CHESAPEAKE BAY PROGRAM LAND USE WORKGROUP

Face-to-Face Meeting Summary
September 7, 2016
10:00AM-3:00PM

Meeting Materials: http://www.chesapeakebay.net/calendar/event/23315/

Actions & Decisions:
ACTION: The group approved use of a 30/70 MO/TG split and a 70/30 MO/INR split, with the potential to change if VA provides contrasting data.

ACTION: The group approved the STAC review questions on current land use development and backcasting methodology presented by Claggett.

DECISION: The LUWG approved the revised methodology for incorporating Ag Census acres into the Phase 6 land use database.

DECISION: The LUWG agreed to classify railroads and railroad ROWs based solely on the land cover data.

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

- Minutes from the July 6 call were approved.

Fractional Land Use Values Discussion – K. Berger, MWCOG, State Representatives, and Peter Claggett, USGS
Karl Berger led a discussion with the workgroup on the proposed values to be used in the Fractional Model of the Phase 6 land use. Given the fact that the types of parcels for which fractional land uses are proposed constitute a very small percentage of the overall land use in the watershed and the need for decisions to be made so that the land use data team can continue to make progress, he expressed the need to reach a consensus decision at today's meeting.

Discussion:

- Claggett noted that there are two classes in the fractional model: Mixed Open/Impervious Non-Roads (MO/INR), and Mixed Open/Turf Grass (MO/TG). He also noted that acres to be considered under these classes constitute very small percentages of the total Bay watershed. Although it is important to get the fractional values as accurate as possible, some assumptions will have to be made to finalize land use and meet deadlines. Prior to the meeting, state representatives for MD, VA and PA looked at their data to determine the relative proportions of land use classes in these specific areas. However, he said, it is important to determine a single fractional value for each class that can be applied Bay-wide. The fractional approach would mean that the land

doesn't load as low as mixed open, and it doesn't load as high as turf grass, for instance, but that it falls somewhere in between. This is warranted on places like federal facilities and universities, where it's not immediately obvious what these spaces are.

- Claggett also noted that the parcels of such fractional lands are distributed fairly equally among states.
- Bill Keeling and Travis Stoe discussed the Fractional Model with their management. Travis said that PA management is comfortable with a 70 MO/30 TG split. For MO/TG, the fractions would split 30/70 respectively.
- Berger asked what types of lands the fractional model would apply to.
    - According to Claggett, the MO/INR class would cover junk/salvage, industrial, railyard, and transitional areas. The MO/TG class would cover institutional/governmental, university, park, monuments, federal facilities, and large developed parcel areas.
- Because a Virginia representative was not present on the call, Peter summarized what he had heard from Bill Keeling of Virginia DEQ: Basically, VA is not comfortable with any fractional values as yet because the state has not done an analysis of these types of land uses. He also expressed concern with a 'one size fits all' approach.
- Travis Stoe said that PA management is comfortable with splits of 70/30 MO/TG and 30/70 MO/INR, respectively.
- Concern was expressed regarding agricultural lands on federal facilities, which are not currently represented in the model.
    - Claggett: If there's agriculture on federal lands, the federal facilities will tell us how much there is, and that land will be reassigned to the non-federal land segments. This is an improvement because in the past this agricultural land has just been ignored.
- Jeff White noted that MD's analysis of these parcels resulted in a 70/30 MO/TG split and a 30% was mixed open.
- Karl asked the group whether there was consensus around a single set of fractional values.
    - Claggett: We could potentially edit our models to fit in any changes or requests from Virginia since we won't be applying the percentages until a later point in land use development. But, he noted again, this is a very inconsequential number of acres.

ACTION: The group approved use of a 70/30 MO/TG split and a 30/70 MO/INR split, with the potential to change if VA provides contrasting data.

<u>Backcasting methodology, preliminary rules and results, and discussion of STAC review</u> – P. Claggett, USGS

Claggett discussed the approach being used to backcast current land use through the model's 1985 – 2015 calibration period, and presented initial results. The new approach is based on USGS' LCMAP-Continuous Change Detection and Classification approach. It will allow the

modelers to measure actual change on an annual basis rather than relying on interpolation in between the years of periodic datasets.

Peter also reviewed the questions that would guide a STAC review of both the backcasting approach and the methods used to establish the current Phase 6 land use dataset.

Discussion:

- Berger: So you're saying that this method is better- we're getting annual change instead of interpolating. Is there any place where you ground-truth the accuracy of the new backcasting approach?
    - Mark Symborski noted that there is a consistent set of aerial imagery over time for Montgomery County that perhaps could be used for this purpose. He will send contact information to Peter.
- Stephanie Martins of MDE noted that staff there are willing to help by looking at parcel data, especially in low density areas where change may be more difficult to detect.
- James Davis-Martin asked whether the forecasting methods should be included in the STAC review.
    - Claggett replied that he does not believe this is necessary. The forecasting method has been reviewed by USGS and EPA scientists, and it is currently being peer reviewed for journal publication.
      Berger noted that the accuracy of these forecasting methods will help determine whether or not 2025 land use will be used in the Phase III WIPs.

ACTION: The group approved the STAC review questions on current land use development and backcasting methodology presented by Claggett.

