

**Q1: Would subsurface drains and underground outlets be mapped to ag drainage management?**

No, NRCS reports subsurface drains and underground outlets in units of feet. Both subsurface drain and underground outlets for NRCS practices are mapped to one CAST BMP, "soil conservation and waters quality plans" (aka conservation plans). These practices are not stand alone practices but planned as part of a conservation system with other conservation practices.

**Q2: Is this another charge to the Ag Modeling Subcommittee (AMS) to see what improvements can be made in the future?**

There may be something here for the Watershed Technical Workgroup, and it will need to be submitted to them first for evaluation of the NEIEN appendix and changes. It may require action from another subgroup regarding NRCS codes related to CBP BMPs if needed. There has not been a request yet regarding re-evaluation of BMP reduction efficiency crediting.

**Q3: I'd like some clarification on the rationale for the change before we vote.**

Leon was initially informed that there was no documentation or meeting notes to confirm the rationale for previously changing the practices' status. However, notes related to the reasons for the changes were documented and some of the relevant reasons are shared. Some BMPs were removed or reidentified as "draft" in the past for various reasons, which some include:

- *All BMPs other than conservation plans that map to "ConPlan" were changed to a "Draft" status. These BMPs were changed as part of calibration in the Phase 5 Model to account for reporting a plan versus individual BMPs within a plan.*
- *Many combinations of BMP/Measurement Name/Unit Name that were not previously submitted to NEIEN were removed. Some newer records were left to accommodate recently approved BMPs.*
- *Any records with no associated ScenarioBuilder name were removed with the exception of many cover crop BMPs that currently do not receive credit but have been traditionally reported. There may now be a CAST name equivalent for reported practices.*
- *All BMPs other than conservation plans that map to "ConPlan" were changed to a "Draft" status. These BMPs were over-reported in the Phase 5 Model calibration as multiple BMPs treat the same acre of land. In reality these multiple BMPs are part of one holistic BMP: Soil and Water Quality Conservation Plans.*
- *Changes to the appendices between phase 5 and phase 6 were presented at the 9/3/2015 WTWG meeting and approved.*

**Q4: If we approve this, what are the reductions associated with these practices in terms of meeting the TMDL?**

Phase 6 Soil Conservation and Water Quality Plan BMP N/P/S reductions vary based on hydrogeomorphic region and load source. Nitrogen reductions are 3%, 5%, or 8%, phosphorus reductions are 5%, 10%, or 15%, and sediment reductions are from 8%, 14%, or 25%.

**Q5: What was the rationale for the 4% efficiency for conservation plans (if correct)?**

After some investigation, it appears that the 4% N efficiency is just one of the values available in certain hydrogeomorphic regions of the watershed for conservation plans. Conservation Plans are defined as a combination of practices, other than conservation tillage or no-till, that reduces soil loss to or below tolerance, defined as the maximum amount of erosion at which the quality of a soil as a medium for plant growth can be maintained. Nutrient and sediment reductions vary by the land use, e.g. conventional tillage, conservation tillage, hayland or pastureland, in the model that a conservation plan is applied to.

The BMPs have varying nutrient reduction efficiencies based on hydrogeomorphic region, so some of the same BMPs may have a different nutrient reduction efficiency because of its hydrogeomorphic region.

114	Agriculture	Cover Crop Traditional Annual Legume	covercroptradlea	Grain with Manure	Appalachian Plateau Ca	4.00	0.00	0.00
115	Agriculture	Cover Crop Traditional Annual Legume	CoverCropTradLEA	Grain without Manure	Appalachian Plateau Ca	4.00	0.00	0.00
116	Agriculture	Cover Crop Traditional Annual Legume	covercroptradlea	Other Agronomic Crops	Appalachian Plateau Ca	4.00	6.00	8.00
117	Agriculture	Cover Crop Traditional Annual Legume	CoverCropTradLEA	Silage with Manure	Appalachian Plateau Ca	4.00	6.00	8.00
118	Agriculture	Cover Crop Traditional Annual Legume	covercroptradlea	Silage without Manure	Appalachian Plateau Ca	4.00	6.00	8.00
119	Agriculture	Cover Crop Traditional Annual Legume	CoverCropTradLEA	Small Grains and Grains	Appalachian Plateau Ca	4.00	0.00	0.00
120	Agriculture	Cover Crop Traditional Annual Legume	covercroptradlea	Specialty Crop High	Appalachian Plateau Ca	4.00	6.00	8.00
121	Agriculture	Cover Crop Traditional Annual Legume	CoverCropTradLEA	Specialty Crop Low	Appalachian Plateau Ca	4.00	0.00	0.00
122	Agriculture	Cover Crop Traditional Annual Legume	CoverCropTradLEA	Double Cropped Land	Appalachian Plateau Sil	3.00	0.00	0.00
123	Agriculture	Cover Crop Traditional Annual Legume	covercroptradlea	Full Season Soybeans	Appalachian Plateau Sil	3.00	0.00	0.00
124	Agriculture	Cover Crop Traditional Annual Legume	CoverCropTradLEA	Grain with Manure	Appalachian Plateau Sil	3.00	0.00	0.00
125	Agriculture	Cover Crop Traditional Annual Legume	covercroptradlea	Grain without Manure	Appalachian Plateau Sil	3.00	0.00	0.00

