

**2020 Transmission-Distribution Substation Loading Summary**<sup>NOTE1,NOTE2</sup>

| Area | Substation          | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup>              |
|------|---------------------|---------------|----------------|-----------------------------------|---------------|-------------------------------------------|
| C    | 15th Ave West       | 115/14 kV     | 35.50          | 12.50                             | 21.23         | eDNA Data Historian                       |
| C    | Bear Creek          | 69/46 kV      | 11.70          | 0.40                              | 4.84          | eDNA Data Historian<br>Operated Networked |
| C    | Big Rock            | 115/14 kV     | 4.90           | 2.30                              | 3.05          | eDNA Data Historian                       |
| C    | Burnett             | 115/14 kV     | 1.81           | 0.36                              | N/A           | Line Sensor                               |
| C    | Canosia Road        | 115/14 kV     | 9.70           | 2.20                              | 4.97          | eDNA Data Historian                       |
| C    | Cloquet             | 115/14 kV     | 28.10          | 10.65                             | 18.68         | eDNA Data Historian                       |
| C    | Colbyville          | 115/14 kV     | 24.66          | 8.33                              | 14.12         | eDNA Data Historian                       |
| C    | Floodwood           | 115/14 kV     | 1.90           | 0.38                              | N/A           | Line Sensor                               |
| C    | Four Corners        | 115/14 kV     | 13.02          | 4.49                              | 7.10          | eDNA Data Historian                       |
| C    | French River        | 115/14 kV     | 5.10           | 1.20                              | 2.29          | eDNA Data Historian                       |
| C    | Gary                | 115/14 kV     | 21.95          | 2.05                              | 8.68          | eDNA Data Historian                       |
| C    | Haines Road         | 115/14 kV     | 24.98          | 9.13                              | 14.16         | eDNA Data Historian                       |
| C    | Hibbard             | 115/14 kV     | 5.79           | 0.51                              | 1.96          | eDNA Data Historian                       |
| C    | Hinckley East       | 69/46 kV      | 5.42           | -0.68                             | 2.40          | eDNA Data Historian<br>Operated Networked |
| C    | LSPI                | 115/14 kV     | 22.76          | 10.38                             | 14.91         | eDNA Data Historian                       |
| C    | LSPI                | 115/34 kV     | 8.10           | 3.50                              | 4.81          | eDNA Data Historian                       |
| C    | Mahtowa             | 115/23 kV     | 3.71           | 0.80                              | 2.33          | eDNA Data Historian                       |
| C    | Mahtowa             | 115/46 kV     | 9.75           | -0.89                             | 2.48          | eDNA Data Historian<br>Operated Networked |
| C    | Meadowlands         | 115/14 kV     | 1.10           | 0.22                              | N/A           | Engineering Estimate                      |
| C    | Midway              | 115/14 kV     | N/A            | N/A                               | N/A           | Retired in 2019                           |
| C    | Ridgeview           | 115/14 kV     | 24.00          | 11.30                             | 15.97         | eDNA Data Historian                       |
| C    | Silver Bay Hillside | 115/14 kV     | 4.50           | 0.80                              | 2.34          | eDNA Data Historian (Calc)                |
| C    | Swan Lake Road      | 115/34 kV     | 13.60          | 7.30                              | 9.47          | eDNA Data Historian                       |
| C    | Swan Lake Road      | 115/14 kV     | 16.90          | 7.40                              | 11.12         | eDNA Data Historian                       |
| C    | Taft                | 115/34 kV     | 5.93           | 2.00                              | 2.97          | eDNA Data Historian                       |
| C    | Thomson             | 115/14 kV     | 5.22           | 1.67                              | 2.90          | eDNA Data Historian                       |
| C    | Thomson             | 115/46 kV     | 2.81           | 0.13                              | 0.65          | eDNA Data Historian                       |
| C    | Two Harbors         | 115/14 kV     | 4.53           | 1.26                              | 2.29          | eDNA Data Historian (Calc)                |

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| Area | Substation          | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup>              |
|------|---------------------|---------------|----------------|-----------------------------------|---------------|-------------------------------------------|
| C    | Wrenshall           | 115/14 kV     | 3.67           | 1.00                              | 1.91          | eDNA Data Historian                       |
| N    | Babbitt             | 115/46 kV     | 17.30          | 2.00                              | 5.06          | eDNA Data Historian<br>Operated Networked |
| N    | Big Fork Village    | 69/12 kV      | 1.80           | 0.60                              | 0.93          | eDNA Data Historian                       |
| N    | Canisteo            | 115/14 kV     | 0.00           | 0.00                              | 0.00          | eDNA Data Historian                       |
| N    | Diamond Lake        | 115/34 kV     | 0.00           | 0.00                              | 0.00          | eDNA Data Historian                       |
| N    | Embarrass           | 115/23 kV     | 6.56           | 0.54                              | 0.55          | eDNA Data Historian                       |
| N    | Hat Trick           | 115/23 kV     | 11.30          | 3.70                              | 7.12          | eDNA Data Historian                       |
| N    | Hibbing             | 115/23 kV     | 38.60          | 15.32                             | 24.70         | eDNA Data Historian                       |
| N    | International Falls | 115/14 kV     | 13.05          | 5.73                              | 7.70          | eDNA Data Historian                       |
| N    | Laskin              | 115/23 kV     | 4.26           | 0.50                              | 1.65          | eDNA Data Historian (Calc)                |
| N    | Laskin              | 115/46 kV     | 5.72           | 0.27                              | 2.47          | eDNA Data Historian (Calc)                |
| N    | Lind-Greenway       | 115/23 kV     | 4.90           | 1.10                              | 2.51          | eDNA Data Historian (Calc)                |
| N    | Maturi              | 115/34 kV     | 0.00           | 0.00                              | 0.00          | eDNA Data Historian                       |
| N    | Maturi              | 115/23 kV     | 2.80           | 0.40                              | 0.87          | eDNA Data Historian                       |
| N    | Nashwauk            | 115/23 kV     | 5.69           | 2.44                              | 3.37          | eDNA Data Historian                       |
| N    | Tower               | 115/46 kV     | 7.00           | 1.60                              | 3.39          | eDNA Data Historian<br>Operated Networked |
| N    | Virginia            | 115/23 kV     | 22.58          | 4.96                              | 11.81         | eDNA Data Historian                       |
| N    | Virginia            | 115/46 kV     | 10.92          | 2.67                              | 6.09          | eDNA Data Historian<br>Operated Networked |
| N    | Zemple              | 115/23 kV     | 2.50           | 0.90                              | 1.36          | eDNA Data Historian                       |
| W    | Akeley              | 115/34 kV     | 16.40          | 5.30                              | 8.40          | eDNA Data Historian                       |
| W    | Baxter              | 115/34 kV     | 13.18          | 3.59                              | 5.29          | eDNA Data Historian                       |
| W    | Blanchard           | 115/34 kV     | 19.18          | 5.98                              | 11.34         | eDNA Data Historian                       |
| W    | Dog Lake            | 115/34 kV     | 11.10          | 3.60                              | 6.64          | eDNA Data Historian                       |
| W    | Eagle Valley        | 115/34 kV     | 11.80          | 4.80                              | 6.99          | eDNA Data Historian                       |
| W    | Little Falls        | 115/34 kV     | 30.75          | 10.65                             | 16.96         | eDNA Data Historian                       |
| W    | Long Prairie        | 115/34 kV     | 24.99          | 9.59                              | 16.36         | eDNA Data Historian                       |
| W    | Pepin Lake          | 115/34 kV     | 11.90          | 4.90                              | 7.01          | eDNA Data Historian                       |
| W    | Pequot Lakes        | 115/34 kV     | 13.60          | 3.90                              | 5.75          | eDNA Data Historian                       |

