Power Lines and Sage-Grouse

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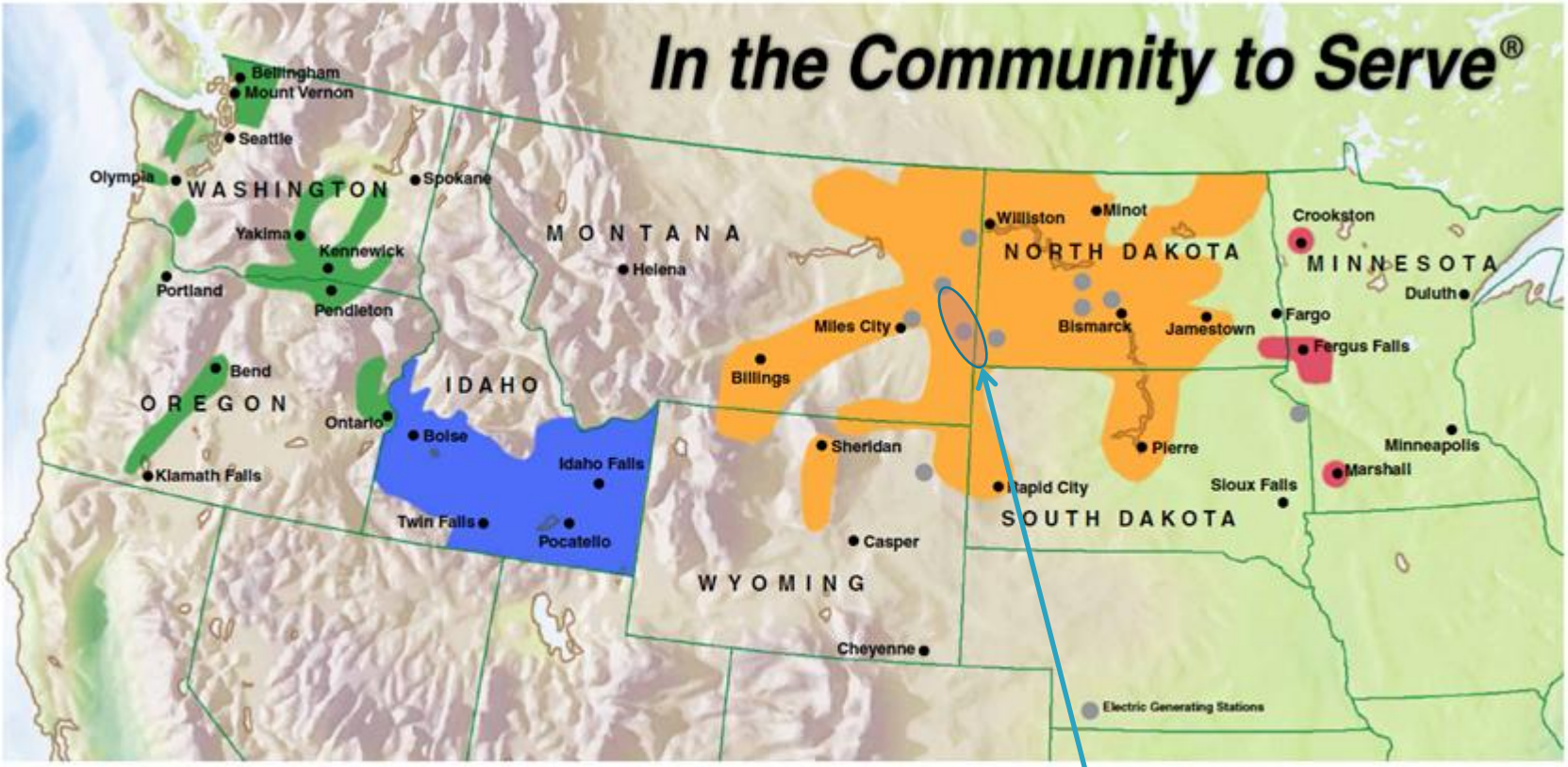
- A division of MDU Resources Group, Inc.
- Electric and gas distribution, electric transmission and generation
- Montana-Dakota's customers:

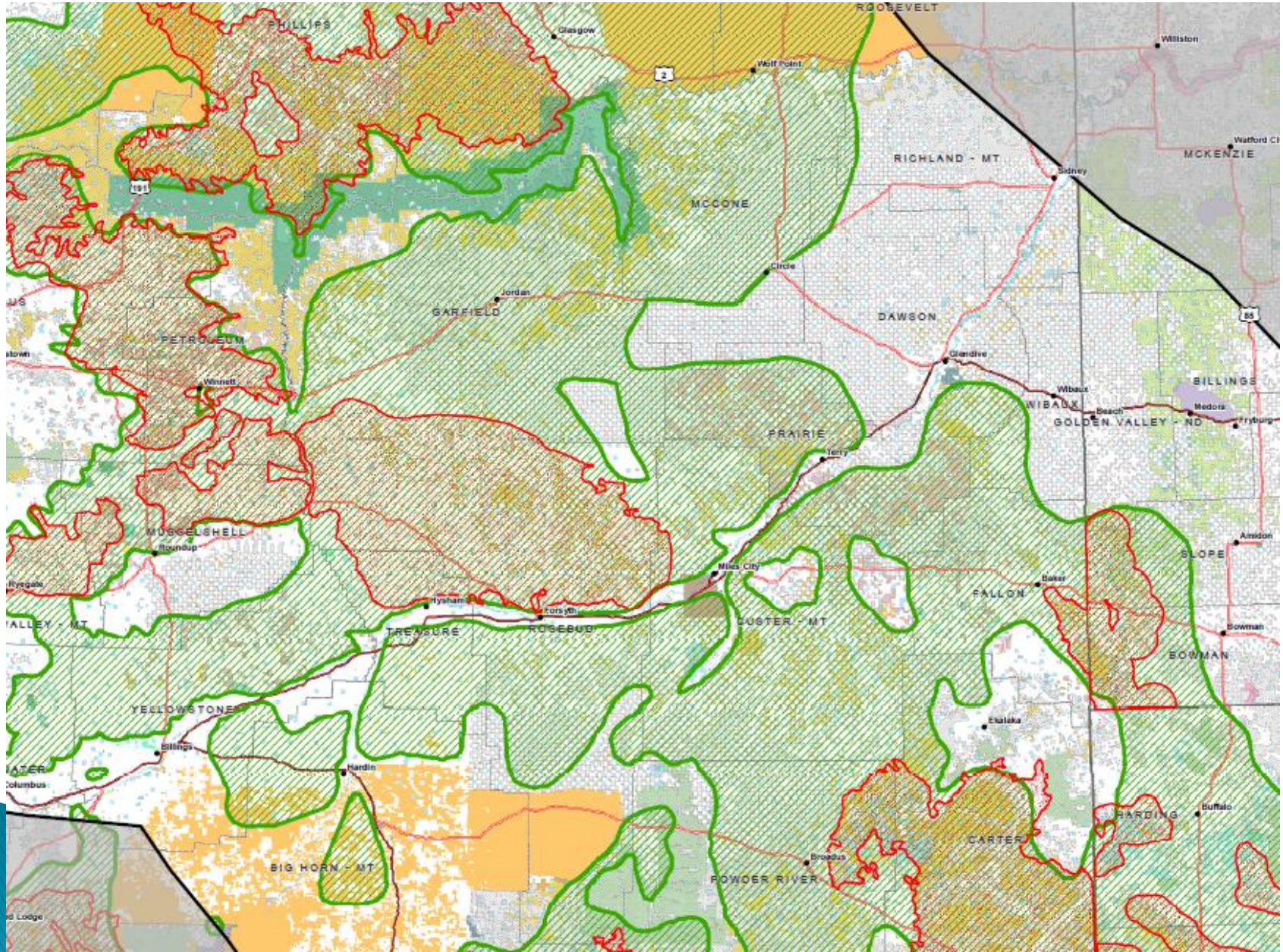
	Total	Electric	Gas	Combination (gas and electric)
All Customers	311,564	179,031	59,286	73,247
Montana Customers	89,511	64,241	9,495	15,775

