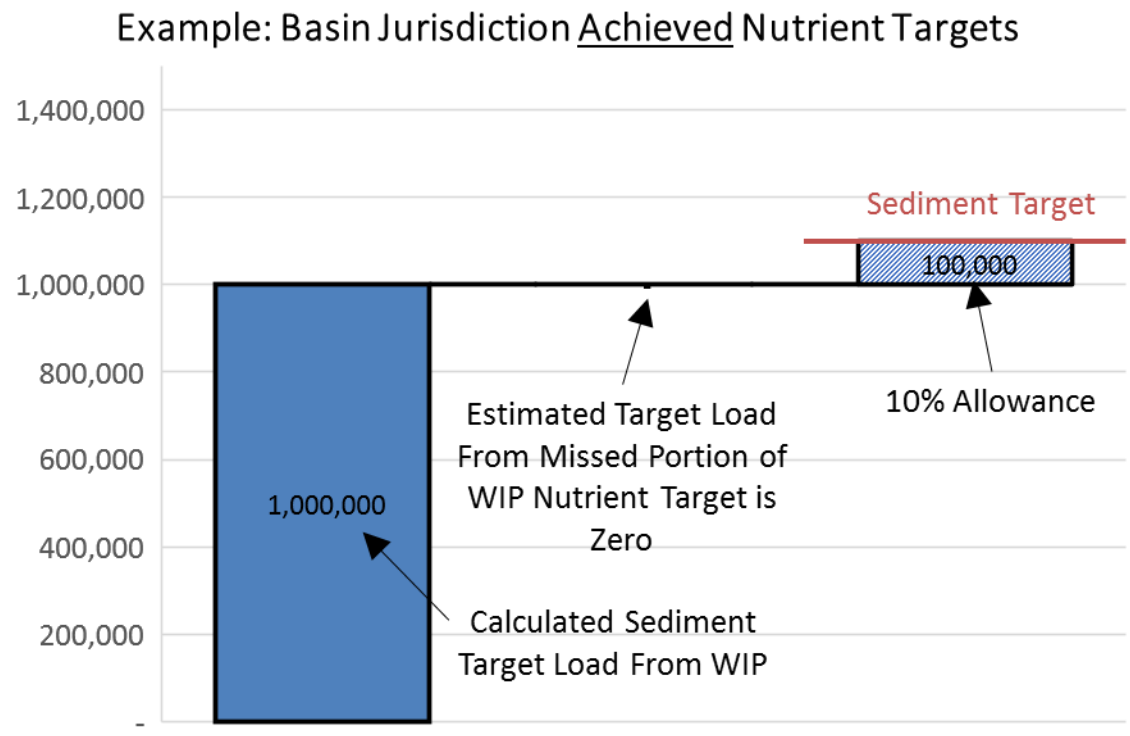
Attachment 1 to *Process and Schedule for Developing Sediment Planning Targets in Phase III to Meet Water Clarity/SAV Water Quality Standards*
May 20, 2019

