Findings from Fiber Broadband Association's Second Annual Fiber Deployment Cost Study

BEFORE WE BEGIN

- Attendees are in **listen-only mode**
- Use the **Control Panel** to access additional tools
- Please submit questions using the **Questions panel**
- The **On-Demand Replay** of today's webinar will be available within 24 hrs on the FBA website under Events / Webinars

Meg Corriveau

Manager, Strategy & Analytics

Cartesian®

One Hour Webinar

Fiber Broadband ASSOCIATION

Fiber Deployment Cost Annual Report

2024 Study Findings

February 6th, 2025

Fiber Broadband Association

Cartesian®

Fiber Deployment Cost Annual Report

1. Fiber Deployment Trends
2. Study Methodology
3. Study Findings

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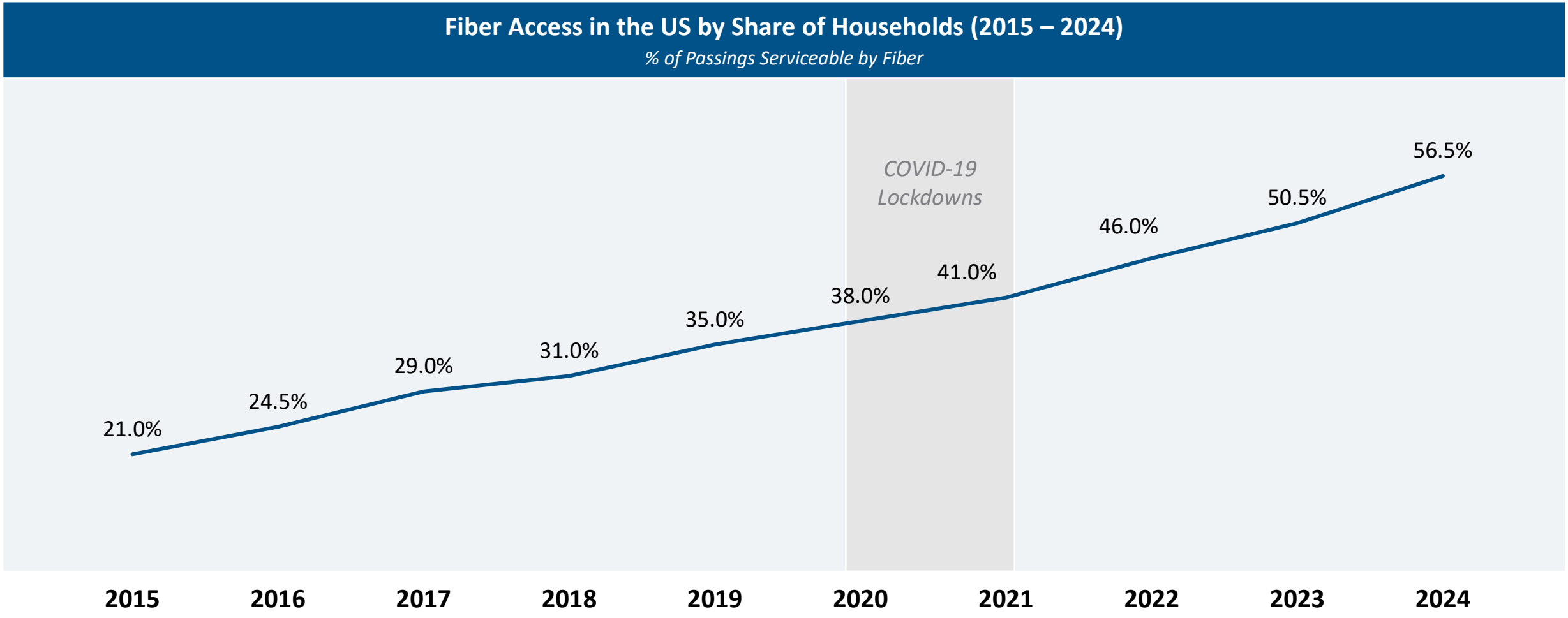
Fiber Deployment Trends | Overall Serviceability

About 57% of all US households (76.5M) now have access to fiber, according to the latest FBA/RVA study



Source: The State of North American Fiber Deployment 2024 Report by Fiber Broadband Association, RVA LLC

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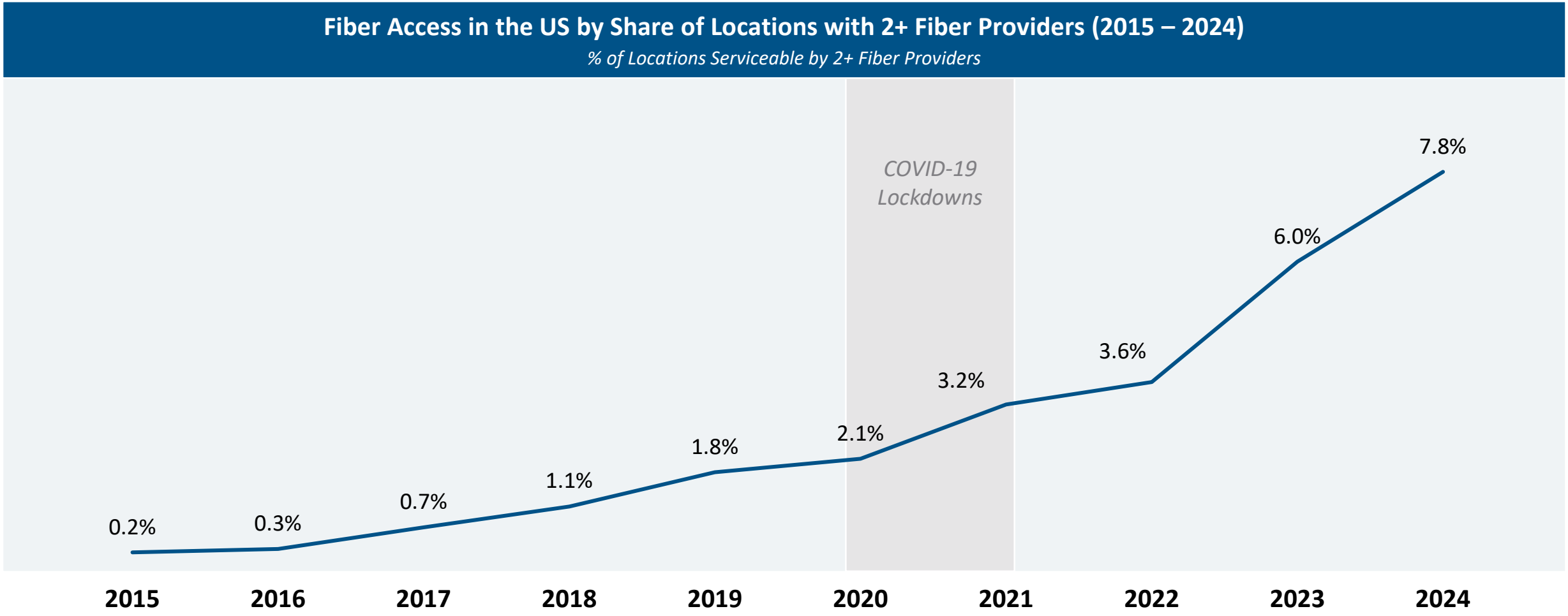
Fiber Deployment Trends | Access to Multiple Providers

Competition in the fiber market has greatly increased in recent years, ~8% of locations now have 2+ fiber options



Note: FCC Form 477 data utilized for June 2015 to June 2021, and FCC Broadband Data Maps used for June 2022 and beyond
Source: FCC Form 477 and Broadband Data Collection (BDC) filings, June 2024 release, accessed November 2024, Cartesian

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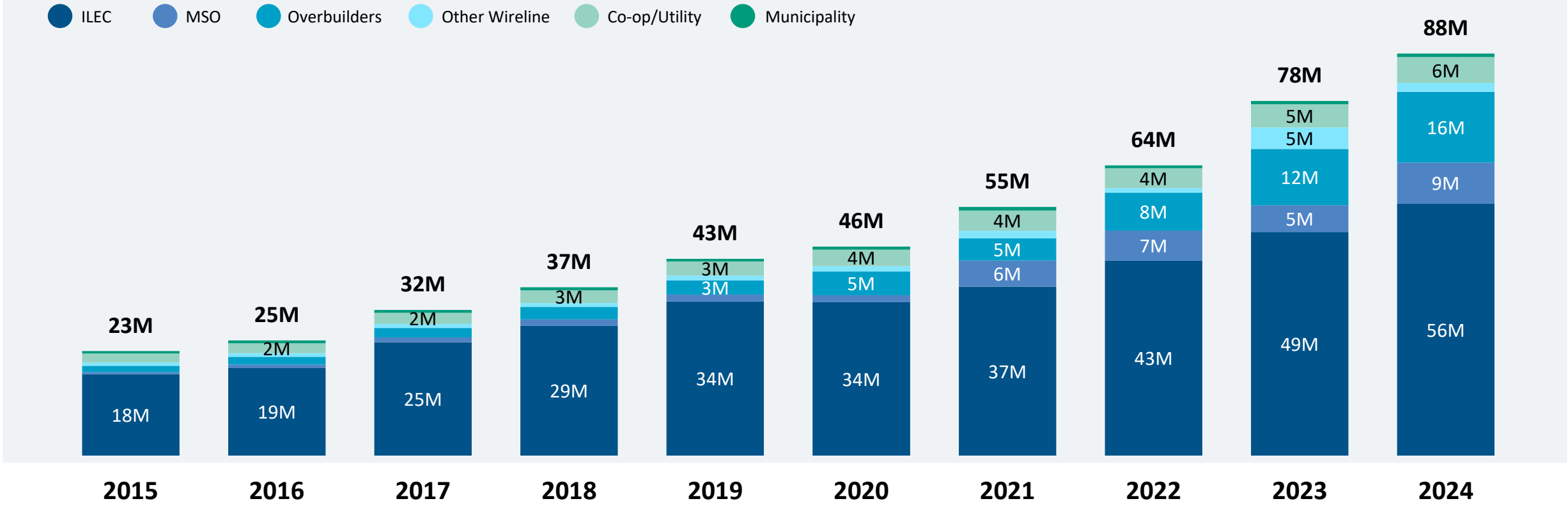
Fiber Deployment Trends | Access by Provider Type

