

TAPS: Sustaining Alaska's Economic Artery

*Presentation to
Resource Development Council
September 5, 2013
Tom Barrett, President*



TAPS is Alaska's economic artery

- AOGA: 1/3 of all Alaska's jobs, about 110,000, are attributed to the oil and gas industry.
- Fuels 1/3 of Alaska's economy.
- >90% of Alaska's unrestricted general fund revenue.
- Delivers >\$8.5 billion in revenue each year; \$24 million/day
- Annual tax payments to municipalities throughout Alaska.
- Permanent Fund of \$45 billion



Trans Alaska Pipeline System

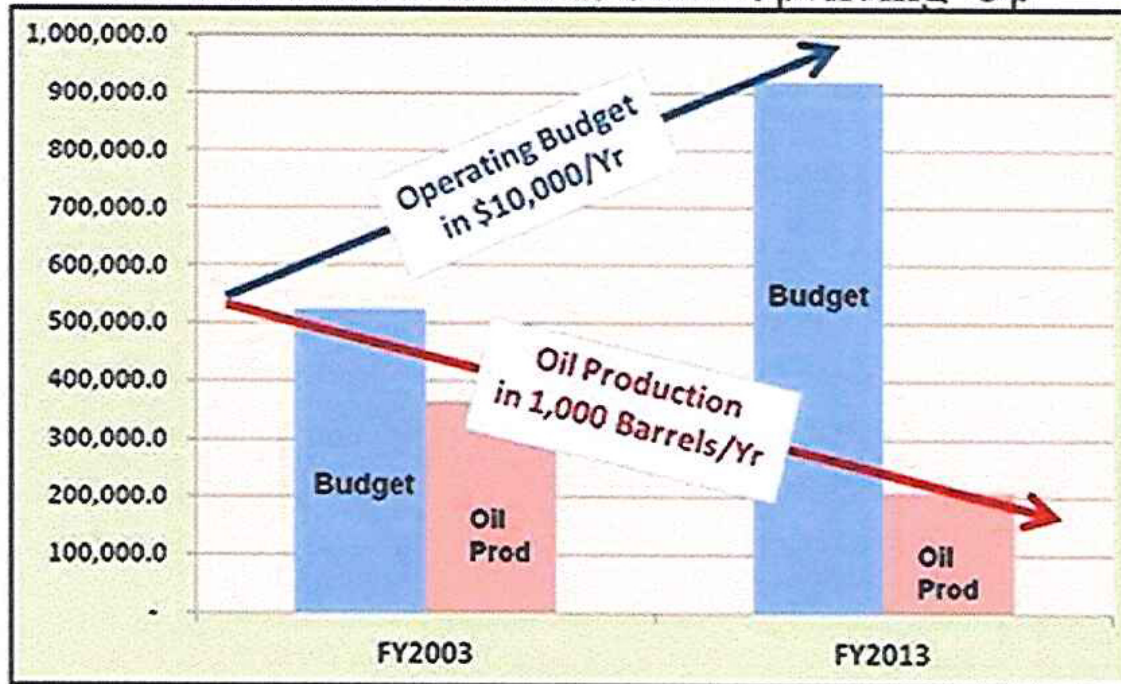
- 800-mile warm-oil pipeline in cold climate.
- Arctic pipeline operated successfully for 36 years.
- 2012 throughput average: 548,000 bpd.
- 8% of U.S. domestic oil supply.
- More than 20% of west coast refinery input.
- Nationally significant infrastructure.
- Supplies Alaska refineries.



