Land Use Outcomes: Update on SRS & Indicators Survey

Land Use Workgroup (LUWG) Meeting

March 16, 2023

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Overview

I. Review of Land Use Outcomes
II. Strategy Review System (SRS) Process
    I. Review purpose of SRS
    II. Quarterly Progress Meeting (QPM)
    III. Outcomes of the QPM: LUMM and LUOE
III. Indicators Survey
    I. Brief overview of 2023 proposed indicators
    II. Internal CBP survey results: how will the CBP use our indicators?
    III. What do the survey responses tell us?
IV. Next steps

Acronym List

2014 Chesapeake Bay Watershed Agreement:

Themes, Goals, and Outcomes

Themes (5)	Goals (10)	Outcomes (31)
Abundant Life	Sustainable Fisheries	Blue Crab Abundance
		Blue Crab Management
		Oysters
		Forage Fish
		Fish Habitat
	Vital Habitats	Wetlands
		Black Duck
		Stream Health
		Brook Trout
		Fish Passage
		Submerged Aquatic Vegetation
		Forest Buffers
		Tree Canopy
Clean Water	Water Quality	2017 Watershed Implementation Plan (WIP)
		2025 Watershed Implementation Plan (WIP)
		WQ Standards Attainment & Monitoring
	Toxic Contaminants	Toxic Contaminants Research
		Toxic Contaminants Policy & Prevention
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Conserved Lands	**Land Conservation**	Protected Lands
		Land Use Methods and Metrics Development
		Land Use Options Evaluation
Engaged Communities	Stewardship	Citizen Stewardship
		Local Leadership
		Diversity
	Public Access	Public Access Site Development
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		Environmental Literacy Planning
Climate Change	Climate Resiliency	Climate Monitoring & Assessment
		Climate Adaptation

What is the Land Use Methods and Metrics Outcome

Outcome: Assess and understand the impacts of land use change on watersheds, habitats, and communities at a scale relevant to county-level decision-makers.

1. Measure rate of farmland, forest and wetland conversion, and the extent and rate of change in impervious surface coverage.
2. Quantify the potential impacts of land conversion to water quality, healthy watersheds and communities.
3. Launch a public awareness campaign to share this information with citizens, local governments, elected officials and stakeholders.

Note: The LUWG is the lead for this outcome.

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What is the Land Use Options Evaluation Outcome

Evaluation of policy options, incentives and planning tools that can help local governments reduce the rate of conversion of agricultural lands, forests and wetlands by the end of 2017.

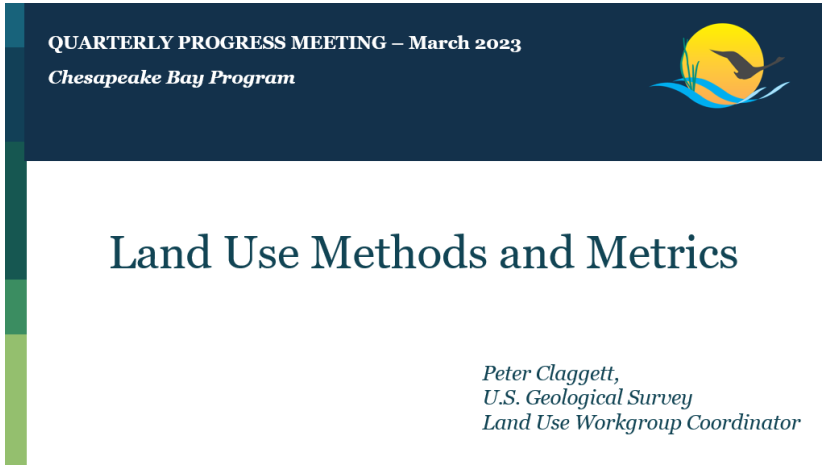
Development of strategies to support local government efforts in reducing land conversion rates by 2025 and beyond.

