

# Verizon Small Wireless Facilities

Mitchell, South Dakota  
August 19, 2019

verizon<sup>✓</sup>


By  
Sarah Meuli & Jeff Armour



“This is an issue of **enormous consequence**, I believe, to our global **competitiveness**, our **economy**, and the country that embraces and gets ahead and wins the race on 5G ...”

*- Senator Thune, Feb 6, 2019.*

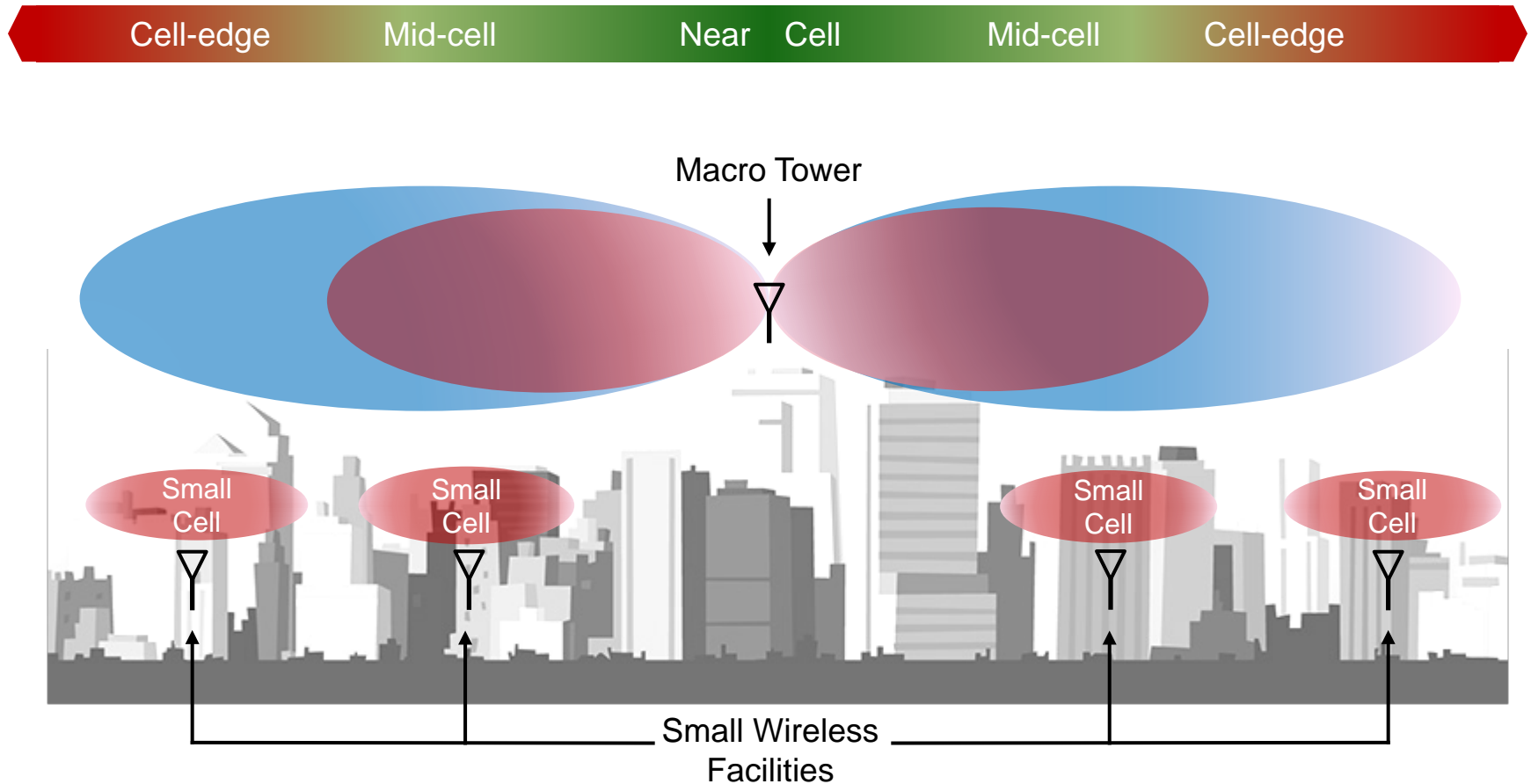
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A photograph of a theater interior. The stage is covered by a large, heavy red curtain. In the foreground, rows of red upholstered seats are visible, facing the stage. The lighting is dim, focusing on the curtain.

