

## **Appendix M**

### **Cumulative Impacts Supplemental Information**

- 1. Determination of Pre-settlement and Current Vegetation and Character by Watershed and Ecological Classification System**
- 2. Current and Reasonably Foreseeable Actions Potentially Affecting Aquatic Resources within the Project Watershed Areas**

## Determination of Pre-settlement and Current Vegetation and Character by Watershed and Ecological Classification System

### Ecological Classification System (ECS)

The Minnesota Department of Natural Resources and the U.S. Forest Service have developed an Ecological Classification System (ECS) for ecological mapping and landscape classification in Minnesota following the National Hierarchical Framework of Ecological Units (ECOMAP 1993). Ecological land classifications are used to identify, describe, and map progressively smaller areas of land with increasingly uniform ecological features. The system uses associations of biotic and environmental factors, including climate, geology, topography, soils, hydrology, and vegetation. ECS mapping enables resource managers to consider ecological patterns for areas as large as North America or as small as a single timber stand and identify areas with similar management opportunities or constraints relative to that scale. There are eight levels of ECS units in the United States. Map units for six of these levels occur in Minnesota: Provinces, Sections, Subsections, Land Type Associations, Land Types, and Land Type Phases.

This analysis assesses pre-settlement, baseline, and current conditions, and projected reasonably predictable future impacts on the basis of ECS Subsections that are defined using glacial deposition processes, surface bedrock formations, local climate, topographic relief, and the distribution of plants, especially trees. Minnesota has 26 subsections (figure M-1).

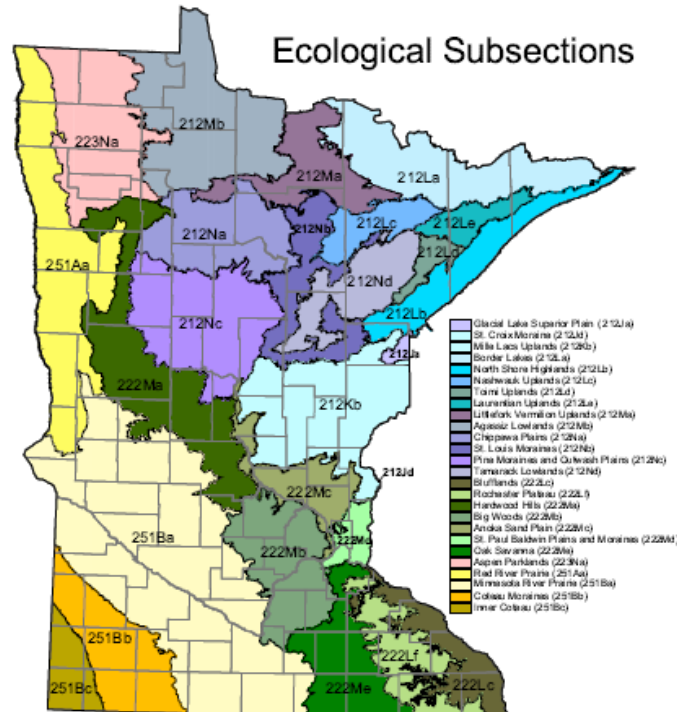
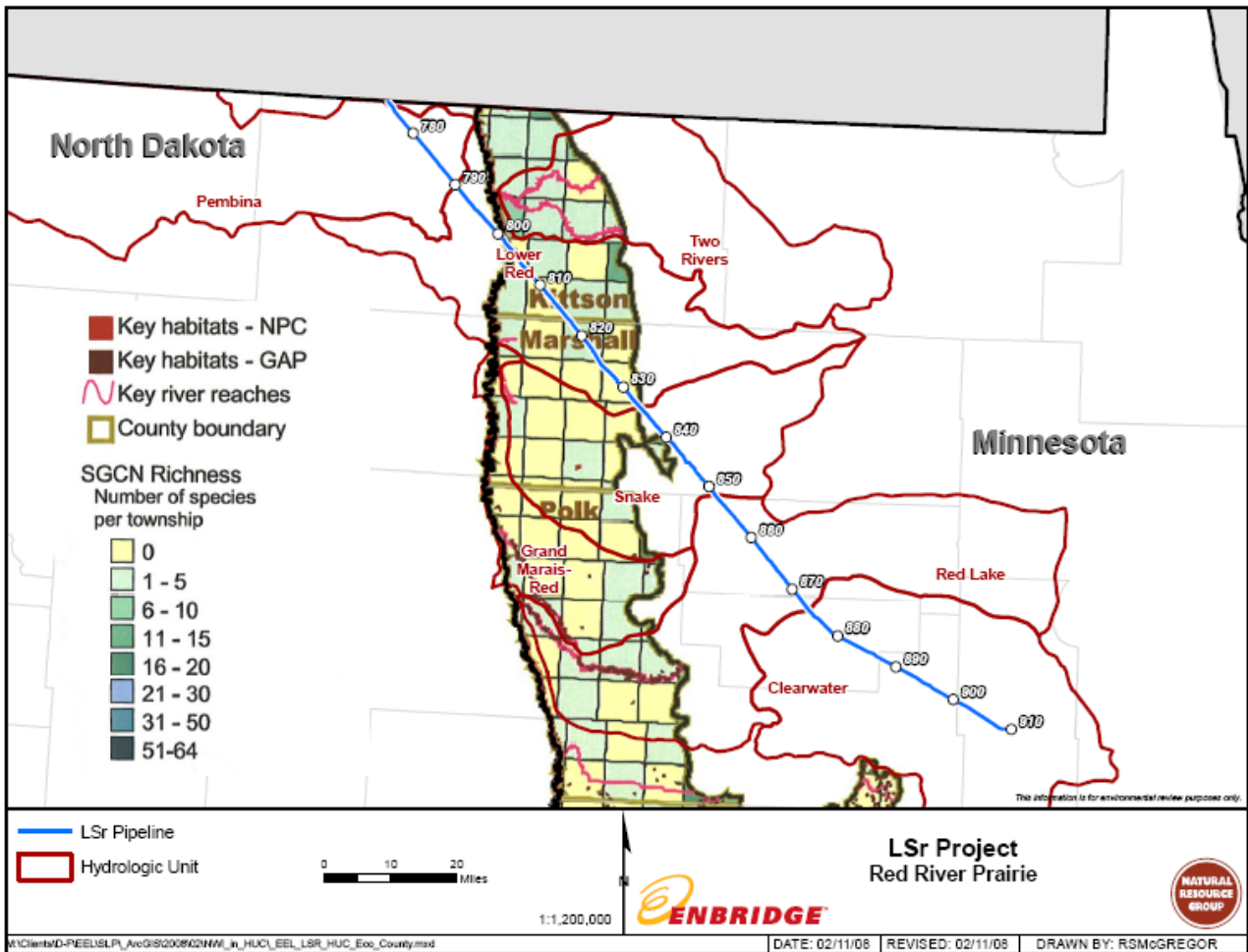


