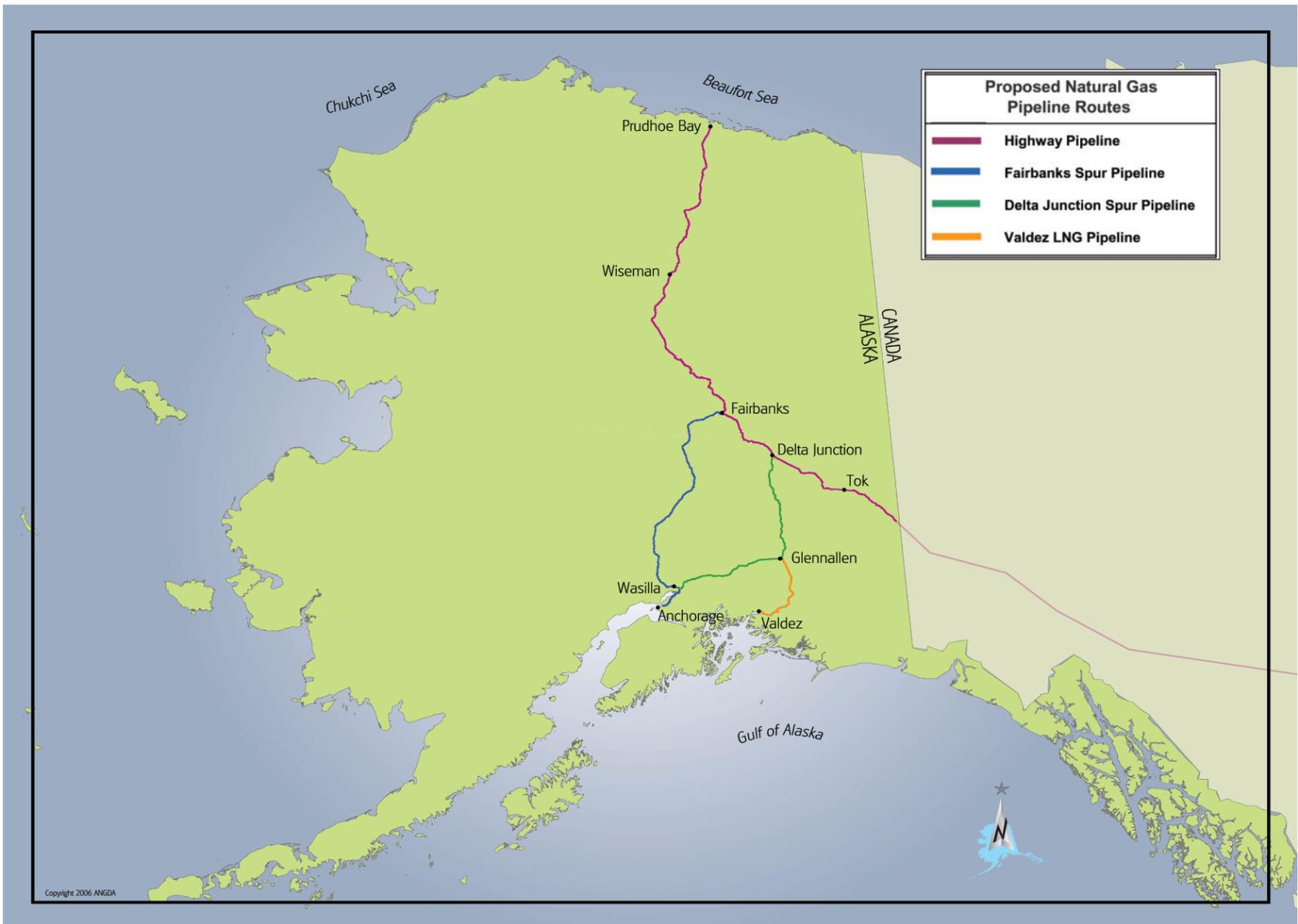




# Connecting Alaskans to their Natural Gas

November 2006



## IDEAS TO SOLVE ALASKA'S ENERGY CRISIS

### A Progress Report by the Alaska Natural Gas Development Authority (ANGDA)

This report is an update of the continuing work by the Alaska Natural Gas Development Authority to bring North Slope natural gas to market and Alaskans.

Like oil on the North Slope that was brought to market through a pipeline, there are plentiful supplies of natural gas in Alaska's Arctic that need a pipeline. That gas also is the

key to solving Alaska's energy crisis. Alaskans have felt the impact of higher energy prices over the last two years. Getting North Slope natural gas to the Yukon River, Fairbanks, the Cook Inlet region and a tidewater port allows all Alaskans to share this long-term energy supply.

#### ESTABLISHMENT OF AUTHORITY

ANGDA was created by the People of Alaska through a 2002 General Election Ballot Initiative and is a public corporation (much like the Permanent Fund or Alaska Railroad). With the

support of the Legislature and the Administration, ANGDA started work in 2003 within the Alaska Department of Revenue.

