

Alternative Connect America Cost Model Overview  
April 1, 2015



**Federal  
Communications  
Commission**



# Agenda

- Background
- Key elements of model
- Illustrative model outputs (model for voluntary path to model-based support for RORs not finalized)
- Resources

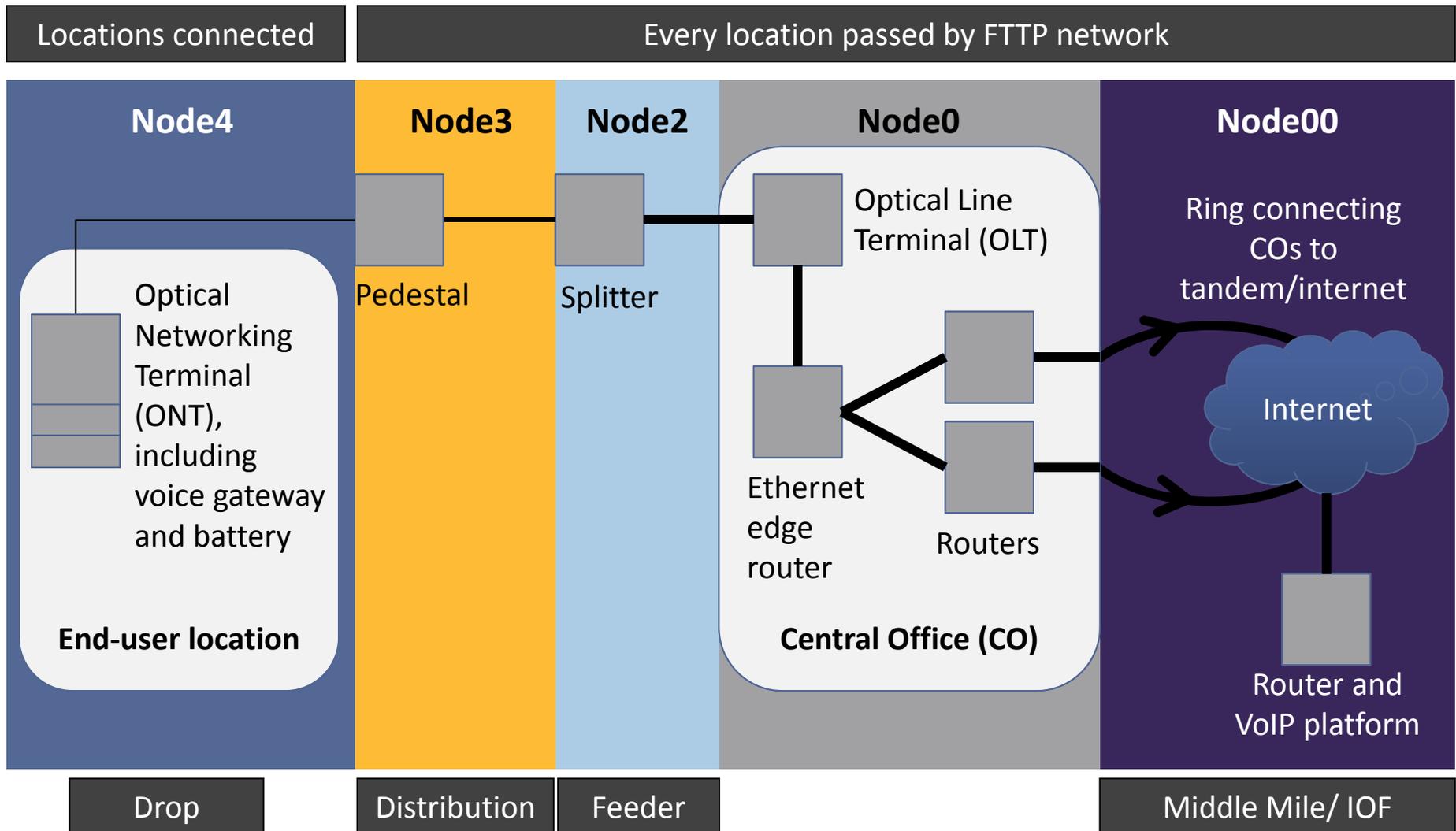
## Commission proposes voluntary path to model-based support for rate-of-return carriers

- In the *April 2014 Connect America Order/FNPRM*, the Commission proposed a voluntary election by rate-of-return carriers to receive model-based support
  - Directed the Bureau to incorporate results of the study area boundary data collection in the Connect America Cost Model (CAM), and to make such other adjustments as appropriate for use of that model in rate-of-return areas
  - Sought comment on what specific changes should be implemented before using the model to calculate an offer of model-based support for rate-of –return carriers that voluntarily elect to receive model-based support
- On December 22, 2014, the Bureau announced the availability of version 4.2 of CAM and the first version of the Alternative Connect America Cost Model (A-CAM), being developed for potential use in rate-of-return areas
  - A-CAM v1.0 was fundamentally the same as CAM v4.2 to provide baseline for evaluating subsequent modifications; v1.0.1 uses 10 Mbps instead of 3 Mbps downstream
  - A-CAM v2.0 will incorporate the study area boundary data submitted by rate-of-return carriers
- On March 16, 2015, the Bureau released updated illustrative support amounts for several different support mechanisms using A-CAM version 1.0.1

## Two components to A-CAM

- **Cost model:** calculates cost for all rate-of-return areas
  - Network topology – Geo-spatial- (or GIS-) based routing to meet engineering constraints for a given network technology
    - Uses geo-coded locations, where available; aligns location counts to census, placing additional locations along roads
    - Calculates distances along real roads to individual end-user locations
    - Incorporating rate-of-return study area boundaries as part of A-CAM 2.0
  - Costing – determination of cost to serve using that topology
- **Support model:** calculates support
  - Calculated cost is an input
  - Rate-of-return areas eligible for support not yet decided
    - How to treat areas served by a competitor
  - Support per rate-of-return location not yet decided
    - What funding thresholds to use
    - Whether to average costs over larger areas
    - How to ensure total support for rate-of-return areas does not exceed budget

# The model uses passive Gigabit Passive Optical Network (GPON) Fiber to the Premises (FTTP) technology

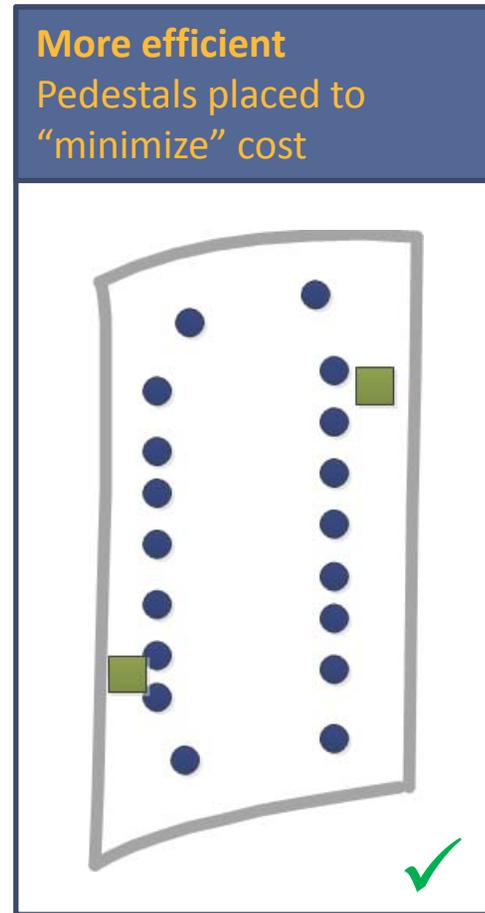
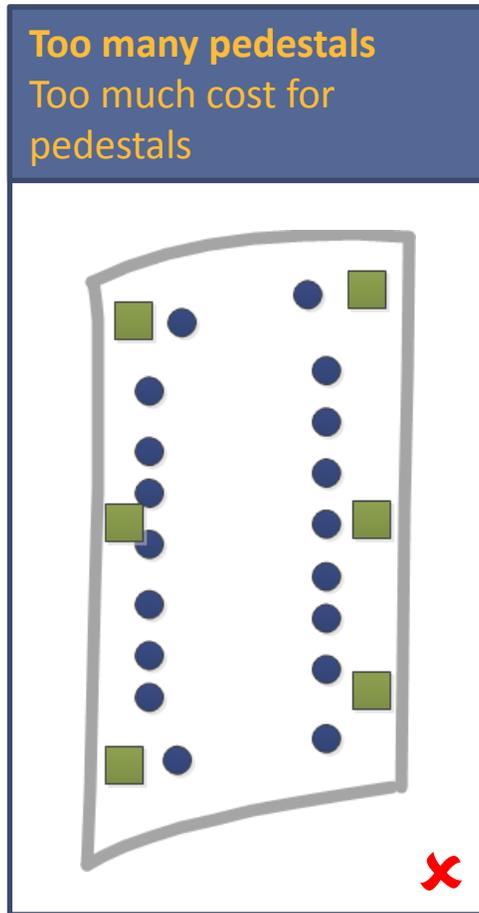
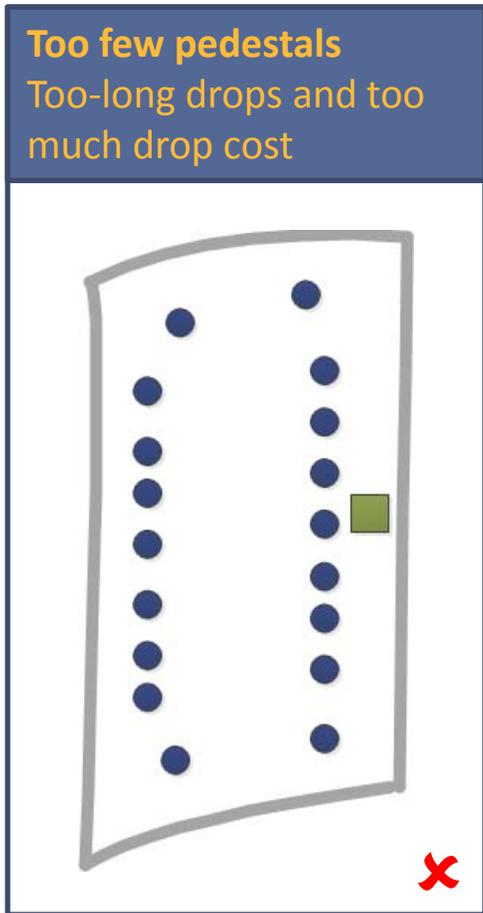


