

# Verizon Wireless Small Cell Right-of-Way Use Agreement

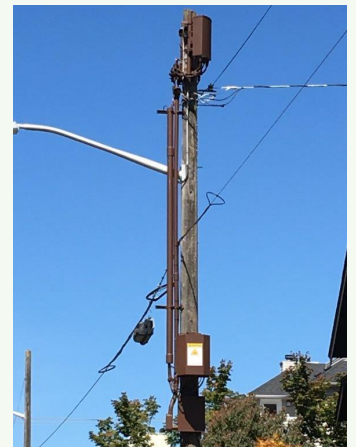


Mark Poch – Assistant Director, Transportation  
Carol Helland – Land Use Director, Development Services

Council Study Session  
December 5, 2016

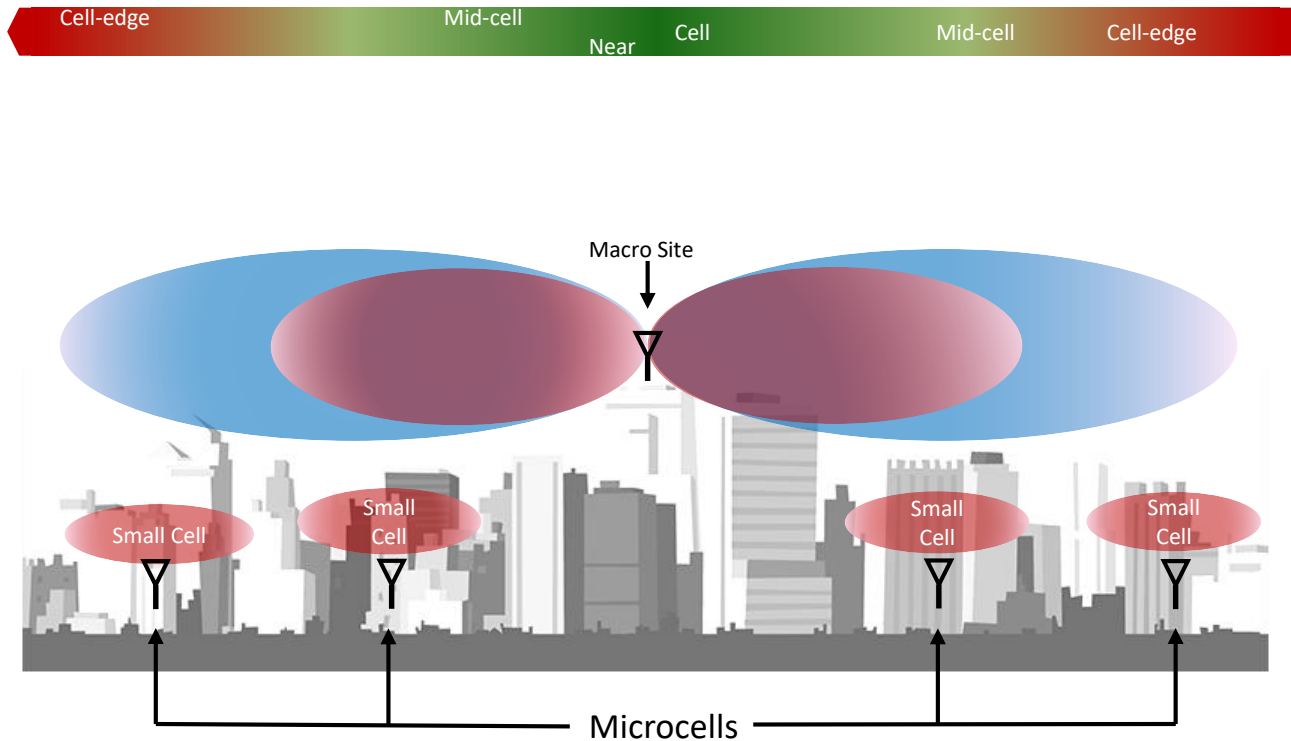
# AGENDA – Verizon Wireless Right-of-Way Use Agreement

- Context for Council's action on the ROW Use Agreement
- Small Cell definition
- Status of Verizon's Small Cell deployment
- Legal Framework
- Policy Framework
- Strategy Moving Forward

