

Aurora IV Economics of Broadband in Rural Alaska

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Overview

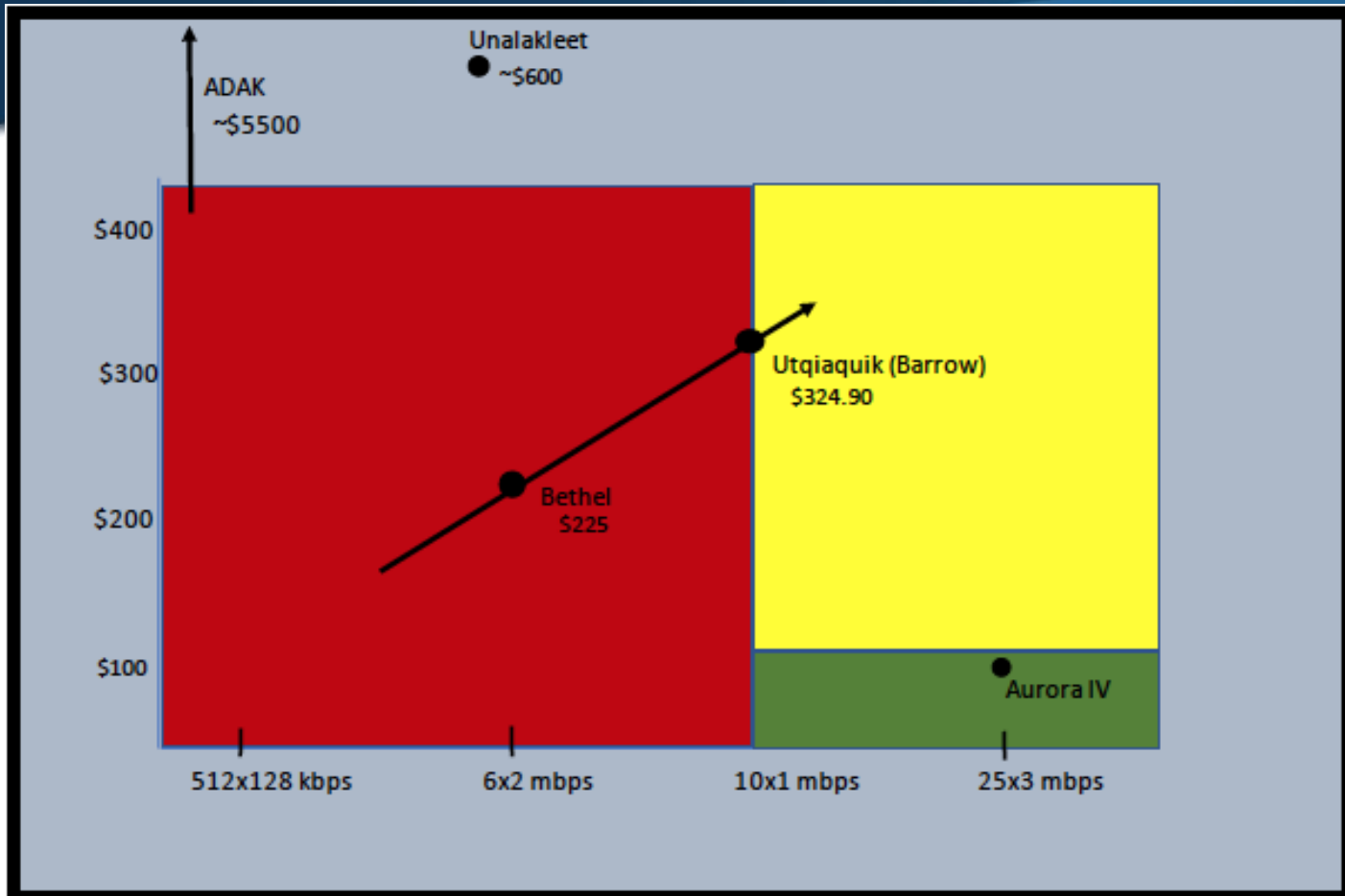
- **Economics**
 - Alaska Plan
 - \$\$ Divide
- **Latency or Hoses 101**
 - Option or requirement
 - Cost of low latency
- **Aurora IV**
 - Why is it different?
 - How can it provide affordable broadband internet?
 - **Where do LEO's fit?**

Economics of Rural Broadband—The Alaska Plan

- **FCC Alaska Plan August 2016**
- **\$1.5B over 10 years**
 - Wireline Local Exchange Carriers
 - Wireless Carriers
- **Wireline Goal**
 - 10x1 Mbps
 - 150 GB
 - \$99.90/month
 - <100ms
- **Wireless Goal**
 - 4G/LTE
 - Comparable to Anchorage rates

\$\$ Divide—Middle Mile is Everything

- **Middle Mile**
 - How broadband gets to the consumer
 - Terra and Quintillion are examples
- **Bridging digital divide with terrestrial systems costs \$100,000,000 for every 1000 miles and takes a lot of time**
- **Where are we today with megabits and \$\$?**



Broadband Requirements—4 Tests

- Speed
- Capacity
- Price
- Latency <100ms

Low Latency—Option or requirement?

- **Latency**
 - Length of the hose
 - Water can come out of long hose just as fast as a short hose
- **95% of internet traffic doesn't care about the length of the hose**
- **The important part is**
 - The speed at which water comes out
 - The price of a 5 gal bucket
- **What is the cost of low latency?**
 - An additional \$200-\$600/month/customer
 - \$144,000,000 more a year for 60,000 customers at a minimum

Aurora IV—Why is it different?

- **Primary mission—serve all of Alaska**

- We mean all, Adak to Kaktovik, Hyder to Little Diomedede
- Located ~150W longitude over the equator

- **How can it provide affordable broadband?**

- 24-26 Gbps of forward capacity
- \$120M in space
- 4 times the capacity of Terra for 1/3 price
- Service in 4Q 2020

- **Who can use it?**

- Local Telephone and Wireless Companies
- ISPs
- Individuals

Where do LEOs fit in?

- LEO's—One Web, Telesat, SpaceX, et al
- One or more will succeed
- Complement geosynchronous satellite capacity
 - Any RF based middle mile system is bandwidth limited
- For Alaska
 - Broadband is not a one horse race, Terra, Quintillion, et al
 - **LEO's can help extend low latency services without terrestrial infrastructure**

Aurora IV—Q4 2020