**2020 Transmission-Distribution Substation Loading Summary**<sup>NOTE1,NOTE2</sup>

| Area | Substation     | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup> |
|------|----------------|---------------|----------------|-----------------------------------|---------------|------------------------------|
| W    | Pine River     | 115/34 kV     | 5.70           | 1.50                              | 3.12          | eDNA Data Historian          |
| W    | Platte River   | 115/34 kV     | 5.40           | 0.20                              | 2.63          | eDNA Data Historian          |
| W    | Riverton       | 115/34 kV     | 14.78          | 5.61                              | 8.05          | eDNA Data Historian          |
| W    | Straight River | 115/34 kV     | 2.80           | 0.50                              | 1.16          | eDNA Data Historian          |
| W    | Verndale       | 115/34 kV     | 31.01          | 10.34                             | 17.45         | eDNA Data Historian          |

**NOTES**

1. Values in table are non-coincident and shouldn't be added together
2. Values represent real power loading (MW) only; apparent power loading (MVA) will generally be slightly higher
3. Daytime Minimum corresponds to minimum hourly load between 0800-1800 where available or 20% of peak load where direct data is not available
4. Except as noted, values are based on hourly load data from the MP eDNA Data Historian at the distribution bus
5. Where possible, the effective load reduction from large-scale distribution-connected generation has been excluded

**2020 Parent Feeder Loading Summary**<sup>NOTE1,NOTE2</sup>

| Area | Substation            | Feeder   | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup>                     |
|------|-----------------------|----------|---------------|----------------|-----------------------------------|---------------|--------------------------------------------------|
| C    | Bear Creek - Hinckley | 198 LINE | 46 kV         | 7.23           | 3.03                              | 4.13          | eDNA Data Historian (Calc)<br>Operated Networked |
| C    | Bear Creek            | 23 LINE  | 46 kV         | 1.80           | 0.40                              | 0.98          | eDNA Data Historian                              |
| C    | Thomson               | 23 LINE  | 46 kV         | 2.81           | 0.13                              | 0.65          | eDNA Data Historian                              |
| C    | Bear Creek            | 59 LINE  | 46 kV         | 0.81           | 0.20                              | 0.46          | eDNA Data Historian (Calc)                       |
| C    | Mahtowa               | 59 LINE  | 46 kV         | 5.04           | 1.86                              | 2.82          | eDNA Data Historian (Calc)                       |
| C    | Big Rock              | BGR-272  | 14 kV         | 4.90           | 2.30                              | 3.05          | eDNA Data Historian                              |
| C    | Big Rock              | BGR-274  | 14 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian                              |
| C    | Burnett               | BUR-407  | 14 kV         | 0.25           | 0.05                              | N/A           | Engineering Estimate                             |
| C    | Burnett               | BUR-408  | 14 kV         | 1.56           | 0.31                              | N/A           | Line Sensor                                      |
| C    | Cloquet               | CLQ-404  | 14 kV         | 9.78           | 1.70                              | 5.76          | eDNA Data Historian                              |
| C    | Cloquet               | CLQ-406  | 14 kV         | 10.32          | 4.37                              | 5.98          | eDNA Data Historian                              |
| C    | Cloquet               | CLQ-409  | 14 kV         | 7.32           | 3.17                              | 4.38          | eDNA Data Historian                              |
| C    | Cloquet               | CLQ-410  | 14 kV         | 4.13           | 1.17                              | 2.48          | eDNA Data Historian                              |
| C    | Cloquet               | CLQ-412  | 14 kV         | 0.42           | 0.01                              | 0.10          | eDNA Data Historian                              |
| C    | Canosia Road          | CNA-403  | 14 kV         | 1.60           | 0.40                              | 0.78          | eDNA Data Historian                              |
| C    | Canosia Road          | CNA-405  | 14 kV         | 4.50           | 1.50                              | 2.51          | eDNA Data Historian                              |
| C    | Canosia Road          | CNA-413  | 14 kV         | 3.70           | 0.90                              | 1.68          | eDNA Data Historian                              |
| C    | Colbyville            | COL-240  | 14 kV         | 7.53           | 2.87                              | 4.17          | eDNA Data Historian                              |
| C    | Colbyville            | COL-241  | 14 kV         | 4.16           | 1.41                              | 2.17          | eDNA Data Historian                              |
| C    | Colbyville            | COL-242  | 14 kV         | 6.27           | 2.58                              | 3.83          | eDNA Data Historian                              |
| C    | Colbyville            | COL-244  | 14 kV         | 4.78           | 1.99                              | 2.76          | eDNA Data Historian                              |
| C    | Colbyville            | COL-245  | 14 kV         | 1.67           | 1.03                              | 1.19          | eDNA Data Historian                              |
| C    | Four Corners          | FCS-214  | 14 kV         | 7.29           | 2.82                              | 4.15          | eDNA Data Historian                              |
| C    | Four Corners          | FCS-215  | 14 kV         | 6.49           | 1.67                              | 2.94          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-219  | 14 kV         | 6.90           | 0.10                              | 2.74          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-220  | 14 kV         | 1.90           | 0.70                              | 1.29          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-221  | 14 kV         | 3.20           | 0.10                              | 0.80          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-222  | 14 kV         | 0.30           | 0.00                              | 0.12          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-226  | 14 kV         | 3.00           | 0.90                              | 1.52          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-228  | 14 kV         | 2.30           | 0.80                              | 1.63          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-230  | 14 kV         | 5.10           | 2.10                              | 3.36          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-231  | 14 kV         | 2.30           | 0.30                              | 0.85          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-232  | 14 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-233  | 14 kV         | 3.60           | 1.00                              | 1.66          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-234  | 14 kV         | 0.50           | 0.10                              | 0.37          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-260  | 14 kV         | 5.50           | 1.80                              | 3.32          | eDNA Data Historian                              |
| C    | 15th Ave West         | FIF-261  | 14 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian                              |