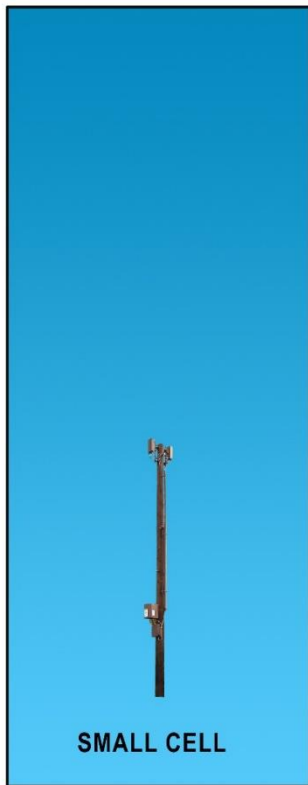




# Macro vs Small Cell



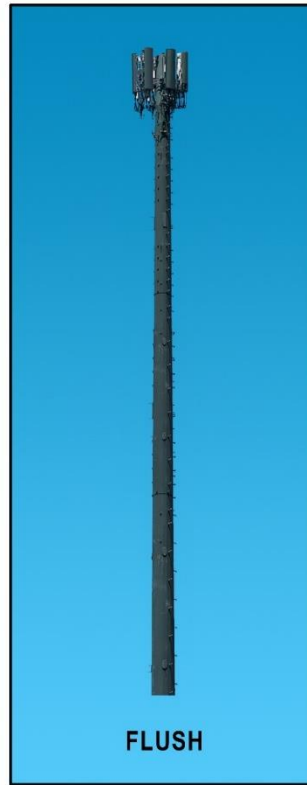
## Macro vs Small Cell



**Small Cell**

100 —

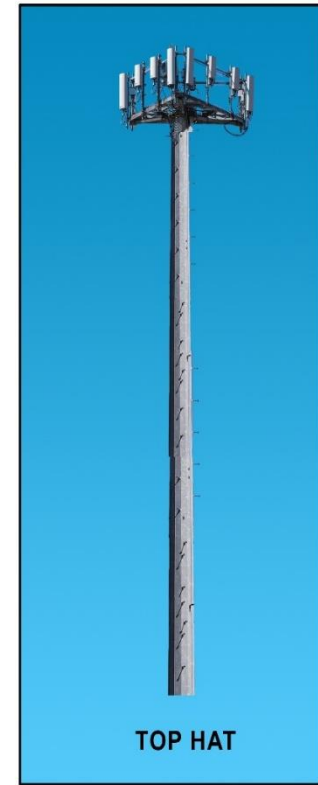
40 —



**Macro Cell**

100 —

40 —

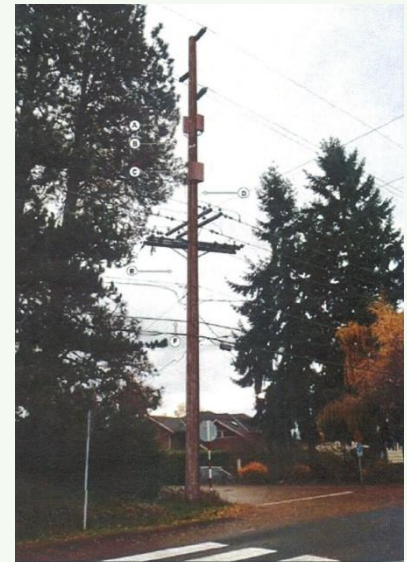


**Macro Cell**

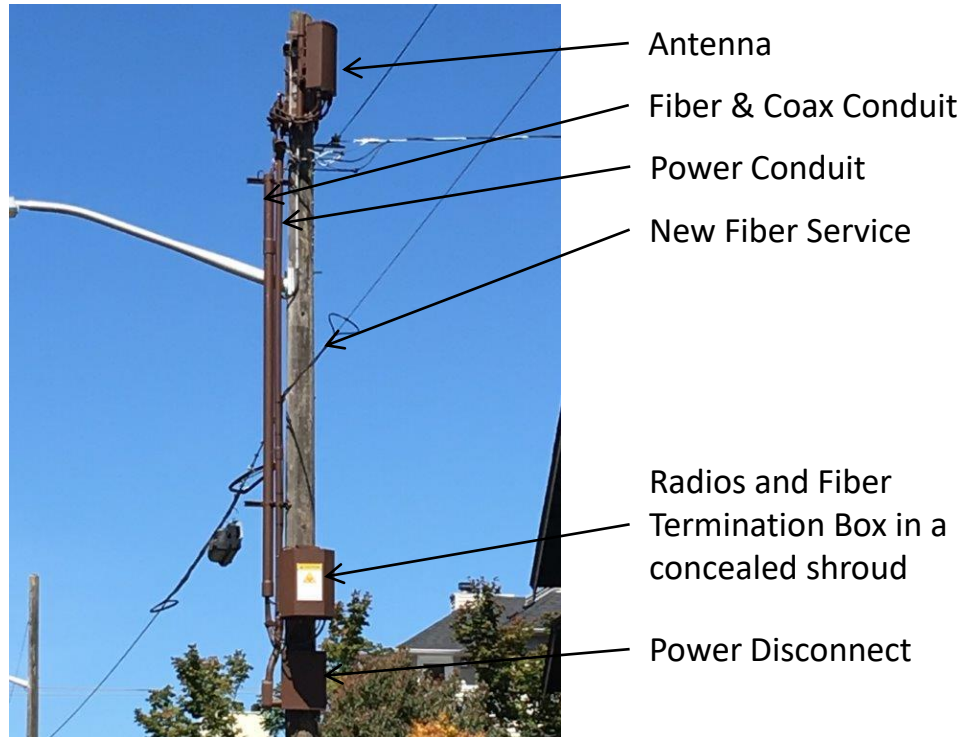
TIM BRADLEY IMAGING

# What is Small Cell?

- Nodes located on Utility/Light poles
- Nodes work in groups to provide consistent service
- Smaller coverage area per node
- Smaller equipment vs Macro site



