U.S. Hydropower

Resource Assessment

Michigan

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U.S. Hydropower Resource Assessment for Michigan

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ABSTRACT

The U.S. Department of Energy is developing an estimate of the undeveloped hydropower potential in the United States. The Hydropower Evaluation Software (HES) is a computer model that was developed by the Idaho National Engineering and Environmental Laboratory for this purpose. HES measures the undeveloped hydropower resources available in the United States, using uniform criteria for measurement. The software was developed and tested using hydropower information and data provided by the Southwestern Power Administration. It is a menu-driven program that allows the personal computer user to assign environmental attributes to potential hydropower sites, calculate development suitability factors for each site based on the environmental attributes present, and generate reports based on these suitability factors. This report describes the resource assessment results for the State of Michigan.

ACKNOWLEDGMENTS

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U.S. Hydropower Resource Assessment for Michigan

INTRODUCTION

In June 1989, the U.S. Department of Energy initiated the development of a National Energy Strategy to identify the energy resources available to support the expanding demand for energy in the United States. Public hearings conducted as part of the strategy development process indicated that undeveloped hydropower resources were not well defined. As a result, the Department of Energy established an inter-agency Hydropower Resource Assessment Team to ascertain the undeveloped hydropower potential. In connection with these efforts by the Department of Energy, the Idaho National Engineering and Environmental Laboratory designed the Hydropower Evaluation Software (HES), which has been used to perform a resource assessment of the undeveloped conventional hydropower potential in over 40 states. This report presents the results of the hydropower resource assessment for the State of Michigan. Undeveloped pumped storage hydropower potential is not included.

The HES was developed as a tool to measure undeveloped hydropower potential regionally or by state. The software is not intended to provide precise development factors for individual sites, but to provide regional or state totals. Because the software was developed as a generic measurement tool encompassing national issues, regional and state totals must be considered judiciously; various local issues may skew undeveloped hydropower potential totals. The information for the resource assessment was compiled from the Federal Energy Regulatory Commission's Hydroelectric Power Resources Assessment database and several other sources. Refer to DOE/ID-10338, the *User's Manual* (Francfort, Matthews, Rinehart 1991) for the specifics of the software and to DOE/ID-10430.1, the *Status Report* (Conner, Francfort, Rinehart 1996) for an overview of all resource assessment activities to date.

Model Development

Hydropower Evaluation Software, both a probability-factor computer model and a database, is a menu-driven program that is intended to be user-friendly. Computer screens and report-generation capabilities were developed to meet the needs of users nationwide. The software uses environmental attribute data to generate an overall project environmental suitability factor (PESF) between 0.1 and 0.9, where 0.9 indicates the highest likelihood of development and 0.1 indicates the lowest likelihood of development. The suitability factors depend on the unique environmental attributes of each potential site. They reflect the considerations that (a) environmental concerns can make a potential site unacceptable, prohibiting its development (for a suitability factor of 0.1), or (b) if there are no environmental concerns, there is no negative effect on the likelihood of site development (for a suitability factor of 0.9). A combination of attributes can result in a lower suitability factor because multiple environmental considerations would reduce the likelihood that a site may be developed to its physical potential.

Model Goal

The goal of the HES is to assemble an accurate resource database of all sites with undeveloped hydropower potential in the United States for use as a planning tool to determine the viable national hydropower potential. Undeveloped hydropower potential is not limited to the development of new sites; it also includes the development of additional hydropower-generating capacity at sites that currently have hydropower, but are not developed to their full potential. This undeveloped hydropower potential is a source of nonpolluting, renewable energy available to meet the growing power needs of the United States. The HES should help make this goal obtainable and ensure a set of uniform criteria for national assessment.

Dam Status

The effects of environmental attributes vary by dam status. The dam status classifications used are as follows:

W = Developed hydropower site with current power generation, but the total hydropower potential has not been fully developed. Only the undeveloped hydropower potential is discussed in this report.

W/O = Developed site without current power generation. The site has some type of developed impoundment or diversion structure, but no developed hydropower generating capability.

U = Undeveloped site. The site does not have power generation capability nor a developed impoundment or diversion structure.

ASSESSMENT RESULTS

Summary Results

A total of 86 sites (Table 1) have been identified and assessed for their undeveloped hydropower potential. The HES results for

individual site capacities range from 26 kilowatts (kW) to 246 megawatts (MW). Greater than one-half (51%) of the HES-modeled sites in Michigan are small hydropower sites, less than 1 MW (Figure 1).

The nonmodeled undeveloped hydropower potential total for Michigan was identified as 613 MW. The HES results lowers this estimate about 37% to 389 MW. The greatest reduction in undeveloped hydropower potential, by MW, occurs at sites that do not have power generation capability or a developed impoundment or diversion structure (U category). These sites have a HES-modeled undeveloped hydropower potential of about 18 MW, a 111-MW reduction in the estimated undeveloped hydropower potential (Figure 2). Figure 3 correlates the number of sites that have undeveloped hydropower potential with the total megawatts of HES-modeled undeveloped hydropower potential.

The 86 identified sites are located within eleven major river basins and several minor river basins. The number of sites per major river basin ranges from 2 in the St. Mary's River basin to 13 in the Menominee River basin (Figure 4). Sixty-four percent of the undeveloped hydropower potential in the State of Michigan is contained within the St. Mary's River basin (Figure 5).

Table 1. Undeveloped hydropower potential summary for Michigan. The table contains the nonmodeled undeveloped nameplate potential and the HES-modeled undeveloped potential totals.

	Number of projects	Nameplate potential (MW)	HES-modeled potential (MW)
With Power	11	25.4	16.6
W/O Power	53	458.9	353.8
Undeveloped	22	128.9	18.3
State Total	86	613.2	388.7

Figure 1. Number of sites, by capacity groups, with HES-modeled undeveloped hydropower potential.

Figure 2. The nonmodeled and HES-modeled undeveloped hydropower potential.

Figure 3. The number of sites with undeveloped hydropower potential and the total megawatts of HES-modeled undeveloped hydropower potential.

Figure 4. Number of sites with undeveloped hydropower potential in the Michigan river basins.

Figure 5. Megawatts of HES-modeled undeveloped hydropower potential in the Michigan river basins.

Detailed Results

The appendices contain, in the form of HES-generated reports, detailed information about the undeveloped hydropower potential in Michigan. The appendices contain the following information:

Appendix A summarizes the undeveloped hydropower potential by dam status groups. The number of sites, nonmodeled undeveloped hydropower potential, and HES-modeled undeveloped hydropower potential is provided based on the dam status.

Appendix B provides the hydropower resource assessment by river basin, which includes the project number, project name, stream name, dam status, nonmodeled undeveloped hydropower potential, and the HES-modeled undeveloped hydropower potential for each site. Subtotals are provided for each river basin.

