City of Santa Rosa

WIRELESS SMALL CELLS ON CITY LIGHT POLES IN THE PUBLIC RIGHT-OF-WAY

City Council Study Session

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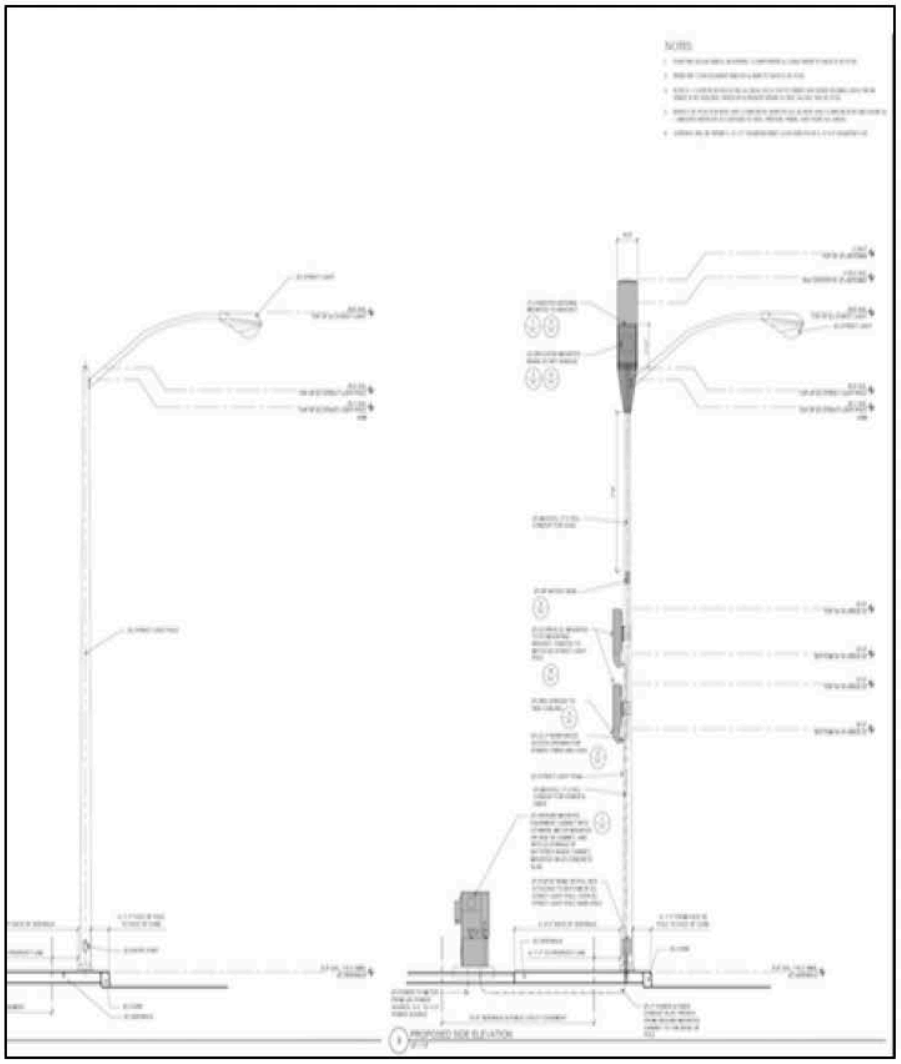
June 5, 2018

Small Cell Cellular Network

City vs. PG&E ("Joint") Poles



Small Cell Cellular Network

Definition

all cells" are used to increase cellular capacity and
ove cellular network performance, particularly in urban
s.

l cells are complementary to more traditional **macrocell**
, enabling carriers to fill in small gaps and transmit more
in areas where towers may not be sufficient.

macrocells provide the **umbrella** network, and the small
are **underneath** the umbrella network to provide the
city needed.

Small Cells on City Poles

Topics

Background

- Past Council discussion and action
- City vs. PGE/Joint Pole infrastructure
- RFI-related topics

Why Small Cells?

- Customer and industry trends
- Emergency notification
- Public Safety needs

City Infrastructure: Permitting and construction

- Permit process
- Notification
- Planned deployments

Actions Taken since March

1. City and Verizon actively working with residents on a handful of problematic installations. Process will be leveraged for future challenging residential areas.
2. Added “dedicated pole in ROW” as a placement consideration for challenging residential areas.
3. Exercising option to NOT include battery backup in challenging areas.
4. Agreement on design standards for street light installations, including photo simulations when needed.

Four Problematic Installations

Verizon on PG&E poles

verizon

"At this point, we are reviewing internally, across departments, to determine if there are any alternatives available for the 4 proposed utility poles that residents have concerns. We have informed our construction team that these sites are currently on hold until we evaluate alternatives. We will not proceed with construction without further discussion regarding any viable alternatives with the City and residents."

Street Light Installations

PhotoSim: Fountaingrove Area

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Amendment to Council Policy 300-04

