



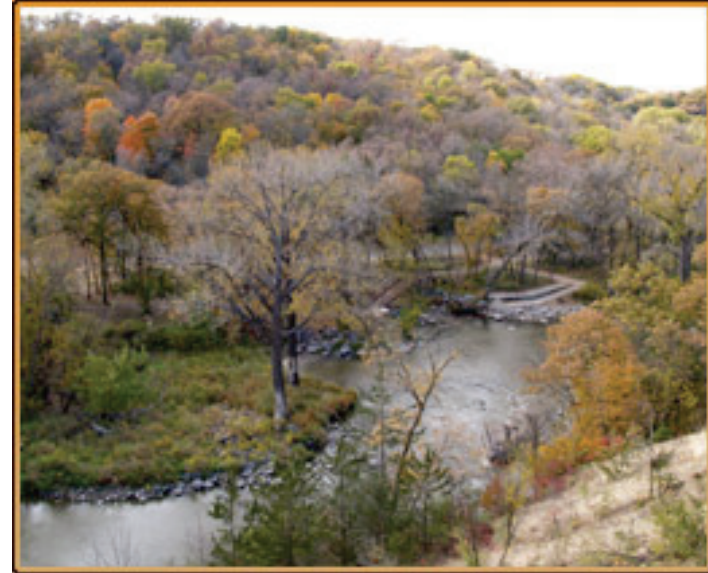
Lower Sioux Wind Feasibility and Development

DOE Tribal Energy Program Review

November 2009

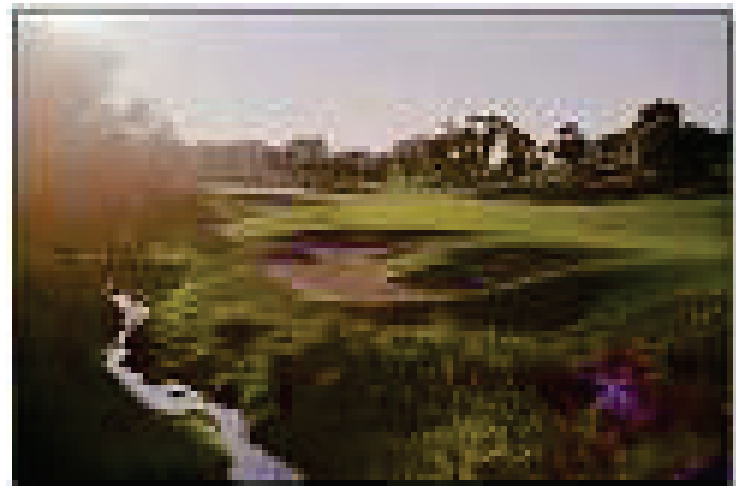
Lower Sioux Indian Community

- 930-member community located on the southern bank of the Minnesota River in South Central Minnesota
- Part of the Mdewakanton Band of Dakota; organized under the 1934 Indian Reorganization Act
- Half of the population lives on the 1743-acre reservation
- Five-member Lower Sioux Community Council