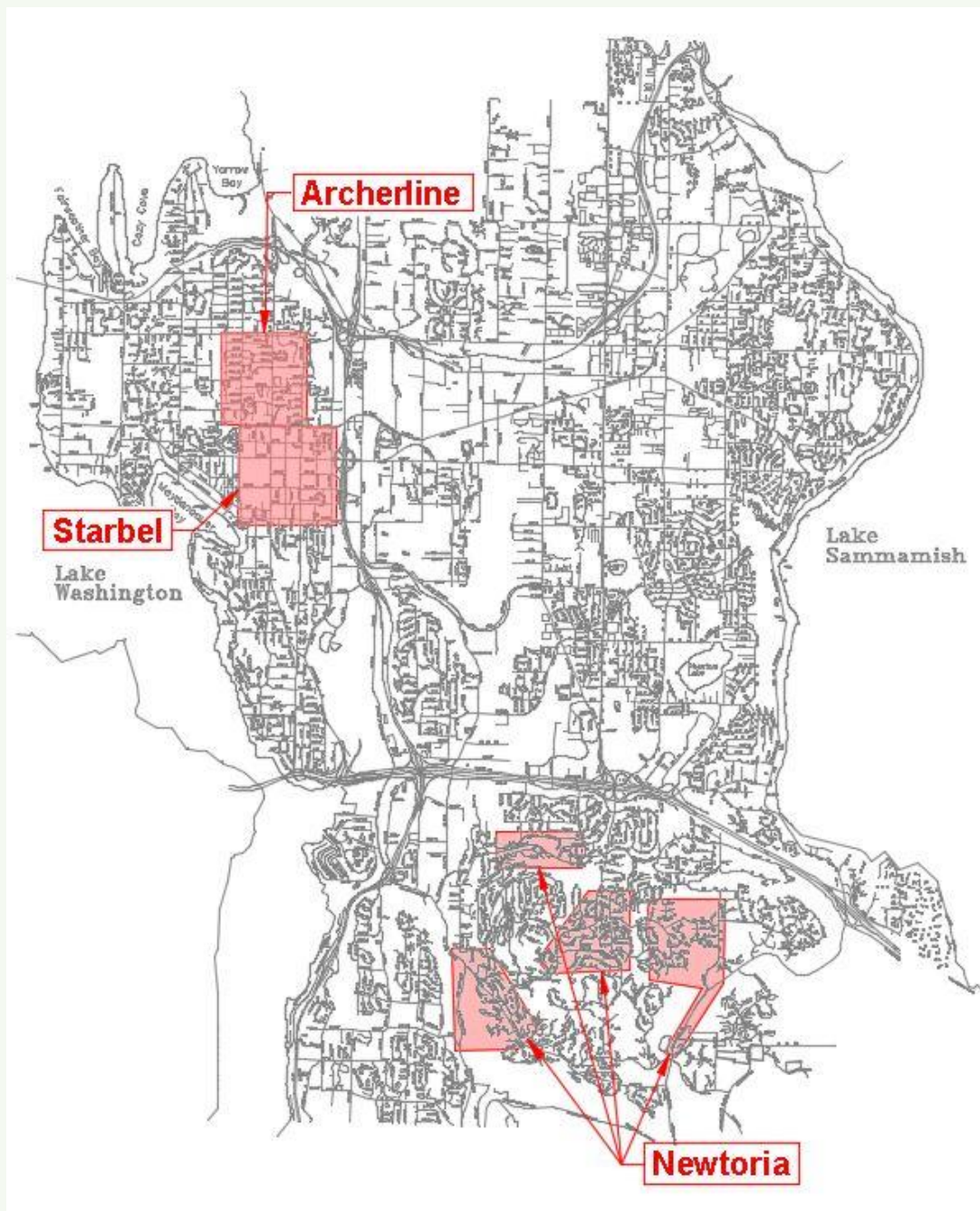
## Small Cell Components



# Status of Verizon Small Cell Deployment

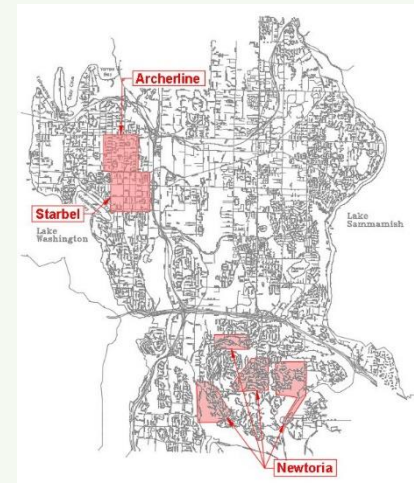
- Verizon's ROW Use Agreement Application – 3 projects
  - Archerline (North Bellevue)
  - Newtoria (Somerset/Lakemont/Eastgate)
  - Starbel (Downtown)