#### ALASKA STATUTE 41.41

Under State law, ANGDA has the authority to facilitate the planning, design and construction of a natural gas pipeline (together with all related property and facilities) extending from Prudhoe Bay to tidewater on Prince William Sound or Cook Inlet with a spur pipeline to the Southcentral gas distribution system. ●



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"This first major step toward a connecting gas pipeline will assure the availability of Alaska's gas for generations to come." —Harold Heinze, ANGDA Chief Executive Officer, referring to ANGDA's conditional right-of-way lease.



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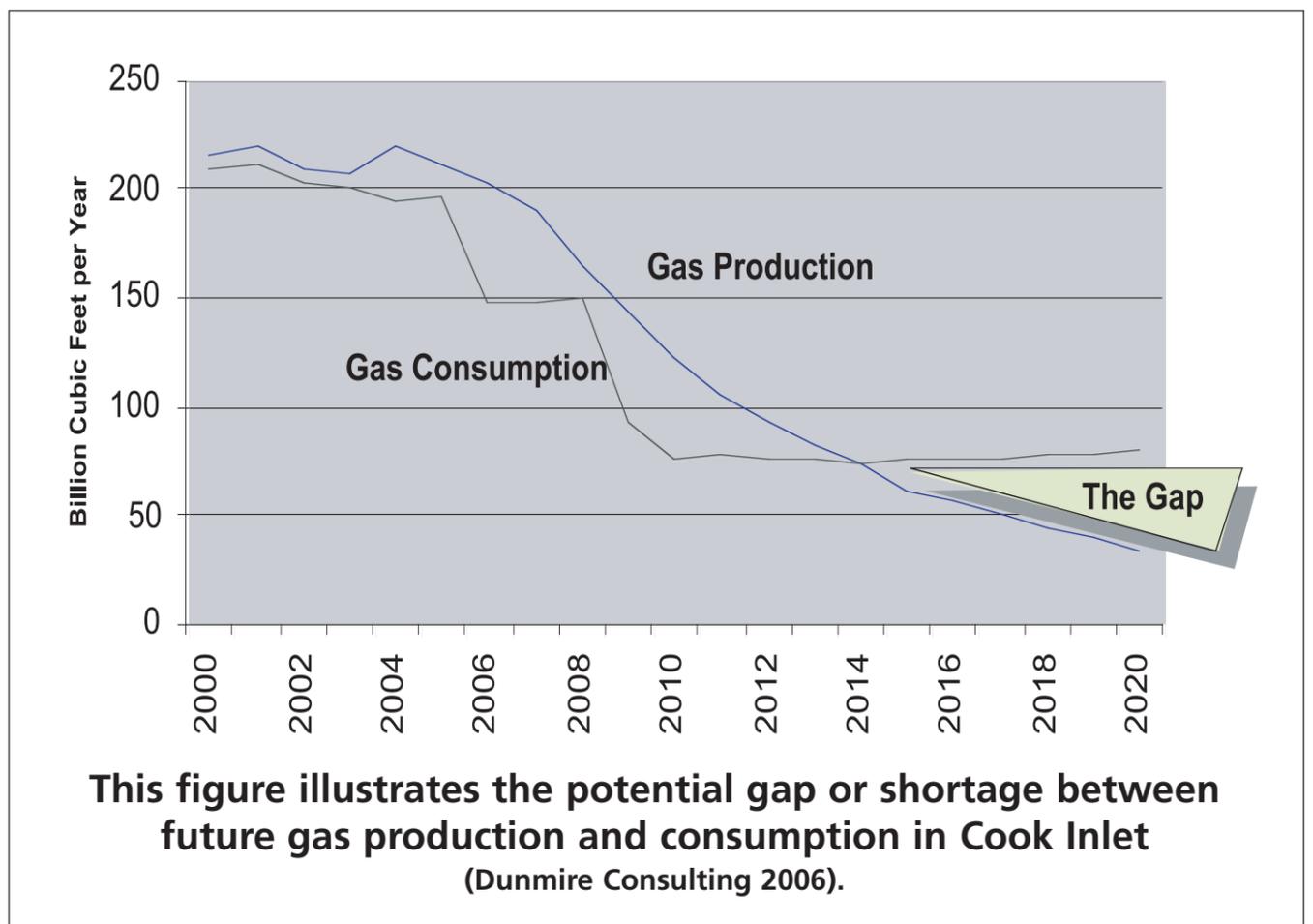
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## COOK INLET

It is widely known that Cook Inlet's supply of natural gas is diminishing. A large portion of Southcentral Alaska's energy infrastructure relies on natural gas.