Figure M-1. Ecological Subsections in Minnesota

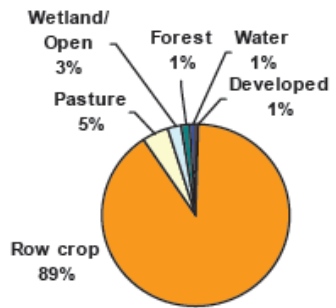
Ecological Subsections included within the project watersheds include: The Red River Prairie (251Aa), the Aspen Parklands (223Na), the Hardwood Hills (222Ma), the Chippewa Plains (212Na) and the Agassiz Lowlands. GIS spatial query methods were used to aggregate

data including pre-settlement vegetation (Marshner and SSURGO2), and baseline conditions (NWI and GAP Land Use) by watershed, county, and ECS Subsection.

Figures M-2, M-3, and M-4 provide detailed information on the ECS Subsections crossed by the LSr Project.



Current Land Use/Land Cover



C – Terrestrial Habitat Change

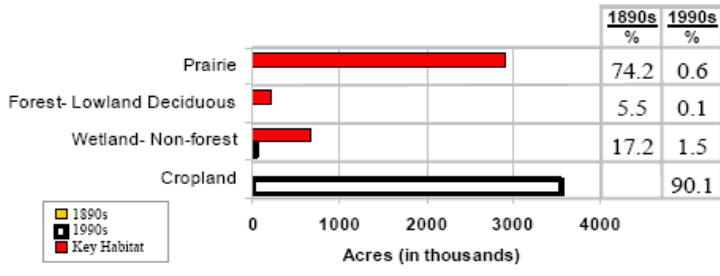


Fig. M-2. The Red River Prairie ECS is crossed by the northern portion of the LSR route in the Pembina, Lower Red River, and Snake watersheds. The area was originally in tall-grass prairie with extensive wetland and has very fertile soils. Virtually all wetlands and native prairie have been converted to agriculture. Population is relatively stable but is decreasing slightly. The LSR route crosses the northern portion of the ECS which is not as high in species in greatest conservation need.