Growth in fiber passings is increasingly driven by various types of providers

Fiber Deployments by Provider Type (2015 – 2024)

Total Fiber Locations[1]



1: Includes double passings

Note: Cartesian estimates based on data from FCC Form 477, FCC Broadband Data Map, and Census Bureau data; fluctuations in figures between years likely due to quality issues in historical reported coverage

Source: FCC Form 477 and Broadband Data Collection (BDC) filings, June 2024 release, accessed November 2024, Census Bureau

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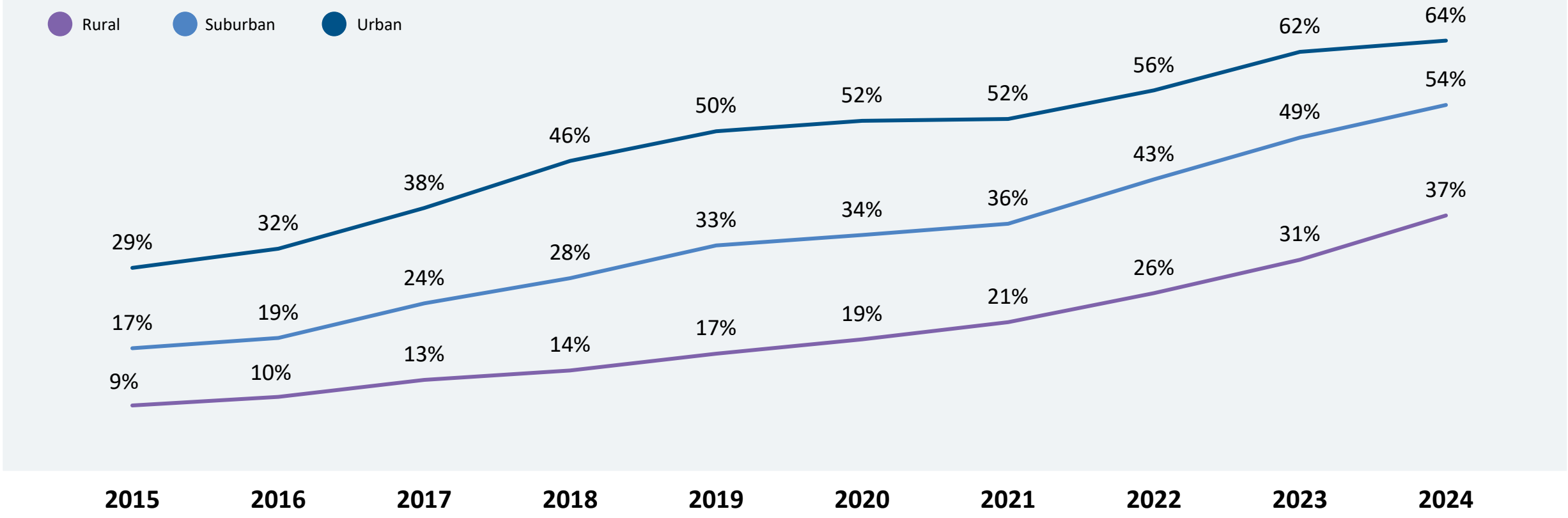
Fiber Deployment Trends | Access by Population Density

Rural communities saw the most YoY growth in fiber access, with 37% of rural locations now serviceable by fiber

Fiber Coverage by Population Density[1] (2015 – 2024)

Share of Total Locations with Fiber Access



1: Rural is <100 locations per square mile, suburban is 101 – 2500 locations per square mile, urban is 2500+ locations per square mile
Note: FCC Form 477 data utilized for June 2015 to June 2021, and FCC Broadband Data Maps used for June 2022 and beyond
Source: FCC Form 477 and Broadband Data Collection (BDC) filings, June 2024 release, accessed November 2024, Cartesian

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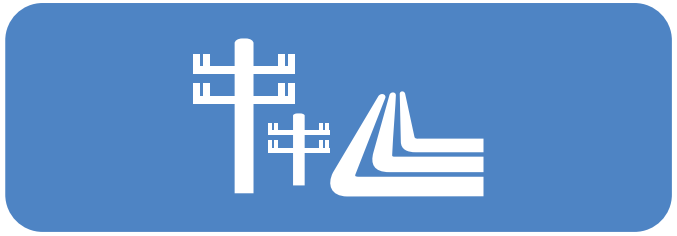
Annual Fiber Deployment Cost Study | Overview

The annual study aims to understand fiber cost benchmarks and analyze how costs change over time

We surveyed industry participants to understand the costs they face to deploy fiber in their communities, covering the following topics:



Network Deployment Costs

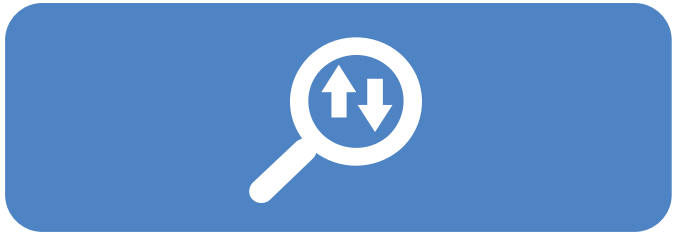
Building the access network

- Labor cost per foot
- Materials cost per foot
- + Engineering, permitting, and make-ready costs

Customer Premises Drop Costs

Connecting customer premises to the access network

- Labor cost per drop
- Materials cost per drop



Cost Trends & Expectations

Deployment cost changes over time

- Experienced change in costs over the past year
- Expected change in costs in the coming year
- Drivers for change in cost

Source: Cartesian

Fiber Broadband Association

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Annual Fiber Deployment Cost Study | Research Sources

We collected data through interviews and surveys from across the fiber deployment ecosystem

Type of Respondents

Survey respondents spanned the fiber deployment ecosystem:

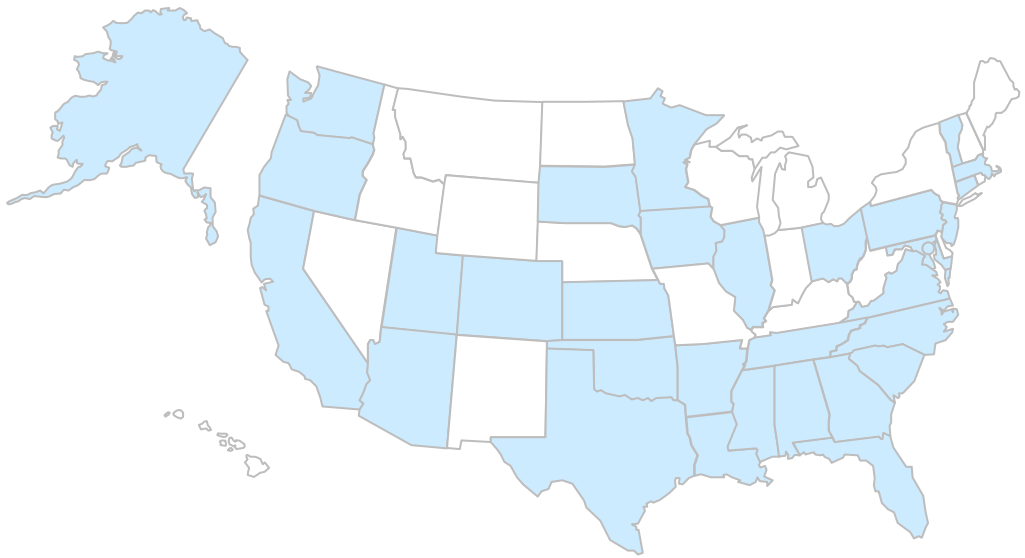
- Network Operators
- Municipal Providers
- Utility Cos.
- Prime Contractors
- Subcontractors

They also provided input for their primary deployment type:

Primarily Underground	Underground + Aerial	Primarily Aerial
40%	44%	16%

States Represented

Deployment projects in 32 states are represented:



