

# STAR Science Needs Meeting: Land use Outcomes

Peter Claggett, USGS



# Land Use Options Evaluation and Land Use Methods and Metrics Science Needs

STAR meeting April 27, 2023 (Post SRS review)

Prepared by:

- Peter Claggett, USGS, CBP, Land Use Workgroup Coordinator
- Renee Thompson, USGS, CBP, Healthy Watersheds GIT Coordinator
- Sophie Waterman, CRC, Healthy Watersheds Staffer

# In Progress Science Needs (previous needs 2021)

1. Continued support of the development of [very high-resolution land use/ land cover metrics and data](#) beyond 2024
  2. Develop [metrics related to change in land use](#) informing other Outcomes
  3. Engagement from individual outcome representatives to [help relate LUMM and interpret what rates of change mean](#) to individual outcomes
- Science need that has been fulfilled
    - What actions were taken to fulfill it? *Some*
    - What resources were used to fulfill it? *USGS/CBP*
    - Any follow up action required for this science need? *Yes*
    - May this science need be archived in the database? *No*

- Full resources
- **Partial resources**
- No resources

1.

# Ongoing/In Progress Science Needs

- **Need:** continued monitoring of high-res land use change through the year 2034 is needed to support the achievement of multiple outcomes and the Phase 7 model.
- **Why Need:** Monitoring LULC change every four to five years over an eight-year time span is too long an interval to provide timely information to resource managers or elected officials and constrain our understanding of the relationship between changes in LULC and changes in water quality, stream flow, watershed health, and communities.
- **Status of Need:** In progress
  - 1-meter, 54 class land use data completed for 2017/18 and 2013/14 (revised) and 2021/22 data are entering production.
- **Engaged Resources:** An additional \$500,000 per year is needed to increase the temporal resolution of the data, update hydrography, and inform BMP verification.

- Full resources
- **Partial resources**
- No resources

2.

## Ongoing/In Progress Science Needs

- **Need:** Engage workgroups and GITS on use of land use change data to inform their outcomes: Healthy Watersheds, Stream Health, Climate Resilience, Tree Canopy, Forest Buffers, Wetlands, Fish Habitat, Oysters, Brook Trout, and Black Duck.
- **Why Need:** The "So *What*" of this Outcome are the impacts to habitats, watersheds, and communities.
- **Status of Need:** In Progress
  - 1-meter, 54 class land use data completed for 2017/18 and 2013/14 (revised).
  - Impervious Surface and Community Tree Cover indicators completed.
  - County Tree Cover Fact Sheets completed.
  - Riparian tree cover and land conversion metrics in development (May 2023).
  - Draft hyper-resolution hydrography data under review.
- **Engaged Resources:**
  - US Geological Survey (USGS), CBP GIS Team, and Chesapeake Conservancy: compute metrics
  - Need more proactive engagement from the other workgroups/GITs

- Full resources
- Partial resources
- **No resources**

# New and Emerging Science Needs - High Priority

**Need:** Translate, format, package and flow information through to trusted sources to better effectively engage locals directly.

- **What needs to be done to address it?** Need for translators to share information with local trusted sources (e.g., planning staff) and leaders. The “translator” positions are needed in each major jurisdiction or sub-basin with representation on the Land Use Workgroup;
- **What is the urgency/reason for the need?** High priority because translators are critical to the success of the CBP’s local engagement strategy and local organizations are the ones who make land use policies.
- **Who are the currently engaged resources?** LUWG, GIT 4, Local Leadership Workgroup.
- **Are there potential resources and do you need support engaging them?** Dedicated annual CBP funding for jurisdictions is needed to support these positions.

- Full resources
- **Partial resources**
- No resources

# New and Emerging Science Needs - High Priority

**Need:** Quantify impact of land conversion on communities.

- **What needs to be done to address it?** A deep dive into how our tools and data are used to understand land conversion.
- **What is the urgency/reason for the need?** Improved understanding of additional needs and successes of our efforts and their impact on the rate of land conversion. Land conversion poses a threat to healthy watersheds. It would be beneficial to know if all the tools and data we have created is helping inform communities on how to grow.
- **Who are the currently engaged resources?** Comms Team and HWGIT through a GIT funding project.
- **Are there potential resources and do you need support engaging them?** Local Leadership WG

- Full resources
- **Partial resources**
- No resources

# New and Emerging Science Needs - High Priority

**Need:** Strategy on how to involve locals, using the existing Local Engagement Strategy for guidance, so they may be provided data, resources and information related to land use change in a more efficient and effective manner.