# Verizon Wireless Small Cell Video

<https://wdrv.it/8442ae916>

# Macro Towers vs Small Wireless Facilities



**Small Cells accelerate the benefits of 4G LTE, next generation 5G, the Internet of Things, machine-to-machine technology, and smart cities solutions for consumers and businesses.**

## Different locations require different solutions.

We balance engineering the best possible network given the local community's needs and topography.

“Macro” sites give you coverage...



- ...“Small cells” give you **capacity**
- Compliment to macros; not a replacement
  - Appropriate in dense urban areas
  - Distance/reach is about a football field in all directions

# Staying ahead of demand.

A wireless network is like a highway system...



More wireless **traffic** means communities need more **lanes**

- **Congestion** happens when too many people overwhelm a wireless site with data demands at once.
- The solution for congestion is the addition of small wireless facilities (“**small cells**”) to off-load capacity.
- Small cells in your community mean your residents can continue to expect **reliable service** from Verizon.

The average North American smartphone user will consume 48 GB of data per month in 2023, up from just 5.2 GB per month in 2016 and 7.1 GB per month in 2017.

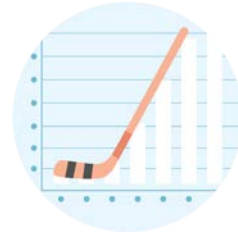
• Ericsson Mobility Report, November 2017

# Why are we expanding the wireless network?

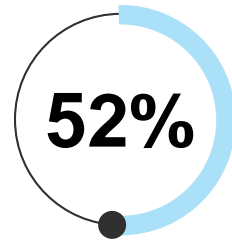
More people than ever before rely on wireless connections to manage their lives and businesses.

Verizon is expanding its wireless network to meet the growing demands of today and tomorrow.

But it takes time.



The average North American smartphone user will consume 48 GB of data per month in 2023, up from just 5.2 GB per month in 2016 and 7.1 GB per month in 2017 .<sup>1</sup>



Around 52 percent of American households are now wireless only for voice service.<sup>2</sup>



In North America, the average household has 13 connected devices with smartphones outnumbering tablets 6 to 1.<sup>3</sup>

1. Ericsson Mobility Report, November 2017

2. CDC's 2016 Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December

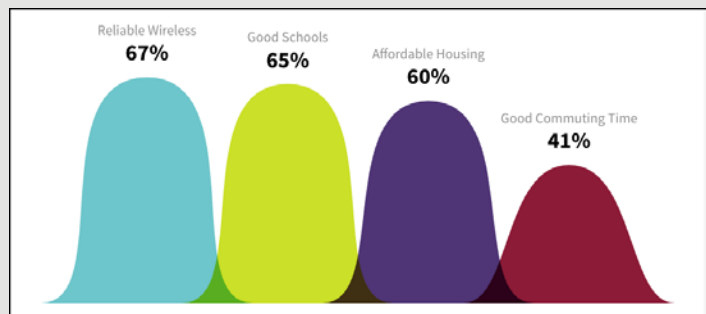
3. IHS Markit Connected Device Market Monitor: Q1 2016 , June 7, 2016



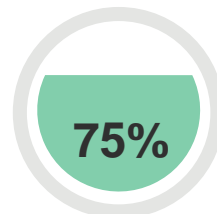
# Economic Benefits:

## Wireless facilities and property values.

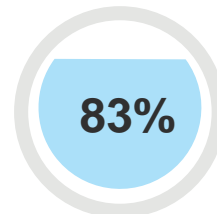
Home buyers view cell service as a **critical** factor



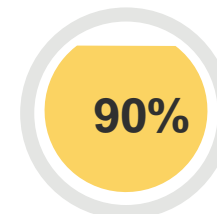
National studies show **most home buyers value good cell service over many other factors** including school district when purchasing a home.



