MONTANA-DAKOTA
UTILITIES CO.
A Division of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
(701) 222-7900

June 29, 2018

Executive Secretary
North Dakota Public Service
Commission
State Capitol Building
Bismarck, ND 58505-0480

Re: Ten-Year Plan

Montana-Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources Group, Inc., herewith submits ten (10) copies of its North Dakota Ten-Year Plan in accordance with NDCC 49-22-04. Notice of the filing of this plan is given, pursuant to Article 69-06-02-02 of the North Dakota Administrative Code, to the state agencies and officers as designated in Article 69-06-01-05 of the Administrative Code and denoted on the attached Service List. The report can be found at the Public Service Commission's website: http://www.psc.nd.gov/ .

Sincerely,

Tamie A. Aberle
Director of Regulatory Affairs

Enclosure
cc: Service List (without enclosure)

1 PU-18-243 Filed 06/29/2018 Pages: 17
2018 Ten Year Plan
Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc.
Tamie Aberle

Montana-Dakota Utilities Co., a Division of)
MDU Resources Group, Inc. Ten-Year Plan) CERTIFICATE OF SERVICE
Submitted on June 29, 2018)

I, Katlyn Wahl, being first duly sworn on oath, certifies that the following list contains the names and last address of each designated state agency and/or state official given notice of filing of Montana-Dakota Utilities Co.'s (Montana-Dakota) Ten-Year Plan pursuant to the Rules and Regulations of the North Dakota Public Service Commission. I hereby certify that I have, by depositing this Certificate of Service with the United States Postal Service, caused notice to be given all such required state agencies and state officials that Montana-Dakota has filed its Ten-Year Plan for North Dakota Electric Properties with the North Dakota Public Service Commission.

Name	Last Known Address
See Exhibit A Attached	See Exhibit A Attached

Katlyn Wahl

Katlyn Wahl

Subscribed and sworn to before me this 29th day of June, 2018.

Caitlin Straabe

Caitlin Straabe, Notary Public
Burleigh County, North Dakota
My Commission Expires: 09/28/2019

CAITLIN STRAABE
Notary Public
State of North Dakota
My Commission Expires August 28, 2019

Exhibit A

Montana-Dakota Utilities Co.
2018 North Dakota Ten-Year Plan For North Dakota Electric Properties
Service List – Notice of Filing

North Dakota Aeronautics Commission
P.O. Box 5020
Bismarck, ND 58502-5020

North Dakota Office of Attorney General
State Capitol Building Dept 125
600 East Boulevard Avenue
Bismarck, ND 58505

North Dakota Department of Agriculture
State Capitol Building Dept 602
600 East Boulevard Avenue
Bismarck, ND 58505-0020

North Dakota Department of Health
State Capitol Building 2nd Floor Judicial Wing
600 East Boulevard Avenue
Bismarck, ND 58505-0200

North Dakota Department of Human Services
State Capitol Judicial Wing Dept 325
600 East Boulevard Avenue
Bismarck, ND 58505-0250

North Dakota Department of Labor and Human Rights
600 East Boulevard Avenue Dept 406
Bismarck, ND 58505-0340

North Dakota Department of Career & Technical Education
State Capitol Building, 15th Floor Dept 270
600 East Boulevard Avenue
Bismarck, ND 58505-0610

North Dakota Department of Commerce
1600 East Century Avenue, Suite 2
PO Box 2057
Bismarck, ND 58503

Energy Infrastructure and Impact Office
North Dakota Department of Trust Lands
1707 North 9th Street
P.O. Box 5523
Bismarck, ND 58506-5523

North Dakota Game & Fish Department
100 North Bismarck Expressway
Bismarck, ND 58501-5095

Job Service of North Dakota
P.O. Box 5507
Bismarck, ND 58506-5507

North Dakota Department of Trust Lands
1707 North 9th Street
PO Box 5523
Bismarck, ND 58506-5523

North Dakota Parks & Recreation Department
1600 East Century Avenue, Suite 3
P.O. Box 5594
Bismarck, ND 58505-5594

ND State Soil Conservation Committee
c/o NDSU Extension Service
2718 Gateway Avenue, Suite 304
Bismarck, ND 58503

