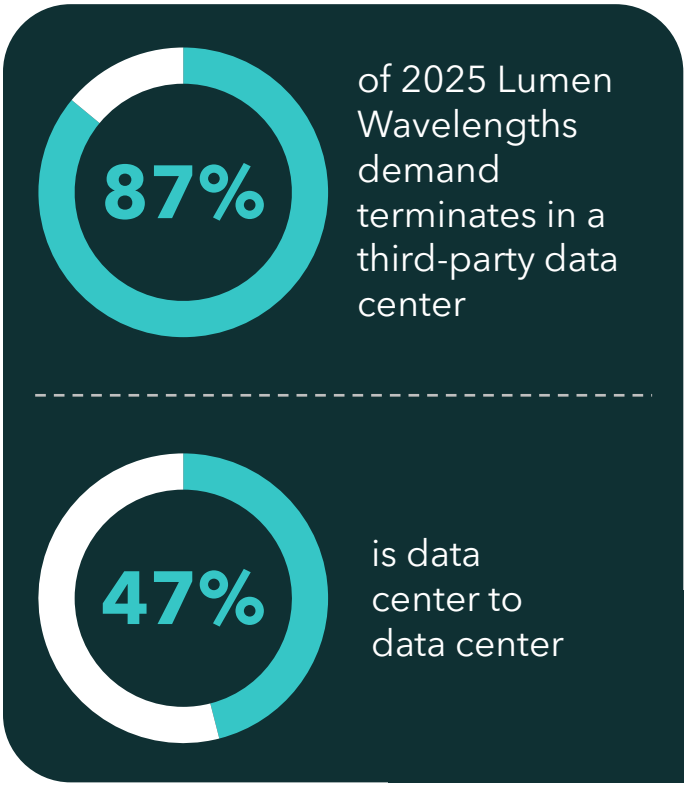
Lumen Wavelengths Capacity Index

Demand is Drawing the Map

High-capacity wavelength demand is concentrating along specific corridors.

2025 consumption patterns show sustained clustering across a small number of Lumen Wavelength routes. Multiple corridors now exceed 20% total wavelength consumption, with the highest surpassing 25%. These routes connect major data center hubs and cloud regions where workload density and east-west traffic continue to intensify.



The majority of this demand is anchored in data center interconnect. 87% of observed Lumen Wavelengths demand in 2025 includes at least one endpoint terminating in a third-party data center, and 47% is third-party data center to third-party data center. As distributed architectures expand, east-west traffic between facilities is absorbing capacity along select markets.

Several RapidRoutes corridors exceeded 20% wavelength consumption within their first year of availability, with the most active surpassing 25%.*

Where architecture concentrates, capacity follows.

This index transforms those patterns into strategy.

It identifies where high-capacity wavelength demand is accelerating, where infrastructure investment is reinforcing key markets, and where standardized design improves readiness as traffic scales. The view is directional and refreshed bi-annually as conditions evolve.

**Based on Lumen internal data, March 2026.*

Where Traffic Wants to Go

National View of High-Capacity Market Momentum

RapidRoutes Enabled
Pre-engineered routes available today for buyers that need faster activation across priority markets. Continued expansion underway through Q2 2026.

Concentrated Demand
Markets where high-capacity wavelength consumption signals growing pressure on high-capacity routes.

Active Demand
Markets demonstrating consistent wavelength absorption across enterprise, cloud, and data center interconnect use cases.

Data as of March 2026, signals reflect aggregated 2025 high-capacity wavelength utilization and current commercial availability.

The Southwest Pressure Point

Where concentrated east-west demand reinforces the same high-capacity pathways.

Demand Reality

Southern California and the Southwest represent one of the most competitive high-capacity clusters in the network. Overlapping corridors between Los Angeles, Sacramento, San Jose, Phoenix, and El Paso consistently absorb sustained wavelength demand.

Multiple pathways in this cluster exceed 20% total wavelength consumption. Since RapidRoutes became commercially available in August 2025, these corridors have continued to absorb sustained demand, reinforcing their position among the most actively utilized high-capacity markets in the network.

What That Means

In concentrated markets, demand density changes the equation. When multiple parties are scaling at once, deployment speed and design readiness determine who moves first.

Highlighted Corridors

Los Angeles ↔ Phoenix
Los Angeles ↔ Sacramento
San Jose ↔ Sacramento
Phoenix ↔ El Paso

LUMEN®

The West Coast is Warming Up

Where reinforcing pathways are forming ahead of broader east-west redistribution.

Highlighted Corridors

Seattle ↔ Sacramento

Seattle ↔ Salt Lake City

Hillsboro Loop

Markets do not shift overnight. Utilization patterns signal where infrastructure reinforcement is needed well before peak pressure arrives. Our focus is acting on those signals early."

– **Brendan Graham**
VP, Order Entry and Design

Demand Signal

The Pacific Northwest and Northern California are showing consistent clustering across adjacent corridors. Utilization patterns along Seattle ↔ Sacramento and Seattle ↔ Salt Lake City indicate early-stage reinforcement as cloud adjacency, secondary data center growth, and workload redistribution expand across a footprint that includes more than 2,200 on-net third-party data centers.

