


MEMORANDUM

CITY/BOROUGH OF JUNEAU
155 South Seward Street, Juneau, Alaska 99801

DATE: April 7, 2014

TO: Planning Commission

FROM: Travis Goddard, Planning Manager 
Community Development Department

FILE NO.: TXT2009-00007

PROPOSAL: Major Issues - Wireless Communications Facilities Master Plan and Ordinance.

PROJECT DESCRIPTION AND BACKGROUND

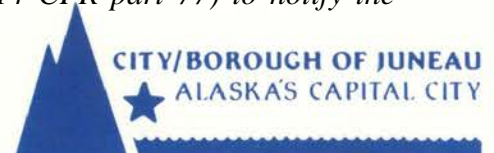
The CBJ is seeking to adopt a Wireless Communications Facility (WCF) Master Plan (MP) and implementation ordinance. As part of this effort, CDD staff held public open houses to inform the public of the project's objectives and to gather public input. In addition, staff has had several sessions with the Planning Commission and a committee of the whole meeting with the assembly to gather input and identify areas of concern that they would like the MP and ordinance to address.

ANALYSIS

The following analysis, while not a comprehensive analysis of the complete list of comment submitted, addresses the major issues raised by the public, the industry, the Planning Commission, and the Assembly. This memorandum supplements the data and conclusions completed as part of the Wireless Communications Facility Survey Results memo produced on April 3, 2014.

In addition, the analysis is based upon the premise that most collocations and attachments would not require conditional use permits while new towers will require a conditional use permit (as found in Table 1 of the proposed ordinance). Based upon this assumption, staff recognizes that the Condition Use Permit process requires compliance with CBJ 49.15.330(f) which includes the standard of being in substantial harmony with property in the neighboring area. This substantial harmony standard provides a significant tool for the CBJ to review proposals, and does not require additional code language to implement. It simply requires the CBJ to establish performance policies and standards for which proposed WCFs can be measured against. Given this, staff provides the following analysis of the issues of major concern raised during the public involvement phase of this planning process.

Aviation Safety and Lighting - FAA Advisory Circular (AC) AC 70/7460-1K is the AC for Obstruction Marking and Lighting. Under the reporting requirements in Chapter 1, it indicates that *"any type of construction...that may affect the National Airspace System (NAS)...is required under the provisions of Title 14 Code of Federal Regulations (14 CFR part 77) to notify the*



FAA”. Such notice is required 30-days prior to the proposed construction begins and “*on or before the date an application for a construction permit is filed with the Federal Communications Commission (FCC).*” (Information about the NAS can be found at https://www.faa.gov/air_traffic/nas/)

Staff notes that this section is broadly worded so that “*any type of construction*” could be interpreted to mean any type of building or structure, but also any the activity to construct a building or structure (like cranes to erect buildings). This broad construction could only be interpreted to mean that local authorities should be given authority to apply site specific considerations to address site specific safety concerns as needed. In effect the word “may” allows individual airports and jurisdictions to use their judgment in evaluating whether the NAS may be affected and to, on a case-by-case basis, require applicants contact the FAA for review under the AC.

Given this, staff recommends that the existing Master Plan Public Health & Safety statement and Policy 2 remain unchanged. It clearly states that it is a CBJ priority to protect aviation safety.

Lighting - Chapter 2, Section 20 of the AC says:

“Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 feet (61m) above ground level (AGL) or exceeds any obstruction standard contained in 14 CFR part 77, should normally be marked and/or lighted. However, an FAA aeronautical study may reveal that the absence of marking and/or lighting will not impair aviation safety. Conversely, the object may present such an extraordinary hazard potential that higher standards may be recommended for increased conspicuity to ensure safety to air navigation. Normally outside commercial lighting is not considered sufficient reason to omit recommended marking and/or lighting. Recommendations on marking and/or lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design. The FAA may also recommend marking and/or lighting a structure that does not exceed 200 (61m) feet AGL or 14 CFR part 77 standards because of its particular location.”

This section does a good job defining what the FAA considers as a trigger for reviewing obstructions to the NAS. It sets a minimum bar for lighting and marking at 200-feet then goes on to allow for a FAA aeronautical study as a safety valve for considering individual cases as necessary.

