

Groton Unit 2

Informational

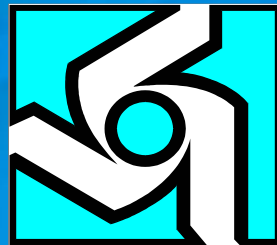
Report

Dick Shaffer
Feb. 5, 2007

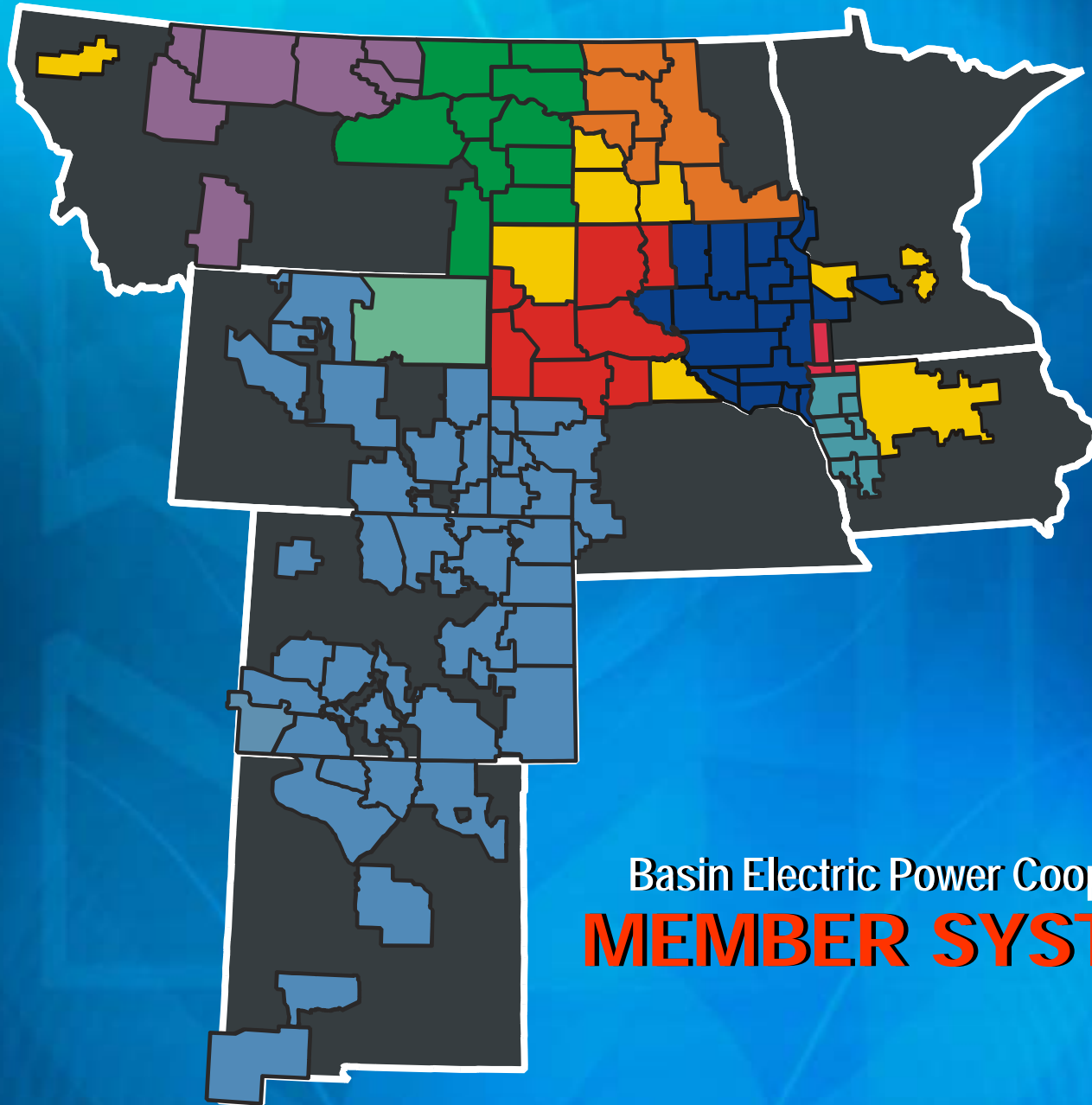


**Basin Electric
proposes to build a
second 100 MW
Natural Gas fired
Peaking
Turbine Generator**

Basin Electric Power Cooperative

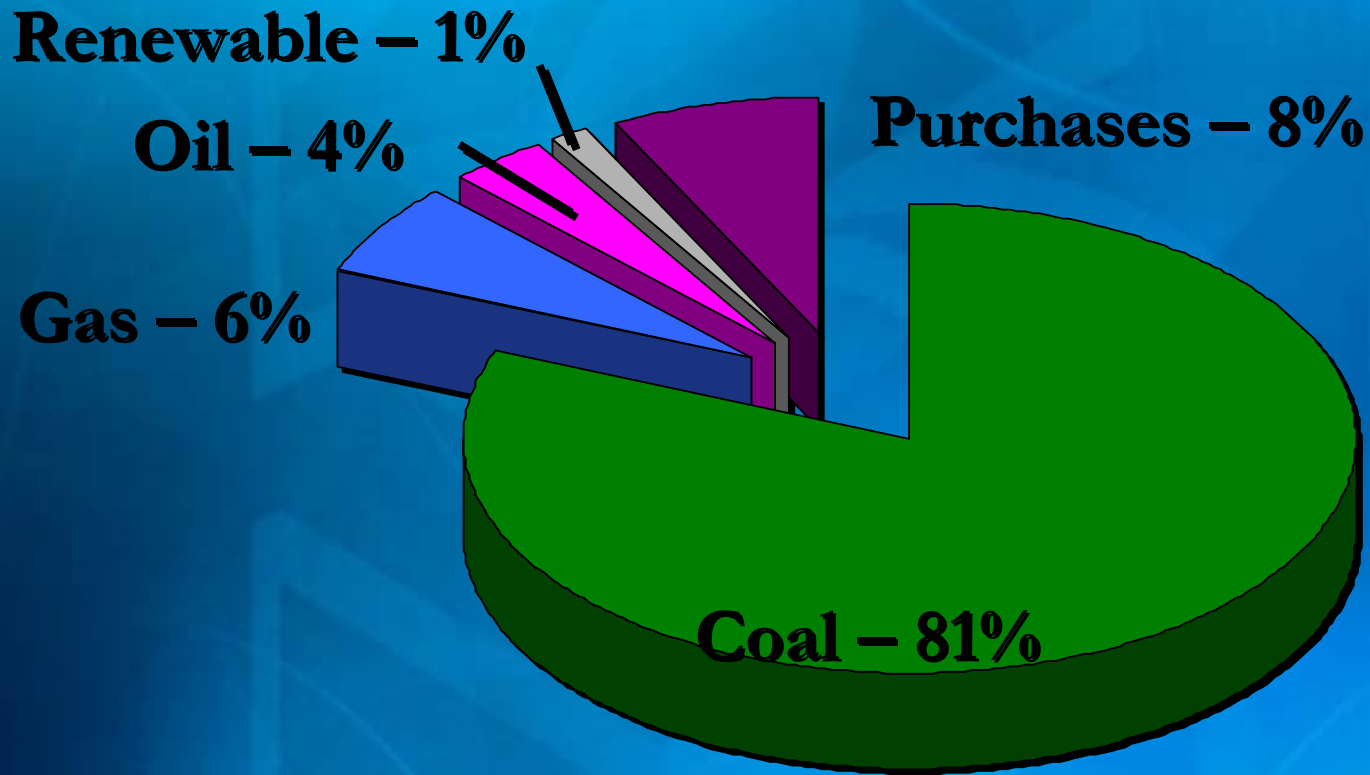


