

SB

215

<TARGET><BILL>SB 215</BILL><SUBJECT>SB
215</SUBJECT><COMM>SRES27</COMM></TARGET>

ALASKA STATE LEGISLATURE



SENATOR JOE THOMAS

Senate Bill 215:

"An Act requiring the Alaska Gasline Development Corporation to construct a natural gas pipeline to deliver Cook Inlet natural gas to Fairbanks and other communities between Cook Inlet and Fairbanks that do not have access to a natural gas pipeline."

For the last forty years, Alaskans have been waiting for a gasline while our gas on the North Slope and in Cook Inlet remains sequestered in the regions where they were discovered. Senate Bill 215 changes this trend and makes Alaska's resources available to more Alaskans by proposing to build a natural gas pipeline from Cook Inlet to Fairbanks.

SB 215 charges the Alaska Gasline Development Corporation to build the fastest, lowest cost and most economic gasline to deliver Cook Inlet gas supplies to market in the Interior.

This bill takes advantage of work already done by the AGDC on the Alaska Stand Alone Pipeline and the Alaska Natural Gas Development Authority while working on the Beluga to Fairbanks gasline. Those organizations have already evaluated many of the important initial steps necessary for any pipeline, including location of access points and resources along the route. With rights-of-way established, tariffs estimated and much of the planning and feasibility studies completed along both the Richardson and Parks Highways, SB 215 would deliver pipeline gas to the Interior faster than any other option on the table today.

With the cost of fuel hovering around four dollars per gallon in Fairbanks and even higher in many other communities in the Interior, sustainable and affordable delivery of natural gas could lower the cost of home heating by 66% or more. Additionally, by enhancing the marketability and distribution of Cook Inlet gas, SB 215 will help improve the economics of gas development in Cook Inlet and augment the reliability and lower the cost of gas to current Southcentral customers.

Alaskans have been waiting far too long for a gasline. I urge you to join me in supporting Senate Bill 215 to deliver Alaska's resources to Alaskans.

Service lines- tie-in

Description	Class	Dia (in)	Quantity (houses)	Quantity (LF)	Cost	unit	Total cost
Construction							
Residential lines- high density	60 psig	0.625	12,466	807,116	\$ 25	LF	\$ 20,178,000
Commercial lines- high density	60 psig	1	761	32,975	\$ 25	LF	\$ 824,000
Subtotal-construction							\$ 21,002,000

Service lines- tie-in

Description	Class	Dia (in)	Quantity (houses)	Quantity (LF)	Cost	unit	Total cost
Construction							
Residential lines- medium density	60 psig	0.625	8,610	861,000	\$ 25	LF	\$ 21,525,000
Commercial lines- medium density	60 psig	1	163	16,300	\$ 25	LF	\$ 408,000
Subtotal-construction							\$ 21,933,000

Table 2. Estimated Annual Residential, Commercial, and Industrial Sector Natural Gas Requirements for Heating, Power Generation, and Industrial Processing

Category	Count (# of units)	Area (square feet)	Estimated Demand (Bcf/year)
Residential Sector	24,986	57,573,880	6.7
Commercial Sector			
Taxable Structures	978	10,576,081	3.9
Non-Taxable Structures		2,340,000	0.9
Industrial Sector			
Space Heating	571	5,318,832	2.7
Power Generation			2.9
Refinery Processing			4.8
Total	26,535	75,808,793	20.9

Source: Michael Baker, Jr. and Northern Economics, Inc.

2.1.1 Estimated Residential Savings

The current natural gas cost in Fairbanks is \$23.35 per Mcf and heating fuel is \$3.84 per gallon, at its best rate, delivered, and quoted by two suppliers. Converting to an equivalent heat basis, natural gas costs \$23.35 per million British thermal units (MMBtu) and heating oil is \$27.67 per MMBtu, an approximate savings of \$4.32 per MMBtu.

An average residential home consumes approximately 190 Mcf per year (2009) for a projected natural gas cost of \$4,437 per year, versus heating oil of \$5,257. This results in an estimated \$820 of savings per year, for the average-size home.

