than not having them there at all, and this is also the stream network that we're using for our erosion modeling.
    - Symborski: Do you assume erosion is occurring everywhere these networks are?
    - Claggett: We assume erosion occurs on every pervious pixel of the landscape. The streams represent the distance that the eroded material has to travel to get to a stream. If you had a denser stream network, then eroded material gets to the network more quickly. The opposite is true of a less dense network.
- Karl asked if any members objected to using this streams dataset in the final land use data.
    - Lee Epstein expressed some concern on using this dataset, which is unreliable in karst areas, because there is a large portion of karst areas in the watershed.
    - Peter replied that this dataset is being used in the erosion modeling, and encouraged the workgroup to consider using this dataset from a land use perspective in terms of representing BMPs.

DECISION: The LUWG agreed that the data team should move forward with using the synthetic streams dataset in the final land use dataset. This decision was made without official workgroup representation from NY, PA, and VA.

Discussion of Virginia data:

- Peter noted that for the VA land cover data, leaf-off imagery was used to derive tree cover. The Chesapeake Conservancy then went in with leaf-on imagery to manually digitize all of the treed areas, and then the Bay Program contracted the conservancy to process all of the Virginia land use data. The CBP expected to have this data by October 17, but we are running behind.
- Peter noted that roughly half of Virginia's data is expected to be uploaded this week, with the other half to be uploaded next week. He also noted that in the land cover data there were gaps in the data, perhaps caused by image tile overlays.
- Claggett: In order to resolve this issue, we moved to classify those no-data areas as mixed open. In a worst case scenario, there's roughly 1-2 football fields of this unclassified area; the best case scenario is that there are not data gaps. This is just a short-term fix, but a long-term fix would use the Nibble function to replace the no data cells with the nearest cell that's classified. This is very time-consuming and would be a more long-term solution.

    - Darold Burdick asked why the original contractor (WSI) couldn't fix it. Peter noted that if VA reviewers noticed this, they should have contacted their VA DEQ representative.
    - Norm Goulet asked how these errors passed the QA/QC process. Peter replied that he will contact James Davis-Martin.
    - Goulet: So this is what, <.5%?
        - Claggett: Like a football field's worth of no-data. It's a really small portion of the coverage.
- Burdick: I noticed that VA over-estimated the amount of pasture in Fairfax County.
    - Claggett: We potentially could take out some of your pasture for you.
    - Burdick: We looked at their 1 meter against the land use data that we provided, and we were able to remove quite a bit.
    - Claggett: Yes. That would be the intent, and that's why we've asked for your land use data. When you get the data, if you still see this as a problem, then let us know and we can re-interpret the land use data.

Discussion of timeline and schedule:

- Maryland and Delaware counties are expected to be posted by the end of the week. Half of Virginia is expected to be uploaded by the end of this week, with the rest posted by the end of next week. Everything should be completed by some point next week.
- The local review will be 4 weeks. Fatal flaw comments should be submitted within 2 weeks.
- Peter noted that the deadline previously provided by the modelers was Dec. 2. The WQGIT recently revised the timeline to allow all data to be submitted by Dec. 31. After negotiating with the modeling team, the new deadline for the land use data to be incorporated into the Phase 6 model is Dec. 16.
- Karl Berger requested that in the event the December 7 LUWG meeting does not occur because of the data team's workload, that Peter distribute a written update on the status of the land use development and review process to the workgroup.
    - Claggett: Certainly. And be warned that if something should crop up that needs a decision made, we may send out a blast email to the LUWG members asking for a decision with a tight turnaround. And if we get a number of fatal flaw comments coming up, we may have to make some changes to the rules and will need to notify the workgroup about this.
- Claggett: The annual back-cast information that I've requested from the USGS may not be available by the time we need it. In that case, we would revert back to the 5.3.2 back-casting methods, which uses 5 dates of land cover change and interpolates. If the information we requested comes in January or February, we could produce the better land cover change assessment. In addition, if we assume there are no local review fatal flaw comments, but there are a number small errors that have been identified, then in the January-March timeframe, we could make these smaller edits and incorporate those changes into the final land use that gets used in the final Phase 6 model provided there

is a strong demand from the jurisdictions during the final Phase 6 fatal flaw review period in early 2017.

- Jeff White: I've heard from our locals that it would be nice if the fatal flaw review period was 3 weeks instead of 2. Would that be possible?
    - Claggett: Unfortunately, no. We're already backed up against a wall here.
    - White: Some of our locals have also requested that in addition to having the spatial data available online, to have tabular data made available.
    - Claggett: We can certainly do that, but I would like to do that after the entire watershed is complete. Then we can send out an alert notifying people that tabular data is now available.
- Karl proposed the workgroup make a formal recommendation that they fully support maintaining a 4-week review period for the land use data.

DECISION: The workgroup agreed to make a formal recommendation that the 4-week review period for the Phase 6 land use data be maintained in the event that it conflicts with Partnership deadlines.

- Karl asked the workgroup and reviewers to keep in mind what constitutes a fatal flaw that necessitates re-processing a county's data, and that the Phase 6 land use data is likely one of the most accurate inputs to the entire Phase 6 model.

<u>Discussion of December LUWG Face-to-Face Agenda/Wrap-Up</u> – All

- Peter proposed that the workgroup cancel its face-to-face meeting and instead hold a conference call for the December meeting. He also proposed holding a conference call in January, and potentially a face-to-face meeting in February. The January-May 2017 timeframe will be focused on forecasting future land use.
- The group would like to discuss the back-casting methodology, and whether there will be a ground-truth of the data if the new USGS data is delivered in time for the new method to be used.
- Peter agreed to provide the workgroup with the back-casting data in January for review, and suggested jurisdictions review pixel-level data.

<u>Future Meeting Topics:</u>

Summary of comments and issues identified in the process of creating the Phase 6 land use database.

<u>Participants:</u>

Karl Berger	MWCOG
Peter Claggett	USGS
Lindsey Gordon	CRC
Darold Burdick	Fairfax Co. VA
Norm Goulet	NVRC
Lori Brown	DE DNREC
Brittney Sturgis	DE DNREC

Jim Crones	DDA
Dennis Cumbie	Loudoun County
Megan Grose	WV DEP
Sebastian Donner	WV DEP
George Onyullo	DOEE
Jeff White	MDE
Shannon McKenrick	MDE
Mark Symborski	Montgomery County Planning
Krystal Reifer	Montgomery County MD
Chris McGovern	Montgomery Planning
Lee Epstein	CBF
Steve Stewart	Baltimore County MD
Fred Irani	USGS
Quentin Stubbs	USGS
Renee Thompson	USGS
Travis Stoe	PA DEP
Labeeb Ahmed	CBP