

MEMORANDUM

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

DATE: April 3, 2014

TO: Planning Commission

FROM: Travis Goddard, Planning Manager
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Community Development Department

FILE NO.: TXT2009-00007

PROPOSAL: Wireless Communications Facility Survey Results.

PROJECT DESCRIPTION AND BACKGROUND

The CBJ is seeking to adopt a Wireless Communications Facility (WCF) Master Plan 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. The first meeting was held on March 20th in the Assembly Chambers at City Hall. The second meeting was held March 27th in the Glacier Room of Egan Hall at the University of Alaska Southeast.

At both meetings, staff presented general information about the Master Plan and Ordinance. Staff noted that Conditional Use Permits require evaluating whether the proposal is in "harmony with property in the neighborhood". With this standard in mind, staff identified what it deemed to be 10 key elements of a WCF design proposal that could be weighed in order to answer the question of "harmony. From those elements, staff created a neighborhood harmony survey and 10 displays around which the public meetings would focus.

The meetings themselves were designed to solicit citizen opinions as to what design elements the city preferred to see in order to make WFC proposals be in "harmony" with their neighborhood. Or in other words, what design elements would citizens most prefer to see in new towers, in order to keep them in harmony with the neighborhood?

The survey included several methods or tools for each of the 10 elements, which allowed citizens to evaluate that element. For example, when it comes to screening ground equipment, the survey asked citizens to think about their neighborhood and whether harmony would best be served by having no screening, chain link fence screening, vegetation screening, solid wood or vinyl fencing as screening, brick or rock wall screening, or by putting all the equipment in a building or structure. And since each tool choice is scored independently, the citizen could evaluate each option on its own merits. The results of this survey are discussed below.

The actual scores for the surveys are presented in Attachment A and show the raw vote totals for each method or tool. Attachment B is a print out of the display stations used at the meetings.



ANALYSIS

Collocation and Attachment – Collocation is when multiple antennas or arrays are installed on a single tower. Attachment is when one or more antennas or arrays are installed on something other than a tower (i.e. a building rooftop, light post, stadium lights etc.) The results of the survey are shown in the table below. (Please note: 5 represents most preferred; 3 is neutral; and 1 is least preferred)

Collocation and Attachment Methods	Average Score
Collocation should not be required (i.e., only having one array per tower).	2.1
Collocating on an existing tower.	4.0
Attached to building's rooftops.	3.8
Attached to existing structures (i.e., light towers or utility poles).	4.4
Attached to a camouflaged tower.	4.1

In general, the idea that “collocation should not be required” scored pretty low at 2.1. This tells staff that single user towers were not seen as harmonious with the neighborhood.

On the other hand, citizens felt all four methods for collocating and attaching towers scored as highly preferred methods for being seen as harmonious with a neighborhood.

Based upon interactions with the public and the results of the survey, staff concludes that collocation and attachment is a highly preferred method for making WCFs harmonious with neighborhoods.

Camouflage – A design method for towers and antennas that allow them to blend in, in both urban and rural environments. The results of the survey are shown in the table below.

Camouflage Methods	Average Score
No camouflage (i.e., bare metal towers with no paint or texture).	1.8
Painting of a tower to blend in with its surroundings.	3.8
Vegetative look and texture (i.e., pine tree, palm tree).	3.7
Disguised structure (i.e., flag pole, church steeple).	3.6
Hidden inside or blending with an existing structure (i.e., a chimney, or building addition).	4.3
Set back on a roof so it's not visible from the ground below at short distances.	4.1

The idea of not requiring camouflage scored substantially low at 1.8. This was a clear indicator to staff that camouflage is a significant contributor to neighborhood harmony for WCFs. However, beyond that, any type of camouflage seems to be equally accepted as a highly preferred factor in neighborhood harmony.

Screening of Ground Equipment – Telecommunication facilities contain auxiliary equipment to operate signal distribution, such as electrical feed lines, radio cabinets, meter boxes, back-up generators, cooling elements, etc. These elements are often placed on the ground. The results of the survey are shown in the table below.

Methods for Screening of Ground Equipment	Average Score
No screening (everything is visible).	1.4
Use of perimeter vegetation (trees and shrubs).	4
Non-sight obscuring fencing (chain-link with or without plastic slats).	2.7
Sight obscuring fencing (wood or vinyl).	3.2
Brick or stone perimeter walls.	3.7
Fully enclosed within a building.	3.6
Fully enclosed in a building that matches the neighborhood it is within or that has design standards (looks like a small house etc.).	3.9

Security fencing for WFC bases and their equipment area is an industry standard. Staff accepts this stance as a matter of standard practice. However, for the purpose of the survey, evaluating whether security fencing can be leveraged into a factor for making the WCF more in harmony with a neighborhood seemed logical.

Once asked, the screening of ground equipment seemed to be a marginal factor in neighborhood harmony. Several choices were rated at or near having a neutral effect on harmony. Respondents did show a preference for vegetative screening (4.0) and for enclosing the equipment in a building that matched the character of the neighborhood (3.9)

Staff interprets the data to show that good screening can contribute to neighborhood harmony for WCFs.

Lighting - Depending on the WCF height and location in relation to an airport runway, a tower may be required to have lighting for aviation safety purposes. For the purpose of this planning effort staff generally used the FAA Advisory Circular for Obstruction Marking and Lighting (AC 70/7460-1K) as a guideline for when they think about or talk about lighting. While not required to do so, staff felt it provided a good guideline for what is widely used in the WCF industry. In that circular, lights are described as either “high intensity” or “medium intensity”. In addition, a “steady light” is one that emits a steady stream of light, while a light which blinks on and off is called a “flashing beacon”. For the sake of the survey and meetings, staff provided no pictures but instead used a simple menu of option descriptions for lighting combinations. The results of the survey are shown in the table below.

Methods for Lighting	Average Score
No lighting.	4.7
Medium intensity - STEADY light.	3.3
Medium intensity - FLASHING beacon.	1.6
High intensity - STEADY light.	1.7
High intensity - FLASHING beacon.	1.2

Not surprisingly, survey respondents clearly indicated that they preferred no lights on towers when considering whether a tower would be in harmony with a neighborhood. Staff expected this outcome but structured the survey so that respondents would have to take a look at lighting options and continue to evaluate the remaining choices. This was purposely done because staff knew that there would be times when a WCF would be required to have lighting, if for no other reasons than for safety purposes.

Given the assumption that lighting might be a requirement and not a choice, the citizens surveyed showed a clear preference for medium intensity steady lights (3.3).

Previous staff research showed that the intensity of lighting could be an option for new development in most cases. Staff also determined that the need for a “beacon” versus the need for a “light” was primarily determined based upon the height of the structure on which the light was located. Based upon this knowledge and the clear preference shown in the data, staff feels that the survey results show three preferences:

1. Short towers would be preferred because they likely wouldn’t trigger lighting requirements as often;
2. In order to avoid lighting due to FAA or airport concern, locational factors which affect the need for lighting, should be considered important; and,
3. Any way to influence towers designs so that they do not require lighting, would be a factor in the new facility being found in harmony with the neighborhood.

Noise - Wireless Communication Facilities have back-up power generators for emergency situations and cooling fans to reduce heat. The generators may be powered by batteries or fuel-combustion. Decibel levels may vary depending on generator type or by the location of cooling fans. The results of the survey are shown in the table below.

Methods for Noise Mitigation	Average Score
Low noise (batteries).	4.7
High Noise (i.e., fuel burning generators).	
Enclosed within a building.	3.4
Enclosed behind a wall.	2.9
Enclosed with a fence.	1.8
Enclosed by vegetation.	2.7

After reviewing the survey results, the clear preference for neighborhood harmony would be for WCFs to have batteries for their source of back-up power. However, staff recognizes that the presence of generators will have a minor impact on neighborhood harmony given that such back-up power sources are rarely in use.

In addition, the responses to high noise production options seem to show a relatively neutral or apathetic feeling towards how that noise should be mitigated. Given this, staff finds that preferences for ground equipment screening probably rates as a more important factor when considering WCFs for harmony with the neighborhood. And since the methods for screening equipment, and the methods for screening noise are the same, staff does not feel that specific noise policy or regulatory language is warranted.

View shed Prominence - View sheds are areas of visual importance to the community. Towers located in a view shed can have negative impacts. The results of the survey are shown in the table below.

Viewshed Prominence Harmony Methods	Average Score
Non-camouflaged in mapped viewshed corridors identified in the 2013 Comprehensive Plan.	1.4
Camouflaged in mapped viewshed corridors identified in the 2013 Comprehensive Plan.	3.7

While limited options were discussed for viewshed prominence, the result of the survey was to show that citizens felt that when WCFs could be seen in viewsheds, camouflage would be a preferred method for seeking to make them more in harmony with neighborhoods. Several survey comments also attributed lighting to be a major factor in neighborhood harmony in a viewshed.

Remote/Terrain/Trees - Neighborhood harmony is largely affected by where a tower is located. Using natural terrain features is a common way to minimize impacts. The results of the survey are shown in the table below.

Remote/Terrain/Tree Methods	Average Score
Locating towers amongst trees that are at least 60% of the tower height.	3.3
Locating towers amongst trees that are at least 80% of the tower height.	4.2
Locating tower on mountain tops.	3.3
Locating towers on islands.	1.8
Locating towers on hillsides or mountainsides.	3.6

The clearest conclusion from this survey element is that locating WCF towers on an island was one of the least preferred options. However, staff must recognize that there is one facility in Juneau that is strongly influencing this survey result. Staff therefore recognizes both the survey result and the potential bias it has on the survey.

