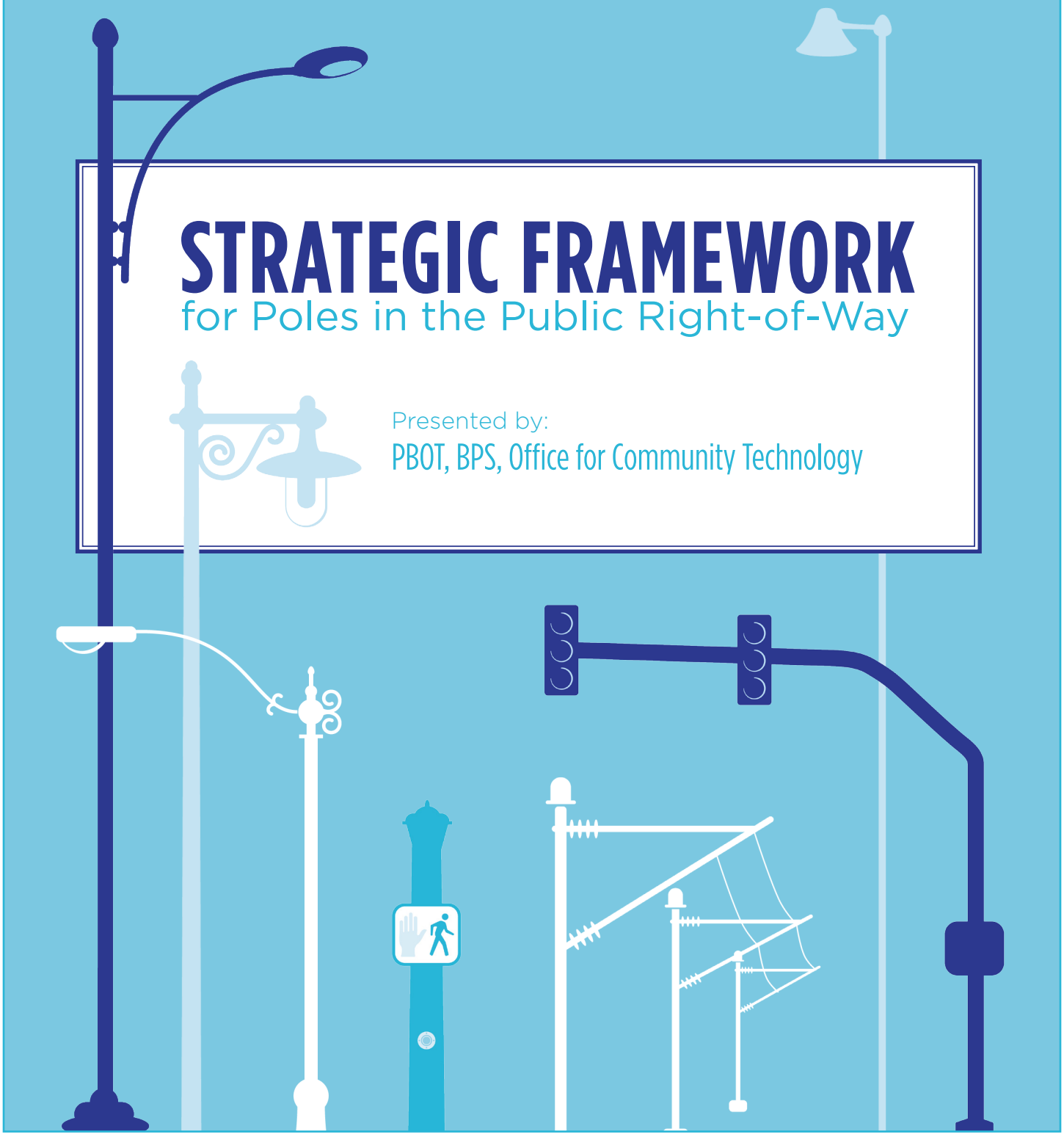
STRATEGIC FRAMEWORK

for Poles in the Public Right-of-Way



Presented by:

PBOT, BPS, Office for Community Technology

PBOT
PORTLAND BUREAU OF TRANSPORTATION

City of Portland
Office for
Community Technology
- Broadband & Communications Policy
- Cable Regulation & Consumer Protection
- Utility Franchises, Licenses & Wireless

Bureau of Planning and Sustainability
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Poles Framework
CONTRIBUTORS

BUREAU OF PLANNING AND SUSTAINABILITY

Christine Kendrick, Air Quality Lead/Smart Cities Project Manager
Kevin Martin, Tech Services/Smart Cities Manager