The Cook Inlet Basin is the source for all of the natural gas produced in Southcentral Alaska. This gas is used by three out of four Southcentral Alaskans to heat and light their homes and businesses. Natural gas production from Cook Inlet has been relatively flat since its peak production in 1998. Production forecasts for Cook Inlet show a steep decline starting in



about 2007 and, depending on future gas demand, shortages are expected six to eight years later.

The above figure illustrates the potential gap or shortage between future gas production and consumption in Cook Inlet.

This year, users of natural gas like Agrium's Kenai nitrogen facility have had to curtail their use or shut down. Enstar Natural Gas Co. says in a few years there may not be enough natural gas supplies to hook up new neighborhoods in Southcentral Alaska. Further, in coming years there may not be enough gas to maintain pressure in Cook Inlet's natural gas distribution pipeline system. One of the major electric co-ops wants to replace an old generator but it doesn't have enough gas reserves for bankers to loan the money. It is for reasons like these that Southcentral is on the brink of an energy crisis if new Cook Inlet supplies are not found soon.

### Voices

*"Alaska is at a crossroads as it faces the need to find solutions to a very serious energy crisis in many of our villages across the state. New thinking is needed to prepare ourselves for ever increasing energy costs in both our smaller and larger communities."*

Nels Anderson  
Alaska Energy Policy Advisor  
Dillingham, Alaska

## RURAL ALASKA

Energy in rural communities is increasingly expensive and Alaska villages have been hit hard by rising fuel costs.

According to the University of Alaska Fairbanks, fuel costs in rural Alaska have reached extreme highs and the effects are far-reaching. High gasoline prices impact the price of food, heat and subsistence practices, and in some cases affects such basic needs as water delivery.

In some situations, several village families are living together to share heating costs because they cannot afford to heat their own homes.

Unfortunately, due to the high cost of energy in rural Alaska, the choice for many Native Alaskans to stay on the lands where their ancestors lived is increasingly unsustainable. The Alaska Federation of Natives has recognized that the energy situation is impoverishing many native communities and forcing them to relocate to urban areas.

Governor Frank Murkowski has also identified this issue as critical saying, "without a doubt, the number one concern in rural Alaska right now is the high cost of energy." To help solve Alaska's rural energy problems, on October 19, 2006, the Governor appointed long-time Native leader Nels Anderson of Dillingham as Alaska Energy Policy Advisor to lead the efforts in reducing energy costs in Alaska's rural communities. ●

### Voices

*"It was my intention for ANGDA to help bring North Slope gas to market. I am pleased today that ANGDA is also solving Alaska's energy crisis."*

Scott Heyworth  
Vice Chairman, ANGDA  
Board of Directors  
Prime Sponsor, Ballot  
Measure 3 in 2002 General  
Election



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An energy alternative is defined as any action, program or project that could be implemented to meet future energy demand. There are both SUPPLY and DEMAND alternatives.

Demand alternatives reduce demand for natural gas while supply alternatives increase natural gas supplies.

	Alternative	Description
Supply	<b>Increase Production</b>	Enhance existing gas production and develop new production in Cook Inlet.
	<b>Spur Line</b>	Deliver North Slope gas to Cook Inlet with spur pipeline from a main gas pipeline.
	<b>Bullet Line</b>	Deliver North Slope gas to Cook Inlet with direct Bullet Line.
	<b>Enriched Gas Line</b>	Additional natural gas liquids (NGLs) delivered to Cook Inlet via pipeline.
	<b>CBM</b>	Develop Coal Bed Methane in Susitna Basin.
	<b>Import LNG</b>	Import Liquefied Natural Gas from outside to existing Kenai LNG facility.
	<b>Other Alaska Gas</b>	Develop and deliver gas from Copper River, Bristol Bay or Nenana basins.
	<b>Coal Gasification</b>	Implement coal gasification such as Agrium's Blue Sky Project.
Demand	<b>Coal Power</b>	Replace gas-fired electric generation with coal-fired power (Emma Creek).
	<b>Hydro Power</b>	Replace gas-fired electric generation with small-scale hydro power.
	<b>Wind Power</b>	Replace gas-fired electric generation with wind power (Fire Island Project).
	<b>Nuclear Power</b>	Replace gas-fired electric generation with small-scale nuclear power.
	<b>Tidal Power</b>	Replace gas-fired electric generation with tidal power.
	<b>Gas Conservation</b>	Implement end-use gas conservation programs (weatherization, efficiency).
	<b>Electric Conservation</b>	Implement end-use conservation programs (appliance & light bulb upgrade).
	<b>Distributed Generation</b>	Implement small-scale electric generation including cogeneration and fuel cells at point-of-use to displace central gas-fired electric generation.

