

Anchorage to Kenai 115kV line ("The Kenai Line")

Brian Hickey, P.E.

Director, Transmission Technical
Services

Route and History

- ❖ Begins At University Substation (Anchorage) and Ends at Soldotna Substation (Soldotna)
- ❖ Routed Primarily Along the Seward Highway
- ❖ Two Segments
 - Anchorage to Quartz Creek Substation (South Side of Kenai Lake on Snug Harbor Road)
 - Owned by Chugach
 - Constructed as part of the Cooper Lake Project
 - Built Approximately 1960
 - Quartz Creek Substation to Soldotna Substation
 - Owned by Homer Electric
 - Leased by Chugach
 - Built approximately 1970
 - Lease terminates with wholesale power agreement 2014

● COMMUNITIES

■ GENERATION PLANTS

TOTAL EXISTING GENERATION CAPACITY SHOWN IN MEGAWATTS (MW)

- 1 BELUGA (CEA) 387 MW
- 2 BERNICE LAKE (CEA) 70 MW
- 3 COOPER LAKE HYDRO (CEA) 16 MW
- 4 EKLUTNA HYDRO (APA) 32 MW
- 5 SOLDOTNA (AEG&T) 38 MW
- 6 BRADLEY LAKE (AEA) 120 MW
- 7 PLANT 1 (AML&P) 92 MW
- 8 INTERNATIONAL (CEA) 46 MW
- 9 PLANT 2 (AML&P) 249 MW

TOTAL ANCHORAGE AREA GENERATION - 806 MW

TOTAL KENAI PENINSULA AREA GENERATION - 244 MW

▲ SUBSTATIONS

- 1 ANCHOR POINT (HEA)
- 2 DAVES CREEK (CEA)
- 3 DIAMOND RIDGE (HEA)
- 4 DOUGLAS (MEA)
- 5 FRITZ CREEK (HEA)
- 6 GIRWOOD (CEA)
- 7 HOPE (CEA)
- 8 INDIAN (CEA)
- 9 KASILOF (HEA)
- 10 LAWING (SES)
- 11 PORTAGE (CEA)
- 12 QUARTZ CREEK (CEA)
- 13 SOLDOTNA (HEA)
- 14 TEELAND (CEA)
- 15 O'NEILL (MEA)
- 16 SUMMIT LAKE (CEA)
- 17 SEWARD (SES)
- 18 PT. WORONZOF

