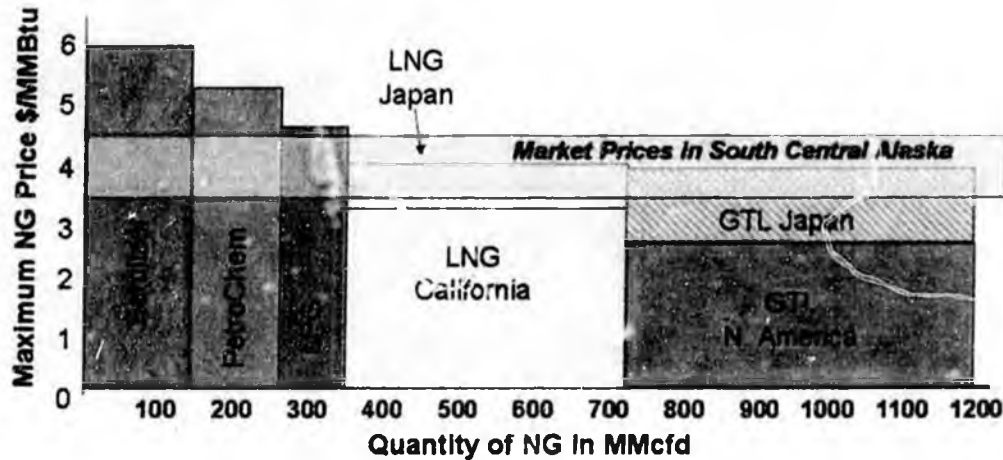




investment. In general, when market prices are relatively high, industries with greater capital investment benefit disproportionately more than industries with lower capital investment.

Figure 3 shows gas and NGL volumes as dry gas equivalents on a thermal basis on the x-axis, and the netback price on the y-axis, where netback price is maximum price of dry gas each of the assessed industries can pay while remaining economically viable under the modeled assumptions. The horizontal bar in Figure 3 represents the expected price range of South Central dry gas (i.e., the average low forecast price of \$3.93/MMBtu, plus or minus \$0.50). If South Central gas prices are higher than the maximum (i.e., netback) value for gas shown for a particular industry, then gas consumption from that industry will likely be severely curtailed, or may never develop.

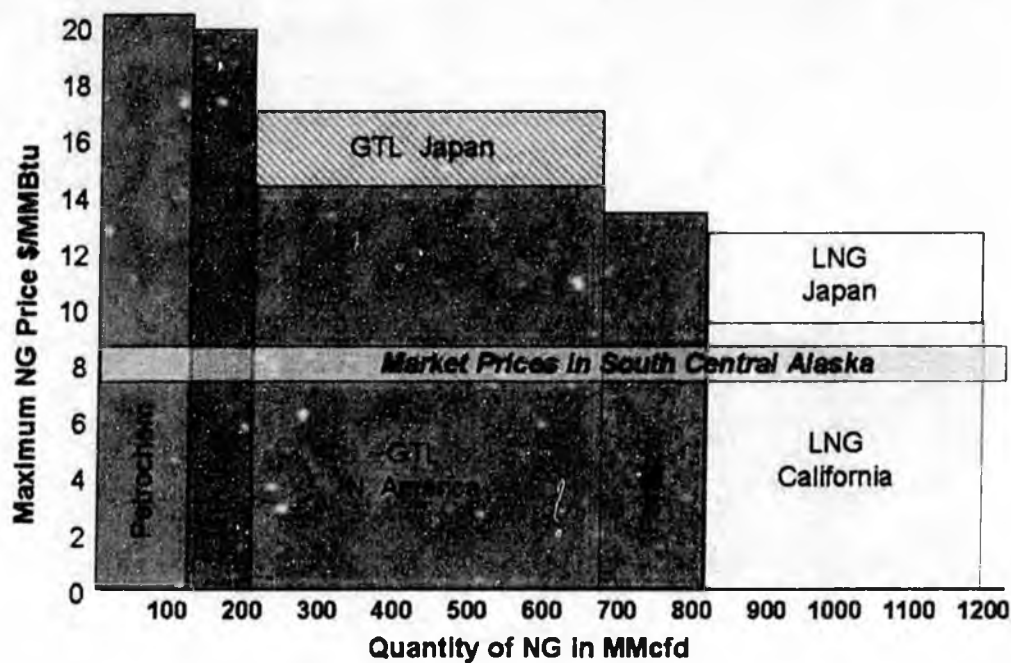
Figure 3: Estimated Maximum Prices Under Low Product Price Scenarios and Demand for Potential Industries for Dry Gas and NGL (Methane equivalent units) and the South Central Alaska Gas Market Price Band.



Source: SAIC

Figure 4 shows a similar graph the high market price scenario. In this case, the horizontal bar represents the expected price range of South Central dry gas with the average high forecast price of \$8.26/MMBtu, plus or minus \$0.50.

Figure 4: Estimated Maximum Prices Under High Product Price Scenarios and Demand for Potential Industries for Dry Gas and NGL (Methane equivalent units) and the South Central Alaska Gas Market Price Band.



Source: SAIC

In comparing netback values under the low and high price scenarios, the industries with the greatest increase in netback value under the high price scenario versus the low price scenario are those with products that have price forecasts based on the forecasted price of crude oil (i.e., GTL, petrochemical, and LPG). This is in part, a result of the greater difference between low and high forecasts prices for crude than for natural gas, i.e., high scenario natural gas prices are 2.1 times greater than low scenario prices, while high forecast prices of crude oil are 2.88 times greater than low forecast prices, as shown in Figure 1.

Because these analyses were conducted using assumptions that are inherently uncertain (i.e., projections of average market prices), none of the maximum price values should be considered accurate. However, the *relative* ranking of the industrial netback values in the South Central Alaska locations is not likely to change with modest assumption adjustments, with the possible exception of GTL. GTL is more sensitive to assumption modifications due to the larger gas demand and the higher uncertainty over project costs. The assumptions used in the GTL industry assessment are considerably more speculative than in other industries as a result of the uncertainty surrounding newer GTL technology and the still-emerging ultra-low-sulfur diesel fuel market.

6.0 Recommendations

There are many options and combinations of options that may have potential for Alaska with the development of ANGP and a spur pipeline. The relative merits of the options are complex and the long-term price forecasts for natural gas and oil and petroleum products on the world market always have a significant degree of uncertainty. Potential industries could be assessed on more detailed levels, with probabilistic analyses that account for cost and market risk to help provide additional insight into the complex interactions of options and economic benefits. Ultimately, these detailed analyses will likely be performed by serious investors. However, some over-reaching concepts are applicable to multiple industries and their integration, and thus may be best studied at an integrated level. Recommended integrated studies, include the following:

- A large-capacity spur pipeline will impact the design and operation of ANGP and could have significant economic impacts on that project. These issues were not analyzed in this study and could be more fully understood by running sensitivities to determine the impact of different-capacity spur pipelines on the value of ANGP.
- The uncertainties surrounding the completion of ANGP and consequently the spur pipeline are well understood. Alternative supply options exist, such as a smaller capacity bullet line from the ANS to Central Alaska. A comparative assessment of the alternative supply options would determine the costs and benefits of each supply option and help identify the optimal strategy for meeting natural gas demand.
- The potential location of various industries at North Slope or Central Alaska (e.g., GTL or petrochemical) may affect the desirability of further industry development in South Central. If industrial development at North Slope or Central Alaska is pursued further, the effects of industries located closer to the wellhead on state-wide industrial development may warrant further assessment.
- The results of this study suggest that the state of Alaska should explore the level of industry interest in investing in Alaska.

Appendix A: Gas Composition of a Dense Phase, Wet Spur Line

The spur line will provide a means to deliver a portion of the stranded natural gas at Alaska North Slope to a market. While the primary component of this gas is methane, it also contains a significant amount of natural gas liquids (NGL), i.e., ethane, propane, butane, and pentane. The economics of sending the stranded Alaska North Slope natural gas to market may depend on the inclusion of NGL because these components have a higher value per volume than methane.³ A non-traditional, high-pressure pipeline allows transport of NGL without development of a separate liquid phase in the line, avoiding the slug flows that occur when a low pressure line includes more NGL than found in dry gas. The pressure of a wet gas line is set based on the NGL composition.

The composition of natural gas components in a wet gas line can vary greatly depending on:

- **Gas source.** There are several different potential sources of natural gas at Alaska North Slope, each source has a different proportion of methane and NGL.
- **Volume of wet gas from which NGL are separated.** The recovered NGL are used to enrich the South Central Spur line.
- **Percent recovery of NGL.** This is determined by the separation technology used for enriching the Spur and used to remove NGL at the end of the Spur (i.e., Anchorage/Nikiski).

This update assesses each of the two gas compositions described in the Alaska Gasline Inducement Act (AGIA) Request for Applications (RFA), released in July, 2007. Separation efficiency assumptions are based on straddle separator plant efficiencies for recently designed plants in Canada, which have 95% separation efficiencies of ethane, and essentially 100% separation efficiencies of all other NGL. Based on recent designs, extraction of individual NGL from the liquid stream is assumed to be 100%.

The volume of gas from which NGL are separated is assumed to be the volume from which sufficient ethane would be removed to enrich the spur line with enough ethane to meet the demand of a world-class ethylene plant that uses ethane as a sole feedstock (i.e., 70,000 to 80,000 bpd ethane). The volume of raw gas that is transferred to the spur pipeline without processing by the straddle separator is assumed to be the volume that would allow the final spur line methane output to meet the projected dry gas demand for residential, commercial, and power sectors in addition to an industrial GTL complex. The propane and butane associated with the gas needed to meet the ethane and methane demand is the supply available for an LPG industry.

Calculations of spur pipeline composition are provided for both the "Rich" and "Lean" gas cases delineated in the AGIA RFA. Assumed demand includes South Central residential, commercial,

³ Michael Baker, Jr., Inc. 2005. Transport of North Slope Natural Gas to Tidewater. Submitted to the Alaska Natural Gas Development Authority (ANGDA), April, 2005.

and power sectors (a combined demand estimated to be 0.26 Bscfd), in addition to continued demand from the Agrium fertilizer plant, expansion of the ConocoPhillips LNG facility, and new development of GTL, petrochemicals, and LPG industries (a combined demand estimated to be 1.18 Bscfd).

Table A1 shows calculations of spur pipeline composition under the Lean Gas Case, in which 930 MMscfd is processed by a straddle plant separator with an ethane removal efficiency of 95%, and 100% removal efficiency of other NGL. Separated NGL are added as enrichment to a 1.4 Bcfd gas spur pipeline. This entire stream is processed by a second straddle separator in Anchorage/Kenai with efficiencies that are the same as those of the first straddle plant.

Table D1: Lean Gas Case, Spur line gas composition and volume.¹ (Assumes ideal gas behavior at 60 F and 14 psia)

Raw Gas Component	Raw Gas* Mole %	1st Straddle Input (930 MMscfd)		1st Straddle NGL Output to Spur		Total Spur Input**		2nd Straddle NGL Output	
		MMscfd	bpd	MMscfd	Bpd	MMscfd	bpd	MMscfd	Bpd
Methane	89.90	836	NA	NA	NA	1,169	NA	0	NA
Ethane	5.80	54	60,666	51	32,150	127	79,457	120	75,484
Propane	1.70	16	26,019	16	10,038	38	24,070	38	24,070
n-Butane	0.10	1	2,254	1	608	2	1,459	2	1,459
i-Butane	0.20	3	4,713	2	1,387	4	3,325	4	3,325
Pentanes	0.10	1	3,189	1	723	2	1,733	2	1,733

* Raw gas mole % based on AGIA RFA, 2007.

** Total spur pipeline input calculated as 1st straddle output plus 1.30 Bcfd gas directly from the main pipeline.

These spur line inputs and straddle plant efficiencies yield roughly 75,000 bpd ethane, meeting the needs of a world class ethylene plant. This line would also supply roughly 25,500 bpd of propane and butane for an LPG industry, and 1,700 bpd pentanes for sale to other users, i.e., for blending into gasoline.⁴ In addition, the spur line would yield approximately 1.2 Bcfd dry gas to meet the dry gas demand of the South Alaskan residential, commercial, power and industrial sectors.

Table A2 shows calculation of spur pipeline composition under the Rich Gas Case scenario, in which 450 MMcfd is processed by a straddle plant separator with an ethane removal efficiency of 95%, and 100% removal efficiency of other NGL. Separated NGL are added as enrichment to a 1.4 Bcfd spur pipeline. This entire stream is processed by a second straddle separator in Anchorage/Kenai with efficiencies that are the same as those of the first straddle plant.

⁴ Pentane is also referred to as "natural gasoline" because it is a major component of gasoline.