Source: Fiber Broadband Association, Cartesian

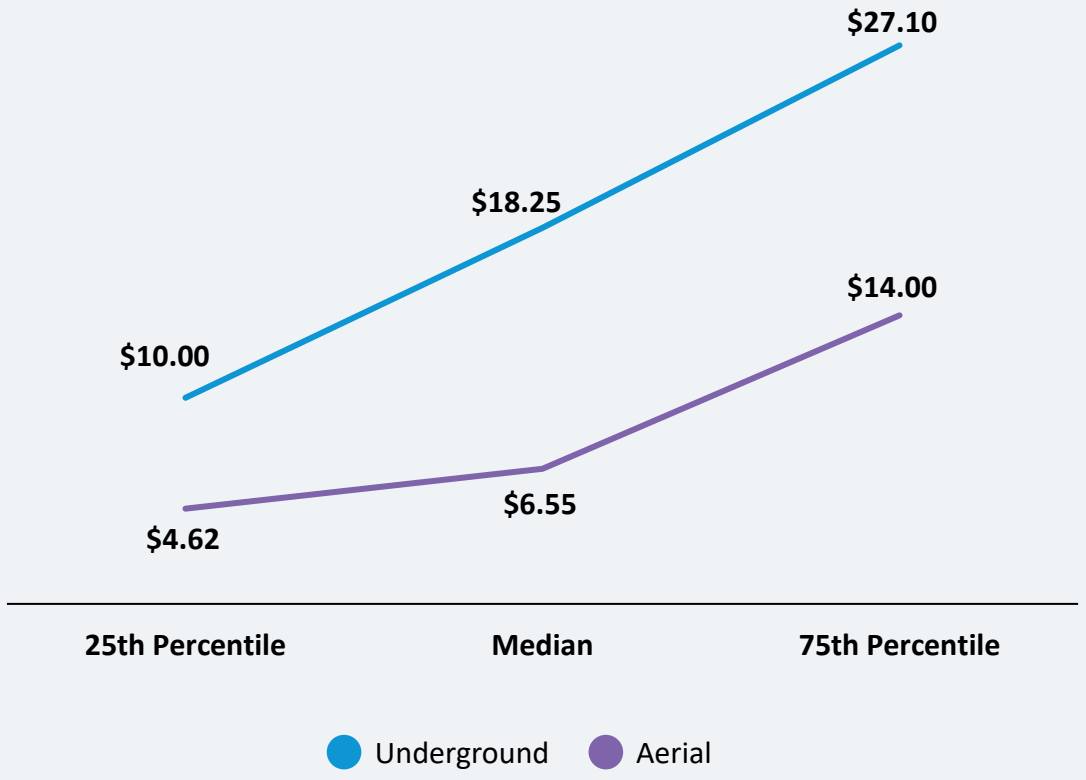
Fiber Broadband ASSOCIATION Cartesian®

Network Deployment Costs | Summary Results

Respondents reported a median cost of $18.25 for underground deployments, $6.55 for aerial deployments

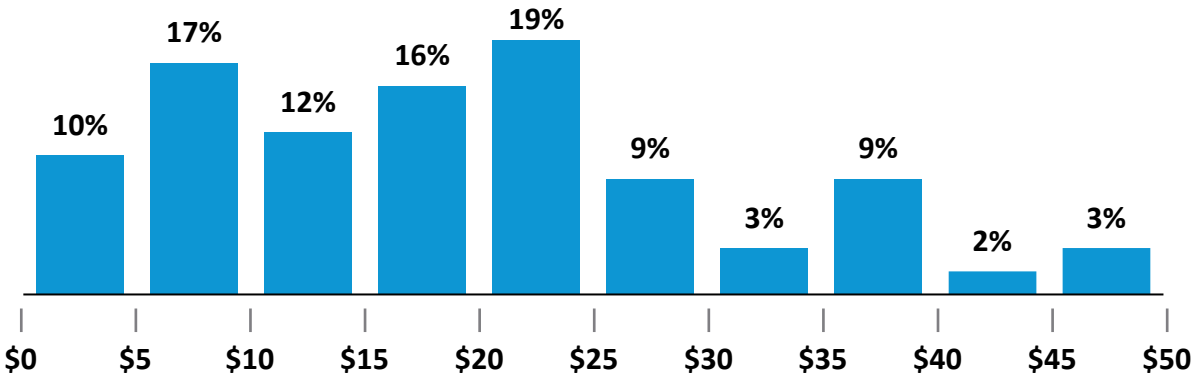
Interquartile Range of Reported Deployment Cost per Foot[1]

Labor and Materials Costs Only



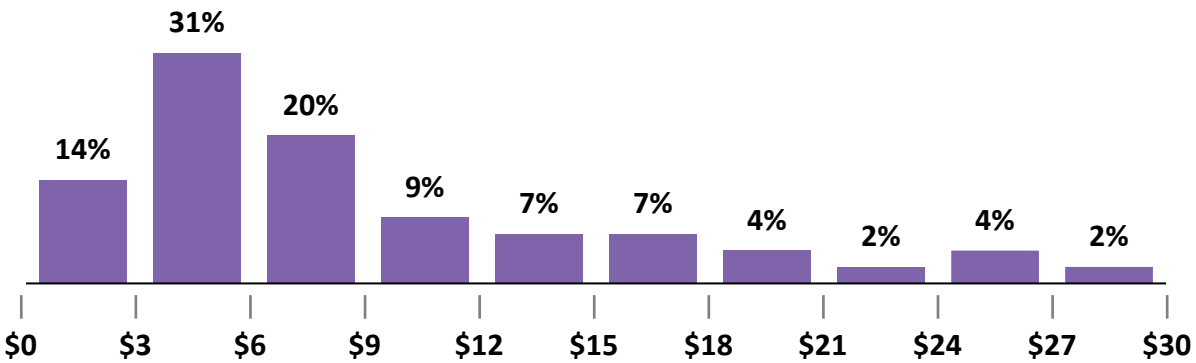
Distribution of Reported Underground Cost per Foot

Labor and Materials Costs Only



Distribution of Reported Aerial Cost per Foot

Labor and Materials Costs Only



Source: Fiber Broadband Association, Cartesian

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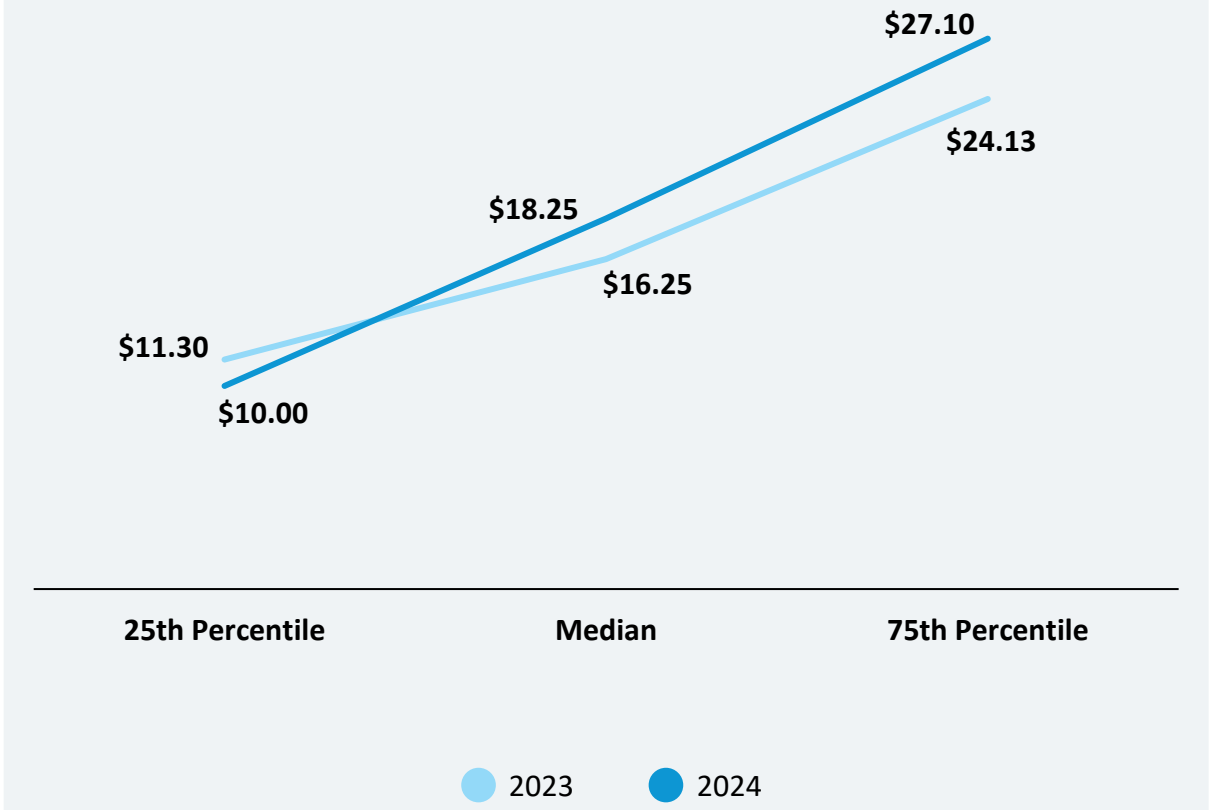
Network Deployment Costs | YoY Cost Ranges