These markets are not yet among the highest-volume clusters in the network, but absorption patterns suggest demand is forming before it becomes visible at scale.

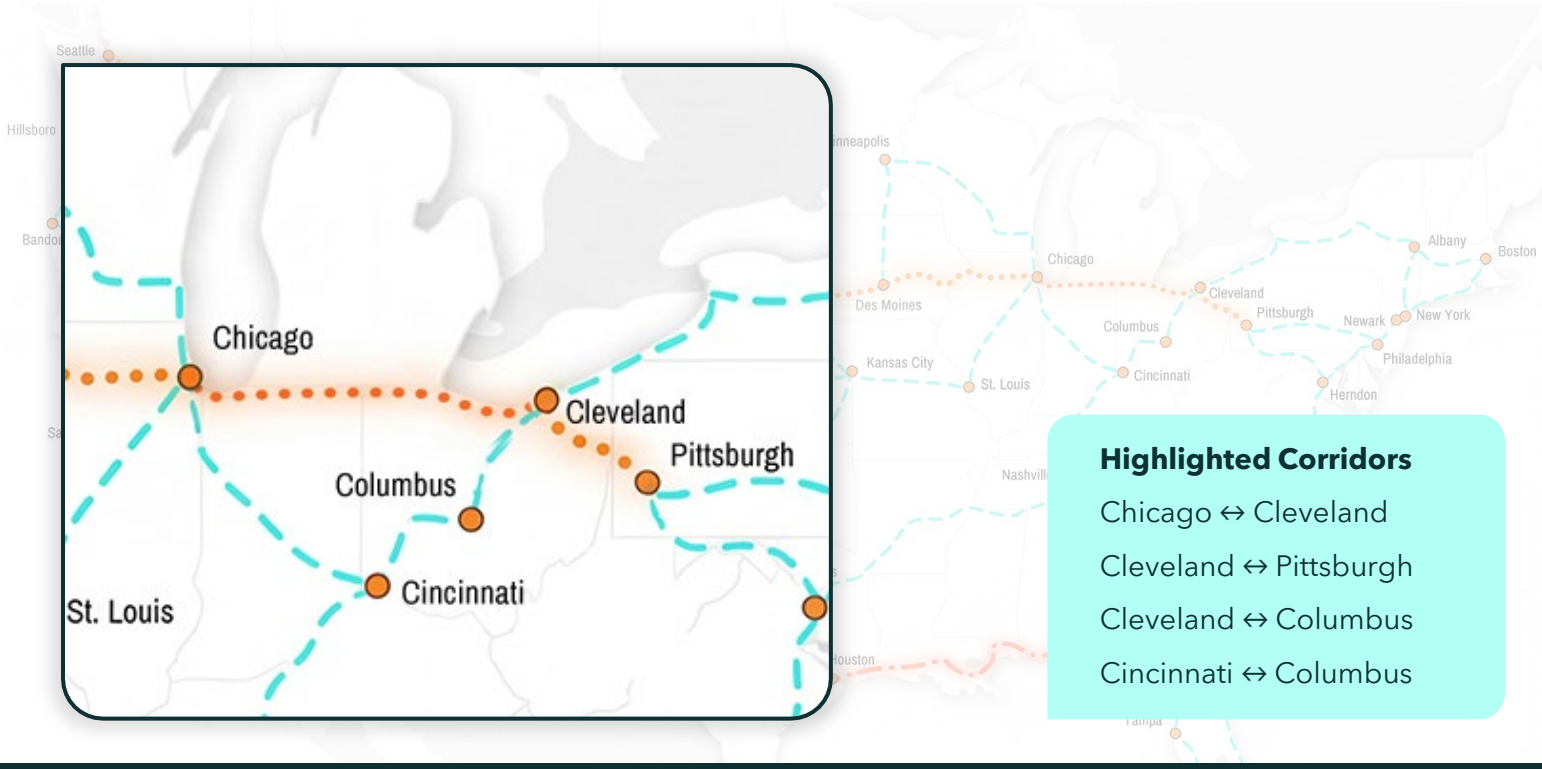
What That Means

As reinforcing corridors strengthen, they position these markets to absorb future east-west traffic redistribution. In emerging clusters, readiness before saturation becomes the differentiator.

Pre-engineered, design-ready corridors in these regions reduce friction early, before utilization pressure compounds.

Demand You Can Set Your Clock To

Sustained midwestern enterprise demand anchors regional connectivity.



Demand Context

Chicago and Cleveland anchor one of the most interconnected enterprise clusters in the country. Corridors extending east to Pittsburgh and south through Columbus and Cincinnati demonstrate steady wavelength absorption across adjacent pathways.

These routes support consistent north–south enterprise traffic between regional business environments and cloud or interconnection hubs, while also reinforcing broader east–west redistribution across higher-density markets.