A Touchstone Energy SMParter 



Basin Electric Power Cooperative
MEMBER SYSTEMS

2006 Summer Capacity





A - Antelope Valley



B - Leland Olds



C - Laramie River



D - Spirit Mound



E - WY Distributive Generation



F - Dakota Gasification



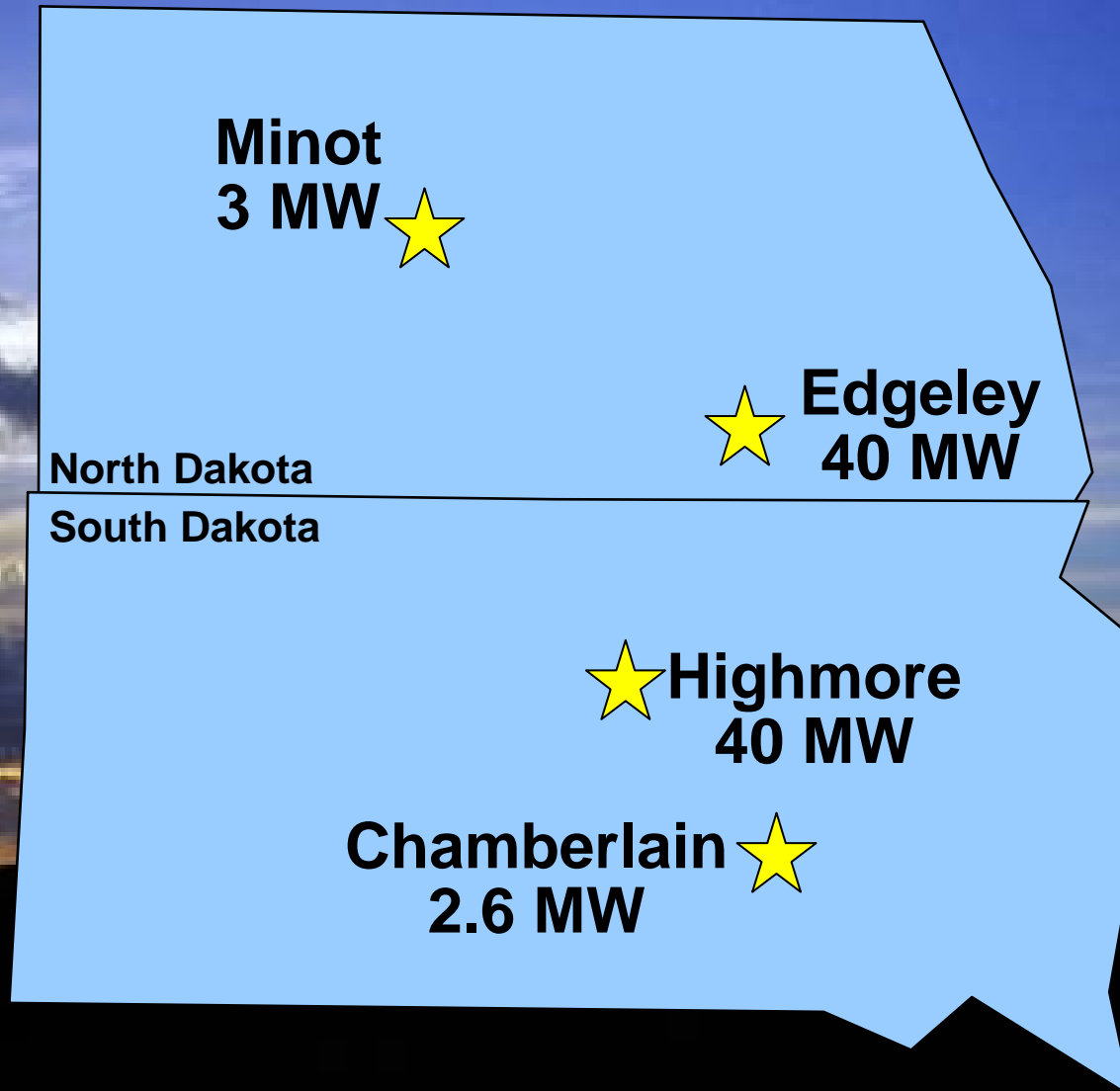
