

Lein, Jerry R.

From: Jim Atkinson (ALLETE) [jbatkinson@allete.com]
Sent: Monday, July 20, 2009 3:38 PM
To: Lein, Jerry R.
Subject: Fw: Bison 1 wind farm
Attachments: Figure1a_WAPAMicrowaveMap.pdf

Jerry. As you can see from the attached map, Bison I is not in the beam path of the referenced towers. Future phases will need to account for them.

Thanks.
Sent from Jim Atkinson's wireless e-mail device

----- Original Message -----

From: Moreira Bruce B. <Bruce.Moreira@hdrinc.com>
To: David Moeller (ALLETE); Jim Atkinson (ALLETE); Ron Gullicks (MP)
Cc: Mattson, Todd <Todd.Mattson@hdrinc.com>
Sent: Mon Jul 20 15:14:06 2009
Subject: RE: Bison 1 wind farm

Here are the locations of the Western Microwave Towers. I double checked the coordinates and they line up with a signature on the aerials that looks like it is a microwave tower (i.e. a structure on a highpoint of land with a road leading up to it). The beam path connecting the three towers does not intersect Phase 1 of the Bison wind farm. When you move to Phases 2 and above, you will likely have to deal with the beam path.

I can provide this data to EAPC if needed.

Bruce Moreira

-----Original Message-----

From: David Moeller (ALLETE) [mailto:dmoeller@allete.com]
Sent: Monday, July 20, 2009 2:03 PM
To: Moreira Bruce B.
Subject: FW: Bison 1 wind farm

-----Original Message-----

From: Jim Atkinson (ALLETE)
Sent: Monday, July 20, 2009 8:59 AM
To: 'Lein, Jerry R.'; David Moeller (ALLETE)
Cc: THURN@wapa.gov; Hamre, John G.; Marquart, Janet R.
Subject: RE: Bison 1 wind farm

Thanks Jerry.

I'll make sure this is thoroughly investigated.

Jim Atkinson

ALLETE, Inc.
30 W Superior St
Duluth, MN 55802

Office: 218.355.3561

17 **PU-09-151** Filed: 7/20/2009 Pages: 3
Email WAPA Information Forwarding re. Microwave
Tower Locations

Fax: 218.723.3916
Cell: 218.343.9119

jbatkinson@allete.com

-----Original Message-----

From: Lein, Jerry R. [mailto:jlein@nd.gov]
Sent: Monday, July 20, 2009 8:45 AM
To: David Moeller (ALLETE); Jim Atkinson (ALLETE)
Cc: THURN@wapa.gov; Hamre, John G.; Marquart, Janet R.
Subject: FW: Bison 1 wind farm

David and Jim - Forwarding WAPA microwave information regarding the Bison I project. Please contact Lyle Thurn below. Thanks.

Jerry Lein
701 328-1035

-----Original Message-----

From: Lyle Thurn [mailto:THURN@wapa.gov]
Sent: Sunday, July 19, 2009 2:48 PM
To: Marquart, Janet R.
Subject: Bison 1 wind farm

Janet

Western Area Power has a microwave tower inside the area shaded for the windfarm. Our radio paths for microwave may be affected by placement of the towers. I'll give the coordinates of the sites and antenna elevations. I ask that unobstructed air clearance for the paths point to point, with a cylinder of 70' radius be kept clear of towers and rotors.

Custer Lookout, antenna 2690 AMSL, latitude 46° 50' 55.5" Longitude 102° 10' 14.5"

Hailstone Butte, antenna 2489 AMSL, latitude 46° 54' 47.4" Longitude 101° 40' 30.3"

