Setting Realistic Reductions for Runoff from Upslope Land Uses

Modeling Workgroup
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Issue and Objective

- Issue:
  - Runoff from an upland land use can sometimes be very low, or even negative due to BMP implementation.
  - Watershed Technical Workgroup and Modeling Team recommend limiting reductions from land uses to avoid these unrealistic results.
- Objective:
  - Determine if there is support from Modeling Workgroup members on limiting reductions.
  - If so, gather feedback on a couple of options.

How does it happen? Overly Optimistic BMPs

- Example from Phase 5: Infiltration Practices reduce 85% of TN
  - 11 Lbs TN (from urban pervious acre) X (1-0.85) = 1.95 Lbs TN.
  - Forest loads at 3.1 Lbs TN.

How does it happen? Combination of BMPs

- Multiple BMPs can result in overly optimistic reductions from an acre.
- Example from Phase 5: Bioretention reduces 70 % N and Urban Nutrient Management reduces 20% N
  - 11 Lbs TN (from urban pervious acre) X (1-0.7) X (1-0.2) = 2.64 Lbs TN.
  - Forest loads at 3.1 Lbs TN.

Potential Solutions?

- Reductions from per acre runoff by species could be capped at a percent (e.g., 90%) of the target value.
- Reductions could be capped at total nutrient level of a land use (e.g., forest) in the same segment.
  - Individual species may have targets below forest to begin with (e.g., impervious urban has no NO3 while forest does).
- Others?