Recommended Approach To Account for Air Credits in the Phase II WIPs

Introduction

Achieving the TMDL allocations will challenge the CBP State partners to look at all reasonable and appropriate means to account for progress they're making in meeting the Phase II WIPs and subsequent 2-year milestones. One approach, encouraged by the Chesapeake Bay Program, is through air credits. The nutrient allocation letter of July 1, 2010 states:

> "EPA anticipates that [the 15.7 million pounds of atmospheric deposition direct to the tidal Chesapeake] will be achieved through implementation of federal Clean Air Act regulations by EPA and the states through 2020. Projected reductions in atmospheric nitrogen deposition loads to the surrounding watershed over this same period are already accounted for within the individual jurisdiction and major river draft allocations. Any additional nitrogen reduction realized through more stringent controls at the jurisdictional level, beyond minimal federal requirements, may be credited to the individual jurisdictions through future revisions to the jurisdictions' WIPs, two-year milestones, and the Bay TMDL tracking and accounting framework."

Background

Progress has been made in the coordination of Region 3 water and air programs through ongoing meetings in 2010-2011 with active and engaged air directors from the Bay Program States. A key motivation of the air directors is learning how nitrogen emission reductions brought about by their programs can contribute to the Bay Program nitrogen reductions in the WIPs. We want to encourage the continued air-water program interaction and make the way smooth for air credits going forward through: 1) improving the air credit decision rules we already have in place for the Phase I WIPs; 2) providing a clear path forward for legitimate air reduction credits in the Phase II WIPs in order to reduce frustration and difficulty of Bay Program States to get credit for real measurable reductions in nitrogen emissions; and 3) encouraging coordination of air and water protection in the watershed by allowing progress in atmospheric deposition nitrogen reductions to be appropriately credited in the Phase II WIPs.

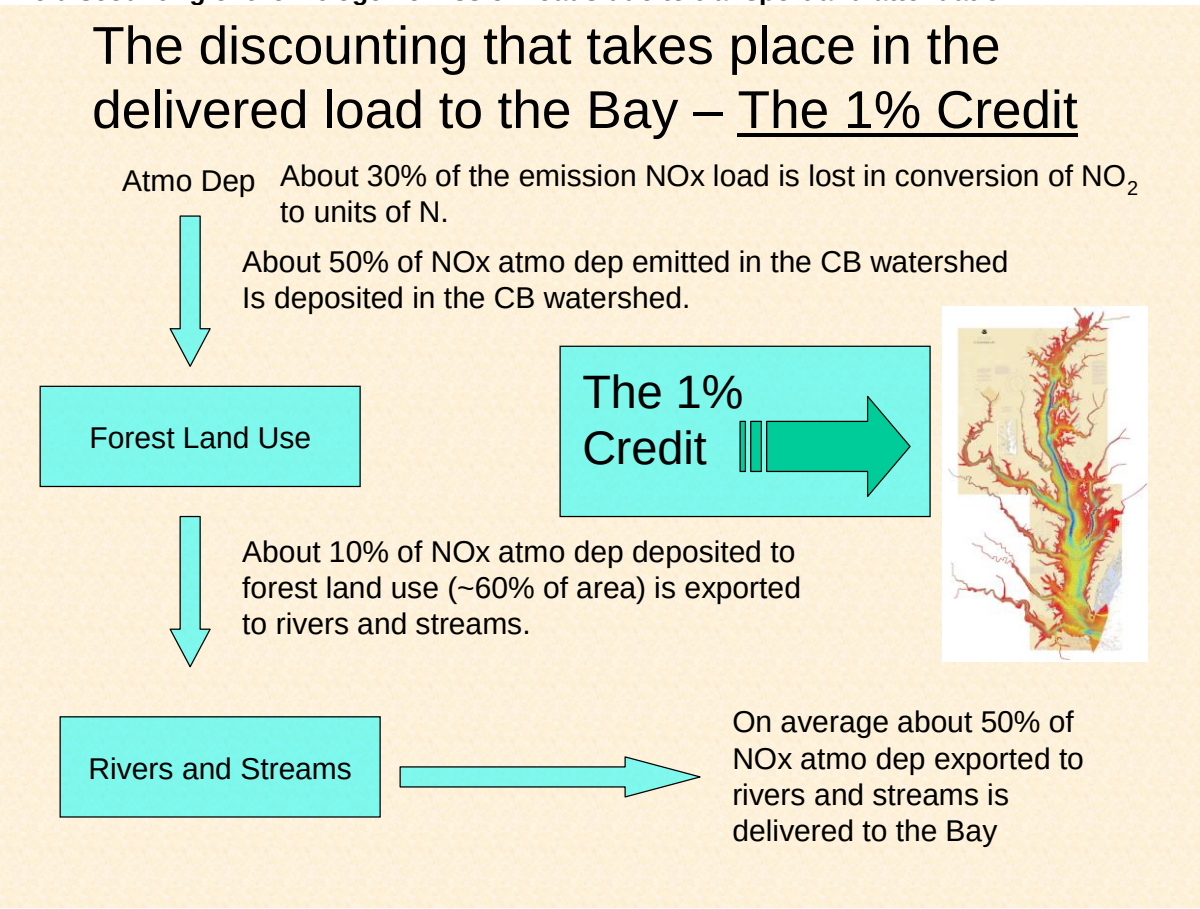
Most of the reductions in atmospheric deposition have already been captured by the 2020 CMAQ Scenario which set the watershed and tidal Bay allocations. The 2020 CMAQ Scenario included, On-Road Light Duty Mobile Sources - Tier 2, On-Road Heavy Duty Diesel Rule - Tier 4, Clean Air Non-Road Diesel Rule, Off-road large spark ignition engine rules, CAIR second phase in place (in coordination with earlier NOx SIP call), Regional Haze Rule and guidelines for Best Available retrofit Technology (BART), Clean Air Mercury Rule (CAMR), and Hospital/Medical Waste Incinerator Rules (*Appendix L. Setting the Chesapeake Bay Atmospheric Nitrogen Deposition Allocations*).

