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# Alaska Plan

Tailored for a Unique State

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# The Problem

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- ▶ USF/ICC Reform Order is adopted November, 2011.
- ▶ Immediately cuts high-cost support for Alaskan rate-of-return ILECs and freezes support for CETCs.
- ▶ Reform has disproportionate effects in Alaska. By the end of 2015, HCLS/ICLS support was reduced by 21% from 2011 levels. Nationally, the average reduction is 2%.

# Chronology

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- ▶ November, 2011: USF/ICC Reform Order triggers steep reductions in high cost support to Alaska.
- ▶ August, 2014: Chairman Wheeler and Commissioner O’Rielly tour Alaska and challenge industry for a solution.
- ▶ January, 2015: ATA member companies sign the Consensus Alaska Plan.
- ▶ February 2015 – July 2016: Advocacy by ATA, rate-of-return and wireless carriers.
- ▶ August 31, 2016: FCC releases Report and Order and Further Notice of Proposed Rulemaking adopting the Alaska Plan with minor modifications.

# The Order

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- ▶ Issued August 31, 2016
- ▶ Effective 30 days after publication in Federal Register
- ▶ “Adopts an integrated plan to address both fixed and mobile voice and broadband service in high-cost areas of the state of Alaska,”
- ▶ Three sections: rate-of-return, mobile carriers, and a Further Notice of Proposed Rulemaking

# Support

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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 annual support: \$152M

# Three Paths for Alaskan Rate-of-Return ILECs

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- ▶ Alaska Plan
- ▶ A-CAM
- ▶ Reformed Legacy

# Wireline Public Interest Obligations

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- ▶ Voice and broadband
- ▶ Statewide election
- ▶ Speeds 10/1Mbps, 4/1 Mbps, 1Mbps/256kbps
- ▶ Latency 100 ms
- ▶ Usage 150GB
- ▶ Flexibility for backhaul limitations

# Wireline Broadband Improvements

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- ▶ Deploys fixed broadband of at least 10/1 Mbps to 90% of locations in remote Alaska, up from 60%.
- ▶ Upgrades almost 70,000 locations to 25/3 Mbps.
- ▶ Reduces remote locations without 10/1 Mbps from 49,000 to less than 13,000.



# Wireless Broadband Improvements

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- ▶ Deploys new 4G LTE or better service to more than 100,000 remote Alaska residents.
- ▶ Reduces remote Alaska population reliant on 2G by 60%.
- ▶ Creates a fund to bring mobile broadband to communities currently without wireless service.

# Appropriate Use of Funds

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## ▶ Rate-of-return/Wireline

- ▶ “...operating expenses and capital expenses for new deployment, upgrades, and maintenance of voice and broadband-capable networks...they are not limited to using the support only for last mile facilities...support will be provided for the entire network.”

Para. 34.

## ▶ CETC/Mobile

- ▶ “operating expenses and capital expenses for new deployment, upgrades, and maintenance of mobile voice and broadband-capable networks, including middle-mile improvements needed to those ends.”

Para. 81.

## ▶ Support for middle mile

- ▶ “Appropriate use of support for middle-mile improvements includes the use of support to build or upgrade middle mile that lays outside a participating competitive ETC’s service area but that is necessary for service in that carrier’s service area.”

Footnote 166.

# Wireline Accountability

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- ▶ Wireline location reporting via geocode for new and upgraded broadband service.
- ▶ Annual Form 481 and RCA ETC certifications.
- ▶ Year 4 update of performance plans in light of middle mile developments.
- ▶ Middle mile monitoring via maps for new deployment.
- ▶ New middle mile triggers obligation to re-evaluate performance plans.
- ▶ Retention of documentation of support spent on capex and opex for companies limited to satellite backhaul and biennial review.
- ▶ Penalties for non-performance.

