



Alaska Department of Transportation & Public Facilities

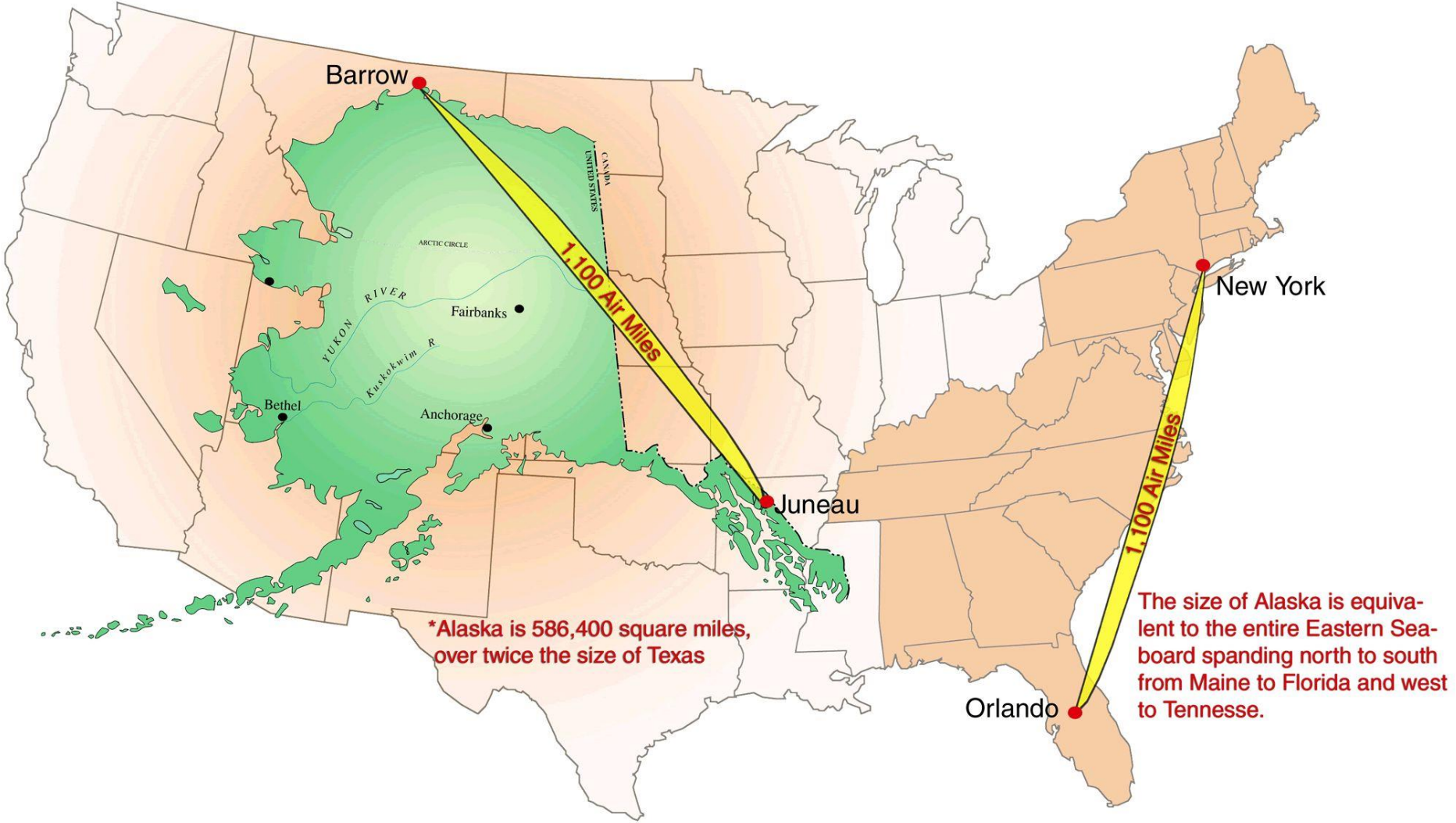
RMWPPP Anchorage, AK

Jim Horn, PE

October 8, 2013



SIZE AND DISTANCE COMPARISON





Alaska PMS Perks: Private Office





Alaska PMS Perks: Mobile Data Collection Equipment



Photograph: Wayde Carroll/Reuters

4100 centerline
miles
(All Asphalt)