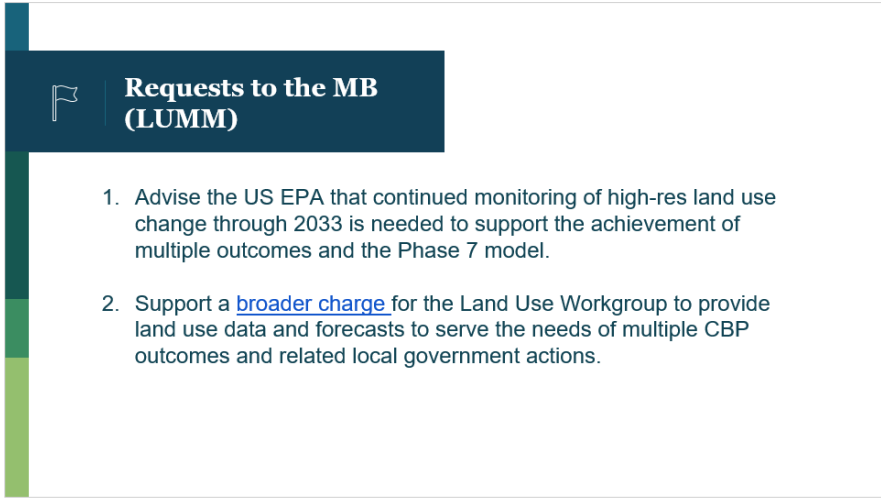
Note: The Healthy Watersheds GIT is the lead for this outcome.

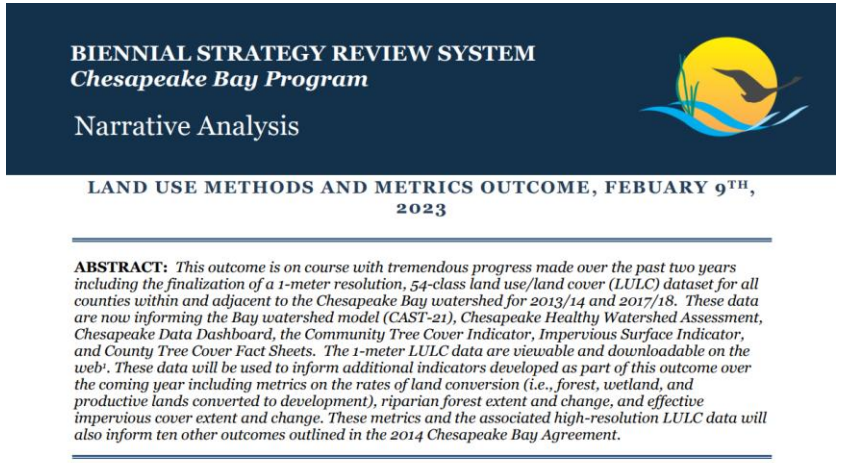
Strategy Review System (SRS)

- The purpose of SRS is for outcome leads to:
  - Report on the progress of their outcome.
  - Reflect on any challenges encountered in achieving their outcome.
  - Request action or assistance from the Management Board to support their work moving forward.
  - Adapt future work accordingly.

Quarterly Progress Meeting (QPM) for LUMM







QPM Takeaways: LUMM

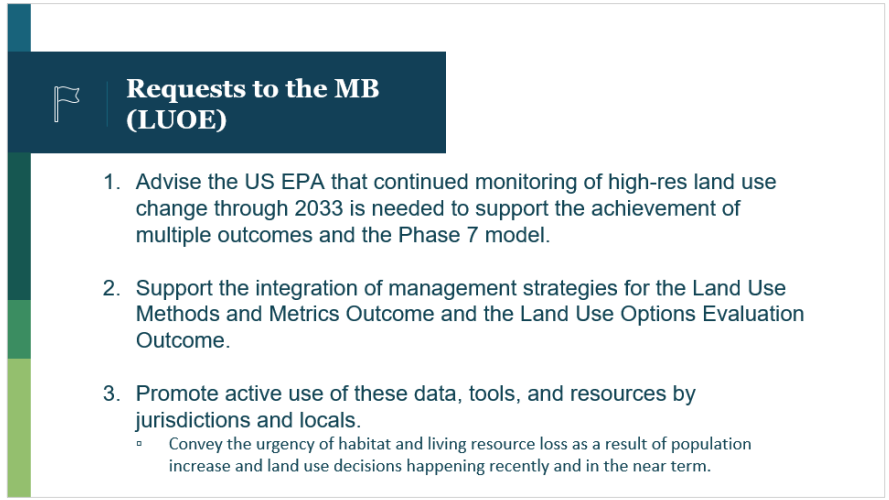
- Request 1: support for continued monitoring of high-res land use change through 2033.
- **MB Response:**
  - **Agreed that continued LULC monitoring is a priority for the partnership.**
  - Need to see breakdown of funding request for future agreement – what will the future agreement cost?
  - Need options for how to support the funding request – the future agreement will require more money, how can we fill that gap?
  - Need to see use cases of this data to help bolster the argument of why this should be funded and prioritized