# Wireless Accountability

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- ▶ Wireless Form 477 biannually.
- ▶ Drive tests above \$5M threshold to report population served.
- ▶ Annual Form 481 and RCA ETC certifications.
- ▶ 4-year review for middle mile developments.
- ▶ Middle mile monitoring.
- ▶ Wireless competitive overlap analysis at Year 5.
- ▶ Retain documentation of support spent on opex and capex.
- ▶ Penalties for non-performance.

# Implementation

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- ▶ 30-day window to revise plan or opt out.
- ▶ Bureau issues public notice approving plans.
- ▶ Company officer submits letter certifying plan.
- ▶ Wireline company exits NECA common line pool, re-files special access tariff.
- ▶ Funding begins Jan. 1, 2017
- ▶ WCB conducts challenge process for wireline carriers.

# Further Notice of Proposed Rulemaking

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- ▶ “...the Commission’s policy has been to eliminate the provision of high-cost support to more than one competitive ETC in the same geographic area.” Para. 107
- ▶ How to, “eliminate duplicative support levels in the second half of the 10-year term of the Plan”? Para. 107
- ▶ Proposes overlapping funding be moved to other areas in Alaska.
- ▶ Proposes carriers amend performance plans in the event of overlap.
- ▶ Comments due in 60 days and Reply in 30 days from effective date of the Order.

# Signatories

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## ▶ All rate-of-return ILECs.

- ▶ Adak Eagle Enterprises, Alaska Telephone Company, Bettles Telephone, North Country Telephone, Arctic Slope Telephone Association Cooperative, Bristol Bay Telephone Cooperative, Bush-Tell, Copper Valley Telephone Cooperative, Cordova Telephone Cooperative, Interior Telephone, Mukluk Telephone, Ketchikan Public Utilities, Matanuska Telephone Association, Nushagak Cooperative, OTZ Telephone Cooperative, Summit Telephone Company, United Utilities, Yukon Telephone Company.

## ▶ All competitive ETCs.

- ▶ ASTAC Wireless, Bristol Bay Cellular Partnership, Copper Valley Wireless, Cordova Wireless, GCI, TelAlaska Cellular, MTA Wireless, OTZ Wireless, Windy City Wireless.

# Questions?

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# Alaska Infrastructure Fund Universal Service Support Schedules

## Schedule 1

### High-Cost Disbursements in Alaska in 2015 (for rate-of-return ILECs) and 2014 (CETCs)

Rate-of-Return ILECs (2015 levels)	45,893,141
Adak Telephone Utility (2015 levels annualized post-order)	617,678
Remote CETCs (2014 levels)	77,844,072
Windy City Cellular (2015 levels annualized post-order)	132,900
Non-remote CETCs (2014 levels)	27,350,796

<b>Total Annual Amount of Frozen Alaska Plan Support</b>	<b>\$151,838,587</b>
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## Schedule 2

### High-Cost Disbursements Assuming All Eligible Carriers Participate in Alaska Plan

	Year 1	Year 2	Years 3 through 10
Rate-of-Return ILECs (2011 levels)	55,124,882	55,124,882	55,124,882
Adak Telephone Utility (no change)	617,678	617,678	617,678
Remote CETCs (2014, without Matanuska-Kenai due to overlap)	73,804,608	73,804,608	73,804,608
Windy City Cellular (no change)	132,900	132,900	132,900
Non-Remote CETCs (transition support)	18,233,864	9,116,932	0
Available for reverse auction for wireless unserved	3,924,655	13,041,587	22,158,519

<b>Total Annual Amount of Frozen Alaska Plan Support</b>	<b>\$151,838,587</b>	<b>\$151,838,587</b>	<b>\$151,838,587</b>
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Total amount available for reverse auction for wireless unserved over 10 years = \$194,234,392