Beyond that issue, there are consistently high preference scores for this element. It shows support in the community for policies or regulations that try to reduce the impact and visibility for WCF projects by using remote locations, or by using terrain and/or trees to mask towers. Staff interprets this to be a pretty clear signal for WCF providers to consider such factors when designing their towers and selecting locations (regardless of whether those end up in the Master Plan and Ordinance or not).

Setbacks – Towers are designed to meet local building code for structural safety. Such considerations can be for lateral wind forces and for snow and ice loads. Additional setback distance was offered as a potential way to provide more protection. The results of the survey are shown in the table below.

Setback Methods	Average Score
Use current zoning setbacks (i.e., 5-25 feet).	2.2
A distance equal to the height of the tower.	3.1
A distance half the height of the tower.	2.8
A distance more than the height of the tower.	3.9

There appears to be only a medium collation between how far towers should be from property lines when compared to neighborhood harmony. The least favored option would be to use the current setbacks required in CBJ code. The most preferred choice would be to locate towers further away from property lines.

Staff recognizes that often site size can have a huge limiting factor on how far a WCF can be from a property line. Given this, staff interprets the near neutral and closely ranged scores to show that setbacks might not be an especially passionate issue for neighborhood harmony. Staff therefore concludes that setbacks might be better analyzed on a case-by-case basis given that the location of a tower might need to be considered as more important than setbacks.

Tower Type - There are generally two different types of towers: 1) Monopoles, and 2) Lattice designs. The monopole is a single cylindrical pole. Lattice poles are typically 3- or 4-legged structures that contain diagonal or horizontal cross members which connect to the vertical legs. The lattice tower contains more structural components, and therefore, may be more visible than a monopole. Generally, lattice towers tend to be stronger and therefore taller than monopoles. Guy wires can be connected to a monopole or lattice tower to strengthen it from lateral forces from the elements. Guy wires are connected to the pole or tower at one end and to the ground at the other end. Poles or towers with guy wires use more land than those without guy wires. The results of the survey are shown in the table below.

Tower Types	Average Score
Lattice tower.	3.3
Monopole (a single pole).	3.8
Guy tower.	1.8

Survey results appear to show that there is little difference in preference when it comes to monopoles or lattice towers. The one clear indicator in the data is that towers with guy wires are significantly less likely to be seen as in harmony with a neighborhood. (While not discussed by the survey itself, comments from the surveys seem to show that concerns about migratory bird impacts from guy wires, are the likely influencer on a citizens dislike of guy towers.)

Height - Towers are designed to have a height that effectively distributes cell and data signal coverage. The survey and displays attempted to get at some of the inter-related issues that find the issue of height at their nexus. The results of the survey are shown in the table below.

Height	Average Score
Tall towers which maximize collocation opportunities.	3.0
Tall towers because there will be fewer of them.	3.2
Short towers that are hidden from view.	3.8
Short towers (even if means no collocation opportunities).	3.4
Collocations on existing towers regardless of height.	4.1
Collocations on existing structures or buildings.	3.9
Any height as long as it does not have lighting.	3.7
Location matters more than height.	4.4
Camouflaging matters more than height.	3.3

The scores related to tall towers (3.0 and 3.2) show a pretty neutral opinion towards tall towers. Short towers, on the other hand, seemed to be the more preferred option. But for height, some additional discussion regarding how the votes were distributed is warranted. (Note: 5 represents most preferred; 3 is neutral; and 1 is least preferred)

Height <i>(by number of votes)</i>	Most Preferred		Neutral		Least preferred
Tall towers which maximize collocation opportunities.	<u>3</u>	<u>4</u>	2	<u>4</u>	<u>3</u>
Tall towers because there will be fewer of them.	<u>4</u>	<u>4</u>	2	<u>3</u>	<u>3</u>
Short towers that are hidden from view.	4	7	<u>3</u>	1	1
Short towers (even if means no collocation opportunities).	4	1	<u>10</u>	1	1
Collocations on existing towers regardless of height.	<u>7</u>	<u>3</u>	4	1	
Collocations on existing structures or buildings.	<u>6</u>	<u>3</u>	6	1	
Any height as long as it does not have lighting.	5	2	2	2	1
Location matters more than height.	11	2	2		1
Camouflaging matters more than height.	4	3	3	4	1

Tall towers had a more polarized result meaning that there were more people who preferred them (15 votes), compared to people who didn't prefer them (13 votes), while 4 people were neutral.

Short towers by comparison, were strongly preferred overall (16 votes) versus short tower non-preference votes (4). The reason short towers didn't more clearly dominate the results was because of the many neutral votes (13 in total) which served to dilute the support for short towers.

Staff interpreted this result as one which signaled that respondents were making an effort to critically evaluate the specific implication of each question. For example, 10 respondents were neutral about using "short towers (even if it means no collocation opportunities)". This neutrality towards short towers coupled with the "collocation" preference data, tells staff that respondents want both short towers AND collocation. Staff wondered whether they might have recognized their mixed desires meant they could not to get both options at the same time. On the other hand, it might simply signal that citizens were torn by support for a short tower policy but they also support a collocation policy (just not in a mutually exclusive way). Meaning they want collocations to be the first option, while short towers are an equally appealing second option.

RECOMMENDATION

No recommendation is made in regards to the results of the survey. Staff will use both the WCF issue matrix and its staff report to provide policy and regulation recommendations. However, Attachment C shows the potential policy and regulatory implications identified by staff during the review and analysis of survey results. (Please note: no statistical analysis for significance, error, or deviation was completed at the time this document was completed.)

ATTACHMENTS

- Attachment A – Table of Survey Results as of March 27, 2014
- Attachment B – Harmony Element Displays
- Attachment C – Survey Policy & Regulation Implications document

Methods	Most Preferred			Neutral			Least preferred			Avg Score
Collocation and Collocation should not be required (i.e., only having one array per tower).	3		1		3	2		12		2.1
Collocation and Collocating on an existing tower.	10		6		1	2		2		4.0
Collocation and Attached to building's rooftops.	8		4		3	3		1		3.8
Collocation and Attached to existing structures (i.e., light towers or utility poles).	9		9		1					4.4
Collocation and Attached to a camouflaged tower.	8		4		6					4.1
Methods	Most Preferred			Neutral			Least preferred			
Camouflage No camouflage (i.e., bare metal towers with no paint or texture).	2				4			14		1.8
Camouflage Painting of a tower to blend in with its surroundings.	9		4		2	4		1		3.8
Camouflage Vegetative look and texture (i.e., pine tree, palm tree).	7		5		5			3		3.7
Camouflage Disguised structure (i.e., flag pole, church steeple).	3		9		4	4				3.6
Camouflage Hidden inside or blending with an existing structure (i.e., a chimney, or building addition).	11		4		2	2				4.3
Camouflage Set back on a roof so it's not visible from the ground below at short distances.	9		5		2	3				4.1
Methods	Most Preferred			Neutral			Least preferred			
Screening of gr No screening (everything is visible).			1		2			13		1.4
Screening of gr Use of perimeter vegetation (trees and shrubs).	7		6		2	1		1		4.0
Screening of gr Non-sight obscuring fencing (chain-link with or without plastic slats).	2		2		3	6		2		2.7
Screening of gr Sight obscuring fencing (wood or vinyl).	3		6		3	6		1		3.2
Screening of gr Brick or stone perimeter walls.	4		7		4	1		1		3.7
Screening of gr Fully enclosed within a building.	6		4		5	1		2		3.6
Screening of gr Fully enclosed in a building that matches the neighborhood it is within or that has design standards (looks like a small house etc.).	8		4		3	2		1		3.9
Methods	Most Preferred			Neutral			Least preferred			
Lighting No lighting.	16		2		1	1				4.7
Lighting Medium intensity - STEADY light.	4		5		4	5		1		3.3
Lighting Medium intensity - FLASHING beacon.					4	4		12		1.6
Lighting High intensity - STEADY light.			2		2	3		13		1.7
Lighting High intensity - FLASHING beacon.					1	1		18		1.2

	Methods	Most Preferred	Neutral	Least preferred	
Height	Tall towers which maximize collocation opportunities.	3	2	4	3.0
Height	Tall towers because there will be fewer of them.	4	2	3	3.2
Height	Short towers that are hidden from view.	4	3	1	3.8
Height	Short towers (even if means no collocation opportunities).	4	10	1	3.4
Height	Collocations on existing towers regardless of height.	7	4	1	4.1
Height	Collocations on existing structures or buildings.	6	6	1	3.9
Height	Any height as long as it does not have lighting.	5	2	2	3.7
Height	Location matters more than height.	11	2	1	4.4
Height	Camouflaging matters more than height.	4	3	4	3.3

Collocation/ Attachment

Collocation: When multiple antennas are installed on a single tower

Attachment: When one or more antennas are installed on something other than a tower (i.e. rooftop building, light post, stadium lights, etc.) Please use the following images for your survey.