## Cost model – network topology

- **“Simple” set of rules for all-IP FTTP (GPON) network** based on standard engineering principles:
  - Network facilities to “pass” every rate-of-return location in the country (>6 million) – essential network assets within a short distance of every location – with connections to central office currently serving each location
  - For each block or street segment, determine location of pedestal (node 3) by minimizing cost in trade-off between distribution plant and drop to individual locations
  - Determine number and location of splitters (node 2) so that all locations are within at most 5000-5,500 feet of splitter and splitter is equipped to serve up to 32 locations per GPON Feeder Fiber
  - Determine feeder path to connect splitters to central office using spanning tree optimization routines
- **Computationally intense** – takes weeks for a national data run

# Simple topology example #1: placing neighborhood pedestals (node 3)

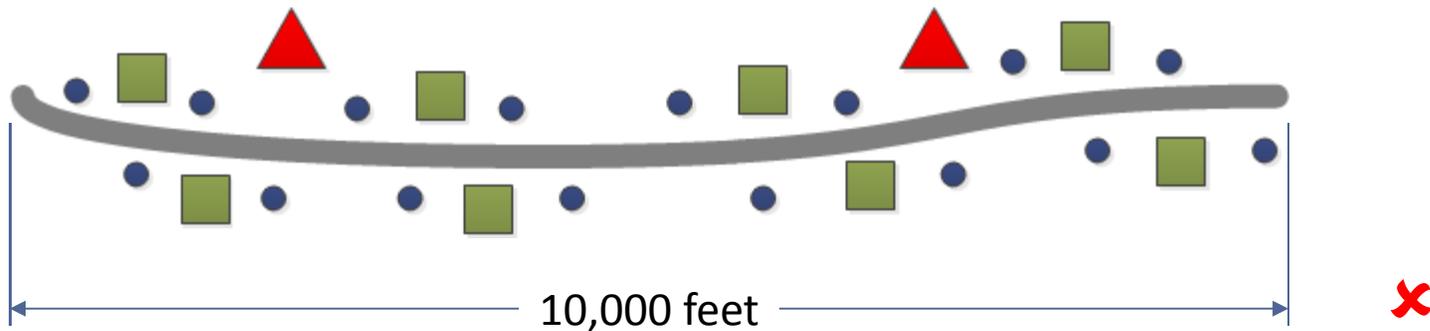
- Road segment
- End-user location
- Possible “pedestal” location



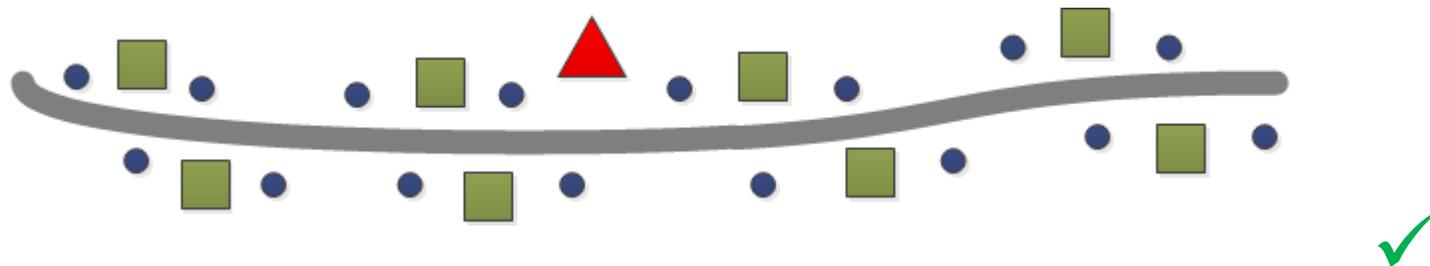
## Simple topology example #2: Placing FTTP splitters (node 2)

- Road segment
- End-user location
- Possible “pedestal” location
- ▲ Possible splitter location

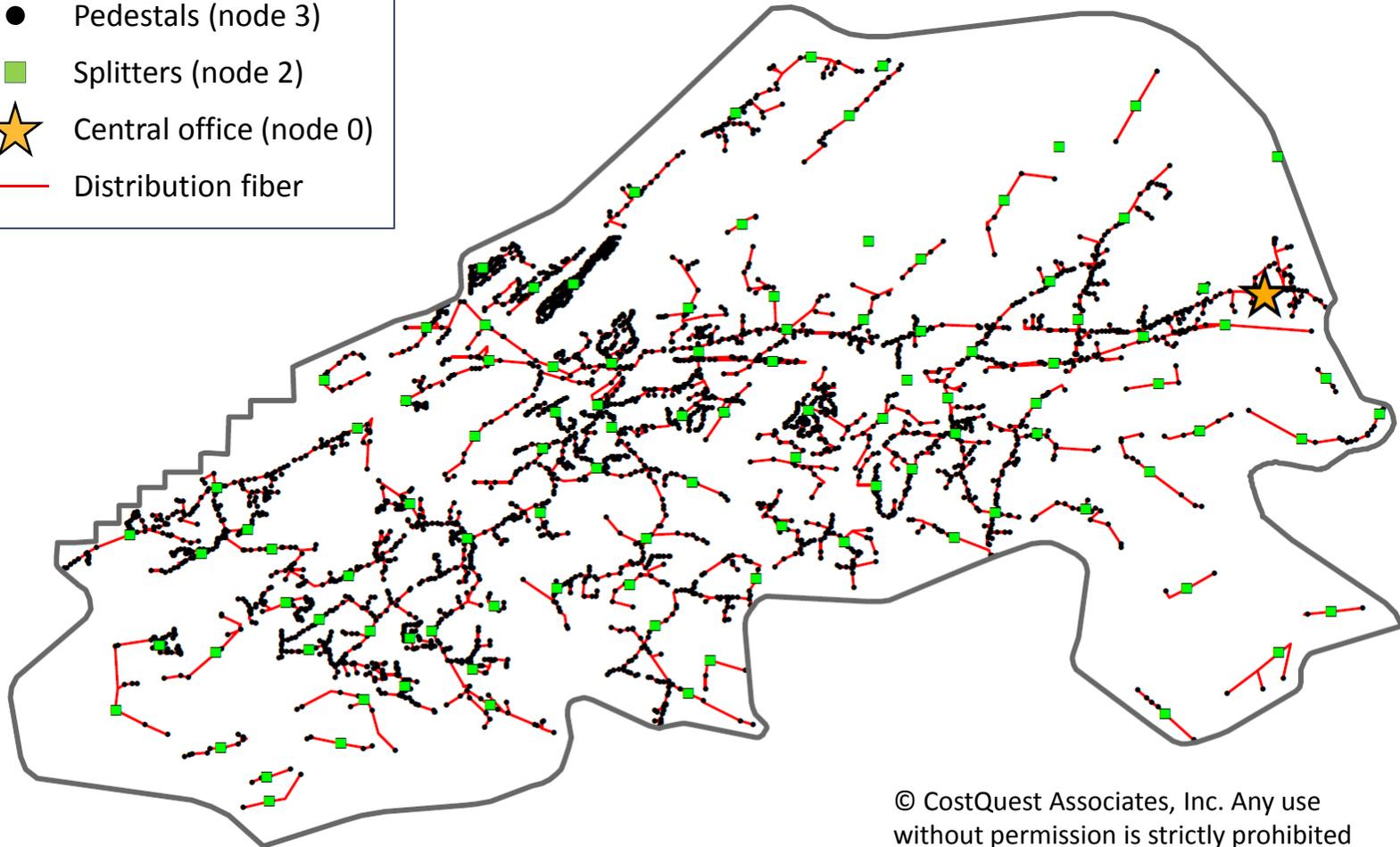
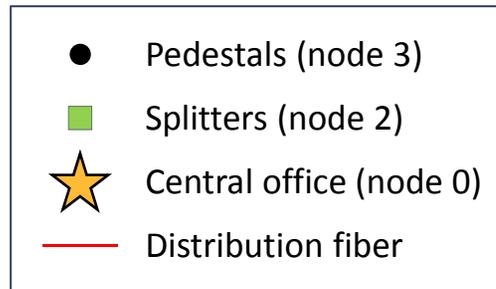
**Too costly:** Poor splitter placement means needing two splitters