Appendix C lists the project numbers, plant name, stream name, if a site is Federally owned, nonmodeled undeveloped hydropower potential,

and HES-modeled undeveloped hydropower potential. The sites are grouped by dam status.

Appendix D contains a resource database list for the 86 sites in Michigan. Information includes plant name, stream, state, county, river basin and owner names, project number, nameplate and HES-modeled undeveloped hydropower potential, the unit and plant types, dam status, latitude, longitude, and the environmental factors that the HES uses to determine the PESF.

OBTAINING INDIVIDUAL STATE INFORMATION

Additional copies of the hydropower resource assessment results for individual states are available and can be obtained by writing or calling the authors or the National Technical Information Service (NTIS).

Telephone Orders—(703) 487-4650. NTIS sales desk and customer services are available between 8:30 a.m. and 5:00 p.m., Eastern Standard Time.

Fax—(703) 321-8547. Customers may fax their orders to NTIS. These orders may be charged to a NTIS deposit account, American Express, VISA, or MasterCard.

Mail Orders—Mail orders should be sent to National Technical Information Service, Document Sales, 5285 Port Royal Road, Springfield, VA 22161. Call the sales desk for prices before placing an order.

E-mail—Customers may e-mail their requests to info@ntis.fedworld.gov.

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For Help in Tracing an Order—Call (703) 487-4650 and request the customer service option.

ADDITIONAL HYDROPOWER EVALUATION SOFTWARE INFORMATION

Additional information concerning the HES can be obtained by contacting Ben Rinehart or Jim Francfort at the addresses provided below. Copies of the software and the User's Manual may also be obtained from these individuals.

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REFERENCES

Conner, A. M., J. E. Francfort, and B. N. Rinehart, 1996, *Uniform Criteria for U.S. Hydropower Resource Assessment, Hydropower Evaluation Software Status Report-II*, DOE/ID 10430.1, Idaho National Engineering Laboratory, Idaho Falls, Idaho.

Francfort, J. E., S. D. Matthews, and B. N. Rinehart, 1991, *Hydropower Evaluation Software User's Manual*, DOE/ID-10338, Idaho National Engineering Laboratory, Idaho Falls, Idaho.

Appendix A
Summary Report

DATE: 02/11/98

HYDROPOWER CAPACITY SUMMARY

<u>State</u>	<u>Category</u>	<u>Number of Projects</u>	<u>Name Plate Capacity (KW)</u>	<u>HES Adjusted Capacity (KW)</u>
MI	With Power	11	25366	16637
	W/O Power	53	458865	353840.90
	Undeveloped	22	128875	18262.75
	STATE TOTAL	86	613106	388740.65
TOTALS	With Power	11	25366	16637
	W/O Power	53	458865	353840.90
	Undeveloped	22	128875	18262.75
GRAND TOTAL		86	613106	388740.65

Appendix B

River Basins Report

HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** River Basin AU SABLE RIVER BASIN					
MI004	OSCODA AU SABLE R	U	4500.00	0.50	2250.00
MI005	THOMPSON AU SABLE R	U	12000.00	0.10	1200.00
MI007	STATE ROAD AU SABLE R	U	4700.00	0.10	470.00
MI009	BAKER BRIDGE AU SABLE R	U	5500.00	0.10	550.00
MI009	EATON AU SABLE R	U	5000.00	0.10	500.00
02449	LOUD AU SABLE R	WO	2000.00	0.50	1000.00
MI006	ALCONA AU SABLE R	WO	2800.00	0.75	2100.00
** Subtotal **			36500.00		8070.00
** River Basin GRAND RIVER BASIN					
MI024	WEBBER GRAND R	U	2900.00	0.10	290.00
11300	LABARGE THORNAPPLE R	W	600.00	0.75	450.00
03607	ADA THORNAPPLE R	W	960.00	0.50	480.00
10768	PORTLAND MUNICIPAL GRAND R	W	2400.00	0.50	1200.00
09729	GRAND RAPIDS GRAND R	WO	2250.00	0.50	1125.00
11120	MIDDLEVILLE THORNAPPLE R	WO	350.00	0.75	262.50
09180	FRANKLIN STREET FLAT R	WO	130.00	0.90	117.00

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HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** Subtotal **			9590.00		3924.50
** River Basin HURON RIVER BASIN					
09951	FRENCH LANDING HURON R	W	150.00	0.50	75.00
10004	PENINSULAR PAPER HURON R	WO	524.00	0.50	262.00
03143	GEDDES DAM HURON R	WO	480.00	0.50	240.00
03150	ARGO DAM HURON R	WO	315.00	0.50	157.50
MI001	MILFORD HURON R	WO	180.00	0.50	90.00
MI002	HENRY FORD RES (FAIR LANE) ROUGE R	WO	551.00	0.90	495.90
** Subtotal **			2200.00		1320.40
** River Basin KALAMAZOO RIVER BASIN					
07127	TROWBRIDGE KALAMAZOO R	WO	2100.00	0.50	1050.00
07793	OTSEGO DAM KALAMAZOO R	WO	1700.00	0.50	850.00
07101	PLAINWELL 1 KALAMAZOO R	WO	1200.00	0.50	600.00
MI025	MOSHERVILLE S BR KALAMAZOO R	WO	52.00	0.50	26.00
10736	CERESCO KALAMAZOO R	WO	800.00	0.50	400.00
** Subtotal **			5852.00		2926.00
** River Basin MANISTEE RIVER BASIN					
MI011	ANDERSON MANISTEE R	U	10000.00	0.10	1000.00

HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
MI012	HIGH BRIDGE MANISTEE R	U	6800.00	0.10	680.00
MI019	DUTCH JOHN MANISTEE R	U	5000.00	0.10	500.00
MI013	WILSON PINE R	WO	8200.00	0.50	4100.00
MI014	LOWER SIBLEY MANISTEE R	WO	17000.00	0.50	8500.00
MI015	SHERMAN MANISTEE R	WO	16000.00	0.50	8000.00
MI016	MANTON MANISTEE R	WO	9500.00	0.50	4750.00
MI017	WALTON MANISTEE R	WO	5600.00	0.50	2800.00
MI018	SANDS MANISTEE R	WO	10000.00	0.50	5000.00
** Subtotal **			88100.00		35330.00
** River Basin MENOMINEE RIVER					
MI031	UPPER MENOMINEE MENOMINEE R	U	3468.00	0.25	867.00
MI032	CHALK HILL MENOMINEE R	U	987.00	0.25	246.75
01759	TWIN FALLS MENOMINEE R	W	4856.00	0.75	3642.00
02744	MENOMINEE MENOMINEE R	WO	1000.00	0.50	500.00
MI029	LOWER MENOMINEE MENOMINEE R	WO	1512.00	0.75	1134.00
MI030	CHAPPIE RAPIDS MENOMINEE R	WO	5200.00	0.75	3900.00
MI033	PEMENE FALLS MENOMINEE R	WO	10000.00	0.75	7500.00

HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
MI034	PEMENE DAM MENOMINEE R	WO	7000.00	0.75	5250.00
MI035	STURGEON RIVER STURGEON R	WO	350.00	0.50	175.00
MI036	SAND PORTAGE MENOMINEE R	WO	6800.00	0.75	5100.00
01980	BIG QUINNESEC FALLS MENOMINEE R	WO	8000.00	0.75	6000.00
MI037	BIG QUINNESEC FALLS MENOMINEE R	WO	5000.00	0.75	3750.00
MI038	WAY MICHIGAMME R	WO	315.00	0.90	283.50
** Subtotal **			54488.00		38348.25
** River Basin MINOR RIVER BASINS					
02885	ELK RAPIDS ELK LAKE, CEDAR R	U	800.00	0.90	720.00
03149	MOSQUITO CREEK OUTFALL MOSQUITO CR, MUSKEGON R	U	300.00	0.10	30.00
MI042	TAHQUAMENON FALLS TAHQUAMENON R	U	4500.00	0.10	450.00
MI050	NO NAME MONTREAL R	U	1060.00	0.90	954.00
09560	ALVERNO BLACK R	W	100.00	0.75	75.00
10615	KLEBER BLACK R	W	3700.00	0.75	2775.00
02979	BOARDMAN BOARDMAN R	W	1000.00	0.90	900.00
MI010	FOUR MILE DAM THUNDER BAY R	WO	4810.00	0.50	2405.00
10878	BELLAIRE CEDAR R	WO	200.00	0.90	180.00

HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
02977	UNION STREET BOARDMAN R	WO	220.00	0.90	198.00
MI020	BRIDGETON MUSKEGON R	WO	6000.00	0.50	3000.00
08053	NEWAYGO MUSKEGON R	WO	3000.00	0.50	1500.00
MI021	BACON MUSKEGON R	WO	15000.00	0.50	7500.00
MI022	CROTON MUSKEGON R	WO	1500.00	0.50	750.00
MI023	HARDY MUSKEGON R	WO	4500.00	0.50	2250.00
03019	MUSKEGON RIVER MUSKEGON R	WO	1900.00	0.50	950.00
10015	BIG RAPIDS MUSKEGON R	WO	2000.00	0.50	1000.00
MI039	ESCANABA 2 ESCANABA R	WO	326.00	0.75	244.50
MI049	SUPERIOR FALLS MONTREAL R	WO	1720.00	0.90	1548.00
02610	SAXON FALLS MONTREAL R	WO	4000.00	0.90	3600.00
10318	CARP RIVER CARP R	WO	1500.00	0.75	1125.00
** Subtotal **			58136.00		32154.50
** River Basin ONTONAGON RIVER BASIN					
MI046	GRAND RAPIDS ONTONAGON R	U	4800.00	0.25	1200.00
MI047	FORKS ONTONAGON R	U	4200.00	0.25	1050.00
MI048	HOOPER W BR ONTONAGON R	U	6000.00	0.10	600.00

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HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
10168	PAULDING ROSELAWN CR(M BR ONTONAGON R)S	WO	400.00	0.50	200.00
** Subtotal **			15400.00		3050.00
** River Basin SAGINAW RIVER BASIN					
MI003	SMALLWOOD TITTABAWASSEE R	U	460.00	0.25	115.00
10444	CHAPPEL TRIB, TOBACCO R	WO	250.00	0.90	225.00
10948	HOLLOWAY FLINT R	WO	700.00	0.50	350.00
** Subtotal **			1410.00		690.00
** River Basin ST JOSEPH RIVER BASIN					
MI027	BERRIEN SPRINGS ST JOSEPH R	W	7200.00	0.50	3600.00
00401	MOTTVILLE ST JOSEPH R	W	1300.00	0.50	650.00
10993	PAW PAW S BR PAW PAW R	WO	250.00	0.90	225.00
MI026	KINGS LANDING ST JOSEPH R	WO	7200.00	0.50	3600.00
02551	BUCHANAN ST JOSEPH R	WO	3400.00	0.50	1700.00
MI028	THREE RIVERS ROCKY R	WO	80.00	0.90	72.00
** Subtotal **			19430.00		9847.00
** River Basin ST MARYS RIVER BASIN					
MI040	EDISON (SAULT) ST MARYS R	W	3100.00	0.90	2790.00
MI041	ST MARYS FALLS ST MARYS R	WO	273000.00	0.90	245700.00

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HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** Subtotal **			276100.00		248490.00
** River Basin STURGEON RIVER BASIN					
MI043	LOWER PLANT STURGEON R	U	16300.00	0.10	1630.00
MI044	BIG FALLS STURGEON R	U	17600.00	0.10	1760.00
MI045	TIBBETS FALLS STURGEON R	U	12000.00	0.10	1200.00
** Subtotal **			45900.00		4590.00
*** Total ***			613106.00		388740.65

Appendix C
Michigan Sites List

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	ST	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number 02885					
ELK RAPIDS	MI	U	800.00	0.90	720.00
ELK LAKE, CEDAR R					
** Subtotal **			800.00		720.00
** FERC Number 03149					
MOSQUITO CREEK OUTFALL	MI	U	300.00	0.10	30.00
MOSQUITO CR, MUSKEGON R					
** Subtotal **			300.00		30.00
** FERC Number MI003					
SMALLWOOD	MI	U	460.00	0.25	115.00
TITTABAWASSEE R					
** Subtotal **			460.00		115.00
** FERC Number MI004					
OSCODA	MI	U	4500.00	0.50	2250.00
AU SABLE R					
** Subtotal **			4500.00		2250.00
** FERC Number MI005					
THOMPSON	MI	U	12000.00	0.10	1200.00
AU SABLE R					
** Subtotal **			12000.00		1200.00
** FERC Number MI007					
STATE ROAD	MI	U	4700.00	0.10	470.00
AU SABLE R					
** Subtotal **			4700.00		470.00
** FERC Number MI009					
BAKER BRIDGE	MI	U	5500.00	0.10	550.00
AU SABLE R					

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	ST	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
EATON AU SABLE R	MI	U	5000.00	0.10	500.00
** Subtotal **			10500.00		1050.00
** FERC Number MI011					
ANDERSON MANISTEE R	MI	U	10000.00	0.10	1000.00
** Subtotal **			10000.00		1000.00
** FERC Number MI012					
HIGH BRIDGE MANISTEE R	MI	U	6800.00	0.10	680.00
** Subtotal **			6800.00		680.00
** FERC Number MI019					
DUTCH JOHN MANISTEE R	MI	U	5000.00	0.10	500.00
** Subtotal **			5000.00		500.00
** FERC Number MI024					
WEBBER GRAND R	MI	U	2900.00	0.10	290.00
** Subtotal **			2900.00		290.00
** FERC Number MI031					
UPPER MENOMINEE MENOMINEE R	MI	U	3468.00	0.25	867.00
** Subtotal **			3468.00		867.00
** FERC Number MI032					
CHALK HILL MENOMINEE R	MI	U	987.00	0.25	246.75