Larger natural gas distribution will lead to economies of scale and potentially reduce prices. Team analysts reviewed a range of natural gas prices from \$23.35/MCF to \$111.00/MCF in \$3.00 increments; potential savings ranged from \$114 million to \$238 million.

Table 1. Potential Conversion Savings, Natural Gas Over Fuel Oil Equivalent, Selected \$/Mcf

Natural Gas, \$/Mcf	Savings, \$
23.35	114,180,000
23.00	118,800,000
20.00	158,400,000
17.00	198,000,000
14.00	237,600,000

Source: Northern Economics Inc.

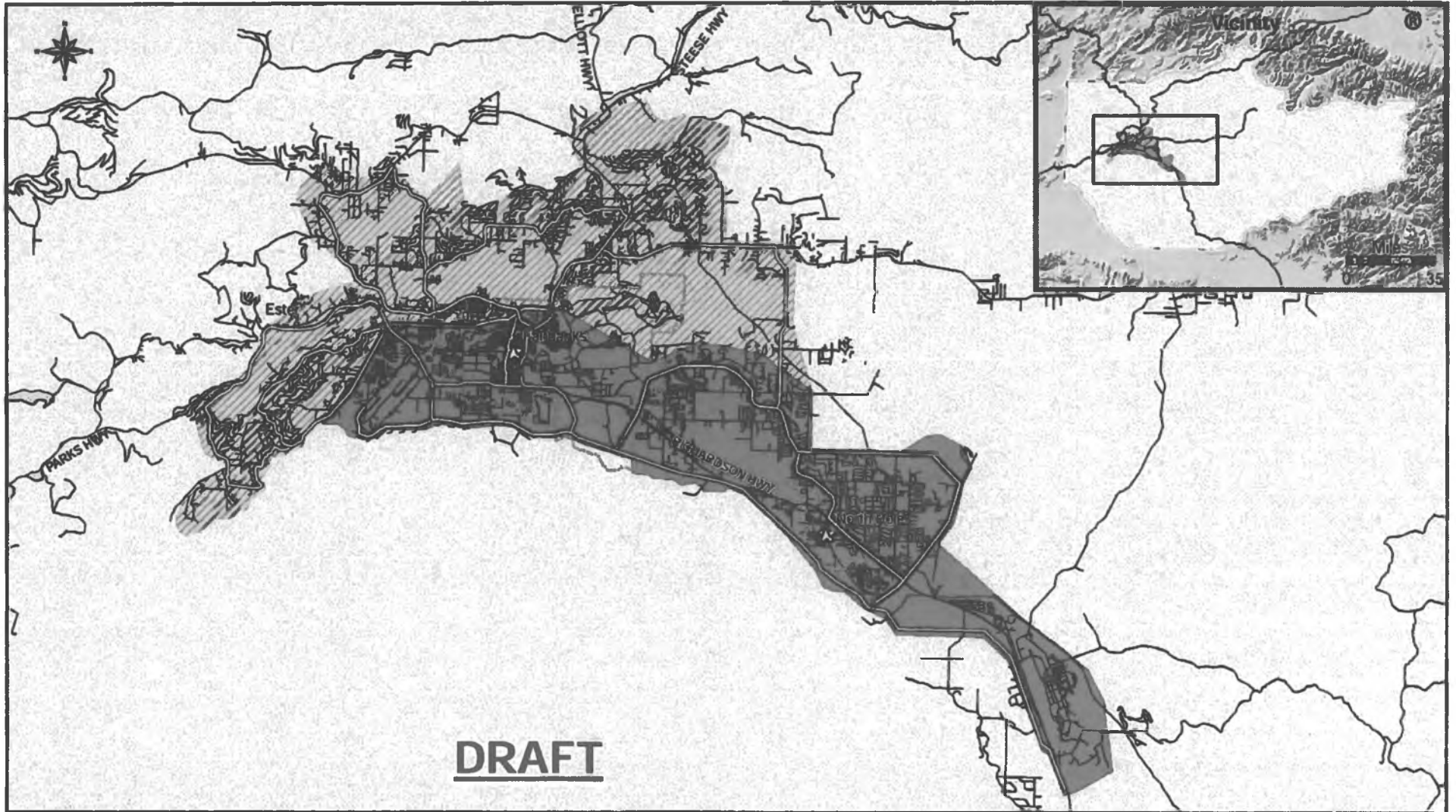
Table 2 Relative Comparison of Environmental and Special Areas Associated with In-State Gas Pipeline Route Alternatives