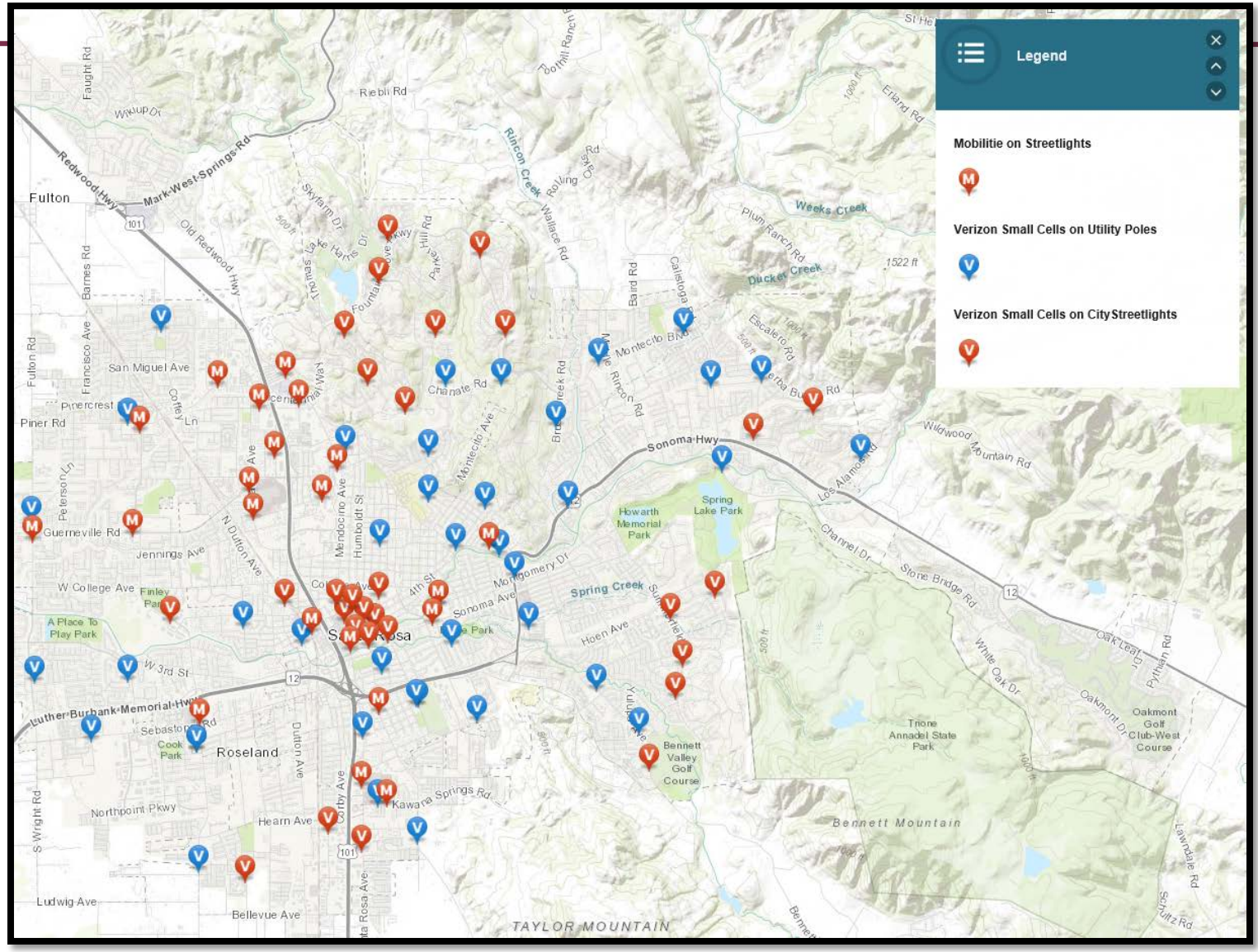
February 14, 2017

- Adopted in July 2000.
- Amended in February 2015.
- Generally tailored for large, “macro” wireless cell site installations
- Amendment allows for small-cell type deployments in City right-of-way.
  - Removes prior Master License Agreement template from Council Policy.
  - Site license fees will be negotiated within Master License Agreements specific to installation proposals.

Telecom Facilities on City Facilities in the Public Right-of-Way

February 14, 2017

Proposed Small Cells



Study Session Discussion

March 6, 2018

- Overview of initial Verizon installations.
- Council indicated a desire to pause installations (when possible), pending additional information from Staff.
- City lacked ability to pause installations on CPUC-controlled PG&E joint poles.
- City paused approval of installations on City streetlights.

Current Status (“Paused”)

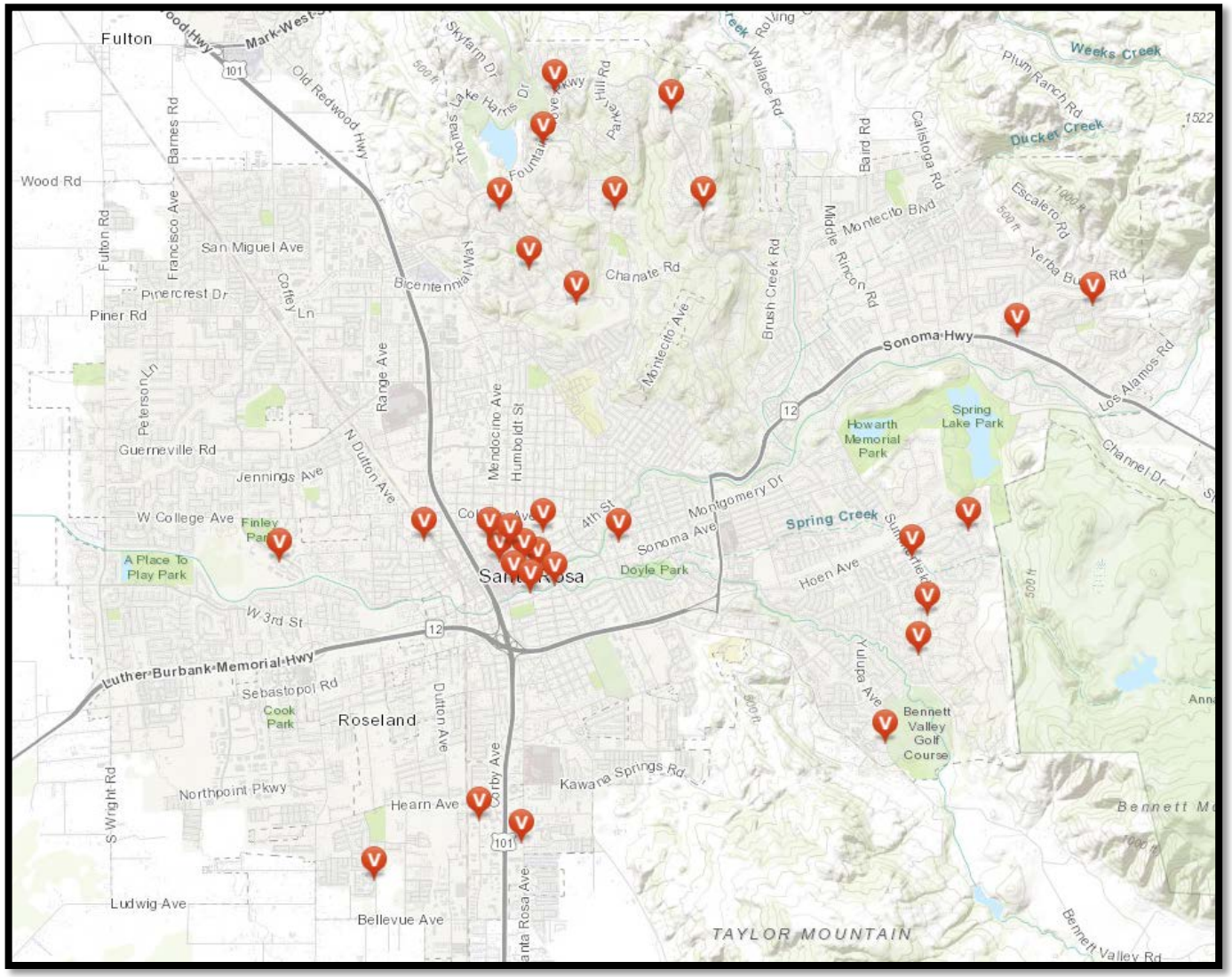
- Location options limited to wooden poles.
- Design options on wooden poles are limited by PG&E.
- Generally unable to deploy in downtown, commercial and “undergrounded” residential areas.

