

NANA



# Mineral Development

With a focus on Red Dog and Northwest Alaska



## 6 Large Mines (And Placer Mines)

- 9,200 direct & indirect jobs
- \$148.6 million to state gov't
- \$34.2 million to local gov't
- \$358 million to Native corps
- \$1.8B in export value (36% of Alaska's export-2017)
- Plus the impact of small mines and exploration
- Juneau, Fairbanks, NW AK

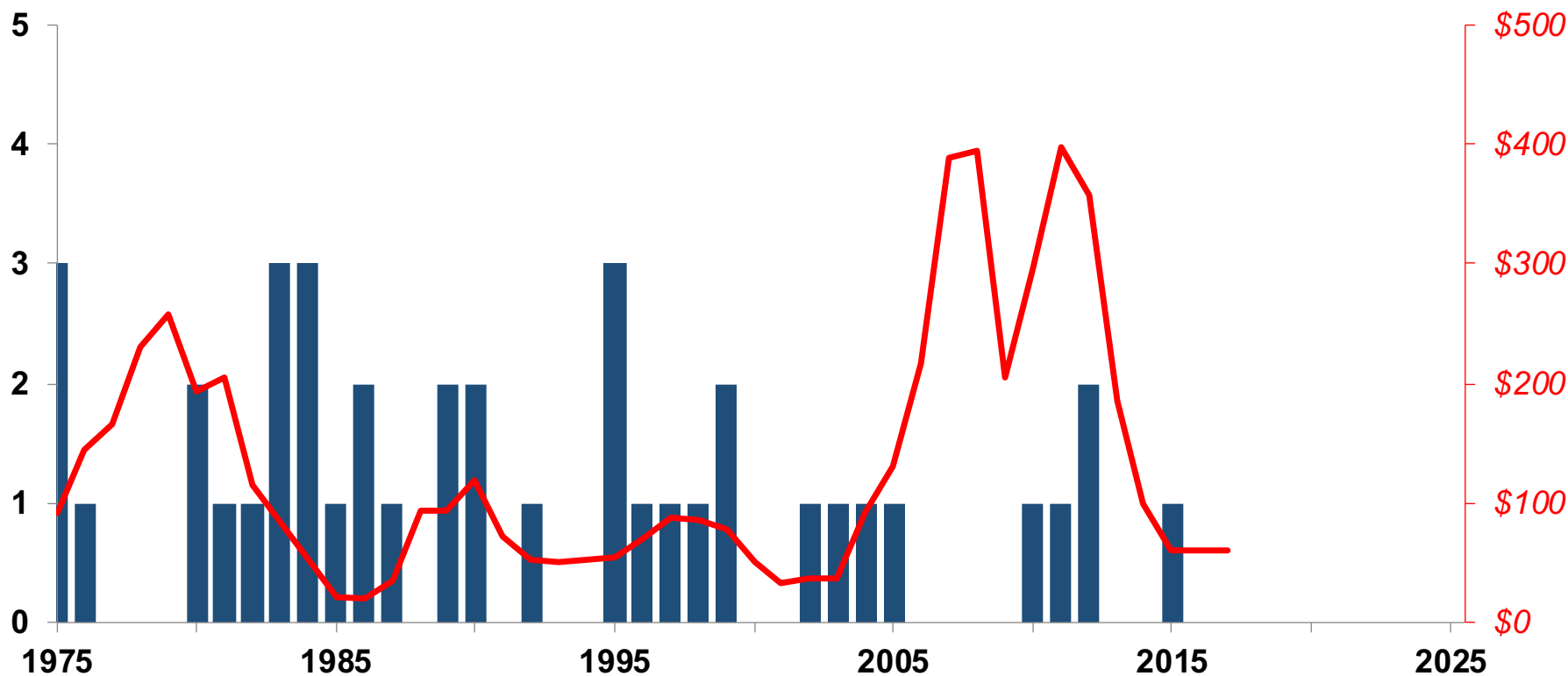


# Mining Activity in Alaska



# Exploration Expenditures (\$100's millions) and Number of Significant Discoveries in Alaska

## *All Commodities: 1975-2017*

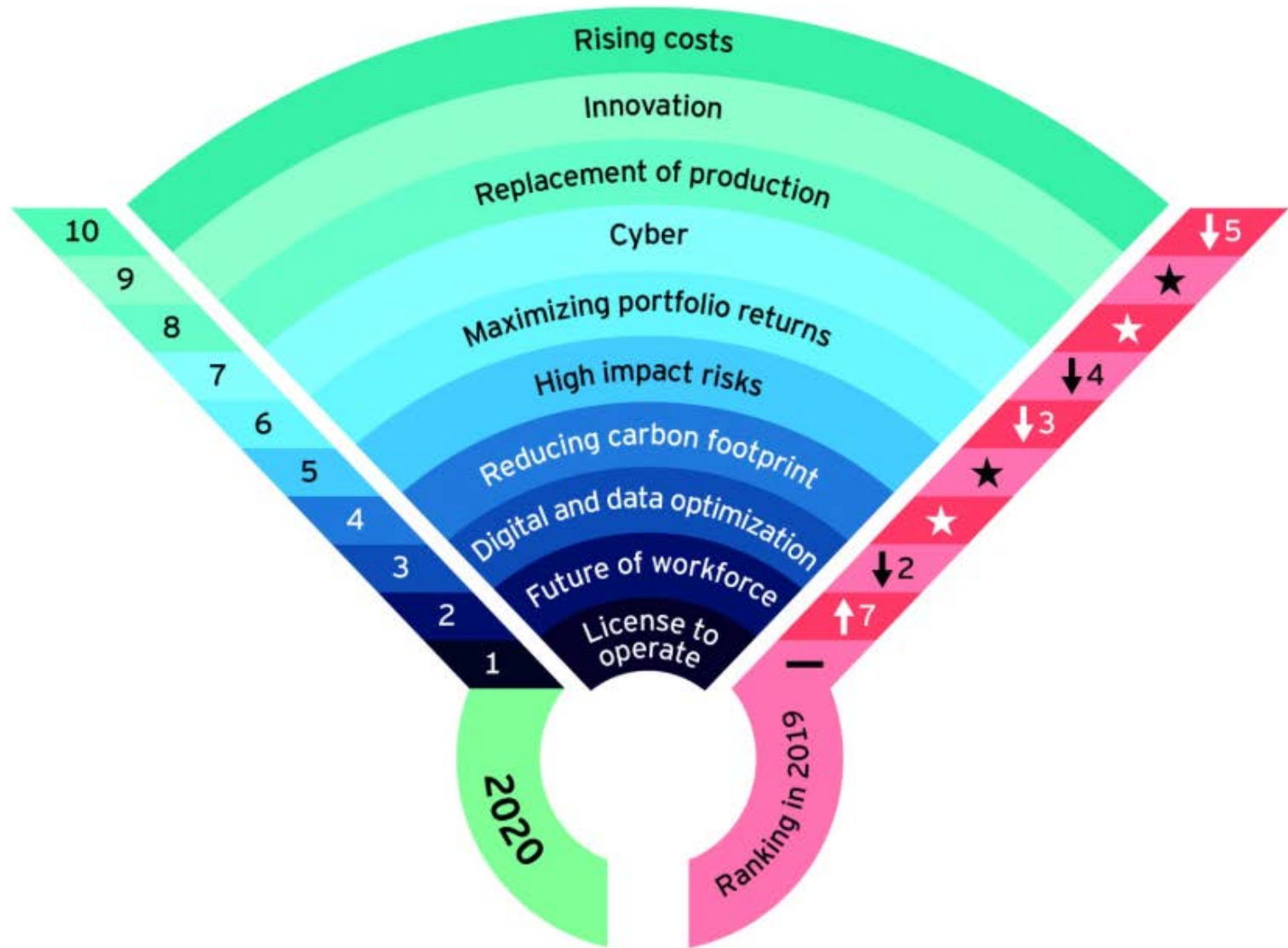


# Typical Project Stages

	Exploration		Prefeasibility		Feasibility		Permitting/ Design		Construction
Resource	Inferred	<b>Positive Order of Magnitude Study</b>	Indicated	<b>Positive Prefeasibility Study</b>	Measured	<b>Positive Feasibility Study</b>	Measured	<b>Decision to Mine</b>	2-3 years \$100's M
Reserves	Assumed		Probable		Proven/Prob.		Proven		
Mine	Sketch		Preliminary		Firm		Final		
Processing	Assumed		Options		Selected		Optimized		
Market	Assumed		Options		Letter of Intent		Agreement		
Environment Impact	Concept		Approximate		Near Complete		Completed		
EIS	Conceptual		Scoped		Approved		Final		
Closure Plan	Concept		Preliminary		Advanced		Granted		
Permits	Assumed		Identified		Applied for		Agreement		
Community	Fatal Flaws		Issues		Negotiations		Final		
Project Schedule	Assumed		Approximate		Firm		±5%		
Cost Estimate	±30%		15-25%		±15%		Finalized		
Economics	Est. ±30%		Probable ±15%		Firm ±15%		In place		
Finance	Assumed		Options		Negotiations		???		
Time	A few years	1-2 years	A few years	\$5-10M					
Cost of Stage	\$5-10M	\$10-30M	\$30 – 100M						

