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# Alaska Plan Broadband for Alaskans

Presentation to the Regulatory Commission of Alaska  
March 22, 2017

# Connect America Fund

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- ▶ The Alaska Plan is part of the Connect America Fund, supporting broadband service in rural areas.
- ▶ The Connect America Fund is capped at \$2 billion nationally.
- ▶ The Alaska Plan dedicates \$150M to support both fixed and wireless broadband services across Alaska.

# The Alaska Plan Order

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- ▶ Issued August 31, 2016
- ▶ “Adopts an integrated plan to address both fixed and mobile voice and broadband service in high-cost areas of the state of Alaska,”
- ▶ Establishes Connect America Fund option for rate-of-return and competitive carriers in Alaska.

# Support Framework

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- ▶ ILECs/Wireline: frozen support by company at 2011 levels of HCLS/ICLS for 10 years.
- ▶ CETCs/Mobile: frozen support by company at 2014 levels by for 10 years.
- ▶ Integrated plan restores ILECs to 2011 support levels and retargets support to remote areas.
- ▶ Total Alaska Plan annual support: \$150M

# Connect America Fund in Alaska

## Connect America Fund Designated to Alaska For Broadband Deployment 2017-2026

### Alaska Plan - Wireline

Adak Telephone Company	\$	333,000
Arctic Slope Telephone Association Cooperative		3,135,240
Bristol Bay Telephone Cooperative, Inc		1,136,604
Bush-Tell, Inc.		783,048
Circle		38,532
Copper Valley Telephone Cooperative, Inc.		11,307,498
Cordova Telephone Cooperative		2,316,234
Interior Telephone Company, Inc.		4,018,866
Ketchikan Public Utilities		4,217,490
Matanuska Telephone Association		18,720,342
Mukluk Telephone Company, Inc.		1,373,004
Nushagak Electric & Telephone Cooperative, Inc		1,545,198
OTZ Telephone Cooperative, Inc		1,925,544
United Utilities		3,287,841
Yukon Telephone Company, Inc.		237,783
<b>Total Alaska Plan - Wireline</b>	<b>\$</b>	<b>54,376,224</b>

### Alternative Connect America Model - Wireline

Alaska Power & Telephone		6,446,981
Summit Telephone & Telegraph Company		926,178
<b>Total A-CAM - Wireline</b>	<b>\$</b>	<b>7,373,159</b>

### Connect America Fund II - Wireline

Alaska Communications	<b>\$</b>	<b>19,694,208</b>
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### Alaska Plan - Wireless

ASTAC Wireless, LLC	\$	913,344
Bristol Bay Cellular Partnership		1,897,716
Copper Valley Wireless, Inc.		8,636,076
Cordova Wireless Communications, Inc.		3,762,420
OTZ Telecommunications, Inc.		2,452,056
TelAlaska Cellular		833,868
GCI Communication Corp.		33,679,668
GCI Communication Corp. - CL		6,227,400
Alaska Communications Systems Holding, Inc. - CL		15,402,060
Windy City		132,900
<b>Total Alaska Plan - Wireless</b>	<b>\$</b>	<b>73,937,508</b>

### Alaska Plan Wireless Unserved Fund

Support to be awarded via reverse auction

**\$ 22,158,519**

### Annual Connect America Fund to Alaska

**\$177,539,618**

*Alaska Plan wireline support per Public Notice DA 16-1425 released December 21, 2016*

*Alternative Connect America Model support per Public Notice DA 17-99A1 released January 24, 2017*

*Alaska Plan wireless support per Public Notice DA 16-1419 released December 21, 2016*

*CAF II support per Order FCC 16-143 released October 31, 2016*

# Metrics – Location, Location, Location

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- ▶ In recent years FCC policy has prioritized extending broadband to rural populations as widely and quickly as possible.
- ▶ 2011 Reform Order adopted location-based metrics.
- ▶ Connect America Fund mechanisms for all participating companies are location-driven and compliance is measured by number of locations or in the case of mobile, number of population in an area.
- ▶ Alaska Plan, A-CAM, Reformed Legacy and CAF II all must report broadband locations.