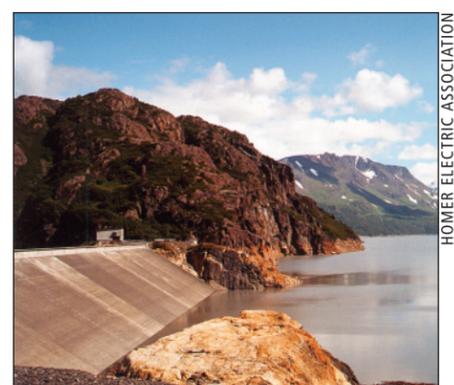
**Wind Farm - Kotzebue, Alaska**



**Power Creek Hydroelectric Project - Cordova, Alaska**

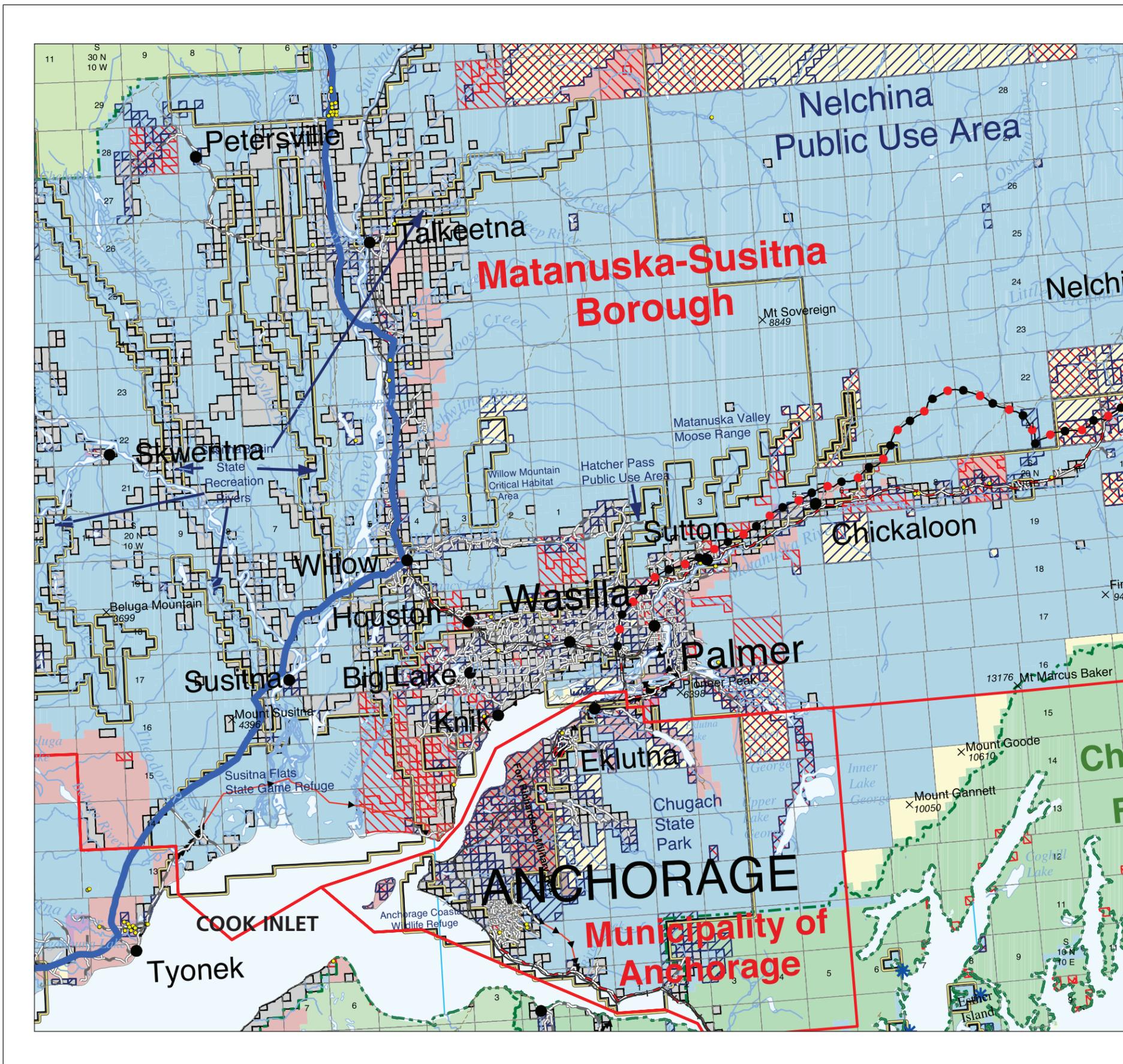


**Bradley Lake Hydroelectric Project - Kenai Peninsula**



HOMER ELECTRIC ASSOCIATION

# Natural Gas Spur



## Voices

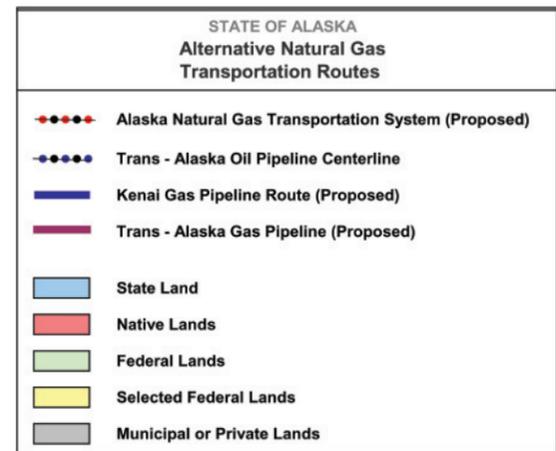
