

CHESAPEAKE BAY PROGRAM LAND USE WORKGROUP

Meeting Minutes

Nov 3rd, 2021

1:00 PM – 3:00 PM

Meeting Materials: [Link](#)

Summary of Actions and Decisions

Decision: The LUWG approved the [October meeting minutes](#).

Action: Jackie Pickford will reach out to voting members to conduct a poll for a new monthly meeting time starting in January 2022. Results will be discussed at the December meeting.

Action: Peter Claggett will update the proposed CAST-23 review process timeline.

Action: The Conservancy will answer the questions and concerns brought up by the LUWG and provide a more detailed overview of the accuracy assessment at a future meeting. Jackie Pickford will consolidate the feedback from the LUWG and provide it to the Conservancy.

Action: Jackie Pickford will work with Peter Claggett and the Conservancy to update the “Land Use Products” spreadsheet with details of the land cover/use change products and associated deliverables, timelines, and definitions.

Action: Please provide feedback to Peter Claggett **by COB Wed, Nov 24th** on the draft impervious surface indicator for the Land Use Methods and Metrics Outcome and any other suggestions on additional indicators.

Welcome, Roll Call, Review of Meeting Minutes, Action Item Update – KC Filippino, Hampton Roads Planning District Commission (10 min).

Announcements:

- **Decision:** The LUWG approved the [October meeting minutes](#).
- **Action:** Jackie Pickford will reach out to voting members to conduct a poll for a new monthly meeting time starting in January 2022. Results will be discussed at the December meeting.
- **Announcement:** At-Large Member Results
 - New membership posted [here](#)
- **Next Meeting:** Wednesday, December 1st from 1:00 - 3:00 PM.

Accuracy Assessment Framework – J. Czawlytko, Chesapeake Conservancy, and P. Claggett, USGS

Peter reviewed the draft CAST-23 data development [timeline](#) presented at the October meeting and proposed an elongated local review of the Version 1 data on a timeline independent of CAST-23. This review timeline is not final and will be discussed further at the December meeting. Jacob presented initial plans for an accuracy assessment of the Version 2 of the 2017 land cover and 2013-2017 land cover change data. The Conservancy plans to execute the accuracy assessment from Dec 2021-Feb 2022 and produce a white paper of the results in Spring 2022.

Jacob will return to the LUWG in December with a more concrete methodology of the process, a maximum number of strata per budget, and a margin of error.

Proposed Review Process

- **Peter Claggett:** I am proposing an elongated local review of land use and land cover independent of the CAST-23 timeline. Local review would be used to inform V2 of the data when it is publicly released in Spring 2024, rather than having the local review inform CAST-23. Instead, the systematic accuracy assessment that Jacob will present on is what will inform CAST-23. After it is complete, we'll be asking the following: If the accuracy of the V1 2017-2021 land cover change data is similar to the accuracy of the V2 2013-2017 land cover change data, would the LUWG be comfortable using that data in CAST-23 prior to incorporating comments from local review?

Proposed Products and Timeline

- 2021/22 V1 data: LU, LC, + change products
 - Will inform CAST-23.
 - Errors will be quantified using the automated accuracy assessment.
- 2021/22 V2 data: LU, LC, + change products
 - Will inform future versions of the model.
 - Errors will be quantified using the automated accuracy assessment AND review from localities.
- Timeline
 - Spring 2023: 2021/22 V1 data released.
 - Spring 2023 to Summer 2023: Local review of 2021/22 V1 data.
 - Fall 2023: CIC starts developing 2021/22 V2 of the data based on local review.
 - CIC makes changes to rules, classifications, etc. based on input from localities.
 - Spring 2024: Public release of 2021/22 V2 data.