# Status of Verizon Small Cell Deployment

- Verizon's ROW Use Agreement Application
  - Land Use approvals already in process for Archerline & Newtoria
  - Council has received resident concerns regarding these projects
  - September 26, 2016 Memo to Council provided regulatory background



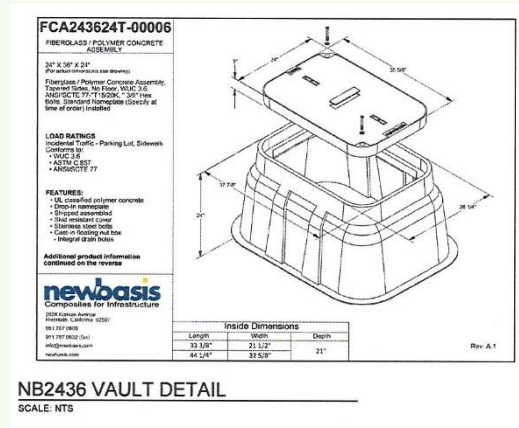
# Verizon Small Cell Approval Process

- ROW Use Agreement Application Review
  - Submitted Aug 3, 2016
  - Started a 120 day “shot clock” for approval (December 1<sup>st</sup>)
  - Processed by the Transportation Department
- ROW Use Agreement Execution
  - Council Regular Session, anticipated for December 12, 2016
  - No public process for ROW Use Agreements
- Land Use approvals
  - ACU approved for Archerline Oct 27, 2016 (appeal underway)
  - ACU for Newtoria anticipated early in 2017
- ROW Permits
  - Regulate use, construction, and traffic control
  - Also required for communication connections (backhaul)



# Verizon Small Cell Approval Process

- Backhaul
  - Aerial
  - Underground
  - Can result in some disturbance within street right-of-way



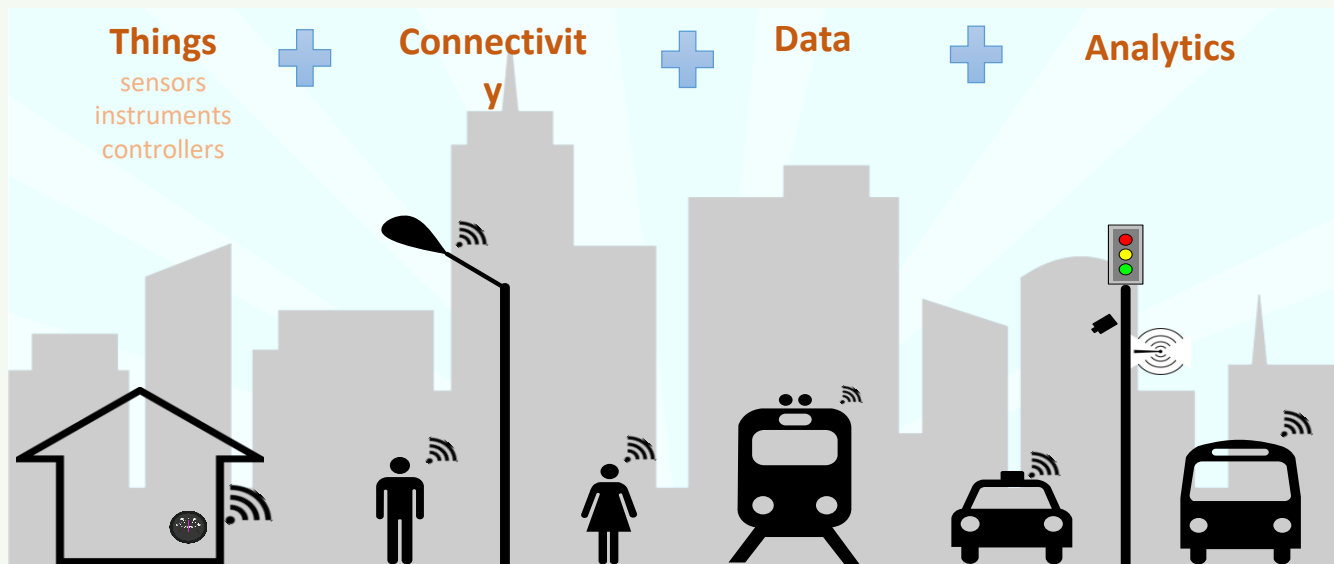
# Legal Framework

- Federal and State regulations compel ROW Use Agreement approval
- Federal Telecommunications Act
  - City can't prohibit provision of personal wireless service (e.g. small cell) without substantial evidence
- RCW
  - City land use regulation can't result in outright prohibition of small cell



