Eagle Mountain BMP Modeling Analysis Utilizing SWAT

Mark R. Ernst aka Taesoo
Tarrant Regional Water District
North Central Texas

Water Quality Project

12 BMPs and Target Area Adoption Rates
• Grade Stabilization Structures: 25%
• Filter Strips: 25%
• Grassed Waterways: 10%
• Herbicide Application: 5%
• 2000 Foot Nutrient Buffer Surrounding Reservoir: 60%
• Terraces: 10%
• Cropland Conversion to Pasture: 25%
• Prescribed Burning: 4%
• P Inactivation with Alum of 45% of Lake for 65% control
• FP Sites: 100%
• Pasture Planting: 25%
• Brush Management: 20%

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Water Quality Project

12 BMPs and Total Phosphorus Reduction cumulative)
• Grade Stabilization Structures: 2.1% (2.1%)
• Filter Strips: 3.9% (6.0%)
• Grassed Waterways: 1.8% (7.8%)
• Herbicide Application: 0.7% (8.5%)
• 2000 Foot Nutrient Buffer: 3.8% (12.3%)
• Terraces: 1.7% (14%)
• Cropland Conversion to Pasture: 6.5% (20.5%)
• Prescribed Burning: 0.8% (21.3%)
• P Inactivation with Alum 3.3% (24.6%)
• FP Sites: 4.2% (28.8%)
• Pasture Planting: 0.3% (29.1%)
• Brush Management: 0.3% (29.4%)
Baseline: Total Phosphorus (TP) by Sub basin

TP Loading by 1 BMP
Graded Stabilization Structures
TP Loading by 4 BMPs
Graded Stabilization Structures
Filter Strips
Grassed Waterways
Herbicide Application

TP Loading by 5 BMPs
Graded Stabilization Structures
Filter Strips
Grassed Waterways
Herbicide Application
2000 ft. Nutrient Buffer
TP Loading by 6 BMPs
Graded Stabilization Structures
Filter Strips
Grassed Waterways
Herbicide Application
2000 ft. Nutrient Buffer
Terraces

TP Loading by 7 BMPs
Graded Stabilization Structures
Filter Strips
Grassed Waterways
Herbicide Application
2000 ft. Nutrient Buffer
Terraces
Cropland Conversion to Grass
TP Loading by 8 BMPs
Graded Stabilization Structures
Filter Strips
Grassed Waterways
Herbicide Application
2000 ft. Nutrient Buffer
Terraces
Cropland Conversion to Grass
Prescribed Burning

TP Loading by 9 BMPs
Graded Stabilization Structures
Filter Strips
Grassed Waterways
Herbicide Application
2000 ft. Nutrient Buffer
Terraces
Cropland Conversion to Grass
Prescribed Burning
FP Sites
SWAT Input for WASP

- 11 BMP’s decrease annual TP load by 26.1%
- In-lake Alum treatment is expected to reduce the TP flux
- Average annual TP load reduction is expected to be 29.4%
- WASP modeling will evaluate this reduction

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