CITY ATTORNEY'S OFFICE

Maja Haium, Deputy City Attorney
Ben Walters, Chief Deputy City Attorney

OFFICE FOR COMMUNITY TECHNOLOGY

Ann Goldenberg, Division Manager
Jennifer Li, Utility Program Manager

PORTLAND BUREAU OF TRANSPORTATION

Alex Bejarano, Division Manager
Judith Gray, Supervising Transportation Planner
Anne Hill, Program Development
Ryan Mace, Development Supervisor II
Juli Maus, Engineering Tech II
Providance Nagy, Traffic Safety Education and Enforcement
Caitlin Reff, Program Development

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Strategic Framework
Poles in the Public Right-of-Way

Problem Statement

This document describes a proposed work program that would develop new policies and procedures that are responsive to increasing private and public-sector demand for attachments in the right-of-way, while ensuring the highest stewardship of this limited, publicly-owned resource.

Rapidly growing demand for wireless and data services – contributed to by the Internet of Things (IoT) and the growth of automated systems and data needs – is increasing pressure on two of Portland's finite resources: the public right-of-way and City-owned poles in the public right-of-way. Policies and procedures that were developed in past decades will not address the needs and constraints of today and the future.

Early in 2017, the Portland Bureau of Transportation (PBOT) staff convened a working group to assess current related policies and identify needed changes. The working group included representatives of PBOT, Bureau of Planning and Sustainability (BPS), Office for Community Technology (OCT), and the Office of the City Attorney. Some of the major issues identified by the working group include: potential state and local regulatory preemption; neighborhood impacts (visual, noise, environmental); as well as potential opportunities to advance equitable broadband service and public/private partnerships in infrastructure investments.

The working group seeks input and direction on this proposed work program. A multi-bureau effort is envisioned to conduct technical and policy related work, potentially leading to updates and clarifications in city policy, codes, and administrative procedures. To that end, the group proposes to share this framework with PBOT Director's Team, the City's Smart Cities Steering Committee, a Planning and Development Directors meeting, and Commissioner Saltzman and Mayor Wheeler staff.

Introduction

Rapidly growing demand for wireless and data services - dependent on more attachments and infrastructure - is increasing pressure on two of Portland's finite resources: the public right-of-way and City-owned poles in the public right-of-way. Communications systems (telephone, cable and data) rely primarily on privately-owned electric utility poles to attach necessary infrastructure. Future demand and the required attachments may exceed the capacity of existing communications facilities. Therefore, City-owned signal and street light poles are attractive sites for attachments because they have a power supply, are well distributed for antennas, and are in proximity to people and traffic.

Right-of-Way in Overlay Zones and Districts

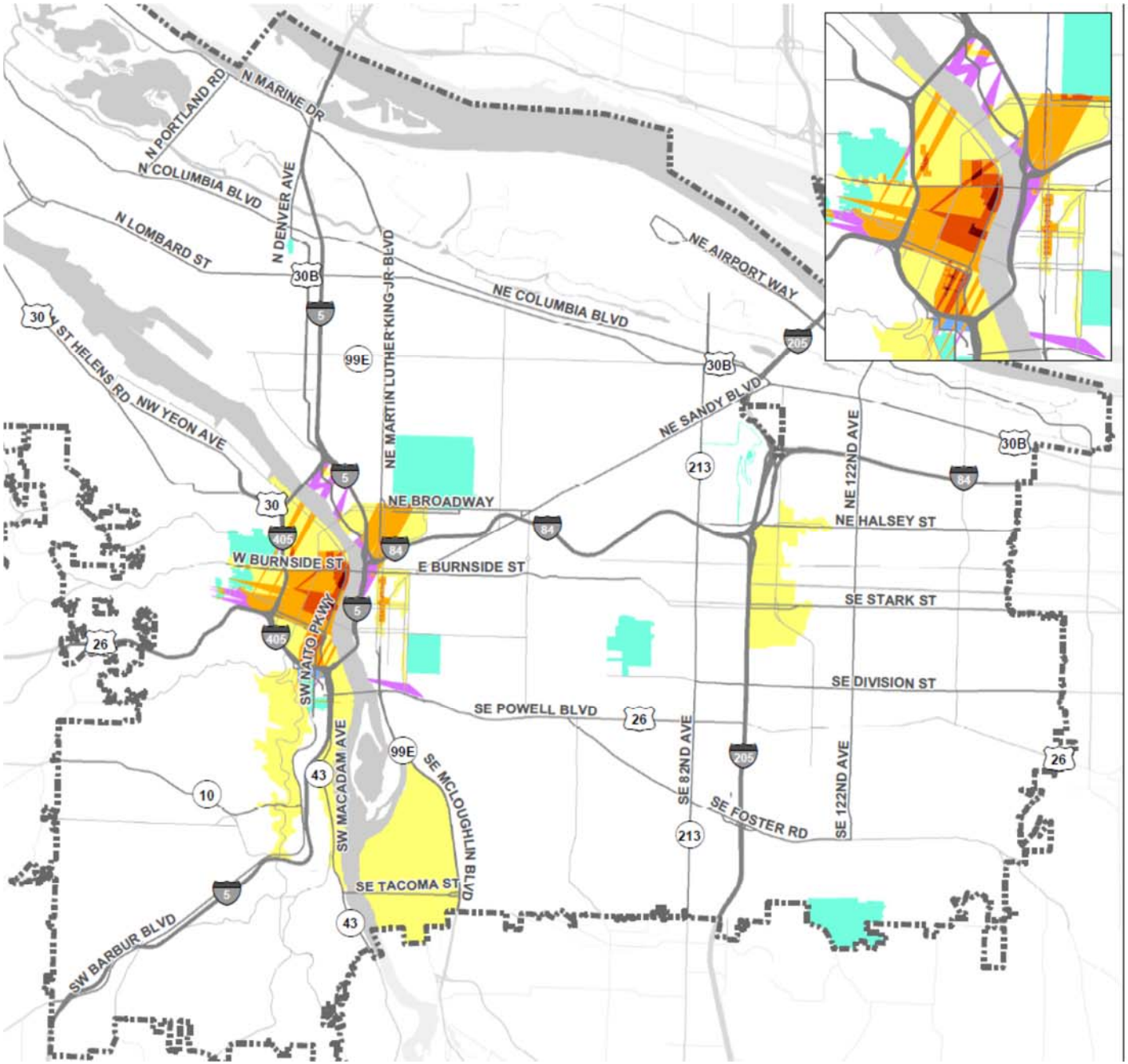
Some overlay zones and districts (i.e., Underground Wiring Districts, Design and Historic Districts, and Scenic Corridors) limit attachments to poles in the public right-of-way.