Figure A: No Collocation/ Attachment



Figure B: Collocated on Tower

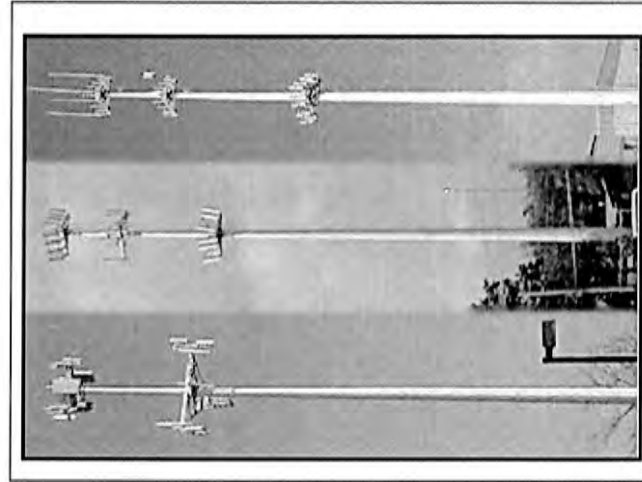


Figure C: Attached to building's roof

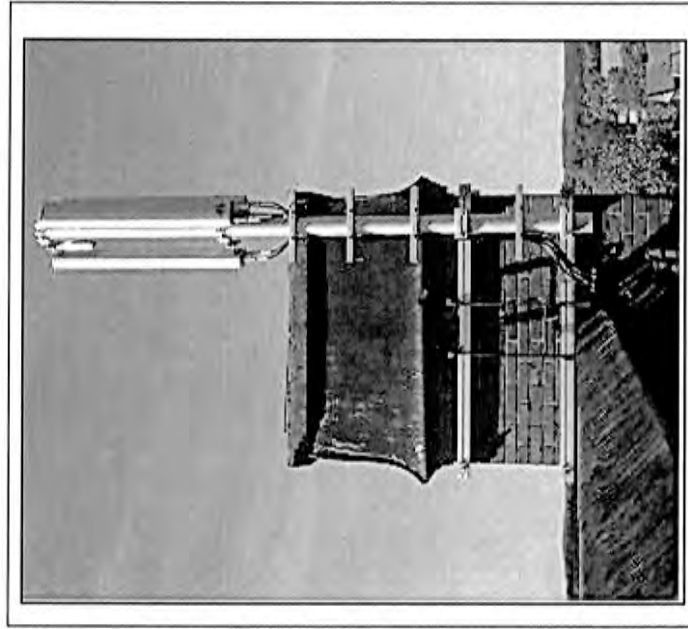


Figure D: Attached to Utility Pole

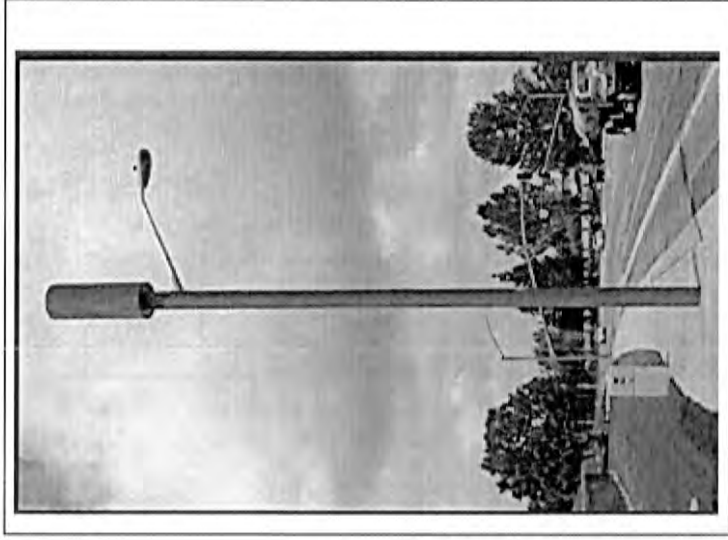
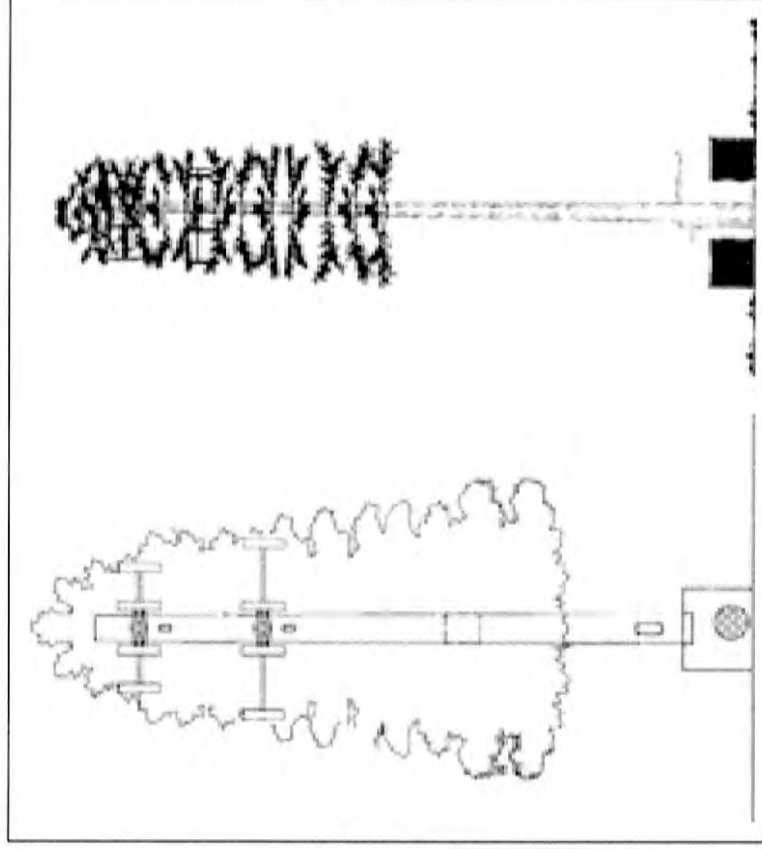


Figure E: Collocated on Concealed Tower



Camouflage

Towers and antennas can be designed to blend in with urban or rural environments. Please use the following images for your survey.