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW) PESF	PESF * KW
** Subtotal **		987.00	246.75
** FERC Number MI042 TAHQUAMENON FALLS TAHQUAMENON R	MI U	4500.00 0.10	450.00
** Subtotal **		4500.00	450.00
** FERC Number MI043 LOWER PLANT STURGEON R	MI U	16300.00 0.10	1630.00
** Subtotal **		16300.00	1630.00
** FERC Number MI044 BIG FALLS STURGEON R	MI U	17600.00 0.10	1760.00
** Subtotal **		17600.00	1760.00
** FERC Number MI045 TIBBETS FALLS STURGEON R	MI U	12000.00 0.10	1200.00
** Subtotal **		12000.00	1200.00
** FERC Number MI046 GRAND RAPIDS ONTONAGON R	MI U	4800.00 0.25	1200.00
** Subtotal **		4800.00	1200.00
** FERC Number MI047 FORKS ONTONAGON R	MI U	4200.00 0.25	1050.00
** Subtotal **		4200.00	1050.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	ST	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number MI048 HOOPER W BR ONTONAGON R	MI	U	6000.00	0.10	600.00
** Subtotal **			6000.00		600.00
** FERC Number MI050 NO NAME MONTREAL R	MI	U	1060.00	0.90	954.00
** Subtotal **			1060.00		954.00
** FERC Number 00401 MOTTVILLE ST JOSEPH R	MI	W	1300.00	0.50	650.00
** Subtotal **			1300.00		650.00
** FERC Number 01759 TWIN FALLS MENOMINEE R	MI	W	4856.00	0.75	3642.00
** Subtotal **			4856.00		3642.00
** FERC Number 02979 BOARDMAN BOARDMAN R	MI	W	1000.00	0.90	900.00
** Subtotal **			1000.00		900.00
** FERC Number 03607 ADA THORNAPPLE R	MI	W	960.00	0.50	480.00
** Subtotal **			960.00		480.00
** FERC Number 09560 ALVERNO BLACK R	MI	W	100.00	0.75	75.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW)	PESF	PESF * KW
** Subtotal **		100.00		75.00
** FERC Number 09951 FRENCH LANDING HURON R	MI W	150.00	0.50	75.00
** Subtotal **		150.00		75.00
** FERC Number 10615 KLEBER BLACK R	MI W	3700.00	0.75	2775.00
** Subtotal **		3700.00		2775.00
** FERC Number 10768 PORTLAND MUNICIPAL GRAND R	MI W	2400.00	0.50	1200.00
** Subtotal **		2400.00		1200.00
** FERC Number 11300 LABARGE THORNAPPLE R	MI W	600.00	0.75	450.00
** Subtotal **		600.00		450.00
** FERC Number MI027 BERRIEN SPRINGS ST JOSEPH R	MI W	7200.00	0.50	3600.00
** Subtotal **		7200.00		3600.00
** FERC Number MI040 EDISON(SAULT) ST MARYS R	MI W	3100.00	0.90	2790.00
** Subtotal **		3100.00		2790.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number 01980 BIG QUINNESEC FALLS MENOMINEE R	MI WO	8000.00	0.75	6000.00
** Subtotal **		8000.00		6000.00
** FERC Number 02449 LOUD AU SABLE R	MI WO	2000.00	0.50	1000.00
** Subtotal **		2000.00		1000.00
** FERC Number 02551 BUCHANAN ST JOSEPH R	MI WO	3400.00	0.50	1700.00
** Subtotal **		3400.00		1700.00
** FERC Number 02610 SAXON FALLS MONTREAL R	MI WO	4000.00	0.90	3600.00
** Subtotal **		4000.00		3600.00
** FERC Number 02744 MENOMINEE MENOMINEE R	MI WO	1000.00	0.50	500.00
** Subtotal **		1000.00		500.00
** FERC Number 02977 UNION STREET BOARDMAN R	MI WO	220.00	0.90	198.00
** Subtotal **		220.00		198.00
** FERC Number 03019 MUSKEGON RIVER MUSKEGON R	MI WO	1900.00	0.50	950.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW)	PESF	PESF * KW
** Subtotal **		1900.00		950.00
** FERC Number 03143 GEDDES DAM HURON R	MI WO	480.00	0.50	240.00
** Subtotal **		480.00		240.00
** FERC Number 03150 ARGO DAM HURON R	MI WO	315.00	0.50	157.50
** Subtotal **		315.00		157.50
** FERC Number 07101 PLAINWELL 1 KALAMAZOO R	MI WO	1200.00	0.50	600.00
** Subtotal **		1200.00		600.00
** FERC Number 07127 TROWBRIDGE KALAMAZOO R	MI WO	2100.00	0.50	1050.00
** Subtotal **		2100.00		1050.00
** FERC Number 07793 OTSEGO DAM KALAMAZOO R	MI WO	1700.00	0.50	850.00
** Subtotal **		1700.00		850.00
** FERC Number 08053 NEWAYGO MUSKEGON R	MI WO	3000.00	0.50	1500.00
** Subtotal **		3000.00		1500.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number 09180 FRANKLIN STREET FLAT R	MI WO	130.00	0.90	117.00
** Subtotal **		130.00		117.00
** FERC Number 09729 GRAND RAPIDS GRAND R	MI WO	2250.00	0.50	1125.00
** Subtotal **		2250.00		1125.00
** FERC Number 10004 PENINSULAR PAPER HURON R	MI WO	524.00	0.50	262.00
** Subtotal **		524.00		262.00
** FERC Number 10015 BIG RAPIDS MUSKEGON R	MI WO	2000.00	0.50	1000.00
** Subtotal **		2000.00		1000.00
** FERC Number 10168 PAULDING ROSELAWN CR(M BR ONTONAGON R)S	MI WO	400.00	0.50	200.00
** Subtotal **		400.00		200.00
** FERC Number 10318 CARP RIVER CARP R	MI WO	1500.00	0.75	1125.00
** Subtotal **		1500.00		1125.00
** FERC Number 10444 CHAPPEL TRIB,TOBACCO R	MI WO	250.00	0.90	225.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW) PESF	PESF * KW
** Subtotal **		250.00	225.00
** FERC Number 10736 CERESCO KALAMAZOO R	MI WO	800.00 0.50	400.00
** Subtotal **		800.00	400.00
** FERC Number 10878 BELLAIRES CEDAR R	MI WO	200.00 0.90	180.00
** Subtotal **		200.00	180.00
** FERC Number 10948 HOLLOWAY FLINT R	MI WO	700.00 0.50	350.00
** Subtotal **		700.00	350.00
** FERC Number 10993 PAW PAW S BR PAW PAW R	MI WO	250.00 0.90	225.00
** Subtotal **		250.00	225.00
** FERC Number 11120 MIDDLEVILLE THORNAPPLE R	MI WO	350.00 0.75	262.50
** Subtotal **		350.00	262.50
** FERC Number MI001 MILFORD HURON R	MI WO	180.00 0.50	90.00
** Subtotal **		180.00	90.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number MI002 HENRY FORD RES (FAIR LANE) ROUGE R	MI WO	551.00	0.90	495.90
** Subtotal **		551.00		495.90
** FERC Number MI006 ALCONA AU SABLE R	MI WO	2800.00	0.75	2100.00
** Subtotal **		2800.00		2100.00
** FERC Number MI010 FOUR MILE DAM THUNDER BAY R	MI WO	4810.00	0.50	2405.00
** Subtotal **		4810.00		2405.00
** FERC Number MI013 WILSON PINE R	MI WO	8200.00	0.50	4100.00
** Subtotal **		8200.00		4100.00
** FERC Number MI014 LOWER SIBLEY MANISTEE R	MI WO	17000.00	0.50	8500.00
** Subtotal **		17000.00		8500.00
** FERC Number MI015 SHERMAN MANISTEE R	MI WO	16000.00	0.50	8000.00
** Subtotal **		16000.00		8000.00
** FERC Number MI016 MANTON MANISTEE R	MI WO	9500.00	0.50	4750.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW)	PESF	PESF * KW
** Subtotal **		9500.00		4750.00
** FERC Number MI017 WALTON MANISTEE R	MI WO	5600.00	0.50	2800.00
** Subtotal **		5600.00		2800.00
** FERC Number MI018 SANDS MANISTEE R	MI WO	10000.00	0.50	5000.00
** Subtotal **		10000.00		5000.00
** FERC Number MI020 BRIDGETON MUSKEGON R	MI WO	6000.00	0.50	3000.00
** Subtotal **		6000.00		3000.00
** FERC Number MI021 BACON MUSKEGON R	MI WO	15000.00	0.50	7500.00
** Subtotal **		15000.00		7500.00
** FERC Number MI022 CROTON MUSKEGON R	MI WO	1500.00	0.50	750.00
** Subtotal **		1500.00		750.00
** FERC Number MI023 HARDY MUSKEGON R	MI WO	4500.00	0.50	2250.00
** Subtotal **		4500.00		2250.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	ST	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number MI025 MOSHERVILLE S BR KALAMAZOO R	MI	WO	52.00	0.50	26.00
** Subtotal **			52.00		26.00
** FERC Number MI026 KINGS LANDING ST JOSEPH R	MI	WO	7200.00	0.50	3600.00
** Subtotal **			7200.00		3600.00
** FERC Number MI028 THREE RIVERS ROCKY R	MI	WO	80.00	0.90	72.00
** Subtotal **			80.00		72.00
** FERC Number MI029 LOWER MENOMINEE MENOMINEE R	MI	WO	1512.00	0.75	1134.00
** Subtotal **			1512.00		1134.00
** FERC Number MI030 CHAPPIE RAPIDS MENOMINEE R	MI	WO	5200.00	0.75	3900.00
** Subtotal **			5200.00		3900.00
** FERC Number MI033 PEMENE FALLS MENOMINEE R	MI	WO	10000.00	0.75	7500.00
** Subtotal **			10000.00		7500.00
** FERC Number MI034 PEMENE DAM MENOMINEE R	MI	WO	7000.00	0.75	5250.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW) PESF	PESF * KW
** Subtotal **		7000.00	5250.00
** FERC Number MI035 STURGEON RIVER STURGEON R	MI WO	350.00 0.50	175.00
** Subtotal **		350.00	175.00
** FERC Number MI036 SAND PORTAGE MENOMINEE R	MI WO	6800.00 0.75	5100.00
** Subtotal **		6800.00	5100.00
** FERC Number MI037 BIG QUINNESEC FALLS MENOMINEE R	MI WO	5000.00 0.75	3750.00
** Subtotal **		5000.00	3750.00
** FERC Number MI038 WAY MICHIGAMME R	MI WO	315.00 0.90	283.50
** Subtotal **		315.00	283.50
** FERC Number MI039 ESCANABA 2 ESCANABA R	MI WO	326.00 0.75	244.50
** Subtotal **		326.00	244.50
** FERC Number MI041 ST MARYS FALLS ST MARYS R	MI WO	273000.00 0.90	245700.00
** Subtotal **		273000.00	245700.00