Special Areas				
Number / miles	18 / 670	40 / 670	23 / 365	21 / 365
National Park	1 / 7	None	1 / 7	None
Wild & Scenic River	None	2 / 50	None	2 / 50
Military	1 / 7	4 / 32	1 / 7	4 / 32
State Park / Rec. Area	3 / 50	3 / 25	3 / 50	3 / 25
State Game Area	1 / 60	1 / 55	2 / 20	1 / 45
Listed Threatened or Endangered Species				
Polar Bear (Critical Habitat miles)	11	43	None	None
Beluga Whale	None	None	None	None
Stellar's Eider	None	None	None	None
Spectacled Eider	None	None	None	None
Wetlands				
Features / acres	573 / 1288	730 / 1731	204 / 496	171 / 324
Fish Stream Crossings				
Number	480	525	220	175
Waterfowl (Habitat miles)				
Concentration Area	200	250	170	130
Swans	50	65	50	65
Major Migration Route	50	135	50	75
Sharp-tailed Grouse	None	60	None	60
Raptor / Eagle nesting (habitat miles)	100	115	10	25
Moose (Habitat miles)				
Winter Concentration Area	211	415	70	333
Summer Area	50	70	50	40
Calving Area	20	20	20	85
Dall Sheep				
Lambing (number / habitat miles)	24 / 80	29 / 135	1 / 7	6 / 65
Mineral Licks (number)	3	15	None known	10
Caribou (Habitat miles)				
Winter Concentration	81	101	13	125
Calving	15	85	None	70
Migration	180	270	5	100
Bison (Habitat miles)				
Movement Area	None	20	None	20
Calving	None	50	None	50
Bear (Habitat miles)				
Brown Bear Concentration	105	130	15	30
Black Bear Concentration	20	30	5	15
Human				
Recreation Sites (approximate number)	80	90	40	55
Scenic Areas (number)	50	80	20	25
Cultural Sites (number)	405	490	130	165
Unimproved / Primitive Route (miles traversed)	68	64	15	64
Substance (miles traversed)	540	560	265	325
Number of communities / combined population	33 / 372,600	47 / 380,000	23 / 367,000	20 / 319,100

**Table 3 Estimated Number of Customers and Gas Demand for:
 * Parks Highway and Richardson Highway Corridors
 * Parks Highway Spur and Richardson Highway Spur Lines and Alaska-Canada Gasline**

Parks Highway Stand Alone				
Customers	1,400	150	3	1,593
Demand (mmcf/d)	0.8	0.3	17.0	18.1
Richardson Highway Stand Alone				
Customers	2,300	280	2	2,582
Demand (mmcf/d)	1.3	0.6	0.5	2.4
Parks Highway Spur / Alaska-Canada Gasline				
Customers	2,400	300	3	2,703
Demand (mmcf/d)	1.4	0.3	17.0	18.9
Richardson Highway Spur / Alaska-Canada Gasline				
Customers	2,300	280	2	2,582
Demand (mmcf/d)	1.3	0.6	0.5	2.4
Notes:				
1. Utility demand assumes that the coal-fired power plants at Healy, Clear Air Force Station, and Fort Greely would convert to gas. If they remain coal-fired, the utility demand for the Parks Highway corridor would be 0.0 and 0.03 mmcf/d for the Richardson Highway Corridor.				
2. Table does not include the number of customers and gas demand for the population centers (Anchorage/Cook Inlet area, Fairbanks) that would be served by either option.				
3. The Parks Highway Spur residential number includes people served along the mainline between Fairbanks and Delta Junction.				
Sources: Adapted from Alternative Analysis report (Northern Economics, adapted from ENSTAR, January 2009; Interior Issues Council, 2009, and Doyan Utilities, 2009.)				