# Reporting

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- ▶ Existing reporting continues with additional data required:
  - ▶ Annual Form 481 (except 5-year plan which is replaced by individual company performance plan reviews, updates and certifications.)
  - ▶ Biannual Form 477 broadband report - including shape files for wireless service.
  - ▶ Minimum annual deployment and upgrade location reporting by geocode for every location. (USAC will monitor and may audit location compliance.)
  - ▶ Annual jurisdictional cost studies

# Reporting

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- ▶ State ETC reports and certifications
- ▶ Records of operating and capital expenditures maintained and provided upon request
- ▶ Network maps of new fiber and/or microwave network deployment
- ▶ Report new middle mile availability – even if deployed by another company
- ▶ Wireless drive tests above \$5M threshold to report population served



# Accountability

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- ▶ Penalties for non-performance 47 CFR § 54.320(d)
  - ▶ Tier 1 - a compliance gap between 5-15% of the number of locations (fixed) or population base (wireless) required by the performance plan triggers escalated reporting every 3 months.
  - ▶ Tier 2 - compliance gap between 15-25% triggers withholding 15% monthly support and quarterly reporting until the gap is below 15%. Then Tier 1 applies.
  - ▶ Tier 3 - compliance gap of 25-50% triggers withholding 25% of monthly support and quarterly reporting until the gap is below 25%. Then Tier 2 applies.

# Accountability

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- ▶ Tier 4 - compliance gap of  $\geq 50\%$  triggers 50% withholding of monthly support and quarterly reporting. As compliance improves, the company will move back down through lower Tiers. If, after 6 months, the company has not achieved Tier 3 or better compliance, 100% of support will be withheld and recovery action of support amounts related to the compliance gap plus 10% will be initiated by USAC. If the company achieves Tier 1 compliance, withheld funds will be restored.
- ▶ Final milestone - if the final milestone is not met, the ETC will have 12 months to comply. If the ETC does not report full compliance, 1.89 times the average amount per location for the relevant population for the full 10-year term (wireless) or 1.89 the average amount per location plus 10% for the full 10-year term (wireline).

# Performance Plans Calibrated for Alaska

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- ▶ Balance between 10/1 priority and reality of Alaska's unique circumstances: cost, geography, climate, small population.
- ▶ Essential to maintain service and also press for upgrades.
- ▶ Many conversations between providers and FCC staff to understand technology, barriers, changes on horizon.
- ▶ Resulted in rigorous, yet achievable performance obligations.
- ▶ Prevented loss of support if national benchmarks applied.

# Middle Mile

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- ▶ The Universal Service Fund cannot support middle mile costs under the current budget cap.
- ▶ The FCC recognizes the challenge of middle mile infrastructure in Alaska.
- ▶ The FCC was particularly focused on middle mile beginning with first introduction of the Alaska Plan.
- ▶ The Alaska Plan takes a practical approach that preserves and improves last mile while accommodating middle mile changes.

# Entire Network Support

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- ▶ The Alaska Plan Order includes language calling for support for the “entire network.”
- ▶ Change from the old regime where high cost support was dedicated to the local loop.
- ▶ Appropriate adjustment to support broadband networks.
- ▶ For language see: Alaska Plan Order at paragraphs 34 and 81 and footnote 166.

# Middle Mile Triggers

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- ▶ Performance plan updates are required in Year 4 for all participants.
- ▶ Middle mile network maps for new fiber and/or microwave deployment.
- ▶ Mandate to offer broadband service and revise performance plan when new middle mile becomes available.
- ▶ Retention of documentation of support spent on capex and opex for companies limited to satellite backhaul and biennial review of performance plans by FCC staff.

# Public Interest Obligations

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- ▶ Voice and broadband
- ▶ Remote Alaska
- ▶ Wireless 4GLTE
- ▶ Wireline speeds 10/1Mbps, 4/1 Mbps, 1Mbps/256kbps
- ▶ Latency 100 ms
- ▶ Usage 150GB
- ▶ Flexibility for backhaul limitations

# Performance Plans Approved

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- ▶ Each Alaska Plan participant's performance plan was approved by FCC Public Notice December 21, 2016.
  - ▶ Metric is number of locations (fixed) or percentage of population (wireless).
  - ▶ Plans are the result of analysis by each provider to forecast what can be achieved over a 10-year term.
  - ▶ Goal was to set the bar high – but achievable.
  - ▶ Plans have undergone rigorous review by FCC staff.
  - ▶ Major investments will happen over the term, particularly in the first 5 years.
  - ▶ All plans will be re-evaluated at Year 4 and when middle mile-related triggers occur.



# 2017 - 2026

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- ▶ Alaska Plan participants will leverage the certainty of frozen funding to invest \$150M annually in infrastructure and operate existing networks.
- ▶ Over the next 10 years thousands of Alaskans in rural and remote areas will have new access to broadband service due to support from the Connect America Fund.

