



SWMP Effectiveness Planning

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SWMP Effectiveness Planning

Agenda:

- Phase I MS4 Permit Requirements
- Typical MS4 Data Sources
- Planning and Goals



SWMP Effectiveness Planning

Phase I MS4 Permit Requirements

- Part V.B – Assessment Program
- Part VI.C – Reapplication: Evaluation of SWMP Effectiveness



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Part V.B – Assessment Program

1. *Assessment Program Objective:* The purpose of the assessment program is to provide information for the permittee to determine the overall effectiveness of the SWMP in reducing stormwater pollutant loadings from the MS4. The following elements shall be used to develop the assessment program:
 - a. A water quality monitoring plan intended to identify local sources where urban stormwater is adversely effecting surface water resources.
 - b. Pollutant loadings.
 - c. A description of how the data from a. and/or b. above will be used to:
 - (1) Evaluate trends in pollutant loadings from the MS4 and in water quality; and
 - (2) Identify portions of the MS4 which can be targeted for loading reduction /corrective action with additional pollutant reduction measures.

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Part VI.C – Reapplication: Evaluation of SWMP Effectiveness

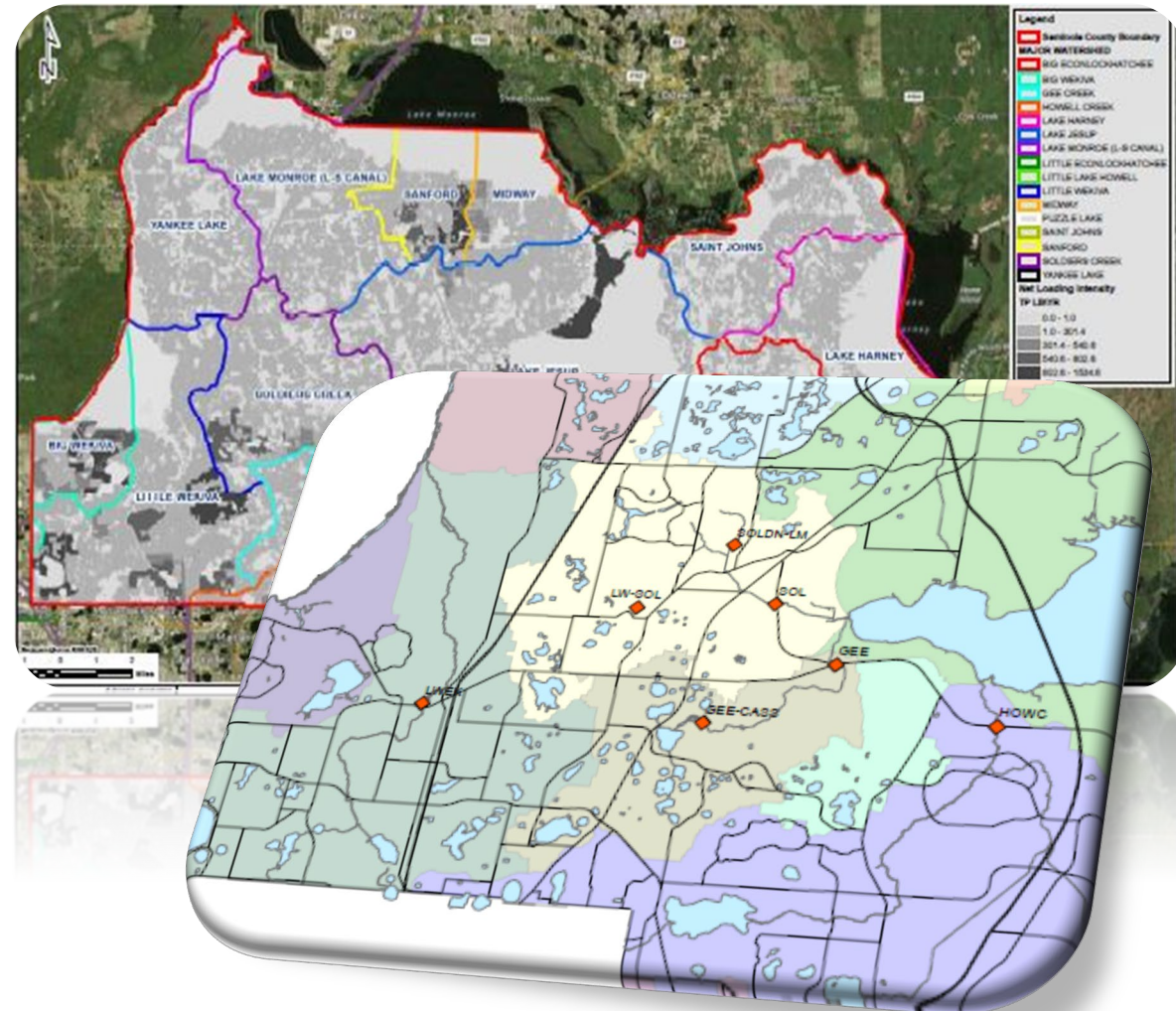
The permittee shall attach to the Year 4 ANNUAL REPORT and reapplication a summary of the SWMP evaluation including the following:

1. An evaluation of the effectiveness of the SWMP in reducing pollutant loading from the MS4, accomplishments in the implementation of MS4 pollutant reduction activities, and the overall effectiveness of SWMP implementation. The permittee should utilize information generated in Part V and Part VIII of the permit in composing their evaluation.
2. Describe whether stormwater pollutant loadings discharged from the MS4 have decreased. Include results and annual loadings from Part V.
3. Recommended SWMP revisions for each of the elements in Part III of the permit as a result of the SWMP evaluation. Based on an analysis of the assessment results, identify any areas or drainage basins within the boundaries of the MS4 that should be targeted for corrective action(s). If applicable, specify what

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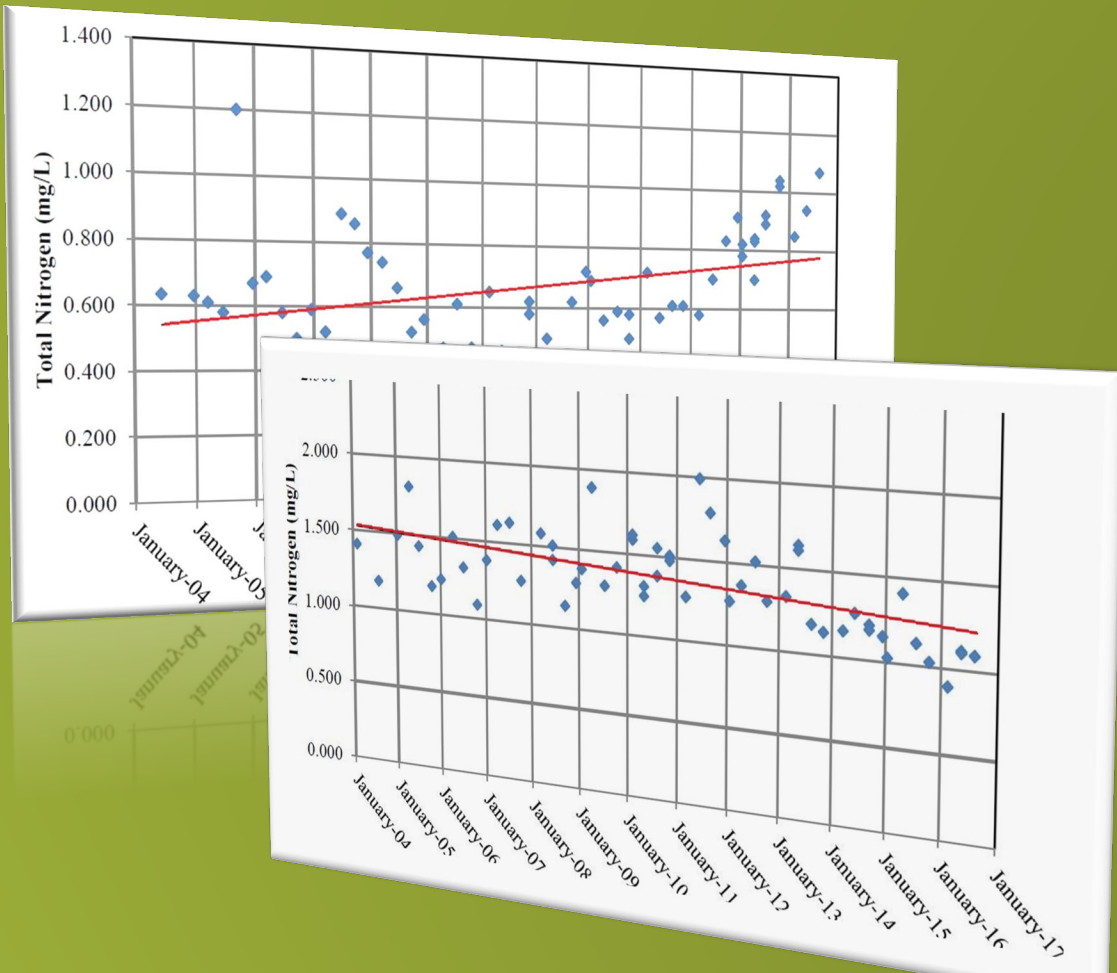
Typical MS4 Data Sources