**More efficient:** Use fewer splitters to serve the area

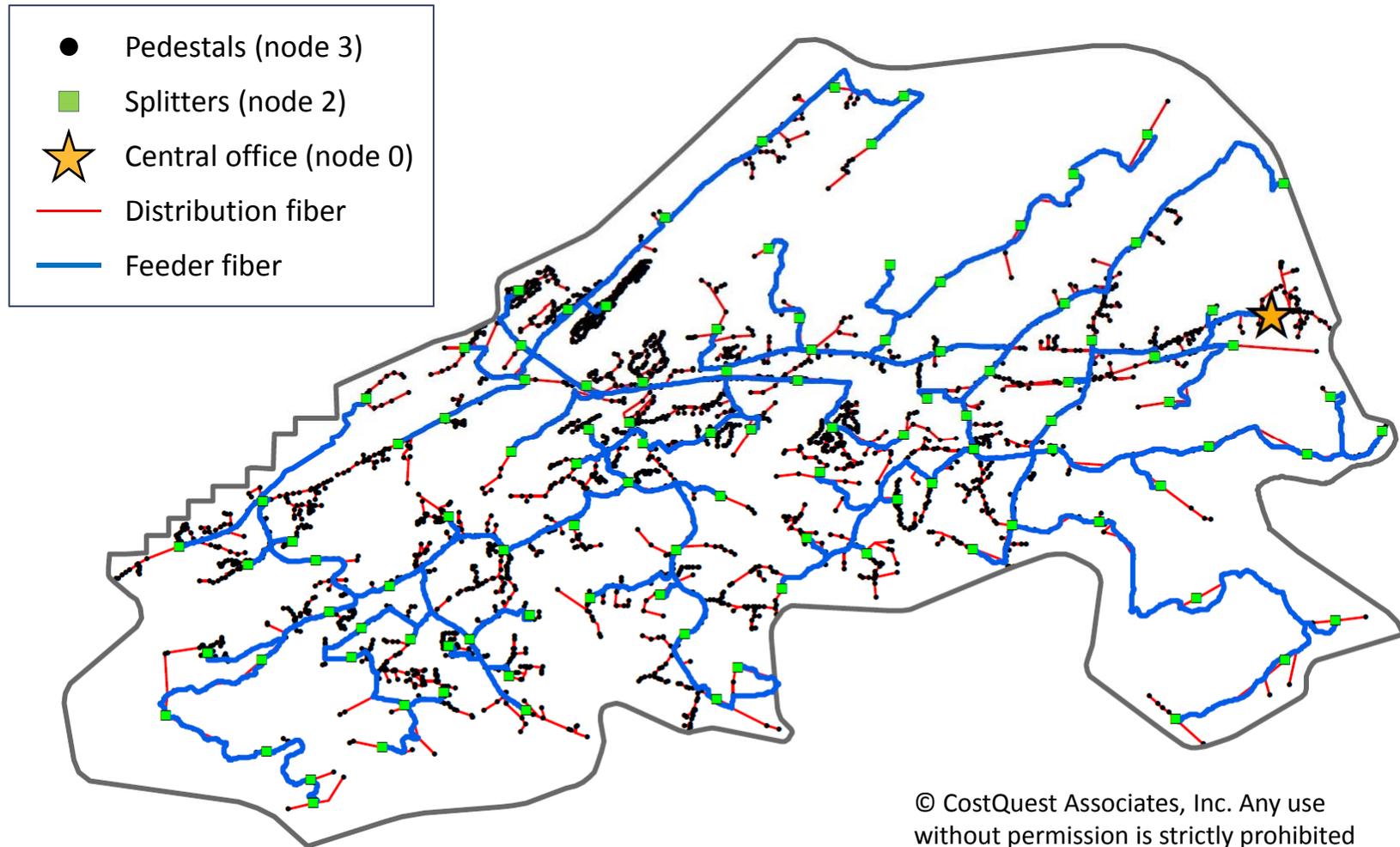


Result is route-tracing, efficient network that connects pedestals to splitters via a road-tracing distribution network...



© CostQuest Associates, Inc. Any use without permission is strictly prohibited

...and connects splitters back to wire centers via feeder network



## Output of network topology: a large database that captures information relevant to calculating costs

- Number of locations
- Feet of feeder plant and distribution plant (and overlap between them)
- Pedestals associated with block
- Equipment and feet of transport (middle mile and/or undersea) for nodes (e.g., splitter, OLT, etc..) serving the block, apportioned back based on cost causation
- Serving wire center (by Common Language Location Identifier or CLLI codes)
- Area
- Density zone – whether the block is rural, suburban or urban
- Terrain
- Three-digit ZIP code

## The model provides more information via user-configurable inputs

- GIS-based information, based on density and terrain, used to calculate cost, including
  - Plant mix (mix of aerial, buried and underground facilities)
  - Tax rates
  - Regional cost adjustments
- Cost per unit for each network asset, including
  - Fiber
  - Outside-plant structure (e.g., poles, conduit, manholes)
  - FTTP hardware (e.g., splitters, ONTs, OLTs)
  - Network hardware (e.g., optical add-drop multiplexers or OADMs, routers)
- Asset lifetimes and cost of capital (through Annual Charge Factors)
- Customer drop rate (to determine number of drops and CPE in cost calculation)
- Capacity demand

# Illustrative cost calculation for aerial plant in rural areas using A-CAM v1.0.1

	<b>Materials</b>	<b>Placement</b>
<b>Fiber</b>	+ \$0.444 /foot for 48-fiber bundle + \$0.118 /foot material loading <hr/> = \$0.562 /foot	+ \$1.185 placement / foot + \$0.0053 admin cost/foot + \$0.230 engineering cost/foot + \$0.540 splicing cost/foot <hr/> = \$1.960 / foot
<b>Structure</b>	+ \$214.61 per pole → \$1.25/foot + \$86.56 per anchor → \$0.072/foot + \$5.61 per guy → \$0.0046/foot + \$0.131/foot for material loading <hr/> = \$1.459 / foot pre-sharing = \$.7005 / foot including sharing	+ \$452.97 per pole → \$2.64/foot + \$184.25 per anchor → \$0.154/foot + \$25.60 per guy → \$0.021/foot + \$0.401 engineering cost/foot <hr/> = \$3.22 / foot pre-sharing = \$1.54 / foot including sharing
<b>Total cost</b>	Total construction cost per foot for rural aerial plant:            \$7.20 Aerial cost per foot (rural) <i>for ILEC</i> :     \$4.77	
<b>Additional adjustments</b>	<ul style="list-style-type: none"> <li>• Multiply all costs by Regional Cost Adjustment</li> <li>• For routes where feeder and distribution overlap, rural aerial structure shared 78% of the time (i.e., less structure cost incurred)</li> <li>• Addition of state specific sales tax on material</li> </ul>	

## Illustrative cost calculation for buried plant in rural, soft rock areas using A-CAM 1.0.1

	<b>Materials</b>	<b>Placement</b>
<b>Fiber</b>	+ \$0.466 /foot for 48-fiber bundle + \$0.050 /foot material loading <hr/> = \$0.515/foot	+ \$0.00 placement / foot + \$0.0053 admin cost/foot + \$0.001 engineering cost/foot + \$0.531 splicing cost/foot <hr/> = \$.538 / foot
<b>Structure</b>	NA	+ 3.77/foot for labor + \$0.538/foot for engineering <hr/> = \$4.310 /foot pre-sharing = \$4.149 / foot including sharing
<b>Total cost</b>	Total construction cost per foot for rural, soft-rock, buried plant: \$5.36 Buried cost per foot (rural, soft-rock) <i>for ILEC</i> : \$5.20	
<b>Additional adjustments</b>	<ul style="list-style-type: none"> <li>• Multiply all costs by Regional Cost Adjustment</li> <li>• For routes where feeder and distribution overlap, rural buried structure shared 41% of the time (i.e., less structure cost incurred)</li> <li>• Addition of state specific sales tax on material</li> </ul>	