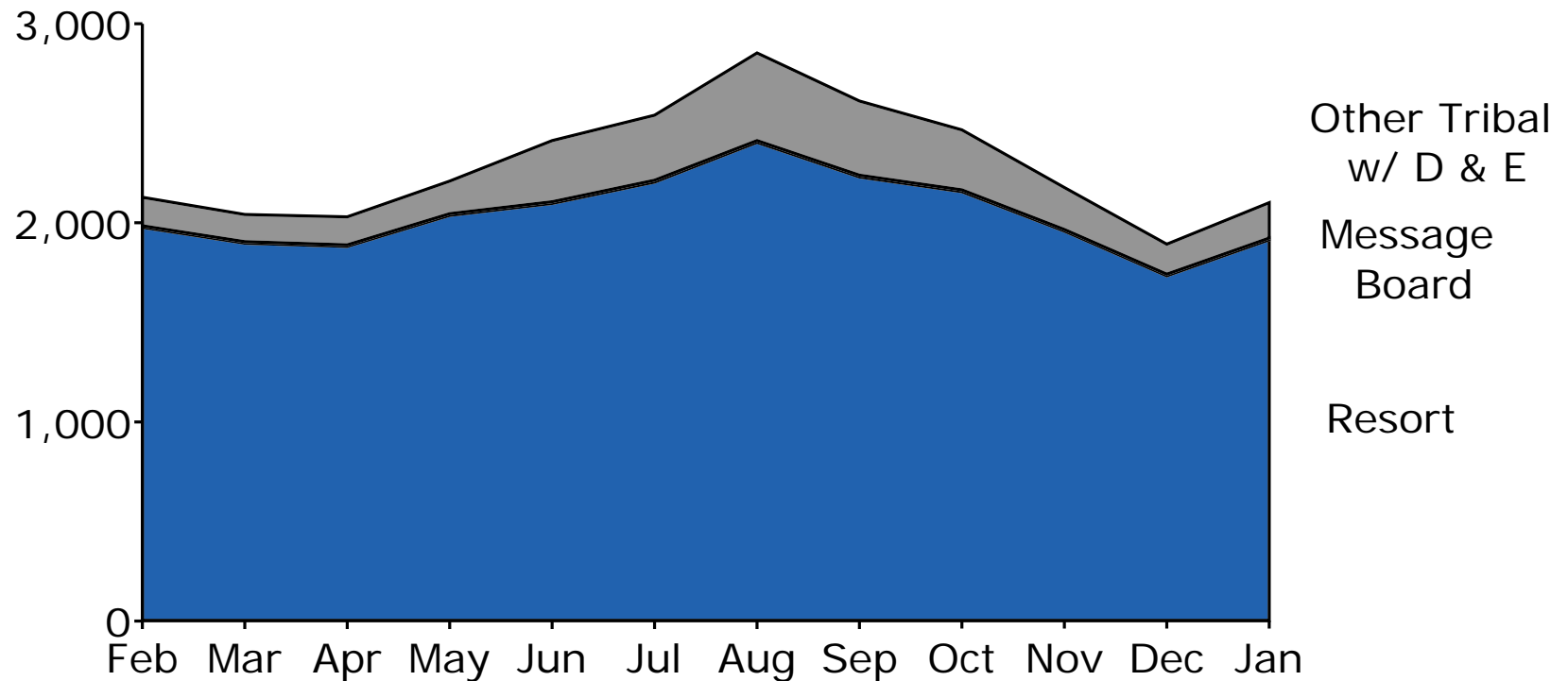
Lower Sioux Enterprises

- Jackpot Junction Casino
- Lower Sioux Lodge
- Dacotah Exposition Center and Amphitheater
- Dacotah Ridge Golf Club
- Dakota Futures, Inc.



Dakota Futures Power Demand

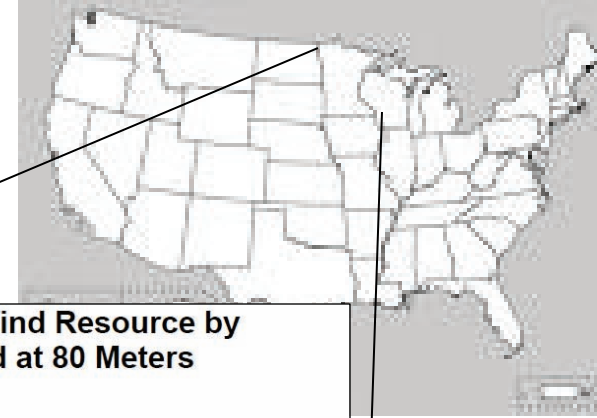
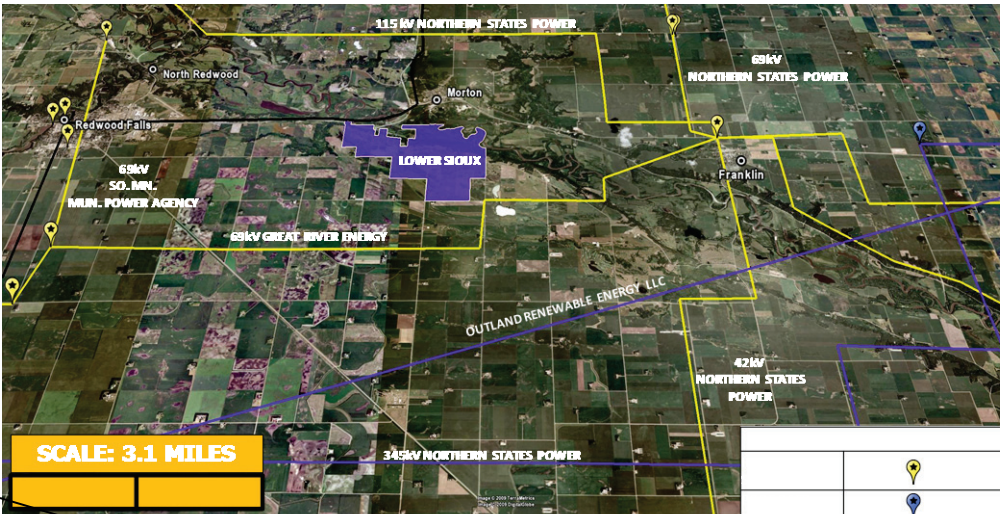
Power Demand in kW