Right-of-Way Not in Overlay Zones and Districts

Outside of these overlay zones and districts, there are approximately 75 privately-owned poles in the right-of-way to which wireless carriers have obtained permits for attachments from the City. These attachments are regulated by a policy set by Resolution No. 36089 (2002). While the City has regulatory authority over all facilities in its right-of-way, including pole attachments, utilities have not always requested City approval before installing poles or allowing other utilities to add attachments to the poles. For example, the City recently acquired streetlights from PGE. The City had not permitted any attachments on the poles, but numerous third-party pole attachments existed.

Increased demand means Portland faces new questions regarding its management of City-owned poles:

- How can Portland accommodate the demand, from both public and private entities, for access to infrastructure in the right-of-way?
- How does Portland balance competing values – public safety, aesthetics, reliable communications services for our businesses and residents, and appropriate compensation for use of public assets – when managing the right-of-way and City-owned assets?
- Should Portland make spots available on City infrastructure on a first come, first served basis? Or should an alternative allocation method be considered to avoid an Oklahoma land rush?
- How can Portland ensure that use of City-owned assets in the right-of-way serves the City's general goals of equity, resiliency and improved access to city services?
    - Should Portland explore ways in which we could incentivize siting facilities in underserved communities?
- How can Portland ensure that privately-owned poles in the right-of-way also comply with regulations that support the highest public good?



June 5, 2017

City of Portland, Oregon | |
Bureau of Planning and Sustainability | |
Geographic Information Systems

Pole Framework

Combined Areas

Legend

- Scenic View Corridors
- Design Districts
- Historic Districts
- Underground Wiring Districts

Overlapping Areas

- 2 Areas Overlap
- 3 Areas Overlap
- 4 Areas Overlap
- City Boundary

NORTH

0 0.75 1.5 Miles

The information on this map was derived from City of Portland GIS databases. Care was taken in the creation of this map but it is provided "as is". The City of Portland cannot accept any responsibility for error, omissions or positional accuracy.

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Policies, Regulations, & Plans

Existing City policies acknowledge that information and technology services have become essential infrastructure with benefits that should be equally available to all Portland residents and businesses.

- **2035 Comprehensive Plan, Technology and Communications:** encourage innovation in emerging technologies and systems that have the potential to make Portland a cleaner, safer, and more efficient, resilient, and affordable city.
    - **Goal 8.L:** Technology and communications: All Portland residences, businesses, and institutions have access to universal, affordable, and reliable state-of-the-art communication and technology services.
- **Digital Equity Action Plan:** eliminate gaps in broadband capacity, equity, access and affordability so Portland achieves near universal adoption of broadband services for all residents, small businesses and community-based organizations.
- **Portland Broadband Strategic Plan:** pursue universal, affordable and reliable access to high-speed information technology and the devices and training to use the Internet effectively.

