Compiled Priorities for 2017 Midpoint Assessment

Evaluating Milestones

VA (Collective):
Develop 2018-2019 Milestones

- Based on v.6.0.
- Date for Completion – 1/8/2018

VA (Collective):
Evaluating Progress

- 2016-2017 Milestones
  - Use v.5.3.2
  - Goal - 60% of Reductions Achieved?
    - *Programmatic Enhancements can Justify Shortfalls*
    - *Capacity Building Activities can Justify Shortfalls*
    - *Future Milestones Should Address Shortfall Make-up Plan*
- 2018 and Beyond
  - Use v.6.0
  - Evaluate Progress Using Actual Growth and Hydrology
  - Compare Progress with Monitoring Data
  - Compare Progress with Ecological Data
  - Use Input Deck Format Consistent with v.5.3.2.
  - Establish Lockdown Periods for Changes to Progress Reporting Format
  - Allow Interim BMPs Used in Planning to be Used in Evaluating Progress

MD (Collective):
Mid-Point Assessment Topic: Evaluating 2013 Milestones

- Develop clear technical understanding of how 2013 Milestones will be evaluated.
- Proposed Approach:
  This approach makes a distinction between A) evaluating the Milestone BMP implementation commitments during the milestone period, and B) evaluating the overall change in NPS loads during the milestone period. Conceptual approaches for these evaluations are outlined below.

A) Evaluating Effects of Milestone BMPs[1]
   1. Conduct a baseline model scenario using a fixed land use to define a baseline load, e.g., 2010 acres and 2010 BMPs.
   2. Conduct a milestone scenario using the same fixed land use, e.g., 2010, with milestone BMPs added, some of which could be landuse change BMPs.
   3. Compute the difference in loads between the baseline and milestone scenarios. This is the load reduction *milestone reduction goal* for comparison in the future evaluation.
   4. At the end of the milestone period, conduct a milestone evaluation scenario using the same fixed land use, e.g., 2010, and the actual BMPs that were implemented.

[1] This most directly applies to nonpoint source loads. Point source loads also need to be addressed; however, refinements in evaluating these loads are suggested later in this white paper.

5. Compute the difference in loads between the milestone evaluation scenario and the baseline scenario Step 1. This reduction can be compared to the *milestone reduction goal* in Step 3 to evaluate whether the Milestone BMP implementation commitments where achieved.

B) Evaluating Overall Change in Loads

Changes in loads due to implementing Milestone BMPs are separate from changes in loads due to growth[2] or the weather[3]. It makes sense to evaluate these changes separately so that we can understand what is causing the change in loads over the milestone period.

Consider the weather. A distinction should be made between A) estimated annual loads based on long-term average rainfall and B) annual loads based on variable rainfall. This distinction is reflected in Figure 1 below. Both plots A) and B) in Figure 1 have legitimate uses.

Plot A) represents loads using the same long-term average rainfall each year. It is valuable for seeing trends due to restoration management actions and growth that would otherwise be masked by the annual variability in rainfall.

Plot B) represents loads using different annual rainfall each year. It is valuable from a scientific perspective of knowing what loads actually occurred in a given year, but masks changes in loads due to management actions and growth.

[2] These are the changes in annual loads due to land use changes associated with land development, new septic systems, increased population discharging to waste water treatment plants, etc.

[3] Even without changes in BMPs or growth, annual point source and nonpoint source loads are significantly affected by the amount of rainfall in any given year.

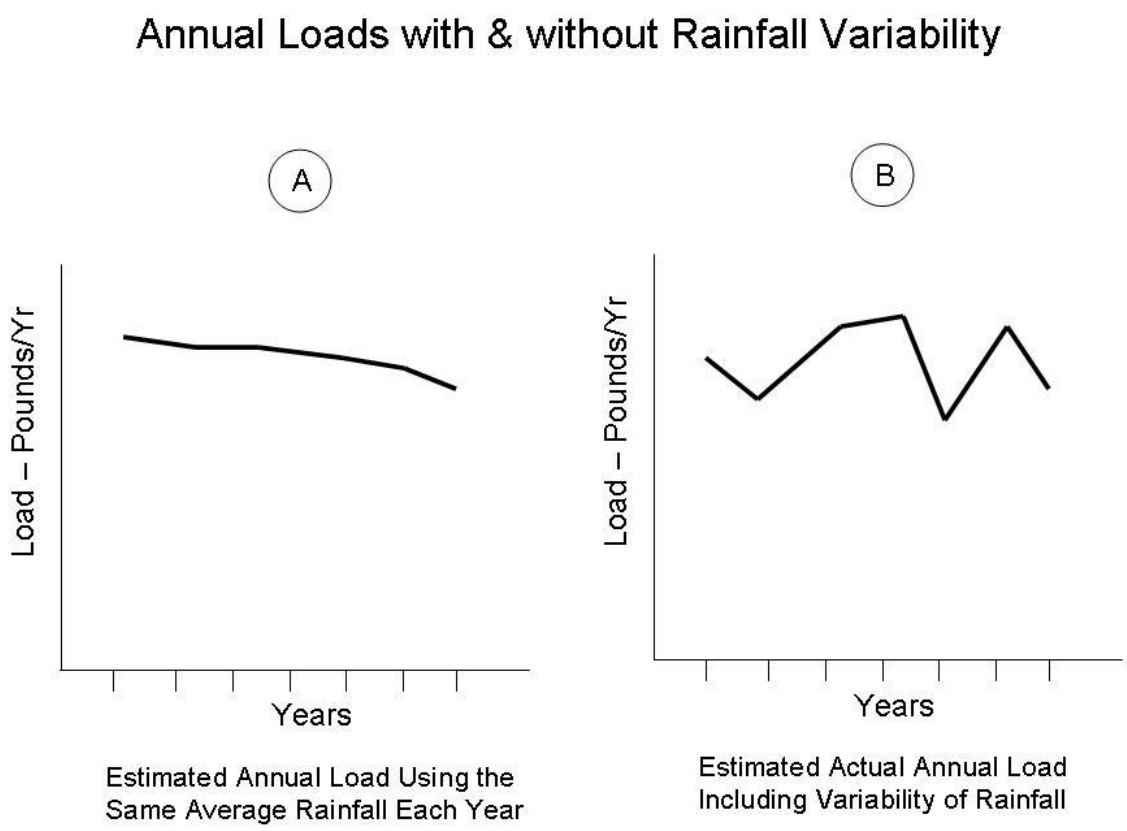

Figure 1

Both point source loads and NPS loads rise and fall with the variation in annual rainfall. If the objective is to evaluate annual changes due to management actions, separate from changes in annual rainfall, it would make sense to use Plot A) for both types of sources. Currently, the Bay Program effectively uses Plot A) for NPS and Plot B) for point sources to evaluate annual progress. **Recommendation:** Progress for both point sources and nonpoint sources be evaluated in a way that normalizes rainfall as in Plot A).

In order to properly evaluate progress on milestones, this underlying issue needs to be resolved. The solution is to generate both estimates presented in Plot A) and Plot B), which will put point sources and nonpoint sources on an even footing and provide valuable information as discussed above. **Recommendation:** Bay Program partners should work out the technical means of reporting both annual loads that vary with precipitation and annual loads based on "constant" flows that reveal impact of growth and management actions as part of the 2017 Midpoint Assessment.