Unable to Pause

Paused

“Paused” Small Cells

City Street Lights



Small Cell Cellular Network

Fees and Revenue (City poles)

- Palo Alto: $270 per year
- Anaheim: $95 per year
- Denver: approximately $200 per year
- Spokane: $700 per year
- PG&E: approximately $150 per year
- Santa Rosa: $350 per year
  - Annual revenue (200 small cells): $70,000
  - Fifteen-year revenue ~$1M

Pole Options

City Owned Poles – this is typically a metal streetlight. The Council authorized a program to work with carriers to install small cells on City owed metal poles. This will require compliance with our standards and public outreach. To date, no applications have been approved to install a small cell on a City pole; however, Verizon has submitted plans for an installation near 69 Stony Circle.

Pole Options

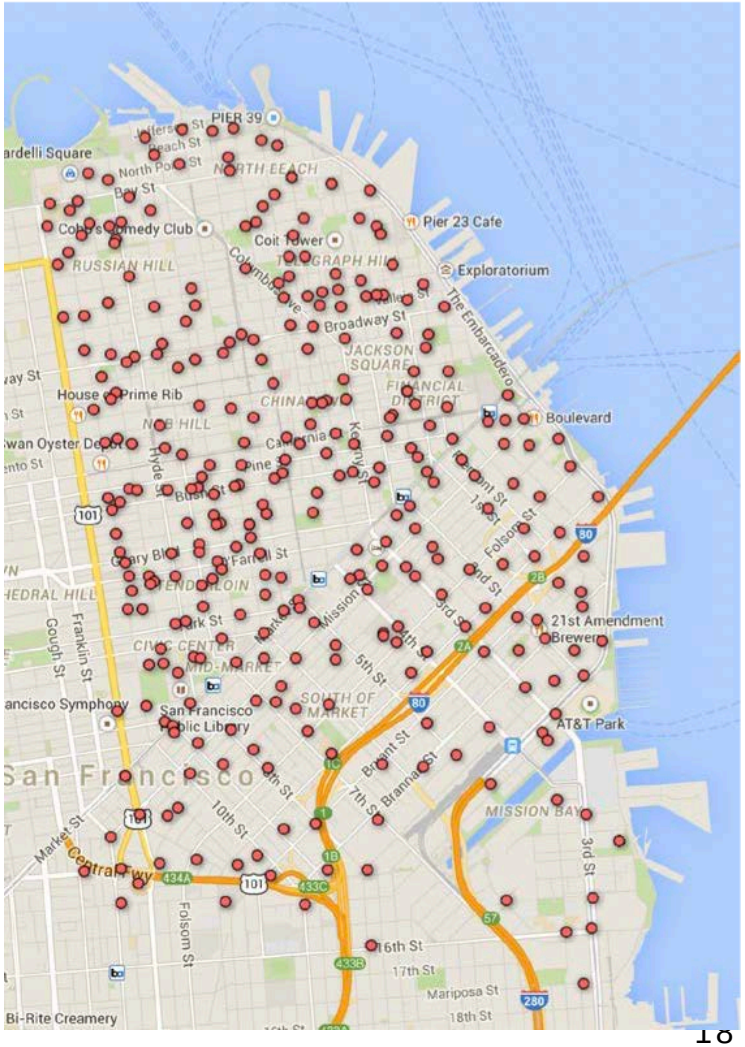
Private Poles (PG&E) – this is typically a wood pole owned by another utility. The City requires compliance with Chapter 13 of the City Code and the City's Design and Construction Standards for public improvements (height, placement in the right-of-way), but the standards do not address visual aspects of small cells. Private companies submitting to put these on private poles only need to obtain a ministerial encroachment permit to address the City's Design and Construction Standards.

City of San Francisco

Initial Steel Pole "Concept" Deployment Map for Extenet Systems & Verizon Wireless

- **Who owns the poles? *Steel*** poles along public streets that only feature a street light are generally owned by the San Francisco Public Utilities Commission (SFPUC)1. Transit poles that support electric lines for buses and light rail vehicles (including those with a street light) are generally owned by the San Francisco Municipal Transportation Agency (SFMTA, or "MUNI").

- ***Wood*** poles are not typically owned by the City, but by either the Northern California Joint Pole Association (a consortium of utility providers), or Pacific Gas & Electric (typically wood poles only holding up a street light).



City of San Francisco

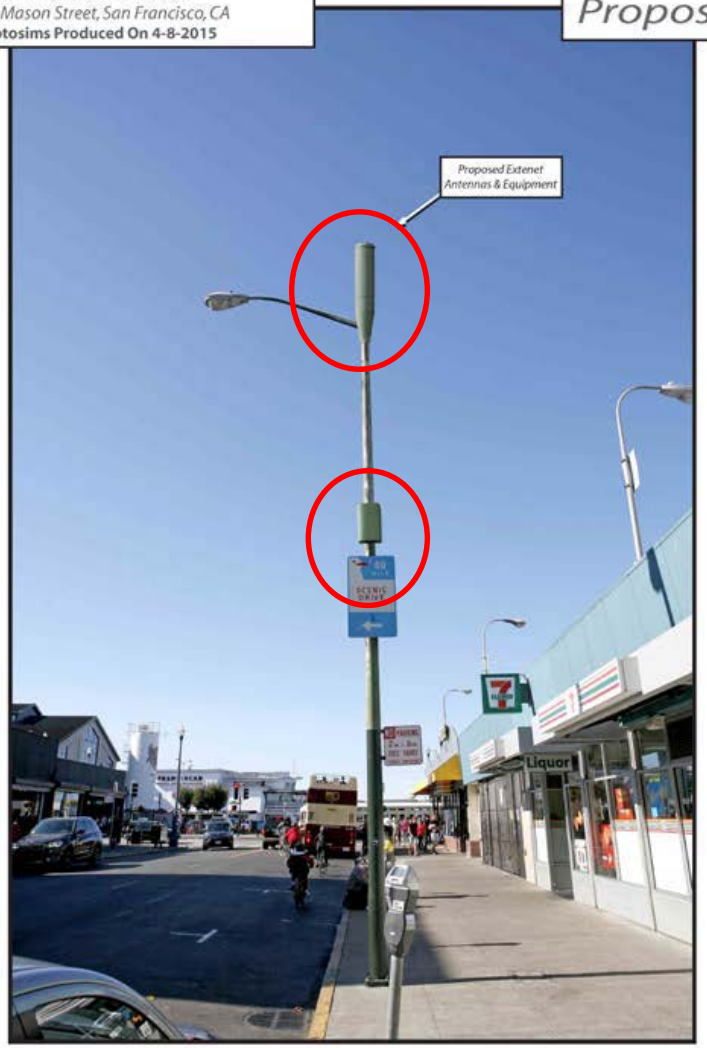
view from Mason Street looking north at site