# Copper Valley Telephone Performance Obligations

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## Alaska Infrastructure Fund Performance Obligations Copper Valley Telephone

Middle Mile Facility	Speed to End User	Note 1	Note 2		
		Base Locations 12/31/15	% At Or Above Benchmark 12/31/15	% At Or Above Benchmark Year 5	% At Or Above Benchmark Year 10
Satellite	1Mb/256k	-	-	-	-
Hybrid Microwave-Fiber	4Mb/1Mb	166	0%	0%	0%
Hybrid Microwave-Fiber	10Mb/1Mb	166	58%	0%	0%
Hybrid Microwave-Fiber	25Mb/3Mb	166	40%	98%	98%
Fiber	10Mb/1Mb	3,931	90.6%	30%	2%
Fiber	25Mb/3Mb	3,931	-	20%	10%
Fiber	50Mb/5Mb	3,931	-	17%	15%
Fiber	100Mb/5Mb	3,931	-	15%	28%
Fiber	1000MB/100Mb	3,931	-	18%	45%

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/15.

Note 3: Year 1 is 2017

# What is CVT doing to meet these obligations?

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- ▶ Preparing 5 year and 10 year CapX and OpX plans to meet the obligations.
  - Fiber to the Home in Valdez
    - ❖ 1Gig broadband speeds
  - Reducing loop lengths and deploying alternative technologies in the Copper River Valley area and other locations where population densities are low and Fiber to the Home is not economical
    - ❖ 100 Mbps broadband speeds
- ▶ Performance Obligations are the minimum and CVT is working to provide faster broadband speeds.

# Copper Valley Wireless Performance Obligations

Copper Valley Wireless, LLC

Middle Mile	Note 1		Note 2											
	Population 2010 Census	Spectrum Codes (477 Code)	Population Served 12/31/15	% Base Population Served 12/31/15	Technology Of Transmission (477 Code)	Minimum Expected Upload/Download Speeds	5 Year Base Population Served	5 Year % Total Population Served	Technology Of Transmission (477 Code)	Minimum Expected Upload/Download Speeds	10 Year Total Base Population Served	10 Year % Population Served	Technology Of Transmission (477 Code)	Minimum Expected Upload/Download Speeds
Satellite	NA													
Microwave	2,426	90	2,377	98%	83	10MB/3MB	2,377	98%	83	10MB/3MB	2,377	98%	83	10MB/3MB
Fiber	6,708	90	202	3%	85	1MB/.8MB								
			6,171	92%	83	10MB/3MB	6,373	95%	83	10MB/3MB	6,373	95%	83	10MB/3MB

Note 1: Population per 2010 Census in service area. Excludes population served by AT&T and/or Verizon at 4G LTE using their infrastructure.

Note 2: Percentage of population served at benchmark speeds as of 12/31/15.