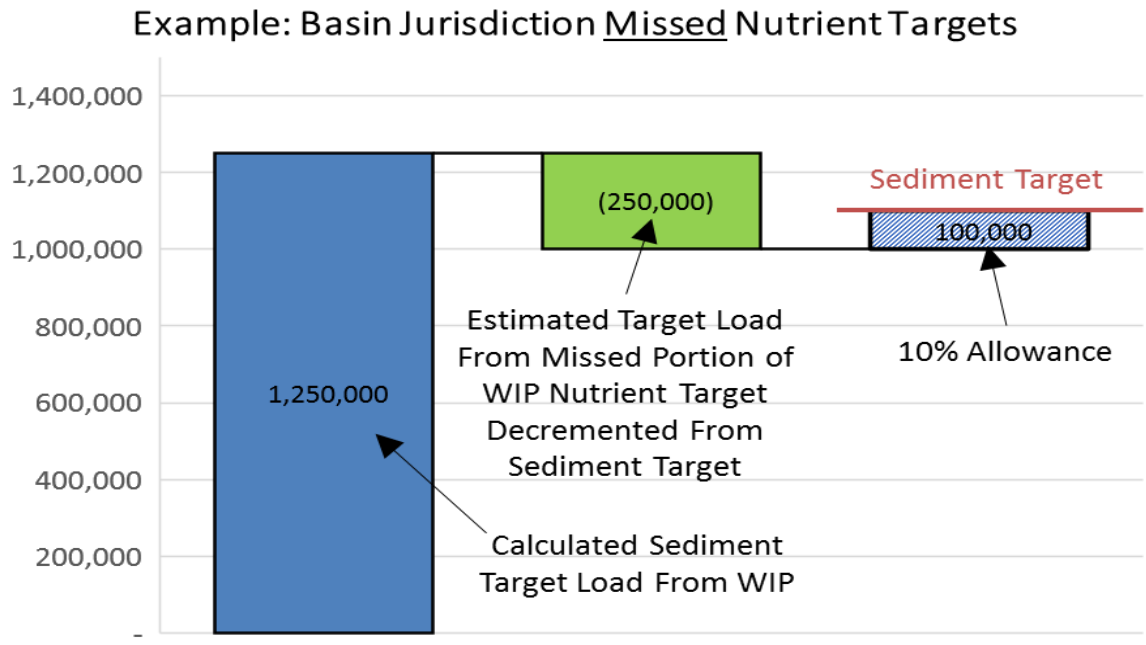
As an example of the calculation of the draft sediment targets, assume a partner's basin-jurisdiction nutrient target of a hypothetical 50 million pounds nitrogen and 5 million pounds of phosphorus delivered to tidal waters has been achieved by their Phase III WIP. Using the management practices and BMPs in the basin-jurisdiction's Phase III WIP to calculate the associated pounds of sediment results in an estimated 1 million pounds (1,000,000 pounds) of sediment delivered to the tidal Bay. Then a 10 percent allowance is applied to the sediment target, which in this hypothetical case would be 100,000 pounds of sediment. Adding the calculated sediment delivered to the Bay under the Phase III WIP of 1 million pounds sediment and the 10 percent allowance results in an estimated 1.1 million pound sediment draft target (1,100,000 pounds) for the hypothetical basin jurisdiction (Attachment 1, Figure 1).

Attachment 1, Figure 1. Estimated draft sediment target with 10 percent allowance when nutrient target is fully achieved. The solid blue is the portion of the sediment target calculated from the sediment delivered to tidal waters under the management practices in the draft Phase III WIP and the striped blue bar is the 10 percent allowance. Units in pounds.



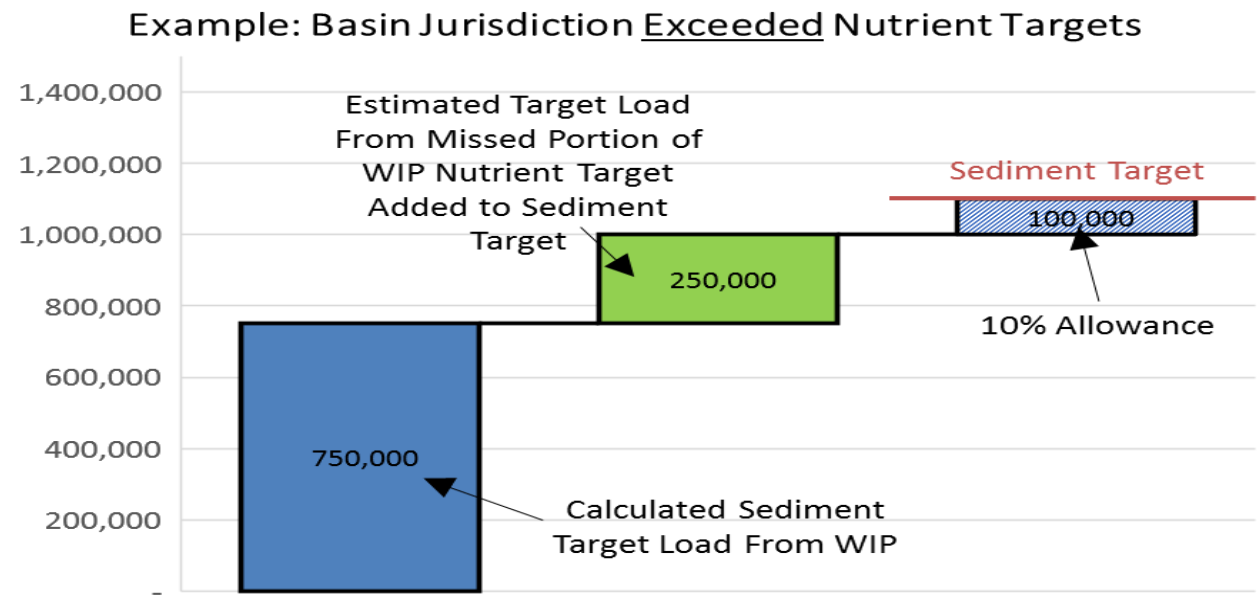
In an example using the same hypothetical partner's basin-jurisdiction, but in this case only 75 percent of their nitrogen and phosphorus target of 50 million pounds nitrogen and 5 million pounds phosphorus was achieved, then the calculated pounds of sediment delivered to the Bay would be higher than the former case at 1,250,000 pounds because less BMPs in the watershed are allowing more sediment to be transported to the Bay. Using the missing portion (25%) of the nutrient target to estimate the remining portion of the sediment target that would not have been delivered to the Bay if the nutrient target was met results in 250,000 pounds of sediment removed from the estimated sediment loads delivered to the Bay from the underperforming WIP*. Note that this approach assumes a necessary simplifying assumption that the remaining BMPs ultimately applied to reach the nutrient target have the same level of sediment reductions as the BMPs already in the WIP. The 1,250,000 pounds of reduced sediment load to the tidal Bay estimated from the underperforming WIP and the estimated 250,000 pounds removed from the sediment target because of the missed nutrient target are summed for an estimated 1 million pounds (1,000,000 pounds) of sediment removed from the tidal Bay. Then with the 10 percent allowance again applied, the sediment target allowance in this hypothetical case would be 100,000 pounds of sediment. Adding the calculated reduction from BMPs and the 10 percent allowance results again in a calculated 1.1 million pound sediment target (1,100,000 pounds) for the hypothetical basin jurisdiction.