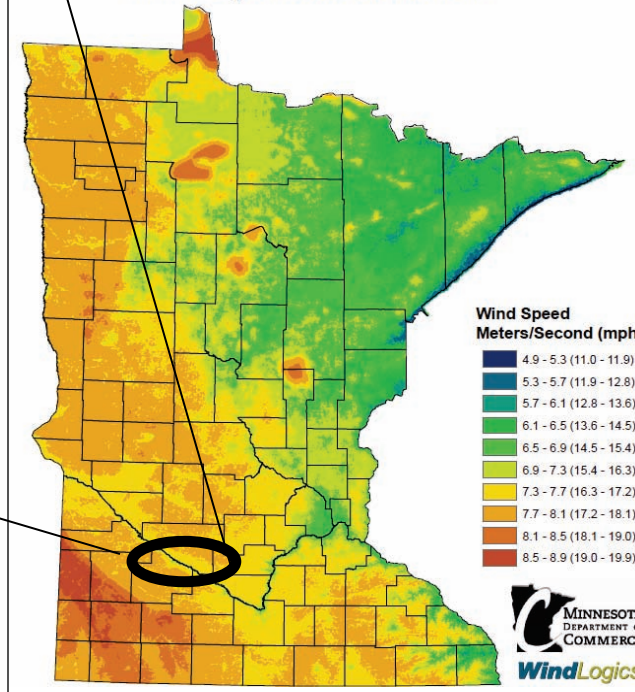
2008 - 2009



Project Location



Minnesota's Wind Resource by Wind Speed at 80 Meters



Lower Sioux Wind Interests

- Wind monitored at four locations in 1995-7 with EPA funding
- Unclear whether monitoring sites were optimal
- 20 kW (Jacobs?) demonstration turbine installed in 1999
- Wind turbine no longer operating, and significant cost involved in repairing/ refurbishing the turbine
- Significant community interest in wind at facility-, community- and commercial-scale



Lower Sioux Community Energy Goals

- Provide cleaner and more environmentally safe energy resources for the tribal reservation by installing several wind turbines throughout the Lower Sioux Indian Community
- Sell off excess power to the grid or more specifically to adjacent power companies
- Lower the cost of energy to local businesses and homeowners in the Lower Sioux Indian Community
- Provide new employment opportunities