G - Groton Generation



Waste Heat 22 MW



Wind Resources



Minot
3 MW ★

★ **Edgeley**
40 MW

North Dakota

South Dakota

★ **Highmore**
40 MW

Chamberlain ★
2.6 MW



Suburban



Commercial

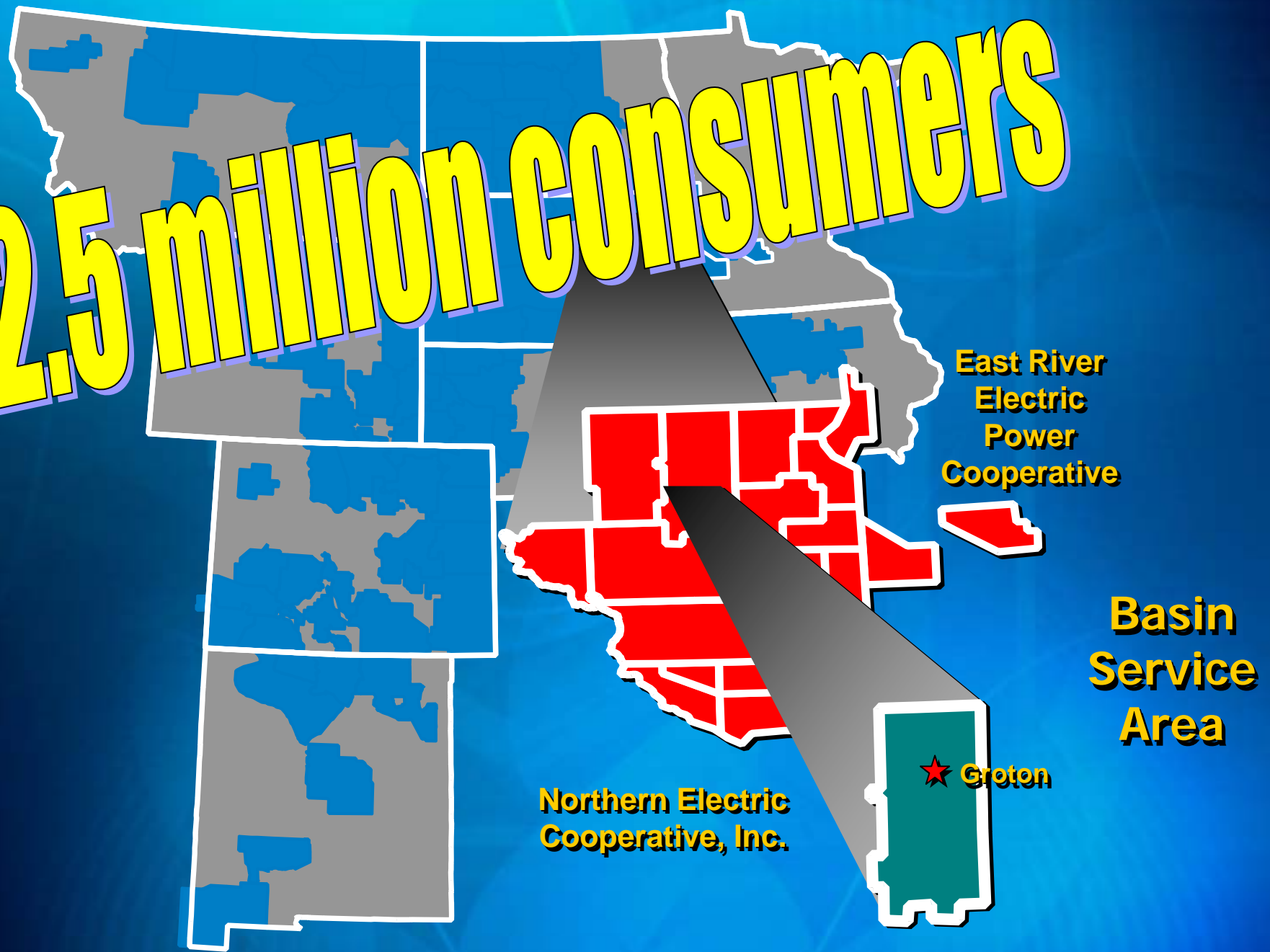


Ag



Energy

2.5 million consumers

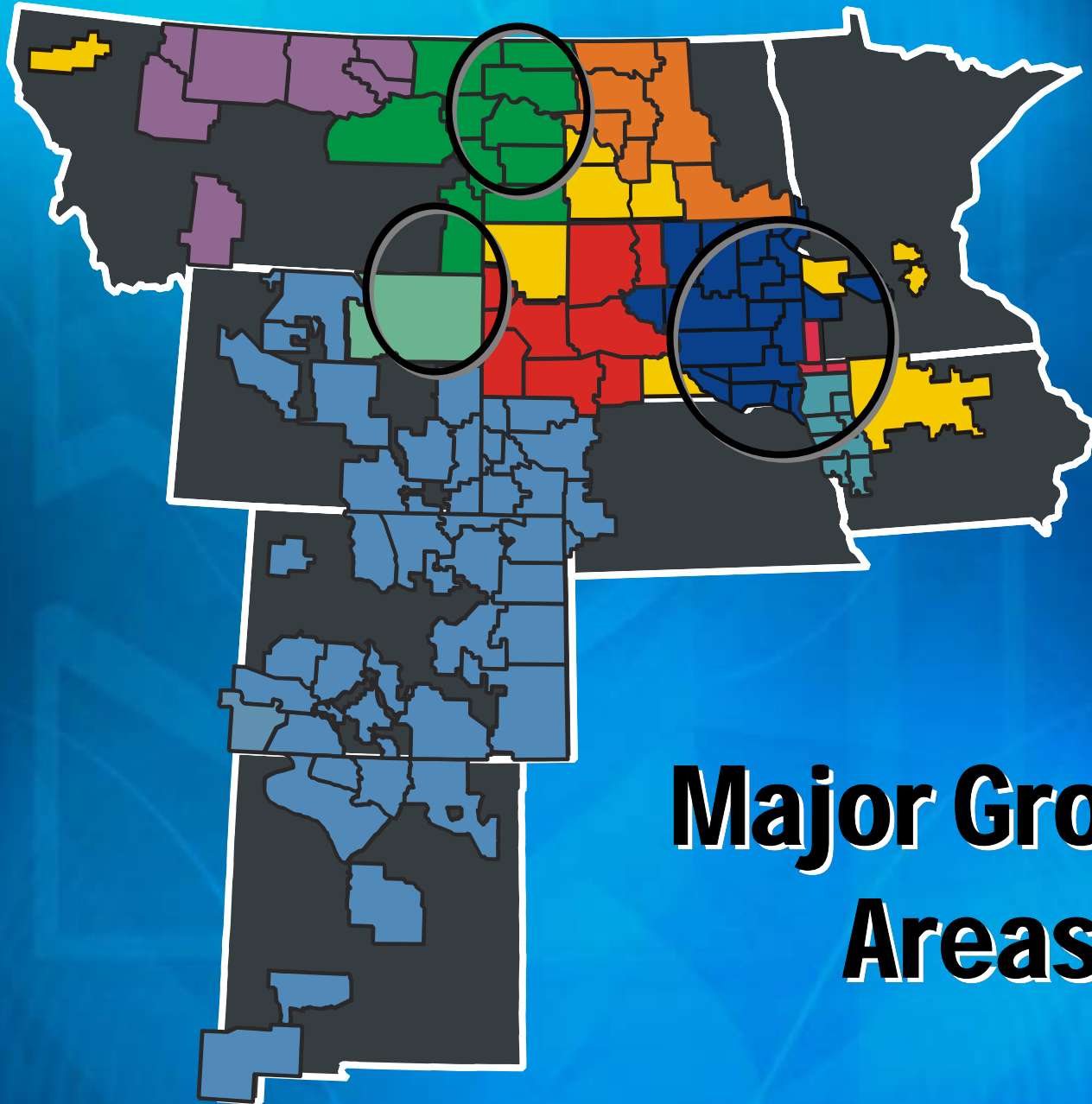