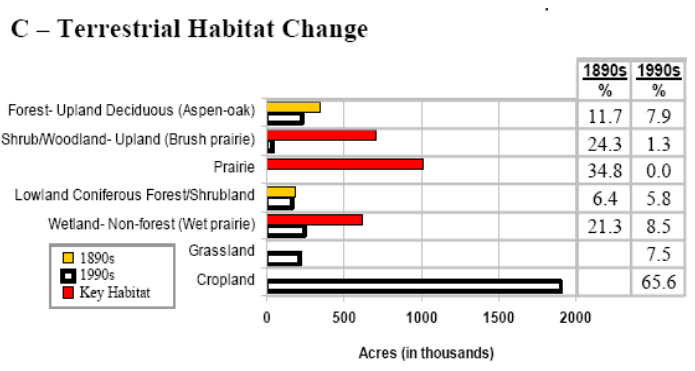
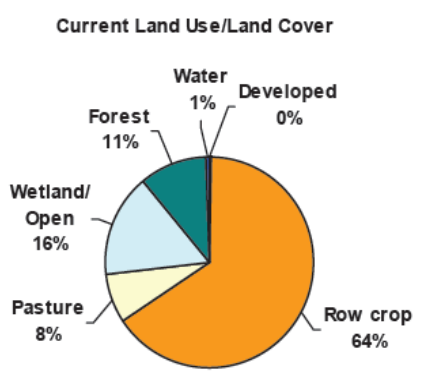
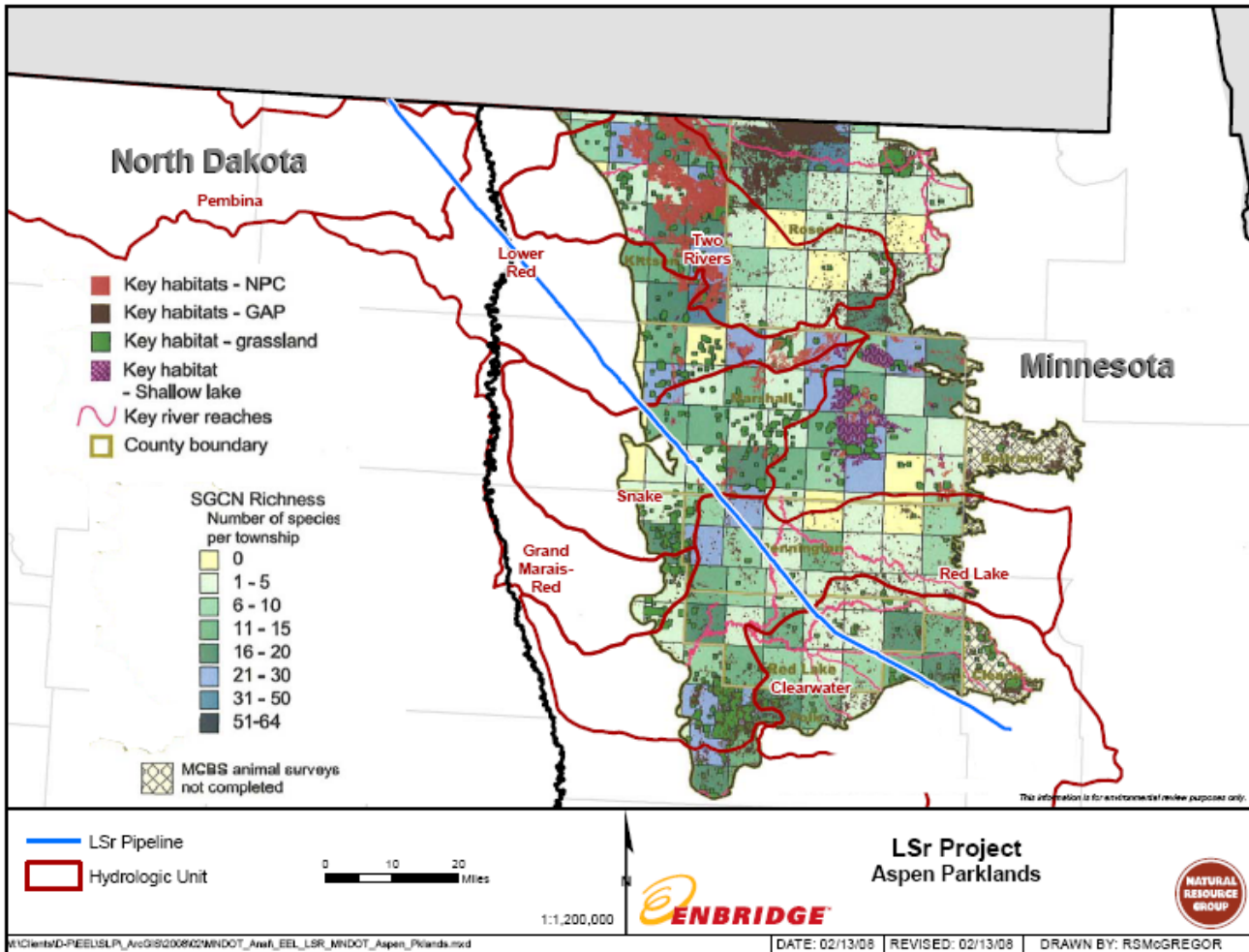
