CHESAPEAKE BAY PROGRAM LAND USE WORKGROUP
Call Summary

April 6, 2016
10:00AM-12:00PM
Meeting Materials: http://www.chesapeakebay.net/calendar/event/23310/

Actions & Decisions:

DECISION: The LUWG agreed to move forward with Option C as noted in Quentin Stubb's presentation for representing highway right of ways using county parcel boundaries. For counties without parcel boundaries, the model would sample the ROW widths for each road type created using parcel boundaries from counties in the respective state, and apply buffer widths to the street layer by road type.

DECISION: The LUWG tentatively agreed to move forward with using Maryland data and information to inform the fractional model for the entire Bay watershed. If states have an alternative method they would like to suggest to develop fractional percentages, they should sent them to Peter Claggett and the Land Data Team as soon as possible.

ACTION: MDE will work with the CBP Land Data Team to develop a list of select land uses based on local land use data that should be included in the fractional model. MDE will then calculate fractional percentages of turf, mixed open, and impervious to be used to represent the fractional model masks. This recommendation will then be presented back to the LUWG during their May meeting for final approval.

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

- The LUWG approved the minutes from the March 2nd meeting.

10:05 **Update on Phase 6 Land Use Database** – F. Irani

- Fred updated the LUWG on the production schedule for the Phase 6 land use database. For more information, refer to the 'Phase 6 Land Use Database Project Plan' presentation on the calendar event page. The current best, optimistic estimate of completion for the Phase 6 Land Use Database is October, 2016.
- Berger: I thought I saw that you're still waiting for the wetlands expert panel to get back to you. This work is all very interdependent, so I'm concerned that the expert panel is well aware of the need to wrap up their work as soon as possible in order to let you guys move forward.
  - Irani: The problem is that emergent wetlands are exceeding the wetlands delineated in the model.
  - Stubbs: I spoke with the panel on the new high res data we'll be receiving, which will include emergent wetlands. That needs to be integrated with the NWI data and the existing state wetland dataset. We need to look at our methods for

deciphering tidal versus non-tidal emergent wetlands. So I'm working with the panel and the Wetlands workgroup to make that decision.
    - Berger: So that's not going to hold up the process any more, once you have all of this automated?
    - Stubbs: It shouldn't slow us down at all.
- White: We got new NWI+ data that just came out. Is that what you're using?
    - Stubbs: That would fall under the state wetlands dataset.
    - White: Are areas that don't come up as wetlands in the high res data – are they being reclassed based on the NWI or state data? In the process model, are those areas being reclassed?
    - Stubbs: Yes – it's being appended to the state wetlands and NWI, unless there's some concrete evidence that the wetland doesn't exist anymore.
- Burdick: Question on how this setback will affect the Phase 6 schedule.
    - Power: James Davis-Martin will be teeing this up to the WQGIT during their upcoming meeting, and at that point we'll have a better picture of how this will impact the final schedule. We're looking at shifting the calibration of the model out a few months, but more specific details will be provided this coming Monday. A briefing document on the reasons behind this and the impacts that it will have will be made available to the LUWG.
- Berger: Once you process the high-res data from the contractors and produce the land use dataset, there's still the local review built in for a 3 week local review, correct?
    - Irani: The October delivery date (end of October) includes that review, and work after that review, final adjustments, and final delivery.
    - Berger: My point is that we need to ensure that the local review remains unchanged.
    - Irani: It might be good to reach out to our contacts and give them a heads up and some instruction on what we'll be delivering and asking from them.
- Karl Berger suggested the Land Use Data Team collaborate with Mary Gattis, LGAC on the local review process.

10:30 **Clustering local land use classes for classification as fractions of P6 land uses** –R. Thompson and Q. Stubbs

- *Renee reviewed the clustering of local land use and NAVEQ data into fractional Phase 6 land uses based on the feedback from the LUWG and USWG in March. Refer to the 'Local Land Use' presentation on the calendar event page for more information.*
- Question: Anything in the turf mask that isn't impervious is considered turf?
    - Thompson: Anything that isn't impervious or forest that are in urbanized areas, that's left over after we've accounted for everything else. Basically low vegetation and barren areas would then be considered turf.
- Question: Does that change the loading rate at all? Or is it just for categorizing it within the model? Or are those two loading rates, like for barren and turf, the same?