Note 3: Year 1 is 2017

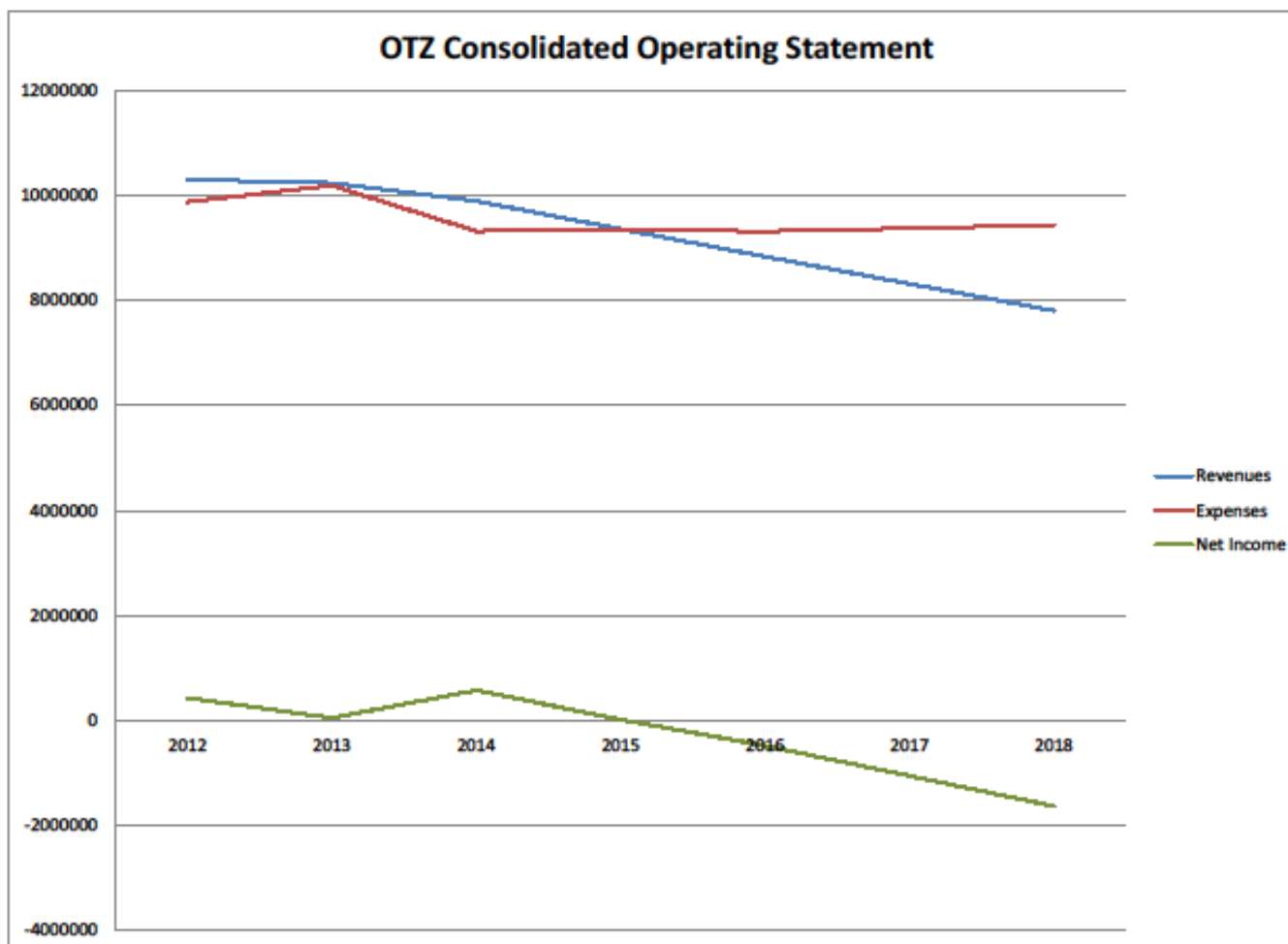
# What is CVW doing to meet the obligations?

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- ▶ **Upgrading remaining 7 cell sites to 4G LTE**
  - 34 sites will be 4G LTE by the end of 2018
  - Continuing to look at acquiring spectrum to add additional sites

# OTZ Telephone Cooperative and OTZ Telecommunications (Wireless Affiliate)

- OTZ visited the FCC in 2013 to discuss the oncoming financial disaster facing OTZ.
  - *Transformation Order* reforms drastically reduced OTZ's high cost support
    - *20% phase down of wireless support*
    - *Quantile Regression Analysis created uncertainty for future USF support*
  - Projected net loss starting in 2016; Bankruptcy by 2017
  - QRA funding forced OTZ to rescind RUS loan agreement for wireless buildout due to loss of funding and investment uncertainty
- Other FCC Funding Mechanisms Were Not Designed for Small, Rural Carriers.
  - CAF Phase I: Only Price Cap carriers eligible
  - Remote Areas Fund: Very limited funding for highest cost areas; Envisioned in 2013 as a consumer subsidy for satellite service
  - Tribal Mobility: RUS borrowers could not fulfill Letter of Credit requirement; Ineligible for tribal bidding credit