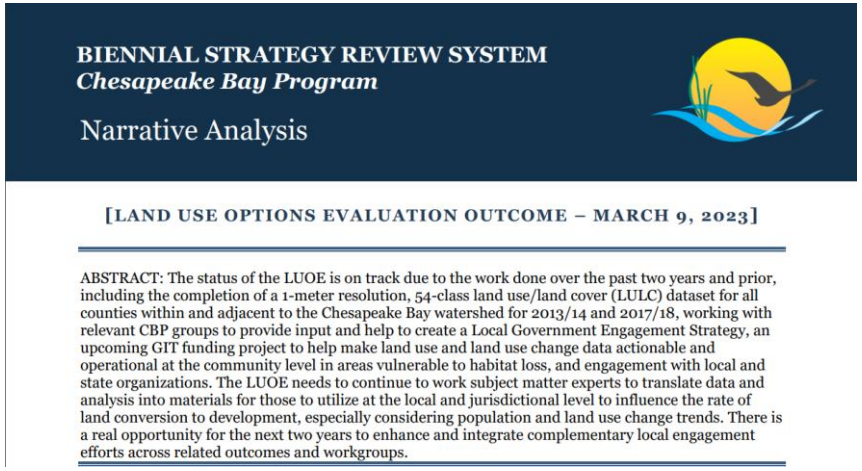
QPM Takeaways: LUMM

- Request 2: support a broader charge for the LUWG.

- **MB Response:**
  - **Supports proposed change to LUWG charge.**
  - Requested the LUWG approve the charge and present it to the MB with the funding options proposal described on previous slide.

Quarterly Progress Meeting (QPM) for LUOE





QPM Takeaways: LUOE

- Request 1: support for continued monitoring of high-res land use change through 2033.
- **MB Response: See slide for LUMM Request 1.**
  - **Agreed that continued LULC monitoring is a priority for the partnership.**

QPM Takeaways: LUOE

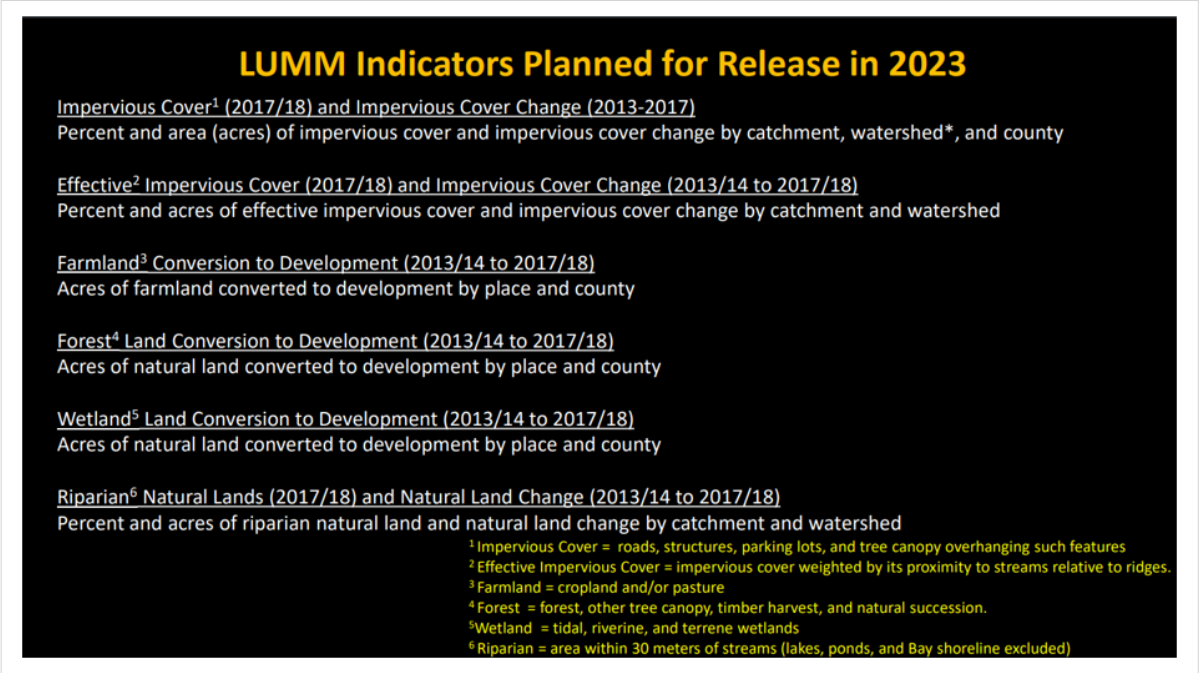
- Request 2: integration of management strategies for LUMM and LUOE.
- **MB Response:**
  - **Supports the integration of Management documents for two Land Use Outcomes.**
  - Defers to the workgroups on how best to execute the integration.
  - Requests Land Use outcome staff work with GIT and WG leadership to identify where the WG best fits within their organizational hierarchy.