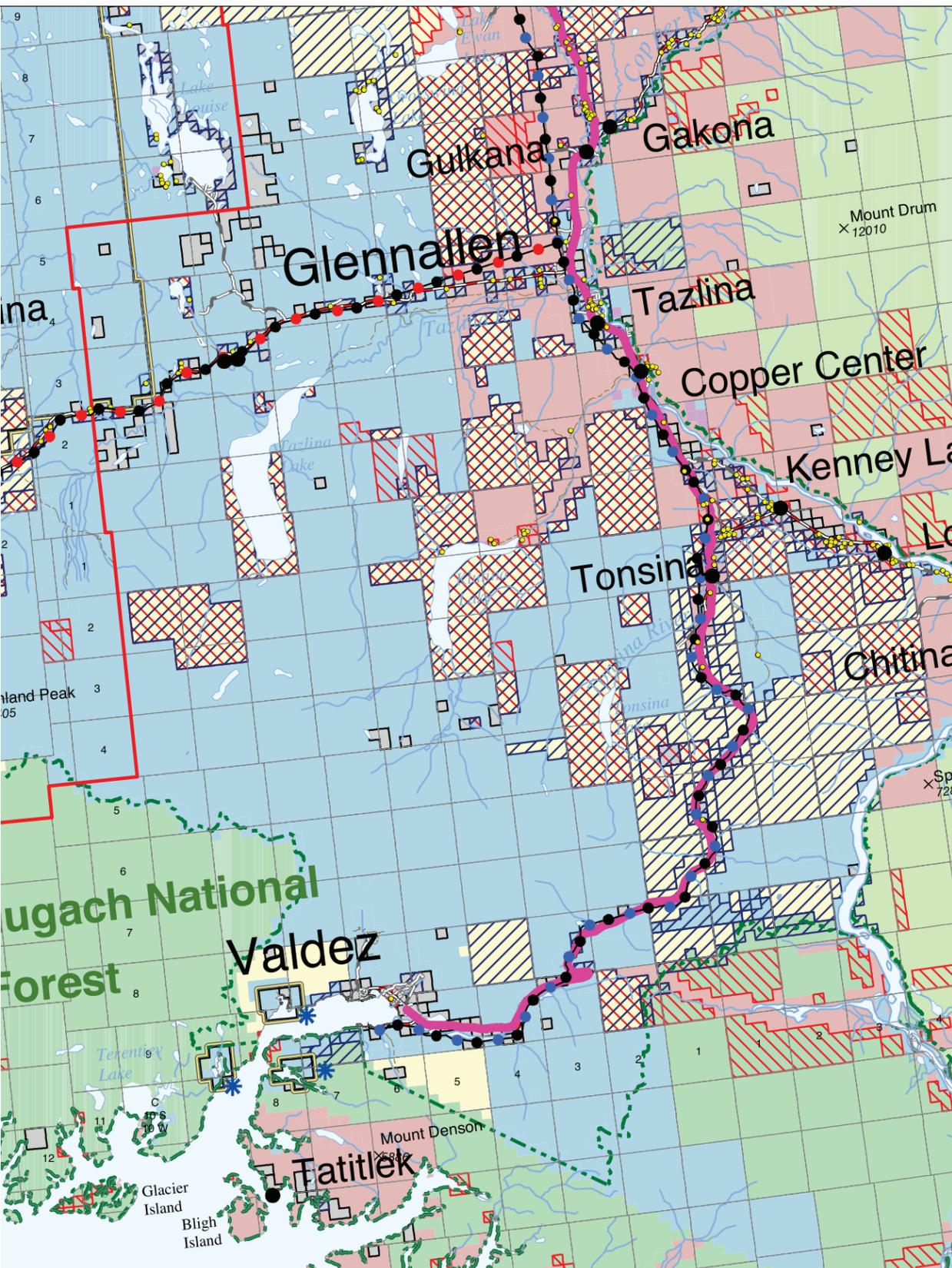
*“I have been involved in several controversial utility and natural resource development issues that directly affected the residents of the Matanuska-Susitna Borough over the last decade. I have been impressed with the effort ANGDA has put forth to reach out to residents and local communities that would be affected by their project.*