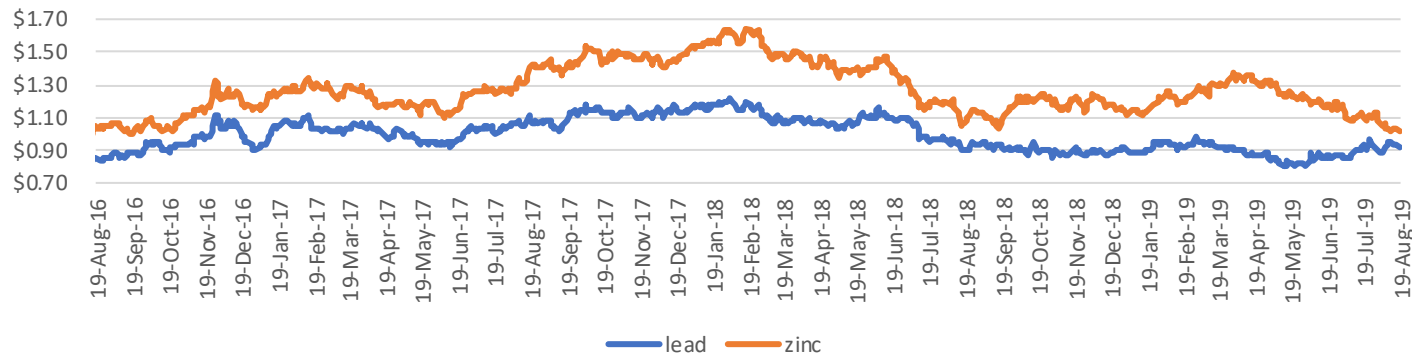


## Top 10 business risks facing mining and metals

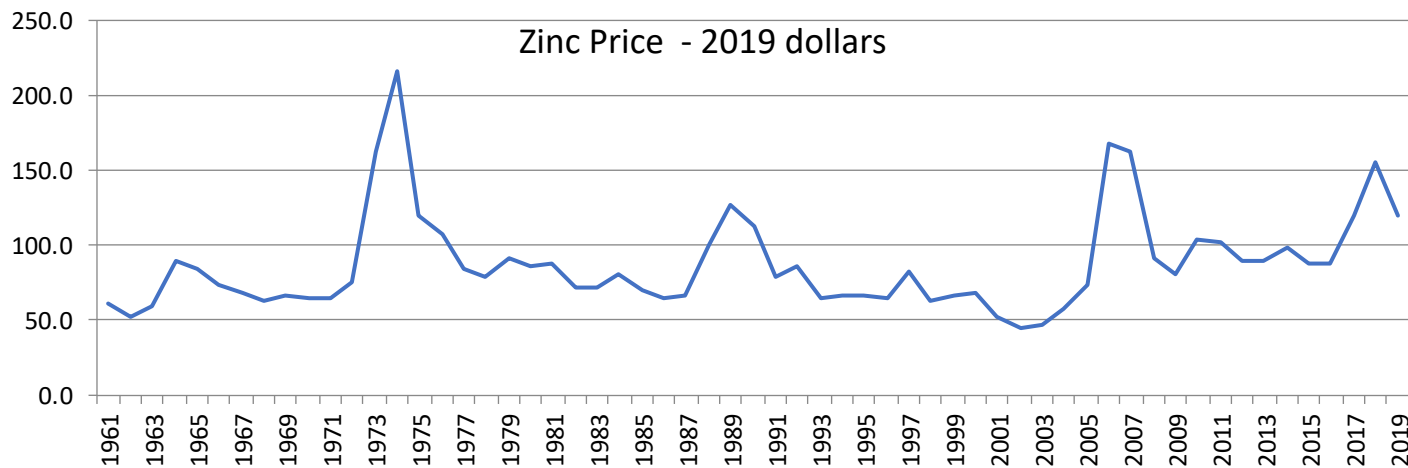


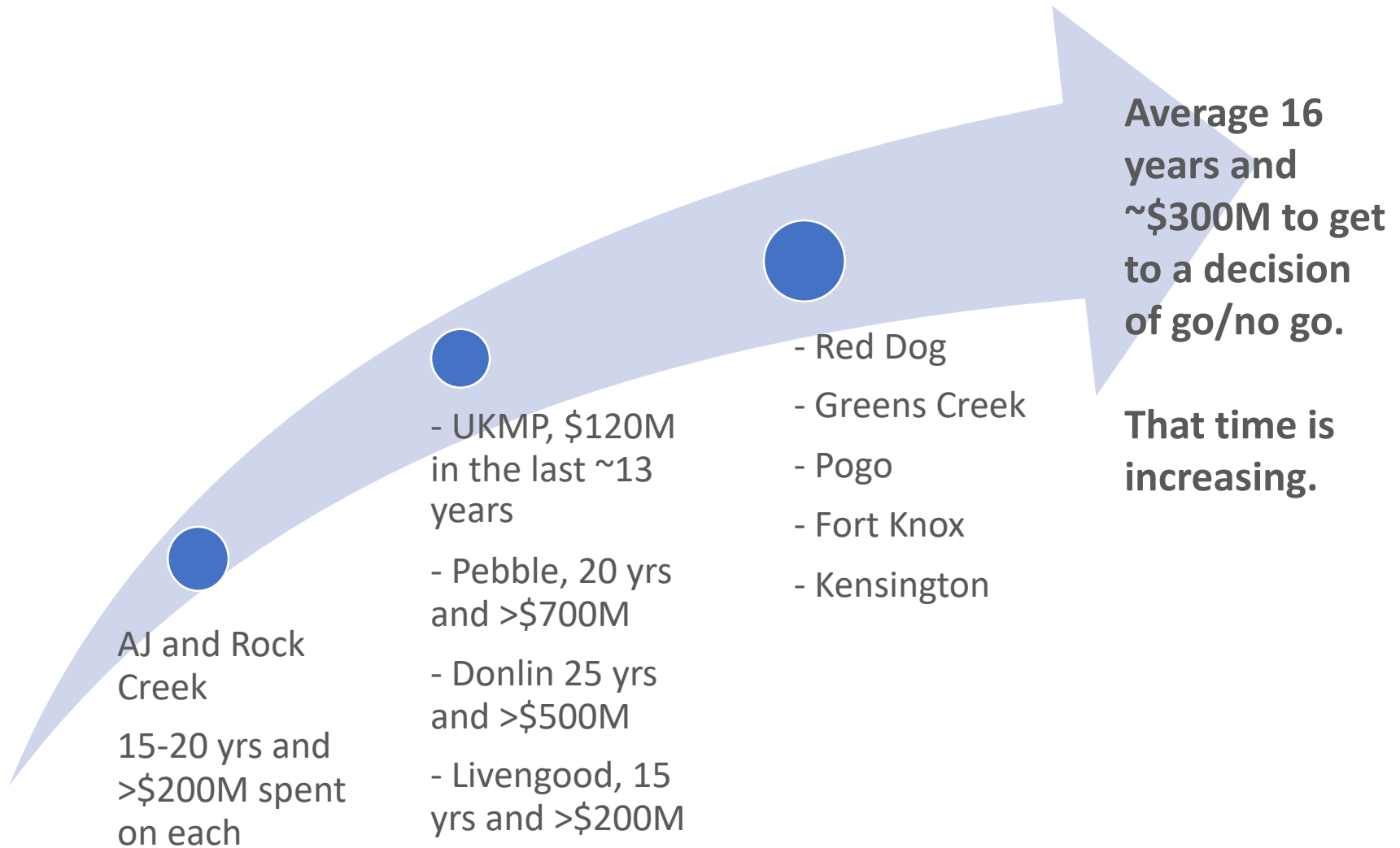
# Metal Price Cycles

### Lead and Zinc Price Per Pound



### Zinc Price - 2019 dollars







# We Are NANA

- A for-profit corporation
- \$1.5B in revenues (FY18)
- >11,000 employees
- 1,551 shareholder employees
- 2.3 million acres of land