Table A2: Rich Gas Case, Spur line gas composition and volume.¹ (Assumes ideal gas behavior at 60 F and 14 psia)

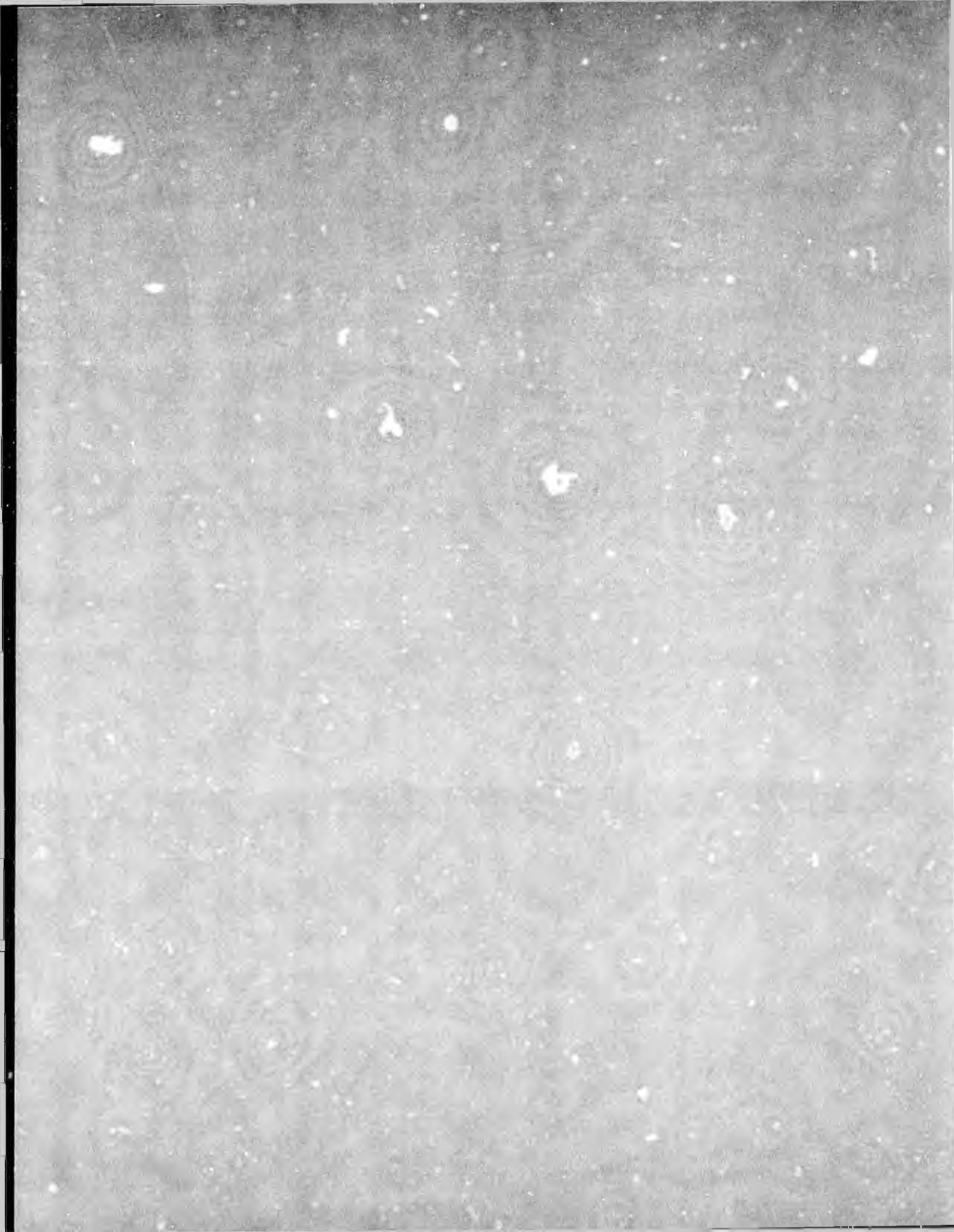
Raw Gas Component	Raw Gas* Mole %	1st Straddle Input (450 MMscfd)		1st Straddle Output to Spur		Total Spur Input**		2nd Straddle NGL Output	
		MMscfd	bpd	MMscfd	Bpd	MMscfd	bpd	MMscfd	Bpd
Methane	86.40	389	NA	0	NA	1,175	NA	0	NA
Ethane	7.10	32	20,046	30	19,043	127	79,626	121	75,645
Propane	3.60	16	10,286	16	10,286	65	41,373	65	41,373
n-Butane	0.30	1	883	1	883	5	3,552	5	3,552
i-Butane	0.40	2	1,342	2	1,342	7	5,397	7	5,397
Pentanes	0.10	0	350	0	350	2	1,406	2	1,406

* Raw gas mole % based on AGAI RFA, 2007.

** Total spur pipeline input calculated as 1st straddle output plus 1.36 Bcf/d raw gas.

These spur line inputs and straddle plant efficiencies yield roughly 76,000 bpd ethane, meeting the needs of a world class ethylene plant. This line would also supply roughly 50,000 bpd of propane and butane for an LPG industry, and 1,400 bpd pentanes for sale to other users, i.e., for blending into gasoline.⁵ In addition to the NGL streams, the spur line would yield approximately 1.2 Bcf/d dry gas to meet the demand for the South Central Alaskan residential, commercial, power, and industrial sectors.

⁵ Pentane is also referred to as "natural gasoline" because it is a major component of gasoline.



“Connecting Alaskans To Their Natural Gas”

Legislative Hearing

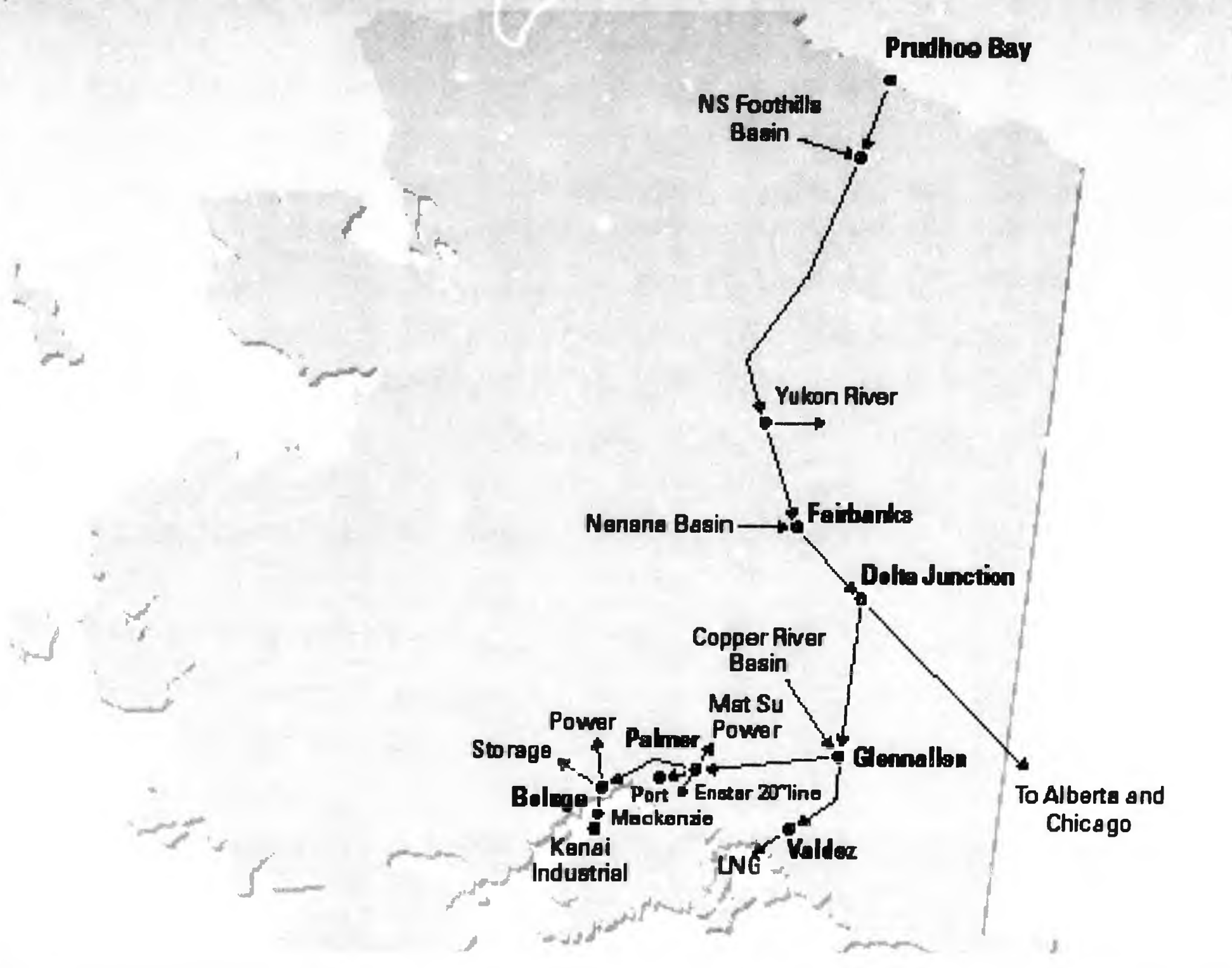
Fairbanks on June 12, 2008

***In-State Use
North Slope Gas***



Alaska

Natural Gas Development Authority



Prudhoe Bay

**NS Foothills
Basin**

Yukon River

Nenana Basin Fairbanks

Delta Junction

**Copper River
Basin**

**Mat Su
Power**

Glennallen

**To Alberta and
Chicago**

**Power
Storage**

Palmer

Beluga

Port

Enstar 20 line

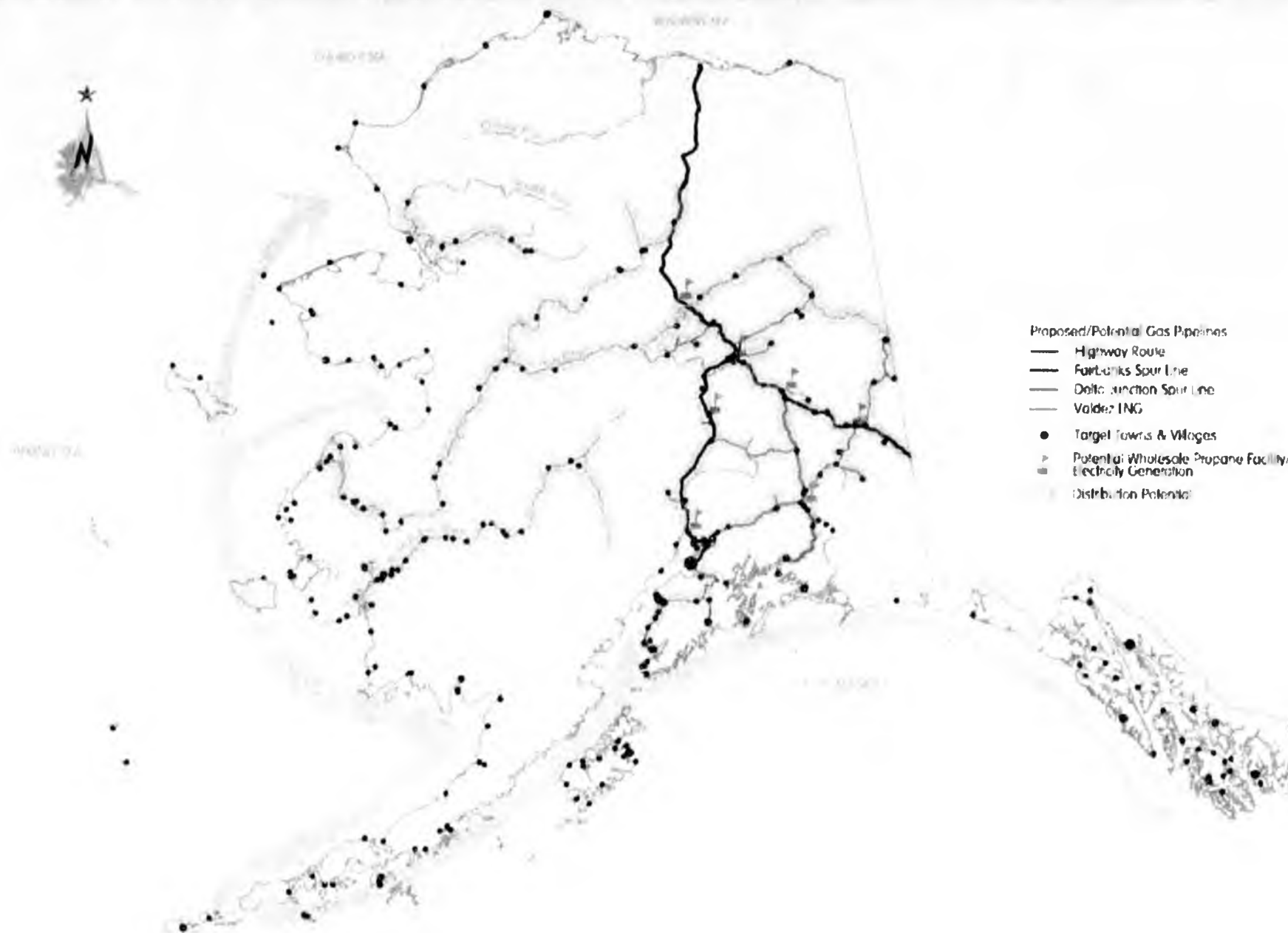
Mackenzie

**Kenai
Industrial**

LNG

Valdez

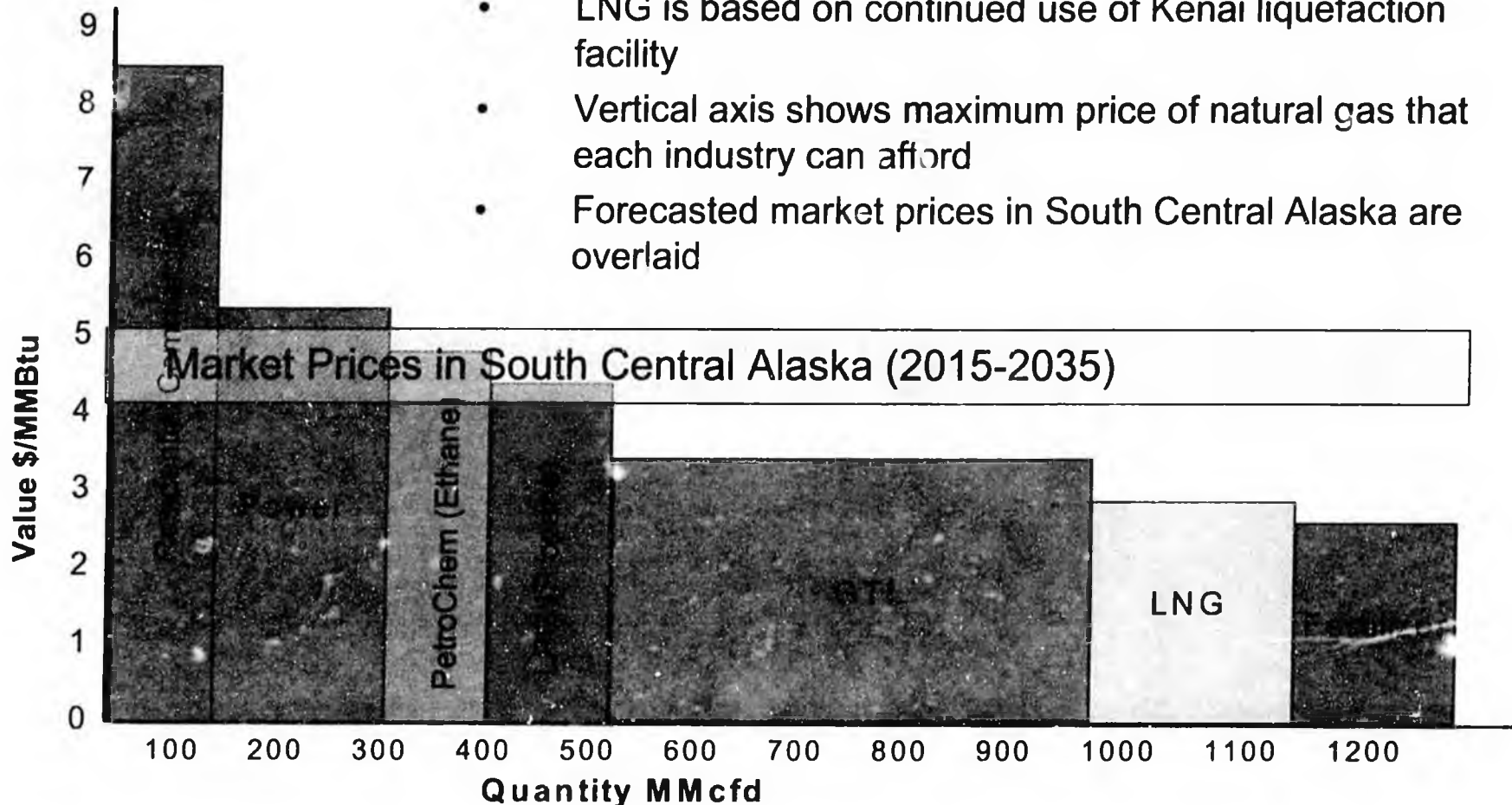
“Connecting Alaskans To Their Natural Gas”