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HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW) PESF	PESF * KW
** FERC Number MI049 SUPERIOR FALLS MONTREAL R	MI WO	1720.00 0.90	1548.00
** Subtotal **		1720.00	1548.00
*** Total ***		613106.00	388740.65

Appendix D

Individual Resource Database List

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FERC Number	Plant Name	Stream	State Name
00401	MOTTVILLE	ST JOSEPH R	MI

County Name	River Basin
ST JOSEPH	ST JOSEPH RIVER BASIN

Class	Owner Name
P	INDIANA MICHIGAN PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1300.00	0.50	650.00	2000.00	1000

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4147.00 8545.00
C	ROR	MO	W		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
01759	TWIN FALLS	MENOMINEE R	MI

County Name	River Basin
IRON	MENOMINEE RIVER

Class	Owner Name
P	WISCONSIN ELEC PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
4856.00	0.75	3642.00	18200.00	13650

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4553.00 8806.00
C	STG	MO	W		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	0.90		Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location	0.90		Threatened/Endangered Wildlife		0.90
Cultural Value	0.90		Federal Land Code 103		0.90
Fish Presence Value	0.90		Federal Land Code 104	Y	0.75
Geologic Value	0.90		Federal Land Code 105		0.90
Historic Value	0.90		Federal Land Code 106		0.90
Other Value	0.90		Federal Land Code 107		0.90
Recreation Value	0.90		Federal Land Code 108		0.90
Scenic Value	0.90		Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
01980	BIG QUINNESEC FALLS	MENOMINEE R	MI

County Name	River Basin
DICKINSON	MENOMINEE RIVER

Class	Owner Name
P	WISCONSIN ELEC PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
8000.00	0.75	6000.00	8000.00	6000

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
C	STG	MO	WO	4547.00	8803.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
02449	LOUD	AU SABLE R	MI

County Name	River Basin
ALCONA	AU SABLE RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
2000.00	0.50	1000.00	7000.00	3500

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
C	ROR	MO	WO	4428.00	8343.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
02551	BUCHANAN	ST JOSEPH R	MI

County Name	River Basin
BERRIEN	ST JOSEPH RIVER BASIN

Class	Owner Name
P	IN AND MI ELEC CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
3400.00	0.50	1700.00	8500.00	4250