extenet SYSTEMS

MTAPOLY-VZW Node 72A
2650 Mason Street, San Francisco, CA
Photosims Produced On 4-8-2015

Existing

Proposed

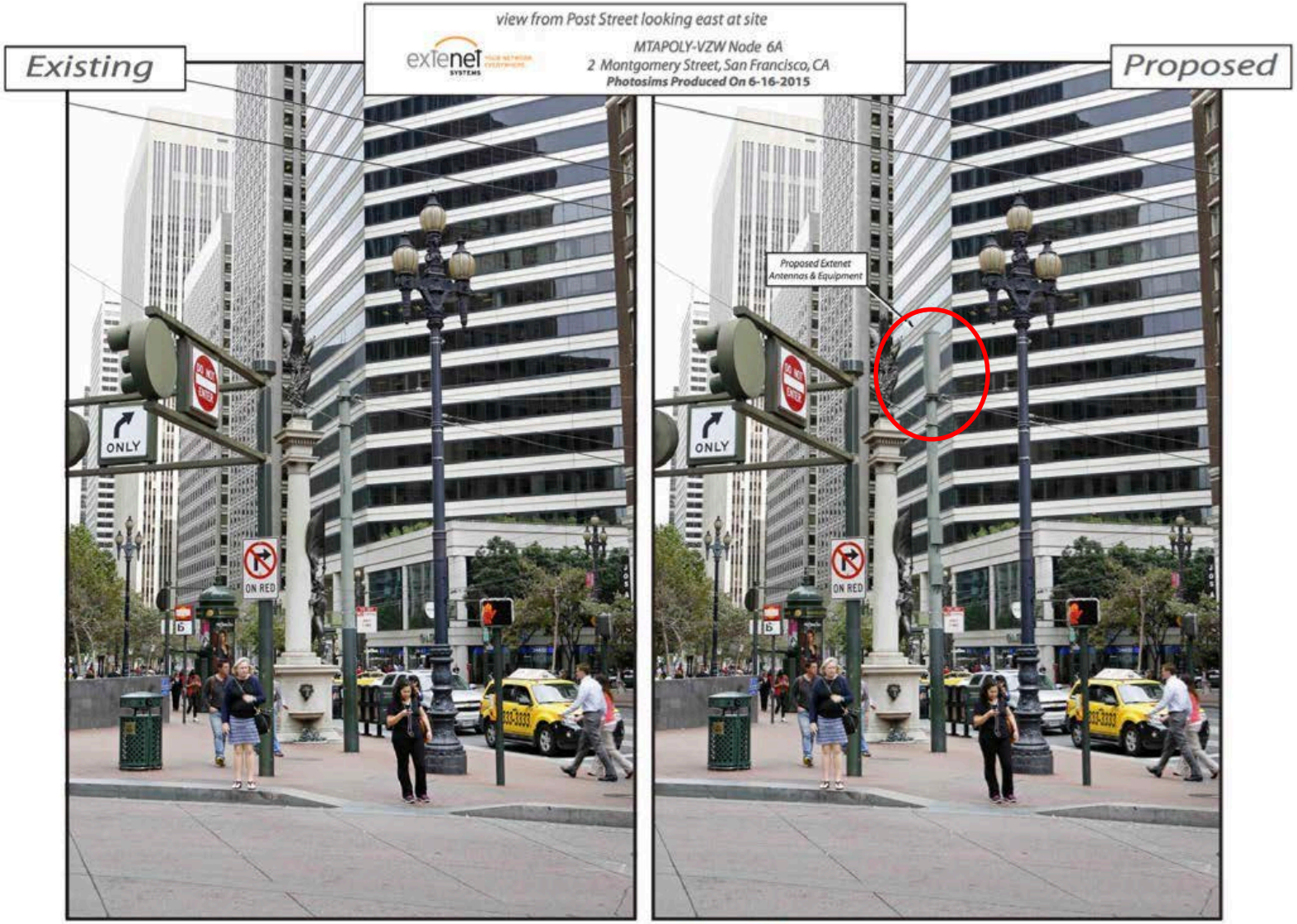


AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

City of San Francisco

Existing facility at Bay Street and North View Court in the Russian Hill neighborhood. Planning Department staff worked with the carrier to place the existing road signs in front of the two equipment enclosures.

City of San Francisco



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PG&E Poles

CPUC Rulemaking

COM/LR1/lil/dc3 **Date of Issuance 2/1/2016**

Decision 16-01-046 January 28, 2016

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding the Applicability of the Commission's Right-of-Way Rules to Commercial Mobile Radio Service Carriers.

Rulemaking 14-05-001
(Filed May 1, 2014)

DECISION REGARDING THE APPLICABILITY OF THE COMMISSION'S RIGHT-OF-WAY RULES TO COMMERCIAL MOBILE RADIO SERVICE CARRIERS

Verizon has right-of-way access rights per the modified right-of-way decision of 2016. By way of this decision, PG&E is mandated to provide access to its poles for pole top antennas belonging to Verizon. The process involves Verizon submitting an application and construction drawings, and pole loading calculations are also performed to ensure structural integrity. Verizon is solely responsible for constructing to GO95 compliance and for retaining any jurisdictional permitting required.

PG&E does not get to choose which poles may be encumbered with an antenna on the basis of property value or aesthetic reasons.

RF Energy and Interference

To the best of our knowledge, small cells present no significant public safety danger.

- Small Cells RF emission limits are regulated by the FCC as a condition of the spectrum license.
- City Master License Agreement requires compliance with emission requirements.