QPM Takeaways: LUOE

- Request 3: Promote active use of these data, tools, and resources by jurisdictions and locals.
- **MB Response:**
  - **Supports this effort.**
  - Local Leadership Workgroup, Healthy Watersheds GIT, Land Protection WG, LUWG, LGAC and others will coordinate efforts to promote active use of data, tools, and resources by jurisdictions and locals.
  - This strategy will be incorporated into an updated Land Use logic and action plan (LAP).

Internal (Bay Program) Survey on 2023 Proposed Indicators

- Sent survey to CBP goal teams and workgroups.
- Purpose of survey: to capture the ways in which the LUMM proposed indicators could be (or are currently being) used by Bay Program goal teams and workgroups to demonstrate the importance of tracking land conversion
  - Impervious cover
  - Farmland conversion
  - Forest land conversion
  - Wetland conversion
  - Riparian natural lands conversion



Full survey responses are posted to the calendar page.

Survey Response Summary - LUMM indicators support a variety of applications across the partnership, including:

- Development of tributary reports
- Explaining drivers of water quality trends
- Improving communications to local leadership
- Evaluating “accounting for growth” strategies
- Identifying stressors to SAV / correlation with distribution, abundance and resiliency of SAV
- Targeting conservation
- Understanding watershed trends and vulnerability
- Informing trends in forest and riparian areas

CBWA Themes Goals, & Outcomes

How many mention land use change or land conversion as an important metric or factor influencing progress?

5 of 5 Themes

taken from survey results and/or identified from individual LAPs, management strategies, or science needs lists

Themes (5 of 5)	Goals (8 of 10)	Outcomes (20 of 31)
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CBWA Themes Goals, & Outcomes

How many mention land use change or land conversion as an important metric or factor influencing progress?

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CBWA Themes Goals, & Outcomes

How many mention land use change or land conversion as an important metric or factor influencing progress?

20 of 31 Outcomes

taken from survey results and/or identified from individual LAPs, management strategies, or science needs lists

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What do the survey responses tell us?

- Tracking land conversion is not only important for the two Land Use Outcomes, but across the work of all 6 Goal Implementation Teams (GITs) and nearly 2/3 of the Watershed Agreement outcomes.
- Improvement of the data (temporally, spatially) & associated indicators will also improve our ability to assess long term progress for multiple Watershed Agreement outcomes.
- Cross-outcome collaboration is crucial.

Full survey responses are posted to the calendar page.

Review of Next Steps

- Develop proposal of funding options for continued monitoring of land use change. Present to MB at future meeting.
  - Overview of funding sources for current monitoring agreement.
  - Identify gaps in funding for the future agreement and **develop options for filling those gaps**.
- Approve the LUWG updated charge.
- Develop an integrated LUMM and LUOE management strategy and logic and action plan for the upcoming two-years to finish up the SRS process.
- Coordinate efforts with Local Leadership WG, Healthy Watersheds GIT, Land Protection WG, and Local Gov Advisory Committee to promote active use of data, tools, and resources by jurisdictions and locals.