More than **75%** of prospective home buyers said a good cellular connection was **important** to them.<sup>1</sup>



The same study showed that **83%** of Millennials (those born between 1982 and 2004) said cell service was the **most important** factor in purchasing a home.



90% of U.S. households use wireless service. Citizens need access to 911 and reverse 911 and wireless may be their only connection.<sup>2</sup>



Densification of our 4G network will create jobs to build out new network infrastructure.

1. Money, "The Surprising Thing Home Buyers Care About More than Schools," June 2, 2015  
2. CTIA Facts and Infographics, June 2015

# Building a wireless network you can rely on in a crisis.

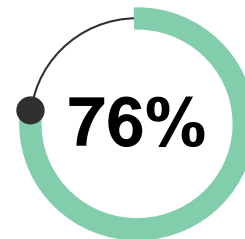
Cell service matters when crisis strikes. A simple call or text message can make the difference between life and death.



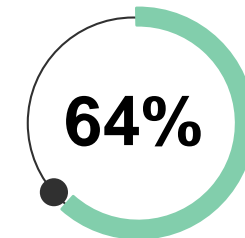
Reliability starts when we choose the safest, most secure locations for our wireless equipment.

When disaster strikes, we coordinate with first responders and can mobilize charging stations, special equipment, emergency vehicles and more to support local, state and federal agencies in all 50 states.

It's who we are.



of 911 calls originate from a cell phone.<sup>1</sup>



of all 911 calls are made from wireless devices, with half of those made indoors.<sup>2</sup>

**240 million**

911 calls are made annually. In many areas, 80% or more are from wireless devices.<sup>3</sup>



# Community Benefits

## Enhanced Wireless Services:

Accelerated benefits of Voice, Video & Data

## Reliability:

Emergency Services for Citizens, Law Enforcement and other First Responders

## Economic Benefit:

Jobs, New Commerce, Conventions & Tourism, Property Values

## Significant Verizon Capital Investment

in your Community

## Resiliency:

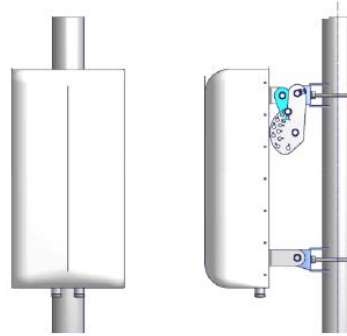
Redundancy, Smart Community & Next Generation Wireless Services Foundation

# Antenna Types

## Cylindrical

Height  
1 to 4 ft.

Diameter  
~16 in.



## Panel

Height  
1 to 4 ft.

Width  
1 to 3 ft.



