

Management Action Reassessment Team

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Action Plan Reassessment and MART

- Task Force initiated MART in June, 2005, Co-Chaired by USDA, EPA and MN
- Status of existing available programs in the MRB that assist landowners, municipalities, and others in the basin to reduce nutrient loadings – majority of these reach out to control NPS
- MRB Point Source Reassessment

MART Report Format



1. Introduction
2. Discussion: Programs to meet the Goals of the Action Plan
3. Status: Implementation of Action Items No. 9 and No. 10 and other Indicators
4. Acronyms and Abbreviations

MART: Program Status Report

- Distribution of Farm Bill Programs from 2000 - 2005
- Distribution of the Section 319 NPS Program, and loading reductions resulting from that program from 2002 - 2006
- Distribution of the Partners for Fish and Wildlife Program (PFW)
- Distribution of Combined Sewer Overflows

Action Item No. 9

- Conservation Reserve Program: total ac enrolled, 2005 = 23,779,808
- Wetland Reserve Program: total ac enrolled, 2005 = 603,441
- Vegetated or forested buffers established along rivers and streams of priority watersheds: ~332,000 ac riparian buffers regardless of program, 2002 to 2005 (but from USDA programs)
- Number and percent of wetland acres restored, enhanced, or created : ~785,000 acres of wetland creation, enhancement and restoration, 2002-2005

Action Item No. 10

- Environmental Quality Incentives Program: total ac enrolled, 2000-2005 = 34,877,812
- Conservation Tillage: ~11.8 million ac under residue management, 2002 -2005
- Nutrient Management Planning: ~10.3 million ac under nutrient management, 2002-2005
- Section 319 of the Clean Water Act: projects focusing on N and P, 2002-2006
 - N = 25,542,923 lbs/yr reduced
 - P = 15,248,562 lbs/yr reduced

Other Programmatic Indicators

- Conservation Security Program: 80 watersheds (8-dig), ~126,000 farms, 59 million ac, 2004-2005
- Partners for Fish and Wildlife Program: 5,528 projects, 573,931 ac, 814 stream miles, 2001-2006
- Combined Sewer Overflows: 475 facilities, 2004

Point Source Mass Loadings Report Format

1. Introduction
2. Results
3. Data Description
4. Methodology
5. Changes to the 1998 Assessment
6. Acronyms and Abbreviations
7. References Cited

Compliance and Reporting

- What is a NPDES permit?
 - License granting permission discharge
 - It is revocable for cause (noncompliance)
- When permit contains monitoring requirements or limits, facilities must monitor and report to states monthly
- States enter all data into EPA's Integrated Compliance Information System/Permit Compliance System
- Data from PCS was used to analyze PS loadings to the MARB

Loadings of TN, TP, and BOD

	# Permits	Kg per day	Pounds per year
TN	31,817	578,681 kg/day	465,736,936 lb/yr
TP	30,498	97,840 kg/day	78,744,078 lb/yr
BOD	33,326	690,863 kg/day	556,023,814 lb/yr

	Method	Source of Pollutant Concentration Value	Source of Discharge Flow Value	SIC Code	TN	TP	BOD
1	EDS Retrieval	PCS Database	PCS Database	Any	11.1%	14.1%	62%
2	Estimate	TPC	CWNS existing flow	Any	45.2%	44.9%	9.2%
3	Estimate	TPC	Design flow adjusted by coeff. = 0.72	4952 only	34.3%	33.9%	22.8%
4	Estimate	TPC	Design flow adjusted by p-factor & operation days	Not 4952			
5	Estimate	TPC	No design flow or actual flow; TFV adjusted by design flow coeff. = 0.28	Any	9.4%	7.0%	6%

Sewage Treatment Plants

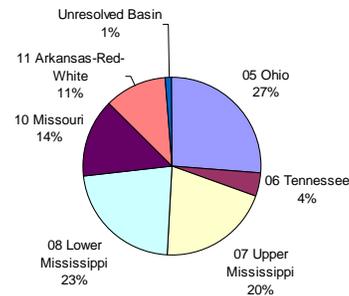
- Compared mass load contribution from sewage treatment plants (SIC=4952) to other industrial categories
- Sewage treatment plants contribute approximately:
 - 64.1% TN load
 - 65.7% TP load
 - 62.5% BOD load

MRB Loads	SIC=4952 (kg/day)	SIC ≠ 4952 (kg/day)
N	370,789	207,892
P	64,291	33,549
BOD	431,499	259,364