# THE WORLD OF NANA

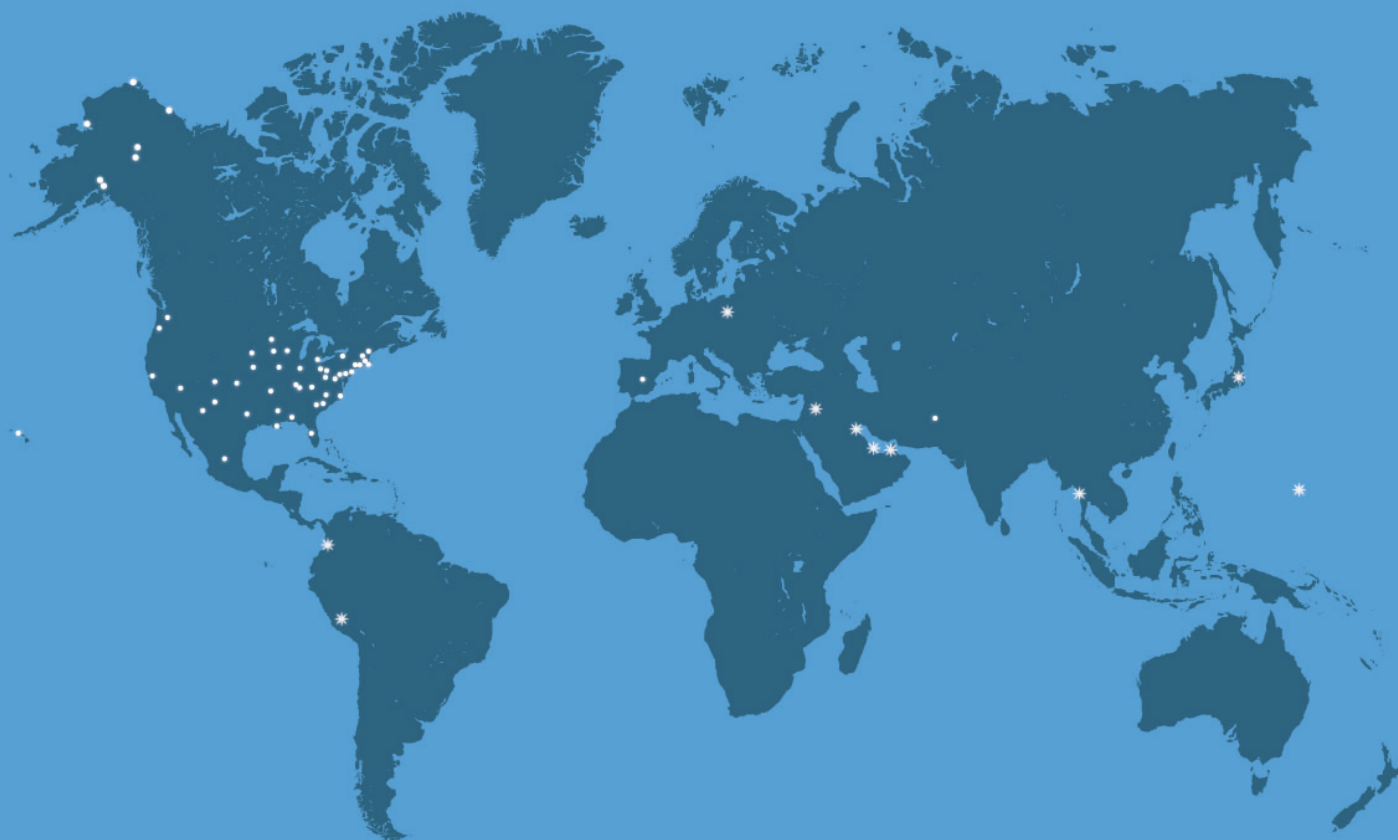
38 STATES



15 COUNTRIES



5 CONTINENTS



# Alaska Regional Corporations



# Responsible Development at Red Dog Mine



# 30 Years of Mining at Red Dog Mine

## Red Dog Then



## Red Dog Now



## Resolution of competing title claims critical

- NANA leaders visited Cominco operations: Pine Point, Polaris, Black Angel, Trail