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4150.00
				Longitude	8622.00
C	ROR	MO	WO		

Factor	Exist	Prob	Factor	Exist	Prob
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Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value		0.90	Federal Land Code 104		0.90
Fish Presence Value		0.90	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value	Y	0.75	Federal Land Code 198		0.90
Scenic Value		0.90			

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FERC Number	Plant Name	Stream	State Name
02610	SAXON FALLS	MONTREAL R	MI

County Name	River Basin
GOGEBIC	MINOR RIVER BASINS

Class	Owner Name
P	NORTHERN STATE POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
4000.00	0.90	3600.00	10600.00	9540

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4632.00 9022.00
C	STG	NO	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	0.90		Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location	0.90		Threatened/Endangered Wildlife		0.90
Cultural Value	0.90		Federal Land Code 103		0.90
Fish Presence Value	0.90		Federal Land Code 104		0.90
Geologic Value	0.90		Federal Land Code 105		0.90
Historic Value	0.90		Federal Land Code 106		0.90
Other Value	0.90		Federal Land Code 107		0.90
Recreation Value	0.90		Federal Land Code 108		0.90
Scenic Value	0.90		Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
02744	MENOMINEE	MENOMINEE R	MI

County Name	River Basin
MENOMINEE	MENOMINEE RIVER

Class	Owner Name
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I	MENOMINEE CO
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1000.00	0.50	500.00	3100.00	1550

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4524.00
C	ROR	MO	WO	Longitude	8736.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
02885	ELK RAPIDS	ELK LAKE, CEDAR R	MI

County Name	River Basin
ANTRIM	MINOR RIVER BASINS

Class	Owner Name
M	ANTRIM, COUNTY OF

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
800.00	0.90	720.00	2312.00	2080.80

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	STG	XX	U	4454.00	8525.00

Factor	Exist Prob	Factor	Exist Prob
Wild/Scenic Protection	0.90	Wildlife Value	0.90
Wild/Scenic Tributary or Upstream/Downstream		Threatened/Endangered Fish	0.90
Wild/Scenic Location	0.90	Threatened/Endangered Wildlife	0.90
Cultural Value	0.90	Federal Land Code 103	0.90
Fish Presence Value	0.90	Federal Land Code 104	0.90
Geologic Value	0.90	Federal Land Code 105	0.90
Historic Value	0.90	Federal Land Code 106	0.90
Other Value	0.90	Federal Land Code 107	0.90
Recreation Value	0.90	Federal Land Code 108	0.90
Scenic Value	0.90	Federal Land Code 198	0.90

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FERC Number	Plant Name	Stream	State Name
02977	UNION STREET	BOARDMAN R	MI

County Name	River Basin
GRAND TRAVERSE	MINOR RIVER BASINS

Class	Owner Name
M	TRAVERSE CITY, CITY OF

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
220.00	0.90	198.00	1510.00	1359

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4446.00	Longitude	8538.00
	ROR	XX	WO				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
02979	BOARDMAN	BOARDMAN R	MI

County Name	River Basin
GRAND TRAVERSE	MINOR RIVER BASINS

Class	Owner Name
M	TRAVERSE CITY, CITY OF

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1000.00	0.90	900.00	5000.00	4500

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4442.00
C	ROR	LE	W	Longitude	8537.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	0.90		Wildlife Value	0.90	
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish	0.90	
Wild/Scenic Location	0.90		Threatened/Endangered Wildlife	0.90	
Cultural Value	0.90		Federal Land Code 103	0.90	
Fish Presence Value	0.90		Federal Land Code 104	0.90	
Geologic Value	0.90		Federal Land Code 105	0.90	
Historic Value	0.90		Federal Land Code 106	0.90	
Other Value	0.90		Federal Land Code 107	0.90	
Recreation Value	0.90		Federal Land Code 108	0.90	
Scenic Value	0.90		Federal Land Code 198	0.90	

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FERC Number	Plant Name	Stream	State Name
03019	MUSKEGON RIVER	MUSKEGON R	MI

County Name	River Basin
MECOSTA	MINOR RIVER BASINS

Class	Owner Name
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M	BIG RAPIDS, CITY OF
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1900.00	0.50	950.00	9000.00	4500

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4345.00	Longitude	8529.00
	ROR	XX	WO				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
03143	GEDDES DAM	HURON R	MI

County Name	River Basin
WASHTENAW	HURON RIVER BASIN

Class	Owner Name
M	ANN ARBOR, CITY OF

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
480.00	0.50	240.00	2100.00	1050

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4216.00
				Longitude	8337.00
	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
03149	MOSQUITO CREEK OUTFALL	MOSQUITO CR,MUSKEGON R	MI

County Name	River Basin
MUSKEGON	MINOR RIVER BASINS

Class	Owner Name
M	MUSKEGON CO WASTEWATER MNGMT SYS

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
300.00	0.10	30.00	1200.00	120

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4325.00	Longitude	8602.00
	ROR	XX	U				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.25	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
03150	ARGO DAM	HURON R	MI

County Name	River Basin
WASHTENAW	HURON RIVER BASIN

Class	Owner Name
M	ANN ARBOR,CITY OF

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
315.00	0.50	157.50	1500.00	750

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4213.00 8337.00
	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
03607	ADA	THORNAPPLE R	MI

County Name	River Basin
KENT	GRAND RIVER BASIN

Class	Owner Name
R	THORNAPPLE ASSOC INC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
960.00	0.50	480.00	4540.00	2270

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4251.00	Longitude	8530.00
C	ROR	LE	W				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
07101	PLAINWELL 1	KALAMAZOO R	MI

County Name	River Basin
ALLEGAN	KALAMAZOO RIVER BASIN

Class	Owner Name
R	LANGE, ERIC H

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1200.00	0.50	600.00	6000.00	3000

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	ROR	XX	WO	4227.00	8540.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
07127	TROWBRIDGE	KALAMAZOO R	MI

County Name	River Basin
ALLEGAN	KALAMAZOO RIVER BASIN

Class	Owner Name
R	STS CONSULTANTS LTD

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
2100.00	0.50	1050.00	11000.00	5500

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4229.00 8549.00
	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
07793	OTSEGO DAM	KALAMAZOO R	MI

County Name	River Basin
ALLEGAN	KALAMAZOO RIVER BASIN

Class	Owner Name
M	ALLEGAN, COUNTY OF

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1700.00	0.50	850.00	9000.00	4500

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4228.00
				Longitude	8545.00
	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value		0.90	Federal Land Code 104		0.90
Fish Presence Value		0.90	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value	Y	0.75	Federal Land Code 198		0.90
Scenic Value		0.90			

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FERC Number	Plant Name	Stream	State Name
08053	NEWAYGO	MUSKEGON R	MI

County Name	River Basin
NEWAYGO	MINOR RIVER BASINS

Class	Owner Name
M	NEWAYGO,CITY OF ET AL

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
3000.00	0.50	1500.00	17000.00	8500