**East River
Electric
Power
Cooperative**

**Basin
Service
Area**

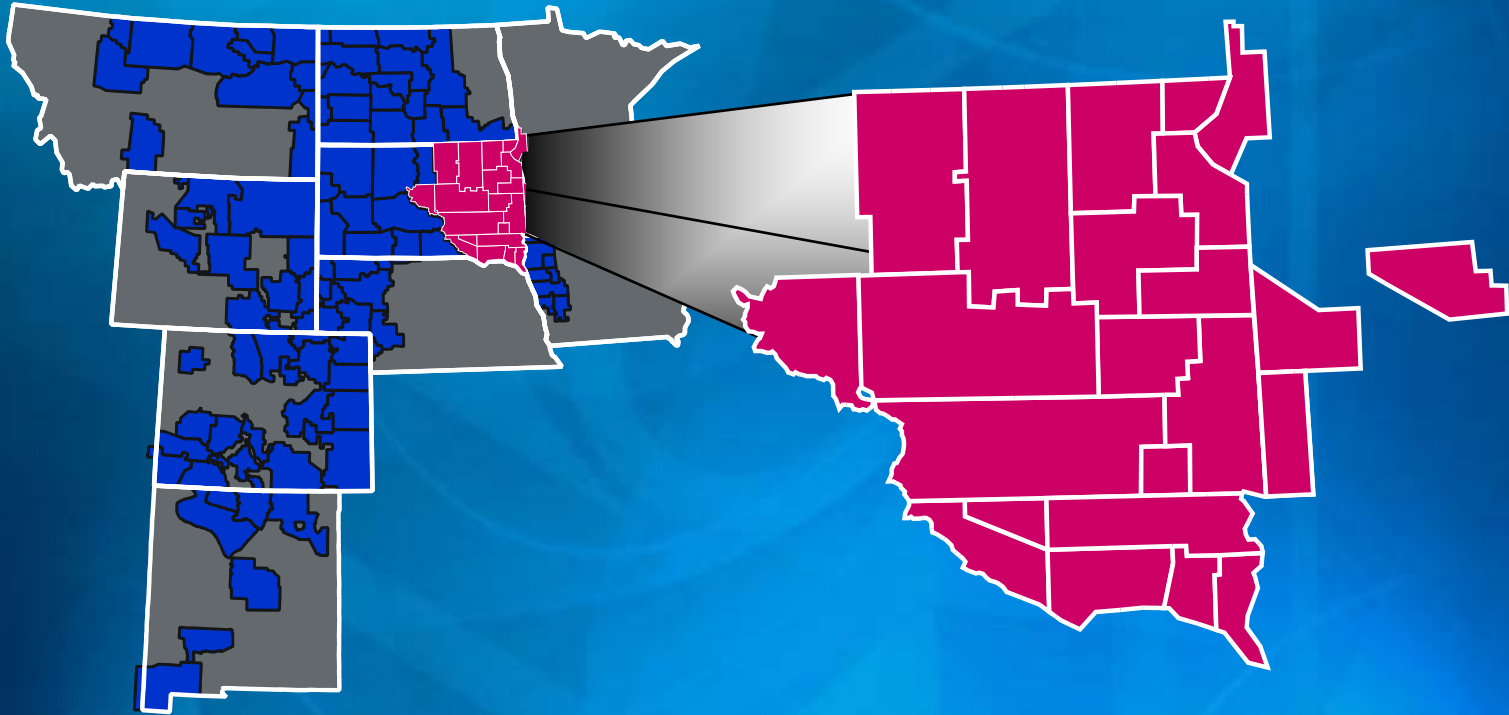
**Northern Electric
Cooperative, Inc.**

★ Groton



Major Growth Areas

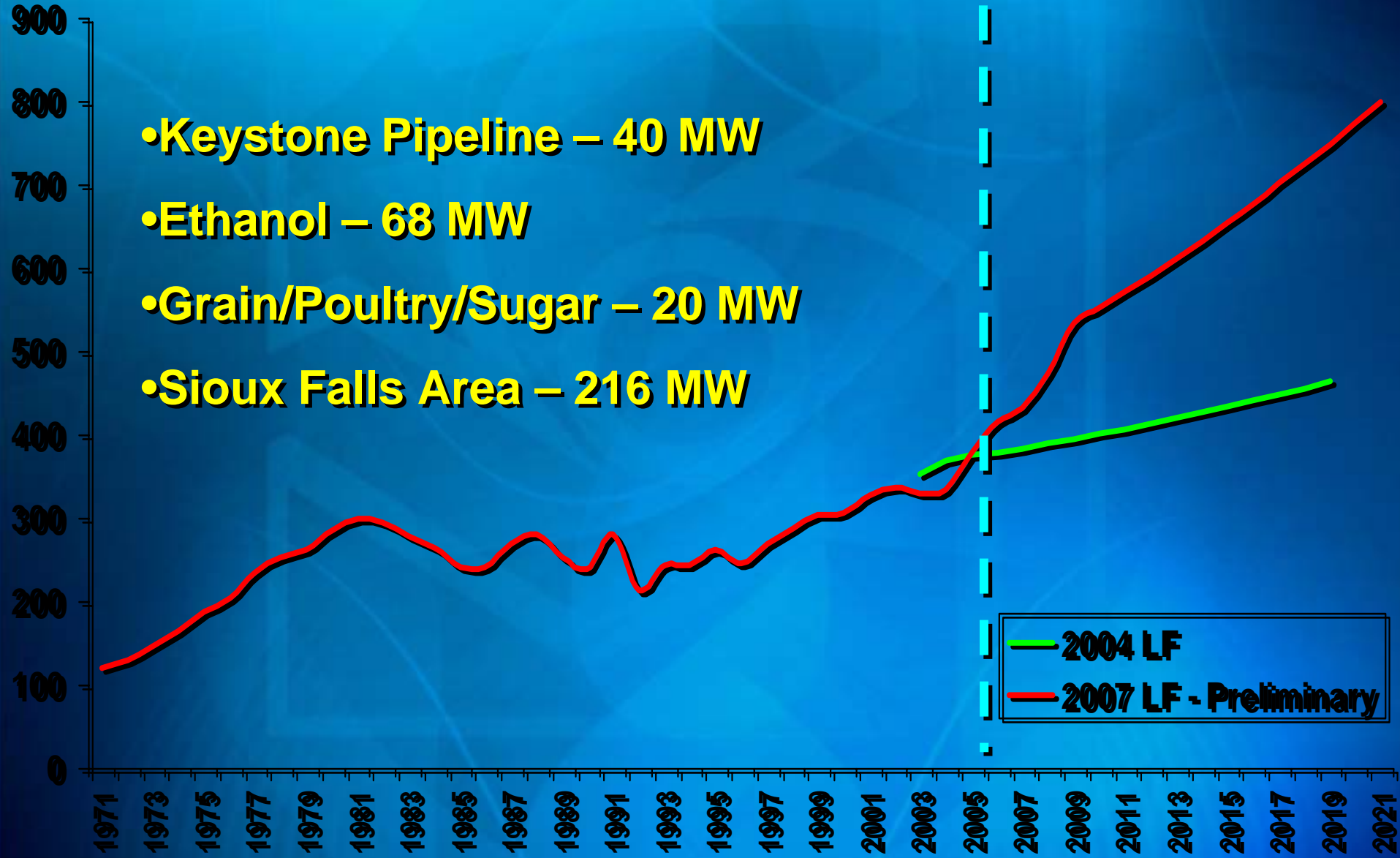
East River



East River

Total Summer Peak

MW



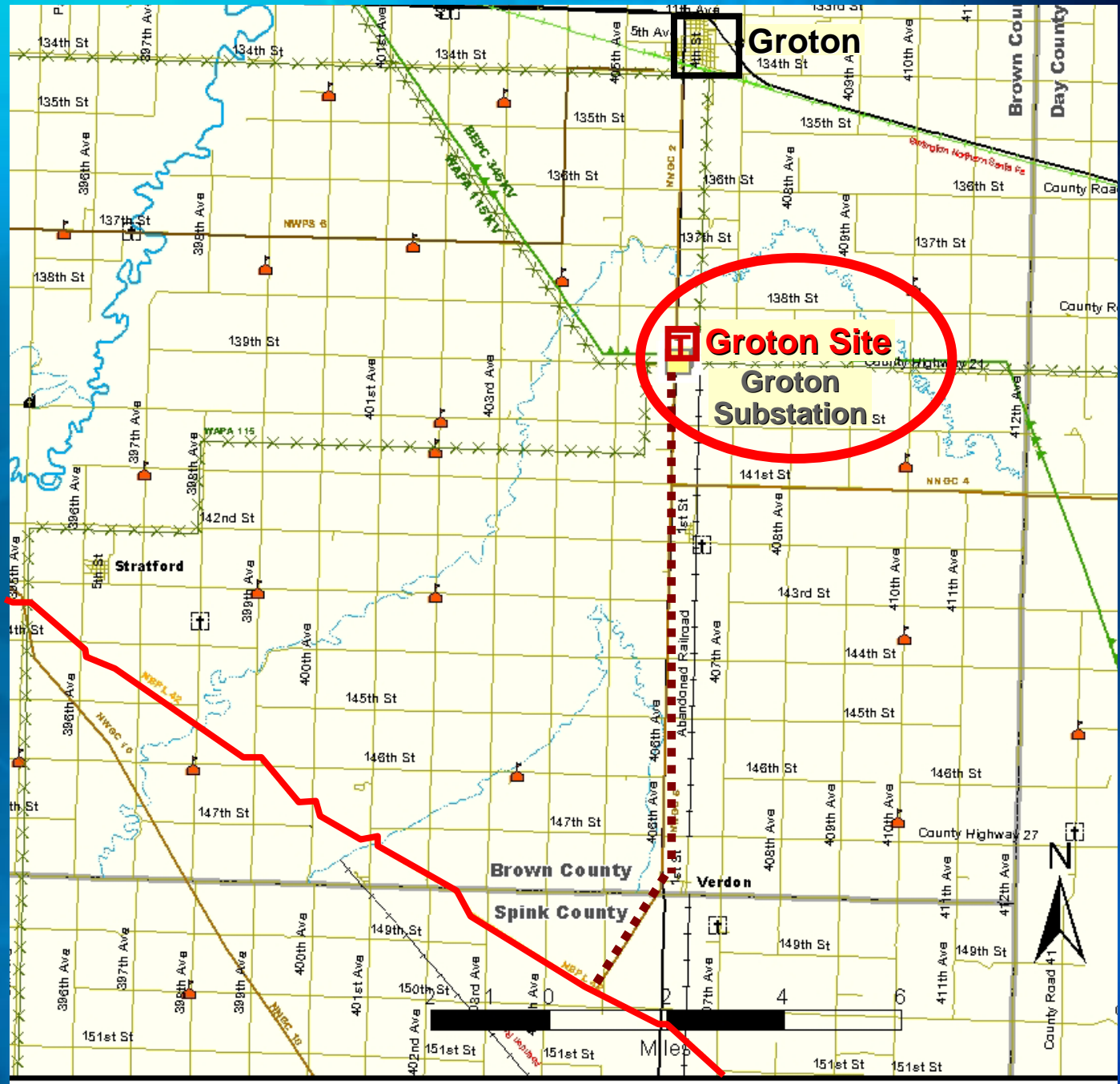
- **Keystone Pipeline – 40 MW**
- **Ethanol – 68 MW**
- **Grain/Poultry/Sugar – 20 MW**
- **Sioux Falls Area – 216 MW**

— 2004 LF
— 2007 LF - Preliminary

Other Major Concerns

- **Low Hydro**
- **Loss of generator**
- **Transmission constraints**
- **Ability to move power into the region**