Figure A. No Camouflage



Figure 2. Painted Tower

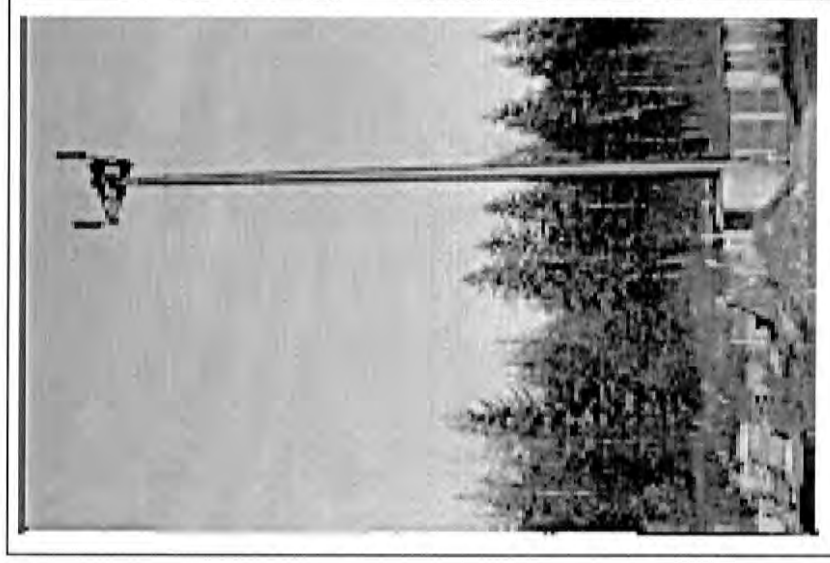


Figure 3. Fake Tree

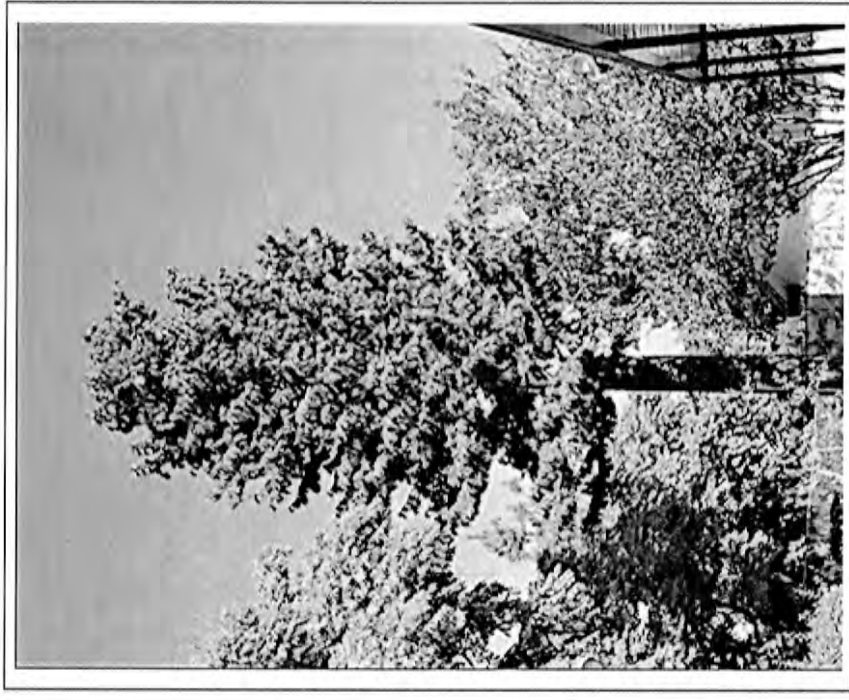


Figure 4: Disguised as a Flag Pole

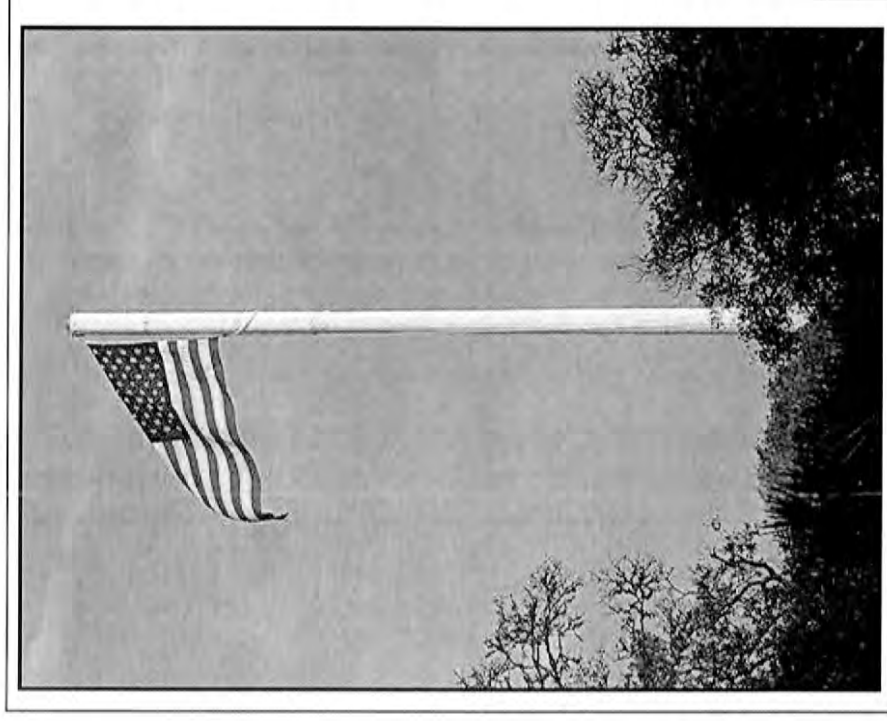
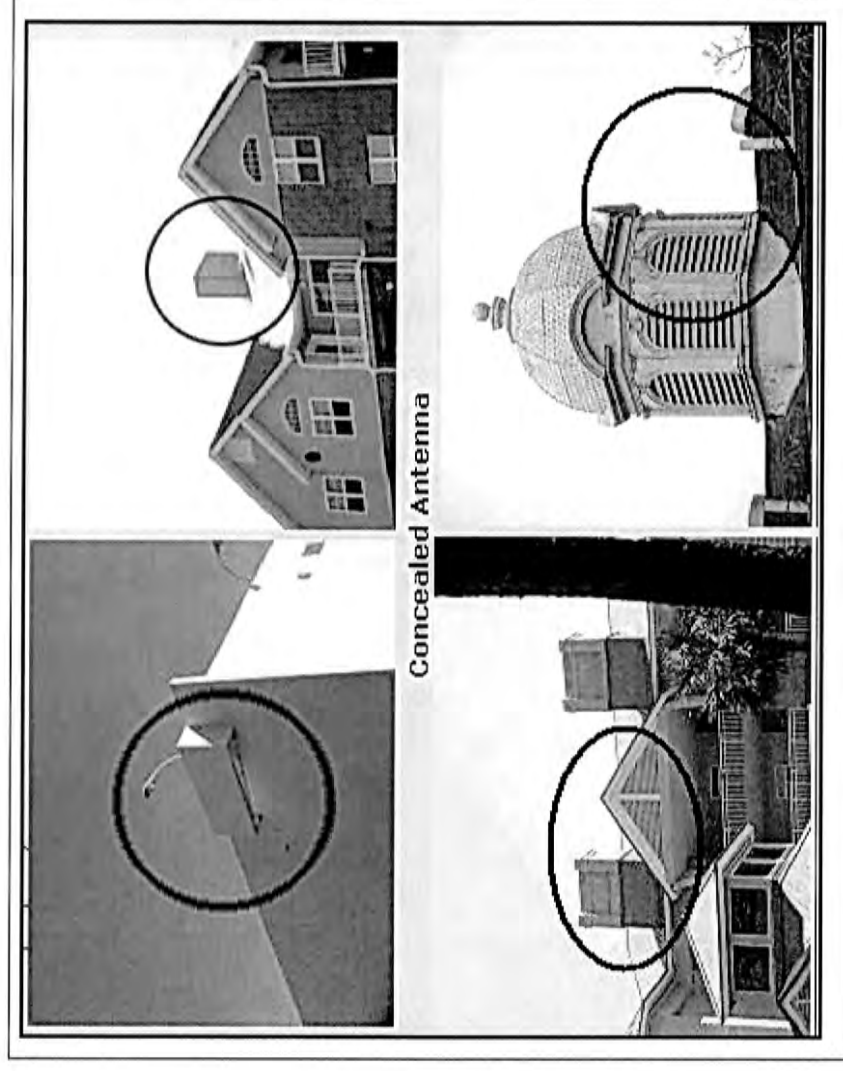


Figure 5: Hidden inside building's features (chimney, roof element, etc.)



Screening of Ground Equipment

Telecommunication facilities contain auxiliary equipment to operate signal distribution, such as electrical feed lines, radio cabinets, meter box, back-up generators, cooling elements, etc. These elements are often placed on the ground. Please use the following images for your survey.