## Illustrative cost calculation for underground plant in rural, soft rock areas using A-CAM 1.0.1

	<b>Materials</b>	<b>Placement</b>
<b>Fiber</b>	+ \$0.445 /foot for 48-fiber bundle + \$0.057 /foot material loading <hr/> = \$0.502 /foot	+ \$2.289 placement / foot + \$0.0053 admin cost/foot + \$0.442 engineering cost/foot + \$0.582 splicing cost/foot <hr/> = \$3.319 / foot
<b>Structure</b>	+ \$1372.10 per manhole → \$1.52/foot + \$2.04 / foot for duct + \$0.466/foot for material loading <hr/> = \$4.03 / foot pre-sharing = \$3.97 / foot including sharing	+ \$793.66 per manhole → \$0.882 / foot + \$0.71/foot for duct (no sharing) + \$8.33 /foot for excavation + \$1.42 engineering cost/foot <hr/> = \$11.34 / foot pre-sharing = \$10.89 / foot including sharing
<b>Total cost</b>	Total construction cost per foot for rural, soft-rock, underground plant: \$19.19 Underground cost per foot (rural, soft-rock) <i>for ILEC</i> : \$18.68	
<b>Additional adjustments</b>	<ul style="list-style-type: none"> <li>• Multiply all costs by Regional Cost Adjustment</li> <li>• For routes where feeder and distribution overlap, rural underground structure shared 67% of the time (i.e., less structure cost incurred)</li> <li>• Addition of state specific sales tax on material</li> </ul>	

# Sources for aerial plant cost calculation

## Materials

### Fiber

- **Fiber Material:** Size 24 Aerial Material cost:  $\$0.3135/\text{foot} * 1.42$  for 48-fiber cable =  $\$0.444$  per foot
- **Labor Rates and Loadings:** AerialFO Total Material Loadings:  $.265177 \rightarrow \$0.118$  per foot

### Structure

- **Structure Material:** Size 35 Material cost per pole:  $\$214.61$
- **Engineering rules:** Size 35 pole spacing: 200 feet
- **Engineering rules:** Typical aerial span: 1200 feet  $\rightarrow 7$  poles over 1200 feet
- **Structure Material:**  $\$86.56$  per anchor
- **Structure Materials:**  $\$0.11$  per guy per foot
- **Engineering rules:** Guy length to pole height ratio: 1.5  $\rightarrow \$5.61$  per guy (size 35 pole)
- **Engineering rules:** Typical guy span: 1200 feet
- **Labor Rates and Loadings:** Pole Total Material Loadings:  $.098305 \rightarrow \$0.131$  per foot
- **Plant Sharing Tables:** Aerial 48%

## Placement

- **Material Labor:** AerialFO Placing cost per foot:  $\$0.836 * .142$  for 48-fiber cable =  $\$1.185$  per foot
- **Material Labor:** AerialFO Telco admin cost per foot:  $\$0.0053$
- **Labor Rates and Loadings:** AerialFO Engineering rate:  $.1925 \rightarrow \$0.230$  per foot
- **Splicing (see "Sources for Splicing" slide):**  $\$0.540$  per foot
- **Structure Labor:** Size 35 pole:  $\$452.97$  per pole
- **Engineering rules:** Size 35 pole spacing: 200 feet
- **Engineering rules:** Typical aerial span: 1200 feet  $\rightarrow 7$  poles over 1200 feet
- **Structure Labor:** Size 35 pole:  $\$452.97$  per pole
- **Structure Labor:**  $\$184.25$  per anchor
- **Structure Labor:** :  $\$25.60$  per guy
- **Engineering rules:** Typical guy span: 1200 feet
- **Labor Rates and Loadings:** Pole:  $.1425$  for engineering  $\rightarrow \$0.401$  per foot
- **Plant Sharing Tables:** Aerial 48%

# Sources for buried plant cost calculation

## Fiber

### Materials

- **Fiber Material:** Size 24 Underground Material cost:  $\$0.32878/\text{foot} * 1.42$  for 48-fiber cable =  $\$0.466$  per foot
- **Labor Rates and Loadings:** BuriedFO Total Material Loadings:  $.106440 \rightarrow \$0.050$  per foot

## Structure

- NA

### Placement

- **Material Labor:** UndergroundFO Placing cost per foot:  $\$0.00$
- **Material Labor:** AerialFO Telco admin cost per foot:  $\$0.0053$
- **Labor Rates and Loadings:** AerialFO Engineering rate:  $.1925 \rightarrow \$0.001$  per foot
- **Splicing (see "Sources for Splicing" slide):**  $\$0.531$  per foot
  
- **Structure Labor:** Buried excavation, rural soft rock:  $\$3.773$  per foot
- **Labor Rates and Loadings:** Conduit:  $.1425$  for engineering  $\rightarrow \$0.538$  per foot
- **Plant Sharing Tables:** Rural, buried: 96.25%

# Sources for underground plant cost calculation

## Materials

### Fiber

- **Fiber Material:** Size 24 Underground Material cost:  $\$0.31407/\text{foot} * 1.42$  for 48-fiber cable =  $\$0.445$  per foot
- **Labor Rates and Loadings:** UndergroundFO Total Material Loadings:  $.127821 \rightarrow \$0.057$  per foot

### Structure

- **Structure Material:** Size 2 manhole:  $\$1372.10$
- **Engineering rules:** Size 2 manhole spacing: 900 feet
- **Structure Material:** Duct cost:  $\$2.04/\text{foot}$
- **Labor Rates and Loadings:** Conduit:  $.130561 \rightarrow \$0.714$  per foot
- **Plant Sharing Tables:** Rural, underground: 95.78% (conduits are not shared)

## Placement

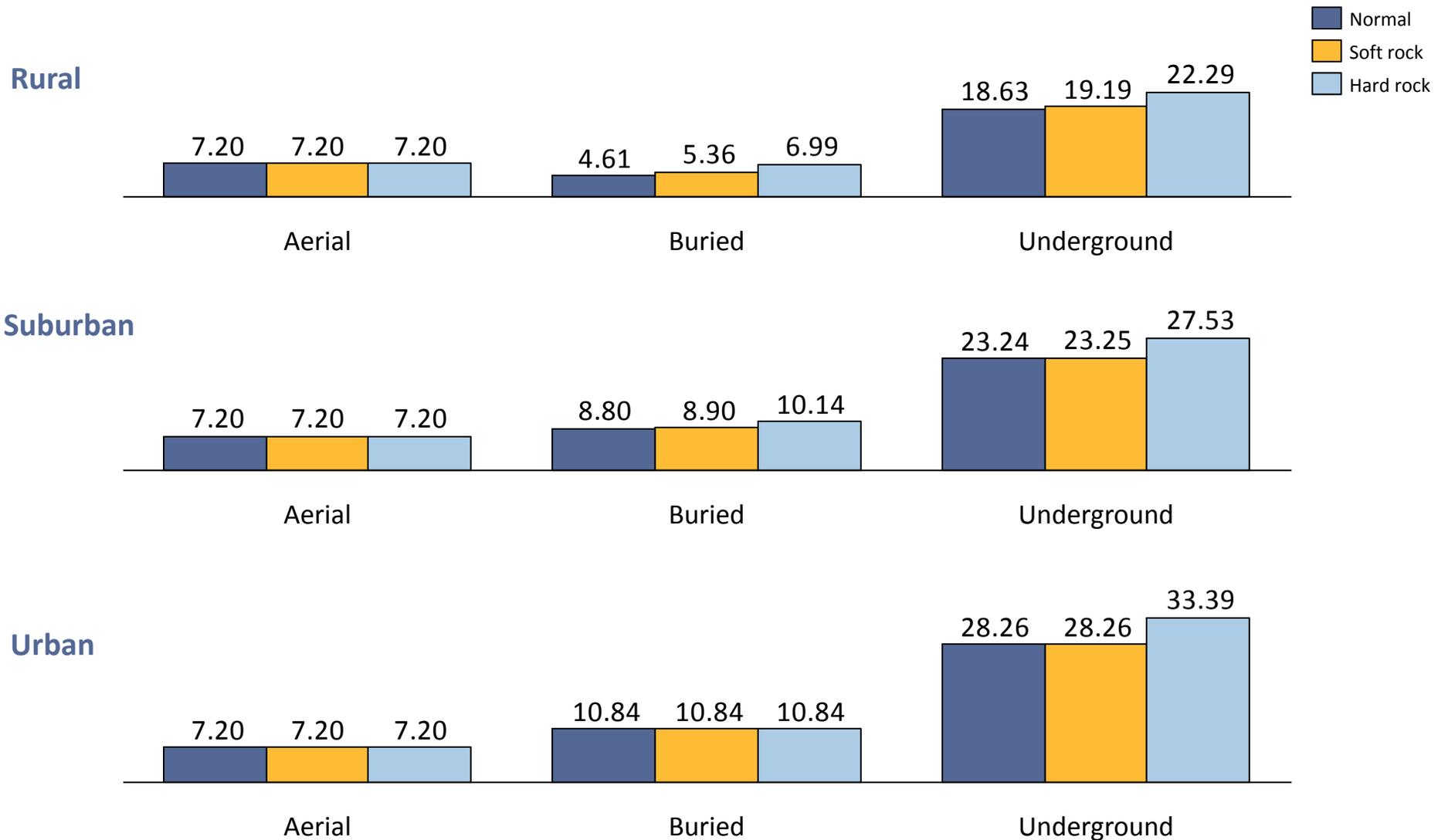
- **Material Labor:** UndergroundFO Placing cost per foot:  $\$1.62 * .142$  for 48-fiber cable =  $\$2.29$  per foot
- **Material Labor:** AerialFO Telco admin cost per foot:  $\$0.0053$
- **Labor Rates and Loadings:** AerialFO Engineering rate:  $.1925 \rightarrow \$0.442$  per foot
- **Splicing (see "Sources for Splicing" slide):**  $\$0.582$  per foot
- **Structure Labor:** Size 2, soft-rock manhole:  $\$793.66$  per manhole
- **Engineering rules:** Size 2 manhole spacing: 900 feet
- **Structure Labor:** Underground excavation, rural soft rock:  $\$8.33$  per foot
- **Structure Labor:** Underground duct labor:  $\$0.71$  per foot
- **Labor Rates and Loadings:** Conduit:  $.1425$  for engineering  $\rightarrow \$1.42$  per foot
- **Plant Sharing Tables:** Rural, underground: 95.78% (conduits are not shared)

