

Recommendations for the Rollup of Phase 7

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USGS, Lower Mississippi Gulf Water Science Center

Land Use Work Group

March 19, 2025

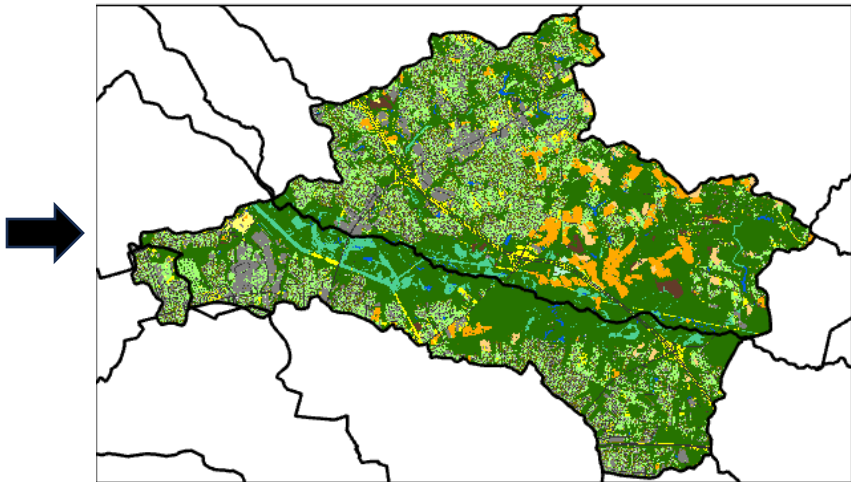
What Does “Land Use” Mean?

High-resolution LULC
56 classes



Mapped from aerial imagery, Light Detecting and Ranging (LiDAR), and ancillary data sources.

Phase 7 Rollup Land Use
*16 classes



Reclassifies mapped LULC and summarizes as acres per class per LRSEG to form the base land use for CAST. This also forms the starting point for land use forecasts in the Chesapeake Bay Land Change Model (CBLCM) and the back-cast to the 1980s.

CAST Land Use
49 classes (or load sources)

County	LRSEG	Land Use	Acres
ABC	1	Grass	100
ABC	2	CSS Roads	200
ABC	3	Pasture	50
DEF	4	Septic	35
DEF	5	True Forest	500

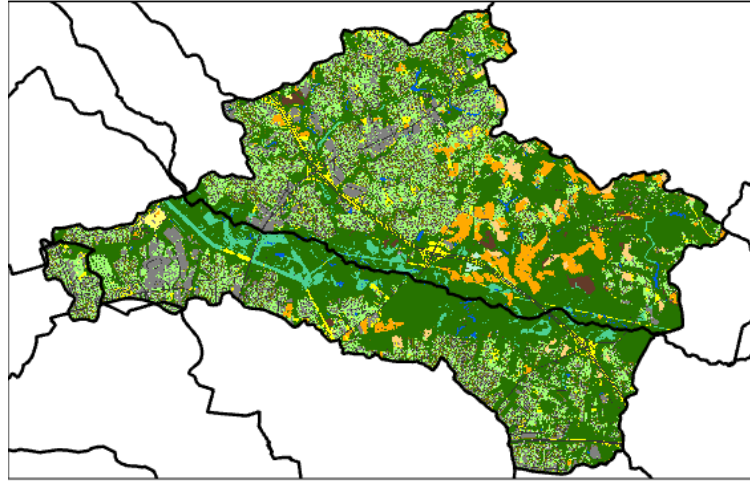
Incorporates reported data (census of agriculture, state annually-reported forest harvest and construction acres, CSO separations) with the base land use acres. Produces acres of land use by LRSEG in which BMPs are applied and loads are calculated.

LULC = Land Use/Land Cover
LRSEG = Land River Segment
CAST = Chesapeake Assessment Scenario Tool
BMP = Best Management Practice
CSO = Combined Sewer Overflows
* Final classification schema for Phase 7 has not yet been approved.