Median deployment costs increased vs. 2023 results, particularly for underground deployments (+12% YoY)

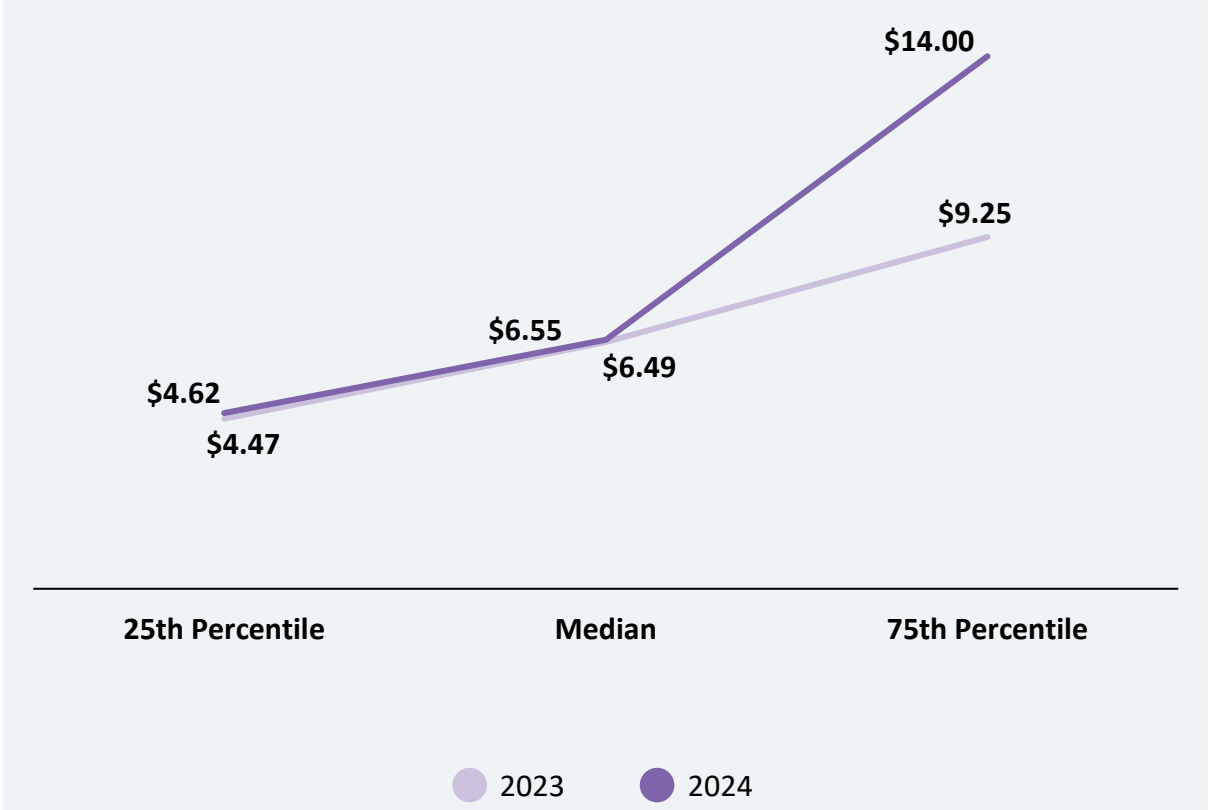
Interquartile Range of Reported Underground Cost per Foot[1]

2024 vs. 2023 Study Results



Interquartile Range of Reported Aerial Cost per Foot[1]

2024 vs. 2023 Study Results

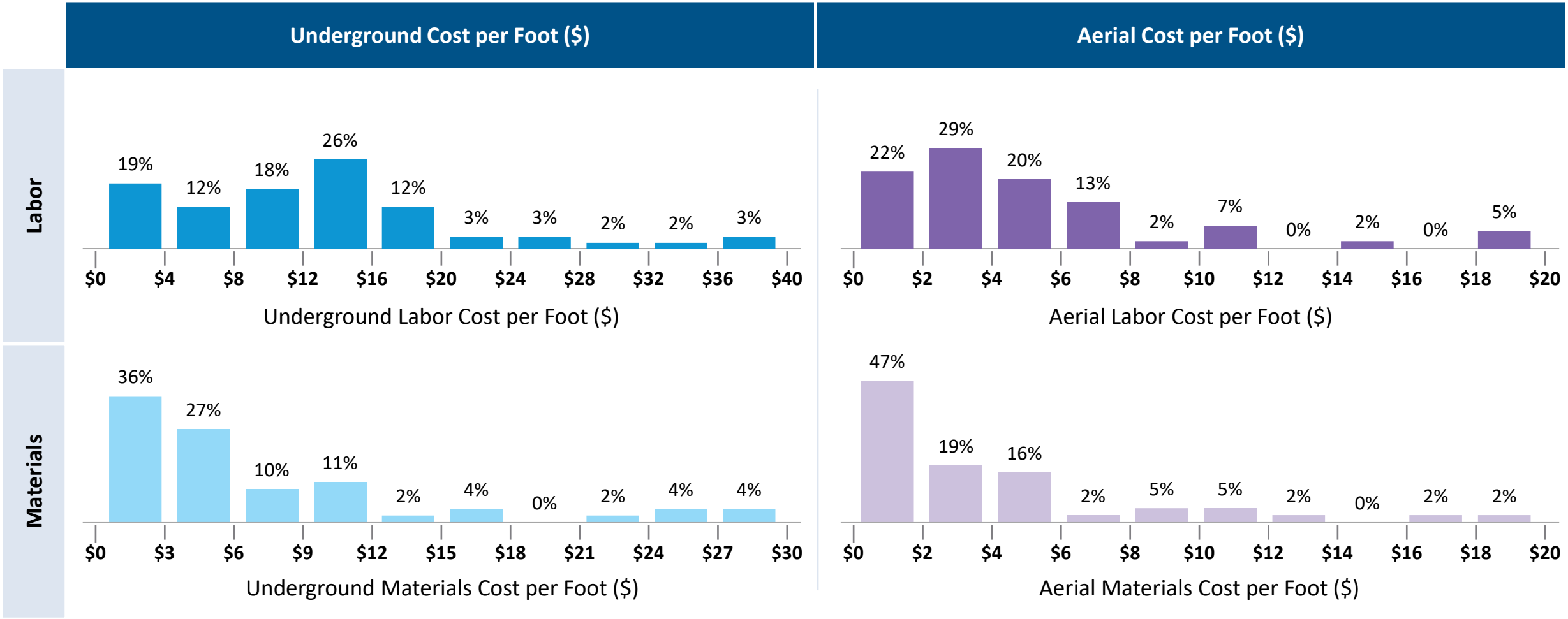


1: Cost per foot inclusive of labor and materials components only
Source: Fiber Broadband Association, Cartesian

Fiber Broadband ASSOCIATION Cartesian®

Network Deployment Costs | Input Cost Distribution

Labor accounts for 75% of underground deployment costs and 63% of aerial deployment costs



Source: Fiber Broadband Association, Cartesian

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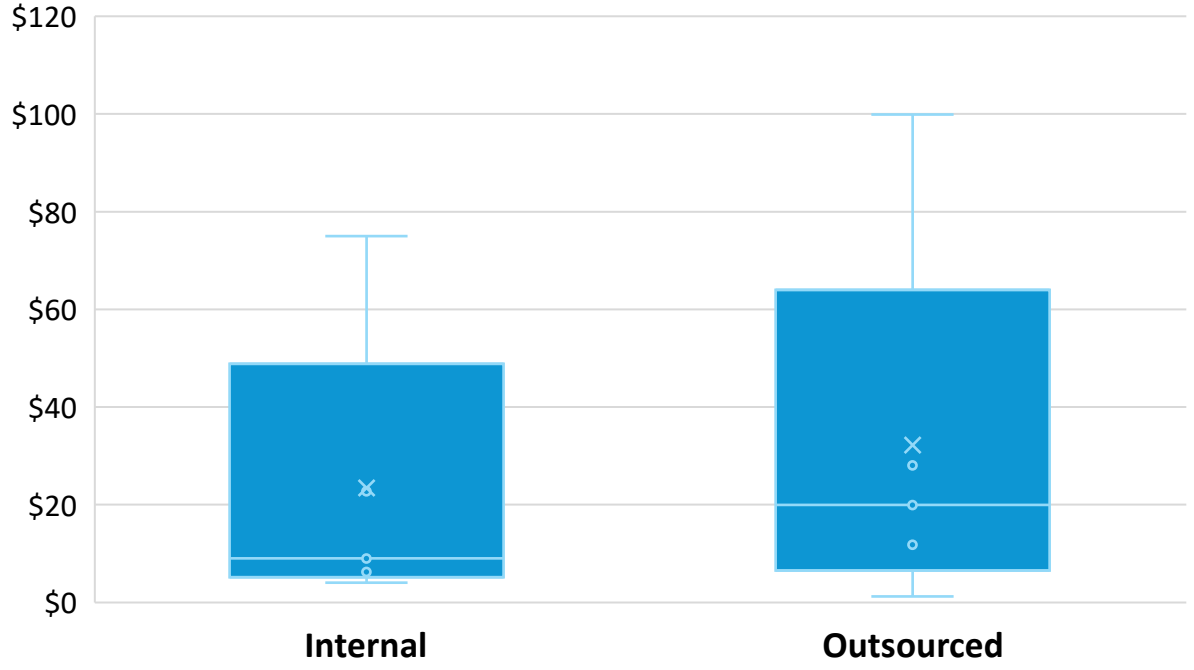
Network Deployment Costs | Labor Source