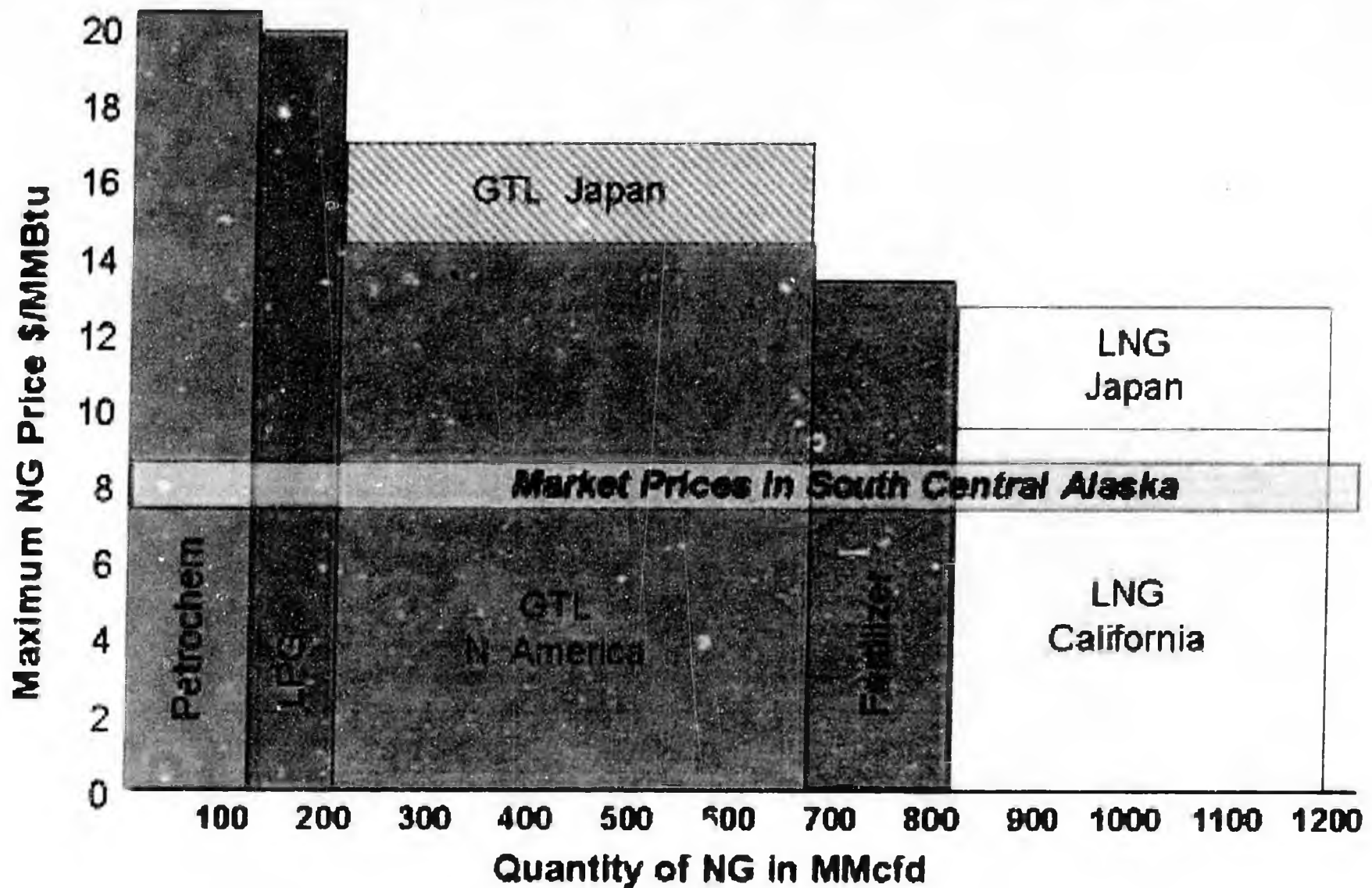
2006 Study Conclusions

Base Price Scenario (2025 Snapshot)

- Horizontal axis shows potential gas demand for each industry based on world class size for petrochemical, LPG, and GTL
- LNG is based on continued use of Kenai liquefaction facility
- Vertical axis shows maximum price of natural gas that each industry can afford
- Forecasted market prices in South Central Alaska are overlaid