**2020 Parent Feeder Loading Summary**<sup>NOTE1,NOTE2</sup>

| Area | Substation          | Feeder  | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup> |
|------|---------------------|---------|---------------|----------------|-----------------------------------|---------------|------------------------------|
| C    | 15th Ave West       | FIF-264 | 14 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| C    | 15th Ave West       | FIF-265 | 14 kV         | 5.90           | 1.00                              | 1.63          | eDNA Data Historian          |
| C    | 15th Ave West       | FIF-266 | 14 kV         | 3.20           | 1.20                              | 1.93          | eDNA Data Historian          |
| C    | Floodwood           | FLF-402 | 14 kV         | 1.90           | 0.38                              | N/A           | Line Sensor                  |
| C    | French River        | FRR-275 | 14 kV         | 3.10           | 0.70                              | 1.43          | eDNA Data Historian          |
| C    | French River        | FRR-276 | 14 kV         | 2.00           | 0.30                              | 0.86          | eDNA Data Historian          |
| C    | Gary                | GRY-200 | 14 kV         | 3.14           | 1.17                              | 1.78          | eDNA Data Historian          |
| C    | Gary                | GRY-201 | 14 kV         | 3.25           | 1.47                              | 2.00          | eDNA Data Historian          |
| C    | Gary                | GRY-210 | 14 kV         | 4.60           | 0.32                              | 2.79          | eDNA Data Historian          |
| C    | Hinckley East       | HKE-463 | 14 kV         | 2.65           | 0.75                              | 1.33          | eDNA Data Historian (Calc)   |
| C    | Haines Road         | HNS-229 | 14 kV         | 7.35           | 3.18                              | 4.24          | eDNA Data Historian          |
| C    | Haines Road         | HNS-235 | 14 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| C    | Haines Road         | HNS-236 | 14 kV         | 8.23           | 2.40                              | 3.79          | eDNA Data Historian          |
| C    | Haines Road         | HNS-237 | 14 kV         | 5.04           | 1.44                              | 2.80          | eDNA Data Historian          |
| C    | Haines Road         | HNS-238 | 14 kV         | 2.68           | 0.65                              | 1.27          | eDNA Data Historian          |
| C    | Haines Road         | HNS-239 | 14 kV         | 1.33           | 0.29                              | 0.56          | eDNA Data Historian          |
| C    | Haines Road         | HNS-247 | 14 kV         | 2.56           | 1.10                              | 1.49          | eDNA Data Historian          |
| C    | LSPI                | LSP-208 | 34 kV         | 8.10           | 3.50                              | 4.81          | eDNA Data Historian          |
| C    | LSPI                | LSP-223 | 14 kV         | 7.93           | 3.27                              | 4.74          | eDNA Data Historian          |
| C    | LSPI                | LSP-224 | 14 kV         | 3.77           | 0.24                              | 0.84          | eDNA Data Historian          |
| C    | LSPI                | LSP-225 | 14 kV         | 5.86           | 2.52                              | 3.52          | eDNA Data Historian          |
| C    | LSPI                | LSP-280 | 14 kV         | 5.19           | 1.32                              | 3.19          | eDNA Data Historian          |
| C    | LSPI                | LSP-281 | 14 kV         | 3.21           | 1.26                              | 1.97          | eDNA Data Historian          |
| C    | LSPI                | LSP-282 | 14 kV         | 0.73           | 0.25                              | 0.50          | eDNA Data Historian          |
| C    | Mahtowa             | MAT-420 | 23 kV         | 3.71           | 0.80                              | 2.33          | eDNA Data Historian          |
| C    | Meadowlands         | MDL-401 | 14 kV         | 1.10           | 0.22                              | N/A           | Engineering Estimate         |
| C    | Midway              | MDY-277 | 14 kV         | N/A            | N/A                               | N/A           | Retired in 2019              |
| C    | Midway              | MDY-278 | 14 kV         | N/A            | N/A                               | N/A           | Retired in 2019              |
| C    | Hibbard             | MLH-267 | 14 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| C    | Hibbard             | MLH-268 | 14 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| C    | Hibbard             | MLH-279 | 14 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| C    | Ridgeview           | RGV-251 | 14 kV         | 2.20           | 0.50                              | 1.15          | eDNA Data Historian          |
| C    | Ridgeview           | RGV-252 | 14 kV         | 6.80           | 3.00                              | 4.29          | eDNA Data Historian          |
| C    | Ridgeview           | RGV-253 | 14 kV         | 4.50           | 1.40                              | 2.38          | eDNA Data Historian          |
| C    | Ridgeview           | RGV-254 | 14 kV         | 4.70           | 2.00                              | 2.87          | eDNA Data Historian          |
| C    | Ridgeview           | RGV-255 | 14 kV         | 6.30           | 2.90                              | 4.11          | eDNA Data Historian          |
| C    | Ridgeview           | RGV-256 | 14 kV         | 2.30           | 0.70                              | 1.15          | eDNA Data Historian          |
| C    | Silver Bay Hillside | SBH-271 | 14 kV         | 4.50           | 0.80                              | 2.34          | eDNA Data Historian (Calc)   |

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|------|---------------------|----------|---------------|----------------|-----------------------------------|---------------|------------------------------|
| C    | Swan Lake           | SLA-203  | 34 kV         | 13.60          | 7.30                              | 9.47          | eDNA Data Historian          |
| C    | Swan Lake           | SLA-250  | 14 kV         | 8.10           | 3.40                              | 4.94          | eDNA Data Historian          |
| C    | Swan Lake           | SLA-257  | 14 kV         | 4.10           | 1.30                              | 2.45          | eDNA Data Historian          |
| C    | Swan Lake           | SLA-258  | 14 kV         | 6.50           | 2.00                              | 3.72          | eDNA Data Historian          |
| C    | Taft                | TFT-202  | 34 kV         | 5.93           | 2.00                              | 2.97          | eDNA Data Historian          |
| C    | Thomson             | TMS-412  | 14 kV         | 5.22           | 1.67                              | 2.90          | eDNA Data Historian          |
| C    | Two Harbors         | TWH-273  | 14 kV         | 4.53           | 1.26                              | 2.29          | eDNA Data Historian (Calc)   |
| C    | Wrenshall           | WRN-411  | 14 kV         | 3.67           | 1.00                              | 1.91          | eDNA Data Historian          |
| N    | Virginia-Tower      | 199 LINE | 46 kV         | 3.80           | 0.90                              | 2.29          | eDNA Data Historian          |
| N    | Laskin              | 30 LINE  | 46 kV         | 5.51           | 0.89                              | 2.30          | eDNA Data Historian          |
| N    | Virginia            | 30 LINE  | 46 kV         | 2.84           | 0.59                              | 1.92          | eDNA Data Historian          |
| N    | Babbitt-Winton      | 31 LINE  | 46 kV         | 4.60           | 1.30                              | 2.55          | eDNA Data Historian          |
| N    | Tower-Winton        | 32 LINE  | 46 kV         | 8.40           | 1.90                              | 4.37          | eDNA Data Historian          |
| N    | Winton              | 33 LINE  | 46 kV         | 12.50          | 3.00                              | 5.32          | eDNA Data Historian          |
| N    | Laskin              | AUR-313  | 23 kV         | 4.26           | 0.50                              | 1.65          | eDNA Data Historian (Calc)   |
| N    | Big Fork            | BFV-1    | 12 kV         | 1.80           | 0.60                              | 0.93          | eDNA Data Historian          |
| N    | Canisteo            | CNS-382  | 14 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| N    | Diamond Lake        | DML-380  | 34 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| N    | Embarrass           | EMB-317  | 23 kV         | 6.56           | 0.54                              | 0.55          | eDNA Data Historian          |
| N    | Grand Rapids        | GRR-325  | 23 kV         | 0.30           | 0.10                              | 0.16          | eDNA Data Historian          |
| N    | Hat Trick           | HAT-321  | 23 kV         | 6.60           | 2.40                              | 3.91          | eDNA Data Historian          |
| N    | Hat Trick           | HAT-332  | 23 kV         | 5.30           | 1.50                              | 3.21          | eDNA Data Historian          |
| N    | Hibbing             | HIB-307  | 23 kV         | 13.55          | 4.50                              | 7.37          | eDNA Data Historian          |
| N    | Hibbing             | HIB-308  | 23 kV         | 4.55           | 1.78                              | 3.34          | eDNA Data Historian          |
| N    | Hibbing             | HIB-310  | 23 kV         | 6.69           | 2.31                              | 4.02          | eDNA Data Historian          |
| N    | Hibbing             | HIB-312  | 23 kV         | 7.38           | 0.22                              | 2.41          | eDNA Data Historian          |
| N    | Hibbing             | HIB-315  | 23 kV         | 1.19           | 0.72                              | 0.71          | eDNA Data Historian          |
| N    | International Falls | INF-1    | 12 kV         | 2.26           | 0.87                              | 1.29          | eDNA Data Historian          |
| N    | International Falls | INF-2    | 12 kV         | 3.54           | 1.36                              | 2.11          | eDNA Data Historian          |
| N    | International Falls | INF-3    | 12 kV         | 4.51           | 1.27                              | 2.64          | eDNA Data Historian          |
| N    | International Falls | INF-4    | 12 kV         | 2.85           | 1.01                              | 1.59          | eDNA Data Historian          |
| N    | International Falls | INF-5    | 12 kV         | 0.13           | 0.05                              | 0.07          | eDNA Data Historian          |
| N    | Lind-Greenway       | LGW-334  | 23 kV         | 3.52           | 0.70                              | N/A           | Line Sensor                  |
| N    | Lind-Greenway       | LGW-335  | 23 kV         | 1.11           | 0.22                              | N/A           | Engineering Estimate         |
| N    | Maturi              | MTU-330  | 23 kV         | 2.80           | 0.40                              | 0.87          | eDNA Data Historian          |
| N    | Maturi              | MTU-381  | 34 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| N    | Nashwauk            | NAS-314  | 23 kV         | 2.74           | 1.06                              | 1.48          | eDNA Data Historian          |
| N    | Nashwauk            | NAS-318  | 23 kV         | 0.11           | 0.02                              | 0.03          | eDNA Data Historian          |