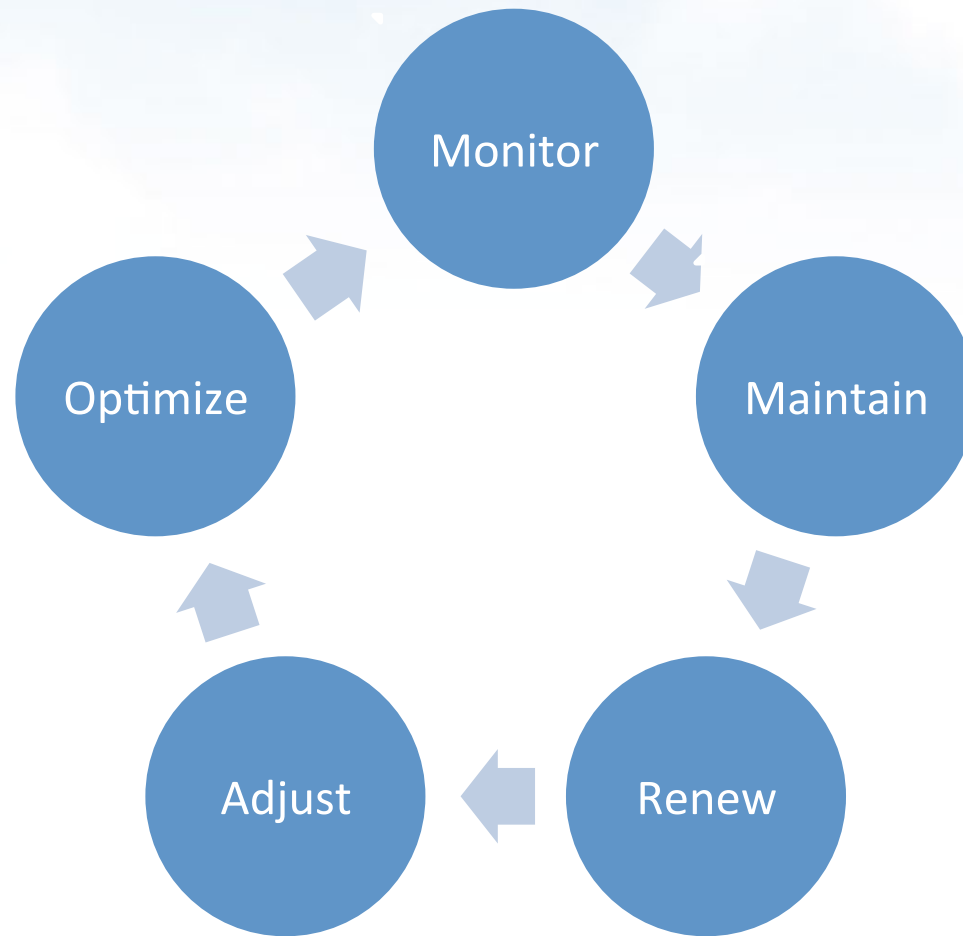
Greatest economic threats to Alaska

Declining TAPS Throughput & Increasing Budget

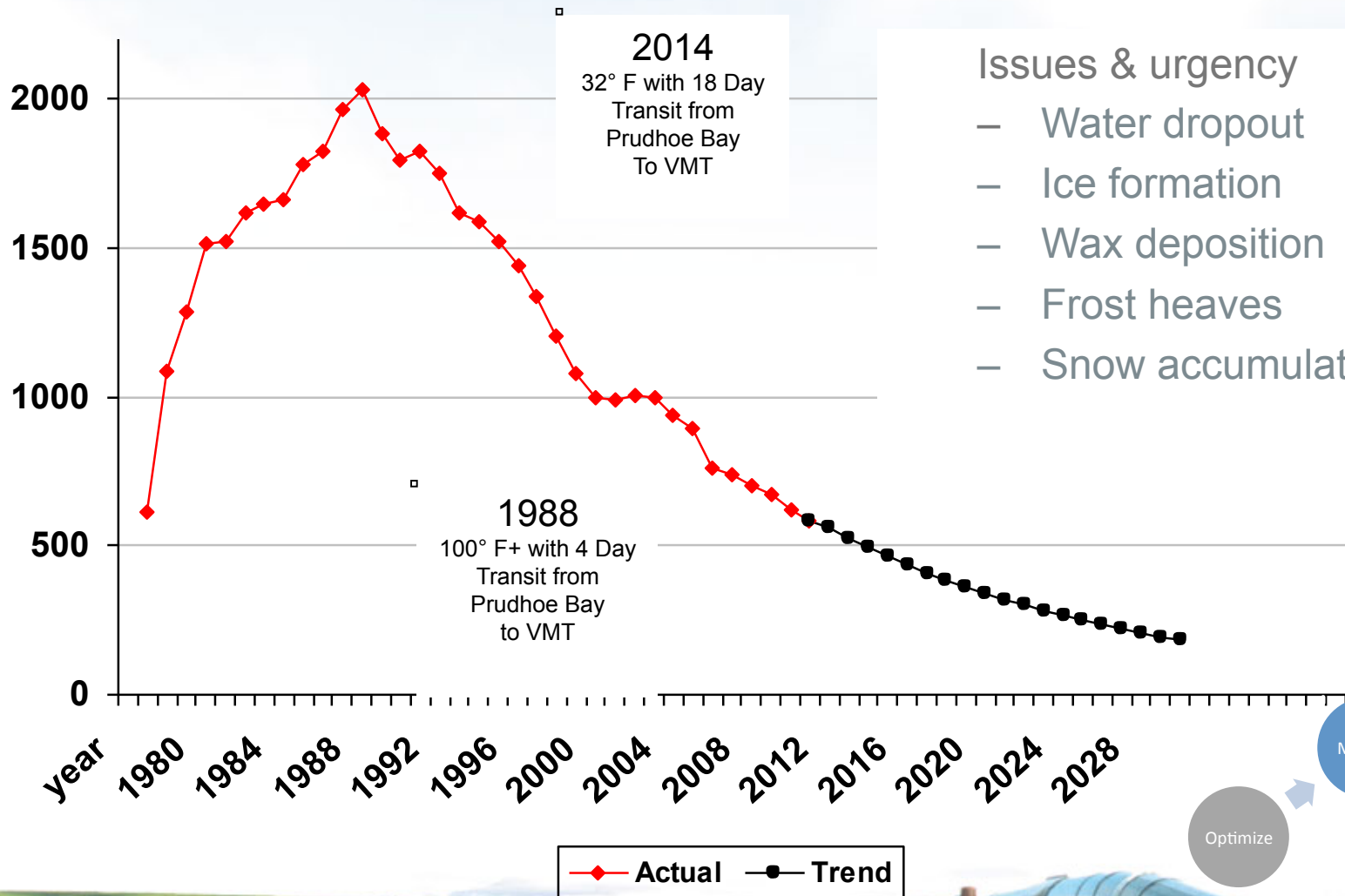
Oil Production Down: State Spending Up



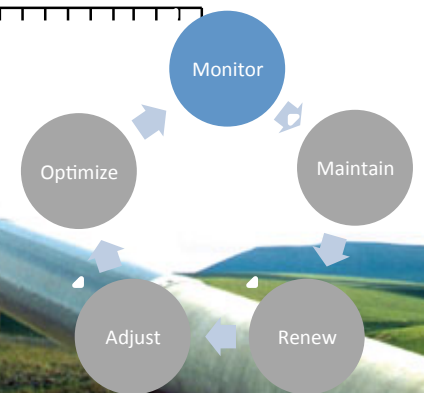
Sustaining Alaska's economic artery



Monitor: Steadily declining throughput

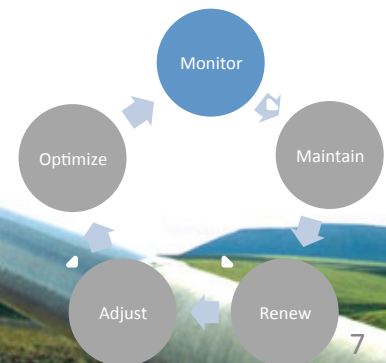


- Issues & urgency
- Water dropout
 - Ice formation
 - Wax deposition
 - Frost heaves
 - Snow accumulation



Monitor: Operations data

- Crude oil temperature
- Equipment diagnostics
- In-Line Inspection tool data
- Digs & inspections
- Above-ground piping inspections
- Corrosion coupons
- More



Maintain and Renew

- 146 maintenance and renewal projects
- >\$300 million this year
- Similar level of maintenance and renewal in coming years