Air credits are for the particular case of management actions resulting in "nitrogen reductions realized through more stringent controls at the jurisdictional level, beyond minimal federal requirements". Air credits generally cover management actions, usually initiated after the 2020 CMAQ Scenario was run in 2008, whose emission reductions were unaccounted for in the CMAQ 2020 Scenario.

The overall contribution the air credit will make on the WIPs is small due to the discounting of attenuation at every step from emissions, to partial deposition on the watershed, to deposition to

attenuation on the land and in rivers as shown in the figure below. Generally, the air credit of delivered loads to the Bay is about 1 percent of the emission loads.

The discounting of the nitrogen emission loads due to transport and attenuation.



The air credits have no influence on the allocations, only on the WIPs and milestones. The air credits come into play after the allocations are set and late in the WIP process because of the small contribution they make to nitrogen load reductions – more as a trim of final nitrogen WIP loads than as a major element of nitrogen reductions.

The Phase I WIP air credit decision rules were sufficient for the Phase I WIPs, and with the exception of recommended modifications made to two of the decision rules in order to refine accounting of appropriate air credits, are sufficient for the Phase II WIPs as well. The Phase I WIP decision rules are:

1) Determine whether the emission source for which the state is seeking credit is already assessed in reductions in the State's State Implementation Plan (SIP) for achieving the State's air quality standards.
2) Determine whether the emission reduction is a state-wide emission or point source.
3) Determine if the emission controls will impact NOx and/or NH3 emissions.
4) Determine the annual average emission reduction.
5) Only the State requesting air credit gets deposition credit for delivered load to Bay.

Source: Appendix L. Setting the Chesapeake Bay Atmospheric Nitrogen Deposition Allocations

Approach

Recommended Changes In Decision Rule 1

Of the 5 decision rules, decision rule 1 was key to assessing what nitrogen reductions went beyond minimal federal requirements. Decision rule 1 was based on the need for a "bright line" between what was counted in the 2020 CMAQ Scenario and what was not. Because the CMAQ scenarios are always updated and tend to capture the latest SIPs, the bright line of "within or without the SIP" made sense.

An approach closer to the intent of the decision rule 1 though would be to use the 2020 CMAQ Scenario directly and count as an eligible air credit only what's not included in scenario. This is a better metric in the WIPs to assess the "beyond minimal federal requirements" requirement, and is the major change recommended in the air credit decision rules for the Phase II WIPs.

An ancillary recommended change is to have a single point of contact (SPOC) in Air Protection Division to vet reductions as legitimate. The POC will check to see if the proposed credit was initiated after the 2007-2008 emission data sets used in the 2020 CMAQ scenario. Another important check will be for proposed credits involving enforcement actions. Generally, when enforcement actions are applied to ensure that emissions are in compliance with the CAA then credits would be unallowable, but if enforcement led to emission reductions beyond what's called for in the CAA then a credit can be approved. (Note: Establishing a SPOC for air credits is already underway in Region 3 Air Protection Division and this point could be raised as a suggestion in the May 6 meeting with New York on air issues for Region 2's Air Protection Division.)

Every several years a new CMAQ scenario is run which incorporates the latest nitrogen emissions. The next expected CMAQ scenario for the Chesapeake Bay Program is the scenario representing the new ozone standard and Transport Rule. The scenario representing the proposed new standard is expected to better represent the atmospheric deposition in the Chesapeake in 2025, and will be used to update reductions in the WIPs and milestones. In this case, the reductions that were applied in the WIPs as air credits would now be in the base CMAQ scenario used in WIP accounting and a "claw-back" of air credits would be applied to avoid double counting. From this perspective, the air credits can be best seen as a short-term stopgap measure to account for air reductions in the watershed that are not already accounted for in the CMAQ scenarios used in WIP accounting. Every new CMAQ scenario future projection would result in a claw-back of credits that would now be contained in the new CMAQ scenario, resulting in a resetting of the clock for a new round of air credits that would accumulate beyond what's accounted for in the last CMAQ scenario.

Recommended Changes In Decision Rule 5

The other recommended change is in decision rule 5, which was the condition that **t**he credit for the air-water exchange would only be for the deposition loads in the watershed of the State requesting the exchange. This was a condition in the Phase I WIPs solely because it was thought to operationally difficult to remove loads from other State-Basins with an operational scheme that would require multiple model runs.

An approach to get around this operational difficultly and to appropriately allow air credits for deposition loads in the entire watershed as they actually occur would be to take the nitrogen deposition load from other states in the watershed from the atmospheric deposition loads to the tidal Bay when making scenario runs of the WIPs. This would have no influence on the accounting of EPA's nitrogen allocation to tidal water, but would be an operationally efficient method to preserve mass balance on the CBP models while allowing full and appropriate air credits in the watershed to the state requesting the air credit

Application of Air Credits in the WIPs

Making the process for obtaining air credits clear in the Phase II WIPs and making the recommended changes to the decision rules will provide more incentive for air credits. It's expected that a wider application of air credits will be made in the Phase II WIPs

Nevertheless, the nitrogen credits that can be obtained are small. In Phase I WIPs only Pennsylvania's Diesel Idling management action applied for and received an air credit. This credit was small, only 2,600 pounds delivered to Bay for 736 tons of NO_2 emissions reduced.