**2020 Parent Feeder Loading Summary**<sup>NOTE1,NOTE2</sup>

| Area | Substation   | Feeder  | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup> |
|------|--------------|---------|---------------|----------------|-----------------------------------|---------------|------------------------------|
| N    | Nashwauk     | NAS-319 | 23 kV         | 3.14           | 1.23                              | 1.86          | eDNA Data Historian          |
| N    | Virginia     | VRG-301 | 23 kV         | 2.19           | 0.94                              | 1.51          | eDNA Data Historian          |
| N    | Virginia     | VRG-302 | 23 kV         | 4.77           | 1.92                              | 2.90          | eDNA Data Historian          |
| N    | Virginia     | VRG-303 | 23 kV         | 1.81           | 0.97                              | 1.41          | eDNA Data Historian          |
| N    | Virginia     | VRG-304 | 23 kV         | 0.73           | 0.21                              | 0.41          | eDNA Data Historian          |
| N    | Virginia     | VRG-305 | 23 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| N    | Virginia     | VRG-306 | 23 kV         | 12.00          | 5.16                              | 4.15          | eDNA Data Historian          |
| N    | Virginia     | VRG-311 | 23 kV         | 2.50           | 0.78                              | 1.42          | eDNA Data Historian          |
| N    | Zemple       | ZMP-335 | 23 kV         | 0.00           | 0.00                              | 0.00          | eDNA Data Historian          |
| N    | Zemple       | ZMP-337 | 23 kV         | 2.50           | 0.90                              | 1.34          | eDNA Data Historian          |
| W    | Akeley       | AKY-543 | 34 kV         | 9.60           | 3.00                              | 5.11          | eDNA Data Historian          |
| W    | Akeley       | AKY-544 | 34 kV         | 8.90           | 1.50                              | 3.29          | eDNA Data Historian          |
| W    | Baxter       | BAX-531 | 34 kV         | 6.56           | 1.71                              | 2.58          | eDNA Data Historian          |
| W    | Baxter       | BAX-534 | 34 kV         | 6.15           | 1.80                              | 2.71          | eDNA Data Historian          |
| W    | Blanchard    | BLD-508 | 34 kV         | 5.61           | 2.06                              | 3.08          | eDNA Data Historian          |
| W    | Blanchard    | BLD-511 | 34 kV         | 6.65           | 2.01                              | 3.31          | eDNA Data Historian          |
| W    | Blanchard    | BLD-521 | 34 kV         | 1.90           | 0.70                              | 1.17          | eDNA Data Historian          |
| W    | Blanchard    | BLD-524 | 34 kV         | 6.96           | 2.60                              | 3.78          | eDNA Data Historian          |
| W    | Birch Lake   | BLS-509 | 34 kV         | 8.30           | 2.40                              | 3.97          | eDNA Data Historian          |
| W    | Birch Lake   | BLS-516 | 34 kV         | 2.10           | 0.60                              | 0.93          | eDNA Data Historian          |
| W    | Blueberry    | BLU-552 | 34 kV         | 7.80           | 2.30                              | 4.32          | eDNA Data Historian          |
| W    | Dog Lake     | DOG-503 | 34 kV         | 11.10          | 3.60                              | 6.64          | eDNA Data Historian          |
| W    | Eagle Valley | EGV-513 | 34 kV         | 4.10           | 1.70                              | 2.47          | eDNA Data Historian          |
| W    | Eagle Valley | EGV-517 | 34 kV         | 7.90           | 3.00                              | 4.52          | eDNA Data Historian          |
| W    | Hubbard      | HBB-523 | 34 kV         | 4.00           | 0.70                              | 1.36          | eDNA Data Historian          |
| W    | Little Falls | LFL-525 | 34 kV         | 9.19           | 2.19                              | 3.98          | eDNA Data Historian          |
| W    | Little Falls | LFL-526 | 34 kV         | 9.38           | 2.77                              | 5.00          | eDNA Data Historian          |
| W    | Little Falls | LFL-529 | 34 kV         | 12.47          | 3.94                              | 6.07          | eDNA Data Historian          |
| W    | Little Falls | LFL-536 | 34 kV         | 3.38           | 1.03                              | 1.91          | eDNA Data Historian          |
| W    | Long Lake    | LNG-540 | 34 kV         | 0.32           | 0.06                              | N/A           | Engineering Estimate         |
| W    | Long Lake    | LNG-541 | 34 kV         | 12.80          | 3.40                              | 5.35          | eDNA Data Historian          |
| W    | Long Lake    | LNG-542 | 34 kV         | 7.00           | 1.60                              | 3.83          | eDNA Data Historian          |
| W    | Long Lake    | LNG-545 | 34 kV         | 13.80          | 2.40                              | 5.26          | eDNA Data Historian          |
| W    | Long Prairie | LPR-501 | 34 kV         | 6.70           | 1.08                              | 4.22          | eDNA Data Historian          |
| W    | Long Prairie | LPR-527 | 34 kV         | 7.48           | 3.21                              | 4.70          | eDNA Data Historian          |
| W    | Long Prairie | LPR-535 | 34 kV         | 11.84          | 5.09                              | 7.44          | eDNA Data Historian          |
| W    | Platte River | PLA-546 | 34 kV         | 2.30           | -0.70                             | 1.08          | eDNA Data Historian          |
| W    | Platte River | PLA-547 | 34 kV         | 3.70           | 0.70                              | 1.55          | eDNA Data Historian          |

**2020 Parent Feeder Loading Summary**<sup>NOTE1,NOTE2</sup>

| Area | Substation     | Feeder  | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup> |
|------|----------------|---------|---------------|----------------|-----------------------------------|---------------|------------------------------|
| W    | Pine River     | PNV-549 | 34 kV         | 3.80           | 1.40                              | 2.26          | eDNA Data Historian          |
| W    | Pine River     | PNV-550 | 34 kV         | 2.60           | 0.10                              | 0.85          | eDNA Data Historian          |
| W    | Pepin Lake     | PPL-514 | 34 kV         | 8.40           | 3.70                              | 5.09          | eDNA Data Historian          |
| W    | Pepin Lake     | PPL-539 | 34 kV         | 3.60           | 1.10                              | 1.92          | eDNA Data Historian          |
| W    | Pequot Lakes   | PQT-507 | 34 kV         | 3.60           | 1.20                              | 2.02          | eDNA Data Historian          |
| W    | Pequot Lakes   | PQT-531 | 34 kV         | 8.90           | 2.40                              | 3.73          | eDNA Data Historian          |
| W    | Riverton       | RVT-505 | 34 kV         | 5.03           | 1.93                              | 2.36          | eDNA Data Historian          |
| W    | Riverton       | RVT-506 | 34 kV         | 7.42           | 2.57                              | 3.97          | eDNA Data Historian          |
| W    | Riverton       | RVT-530 | 34 kV         | 1.87           | 0.31                              | 1.00          | eDNA Data Historian          |
| W    | Riverton       | RVT-532 | 34 kV         | 2.08           | 0.18                              | 0.52          | eDNA Data Historian          |
| W    | Straight River | STG-551 | 34 kV         | 2.80           | 0.50                              | 1.16          | eDNA Data Historian          |
| W    | Sylvan         | SYL-502 | 34 kV         | 0.60           | 0.10                              | 0.21          | eDNA Data Historian          |
| W    | Verndale       | VRD-503 | 34 kV         | 8.02           | 3.33                              | 4.53          | eDNA Data Historian          |
| W    | Verndale       | VRD-510 | 34 kV         | 4.22           | 1.36                              | 2.01          | eDNA Data Historian          |
| W    | Verndale       | VRD-519 | 34 kV         | 4.53           | 0.57                              | 1.73          | eDNA Data Historian          |
| W    | Verndale       | VRD-533 | 34 kV         | 16.22          | 6.05                              | 9.17          | eDNA Data Historian          |

**NOTES**

1. Values in table are non-coincident and shouldn't be added together
2. Values represent real power loading (MW) only; apparent power loading (MVA) will generally be slightly higher
3. Daytime Minimum corresponds to minimum hourly load between 0800-1800 where available or 20% of peak load where direct data is not available
4. Except as noted, values are based on hourly load data from the MP eDNA Data Historian
5. Where possible, the effective load reduction from large-scale distribution-connected generation has been excluded