Attachment 1, Figure 2. Estimated draft sediment target with 10 percent allowance under the hypothetical case of achieving only 75 percent of the nutrient target. The solid blue is the sediment target (delivered to tidal waters) calculated from the sediment reductions of the management practices in the draft Phase III WIP, the solid green bar is the portion of the decreased sediment loads delivered to the Bay based on the missed portion of the nutrient target, and the striped blue bar is the 10 percent allowance. Units in pounds.



In a third example using the same hypothetical partner's basin-jurisdiction, but in this case the basin jurisdiction exceeded the nutrient target in order to address future climate risk or growth. Therefore, 125 percent of the nitrogen and phosphorus target was achieved, and the calculated pounds of sediment delivered to the Bay is lower than the case of achieving the nutrient targets as in Example 1. When there is an overshoot of the nutrient Phase III target the sediment target is too low because more BMPs in the watershed are allowing less sediment to be transported to the Bay. Using the overshot portion (25 percent) of the nutrient target to estimate the remining portion of the sediment target that would have been delivered to the Bay if the nutrient target was exactly met results in 250,000 pounds of sediment added to the estimated sediment loads delivered to the Bay from the overperforming performing WIP*. The 750,000 pounds of reduced sediment load to the tidal Bay estimated from the overperforming WIP and the estimated 250,000 pounds added to the sediment target because of the overshot nutrient target are summed for an estimated 1 million pounds (1,000,000 pounds) of sediment removed from the tidal Bay. Then with the 10 percent allowance again applied, the sediment target allowance in this hypothetical case would again be 100,000 pounds of sediment. Adding the calculated reduction from BMPs and the 10 percent allowance results again in a calculated 1.1 million pound sediment target (1,100,000 pounds) for the hypothetical basin jurisdiction.

Attachment 1, Figure 3. Estimated draft sediment target with 10 percent allowance under the hypothetical case of overshooting the nutrient target by 125 percent. The solid blue is the sediment target (delivered to tidal waters) calculated from the sediment reductions of the management practices in the draft Phase III WIP, the solid green bar is the portion of the increased sediment loads delivered to the Bay estimated by the overshot portion of the nutrient target, and the striped blue bar is the 10 percent allowance. Units in pounds.



* N-P exchanges would be applied to get an equal "miss" of the target load from both nitrogen and phosphorus WIP loads.