Montana Dakota Service Area



Predominant area where Montana-Dakota infrastructure overlaps sage-grouse habitat

BLM Sage-Grouse Habitat Maps
Red hash shows PACs and green hash shows sage-grouse distribution



Montana-Dakota Infrastructure

	Transmission Overhead	Distribution Overhead	Distribution Underground	Gas Distribution Main
Total Company	3,063 miles	2,693 miles	1,500 miles	6,400 miles
Montana	627 miles	818 miles	294 miles	1,634 miles

- Also have:
  - Electric substations
  - Gas town/border stations
  - Gas service lines
  - ~ 5 miles of gas transmission in MT
  - Communication towers
  - Electric generating facilities
  - Services centers
  - No underground electric transmission in MT

Working Together with Agencies

- Montana-Dakota has been a member of Avian Power Line Interaction Committee (APLIC) since 2012
- Have worked with agencies to address power line avian mortality concerns
- Avian Protection Plan (APP)
  - Addresses electrocution and collision mortality concerns
  - Prioritize and conduct reviews of existing distribution line for electrocutions/collisions concerns and apply retrofits
  - Osprey nesting platforms
  - Sage-grouse issues are new to Montana-Dakota and we have been working with APLIC and other utilities to assess impacts and develop best management practices that can be incorporated into our APP

Electrocution Prevention Retrofits

- Make retrofits where we have had documented electrocution mortality
- Make retrofits according to findings during line patrols or where mortality patterns emerge
  - Forsyth
  - Wolf Point
  - Miles City

Miles City and Hathaway Osprey

Osprey Nest

Nest Deterrent

Nest Platform

Potential Sage-Grouse Conservation and Power Lines

Conservation Measure Considerations

- Recommend continuation of current scientific studies such as these to help determine power line impacts and appropriate conservation measures
  - 10 Year Study of 345 kV Falcon to Gondor line in Nevada
  - LeBeau et al. 2012
  - GIS mapping of existing lines and historic lek use studies

Potential Conservation Measures

- Siting New Line
  - Distance buffers – set distance or case-by-case?
    - Consider available topographical screening of line from leks
  - Noise should not be a concern significant concern for lines in place
  - Power lines have small permanent footprint of ~10 sqft per pole disturbance

Potential Conservation Measures

- Siting New Line (cont.)
  - Co-locate with existing infrastructure as feasible
    - Ie. roads, industry, other power line
    - Outage simulations which show potential North American Energy Reliability Corporation violations could occur would preclude co-location of lines

Potential Conservation Measures

- Siting New Line (cont.)
  - Marking for collisions
    - Further study recommended to determine if marking reduces mortality impacts
  - Underground
    - Transmission line is a minimum of 10 times cost of overhead
    - Increased maintenance costs due to limited access
    - Distribution may be possible depending on terrain/feasibility
    - More habitat disturbance

Potential Conservation Measures

- Siting New Line (cont.)
  - Perch deterrents to prevent raptor prey use?
    - Most deterrents still allow perching and can increase chances of nest building

Potential Conservation Measures

- Construction
  - Construction feasibility should be considered when line is sited
  - Construction timing to avoid sensitive use of habitats
    - ie. Lek use and nesting from March 1 to June 15)
  - Noise/distance buffer from leks – set distance or case-by case?
  - Use sagebrush and native grasses seed mix for reclamation

Potential Conservation Measures

- Existing Line
  - Recommend no reroutes or underground requirements for existing line
  - Perch deterrents to prevent raptor prey use?
  - Raptor/raven nest removals?
    - Balance between protections provided for sage-grouse and eagles/migratory birds. Can permit approvals be accelerated to remove eagle or raven nests for sage-grouse protection?

Potential Conservation Measures

- Ongoing Maintenance and Operation
  - Ground disturbing activity is minimal
    - Avoid permanent damage to sagebrush
  - Schedule to avoid most sensitive habitat use
  - Line rebuilds or maintenance requiring ground disturbance should apply the measures under Construction in consideration of most sensitive habitat use

Potential Conservation Measures

- Emergency maintenance – no restrictions recommended
  - Usually short duration, minimal disturbance

Thank you for allowing us to participate!

Questions?