**2020 Stepdown Feeder Loading Summary**<sup>NOTE1,NOTE2</sup>

| Area | Substation            | Parent Feeder | Stepdown               | Stepdown Feeder | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup> |
|------|-----------------------|---------------|------------------------|-----------------|---------------|----------------|-----------------------------------|---------------|------------------------------|
| C    | Bear Creek            | BCR 23 LINE   | Askov                  | ASK-6521        | 12 kV         | 1.10           | 0.22                              | N/A           | Engineering Estimate         |
| C    | Mahtowa               | 59 LINE       | Barnum                 | BAR-6421        | 12 kV         | 2.04           | 0.41                              | N/A           | Line Sensor                  |
| C    | Four Corners          | FCS-214       | Caribou Lake           | CBL-214         | 12 kV         | 0.96           | 0.19                              | N/A           | Line Sensor                  |
| C    | Cloquet               | CLQ-409       | Big Lake               | CQB-6301        | 12 kV         | 1.20           | 0.24                              | N/A           | Engineering Estimate         |
| C    | Mahtowa               | 59 LINE       | Denham                 | DEN-6431        | 12 kV         | 1.90           | 0.38                              | N/A           | Line Sensor                  |
| C    | Taft                  | TFT-202       | Fredenburg             | FBG-269         | 14 kV         | 2.22           | 0.44                              | N/A           | Line Sensor                  |
| C    | Bear Creek            | 59 LINE       | Anderson Corner        | FIN-6511        | 12 kV         | 0.81           | 0.20                              | 0.46          | eDNA Data Historian (Calc)   |
| C    | LSPI                  | LSP-208       | 4th Ave West           | FOR-262         | 14 kV         | 2.60           | 0.70                              | 1.14          | eDNA Data Historian          |
| C    | LSPI                  | LSP-208       | 4th Ave West           | FOR-263         | 14 kV         | 2.90           | 0.90                              | 1.64          | eDNA Data Historian          |
| C    | Bear Creek - Hinckley | 198 LINE      | Hinckley West          | HKZ-461         | 14 kV         | 1.51           | 0.45                              | 0.76          | eDNA Data Historian (Calc)   |
| C    | Bear Creek - Hinckley | 198 LINE      | Hinckley West          | HKZ-462         | 14 kV         | 1.24           | 0.45                              | 0.76          | eDNA Data Historian (Calc)   |
| C    | Bear Creek            | BCR 23 LINE   | Kerrick                | KER-6501        | 12 kV         | 0.80           | 0.16                              | N/A           | Engineering Estimate         |
| C    | Mahtowa               | MAT-420       | Mahtowa                | MAH-6411        | 12 kV         | 1.43           | 0.29                              | N/A           | Line Sensor                  |
| C    | Scanlon               | SCH-420       | Moorhead Rd            | MHR-451         | 14 kV         | 1.30           | 0.26                              | N/A           | Line Sensor                  |
| C    | Thomson               | TMS 23 LINE   | Military Rd            | MLT-414         | 14 kV         | 2.81           | 0.13                              | 0.65          | eDNA Data Historian          |
| C    | Swan Lake             | SLA-203       | 9th Ave East           | NIN-246         | 14 kV         | 2.60           | 1.20                              | 1.63          | eDNA Data Historian          |
| C    | Swan Lake             | SLA-203       | 9th Ave East           | NIN-248         | 14 kV         | 3.80           | 1.40                              | 2.17          | eDNA Data Historian          |
| C    | Mahtowa               | MAT-420       | Olsonville East        | OLE-4471        | 4 kV          | 0.30           | 0.06                              | N/A           | Engineering Estimate         |
| C    | Mahtowa               | MAT-420       | Olsonville West        | OLW-4471        | 4 kV          | 0.30           | 0.06                              | N/A           | Engineering Estimate         |
| C    | Taft                  | TFT-202       | Pioneer Rd             | PIO-270         | 14 kV         | 3.61           | 0.72                              | N/A           | Line Sensor                  |
| C    | Four Corners          | FCS-214       | Pike Lake              | PLR-214         | 12 kV         | 0.52           | 0.10                              | N/A           | Line Sensor                  |
| C    | Scanlon               | SCH-420       | Sawyer                 | SAW-6311        | 12 kV         | 0.82           | 0.16                              | N/A           | Line Sensor                  |
| C    | Silver Bay Hillside   | SBH-271       | Silver Bay Townsite    | SBT-4301        | 4 kV          | 1.13           | 0.23                              | N/A           | Line Sensor                  |
| C    | Silver Bay Hillside   | SBH-271       | Silver Bay Townsite    | SBT-4302        | 4 kV          | 0.22           | 0.04                              | N/A           | Engineering Estimate         |
| C    | Thomson               | TMS-412       | Scanlon                | SCH-420         | 23 kV         | 2.10           | 0.70                              | 1.14          | eDNA Data Historian          |
| C    | Swan Lake             | SLA-203       | 2nd Ave East           | SND-217         | 14 kV         | 3.70           | 1.80                              | 1.32          | eDNA Data Historian          |
| C    | Swan Lake             | SLA-203       | 2nd Ave East           | SND-218         | 14 kV         | 2.40           | 0.90                              | 1.07          | eDNA Data Historian          |
| C    | Bear Creek - Hinckley | 198 LINE      | Sandstone              | SNT-452         | 12 kV         | 4.60           | 1.94                              | 2.61          | eDNA Data Historian (Calc)   |
| C    | Four Corners          | FCS-215       | Seville Rd             | SVR-215         | 12 kV         | 2.43           | 0.49                              | N/A           | Line Sensor                  |
| C    | LSPI                  | LSP-208       | 25th Ave West          | TFW-243         | 14 kV         | 3.20           | 1.10                              | 1.47          | eDNA Data Historian          |
| C    | Wrenshall             | WRN-411       | Wrenshall Riverside    | WRR-6321        | 12 kV         | 0.68           | 0.13                              | 0.35          | Line Sensor                  |
| N    | Embarrass             | EMB-317       | Aurora                 | AUN-1           | 4 kV          | 1.56           | 0.31                              | N/A           | Engineering Estimate         |
| N    | Embarrass             | EMB-317       | Aurora                 | AUN-2           | 4 kV          | 2.12           | 0.42                              | N/A           | Engineering Estimate         |
| N    | Babbitt               | 31 LINE       | Babbitt Townsite       | BAB-1           | 4 kV          | 1.64           | 0.33                              | N/A           | Line Sensor                  |
| N    | Babbitt               | 31 LINE       | Babbitt Townsite       | BAB-2           | 4 kV          | 0.40           | 0.08                              | N/A           | Line Sensor                  |
| N    | Hibbing               | HIB-310       | Balkan                 | BAL-1           | 12 kV         | 1.11           | 0.22                              | N/A           | Line Sensor                  |
| N    | Hibbing               | HIB-310       | Balkan                 | BAL-2           | 12 kV         | 0.30           | 0.06                              | N/A           | Line Sensor                  |
| N    | Embarrass             | EMB-317       | Biwabik                | BIW-1           | 12 kV         | 1.66           | 0.33                              | N/A           | Line Sensor                  |
| N    | Embarrass             | EMB-317       | Biwabik                | BIW-2           | 12 kV         | 1.94           | 0.39                              | N/A           | Engineering Estimate         |
| N    | Hibbing               | HIB-310       | Chisholm               | CHL-1           | 4 kV          | 2.30           | 0.46                              | N/A           | Line Sensor                  |
| N    | Hibbing               | HIB-310       | Chisholm               | CHL-2           | 4 kV          | 1.15           | 0.23                              | N/A           | Line Sensor                  |
| N    | Hibbing               | HIB-310       | Chisholm               | CHL-3           | 4 kV          | 1.87           | 0.37                              | N/A           | Line Sensor                  |
| N    | Lind-Greenway         | LGW-335       | Cohasset               | COA-1           | 4 kV          | 0.15           | 0.03                              | N/A           | Engineering Estimate         |
| N    | Lind-Greenway         | LGW-334       | Coleraine COE          | COE-1           | 4 kV          | 0.15           | 0.03                              | N/A           | Engineering Estimate         |
| N    | Lind-Greenway         | LGW-334       | Coleraine COF          | COF-1           | 4 kV          | 0.30           | 0.06                              | N/A           | Engineering Estimate         |
| N    | Zemple                | ZMP-337       | Deer River DRR         | DRR-2           | 4 kV          | 1.48           | 0.30                              | N/A           | Line Sensor                  |
| N    | Zemple                | ZMP-337       | Deer River DRV         | DRV-1           | 4 kV          | 0.03           | 0.01                              | N/A           | Engineering Estimate         |
| N    | Zemple                | ZMP-337       | Deer River DRW         | DRW-1           | 4 kV          | 0.03           | 0.01                              | N/A           | Engineering Estimate         |
| N    | Babbitt               | 31 LINE       | Dunka River            | DUN-1           | 4 kV          | 0.46           | 0.09                              | N/A           | Line Sensor                  |
| N    | Hat Trick             | HAT-321       | Ely Lake Olaughlin EOQ | EOQ-1           | 4 kV          | 0.05           | 0.01                              | N/A           | Engineering Estimate         |