Source:



DRAFT

**Figure 5
High, Medium, and Low
Demand Areas**

SCALE 1 in = 3 miles
DATE 01/24/2012

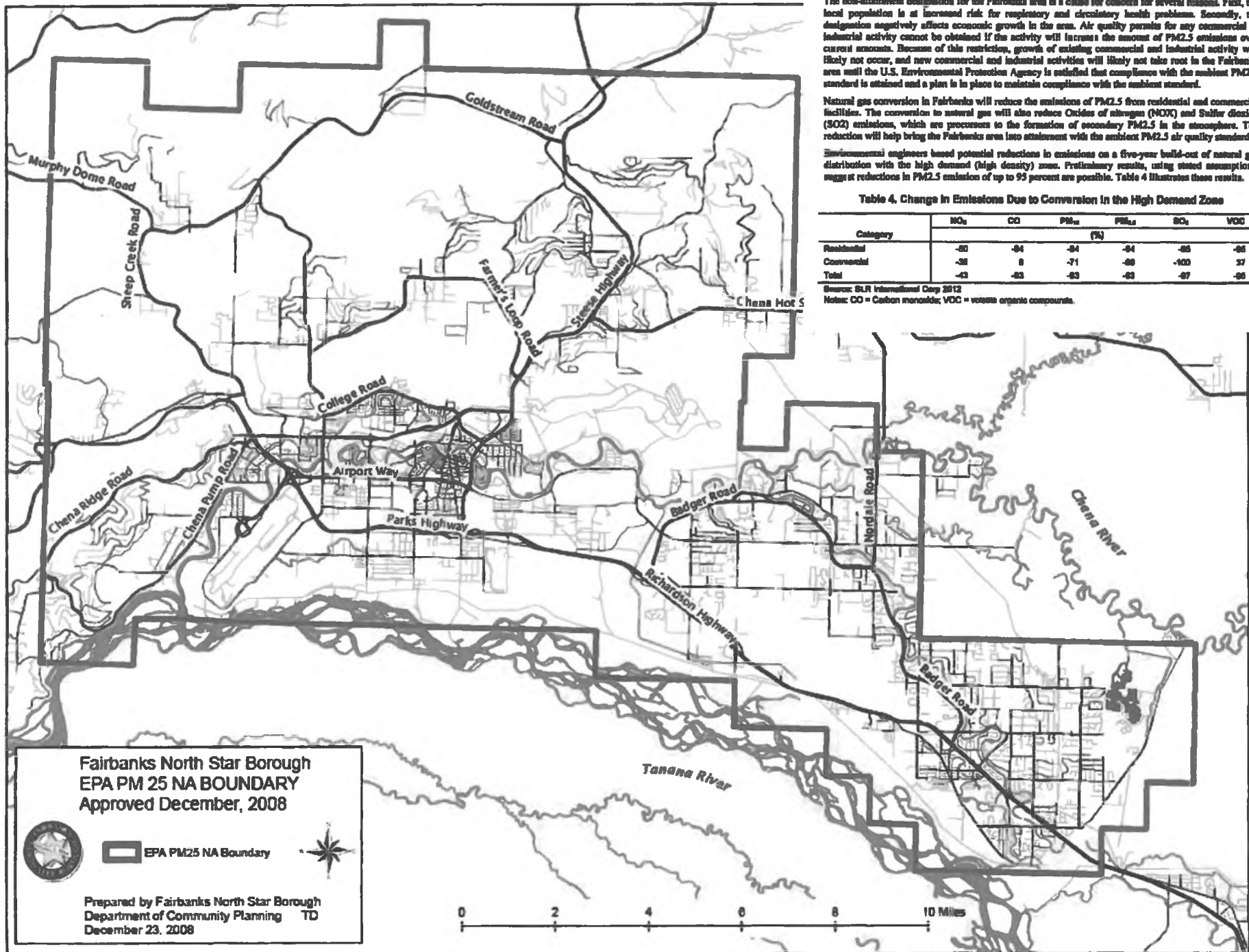
Baker

Legend

- | | | | |
|----------------|-------------------------|--------------------|----------|
| J Gas In Point | — Roads | ▭ City Boundary | Demand |
| ' Gate Station | — Distribution Pipeline | ▭ Borough Boundary | ■ High |
| # Reg Station | — Transmission Pipeline | | ▨ Medium |
| | | | □ Low |