# Sources for splicing cost

	Aerial	Buried	Underground
<b>Closure and setup</b>	<ul style="list-style-type: none"> <li>• <b>Material Labor:</b> \$83.85</li> <li>• <b>Labor Rates and Loadings:</b> Engineering rate 0.1925 → \$16.14 per splice</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Material Labor:</b> \$87.60</li> <li>• <b>Labor Rates and Loadings:</b> Engineering rate 0.1925 → \$16.86 per splice</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Material Labor:</b> \$121.80</li> <li>• <b>Labor Rates and Loadings:</b> Engineering rate 0.1925 → \$23.45 per splice</li> </ul>
	<b>Occurrences per foot (typical) determined by model/topology:</b> 0.00084 (1 per 1189 feet)		
	• \$0.084 / foot	• \$0.088/ foot	• \$0 .122 /foot
<b>Splice cost</b>	<ul style="list-style-type: none"> <li>• <b>Material Labor:</b> \$9.72 / fiber</li> <li>• <b>Labor Rates and Loadings:</b> Engineering rate 0.1925 → \$1.87 per splice</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Material Labor:</b> \$9.46 /fiber</li> <li>• <b>Labor Rates and Loadings:</b> Engineering rate 0.1925 → \$1.82 per splice</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Material Labor:</b> \$9.83/fiber</li> <li>• <b>Labor Rates and Loadings:</b> Engineering rate 0.1925 → \$1.89 per splice</li> </ul>
	<b>Occurrences per foot (typical) determined by model/topology:</b> 0.0393 (24 splices every 611 feet)		
	• \$0.456 / foot	• \$0.443/ foot	• \$ 0.460 /foot
<b>Total</b>	• \$0.540 / foot	• \$0.531 / foot	• \$0.582 / foot

Number of splices driven by network topology – splices are assumed wherever there is a branch (a “Y”) in the network or when the number of strands drops enough to move to a smaller cable

# Illustrative construction costs per foot assuming 48-fiber bundles, 35-foot poles and no regional cost adjustment



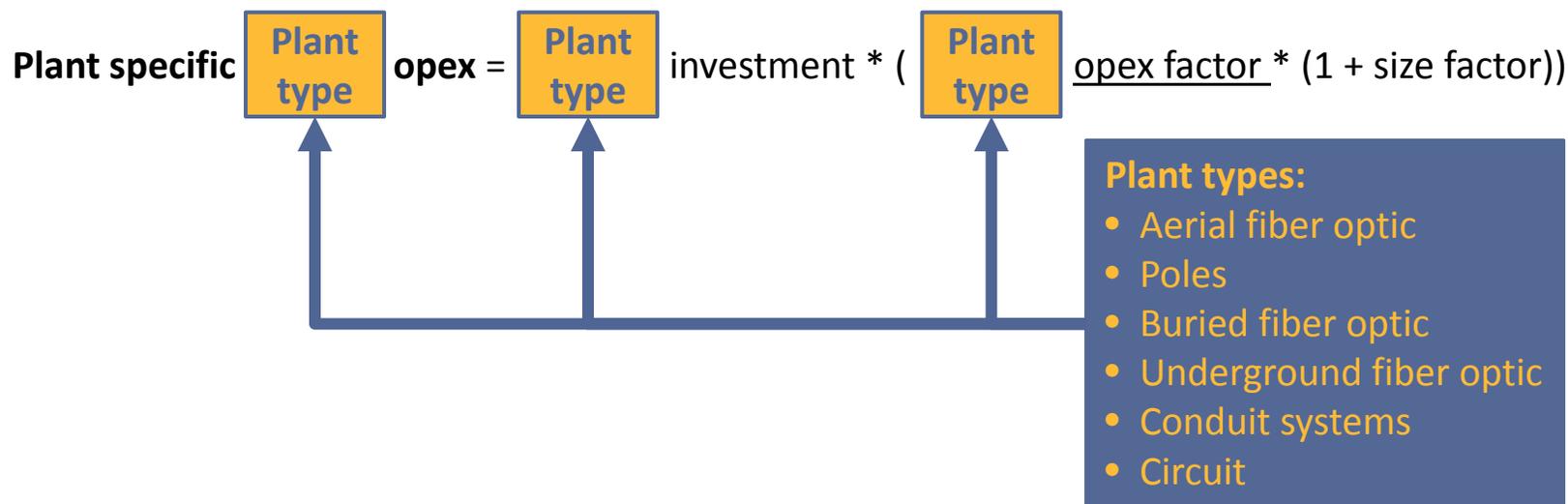
## Calculating annual cost of initial investment: levelization using Annual Charge Factors

- Annual Charge Factors (ACFs) relate the initial investment to the cost over the useful lifetime of each asset – what is the monthly cost over time for a given investment
  - Based on lifetimes for each asset class using retirement curves
  - Includes asset replacement costs as well as future net salvage value or future net salvage cost as appropriate
  - Captures capital recovery (DEPR), and post-tax cost of money (COM and TAX)
- The model tracks each asset class separately (despite prior cost per foot calculation)
- Output is a cost per month for each asset attributable to each census block. Asset classes include:
  - Aerial Fiber
  - Buried Fiber
  - Underground Fiber
  - Conduit
  - Circuit (network electronics)
- And excel-based model (called the “CapCost model”) is available to calculate ACFs for different assumptions