Area Map

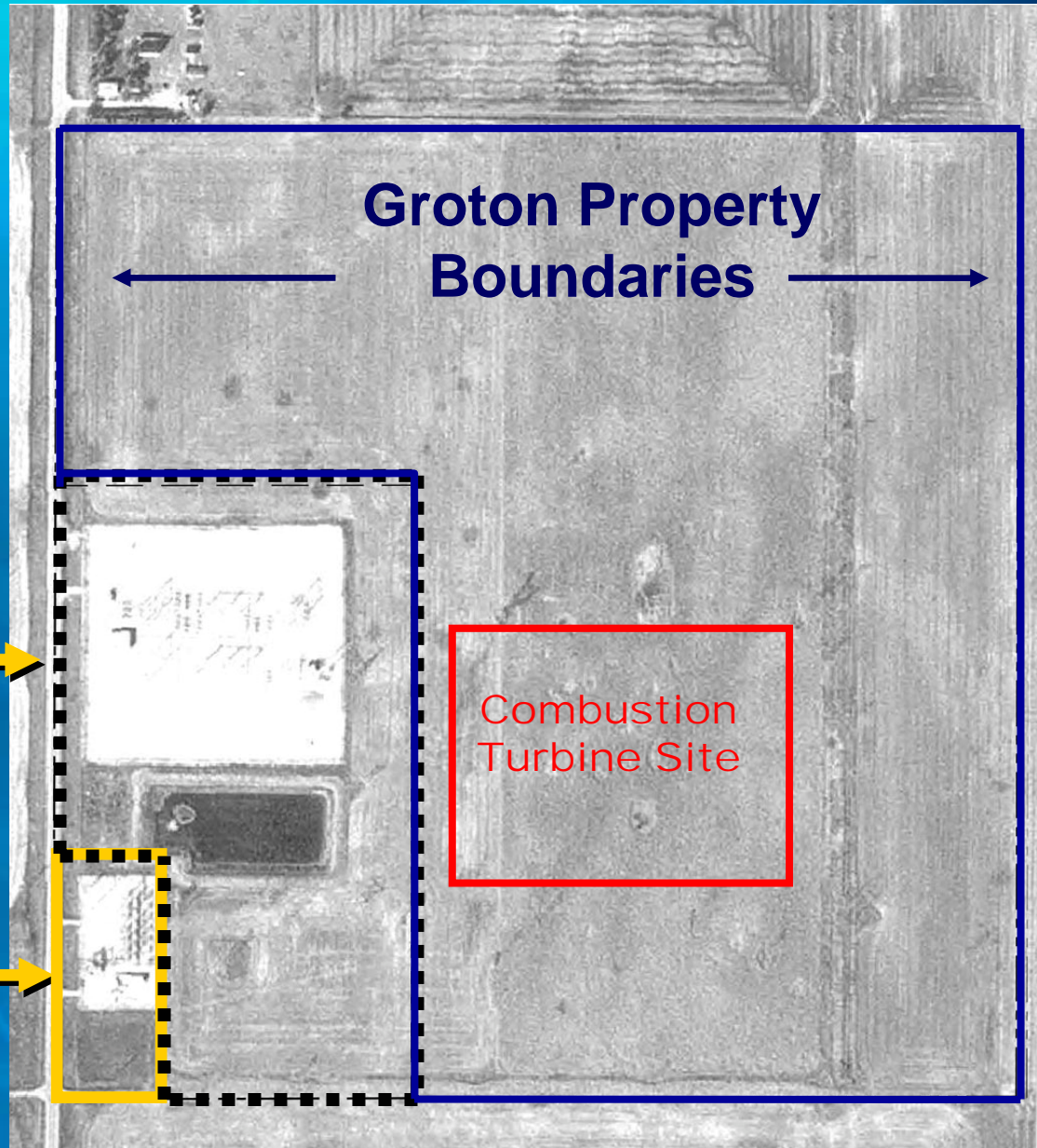


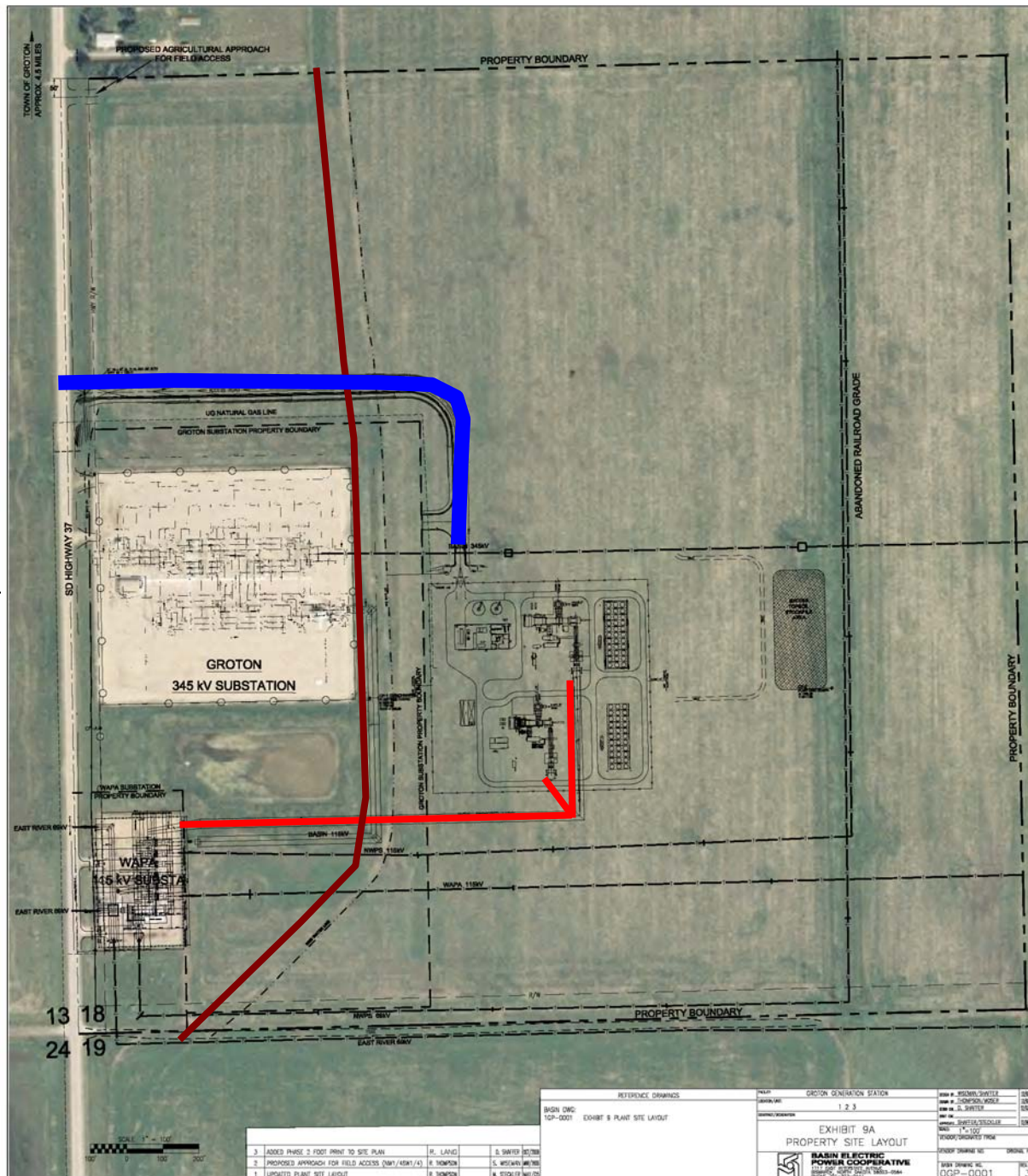
Site Plan

Groton 345 kV
Substation



WAPA 115 kV
Substation





TOWN OF GROTON APPROX. 4.8 MILES

PROPOSED AGRICULTURAL APPROACH FOR FIELD ACCESS

PROPERTY BOUNDARY

SD HIGHWAY 37

GROTON 345 kV SUBSTATION

WAPA 138 kV SUBSTATION

ABANDONED RAILROAD GRADE

PROPERTY BOUNDARY

13 18
24 19

PROPERTY BOUNDARY



| NO. | DESCRIPTION | BY | DATE |
|-----|---|-------------|---------|
| 3 | ADDED PHASE 2 FOOT PRINT TO SITE PLAN | W. LAND | 5. 2017 |
| 2 | PROPOSED APPROACH FOR FIELD ACCESS (NMT/ASMT/A) | E. THOMPSON | 5. 2017 |
| 1 | UPDATED PLANT SITE LAYOUT | P. THOMPSON | 8. 2017 |

| REFERENCE DRAWINGS | |
|--------------------|-----------------------------|
| BASIN O&G 10P-0001 | EXHIBIT 8 PLANT SITE LAYOUT |

| PROJECT INFORMATION | |
|---------------------|---------------------------|
| PROJECT NAME | GROTON GENERATION STATION |
| PROJECT NUMBER | 1 2 3 |

EXHIBIT 9A
PROPERTY SITE LAYOUT

BASIN ELECTRIC POWER COOPERATIVE
2000 WEST 10TH AVENUE
DENVER, CO 80202

| DESIGNER | DATE | SCALE |
|-------------|---------|-----------|
| W. LAND | 5. 2017 | 1" = 100' |
| E. THOMPSON | 5. 2017 | 1" = 100' |
| P. THOMPSON | 8. 2017 | 1" = 100' |

PROJECT NUMBER: OGP-0001



LMS100 Plant View

MS6001FA Inlet System

Variable Bleed Valve (VBV) System

Cooling Tower
(Wet or Dry)