**Fairbanks North Star Borough
Gas Distribution Analysis**





Air Quality

The non-attainment designation for the Fairbanks area is a cause for concern for several reasons. First, the local population is at increased risk for respiratory and circulatory health problems. Secondly, the designation negatively affects economic growth in the area. Air quality permits for any commercial or industrial activity cannot be obtained if the activity will increase the amount of PM2.5 emissions over current amounts. Because of this restriction, growth of existing commercial and industrial activity will likely not occur, and new commercial and industrial activities will likely not take root in the Fairbanks area until the U.S. Environmental Protection Agency is satisfied that compliance with the ambient PM2.5 standard is obtained and a plan is in place to maintain compliance with the ambient standard.

Natural gas conversion in Fairbanks will reduce the emissions of PM2.5 from residential and commercial facilities. The conversion to natural gas will also reduce Oxides of nitrogen (NOx) and Sulfur dioxide (SO2) emissions, which are precursors to the formation of secondary PM2.5 in the atmosphere. The reduction will help bring the Fairbanks area into attainment with the ambient PM2.5 air quality standard.

Environmental engineers based potential reductions in emissions on a five-year build-out of natural gas distribution with the high demand (high density) zone. Preliminary results, using stated assumptions, suggest reductions in PM2.5 emission of up to 93 percent are possible. Table 4 illustrates these results.

Table 4. Change in Emissions Due to Conversion in the High Demand Zone

Category	NO _x	CO	PM ₁₀	PM _{2.5}	SO ₂	VOC
	(%)					
Residential	-80	-94	-94	-94	-85	-85
Commercial	-38	8	-71	-88	-100	37
Total	-43	-83	-83	-83	-87	-85

Source: BUR International Corp 2012
 Notes: CO = Carbon monoxide; VOC = volatile organic compounds.