Chapter 2, Section 22 Marking and Lighting Equipment, also adds additional discussion for the marking of obstructions. It says:

“Considerable effort and research have been expended in determining the minimum marking and lighting systems or quality of materials that will produce an acceptable level of safety to air navigation. The FAA will recommend the use of only those marking and lighting systems that meet established technical standards. While additional lights may be desirable to identify an obstruction to air navigation and may, on occasion be recommended, the FAA will recommend minimum standards in the interest of safety, economy, and related concerns. Therefore, to provide an adequate level of safety,

obstruction lighting systems should be installed, operated, and maintained in accordance with the recommended standards herein”

Chapter 2, Section 25 of the AC goes on to say that “*FCC licensees are required to file an environmental assessment with the Commission when seeking authorization for the use of the high intensity flashing white lighting system on structure located in residential neighborhoods as defined by the applicable zoning law.*” This particular section has been a specific point of contention in the past. In the recent case, while the light appears to be very intense, it is actually a medium intensity flashing design according to the AC and its specifications which means that an environmental assessment was not triggered.

Staff reads Section 22 as a pretty strong statement by the FAA that they have studied and analyzed obstruction lighting and have reached their AC standards based upon an expertise that CBJ cannot hope to replicate. With this in mind, staff’s preferred approach would be to rely upon the FAA and FCC to do their jobs in coordinating and reviewing WCF application material. This approach would rely upon the FAA to not approve unsafe structures in the NAS. It also relies upon the FCC properly notifying the FAA when a possible obstruction is being proposed in the NAS. This approach recognizes the FAA has a process for allowing for alternative lighting and marking standards which could be either more-strict or less-strict (provided the FAA can approve it through their process). It also provides local involvement for projects less than 200-feet AGL if the local jurisdiction finds sufficient cause.

Staff therefore sees three possible policy options for lighting:

1. **The ordinance could include no local lighting standards but reference compliance with the permits, reviews, or licenses from the FAA and FCC.** This would allow applicants to determine whether lighting is required by using a national standard. The existing CBJ conditional use permit review standards already allow for local evaluation of the project for harmony with the neighborhood. This option produces no additional processing hurdles and has no financial impacts to the CBJ or applicants.
2. **The ordinance can assume responsibility for establishing a local lighting standard that is stricter than the FAA standard.** This would require establishing an accepted local standard to apply. It will also require either establishing a process for the FAA and FCC to approve the standard, or, a process for each project approved under the CBJ process, to be reviewed and approved by the FAA and FCC. The FAA specifically has a process for reviewing alternative obstruction lighting and marking proposals. The question of who would pay for these reviews would have to be considered (and costs could be considerable).
3. **The ordinance can assume responsibility for establishing a local lighting standard that is less strict than the FAA standard.** Again, a local standard would need to be developed and the standard would have to get approval by both the FAA and FCC. As above, one way would be to get a single approval for the standard itself. The second method would be to adopt a standard and require that each WCF proposer return to the FAA and FCC after CBJ action, to ensure that the proposal is still in compliance with their standards. The question of who

would pay for these reviews would have to be considered (and costs could be considerable).

Lighting Specifications - Staff also notes that Appendix 1 of the AC has Specifications for Obstruction Lighting Equipment Classification. It says:

Type	Description
L-810	Steady-burning Red Obstruction Light
L-856	High Intensity Flashing White Obstruction Light (40 FPM)
L-857	High Intensity Flashing White Obstruction Light (60 FPM)
L-864	Flashing Red Obstruction Light (20-40 FPM)
L-865	Medium Intensity Flashing White Obstruction Light (40-FPM)
L-866	Medium Intensity Flashing White Obstruction Light (60-FPM)
L-864/L-865	Dual: Flashing Red Obstruction Light (20-40 FPM) and Medium Intensity Flashing White Obstruction Light (40 FPM)
L-885	Red Catenary 60 FPM

FPM = Flashes Per Minute

Under existing CBJ code flashes per minutes can already be considered as a factor for being in harmony with the neighborhood. The intensity of the light would be driven by FAA standards but can still be considered for whether it is in harmony with the neighborhood.