Projects Closed in 2016			Purpose of Work Order
Coop			
16ABL03POTSR	Closed	Ambler Core Electronics	Improved infrastructure to support broadband in village
168KC01POTSN	Closed	Buckland Redcom	Upgrade Central Office Switch to support next generation switching
168KC02POTSN	Closed	Buckland Broadband	Improved infrastructure to support broadband in village
168KC05JTON	Closed	Buckland Cable Rearrangement	Maintenance in Buckland for OSP
168KC08POTSN	Closed	Buckland New GCI Entrance Cable	Extend outside plant to customer premise to connect to GCI Terra's network
16DRG01POTSR	Closed	Deering Core Electronics	Improved infrastructure to support broadband in village
16DRG03POTSN	Closed	Deering CO Repair	Maintenance repair of Deering Central Office Building
16DRG05POTSN	Closed	Deering Redcom	Upgrade Central Office Switch to support next generation switching
16IAN01POTSR	Closed	Kiana Redcom	Upgrade Central Office Switch to support next generation switching
16IAN02POTSR	Closed	KIANA BROADBAND	Improved infrastructure to support broadband in village
16KVL01POTSR	Closed	Kivalina Redcom	Upgrade Central Office Switch to support next generation switching
16KVL02POTSR	Closed	KIVALINA BROADBAND	Improved infrastructure to support broadband in village
16OBU01POTSR	Closed	Kobuk Core Electronics	Improved infrastructure to support broadband in village
16OBU02POTSN	Closed	Kobuk Redcom	Upgrade Central Office Switch to support next generation switching
16ORV01JTON	Closed	Noorvik Fire Damaged Cable Repair	Maintenance in Noorvik of OSP for fire damaged cable
16ORV02POTSR	Closed	Noorvik Core Electronics	Improved infrastructure to support broadband in village
16ORV03POTSN	Closed	Noorvik Redcom	Upgrade Central Office Switch to support next generation switching
16OTZ04JTOR	Closed	Quintillion Central Office Rearrangement	Provide Quintillion space for their Undersea Fiber Equipment
16OTZ05POTSN	Closed	Kotz Core Electronics	Improved infrastructure to support broadband in Kotzebue
16OTZ06POTSN	Closed	Kotzebue Redcom Upgrade	Upgrade Central Office Switch to support next generation switching
16OTZ07POTSN	Closed	4th & Turf St New Poles & Anchors	OSP upgrade in Kotzebue
16OTZ08POTSR	Closed	Wanda St Cable Relocate Permanent Repair	OSP upgrade in Kotzebue as well as repair of damaged cable
16OTZ09POTSN	Closed	Kotz Fiber From GCI ES to Cellsite	OSP Fiber Optics Install to support broadband
16OTZ10JTON	Closed	OTZ_ATT Network Outage	Maintenance/repairs for outage
16OTZ11POTSN	Closed	Kotz Server Room Batteries	Upgrade Battery Plant to provide stable DC power for wireless broadband
16OTZ15JTON	Closed	Fiber Splicing Trailer	Upgrade OSP trailer for Fiber Optics splicing
16SHG01POTSN	Closed	Shungnak Redcom	Upgrade Central Office Switch to support next generation switching
16SHG02POTSN	Closed	Shungnak Broadband	Improved infrastructure to support broadband in village
16WLK02POTSN	Closed	Selawik Redcom	Upgrade Central Office Switch to support next generation switching
16WLK05POTSN	Closed	Selawik New GCI Entrance Cable	Extend outside plant to customer premise to connect to GCI Terra's network
16WTK01POTSN	Closed	Noatak Broadband Upgrade	Improved infrastructure to support broadband in village
15OTZ05POTSN	Closed	Kotz Fiber to GCI Earth Station	OSP Fiber Optics Install to support broadband



Telecom			
15OTZ11INTR	Closed	Kotzebue Packet Shaper Upgrade	Upgrade Back Office Equipment to support broadband
16BK06CELLN	Closed	Buckland Cell Tower	LTE Wireless
16BK07CELLN	Closed	Buckland LTE installation	LTE Wireless
16DRG02CELLN	Closed	Deering Cell Tower	LTE Wireless
16DRG04CELLN	Closed	Deering LTE installation	LTE Wireless
16IAN03CELLN	Closed	Kiana LTE Antenna System	LTE Wireless
16IAN04CELLN	Closed	KIANA LTE INSTALLATION	LTE Wireless
16KVL03CELLN	Closed	Kivalina LTE Antenna System	LTE Wireless
16KVL04CELLN	Closed	KIVALINA LTE INSTALLATION	LTE Wireless
16OBU03CELLN	Closed	Kobuk LTE Antenna System	LTE Wireless
16OBU04CELLN	Closed	Kobuk LTE Installation	LTE Wireless
16ORV04CELLN	Closed	Noorvik LTE Antenna System	LTE Wireless
16ORV05CELLN	Closed	Noorvik LTE Installation	LTE Wireless
16KOTZ01CELN	Closed	Kotz LTE and Common Equipment	LTE Wireless
16OTZ12CELLN	Closed	Kotzebue LTE Antenna System	LTE Wireless
16SHG04CELLN	Closed	Shungnak LTE Antenna System	LTE Wireless
16SHG05CELLN	Closed	Shungnak LTE Installation	LTE Wireless
16WLK03CELLN	Closed	Selawik LTE Antenna System	LTE Wireless
16WLK04CELLN	Closed	Selawik LTE Installation	LTE Wireless
16WTK03CELLN	Closed	Noatak LTE Antenna System	LTE Wireless
16WTK04CELLN	Closed	NOATAK LTE INSTALLATION	LTE Wireless
2016 Projects Left Open for 2017			
Work Order No	Status	Type	Description
16IAN05POTSN	Open		Kiana New GCI entrance cable
16ORV06POTSN	Open		Noorvik New GCI Entrance Cable
16OTZ02POTSN	Open		Fiber Electronics 41 Unit on 3rd Ave
16OTZ14POTSN	Open		Kotz Fiber Extension in Airport area
16WLK01POTSR	Open		Selawik Core Electronics
			Extend outside plant to customer premise to connect to GCI Terra's network
			Extend outside plant to customer premise to connect to GCI Terra's network
			OSP Fiber Optics Install to support broadband
			OSP Fiber Optics Install to support broadband
			Improved infrastructure to support broadband in village