Median outsourced labor costs are twice as expensive as internal for underground deployments

Median Underground Deployment Cost by Labor Source

Cost per Foot ($)[1]

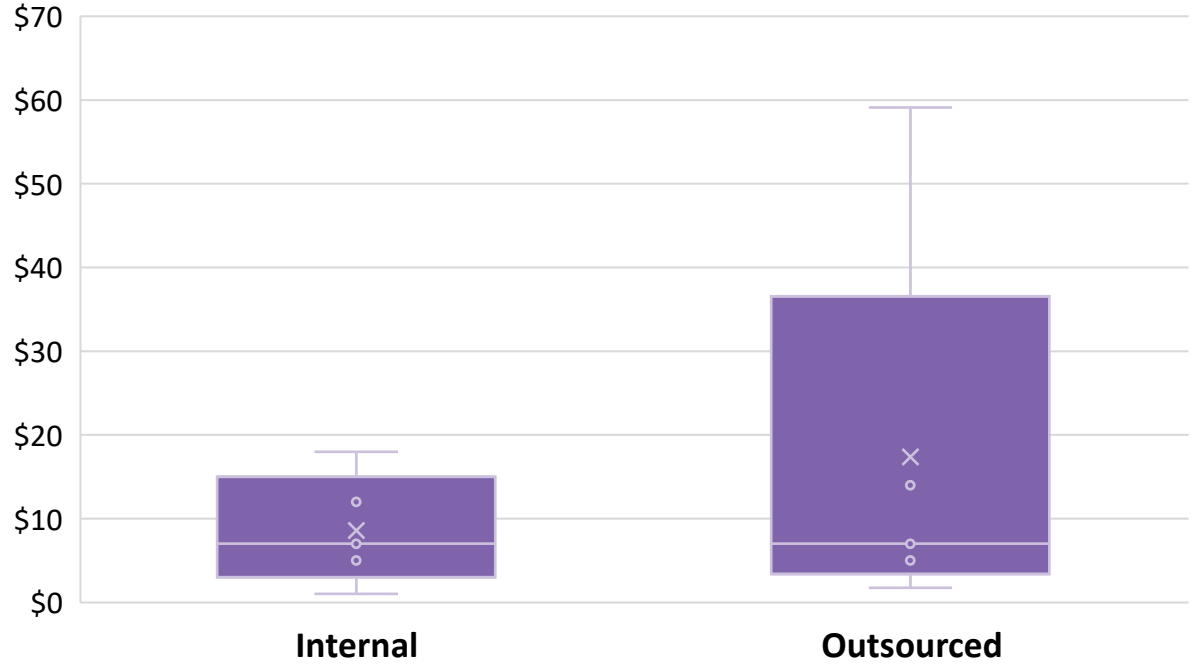


Median:

Internal	Outsourced
$9.00	$19.95

Median Aerial Deployment Cost by Labor Source

Cost per Foot ($)[1]



Median:

Internal	Outsourced
$7.00	$7.00

Underground Aerial

1: Cost per foot inclusive of labor and materials components only

Source: Fiber Broadband Association, Cartesian

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Network Deployment Costs | Population Density

Costs generally increase alongside density; however, rural deployments have the most variability in costs

Median Deployment Cost Ranges by Population Density

Cost per Foot ($), Labor and Materials Only

	Extremely Rural[1]	Rural	Suburban	Urban
	Far from any town; <5 homes per mile	*Small town and surrounding areas; 5 – 10 homes per mile*	*Beyond city outskirts; 11 – 50 homes per mile*	*City or densely populated town; >50 homes per mile*
Median:				
UG	**$10.00**	**$15.06**	**$18.00**	**$25.25**
Aerial	**-**	**$5.00**	**$7.20**	**$7.00**

Underground Aerial

1: Limited response count for aerial deployments in extremely rural densities

Source: Fiber Broadband Association, Cartesian

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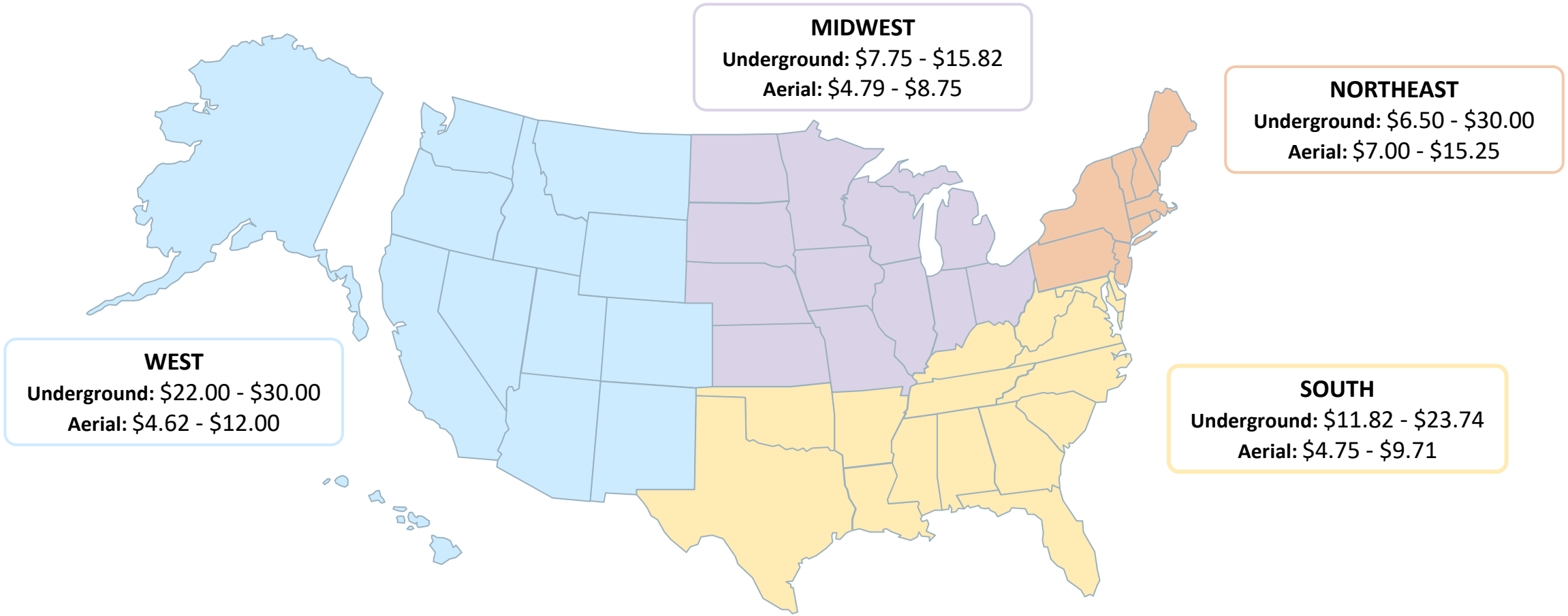
Network Deployment Costs | Region

Regional cost variation is more pronounced for underground deployments, as terrain impacts construction

Deployment Cost Ranges by Region

25th – 75th Percentiles for Cost per Foot, Labor and Materials Only



Source: Fiber Broadband Association, Cartesian

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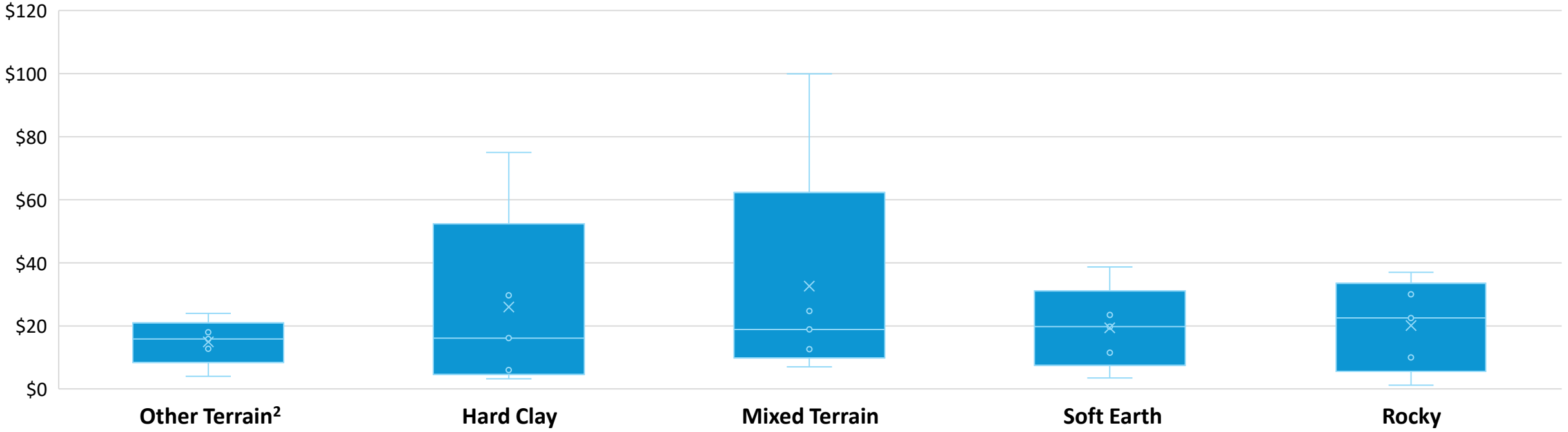
Underground Network Deployment Costs | Terrain