Environmental Protection & Migratory Birds –CBJ code, as well as state and federal agency reviews already address developments that might occur within critical areas like wetlands, riparian corridors, or near eagle nests. Additional regulations or policies are not generally warranted for WCFs with the possible exceptions for migratory bird impacts. Staff reviewed the August 2000 USF&W guidelines for bird strikes from towers. These guidelines have been on the WCF website for review.

Should policies regarding migratory bird concerns be desired staff suggests the following revisions:

1. **Master Plan – Add “Implementation Action #4 – Adopt ordinance language designed to protect migratory birds according to accepted guidelines.”**

And

2. **Ordinance – Add "New towers with guy wires are prohibited unless the applicant can show why the tower requires guy wires, and, that the proposed tower can be found substantially consistent with the US Department of Interior, Fish and Wildlife Service Service Guidelines for Siting, Construction, Operations, and Decommissioning of Communications**

Towers, dated August 2000." This language would allow applicants to avoid the issue by designing their proposal in a manner that avoids the use of guy wires, which are the primary concern outlined for migratory birds. It also allows for applicants who must include guy wires in their proposal, the opportunity to argue their circumstances before the PC as part of their conditional use permit process.

Public Notice - Public notice is currently covered by CBJ 49.15.230. It says notice shall be in form of inclusion on the hearing agenda, publishing in the newspaper 10-days prior to the hearing, posting of a sign on the property, and by mailing of notice to property owners within 500 feet.

Publishing in the newspaper

Current code requires notice be published once, 10-days prior to the hearing. Current practice is to publish notice 10-days prior to hearing and, once more on the day prior to the hearing. This doubles publishing costs and exceeds the standard required by code but has been the City's standard operating procedure.

Sign placement

Currently only one sign is required to be posted. Code requires that it be on-site and visible from a right-of-way.

Mailing Notice

Increasing the mailing distance for notice is one policy option. The table below shows several hypothetical calculations for how many notices would be mailed if the distance was increased from 500 feet. (A map of the hypothetical location is available)

Property mailings for hypothetical Locations

	500ft	0.5 miles	1 mile
Tee Harbor	3	116	205
Auke Bay	7	288	513
Mendenhall Valley	2	1187	2390
Mendenhall Peninsula	1	135	284
Lemon Creek	17	868	1344
Downtown	14	261	1525
Downtown Douglas	28	633	1020
North Douglas	1	78	161
Average	9	446	930

Staff took an estimated production cost of \$.50 per notice and added a base administrative set-up cost of \$50. Mailing costs are reflected in the table below. (Stamps are \$.48 each)

	500ft	0.5 miles	1 mile
Tee Harbor	\$ 51.50	\$ 108.00	\$ 152.50
Auke Bay	\$ 53.50	\$ 194.00	\$ 306.50
Mendenhall Valley	\$ 51.00	\$ 643.50	\$ 1,245.00
Mendenhall Peninsula	\$ 50.50	\$ 117.50	\$ 192.00
Lemon Creek	\$ 58.50	\$ 484.00	\$ 722.00
Downtown	\$ 57.00	\$ 180.50	\$ 812.50
Downtown Douglas	\$ 64.00	\$ 366.50	\$ 560.00
North Douglas	\$ 50.50	\$ 89.00	\$ 130.50
Average	\$ 54.50	\$ 273.00	\$ 515.00

What this does not address is for those situations where projects would have few neighbors but that are highly visible none-the-less. Several of the hypothetical examples, like on the Mendenhall Peninsula, demonstrate where even an increased notice distance would be ineffective. Few neighbors would receive notice by mail while a significant number of properties would be able to easily view the tower. Staff finds the difficulty to be one of what constitutes “adequate” notice. If the policy were to be a 500-foot distance from all adjacent shorelines across water bodies, it would not solve the fact that topography rises the further you get from the water. Therefore, one could argue that the people further from the water have a higher elevation view and should therefore be more affected by the project. As a practical matter, such a policy means that for a high visibility are like the Mendenhall Peninsula, nearly every property owner within view would need notice. That could result in thousands of notices from Lena Point to North Douglas, the entire valley and on both Admiralty and Shelter islands.