# Design Options: Street Lights



San Francisco, CA

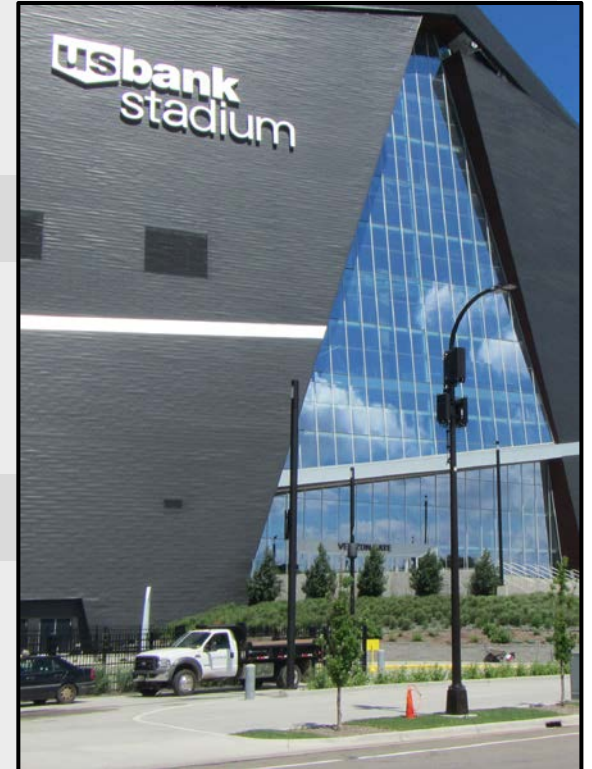


Minneapolis, MN



Kansas City, KS

# Design Options: Street Lights



Minneapolis, MN



# Design Options: Street Lights



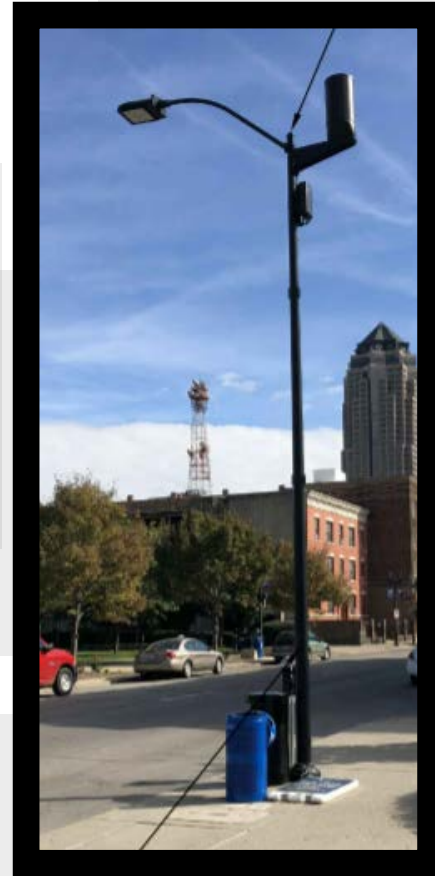