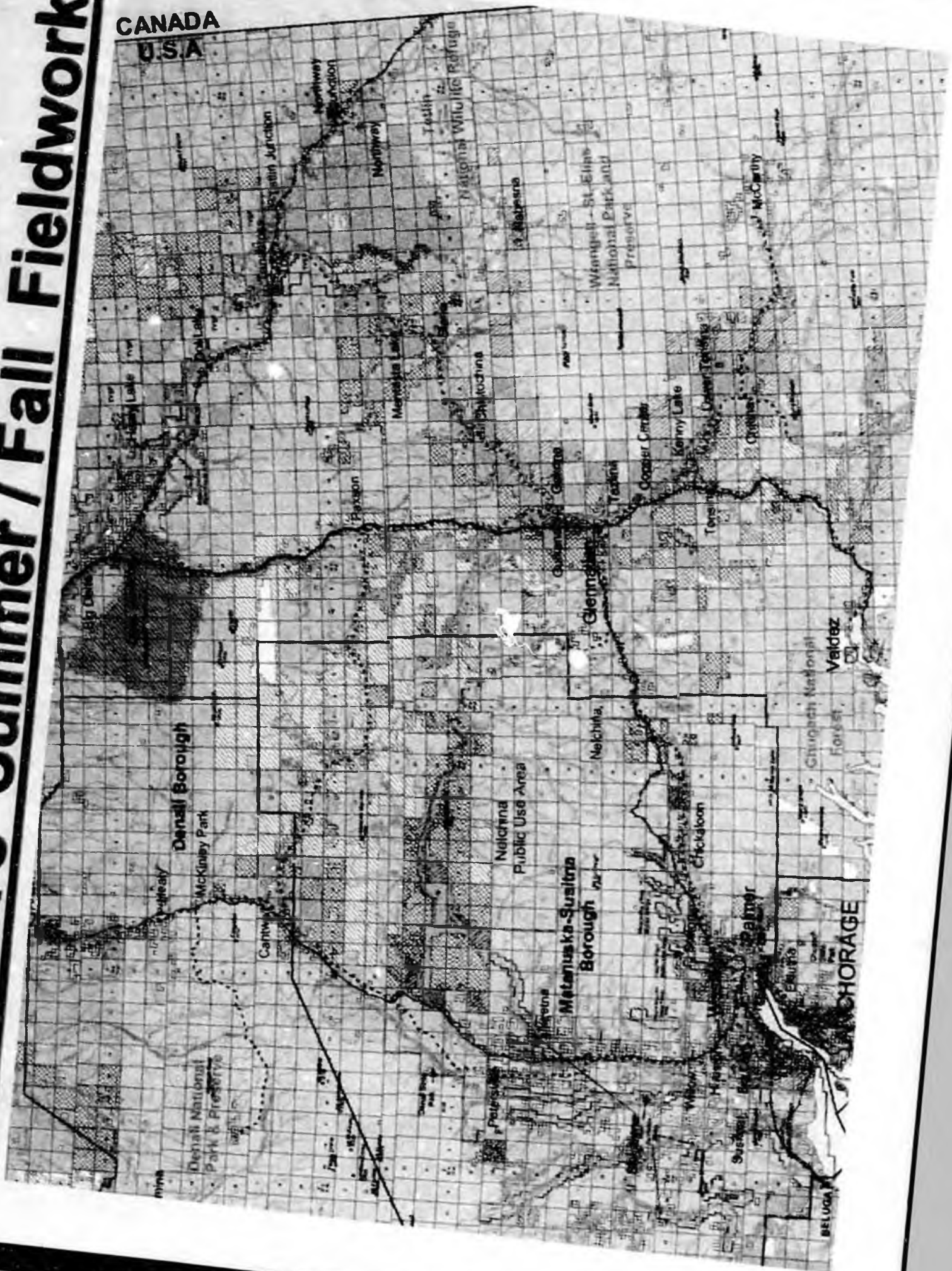


2008 Updated Study

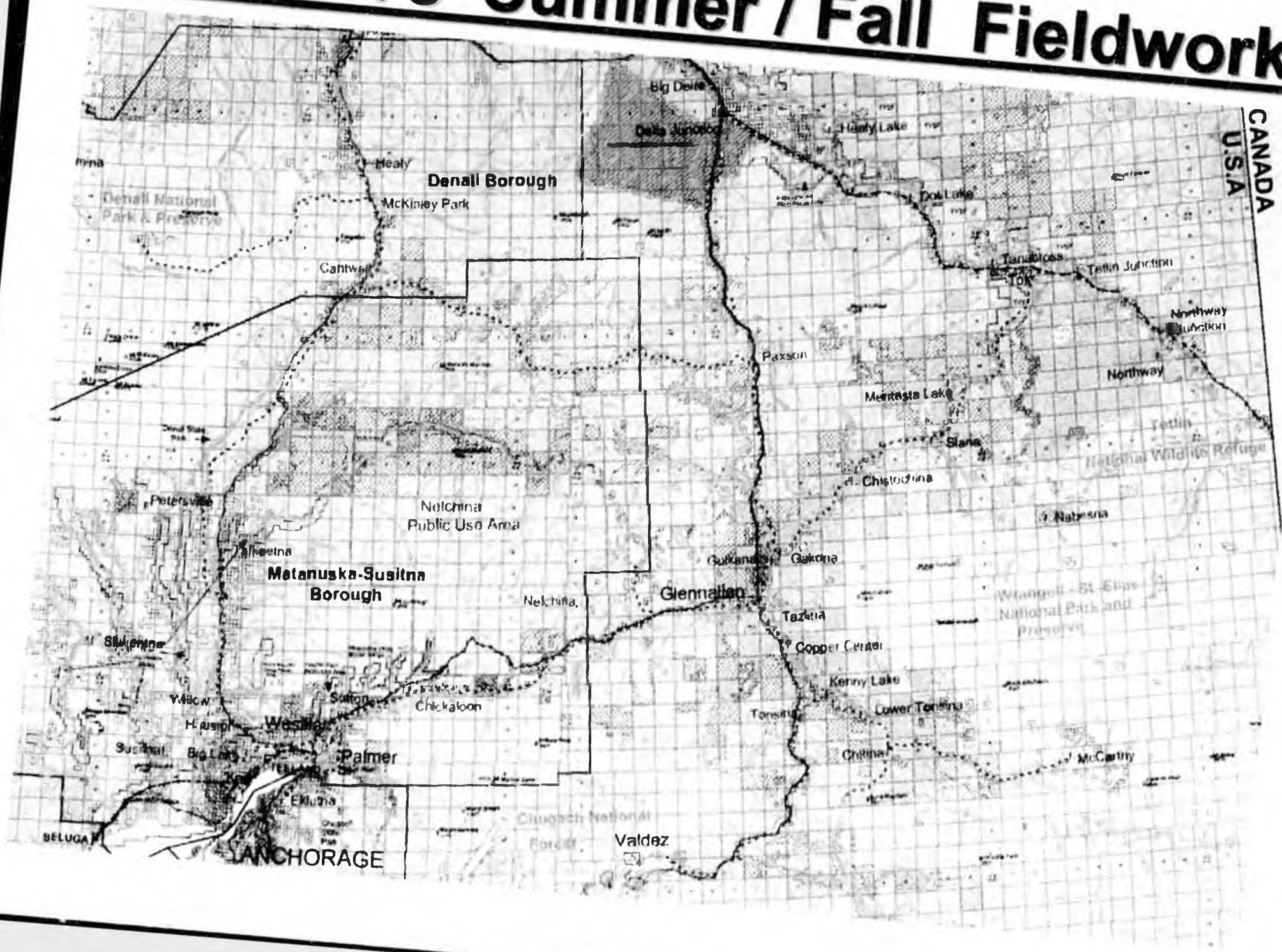


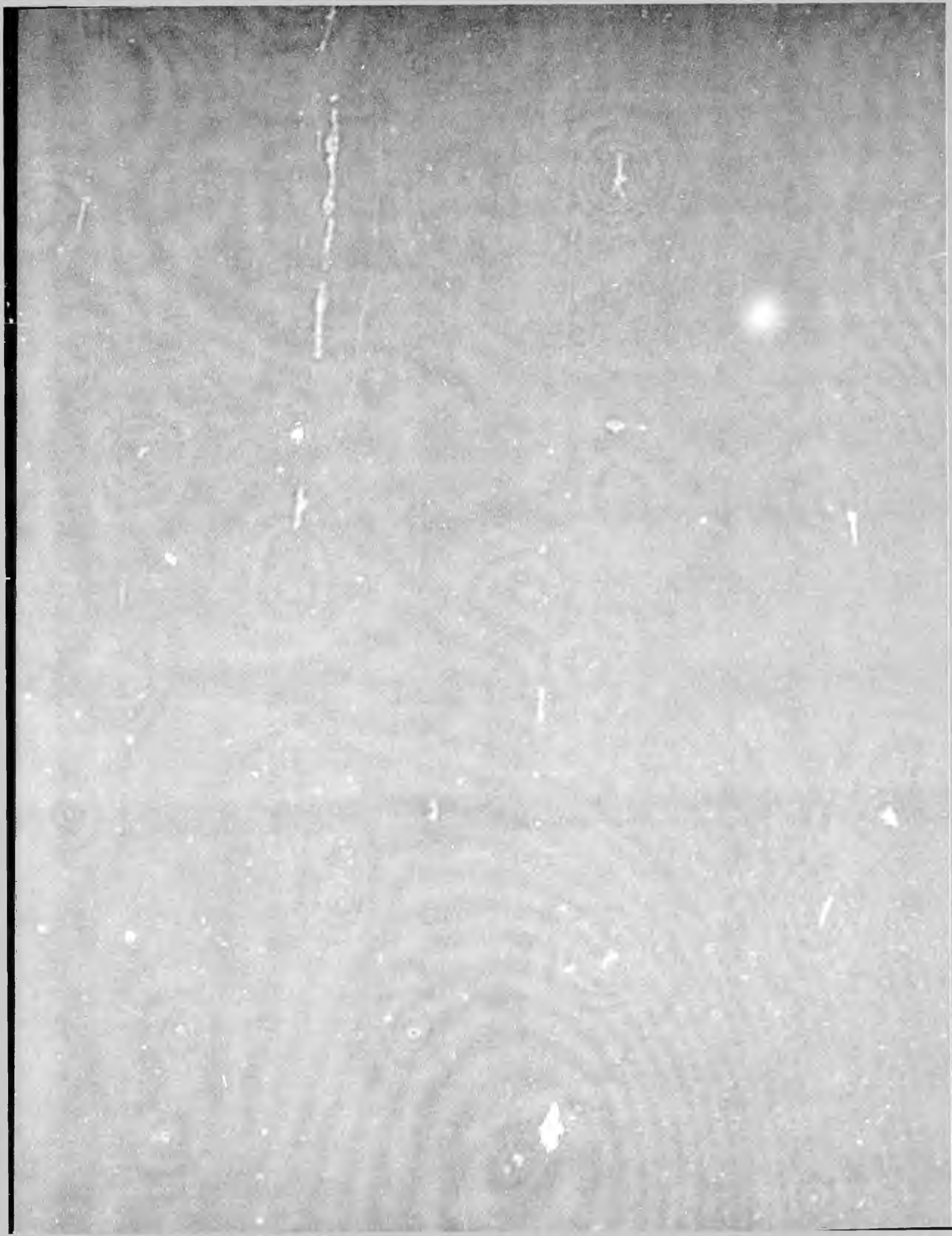


ANGDA's Summer / Fall Fieldwork



ANGDA's Summer / Fall Fieldwork







Special Session
Fairbanks, Alaska
June 12, 2008

Gene Dubay, SVP & COO
Continental Energy Systems

Curtis Thayer, Director
Corporate & External Affairs

Andrew White, Manager
Business Development & Revenue Forecasting



All Our Energy Goes Into Our Customers

Who We Are – ENSTAR Facts

- Established 1961
- Number of Meters – 128,000+
- Number of Alaskans Served* - 345,600
- Miles of Distribution Mains and Transmission Mains – 3,100
- Direct Impact on Alaska's Economy - \$306 mil
- Number of ENSTAR Employees – 174
- Rank among Alaskan energy Utilities – 1
- New Customers in 2007 – 2,376

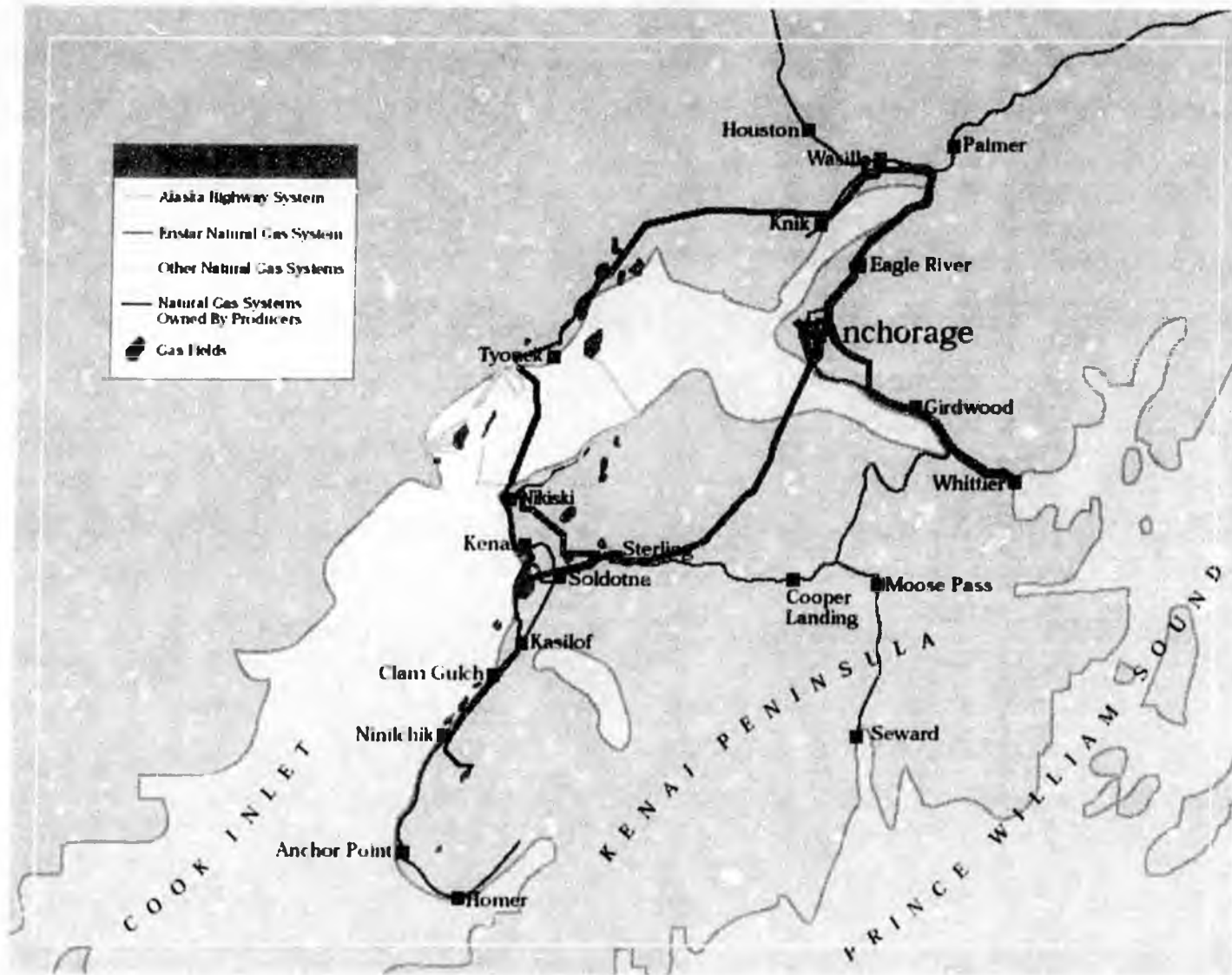
* 128,000 Meters x 2.7 Alaskan Consumers per Meter

ENSTAR

(Alaska Pipeline Company)

- Engineering/Construction
- 45 Years of Experience in Alaska
- Constructed and is operating 450 miles of Transmission Mains and 2700 miles of Distribution Mains
 - Represents 75% of all gas transmission pipelines in Alaska
 - Represents 100% of distribution mains in South-Central Alaska
- Expertise
 - Compression Plant Engineering & Construction
 - Pipeline Engineering
 - Environmental/Permitting
 - Construction Management

South Central Gas Distribution



Cost Comparison Percentage of Annual Bill

Cost Comparisons 1998

Average Bill = \$3.77/Mcf

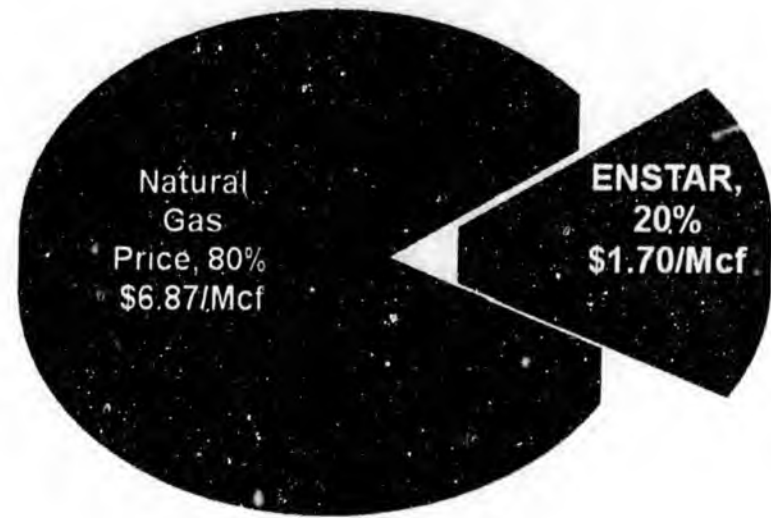


*Average Consumption per household in 1998 = 179 Mcf

*Average Annual Bill = \$675.00 (\$56.25/month)

Cost Comparisons 2008

Average Bill = \$8.57/Mcf



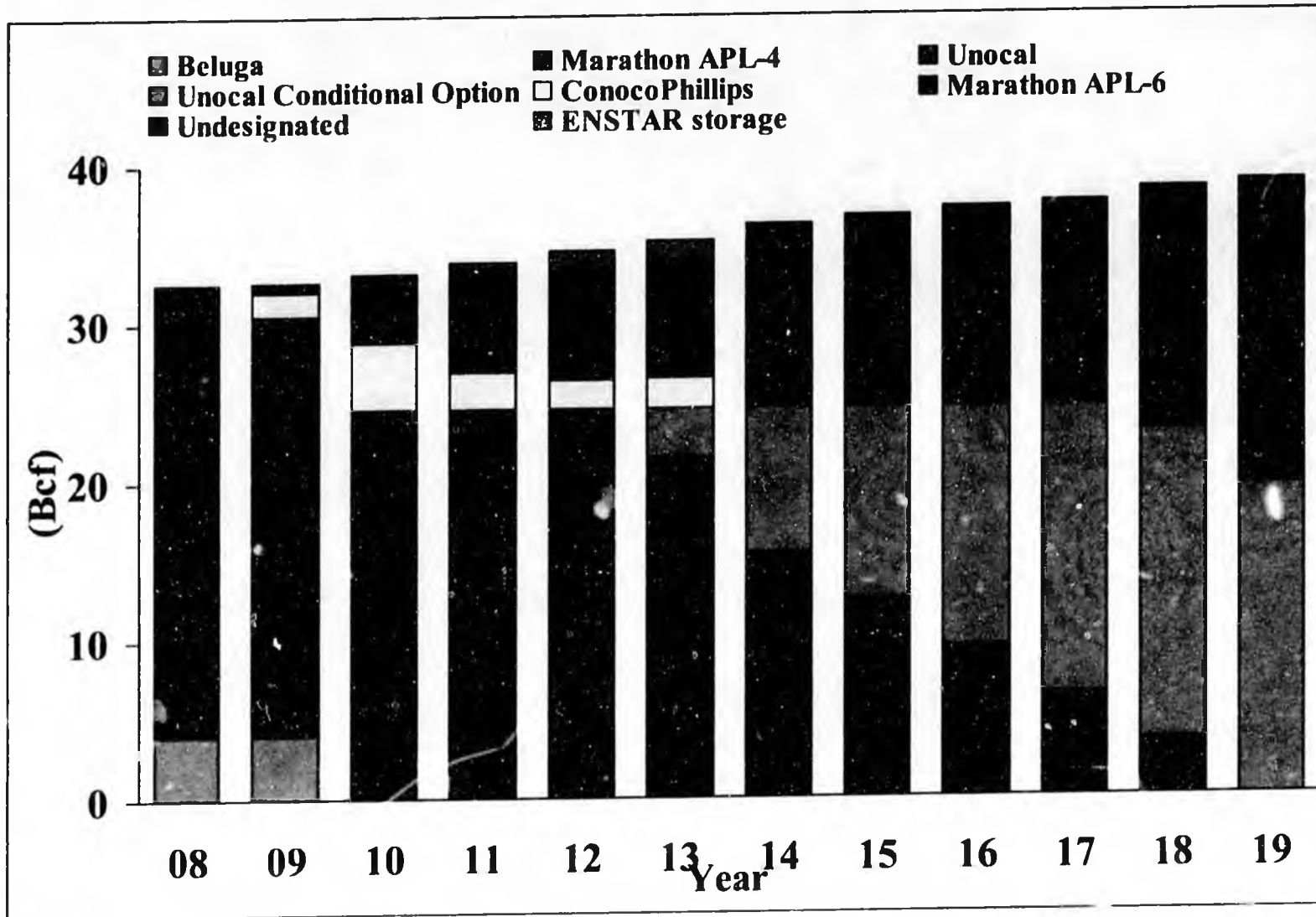
*Average Consumption per household in 2007 = 173 Mcf

*Average Annual Bill = \$1483.00 (\$124.00/month)

Three Driving Principles:

1. *Assure a safe reliable supply of natural gas for our customers.*
2. *Achieve the lowest available price possible for our customers.*
3. *Encourage exploration, thereby increasing available natural gas reserves.*

Gas Supply – April 2008 Outlook



Gas Supply Contract Timeline

- February 2007: ENSTAR solicited gas through RFP
- March 2007: ConocoPhillips & Marathon respond
- March 2007-April 2008: Negotiations (supply & gas storage)
- December 2007: Term sheets signed with both suppliers
- April 11, 2008: Regulatory approval process: Contracts submitted to the RCA
- July 28, 2008 Public hearings begin in Anchorage
- January 1, 2009 2.1 Bcf shortfall if contracts not approved

Gas Supply Contracts

- Supply Commitment subject to U.S. DOE approval of LNG export authorization – Granted June 3, 2008
- ENSTAR to develop gas storage 2011
- Tiered Pricing
 - Base Load Volumes
 - Seasonal Volumes
 - Peak Needle Volumes
- Gas delivered will be based on supplier share of the forecasted market
- ENSTAR target approval: October 31, 2008