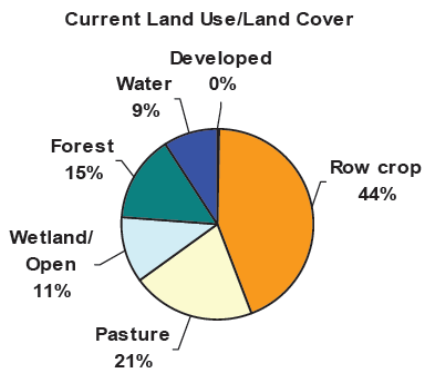
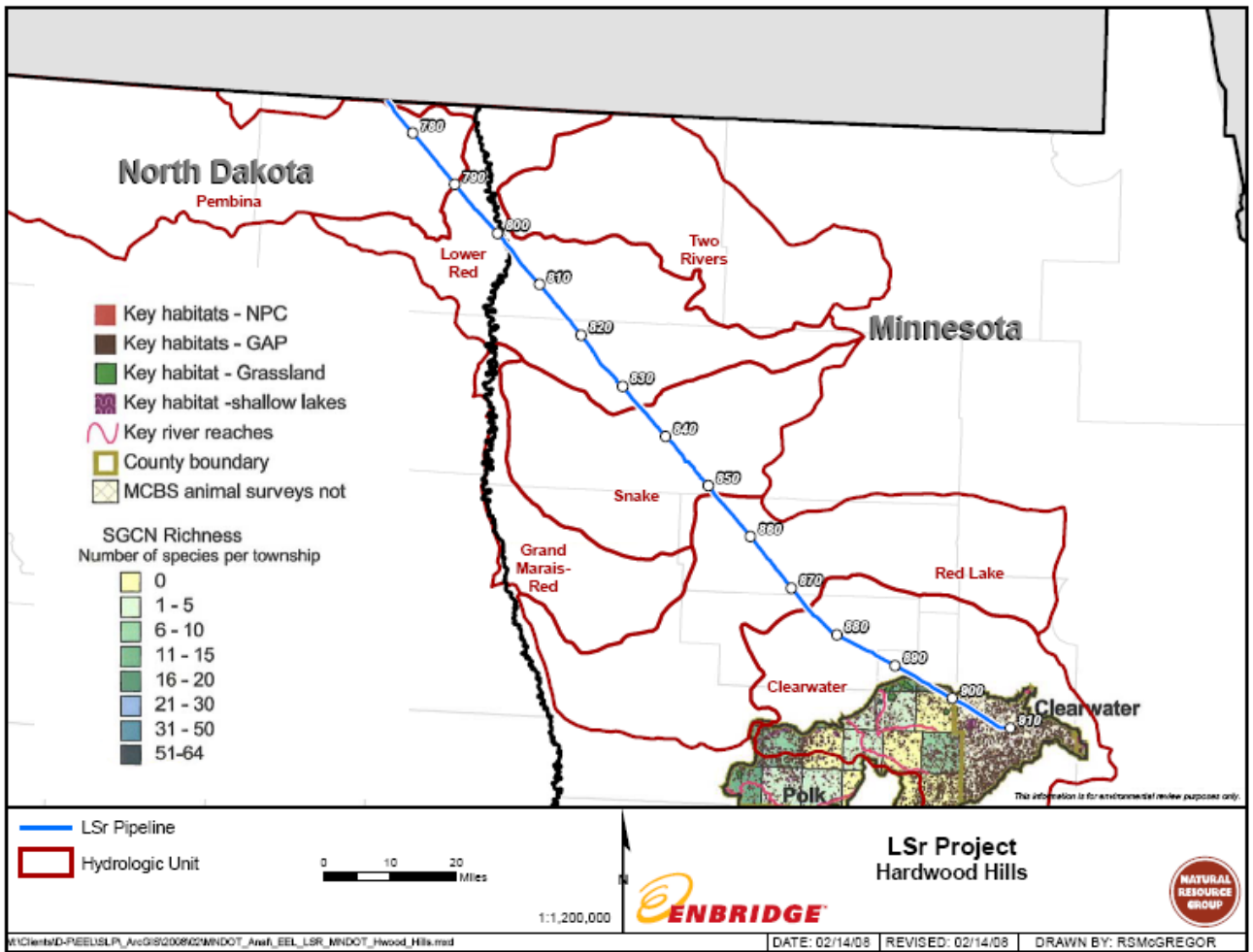