The policies of Resolution 36089 from 2002 and Ordinance 182846 from 2009 generally apply to the public right-of-way. All wireless infrastructure approved to date has been attachments on privately owned utility poles and none on City-owned poles.

- **Resolution 36089**: established application procedure for wireless right-of-way agreements for mobile telecommunications providers, including standard terms and conditions.
- **Ordinance 182846**: recognizes the need for polices concerning commercial wireless carriers' communications infrastructure in the public right-of-way and prioritizes placement of infrastructure in the right-of-way along higher traffic streets.

The following Portland City Code (PCC) and Portland Policy Documents (PPD) apply to private utilities and provide a regulatory framework for attachments to City-owned poles (full text of applicable PCC and PPD appears in the Appendix A Code & Regulations):

- City Charter, Chapter 10, Article 2, Franchises
- PCC 3.114.040, Policy, Office for Community Technology
- PCC 17.24.010, Permits Required
- PCC 17.56.010, Public Utilities
- PCC 17.56.050 Poles or Wires in Public Area
- PCC 17.60 Underground Wiring Districts
- PCC 17.60.020 Overhead Wires Prohibited
- PCC 17.60.110 Exemptions
- TRN-10-19, Utility Permits in the right-of-way, Utility Pole Placement Permits
- TRN-10-19, Utility Permits in the right-of-way, Wireless Telecommunication Facilities

Relevant federal law is listed below; however, federal limitations do not apply to a city's proprietary assets (e.g. City-owned poles):

- **Telecommunications Act of 1996, Section 253(a) and Section 332(c)(7).** Generally preserves local authority to control placement of wireless facilities, unless local regulations prohibit or have the effect of prohibiting the ability of an entity to provide telecommunications services.
- **Spectrum Act, Section 6409.** Mandates that a city approve certain wireless facilities siting requests for modifications and collocations of wireless equipment that does not result in a substantial change to the physical dimensions of the facility.

Opportunities

Opportunities abound for the public and the City to benefit from integrating wireless communication and technology devices on City-owned poles by improving: access and digital equity; resiliency and safety; civic engagement opportunities; revenue streams; and data-driven decision making. Types of applications may include small cells, IoT sensors, traffic safety cameras, and connected vehicle (CV) and autonomous vehicle (AV) devices. Specific opportunities may include:

1. Continue proactive management of Portland's largest asset, the right-of-way.
2. Maintain Portland's look and feel in the future by implementing the following requirements:
    a. Aesthetics such as camouflage and concealment;
    b. Noise and air pollution mitigation;
3. Increase investment in upgrading City infrastructure.
    a. Replace or upgrade existing City-owned poles and wires to accommodate new attachments;
    b. Opportunities to install poles with electric vehicle charging capabilities.
4. Address Climate Action Plan, Transportation Systems Plan and Vision Zero goals through current and comprehensive data collection and improved communications infrastructure, including:
    a. Weather/climate data;
    b. Air/water pollution/quality;
    c. Seismic activity;
    d. Real-time pedestrian counts and patterns;
    e. Real-time cyclist counts and patterns;
    f. Road Conditions;
    g. Traffic data and patterns;
    h. Real-time parking utilization (potential additional revenue).
5. Meet emergency response and resiliency goals by better maintaining communication network redundancy and capacity in the event of a disaster.
6. Meet bandwidth needs for City entities, residents, consumers, visitors and businesses through efficient deployment of wireless services, including:
    a. Increased wireless connectivity to address the digital divide, per the City's Digital Equity Action Plan;
    b. Increased wireless connectivity in high population areas and event site locations;
    c. Support of advanced wireless technologies to accommodate growing demand for bandwidth from IoT devices, connected and autonomous vehicles, etc.
7. Compensation for each, distinct legal right used:

    a. Access to the right-of-way;
    b. Access to City-owned poles.
8. Create public/private partnerships to provide adequate service area coverage for innovative technologies such as:
    a. CV/AV;
    b. Ability to wirelessly connect and share data from IoT sensors, CV/AV.

Known Policy Issues

There is no citywide policy or regulation for City-owned poles. The City will consider the following to help guide and establish policies and regulations for City-owned poles:

1. Continue proactive management of a valuable and finite public resource that is under increasing pressure from competing uses. The City should avoid setting up a competitive market environment between private sector companies for space on City-owned poles (i.e., leases will be non-transferrable).
2. The City will consider aesthetic and design implications, including:
    a. How many devices per pole will the public be content with across the various neighborhoods and districts in Portland?
    b. What is the allowable size and other design guidelines for devices depending on their type?
    c. For certain applications, such as devices to support connected and autonomous vehicles, a higher density of locations will be needed. How do we balance these needs with aesthetic and design guidelines?
3. Ensure policies advance Digital Equity Action Plan goals and support equitable deployment of services in traditionally underserved neighborhoods throughout the City. Possible initial actions include:
    a. Developing maps of current and proposed installations
    b. Making these maps publicly available;
4. Develop comparable compensation requirements for similarly situated users.
    a. Neutral host partner carriers and sublease rates;
    b. Increase investment in maintenance and upgrades to City infrastructure.
5. Maintain available space on City-owned infrastructure and in the right-of-way for City use to meet the City's transportation, safety, resiliency and communication requirements.
6. Parallel to attachment policies, create data contract language, user agreements and policies to ensure that data collected by IoT-related sensors is owned by the City, used legally and responsibly, protects confidentiality and personally identifiable information (PII), and that data sharing and data collection policies are consistently applied and publicly-available. Specific actions will include:
    a. Per the City's Open Data Program, the City will work with private sector companies, non-profit organizations, academia, and other government and non-government agencies that are using City infrastructure or operating in the public right-of-way to establish data sharing agreements that will inform City operations and decision making;
    b. Ensure that hardware, peripherals, and software upgrades can be made as technology changes and improves and continue to meet privacy and security requirements;
    c. Develop policies, requirements and specifications for edge processing of data, specifically for any sensor devices capable of capturing images or video.

Examples of Current Applications

Small Cells

Small cells or distributed antenna systems (DAS) are short range, low-powered cellular radio access nodes used to provide in-building and outdoor wireless service (Wikipedia, 2017). The term small is used because these mobile phone base stations have a shorter range and handle fewer calls or sessions compared to more common and larger cellular base stations/towers or macrocells. Cellular and wireless providers are currently looking to install and expand networks of small cells throughout urban areas to improve coverage, quality, resilience and increase cellular network capacity to meet the increasing demand on their current networks served by cell towers.

A negative small cell example without collaborative City input in Oakland.

(accessed https://medium.com/@omarmasry/10-key-issues-for-california-cities-counties-on-the-challenges-of-small-cells-not-so-small-c9e966f257a)

A positive small cell example with collaborative City input in Oakland.

A positive small cell example on a traffic signal pole with stealth and camouflage features.

(accessed https://www.stealthconcealment.com/photo-gallery/small-cell-2/)

Small cell pole attachments can be deployed in a wide range of sizes and configurations depending on the structural capacity of the pole, partnership with the carrier and pole owner, and any local design guidelines. There are examples of small cell infrastructure installed with exposed wiring, noisy fans, a diesel-powered back-up generator and no blending with the rest of the streetscape. There are also examples of small cell infrastructure being integrated into historical street lights where the components are camouflaged inside the street light (though this often requires a taller profile).

Key Considerations

- Increasing usage of streaming data such as video over smart phones is driving the need for increased coverage by wireless providers;
- Internet of Things (smart technology, autonomous vehicles, etc.) will greatly increase need for wireless capacity in the foreseeable future;
- Wireless deployment requires access to buildings and poles that are close to, or in, the right-of-way for proximity to users (people and traffic) and potentially for line-of-sight conditions for certain connection technologies;
- Need to balance public safety, aesthetics (i.e. what should the public right-of-way look like in a decade, two decades, or three?) and industry's need for predictable and efficient deployment;
- Leasing City-owned pole space for small cells is a potential revenue generator and opportunity to upgrade poles and improve pole maintenance;
- Improved cellular and wireless network capacity through private or public networks could lead to a more resilient communications system, one more likely to function after a disaster;
- Application and installation guidelines must address competitive neutrality and equity of expansion considerations related to private and public access to City-owned facilities in the right-of-way;
- There are opportunities for both City-owned and privately-owned poles to implement stealth and camouflage specifications.

Sensors

A combination of the miniaturization of electronics, improved distributed computer processing and data logging, and demand for data driven decision making has led to a growing interest in deploying networks of internet-connected sensors in urban areas. Examples of sensor applications include automated measurements of pedestrian, bicyclist and traffic counts, road conditions, seismic activity, flooding, parking detection, and variables related to weather, climate, and noise, light, air and water pollution.

Sensor device size will depend on the specific application. Most sensor devices for urban applications are being designed so that the actual sensors inside the devices can be changed, upgraded, or new sensors integrated. This is important to accommodate changes and advancements in technology. Some sensor devices, such as those with cameras for pedestrian and bicyclist detection, are often integrated or attached to street-light poles, per the examples below.

Images of AT&T/GE/intel sensor nodes and sensor nodes attached to LED street lights.