Marathon Contract

- Term: 2009 – 2013
- Total Volume Commitment: 25.6 Bcf
- Energy Price is the Composite Index of 3 pricing points:
 - Chicago City Gate
 - PG&E City Gate
 - SoCal Gas

ConocoPhillips Contract

- Term: 2009 – 2013
- Total Volume Commitment = 12.0 Bcf
- Energy price is the Cook Inlet Composite Index comprised of 5 pricing points:
 - TCPL Alberta, AECO
 - Northwest Canadian border – Sumas
 - PG&E Malin
 - PG&E City Gate
 - SoCal Gas

Gas Storage Options

- Develop and acquire reservoir storage
- Continued export of LNG from existing Kenai plant and add peak shaving for ENSTAR
- Use existing Kenai LNG plant if LNG export **CEASES** (operated by either ConocoPhillips or ENSTAR)

Higher GCA Does Not Benefit ENSTAR

■ We have moved from a market of excess deliverability to an environment where deliverability does not meet demand

- Cost of natural gas reflects market prices
- More supply contracts needed; smaller volumes
- Pipeline system more complex to operate

■ Higher energy costs are not good for Utilities

- Commodity costs are a pass-through with no additional profit for the Utility
- Consumers use less
- Slower payments and higher bad debt
- Consumer satisfaction decreases
- New Rate designs are needed that will allow a utility to encourage conservation



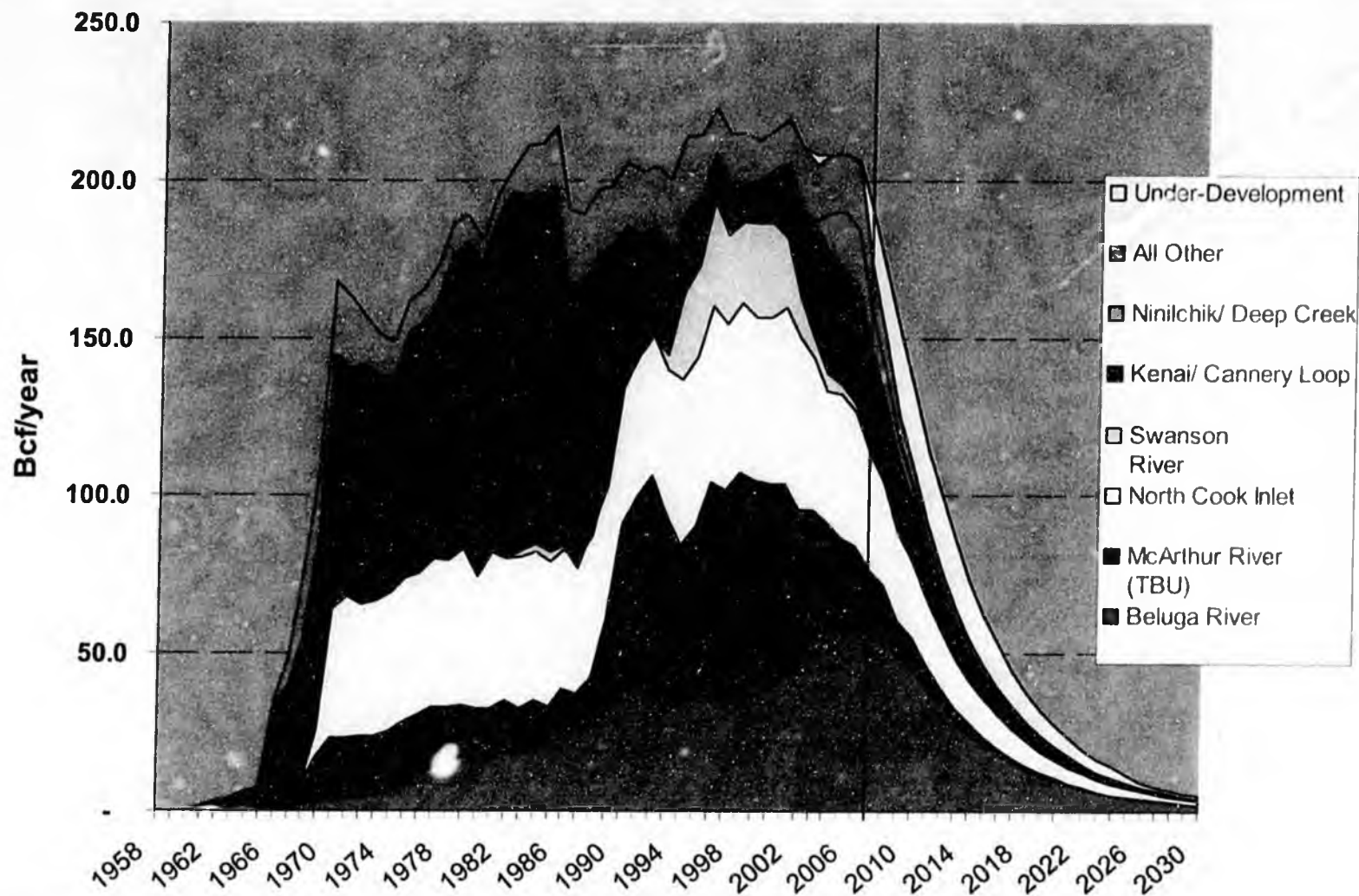
ENSTAR In-State Pipeline Phase One



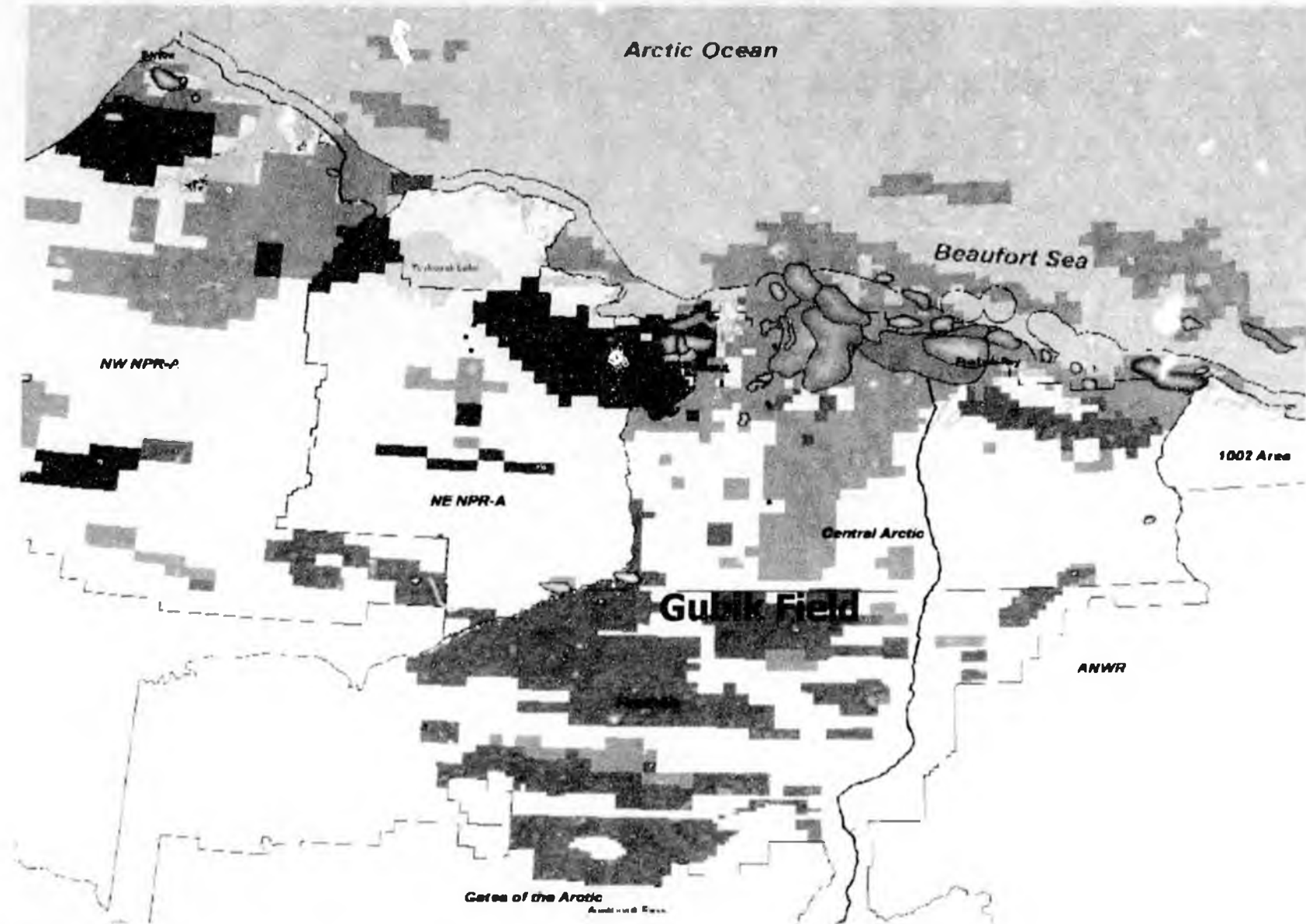
All Our Energy Goes Into Our Customers

Historic & Projected Natural Gas Production (Bcf/Year)

