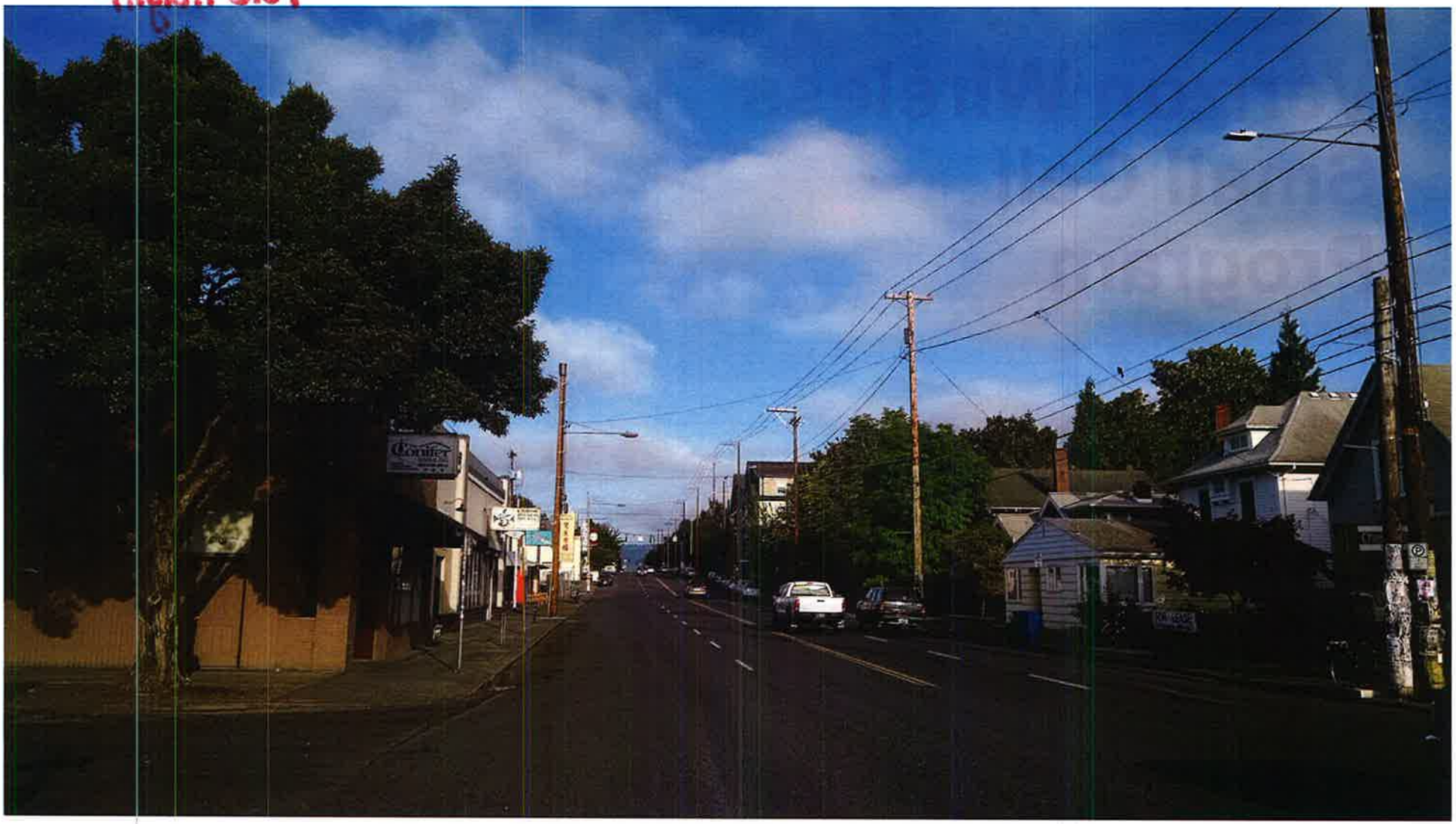
Pole height

Verizon Wireless Small Cell Program

verizon

Pole Height



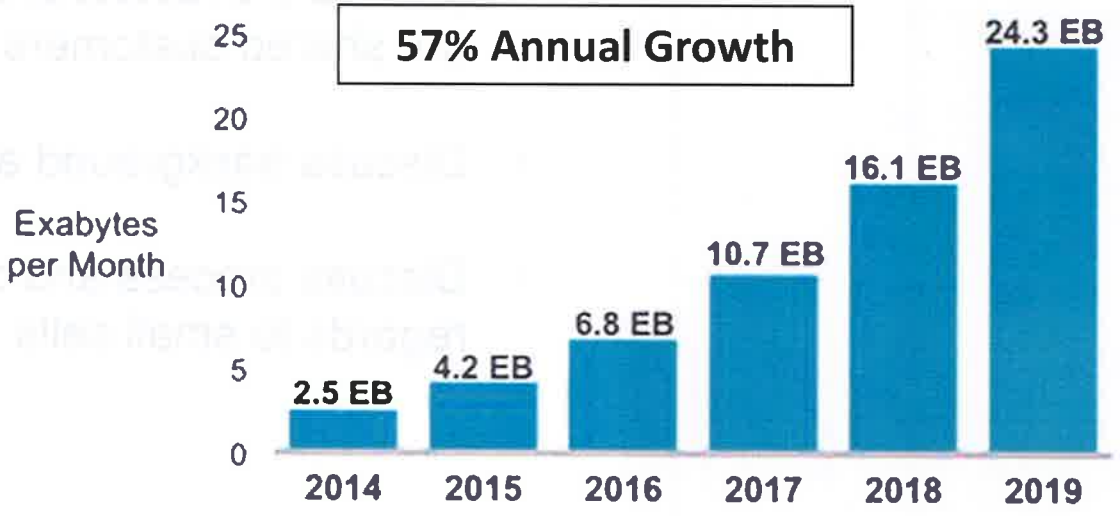
Why are we meeting?

- Verizon desires to partner with cities to deploy small cell technology in the right-of-way to serve the residents of member cities and provide the fastest and most reliable network to our shared customers
- Discuss background and benefits of small cells
- Discuss process and code requirements in regards to small cells

verizon

Growth in Data: What Are Carriers Doing?

- ✓ Deploy Macro Cells
- ✓ Add Capacity to Existing Sites
- ✓ **Deploy Small Cells**



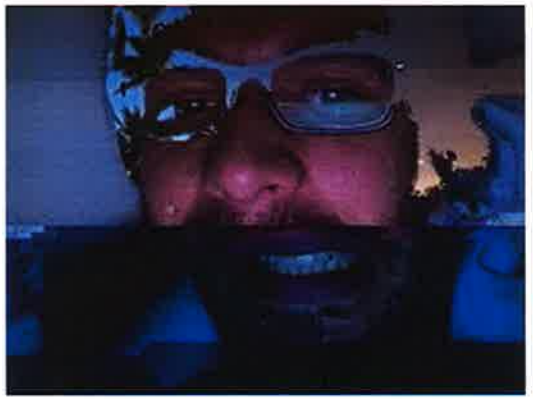
Global Mobile Data Traffic Projected Growth

Source: Cisco VNI Mobile, 2015

verizon✓

What is the impact of insufficient capacity?

- ✓ Slow Data Speeds
- ✓ Increased Video Buffering Times
- ✓ Disruptions to video calls
- ✓ Connection problems
- ✓ Dropped or Incomplete Calls



verizon

What is a Small Cell?

Individual small cell nodes are mounted to existing utility poles or light poles

Nodes work together in groups to create a network to provide consistent service across the targeted area

Small cell characteristics:

- Lower Antenna Heights
- Lower Power
- Smaller Coverage Area

Different equipment needs compared to Macro:

- Smaller Antenna
- Fewer Cabinets and Smaller Footprint Required
- Modular Design

verizon

What is a Small Cell?

