

# Maryland's *Draft* Turf Grass Calculation Methodology

(Calculation Methods – 2012 conditions)

## Overview

Maryland developed tabular estimates of turf grass for Chesapeake Bay Program (CBP) Phase 6 watershed model land-river segments for 2012 conditions. These methods were developed by Maryland Department of the Environment (MDE) and Maryland Department of Planning (MDP). MDE and MDP used the Phase 6 model impervious surface estimates in conjunction with the Phase 5.3.2 watershed model urban pervious to impervious ratio per modeling segment to calculate the acres of turf grass for the Phase 6 model. This document functions as technical documentation of the calculation methods to standardize methods and ensure quality. This was not intended as a broad overview of the turf grass calculation methodology.

## Process

The following presents the individual steps that were used to create tabular estimates of turf grass for the CBP Phase 6 watershed model land-river segments:

1. Generate crosswalk of Phase 5.3.2 land-river segments to Phase 6 land-river segments. This crosswalk identifies Phase 6 segments that are composed of multiple P5.3.2 model segments. This crosswalk is also used to confirm which segments have changed from P5.3.2 to P6, and by how much. The following P6 segments were identified as containing multiple P5.3.2 segments:

County	P6 Segment	P5.3.2 Segments
AL	<b>N24001PU1_3580_3780</b>	A24001PU1_3580_3780 B24001PU1_3580_3780
AL	<b>N24001PU4_3890_3990</b>	A24001PU4_3890_3990 B24001PU4_3890_3990
FR	<b>N24021PM3_3040_3340</b>	A24021PM3_3040_3340 B24021PM3_3040_3340
FR	<b>N24021PM4_3340_3341</b>	A24021PM4_3340_3341 B24021PM4_3340_3341
FR	<b>N24021PM4_3341_4040</b>	A24021PM4_3341_4040 B24021PM4_3341_4040
FR	<b>N24021PM4_4040_4410</b>	A24021PM4_4040_4410 B24021PM4_4040_4410
FR	<b>N24021PM7_4200_4410</b>	A24021PM7_4200_4410 B24021PM7_4200_4410

2. Total urban pervious acres from the Phase 5.3.2 2006 year land-use dataset are summed at the model segment scale. This includes the following land-uses:
  - CSS pervious developed (cpd),
  - Non-regulated pervious developed (npd),
  - Regulated Pervious developed (rpd).
3. Total impervious acres from the Phase 5.3.2 2006 year land-use dataset are summed at the model segment scale. This includes the following land-uses:
  - CSS impervious developed (cid),
  - Non-regulated impervious developed (nid),
  - Regulated Impervious Developed (rid).
4. Divide the total Phase 5.3.2 urban pervious acres in the model segment by the total impervious acres in the segment. The resulting number is the impervious to pervious ratio.
5. Relate the Phase 5.3.2 segmentation to the Phase 6 segmentation to determine ratios by Phase 6 segment.
  - For Phase 6 segments composed of multiple Phase 5.3.2 segments, the ratio for the Phase 6 segment is an average of the ratio calculated for each of the Phase 5.3.2 segments.
6. Sum MD's estimated 2012 impervious acres per segment (road impervious and non-road impervious).
7. Multiply the total impervious acres per segment by the ratios calculated in step 3. The resulting number is the total segment urban pervious acres.
8. Subtract MD's estimated 2012 urban tree canopy acres from the total segment urban pervious acres calculated in step 6. The resulting number represents the total turf grass acreage.