Should staff be asked to formulate or recommend a mailing notice standard that is anything other than a simple distance measurement, staff would have to be given additional time to determine what options could be reasonable and practical.

Staff therefore sees seven possible options for changes in public notice standards:

1. **The ordinance could retain the current notification standards.**
2. **The ordinance can be changed to authorize the CDD Director to increase the number or methods of public notification as deemed appropriate on a case by case basis.** This would allow staff to determine whether additional notice is warranted on a case-by-case basis.
3. **The ordinance can require an increased distance standard for mailing notices.** Any distance could be adopted (1,000 feet, ¼ mile, ½ mile, 1 mile, etc.). This would increase notice costs but not create any process related changes or increase processing delays. Staff would recommend that a formula be adopted to calculate additional processing costs and to add those costs as a permit application fee.

4. **The ordinance can require increase notification standards that are not based on a strict distance measurement.** In this case, staff would have to formulate exactly how such a notice system will work. For example, staff would have to define what a view shed is, how to define the water body, identify what distance should be used for identifying properties, etc. The complexity of such a provision would require considerable staff time to develop wording that would be understandable and implementable. Notice requirements that are not clearly defined could open projects to appeals based upon procedural failures.
5. **The ordinance can be changed to require more than one sign on the property.** Additional signs could be required at local docks, boat launches, harbors, viewing points, roadways, entrances, community buildings etc. This options would require additional effort by the applicant and require that more than one sign deposit be submitted to CDD. It will not however, solve the problem of selecting where the signs get posted. For example, for Mendenhall Peninsula how many boat launches should be posted? Private docks or public ones? Would the ferry terminal be considered for posting?
6. **The ordinance can be changed to require more than one publication in the newspaper.** CBJ currently published notice twice and the cost is not borne by the applicant. Additional standards for required publishing more than twice will continue to increase processing
7. **The ordinance can require that an alternative method of notice be added to the list of required notice methods.** Requiring notice on the radio is an example. The PC would need to decide which stations, when the notices should be required (# of days in advance of the meeting), and how the additional costs will be covered.

Balloon Testing – Proposed code 49.65.940(c)(8) is the balloon testing section. The PC asked about incorporating a light into the balloon test. Research on the web showed that balloons can be lit, however, these lights tend to light the entire balloon. This might be ineffective in simulating the impact of a light on a tower. Lit balloons will be larger than a typical light on a tower, and the intensity of the balloon will not effectively simulate the intensity of a tower light. There is also a question as to whether the light in the balloon can be made to blink. It would however be an effective way to notify neighbors as to the location of a potential tower.

Should a policy decision warrant updating the proposed code, staff suggests the following revisions to the ordinance:

1. **Add a statement requiring that the balloon be lit if the proposed tower includes a light.**

Safety Signage - A request for safety signage was submitted. Staff referred to the 2011 National Electrical Code Article 110 Requirements for Electrical equipment and noted the following:

- The NEC requires safety signage on cabinets when deemed appropriate.
- The signage is required on the cabinet.

- When appropriate, electrical equipment must be placed in a structure. The structure must comply with building code standards and includes requirements for work space, access, and safety signage.
- The structure is required to be locked so that access is limited to qualified maintenance technicians.
- Depending upon voltage perimeter security fencing is a requirement.

Fencing is a normal security measure by the industry. Electrical equipment signage is required by the NEC and will be on the cabinet itself and the door to the structure in which the equipment is housed.