Report notes the top ten contributing non-sewage treatment SIC categories

Annual point source TN load contributions by Sub-Basin

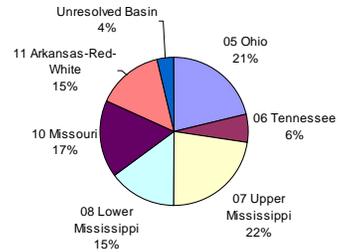
2-digit HUC/Hydrologic Region	Number of permits (for N loading)	Nitrogen load (kg/day)	% of TN load
05 Ohio	8881	152,982	26.4
06 Tennessee	1353	24,511	4.2
07 Upper Mississippi	4915	116,553	20.1
08 Lower Mississippi	6283	128,757	22.3
10 Missouri	6189	83,183	14.4
11 Arkansas R-W	3680	66,019	11.4
Unresolved Basin*	516	6,667	1.2
Total	31,817	578,672	100.0



*Permits whose hydrologic region was not identified in the PCS database, and which could not be assigned to a hydrologic region because latitude and longitude data were missing for the permit and could not be accurately resolved from other address information from the permit

Annual point source TP load contributions by Sub-Basin

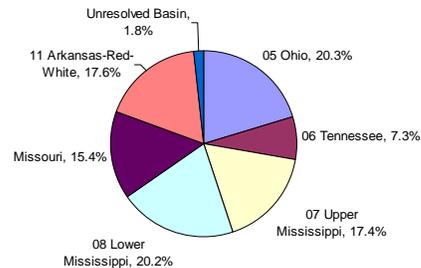
2-digit HUC/Hydrologic Region	Number of permits (for P loading)	TP load (kg/day)	% of TP load
05 Ohio	7960	21,013	21.5%
06 Tennessee	1248	5,898	6.0%
07 Upper Mississippi	4736	21,966	22.5%
08 Lower Mississippi	6329	14,411	14.7%
10 Missouri	6086	16,637	17.0%
11 Arkansas R-W	3630	14,338	14.7%
Unresolved Basin*	509	3,575	3.7%
Total	30,498	97,838	100.0%



*Permits whose hydrologic region was not identified in the PCS database, and which could not be assigned to a hydrologic region because latitude and longitude data were missing for the permit and could not be accurately resolved from other address information from the permit

Annual point source BOD load contributions by Sub-Basin

2-digit HUC/Hydrologic Region	Number of permits (for BOD loading)	BOD load (kg/day)	% of BOD load
05 Ohio	9417	140,419	20.3%
06 Tennessee	1493	50,702	7.3%
07 Upper Mississippi	5031	120,212	17.4%
08 Lower Mississippi	6738	139,229	20.2%
10 Missouri	6251	106,572	15.4%
11 Arkansas R-W	3781	121,350	17.6%
Unresolved Basin*	525	12,380	1.8%
Total	33,236	690,864	100.0%



*Permits whose hydrologic region was not identified in the PCS database, and which could not be assigned to a hydrologic region because latitude and longitude data were missing for the permit and could not be accurately resolved from other address information from the permit

1998 vs. 2006

- Estimated total MRB point source mass loadings for TN and TP in the current reassessment are substantially lower than those estimated in 1998
- More permitted discharges were considered now
- Estimated total mass loading for N is ~73% of the previous estimate
- Estimated total mass loading for P is ~59% of the previous estimate

	1998 Assessment (based on 1996 data)	2006 Assessment (based on 2004 data)
Number of discharges considered	11,500 facilities	31,817 permits (TN) 30,498 permits (TP) 33,236 permits (BOD)
TN load	642 million lb/yr	466 million lb/yr
TP load	133 million lb/yr	79 million lb/yr
BOD load	Not estimated	566 million lb/yr

Current Point Source Loadings

- Difficult to determine trends and establish accurate baseline due to lack of effluent monitoring data for nutrients (TN and TP)
- Why is monitoring minimal?
 - Few permit requirements
 - Little numeric nutrient criteria designed to be protective of the Gulf or MARB
 - Many impaired waters do not have TMDLs yet
 - Most likely to monitor for TP due to localized effects
 - More likely to monitor for ammonia instead of TN or nitrate

Point Source Conclusions

- Sewage Treatment Plants (4952) contribute the largest % of TN, TP, and BOD load in the MRB
- 2006 shows loading decrease for TN and TP in comparison to the 1998 report
 - Methodology adjustments: same procedures from 1998, changes made when the accuracy of the results could improve
 - 1998 report used many data sources: PCS, electronic and paper reports from state and USEPA regional offices; many approximations and assumptions
 - 2006 report relied almost entirely on PCS data w/adjustment factors to improve lit. estimated values for pollutant concentrations and facility flows
 - TPC values (estimates from literature) had been updated for some industry categories since the 1998 report, for example, TPC for P in 4952 was reduced for the 2^o tx level from 7.0 mg/L in 1993 tables to ~2.0 mg/L in 1999 tables and for 3^o tx from 3.5 mg/L in 1993 tables to 0.8 mg/L in 1999 tables
 - Possible that improvements in nutrient removal by dischargers represent lower nutrient content discharged between 1996 and 2004