- **Monitoring Programs**
 - Ambient
 - Storm-Event (Outfall)
 - Biological (Vegetation, Bugs, Bacteria)
- **Pollutant Load Modeling**
 - GIS
 - Spreadsheet



Assessment Program Data

Monitoring Programs



Pros / Cons

Pros

- Long-term trends
- Support multiple programs
- Collaborative

Cons

- Costly
- Labor intensive
- Not always MS4 specific
- Interconnected flows

Assessment Program Data

Pros / Cons

Pollutant Loading Estimates

Pros

- Cost-effective
- MS4 Specific
- Collaborative

Cons

- Estimates
- Data intensive
- No trends

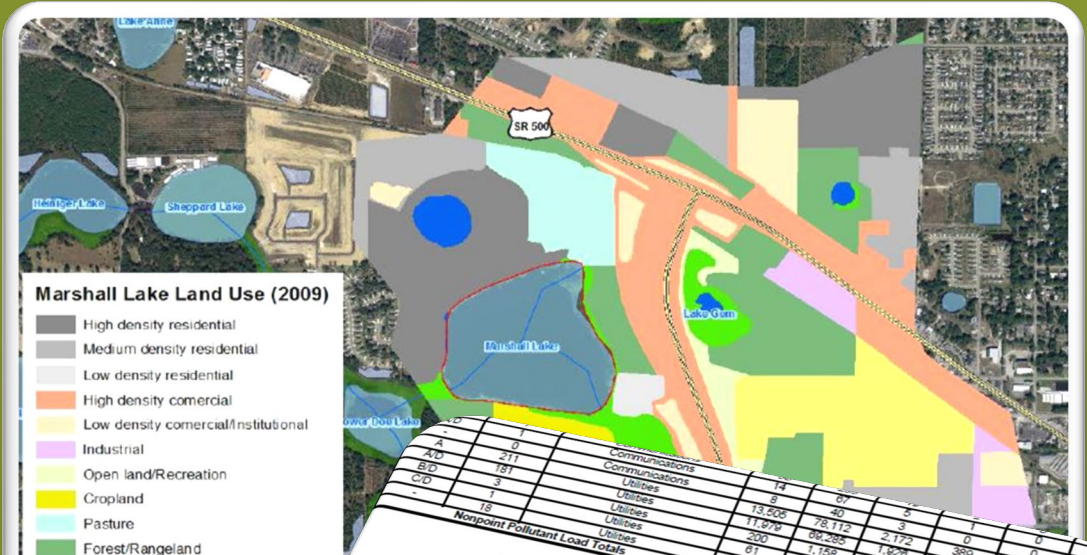
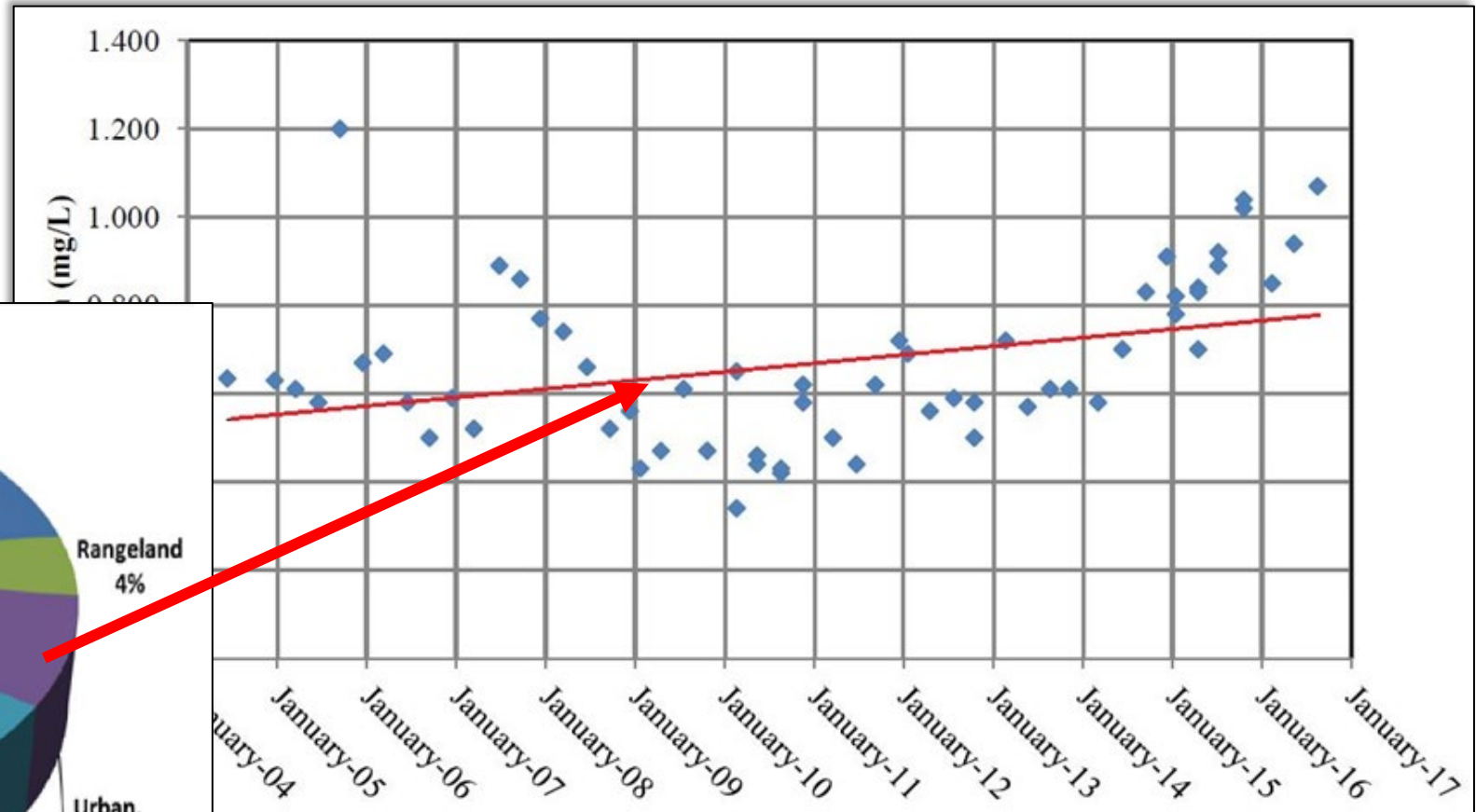
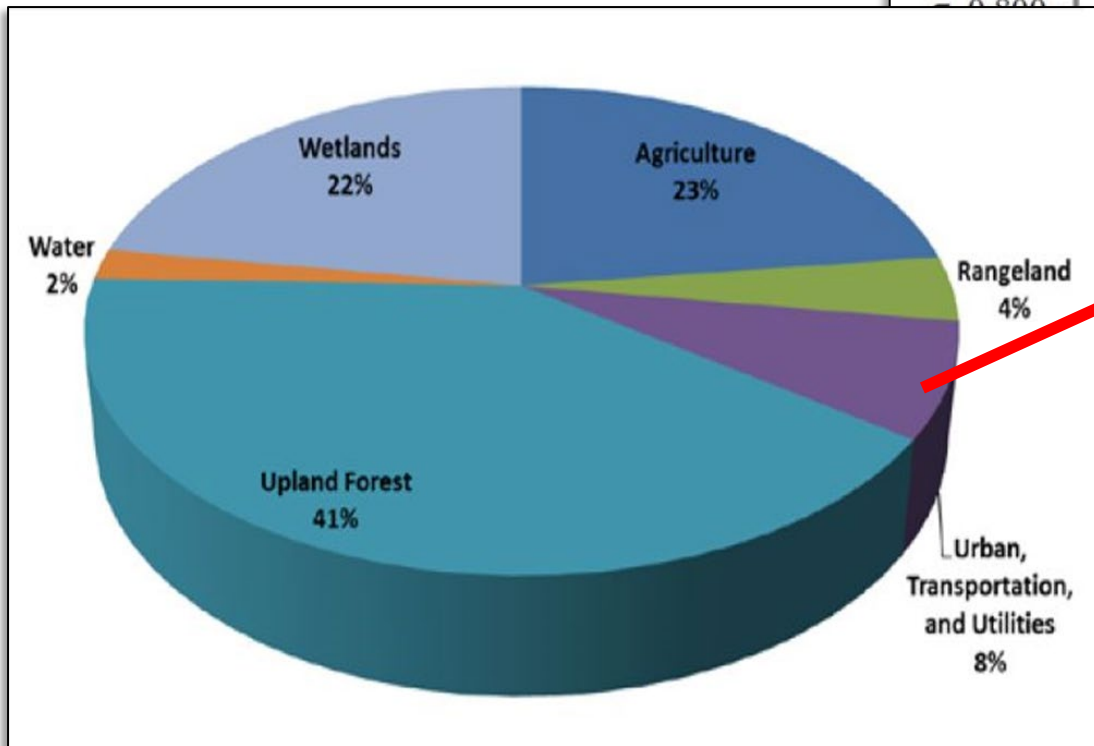