The revised proposed ordinance includes language for DAS wired hubs in 49.65.960(b)(3)(b) which requires safety signage every 20 feet if there is equipment using 200-Volts or more. Should the PC wish to require additional safety signage on the security enclosure staff suggests the following:

1. **Master Plan – Add “Implementation Action #5 – Adopt signage standards that require the placement of electrical safety signs on security enclosures.”**

And

2. **Ordinance – Place 49.65.960(b)(3)(b) as a development standard that applies to all WCFs.**

Tower Removal After Use – Several questions were raised about the ability to require that unused or abandoned towers be removed. The proposed ordinance includes language that would require applicants to submit bi-annual reports indicating that the WCF is still structurally sound. Specifically the General Standards section (19.65.920) includes a section for “Abandonment and Fall Zone” in which WCF owners need to submit reports on July 1st of every second year, in which a licensed engineer states it is structurally sound. The section goes on to state that the CDD director may give the owner/operator 60-days to remove the structure if the report is unsatisfactory or the report is not submitted. This would allow the owner/operator to work with the Director to determine if removal is warranted or to establish a removal schedule.

Staff suggests the following revisions:

1. **Master Plan – Add “Towers and structures which are no longer in use should be removed. Towers that are unused for more than a total of 12 consecutive months shall be removed. Towers which are found to be structurally unsound or a danger public health or property, should be removed.”**

And

2. **Ordinance – Add the general standard “WCF towers and structures should be removed within 180 days of cessation of use. Failure to remove such towers or structures will result in code enforcement action by the department, by any means necessary, up to an including through fines and liens against the property on which the tower and/or structure is located.”**

Property Appraisals – Requiring an appraisal as part of the submittal is a policy decision. The proposed code says the CDD Director can request "(4) Other items deemed by the Director to be relevant in determining whether a proposed WCF complies with Title 49." But, an appraisal might require technical abilities not currently available at the CBJ. So third party review would be required to implement this policy. Staff would like the cost for this review to be passed on to the applicant and not the responsibility of the CBJ. Also, appraisers are in short supply so this work would have to be shipped to the third party who might be outside SE Alaska (like in Anchorage or in Washington for example).

Another aspect of the policy is whether this would be required for collocations or just new towers? And would they be required for building permit applications or just Conditional use permits?

Should appraisals be desired for submittal items, no policy changes would need to be added to the MP. Staff suggests the following revisions to the ordinance:

- 1. For required submittals: "Documentation from a qualified appraiser, analyzing the proposed project's impact on property values;"**. This data would then be used to evaluate the existing conditional use permit criteria. (Not sure the purpose of the data if it is also required for building permit review. Guidance needed if policy includes building permits.)

Concealment – Proposed code 49.65.930(b) Permit Types has specific performance criteria for concealed towers. It includes the need to: a) resemble the surrounding natural landscape; b) resemble aspects of the developed environments; c) be 70% concealed or screened; d) not significantly impact the viewshed; and e) not extend higher than the dominant background (skyline).

Ham Radio Tower Exemptions – Proposed code 49.65.910(c)(1) is the Exempt Facilities section that discusses ham radio towers.

Height and Setbacks – Setbacks from property lines will result in a significant limit on the properties that could allow a WCF. In one sense this will significantly deter WCFs in residential areas but at the same time there may be few places in the community in which a WCF could be located. The other result would it would trigger a significant number of variance applications. This would trigger an additional permit workload that duplicates the authority that the PC already has under the conditional use permit process.

It also assumes that the center of the property would be the best place for the tower. For example, if a property has topographical features that could be used to gain elevation without needing a higher tower. A property line setback standard could require that the tower be placed in the most offensive or least harmonious location on the property.

The table below uses some standard tower heights and assumes they would be required setbacks from property lines. The first figures are for circles based on height as a radius, the second set is for a square property that is twice the height in both length and width.

	Lot Radius (circle)		Lot Area (square)	
	Sq. Ft.	Acres	Sq. Ft.	Acres
80 Feet	20,106	0.46	25,600	0.59
100 Feet	31,415	0.72	40,000	0.92
150 Feet	70,685	1.62	90,000	2.07
200 Feet	125,663	2.88	160,000	3.67
500 Feet	785,398	18.03	1,000,000	22.96

Staff suggests that if a setback is related to a structure, it should be tied to the distance from other structures or development activity. This means that structures or development features built after the WCF would be built with full knowledge that the tower exists.

RECOMMENDATION

No overall recommendation is made at this time. Staff requests the Planning Commission provide direction for its preferred policy directions and ordinance language to be included in the PC recommendation to the assembly.