Figure A: No Screening



Figure B: Perimeter Vegetation as Screening

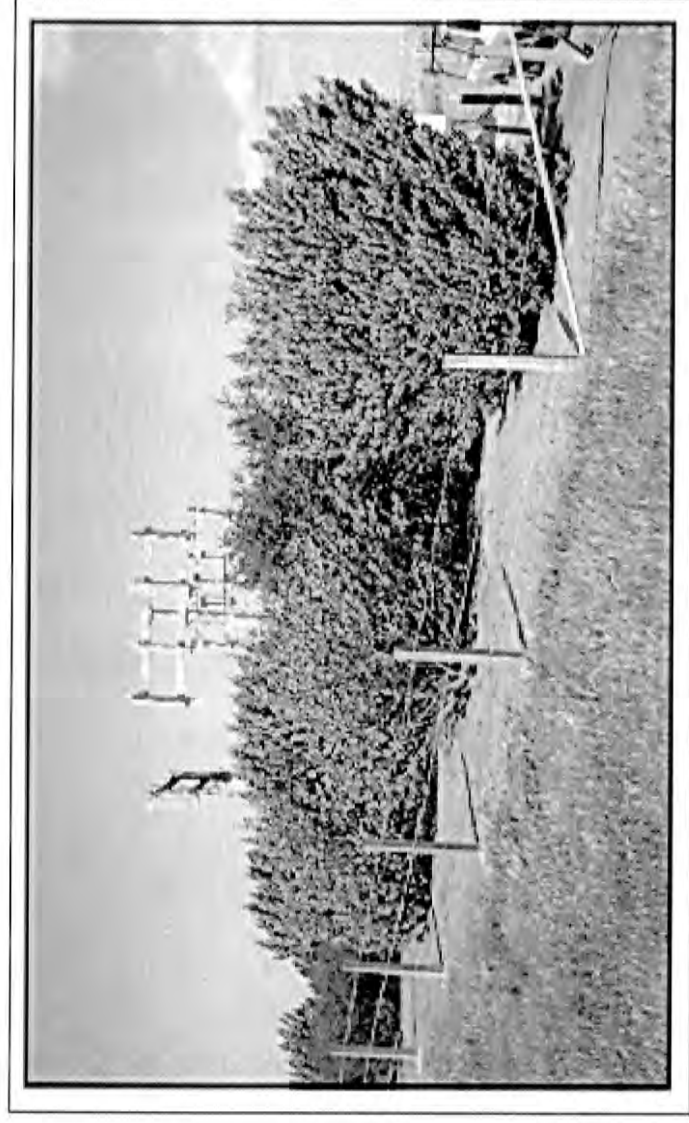


Figure C: Perimeter chain-link fencing

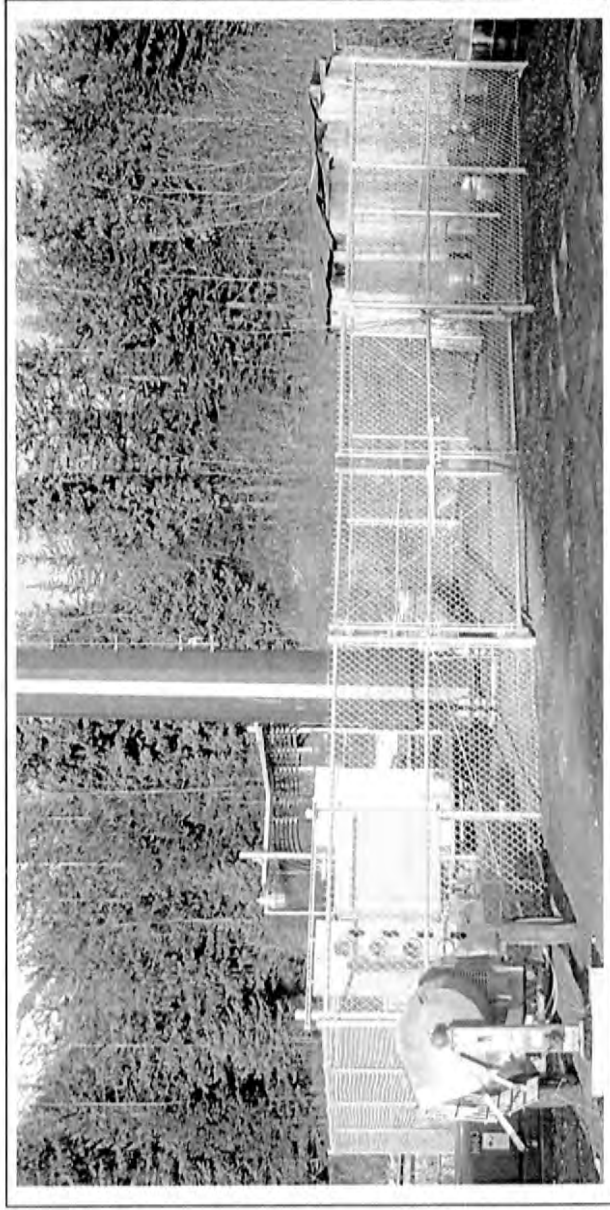


Figure D: Sight-Obscuring Fence

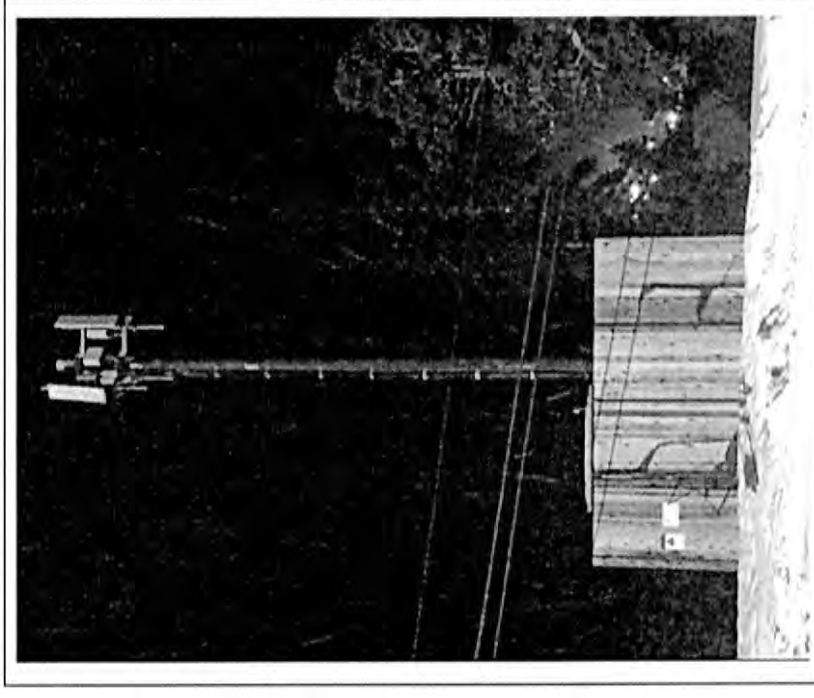


Figure E: Brick/ Stone Perimeter Wall

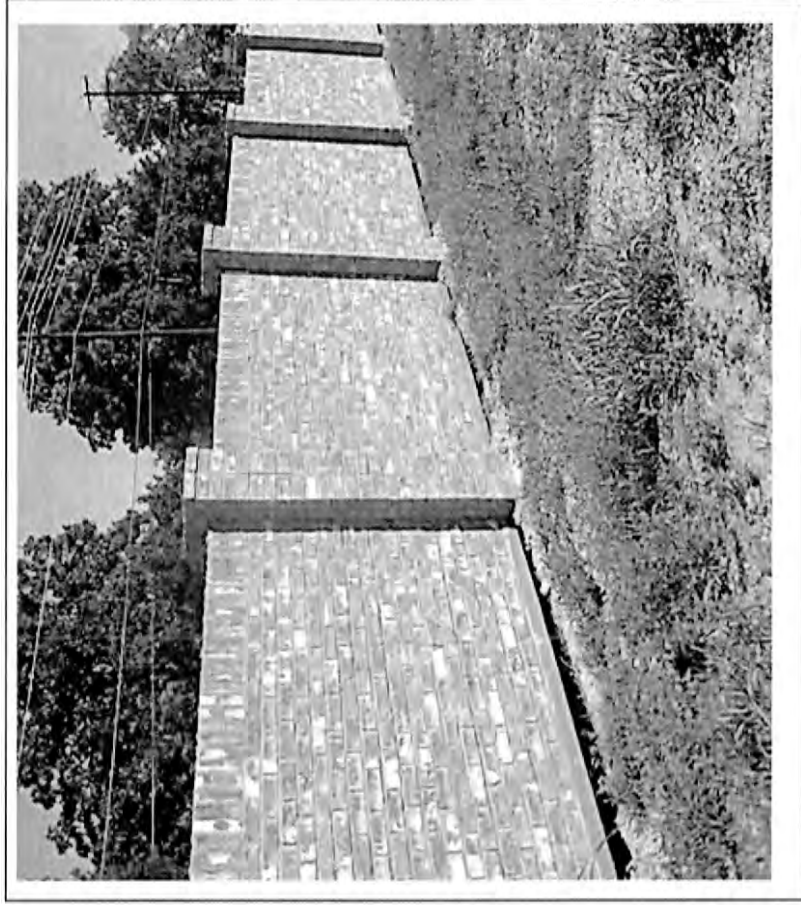
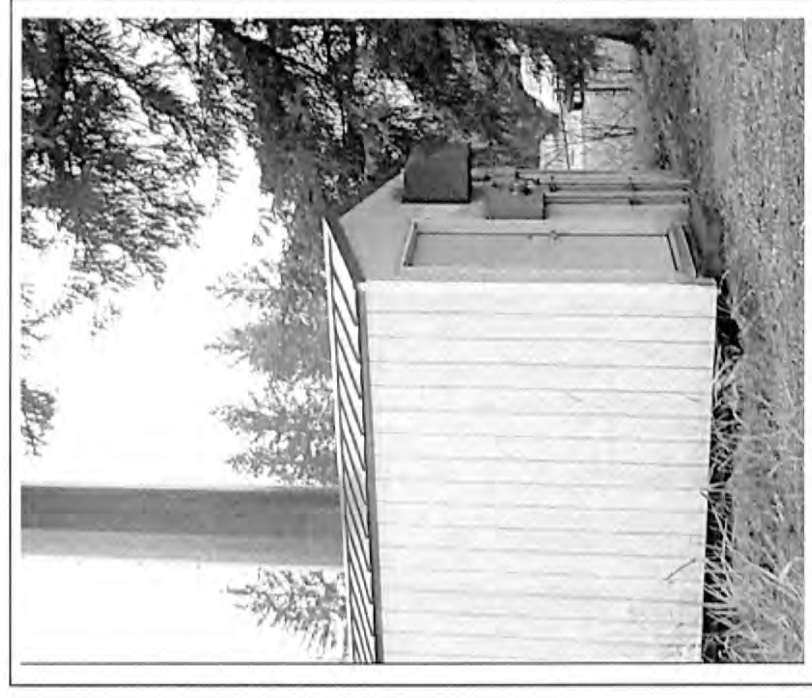


Figure F: Fully Enclosed Building



Lighting

Depending on the height and location to an airport runway, a tower may be required to have a light on the top for aviation safety purposes. Please use the following statements for your survey.

- A. No Lighting
- B. Medium Intensity Steady Light (no flashing/
blinking)
- C. Medium Intensity Blinking (flashing) Light
- D. High Intensity Steady Light
- E. High Intensity Blinking Light

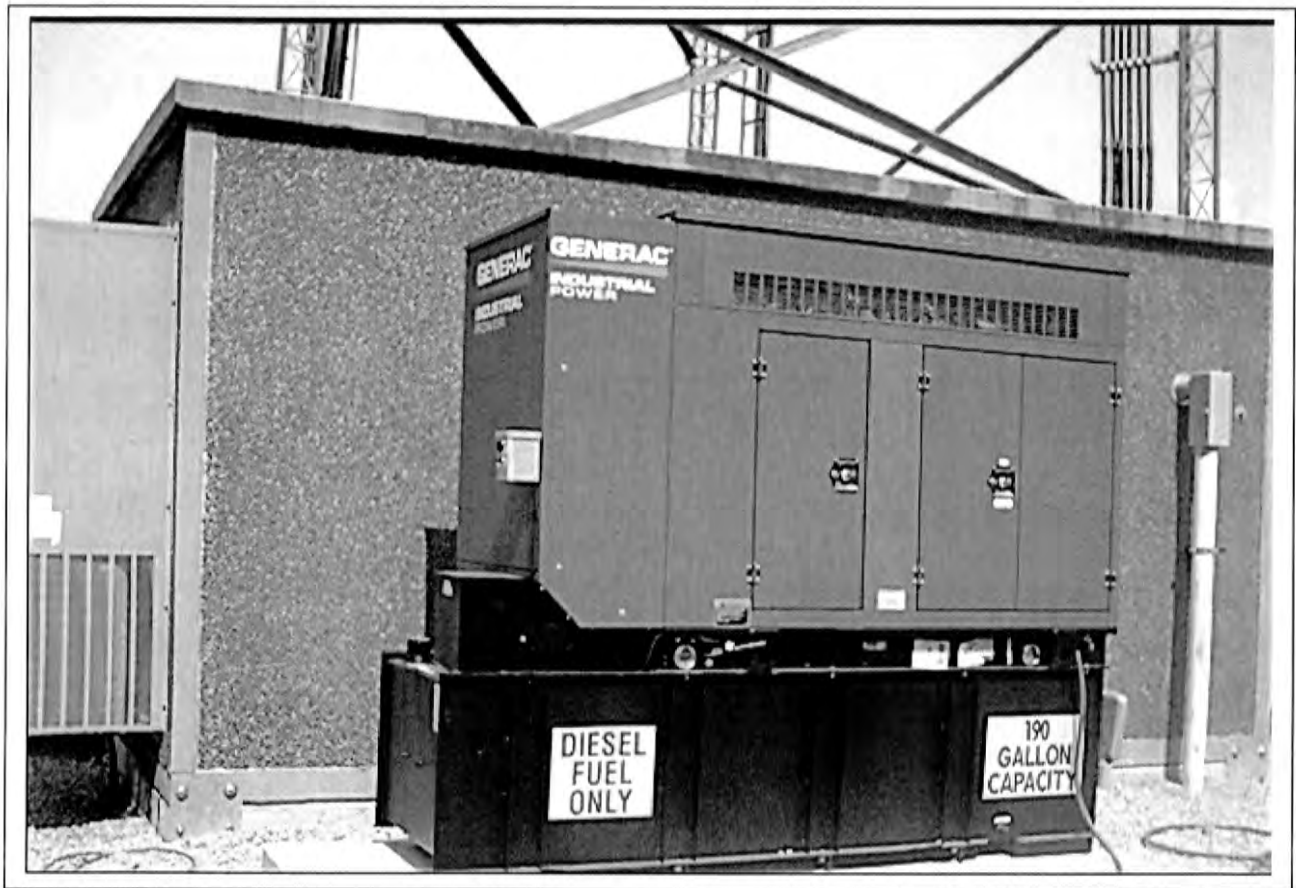
Noise

Wireless Communication Facilities have back-up power generators for emergency situations and cooling fans to reduce heat. The generators may be powered by batteries or fuel-combustion. Decibel levels may vary depending on generator energy source and citing of cooling fans.