Table 7b: Seminole County - Howell Creek Watershed									
Water Treatment Summary									
	BOD ₅ (lb/yr)	TSS (lb/yr)	TN (lb/yr)	TP (lb/yr)	Cu (lb/yr)	Zn (lb/yr)			
5.5% Education Credit Removal									
Street Sweeping Removal	37,730	221,975	9,592	1,275	83	335			
BMP Treatment Removal	0	369,156	220	141	0	0			
Nonpoint Pollutant Load Totals	38,158	2,296,590	40,480	2,816	423	2,851			

Table 7c: Seminole County - Howell Creek Watershed									
Summary									
	BOD ₅ (lb/yr)	TSS (lb/yr)	TN (lb/yr)	TP (lb/yr)	Cu (lb/yr)	Zn (lb/yr)			
Totals	688,171	4,035,912	174,224	28,628	1,144	6,997			
Gross Pollutant Load	378,395	2,887,031	56,282	10,531	488	3,228			
Total Pollutant Reduction	309,776	1,148,881	117,942	18,097	656	3,769			
Net Pollutant Load	68,619	2,737,051	59,340	10,531	488	3,228			

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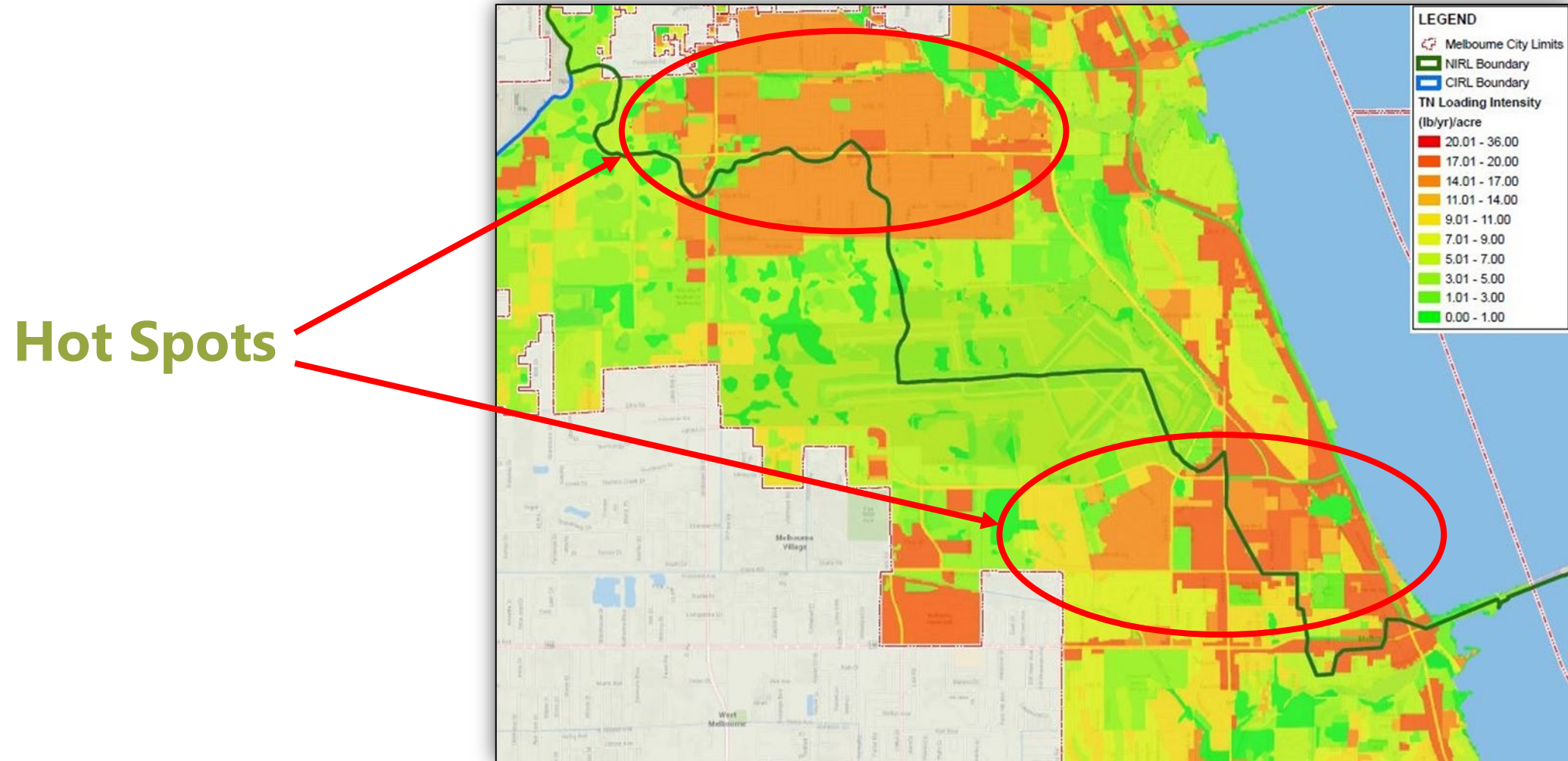
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Stormwater Treatment Summary						
Best Management Practices	BOD ₅ (lb/yr)	TSS (lb/yr)	TN (lb/yr)	TP (lb/yr)	Cu (lb/yr)	Zn (lb/yr)
5.5% Education Credit Removal	127,762	715,340	38,383	6,028	216	1,241
Street Sweeping Removal	0	0	4,057	2,208	0	0
BMP Treatment Removal	904,343	4,637,360	224,706	31,384	928	6,118