# Operating expenses calculated with factors based on NECA data

## Network plant specific opex (scales with investment in each plant type)

---



## Non-network plant specific opex (scales with total investment)

---

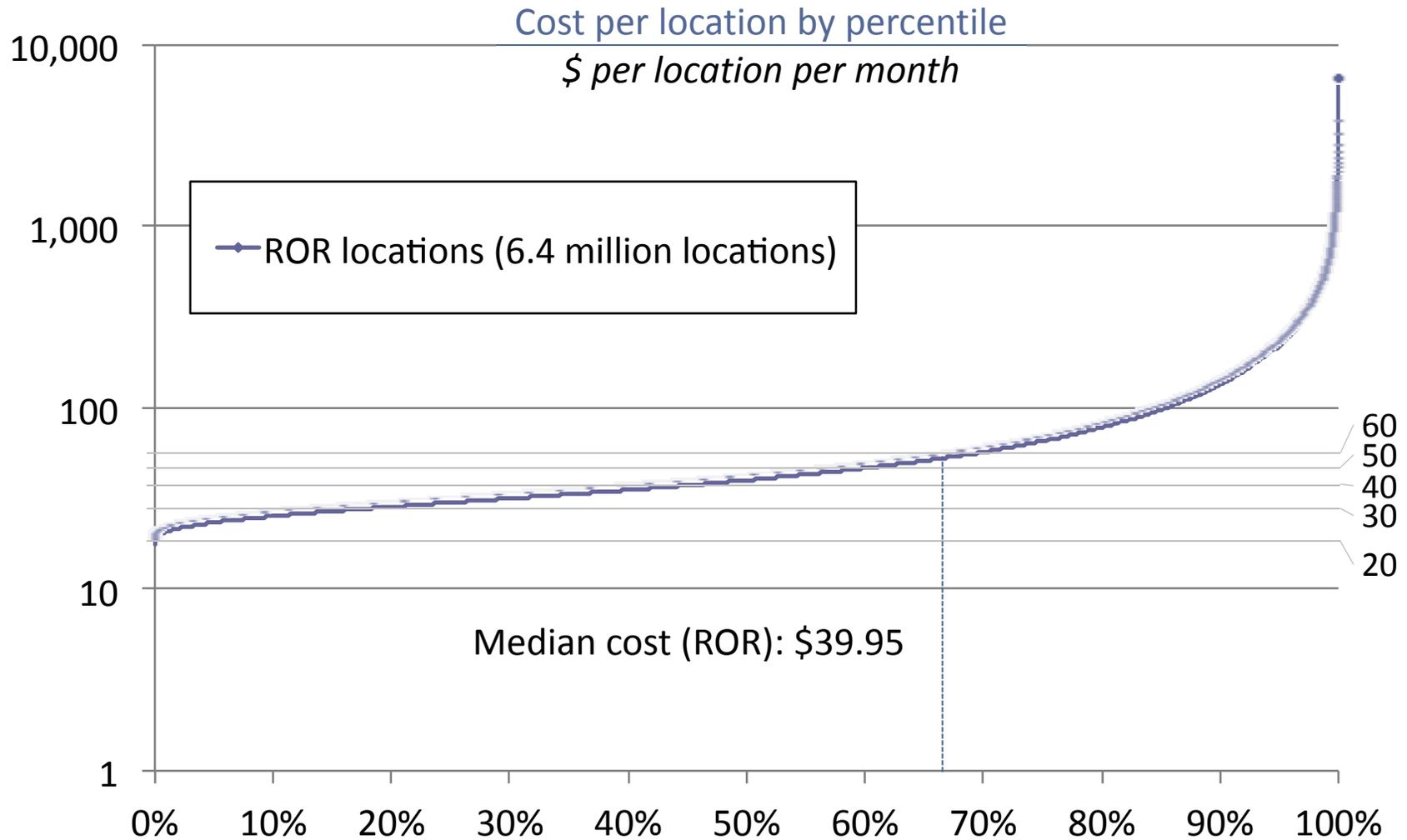
**Plant non-specific opex** = total plant investment \* (network PNS factor \* (1 + size factor))  
**Overhead G&A** = total plant investment \* (overhead G&A factor \* (1 + size factor))

## Additional opex (scales with number of customers)

---

**Cust. ops & mark. opex** = Customers \* (Ops per customer \* (1 + size factor))  
**Bad debt** = Customers \* (Bad debt per customer)

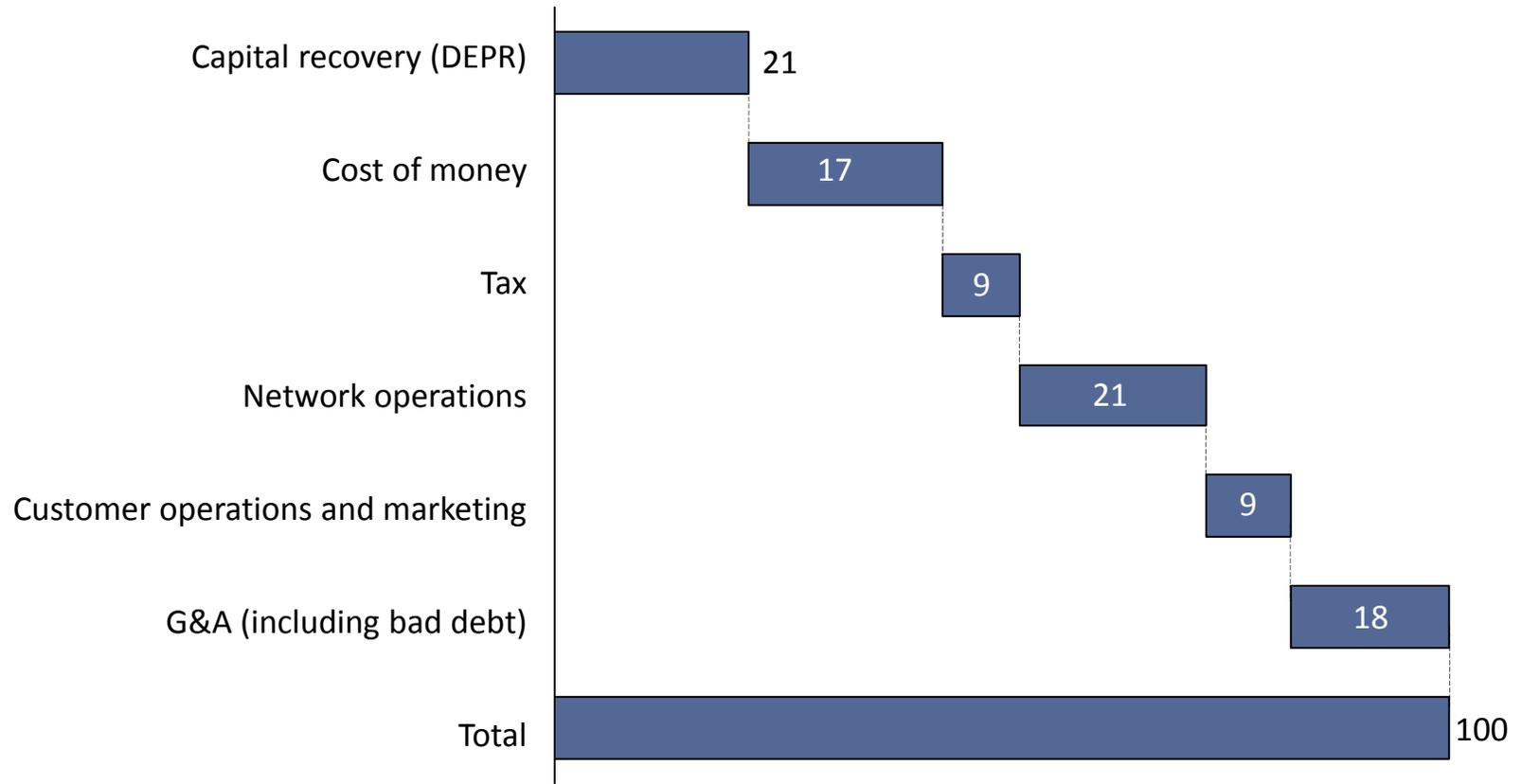
# Illustrative cost per location per month varies widely around the country\*



\* Illustrative results A-CAM v1.0.1

# Overall model results by cost category\*

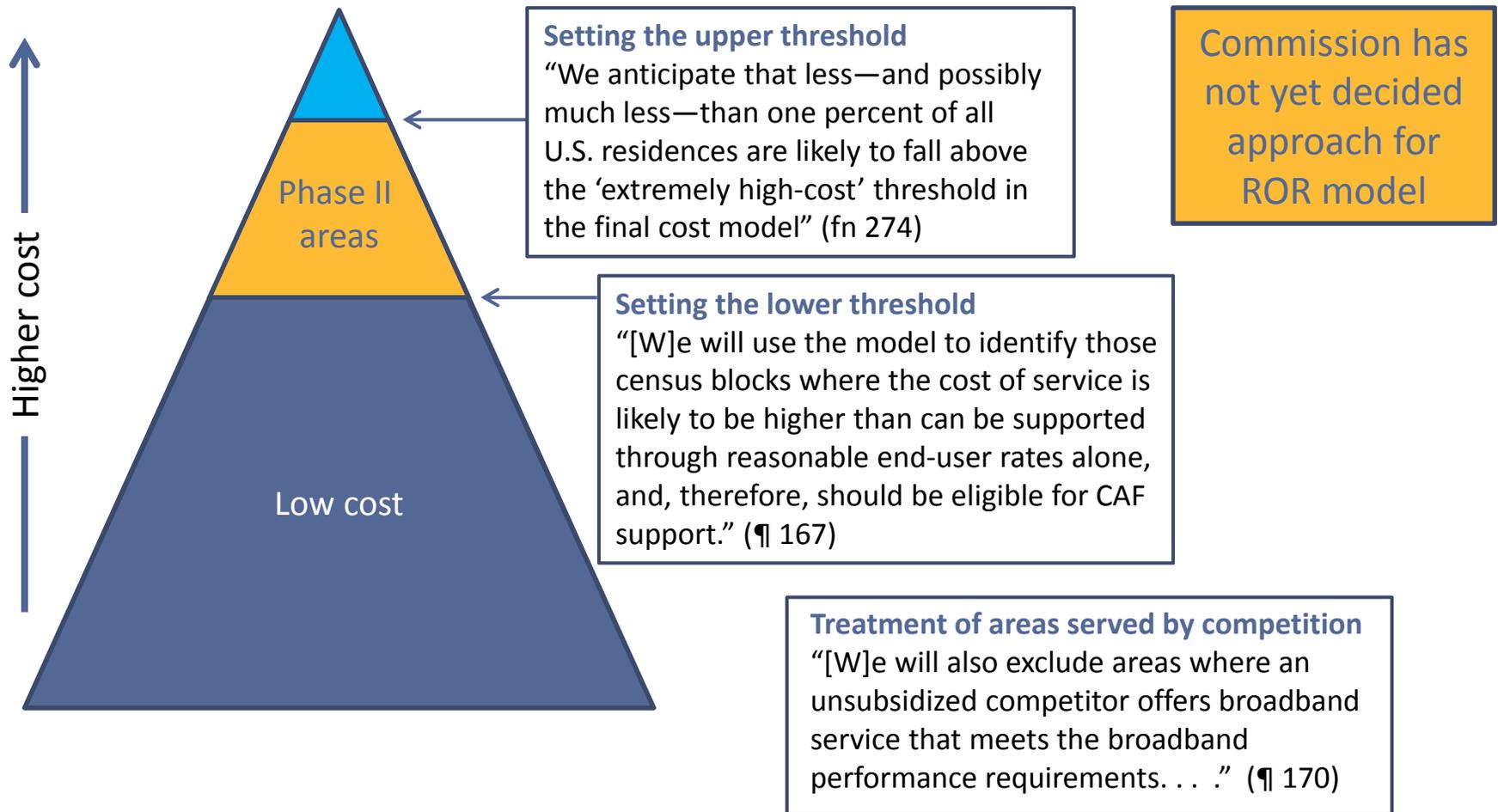
Breakout of costs for rate-of-return areas  
*% of total cost*