**2020 Stepdown Feeder Loading Summary**<sup>NOTE1,NOTE2</sup>

| Area | Substation   | Parent Feeder | Stepdown               | Stepdown Feeder | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup> |
|------|--------------|---------------|------------------------|-----------------|---------------|----------------|-----------------------------------|---------------|------------------------------|
| N    | Hat Trick    | HAT-321       | Ely Lake Olaughlin EOS | EOS-1           | 4 kV          | 0.03           | 0.01                              | N/A           | Engineering Estimate         |
| N    | Hat Trick    | HAT-321       | Ely Lake Shady Lane    | ESL-1           | 4 kV          | 0.03           | 0.01                              | N/A           | Engineering Estimate         |
| N    | Hat Trick    | HAT-321       | Eveleth                | ESS-1           | 4 kV          | 2.35           | 0.47                              | N/A           | Engineering Estimate         |
| N    | Hat Trick    | HAT-321       | Eveleth                | ESS-2           | 4 kV          | 0.73           | 0.15                              | N/A           | Engineering Estimate         |
| N    | Hat Trick    | HAT-321       | Ely Lake Woodlawn Pt   | EWP-1           | 4 kV          | 0.02           | 0.00                              | N/A           | Engineering Estimate         |
| N    | Hat Trick    | HAT-321       | Half Moon Lake         | HML-1           | 4 kV          | 0.13           | 0.03                              | N/A           | Engineering Estimate         |
| N    | Laskin       | AUR-313       | Hoyt Lakes             | HYN-1           | 4 kV          | 0.56           | 0.11                              | N/A           | Line Sensor                  |
| N    | Laskin       | AUR-313       | Hoyt Lakes             | HYN-2           | 4 kV          | 1.89           | 0.38                              | N/A           | Line Sensor                  |
| N    | Virginia     | VRG-311       | Iron Bowl North        | IBN-1           | 4 kV          | 0.07           | 0.01                              | N/A           | Engineering Estimate         |
| N    | Virginia     | VRG-311       | Iron Bowl South        | IBS-1           | 4 kV          | 0.07           | 0.01                              | N/A           | Engineering Estimate         |
| N    | Virginia     | VRG-311       | Iron                   | INJ-1           | 12 kV         | 1.03           | 0.21                              | N/A           | Line Sensor                  |
| N    | Hibbing      | HIB-315       | Kelly Lake             | KLY-1           | 4 kV          | 0.56           | 0.11                              | N/A           | Line Sensor                  |
| N    | Laskin       | AUR-313       | Laskin Energy Park     | LEP-1           | 4 kV          | 0.57           | 0.11                              | N/A           | Line Sensor                  |
| N    | Nashwauk     | NAS-319       | Marble                 | MAR-1           | 4 kV          | 0.64           | 0.13                              | N/A           | Engineering Estimate         |
| N    | Hat Trick    | HAT-332       | Eveleth OHV            | OHV-1           | 4 kV          | 0.02           | 0.00                              | N/A           | Engineering Estimate         |
| N    | Nashwauk     | NAS-319       | Pengilly North         | PNN-1           | 4 kV          | 0.15           | 0.03                              | N/A           | Engineering Estimate         |
| N    | Nashwauk     | NAS-319       | Pengilly South         | PNS-1           | 4 kV          | 0.15           | 0.03                              | N/A           | Engineering Estimate         |
| N    | Hat Trick    | HAT-321       | Rural Camp Warren      | RCW-1           | 4 kV          | 0.05           | 0.01                              | N/A           | Engineering Estimate         |
| N    | Hat Trick    | HAT-321       | Rural Long Lake Rd     | RLL-1           | 4 kV          | 0.01           | 0.00                              | N/A           | Engineering Estimate         |
| N    | Winton       | 33 LINE       | St. Croix              | STC-1           | 12 kV         | 0.39           | 0.08                              | N/A           | Line Sensor                  |
| N    | Winton       | 33 LINE       | St. Croix              | STC-2           | 12 kV         | 1.35           | 0.27                              | N/A           | Line Sensor                  |
| N    | Maturi       | MTU-330       | Stuntz                 | STZ-1           | 4 kV          | 0.39           | 0.08                              | N/A           | Engineering Estimate         |
| N    | Maturi       | MTU-330       | Stuntz                 | STZ-2           | 4 kV          | 0.70           | 0.14                              | N/A           | Line Sensor                  |
| N    | Maturi       | MTU-330       | Spudville East         | SVE-1           | 4 kV          | 0.09           | 0.02                              | N/A           | Engineering Estimate         |
| N    | Maturi       | MTU-330       | Spudville West         | SVW-1           | 4 kV          | 0.26           | 0.05                              | N/A           | Line Sensor                  |
| N    | Hibbing      | HIB-308       | Stuntz Wilpen Bridge   | SWB-1           | 4 kV          | 0.20           | 0.04                              | N/A           | Engineering Estimate         |
| N    | Nashwauk     | NAS-319       | Taconite Village       | TAC-1           | 4 kV          | 0.30           | 0.06                              | N/A           | Engineering Estimate         |
| N    | Tower        | 32 LINE       | Tower Soudan           | TWN-1           | 12 kV         | 1.03           | 0.21                              | N/A           | Engineering Estimate         |
| N    | Tower        | 32 LINE       | Tower Soudan           | TWN-2           | 12 kV         | 1.67           | 0.33                              | N/A           | Line Sensor                  |
| N    | Virginia     | VRG-311       | West Eveleth Hwy 101   | WEH-1           | 4 kV          | 0.01           | 0.00                              | N/A           | Engineering Estimate         |
| W    | Akeley       | AKY-543       | Akeley Dist            | AKE-1           | 4 kV          | 1.10           | 0.22                              | N/A           | Engineering Estimate         |
| W    | Verndale     | VRD-503       | Aldrich                | ALD-1           | 4 kV          | 0.32           | 0.06                              | N/A           | Engineering Estimate         |
| W    | Birch Lake   | BLS-516       | Backus                 | BAC-1           | 12 kV         | 2.20           | 0.44                              | N/A           | Engineering Estimate         |
| W    | Long Prairie | LPR-535       | Big Bear               | BBR-1           | 12 kV         | 1.20           | 0.24                              | N/A           | Engineering Estimate         |
| W    | Eagle Valley | EGV-513       | Bertha                 | BER-1           | 12 kV         | 1.20           | 0.24                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-505       | Black Hoof Lake        | BHL-1           | 4 kV          | 1.50           | 0.30                              | N/A           | Engineering Estimate         |
| W    | Verndale     | VRD-510       | Blue Grass             | BLG-1           | 4 kV          | 0.08           | 0.02                              | N/A           | Engineering Estimate         |
| W    | Eagle Valley | EGV-517       | Browerville            | BRW-1           | 12 kV         | 3.03           | 0.61                              | N/A           | Engineering Estimate         |
| W    | Eagle Valley | EGV-517       | Browerville            | BRW-2           | 12 kV         | 3.45           | 0.69                              | N/A           | Engineering Estimate         |
| W    | Blanchard    | BLD-524       | Bowlus                 | BSD-1           | 12 kV         | 0.28           | 0.06                              | N/A           | Engineering Estimate         |
| W    | Blanchard    | BLD-524       | Bowlus                 | BSD-2           | 12 kV         | 1.25           | 0.25                              | N/A           | Line Sensor                  |
| W    | Eagle Valley | EGV-517       | Clarissa               | CLR-1           | 12 kV         | 2.20           | 0.44                              | N/A           | Engineering Estimate         |
| W    | Eagle Valley | EGV-517       | Clarissa               | CLR-2           | 12 kV         | 0.20           | 0.04                              | N/A           | Engineering Estimate         |
| W    | Blanchard    | BLD-508       | Camp Ripley Rural      | CRS-1           | 12 kV         | 1.10           | 0.22                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-505       | Crosby                 | CSB-1           | 4 kV          | 3.20           | 0.64                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-505       | Crosby                 | CSB-2           | 4 kV          | 2.40           | 0.48                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-506       | Cotton Tail Drive      | CTD-1           | 12 kV         | 0.15           | 0.03                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-506       | Cuyuna                 | CUY-1           | 4 kV          | 0.28           | 0.06                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-506       | Deerwood               | DER-1           | 12 kV         | 2.40           | 0.48                              | N/A           | Line Sensor                  |
| W    | Riverton     | RVT-506       | Deerwood               | DER-2           | 12 kV         | 1.90           | 0.38                              | N/A           | Engineering Estimate         |