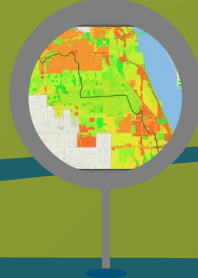
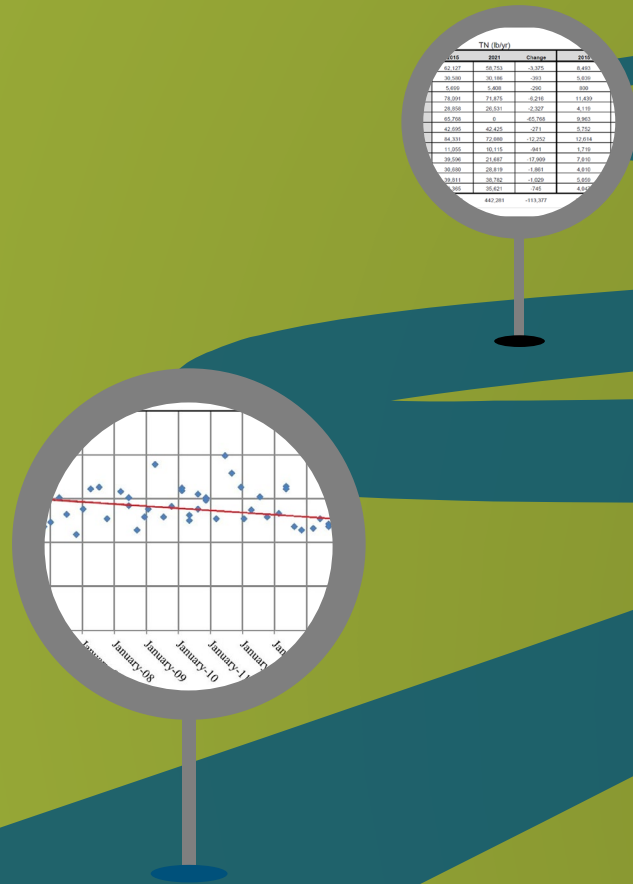
Net Stormwater Quality Summary						
Totals	BOD ₅ (lb/yr)	TSS (lb/yr)	TN (lb/yr)	TP (lb/yr)	Cu (lb/yr)	Zn (lb/yr)
Gross Pollutant Load	2,322,951	13,006,176	697,881	109,598	3,922	22,564
Total Pollutant Reduction	1,032,105	5,352,700	267,146	39,620	1,144	7,359
Net Pollutant Load	1,290,845	7,653,476	430,735	69,978	2,778	15,204

	TN (lb/yr)			TP (lb/yr)		
	2015	2021	Change	2015	2021	Change
	62,127	58,753	-3,375	8,493	8,111	-381
	30,580	30,186	-393	5,039	4,950	-89
	5,699	5,408	-290	800	783	-17
	78,091	71,875	-6,216	11,439	11,336	-102
	28,858	26,531	-2,327	4,119	3,682	-437
	65,768	0	-65,768	9,963	2,081	-7,881
	42,695	42,425	-271	5,752	5,650	-102
	84,331	72,080	-12,252	12,614	11,387	-1,227
	11,055	10,115	-941	1,719	1,380	-339
Puzzle Lake	39,596	21,687	-17,909	7,010	3,678	-3,332
Saint Johns	30,680	28,819	-1,861	4,010	3,616	-394
Soldiers Creek	39,811	38,782	-1,029	5,059	4,883	-177
Yankee Lake	36,365	35,621	-745	4,047	3,924	-123
Net Load	555,658	442,281	-113,377	80,064	65,461	-14,603