North Dakota State Water Commission
900 East Boulevard Avenue Dept 770
Bismarck, ND 58502-0850

United States Department of Defense
1400 Defense Pentagon
Washington, DC 20301-1400

United States Fish and Wildlife Services
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

United States Army Corps of Engineers
North Dakota Regulatory Office
1513 South 12th Street
Bismarck, ND 58504

Federal Aviation Administration
United States Department of Transportation
800 Independence Avenue SW
Washington, DC 20591

North Dakota Transmission Authority
c/o North Dakota Industrial Commission
State Capitol, 14th Floor
600 East Boulevard Avenue Dept. 405
Bismarck, ND 58505-0840

North Dakota Industrial Commission
State Capitol Building, 14th Floor Dept 405
600 E Boulevard Avenue
Bismarck, ND 58505-0840

Office of Governor
State Capitol Building
600 East Boulevard Avenue
Bismarck, ND 58505-0100

North Dakota Department of Transportation
608 East Boulevard Avenue
Bismarck, ND 58505-0700

State Historical Society of North Dakota
Heritage Center
612 East Boulevard Avenue
Bismarck, ND 58505-0830

Indian Affairs Commission
1st Floor Judicial Wing Rm 117
600 East Boulevard Avenue
Bismarck, ND 58505-0300

North Dakota Pipeline Authority
c/o North Dakota Industrial Commission
State Capitol 14th Floor
600 East Boulevard Avenue Dept. 405
Bismarck, ND 58505-0840

MONTANA-DAKOTA UTILITIES CO.
TEN YEAR PLAN
FOR NORTH DAKOTA ELECTRIC PROPERTIES

For Planning Years July 1, 2018 through June 30, 2028

Submitted to

NORTH DAKOTA PUBLIC SERVICE COMMISSION

June 29, 2018

MONTANA-DAKOTA
UTILITIES CO.
A Division of MDU Resources Group, Inc.

MONTANA-DAKOTA UTILITIES CO.
TEN YEAR PLAN
FOR NORTH DAKOTA ELECTRIC PROPERTIES

For Planning Years July 1, 2018 through June 30, 2028

Submitted to

NORTH DAKOTA PUBLIC SERVICE COMMISSION

June 29, 2018

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
400 North 4th Street
Bismarck, North Dakota 58501

INTRODUCTION

Enclosed are data comprising the Montana-Dakota Utilities Co. (Montana-Dakota) "Ten Year Plan" for North Dakota Electric Properties filed in compliance with NDCC §49-22-04 and NDAC §69-06-02-01 and 02.

SCHEDULE A

EXISTING ENERGY CONVERSION FACILITIES

The existing energy conversion facilities subject to this filing and located in North Dakota are the 427 MW Coyote Station near Beulah in which Montana-Dakota has a 25 percent ownership interest, the 191 MW Heskett Station in Mandan, which is wholly owned by Montana-Dakota, the 5.3 MW waste heat recovery unit located near Glen Ullin, the 19.5 MW Cedar Hills wind project located near Rhame and the 107.5 MW Thunder Spirit wind project located near Hettinger. Otter Tail Power Company of Fergus Falls, Minnesota operates the Coyote Station and reports all information required by Schedule A.

No energy conversion facilities are committed to be retired in the next ten years. As part of its resource planning activities, Montana-Dakota is studying the retirement of the Heskett I and Heskett II generating units in 2025 or a later date.

SCHEDULE B

ENERGY CONVERSION FACILITIES UNDER CONSTRUCTION

Construction is underway to expand the Thunder Spirit Wind project located near Hettinger from 107.5 MW to 155.5 MW. This work is expected to be completed in the fall of 2018.

SCHEDULE C

PROPOSED ENERGY CONVERSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS

Montana-Dakota is studying the development of a combined cycle generating resource to economically and reliably meet its future customer energy and demand requirements. Montana-Dakota will continue with engineering to support siting, permitting, and approval of a combined cycle combustion turbine facility, including potential partnerships to achieve greater economies of scale and efficiencies through the construction of a larger energy generating facility.

Final location and timing of this energy conversion facility has not been determined at this time.