Three examples of air quality sensor devices are pictured below and have relatively similar sizes:

- Chicago/Argonne Array of Thing Node: 14 inches tall x 14 inches x 7 inches
- Apis SensorCell Node: 1 foot tall with an approximate 10-inch diameter
- SenSevere's RAMP Node: 1 foot tall x 8 inches x 5 inches

Images of three air quality sensor devices. From left to right, Argonne National Laboratory/University of Chicago's Array of Things Node, Apis' SensorCell Node, and SenSevere's RAMP device.

Key Considerations

- There is a growing opportunity to deploy and test sensor devices that collect data that could be used to inform and evaluate policy decisions, infrastructure investments, improve City services, and foster innovation, civic and social engagement.
- How do we balance availability of space on City-owned poles for City-owned or privately-owned sensor applications with revenue generating applications such as small cell installations?
- Sensor network deployments will require new maintenance and installation plans to help manage this new type of infrastructure.

Automated Enforcement

The City of Portland has been a leader utilizing automated enforcement tools to improve safety since 1995 when it gained pilot authority to launch a mobile van speed enforcement program. Four years later, the City gained authority to operate red light running cameras. In 2015, the City gained authority to operate fixed photo radar, referred to as fixed speed safety cameras.

Because speeding and dangerous behaviors are contributing factors to deadly crashes across the Portland region, the City of Portland's Vision Zero Action Plan includes automated enforcement as part of its actions to mitigate dangerous behaviors and speeding. Portland Police Bureau (PPB) administers the red-light camera program; and PBOT administers the fixed speed safety camera program along four high crash corridors as outlined in the Vision Zero Action Plan. There is a memorandum of understanding between PBOT, PPB, and the Multnomah County Circuit Court.

Intersection Safety: Red-light Cameras

A red-light camera system is connected to the traffic signal and to sensors buried in the pavement at the crosswalk or stop line. The system continuously monitors the traffic signal; the camera is triggered by any vehicle passing over the sensors after the signal has turned red. A second photograph is taken that shows the red-light violator in the intersection. The camera records the date, time of day, time elapsed since the beginning of the red signal and the vehicle speed. In advance of the intersection where a red-light camera is operating, a sign indicating that a camera may be in operation is posted before the device. The camera system requires power installation and typically uses wireless communications instead of any subterranean conduit.

Key considerations:

- Using a data-driven process to reorganize and expand red light safety camera program is a key action for Portland's Vision Zero Program to improve traffic safety at high crash intersections.
- Red-light cameras supplement traffic safety efforts at high crash intersections.
- Signal or other poles and adjacent space may need special evaluations to ensure that the red-light cameras and required signage can be installed in the future or be moved to different intersections where crash data warrants their use to improve public safety.

Corridor Safety: Fixed Speed Safety Cameras

Speed is a specific action area of Portland's Vision Zero Action. Slowing vehicle speeds is key to reducing fatalities and serious injuries in crashes, especially those involving a person walking, rolling, bicycling, or riding a motorcycle. A Fixed Speed Safety Camera system is attached to an existing pole and focuses on one direction of travel. There are numerous considerations when determining where to place a speed safety camera. One example is that the speed camera cannot be placed too close to a signalized/controlled intersection; so, queuing distance and stopping sight distance are among the engineering factors considered.

Each system is comprised of two cameras, a front and rear camera, and adjoining flashes. Warning signs announcing "TRAFFIC LAWS PHOTO ENFORCED", the posted speed limit, and a speed reader board displaying the vehicle's current speed are placed in advance of the speed safety camera. The speed reader board assembly must be placed on the same street as the speed camera and must be placed between 100 and 400 yards before the location of the fixed speed safety camera. Both the reader board and camera system require power installation and typically use wireless communications instead of any subterranean conduit.

Images of fixed speed safety cameras being installed and deployed to on Portland roadways. (Images from PBOT's New Release "Speed Safety Cameras start issuing warnings today on two East Portland high crash corridors).

Key Considerations

- Piloting fixed speed safety cameras is a key action for Portland's Vision Zero Program to improve traffic safety on high crash corridors.
- Pole and adjacent space on high crash corridors may need special evaluations to ensure fixed speed safety cameras and required signage can be installed in the future or moved to different intersections along these corridors.

Devices Supporting Connected Vehicle & Autonomous Vehicles

Connected vehicle (CV) and autonomous vehicle (AV) technologies are currently being developed and research is growing by both the private and public sector. CV and AV are generally defined as:

- Connected Vehicles: not self-driving vehicles, but vehicles with communication technology to make driving safer. CV technology can include communications from vehicles to vehicles (V2V), vehicles to infrastructure (V2I) such as traffic signals, and vehicles to devices (V2X), such as devices that would inform the vehicle of a work zone.
- Autonomous Vehicles: self-driving vehicles with sensory technologies embedded in the vehicle that include radar, LiDAR, GPS, computer vision, and potentially V2V communications. To support communications with other vehicles, infrastructure or reporting road conditions, CV technology will likely be integrated into AV vehicles.