Accuracy Assessment Feedback

- **Lisa Beatty:** If you have the lower quality lidar data in some areas and higher quality lidar data in others, is that going to affect the methodology?
 - **Jacob Czwalytko:** No, the methods will be the same across all quality of data. My suggestion was to add another strata for the different quality levels for comparison and identification of whether there is a statistically significant difference between the accuracy of high quality vs lower quality input data.
 - **KC Filippino:** I think that should definitely be a strata. Is there a limit to how many strata we can incorporate?
 - **Jacob Czwalytko:** Not from a technical point of view. But from a timeline and financial point of view, yes, there is a limit.
- **Dave Montali:** There were differences in some imagery that could have resulted in inaccuracies or poorer quality, such as snowfall or leaf cover. Could you incorporate a strata to address that?
 - **Jacob Czwalytko:** Yes. We have to be mindful of the number of strata that we incorporate, but it could be lumped into a strata category of image quality, for example.
- **Lisa Beatty:** I am concerned that there isn't an on-the-ground QA/QC component to verify this methodology.

- **Jacob Czwalytko:** Considering the scope of this project, I don't think it's possible for us to have on-the-ground verification for the entire dataset, but there will be local review for V2 of the data, as Peter mentioned previously.
- **KC Filippino:** Can you clarify how much expertise reviewers will need to conduct the accuracy assessment?
 - **Jacob Czwalytko:** We want reviewers to know how to interpret satellite imagery and the raster data.
 - **Katie Walker:** Reviewers will probably be an analyst or someone from the Conservancy or UVM that wasn't involved in the data development process.
- **Mindy Neil (in chat):** What happens if the accuracy of the LCC product from 2017-2021 does not meet an acceptable level of accuracy? Will we still use that LCC product in CAST 23?
 - **KC Filippino:** I think we need more discussion on this in December to determine a path forward if that is the case.
- **Jacob Czwalytko:** For the December meeting, we'll come back to the group with a more detailed methodology including details such as a maximum number of strata per budget and a margin of error.

Action: Peter Claggett will update the proposed CAST-23 review process timeline.

Action: The Chesapeake Conservancy will answer the questions and concerns brought up by the LUWG and provide a more detailed overview of the accuracy assessment at a future meeting. Jackie Pickford will consolidate the feedback from the LUWG and provide it to the Conservancy.

Action: Jackie Pickford will work with Peter Claggett and the Conservancy to update the "Land Use Products" spreadsheet with details of the land cover/use change products and associated deliverables, timelines, and definitions.

Review of Chesapeake Bay Land Change Model: Part 1- Peter Claggett, USGS (30 min).

Peter reviewed the current and proposed future functionality of the Chesapeake Bay Land Change Model (CBLCM). Further discussion on the model and the effects of the CAST-21 Land Policy BMPs will occur at the December meeting.

- **KC Filippino:** When will the decennial census data be incorporated?
 - **Peter Claggett:** We're starting to work on that right now.
- **Lee Epstein:** How does the Bay Program verify these programs?
 - **Peter Claggett:** Right now we don't have any means of validating that and it's simply based on trust.
- **Karl Berger:** This will be more important for verifying that the model works and looking beyond 2025, for example, a) using what happened to the land change from 2013-2025 to evaluate accuracy of the model and improve it; and b) producing a bracket of land use for 2035 and giving more than one set of numbers.

Land Use Methods and Metrics Outcomes Indicators – Peter Claggett, USGS (30 min).

Peter presented on the first draft of an impervious surface indicator for the Land Use Methods and Metrics Outcome and asked the group for feedback/suggestions on additional indicators.

- **Lee Epstein:** This meets my expectations as an indicator.
 - **Karl Berger:** I agree, but trends will be more reflective after 8 years of data. Might be valuable to compare finer scale differences in counties.
 - **Lee Epstein:** When counties have similar growth rates and zoning regimes, it might be more clear to see where management has an effect.
 - **Norm Goulet:** Even comparing within a single county may pose difficulties.
 - **KC Filippino:** I'm not sure what our locals will do with this information.
- **Peter Claggett:** I encourage the group to think about how they want the data separated to make it more informative. We could do residential vs commercial, structures vs tree cover over impervious, roads vs driveways, etc. We want to produce a metric that will inform management decisions or at least be helpful to those making decisions.
 - **Karl Berger:** Maybe we can organize workshops or conferences with states (VA Association of Counties, for example) to get feedback from counties on what they would find useful.
- **Sarah McDonald:** Have we tried to tie the data to the implications or outcomes (such as watershed health for example) to show the overall impact?
 - **Peter Claggett:** The MD Healthy Watershed Assessment is doing that. They take the high res data and statistically relate it to benthic health using a variety of measures. Some USGS colleagues are doing a Bay-wide model for benthic health and will use it in the future.