2013 PROJECTS

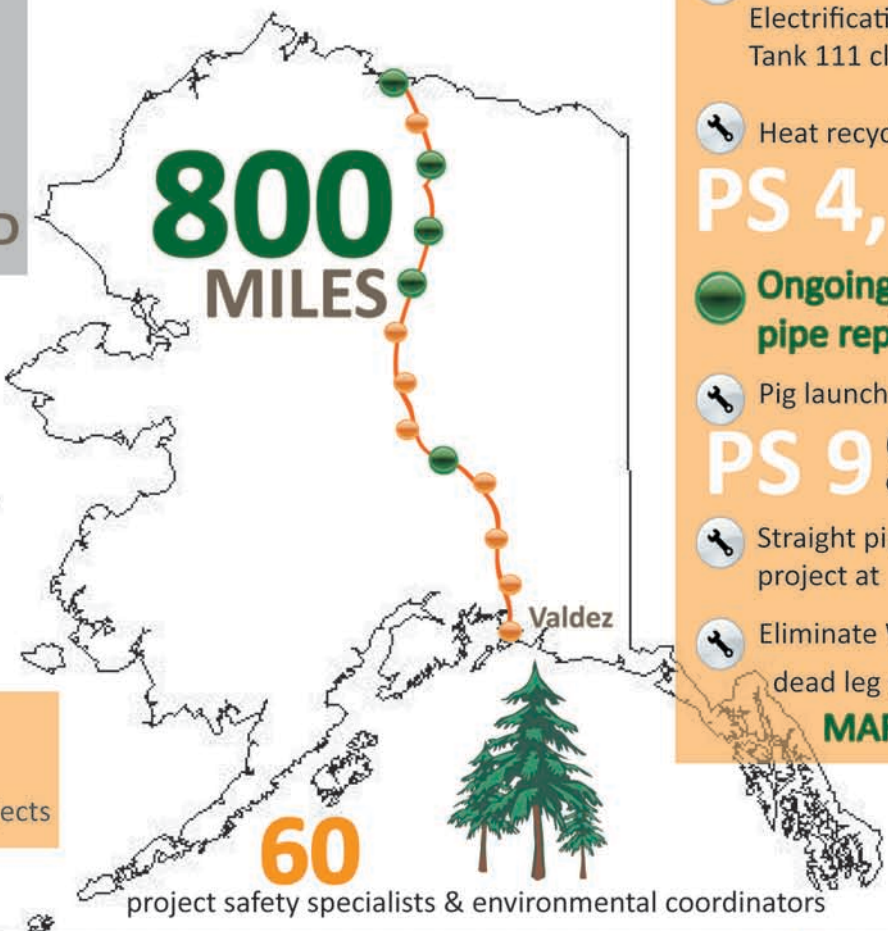
The Trans Alaska Pipeline System

DELIVERING EXCELLENCE

146 ACTIVE PROJECTS
\$300⁺ MILLION BUDGETED

MAINTENANCE SHUTDOWNS
1 four-hour
4 six-hour
2 eighteen-hour

coming in 2014 **130** anticipated projects



AT A GLANCE

- PS 1** Belowground pipe replacement; Electrification & Automation; Tank 111 cleaning & inspection
- Heat recycle work at **PS 4, 5 & 7**
- Ongoing belowground pipe replacement
- Pig launcher/receiver at **PS 9** (estimated completion 2014)
- Straight pipe project at **PS 10**
- Eliminate West Tank Farm dead leg piping at **VALDEZ MARINE TERMINAL**

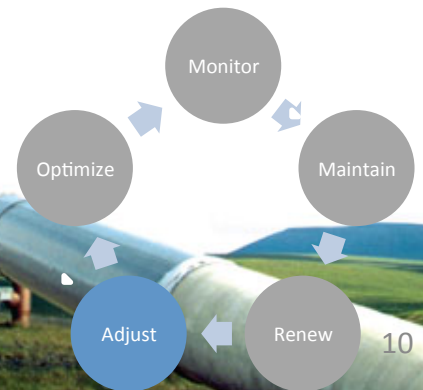


a total of **2,747,008** HOURS WORKED (1/1/13-7/8/13) & **0** DAFWCs

Adjust: TAPS scraper pigs



Low throughput leads to greater wax, slower pig velocities. Ongoing adjustment of pig design and protocol.