2020 Stepdown Feeder Loading Summary<sup>NOTE1,NOTE2</sup>

| Area | Substation   | Parent Feeder | Stepdown                | Stepdown Feeder | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup> |
|------|--------------|---------------|-------------------------|-----------------|---------------|----------------|-----------------------------------|---------------|------------------------------|
| W    | Riverton     | RVT-506       | Deerwood Highway        | DHY-1           | 12 kV         | 2.40           | 0.48                              | N/A           | Engineering Estimate         |
| W    | Long Lake    | LNG-540       | Dorset                  | DOR-1           | 4 kV          | 0.32           | 0.06                              | N/A           | Engineering Estimate         |
| W    | Long Lake    | LNG-541       | Explorer Circle         | ECS-1           | 4 kV          | 0.15           | 0.03                              | N/A           | Engineering Estimate         |
| W    | Eagle Valley | EGV-513       | Eagle Bend              | EGB-1           | 12 kV         | 1.70           | 0.34                              | N/A           | Engineering Estimate         |
| W    | Pepin Lake   | PPL-514       | Flensburg               | FLN-1           | 12 kV         | 0.15           | 0.03                              | N/A           | Engineering Estimate         |
| W    | Pepin Lake   | PPL-514       | Flensburg               | FLN-2           | 12 kV         | 0.65           | 0.13                              | N/A           | Engineering Estimate         |
| W    | Sylvan       | SYL-502       | Fort Ripley             | FTR-1           | 4 kV          | 0.25           | 0.05                              | N/A           | Engineering Estimate         |
| W    | Pepin Lake   | PPL-539       | Grey Eagle              | GES-1           | 12 kV         | 2.05           | 0.41                              | N/A           | Engineering Estimate         |
| W    | Long Prairie | LPR-527       | Gutches Grove           | GGR-1           | 12 kV         | 2.69           | 0.54                              | N/A           | Engineering Estimate         |
| W    | Blanchard    | BLD-508       | Ginger Rd               | GIN-1           | 12 kV         | 1.34           | 0.27                              | N/A           | Line Sensor                  |
| W    | Baxter       | BAX-531       | Gull Lake               | GLL-1           | 12 kV         | 3.73           | 0.75                              | N/A           | Line Sensor                  |
| W    | Baxter       | BAX-531       | Gull Lake               | GLL-2           | 12 kV         | 1.72           | 0.34                              | N/A           | Line Sensor                  |
| W    | Birch Lake   | BLS-509       | Hackensack              | HCS-1           | 12 kV         | 1.48           | 0.30                              | N/A           | Engineering Estimate         |
| W    | Verndale     | VRD-519       | Hewitt                  | HEW-1           | 12 kV         | 0.70           | 0.14                              | N/A           | Engineering Estimate         |
| W    | Baxter       | BAX-531       | Hole in the Day         | HID-11          | 12 kV         | 1.26           | 0.25                              | N/A           | Line Sensor                  |
| W    | Long Prairie | LPR-535       | Harts Press             | HPS-1           | 12 kV         | 0.51           | 0.10                              | N/A           | Line Sensor                  |
| W    | Hubbard      | HBB-523       | Hubbard Dist            | HUB-1           | 12 kV         | 0.33           | 0.07                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-505       | Ironton                 | IRN-1           | 4 kV          | 0.46           | 0.09                              | N/A           | Engineering Estimate         |
| W    | Pine River   | PNV-549       | Jenkins                 | JKS-1           | 12 kV         | 0.55           | 0.11                              | N/A           | Engineering Estimate         |
| W    | Long Prairie | LPR-535       | Lake Charlotte          | LCH-1           | 12 kV         | 0.65           | 0.13                              | N/A           | Engineering Estimate         |
| W    | Little Falls | LFL-529       | Little Falls East Side  | LFE-1           | 12 kV         | 1.79           | 0.36                              | N/A           | Line Sensor                  |
| W    | Little Falls | LFL-529       | Little Falls Hospital   | LFG-1           | 4 kV          | 1.57           | 0.31                              | N/A           | Engineering Estimate         |
| W    | Little Falls | LFL-529       | Little Falls South Side | LFS-1           | 4 kV          | 0.51           | 0.10                              | N/A           | Engineering Estimate         |
| W    | Little Falls | LFL-525       | Little Falls West Side  | LFW-1           | 4 kV          | 1.96           | 0.39                              | N/A           | Line Sensor                  |
| W    | Little Falls | LFL-525       | Little Falls West Side  | LFW-2           | 12 kV         | 1.98           | 0.40                              | N/A           | Line Sensor                  |
| W    | Long Lake    | LNG-541       | Long Lake Park Rapids   | LGL-1           | 4 kV          | 0.75           | 0.15                              | N/A           | Engineering Estimate         |
| W    | Long Prairie | LPR-501       | Long Prairie Rural      | LGP-1           | 12 kV         | 0.81           | 0.16                              | N/A           | Engineering Estimate         |
| W    | Pepin Lake   | PPL-514       | Long Lake Stepdown      | LLK-1           | 12 kV         | 0.72           | 0.14                              | N/A           | Engineering Estimate         |
| W    | Baxter       | BAX-534       | Lynch Lake              | LNL-1           | 12 kV         | 0.20           | 0.04                              | N/A           | Engineering Estimate         |
| W    | Long Prairie | LPR-527       | Long Prairie Dist       | LPD-1           | 4 kV          | 2.56           | 0.51                              | N/A           | Engineering Estimate         |
| W    | Long Prairie | LPR-527       | Long Prairie Dist       | LPD-2           | 4 kV          | 0.58           | 0.12                              | N/A           | Engineering Estimate         |
| W    | Long Prairie | LPR-535       | Long Prairie North      | LPN-1           | 12 kV         | 0.05           | 0.01                              | N/A           | Engineering Estimate         |
| W    | Hubbard      | HBB-523       | Menahga                 | MEN-1           | 12 kV         | 0.54           | 0.11                              | N/A           | Engineering Estimate         |
| W    | Dog Lake     | DOG-503       | Motley                  | MOT-1           | 12 kV         | 1.70           | 0.34                              | N/A           | Engineering Estimate         |
| W    | Dog Lake     | DOG-503       | Motley                  | MOT-2           | 12 kV         | 0.52           | 0.10                              | N/A           | Engineering Estimate         |
| W    | Long Lake    | LNG-541       | Mud Lake Stepdown       | MSD-1           | 4 kV          | 0.07           | 0.01                              | N/A           | Engineering Estimate         |
| W    | Akeley       | AKY-544       | Nevis                   | NEV-1           | 4 kV          | 1.63           | 0.33                              | N/A           | Engineering Estimate         |
| W    | Pequot Lakes | PQT-531       | Nisswa Pumping Station  | NPS-1           | 12 kV         | 1.95           | 0.39                              | N/A           | Line Sensor                  |
| W    | Pequot Lakes | PQT-531       | Nisswa                  | NSW-1           | 12 kV         | 1.69           | 0.34                              | N/A           | Line Sensor                  |
| W    | Pequot Lakes | PQT-531       | Nisswa                  | NSW-2           | 12 kV         | 3.38           | 0.68                              | N/A           | Line Sensor                  |
| W    | Little Falls | LFL-525       | Little Falls North Side | NTH-1           | 12 kV         | 0.85           | 0.17                              | N/A           | Engineering Estimate         |
| W    | Little Falls | LFL-525       | Little Falls North Side | NTH-2           | 12 kV         | 0.15           | 0.03                              | N/A           | Engineering Estimate         |
| W    | Pequot Lakes | PQT-531       | Northwest Gull Lake     | NWG-1           | 12 kV         | 0.82           | 0.16                              | N/A           | Line Sensor                  |
| W    | Pequot Lakes | PQT-531       | Northwest Gull Lake     | NWG-2           | 12 kV         | 1.39           | 0.28                              | N/A           | Line Sensor                  |
| W    | Baxter       | BAX-534       | Pillager Dist           | PIL-1           | 12 kV         | 0.30           | 0.06                              | N/A           | Engineering Estimate         |
| W    | Long Lake    | LNG-542       | Park Rapids Dist #2     | PKD-1           | 4 kV          | 2.13           | 0.43                              | N/A           | Engineering Estimate         |
| W    | Long Lake    | LNG-542       | Park Rapids Dist #1     | PKR-1           | 4 kV          | 2.61           | 0.52                              | N/A           | Engineering Estimate         |
| W    | Baxter       | BAX-534       | Pine Beach              | PNB-1           | 12 kV         | 1.43           | 0.29                              | N/A           | Line Sensor                  |
| W    | Baxter       | BAX-534       | Pine Beach              | PNB-2           | 12 kV         | 1.50           | 0.30                              | N/A           | Engineering Estimate         |
| W    | Pine River   | PNV-550       | Pine River Dist         | PNR-1           | 12 kV         | 1.70           | 0.34                              | N/A           | Engineering Estimate         |