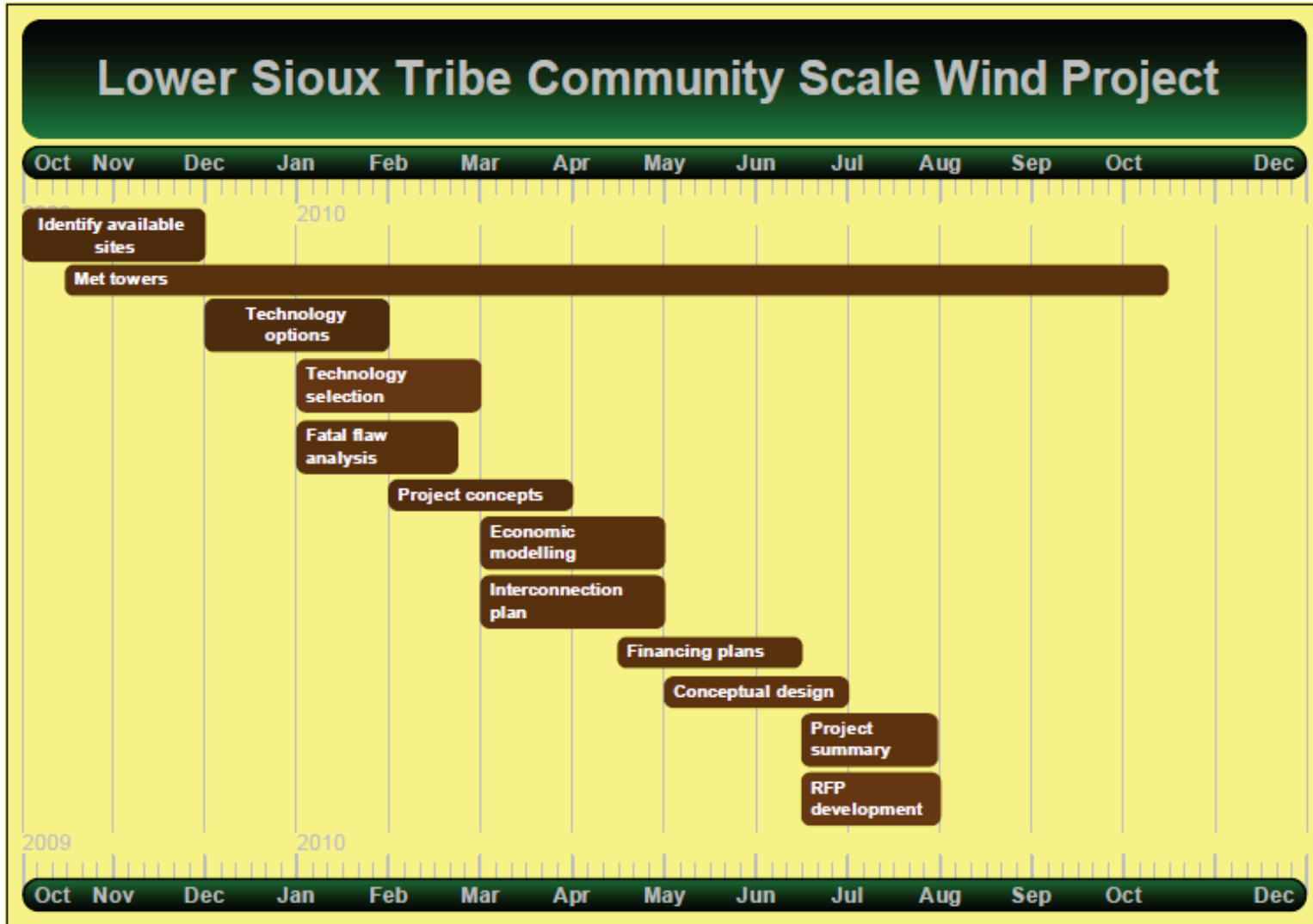


Objectives

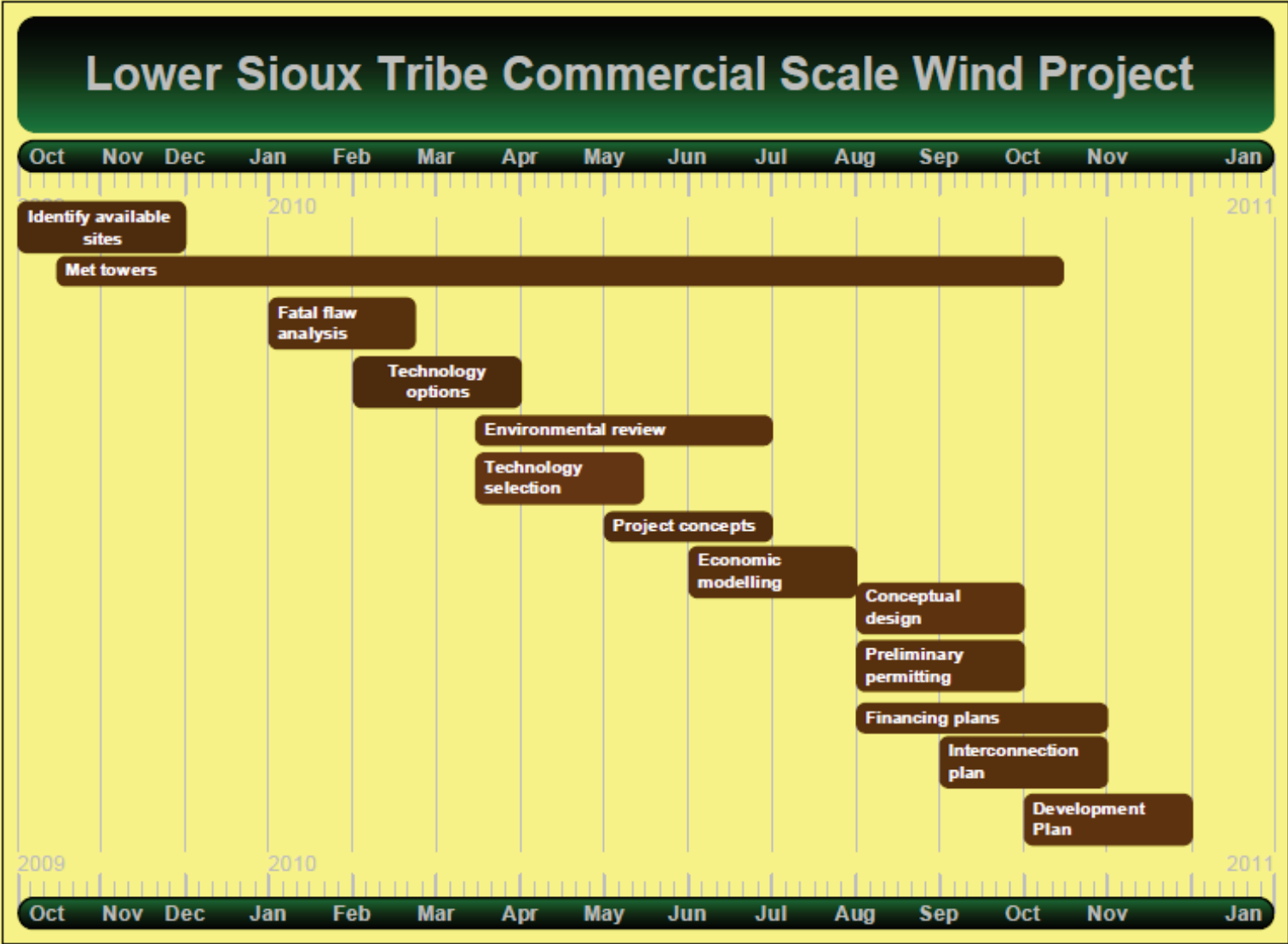
- Develop a single turbine wind energy project to serve the Lower Sioux Indian Community, on the Lower Sioux Indian Reservation, within two years
- Develop a larger, multi-turbine wind energy project to provide power to be sold on the grid within four years



Phase 1 – Facility/Community Scale



Phase 2 – Commercial Scale Wind



Project Participants

- Lower Sioux Green Energy Team
 - Darin Minkel, Interim DFI President
 - Lower Sioux Council representative
 - Lower Sioux Environmental staff
 - Dakota Futures Board members
- Red Mountain Energy Partners
- Stantec