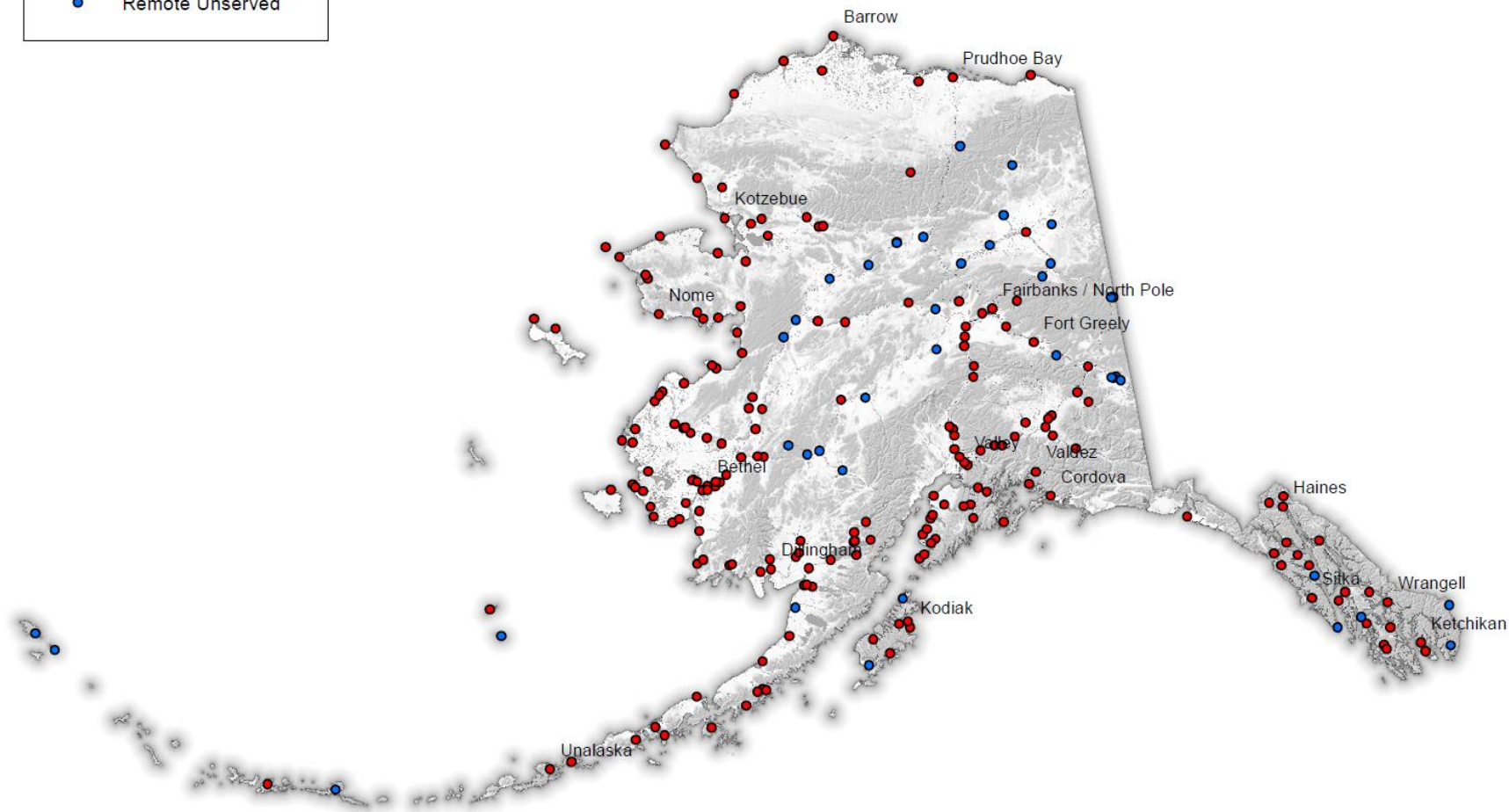
# Alaska Plan

# Stable Funding

- GCI retains \$55.3 M in annual support for broadband and mobile services to Remote areas for at least 5 years. (Reassessment at Year 5.)
- At the 5 year mark, the FCC plans to eliminate and redistribute duplicative support in the areas with overlapping 4G LTE service.
  - This issue is currently with the FCC in the form of Further Notice of Proposed Rule Making (FNPRM).

### AlaskaPlan Category

- Eligible Remote
- Remote Unserved





# Public Interest Obligations

## Service Requirements

- Provide stand-alone voice service
- Maintain at least the level of current data service
- Upgrade service per individual performance commitments

## Reasonably Comparable Rates

- Charge no more than a similar service plan offered in Anchorage



# Appropriate Use of Alaska Plan Support

Opex and capex for upgrades and maintenance of mobile voice and broadband-capable networks, including necessary middle-mile improvements.



Attorney Work Product



GCI Confidential



# Accountability and Oversight

## Annual Reporting Requirements

### **1) Form 477, March 1 and Sept 1 of each year**

- Collects data about broadband connections to end-user locations, wired and wireless local telephone services, and interconnected Voice over Internet Protocol (VoIP) services.
- Data obtained from this form is used to describe the deployment of broadband infrastructure and competition to provide local telecommunications services.

### **2) Form 481, July 1 of each year**

- Annual report required of ETCs for the purpose assuring compliance with FCC high-cost and low-income universal service support rules and goals

# Accountability and Oversight

## Alaska Plan Milestone Reporting Requirements

- At Years 5 (2021) and 10 (2026), must certify that we have met our 5-year milestone.
- Includes data from drive tests showing mobile transmissions to and from the network, meeting or exceeding the speeds delineated in the approved performance plans.