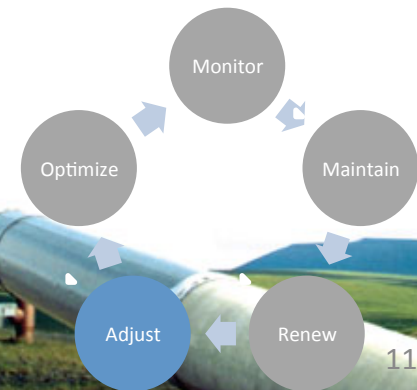
Adjust: Colder crude oil



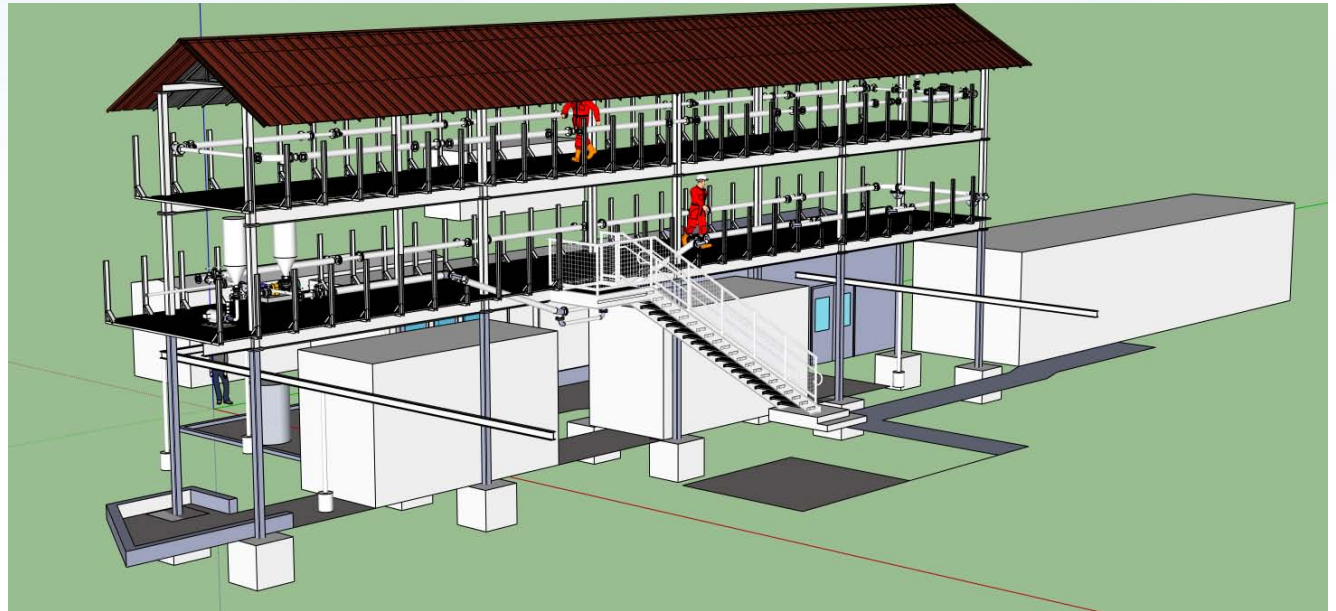
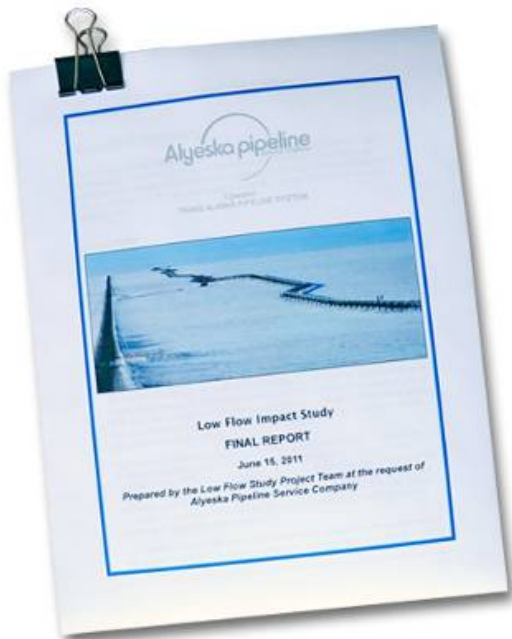
Recirculation at a pump station adds 7-10. Winter recirculation at PS 3, 4, 7, 9.



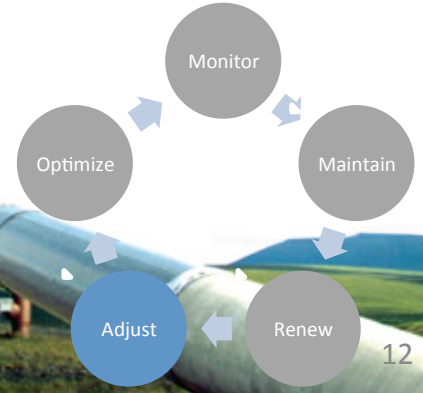
Tank top snow removal



Adjust: Study & test options



University of Tulsa flow loop for testing cold, dry flow.



Optimize: Increase TAPS throughput

OFFSHORE ARCTIC

- 27 bbo
- 132 tcf gas
- Est. 54,000 jobs (nationwide)

NPR-A

- 896 mbo
- 53 tcf gas

COOK INLET

- 599 mbo
- 19 tcf gas



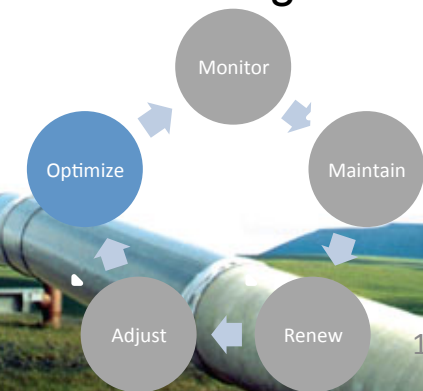
ONSHORE NORTH SLOPE

- Conventional: 5 bbo, 35 tcf gas;
- Heavy/Viscous: 24-33 bbo;
- Unconventional: 2 bbo, 12 tcf gas

ANWR

- 10 bbo
- 3.5 tcf gas

*mbo = million barrels of oil bbo = billion barrels of oil
tcf = trillion cubic feet*



Dedicated, highly qualified Alaska team