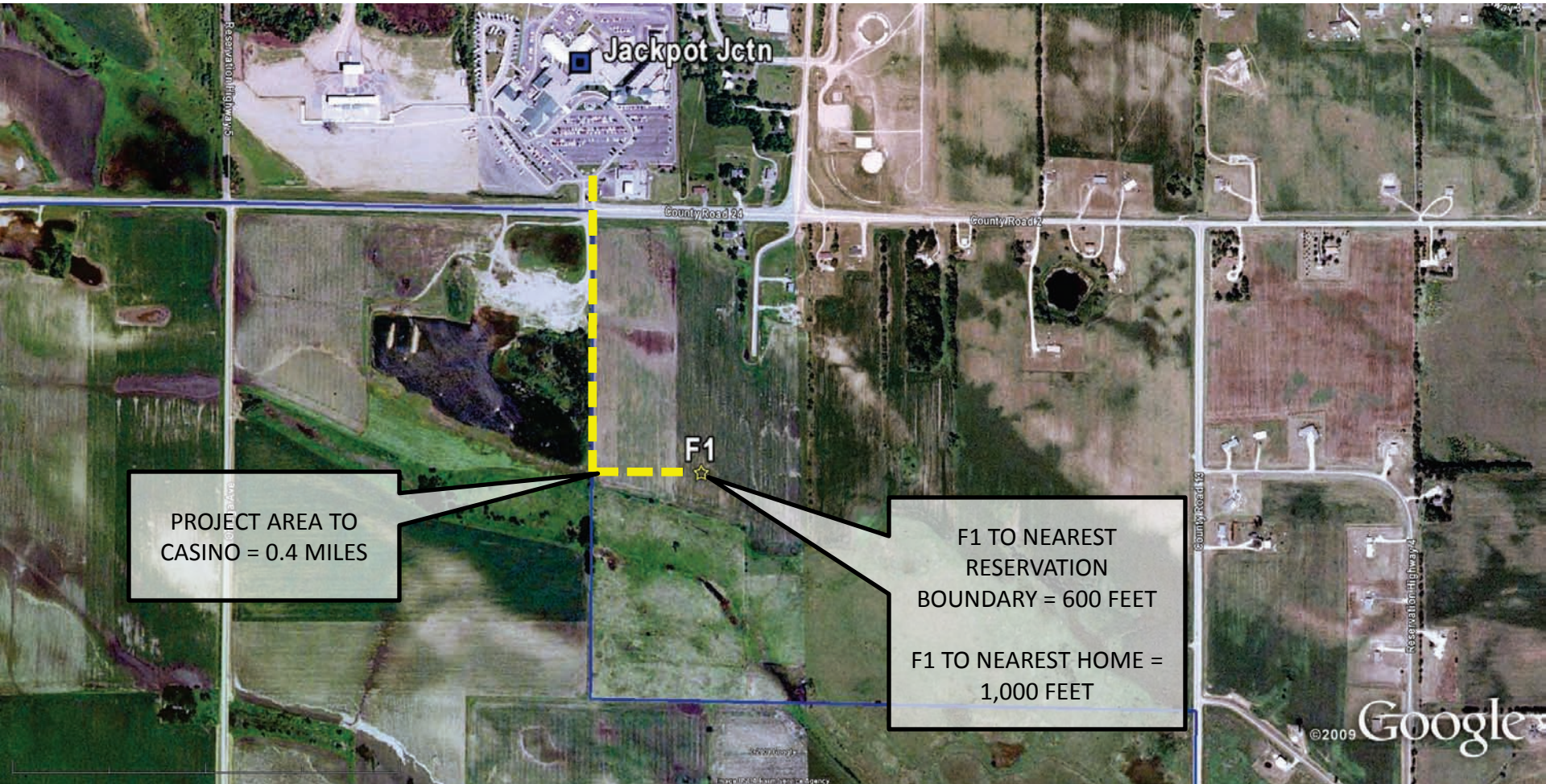
Project Activities to Date

- Project Team Kick-off and Site Visit
- Evaluated Met Tower Locations
- Identified Met Tower Installation Contractors
- Requested Met Tower Environmental Clearances