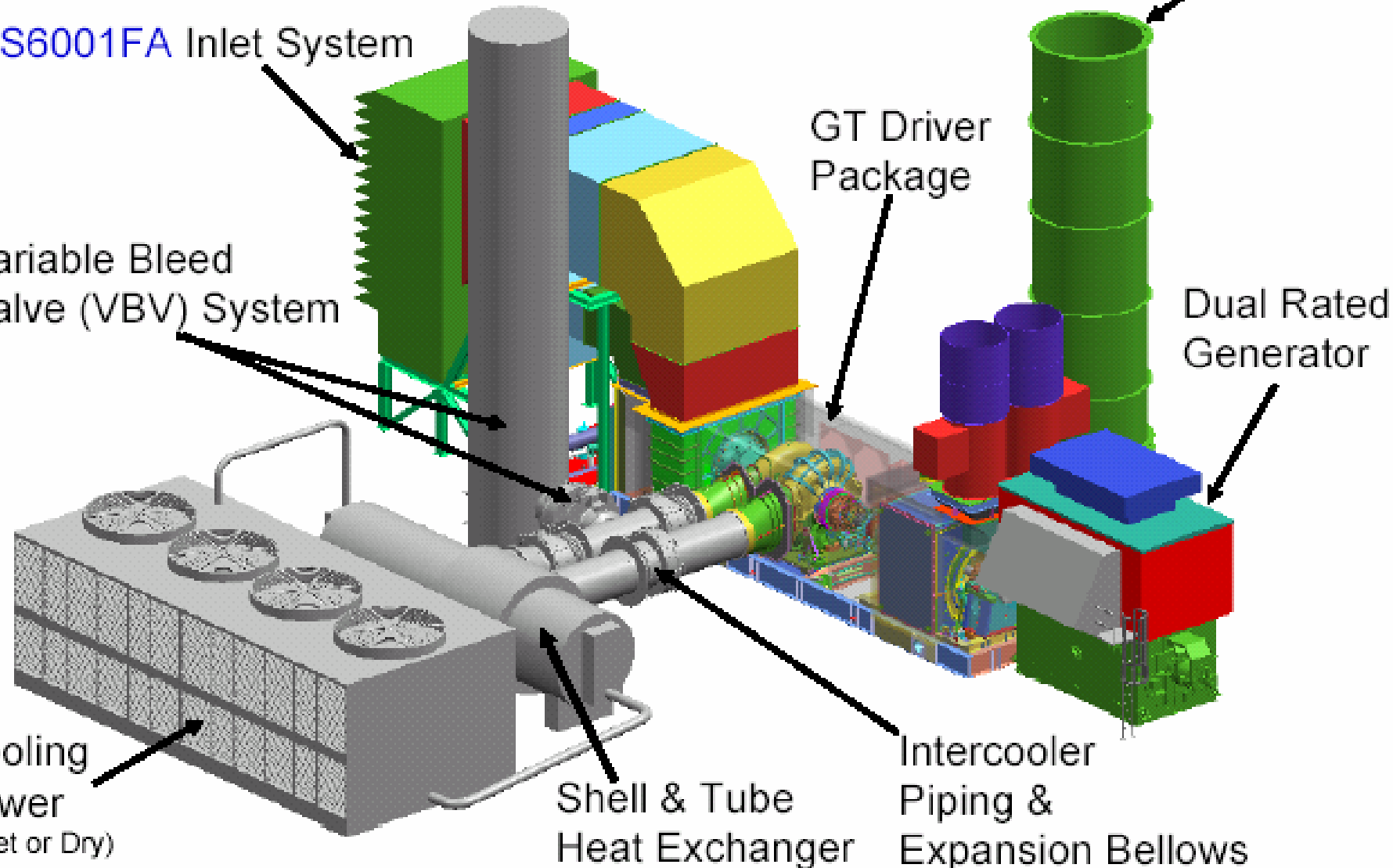
Shell & Tube Heat Exchanger

GT Driver Package

Intercooler Piping & Expansion Bellows

Simple Cycle Exhaust

Dual Rated Generator



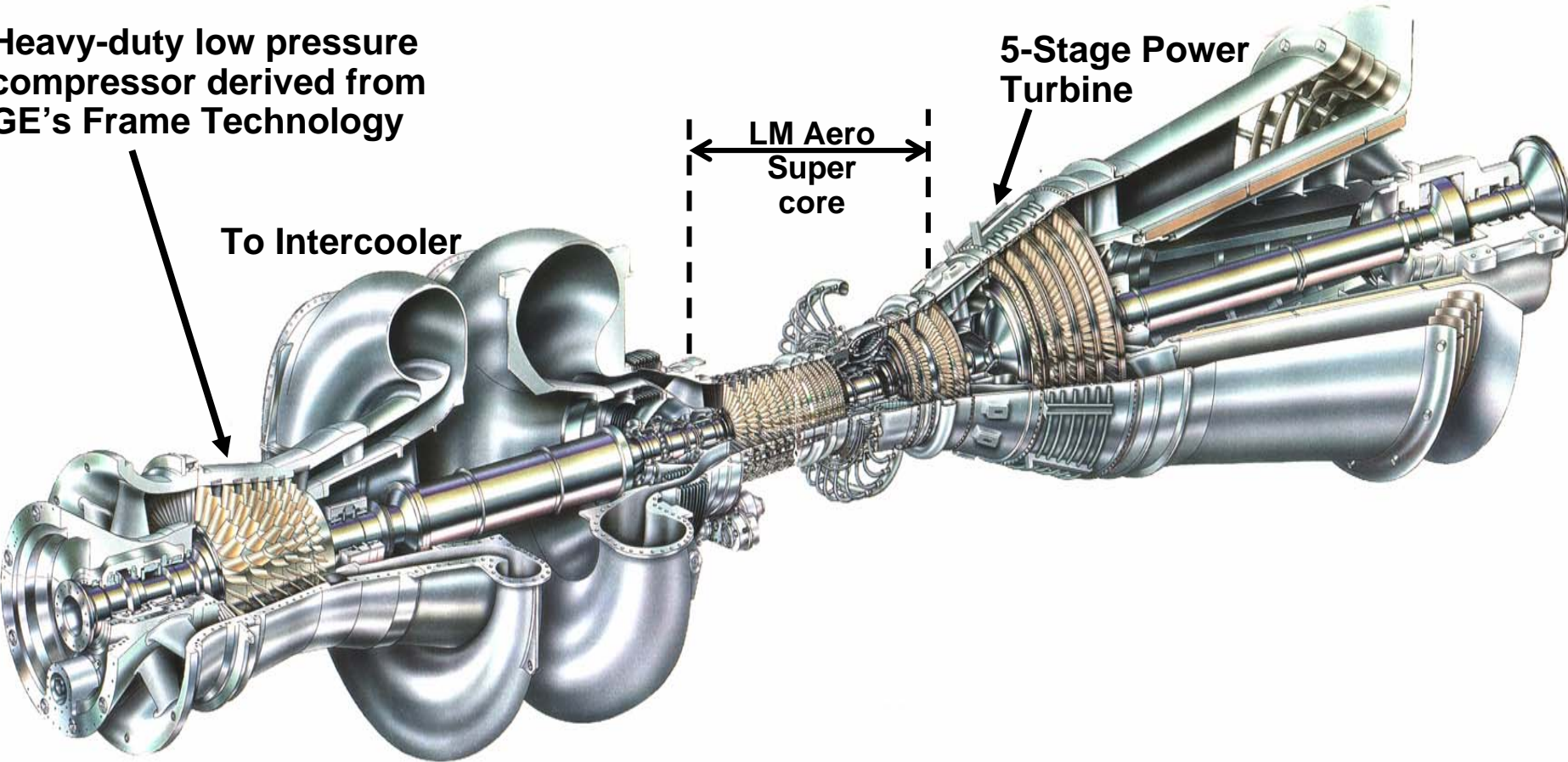
GE LMS100

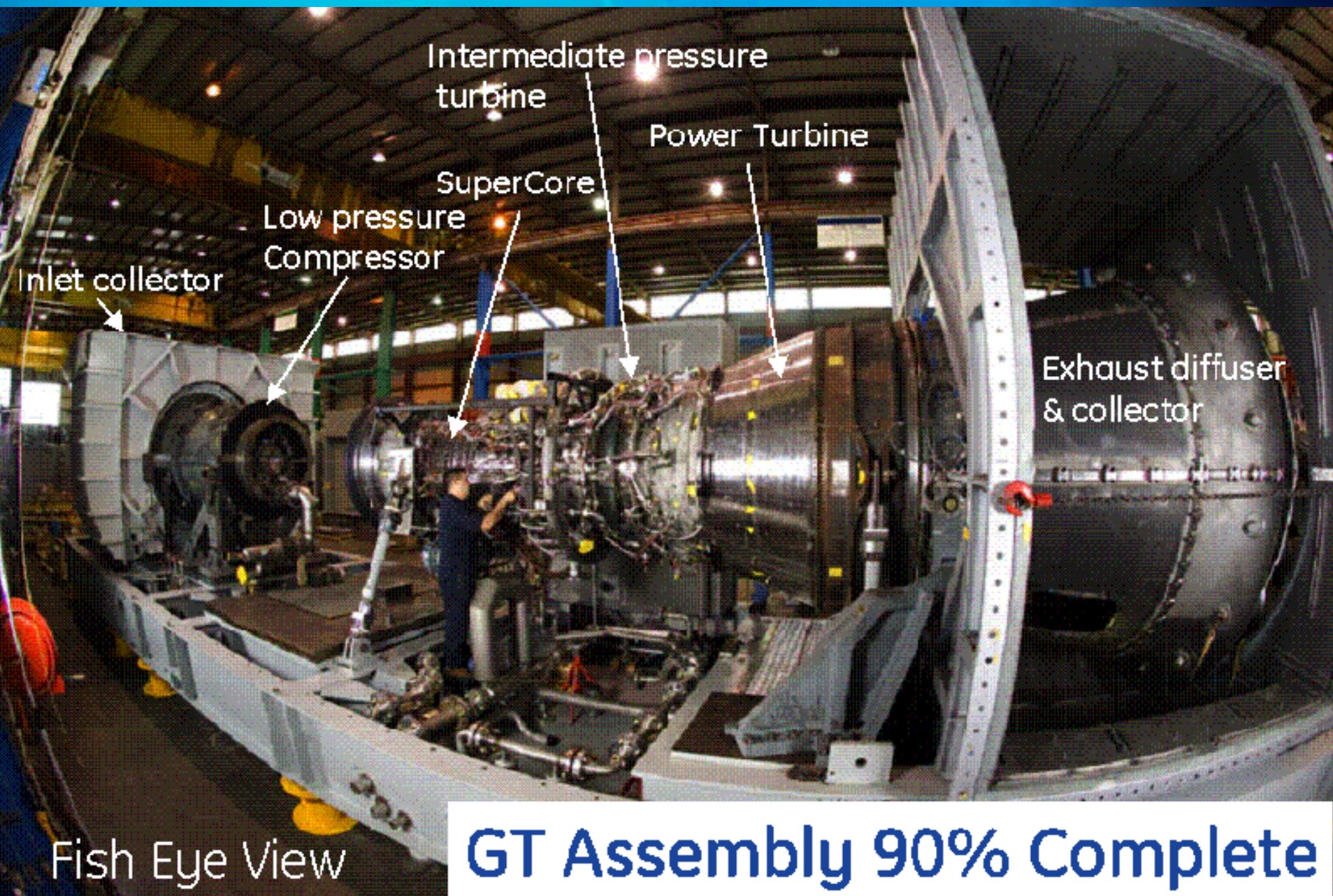
Heavy-duty low pressure compressor derived from GE's Frame Technology

To Intercooler

LM Aero Super core

5-Stage Power Turbine





Fish Eye View

GT Assembly 90% Complete



08/29/2006



08/29/2006



08/29/2006

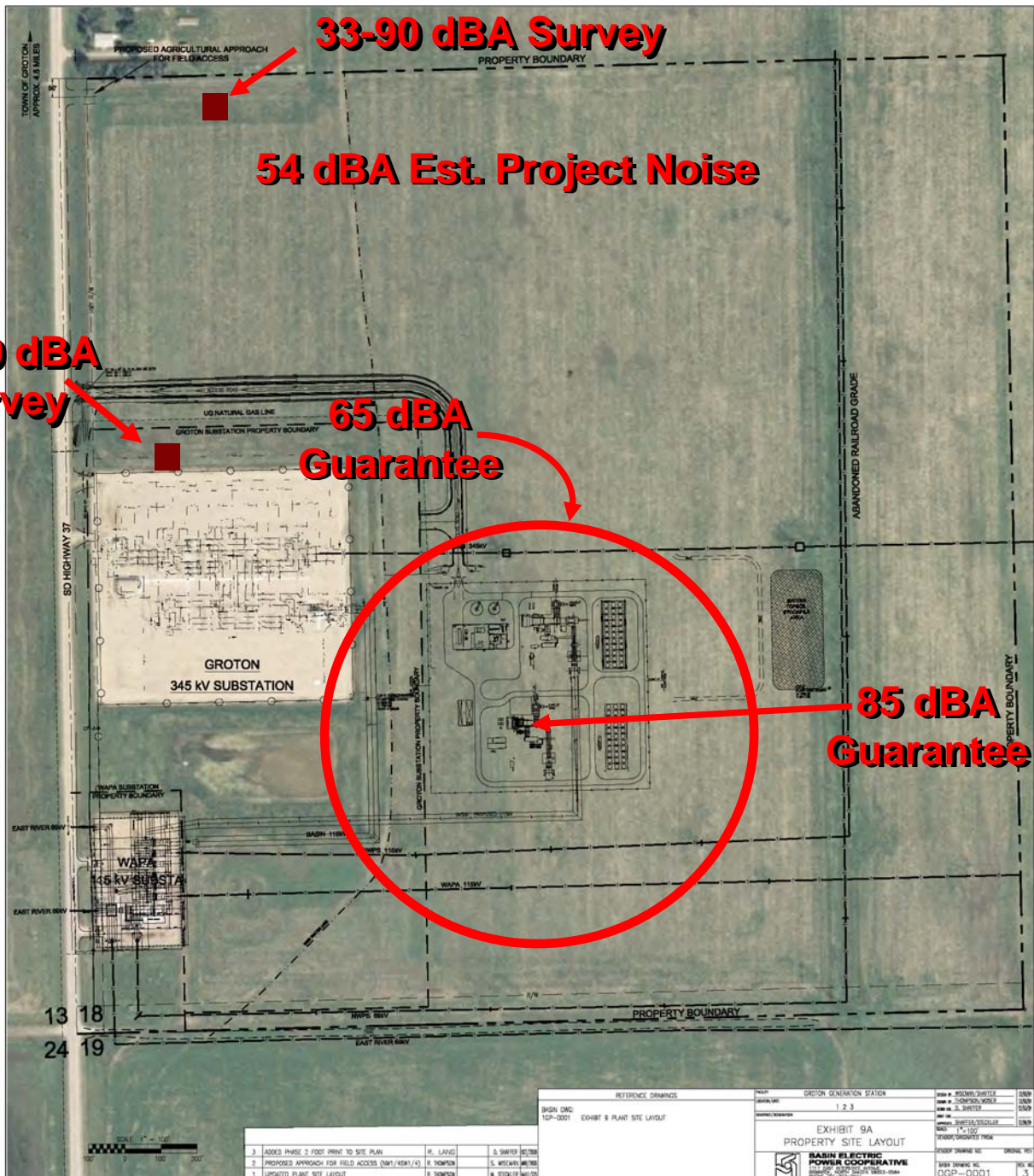


08/29/2006

Approximate Water Usage

- **NOx control ~ 50 gpm**
- **Evaporative cooling ~ 25 gpm**

Sound Level Survey



Typical Noise Levels

| <u>Typical Noise Source</u> | <u>Noise Level (dBA)</u> |
|---------------------------------|--------------------------|
| Ambulance siren at 100 feet | 100 |
| Motorcycle at 25 feet | 90 |
| Typical construction site | 85 |
| Single truck at 25 feet | 80 |
| Urban shopping center | 70 |
| Single car at 25 feet | 65 |
| Typical highway at 100 feet | 60 |
| Residential area during the day | 50 |
| Residential area at night | 40 |
| Rural area during the day | 40 |
| Rural area at night | 35 |
| Quiet whisper | 30 |
| Threshold of hearing | 20 |

Construction Manpower

- **105-145**
- **40% to 60% Local**

Long-term Employment

- **2 existing & 1 or 2 additional full-time positions**

Permitting/Environmental

- **Special exception permit**
- **Air quality permit**
- **Environmental Assessment**
- **SD Public Utility Commission**

Schedule

- **Summer 2007 – Start Construction**
- **April 2008 – First fire**
- **June 2008 – Commercial operation**

Questions???

Thank you!