Rocky terrains have the highest reported median cost, while mixed terrains have a longtail of higher costs

Median Deployment Cost by Terrain Type

Underground Only, Cost per Foot ($)[1]



Median:

Other Terrain[2]	Hard Clay	Mixed Terrain	Soft Earth	Rocky
$15.83	$16.13	$18.88	$19.75	$22.50

Note: Insufficient response count to display microtrenching construction technique
1: Cost per foot inclusive of labor and materials components only ; 2: Other terrain includes sand, wetlands, and any other terrain type
Source: Fiber Broadband Association, Cartesian

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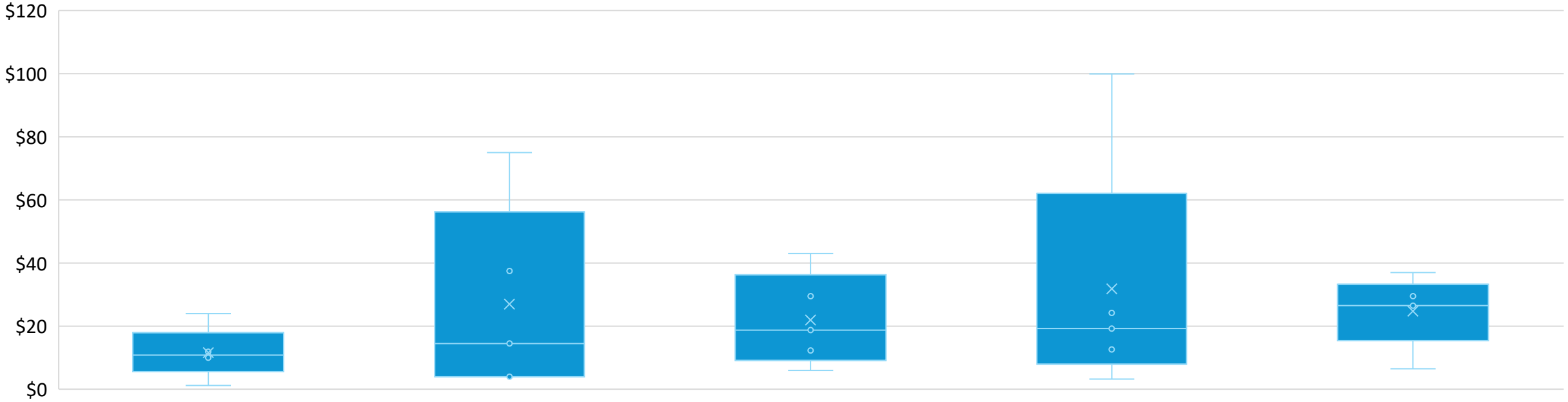
Underground Network Deployment Costs | Technique

While trenching reports the highest median cost, plowing and directional boring/plowing skew more expensive

Median Deployment Cost by Primary Construction Technique

Underground Only, Cost per Foot ($)[1]



Median:

Mixed Technique[2]	Plowing[3]	Directional Boring	Directional Boring & Plowing	Trenching
$10.82	$14.50	$18.75	$19.25	$26.50

Note: Insufficient response count to display microtrenching construction technique
1: Cost per foot inclusive of labor and materials components only 2: Mixed technique is any combination excluding directional boring + plowing 3: Limited response count for builds using plowing as the primary technique
Source: Fiber Broadband Association, Cartesian

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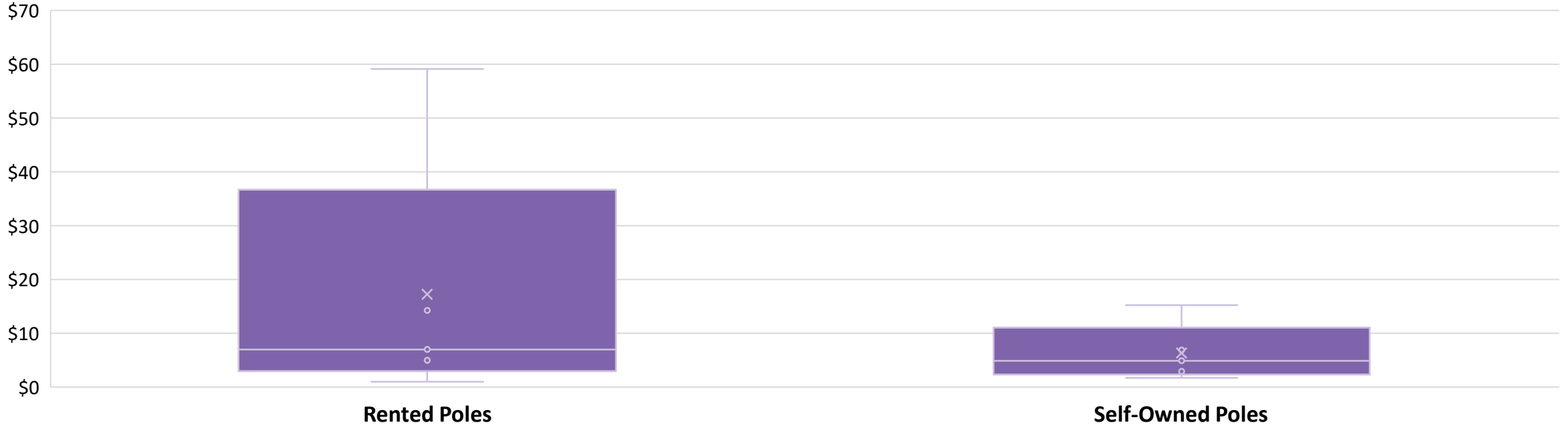
Aerial Network Deployment Costs | Pole Ownership

The median cost of rented poles is ~40% more than self-owned in aerial deployments

Median Deployment Cost by Pole Ownership[1]

Aerial Only, Cost per Foot ($)[2]



Median:

Rented Poles	Self-Owned Poles
$7.00	$4.90

1: Limited response count for deployments requiring new/replacement poles
2: Cost per foot inclusive of labor and materials components only
Source: Fiber Broadband Association, Cartesian

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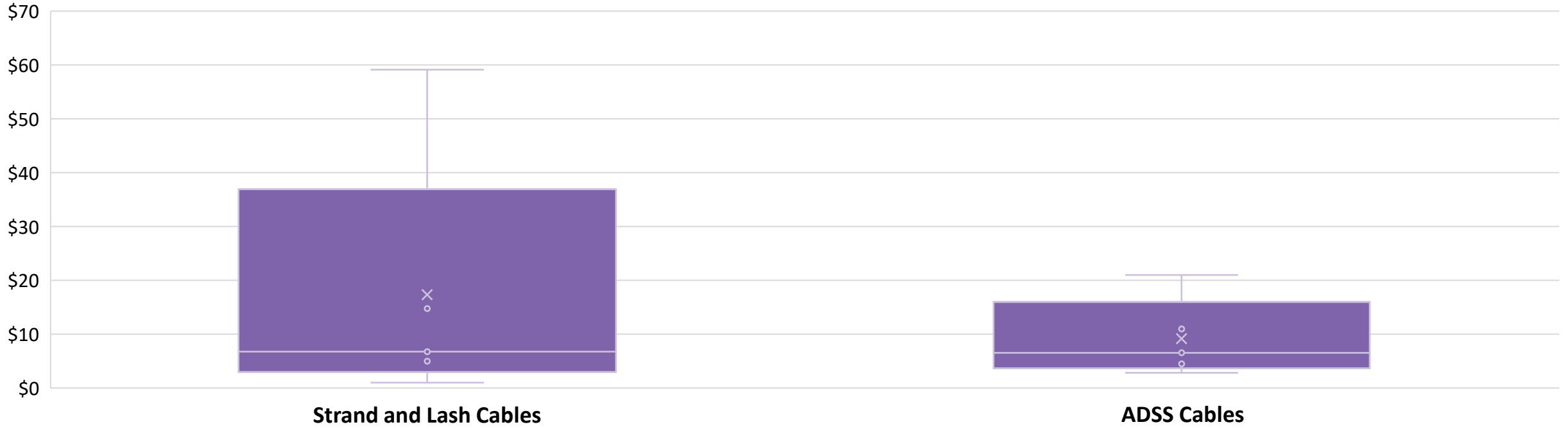
Aerial Network Deployment Costs | Install Type