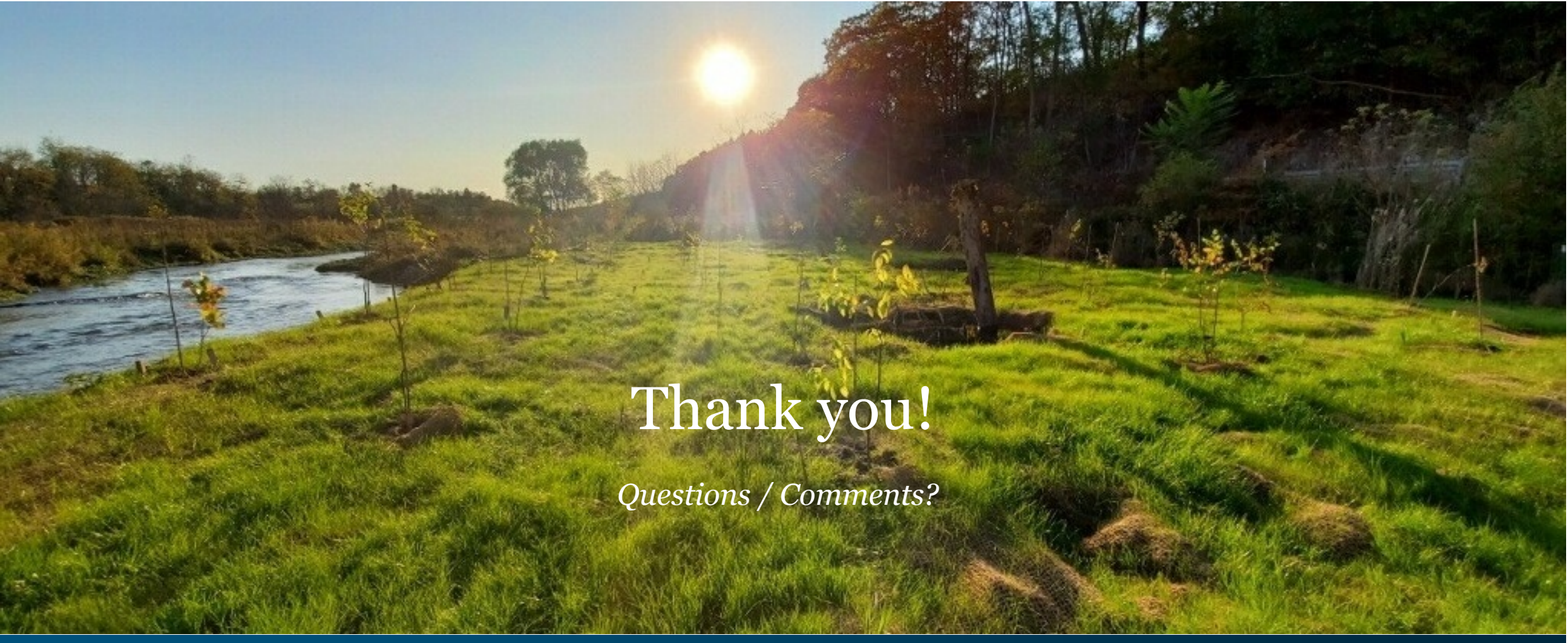
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Planning and Goals



- Document reductions of pollutant loading from MS4
- Determine overall effectiveness of SWMP
- Identify areas of MS4 for load reduction



Thank you!

Questions / Comments?