Figure A. Low Noise (Battery-powered Generator)



Figure B. High Noise (Fuel-combustion powered Generator



1. Enclosed within a building – see Screening Poster
2. Perimeter solid wall
3. Perimeter fence
4. Perimeter Vegetation

View shed Prominence

View sheds are areas of visual importance to the community. Towers located in a view shed can have negative impacts. Please use the following figures for your survey.

Figure C: Locating Towers on Mountain Tops.
[Image below is pointing to the towers on Saddle Mt.]



Figure D: Locating Towers on Islands.

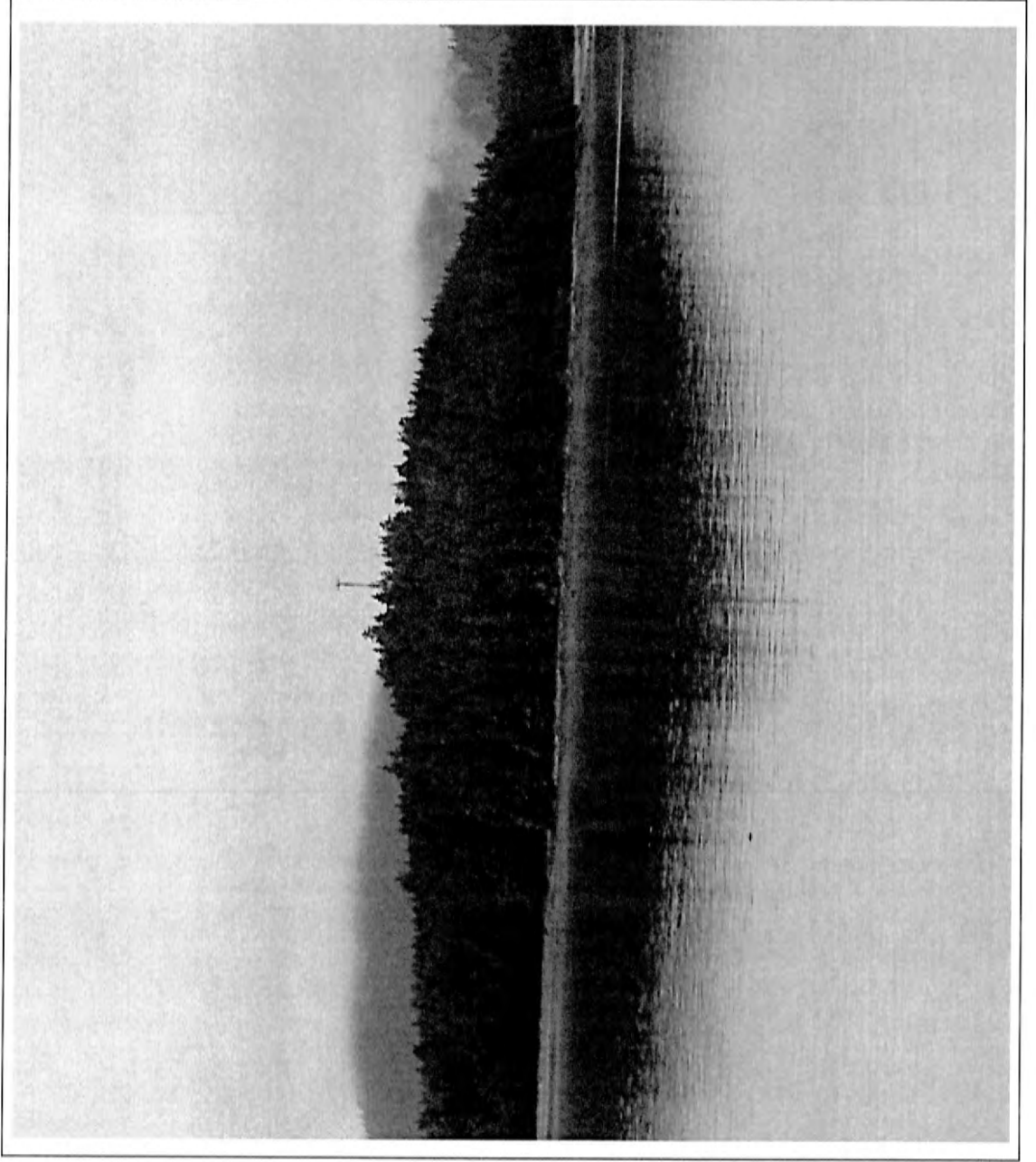
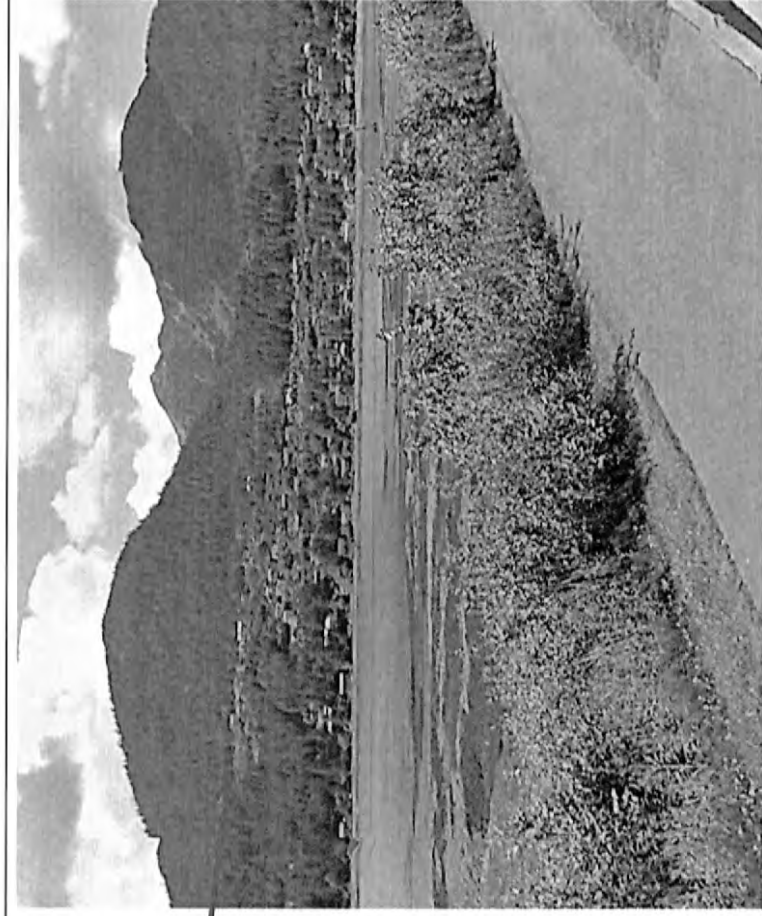
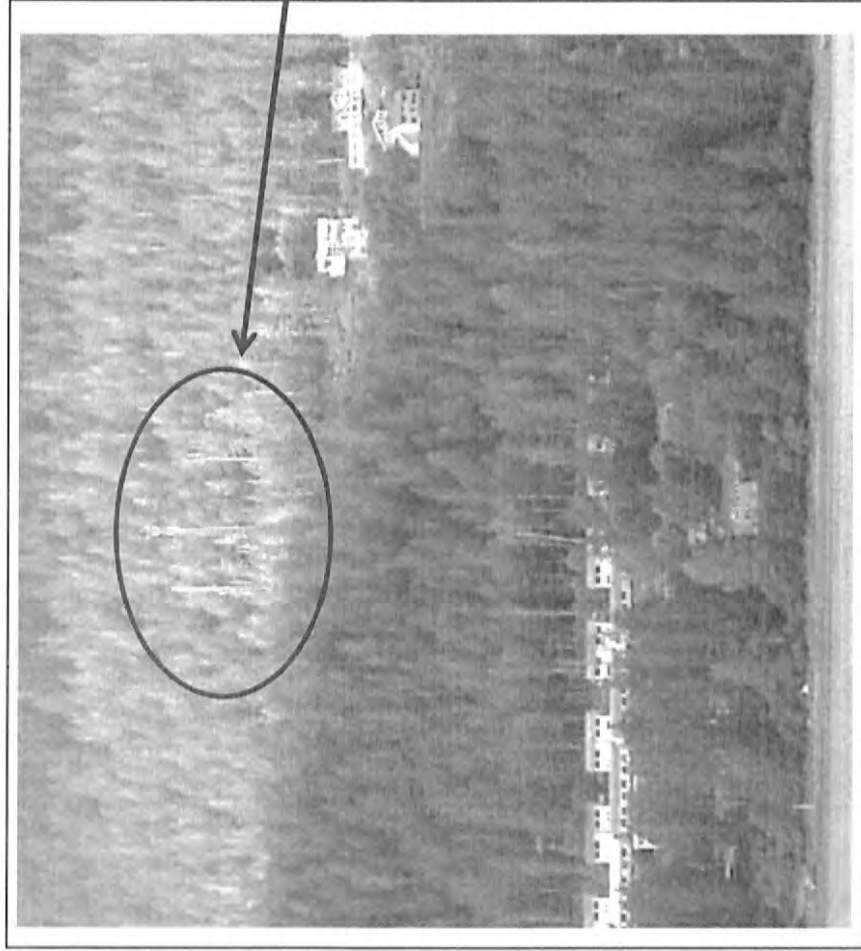


Figure E: Locating Towers on hillsides.