Aerial install methods have similar median costs; however, Strand and Lash has a wider range of reported costs

Median Deployment Cost by Cable Installation Method

Aerial Only, Cost per Foot ($)[1]



Median:

Strand and Lash Cables	ADSS Cables
$6.75	$6.55

1: Cost per foot inclusive of labor and materials components only
Source: Fiber Broadband Association, Cartesian

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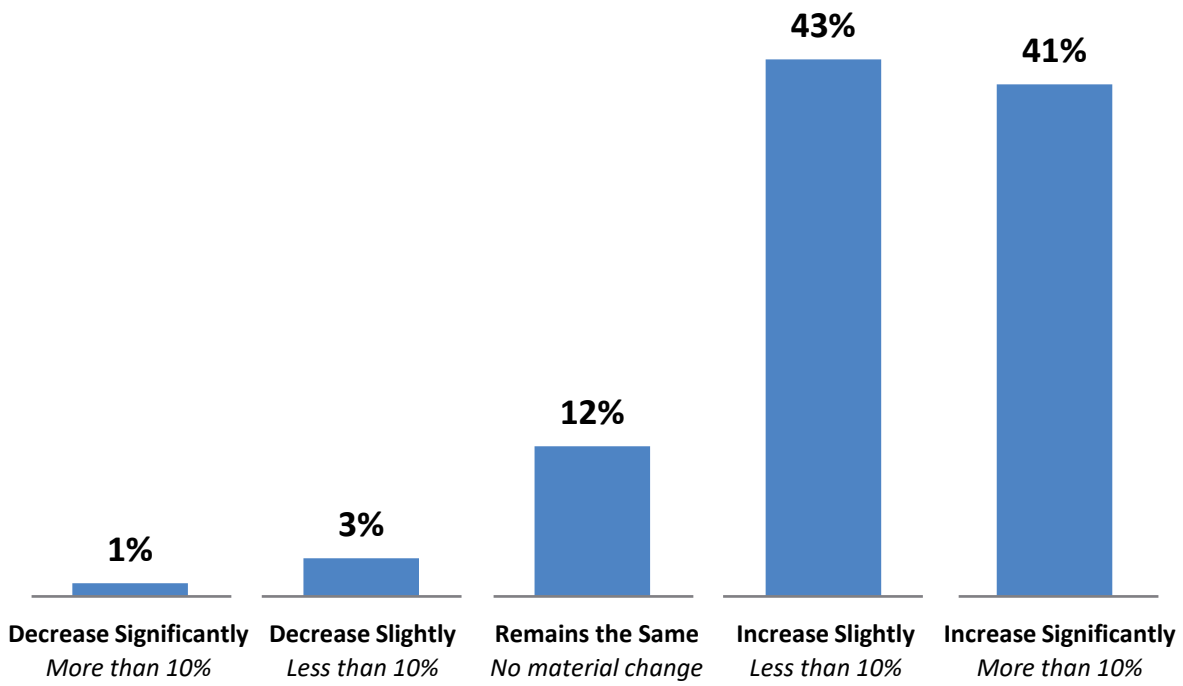
Annual Cost Trends | Reported Cost Changes in 2024

84% of respondents reported experiencing higher costs in 2024 than 2023, driven by labor and materials costs

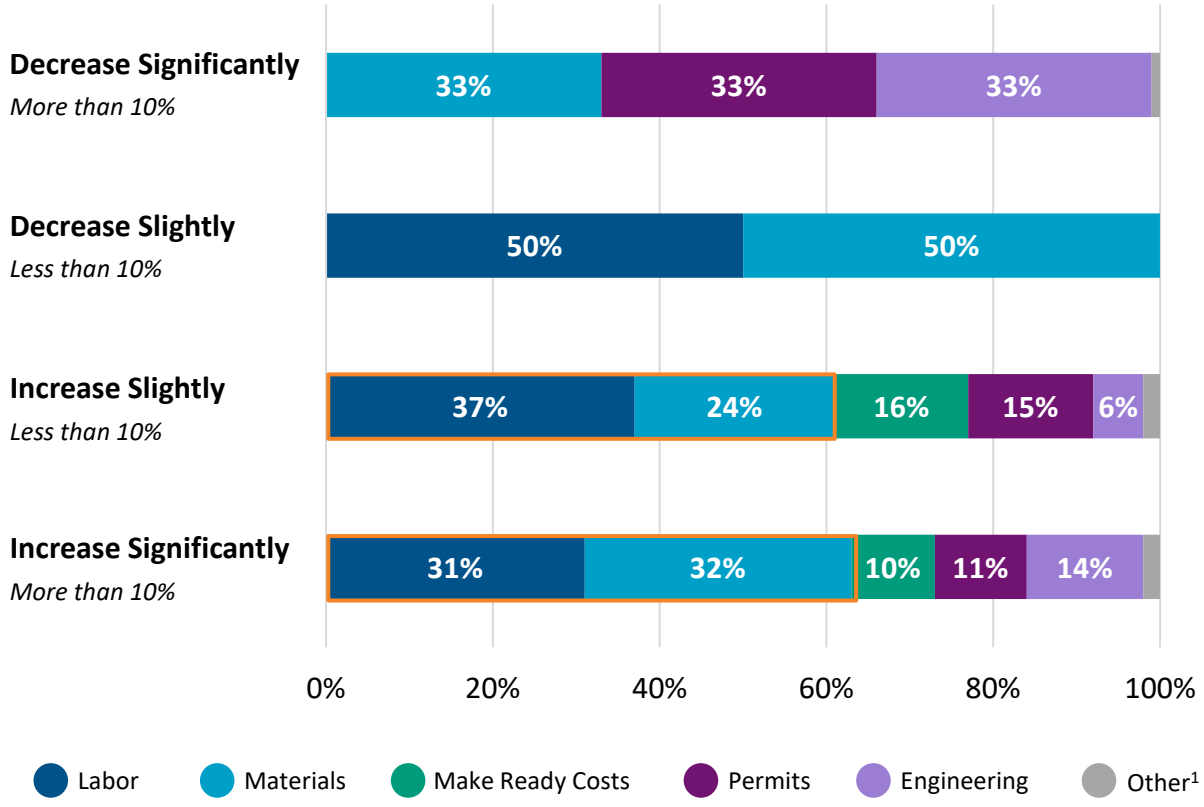
Reported Annual Deployment Cost Changes
2023 - 2024

How respondents experienced costs changing in 2024



Reported Drivers of Cost Changes
2023 - 2024

Factors cited as drivers for experienced cost changes in 2024



Note: Respondents were able to cite more than one cost component as a driver for change
1: "Other" includes write in responses for political climate changes
Source: Fiber Broadband Association, Cartesian

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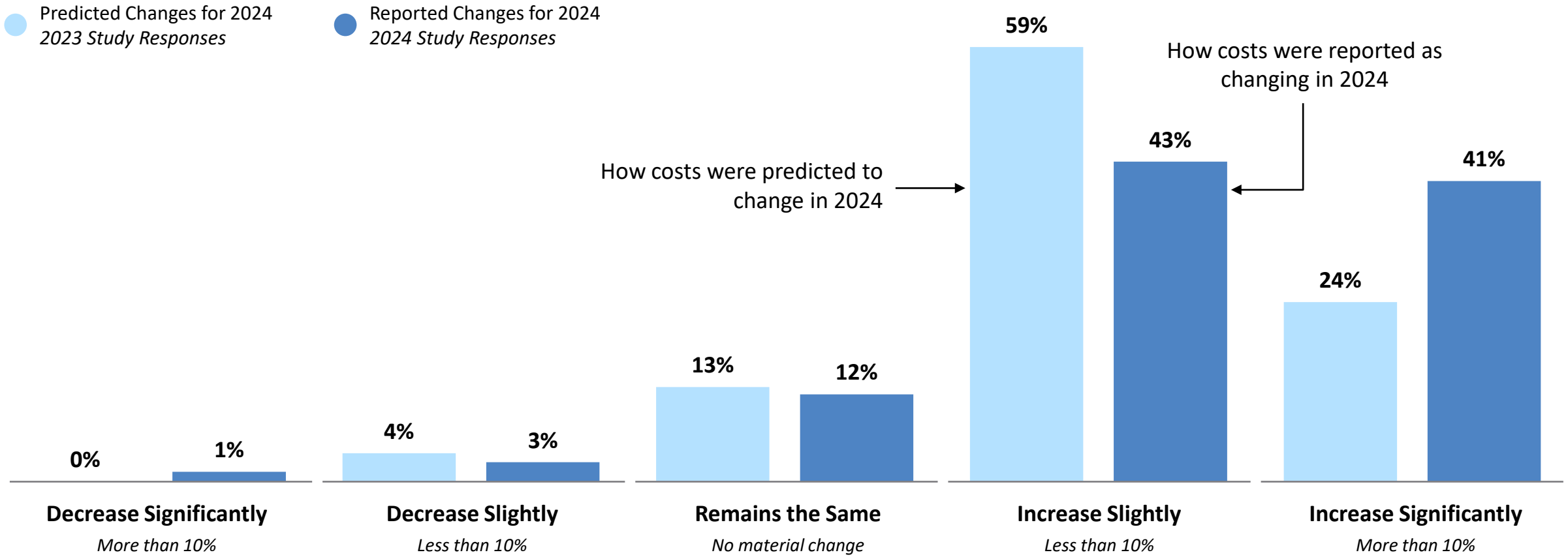
Annual Cost Trends | 2024 Predicted vs. Experienced Changes