Fairbanks North Star Borough
 EPA PM 25 NA BOUNDARY
 Approved December, 2008



EPA PM25 NA Boundary

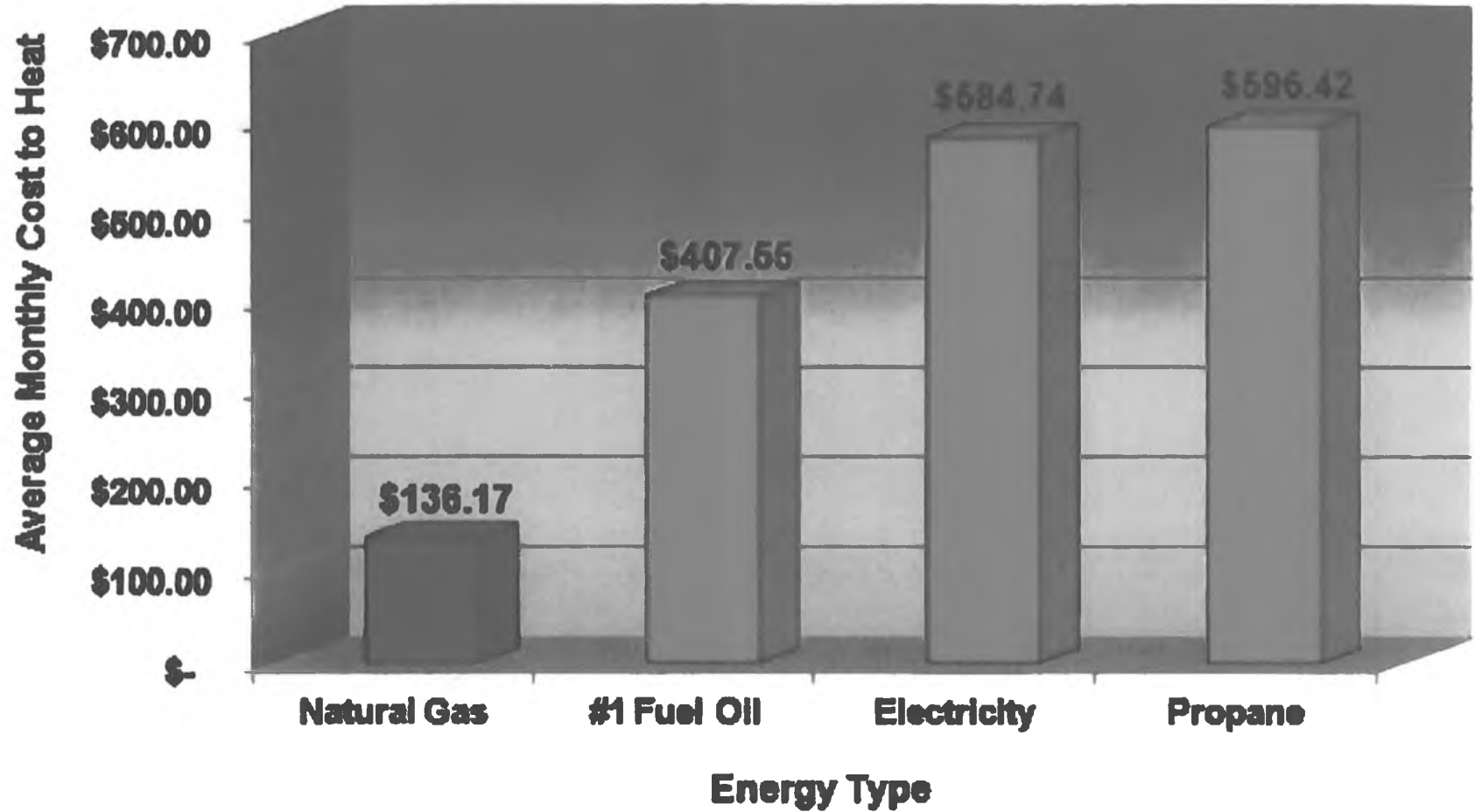


Prepared by Fairbanks North Star Borough
 Department of Community Planning TD
 December 23, 2008

