
SEATTLE DEPARTMENT OF CONSTRUCTION AND INSPECTIONS
Director’s Report and Recommendation
Internet Service and Low Power FM Radio Amendments

Background

Seattle Municipal Code Chapter 23.57, Communications Regulations, was adopted as part of the Seattle Land Use Code under Ordinance 116295, effective in 1992. In the 23 years since Chapter 23.57 became part of the Code, technology has changed considerably. Updates to the Land Use Code are proposed to accommodate advances in two specific areas: 1) internet service, and 2) Federal licensing for use of the airwaves by low power radio stations. The proposal would change the existing regulations to make it easier to locate utility equipment boxes designed primarily to facilitate better internet connectivity but also better telephone and video connections, and would also change regulations applicable to radio stations to make it easier for low power FM broadcasting facilities, licensed solely as non-profit entities and with a limited broadcasting reach, to locate their antennas in suitable locations in all zones throughout the city.

Under current regulations, telecommunication facilities of various types are allowed in all zones throughout the City. Telephone equipment, in particular, has long been a feature of the urban environment. Telephone equipment is more commonly located in the street or other public right-of-way, rather than on private property, although this does occur. With the rise of widespread personal computer and cellular telephone use in the 1990’s, the technology for delivery of telephone service has changed considerably. Telephone and cable companies both have broadened their traditional services to include a mix of telephone, internet connection for computers and related devices, and video connections. With the increase in new business activities, telephone and cable companies have an increased business need to install new equipment. While some of this equipment can be located in the right-of-way, increasing demand from customers has resulted in installation of equipment on private property.

Minor communications utilities, which include towers and antennas for wireless communication services such as cellular telephone, and accessory communications devices, including amateur radio (HAM) towers and antennas are regulated in Chapter 23.57 of the Land Use Code. There is no current definition or classification that specifically applies to utility equipment cabinets. The lack of a current definition or use classification for these devices in the Land Use Code creates an ambiguity in interpretation of the regulations. Consequently, SDCI is recommending new definitions and development standards in the Land Use Code to clarify that they are defined and regulated as a minor communication utility use and to regulate their appearance and location.

Current Code standards for minor telecommunication facilities allow “FM translators” and “FM boosters with fewer than 10 watts transmitting power.” It is possible to interpret the existing regulations to classify low power FM radio facilities as minor telecommunications utilities. However, low power FM is essentially a new type of radio use. Chapter 23.57 would

be improved by specifically defining low power FM as a minor telecommunication utility and providing both development standards for them and a clear permitting path.

Proposal

The legislation would accomplish the following for communication utility cabinets:

- Add a definition to SMC Section 23.84A.006 under “Communication Devices and Utilities” for a “communication cabinet” to clarify that utility cabinets containing equipment for such purposes as internet, telephone and video connectivity to serve multiple customers are a specific type of telecommunications use distinguishable from existing major and minor telecommunications uses regulated by the current Code.
- Change the definition of “communication utility, minor” to include communication cabinets.
- Add language to existing use regulations in Chapter 23.57 for all zones to clarify that communication cabinets for such purposes as telephone, internet, and video connection are a minor communication utility use, distinguishable from existing major communications utilities such as television and radio towers and also distinguishable from minor communications utilities that are wireless facilities.
- Specify that communication cabinets are permitted outright on private property in all zones if less than 66 inches in height and having a maximum volume of 36 cubic feet.
- Permit communication cabinets larger than 66 inches in height and 36 cubic feet in volume by administrative conditional use in Single Family, Residential Small Lot, Multifamily, and Master Planned Community zones and permit them outright in all other zones subject to location, screening, and landscaping standards.
- Require development standards for utility cabinets to regulate lot coverage, location in yards and setbacks, limit their maximum height, and require screening, landscaping, or decorative wraps if screening or landscaping cannot occur due to physical or topographical constraints.
- Allow the location of utility cabinet uses as a Type I Master Use Permit decision, unless development standards cannot be met, in which case the standard Type II special exception process with specific criteria would be required.

The legislation would accomplish the following for low power FM radio facilities:

- Add a definition to SMC Section 23.84A.006 under “Communication Devices and Utilities” for a “Low Power FM broadcasting facility” to distinguish this type of facility from standard radio broadcasting facilities and specify that low power FM facilities are limited by FCC regulations to no more than 100 Watts of broadcast capability.
- Change the definition of “communication utility, minor” to include low power FM broadcasting facilities and also specify that broadcasting studios for low power FM stations may be accessory to the low power FM minor communication utility use.

