

# **Fifty Years in Alaska Without the Trans Alaska Pipeline**

**Dave Norton and Scott Goldsmith**

# Alaska's Oil and Gas Resources





# THE FLYING PIPELINE

A famous aircraft company has produced a gigantic idea for lifting the oil from Alaska's North Slope wilderness, without destroying the area's priceless beauty.



The working conditions on the North Slope are the worst in the world. The vicious cold is a constant and relentless enemy. A simple mechanical repair job which is child's play in easier climates becomes a mountainous task taking hours in a shrieking 60 miles an hour gale with the effective temperature down to minus 100 deg F. The men work clumsily and slowly, cocooned in layers of protective clothing with the ever-present danger of frostbite striking exposed skin in less than 30 seconds. To replace the energy and bodily heat they use up, the men consume vast quantities of food — the equivalent of your Christmas dinner several times a day.

**A**S YOU eat your Christmas dinner, spare a thought for the oilmen who are eating theirs in surroundings as warm, cheerful and as pleasant as yours, but with a 60-miles-an-hour gale howling outside the door.

In 1968, the first major oil find was made at Prudhoe Bay on the bleak lonely north slope of Alaska. A modern "Gold Rush" of oil companies followed.

Big freight planes flew hundreds of sorties bringing in the oil men and their thousands of tons of gear for locating the oil.

The oil has been found. The amount is staggering. . . the known reserves under northern Alaska are equal to one-third of the combined reserves of the rest of the United States.

The oilmen have worked hard to minimise their impact on the clean wilderness. No mechanical or "tin can and cardboard" litter has been allowed, and drilling rigs are skillfully used to allow widely separated pipes to be sunk down to oil-bearing layers while the surface rigs stay in one small area.

Many wells have now been sunk and "capped" with the oil waiting to flow, so why is it not doing so?

It is remaining where it is because the answer has not been found to a very thorny problem. In hot or temperate lands, crude oil is already hot and free flowing from the friction and pressure of its rise from the depths when it gushes out of the ground in the pipeline. It is boosted along the pipe by pumping stations, and friction keeps it hot.

But in Alaska there is a problem. Beneath the thin green layer of tundra in the warm season, there lies a permanently frozen band of earth — called the "permafrost" layer — which literally holds the land together. If this layer is exposed to

heat, it melts and becomes a boggy, spongy mess in which pipes could not be laid.

The trans-Alaska pipeline would be a 48-in. diameter tube carrying oil at 180 deg F., and if this was buried in the "Permafrost" the result would be the melting of the frozen layer and, left without support, the sagging pipe might burst.

The alternative is to mount the pipeline on pikes above an insulating layer of gravel clear of the ground. But two fears are held for this method. Firstly, Alaska is a notorious earthquake area, and the pipeline could easily be fractured in an earth tremor. Secondly, the raised pipeline could interfere with the migration patterns of the herds of wild reindeer and caribou.

## ICEBREAKER TANKERS

While the engineers and ecologists wrestle with these problems, others are seeking different systems for shifting the oil in bulk. The icebreaker tanker route through the north-west passage has been explored, and the designers of the famous Boeing Aircraft Company have come up with a flying tanker, pictured above.

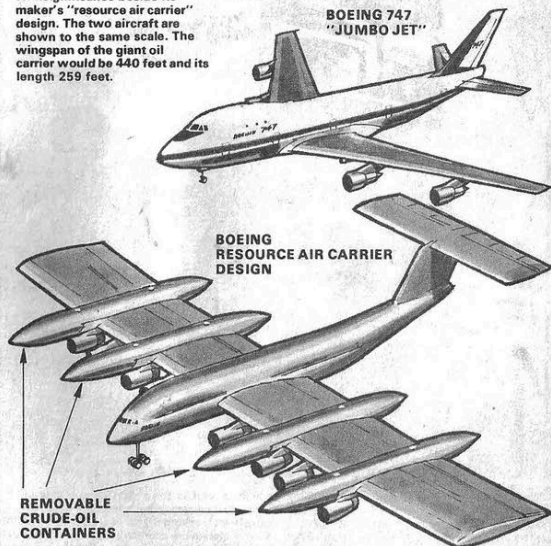
It would be powered by twelve 50,000 lbs. thrust jet engines and would lift about 8,000 barrels of crude oil in four wing-mounted containers. The containers would be loaded and unloaded by giant cranes giving a time from landing to the next take-off of about six minutes. Boeing estimate that a fleet of 40 such aircraft, each making eight daily trips, could shift two million barrels of crude oil a day. A real flying pipeline!

