



## Addressing Nutrient Application Rates July 27, 2015

CBPO Fish Shack, 410 Severn Avenue, Annapolis, MD 21403

Event Webpage: <http://www.chesapeakebay.net/calendar/event/22916/>

- Global total loads are developed from the CBP total load indicator.
  - Further explanation of the unbiased estimate of land loads downstream of RIMS:
    - Adjustments are made downstream of the RIM stations within the Watershed Model (WSM) in the process of adjusting for flow normalization for actual rainfall and inherent bias.
- Global targets are broken apart into large land use groups. Relative ratios were determined from SPARROW, P5, and CEAP models.
  - Relative differences were averaged across all applicable models, e.g. CEAP was not used for the developed land use group.
  - There are two large land use groups for agriculture (crop and pasture/hay) because there were sufficient sources in the literature to break the group apart, unlike the developed land use group.
- As a reminder, the load from a land use group is equal to the number of pounds of nutrients per acre per year. Multiplying this value by the acres of the land use group produces the total land use group load (e.g. lbs. of N per year).
- In order to better determine the change in relative loads based on the effects of BMP practices over time, it is necessary to remove the influences of BMPs.
  - Completing the process will allow for a better approximation of the long term average loading rates that existed between 1985 and 2014 without BMPs.
  - Once the new application rates are set it will be possible to provide a credit for a reduction of nutrients if practices have been implemented that reduce inputs to a loading rate that is lower than the average of the long term loading rate.
  - The removal of BMPs in SPARROW will be done by sector before the calculation of relative loading rates. This will be done by adjusting the 2002 SPARROW run based upon the results of the 2002 no-action Watershed Model scenario.
- The total estimated load will not change at all with new SPARROW runs, but the relative load may change by a small amount.
- Each sector WG selected a base land use and provided relative rates, just as was done with the four types of land classes.
- Further discussion on tree canopy regarding whether or not it needs to be redistributed among different land uses will be determined at the Forestry WG meeting on August 5. At this meeting will also be representatives from the Urban and Land Use Workgroups.
- Taken over the entire watershed, inputs do not raise or lower target loads relative to the steps described above. They do raise or lower the targets locally. When scenarios are run, however, the global average load for a land use will change based on the change in inputs.
- Based on findings presented in the urban nutrient panel report, it is important to emphasize that more work is needed rather than characterizing urban phosphorus sensitivity rates as being blessed by the panel.
- As a reminder, the watershed delivery variance is applicable to all sources within a land segment.