Fig. M-3. The Aspen Parkland originally consisted of a mosaic of prairie and interspersed copses of aspens similar in character to a savannah. Soils are fertile and much of the pre-existing forest and prairie has been converted to cropland. Key habitats are associated with beach areas and extensive wetland. The area has had a relatively stable population and has not experienced any current or projected growth through 2010.



**C – Terrestrial Habitat Change**

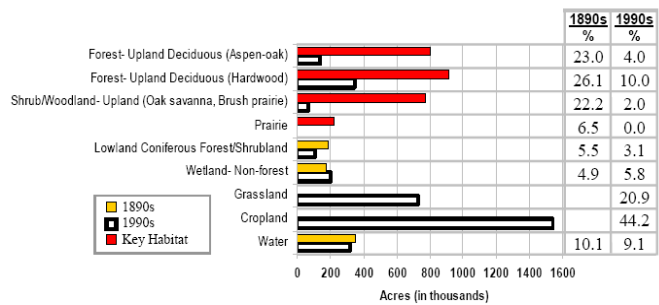


Fig. M-4. The Hardwood Hills ECS is crossed by the southern portion of the LSR route in the Clearwater Watershed. The area is in forest-prairie transition and has relatively fertile soils. Forest resources have been converted to substantial acreage of cropland. Population is expected to increase by 3.6 percent from 2000 to 2010 which could result in additional impacts from residential and commercial development. The LSR route crosses the northern portion of the ECS which is not as high in species in greatest conservation need.

## Current and Reasonably Foreseeable Actions Potentially Affecting Aquatic Resources within the Project Watershed Areas

Table M-1

### Partial List of Current and Reasonably Foreseeable Actions Affecting Aquatic Resources within the Project Area

#### State and County Agency Survey

HYDROLOGIC UNIT CLASSIFICATION - SUB-BASIN*	COUNTY	YEAR	DESCRIPTION	LENGTH (miles/feet) or AREA (acres)	PROJECT TYPE	POTENTIAL AQUATIC IMPACTS	PROPOSED MITIGATION	DATA SOURCE
Pembina River	Pembina	2008	Drain Permit 3240	Unknown	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1991	Drain Permit 2662	300'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2008	Drain Permit 3251	Unknown	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1999	Drain Permit 2878	83260'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2008	Drain Permit 3242	Unknown	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2008	Drain Permit 3252	Unknown	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1999	Drain Permit 2879	50200'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1995	dugout: Loren Estad	92 acre-feet of storage	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2000	dugout: Robert Vivatson	61 acre-feet of storage	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	Unknown	dugout: David Raney	Unknown	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2006	Drain Permit 3148	14520'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1990	Drain Permit 2643	Unknown	Agricultural	Unknown	Unknown	North Dakota State Water Commission

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Pembina River	Pembina	2002	Drain Permit 2971	24000'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1992	dugout: USFWS/American Crystal Sugar Co	50 acre-feet of storage	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2001	dugout: DeHann, Grabs & Associated, LLC/ Carlisle Dairy	76.7 acre-feet of storage	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1988	Drain Permit 2593	15840'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1990	Drain Permit 2639	200'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1981	Drain Permit 1442	2640'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1981	dike: SCS/Clayton Symington	2300'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1989	Drain Permit 2618	700'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1997	dike: St Anthony's Cemetery	408'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1997	dike: Arthur Wagner	3300'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1998	dike: City of Pembina	13500'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1998	dike: Walter Symington	Unknown	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	Unknown	Tongue River Watershed DvERSION	Unknown	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2000	dike: Wesley and Herb Vosper	1720'	Flood Control	Unknown	Unknown	North Dakota State Water Commission

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Pembina River	Pembina	1997	dike: Kelly Brown	2500'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2003	dike: Ronald P. Symington	1500'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2000	dugout: David Raney	27.5 acre-feet of storage	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1999	diversion structure: City of Niche	300'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	Pending	diversion structure: Pembina Co. WRD	25387'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	1987	diversion structure: SWC	5280'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	unknown	dike: Unknown	1800'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	pending	dike: Jeffrey Hughes	1300'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	pending	dike: Lyle Johnson	1500'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	pending	dike: Doug Stegman	1350'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	pending	dike: Randall Wagner	1330'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2004	dike: James Longtin	200'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2000	dike: William J. Newell	1000'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2003	dike: Ronald P. Symington	2061.8'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2000	dike: Garnet Sytmington	500'	Flood Control	Unknown	Unknown	North Dakota State Water Commission