Source: Division of Oil & Gas Report 2006

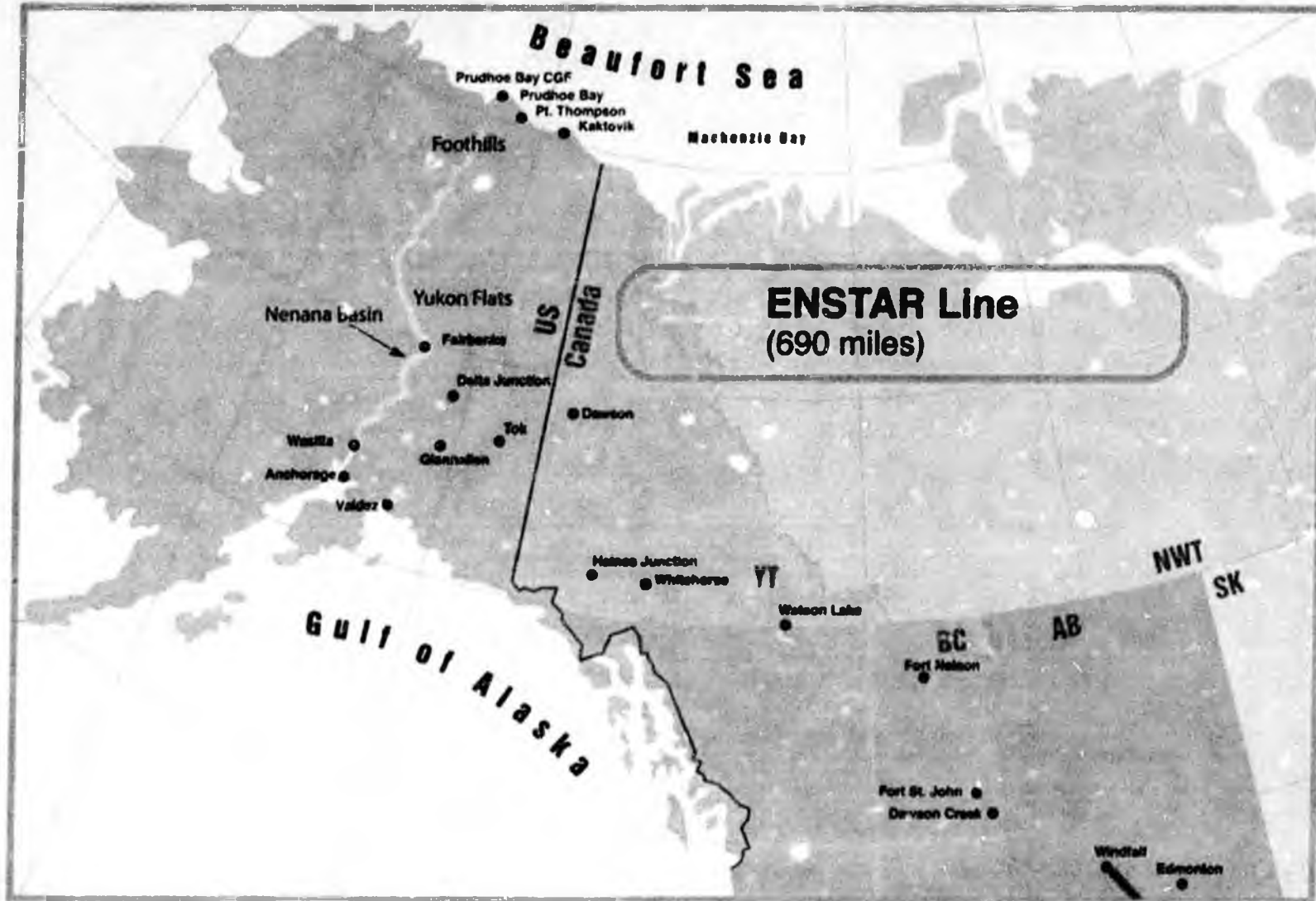


Foothills Unit Area Map



ENSTAR Line

Natural Gas for South Central Alaska



Pipeline Route & Cost

Cook Inlet to Fairbanks

- Approximately 320 Miles
- Parks Highway Route

Cost \$970 million

Fairbanks to the Foothills

- Approximately 370 miles
- Dalton Highway Route

Cost \$2.3 Billion



Total Project Cost - \$3.3 Billion for 20" Diameter

Project Timeline – 5-6 Years

2-3 Years of Permitting, Design & Procurement

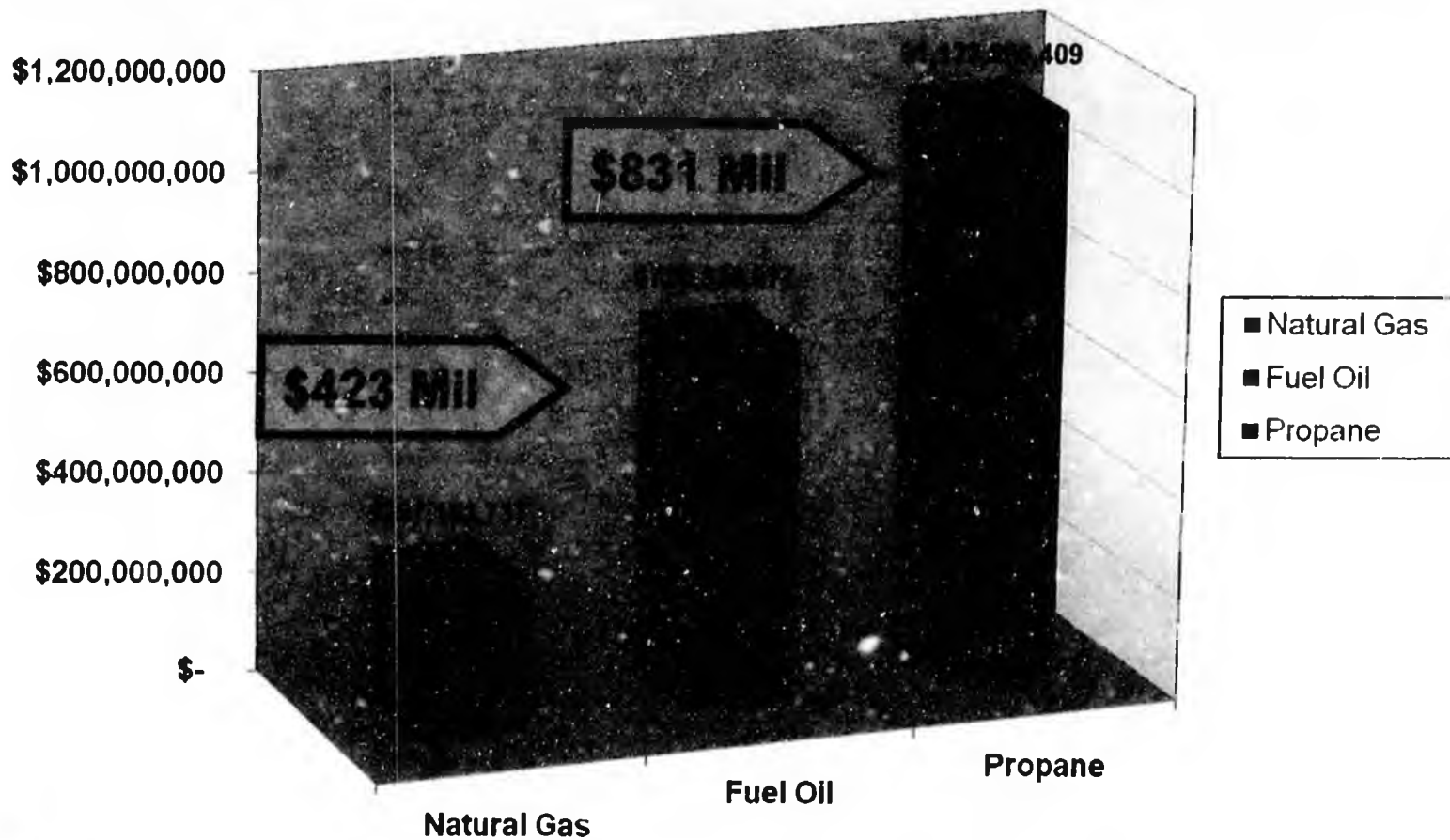
3 Years of Pipeline Construction

Advantages of the ENSTAR Line

- Timing (First gas 2014)
- Alaska controls her own destiny
- Long-term supply solution for the Railbelt communities
- Not mutually exclusive with pipeline to Lower 48
- Compliments AGIA and the DENALI project
- Could revive Agrium plant
- Could extend life of Kenai LNG plant
- Creates opportunities for natural gas-based industrial growth in South Central Alaska
- In-state markets qualify for lower tax burdens under Alaska's ACES
- Achieves reasonable end user pricing for Alaskans
- Ensures sufficient wellhead prices for exploration & development

Cost to Consumer

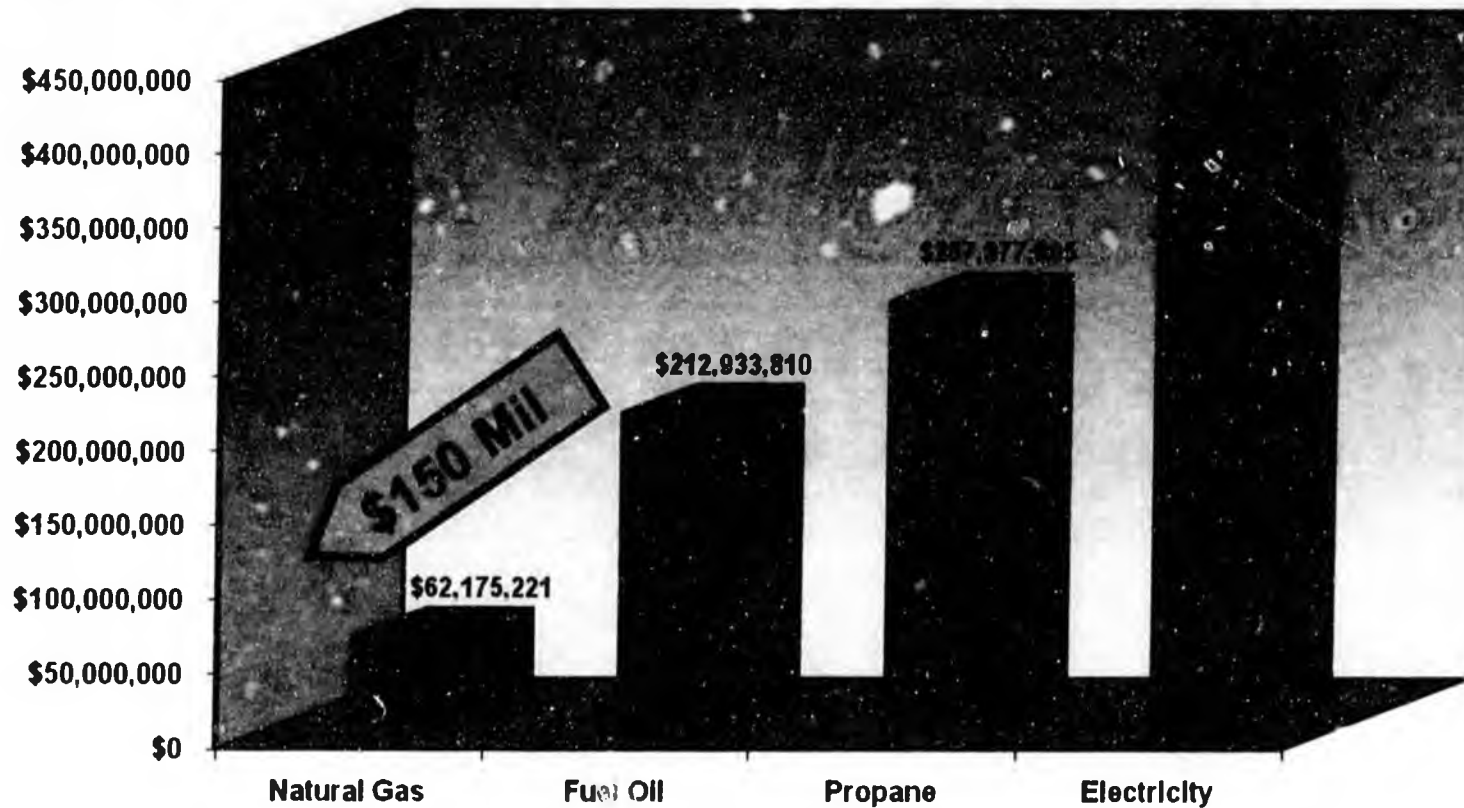
Switching to Alternative Fuels in South Central Alaska (2007 costs)



Comparative Fuels in Fairbanks

Potential Economic Boom

(Natural Gas @ \$8.57/Mcf - ENSTAR price)



Accessible In-State Market

- ENSTAR
- LNG Export
- Agrium
- South-Central Electric Companies
- Fairbanks Natural Gas
- Military Bases
 - Elmendorf AFB & Fort Richardson
 - Eielson AFB & Fort Wainwright
- Flint Hills Refinery
- Fairbanks Power (Fuel Switching)

ENSTAR Pipeline Study

Throughput and Load Estimates

Scenario A - Agrium and LNG Exportation

<u>Load Profile Bcf Per Year</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Agrium, Inc.	48.000	48.000	48.000	48.000	48.000	48.000
Chugach Electric	20.805	16.863	16.863	16.863	16.863	16.863
LNG	49.000	49.000	49.000	49.000	49.000	49.000
ML&P	-	0.365	1.095	1.825	2.190	2.555
ENSTAR	34.203	34.717	35.237	35.766	36.302	36.847
Additional Commercial	4.745	4.745	5.110	5.110	5.110	5.110
Tosoro Refinery	4.015	4.015	4.015	4.015	4.015	4.015
MEA/HEA	-	-	-	-	-	-
Golden Valley Electric	3.200	3.200	3.200	3.200	6.400	6.400
Flint Hills Refinery	5.000	5.000	5.000	5.000	5.000	5.000
Fairbanks NG	2.190	3.650	6.570	7.300	7.665	8.030
Total	171.158	169.555	174.090	176.079	180.545	181.820

ENSTAR Pipeline Study

Throughput and Load Estimates

Scenario A - Agrium and LNG Exportation

<u>Load Profile MMcfd</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Agrium, Inc.	131.51	131.51	131.51	131.51	131.51	131.51
Chugach Electric	57.00	46.20	46.20	46.20	46.20	46.20
LNG	134.25	134.25	134.25	134.25	134.25	134.25
ML&P	-	1.00	3.00	5.00	6.00	7.00
ENSTAR	93.71	95.11	96.54	97.99	99.46	100.95
Additional Commercial	13.00	13.00	14.00	14.00	14.00	14.00
Tesoro Refinery	11.00	11.00	11.00	11.00	11.00	11.00
MEA/HEA	-	-	-	-	-	-
Golden Valley Electric	8.77	8.77	8.77	8.77	17.53	17.53
Flint Hills Refinery	13.70	13.70	13.70	13.70	13.70	13.70
Fairbanks NG	6.00	10.00	18.00	20.00	21.00	22.00
Total	468.93	464.53	476.96	482.41	494.64	498.14

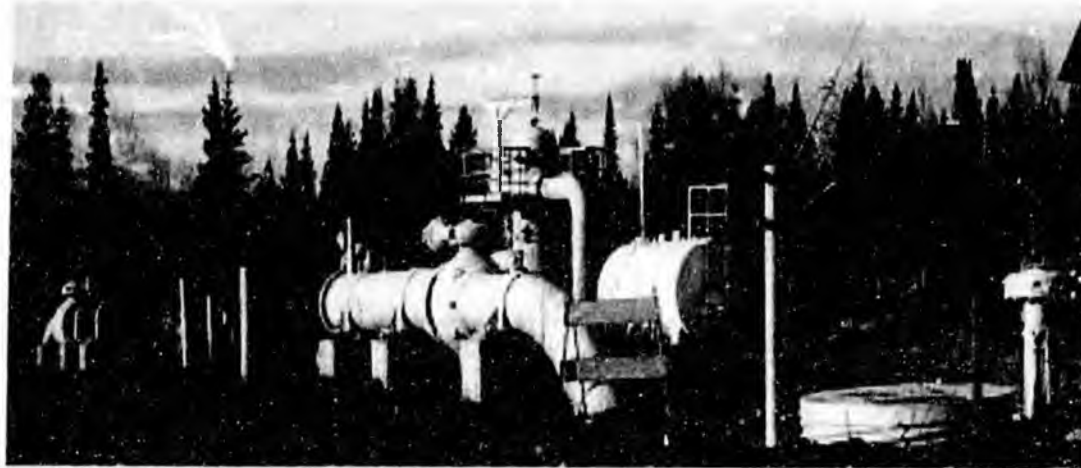
ENSTAR Pipeline Study

Gas Supply Basins

- Foothills
- Cook Inlet
- Nenana Basin
- Yukon Flats
- Peak Storage
 - In field
 - LNG

Assumptions

- Project based on utility grade gas
- 20" diameter high grade steel pipeline
- Operating pressure ~2500 psi
- Operating pressure & design allow for additional hydrocarbon spiking



Project Development Plan Overview

Phase One: Goals & Tasks

- Alignment
- Constructability & Design Basis
- Field Work
- Cost Estimate
- Geotechnical Review
- Regulatory & Environmental

Development Cost Total \$5 to \$6 million

Phase One Complete: Spring 2009



Where Are We Today?

- Contracted engineering, environmental, and construction companies to assist with the project
- Field work began June 10
- Update meetings scheduled with Anadarko in Alaska July 15th
- Aerial photography and LIDAR flights underway on ENSTAR's proposed completed route
- Preliminary permitting and ROW use meetings with Army Corps of Engineers, BLM, JPO, SPCO, National Parks, DNR, and ADOTPF, along with a number of non-governmental agencies
- Development of Environmental Evaluation Document
- Development of GIS database and alignment sheets
- Continued coordination with DENALI Pipeline

Development Plan Priorities

- Continue regulatory permit acquisition
- Prepare economic & financial models
- Address environmental work
- Public outreach & public involvement
 - Alaska Support Alliance, Fairbanks Economic Development Corporation, Rotary Clubs, South Central Chambers, ASRC, CIRI, Doyon, KTUU, KTVA, Anchorage Daily News, Fairbanks Daily News Miner, Peninsula Clarion, Talk Radio Programs, Platts Gas Daily
 - Continued updates planned
- State ROW application submittal
- **June 2009: Management Decision on Plan Moving Forward**

ENSTAR Pipeline Development Team

- ENSTAR Natural Gas Company
- Michael Baker Jr., Inc.
- ASRC Energy Services
- Aerometric, Inc

Questions and Comments

HB 3001

SB 3001

6/13/08

SPECIAL

SESSION

DOCUMENTS

AGIA Training Strategic Plan



Alaska Department of Labor and Workforce Development

Commissioner Click Bishop

Assistant Commissioner Guy Bell

Research & Analysis Chief Brynn Keith

Fairbanks

June 13, 2008

“This gasline will fuel our homes, our economy and careers for Alaskans - for generations.”

Governor Sarah Palin
2008 State of the State Address





Gasline Workforce Goal

Alaskans are trained and ready for a gas pipeline and other natural resource development jobs—and these jobs are made available to Alaskans.



Workforce Development

- Identify skills gaps
- Minimize gaps through career awareness, effective labor exchange, job center network, accessible training services

Result: Alaskans meet the need of Alaska employers for legacy jobs and long term careers.