Acronym List

- CBP: Chesapeake Bay Program
- CBWA: Chesapeake Bay Watershed Agreement
- GIT: Goal Implementation Team
- HWGIT: Healthy Watershed GIT
- LUMM: Land Use Methods and Metrics Outcome
- LUOE: Land Use Options Evaluation Outcome
- LUWG: Land Use Workgroup
- MB: Management Board
- QPM: Quarterly Progress Meeting
- SAV: Submerged Aquatic Vegetation
- SRS: Strategy Review System
- WQGIT: Water Quality GIT

Reference Materials

- LUMM QPM Presentation to MB (2023)
- LUMM Narrative Analysis (2023)
- Quarterly Progress Meeting Materials: March 9, 2023
- 2023 Proposed Indicators Presentation
- Indicator Survey Responses

Requests to the MB (LUMM)

1. Advise the US EPA that continued monitoring of high-res land use change through 2033 is needed to support the achievement of multiple outcomes and the Phase 7 model.

2. Support a broader charge for the Land Use Workgroup to provide land use data and forecasts to serve the needs of multiple CBP outcomes and related local government actions.

Requests to the MB (LUOE)

1. Advise the US EPA that continued monitoring of high-res land use change through 2033 is needed to support the achievement of multiple outcomes and the Phase 7 model.

2. Support the integration of management strategies for the Land Use Methods and Metrics Outcome and the Land Use Options Evaluation Outcome.

3. Promote active use of these data, tools, and resources by jurisdictions and locals.
   - Convey the urgency of habitat and living resource loss as a result of population increase and land use decisions happening recently and in the near term.

LUMM Indicators Planned for Release in 2023

Impervious Cover[1] (2017/18) and Impervious Cover Change (2013-2017)
Percent and area (acres) of impervious cover and impervious cover change by catchment, watershed*, and county

Effective[2] Impervious Cover (2017/18) and Impervious Cover Change (2013/14 to 2017/18)
Percent and acres of effective impervious cover and impervious cover change by catchment and watershed

Farmland[3] Conversion to Development (2013/14 to 2017/18)
Acres of farmland converted to development by place and county

Forest[4] Land Conversion to Development (2013/14 to 2017/18)
Acres of natural land converted to development by place and county

Wetland[5] Land Conversion to Development (2013/14 to 2017/18)
Acres of natural land converted to development by place and county

Riparian[6] Natural Lands (2017/18) and Natural Land Change (2013/14 to 2017/18)
Percent and acres of riparian natural land and natural land change by catchment and watershed

[1] Impervious Cover = roads, structures, parking lots, and tree canopy overhanging such features
[2] Effective Impervious Cover = impervious cover weighted by its proximity to streams relative to ridges.
[3] Farmland = cropland and/or pasture
[4] Forest = forest, other tree canopy, timber harvest, and natural succession.
[5] Wetland = tidal, riverine, and terrene wetlands
[6] Riparian = area within 30 meters of streams (lakes, ponds, and Bay shoreline excluded)

Indicators Survey Results

The Integrated Trends Analysis Team (ITAT)

- 12 Tributary Summary reports
- Tracking change informs outcomes and drivers of water quality trends.

The Local Leadership Workgroup's (LLWG)

- Utilizing data and indicators in communications such as the Local Government Guide to the Bay to demonstrate the importance of land conservation and related policy tools.

WQGIT

- focuses on BMPs and not enough on land conversion
- synthesis of these indicators with WQ monitoring data at varying scales is a valuable application.
- Answer how well different jurisdictions "accounting for growth" strategies are paying off.
- all land conversions play a role in either moving us closer or farther away from our 2025 WIP outcome targets, and these conversion indicators will help us better understand this over time.
- WQGIT's workgroups will also benefit from this data (AgWG, USWG, FWG, Federal Facilities WG)

SAV

- distribution, abundance and resiliency are directly linked to subestuary land use (positive correlation with forested lands, negative correlation with hardened shorelines) - see Patrick et al. 2014.
- Tracking land conversion over time will also aid identifying SAV stressors at the larger scale.

Indicators Survey Results

BFWG

- Not directly using these data
- BUT, DNR is using LU change data to target areas for restoration and conservation in Maryland.

Healthy Watersheds GIT

- Incorporated as metrics in the Chesapeake Healthy Watersheds Assessment.
- Specific land use thresholds and metrics can help characterize the vulnerability of watersheds.
- Supporting information to projects and prioritization of the GIT work.

Forestry Workgroup

- supports efforts to minimize loss of forest to development.
- being able to track this conversion over time is important for understanding the extent of forest loss and where.
- riparian natural lands indicator would be helpful to understand riparian condition, but a forested riparian lands indicator would be more directly relevant to our riparian forest buffer outcome

The Agricultural Modeling Team

- land use change data is instrumental in working to identify feeding operations.

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