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Pembina River	Pembina	2001	dike: Jeffrey Hughes	500'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2002	dike: Luverne Kain	650'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2001	dike: Louis Weiss	2200'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2000	dike: Kathleen Kollack	700'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2000	dike: Jeffrey Hughes	1400'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2000	dike: Lyle Johnson	1320'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2001	dike: Richard Wagner	600'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2001	dike: Crosby Farms	75'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2002	dike: Melvin Lembke	540'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2001	dike: Fred Lambke	1083'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2003	dike: Terry R. Symington	1600'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2001	dike: James Lembke	600'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Pembina River	Pembina	2001	Sagert Dam; Mark (Wetland 1)	0.4 acres	Resource Enhancement	Unknown	Unknown, 0.2 acre-feet of storage	North Dakota State Water Commission
Pembina River	Pembina	2001	Sagert Dam; Mark (Wetland 3)	0.9 acres	Resource Enhancement	Unknown	Unknown, 0.4 acre-feet of storage	North Dakota State Water Commission

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Pembina River	Pembina	2001	Sagert Dam; Mark (Wetland 5)	0.9 acres	Resource Enhancement	Unknown	Unknown, 0.4 acre-feet of storage	North Dakota State Water Commission
Pembina River	Pembina	2001	Sagert Dam; Mark (Wetland 4)	0.9 acres	Resource Enhancement	Unknown	Unknown, 0.4 acre-feet of storage	North Dakota State Water Commission
Pembina River	Pembina	2001	Sagert Dam; Mark (Wetland 2)	0.9 acres	Resource Enhancement	Unknown	Unknown, 0.4 acre-feet of storage	North Dakota State Water Commission
Pembina River	Pembina	2004	North Dakota Natural Resource Trust	171 acres	Resource Enhancement	Unknown	Unknown, 248 acre-feet of storage	North Dakota State Water Commission
Lower Red River	Pembina	1982	Drain Permit 1507	Unknown	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	2004	Drain Permit 3029	15840'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	2003	Drain Permit 3004	5280'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1996	Drain Permit 2763	4800'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	2006	Drain Permit 3129	36046'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1989	Drain Permit 2617	Unknown	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	2000	Drain Permit 2940	2600'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1999	dugout: Donald and Neil Heuchert	100 acre-feet of storage	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	2006	Drain Permit 3086	8735'	Agricultural	Unknown	Unknown	North Dakota State Water Commission

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Lower Red River	Pembina	2005	Drain Permit 3077	5000'	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1995	dugout: G L D Farms	120 acre-feet of storage	Agricultural	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	2001	dike: James O. Winkler	1400'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1989	dike: USFWS	140'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	pending	dike: City of Niche	750'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	2000	dike: Nettie Douville	1716'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	2000	dike: David Raney	2425'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1990	dike: John A Olson #1355/Lakehead Pipeline Co.	125'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1987	dike: Mrs. Carl Heuchert	5280'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	2003	Drain Permit 2990	6000'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1987	dike: Edgar Schmidt #1153 SWC	1500'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1987	dike: USFWS	1313'	Flood Control	Unknown	Unknown	North Dakota State Water Commission
Lower Red River	Pembina	1988	Hart Dam; Charles A.	3.6 acres	Resource Enhancement	Unknown	Unknown, 10 acre-feet of storage	North Dakota State Water Commission

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Lower Red River	Kittson	2006	PL 566 Set Back Levees (Spring Brook Township)	Unknown	Flood Control	~ 15 acres	To be mitigated through BWSR mitigation bank or through onsite creation	MN DNR Waters - Detroit Lake Office
Lower Red River	Kittson	2008-2009	Northstar AgriIndustries - Canola Processing and Refining Facility (Skane Township)	356 acres	Industrial	Unknown	Unknown	Kittson Co. SWCD
Lower Red River	Kittson	2014	From the East End of BR 6690 (ND Border) to TH59 in Karlstad	28.762 miles	Transportation	Potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Lower Red River	Kittson	2009	West of Robbin - Robbin/Drayton BR at the MN/ND Border, New BR	0	Transportation	New longer bridge on a different alignment. - wetland impacts to be determined	if necessary, through MNDOT wetland mitigation bank	MNDOT
Lower Red River	Marshall	2009	Grade widening of County Road 10 in Parker Township (widened 3-4' on each side)	Unknown	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Marshall Co. Highway Dept.
Snake River	Various	2008+	Farmstead Ring Dikes - Flood Protection	Various	Flood Control	Typically no wetland impacts	if necessary, through BWSR mitigation bank or onsite creation	Middle Snake-Tamarac Rivers Watershed District