Training System at a Glance

Postsecondary Education

- University of Alaska
- AVTEC
- Regional Training Centers
- Private Training Providers

Secondary Education

- Education & Early Development
- High Schools
- Adult Basic Education
- Youth First
- Construction Academies
- College Ready Work Ready

Employment Services

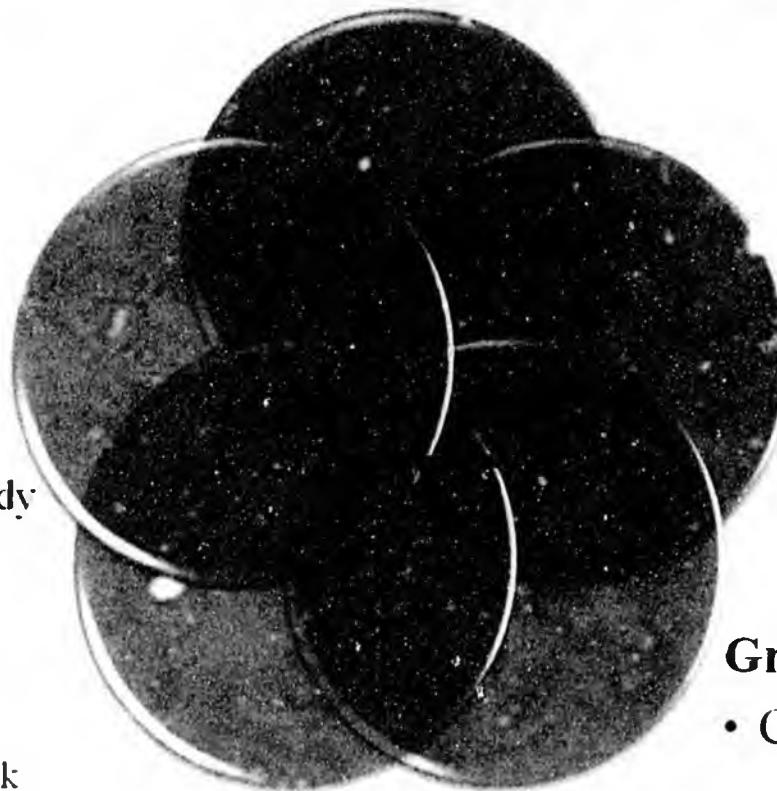
- Job Center Network
 - Counseling
 - Job Training Referral

Funding

- *Federal*
 - Workforce Investment Act
 - Denali Training
 - Pipeline Training
- *State*
 - STEP
 - TVEP
 - GF
- *Tuition, etc.*

Grantees

- Competitive Selection



Challenges

- Economic cycles
- Ebb and flow of workers
- Awareness—not just professional positions but high paying blue collar jobs
- Cost and accessibility of training
- Job barriers—drug free, driver's license, employability skills, transferrable certification



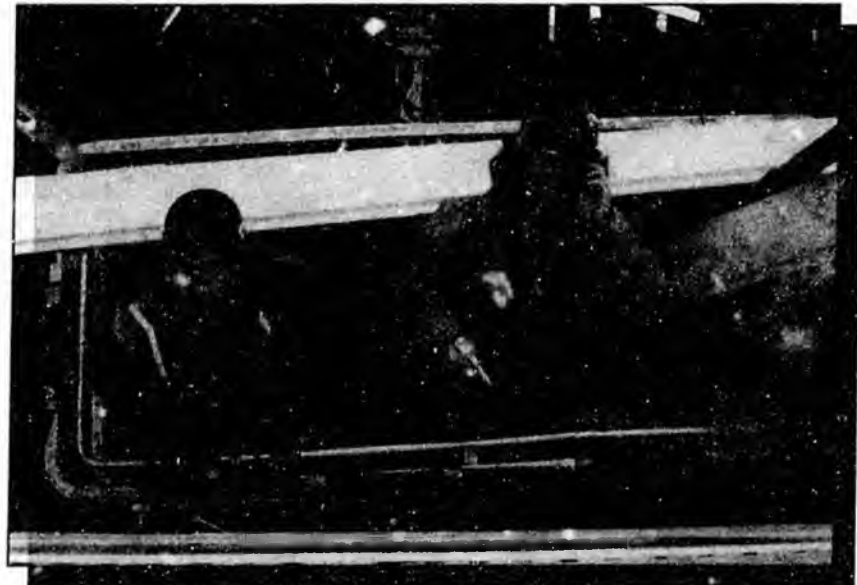
Four AGIA Strategies

- Increase awareness of and access to careers in natural resource development
- Develop comprehensive career and technical education system
- Increase registered apprenticeships and on-the-job training opportunities
- Increase training for operations, technical and management workers



1. Increase Awareness of and Access to Careers in Natural Resource Development

- Job awareness program
- One stop information on jobs and training
- FY 09 funding to develop training web site and improve online job service



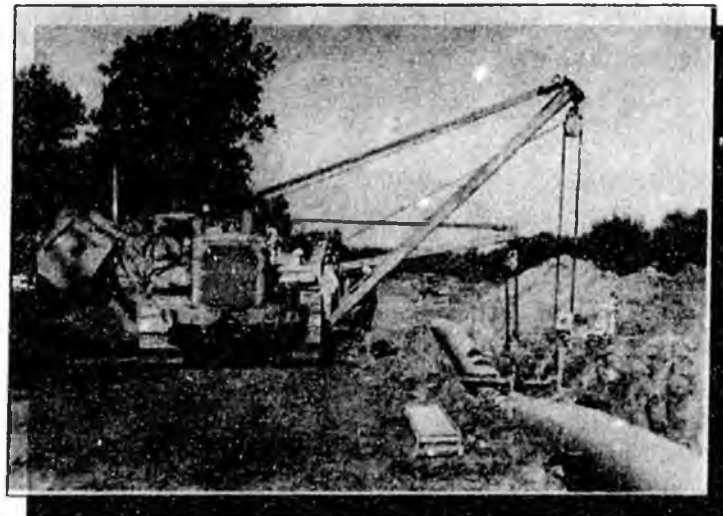
2. Develop Comprehensive Career and Technical Education System

- Career pathways, skill standards and training program coordination
 - FY 09 funding for coordinator
- Work Keys DEED/DOLWD partnership
 - FY 09 funding in DEED
- K-12 career planning and counseling
 - FY 09 Alaska Youth First funded
- Integrated system for youth and adults
 - FY 09 Construction academies funded



3. Increase Registered Apprenticeships and On-the-Job Training Opportunities

- Increase job training for entry level jobs
- Increase apprenticeships in construction
- Employer incentives for apprenticeships and OJT
 - Funding received to support apprenticeships and OJT—targeted federal grant and general fund



4. Increase Training for Operations, Technical and Management Workers

- Expand programs for critical jobs
 - FY 09 funding for UAA engineering program expansion
- Recruit more Alaska high school grads
- Help workers keep pace with technology and skill upgrades
- Expand management training opportunities for skilled workers



Our Focus

- Current skills gap
- Legacy and long-term jobs



Identifying the AGIA Skills Gap

Working with industry partners, DOLWD:

- Identified 113 AGIA occupations
- Used existing occupational supply and demand data to help identify potential gaps



Alaska's AGIA Skills Gap

- Current gap: In 2006 nonresidents accounted for more than 16% of the workers in the AGIA identified occupations
- Future gap: More than 37% of Alaskans working in AGIA occupations were 45 years old or older in 2006





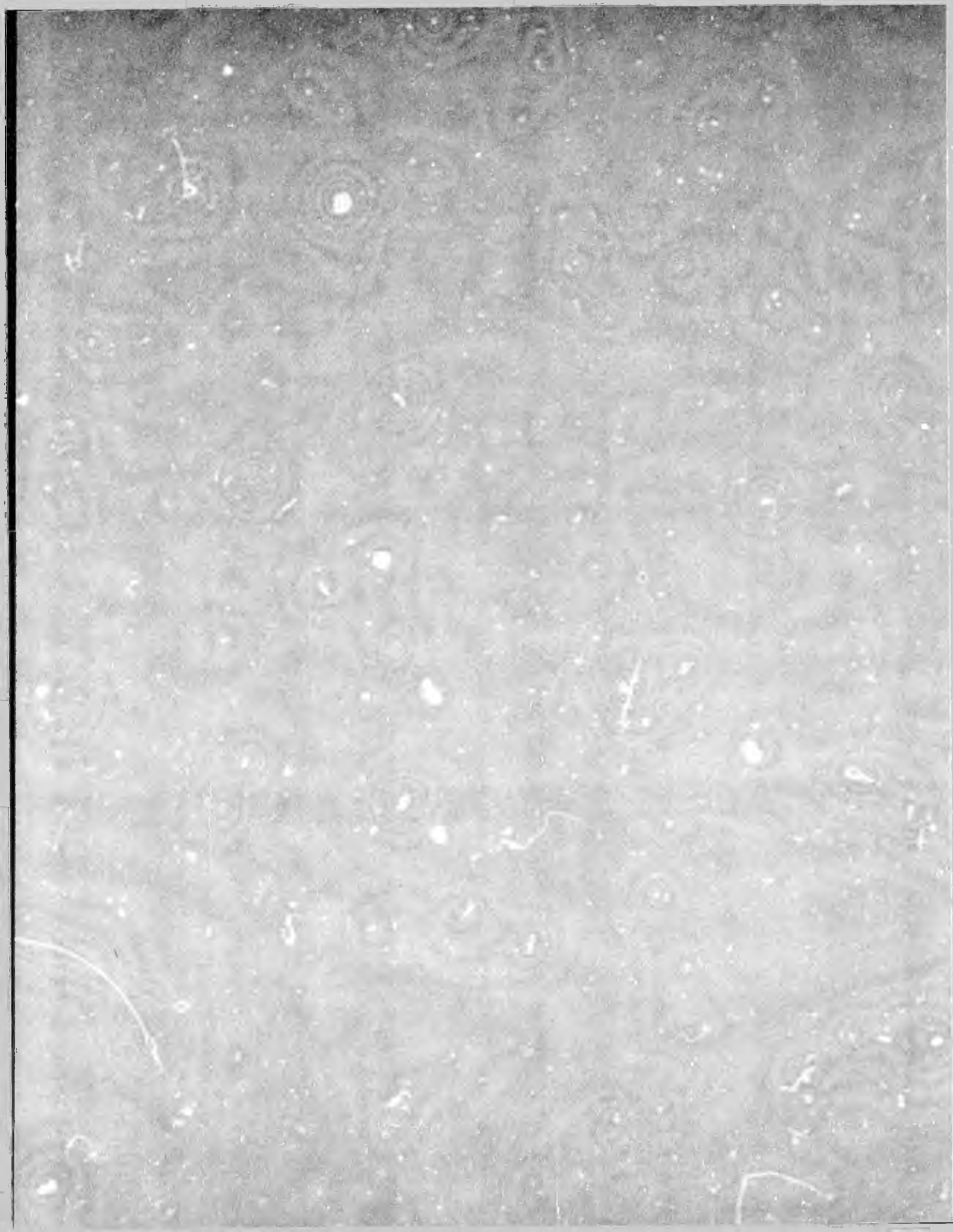
AGIA Occupational Data

	Percent Nonresident Workers (2006)	Percent Workers aged (2006)	Average Wage (Mar. 2007)
Carpenters	17.0%	34.6%	\$26.33
Civil Engineers	12.4%	43.9%	\$36.64
Electricians	24.2%	32.7%	\$31.47
Operating Engineers and Other Construction Equipment Operators	18.3%	49.9%	\$28.10
Surveyors	18.1%	45.2%	n/a
Truck Drivers, Heavy and Tractor- Trailer	13.6%	48.8%	\$21.66
Welders, Cutters, Solderers and Brazers	34.8%	40.4%	\$25.05

For More Information

- Web: labor.state.ak.us
- Click on: AGIA Training Strategic Plan





PREFACE

This document contains the Findings and Determination of the Commissioners of Natural Resources and Revenue concerning whether to issue a license under the Alaska Gasline Inducement Act ("AGIA") to TransCanada Alaska Company, LLC and Foothills Pipe Lines Ltd. Throughout this document, the AGIA applicant is referred to as "TC Alaska." TC Alaska is a subsidiary of TransCanada Corporation ("TransCanada"). TransCanada, through its independent pipeline company affiliates, owns and operates one of the largest natural gas pipeline transportation networks in North America. TransCanada has pledged all support necessary, both financial and otherwise, to TC Alaska to achieve completion of the project.

The basis for this Determination is explained in detail in the written Findings and supporting documentation that follows:

- *Executive Summary:* The Executive Summary contains a short, simple discussion to provide the reader with a sketch of the more important aspects of the Findings document. The reader can obtain additional, more-detailed information from the actual text of the Findings and Determination.
- *Chapter One — Introduction and AGIA:* Chapter One serves as an introduction to the process used to develop this Findings document and presents information that guides the reader through the evaluation conducted by the Commissioners of the Departments of Natural Resources and Revenue under AGIA. Chapter One also presents information on how the commissioners examined and compared three natural gas projects in order to determine the type of project that most sufficiently maximizes benefits to Alaskans.
- *Chapter Two — Technical Background:* Chapter Two provides a simplified explanation of the many components of a major natural gas pipeline project—what physical and engineering components comprise a natural gas pipeline, what regulatory processes govern the development and operation of a pipeline, what commercial factors drive the economics for the various pipeline stakeholders, and what methods are traditionally used to evaluate a pipeline project's technical and commercial viability.
- *Chapter Three — Analysis of TC Alaska's Application:* Chapter Three contains the commissioners' evaluation of the TC Alaska Project as proposed in its AGIA Application.
- *Chapter Four — LNG:* Chapter Four contains the commissioners' comparison of the TC Alaska Project with liquefied natural gas (LNG) project options.
- *Chapter Five — Producer Project:* Chapter Five consists of the commissioners' comparison of the TC Alaska Project with the proposal ConocoPhillips and BP recently submitted, labeled "Denali™ - the Alaska Gas Pipeline" ("the Producer Project").
- *Chapter Six — Findings and Determination:* Chapter Six contains the Findings and Determination of the commissioners.
- *Appendices:* The appendices contain information that supplements or further explains the Findings document. The appendices include the summary of public comments and the responses to those comments, as well as expert reports.