## 1981 Letter of Intent between NANA and Cominco

- Drill deposit on 400' centres
- Before land status was resolved

## 1982 Landmark agreement between NANA and Cominco

- Cominco to operate under a lease agreement
- Ultimately schedule to 50:50 profit share



# DeLong Mountain Transportation System









# The Mining Process



# The Mining Process



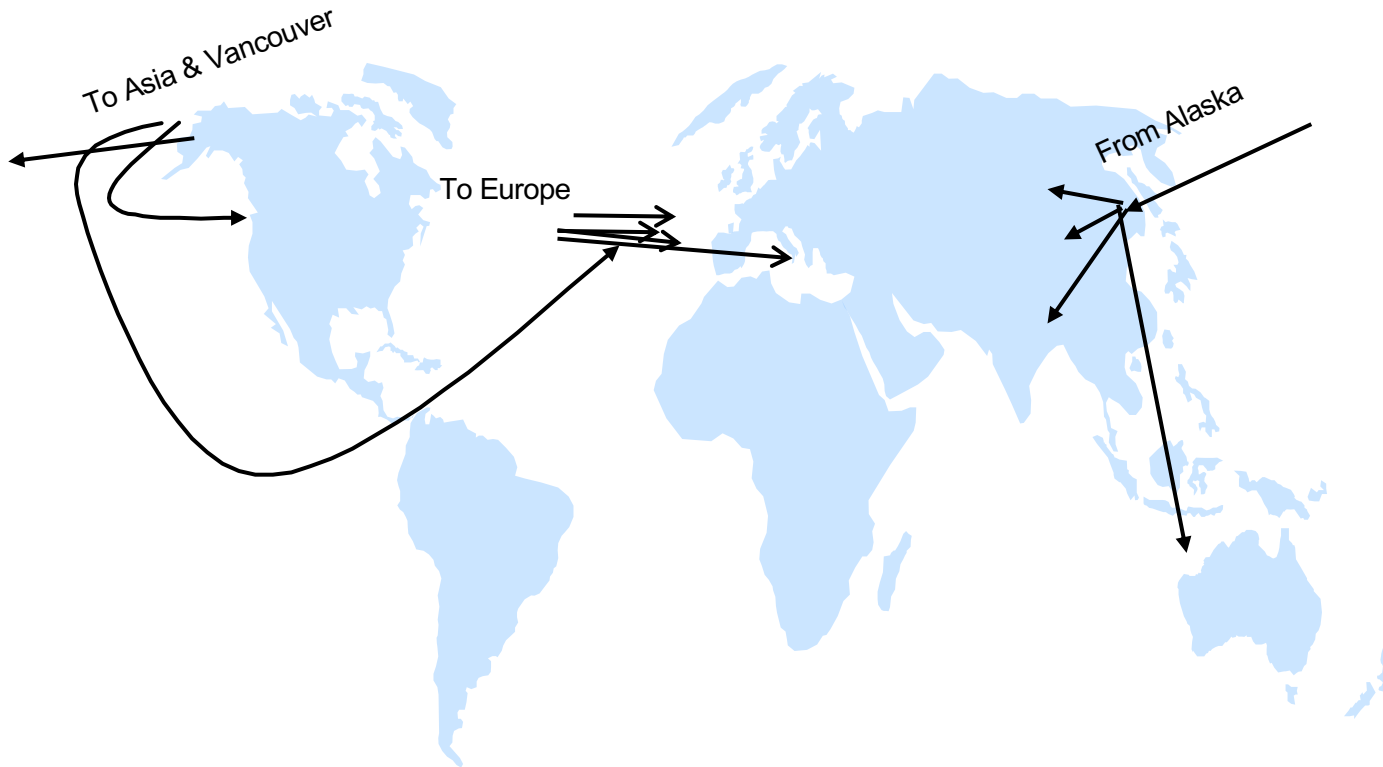
# The Mining Process



# The Mining Process



# Trade Flow of Zinc Concentrates

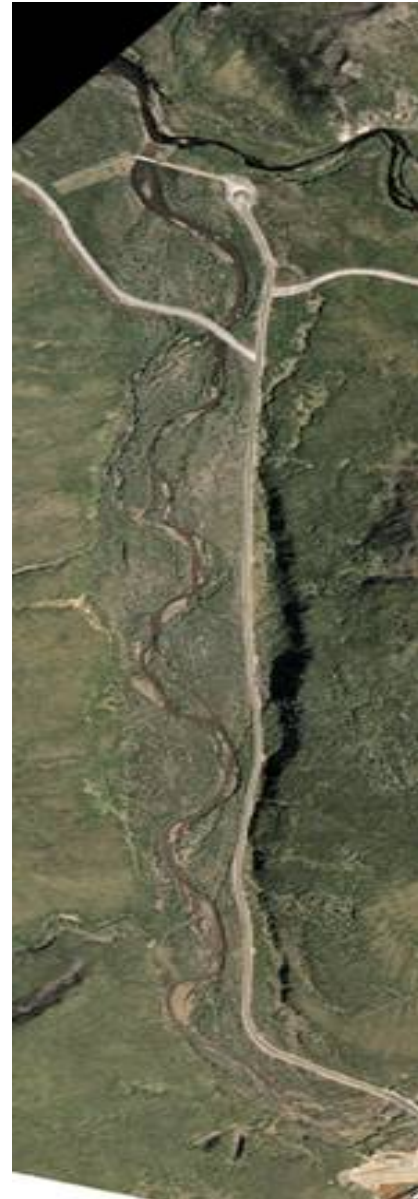


# Then and Now

Before  
Mining →  
(1982)



After  
Mining →  
(2005)