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4325.00 8547.00
	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
09180	FRANKLIN STREET	FLAT R	MI

County Name	River Basin
MONTCALM	GRAND RIVER BASIN

Class	Owner Name
M	GREENVILLE, CITY OF

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
130.00	0.90	117.00	915.00	823.50

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	ROR	XX	WO	4309.00	8515.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	0.90		Wildlife Value	0.90	
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish	0.90	
Wild/Scenic Location	0.90		Threatened/Endangered Wildlife	0.90	
Cultural Value	0.90		Federal Land Code 103	0.90	
Fish Presence Value	0.90		Federal Land Code 104	0.90	
Geologic Value	0.90		Federal Land Code 105	0.90	
Historic Value	0.90		Federal Land Code 106	0.90	
Other Value	0.90		Federal Land Code 107	0.90	
Recreation Value	0.90		Federal Land Code 108	0.90	
Scenic Value	0.90		Federal Land Code 198	0.90	

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FERC Number	Plant Name	Stream	State Name
MI009	EATON	AU SABLE R	MI

County Name	River Basin
OSCODA	AU SABLE RIVER BASIN

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
5000.00	0.10	500.00	10700.00	1070

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4443.00 8406.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI010	FOUR MILE DAM	THUNDER BAY R	MI

County Name	River Basin
ALPENA	MINOR RIVER BASINS

Class	Owner Name
P	ALPENA PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
4810.00	0.50	2405.00	17630.00	8815

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4505.00 8330.00
	STG		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI011	ANDERSON	MANISTEE R	MI

County Name	River Basin
MANISTEE	MANISTEE RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10000.00	0.10	1000.00	25000.00	2500

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4418.00	Longitude	8612.00
	ROR		U				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI012	HIGH BRIDGE	MANISTEE R	MI

County Name	River Basin
MANISTEE	MANISTEE RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
6800.00	0.10	680.00	16300.00	1630

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4418.00 8612.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI013	WILSON	PINE R	MI

County Name	River Basin
LAKE	MANISTEE RIVER BASIN

Class	Owner Name
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P	CONSUMERS POWER CO
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
8200.00	0.50	4100.00	20000.00	10000

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4416.00 8553.00
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ROR	WO
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Factor	Exist	Prob	Factor	Exist	Prob
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Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value		0.90	Federal Land Code 104		0.90
Fish Presence Value		0.90	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value		0.90	Federal Land Code 198		0.90
Scenic Value		0.90			

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FERC Number	Plant Name	Stream	State Name
MI014	LOWER SIBLEY	MANISTEE R	MI

County Name	River Basin
MANISTEE	MANISTEE RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
17000.00	0.50	8500.00	41000.00	20500

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4417.00 8551.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI015	SHERMAN	MANISTEE R	MI

County Name	River Basin
MANISTEE	MANISTEE RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
16000.00	0.50	8000.00	38000.00	19000

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4424.00
				Longitude	8542.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI016	MANTON	MANISTEE R	MI

County Name	River Basin
WEXFORD	MANISTEE RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
9500.00	0.50	4750.00	22700.00	11350

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
				4430.00	8524.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI017	WALTON	MANISTEE R	MI

County Name	River Basin
WEXFORD	MANISTEE RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
5600.00	0.50	2800.00	13300.00	6650

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4430.00 8526.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI018	SANDS	MANISTEE R	MI

County Name	River Basin
KALKASKA	MANISTEE RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10000.00	0.50	5000.00	23500.00	11750

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
				4439.00	8521.00

ROR	WO
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Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value		0.90	Federal Land Code 104		0.90
Fish Presence Value		0.90	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value		0.90	Federal Land Code 198		0.90
Scenic Value		0.90			

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FERC Number	Plant Name	Stream	State Name
MI019	DUTCH JOHN	MANISTEE R	MI

County Name	River Basin
KALKASKA	MANISTEE RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
5000.00	0.10	500.00	12000.00	1200

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4439.00
				Longitude	8521.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI020	BRIDGETON	MUSKEGON R	MI

County Name	River Basin
NEWAYGO	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
6000.00	0.50	3000.00	25700.00	12850

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
				4324.00	8554.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI021	BACON	MUSKEGON R	MI

County Name	River Basin
NEWAYGO	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
15000.00	0.50	7500.00	36000.00	18000

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4326.00 8540.00
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ROR

WO

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI022	CROTON	MUSKEGON R	MI

County Name	River Basin
NEWAYGO	MINOR RIVER BASINS

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1500.00	0.50	750.00	2500.00	1250

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4325.00 8548.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI023	HARDY	MUSKEGON R	MI

County Name	River Basin
NEWAYGO	MINOR RIVER BASINS

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
4500.00	0.50	2250.00	8700.00	4350

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4329.00 8538.00
	STG		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI024	WEBBER	GRAND R	MI

County Name	River Basin
IONIA	GRAND RIVER BASIN

Class	Owner Name
P	CONSUMERS POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
2900.00	0.10	290.00	10600.00	1060

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	ROR		U	4257.00	8454.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value	Y	0.50	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value	Y	0.50	Federal Land Code 105		0.90
Historic Value	Y	0.50	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI025	MOSHERVILLE	S BR KALAMAZOO R	MI

County Name	River Basin
CALHOUN	KALAMAZOO RIVER BASIN

Class	Owner Name
I	MOROSS, E A

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
52.00	0.50	26.00	150.00	75

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	0.00 0.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI026	KINGS LANDING	ST JOSEPH R	MI

County Name	River Basin
BERRIEN	ST JOSEPH RIVER BASIN

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
7200.00	0.50	3600.00	29400.00	14700

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4206.00 8624.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI027	BERRIEN SPRINGS	ST JOSEPH R	MI

County Name	River Basin
BERRIEN	ST JOSEPH RIVER BASIN

Class	Owner Name
P	INDIANA AND MICHIGAN POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
7200.00	0.50	3600.00	13500.00	6750

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4157.00 8620.00
C	STG		W		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI028	THREE RIVERS	ROCKY R	MI

County Name	River Basin
ST JOSEPH	ST JOSEPH RIVER BASIN

Class	Owner Name
M	THREE RIVERS CITY

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
80.00	0.90	72.00	231.00	207.90

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	0.00 0.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI029	LOWER MENOMINEE	MENOMINEE R	MI

County Name	River Basin
MENOMINEE	MENOMINEE RIVER

Class	Owner Name
I	SCOTT PAPER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1512.00	0.75	1134.00	4317.00	3237.75

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4524.00	Longitude	8736.00
	STG		WO				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI030	CHAPPIE RAPIDS	MENOMINEE R	MI

County Name	River Basin
MENOMINEE	MENOMINEE RIVER

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
5200.00	0.75	3900.00	24000.00	18000