Setbacks

Towers are designed to meet local building code for structural safety, such as lateral force from wind and snow. Additional setback distance may offer more protection. Please use the following figures for the survey.

Figure A: Use current zoning district setbacks (5' - 25' feet)

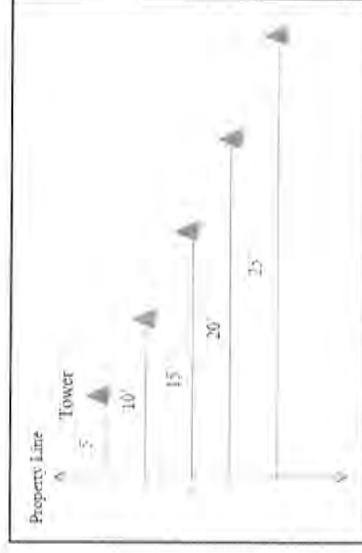


Figure B: Distance equals same height as tower (1:1 ratio)

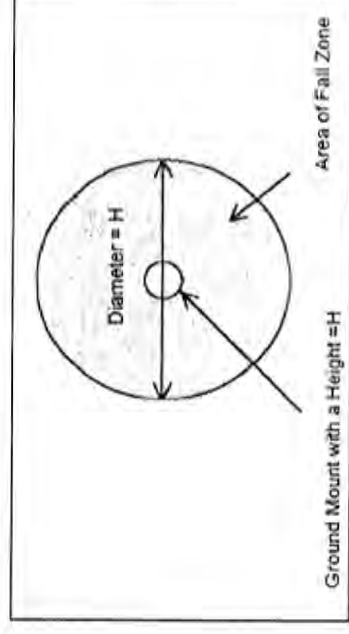


Figure C: Distance equal to half height of tower (1: ½ ratio)

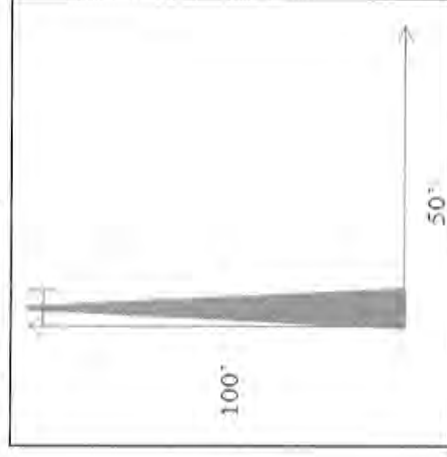
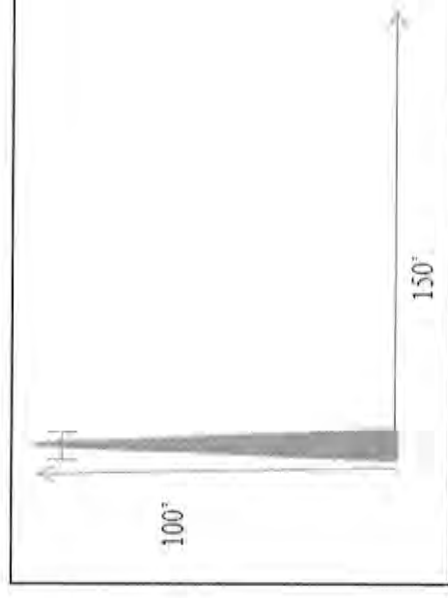


Figure D: Distance greater than height of tower (ex 1:1 ¼, 1:1 ½ ratios)



Type of Towers

There are generally two different types of towers: 1) Monopoles, and 2) Lattice designs. The monopole is a single cylindrical pole. Lattice poles are typically 3- or 4-legged structures that contain diagonal or horizontal cross members which connect to the vertical legs. The lattice tower contains more structural components, and therefore, may be more visible than a monopole. Generally, lattice towers tend to be stronger and therefore taller than monopoles. Use of guy wires can be connected to a monopole or lattice tower to strengthen it from lateral forces from the elements. Guy wires are connected to the pole/ tower at one end and to the ground at a diagonal angle at the other end. Poles/ Towers with guy wires use more land than those without guy wires. Please use the following figures for your survey.

Figure A. Monopole without Guy Wires.



Figure B: Monopole with Guy Wires.

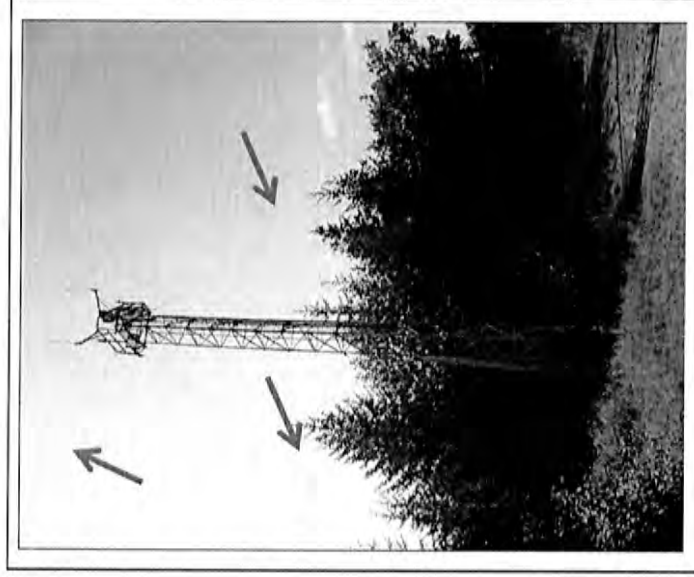


Figure C: 3-Leg Lattice tower

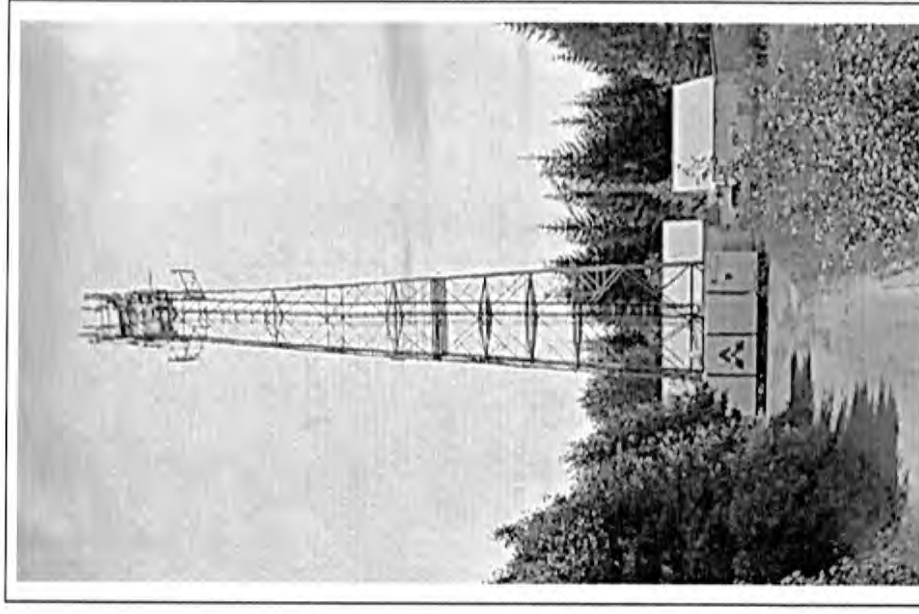
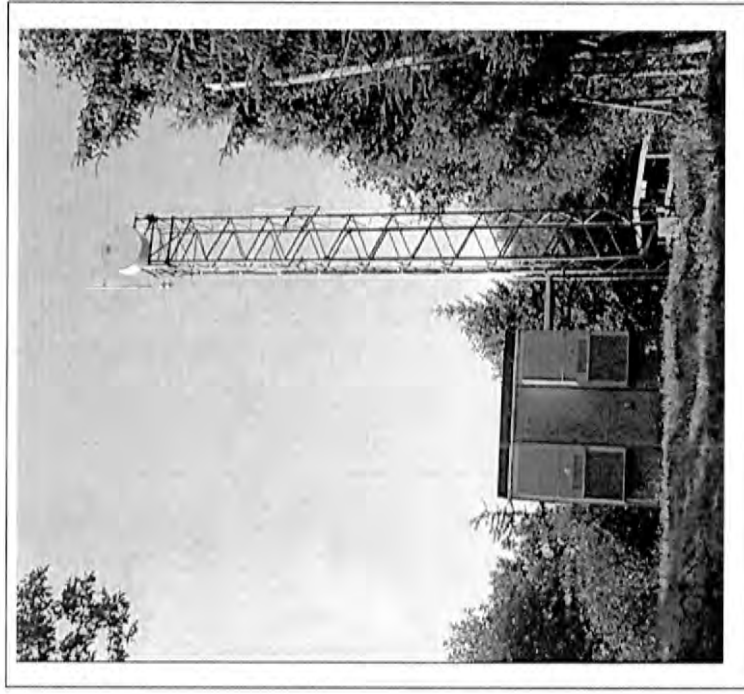


Figure D: 4-Leg Lattice Tower



Height

Towers are designed to have a height that effectively distributes cell and data signal coverage.