*When the project was first proposed they immediately arranged for meetings with local citizens, community organizations and user groups of the land and resources along the proposed route of the pipeline. Since the project's inception they have met with groups at their convenience and whenever requested. Many of the local residents and small communities were skeptical and at times hostile towards what they viewed as a threat towards their chosen lifestyle. Mr. Heinze and the staff of ANGDA took the time to personally attend those meetings, listened to the concerns, and openly discussed ways to mitigate concerns and impacts. This was all done in a positive way, and that kept the proposed project moving forward.*

*Most of the public outreach they willingly participated in was beyond what was required by law. Their willingness to engage the local citizens and users in a meaningful dialog went a long way towards building trust in the community that their concerns were being addressed. ANGDA has set a standard for other utility companies, natural resource development and utilization companies to use as an example.”*

Ron Swanson  
Community Development Director  
Matanuska-Susitna Borough

# Alternative Pipeline Routes



## • Delta Junction to Glennallen to Palmer

This route follows the Trans Alaska Pipeline System (TAPS) oil pipeline from Delta Junction to Glennallen; and from there generally follows along the Glenn Highway to Palmer.

## • Fairbanks to Palmer

This route generally follows the Parks Highway corridor from Fairbanks to Palmer.

A U.S. Dept. of Energy feasibility study currently underway has not identified any significant difference between the routes in delivery costs, hazards, wildlife impacts, socio-economic benefits, or permitting/right-of-way conditions.

Two viable pipeline routes (also known as spur pipelines) are being studied to bring North Slope natural gas to the Southcentral region of Alaska. They will connect with the proposed major gas pipeline project(s).

At 24" in diameter, either spur pipeline would tie in to the much larger diameter main pipeline (48" plus). Each route is approximately 300 miles long; will cost approximately \$1B (one billion dollars); and will generate approximately 600 construction jobs over a two year period. ANGDA was granted a "conditional right-of-way lease" from the

Alaska Department of Natural Resources in July 2006 for the Glennallen-to-Palmer segment.

Governor Frank H. Murkowski said the Department of Natural Resources' conditional right-of-way lease demonstrates the state's confidence that ANGDA can eventually build a critical part of Alaska's Gas Pipeline system. ●



"Providing in-state access to the gas is one of the six fundamental principles I followed in negotiating a natural gas pipeline contract. This right of way is one of the options available to us to fulfill my commitment to get Alaska's gas to the people, and I am very pleased to see ANGDA obtain its lease." —Governor Murkowski, referring to the Glennallen-to-Palmer Conditional Right-of-Way Lease granted to ANGDA in July 2006.



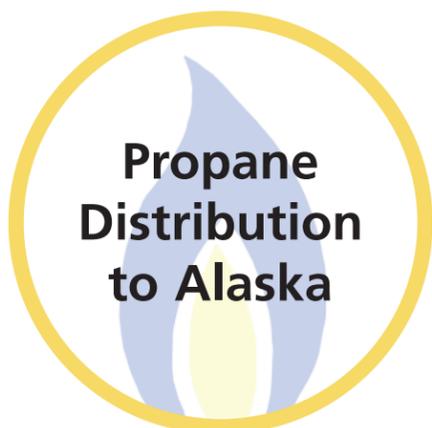
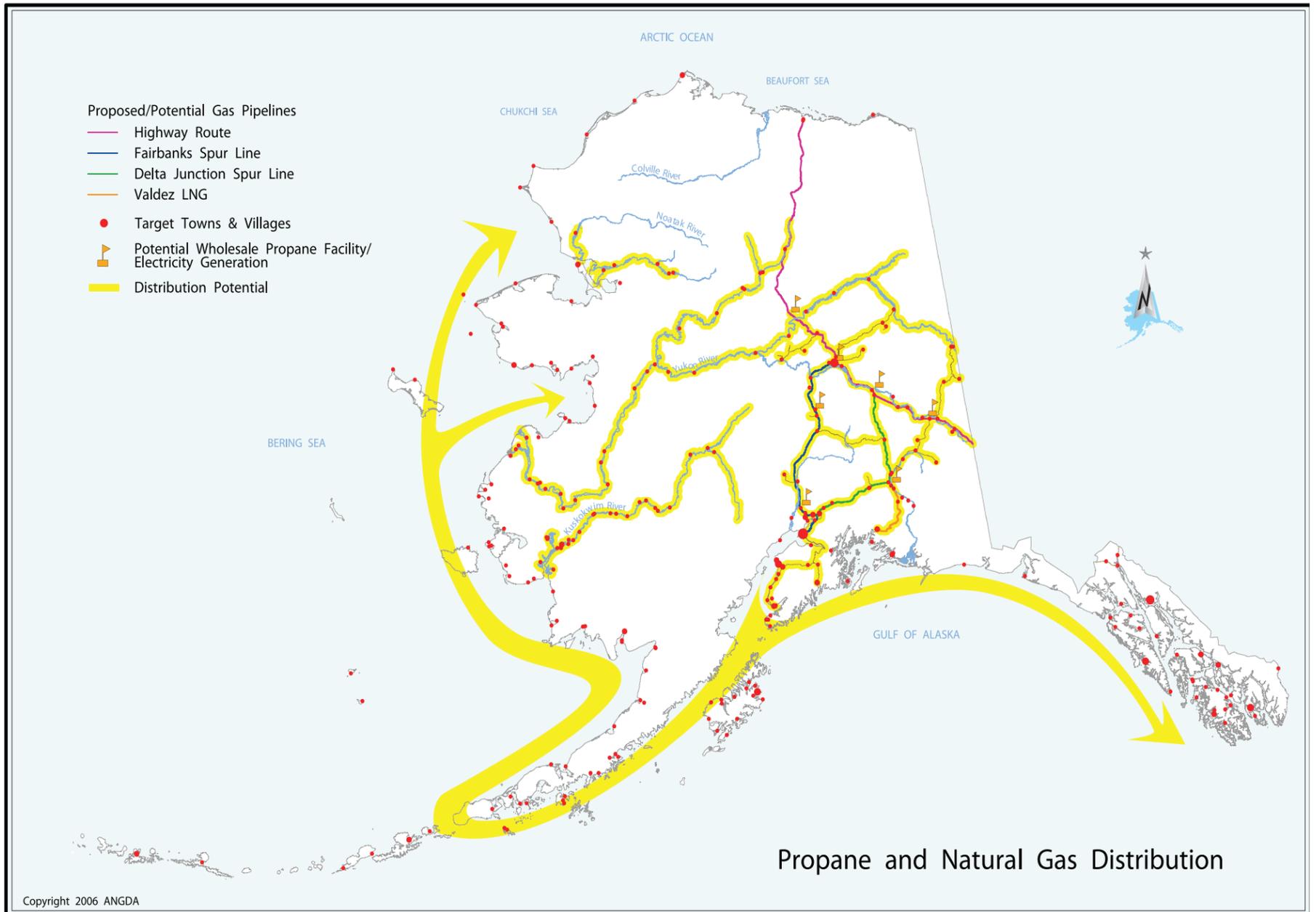
## Voices