Utilization patterns reflect durable, repeatable traffic rather than episodic spikes. These markets are defined by structural enterprise demand.

What That Means

North–south enterprise flows require stability, deterministic performance, and predictable interconnection across regional hubs. As higher-density coastal markets scale east–west, Midwest corridors sustain foundational enterprise traffic while absorbing incremental redistribution.

Reinforcement across this region is supported by continued infrastructure investment, including a planned $100+ million investment in network expansion and additional RapidRoutes development across priority markets.

Design-ready corridors convert steady enterprise gravity into dependable, repeatable high-capacity deployment.

Reading the Capacity Signals

Traffic patterns across RapidRoutes corridors reveal where infrastructure demand is concentrating and how connectivity patterns are evolving.

East-west traffic is accelerating

Cloud platforms, AI workloads, and data center interconnection are driving significant growth in east–west traffic across high-capacity corridors.

As these markets scale, demand increasingly concentrates along routes linking major cloud regions and data center clusters.

Reinforcement corridors are emerging

Secondary pathways are beginning to show early capacity absorption as networks adapt to shifting traffic patterns and growing regional demand.

These corridors often emerge quietly but become increasingly important as primary routes approach higher utilization.

Enterprise gravity remains steady

While cloud-driven traffic often draws attention, consistent north–south enterprise connectivity continues to anchor many regional markets.

Enterprise campuses, business districts, and regional interconnection hubs generate stable demand that reinforces national traffic patterns.

From Design to Deployment

As design-ready corridors expand across the network, infrastructure readiness and operational discipline are translating into more predictable wavelength deployment outcomes.

Faster Deployment at Scale

RapidRoutes corridors are enabling

up to 2× faster deployment

timelines for complex wavelength builds vs. Lumen traditional delivery models.*

Pre-defined paths, standardized designs, and concentrated infrastructure investment reduce the engineering complexity traditionally associated with long-haul wavelength deployments. As more corridors move into a design-ready state, installation teams can activate high-capacity connectivity with fewer custom engineering steps.

RapidRoutes deployments are also supporting a higher share of complex builds across the network, reflecting the concentration of infrastructure across these corridors.

Based on Lumen internal data, March 2026

Executive Perspective

"High-capacity demand is concentrating in markets where cloud density and data center clusters intersect. As east-west traffic becomes the dominant flow of data, readiness in those markets determines who can scale and how quickly capacity comes online.

Our focus is building the infrastructure and operating discipline to activate high-capacity connectivity faster and more consistently as demand accelerates."

Kye Prigg
EVP, Chief Commercial Operations Officer

The Infrastructure Behind the Capacity

High-capacity corridors only matter if the underlying infrastructure can sustain them.

Infrastructure designed for scale

As demand concentrates across high-capacity corridors, the performance of the underlying fiber infrastructure becomes increasingly important. Long-haul wavelength networks must support sustained traffic growth while maintaining optical performance across large distances.

Lumen's long-haul network spans approximately **340,000 fiber route miles**, including more than **100,000 route miles engineered for 400G wavelengths**, forming one of the most capable intercity optical infrastructures in North America.

High-density fiber architecture

Network capacity is increasingly defined by the characteristics of the fiber itself.

Lumen's modern fiber architecture enables **approximately 2× the fiber density per conduit compared with legacy deployments**, allowing significantly more fibers to be deployed within existing conduit infrastructure.

These designs maintain strong optical performance while increasing density, with fiber technology that offers **up to 25% less optical loss and 60% more capacity than traditional designs.***

Cloud connectivity and data movement

High-capacity wavelength demand is increasingly driven by cloud interconnection and data center ecosystems.

Lumen supports this demand with **125+ North American optical cloud on-ramps**, enabling large-scale data movement between enterprise environments, cloud regions, and major data center markets.

As cloud adoption continues to expand, Lumen continues to increase connectivity across key data center markets, strengthening the infrastructure supporting RapidRoutes corridors and the east-west traffic patterns highlighted throughout this report.

340,000 fiber route miles

100,000+ 400G-capable route miles

2× fiber density per conduit vs legacy deployments

Up to 25% less optical loss and 60% more capacity*
125+ optical cloud on-ramps

*25% less fiber optic loss per km; less loss translates to less frequent need for fiber optic signal regeneration, decreasing equipment costs; figure is based on a comparison to vintage 2000 fiber (decrease from .22 db/km loss to .17 db/km).

The next wave of data movement will not be evenly distributed

The corridors highlighted in this report represent where high-capacity demand is already forming across cloud, data center, and enterprise ecosystems.

Organizations planning large-scale data movement, cloud interconnection, or AI infrastructure deployments should evaluate connectivity strategies early to ensure capacity availability across the markets that matter most.

Secure connectivity across the corridors where demand is accelerating.

Explore RapidRoutes availability in your priority markets

"High-capacity demand is concentrating quickly in the markets moving the most data. Organizations planning large-scale cloud, AI, or data center interconnection should evaluate capacity early. The networks that support those workloads will be defined by scale and readiness."

Todd Geneser
Director of Product Management