- **What needs to be done to address it?** A creation of a network to exchange information and be in connection with the Bay Program.
- **What is the urgency/reason for the need?** As we approach 2025 this need will become more of a priority to ensure that locals have resources that can be beneficial to them and that we have connection to groups that can give us feedback.
- **Who are the currently engaged resources?** A storymap is underdevelopment to illustrate changes in land use/cover. In addition, the USFS is producing automated tree canopy fact sheets for communities to help them understand the value of tree canopy, how it is changing and why, and what can be done to maintain/increase tree canopy. The impacts of land use/cover change are so broad and touch on so many different outcomes that separate communication strategies could/should be developed for each outcome.
- **Are there potential resources and do you need support engaging them?** LLWG, LUWG, HWGIT



- Full resources
- Partial resources
- **No resources**

# New and Emerging Science Needs - High Priority

**Need:** Support local decisions on flood hazard mitigation, land use and climate resiliency planning

- **What needs to be done to address it?** Better incorporate information on flood, land use, and climate resiliency into CBP data and tools
- **What is the urgency/reason for the need?** High priority because these issues are local government priorities and measures to address them will also benefit the health of the Bay and local waters.
- **Who are the currently engaged resources?** USGS, Climate Resiliency Workgroup
- **Are there potential resources and do you need support engaging them?** Staffer support

- Full resources
- Partial resources
- **No resources**

# New and Emerging Science Needs - High Priority

**Need:** Collate and curate local spatial data on building permits to assess and map near-term development potential.

- **What needs to be done to address it?** Explore the availability and accessibility of local building permit data and compare it to the construction data already provided by states and the building permit data already reported to the Census.
- **What is the urgency/reason for the need?** While mapping land use change is important for assessing environmental impacts of change, once observed, few intervention options are available. Mapping approved building permits will provide highly accurate information on potential future land change in time for the possible intervention to mitigate impacts
- **Who are the currently engaged resources?** LUWG
- **Are there potential resources and do you need support engaging them?** Local government planning agencies and regional/state planning agencies.

- Full resources
- Partial resources
- **No resources**

# New and Emerging Science Needs - High Priority

**Need:** Develop improved ways to value water quality benefits associated with land conservation and land use planning.

- **What needs to be done to address it?** Example: WQGIT and PSC decisions that grant 100% credit to land conservation as avoided conversion.
- **What is the urgency/reason for the need?** Additional incentives are needed to achieve CBP and CCP land conservation goals (e.g., 30x30).
- **Who are the currently engaged resources?** States, CCP, WQGIT, LUWG
- **Are there potential resources and do you need support engaging them?** Research into ways and rationales other organizations have valued land conservation and land use planning to incentivize behavior.

- Full resources
- Partial resources
- **No resources**

# New and Emerging Science Needs - High Priority

**Need:** Community assessments to determine how underserved communities can be helped by data and resources related to policies, incentives and planning tools to reduce land conversion.

- **What needs to be done to address it?** Engagement with underserved communities to understand their needs and perspectives on land conversion.
- **What is the urgency/reason for the need?** High priority need to better meet the CBP's DEIJ and climate resiliency goals and Presidential mandates.
- **Who are the currently engaged resources?** GIT 4, LUWG, 2023 GIT-funded project: Community Response to Land Use Changes.
- **Are there potential resources and do you need support engaging them?** Diversity workgroup, Stewardship GIT

# Questions?

Point of Contact information for new/emerging science needs.\*

- Renee Thompson, [rthompso@chesapeakebay.net](mailto:rthompso@chesapeakebay.net)
- Peter Claggett, [pclagget@chesapeakebay.net](mailto:pclagget@chesapeakebay.net)

\* Multiple Points of Contacts allowed for each science need.