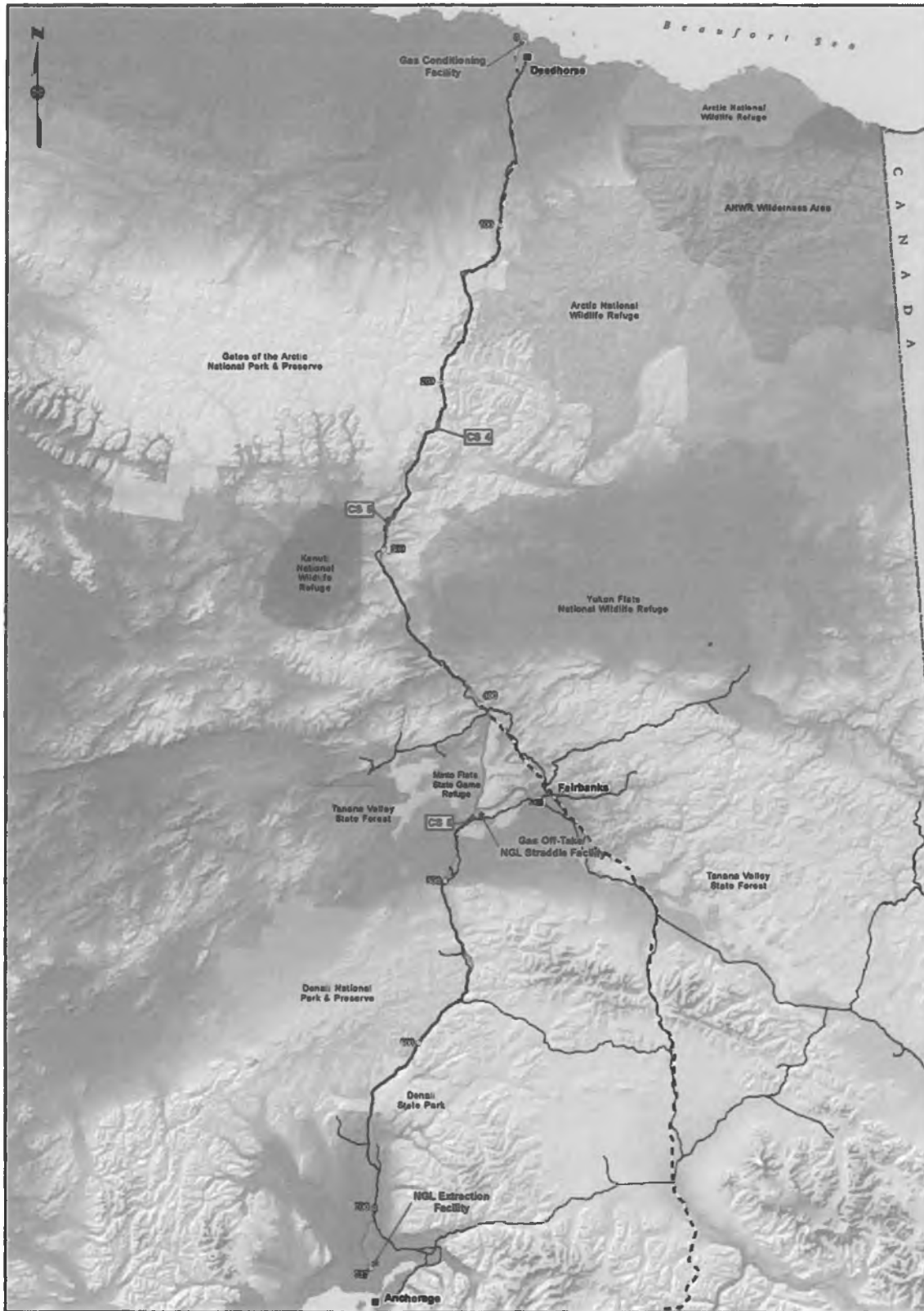


Average Monthly Cost to Heat

January 2012



Source: www.enstarnaturalgas.com



- Alaska Stand Alone Gas Pipeline Route
- Trans Alaska Pipeline
- Compressor Station Milepost Range
- CS 1 Compressor Station
- Alignment Milepost
- Road
- Town

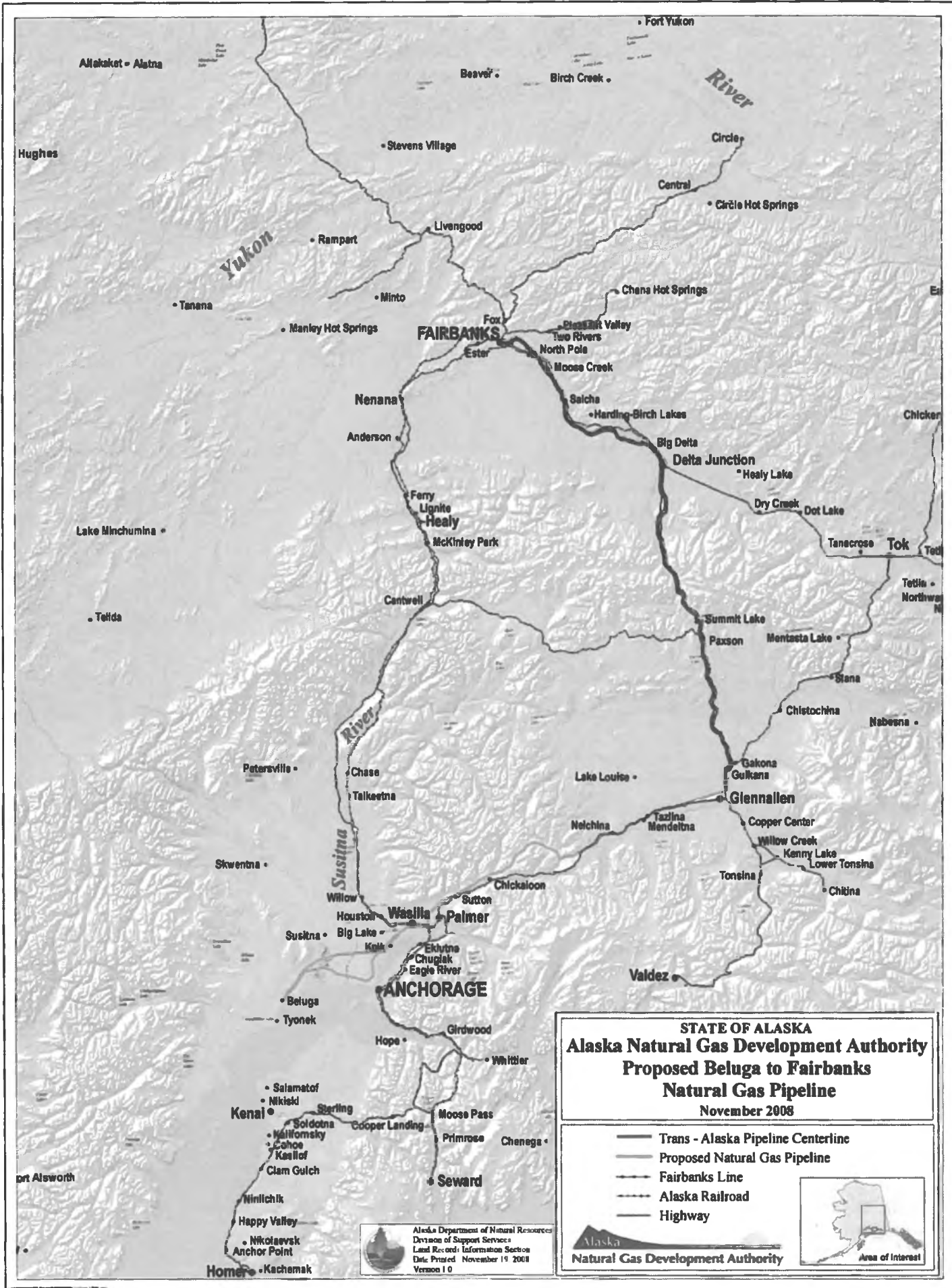
ALASKA STAND ALONE GAS PIPELINE ROUTE
 Alaska Stand Alone Gas Pipelines/ASAP
 Plan of Development, Revision 1