*"This lease lays the foundation for a gas pipeline that, when constructed, will bring the benefits of reliable, affordable natural gas and propane to businesses and residents in Southcentral Alaska, the Kenai Peninsula, and rural and coastal communities throughout the state."*

Commissioner Michael Menge,  
Alaska Department of Natural Resources

# North Slope Natural Gas

## An abundance of energy for generations



Since Alaska's North Slope natural gas contains these valuable gases, Alaska has the opportunity to bring this natural resource to many different markets for different purposes.

The map illustrates where propane can be taken from the pipeline and distributed throughout Alaska by highway, rivers and coastal barge. Inter-modal containers for hauling and storing propane can be built in

Alaska and transferred from freight trucks, trains and barges to local communities. This mode of transportation is common in Alaska and lends itself well to the distribution of propane in our state. ●

Alaska's North Slope gas is more than just methane. In particular, it contains large amounts of propane that can be used for heating, cooking, clothes drying and generating electricity.





TRANSCANADA PHOTOGRAPH © 2005

## Status of Alaska Gas Pipeline Project(s) & In-State Gas Use

### FEDERAL GOVERNMENT

In September 2004, the federal government (with the help of Senator Ted Stevens, Senator Lisa Murkowski, and Congressman Don Young) passed legislation providing an \$18B loan guarantee for a natural gas pipeline project. The federal government is encouraging Alaska to finalize a pipeline contract soon as the law permits “federalization” of the project. It is increasingly important for Alaska to conclude its gas pipeline contract(s) as both the market and the federal government cannot wait much longer.



**Voices**

*"The information that has been gathered through the ANGDA studies will be an invaluable asset for the state as we move toward full evaluation of competing gasline projects. I appreciate the way the ANGDA leadership has worked with communities and business interests to assess in-state needs."*

Senator Gene Therriault, North Pole/Valdez/Richardson Highway

During the summer of 2006, Drue Pearce was appointed by President George W. Bush as Federal Coordinator for the Alaska Pipeline Transportation Project (Alaska Gas Pipeline). Federal studies are currently under way to determine the status of Alaska’s gas pipeline project.

### STATE GOVERNMENT

In May 2006, the State of Alaska concluded negotiations with three oil and gas producers (BP, ConocoPhillips, ExxonMobil) for a large natural gas pipeline from Prudhoe Bay through Canada to the midwestern United States. The draft fiscal contract was released by the Alaska Department of Revenue to the public and the State Legislature for review and comment. On October 20, 2006, Revenue Commissioner William Corbus released a summary of comments and responses to public input and subsequent revisions to the gas pipeline draft fiscal contract.