**Q6: What was the rationale for the Phase 6 efficiency?**

Appears to be based on the [Simpson and Weammert Report](#) (prepared for Phase 5) and expert panel recommendations. Conservation Plans: are a combination of practices, other than conservation tillage or no-till, that reduces soil loss to or below tolerance, defined as the maximum amount of erosion at which the quality of a soil as a medium for plant growth can be maintained. Nutrient and sediment reductions vary by the land use, e.g. conventional tillage, conservation tillage, hayland or pastureland, in the model that a conservation plan is applied to. (p 9) Note that credit cannot be taken for each practice implemented under a farm erosion and sediment plan or a NRCS Conservation Plan; the suite of practices listed in the plan are prescribed to meet a USDA-NRCS Revised Universal Soil Loss Equation, Version 2 (RUSLE2) prediction of soil losses at or below the soil loss tolerance value (T) for the accredited land acreage. This assumes all practices in the NRCS Conservation Plan are for soil loss reduction and credited as part of the group, unless accounted as a different CAST BMP by jurisdictions (p 58).

The Bay Program established BMP Expert Panels in later years to determine BMP definitions and provide recommendations for nutrient and sediment reductions for BMPs. Approved BMP Expert Panel recommendations supersede the Simpson and Weammert report.

\*NOTE from Simpson and Weammert Report: Name Change: The original name of the Conservation Plans BMP will be changed to “Conservation Planning: Field and Pasture Erosion Control Practices” since the credited practices may encompass only a limited portion of the elements contained in a conservation plan. (p 58). No known/ document change

**Q7: Would the practices in question get the Phase 6 reduction efficiencies (map to Phase 6 Cons Plan BMP) or the Phase 5 N efficiency under a different CBP BMP name? [The efficiencies are different]**

See Q5. They would get the Phase 6 reduction efficiencies.

**Q8: A lot of these “draft” BMPs are measured in feet and numbers, but the Conservation Plan BMPs are measured for credit in acres. So how would we get credit?**

See Q10. The BMPs are cross walked from NRCS to CAST in the NEIEN Appendix and account for the unit reporting. The Conservation Plan designation is the CAST BMP Representation group that attributes the CAST Conservation Plan BMP reductions.

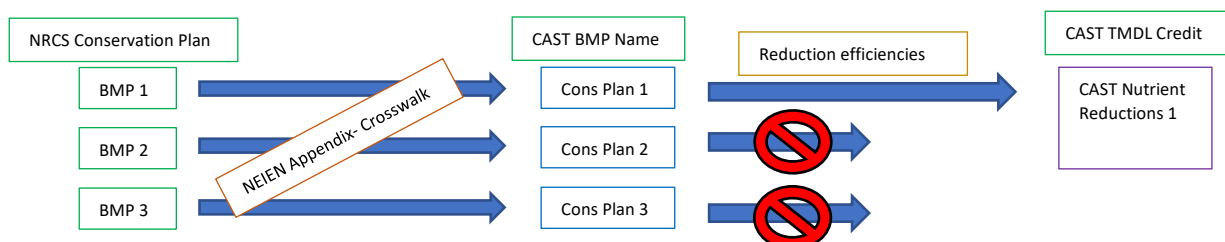
**Q9: Conservation plans in Phase 6 receive TN, TP, and TSS reductions. The units of feet are mapped to Conservation Plans. We should clarify what units NRCS uses if these are converted to “release” status.**

CAST team has conversion factors for unit changes by BMP in the NEIEN Appendix. The conversions had already been done.

**Q10: Wouldn't people reporting these practices already be getting credit for the Conservation Plan BMP?**

That is a possibility, but states are supposed to report the most granular information available. If there are components within a Conservation Plan, states are supposed to report that. However, states ideally shouldn't be reporting all BMP components of a Conservation Plan and all of the individual conservation plan BMPs too. It generally should be one or the other. When jurisdictions report the most granular information by reporting the BMP components of a conservation plan that are on the same acres, only a single BMP's reduction efficiencies are applied for that acreage.