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Proposed Rollup of High-Res LULC for Phase 7

1. Impervious, Roads

20 Roads

2. Impervious, Non-Roads

21 Structures

22 Other Impervious (Parking lots, driveways)

31 Extractive Impervious

3. Tree Canopy Over Impervious

23 TC over Roads

24 TC over Structures

25 TC over Other Impervious

4. Turf Grass

27 Turf Grass

5. Tree Canopy over Turf Grass

26 Tree Canopy over Turf Grass

6. Solar Infrastructure

32 Solar Field Panel Arrays

7. Solar Pervious

34 Solar Field Herbaceous

35 Solar Field Shrubland

8. Compacted Pervious

30 Extractive Barren

36 Suspended Succession Barren

37 Suspended Succession Herbaceous

38 Suspended Succession Shrubland

43 Natural Succession Herbaceous (urban areas)

9. Construction

28 Bare Developed (Urban areas?)

33 Solar Field Barren

42 Natural Succession Barren (Urban areas)

Reported Data from States

10. Forest

40 Forest

41 Tree Canopy, Other

43 Natural Succession Herbaceous (rural areas)

44 Natural Succession Shrubland

53 Riverine Wetlands Tree Canopy

54 Riverine Wetlands Forest

63 Terrene Wetlands Tree Canopy

64 Terrene Wetlands Forest

11. Harvested Forest (2)

45 Harvested Forest Barren

46 Harvested Forest Herbaceous

42 Natural Succession Barren (Rural areas)

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80 Cropland Barren

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16. Water

11 Lakes & Reservoirs

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14 Streams and Rivers (visible water)

15 Bare Shore- adjacent to lakes

Blue = LULC 56-class schema

White = Phase 7 Rollup schema

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What's the Recommendation?

Two new classes representing solar infrastructure and pervious surrounding field-mounted solar panel arrays.

What was it in Phase 6?

Pervious previously captured as Mixed Open. Infrastructure previously captured as Impervious, Non-Roads.

Who's leading?

Urban Stormwater Workgroup (USWG)

What's the recommendation status?

USWG approved loading rates for the two new classes. The decision is set to be revisited upon the completion of ongoing studies. The recommendation needs Water Quality GIT approval.

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What's the Recommendation?

Explicit mapping of construction in high-res LULC to be reconciled with reported construction and potentially replace reporting.

What was it in Phase 6?

Mixed Open

Who's leading?

Watershed Technical Workgroup (WTWG)

What's the recommendation status?

No formal recommendation has yet occurred at the WTWG. This topic will be discussed at the May meeting (May 1st).

10 Terrene Wetlands

14 Streams and Rivers (visible water)

15 Bare Shore- adjacent to lakes

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What's the Recommendation?

Recommendations include moving NATS Shrubland and NATS Herbaceous (rural areas) to Forest, NATS Barren (rural areas) to Harvested Forest, NATS Barren (urban areas) to Construction, and keeping NATS Herbaceous (urban areas) in Compacted Pervious (previously called Mixed Open).

What was it in Phase 6?

Mixed Open

Who's leading?

Forestry Workgroup (FWG)

What's the recommendation status?

Approved recommendation by FWG. NATS Barren (urban) to construction needs approval by WTWG. All changes need approval by Water Quality GIT.

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What's the Recommendation?

Retain Cropland and Pasture and Hay classes while improving classification with relevant supplemental data as possible.

Who's leading?

Agriculture Modeling Team (AMT)

What's the recommendation status?

Discussion on potential updates to the mapped agricultural land uses and changes to the roll up will occur at an upcoming AMT meeting.

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What's the Recommendation?

Name change of Mixed Open to Compacted Pervious.

Who's leading?

Land Use Workgroup (LUWG)

What's the recommendation status?

Approved by LUWG. Needs approval from Water Quality GIT.

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What's the Recommendation?

Bare shore adjacent to lakes be moved to water.

What was it in Phase 6?

Mixed Open

Who's leading?

Land Use Workgroup (LUWG)

What's the recommendation status?

Feedback request (vote in June)

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Keep the same as Phase 6.

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What's the recommendation status?

Feedback request (vote in June)

Summary of Roll up Decisions

Recommendation	Phase 6 Class	Workgroup Lead	Recommendation Status	Next update
Add two Solar classes (infrastructure and pervious)	Mixed Open and Impervious, Non-Roads	Urban Stormwater	Approved by USWG	Update WQGIT
Add Construction class	Mixed Open	Watershed Technical	Ongoing	WTWG May 1 st
Move Natural Succession LULC classes	Mixed Open	Forestry	Approved by FWG	Update WQGIT
Keep classes, incorporate other data to improve map accuracy	Cropland and Pasture	Ag Modeling Team	Pending future discussion	Future AMT meeting
Rename Mixed Open to Compacted Pervious	Mixed Open	Land Use	Approved by LUWG	Update WQGIT
Move Bare Shore LULC class to Water	Mixed Open	Land Use	Ongoing	LUWG June 18 th
Keep Phase 6 rollup the same for remaining classes		Land Use	Ongoing	LUWG June 18 th

Feedback for Water Quality GIT Update?

Sarah McDonald

smcdonald@chesapeakebay.net