SCHEDULE D

PROPOSED ENERGY CONVERSION FACILITIES DURING THE NEXT TEN-YEAR TIME PERIOD

Montana-Dakota routinely studies additional resource options to meet its customer needs. These options are addressed in Montana-Dakota's Integrated Resource Plan (2017 IRP) filed with the Commission on June 30, 2017 and designated as Case No. PU-17-267.

SCHEDULE E

EXISTING TRANSMISSION FACILITIES (ELECTRIC)

Exhibit A is a system map of North Dakota showing the location of existing transmission facilities.

There are no retirements of any North Dakota transmission facilities planned within the next ten years.

SCHEDULE G

PROPOSED TRANSMISSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS (ELECTRIC)

The Midcontinent Independent System Operator, Inc. (MISO) has established a classification of transmission expansion projects called Multi-Value Projects (MVPs). Cost allocation for MVPs will be shared across the entire MISO footprint on a per MWh basis. There is currently one approved MVP project that will connect to Montana-Dakota's transmission system

Which will be jointly owned by Montana-Dakota and Otter Tail Power Company that consists of a 345 kV line to a new substation near the existing Ellendale Junction Substation and then continuing south and east to a new substation south of the current Big Stone Substation in South Dakota. The Companies filed and received from the Commission in Case No. PU-13-840 a corridor certificate and route permit for the Big Stone South to Ellendale MVP line. The project began construction in the summer of 2016 with a scheduled in-service date of 2019.

Montana-Dakota is currently planning a 40-mile 115 kV line from the existing Ellendale Junction substation to a new substation near Leola, South Dakota. This line is being developed to support existing load and improve reliability in the area. This project is expected to be completed in 2019.

SCHEDULE I

PROPOSED TRANSMISSION FACILITIES DURING THE
NEXT TEN YEAR TIME PERIOD (ELECTRIC)

NONE

SCHEDULE J

REGIONAL COORDINATION

Montana-Dakota has been coordinating the planning, construction, and operation of electric facilities with other utilities and agencies serving North Dakota since 1945. Montana-Dakota has interconnection agreements with Basin Electric Power Cooperative (Basin Electric), Western Area Power Administration (Western), Otter Tail Power Company, NorthWestern Energy Corporation, and Minnkota Power Cooperative, Inc. These agreements provide for the interconnection of Montana-Dakota's bulk transmission facilities with the Western transmission network and MISO bulk transmission facilities.

Montana-Dakota is a transmission owning member of MISO. MISO is a FERC-authorized Regional Transmission Organization (RTO). MISO commenced tariff administration for the operational control of the transmission systems of its members in February 2002. MISO commenced its energy market on April 1, 2005. The MISO Ancillary Services Market started on January 6, 2009 at which time Montana-Dakota became a Local Balancing Authority within MISO. Montana-Dakota actively participates in the planning processes performed by MISO, which has the obligation to coordinate the planning of transmission facilities. Two of the planning processes mandated by FERC are generator interconnection and delivery service. The third process is related to expansion planning through the MISO Transmission Expansion Plan. As part of the market operation, Montana-Dakota' generating units are dispatched by MISO.

Montana-Dakota and Western historically had an agreement that provided for mutual wheeling and coordinated construction of transmission facilities. This agreement expired on January 1, 2016. Western and Basin Electric joined the Southwest Power Pool (SPP) in October 2015 and with the expiration of the Western Transmission Service Agreement (TSA) on January 1, 2016, Montana-Dakota began taking Network Integrated Transmission Service (NITS) from SPP to serve approximately one-half of its customer load in western North Dakota and eastern Montana. Montana-Dakota has offset NITS charges by receiving credits for its transmission facilities that are used to facilitate SPP transmission service.

Montana-Dakota, Otter Tail Power Company, and NorthWestern Energy Corporation own the 475 MW Big Stone generating station near Big Stone City, South Dakota, and associated bulk transmission facilities. Montana-Dakota owns 22.7 percent of the Big Stone Plant. In addition, Montana-Dakota is a participant in another joint venture with Minnkota Power Cooperative, Inc. (agent for Northern Municipal Power Agency), Otter Tail Power Company, and NorthWestern Energy Corporation. This is the 427 MW Coyote generating station near Beulah, North Dakota, and associated bulk transmission facilities. Montana-Dakota currently owns 25 percent of the Coyote Station. These cooperative efforts permit Montana-Dakota to realize economic benefits from ownership in a large generating station and to provide the electrical generation required of it and its partners using fewer facilities.