# Caribou

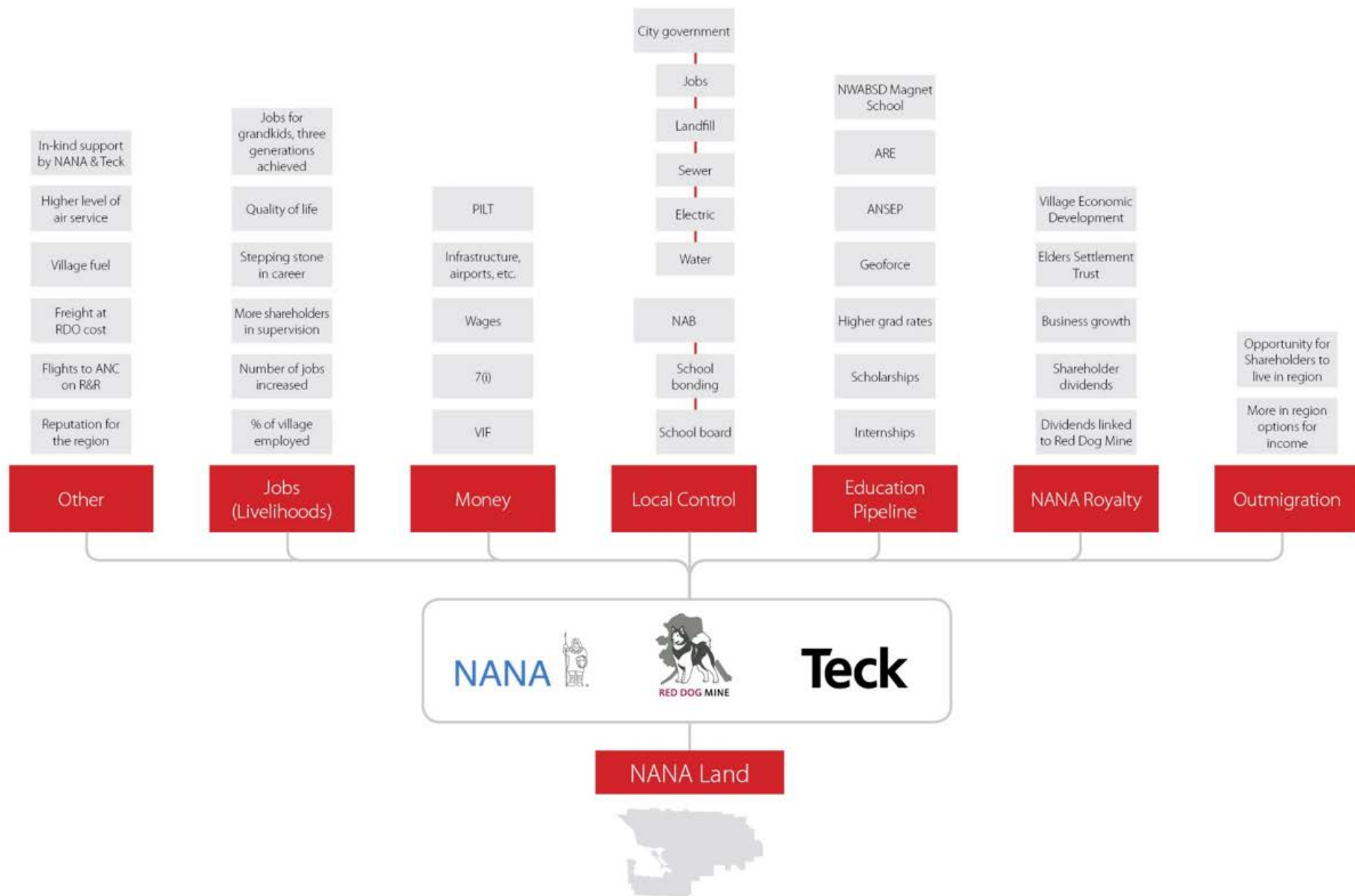




Responsible development at Red Dog has helped improve the lives of our shareholders and build the economy for our region.



# Mining Benefits



# Mining Benefits

More than  
**\$217M**

in total PILT to NAB since  
mining began (through 2019)

**\$35M**

to the Village  
Improvement Fund (VIF)  
(through 2019)

More than  
**\$1.3B**

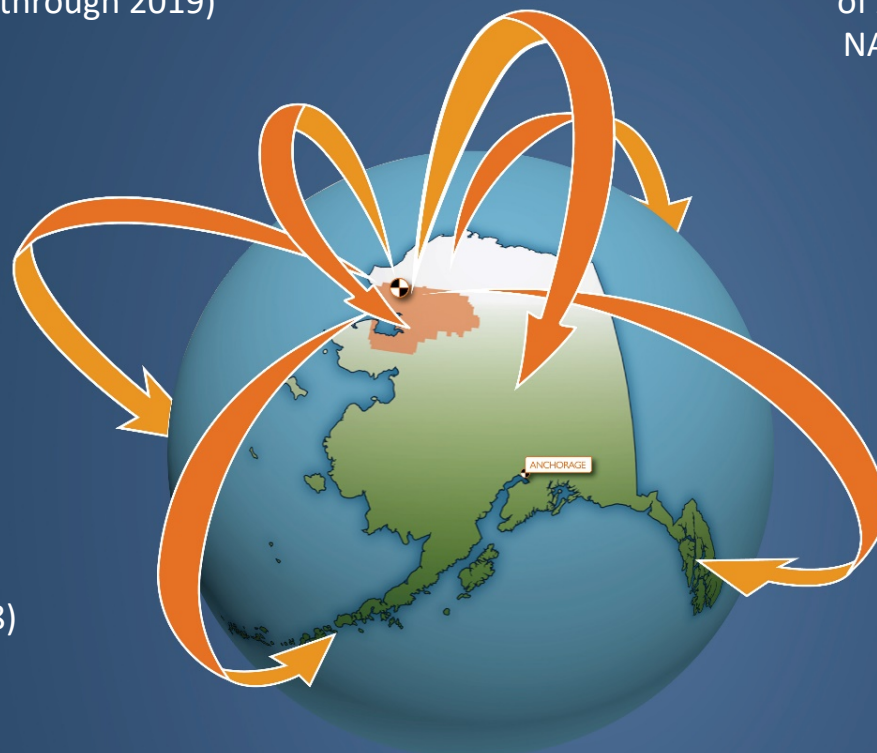
in payments to the State  
of Alaska, AIDEA and  
NAB (through 2018)

**750+**

shareholder jobs

**\$1.2B**

in total 7(i)/7(j)  
payments (through 2018)