FACILITY-SCALE PROJECT AREA

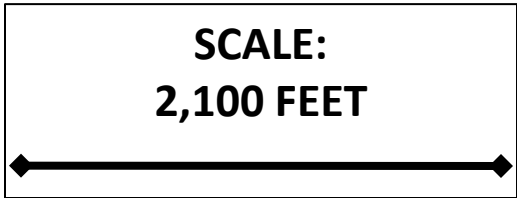
MET TOWER SITES: F1



PROJECT AREA TO CASINO = 0.4 MILES

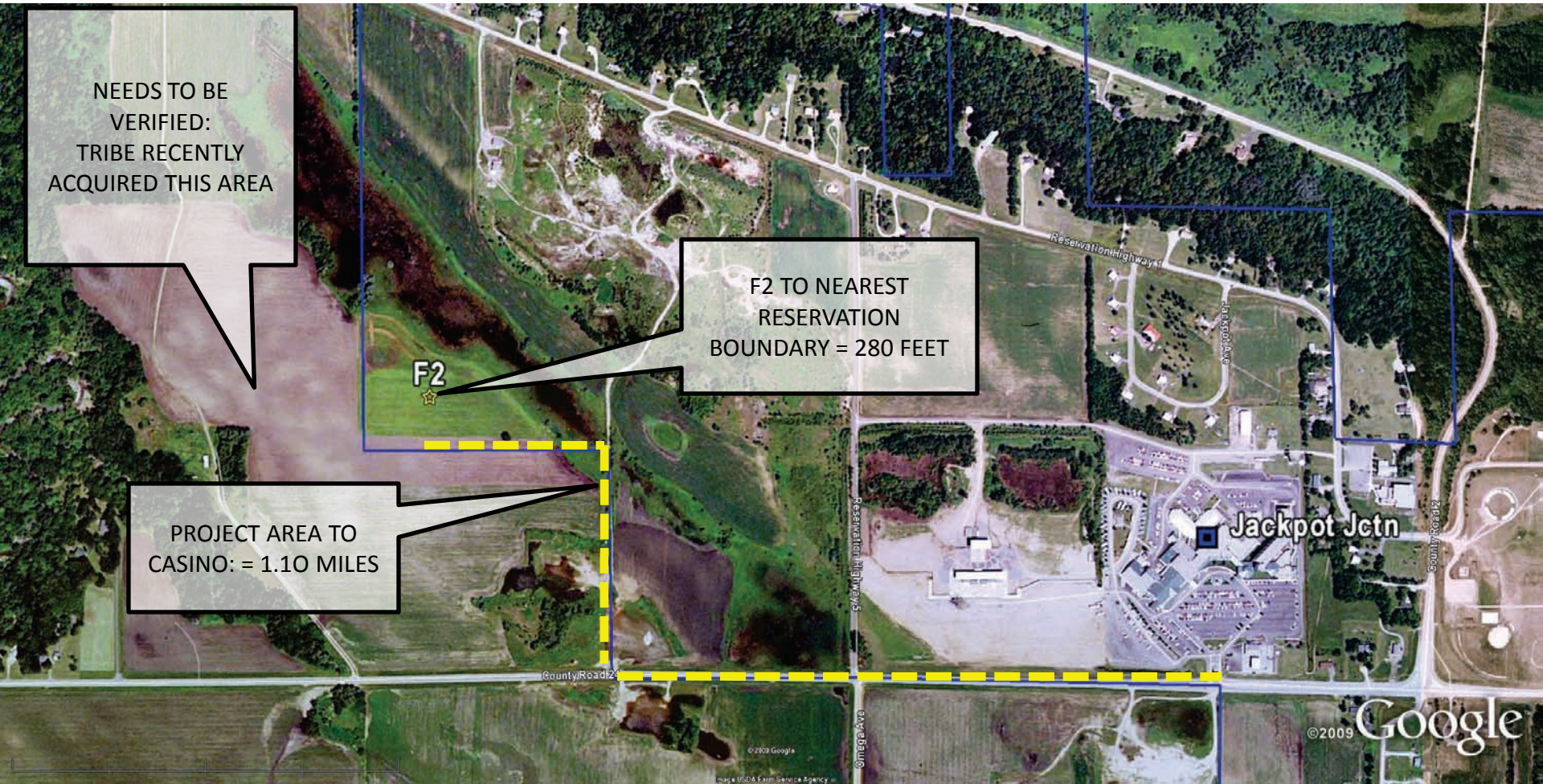
F1 TO NEAREST RESERVATION BOUNDARY = 600 FEET
 F1 TO NEAREST HOME = 1,000 FEET

MET TOWER SITE COORDINATES	
F1	44° 31.525'N
	94° 59.814'W



FACILITY-SCALE PROJECT AREA