## Detail Schedules

### Schedule 3

#### ILEC ETC Support

	SAC	2011 ICLS	2011 HCLS	2011 Total Disbursed	2012 Corp Ops Limit	\$250 Cap Limit	Adjusted 2011 ILEC Support
Alaska Telephone Company	613017	1,631,148	762,552	2,393,700	-		2,393,700
Arctic Slope Telephone Association Cooperative	613001	1,648,254	1,470,240	3,118,494	24,831		3,093,663
Bettles	613002	23,748	192	23,940			23,940
Bristol Bay Telephone Cooperative, Inc	613003	447,072	641,832	1,088,904	5,343		1,083,561
Bush-Tell, Inc.	613004	314,388	404,010	718,398	-		718,398
Circle	613005	25,386	15,168	40,554			40,554
Copper Valley Telephone Cooperative, Inc.	613006	2,943,522	7,992,186	10,935,708	187,722		10,747,986
Cordova Telephone Cooperative	613007	957,342	1,407,732	2,365,074	69,000		2,296,074
Interior Telephone Company, Inc.	613011	2,057,010	1,940,988	3,997,998	30,618		3,967,380
Ketchikan Public Utilities	613013	2,092,770	2,230,608	4,323,378	6,139		4,317,239
Matanuska Telephone Association	613015	8,423,004	9,191,016	17,614,020	559,355		17,054,665
Mukluk Telephone Company, Inc.	613016	823,596	555,318	1,378,914	10,194		1,368,720
North Country Tel	613026	49,626	33,801	83,427	-		83,427
Nushagak Electric & Telephone Cooperative, Inc.	613018	637,692	942,564	1,580,256	4,180		1,576,076
OTZ Telephone Cooperative, Inc	613019	1,022,778	1,085,262	2,108,040	58,392		2,049,648
Summit Telephone Company	613028	335,820	570,804	906,624	-	154,013	752,611
United Utilities	613023	2,251,032	1,137,207	3,388,239	42,784		3,345,455
Yukon Telephone Company, Inc.	613025	171,048	40,737	211,785	-		211,785
<b>Total ILEC Support</b>							<b>\$55,124,882</b>

### Schedule 4

#### Remote CETC Support\*

	SAC	2014 ICLS	2014 HCLS	LSS	SNA	2014 Total
ASTAC Wireless, LLC	619010	410,580	254,292	248,472		913,344
Bristol Bay Cellular Partnership	619008	688,272	790,572	418,872		1,897,716
Copper Valley Wireless, Inc.	619006	2,523,696	5,420,028	576,900	115,452	8,636,076
Cordova Wireless Communications, Inc.	619007	1,284,264	1,839,564	602,544	36,048	3,762,420
OTZ Telecommunications, Inc.	619011	801,972	800,988	802,236	46,860	2,452,056
TelAlaska Cellular	619013	321,564	227,796	284,508		833,868
GCI Communication Corp.	619014	15,269,016	11,448,624	6,823,992	138,036	33,679,668
GCI Communication Corp. - CL	619001	2,920,824	2,449,668	799,776	57,132	6,227,400
Alaska Communications Systems Holding, Inc. - CL	619005	7,610,856	6,527,136	1,166,544	97,524	15,402,060
<b>Total Remote CETC Support</b>						<b>\$73,804,608</b>

\*Annualizes December 2014 Disbursements

### Schedule 5

#### Non-Remote CETC Funds (Schedule 6)

#### Increase by Matnuska-Kenai, Inc.\*

#### Reduce by Change in ILEC 2011-2015 ILEC (Schedule 7)

						27,350,796
	619003	2,040,252	1,849,365	149,847	-	4,039,464
						(9,231,741)
<b>Amount Re-targeted to Remote Areas</b>						<b>\$22,158,519</b>

\*Re-targeted to remote areas due to overlap by 4G LTE

### WT Docket No. 10-208

#### Adak Telephone Utility

#### Windy City Cellular\*

	SAC	ICLS	HCLS	LSS	2012 Corp Ops Limit	\$250 Cap Limit	Total
Adak Telephone Utility	610989	927,528	1,191,737		338,887	1,162,700	617,678
Windy City Cellular*	619012	41,916	67,140	23,844			132,900
<b>Total Disbursed per WT Docket No. 10-208</b>							<b>\$750,578</b>

\*Annualize March 2015 Disbursements to estimate support level resulting from WT Docket No. 10-208