— TRANSMISSION LINES

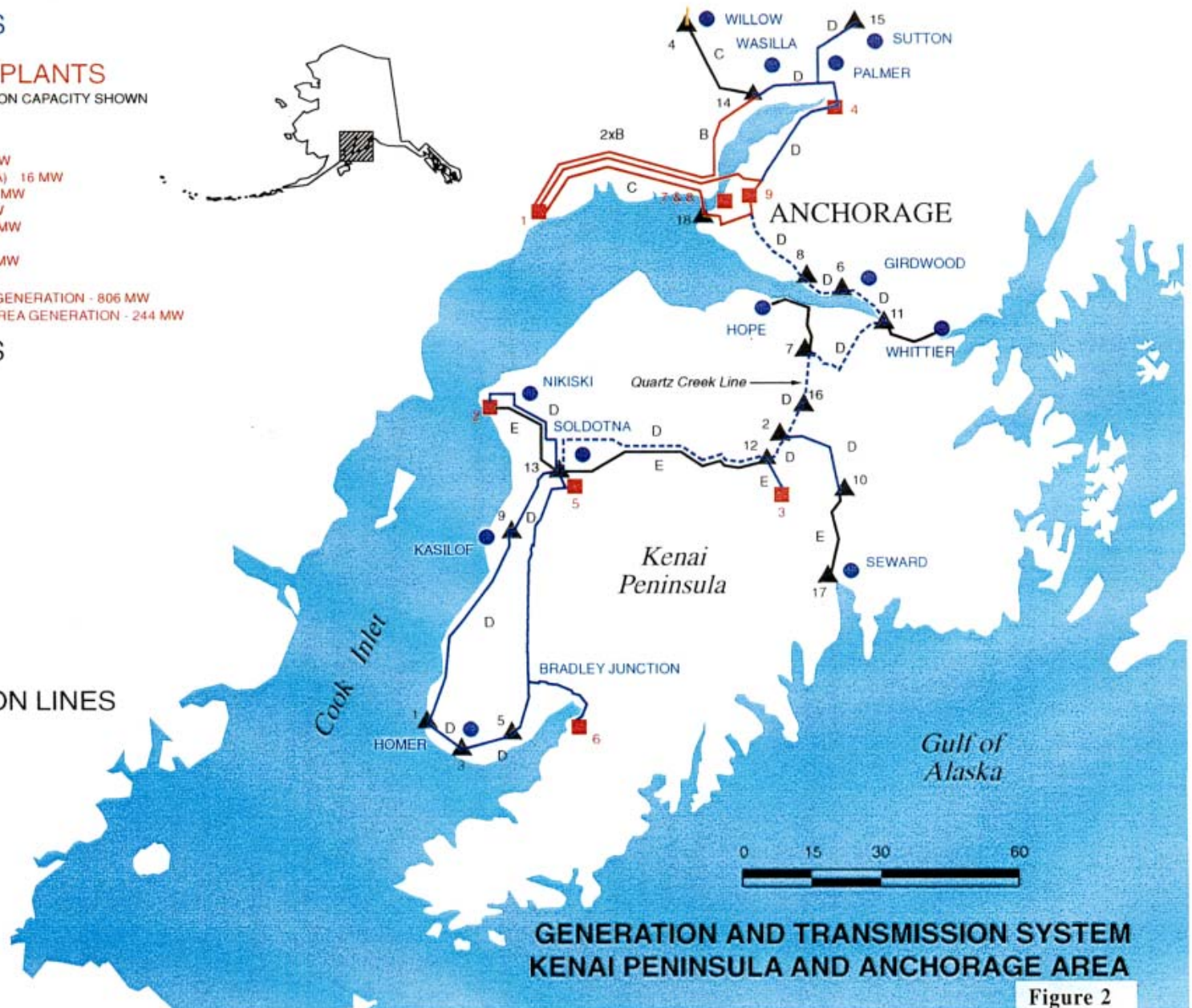
- DESIGNED
- A 500kV
 - B 230kV
 - C 138kV
 - D 115kV
 - E 69kV

--- QUARTZ CREEK LINE



CENTRAL ALASKA

Source: Chugach Electric Association, 1995



**GENERATION AND TRANSMISSION SYSTEM
KENAI PENINSULA AND ANCHORAGE AREA**

Figure 2

Primary Functions-G&T

- ❖ Provides Access to Non-Chugach Railbelt Spinning Reserves
- ❖ Provides Access for all Participants to Bradley Lake Energy and Capacity
- ❖ Provides Access to Homer Electric and Seward Electric Systems
Chugach Generation North of Quartz Creek

Primary Functions-G&T



Primary Functions-G&T

❖ Provides Chugach Consumers North of Quartz Creek Access to Approximately 130 Mw of Chugach Kenai Area Generating Capacity and an additional 110 Mw of non- Chugach Generation

- Bernice Lake
- Cooper Lake
- Bradley Lake
- Nikiski Unit 1 (Homer Electric)