These technologies have communication requirements that will require supporting devices in fixed locations in the right-of-way. These devices allow vehicles to "talk" to roadway infrastructure such as traffic lights, stop signs and work zones, and to communicate with other vehicles. Potential benefits include improved mobility, reduced congestion and improved safety.

Communication capabilities will be dependent on dedicated short-range communications (DSRC), as encouraged by the US Department of Transportation, or 5G, which is still in early stages of development. DSRC requires installation of a small box that includes a radio transmitter, receiver and microcomputer - on light poles, signals, overpasses, etc. DSRC chips are currently being installed in some brands of cars.

Hardware requirements of 5G are less understood as the technology is still being developed, but it will require transmitters and antennas. Because 5G will likely be a shorter-range signal, it will require more antennas in more locations than 4G.

DSRC equipment installed on a pole in the ROW (image from Ben Pierce's SlideShare from the Transformational Transportation Technologies Workshop)

Road side unit along connected vehicle project implementation pilot route in Iran (access from http://cvt-project.ir/En/EnNewsDetail.aspx?SubjectType=109&InfoID=1255)

Example road side unit for vehicle-to-infrastructure (V2X) installation (accessed from Cohda Wireless, http://cohdawireless.com/Products/Hardware.aspx)

Key Considerations

- AVs have the potential to benefit Portland by reducing crashes, improving first and last mile connections for transit users, and reducing the high cost of transportation that results from owning a private vehicle. They also have the potential to significantly increase traffic congestion, vehicle miles travelled, and air pollution including greenhouse gases;
- The Transportation System Plan Update includes consideration for Connected and Autonomous Vehicles. The proposed policy is based on AVs advancing adopted comprehensive plan goals and recommends clear guidance to be developed for evaluating autonomous vehicle tests, pilots, and deployment;
- The Portland Bureau of Transportation launched a Smart Autonomous Vehicles Initiative (SAVI) in April of 2017. A key component of SAVI is the development of policies and requirements for the deployment of AVs in the City of Portland, and to use these polices to inform AV pilots in the City.

Work Program

This work program was developed by the working group for the purpose of developing new and updated policies and procedures in response to the growing private and public-sector demand for attachments in the right-of-way, while ensuring the highest stewardship of this limited, publicly-owned resource. A multi-bureau effort is envisioned to conduct technical and policy related work, potentially leading to updates and clarifications in city policy, codes, and administrative procedures.

The working group seeks input and direction on this proposed work program. To that end, the group proposes to share this framework with PBOT Director's Team, the City's Smart Cities Steering Committee, a Planning and Development Directors meeting, and Commissioner Saltzman and Mayor Wheeler staff.

The following work program is proposed:

1. Policy Review: Portland and Other Cities
    - Review and summarize existing gaps in policies, restrictions, and fees for attachments to City-owned and privately-owned poles;
    - Conduct a review of relevant policy in other cities;
    - Continue to track related federal and state legislation and policies
2. Physical Systems Inventory
    - Develop a digital inventory (GIS data) of all City-owned poles, including pole specifications;
    - Explore the feasibility of developing a digital inventory (GIS data) of privately-owned poles, including pole specifications.
3. Needs Assessment for Future Technology Needs
    - Identify potential underserved areas and develop strategy/incentives for equitable installation;
    - Assess and collect metrics and feedback on current wireless network quality, availability and performance, including a Technical Survey (Radio Frequency (RF) benchmarking);
    - Identify potential negative impacts (e.g., sound, visual, and health) and potential mitigations;
    - Identify needs for future vehicle technologies.
4. Develop Protocols & Specifications
    - Forecast "build out" of pole/attachment infrastructure and develop specifications for design, spacing, locations, and other factors, reference the research already collected by PBOT Signals, Street Lighting, and ITS Division on these details and city comparisons;
    - Develop pole specifications, including stealth and camouflage requirements;
    - Develop costs and potential fee structure, including attachment to City-owned poles and privately-owned poles;
    - Develop a draft policy, rules and fees.

TIMELINE: 6 months

Appendix A Code & Regulations

City Charter
Section 10-210 Conditions and Restrictions.

Every franchise granted by the City shall be subject to the conditions and restrictions hereinafter provided, to wit:
(d) No franchise shall be granted without fair compensation to the City therefor, either by way of direct payment or by reduction of rates, fares or charges, and in addition to the other forms of compensation to be therein provided, the grantee may be required to pay annually to the City such part of its gross receipts as may be fixed in the grant of said franchise. This provision shall not exempt the holder of the franchise from any lawful taxation upon its property nor from any license, charge or imposition not levied on account of such use.
(e) … The Council shall have power to determine what is a fair compensation and to regulate the manner of such use subject to judicial review, but no judicial proceedings shall suspend or postpone such use if the person or corporation desiring such common use shall deposit in the court such sum as the court on a preliminary hearing may determine.