Interference with Communications. Licensee agrees that Licensee's equipment and the electromagnetic energy emitted from the equipment, will at all times comply with all applicable statutes, laws, ordinances, rules and judicial and administrative orders, whether now or hereafter existing, of all applicable federal, state and local governmental authorities and that such equipment shall comply with all obligations to which Licensee is bound in connection with such telecommunications equipment, including, without limitation, applicable regulations of the FCC, the Environmental Protection Agency, and the Occupational Safety and Health Administration.

Small Cells on City Poles

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- Emergency notification
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City Infrastructure: Permitting and construction

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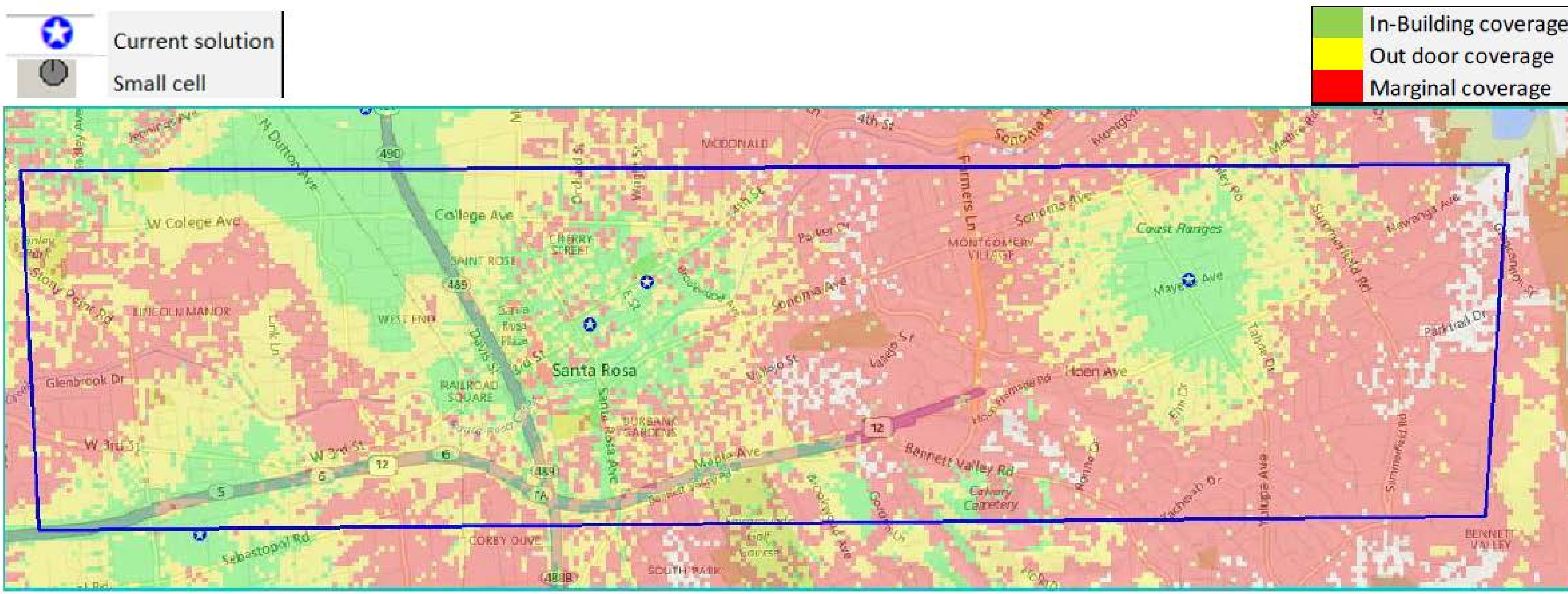
Customer Trends