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
				4524.00	8736.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI031	UPPER MENOMINEE	MENOMINEE R	MI

County Name	River Basin
MENOMINEE	MENOMINEE RIVER

Class	Owner Name
I	SCOTT PAPER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
3468.00	0.25	867.00	19128.00	4782

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4506.00 8738.00
	STG		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI032	CHALK HILL	MENOMINEE R	MI

County Name	River Basin
MENOMINEE	MENOMINEE RIVER

Class	Owner Name
P	WISCONSIN ELEC PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
987.00	0.25	246.75	2010.00	502.50

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	STG		U	4531.00	8748.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI033	PEMENE FALLS	MENOMINEE R	MI

County Name	River Basin
MENOMINEE	MENOMINEE RIVER

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10000.00	0.75	7500.00	40000.00	30000

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4531.00 8748.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI034	PEMENE DAM	MENOMINEE R	MI

County Name	River Basin
MENOMINEE	MENOMINEE RIVER

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
7000.00	0.75	5250.00	33000.00	24750

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
				4531.00	8748.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI035	STURGEON RIVER	STURGEON R	MI

County Name	River Basin
DICKINSON	MENOMINEE RIVER

Class	Owner Name
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P	WISCONSIN ELEC PWR CO
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
350.00	0.50	175.00	730.00	365

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4548.00 8746.00
	STG		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location	Y	0.75	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI036	SAND PORTAGE	MENOMINEE R	MI

County Name	River Basin
DICKINSON	MENOMINEE RIVER

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
6800.00	0.75	5100.00	24500.00	18375

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4547.00	Longitude	8803.00
	ROR		WO				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI037	BIG QUINNESEC FALLS	MENOMINEE R	MI

County Name	River Basin
DICKINSON	MENOMINEE RIVER

Class	Owner Name
P	WISCONSIN ELEC PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
5000.00	0.75	3750.00	11348.00	8511

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4547.00	Longitude	8803.00
	STG		WO				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI038	WAY	MICHIGAMME R	MI

County Name	River Basin
IRON	MENOMINEE RIVER

Class	Owner Name
P	WISCONSIN ELEC PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
315.00	0.90	283.50	680.00	612

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	STG		WO	4611.00	8813.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI039	ESCANABA 2	ESCANABA R	MI

County Name	River Basin
MARQUETTE	MINOR RIVER BASINS

Class	Owner Name
I	UPPER PENINSULA CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
326.00	0.75	244.50	510.00	382.50

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4619.00	Longitude	8730.00
	ROR		WO				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI040	EDISON(SAULT)	ST MARYS R	MI

County Name	River Basin
CHIPPEWA	ST MARYS RIVER BASIN

Class	Owner Name
P	EDISON SAULT ELEC CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
3100.00	0.90	2790.00	91200.00	82080

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4630.00
C	DIV		W	Longitude	8418.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	0.90		Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location	0.90		Threatened/Endangered Wildlife		0.90
Cultural Value	0.90		Federal Land Code 103		0.90
Fish Presence Value	0.90		Federal Land Code 104		0.90
Geologic Value	0.90		Federal Land Code 105		0.90
Historic Value	0.90		Federal Land Code 106		0.90
Other Value	0.90		Federal Land Code 107		0.90
Recreation Value	0.90		Federal Land Code 108		0.90
Scenic Value	0.90		Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI041	ST MARYS FALLS	ST MARYS R	MI

County Name	River Basin
CHIPPEWA	ST MARYS RIVER BASIN

Class	Owner Name
F	CORPS OF ENGINEERS

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
273000.00	0.90	245700.00	1217000.00	1095300

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4630.00 8421.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI042	TAHQUAMENON FALLS	TAHQUAMENON R	MI

County Name	River Basin
CHIPPEWA	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
4500.00	0.10	450.00	30000.00	3000

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4632.00
				Longitude	8401.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value	Y	0.25
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.50
Geologic Value	Y	0.50	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI043	LOWER PLANT	STURGEON R	MI

County Name	River Basin
BARAGA	STURGEON RIVER BASIN

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
16300.00	0.10	1630.00	19100.00	1910

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4642.00
				Longitude	8840.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value		0.90	Federal Land Code 104		0.90
Fish Presence Value		0.90	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value		0.90	Federal Land Code 198		0.90
Scenic Value		0.90			

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FERC Number	Plant Name	Stream	State Name
MI044	BIG FALLS	STURGEON R	MI

County Name	River Basin
BARAGA	STURGEON RIVER BASIN

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
17600.00	0.10	1760.00	23800.00	2380

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	STG		U	4644.00	8844.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI045	TIBBETS FALLS	STURGEON R	MI

County Name	River Basin
BARAGA	STURGEON RIVER BASIN

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
12000.00	0.10	1200.00	12200.00	1220

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4636.00 8845.00
	STG		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI046	GRAND RAPIDS	ONTONAGON R	MI

County Name	River Basin
ONTONAGON	ONTONAGON RIVER BASIN

Class	Owner Name
P	COPPER DIST PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
4800.00	0.25	1200.00	32000.00	8000

Unit Type	Plant Type	Project Status	Dam Status	Latitude	8944.00
				Longitude	8912.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location	Y	0.50	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.50
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI047	FORKS	ONTONAGON R	MI

County Name	River Basin
ONTONAGON	ONTONAGON RIVER BASIN

Class	Owner Name
P	COPPER DIST PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
4200.00	0.25	1050.00	28000.00	7000

Unit Type	Plant Type	Project Status	Dam Status	Latitude	8946.00	Longitude	8912.00
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ROR

U

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location	Y	0.50	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.50
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI048	HOOVER	W BR ONTONAGON R	MI

County Name	River Basin
ONTONAGON	ONTONAGON RIVER BASIN

Class	Owner Name
P	COPPER DIST PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
6000.00	0.10	600.00	23000.00	2300

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	ROR		U	4643.00	8914.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.50
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI049	SUPERIOR FALLS	MONTREAL R	MI

County Name	River Basin
GOGEBIC	MINOR RIVER BASINS

Class	Owner Name
P	LAKE SUPERIOR DIST PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1720.00	0.90	1548.00	5060.00	4554

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4634.00
				Longitude	9025.00
	STG		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	0.90		Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location	0.90		Threatened/Endangered Wildlife		0.90
Cultural Value	0.90		Federal Land Code 103		0.90
Fish Presence Value	0.90		Federal Land Code 104		0.90
Geologic Value	0.90		Federal Land Code 105		0.90
Historic Value	0.90		Federal Land Code 106		0.90
Other Value	0.90		Federal Land Code 107		0.90
Recreation Value	0.90		Federal Land Code 108		0.90
Scenic Value	0.90		Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MI050	NO NAME	MONTREAL R	MI

County Name	River Basin
GOGEBIC	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1060.00	0.90	954.00	7400.00	6660

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4634.00
				Longitude	9025.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90