Montana-Dakota is also a member of the Midwest Reliability Organization (MRO). The MRO is one of seven regional entities in North America operating under authority from regulators in the United States and Canada through a delegation agreement with the North American Electric Reliability Corporation (NERC). The primary focus of the MRO is developing and ensuring compliance with regional and international standards and performing assessments of the grid's ability to meet the demands for electricity.

SCHEDULE K

ENVIRONMENTAL INFORMATION

The Corporate Environmental Policy of MDU Resources Group, Inc., the parent corporation of Montana-Dakota, states that:

> *Our company will operate efficiently to meet the needs of the present without compromising the ability of future generations to meet their own needs. Our environmental goals are:*
>
> - *To minimize waste and maximize resources;*
> - *To support environmental laws and regulations that are based on sound science and cost-effective technology; and*
> - *To comply with or exceed all applicable environmental laws, regulations and permit requirements.*

Montana-Dakota maintains good relations with local, state, and federal agencies involved with environmental protection and land use planning in its service area.

Transmission and energy conversion facilities will be designed and located in such a manner as to maximize operational efficiency and economic benefits and to minimize impacts on agriculture, extractable resources, health and safety, plant and animal life, communications, and the visual effect on the surrounding area. Transmission and energy conversion facilities will be sited in compliance with the federal, state, and local laws and with the Public Service Commission's rules and regulations.

Montana-Dakota strives to maintain compliance and operate in an environmentally proactive manner, while taking into consideration the cost to customers. Montana-Dakota actively provides comments to federal and state legislative and regulatory activity related to environmental issues, including air emissions, greenhouse gases (GHG), waste disposal, and water discharges. The Company has also established memberships in relevant trade organizations to assist in monitoring the potential impact of proposed legislation and regulation to the Company’s operations.

The U.S. Environmental Protection Agency (EPA) has finalized significant air emissions regulations for coal-fired electric generating facilities and has proposed significant new regulations that aim to reduce air emissions, including GHGs, at fossil-fired electric generating facilities and pollutants in wastewater discharges. The EPA also published a final rule in the Federal Register on April 17, 2015, for management of coal ash at coal-fired electric generating facilities. The culmination of all various pending environmental requirements, including any new EPA rulemaking to reduce carbon dioxide emissions from existing fossil fuel fired electric generating units, may result in the retirement of existing coal-fired baseload units earlier than otherwise would occur. Montana-Dakota will continue to monitor regulation changes, and will take both proposed and final regulations into consideration when planning for future resource needs.

SCHEDULE L

PROJECTED DEMAND FOR SERVICE

The load data reported in this plan are the result of Montana-Dakota's *2018-2037 Electric Load Forecast* dated December 31, 2017.

1. Projected Peak Load for 2018-2028

The demand forecast was developed using an econometric model whose methodology is documented in detail in Attachment A of the 2017 IRP.

The summer peak is the highest hourly demand value for the summer months in the given year. The winter peak is the highest hourly demand value for the winter season occurring at the end of the given year or the beginning of the following calendar year. The projected demands shown in MW below represent the load at the customer level plus the demand due to system losses. System losses include energy losses on the transmission and distribution systems and energy that is unaccounted for such as power theft or stray currents. The summer peak demand given is net of energy efficiency and prior to any reduction in load due to demand response.

a. Montana-Dakota Integrated System

PROJECTED PEAK DEMAND (MW)

YEAR	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
SUMMER	604.0	611.2	618.4	625.5	632.9	639.8	647.0	654.1	661.4	668.8	676.1
WINTER	548.4	555.9	563.3	570.6	578.4	585.2	592.6	599.8	607.4	615.0	622.8

GROWTH RATE (%)

YEAR	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
SUMMER	--	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1
WINTER	--	1.3	1.4	1.3	1.4	1.2	1.3	1.2	1.3	1.3	1.3

Historically, for the period 2012-2017 the summer peak demand increased at an average rate of 1.3 percent per year while the winter peak demand increased at an average rate of 0.8 percent per year. The projected average growth rates for the period 2018-2028 are 1.1 percent for the summer peak and 1.3 percent for the winter peak.