## Alaska Infrastructure Fund Universal Service Support Schedules

### Schedule 6 - Frozen Non-Remote CETC Support

	SAC	2014 FHCS
Dobson Cellular Systems, Inc. - AK-NR	989001	15,775,716
Alaska Digitel LLC -CL -AK-NR	989002	-
Unicom, Inc., -CL -AK-NR	989003	-
GCI Communications Corp. -CL -AK-NR	989004	4,891,680
Matanuska-Kenai, Inc. -CL -AK-NR	989005	288,576
Alaska Communications System Holding, Inc. -CL -AK-NR	989006	3,982,848
GCI Communications Corp. -AK-NR	989007	2,411,976
<b>Total Frozen Non-Remote CETC Support</b>		<b>\$27,350,796</b>

### Schedule 7 Change in ILEC ICLS/HCLS Support 2011 - 2015

	SAC	Adjusted 2011 ILEC Support	2015 Total Disbursed ICLS/HCLS	Decrease 2011-2015
Alaska Telephone Company	613017	2,393,700	1,309,082	(1,084,618)
Arctic Slope Telephone Association Cooperative	613001	3,093,663	2,928,822	(164,841)
Bettles	613002	23,940	25,506	1,566
Bristol Bay Telephone Cooperative, Inc	613003	1,083,561	1,056,835	(26,726)
Bush-Tell, Inc.	613004	718,398	493,712	(224,686)
Circle	613005	40,554	34,229	(6,325)
Copper Valley Telephone Cooperative, Inc.	613006	10,747,986	10,653,695	(94,291)
Cordova Telephone Cooperative	613007	2,296,074	2,833,440	537,366
Interior Telephone Company, Inc.	613011	3,967,380	2,585,552	(1,381,828)
Ketchikan Public Utilities	613013	4,317,239	4,280,577	(36,662)
Matanuska Telephone Association	613015	17,054,665	9,514,169	(7,540,496)
Mukluk Telephone Company, Inc.	613016	1,368,720	1,041,952	(326,768)
North Country Tel	613026	83,427	72,761	(10,666)
Nushagak Electric & Telephone Cooperative, Inc.	613018	1,576,076	1,135,857	(440,219)
OTZ Telephone Cooperative, Inc	613019	2,049,648	2,103,960	54,312
Summit Telephone Company	613028	752,611	729,496	(23,115)
United Utilities	613023	3,345,455	4,970,700	1,625,245
Yukon Telephone Company, Inc.	613025	211,785	122,796	(88,989)
<b>Total ILEC Decrease 2011-2015</b>		<b>\$ 55,124,882</b>	<b>\$ 45,893,141</b>	<b>-\$9,231,741</b>



**Alaska Infrastructure Fund Performance Obligations**

**Adak Telephone Utility**

**Note 1**

**Note 2**

	<b>Note 1</b>	<b>Note 2</b>			
<b>Middle Mile Facility</b>	<b>Speed to End User</b>	<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Satellite</b>	1Mb/256k	346	100%	100%	100%
<b>Microwave</b>	4Mb/1Mb				
<b>Microwave</b>	10Mb/1Mb				
<b>Fiber</b>	25Mb/3Mb				

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

## Alaska Infrastructure Fund Performance Obligations

### Alaska Telephone Company

Note 1

Note 2

Middle Mile Facility	Speed to End User	Locations Passed 12/31/2015	Locations At Benchmark 12/31/2015	Locations At Benchmark Year 5	Locations At Benchmark Year 10
Satellite	1Mb/256k	134	0%	0%	0%
Microwave	4Mb/1Mb	8,227	29%	24%	18%
Microwave	10Mb/1Mb	8,227	60%	70%	80%
Fiber	25Mb/3Mb	-			

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

The Eagle wire center is capable of meeting the minimum broadband speed with its local loop plant and can meet the minimum speeds of 4MB/1MB in its plant. However middle mile and second mile transport limits any broadband deployment.