City of Santa Rosa

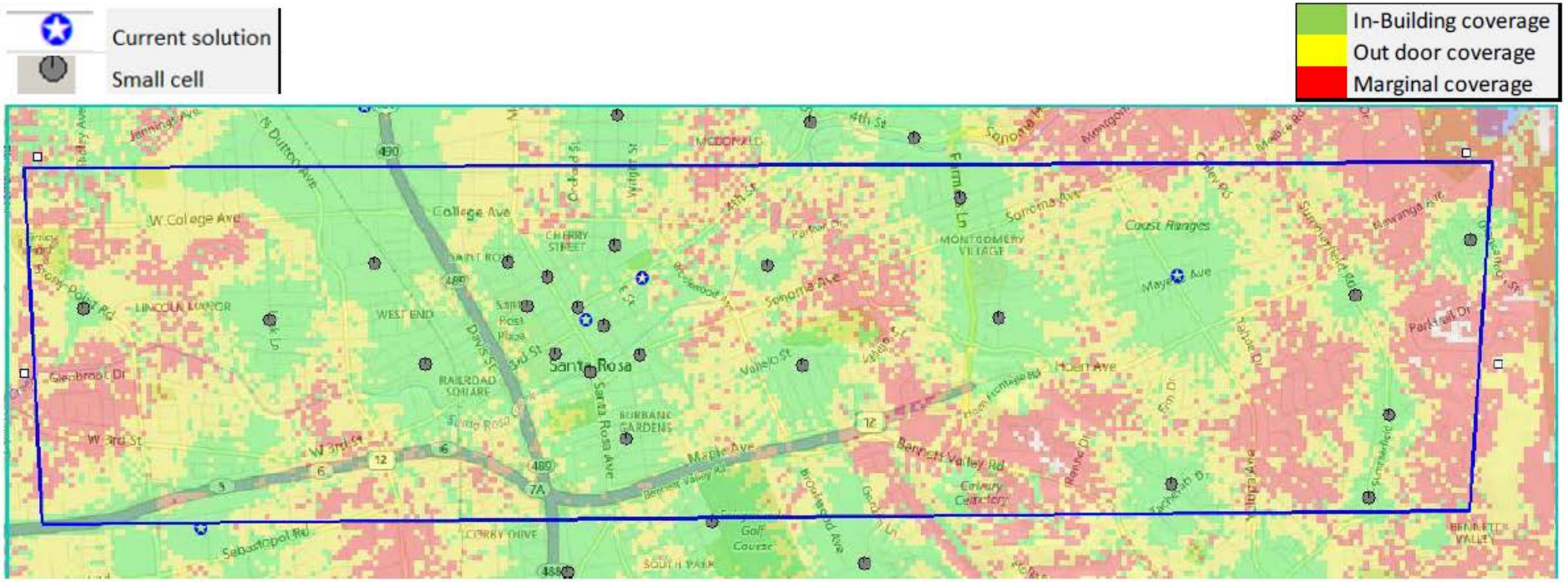
Verizon Cellular Coverage

Downtown Santa Rosa current AWS Coverage

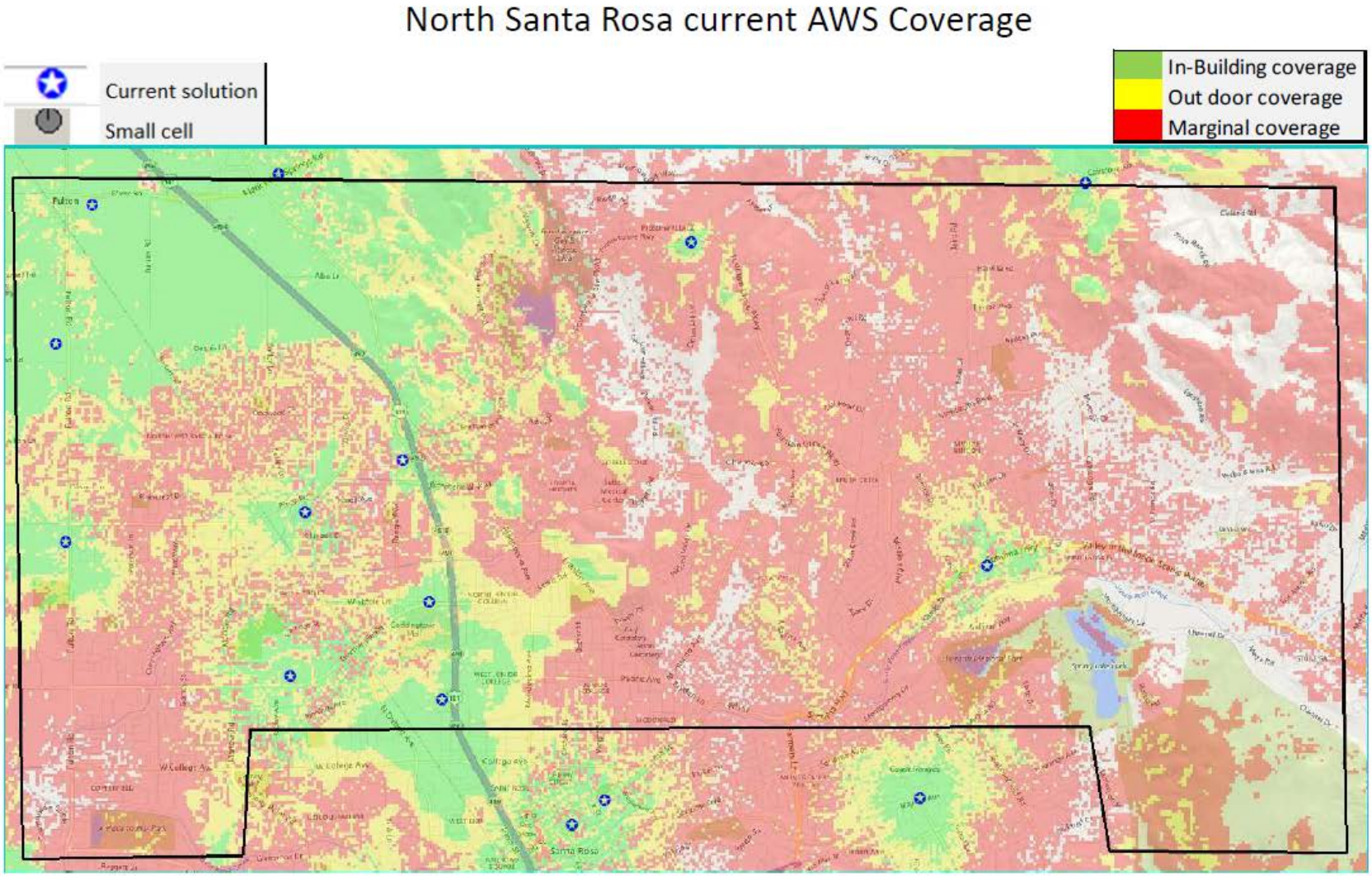


Verizon Cellular Coverage

Downtown Santa Rosa with small cell AWS Coverage

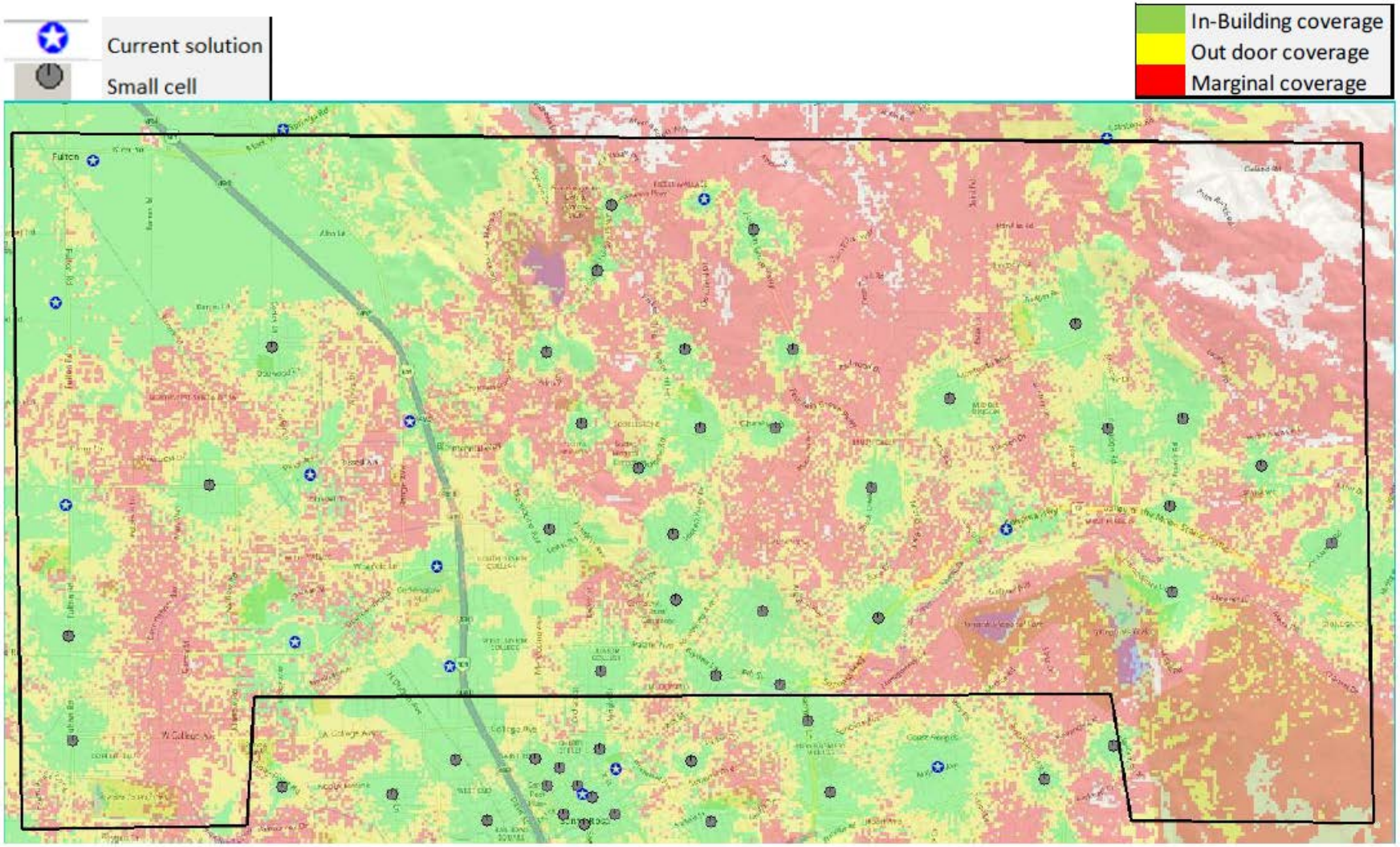


Verizon Cellular Coverage



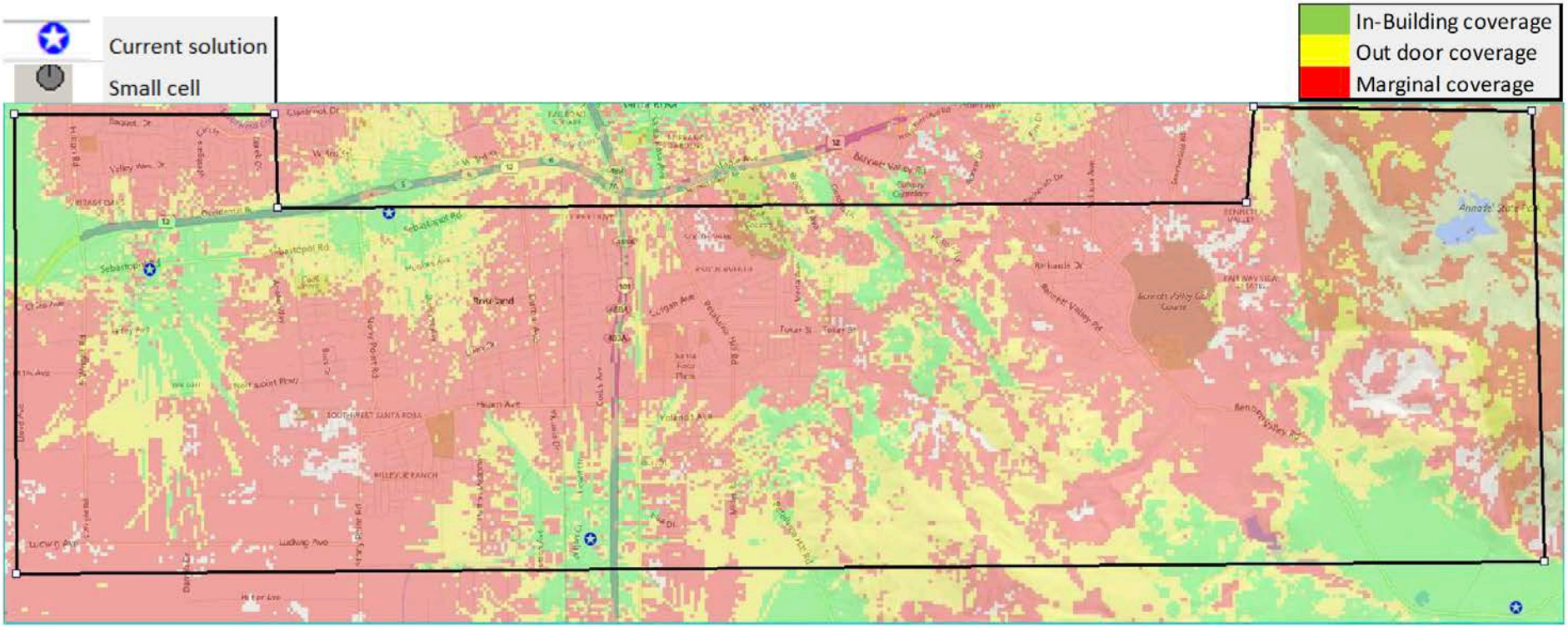
Verizon Cellular Coverage

North Santa Rosa with small cell AWS Coverage



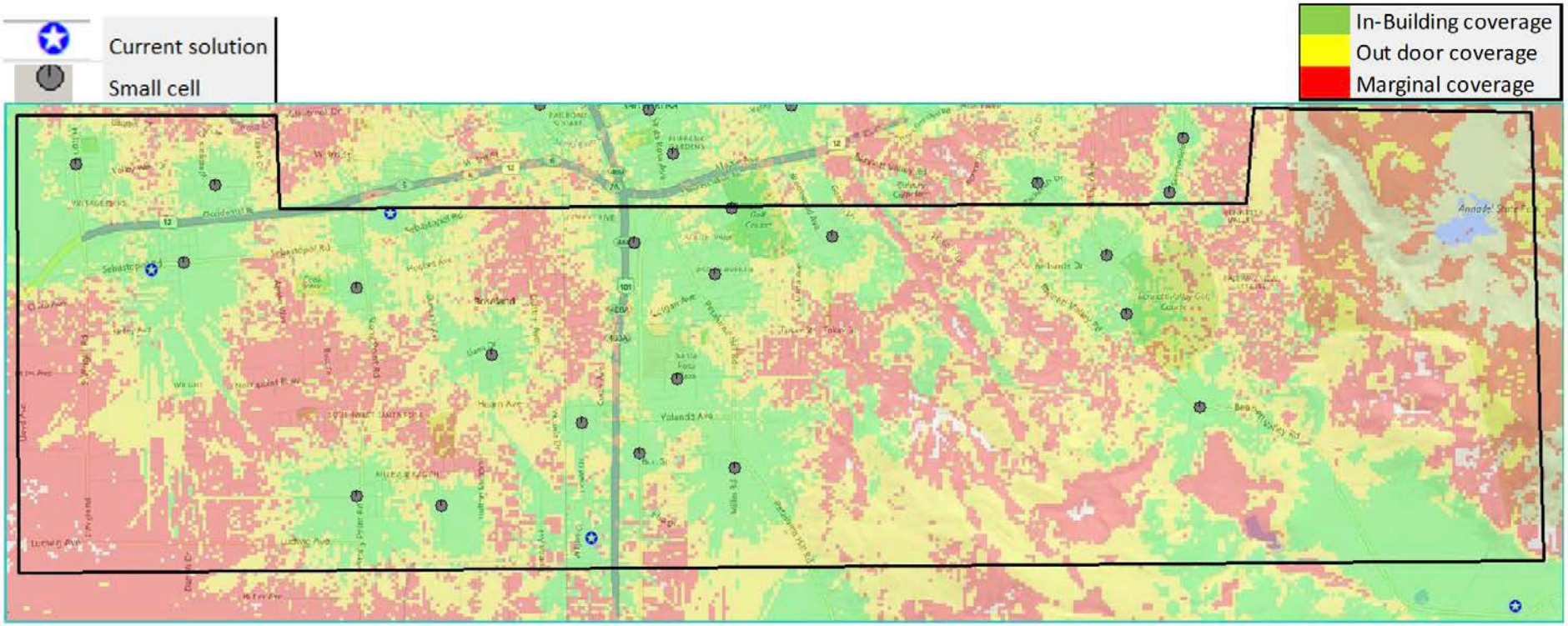
Verizon Cellular Coverage

South Santa Rosa current AWS Coverage

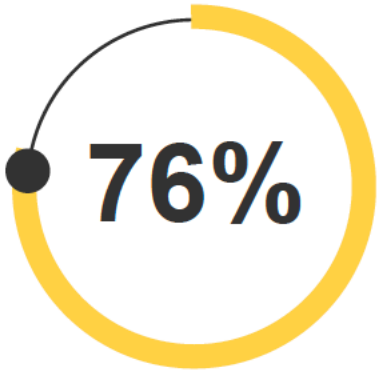


Verizon Cellular Coverage

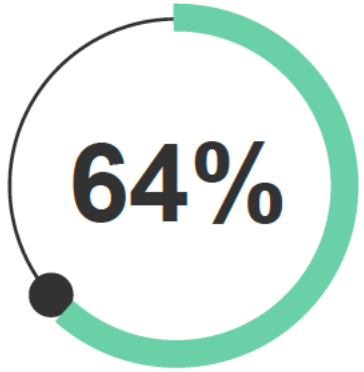
South Santa Rosa with small cell AWS Coverage



Emergency Notification



of wireless subscribers have used devices in an emergency.[1]



of all 911 calls are made from wireless devices, with half of those made indoors.[2]

1. Wireless Week, March 9, 2016
2. EMS World, April 24, 2014

Public Safety

- Wireless prioritized networks for public safety
  - **Verizon** public safety private core (May 2018)
    - Traffic segmentation, priority and preemption, improved security, and enhanced service management and control.
  - **AT&T FirstNet** public safety network
    - Next generation of highly secure, reliable, and innovative mobile broadband communications to first responders through the FirstNet network.

AT&T and San Jose
Small Cell Deal May 2018

- AT&T agreed to pay the city approximately $5 million over a maximum 15-year period to access public assets like light poles throughout the region for the deployment of approximately 170 small cells.
- Blanket agreement for approvals and rate negotiations.