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Snake River	Marshall	2006	Snake River PL-566 Flood Control	4.5 mile floodway	Flood Control	38.73 acres impacted	74.9 acres created on site (Wetmore) and a 7-acre tree parcel	Middle Snake-Tamarac Rivers Watershed District
Snake River	Marshall	2009	Grade widening of County Road 4 near Argyle (widened 3-4' on each side)	Unknown	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Marshall Co. Highway Dept.
Snake River	Marshall	2011	3.0 Miles East of Oslo to Warren - Overlay	13.5 miles	Transportation	Possible Turn Lanes: potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Snake River	Marshall	2008	County Road 43 (4.5 east of Viking) - re-alignment of road to eliminate hazardous curves, gravel to pavement	2 miles	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Marshall Co. Highway Dep
Snake River	Marshall & Kittson	2013	Newfolden to Karlstad	17.1 miles	Transportation	Potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT

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Snake and Red Lake Rivers	Marshall & Pennington	2017+	North End of BR 31027 to 6.4 Miles South of MNTH 1 (ATP 1 \$450,000), (Mill and Overlay - Need New Est.)	13.19 miles	Transportation	Potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Snake River	Polk	2008	Snake River Project #2 JD25 - I Middle River Snake River WD; 12,400 feet of earthen dike	12,400 feet of dike	Flood Control	Unknown	Unknown	Middle Snake-Tamarac Rivers Watershed District
Snake River	Polk	2010	Brandt Angus	960 acres	Flood Control	Unknown	Unknown, project will consist of 960 acres, with a gated storage of 3,800 acre-feet	Middle Snake-Tamarac Rivers Watershed District
Snake River	Polk	1984	Angus Oslo 1	280 acres	Flood Control	None Known	Wetland acreage has probably been expanded and enhanced, 1220 acre-feet of storage	Middle Snake-Tamarac Rivers Watershed District
Snake River	Polk	2005	Angus Oslo Site #4 - off-channel impoundment in Brandt Township in Polk County	~900 acres	Flood Control	~ 30 acres	30 acres mitigated through onsite creation	Middle Snake-Tamarac Rivers Watershed District

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Snake River	Polk	2008	Agassiz Valley Water Resource Management Project (approx 5 miles SE of Warren in Helgeland Township)	~ 2000 acres	Flood Control	~ 34 acres in northern half of Section 7	Mitigation to be conducted through onsite creation in Section 7 of the Project	Middle Snake-Tamarac Rivers Watershed District
Snake River	Polk	2008-2010	March Impoundment Project #2 - Middle Snake River WD. (project likely abandoned)	482 acres, 18,600 feet of dike	Flood Control	Unknown	340 acres to be inundated, storage would be approximately 1360 acre-feet	Middle Snake-Tamarac Rivers Watershed District
Red Lake River	Clearwater & Beltrami	1988	Good Lake Project	9 miles of dike, 7.5 miles of inlet channels, 2 miles of outlet channel	Resource Enhancement	Unknown	Created to provide wetland habitat, flood control and irrigation supply, normal water level of Good Lake increased by 3 feet, increase in surface area from 84 acres to 1800 acres	Red Lake Watershed District

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Red Lake River	Marshall & Pennington	2009	On MNTH 89 from Grygla to MNTH 219 & on MNTH219 from MNTH1 to MNTH 89 & on MNTH1 from MNTH 219 to Pennington CSAH 28 (with culverts) & BR 6815 (New BR 57X03)	5.5, 15.4, 9.0 miles	Transportation	Possible Turn Lanes: potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Red Lake River	Pennington	2013	1.6 miles North of Goodridge, Replace BR 6910	0	Transportation	Potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Red Lake River	Pennington	2017+	In Thief River Falls - From South Limits to Atlantic Ave.	2.3 miles	Transportation	Potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Red Lake River	Polk	2008	Gentilly Cattle, LLC - proposed 6,000 animal unit feedlot	150 acre parcel	Agricultural	Unknown	Unknown	Polk Co. Planning and Zoning Office
Red Lake River	Polk	1981	Odney Flaot Dam; Sponsered by West Polk SWCD	Unknown	Flood Control	Unknown	Unknown	Red Lake Watershed District

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State and County Agency Survey**

