

LOWEST LOADING LAND USE

Water Quality Goal Implementation Team

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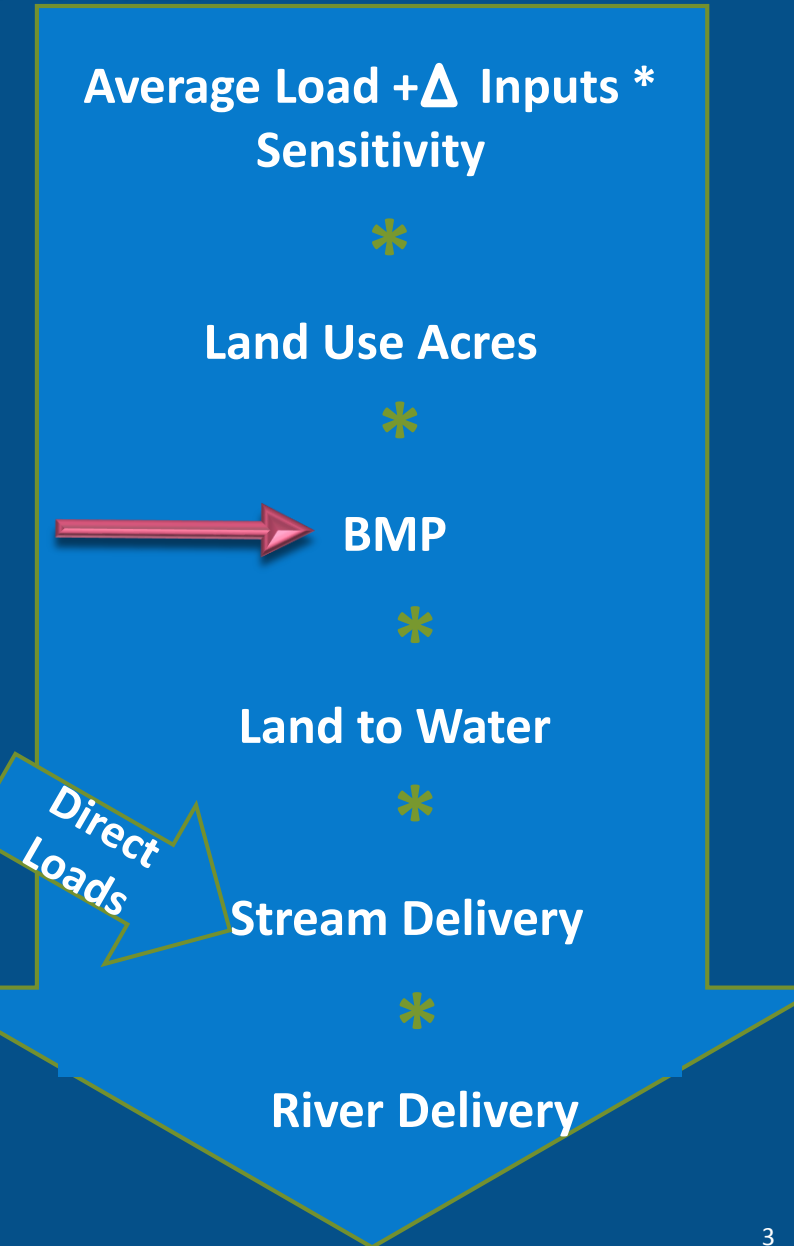
ISSUE: MODEL LOADS BELOW THAT OF FOREST

- Is it realistic for the loads to be lower than the True Forest land use?
- Mathematically, BMPs can reduce loads below forest.
- Should reductions be limited?
 - It happens for 1,470 lbs TN in the Beta 3 E3 scenario
 - This represents 0.004% of the total load of 40 million lbs TN