MET TOWER SITES: F2



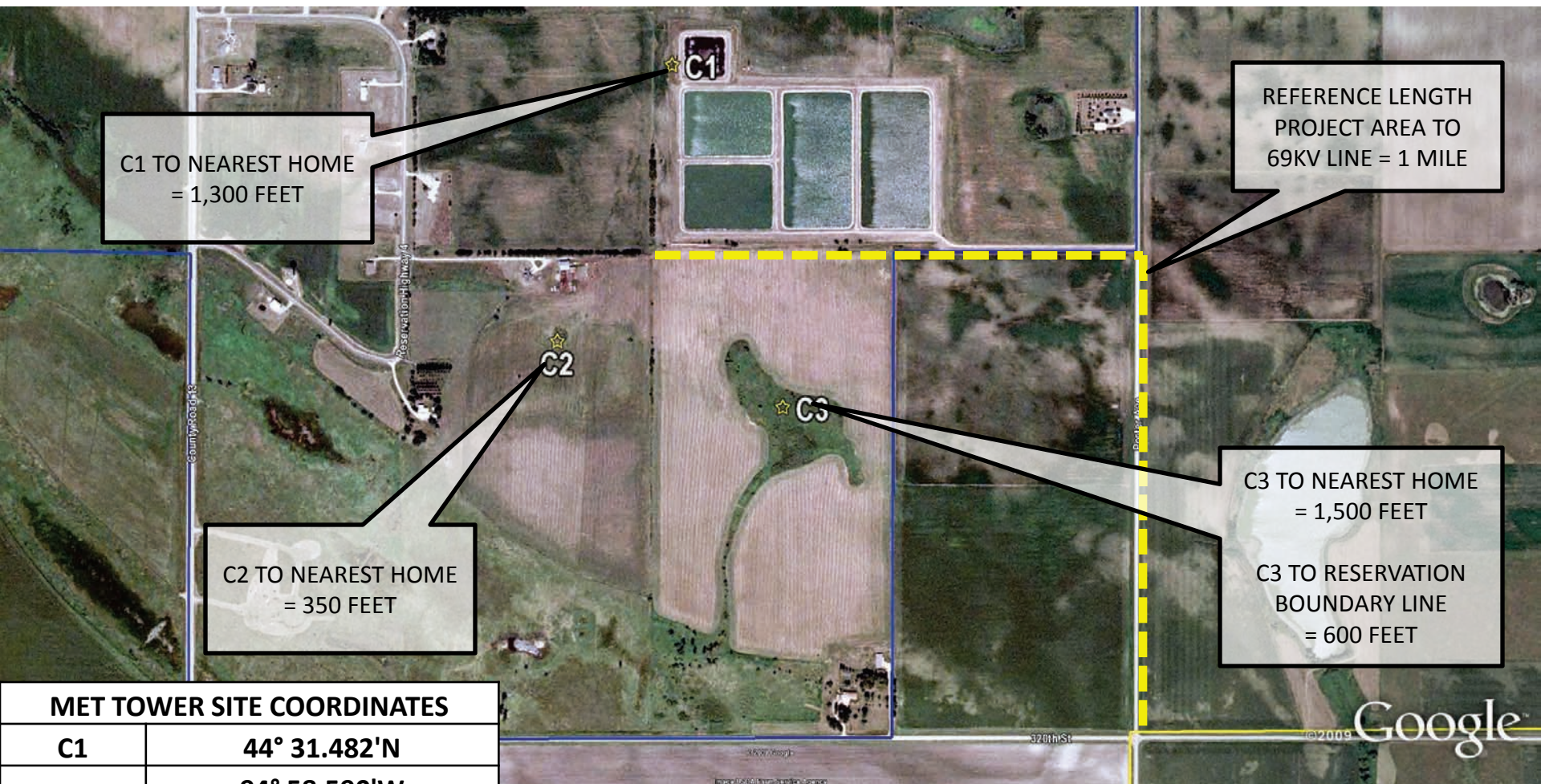
MET TOWER SITE COORDINATES

F2	44° 32.016'N
	95° 0.941'W

SCALE:
2,100 FEET

COMMERCIAL-SCALE PROJECT AREAS

MET TOWER SITES: C1, C2 & C3



MET TOWER SITE COORDINATES

C1	44° 31.482'N
	94° 58.590'W
C2	44° 31.235'N
	94° 58.734'W
C3	44° 31.176'N
	94° 58.451'W