Possibly, some of this could find its way to your central heating system. Perhaps on a future Christmas Day, the warmth you enjoy will have come from the frozen wastes of icy Alaska.

The famous Boeing 747 shrinks to insignificance beside its maker's "resource air carrier" design. The two aircraft are shown to the same scale. The wingspan of the giant oil carrier would be 440 feet and its length 259 feet.

BOEING 747 "JUMBO JET"

BOEING RESOURCE AIR CARRIER DESIGN





# Arctic Oil Tankers if No TAPS



# **DIRECT PETROLEUM CONTRIBUTION TO ALASKA ECONOMY (2023)**

EXPLORATION,  
DEVELOPMENT, AND  
PRODUCTION

- JOBS 36 THOUSAND
- PAYROLL \$3.3 BILLION

STATE AND LOCAL  
GOVT REVENUES

- JOBS 33 THOUSAND
- PAYROLL \$2.6 BILLION

**16% OF TOTAL ALASKA JOBS**

# **INDIRECT PETROLEUM CONTRIBUTION TO ALASKA ECONOMY (50 YRs)**

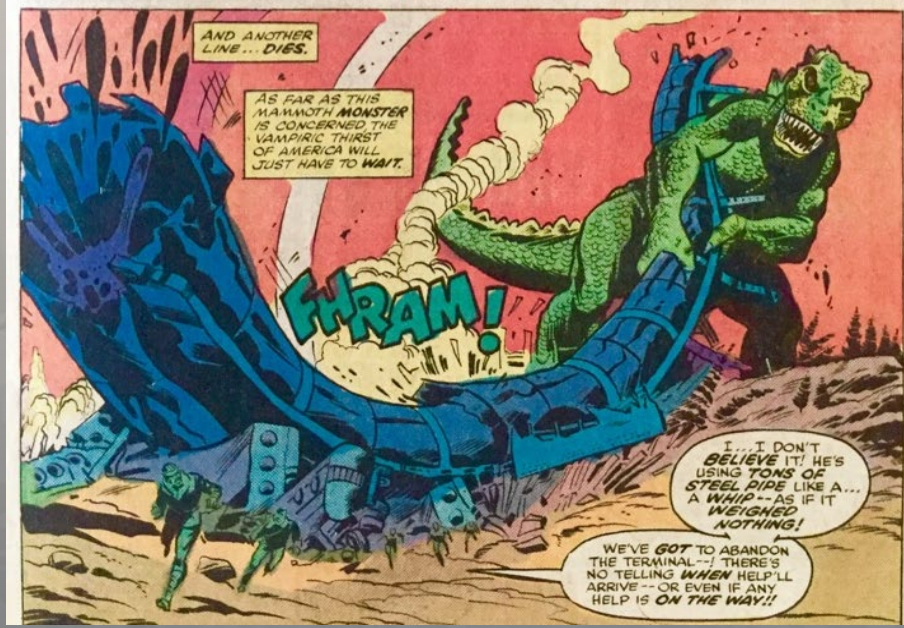
1. Local oil and gas supply
2. PF Dividend
3. Govt support BASIC industry
4. Govt support enhanced quality of life
5. Light business tax burden
6. Light HH tax burden
7. Less seasonality
8. Increase MULTIPLIER size
9. More people
10. More retirees
11. More Federal spending

# ALASKA WITHOUT PETROLEUM ???



- Somewhat more than half as many total jobs
- Half of all jobs dependent on Federal spend (civ&mil)
- BASIC industries smaller(mining, seafood, timber, tourism, air cargo)
- Fewer firms providing business support (wholesale trade, business services, construction , etc.)
- Fewer firms providing goods and services to HH
- Smaller economic MULTIPLIER
- Fewer people