## Alaska Infrastructure Fund Performance Obligations

### Arctic Slope Telephone Cooperative, Inc.

Note 1

Note 2

Middle Mile Facility	Speed to End User	Locations Passed 12/31/2015	Locations At Benchmark 12/31/2015	Locations At Benchmark Year 5	Locations At Benchmark Year 10
Satellite	1Mb/256k	2,509	100%	15%	15%
Microwave	4Mb/1Mb	206	100%		
Fiber*	10Mb/1Mb			85%	
Fiber*	25Mb/3Mb				85%

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

\*Broadband speed projections are forecast at the five and ten year periods knowing that current fiber technology allows for increased capacity over the existing fiber by upgrading electronics, making the asset scalable to market demand. We speculatively forecast that there will be some level of price reduction for bandwidth on the fiber at the five and ten year periods, as the 100% privately financed fiber becomes monetized for the investors, usage demand increases and there may be an alternative future competitor that puts downward pressure on pricing.

**Alaska Infrastructure Fund Performance Obligations**

**Bettles Telephone, Inc.**

**Note 1**

**Note 2**

		<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Middle Mile Facility</b>	<b>Speed to End User</b>				
<b>Satellite</b>	1Mb/256k	220	0%	0%	0%
<b>Microwave</b>	4Mb/1Mb				
<b>Fiber</b>	10Mb/1Mb				
<b>Fiber</b>	25Mb/3Mb				

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

Each wire center is capable of meeting the minimum broadband speed with its local loop plant. Bettles can meet the minimum speeds of 4MB/1MB in its plant. However middle mile and second mile transport limits any broadband deployment.

**Alaska Infrastructure Fund Performance Obligations**

**Bristol Bay Telephone Cooperative**

**Note 1**

**Note 2**

<b>Middle Mile Facility</b>	<b>Speed to End User</b>	<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Satellite</b>	1Mb/256k				
<b>Microwave</b>	4Mb/1Mb	997	99%	99%	100%
<b>Fiber</b>	10Mb/1Mb				
<b>Fiber</b>	25Mb/3Mb				

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

Bristol Bay Telephone Cooperative's last mile network is capable of delivering higher broadband speeds but is limited by the middle mile network. We continue to upgrade our last mile network with fiber deployment and are prepared to offer higher speeds to end users when middle mile availability permits.



## Alaska Infrastructure Fund Performance Obligations

### Bush-Tell, Inc.

Note 1

Note 2

Middle Mile Facility	Speed to End User	Locations Passed 12/31/2015	Locations At Benchmark 12/31/2015	Locations At Benchmark Year 5	Locations At Benchmark Year 10
Satellite	1Mb/256k				
Microwave	6Mb/1Mb	1,109	83%	83%	83%
Fiber	10Mb/1Mb				
Fiber	25Mb/3Mb				

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

Bush-Tell Inc's last mile network is capable of delivering higher broadband speeds but is limited by the middle mile network. We will continue to upgrade our last mile network with fiber deployment and are prepared to offer higher speeds to end users when middle mile availability permits.

Bush-Tell will start deploying fiber farther into the network to decrease loop lengths. Bush-Tell's largest community will be deployed first which will take approximately 5 years to complete. Once this buildout is completed we will start deploying fiber throughout the rest of our service area. This fiber buildout will allow Bus-Tell to easily deploy fiber to the premise in the future and will also place Bush-Tell in a position to provide faster broadband offerings as middle mile rates and availability improve.

Bush-Tell will continue to investivate alternative options to access middle mile as they become available.

## Alaska Infrastructure Fund Performance Obligations

### Circle Telephone & Electric, LLC

Note 1

Note 2

		Locations Passed 12/31/2015	Locations At Benchmark 12/31/2015	Locations At Benchmark Year 5	Locations At Benchmark Year 10
<b>Middle Mile Facility</b>	<b>Speed to End User</b>				
Satellite	1Mb/256k	40	0%	0%	0%
Hybrid Microwave-Fiber	4Mb/1Mb				
Fiber	10Mb/1Mb				
Fiber	25Mb/3Mb				

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017.