# Policy Framework:

## Bellevue Aspires to be a Smart City (Council Vision)



Using information and communications technology  
to enhance livability, sustainability and resiliency



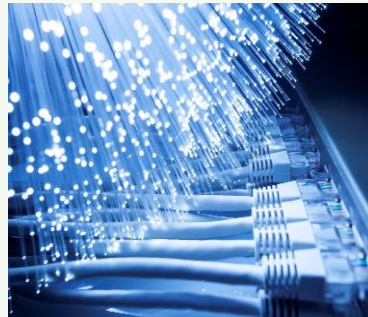


# *Future Vision*

**SMART**connectivity  
BELLEVUE



**Expanded Wi-Fi**



**Digital Economy**



**Consumer  
Broadband  
Services**



**Smart Networks**

## **Smart City Strategy - Connectivity**

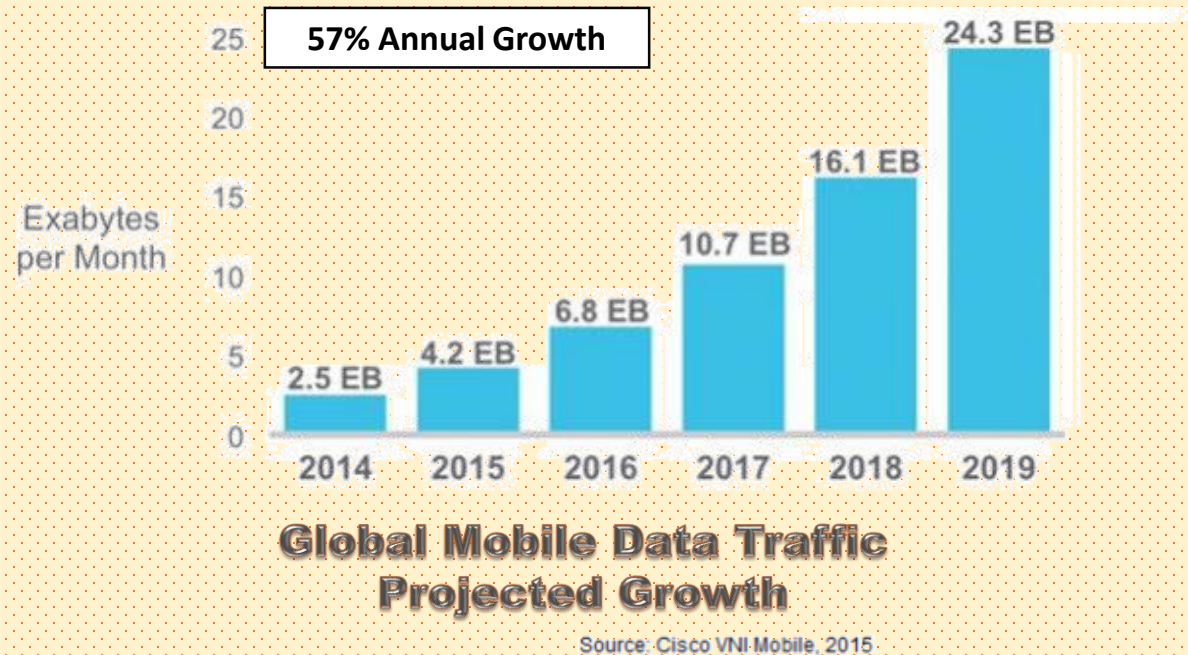
# Policy Framework: Comprehensive Plan Utilities Element

- Encourage widespread, affordable, high-speed internet access including access to competing telecommunications services and new form of technology to provide the community with choice and to facilitate innovation. (UT -50)
- Maintain Bellevue's competitive advantage and attraction as a highly connected community (UT-51)



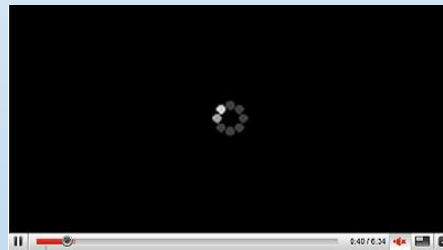
## Growth in Data: What Are Carriers Doing?