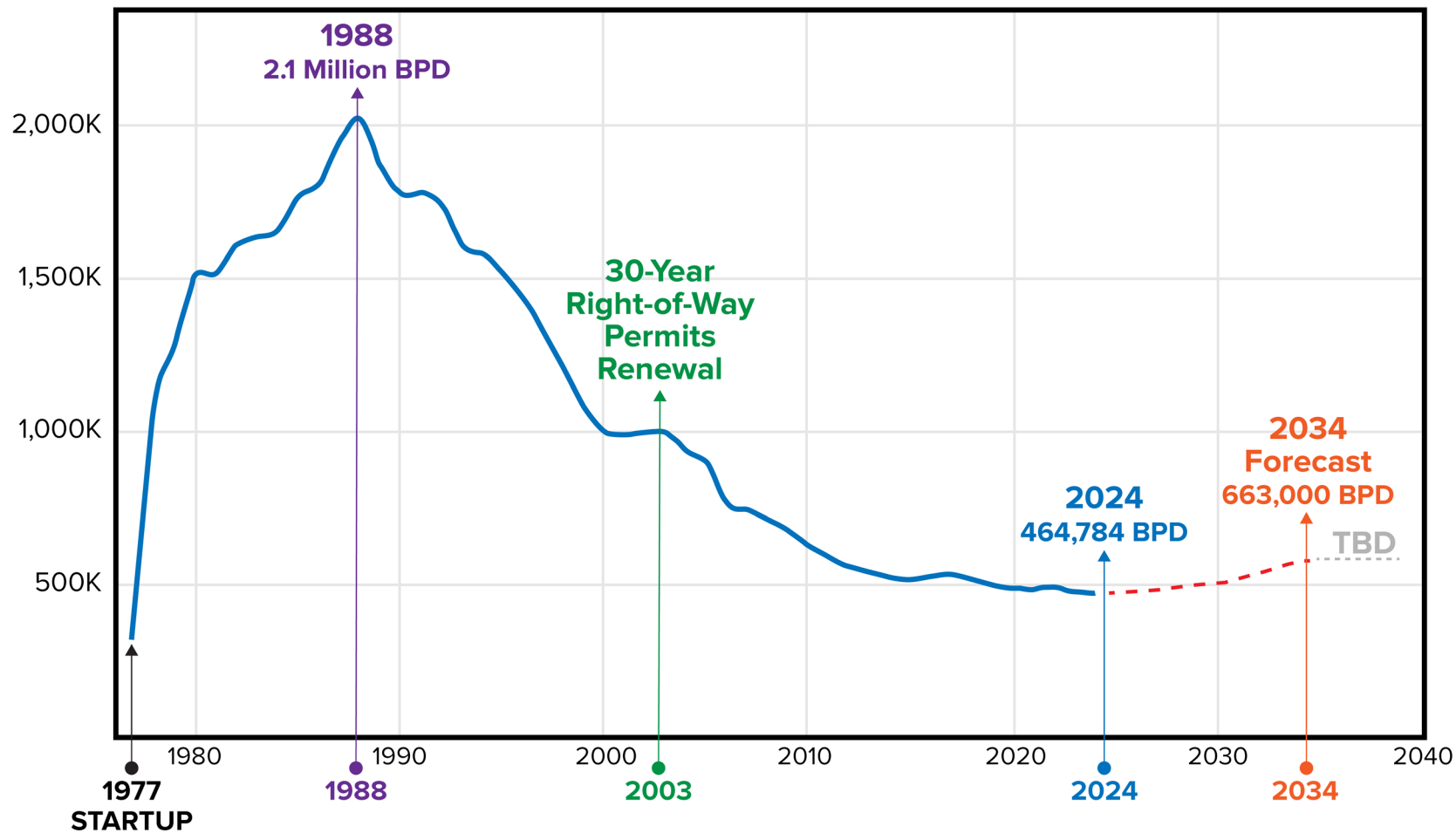
# Consequences: Positive and Negative



# Next 50 Years Imagined







## Historical and Forecast Throughput

SOURCE: Alyeska Pipeline and Alaska DOR

# Alaska Official Seals