Examples...

- Collocation points can add up to 20 feet of separation between arrays.
- Roof mounted antennas might add height to a building.
- Some antennas can be added to a structure but not increase overall height.
- The taller the tower, the more likely FAA lighting standards will be triggered.

WCF Survey Policy Regulation Implications
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		Policy	Regulations
Collocation	No collocation = Least Preferred	No policies speak about not preferred collocation	Have a tower that cannot be collocated is permissible
Collocation	Collocation on existing tower = Most Preferred	Encourage Collocation - Currently a MP policy	Collocation is Building permit - only in Ord
Collocation	Attached to building = Most Preferred	ADD Encourage Collocation/ Attachment	Attachment is Building permit (certain heights) May ADD higher heights - in Ord
Collocation	Attached to existing structure (light pole, utility pole) = Most Preferred	Encourage attachment to existing structure - Currently a MP policy	Attachment is Building permit (certain heights) - in Ord
Collocation	Attached to Camouflaged Tower = Most Preferred (this should be collocation)	ADD Encourage Attached to camouflaged tower - MP	Collocation is Building permit - only in Ord
Camouflage	No Camouflage = Least Preferred	No policies prefer a non-camouflaged tower	Non-camouflaged tower is permitted, but not incentivized as much as one camo
Camouflage	Painting of Tower = Most Preferred	Policies about towers blending in/ not as visible are in MP	ADD painting as option for camo
Camouflage	Vegetative look (fake tree) = Preferred	Policies about towers blending in/ not as visible are in MP	Currently in draft ordinance
Camouflage	Disguised structure (flag pole, church steeple) = Preferred	Policies about towers blending in/ not as visible are in MP	Currently in draft ordinance
Camouflage	Hidden inside/ blend with structure = Most Preferred	Policies about towers blending in/ not as visible are in MP	Currently in draft ordinance
Camouflage	Set back on roof, not visible = Most Preferred	Policies about towers blending in/ not as visible are in MP	Currently in draft ordinance, ADD not visible
Screening	No Screening = Least Preferred	Lack of screening would not entirely be inconsistent w/ MP	Lack of screening is currently allowed in certain districts
Screening	Veg. Screening = Most Preferred	ADD screening of methods that would blend with surrounding environment	Currently in draft ordinance
Screening	Non-sight obscuring fence screening = Not Preferred	Lack of screening would not entirely be inconsistent w/ MP	Lack of screening is currently allowed in certain districts
Screening	sight-obscuring fence screening = Neutral	ADD screening of methods that would blend with surrounding environment	ADD brick/ stone as an option for Ord
Screening	brick/ stone wall screening = Preferred	ADD screening of methods that would blend with surrounding environment	Currently in draft ordinance
Screening	Enclosed building = Preferred	ADD screening of methods that would blend with surrounding environment	ADD match neighborhood design arch. For Ord.
Screening	Enclosed building that matches neighborhood design = Most Preferred	ADD screening of methods that would blend with surrounding environment	
Lighting	No Lighting = Most Preferred	Lack of lighting would be generally conform	Lighting is not required, unless by FAA - currently in Ord.
Lighting	Medium Intensity Steady Light = Neutral	Lighting may generally not be in conformance	ADD No flashing/ high intensity lights to Ord.
Lighting	Medium Intensity Flashing Light = Least Preferred	This would not be in conformance w/ Residence policies	ADD No flashing/ high intensity lights to Ord.
Lighting	High Intensity Steady Light = Not Preferred	This would not be in conformance w/ Residence policies	ADD No flashing/ high intensity lights to Ord.
Lighting	High Intensity Flashing Light = Not Preferred	This would not be in conformance w/ Residence policies	
Viewshed	Non-camo in mapped viewsheds = Least Preferred	This is inconsistent w/ existing MP policy	This is prohibited w/ existing Ord.
Viewshed	Camo in mapped viewsheds = Most Preferred	This is consistent w/ existing MP policy	This is required w/ existing Ord.
Remote	60% blocked by trees = Neutral	This is generally be consistent w/ MP	ADD this as a new regulation in Ord.
Remote	80% blocked by trees = Most Preferred	This is generally be consistent w/ MP	ADD this as a new regulation in Ord.
Remote	Locate on Mtn tops = Preferred	This is generally be consistent w/ MP	ADD this as a new regulation in Ord.
Remote	Locate on islands = Least Preferred	If no light, then generally consistent w/ MP	Would need to list islands if made into Ord./ or List islands that towers are prohibited on
Remote	Locate on hillside = Preferred	This is the Rim Shot idea and is consistent w/ MP	This is currently in draft Ord.
Noise	Low Noise (Battery back-up power) = Most Preferred	This is consistent w/ MP	ADD use of battery in Ord.
Noise	High Noise (Fuel Combustion generator) inside building =	This is consistent w/ MP	This is currently in draft Ord.

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Noise	High Noise (Fuel Combustion generator) behind wall = Neutral	This is consistent w/ MP	This may not be desired by public to be added in Ord.
Noise	High Noise (Fuel Combustion generator) behind vegetation = Neutral	Little noise barrier, may be inconsistent w/ MP depending on location	This may not be desired by public to be added in Ord.
Noise	High Noise (Fuel Combustion generator) behind fence = Neutral	Little noise barrier, may be inconsistent w/ MP depending on location	This may not be desired by public to be added in Ord.
Setbacks	Use current zoning setbacks = Least Preferred	Increasing setback distance would generally be consistent w/ MP	Increasing setback distance needs to be added as new regulation in Ord.
Setbacks	Distance equal to height of tower = Neutral	Increasing setback distance would generally be consistent w/ MP	This may not be desired by public to be added in Ord.
Setbacks	Distance half of tower height = Not preferred	Having a setback distance half of tower would generally be inconsistent w/ MP	This may not be desired by public to be added in Ord.
Setbacks	Distance greater than height of tower = Most preferred	Increasing setback distance would generally be consistent w/ MP	Increasing setback distance needs to be added as new regulation in Ord. (Need to be cautious to not be a Barrier to Entry)
Tower Type	Lattice Tower = Preferred	This is generally be consistent w/ MP	No action requested.
Tower Type	Monopole = Most Preferred	This is generally be consistent w/ MP	Add to Preferred section in Ord.
Tower Type	Guy tower = Least Preferred	This is generally be consistent w/ MP	This is currently addressed in Ord.
Height	Tall towers provide collocation = Neutral	This is generally be consistent w/ MP	Easier permitting is currently provided in draft Ord.
Height	Tall towers, fewer = Preferred	This may/ may not be consistent w/ MP	This gets to ensuring collocation (Easier permitting is currently provided in draft Ord.)
Height	Short towers hidden from view = Preferred	Consistent w/ MP	Easier permitting is currently provided in draft Ord. (ADD more language about hiding tower)
Height	Collocations on existing towers, regardless height = Most	This is generally be consistent w/ MP	Easier permitting for collocation is already provided in Ord.
Height	Collocations on buildings/ structures = Preferred	Consistent w/ MP	Easier permitting is currently provided in draft Ord.
Height	Any height, no lighting = Preferred	This may/ may not be consistent w/ MP (Add discouraging lighting)	Add language to discourage lighting
Height	Location matters more than height = Most Preferred	This is generally be consistent w/ MP (Increase policies for best locations)	Add language to incentivize good locations
Height	Comouflaging matters more than height = Preferred	Consistent w/ MP (Increase policies for Camo.)	Easier permitting for camo. currently provided in draft Ord. (increase incentives for more camo)

Add new MP Policies

- Change Policy 5 to read “PROMOTE LAND USE EFFICIENCY WITH THE COLLOCATION AND ATTACHMENTS OF WIRELESS COMMUNICATION FACILITIES TO EXISTING TOWERS AND STRUCTURES
 - Permitting of Wireless Telecommunication Facilities when attached to and blended with existing building/ structures should be incentivized.
 - Camouflaged towers shall be encouraged to be design to allow collocation.
- Add under Policy 4
 - WCF accessory structures shall be designed to blend in with the neighborhood or be screened using natural vegetation.
 - New towers shall be encouraged to use existing trees to block views from adjacent properties.
- Add under Policy 2
 - WCF's shall be designed and located in areas that minimize hazards to aviation and light requirement standards.
- Add under Policy 3
 - When designing a WCF tower that is above tree canopies or on mountain tops, the applicant shall consider the US Fish & Wildlife “Service Interim Guidelines for Recommendations on Communications Tower Siting, Construction, Operation, and Decommissioning”.
- Add under Policy 4
 - In case of tower collapse, a fall zone shall be established for new towers that protects buildings, public spaces and structure, and schools.

Add new Regulations for Ordinance

- Painting of towers shall be required if tower is not camouflaged as something other than a tower. (This may not be a good alternative to full camouflage)
- Add under Table 1: New, non-lighted, faux tree tower surrounded by trees on all sides that reach up to 80% height – any height.
- Add under Table 1: New non-lighted, non-concealed tower under 100 feet that is surrounded by trees on all sides that reach up to 80% height.
- Amend definition of Fall Zone to state *Fall Zone* means a circular area with a radius from the tower equal to 1.5 times the height of the tower that may be susceptible to damage from falling debris (i.e. WCF parts, snow, or ice) or structure collapse.
- Add under #6 of Location Preference: State Non-concealed freestanding monopole tower
- Add a new # 7 of Location Preference: State Non-concealed freestanding lattice tower
- Add a new # 8 of Location Preference: Any lighted WCF of any tower type and height
- Add new regulation under General Standards: WFC shall not be lighted unless required by the FAA.