Circle Telephone & Electric, LLC's wire center does not have the facilities in place to provide broadband services. CTE has no terrestrial backhaul. The nearest terrestrial backhaul is located 155 miles away. The cost of satellite backhaul is too great for the small community to bear. CTE does not plan to develop or purchase middle mile transport or to deploy broadband until the cost of those facilities changes significantly.

**Alaska Infrastructure Fund Performance Obligations**

**Copper Valley Telephone**

	<b>Note 1</b>	<b>Note 2</b>			
<b>Middle Mile Facility</b>	<b>Speed to End User</b>	<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Satellite</b>	1Mb/256k				
<b>Microwave</b>	4Mb/1Mb				
<b>Fiber</b>	10Mb/1Mb	4,097	90.60%	30%	8%
<b>Fiber</b>	25Mb/3Mb	4,097	0%	68%	90%

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

**Alaska Infrastructure Fund Performance Obligations**

**Cordova Telephone Cooperative**

**Note 1**

**Note 2**

<b>Middle Mile Facility</b>	<b>Speed to End User</b>	<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Satellite</b>	1Mb/256k				
<b>Microwave</b>	4Mb/1Mb				
<b>Fiber</b>	10Mb/1Mb				
<b>Fiber</b>	25Mb/3Mb	850	100%	100%	100%

Note 1: Residential speeds

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

Note 3: Year 1 is 2017

**Alaska Infrastructure Fund Performance Obligations**

**Interior Telephone Company**

**Note 1**

**Note 2**

		<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Middle Mile Facility</b>	<b>Speed to End User</b>				
Satellite	1Mb/256k	2,518	95%	95%	98%
Microwave	4Mb/1Mb	-	0%	0%	0%
Fiber	10Mb/1Mb	2,835	0%	57%	51%
Fiber	25Mb/3Mb	-	0%	23%	47%

Note 1: Residential speeds

Note 2: Base locations in ETC's study area as of 12/31/2015.

Note 3: Year 1 is 2017

**Alaska Infrastructure Fund Performance Obligations**

**KPU**

**Note 1**

**Note 2**

	<b>Note 1</b>	<b>Note 2</b>			
<b>Middle Mile Facility</b>	<b>Speed to End User</b>	<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Satellite</b>	1Mb/256k				
<b>Microwave</b>	4Mb/1Mb				
<b>Fiber</b>	10Mb/1Mb	9,606	7%	4%	1%
<b>Fiber</b>	25Mb/3Mb	9,606	83%	92%	98%

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

While KPU has significant investment in fiber to the curb, the majority of locations are served with copper to the premise and will need to be upgraded at significant cost. Over the term of the Alaska Infrastructure Fund, KPU will install fiber to the premise to support increased bandwidth needs for our customers.

**Alaska Infrastructure Fund Performance Obligations**

**Matanuska Telephone Association**

**Note 1**

**Note 2**

<b>Middle Mile Facility</b>	<b>Speed to End User</b>	<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Satellite</b>	1Mb/256k				
<b>Microwave</b>	4Mb/1Mb				
<b>Fiber</b>	10Mb/1Mb	73,027	78%	26%	20%
<b>Fiber</b>	25Mb/3Mb	73,027	0%	66%	78%

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

**Alaska Infrastructure Fund Performance Obligations**

**Mukluk Telephone Company**

	Note 1	Note 2		Note 4		
Middle Mile Facility	Speed to End User	Locations Passed 12/31/2015	Locations At Benchmark 12/31/2015	Locations Passed Year 5	Locations At Benchmark Year 5	Locations At Benchmark Year 10
Satellite	1Mb/256k	2,628	95%	1,125	91%	95%
Microwave	4Mb/1Mb					
Fiber	10Mb/1Mb			1,503	39%	32%
Fiber	25Mb/3Mb				21%	43%

- Note 1: Residential speeds.
- Note 2: Base Locations in ETC's study area as of 12/31/15.
- Note 3: Year 1 is 2017
- Note 4: 1,503 Base Locations to migrate to Fiber by Year 5 Benchmark