**2020 Stepdown Feeder Loading Summary**<sup>NOTE1,NOTE2</sup>

| Area | Substation   | Parent Feeder | Stepdown             | Stepdown Feeder | Voltage Class | Peak Load (MW) | Daytime Min (MW) <sup>NOTE3</sup> | Avg Load (MW) | Data Source <sup>NOTE4</sup> |
|------|--------------|---------------|----------------------|-----------------|---------------|----------------|-----------------------------------|---------------|------------------------------|
| W    | Pine River   | PNV-550       | Pine River Dist      | PNR-2           | 12 kV         | 1.50           | 0.30                              | N/A           | Engineering Estimate         |
| W    | Pequot Lakes | PQT-507       | Pequot Lakes Dist    | PQL-1           | 12 kV         | 3.40           | 0.68                              | N/A           | Engineering Estimate         |
| W    | Pequot Lakes | PQT-507       | Pequot Lakes Dist    | PQL-2           | 12 kV         | 3.34           | 0.67                              | N/A           | Line Sensor                  |
| W    | Long Lake    | LNG-541       | Park Rapids Hospital | PRH-1           | 4 kV          | 0.61           | 0.12                              | N/A           | Engineering Estimate         |
| W    | Little Falls | LFL-526       | Pierz-Genola         | PZG-1           | 12 kV         | 2.83           | 0.57                              | N/A           | Line Sensor                  |
| W    | Little Falls | LFL-526       | Pierz-Genola         | PZG-2           | 12 kV         | 1.57           | 0.31                              | N/A           | Line Sensor                  |
| W    | Pequot Lakes | PQT-531       | Round Lake           | RDL-1           | 12 kV         | 0.80           | 0.16                              | N/A           | Engineering Estimate         |
| W    | Pequot Lakes | PQT-531       | Round Lake           | RDL-2           | 12 kV         | 1.61           | 0.32                              | N/A           | Line Sensor                  |
| W    | Platte River | PLA-547       | Rice                 | RIC-1           | 12 kV         | 1.34           | 0.27                              | N/A           | Engineering Estimate         |
| W    | Blanchard    | BLD-511       | Royalton             | ROY-1           | 12 kV         | 2.02           | 0.40                              | N/A           | Line Sensor                  |
| W    | Blanchard    | BLD-511       | Royalton             | ROY-2           | 12 kV         | 0.40           | 0.08                              | N/A           | Engineering Estimate         |
| W    | Little Falls | LFL-526       | Rich Prairie         | RPR-1           | 12 kV         | 0.89           | 0.18                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-532       | Riverton Dist        | RVD-1           | 12 kV         | 0.47           | 0.09                              | N/A           | Engineering Estimate         |
| W    | Blueberry    | BLU-552       | Sebeka Nimrod        | SEB-1           | 12 kV         | 1.75           | 0.35                              | N/A           | Engineering Estimate         |
| W    | Blueberry    | BLU-552       | Spirit Lake          | SLS-1           | 12 kV         | 2.40           | 0.48                              | N/A           | Engineering Estimate         |
| W    | Pine River   | PNV-549       | South Pine River     | SPR-1           | 12 kV         | 1.56           | 0.31                              | N/A           | Engineering Estimate         |
| W    | Dog Lake     | DOG-503       | Staples Rural        | STR-1           | 12 kV         | 0.28           | 0.06                              | N/A           | Engineering Estimate         |
| W    | Pepin Lake   | PPL-514       | Swanville            | SWN-1           | 12 kV         | 2.27           | 0.45                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-530       | Sylvan Dist          | SYN-1           | 12 kV         | 0.30           | 0.06                              | N/A           | Engineering Estimate         |
| W    | Birch Lake   | BLS-509       | Tenmile Lake         | TML-1           | 12 kV         | 1.14           | 0.23                              | N/A           | Engineering Estimate         |
| W    | Riverton     | RVT-506       | Trommald             | TRM-1           | 4 kV          | 0.14           | 0.03                              | N/A           | Engineering Estimate         |
| W    | Blanchard    | BLD-524       | Upsala               | UPS-1           | 12 kV         | 0.80           | 0.16                              | N/A           | Engineering Estimate         |
| W    | Blanchard    | BLD-524       | Upsala               | UPS-2           | 12 kV         | 0.75           | 0.15                              | N/A           | Engineering Estimate         |
| W    | Verndale     | VRD-510       | Verndale Dist        | VND-1           | 4 kV          | 1.22           | 0.24                              | N/A           | Engineering Estimate         |
| W    | Akeley       | AKY-543       | Walker #1            | WAK-1           | 12 kV         | 3.37           | 0.67                              | N/A           | Line Sensor                  |
| W    | Akeley       | AKY-543       | Walker #2            | WBK-1           | 12 kV         | 3.47           | 0.69                              | N/A           | Line Sensor                  |
| W    | Akeley       | AKY-543       | Walker Wye           | WYE-1           | 12 kV         | 0.70           | 0.14                              | N/A           | Engineering Estimate         |

**NOTES**

1. Values in table are non-coincident and shouldn't be added together
2. Values represent real power loading (MW) only; apparent power loading (MVA) will generally be slightly higher
3. Daytime Minimum corresponds to minimum hourly load between 0800-1800 where available or 20% of peak load where direct data is not available
4. Except as noted, values are based on hourly load data from the MP eDNA Data Historian