- Allow low power FM radio antennas and pole mounts outright in Single-Family and Multifamily zones according to the standards for amateur radio tower in Sections 23.57.010.E and 23.57.011.C.
- Allow low power FM radio antennas and pole mounts outright in all other zones if the total height above grade of either an independent antenna and pole or an antenna and pole mounted on a structure does not exceed a maximum height of 15 feet above the height limit of the zone.
- Allow low power FM radio antennas and pole mounts by administrative conditional use in all zones, if the maximum height is required to exceed the height allowed for these uses permitted outright, up to a maximum height of 100 feet above grade.
- For low power FM facilities subject to conditional use in Single-Family and Multifamily zones, include a criterion to require analysis of the proposed location to be the least intrusive facility at the least intrusive location on the proposed site of the LPFM facility.

Analysis

Utility Equipment Cabinets

Utility equipment cabinets are a unique type of telecommunications device developed in response to changes in technology and changing customer requirements. Currently Century Link is the primary company installing these devices. Approximately 580 cabinets have been installed in the street right-of-way but also in a few cases on private property. Approximately 30 - 40 cabinets are currently installed on private property, and it is estimated that about 10 per year over the next ten years could be installed on private sites, for a total of about 140 cabinets on private property. Utility equipment cabinets are often intended to serve residential customers. Thus, it makes sense to allow their placement within residential zones, while also clarifying that they may be located in non-residential zones as needed.

Technology in this field is changing rapidly, with the effect of reducing the size of the utility cabinets required to house the equipment. A typical new installation to support deployment of high speed internet service to multiple individual customers includes only one cabinet with a maximum height of 40 inches, width of 19 inches, and depth of 14 inches. This is equivalent to an average air conditioner or heat pump allowed in a required yard in single family zones. These cabinets would support one of the following: 1) a digital subscriber line access multiplexer (dslam) terminal; 2) a fiber access enclosure; or 3) a Gigabit Passive Optical Network (GPON). All of these systems transmit internet and video services to multiple customers. The devices are connected to power lines, telephone lines, and fiber optic cables in the street right-of-way and then connected by wire or fiber optics to individual residences or businesses. The GPON equipment is “passive,” which means that no electrical connection is required. In rare situations the incumbent telecommunications provider may have the need to place equipment to support existing voice services, and these installations may require the placement of a service area interface (SAI) or an equipment cabinet for both copper and fiber based services, which could measure up to five feet high and up to two feet wide or deep.

Based on the modest size of utility equipment cabinets, their low noise levels, and their use to support personal electronic equipment, SDCI’s recommendation is to add a definition for them as a type of minor communication utility use and amend the use regulations of SMC Chapter 23.57 to allow them as a use permitted outright below a specific size threshold.

A new Code section, 23.57.017, would add development standards to regulate the location of utility equipment cabinets and require appropriate screening and landscaping. For all residential zones, except Downtown zones and Seattle Mixed zones, the cabinets could be located in required yards or setbacks, or within the principal building area. They would be subject to a minimum setback of 3 feet from side lot lines and a maximum coverage area 10 feet wide by 10 feet deep. The area designated for the cabinets would also have to be a location not needed to meet any development standard for an existing development on site, such as amenity area, required side yards or setbacks, or required parking. An easement to allow access for maintenance would be allowed in any location on the property. For Downtown, Seattle Mixed, Commercial, and Industrial zones, as well as special review, historic and landmark districts, the cabinets would be allowed anywhere on site, provided that the proposed location is not needed to meet any development standard for an existing development.

Proposed new Section 23.57.010 would also add screening and landscaping standards to screen the equipment cabinets from view. The proposed language would give developers a choice between screening using fences, walls, hedges or landscaped berms up to 6 feet in height or providing a landscaped area at least 3 feet wide. If a site has physical or topographic constraints such as existing structures or steep slope areas, a third option would allow decorative wraps instead of screening or landscaping.

The proposed regulations are intended to address potential aesthetic and noise impacts from the proposed utility boxes. Aesthetic impacts are basically similar to air conditioners, heat pumps or similar mechanical devices. Since equipment cabinets are being designed to increasingly smaller sizes, regulation in side yards and setbacks to limit potential noise and clutter in small open spaces, together with screening and landscaping, should be sufficient to address aesthetic and noise concerns.