During 2005/2006, ANGDA worked with the Regulatory Commission of Alaska (RCA) to amend statutory regulations that will simplify the in-state acquisition and use of North Slope natural gas. After a public hearing, ANGDA’s recommendations were accepted by the Commission and transmitted to the Governor’s Office for legislative consideration.

State efforts to make North Slope natural gas available for in-state use by Alaskans took a giant step forward in July 2006 with the Department of Natural Resources’ approval of a conditional right-of-way lease to ANGDA for a gas pipeline from Glennallen to Palmer.

ANGDA determined that a main large-diameter, high-pressure natural gas pipeline will carry several hundred thousand barrels of ethane, propane, and butane per day. Extracting the State’s share of these gases (also known as NGLs or natural gas liquids) and shipping them in the spur pipeline to tidewater will facilitate a petrochemical industry and LPG (propane) delivery to rural, urban, coastal and river communities of Alaska. The use of NGLs in our state provides business and job opportunities for Alaska, in addition to vital energy sources.

### “OPEN SEASON”

“Open season” is the process by which companies bid on how much North Slope natural gas they want to transport through the pipeline or how much gas they want to purchase at an off-take point along the pipeline route. The “open season” commitments that companies make are the basis for designing and financing the pipeline.

The Federal Energy Regulatory

Commission (FERC) handles the “open season” process for the pipeline transporting Alaska’s natural gas to the lower-48 states. The Regulatory Commission of Alaska (RCA) is in charge of the in-state “open season” for natural gas transported through pipelines within Alaska.

During the “open season,” bidders must negotiate and commit to multiple-year contracts on a “take-or-pay” or “ship-or-pay” basis. That is, once a bid becomes a contract, the company is firmly obligated to either ship or take the gas they signed up for, or pay for it regardless. There will be contracts for supply (or shipping) and demand (users of natural gas like utility companies).

For Alaska utilities, these commitments to buy and ship natural gas over long periods of time will be very large compared to their financial strength. ANGDA will work with the utilities in preparing for these important decisions and possible future financial support needs. ●



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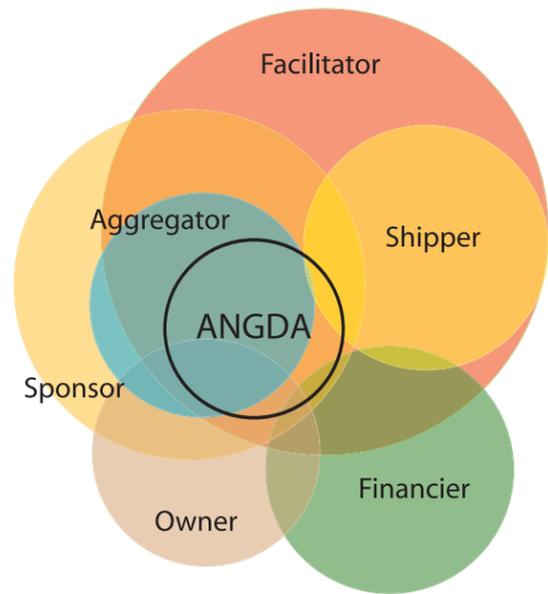


## The Way Forward

ANGDA's challenge is to assure that an abundant supply of relatively low-cost natural gas energy is delivered to Alaskans.

### ANGDA can play many different roles in accomplishing its mission.

Facilitator	Internal project coordination focused on understanding and meeting needs of participating entities.
Sponsor	External project coordination including public process management, government relations, and stakeholder engagement.
Financier	Spur pipeline or other project financing ranging from providing a Letter of Credit to taking an equity position.
Aggregator	Accumulating demand from smaller buyers for purchasing natural gas on the North Slope and potentially aggregating shipping commitments for the spurline and/or main pipeline.
Shipper	Commitment to transport gas through spurline and/or main pipeline.
Owner	Hold deed to spur pipeline or other infrastructure.
Operator	Contract to operate the spur pipeline or other infrastructure.



At this moment Alaska is poised to transition to a new governor. ANGDA's roles will be set by the new administration and the decisions it makes on the major North Slope natural gas pipeline project.

### ANGDA's work plan includes

- Developing the information required for permitting and financing a spur pipeline.
- Demonstrating the feasibility of propane extraction facilities and logistical systems.
- Preparing local utilities to participate in the "open season" process of the major gas pipeline.
- Coordination with the full range of federal and state agencies to assure that Alaska's gas is brought to market for the maximum benefit of Alaskans.



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### ANGDA Board of Directors

From left to right: Robert Stinson, John T. Kelsey, Scott R. Heyworth (Vice-Chair), Harold Heinze (CEO), Andy Warwick (Chair), Daniel A. Sullivan (Not pictured: David W. Cuddy, Robert C. Favretto)



#### Call or visit

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