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



## What is the impact of insufficient capacity?

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



# Policy Framework:

## Comprehensive Plan Utilities Element

- Ensure a permitting process that achieves a **balance** between encouraging deployment of advance high-speed telecommunications infrastructure and protecting neighborhood character. (UT-53, emphasis added)
- Require the reasonable screening and/or architecturally compatible integration of all new utility and telecommunication facilities (UT-64)
- Protect Bellevue's aesthetic quality and infrastructure investment from unnecessary degradation caused by the construction of telecommunication infrastructure. (UT-65)
- Require the placement and design of wireless communication facilities in a manner that minimizes the adverse impacts on adjacent land uses (UT-79)

# Photo Simulation

Photo Simulation - PSE Streetlight



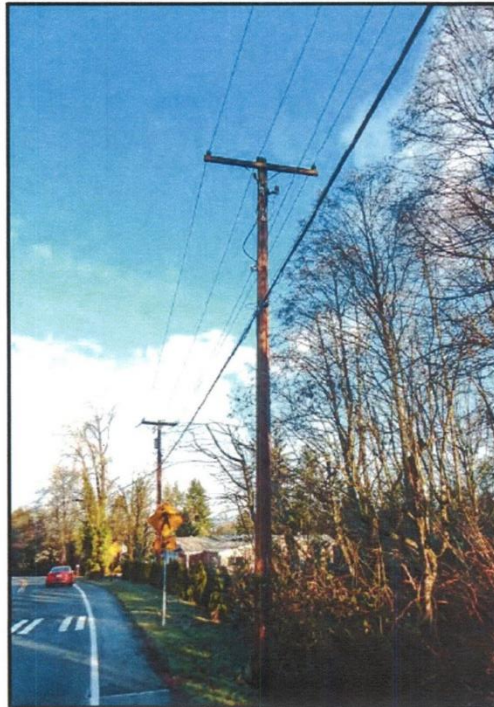
CURRENT



PROPOSED

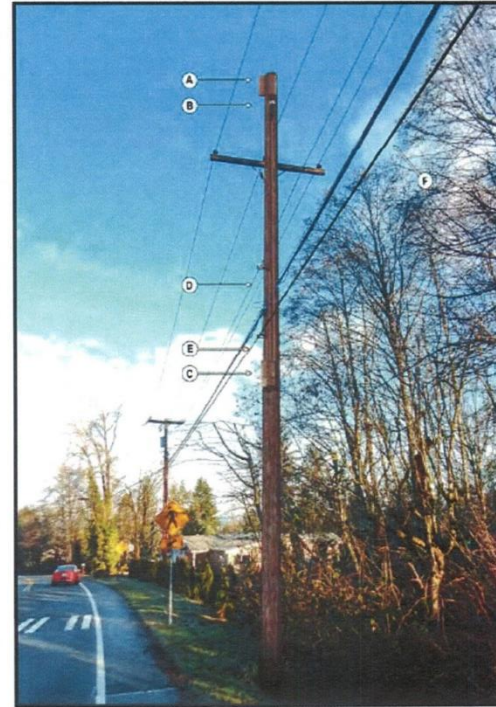
# Photo Simulation

Photo Simulation - PSE Utility Pole



CURRENT

- (A) Antenna (x2)  
ANTEL HTXGW4513Fx0  
24.1" H x 18" W x 7.1" D  
11.7 lbs (x2)
- (B) MicroLab Low PIM Splitters  
10" L (x4)
- (C) ERICSSON mRRU  
15" H x 9" W x 4.76" D  
Weight 22 lbs
- (D) Proposed PSE power draw
- (E) Proposed Wave Conduit
- (F) Proposed Wave Fiber



PROPOSED



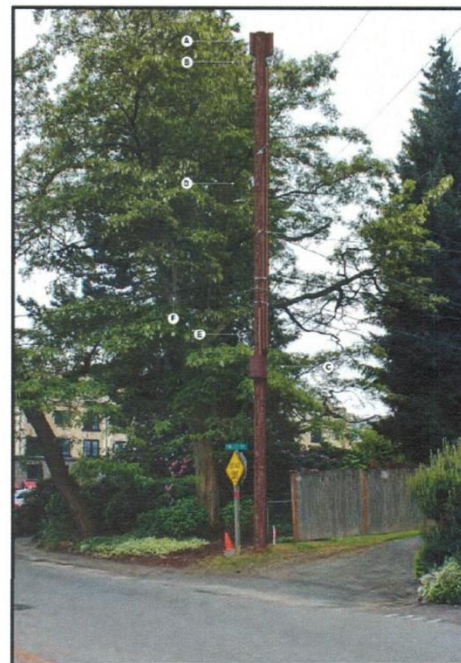
# Photo Simulation

Photo Simulation - PSE Utility Pole



CURRENT

- (A) Antenna (x2)  
Amphenol NTKCW3111414F08  
13.6" H x 12" W x 7.1" D  
13 lbs (x2)
- (B) MicroLab Low PIM Splitter  
10" L (x4)
- (C) NTC3780PRE2 RRU  
28" H x 22" W x 12" D  
Weight TBD
- (D) Proposed PSE power draw
- (E) Proposed Wave Conduit
- (F) Proposed Wave Fiber



PROPOSED

# Strategy Moving Forward

- Execute ROW Use Agreement with Verizon
  - Dictate design details
  - Constrain geographic application
- Use ROW Use Agreement to dictate design for small cell deployments in the near term
- Update Land Use Code in the long term to adopt concealment requirements for small cell technology and to streamline permitting when deployments meet adopted concealment requirements