<b>HYDROLOGIC UNIT CLASSIFICATION - SUB-BASIN*</b>	<b>COUNTY</b>	<b>YEAR</b>	<b>DESCRIPTION</b>	<b>LENGTH (miles/feet) or AREA (acres)</b>	<b>PROJECT TYPE</b>	<b>POTENTIAL AQUATIC IMPACTS</b>	<b>PROPOSED MITIGATION</b>	<b>DATA SOURCE</b>
Red Lake River	Polk	1988	Burnham Creek Dam (BR-6)	9500'	Resource Enhancement	Unknown	a 62-acre permanent wildlife pool was created in the upper part of the impoundment by restoring a drained wetland - the area is managed by the MN DNR as a waterfowl refuge, part of an overall PL 566 Project	Red Lake Watershed District
Red Lake River	Polk	2008	Widening/Overlay (CSAH 41: TH102 to CSAH 12)	7.5 miles	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Polk Co. Highway Department
Red Lake River	Polk	2009	Widening/Overlay (CSAH 57: TH75 to East County Line)	7.5 miles	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Polk Co. Highway Department
Red Lake River	Polk	2017+	In Crookston - Repair Slide Area	0	Transportation	Unknown	Unknown	MNDOT

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Red Lake River	Polk & Red Lake	1996	Louisville/Parnell Impoundment and Wetland Bank	Unknown	Resource Enhancement	Unknown	Project consists of 5 pools, one primary pool for flood control and 4 pools for wetland restoration and banking purposes. Approximately 39 acres of wetland bank are anticipated. Wetland Restoration paid for by MNDOT for their wetland bank to offset future projects	Red Lake Watershed District
Red Lake River	Red Lake	1984	Red Lake WD Project #25: Black River Dam	Unknown	Flood Control	Some wetland impacts, details unknown	Mitigation measures unknown per communication with Red Lake WD	Red Lake Watershed District
Red Lake River	Red Lake	2012	Replacement Bridge on Highway 11 (just west of Plummer)	0	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Red Lake Highway Department

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Red Lake River	Red Lake	2013	0.9 Mile North of Plummer, Replace BR 5817	0	Transportation	Potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Clearwater River	Clearwater	1981	Roy Abraham Dam Lost River; earthfill dam with an 18" CMP spillway	Unknown	Flood Control	Unknown	Unknown	Red Lake Watershed District
Clearwater River	Clearwater	1981	Red Lake WD #27: Pine Lake Dam; Consists of construction of sheet pile outlet structure on Pine Lake, provides 1250 acre feet of flood protection	Unknown	Flood Control	Unknown	Unknown	Red Lake Watershed District
Clearwater River	Clearwater	1987	Little Pine WMA	150 acres	Resource Enhancement	Unknown	At normal levels, has a surface area of 150 acres	Red Lake Watershed District
Clearwater River	Clearwater	2013	EBL - From MNTH 92 to Shevlin	6.4 miles	Transportation	Possible Turn Lanes: potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Clearwater River	Clearwater	2009	County Road 3 (Dudley and Sinclair Townships)	4 miles	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Clearwater Co. Hwy Dept

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Clearwater River	Clearwater	2008	Bridge Replacement - Eddy Township	0	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Clearwater Co. Hwy Dept
Clearwater River	Polk	2008	Agassiz Energy, LLC Ethanol Facility near Erskine	269 acres	Industrial	Existing Wetlands on-site are not anticipated to be disturbed	None required	EAW (MPCA) and Polk County Planning and Zoning Office
Clearwater River	Polk	2008	Widening/Overlay (CSAH 8: McIntosh to North County Line)	8.1 miles	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Polk Co. Highway Department
Clearwater River	Polk	2010	Widening/Overlay (CSAH12: TH2 to CSAH49)	4 miles	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Polk Co. Highway Department
Clearwater River	Polk	2011	Widening/Overlay (CSAH 41: CSAH34 to TH2)	6 miles	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Polk Co. Highway Department
Clearwater River	Polk	2014	4.9 Miles North of Erskine, Replace BR 6449	0	Transportation	Potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Clearwater River	Polk	2009	Widening/Overlay (CSAH 41: CSAH 12 to CSAH 42)	5.3 miles	Transportation	Potential for minor wetland impacts	if necessary, through BWSR mitigation bank	Polk Co. Highway Department

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Clearwater River	Polk & Clearwater	2009	1.7 Miles East of Trail to 1.0 mile East of East Limits of Gonvick; In Bagley from 3.2 Miles North of USTH2 to the RR Tracks (included 0.1 mile in CS 1506) & from CSAH 35 to Zerkel	8.7 miles 3.2 miles 5.1 miles	Transportation	Possible Turn Lanes: potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT
Clearwater River	Red Lake	2017+	3.0 miles West of Brooks, Replace BR 6830	0	Transportation	Potential for minor wetland impacts	if necessary, through MNDOT wetland mitigation bank or onsite creation	MNDOT

\* 8-Digit Hydrologic Unit Codes: Pembina River (09020313), Lower Red River (09020311), Snake River (09020309), Red Lake River (09020303), Clearwater River (09020305)