Primary Functions- Distribution

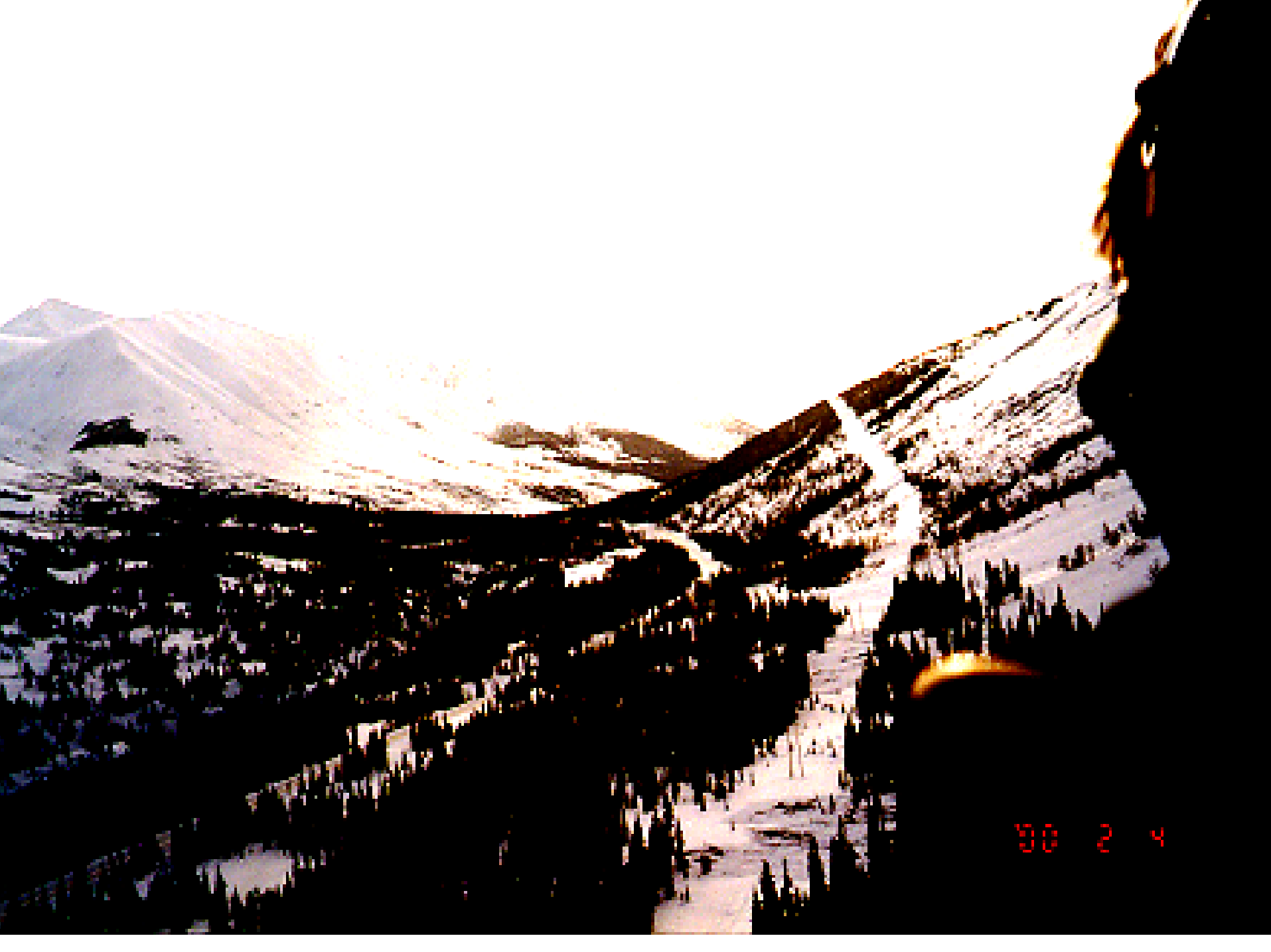
❖ Provides Electric Service to Chugach Retail Consumers

- Indian
- Girdwood
- Portage
- Hope
- Summit Lake
- Cooper landing
- Moose Pass



Project Challenges

- ❖ Traverses Land Controlled by Many Land Managers
- ❖ Traverses Hostile Terrain
- ❖ Subject to Avalanche Damage in Numerous Areas
- ❖ Most Structures Approaching 50 Years old
- ❖ Critical to System Operation
 - Maintenance Outages are Difficult to Obtain
 - Maintenance Outages are Costly



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Glacier Creek Structure
Replacement 2005





LOWER SUMMIT LAKE

73-2



Missing 3 Pole



Bird Point Avalanche

Current Efforts

- ❖ Re-negotiate Permits as a part of Cooper Lake Relicensing
- ❖ Transmission Line Baseline Condition Assessment Scheduled 2006
- ❖ Evaluating Various Re-build Scenarios
- ❖ Rebuild to 2006-2010 CIP