# Design Options: Street Lights



Omaha, NE

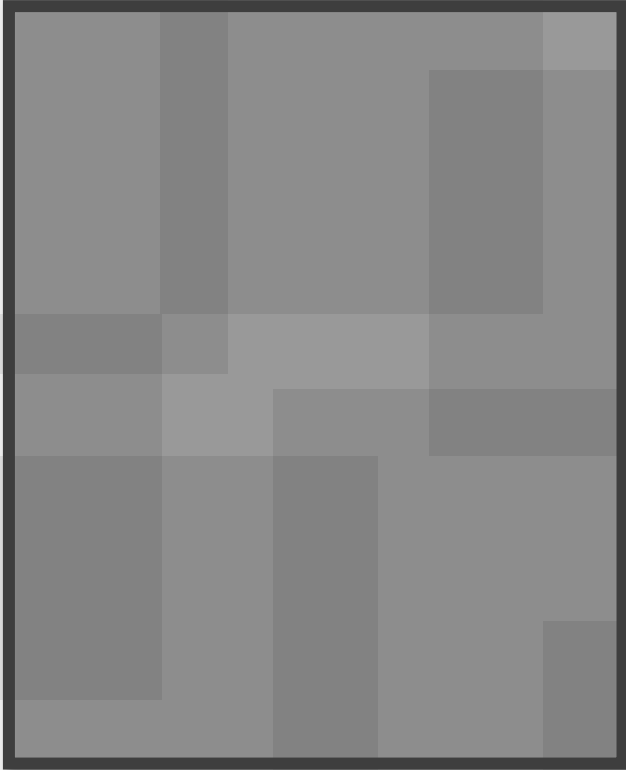


# Design Options: Street Lights



Des Moines, IA

# Design Options: Utility Poles

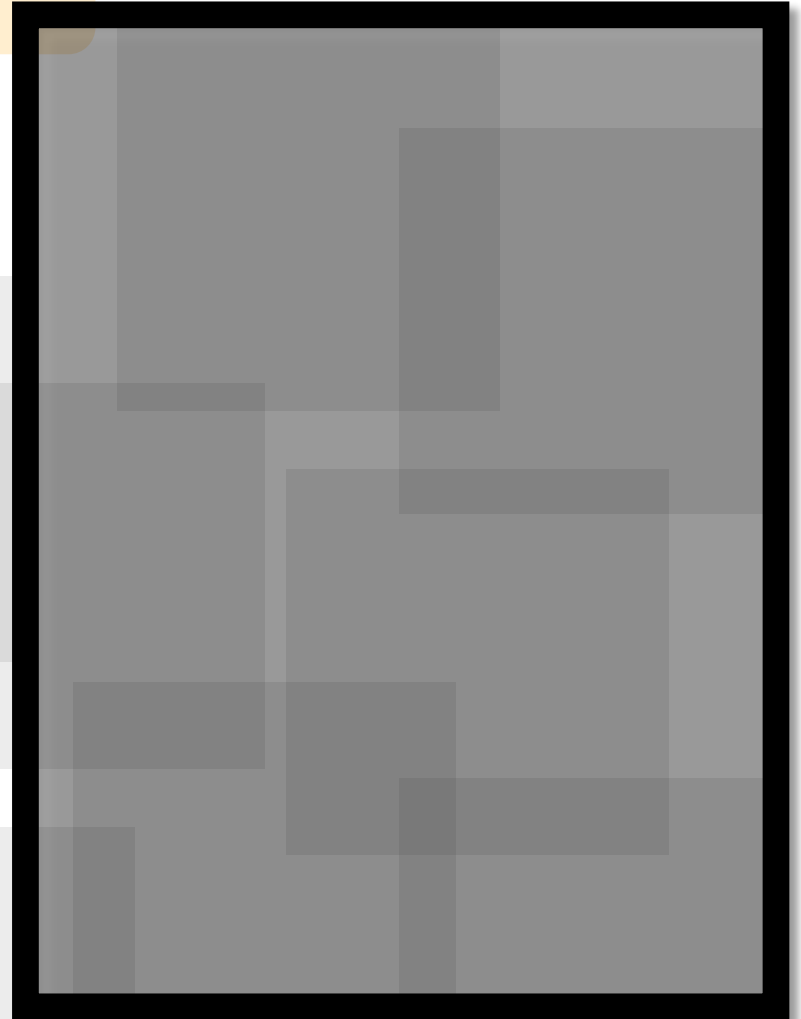
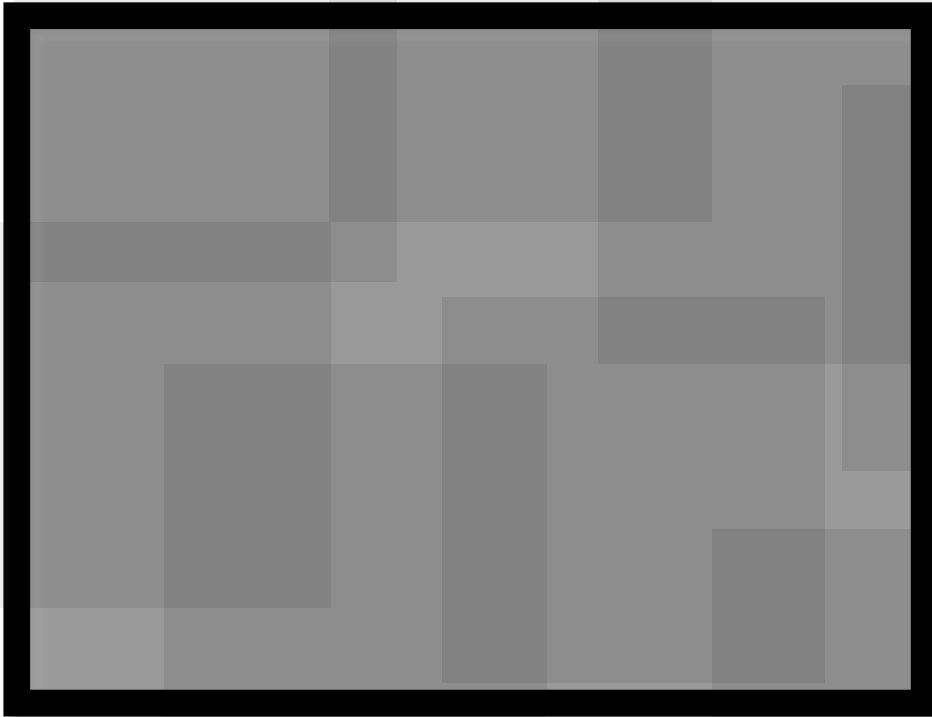