b. North Dakota

PROJECTED PEAK DEMAND (MW)

YEAR	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
SUMMER	415.7	421.5	427.4	433.1	439.1	444.8	450.7	456.5	462.4	468.4	474.6
WINTER	377.7	383.4	389.4	395.2	401.4	406.9	412.9	418.6	424.7	430.9	437.2

GROWTH RATE (%)

YEAR	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
SUMMER	--	1.4	1.4	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3
WINTER	--	1.5	1.6	1.5	1.6	1.4	1.5	1.4	1.5	1.5	1.5

2. Projected Energy for 2018-2028

The projected annual energy requirements, shown in gigawatt-hours (GWh), for Montana-Dakota's Integrated System are as follows:

Year	Annual Energy (GWh)	Year	Annual Energy (GWh)
2018	3,342.6	2024	3,591.7
2019	3,383.6	2025	3,632.4
2020	3,425.6	2026	3,675.4
2021	3,467.1	2027	3,719.1
2022	3,511.0	2028	3,763.4
2023	3,549.8		

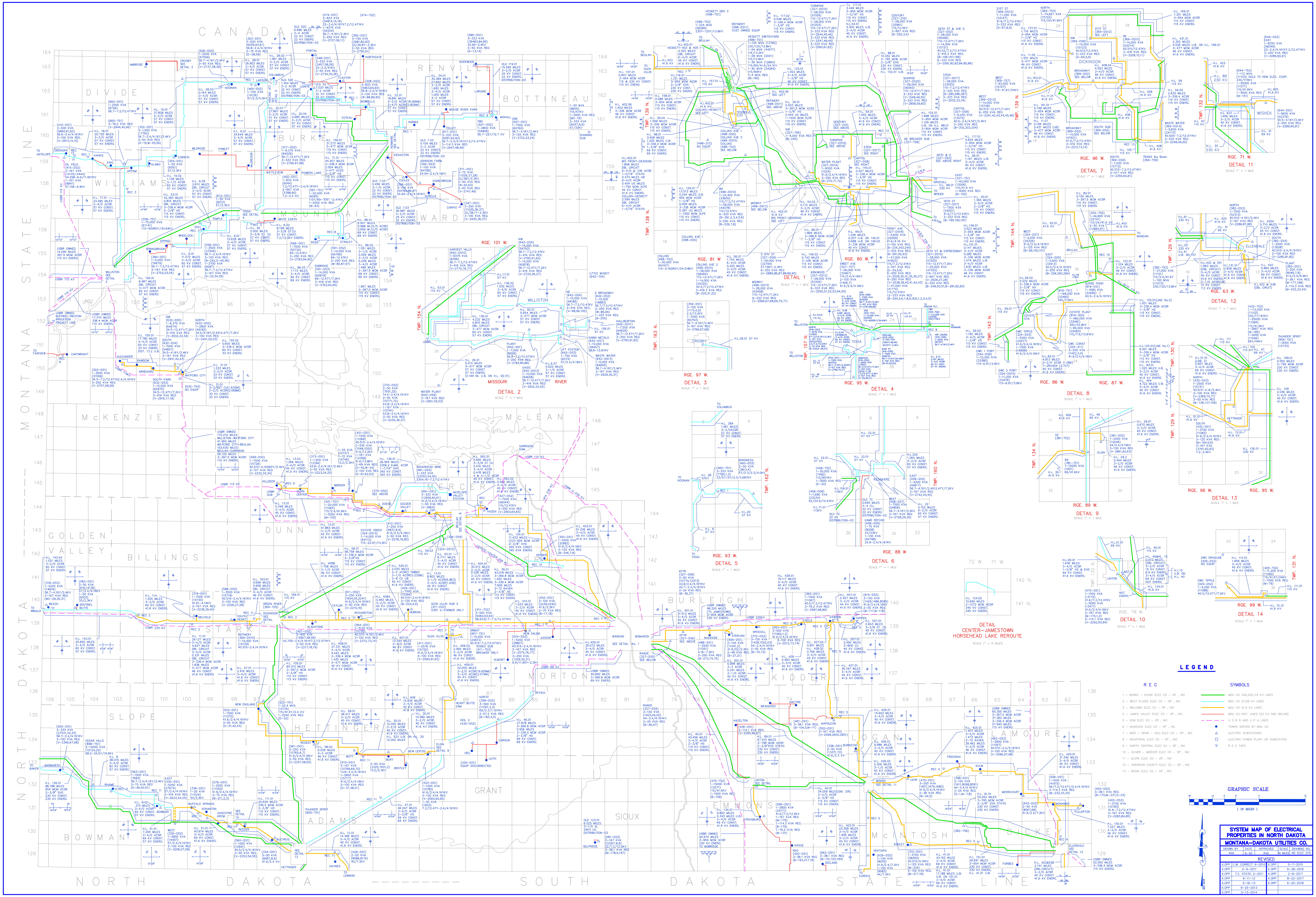
Historically, for the period 2012-2017, Montana-Dakota experienced an average annual increase of 1.8 percent for energy consumption. The projected average growth rate for the period 2018-2028 is 1.2 percent.