EXECUTIVE SUMMARY

This Executive Summary contains a short, simple discussion of the more important aspects of the Findings document. The reader can obtain additional, more detailed information from the actual text of the Findings and Determination. As discussed in these Findings:

- *Issuance of the AGIA license to TC Alaska will maximize benefits to Alaskans because it will provide the best opportunity to achieve a gas pipeline that encourages full exploration of Alaska's natural gas resources, generates long-term jobs for Alaskans, maximizes state revenues, provides affordable in-state gas opportunities, and realizes other important state goals.*
- *Although liquefied natural gas ("LNG") project options are likely economic, they would provide the state with less revenue than the TC Alaska Project. Exclusive LNG projects are significantly less likely to succeed compared to TC Alaska because they are more complex, more costly, more difficult to finance, and would face potential regulatory barriers in exporting LNG to Asia. The TC Alaska Project provides Alaska with its best opportunity for a successful LNG project, as a "Y-line" option. The TC Alaska Project proceeding first will reduce costs and lessen financial and contracting hurdles associated with an LNG project. Coming after gas is already bound for U.S. markets, a Y-line may be able to overcome political opposition to exporting gas. Accordingly, the commissioners believe that the best route to an Alaska LNG project runs through the TC Alaska proposal.*
- *Although the TC Alaska Project would generate billions of dollars of profits for the Major North Slope Producers, BP and ConocoPhillips have opposed the TC Alaska Project and touted their own pipeline proposal ("the Producer Project"). Unlike TC Alaska's Project, the Producer Project contains no commitments to a project timeline, fails (similar to TAPS) to ensure tariff and expansion terms that will maximize North Slope exploration and development, suffers from potential antitrust problems, and in order to result in a pipeline will likely (similar to the failed Stranded Gas Development Act contract) require the state to provide the Producers with massive additional fiscal concessions.*

Purpose of this Finding and Determination

AGIA, AS 43.90, requires the Commissioners of Natural Resources and Revenue to issue a determination with written findings if they decide that a proposed gasline project will sufficiently maximize the benefits to the people of Alaska and merits issuance of an AGIA license. This document constitutes the commissioners' Finding and Determination. Following an extensive evaluation process and consideration of public comments, the commissioners have determined that the TC Alaska Project will sufficiently maximize the benefits to Alaskans and merits issuance of the AGIA license.

Benefits for Alaska of a TC Alaska Gas Pipeline Project

The pipeline project proposed by TC Alaska offers significant benefits to Alaska. Alaska's economy will benefit from short-term construction jobs, but will benefit more significantly from long-term careers, as new natural gas fields are developed because the pipeline to market has been built. Alaska will benefit from a pipeline that can be expanded to accommodate additional natural gas supplies that can be dedicated to meet Alaska's energy needs. Alaska will benefit from a pipeline tariff structure that maximizes state revenues, provides true open access to all potential shippers, provides the lowest reasonable transportation rates, and accommodates expansions. Alaskans will benefit from the opportunity the TC Alaska Project creates for a "Y line" liquefied natural gas project and the "bullet line" to Southcentral Alaska. Alaska will benefit from the potential for lower energy costs as natural gas is made available to communities throughout Alaska via off-take points along the pipeline route and associated spur lines. The construction of a natural gas pipeline is an exciting start to a new era in the Alaska economy, one where more Alaskans have careers in natural gas exploration and development, where the state and its citizens enjoy a continuing stream of tax and royalty revenues, and where local energy costs are reduced.

Because of the commitments to expansion and real open access that will open the North Slope basin to competition, the TC Alaska Project will generate long-term jobs more effectively than either an LNG option or the Producer Project.

Constructing a natural gas pipeline will generate thousands of construction jobs that will last for three to four years. After the pipeline is operating, employees will be needed to operate compressor stations and other pipeline facilities. The demand for skilled workers trained to drill wells and build new production facilities will increase as the availability of a path to market enhances the economics of exploring for Alaska's vast undiscovered gas resources. Because of its commitments to expansion and real open access that will open the North Slope basin to competition, the TC Alaska Project will generate long-term jobs more effectively than either an LNG option or the Producer Project.

The TC Alaska Project will not interfere with a smaller "bullet line" from the North Slope to Southcentral Alaska. Rather, moving both projects forward simultaneously may produce unique synergies. There are adequate amounts of natural gas on the entire North Slope to fill both pipelines. Because of its smaller scale, the "bullet line" project may be designed and

constructed more quickly than the TC Alaska Project. The two projects may provide benefits to each other: the construction work force may gain experience working on the "bullet line;" and the TC Alaska Project may attract experts to the state who would not otherwise be available to work on the "bullet line" project.

The TC Alaska Project would not preclude an LNG project. Indeed, approving the TC Alaska Project will enhance the prospects for a successful "Y line" LNG project as it will reduce the costs, financing challenges, and commercial coordination challenges unique to LNG projects. TC Alaska offers to construct or transport gas to a "Y line" from Delta Junction to an LNG processing facility in Prince William Sound if shippers express sufficient demand for that project as the work on the overland project progresses.

The TC Alaska Project provides several opportunities to address Alaska's need for low-cost energy. TC Alaska's proposed distance-sensitive transportation rates ensure that Alaskans will pay just the costs incurred to ship gas within Alaska. The TC Alaska Project also offers the potential for construction of spur lines that will make natural gas available to communities throughout the state. Most importantly, because the true open access and tariff provisions promote gas exploration and development, Alaskans will benefit from an environment in which companies compete to meet Alaskans' energy needs.

The cost of transportation on the TC Alaska pipeline (its "tariff") will protect the state's interests throughout the years of pipeline operation. Lowest reasonable tariffs are essential to ensure genuine open access and maximize opportunities for development of Alaska's North Slope natural gas resources. TC Alaska commits to the requirements of AGIA that are designed to ensure the lowest possible tariffs. When tariffs are too high, explorers and developers are discouraged from investing in North Slope natural gas exploration and development. Low tariffs improve the economics of finding and developing additional natural gas resources on the North Slope, which encourages additional exploration and development work that will provide for long-term, stable employment for Alaskans.

Low Tariffs

- Encourage exploration
- Increase long-term employment opportunities
- Produce higher revenues to the state
- Strengthen the Permanent Fund

Low tariffs also mean that the state can earn a greater return on its natural gas resources. As the owner of the natural gas resources, the state gets a share of the natural gas production, its "royalty" share. As a sovereign, the state taxes the profit on natural gas production. Tariffs are

deducted from the market price at the destination where the natural gas is delivered before the royalty amount and production taxes are calculated. This means the higher the tariff, the lower the return to Alaska for its natural gas resource. These returns are an important future revenue stream for the state that can be used to fund government services and capital projects, defray the cost of energy to Alaskans, and maintain the strength of and protect the Permanent Fund.

TC Alaska has committed to regularly expand its pipeline to meet the need for transporting additional gas on reasonable commercial terms. This is essential to opening the North Slope to competitive natural gas exploration and development. New explorers and producers need confidence that if their efforts are successful, they will be able to get their natural gas into the pipeline and to market at a fair rate for transportation.

Alaska's experience with TAPS (which is owned by the Major North Slope Producers) demonstrates how the terms of ownership and operation of a pipeline can adversely affect the state's economic interests and the exploration efforts of developers who do not own a share of the pipeline. When the Regulatory Commission of Alaska reviewed the tariffs on the TransAlaska oil pipeline twenty-six years after it began to operate, it found that the tariffs were excessive. The Superior Court, and eventually the Alaska Supreme Court, affirmed the Commission's finding that the TAPS owners had collected pipeline tariffs from shippers that were an average of 57 percent too high. Decades of excessive tariffs reduced the state's royalties and production tax, and hindered competitive development of the state's oil resources by non-owner companies.

Alaska cannot afford to repeat the TAPS experience. The state must maximize development of the natural gas resources on the North Slope to realize economic growth through increased jobs, revenues and other benefits that will flow from increasing gas production. TC Alaska's commitments to a lower tariff structure will ensure that the state does not repeat the problems experienced with TAPS.

The commissioners recognize the Producer Project may be pursued to completion outside the AGIA process and without state fiscal concessions. The Producers have an obligation to market their gas when it is reasonably profitable to do so; they do not have an obligation to transport the gas through any particular project. If the Producer Project proceeds to an open season, the TC Alaska Project would compete with the Producer Project for gas commitments. However, the Producers have stated that they need concessions from the state to enable them to commit gas to any gas pipeline project. AGIA ties upstream incentives to gas committed at the initial

open season of the AGIA project, to provide the state with the benefits Alaskans require. The state will have opportunities throughout this process to evaluate the need to increase the value of the AGIA upstream incentives, when justified.

The TC Alaska Project offers significant benefits to the state and its citizens. As a pipeline company which increases its profits by expanding its system, TC Alaska has the incentive to foster timely development of the state's natural gas resources to their maximum potential. This also serves the state interests. The TC Alaska Project sets the stage for an open and competitive North Slope natural gas basin during and after pipeline construction. TC Alaska is unique in its willingness to commit to actions that will realize this future.

Awarding a license to TC Alaska will ensure that any additional upstream incentives are provided in exchange for the benefits inherent in an AGIA project. In addition, awarding a license to TC Alaska reduces the likelihood that the state will need to provide unwarranted concessions to the Major North Slope Producers.

Background

Development of Alaska's natural resources is the cornerstone of Alaska's economy. Alaska's North Slope is a world-class natural gas basin. Recent studies estimate that there are 224 trillion cubic feet ("Tcf") of undiscovered, technically recoverable natural gas resources throughout the Alaskan Arctic. Of this amount, 137 Tcf are categorized as undiscovered, economically recoverable resources. These resources are in addition to the approximately 24.5 Tcf of natural gas reserves within Prudhoe Bay plus 9 Tcf of natural gas reserves discovered in other existing fields on the North Slope, including Point Thomson. Although there has been considerable debate about who should build a pipeline and when it will be built, there is unanimous agreement that Alaska needs a pipeline to get its huge volumes of natural gas to market.

When natural gas was discovered on the North Slope, the search began for a way to get Alaska's substantial natural gas resources to market. State and federal laws were passed to encourage natural gas pipeline construction. Potential developers spent millions of dollars on plans and studies. However, the low prices in natural gas markets forestalled the commitments necessary to support the tremendous cost of what would be the largest construction project in North America. As dynamic changes occurred in the natural gas market within the last decade, the viability of, and interest in, an Alaska natural gas pipeline increased.

In 1998, when the Stranded Gas Development Act ("SGDA") was passed, the average price for natural gas in the Lower 48 was under \$2 per million British thermal unit (mmbtu). The first half of this decade was marked by discussions of what type and amount of government subsidies and concessions were needed to make the project viable. Within Alaska, those discussions came in the context of contract negotiations conducted by the previous Governor and his administration with the three primary oil and gas leaseholders on the North Slope: BP, ConocoPhillips, and ExxonMobil ("Major North Slope Producers"). The debate surrounding the proposed contract centered on how much value the state would need to transfer to the Major North Slope Producers and how much risk the state would be required to accept.

By 2006, the natural gas markets had changed dramatically. The average price of natural gas in the Lower 48 was more than \$6 per mmbtu. Large government subsidies no longer appeared necessary to make the project economically viable. In addition, the state had become much better educated on natural gas pipeline economics. The State learned that if it was not careful to protect its interests, billions of dollars in value could be transferred unnecessarily from the state to the Major North Slope Producers. These changes shifted the public debate from what state concessions would be necessary to what the state government could do to most effectively advance the project and maximize the interests of Alaskans. The legislature did not accept the contract that had been negotiated with the Major North Slope Producer under the SGDA. The Major North Slope Producers continued to insist that large concessions from the state were needed, without demonstrating the need for those concessions. Alaska's natural gas pipeline project was at an impasse.

When the Palin Administration proposed AGIA in early 2007, it was based on the understanding that an Alaska natural gas pipeline project was economically viable and that the Major North Slope Producers would continue their efforts to negotiate commercial terms to maximize their strategic position in Alaska and obtain maximum value from any natural gas pipeline project. To protect the state's interests, AGIA used free market competition to move the project through the current impasse. All interested companies were eligible to propose any type of project they determined to be economically and technically viable. The Major North Slope Producers would need to decide whether they were going to get the enormous reserves of Alaska natural gas in the fields they now operated to market in a pipeline they built and owned, or one constructed by

AGIA uses free market competition to move the project through the current impasse. All interested companies were eligible to propose any type of project they determined to be economically and technically viable.

a third party. AGIA presumed that the Major North Slope Producers would act as reasonable commercial players who would comply with their lease obligations and participate in a project with positive economics. Furthermore, AGIA established that if incentives are provided to a natural gas pipeline project they are given in exchange for genuine open access and other provisions necessary to protect the state's interests.

AGIA established a competitive process to allow companies to compete for a license. The companies submitting applications to construct and operate Alaska's natural gas pipeline were required to commit to the tariff and expansion terms that were designed to protect the state's interests and to develop the state's economy by providing employment during the construction of the pipeline and (more importantly) providing long-term careers in a new natural gas exploration and development industry. AGIA was based on the understanding that competition could drive companies to make those commitments. All who recognized that the project economics were positive would compete for the commercial opportunity to build the natural gas pipeline and earn some of those profits. The competition was open to everyone willing to operate within the parameters established by the AGIA "must haves." All competitors, including natural gas pipeline companies, natural gas producers, and LNG projects were eligible to compete.

In exchange for the commitments required in AGIA, the Alaska legislature offered a package of inducements. These include: reimbursement of up to \$500 million of the costs incurred to obtain a regulatory approval from the Federal Energy Regulatory Commission ("FERC") to construct a pipeline; an AGIA project coordinator to facilitate the process; and a stable production tax rate for ten years and fixed royalty valuation methods to anyone who committed to purchase capacity to ship natural gas on the AGIA gasline during its first binding open season. The legislature recognized the state's vital interests in encouraging exploration and development of Alaska's natural gas resources by ensuring a genuine open access pipeline and the lowest reasonable transportation rates. AGIA license applicants were required to commit to a tariff structure that would assure the lowest possible transportation rates and expansion terms to encourage natural gas explorers and prospective developers to compete to explore for and develop Alaska's North Slope natural gas resources and bring them to market. The legislature made the inducements available to an AGIA licensee if the licensee would agree to meet the requirements and make the commitments that the legislature deemed necessary to protect the state's interests.