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December 5, 2016



# Additional Photo Simulations

# Photo Simulations

Photo Simulation - PSE Utility Pole



CURRENT

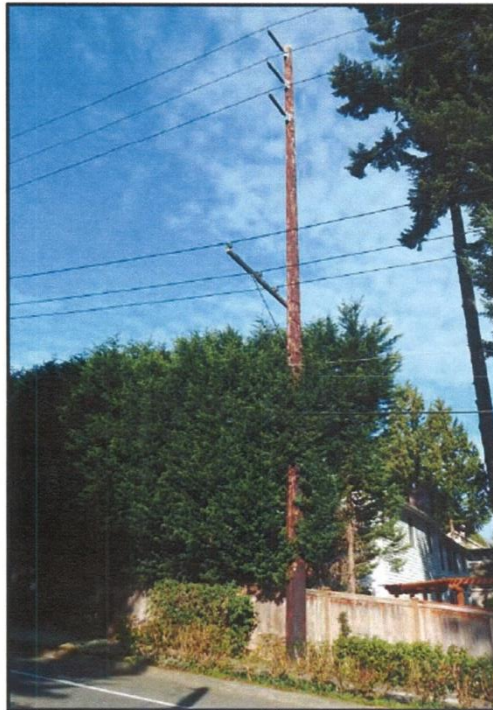
- (A) Antenna (x2)  
Amphenol HTXCWE3111414F x90  
23.5" H x 12" W x 7.1" D  
13 lbs (x2)
- (B) MicroLab Low PIM Splitters  
10" L (x4)
- (C) MTC3718PRE2 RRU  
28" H x 22" W x 12" D  
Weight TBD
- (D) Proposed PSE power draw
- (E) Proposed Wave Conduit
- (F) Proposed Wave Fiber



PROPOSED

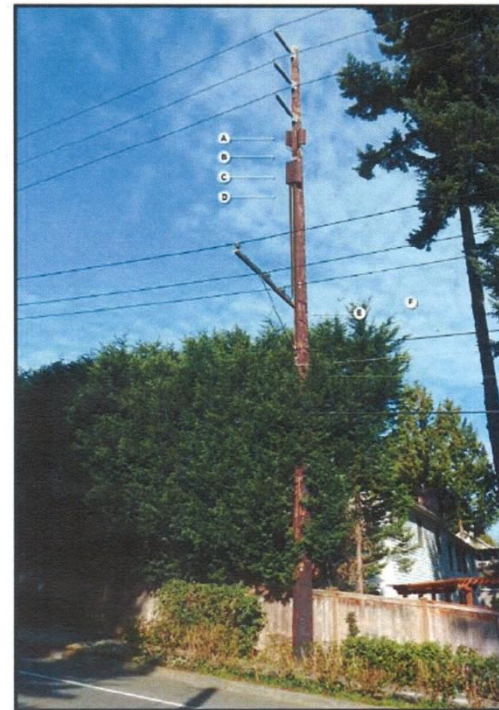
# Photo Simulations

Photo Simulation - PSE Utility Pole



CURRENT

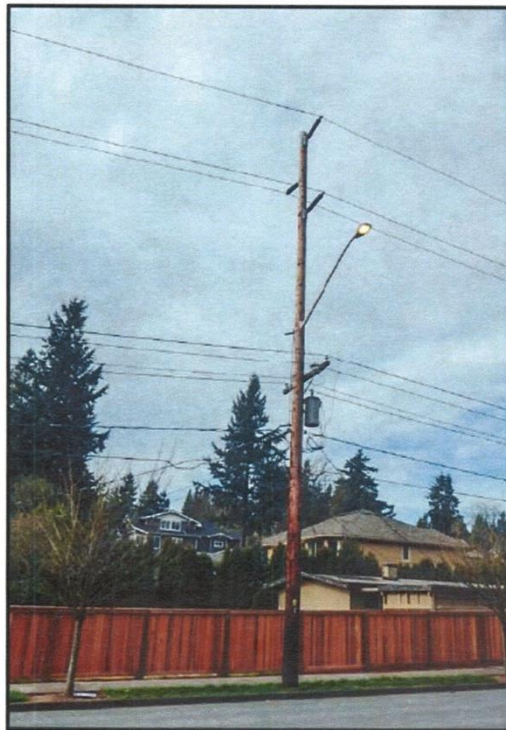
- (A) Antenna (x2)  
Amphenol HTXCW311414F06  
23.5" H x 12" W x 7.1" D
- (B) Microlab Low PIM Splitters  
10" L (x4)
- (C) MTC378PRE2 RRU  
26" H x 24" W x 12" D  
Weight TBD
- (D) Proposed PSE power draw
- (E) Proposed Wave Conduit
- (F) Proposed Wave Fiber