**74%+**

of Alaska's mineral  
export in recent years

**34%**

of Alaska's export  
in 2017 was due  
to Red Dog

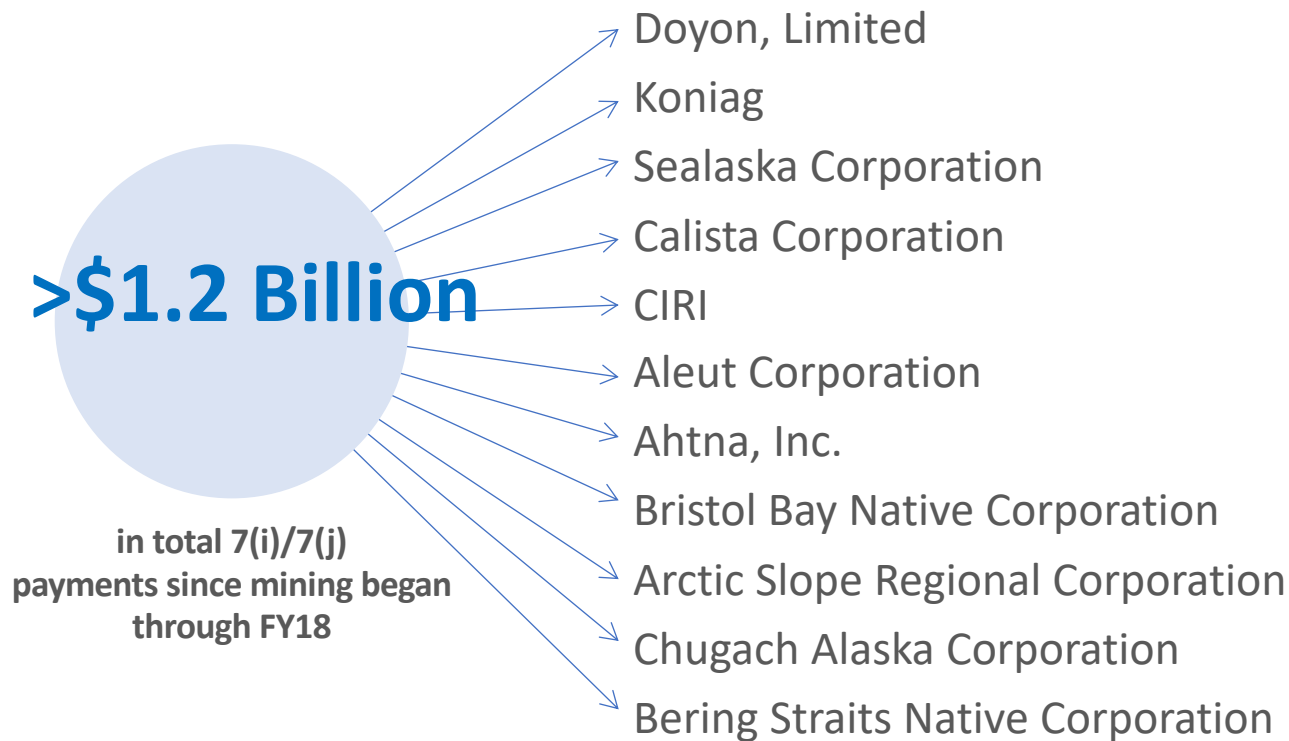
**70.3%**

(2018) of US zinc  
mine production

**4.7%**

of global zinc  
mine production

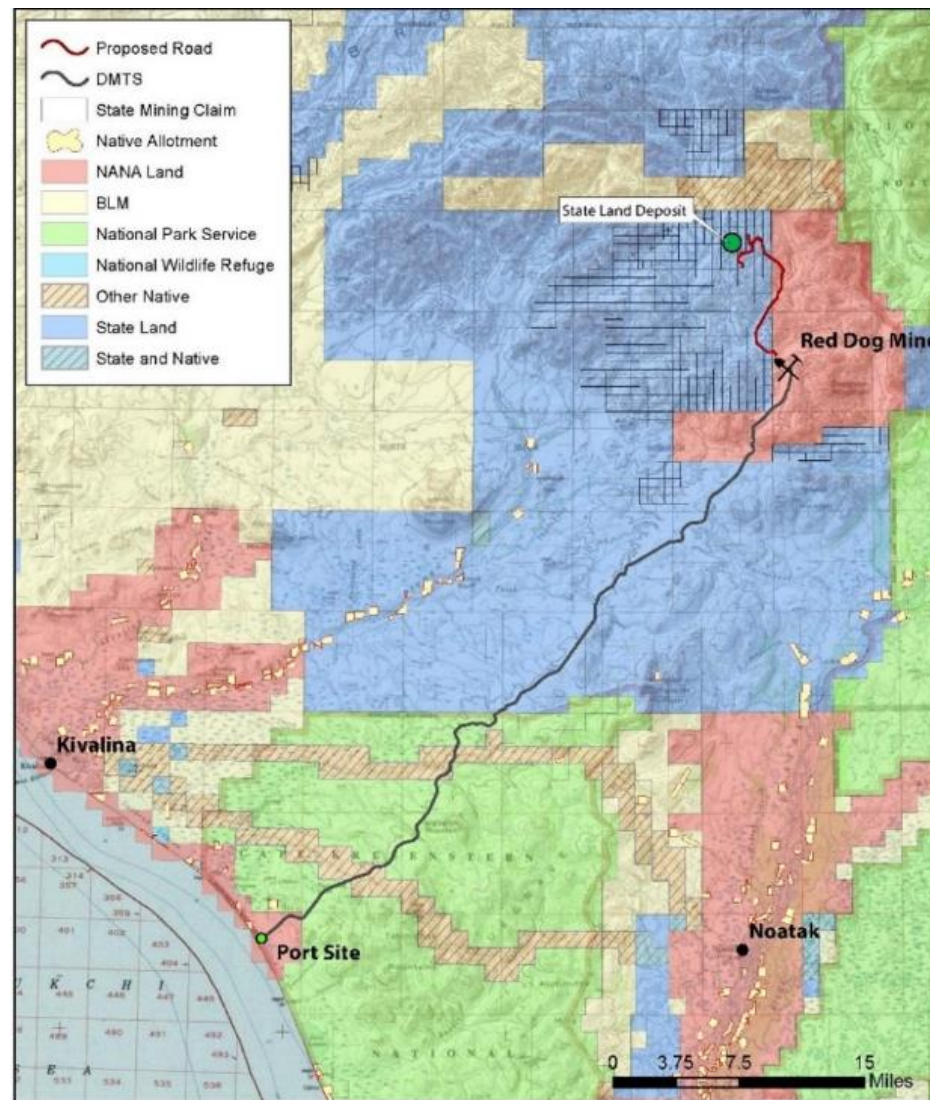
## Helping All of Alaska



2015-2018 ~ 70% of the 7i contribution was from Red Dog

## State Lands Exploration

- Prospective zinc-lead deposits on State of Alaska lands
- Targets are underground
- Years of work before a decision can be made