- Earning access to public rights-of-way for telecom infrastructure is important to AT&T for its public safety FirstNet network, to prepare for 5G services and to develop a stronger presence to support future Internet of Things applications.

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Small Cell Cellular Network

Permit Process

Non-City Owned Infrastructure (Joint Poles)

- Encroachment permit
  - Ministerial review
  - Proposal must be consistent with Chapter 13 of the City Code and the City's Design and Construction Standards
- Building permit
  - Section 105.2.3 of the California Building Code exempts public service agencies from obtaining building permits for the installation, alternation or repair of equipment that is under the ownership of the agency.
  - Applicant is electing to pull a building permit for the electrical panel in order to support PG&E's meter setting process

Small Cell Cellular Network

Permit Process

City Owned Infrastructure (Street Lights)

- Master License Agreement
- Site License for each proposed location
  - Conditions can be imposed by the PED Director
- Encroachment permit
  - Ministerial review
  - Proposal must be consistent with Chapter 13 of the City Code, the City's Design and Construction Standards and any conditions imposed as part of the site license approval
- Building permit
  - Section 105.2.3 of the California Building Code exempts public service agencies from obtaining building permits
  - Applicant is electing to pull a building permit for the electrical panel in order to support PG&E's meter setting process

Small Cell Cellular Network
Notification

- City Code requirements for notification and/or public input
  - Differs from minor/major wireless facilities on private property