\* Illustrative results for A-CAM 1.0.1



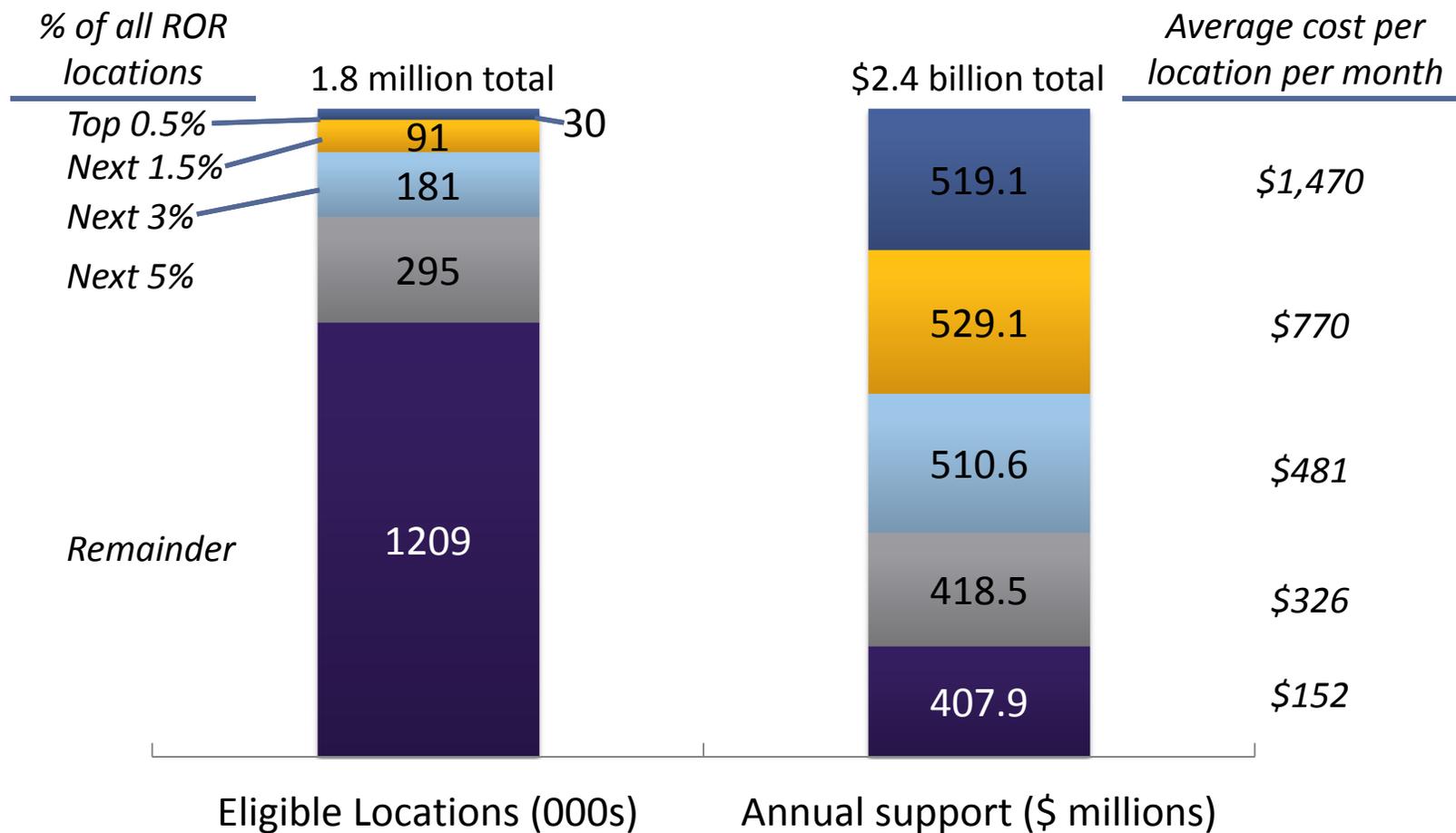
# Support model for price cap carriers determined by Commission in 2011 Order



## Decisions regarding support calculation for rate-of-return carriers remain

- How to determine which areas are served by a competitor at 10 Mbps / 768 kbps or greater and therefore ineligible for support?
- What funding benchmark to use (i.e., what cost is not recoverable from a model-based mechanism)?
- Should costs be averaged over some areas (e.g., census block groups)?
- What mechanism should be used to ensure that model-calculated support does not exceed the budget?
  - Use of an extremely high-cost threshold (locations with costs above this threshold are not eligible for support)?
  - Limit in support per location (with all locations above the funding benchmark eligible for support)?
  - Reduction in all support on a dollars-per-line or percentage basis?
  - Others?

# Illustrative support calculation using A-CAM 1.0.1 model, a \$52.50 benchmark and no mechanism to meet budget



Note: Excludes 356,000 locations served by unsubsidized competitors (providing at least 10 Mbps downstream and 768 kbps upstream) from eligibility for support; if not excluded, those locations would be eligible for another \$200 million in support



# Illustrative results currently posted on FCC website – introduction page

Federal Communications Commission  
 CAFII - A-CAM 1.0.1 - Report Version 1.1  
 March, 2015

All reports utilize A-CAM 1.0.1 output, providing Support & Locations per Rate of Return Carrier per State per Study Area.

Report Reference Number	Mechanism to meet budget	Exclusion of competitive areas from eligibility (non-cost based)	Benchmark	Extremely High-Cost Threshold (EHCT)
1.1	Adjust extremely high-cost threshold (no funding above EHCT)	SBI data showing cable or fixed wireless	\$ 52.50	\$ 563.38
1.2	Adjust extremely high-cost threshold (no funding above EHCT)	None	\$ 52.50	\$ 461.19
1.3	Limit support per location to \$230	SBI data showing cable or fixed wireless	\$ 52.50	\$ 30 Funding Cap per location
1.4	None	None	\$ 60.00	NA
1.5	None	SBI data showing cable or fixed wireless	\$ 60.00	NA
1.6	None	SBI data showing cable or fixed wireless	\$ 52.50	NA
1.7	None	None	\$ 52.50	NA

Multiple scenarios with and without competitive area exclusions

Two illustrative values for Benchmark

The Commission directed the Bureau to make the adjustments necessary to the Connect America Cost Model so it could be used for rate-of-return areas, including incorporating updated study area boundaries. The Bureau is currently working on incorporating revised study area boundary data into the Alternative Connect America Cost Model (A-CAM).

The attached reports are published so that rate-of-return carriers can see how different assumptions in the support module impact the support calculated for a particular study area.

Two scenarios use an extremely high cost threshold as the mechanism to keep total calculated support within the total budget for rate-of-return carriers: Report 1.1 is similar to the approach adopted for the Connect America Cost Model that will be used to calculate the offer of support for price cap carriers utilizing a \$52.50 funding benchmark, with census blocks that are shown as served by cable or fixed wireless on the National Broadband Map excluded from support calculations. Report 1.2 uses the same funding benchmark as Report 1.1, but does not exclude any census blocks above that benchmark that are shown as served on the National Broadband Map from support calculations.

A third scenario utilizes a different approach to keep total calculated support within the total budget for rate-of-return carriers: a per-location funding cap. Specifically, Report 1.3 uses the same funding threshold as the prior two scenarios, but instead imposes a cap of \$230 per location on support provided for eligible census blocks.