**Portland, OR**



**Las Vegas, NV**

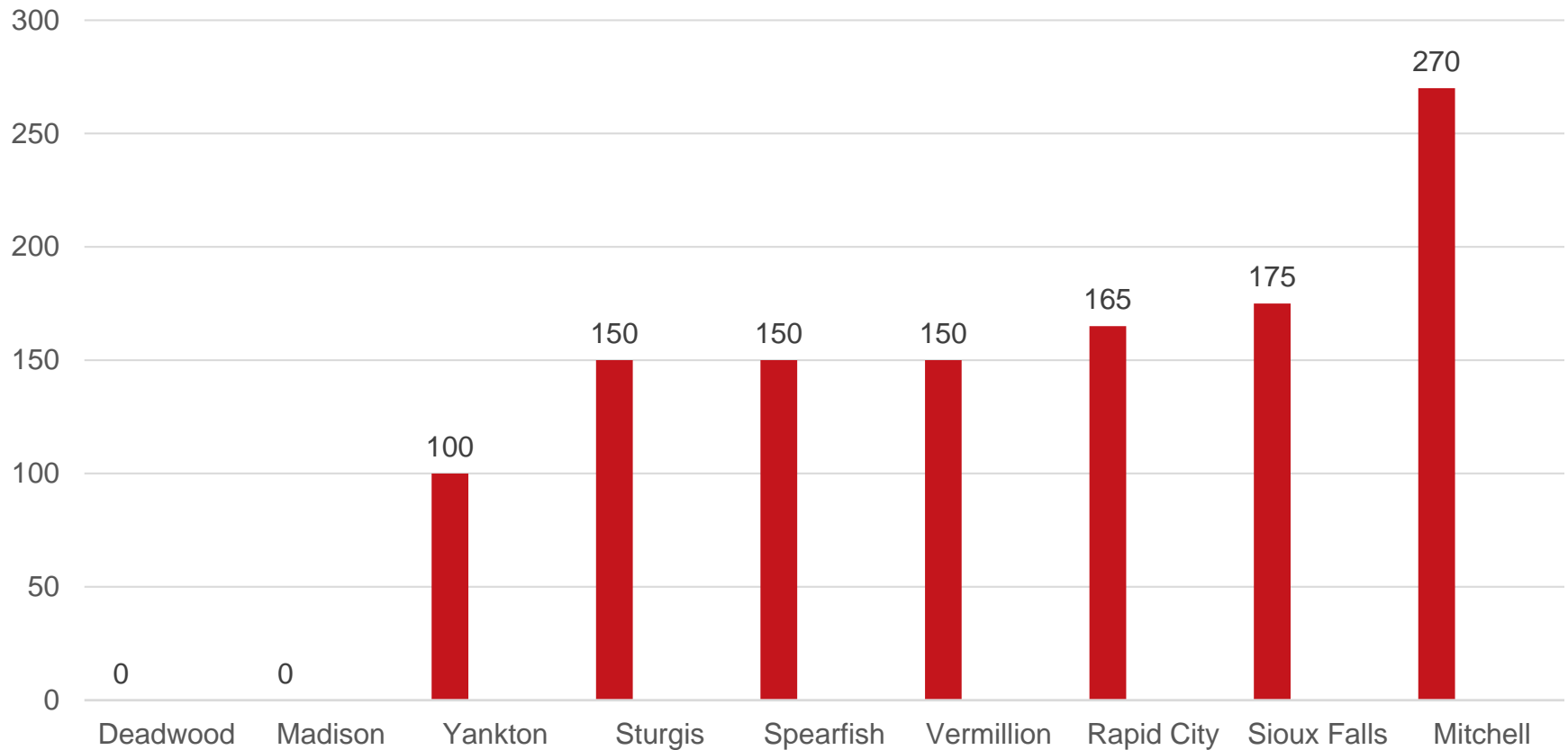
# Verizon-Owned Poles



**Bloomington, MN**

# Annual Rent for South Dakota Cities'

- actual
- direct
- recurring, and
- reasonable costs



# Contact Info

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Verizon Wireless

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Team

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**verizon**<sup>✓</sup>



# Thank you.



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