Street Light

Utility Pole

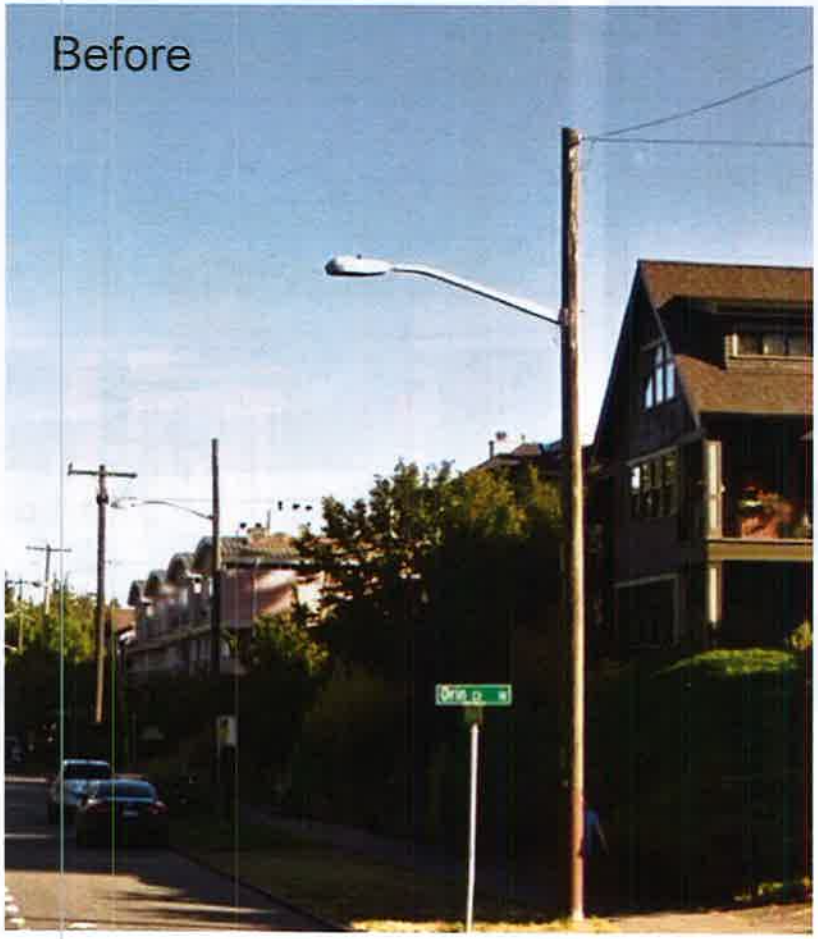
Traffic Control Pole with Cabinet

verizon

Seattle Greenlake Installation

Current Seattle City Light and Puget Sound Energy Utility Pole Design

*Photos of Actual Install



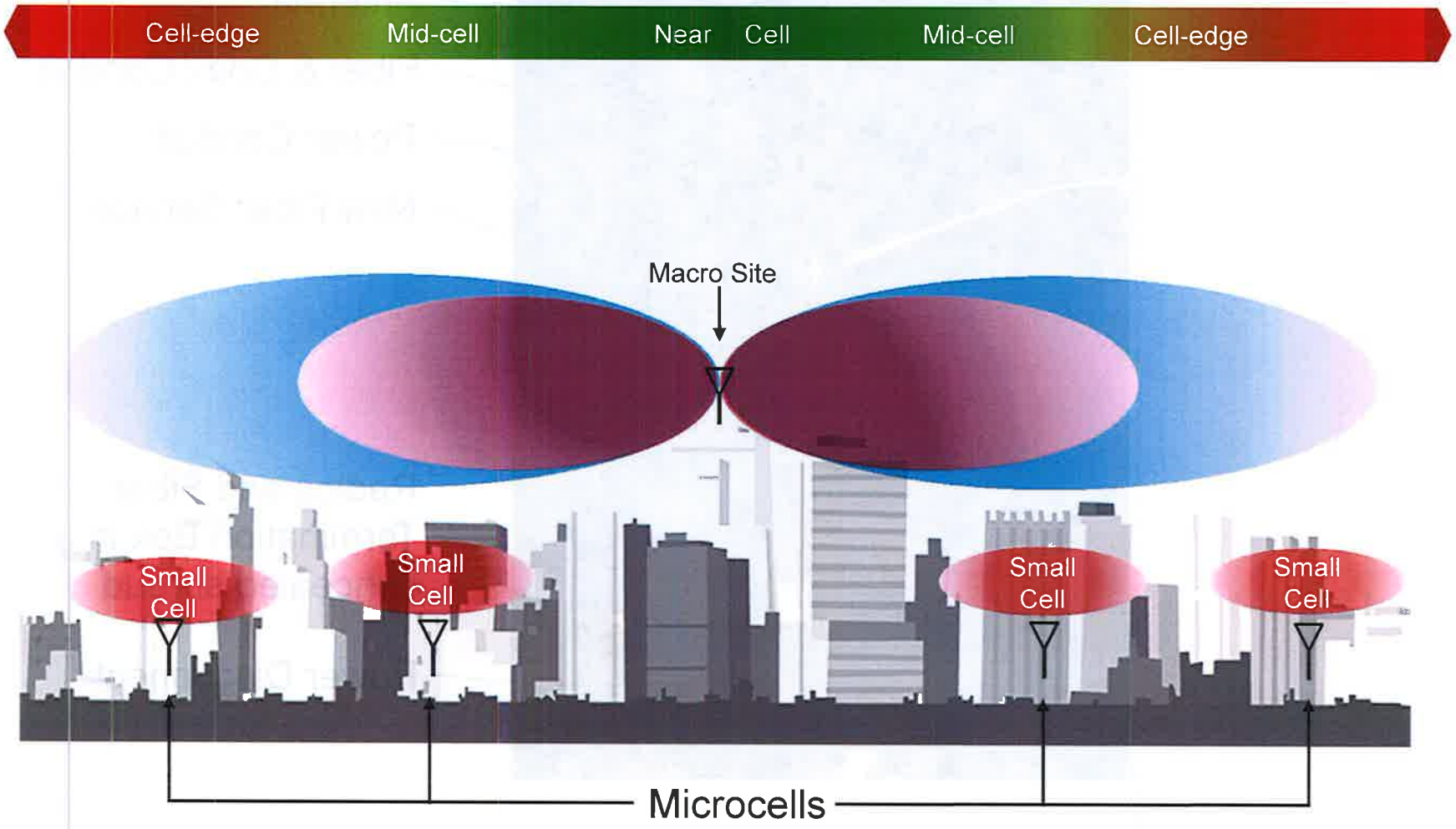
verizon

Seattle Greenlake Installation

Current Seattle City Light and Puget Sound Energy Utility Pole Design

verizon

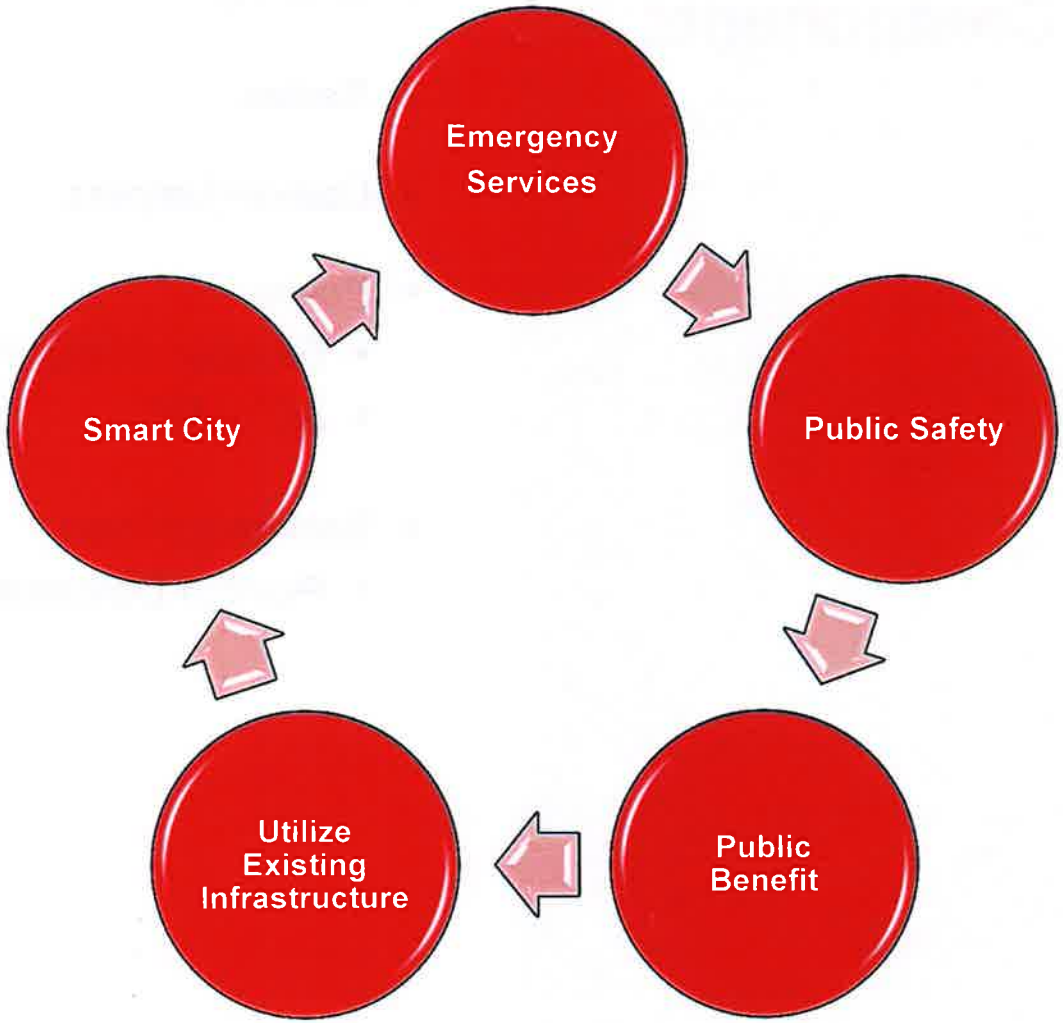
Macro vs Small Cell



verizon

Benefits to the City

- Additional capacity for emergency services, increased data use, telecommuting, and more reliable voice calls
- Utilize existing infrastructure, i.e. street lights and utility poles, to reduce visual impact
- Communication services available for public safety
- Support Smart City initiatives
- Enhanced state of the art network for residents and businesses



verizon

Equipment: Components

- Antenna
- Radios
- Coaxial jumpers
- Power
  - Breaker / Meter / Disconnect Switch
  - AC or DC
- Backhaul (Fiber)
  - Point of Demarcation

verizon

Equipment: Utilities

Transport Requirements:

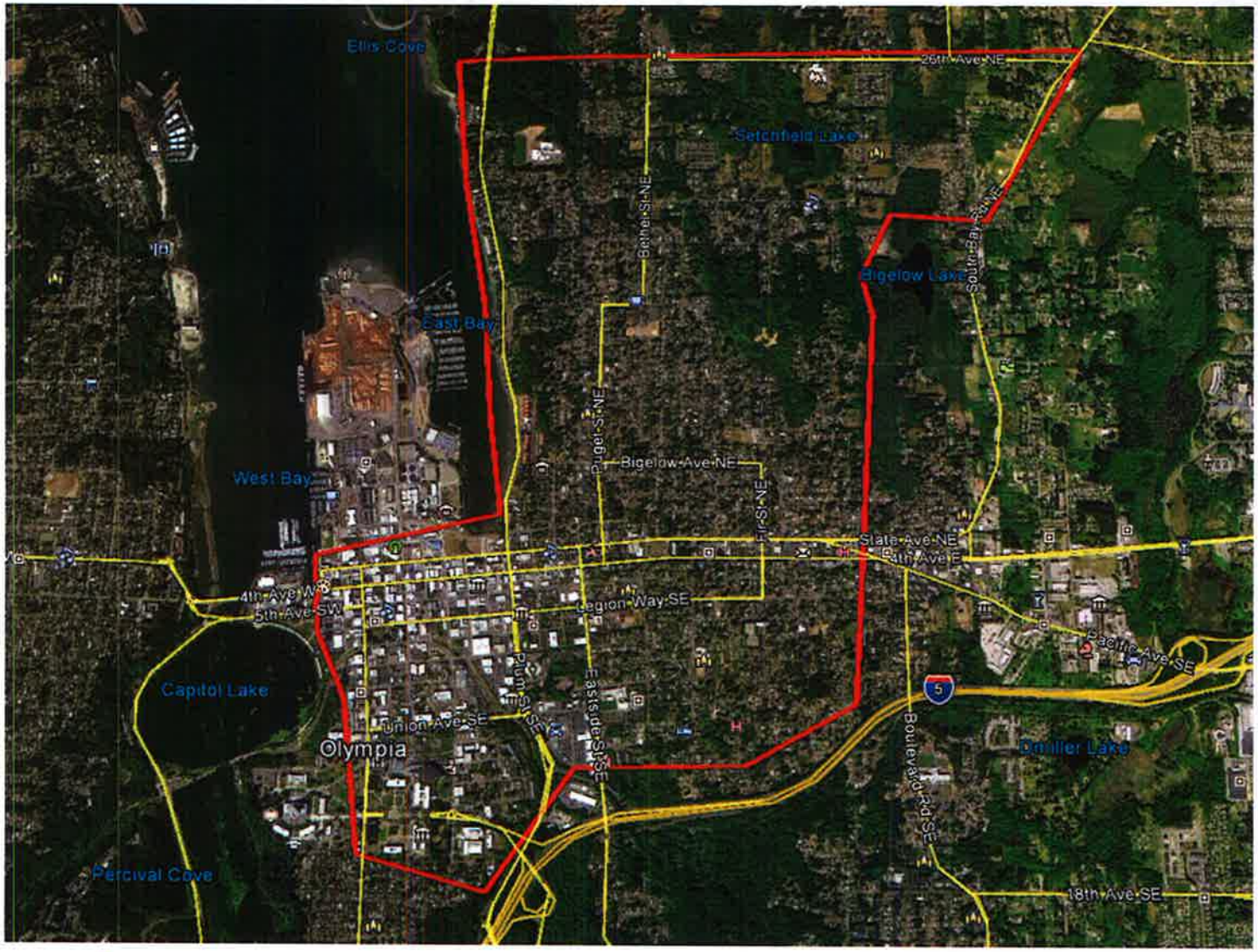
- Each node needs to have a physical connection to the network
  - Dark Fiber to each node

Power Requirements:

- Work with local power companies to bring power to each site
  - AC Power
  - Current power draw for small cell radio is minimal (111 to 127 watts per radio)
- Preference for no meter – flat rate billing

verizon

Initial City of Olympia Small Cell Focus Area



Thank you.