# What could be next?

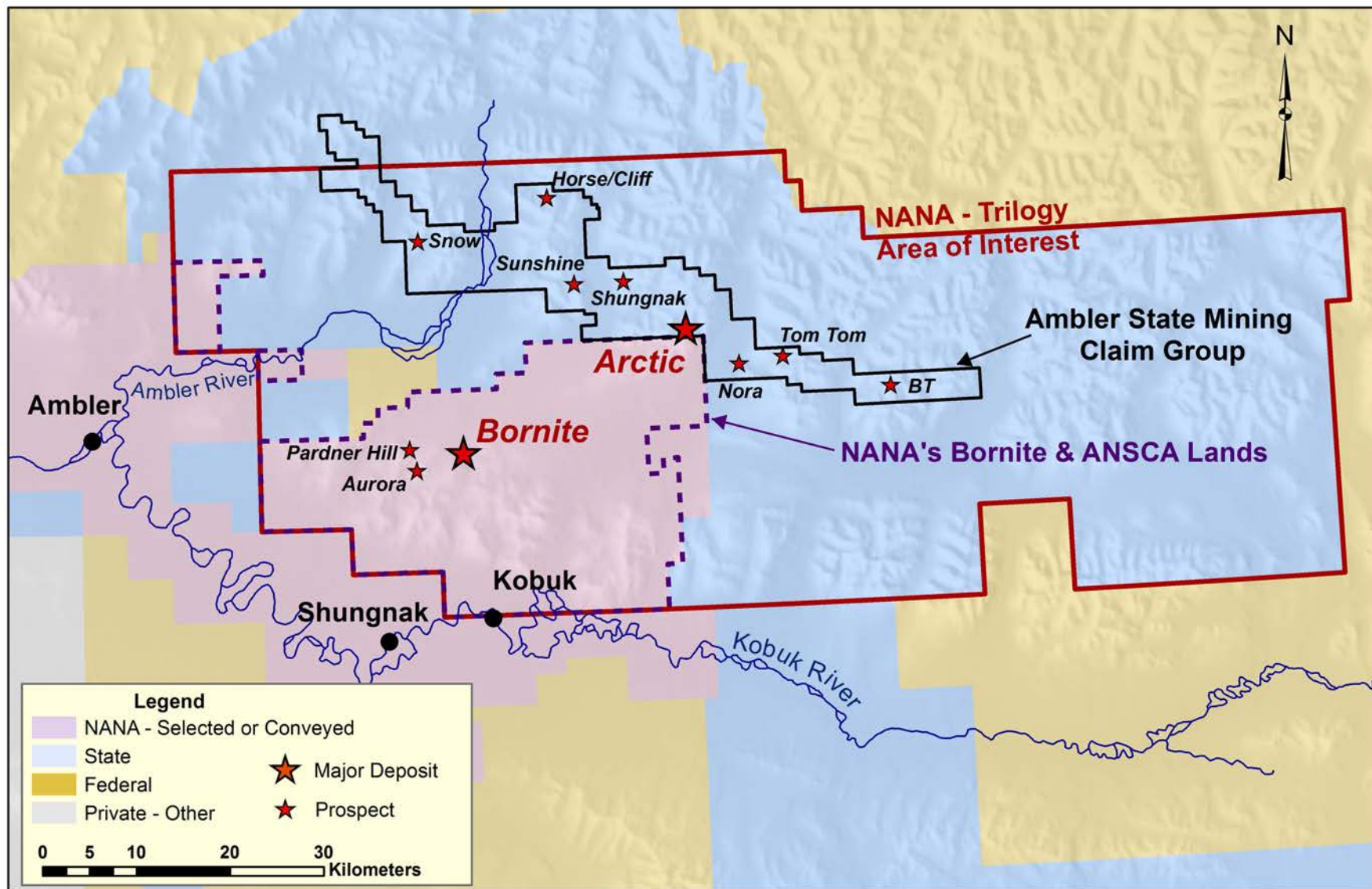


An advanced stage mineral exploration project in the Ambler Mining district with Trilogy Metals (South32)

- > \$120M spent in the last 13 years on exploration
- > 375 shareholder jobs in the last 5 years
- \$18M spent in the 2019 program (\$6M at Arctic/\$10M at Bornite/\$2M expl)



# UKMP Area of Interest

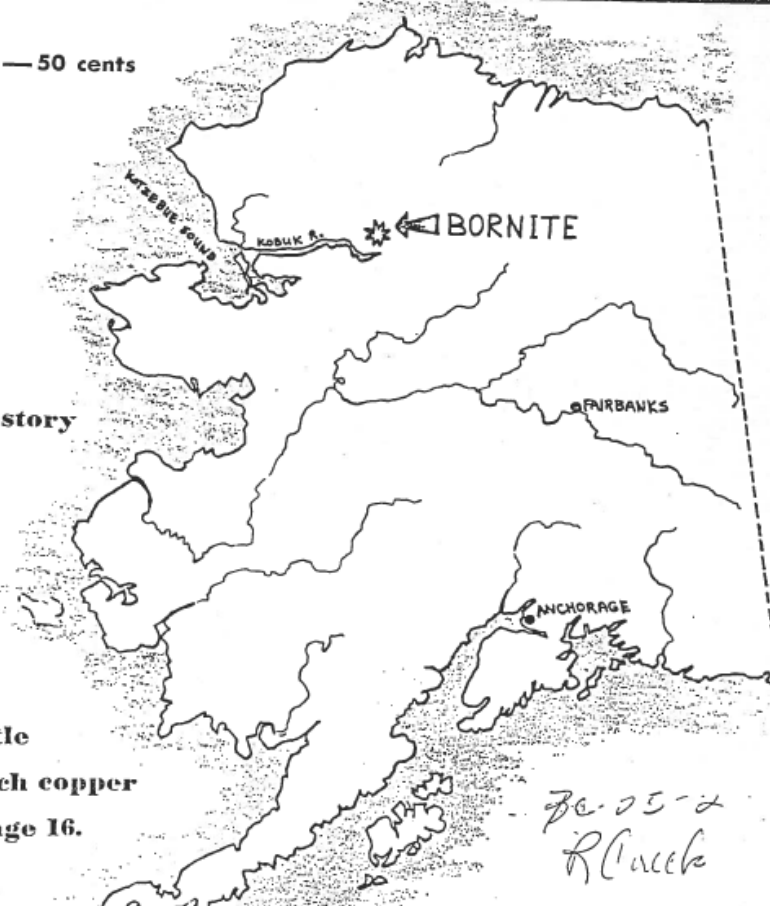




## ALASKA CONSTRUCTION & OIL

February, 1968 — 50 cents

the colorful story  
of bornite, a  
far-north  
outpost  
where  
men are  
waging a  
difficult battle  
to extract rich copper  
lodes—see page 16.