A fourth scenario utilizes a higher funding benchmark than \$52.50, based on the assumption that census block groups where the average cost per location is less than \$60 typically are served by cable competitors. Specifically, Report 1.4 calculates support using a \$60 funding benchmark excluding from support calculations those census block groups with an average cost below \$60. This scenario does not exclude from support calculations any census block groups above that benchmark that are shown as served on the National Broadband Map. A fifth scenario also utilizes a higher funding benchmark than \$52.50. Specifically, Report 1.5 calculates support utilizing a \$60 funding benchmark, but does not average costs across census block groups and excludes census blocks that are shown on the National Broadband Map as served by cable or fixed wireless. Neither of these scenarios utilize an extremely high cost threshold and therefore calculate total support that exceeds the rate-of-return budget; parties to the proceeding have suggested other mechanisms to keep total support within the budget, such as reducing support per location evenly across all locations in order to meet the budget target.

Finally, two additional scenarios that do not contain any budget constraint on support calculations are presented. In Report 1.6, we show support calculations utilizing a \$52.50 funding benchmark, with census blocks that are shown on the National Broadband Map as served by cable or fixed wireless excluded from support calculations. In Report 1.7, we show support calculations utilizing a \$52.50 funding benchmark, and no exclusion of any areas shown as competitively served on the National Broadband Map. These scenarios with no extremely high cost threshold are provided so that interested stakeholders can consider alternatives to an extremely high cost threshold to bring total rate-of-return support within the \$2 billion overall rate-of-return budget.



# Illustrative results posted on FCC website

Federal Communications Commission  
 CAFII - A-CAM 1.0.1 - Report Version 1.1  
 Report Summary Totals  
 March, 2015

Report Reference Number	Mechanism to meet budget	Exclusion of competitive areas from eligibility (non-cost based)	Benchmark	Extremely High-Cost Threshold (EHCT)	Speed Definition	Total Rate of Return Locations	Total Number of Rate of Return Locations in Census Blocks Receiving Model-Based Funding	Total Rate of Return Carrier Model-Based Support	Annual High-Cost Claims 2014 Total Support less CAF/ICC Support	# of SACs w/ACAM Support > 2014 Support	# of SACs w/ACAM Support < 2014 Support
1.1	Adjust extremely high-cost threshold (no funding above EHCT)	SBI data showing cable or fixed wireless	\$ 52.50	\$ 563.38	10/1	6,410,112	1,742,918	\$ 1,624,998,788	\$ 1,642,409,236	607	485
1.2	Adjust extremely high-cost threshold (no funding above EHCT)	None	\$ 52.50	\$ 461.19	10/1	6,410,112	2,066,398	\$ 1,624,997,764	\$ 1,642,409,236	645	447
1.3	Limit support per location to \$230	SBI data showing cable or fixed wireless	\$ 52.50	\$ 230 Funding Cap per location	10/1	6,410,112	1,805,812	\$ 1,622,635,716	\$ 1,642,409,236	615	471
1.4	None	None	\$ 60.00	NA	10/1 CBG	6,410,112	2,440,861	\$ 2,078,817,060	\$ 1,642,409,236	613	479
1.5	None	SBI data showing cable or fixed wireless	\$ 60.00	NA	10/1	6,410,112	1,552,857	\$ 2,234,512,857	\$ 1,642,409,236	653	439
1.6	None	SBI data showing cable or fixed wireless	\$ 52.50	NA	10/1	6,410,112	1,805,812	\$ 2,385,131,894	\$ 1,642,409,236	690	402
1.7	None	None	\$ 52.50	NA	10/1	6,410,112	2,161,931	\$ 2,584,741,723	\$ 1,642,409,236	749	343

Support available and number of locations covered **for illustrative values**

ACAM Support greater than 2014 Support for more than 50% of Study Areas



# Illustrative results posted on FCC website

Breakouts by state, carrier and study area

Federal Communications Commission  
 CAFII - A-CAM 1.0.1 - Report Version 1.1  
 Report 1.1 - Utilizes a Funding Benchmark of \$52.50 and an Extremely High Cost Threshold of \$563.38, Voice Cable Voice Fixed Wireless equal True  
 March, 2015

State	Rate of Return Carrier	Rate of Return Study Area	Rate of Return SAC	Total Rate of Return Locations	Total Number of Rate of Return Locations in Census Blocks Receiving Model-Based Funding	Total Number of Locations in Column F Census Blocks Lacking 10/1	Total Number of Rate of Return Locations in Census Blocks Above Extremely High Cost Threshold (If Applicable)	Percent - Rate of Return Locations Above Extremely High Cost Threshold / Total Rate of Return Locations	Total Rate of Return Carrier Model-Based Support	Annual High-Cost Claims 2014 Total Support less CAF ICC Support
ROR Sub Total	ROR Sub Total	ROR Sub Total	ROR Sub Total	6,410,112	1,742,918	986,337	66,253	1.03%	\$ 1,624,998,788	\$ 1,642,409,236
ROR State Sub	ROR State Sub	ROR State Sub Total	ROR State Sub Total	6,410,112	1,742,918	986,337	66,253	1.03%	\$ 1,624,998,788	\$ 1,642,409,236
ROR Nationwide	ROR Nationwide	ROR Nationwide Total	ROR Nationwide	6,410,112	1,742,918	986,337	66,253	1.03%	\$ 1,624,998,788	\$ 1,642,409,236
ME	OXFR	OXFORD WEST TEL CO	100002	8,410	845	845	34	0.40%	615,446	560,856
ME	LNCL2	LINCOLNVILLE TEL CO	100003	14,272	608	608		0.00%	163,371	577,062
ME	TDS	COBBOSSECONTEE TEL	100005	1,079				0.00%		109,352
ME	TDS	ISLAND TEL CO	100007	943	433	341		0.00%	192,163	33,048
ME	TDS	HAMPDEN TEL CO	100010	3,834	158	32		0.00%	31,919	287,286
ME	TDS	HARTLAND & ST ALBAN	100011	5,190	1,201	1,025	7	0.13%	444,831	278,484
ME	OXFR	OXFORD COUNTY TEL	100019	7,011	619	619	1	0.01%	270,473	712,742
ME	OTLC	PINE TREE TEL & TEL	100020	7,456				0.00%		463,482
ME	OTLC	SACO RIVER TEL & TEL	100022	10,135	5	5		0.00%	5,506	565,428
ME	TDS	SOMERSET TEL CO	100024	16,477	3,675	3,324	132	0.80%	2,692,488	757,578
ME	UNNR	UNION RIVER TEL CO	100027	3,209	2,355	527	141	4.39%	2,249,681	1,406,818
ME	UNTK	UNITY TEL CO., INC.	100029	5,301	1,002	1,002	1	0.02%	319,895	594,408
ME	TDS	WARREN TEL CO	100031	1,968				0.00%		118,806
ME	TDS	WEST PENOBSCOT TEL	100034	3,055	905	776	4	0.13%	225,406	187,452
ME	OTLC	MID MAINE TELECOM	103315	7,755	1,780	1,780				932
MA	OTLC	GRANBY TEL & TEL -MA	110036	2,966						360
MA	CRNR	RICHMOND TEL CO	110037	1,049	9	9				724
NH	LCTC	BRETTON WOODS TEL C	120038	357	26	26				010
NH	YNKT	GRANITE STATE TEL	120039	11,078	610	541				656
NH	DXVL	DIXVILLE TEL CO	120042	371	352	352				284
NH	DNBR	DUNBARTON TEL CO	120043	1,708	291	291				594
NH	TDS	KEARSARGE TEL CO	120045	9,212	300	168				940
NH	TDS	MERRIMACK COUNTY T	120047	7,520	1,148	480				806

Support available and number of locations covered for illustrative values



## Additional information

- **General information about access to the model** using the Third Supplemental Protective Order available at <http://www.fcc.gov/document/connect-america-phase-ii-third-supplemental-protective-order>. The TSPO includes
  - Acknowledgement of Confidentiality
  - Licensing Agreement
  - Non-Disclosure Agreement (provides access to source code and “Systems Evaluator” package)
  - Existing users of CAM who have signed and filed the appropriate documents can contact [CACMsupport@cosquests.com](mailto:CACMsupport@cosquests.com) to get a new link for login credentials for A-CAM
- The current versions of CAM and A-CAM are available at <https://cacm.usac.org>
- Additional resources and information available on CACM website, including:
  - User Guide
  - Frequently Asked Questions and link to CAM Support desk (CACMsupport @costquest.com)
  - Model inputs and results
- In addition, links to model documentation, illustrative results and additional A-CAM resources available on FCC website:
  - <http://www.fcc.gov/encyclopedia/rate-return-resources>

Thank you!



Federal  
Communications  
Commission