Alaska

Yukon Territory

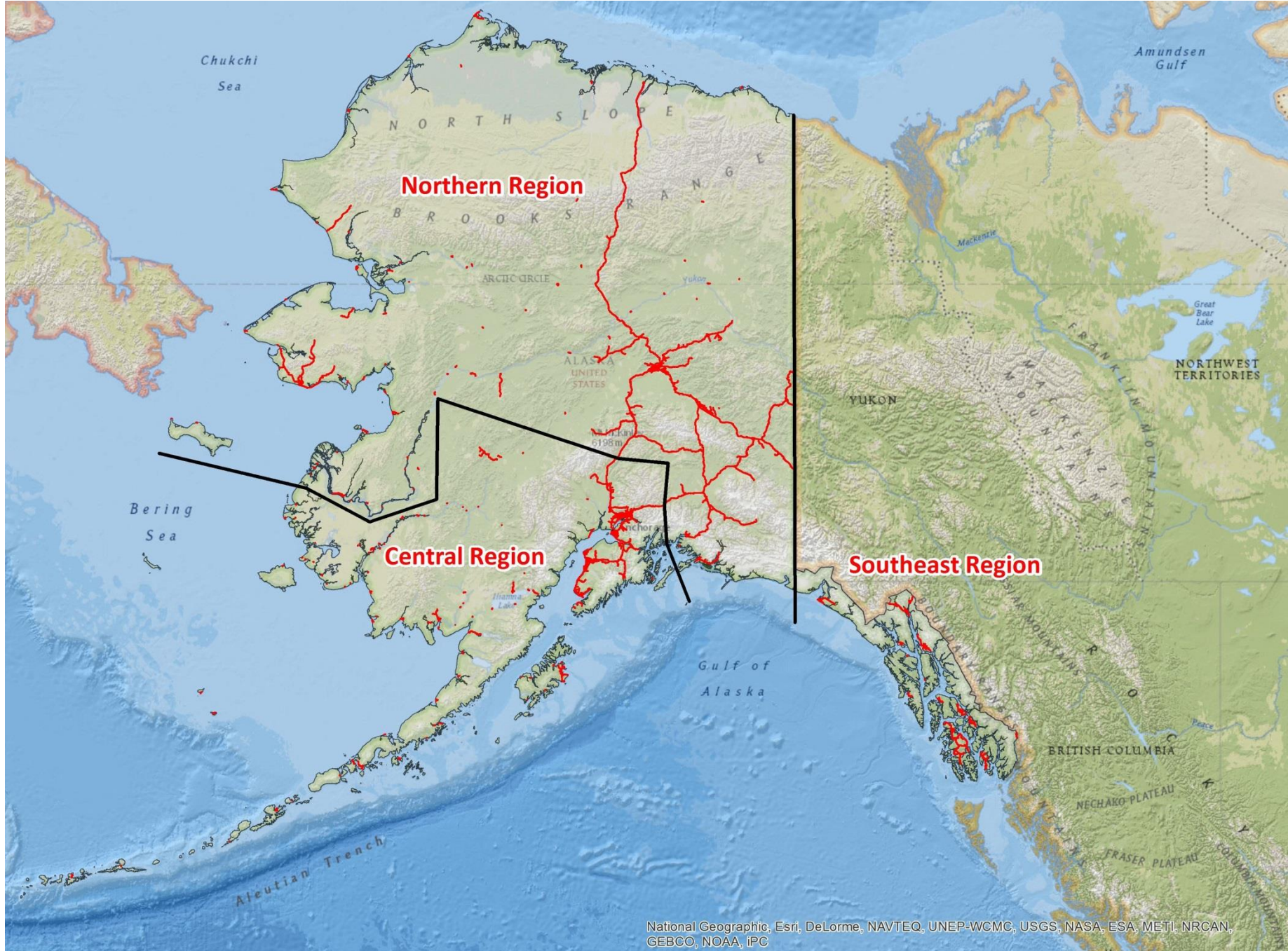
Northwest

Image IBCAO
© 2013 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat

Google earth



Glenn Hwy
M-point 60





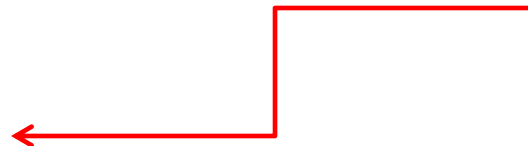
Road Conditions in Alaska

- **Rutting**
 - Population centers; Channelization; Studs
- **IRI**
 - Fixes? Arctic Engineering Issues
- **Cracking**
 - No history for trends
- **Friction**
 - No historical issues (studs)
 - 37 projects for High Friction Surface Treatments (HFST)