For cabinets exceeding 66 inches in height and having a volume greater than 36 cubic feet that are proposed in residential zones, an administrative conditional use review would be required. Under this process, public notice and opportunity to comment would be required, and a land use planner would prepare a written analysis that would involve more detailed review of location on a site and consistency with neighborhood character.

Noise impacts are a secondary concern for telephone and internet utility devices. Some of the devices create continuous, low level noise, generally described as a buzzing sound. While there is no evidence that the devices are inconsistent with City noise regulations, requiring proper setbacks from other lots, together with screening, will help ensure effective noise control.

Low power FM radio

Unlike traditional FM radio stations with large transmission towers capable of reaching a 100-mile transmission radius and with broadcast wattage up to 100,000 Watts, low power FM broadcasting stations are limited by the FCC to 100 broadcast watts and with a maximum broadcast radius of 5-6 miles. Low power FM radio stations require a broadcast booth or facility with one or two staff and an antenna that reaches approximately 100 feet in height from the ground. This height is achieved either by mounting a shorter antenna on a building or mounting it on a steel pole up to 2 inches wide, in order to reach 100 feet in height. There are several different antenna types, but one recommended type is one foot in diameter and weighs 11 pounds, and the other designs are of similar size. For roofs with an insufficient height to reach the desired location, a two-bay or three-bay antenna might be needed. The antenna poles would generally need to be anchored by guide wires. The FCC licensing requires these small radio operations to be non-profit.

Given the modest size of the equipment, the low power and transmission radius, and their nonprofit status, low power FM operations are more similar to amateur radio (HAM) operations than to traditional broadcasting businesses. The proposed amendments would define them as a type of minor communication utility and allow them outright in residential zones subject to the standards for amateur radio devices accessory to residential use and provided that the broadcasting facilities required for them meet the standards for home occupations. If the antennas and poles for a low power FM station were required to exceed the height allowed for amateur radio towers, then a conditional use analysis would be required in residential zones. A maximum height of 100 feet above ground level would be applied for low power FM antennas and poles for conditional use approval. Antennas would be limited to no more than three antennas 18 inches in diameter and 18 inches in height per pole, and poles would be limited to 2 inches in diameter and could be either mounted directly on the ground or on a structure.

In October 2013, the Federal Communications Commission (FCC) was authorized to license low power FM broadcasting facilities and in 2014 granted approximately 1,200 low power FM construction permits nationwide. In Seattle, there are a total of ten applicants who have either been granted FCC construction permits or have pending applications.

Under conditional use review, existing criteria for location of minor communication utility antennas would apply, except that analysis of whether the facility and location proposed is the least intrusive facility at the least intrusive location consistent with effectively providing service would be modified to allow analysis of the least intrusive location on the property proposed as the site of the low power FM facility. This change in the location criterion would take into account that these facilities are small non-profit operations and will be few in number (up to 10 are eligible for or have received FCC licenses), rather than large commercial broadcasting businesses or commercial communication businesses such as cell-phone operations that may have an expanding need for greater numbers of antennas. Additional existing criteria in the Code would require analysis of visual impacts, whether height exceeding the zone height limit is the minimum necessary for effective functioning, and if proposed on a ground mounted pole,

whether it is not feasible to mount the antennas on an existing transmission tower or building instead.

Low power FM facilities would be permitted outright in non-residential zones, with a standard allowing them to exceed the base height limit of the zone by up to 15 feet, similar to height exceptions for solar collectors, mechanical equipment and similar rooftop features. A conditional use analysis would be required if the antenna and pole for them would exceed 15 feet above the height limit of the zone. Existing conditional use criteria would require that the low power FM facility not result in significant change in pedestrian or retail character of a commercial area and that additional height requested beyond the height allowed outright is the minimum necessary for effective functioning. As in residential zones, if proposed on a ground mounted pole exceeding the base height limit plus 15 feet, the analysis would include whether it is not feasible to mount the antennas on an existing transmission tower or building instead.

Recommendation

Telecommunications utility cabinets are a growing segment of the telecommunications industry. They are devices of modest size with the purpose of improving telecommunications primarily for residential customers. The proposed regulations are a reasonable means to allow utility cabinets throughout the City while providing some control over their placement on private property and their appearance. Similarly, low power FM facilities are of a modest size and number, with minimal impacts to any specific neighborhood as they will be distributed throughout the City. Even so, the proposed Code changes, similar to utility cabinets, would regulate placement on private property and appearance. The Director recommends approval of the proposed legislation.