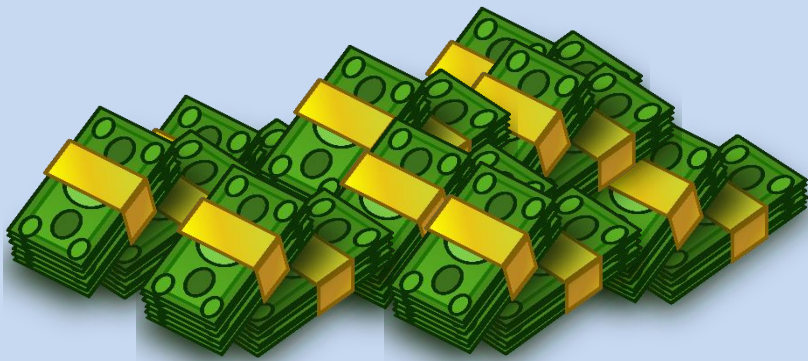




# Reductions in Support and Fines

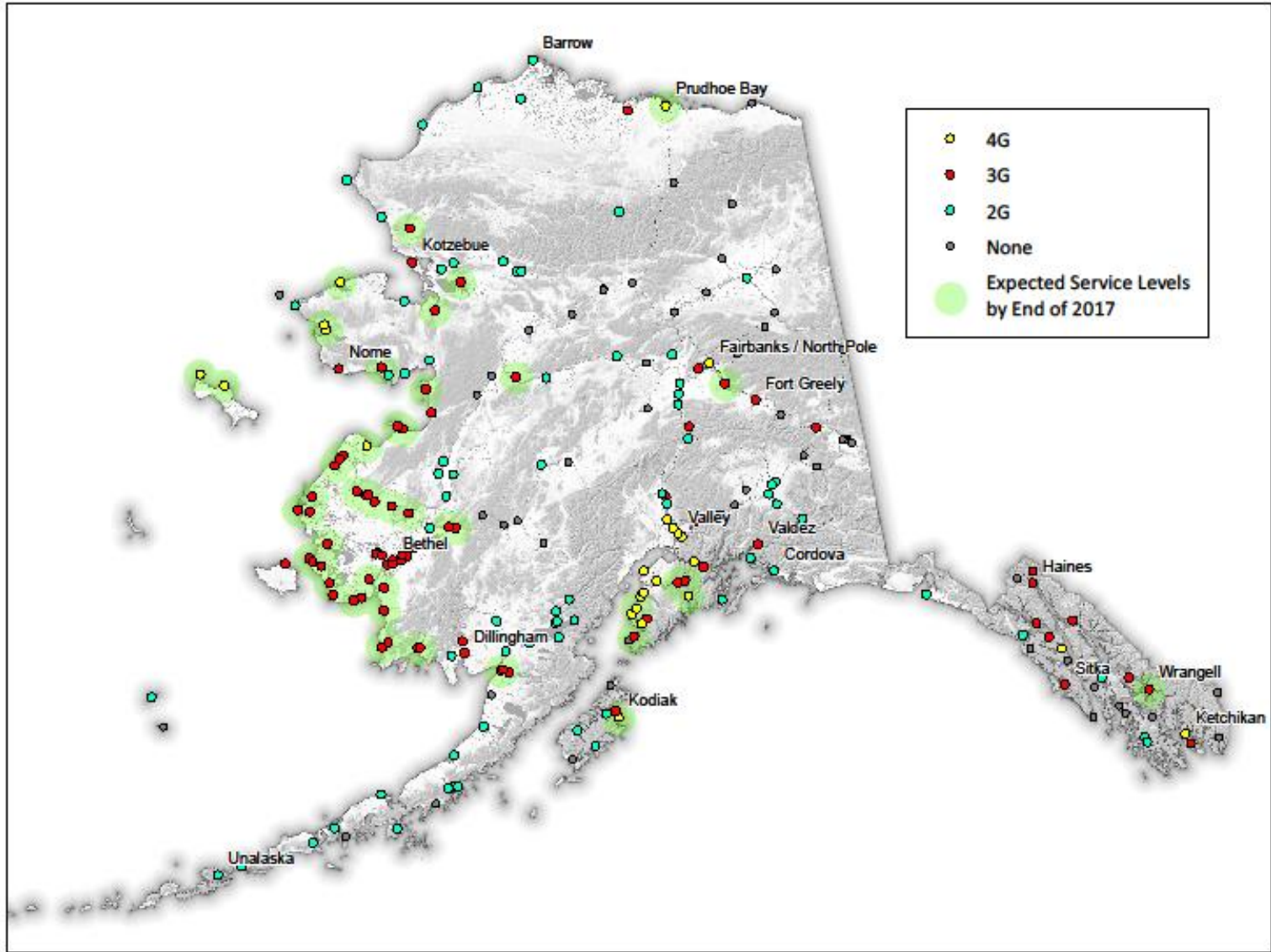
*If we fail to meet performance commitment milestones...*

- Required to pay **1.89 times the average amount of support per location** received over the 10-year term for the relevant number of locations that we have failed to deploy to, **PLUS**
- **10 % of our total Alaska Plan support received over the 10-year term.**



# Wireless Commitments

Middle Mile	2010 Census Population	Service	Minimum Expected Download/Upload Speeds at Edge	Population Served 12/31/15	% of base population	Commitment: 5 Year Population Served	5 Year % Total	Commitment: 10 Year Population Served	10 Year % Population
Fiber	64,158	LTE	10/1 Mbps	13,455	21%	32,079	50%	64,158	100%