Portland City Code
3.114.040
In order to establish and ensure a stable, predictable basis for long-term relations, it is the policy of the City of Portland that public or private utilities and other entities seeking similar rights to utilize City rights-of-way should be subject to franchise agreements with the City.

POLICY	SECTION	SUMMARY
Transportation Administrative Rule – TRN 10.19 (relevant sections)	**Utility Pole Placement Permits**	City policy directs that utility poles should be placed within 1' from the extended property line to the centerline of the new or replacement pole. Poles should be placed 18" from face of curb to face of pole unless right of way constraints exist. …. If the pole is not placed on the extended property line, the utility must obtain abutting property owner written consent. Poles owned by City of Portland Signals and Street Lighting section for the exclusive use of street lighting may be placed in the furnishing zone at any location on the frontage without property owner consent.

		Poles proposed to carry cell equipment of a wireless telecommunications provider will not be permitted. Wireless facilities must be placed on existing or replacement poles only and follow all Administrative Rules listed under the "Wireless Telecommunication Facilities" section of this Administrative Rule.
	Wireless Telecommunication Facilities	Proposed wireless telecom facilities are reviewed and permitted as with any other utility installation and must meet the standards of the City regulating such construction. The facilities placement will also be regulated by the terms and conditions set forth in the right of way Agreement entered into between the City and the Telecom provider.
Portland City Code, Title 17	**17.24.010 Permits Required**	A. Any person desiring to make a public improvement, do work in, or use the street area must first obtain a permit from the Director of the Bureau of Transportation as prescribed in this Chapter, and pay the permit fees set forth in Section 17.24.020, except for maintenance activities allowed without a permit, as set forth in Sections 17.42.020 and 17.42.025. B. Except as set forth in paragraph E. below, no person shall be granted a permit to install, construct, reconstruct, repair, alter or maintain facilities for the distribution, transmission or collection of sewer, water, gas, petroleum products, steam, electricity, telecommunications, or other service and any associated wires, cables, poles, conduits, appliances or apparatus in, on, over, through or in any manner beneath the surface of the streets unless that person currently possesses a franchise or privilege granted by the City of Portland or is a City bureau charged with providing such service to the public to generate, transmit or provide any such service including but not limited to electricity, telecommunications, natural gas, sewer, water, storm water, and pipeline services within the City.

17.56.005 Definitions	For the purposes of this Chapter, "public utility" includes any person that installs, constructs, reconstructs, repairs, alters or maintains facilities for the distribution, transmission or collection of sewer, water, gas, petroleum products, steam, electricity, telecommunications, or other services, together with any associated wires, cables, poles, conduits, appliances or apparatus in, on, over, through or in any manner beneath the surface of the streets and that person currently possesses a franchise or privilege granted by the City of Portland or is a City bureau charged with providing such service to the public.
17.56.050 Poles or Wires in Public Area	It is unlawful for any person to erect any pole or to stretch wires or cables in, under or over any street, park, public way or public ground for any purpose whatsoever, unless a City permit or franchise therefor has first been granted by the Council.
17.60 Underground Wiring Districts	Designates 6 Underground Wiring Districts (Districts A through F), and includes descriptions of those districts. Within the Underground Wiring Districts, overhead wires are prohibited, including poles, appliances or apparatus. Wires, poles and appliances for street lighting are exempted, as are traffic signals. Section 17.60.110.
17.60.020 Overhead Wires Prohibited	A. It is unlawful for any person to erect, construct, or maintain on or over the surface of any street or public use easement designated in Section 17.60.010 within an underground wiring district, any wires, poles, cables, appliances, or apparatus of any kind, on, through or by means of which electrical current or communications are transmitted or used. B. Whenever all existing utility facilities are located underground within a public right of way, a person with permission to occupy the same public right of way must also locate its new facilities underground.

17.60.110 Exemptions

The provisions of this Chapter with respect to underground construction or installation shall not apply to the following:
A. Wires, poles, and appliances for lighting the streets of the City under contract with the City, or under private contract, connected with wires or cables in underground conduits or subways of a public utility; but all wires for street lighting above the surface of the streets shall be placed inside or on the outside of poles used in connection with such street lighting as directed by the City and shall be connected underground from the foot or base of the respective poles directly with the nearest wires or cables placed in such conduits or subways; provided that wires for street lighting if put on the outside of poles shall be placed in proper enclosures so as not to be dangerous to life or property, excepting, however, wires above the ground connecting the poles and the wires thereof with the light fixture on the pole.