### \$10 Million Gamble at Bornite Could Pay Big Dividends

 SPECIAL REPORT

By Robert G. Knox, Associate Editor

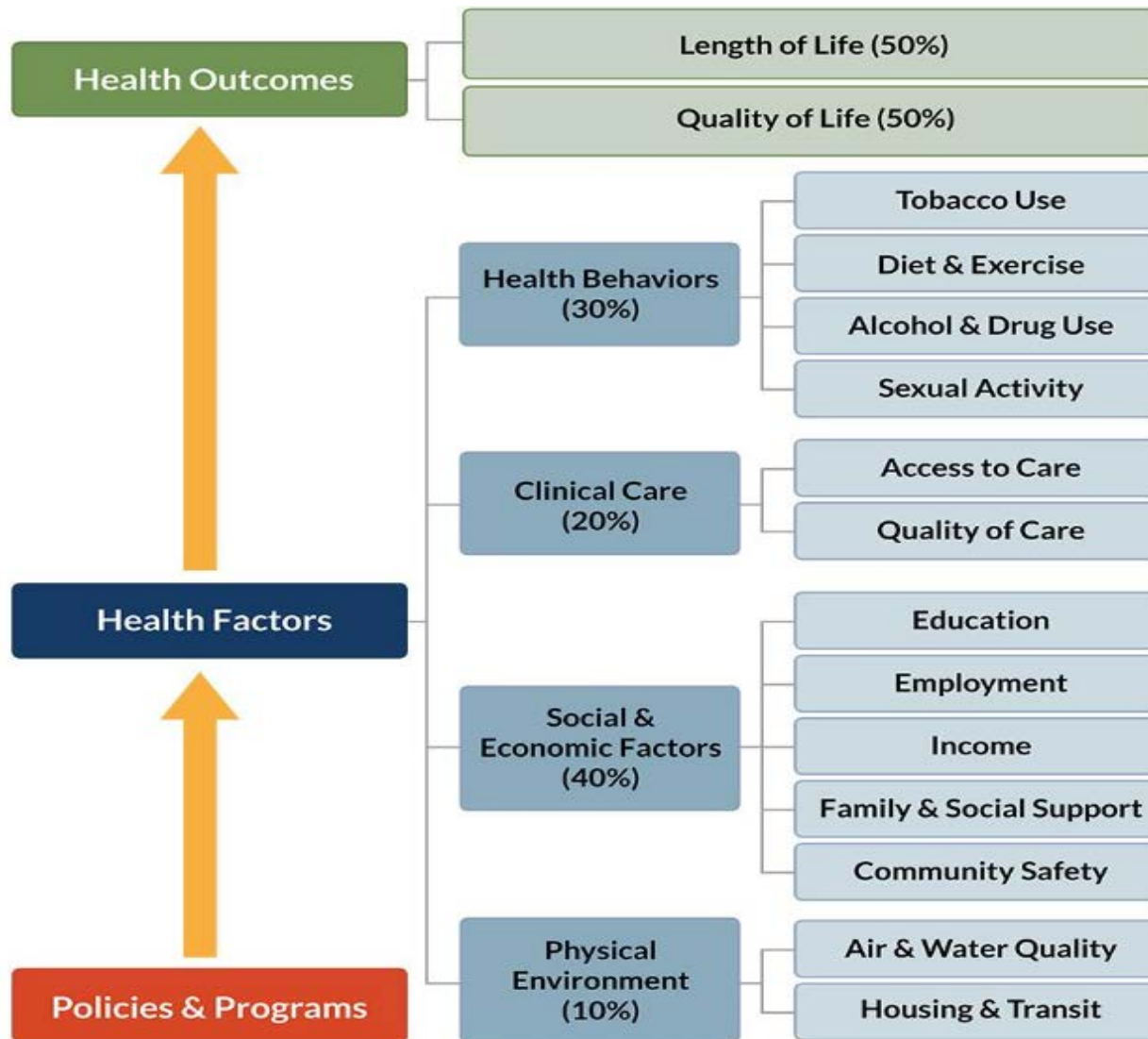
FROM FAIRBANKS the F-27 propjet whistles north for more than an hour. It crosses the Arctic Circle and 40 miles farther on touches down at Dahl Creek just

a TV show in the woods . .



Governor Mickel at Bornite with Charles Penney  
—Staff Photo

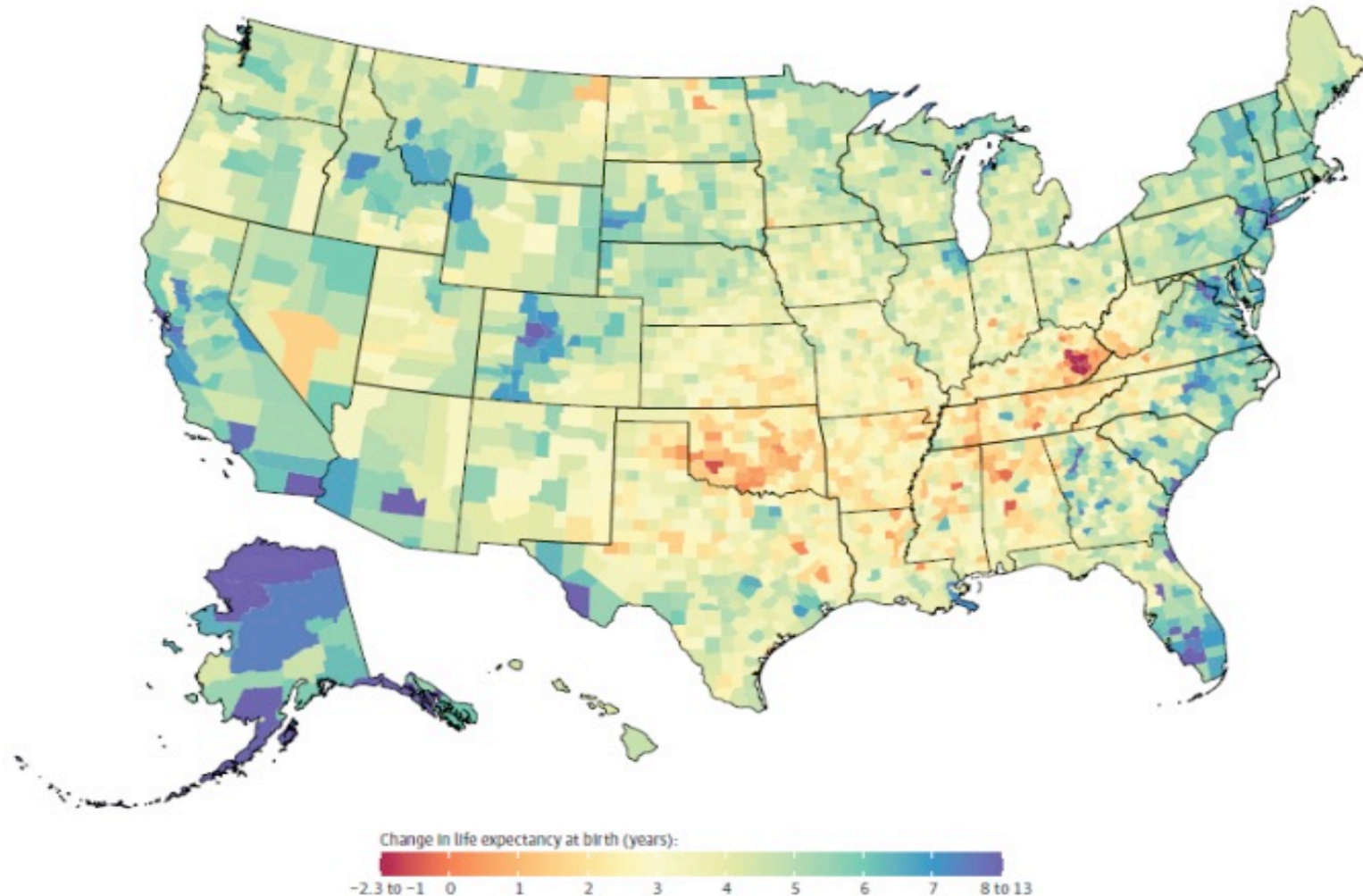
# Social & Economic Impact on Health



County Health Rankings model © 2016 UWPHI

# Change in Life Expectancy at Birth

Figure 2. Change in Life Expectancy at Birth by County, 1980 to 2014



Compared with the national average, counties in central Colorado, Alaska, and along both coasts experienced larger increases in life expectancy between 1980

and 2014, while some southern counties in states stretching from Oklahoma to West Virginia saw little, if any, improvement over this same period.



# TAIKUU