3. Load Centers

Montana-Dakota's load centers for the Integrated System, defined as areas with 10 MW or more of load in a limited geographical area, are, in North Dakota, Bismarck-Mandan, Dickinson, Stanley, Tioga, Watford City, and Williston and in Montana, Baker, Glendive, Sidney, and Miles City.

Exhibit A

North Dakota Electric System Map



CANADA
DIVIDE
BURKE
RENVILLE
BOTTINEAU
WILLIAMS
MOUNTRAIL
WARD
McKENZIE
McLEAN
MERCER
DUNN
GOLDEN VALLEY
BILLINGS
STARK
MORTON
BURLEIGH
KIDDER
SLOPE
HETTINGER
GRANT
SIOUX
EMMONS
LOGAN
McINTOSH
ADAMS
BOWMAN
LAMOURE
DICKEY
MONTANA STATE LINE
NORTH DAKOTA
SOUTH DAKOTA STATE LINE
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
DETAIL 5
DETAIL 6
DETAIL 7
DETAIL 8
DETAIL 9
DETAIL 10
DETAIL 11
DETAIL 12
DETAIL 13
DETAIL 14
DETAIL CENTER–JAMESTOWN HORSEHEAD LAKE REROUTE
SCALE 1" = 1 MILE
LEGEND
R E C
1 – BURKE – DIVIDE ELEC CO – OP , INC
2 – WEST PLAINS ELEC CO – OP , INC
3 – WILLIAMS ELEC CO – OP , INC
4 – JAMES VALLEY ELEC CO – OP , INC
5 – KEM ELEC CO – OP , INC
6 – McKENZIE ELEC CO – OP , INC
7 – MOR – GRAN – SOU ELEC CO – OP , INC
8 – MOUNTRAIL ELEC CO – OP , INC
9 – NORTH CENTRAL ELEC CO – OP , INC
10 – OLIVER – MERCER ELEC CO – OP , INC
11 – SLOPE ELEC CO – OP , INC
12 – SHERIDAN COUNTY ELEC CO – OP , INC
13 – BASIN ELEC CO – OP , INC
SYMBOLS
MDU CO 345,230,115 KV LINES
MDU CO 57,69 KV LINES
MDU CO 41.6 KV LINES
MDU CO DIST. LINES (22 KV AND BELOW)
U S B R AND U P A LINES
TOWNS SERVED BY MDU CO
ELECTRIC SUBSTATIONS
ELECTRIC POWER PLANT OR SUBSTATION
R E C TAPS
GRAPHIC SCALE
18 12 9 6 0 12
(IN MILES)
MAG–DATE
SYSTEM MAP OF ELECTRICAL PROPERTIES IN NORTH DAKOTA
MONTANA–DAKOTA UTILITIES CO.
DRAWN BY RAK
DATE 6–90
APPROVED RAK
SCALE IN MILES
DRAWING NO. ND ELEC SYS
REVISED
K.OPP C.W. CORRECT 9–2010
K.OPP 2–9–2011
K.OPP T.C. STATIC 2–2011
K.OPP 6–11–12
K.OPP 5–16–13
K.OPP 6–25–2013
K.OPP 3–13–2014
K.OPP 5–7–2015
K.OPP 6–28–2016
K.OPP 2–8–2017
K.OPP 8–22–2017
K.OPP 6–20–2018