Action: Please provide feedback to Peter Claggett **by COB Wed, Nov 24th** on the draft impervious surface indicator for the Land Use Methods and Metrics Outcome and any other suggestions on additional indicators.

Meeting Adjourned

Meeting Chat

From Lisa Beatty, PA DEP to Everyone: 01:50 PM

MD/DE land cover inputs with high quality data as a point of comparison to different land cover in both PA and WV. Partly it is comparing a standard that may not include land cover aspects translating to inaccurate land use.

From Peter Claggett to Everyone: 01:54 PM

LiDAR, aerial imagery (NAIP), and local data vary in quality by county. Ideally- we would stratify by county and get county-by-county stats but is likely not feasible (too many sample points required). Rather than use counties as strata, we can be sure points are evenly distributed by county so that we're not biasing the analysis- as Jacob said. One of the next steps is to determine the max number of samples we can afford.

For 2021/22, we'll be using the latest and greatest LiDAR for all counties... including the new 2018 LiDAR available for the majority of Pennsylvania counties in the watershed.

From Lisa Beatty, PA DEP to Everyone: 01:56 PM

What year of Lidar will be used for MD and DE?

From Peter Claggett to Everyone: 02:00 PM

2012 - 2018

However, USGS purchased a 2021 digital surface model for MD and DE derived from the imagery. If it proves helpful, I've asked EPA to purchase similar data for the other states.

From KC Filippino to Everyone: 02:07 PM

Jackie, can you please put up the timeline that needs to be edited?

From Me to Everyone: 02:09 PM

Sure. It was in Rachel's presentation last month

(https://www.chesapeakebay.net/channel_files/42100/luwg_cc_20211007_rs.pdf). I'll post it to this month's page too

From Mindy Neil to Everyone: 02:13 PM

What happens if the accuracy of the LCC product from 2017-2021 does not meet an acceptable level of accuracy? Will we still use that LCC product in CAST 23?

From Lisa Beatty, PA DEP to Everyone: 02:16 PM

Yes. To be equitable and consistent with data analysis every jurisdiction should have the same land cover inputs.

From Lisa Beatty, PA DEP to Everyone: 02:40 PM

For data sources was the 2020 census used?

From Lisa Beatty, PA DEP to Everyone: 02:55 PM

PA requesting an updated definitions table and graphic schedule that shows the difference between the error methodologies and the schedule for the land cover update and how they intersect. Back in May 7, 2021 a spreadsheet "Land Use Products" was distributed that summarized in one place that was a good reference for staff and our technical partners. Could this be updated with the definitions and projected timeline for the next iterations of the land cover/use review and the land error computer methods. I think this would be a good way for everyone to be on the same page and keep track of all these moving parts.

Cumberland County, PA has been deemed the fastest per capita growth in PA along with they have a robust GIS Dept. Maybe an opportunity to look to see how this fast growth is affecting some of these growth issues.

Participants

Jackie Pickford, CRC

Karl Berger, MWCOG

KC Filippino, HRPDC

Peter Claggett, USGS

Cassie Davis, NYSDEC

Mindy Neil, WV DEP

Lori Brown, DNREC

Deb Sward, MDP

Arianna Johns, VA DEQ

Lisa Beatty, PA DEP

Young Tsuei, DOEE

Sarah McDonald, USGS

Katie Walker, CC

Labeeb Ahmed, USGS

Clint Gill, DE

Mark Dubin, UMD

Mark Symborski, MD

Allie Wagner, NVRC

Suzanne Trevena, EPA

Jacob Czawlytko, CC

Andrew Szwak, Land Trust Alliance

Katie Brownson, USFS

Travis Stoe, PA DEP

Shannon McKenrick, MDE

Renee Thompson

Ken Choi

Lee Epstein, CBF

Mark Symborski, M-NCPPC/MC

Dave Montali, Tetra Tech, WV