  - Encroachment permit noticing is intended to address normal construction impacts such as noise, pedestrian and traffic circulation and loss of parking
  - Limited to residents potentially affected by the construction activities
- Process improvements
  - Require noticing prior to approval of street light installations
  - Increasing lead time on notifications
  - Require additional verification that notifications are occurring

Small Cell Cellular Network

Planned Deployments

Verizon *(as of late May 2018)*

- 39 joint pole permits filed
- 39 joint pole permits issued
- 20 under construction, 3 completed
- 3 operational

Mobilitie

- 3 street light permits filed
- 0 permits issued
- 0 under construction, 0 completed
- 0 operational

Installation Options

Goal: Provide additional installation options in neighborhoods

- Joint (PG&E) poles
- City streetlights
- Dedicated metal pole in ROW (NEW)
- Optional battery backup

Installation Considerations

- Proximity to residential facilities
- Battery cabinet public art concept
- Potential design guidelines and conditions for any installation in the right-of-way
  - Legal determination pending
  - Will review and advise upon progress

735 Link Lane

January 2018

February 2018

Small Cell Cellular Network

PhotoSim: Fountaingrove Area

Next Steps

- Move forward with site license agreements for installations on street lights at the discretion of the director of Planning and Economic Development Department.
- Continue discussions for problematic installations and optimization of site layouts.
- Consider incorporating installations on dedicated metal poles in ROW.

Small Cell Cellular Network

Question and Discussion

Questions and Discussion