**Alaska Infrastructure Fund Performance Obligations**

**North Country Telephone**

	<a href="#">Note 1</a>	<a href="#">Note 2</a>			
<b>Middle Mile Facility</b>	<b>Speed to End User</b>	<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Satellite</b>	1Mb/256k	192	0%	0%	0%
<b>Microwave</b>	4Mb/1Mb				
<b>Microwave</b>	10Mb/1Mb				
<b>Fiber</b>	25Mb/3Mb				

[Note 1: Residential speeds.](#)

[Note 2: Locations passed in ILEC's network as of 12/31/2015.](#)

[Note 3: Year 1 is 2017](#)

The Eagle wire center is capable of meeting the minimum broadband speed with its local loop plant and can meet the minimum speeds of 4MB/1MB in its plant. However middle mile and second mile transport limits any broadband deployment.

**Alaska Infrastructure Fund Performance Obligations**

**Nushagak Telephone Cooperative**

**Note 1**

**Note 2**

		<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Middle Mile Facility</b>	<b>Speed to End User</b>				
<b>Satellite</b>	1Mb/256k				
<b>Microwave</b>	6Mb/1Mb	1,217	83%	95%	99%
<b>Fiber</b>	10Mb/1Mb				
<b>Fiber</b>	25Mb/3Mb				

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017

## Alaska Infrastructure Fund Performance Obligations

### OTZ Performance Obligations

Middle Mile Facility	Note 1	Note 2	Locations at Benchmark 12/31/2015	Locations at Benchmark Year 5	Locations at Benchmark Year 10
	Speed to End User	Locations Passed 12/31/2015	Locations at Benchmark 12/31/2015	Locations at Benchmark Year 5	Locations at Benchmark Year 10
Satellite - Note 4	1Mb/256k	2,776	0%	0%	0%
Satellite - Note 4	4Mb/1Mb	2,776	100%	75%	55%
Fiber	10Mb/1Mb	2,776	-	0%	0%
Fiber	25Mb/3Mb	2,776	-	25%	45%

Note 1: Residential speeds.

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

Note 3: Due to high cost of middle mile transport, broadband speeds are not affordable to most of OTZ's customers.

Note 4: Year 1 is the year funding under the AIF begins

OTZ Telephone Cooperative's last mile network as of 12/31/2015 is capable of delivering broadband speeds of 4Mb/1Mb and OTZ currently has a 6Mb/1Mb package available to customers. However, Due to the high cost of middle mile transport, both the 4Mb/1 and 6Mb/1Mb package are beyond the financial reach of most residential customers.

OTZ Telephone Cooperative is committed to offering the best possible communication service to its members and will continue to upgrade the last mile network, by replacing aging copper plant with fiber and upgrading core electronics to support fiber to the home.

OTZ plans on replacing all aging Dslams with VDSL capable Dslams.

For multi family dwellings (larger apartment building) OTZ plans to install fiber fed VDSL Dslams in the apartment buildings communication room. With this model OTZ will be able to mitigate the negative impact of category 3 wiring that is embedded in older apartment buildings.

**Alaska Infrastructure Fund Performance Obligations**

**United Utilities - Yukon Telephone**

Note 1

Note 2

		<b>Locations Passed 12/31/2015</b>	<b>Locations At Benchmark 12/31/2015</b>	<b>Locations At Benchmark Year 5</b>	<b>Locations At Benchmark Year 10</b>
<b>Middle Mile Facility</b>	<b>Speed to End User</b>				
<b>Satellite</b>	1Mb/256k	1,687	37%	100%	100%
<b>Microwave</b>	4Mb/1Mb	8,621	100%	50%	0%
<b>Microwave</b>	10Mb/1Mb	8,621	0%	50%	100%
<b>Fiber</b>	25Mb/3Mb	324	0%	100%	100%

Note 1: Residential speeds.

Note 2: Locations passed in ILEC's network as of 12/31/2015.

Note 3: Year 1 is 2017