		3G	.2/.05 Mbps	43,882	68%	25,258	39%	-	0%
		Voice/2G	<. 2Mbps	6,821	11%	6,821	11%	-	0%
Microwave	50,717	LTE	2/.8 Mbps	125	0%	125	0%	42,095	83%
		3G	.2/.05 Mbps	29,764	59%	41,970	83%	8,622	17%
		Voice/2G	<.2 Mbps	20,828	41%	8,622	17%	-	0%
Satellite	24,482	LTE	1/.256 Mbps	-	0%	12,363	50%	12,363	50%
		3G	.2/.05 Mbps	-	0%	-	0%	-	0%
		Voice/2G	<.2 Mbps	24,482	100%	12,119	50%	12,119	24,482



# UUI/YukonTel Wireline Commitments

Number of Communities	Backhaul Type	Current Max Service	Committed Max Service	Commitment Date
43	TERRA Microwave	6/2Mbps w/ 100GB Data	10/2Mbps w/ 40GB Data	50% by 2021 50% by 2026
11	Satellite	No Service	1M/256K w/7GB Data	100% by 2021
7	Satellite	1M/256K w/ 13GB Data	No additional Commitment	N/A
1	Fiber	8/4Mbps w/ 80GB Data	25/3Mbps w/ 150GB Data	100% by 2021