Performance Measures

- Pavement Serviceability Rating (PSR)
 - Combines rut depth and IRI
 - $5e^{(-0.0041)(IRI)}$
 - $5e^{(-0.0041)(IRI)} - (0.7)(\text{rut depth})$
 - VG ≥ 4.0
 - G ≥ 3.5
 - F $\geq 3.1 < 3.5$
 - M $\geq 2.6 < 3.1$
 - P < 2.6





PETS

- **P**erformance **E**lectronic **T**racking **S**ystem
- Displayed on State website
 - Performance Dashboard
 - Target has been 3.3 for many years
 - Porpoising between 3.1 and 3.2 for past 5 years
- More performance measures coming



Reports

Alaska DOT&PF 201 2 Road Pavement Conditions and 201 3 Pavement Preservation Recommendations

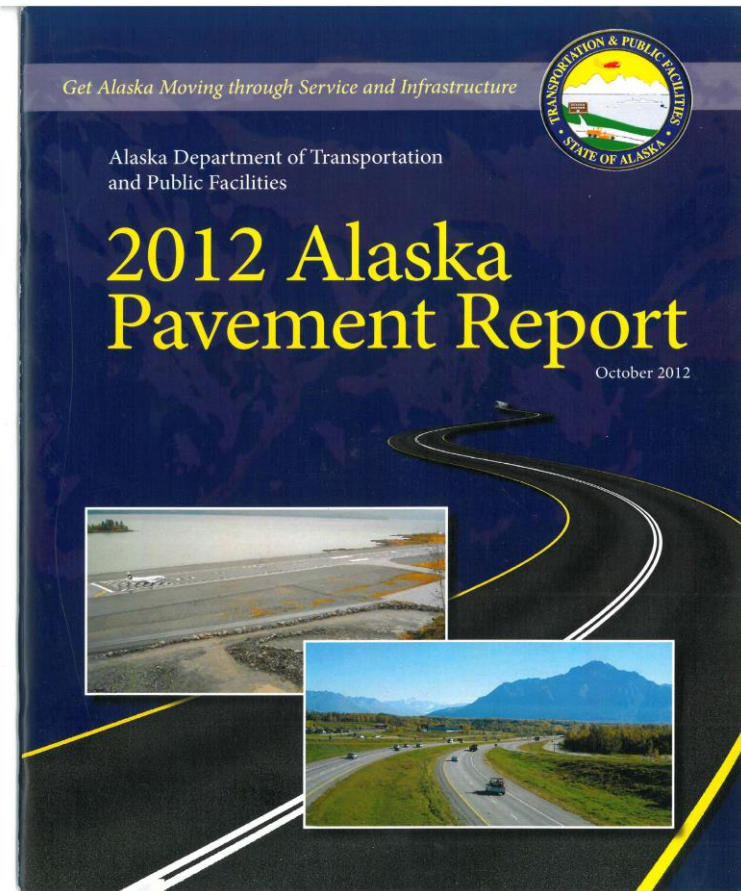


Submitted to:

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Rutting in Alaska



Rutting in Alaska

- Ruts
 - **Plastic deformation** during hot days in summer months (June & July)
 - **Studded tire wear**: Alaska runs studded tires 7.5+ months causing mechanical removal (as much as ¼ inch per year)
- Treatments: Primarily Mill and Fill
- Better Treatments?



Question of Durability

- Nordic Abrasion, LA Abrasion, Sulfate Soundness Test
- Prall Test: 15 minute test

<u>Prall-Loss, cm³</u>	<u>Wear Resistance</u>
<20	Very Good
20 – 29	Good
30 – 39	Satisfactory
40 – 50	Less Satisfactory
>50	Poor



Microsurfacing and Studs





Future of Pavement Management in Alaska

- Alaska is in a great position
 - Opportunity is here!
 - TAM Transition well underway
- Focus is on Pavements & Bridges
 - Consolidated collection pilot
 - Revamp PMS to meet MAP-21
 - Policy & Procedures



Changes

- Data Collection

- Consistent high quality since 1990's
- However:
 - Limited data (rut and IRI only until windshield survey crack data began in 2012)
 - Alternating coverage area
- Changing: Consolidated collection?
 - **Rut / IRI / Cracking (LCMS) / Friction? / Texture? / LIDAR attributes / Photo-log**
- Pavement Condition Index (**PCI**) ?



Strength, Weakness, Opportunity, or Threat?

- Program Implementation
- PMS
- Project Selection
- Preservation Treatments
- Business Process
- Training
- Materials
- Performance Monitoring



Questions ?

Thank you and enjoy Anchorage!
come back June-August... **"FISH – ON" TIME** ;-)

Jim Horn

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