

FIXED WIRELESS
DEDICATED INTERNET ACCESS
FOR WHOLESALE PARTNERS

Towerstream is a leading Fixed Wireless Internet Service Provider delivering Wholesale Dedicated Internet Access to Carriers and Service Providers.

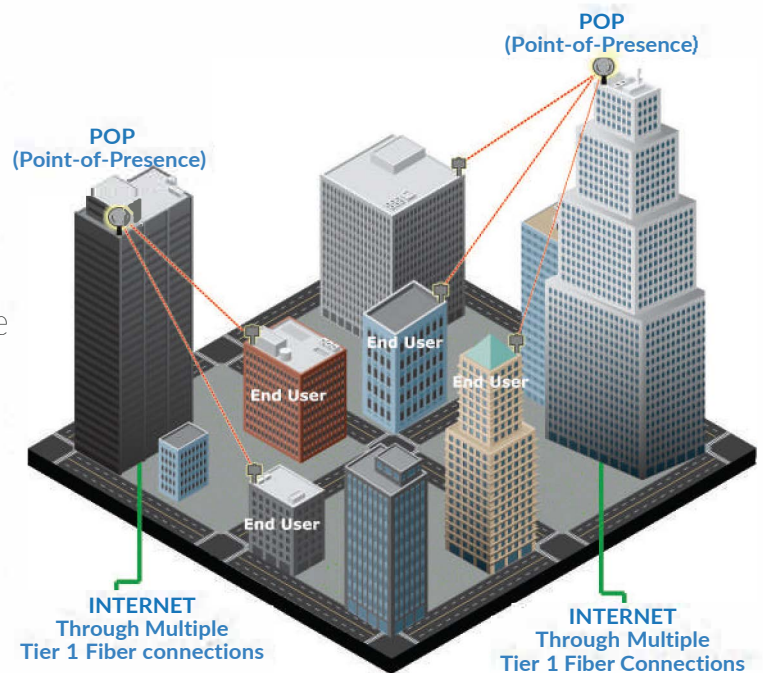
Businesses today require fast and reliable high-speed internet. The demand for Dedicated Internet Access (DIA) means companies require a solution that doesn't only suit today's needs but can scale to address future needs. Fixed wireless is the preferred alternative to fiber for many businesses who either do not have access to fiber or are located where fiber installation is cost prohibitive.

Fixed wireless is a microwave-based technology that allows for the transmission of high-speed data between two fixed sites or locations with uninhibited line-of-sight. There are many compelling advantages for fixed wireless as compared to wired services such as fast installation, scalable bandwidth, true path and network diversity, and easy ethernet hand-off.

How does Towerstream Fixed Wireless work?

Since 1999, Towerstream has owned and operated a state-of-the-art carrier class Fixed Wireless Network using the most advanced millimeter wave technology. Spanning 12 major US markets, Towerstream's Fixed Wireless Internet Network, with a gigabit mesh Ethernet backbone 800 feet above the city, does not rely on the local exchange and bypasses the local loop. Terrestrial diversity allows Towerstream to provide independent and truly redundant Internet connections.

Towerstream broadcasts high-speed carrier grade internet from hundreds of Points-of-presence (POPs) in our coverage areas. These POP's, which are located on the rooftops of some of the tallest buildings in the US, connected to the Internet through tier 1 fiber, are capable of delivering bandwidth speeds from 5 Mbps to 10 Gbps to customer locations. Internet is then delivered from the customer's rooftop to customer premise via Cat 5 cable and Ethernet hand-off.



Towerstream Fixed Wireless is the Preferred Alternative to Fiber for Wholesale Partners

As businesses increasingly turn to the cloud for business operations, business owners are finding that fixed wireless meets their needs for increased bandwidth while improving reliability and performance as compared to traditional fiber optic cable.

- ▶ **Lower Latency:** The existence of more hops introduces more processing latency and noise to a network. Towerstream's network reduces the number of hops as compared to optical networks, thus reducing the overall end-to-end latency. Towerstream guarantees less than 25ms round trip delay on the Towerstream backbone and 10ms round trip delay on Towerstream's last mile.
- ▶ **Improved Reliability:** One of the inherent problems of fiber networks is that the cable runs underground, leaving the network vulnerable to outages due to construction, floods and fires. Fixed wireless connections, in comparison, provide point-to-point connectivity hundreds of feet in the air and are not subject to those same risks, allowing Towerstream to guarantee 99.99% service availability in our SLA.
- ▶ **Faster than Fiber:** Electromagnetic waves travel 50% faster than fiber optic cable through the air. The light in the fiber cable is traveling through a medium similar to glass, which has a higher density than air. Microwaves traveling through air travel very close to the speed of light, helping support the idea that microwave fixed wireless is able to work faster than fiber.

Because microwave fixed wireless technology operates between two points in a straight line, the technology provides an inherent advantage over fiber. Fiber networks cannot be deployed through geographical and infrastructural obstacles like buildings, bridges, mountains and lakes. Instead, fiber networks must go around these obstacles or in metropolitan areas the fiber lines must follow street grids, thus adding distance to the total network path. Microwave fixed wireless overcomes these obstacles and works faster than fiber due to the direct "point-to-point" route, providing true speed-of-light benefits.

- ▶ **True Redundancy:** Towerstream's fixed Wireless Internet Network, with a gigabit mesh Ethernet Backbone 800 feet above the city, does not rely on the local exchange and bypasses the local loop. Terrestrial diversity allows Towerstream to provide independent and truly redundant internet connections with bandwidth options from 5Mbps to 10Gbps.. Fixed wireless can also be used as a backup to fiber to manage risk and minimize downtime.
- ▶ **Faster Installation and Lower Costs:** Typical new fiber installations can take months and be cost prohibitive. A Towerstream fixed wireless link can be installed at your business location in a matter of weeks, or even days at lower costs.

Carriers, Fortune 500's and Small Businesses All Choose Us for Dedicated Internet Access

Carrier SLA

We worry about the network so you don't have to. Our industry leading SLA guarantees 99.99% uptime and provides guarantees for packet loss and latency.

Symmetrical Bandwidth

Our throughput is always bi-directional, offering equal speeds. The ideal choice for content creators, streaming, cloud applications, VOIP, and off-site backup.

Scalability

Our scalable Internet connections are able to grow to accommodate your increased bandwidth demands with a simple phone call.

Rapid Installation

No need to wait for fiber. Towerstream can install fixed wireless Dedicated Internet Access (DIA) in a fraction of the time, a matter of days not months.

Redundancy

By accessing our redundant upstream providers, core site diversity, BGP and load balancing, Towerstream helps customers maximize network reliability.

Customer Support

Our US based support team is a phone call away. We are available 24/7/365 to help customers swiftly resolve any configuration or connectivity issues.

Expansive Fixed Wireless Coverage in 12 US Markets



Boston

Miami

Chicago

New York

Dallas/Ft. Worth

Philadelphia

Houston

Providence

Las Vegas

San Francisco

Los Angeles

Seattle

TOWERSTREAM WHOLESALE



**WANT MORE INFORMATION?
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