SCALE: 0 25 50 100 Miles

FIGURE: 2.0-1



See project disclaimer on inside cover
 NAD83 State Plane Zone 3





STATE OF ALASKA
Alaska Natural Gas Development Authority
Proposed Beluga to Fairbanks
Natural Gas Pipeline
 November 2008

	Trans - Alaska Pipeline Centerline
	Proposed Natural Gas Pipeline
	Fairbanks Line
	Alaska Railroad
	Highway

Alaska Department of Natural Resources
 Division of Support Services
 Local Records Information Section
 Date Printed: November 19, 2008
 Version 1.0

Calculation of State Subsidy for South to North Line

	<u>Tariff</u>	<u>Tariff+Gas</u>
ASAP Estimated Cost	6.45	8.45
Current Cook Inlet Cost of Gas		<u>6.85</u>
Allowable Tariff to beat ASAP	<u>6.45</u>	<u>1.60</u>
Average MCF/Day	60,000.00	60,000.00
# Days/Year	365.25	365.25
Allowable cost recovery/year	141,351,750	35,064,000
# of years of cost recovery in Tariff	<u>20</u>	<u>20</u>
Total cost able to be recovered	<u>2,827,035,000</u>	<u>701,280,000</u>
Pipeline cost, Big Lake to Dunbar	1,565,000,000 *	1,565,000,000
Lateral Line Dunbar to Fairbanks	60,000,000	60,000,000
Cost of Compressor Station in Cook Inlet	80,000,000	80,000,000
Cost of Chilling Unit at Cantwell	20,000,000	20,000,000
Annual Operating Costs @2% CapEx*20 years	690,000,000	690,000,000
Total cost of South to North	<u>2,415,000,000</u>	<u>2,415,000,000</u>
State Subsidy to run South to North	<u>(412,035,000)</u>	<u>1,713,720,000</u>

Note: Does not include cost of fuel gas, local distribution system for Fairbanks and vicinity, cost of re-engineering project, or inflation.

***cost of pipeline from dunbar to big lake less CI NGL Extraction and Compressor Station. Costs shown on 3-4 and 5-35 of July 1 report.**

Presented to the Senate Resources Committee by Joe Dubler, AGDC (3/23/2012)