Self-reported significant (>10%) cost increases exceeded predictions for 2024

Expected and Reported YoY (2023 – 2024) Deployment Cost Changes

Breakdown by Response Category, 2023 Study vs. 2024 Study



Note: Responses are from independent samples conducted in two different years, trends do not reflect YoY changes from the same respondent
Source: Fiber Broadband Association, Cartesian

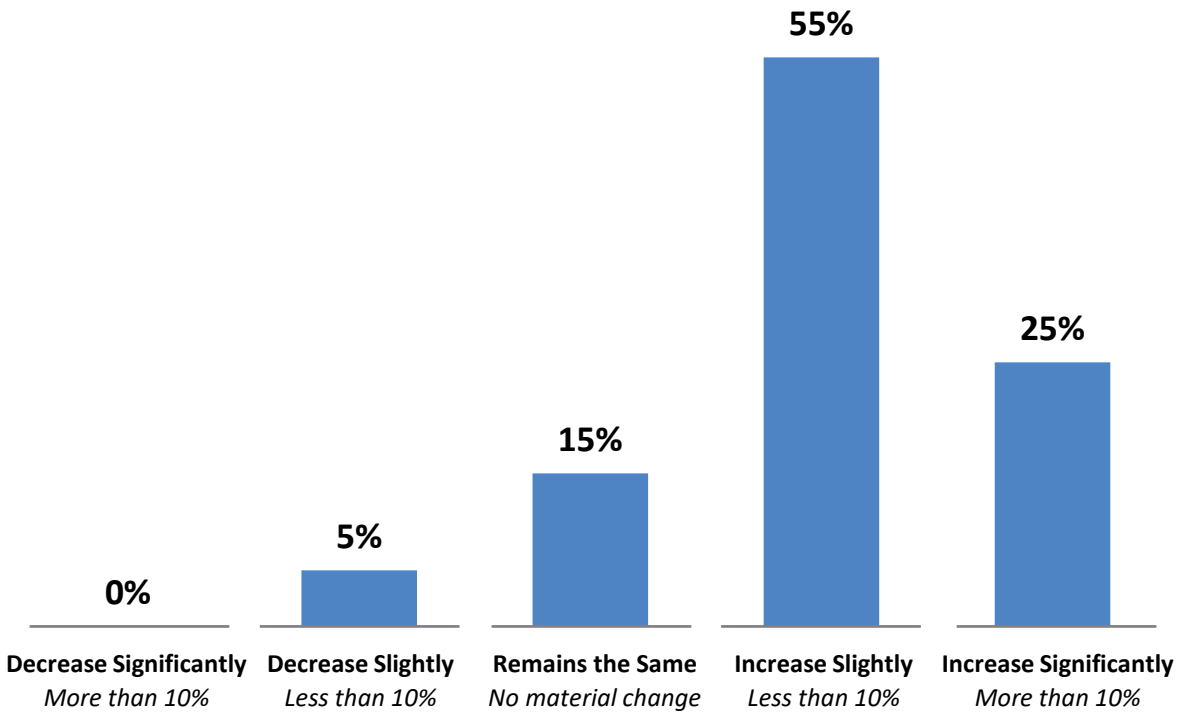
Fiber Broadband ASSOCIATION Cartesian®

Annual Cost Trends | Expected Cost Changes for 2025

Respondents expect deployment cost increases to continue next year, driven primarily by labor and materials

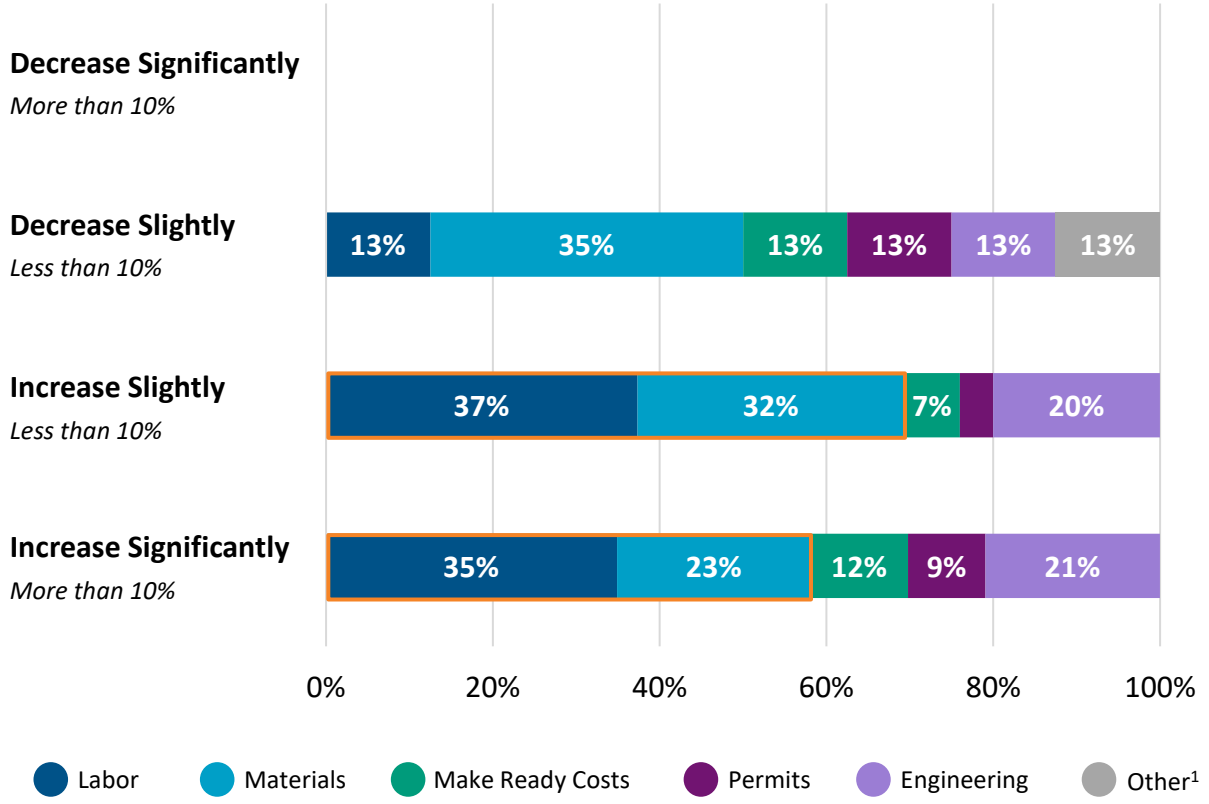
Expected Annual Deployment Cost Changes
By 2025

How respondents expect deployment costs to change in the coming year



Expected Drivers of Future Cost Changes
By 2025

Factors that respondents predict will drive expected cost changes



Note: Respondents were able to cite more than one cost component as a driver for change
1: "Other" includes write in responses for political climate changes
Source: Fiber Broadband Association, Cartesian

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Additional Information

How to access the full results and get plugged into the 2025 study

Looking for the full report?

The 2024 report is now available on the Fiber Broadband Association's website under "Resources"

Have a question or want to participate in the research?

Contact us:

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dkish@fiberbroadband.org

Meg Corriveau
megan.corriveau@cartesian.com

Thank you to all who helped make this year's study a success!

Source: Fiber Broadband Association, Cartesian

QUESTIONS

JOIN US IN SAN ANTONIO, TX

TUESDAY, FEBRUARY 11, 2025

Grand Hyatt San Antonio Riverwalk

REGIONAL FiberConnect

Fiber Broadband ASSOCIATION

FIBER CONNECT 2025

June 1-4, 2025

Gaylord Opryland Resort & Convention Center

Nashville, TN

Save the Date!

2025 Regional Fiber Connect Locations

San Antonio, Texas - February 11 | *Economic Impacts*

Philadelphia, Pennsylvania - March 25 | *Digital Equity*

Anchorage, Alaska - July 17 | *Fiber and Fixed Wireless*

Toronto, Canada - August 19 | *Fibre Economics*

Spokane, Washington - September 16 | *Urban & Suburban Digital Divide*

Scottsdale, Arizona - October 16 | *Tribal Broadband*

Kansas City, Missouri - November 11 | *Demand Drivers*

Contact Lucy Green (lgreen@fiberbroadband.org) for Exhibit and Sponsorship Opportunities

One Hour Webinar

Fiber Broadband ASSOCIATION

Volunteer Now!

We need skilled fiber optic technicians to design, deploy and troubleshoot fiber optic networks. The FBA OpTIC Path Program is our answer to this critical need — but requires volunteers like you to instruct future fiber technicians.

Volunteer to teach!

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Fiber for Breakfast

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Wednesdays at 10 AM Eastern

One Hour Webinar

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