    - Thompson: The loading rate would be associated with turf, and that's the crux of why we care about these masks. Low vegetation and barren will be classified as something different depending on which mask they fall in.
- White: Did you account for scrub shrub?
    - Thompson: My understanding is that the scrub shrub class would be feeding the mixed open model.
    - White: The reason I ask is because in the initial data product from the Conservancy that we saw for PG County, there seemed to be a significant mis-classification of scrub shrub that was actually turf grass.
    - Thompson: Quentin will be showing us some graphics that will be a good opportunity to discuss this. You're correct – there are places where there might be a lot of low veg, barren, and scrub shrub within one area, and in some cases it might be slightly arbitrary what we call the pixel simply by the nature of its low veg and scrub shrub. But I don't know the answer, other than I don't think it's a large proportion of the pie; and it would be a very difficult task to tell you what proportion of the pie that is.
- Lariscy: The numbers of turf vs mixed vs other – is that to feed this model? Or does this model not care about boundaries between the county and an army installation, for example. Why would someone be feeding that information separately since the model seems to be seamless?
    - Thompson: The Federal Facilities Workgroup has been requested to provide an update of their boundaries and a breakdown of land use information for those facilities. In that case, we will be using their information to inform the fractional model when we get to that discussion. In addition to that, the facilities will be using the editor tool to go in and mix up their numbers in terms of how they know those particular facilities to be managed in actuality. That's been negotiated between the federal facilities team and the CBP because they felt the outputs of this model were not representative of what's going on in terms of management.
    - Karl Berger cautioned against recognizing the difference between turf and mixed open, specifically that turf grass is primarily determined based upon soil compaction.
- *Quentin discussed how we plan to represent road right-of-ways (ROWs) in Phase 6. For more information, refer to the presentation 'Ph. 6 Land Use Road Right of Ways' on the calendar event page.*
    - Thompson: Do you know what we have for highway ROWs for other jurisdictions?
    - Stubbs: Right now, I asked MD specifically for their ROW layer. Some counties have provided this, but it's a checkerboard of data. Perhaps it would be worth going back to LGAC to try and get this information.
- In his presentation, Quentin outlined four options for mapping highway right of ways.
- Cannistra: I think that you have to assume that anyone that's done some parcel mapping has really gone through that process of trying to find the best available information to create parcel maps. To try and go back to re-collect or re-create that information would be extremely difficult. In MD, it's only really the major highways

with ROW information available. If you can use the parcel data as much as you can, I think that's the best way to go.

- White: Within the mask, do we think this would be one of the fractional areas?
  - Stubbs: This would be a binary representation. Anything inside this mask would be considered turf. And these are all of the leftover areas – cloverleaf areas that didn't fall inside of a buffer. Heavily urbanized, high population areas have a high probability that these areas are already classified as turf. This is just to improve holes or gaps.
  - White: We did an analysis looking within SHA ROWs, did some random sampling looking at turf versus open space to see what the breakdown was. It's almost a 60/40 split between turf and open space, and there was some ag in there in some instances. Everything within the mask would be considered turf then?
  - Thompson: Great point – and this gets back to the shrub scrub issue. If we wanted to take that NAVTEQ streets ROWs and move it to the fractional model, then those areas would be a fraction of mixed open and turf. If we leave the NAVTEQ streets in the turf mask, then a big clover area in the middle of a highway, anything that's low veg of barren in that turf mask would be turf. If there's a pixel of scrub shrub in that area, it would be mixed open – so you still may end up with a combination of turf and shrub scrub in those areas. We only class low veg and barren to turf, but scrub shrub gets classed to mixed open. So that could get around adding another thing to the fractional model. But we may want to revisit the potential for confusion between scrub shrub, low veg, and barren and whether it should fall into mixed open or turf.
  - White: My question is that if we have this sampling data for the ROWs, how does that compare to the % of scrub shrub versus low veg that falls into the ROW?
- Berger: I think a lot of people confuse turf with fertilization – if it's called turf, then people assume that we add fertilization, but that's not the case. It's really more the compaction of soil that drives turf versus mixed open. In my mind, both highway cloverleaves probably have been significantly compacted. The second issue is that we're talking about land uses that are such a small fraction of the overall total in the model, so it may not have a big impact overall. Do we agree on Option C as proposed by Quentin, which would supplement parcel data with a buffering technique on the ROWs?
- Goulet: I think that's what we're moving towards. My concern with the other options is that you don't have county parcel data from all jurisdictions, so you need an option for counties without that information.
- Grose: Like it's been said – it's such a small % of the overall land use that I don't think would be very significant.

DECISION: The LUWG agreed to move forward with Option C as noted in Quentin Stubb's presentation for representing highway right of ways using county parcel boundaries. For counties without parcel boundaries, the model would sample the ROW widths for each road type created using parcel boundaries from counties in the respective state, and apply buffer widths to the street layer by road type.

- *Renee Thompson continued her presentation on the mixed open space mask and overlay, and additional categories of land use that would be covered in this land use class. She posed the question to the LUWG on whether to move the extractive land type to the fractional overlay. She also discussed issues relating to areas where the mixed open and turf masks intersect, where areas of low veg and barren would be classed in two different ways based on the mask they are covered under.*
    - Norm Goulet, Karl Berger, and George Onyullo all agreed that the turf mask and any changes made to it should take precedence over the mixed open mask.
    - Alex Reed noted that for more rural areas, the opposite should be true – mixed open would supersede turf. Megan Grose agreed; urban areas should focus more on the turf mask.
    - Fred Irani noted that the CBP made a commitment to utilize local county data in a significant way in the Phase 6 land use database.
    - Megan Grose requested that all of the information on these changes be documented and made available.