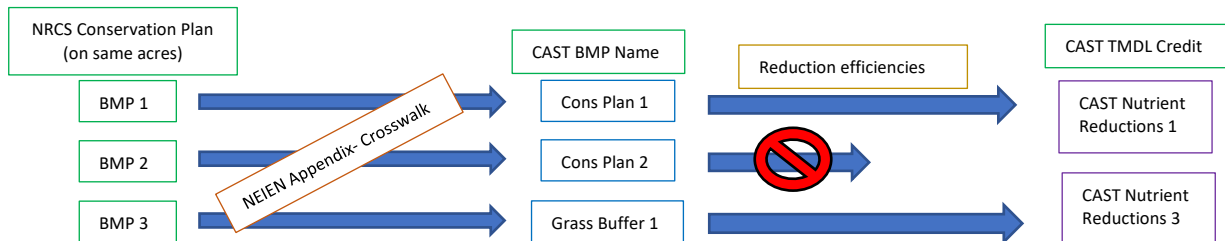
**BMP to TMDL Crediting Flow Chart**  
(When multiple practices applied on the same acres)



\*\*\*Multiple BMPs counted as Cons Plan and only 1 Cons Plan BMP is receiving credit in the model because you cannot get multiple credit on the same acre of land.

**Q11: Can any of these “draft” practices add to a reduction already in the model?**

Possibly, but jurisdictions can only get credit for one “Conservation Plan” BMP per acre. If states are reporting component BMPs of a conservation plan this would only add to a reduction in the model if the BMP is in a different CAST BMP name than “Conservation Plan,” or on different acres than a “Conservation Plan” BMP that is already counted. It can add to a reduction when the practice is credited individually outside the Conservation Plan.



**Q12: Why were these draft BMPs cross-walked up to the Conservation Plan BMP?**

Appears to be based on the Simpson and Weammert Report (prepared for Phase 5) and some expert panel decisions. The Simpson and Weammert Report classify “Conservation Plans” as a combination of practices, other than conservation tillage or no-till, that reduces soil loss to or below tolerance, defined as the maximum amount of erosion at which the quality of a soil as a medium for plant growth can be maintained. Some practices were cross walked to the Conservation Plan BMP because expert panels could not establish a separate CAST BMP category, that would give different reduction efficiencies, based on prior published research. The Conservation Plan BMP category became a catch all for some BMPs that did not have a separate CAST BMP category based on research at that time.

**Q13: Were some of these practices evaluated by expert panels and not approved?**

Irrigation practices are available for planning but are not approved for crediting in that annual progress scenarios. Example: if the irrigation practice is related to center-pivot irrigation- it would not get credit toward the TMDL. An expert panel reported that their findings from the irrigation expert panel were inconclusive. Because of the inconclusive research the irrigation BMPs were not given any sediment, nitrogen or phosphorus reduction efficiency.

**Q14: Does crediting irrigation practices contradict findings of the cropland irrigation expert panel?**

According to the Irrigation Expert Panel report there wasn't sufficient data to consider. Because of the inconclusive research and lack of supporting data the irrigation BMPs were not given any sediment, nitrogen or phosphorus reduction efficiencies. Therefore,

based on the lack of supportive research irrigation practices can be removed from the draft-to-released appendix proposal.

**Q15: Are jurisdictions reporting a “conservation plan” or individual practices?**

Based on feedback from jurisdictions, all are reporting “conservation plans,” however, there are a few that are reporting some individual practices that are not part of the conservation plan for individual practice credit. There are also jurisdictions that have these recommended practices implemented but are unable to receive credit because they are in “draft” status. Some jurisdictions used to get and report NRCS conservation planning acres, but no longer do. They now plan to report some BMPs as conservation plans for crediting.

**NOTES:**

The Conservation Plans reduction efficiencies have not been reviewed and adjusted since 2003

The Agricultural Nutrient and Sediment Reduction Workgroup recommended in 2007, that the name “conservation plan” be changed since the efficiency does not include all parts of the soil conservation plan, just the plans erosion control practices.

There is an interim/ planning Cropland Irrigation Management BMP (not NRCS BMP code) that receives a 4% nitrogen reduction efficiency, but this does not receive credit for reductions in the CAST Model.

**Sources of Answers:**

Chesapeake Bay Program- [Chesapeake Assessment Scenario Tool](#) (CAST) Website

[Simpson and Weammert Report](#) (2009)

[Cropland Irrigation Expert Panel](#) (2019)

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