PROPOSED

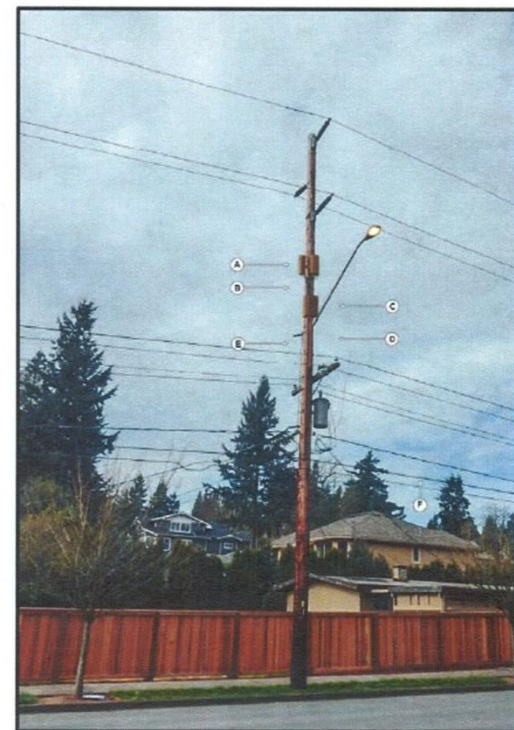
# Photo Simulations

Photo Simulation - PSE Utility Pole



CURRENT

- (A) Antenna (x2)  
Amphenol HTX/CW63111414Fx80  
23.5" H x 12" W x 7.1" D  
13 lbs (x2)
- (B) MicroLab Low PIM Splitters  
10" L (x4)
- (C) MTC378MPRE2 RRU  
28" H x 22" W x 12" D  
Weight TBD
- (D) Proposed PSE power draw
- (E) Proposed Wave Conduit
- (F) Proposed Wave Fiber

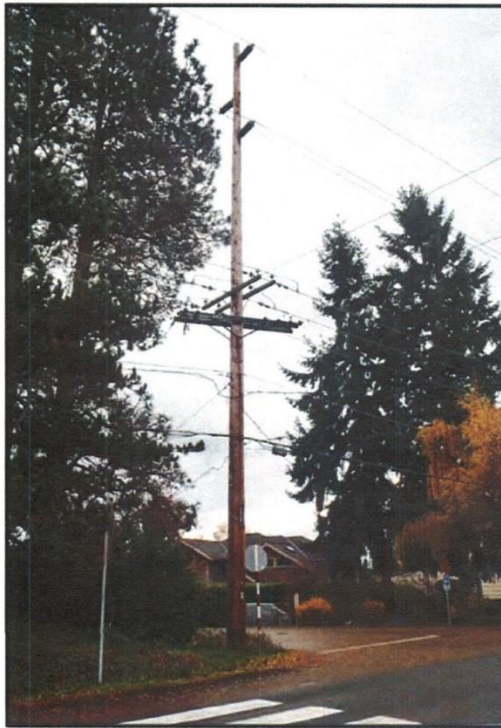


PROPOSED



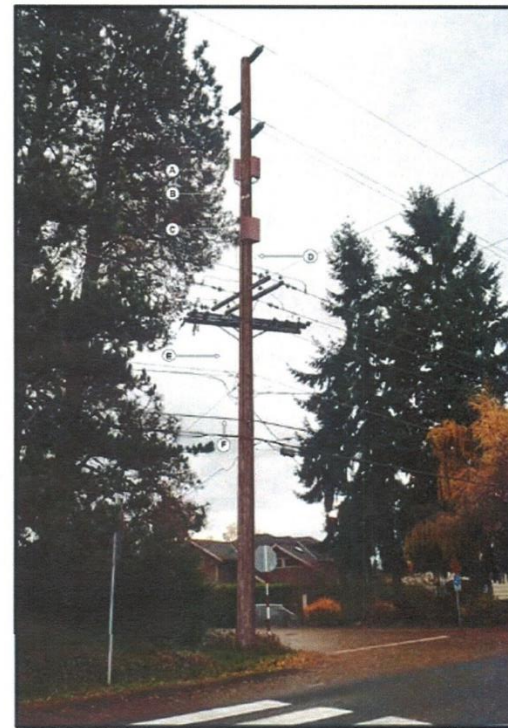
# Photo Simulations

Photo Simulation - PSE Utility Pole



CURRENT

- (A) Antenna (x2)  
Amphenol HTXGW63111414F00  
23.5" H x 12" W x 7.1" D
- (B) Microlab Low PIM Splitters  
18" L (x4)
- (C) MTC3784PRE2 RRU  
28" H x 22" W x 12" D  
Height TBD
- (D) Proposed PSE power draw
- (E) Proposed Wave Conduit
- (F) Proposed Wave Fiber



PROPOSED

## EQUIPMENT PERMITTING