TN WATERSHED MODEL LOADS < FOREST

- Edge of Stream – Includes BMPs

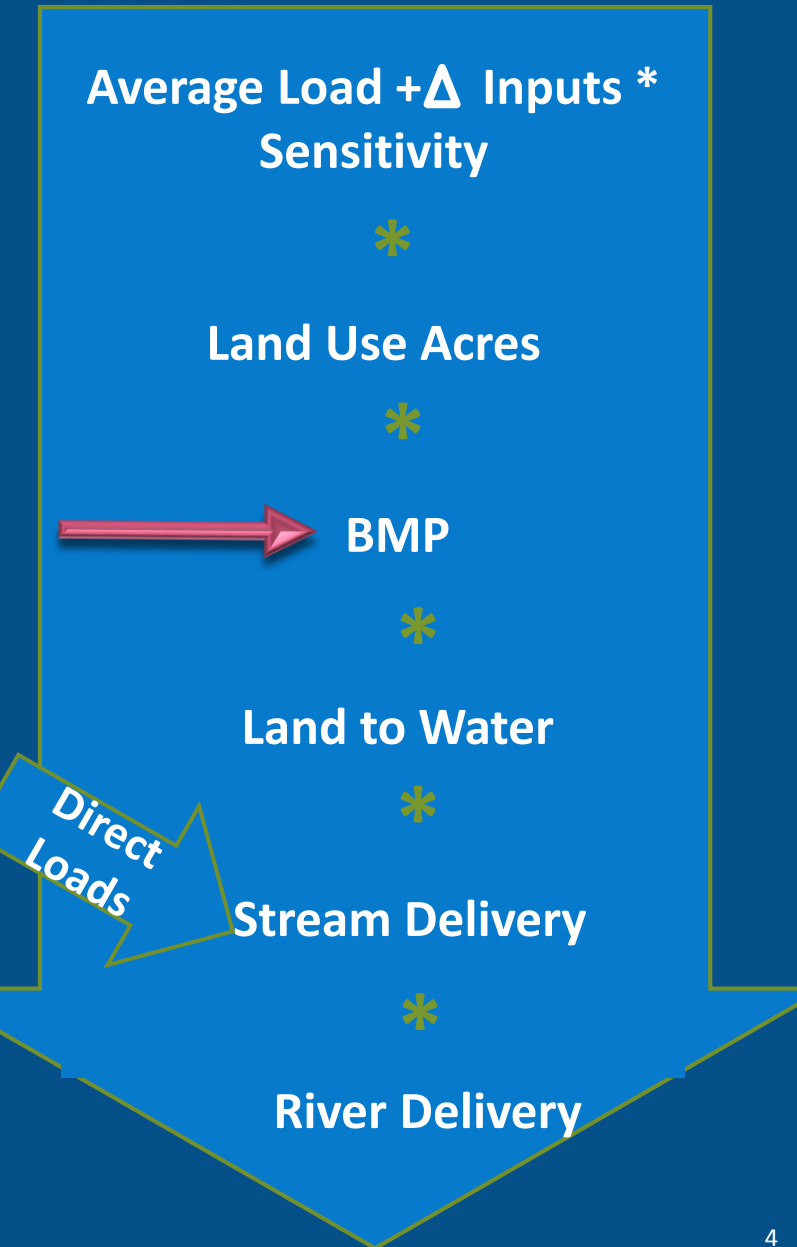
	Scenario	Load type	Land Uses (lbs)	NonForest < Forest (lbs)	Pct. of Load Eliminated
Developed	Beta 3 E3	TN	35,076,496	952	0.003%
Agriculture	Beta 3 E3	TN	76,757,374	518	0.001%
Developed	Beta 3 WIP2	TN	53,073,188	11	0.000%
Agriculture	Beta 3 WIP2	TN	99,379,842	604	0.001%
Developed	Beta 4 Calib	TN	83,002,782	0	0.000%
Agriculture	Beta 4 Calib	TN	233,123,797	6	0.000%



TP WATERSHED MODEL LOADS < FOREST

- Edge of Stream – Includes BMPs

	Scenario	Load type	Land Uses (lbs)	NonForest < Forest (lbs)	Pct. of Load Eliminated
Developed	Beta 3 E3	TP	1,782,084	0	0.000%
Agriculture	Beta 3 E3	TP	3,670,016	867	0.024%
Developed	Beta 3 WIP2	TP	3,011,604	0	0.000%
Agriculture	Beta 3 WIP2	TP	6,576,497	296	0.004%
Developed	Beta 4 Calib	TP	4,068,739	0	0.000%
Agriculture	Beta 4 Calib	TP	10,262,657	0	0.000%



WHY THIS IS OCCURRING

- BMPs

- Example: Infiltration BMP reduces 85% of TN

- $7.81 \text{ Lbs. TN (from turfgrass land use acre in FIPS 54063)} * (1-0.85) = 1.17 \text{ Lbs. TN}$
 - Forest loads at 1.48 Lbs. TN

- Multiple BMPs compound the problem

- Example: Bioretention reduces 80 % N and Urban Nutrient Management reduces 9% N

- $7.81 \text{ Lbs. TN (from turfgrass land use acre in FIPS 54063)} * (1-0.8) * (1-0.09) = 1.42 \text{ Lbs. TN}$
 - Forest loads at 1.48 Lbs. TN

CONSIDERATIONS AND OPTIONS

- Need to explain to the public why forest is or is not the lowest loading land use. Real-life examples are necessary.
- BMPs
 - Could set the forest loading rate as the lowest loading land use
 - No BMPs are applied to forest.