

Comparison of Agriculture and Forestry E3 Proposals

Background (Agriculture Workgroup)

- For the Phase 7 (P7) E3 Scenario, the Agriculture Workgroup (AgWG) set assumptions for 10 land use change best management practices (BMPs).
 - Assumptions for 5 of these BMPs (forest buffers, forest buffers with exclusion fencing, grass buffers, grass buffers with exclusion fencing, and tree planting) have also been proposed by the Forestry Workgroup (FWG), and these assumptions differ from the AgWG's.
 - The FWG proposed an assumption for agroforestry BMPs (alley cropping and silvopasture); the AgWG did not propose an assumption for these practices.
- For the Phase 6 (P6) E3 Scenario, the AgWG proposed – and the Water Quality Goal Implementation Team approved – that the cumulative impact of land use change BMPs would lead to no more than 15% of agricultural land use acres being converted to a non-agricultural land use.
 - For P7 E3, the AgWG agreed to retain this 15% “cap” on ag land use change and structured the assumptions for individual land use change BMPs accordingly.
 - While some of the P6 assumptions for land use change BMPs have been maintained, others have been updated for P7 based on extensive discussion within the AgWG.
 - The AgWG's P7 E3 assumptions for land use change BMPs lead to a theoretical conversion of approximately 14.3% of agricultural land to non-ag land uses across the watershed.

Background (Forestry Workgroup)

- The Forestry Workgroup did not think it would be appropriate to reduce the level of implementation from the Phase 6 E3 scenario in the Phase 7 E3 scenario if only physical constraints are being considered (no financial or practical constraints).
- In some cases the level of implementation was increased over Phase 6 to ensure E3 reflects an increased level of effort over the goals established in the 2025 Watershed Agreement (which were designed to be ambitious but achievable goals).
- Forestry BMPs deliver among the highest level of nutrient load reductions in the agricultural sector so in an E3 context use of these practices should be maximized

Scenario Comparison

The table below compares the Phase 7 E3 Scenario proposals presented by the Forestry and Agriculture Workgroups for several land use change BMPs. It also includes the

Agriculture Workgroup proposal for non-forestry land use change BMPs used to calculate overall agriculture land use change percentage.

- The Forestry Workgroup proposal did not include wetland restoration, land retirement, or alternative crops; for the purposes of this comparison, assumptions for those practices were set to match those of the Agriculture Workgroup to maintain parity to the greatest extent possible. If the Forestry Workgroup proposal for ag/forestry BMPs were accepted, the overall land use change conversion including these additional BMPs would be approximately 18% of agricultural land to non-ag land uses across the watershed.
- For each BMP, we provide the assumption and associated acres credited in CAST. Note these acres are not exactly the same as the [original Forestry Workgroup proposal](#) to the CWGT that relied on the high-res land use data and the 1:24K riparian area rather than data from CAST.
 - Land use change practices exchange acreage of one load source acre for a different load source. For example, Tree Planting can alter an acre of pasture to an acre of forest.
 - In CAST, BMPs are sequentially applied to land uses in each sector governed by an order of operations for land use change BMPs. As land use change BMPs are applied, acres are removed from the original land use, reducing the available acres for BMPs lower in the order of operations. [Appendix 6B](#) shows the order and the load source that the BMP modifies. The information is also available in the Source Data table on the CAST website.
- To generate the percent land use change, we sum the land use change acres, excluding land retirement to pasture and agroforestry acres, then divide by the total number of ag land use acres within the CBWS.
- Land retirement to pasture does not take acres out of an agricultural land use.
- Agroforestry practices are not modeled as land use change BMPs.

FWG/AgWG Land Use Change BMPs		
BMP	E3 Acres Credited (Watershed-Wide)	
	FWG Proposal	AgWG Proposal
Forest Buffers	80% of cropland within 30m of all unbuffered streams/rivers	70% of cropland within 20m of all unbuffered streams/rivers
	300,498	175,299
Forest Buffers (with fence)	80% of pasture within 30m of unbuffered streams/rivers	85% of pasture within 20m of all unbuffered streams/rivers
	114,128	80,845
Grass Buffers	20% of cropland within 30m of all unbuffered streams/rivers	30% of cropland within 20m of all unbuffered streams/rivers
	75,124	75,128
Grass Buffers (with fence)	20% of pasture within 30m of all unbuffered streams/rivers	15% of pasture within 20m of all unbuffered streams/rivers
	28,532	14,267
Tree Planting	3% of available ag land uses [excluding ag open space]	1% of available ag land uses, excluding ag open space
	195,076	66,600
Agroforestry	10% of Cropland/Pasture	0
	627,841	0
Sum of Land Use Change BMP acres included in the FWG proposal (excluding Agroforestry)	713,358	412,139
% Land Use Change	9.3%	5.4%

Remaining Ag Land Use Change BMPs			
BMP	E3 Acres Credited (Watershed-Wide)		
	FWG Proposal ¹ (with assumptions from AgWG)	Alt Option (reduces assumptions from AgWG to achieve 15% cap)	AgWG Proposal
Wetland Restoration	[matches AgWG proposal]	[matches AgWG proposal]	1% of available ag land uses, excluding ag open space
	143,606	143,606	147,043
Land Retirement to Open Space	[matches AgWG proposal]	[reduced to achieve 15%]	Land retirement: combined 7% of available ag land uses
	495,094	293,789	506,945
Land Retirement to Pasture	[matches AgWG proposal]	[matches AgWG proposal]	Land retirement: combined 7% of available ag land uses
	255,686	255,686	261,165
Alternative Crops	[default to matches AgWG proposal]	[reduced to achieve 15% cap]	1% of available row crop acres
	29,062	0	30,305
Sum (LUC BMPs excl. LRP, AF)	1,381,119	1,150,753	1,096,433
CBWS Pre-BMP Ag Ac.	7,671,680		
% LUC (excl. LRP, AF)	18.0%	15%	14.3%

¹ Note the FWG did not make a proposal for these BMPs.