<u>Incorporation of Agricultural Census into Phase 6 Land Use</u> – P. Claggett, USGS
Claggett discussed a proposal to reconcile the number of acres of agricultural land as reported in the Ag Census with the number of acres of other land use classes as determined by high resolution imagery analysis when is the totals of these separate methods do not match the overall size of a county. This revised approach would incorporate the error margins of the Ag Census into the redistribution of acres to other land use classes.

Discussion:

- Claggett explained that this method is essentially a re-allocation based on a proportional allocation of the error in each land use class in the event that the acres reported by the Ag Census either over- or under- reports the number of agricultural acres relative to what was determined from the aerial imagery analysis.
- Peter asked the LUWG members if they were comfortable using this methodology.

DECISION: The LUWG approved the revised methodology for incorporating Ag Census acres into the Phase 6 land use database.

<u>Update on treatment of railroads in the Phase 6 Land Use</u> – F. Irani, USGS

Irani updated the workgroup on the data informing the classification of railroads in the Phase 6 land use database. Ancillary rail data is unable to be incorporated into the classification, so railroad tracks and rail right-of-ways will be classified according to the initial land cover dataset.

Discussion:

- Fred noted that railroad right of ways (ROWs) are still classified largely as impervious, as picked up by the analysis of the high resolution land cover data. However, he noted that a low vegetation and barren areas in the ROWs identified by the land cover data analysis would not be classified as impervious surface.

DECISION: The LUWG agreed to classify railroads and railroad ROWs based solely on the land cover data.

Update on forecasting methodology– P. Claggett, USGS
Claggett provided an update on the methods being used to forecast land use conditions, and presented preliminary results.

Discussion:

- Claggett noted that the CBP land use data team has been asked to provide an interim version of a land use forecast by mid-October.
- He also noted that MDE is interested in having its own land use forecast be incorporated into the Bay Program's forecast, which prompted a discussion on allowing jurisdictions to use their own to forecast land use conditions. Claggett said he did not have a problem with this, as long as there a common set of assumptions are used.
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- One of the members asked what would be the impact on the accuracy of forecasts were a new Bay Bridge to be built or some other unexpected major development were to occur?
- Claggett noted the schedule for the development of a final 2025 land use forecast: Once the land use data team gets done with current land use development, it will focus on the forecast. Currently, the only state for which the team has developed a future land use input deck is Maryland. It hopes to develop input decks for the rest of the states and also conduct a comparison of the results from the forecasting model and the one used by Maryland. The results will be presented to the LUWG in early 2017.
- He noted that the WQGIT will eventually make a decision regarding whether to use 2025 forecasted conditions to inform the development of the Phase III WIPs.

Update on Phase 6 Land Use Database – F. Irani, USGS
Irani updated the LUWG on the status and schedule of the production for the Phase 6 land use database.

Discussion:

- According to Irani, all of the high resolution land cover data has been delivered to the Bay Program, and analysts are almost finished processing local data and ancillary datasets to inform the process.
- Karl Berger asked when the data team expects to have all of the land use data ready for county review.
    - Irani: We're trying to get them all done by Sept. 30, but if further delayed, this may extend into October.
    - The data team will conduct a webinar Sept. 20 to explain the data review process to state and local government officials.
- Sebastian Donner noted that he was not informed of the review of the high resolution land cover data by localities in West Virginia and questioned whether this had occurred. Claggett said he would check on this and respond.
- Claggett also noted what the review process could accomplish at this stage in the process. Comments received from localities will only result in changes if they identify systematic errors in land use processing. There will be no hand-editing of the data.
- He said the land use team will meet a December 1 deadline for completion of Phase 6 land use, but there may be minor changes based on feedback from localities that could be implemented after Dec 1.

Differences in Virginia's process for developing Phase 6 Land Use Data – P. Claggett, USGS
Peter briefed the workgroup on the differences between the Phase 6 land use being developed for Virginia and the other states, which is based on a different process for the analysis of high resolution imagery.

Discussion:

- Claggett noted the VA data doesn't divide impervious surface into road and non-road categories, so the CBP land use team will overlay a road right of way dataset to do this division. The Virginia process didn't map trees over turf, roads, and other impervious, so the Bay Program will use the Chesapeake Conservancy to do that.
- Virginia did map crop and pasture separately with data from ground-truthing, which is not available for the rest of the watershed.

Next meeting: Wednesday, October 5 10:00 – 12:00 PM Conference call (cancelled)

Participants:

David Newbern	UMD
Darold Burdick	Fairfax County VA
Lee Epstein	CBF
Alex Reed	Washington County MD
Norm Goulet	NVRC
Peter Claggett	USGS
Karl Berger	MWCOG
Steve Stewart	Baltimore County MD

Jeff White	MDE
Stephanie Martins	MDP
Shannon McKenrick	MDE
Rob Hirsch	Baltimore County MD
Mark Symborski	Montgomery County MD
George Onyullo	DOEE
Megan Grose	WVDEP
Justin Shafer	City of Norfolk VA
Renee Thompson	USGS
Fred Irani	USGS
Kristy Woodall	VA DEQ
James Davis Martin	VA DEQ
Lori Brown	
Dennis Cumbie	Loudoun County VA
Sebastian Donner	WV DEP
Travis Stoe	PADEP