11:15 **Fractions of mixed open, turf grass, and impervious by local land use**– J. White

- MDE presented their sampling analysis of local land uses to estimate relative proportions of mixed open, turf grass, and impervious surfaces for specific land types (including institutional campuses, military/federal installations, county, state, and national parks, commercial/industrial barren areas, and quarries and surface mines). This estimation will be used to extrapolate across the Chesapeake Bay Watershed to all similar areas.
- MDE recommended extending the fractional mask to residential areas that are larger than a certain size, because other land uses like ag and mixed open may be covered by large residential parcels but incorrectly get classified as turf or mixed open under the current model.
- Thompson: Some examples here are already accounted for in our existing turf grass model. Local parcels that are over 10 acres and greater than 10% impervious are included in the turf mask, and those that don't meet the threshold are not. However, the impervious density model captures some of these turf areas and excludes those larger areas in the transition zone or potentially in the agricultural zone. I think a lot of what you've presented, especially in regard to large residential lots, we've already in effect deciphered between turf and mixed open. I'm not sure when you show the Conservancy's low veg includes shrub scrub, but it seems that we might be going to the trouble of creating a fractional model to parse out turf and mixed open when by default that information is already in the data, and anything that's scrub shrub in a parcel would become mixed open, and anything that's low veg or barren in close proximity to a structure would be turf. So we've already accounted for a few points that you've raised here. I just want us to consider level of effort if we make any type of decision.

    - White: In my examples, it does not show scrub shrub. But you bring up a good point – how much area are we really talking about here? I don't have an estimate for that yet.
    - Thompson: It also seems that you're potentially proposing different fractional breakdowns depending upon the specific land use – large residential lot, etc. That's where I start to get a little worried because of time commitment. Do you think it would be possible, to categorize the two potential fractional model overlays, to provide recommendations on the types of land use that would go into each of those categories?
    - White: If you provide the fractional mask and the % of turf and open space, then we could give you back a number for the % of the turf and open, etc. Peter said he was unable to provide that, so we had to look at the data we had on hand.
    - Thompson: I wonder if we could do a work around with local land use and parcel information for a couple of different counties. We may also be able to provide a general overlay with the NAVTEQ boundaries, but no NAVTEQ information. As much as we can consolidate the land uses into as few overlays as possible, the more efficiently we can do our job.
- Berger: Whatever we would come up with here, using MD data, would then be applied to the entire watershed. I just want to remind everyone of that, and gauge whether we're comfortable with it.
- Irani: Did you do sensitivities for other physiographic regions?
    - White: Not yet. All of our sampling data is for our large MS4 counties. The next step is to build it out for other counties.
- Berger: When would you need to know this information?
    - Thompson: We would need to know the broad categories as soon as possible.
- Burdick: It would be helpful for me to know what's going into the turf model versus the mixed open model. Is there a diagram that has this information?
    - Thompson: I would refer to my presentation that I gave, which has a bulleted list of all of the regional and local information we're using to inform those masks. If there are categories in the masks that you don't think should be there then we need to know as soon as possible.
- White: We could let you know where we have a turf estimate for specific uses. And then the group could say what should be included in the fractional model. Then we could take our information for those select land uses and calculate the percentage breakdown.
- Open question on how MDE's calculations of turf versus open, using Conservancy data, will mesh with the land cover data being developed by Virginia's Worldview Solutions Inc.

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12:00 **Adjourn**

Next meeting: May 4th, 2016; 10:00 AM – 12:00 PM* -- Subject to change.

Participants:

Lindsey Gordon, CRC
Karl Berger, MWCOG
Renee Thompson, USGS
Darold Burdick, Fairfax Co., VA
Steve Stewart, Baltimore Co., MD
James Gregory, DNREC
Jim Cannistra, Prince George's Co., MD
Norm Goulet, NVRC
Alisha Mulkey, MDA
Justin Shafer, Norfolk Co., VA
Kristy Woodall, VA DEQ
Mark Symborski, Montgomery Co. Planning Dept.
Chris Brosch, DDA
Quentin Stubbs, USGS
Sebastian Donner, WVDEP
Fred Irani, USGS
Alex Reed, Washington Co., MD
Krystal Reifer, Montgomery Co., MD
Jeff White, MDE
George Onyullo, DC DOEE
Katherine Antos, EPA
Lucinda Power, EPA
Lee Epstein, CBF
Paul Patnode, Prince George's Co. Planning, MD
Rob Hirsch, Baltimore Co., MD
Shannon McKenrick, MDE
Washington Co., Maryland
Megan Grose, WVDEP
Kevin Lariscy, USAEC
Delaware DNREC
Jenny Tribo, HRPDC