and again

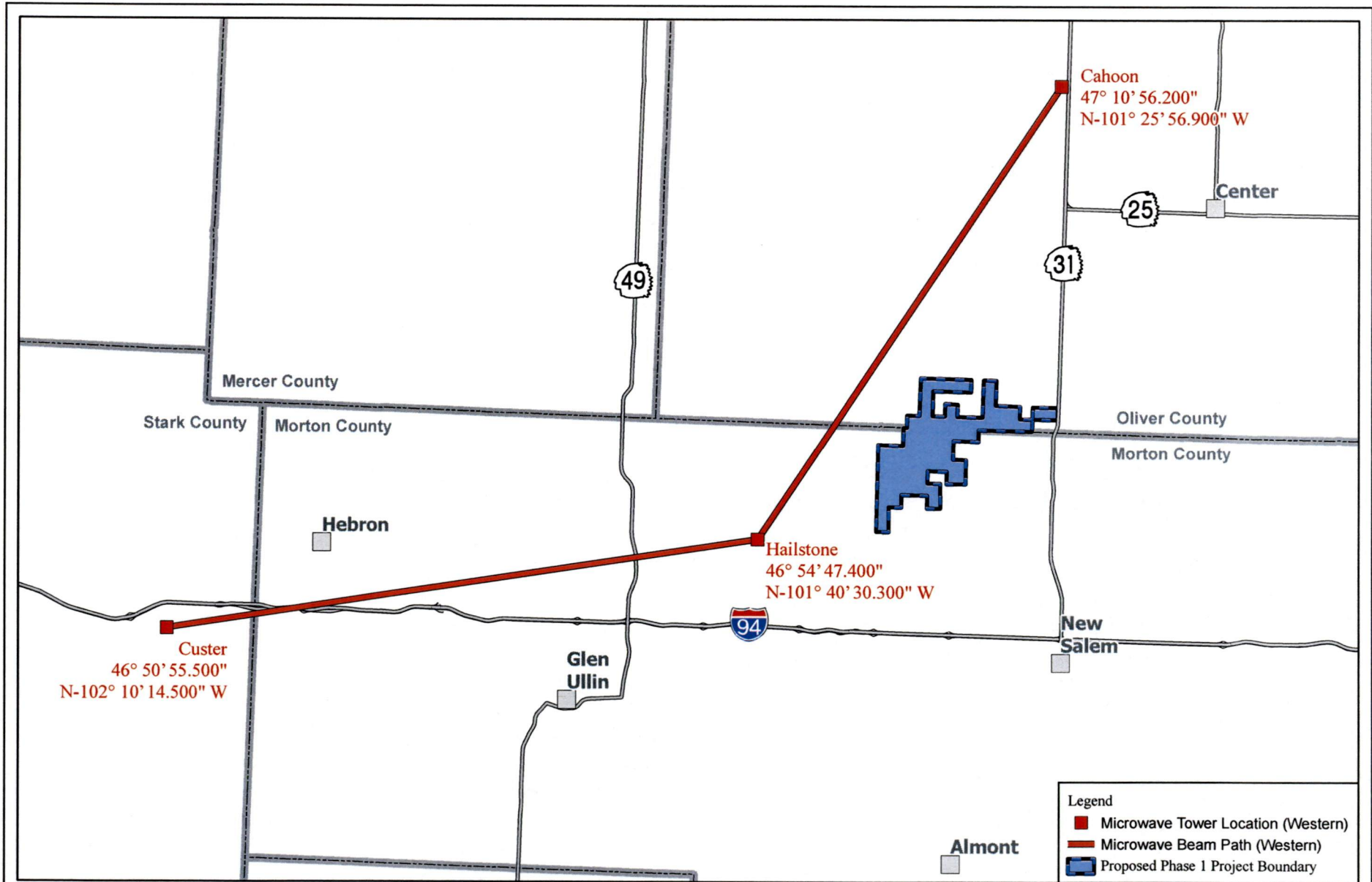
Hailstone Butte, antenna 2499 AMSL, latitude 46° 54' 47.4" Longitude 101° 40' 30.3"

Cahoon Repeater, antenna 2395 AMSL, latitude 47° 10' 56.2" Longitude 101° 25' 56.9"

Lyle

Lyle Thurn
Western Area Power Administration
PO Box 1173
707 N Bismarck Expressway
Bismarck, ND 58502-1173
phn (701)221-4540
fax (701)221-4526

Map Document: (\\msps-gis-file\GISProj\MinPower\106316\map_docs\mxd\WindApplication\Figures\Figure 1a_WAPAMicrowaveMap.mxd) 7/26/2009 3:02:47 PM



HDR



Figure 1a: Western Area Power Microwave Tower Locations
Bison I Wind Project
Minnesota Power
Morton & Oliver Counties, ND