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# City of Fort Collins



## ***Wireless Telecommunications Master Plan***

September 22, 2021

PREPARED BY  
**CityScape**  
CONSULTANTS, INC.  
[www.CityScapeGov.com](http://www.CityScapeGov.com)

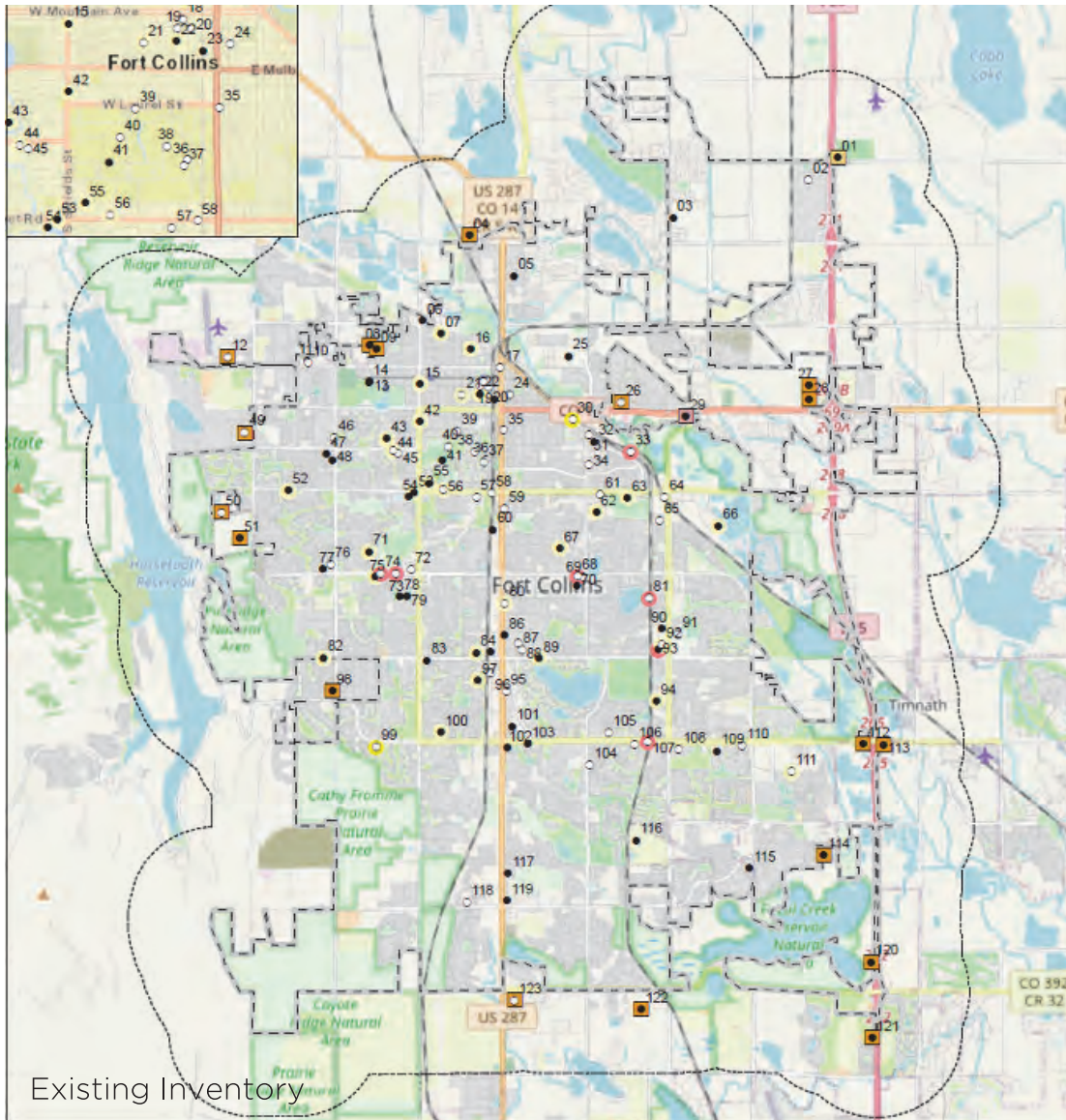
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# EXECUTIVE SUMMARY

The Wireless Telecommunication Master Plan (Plan) is a resource to address the need for better wireless services in the community and to modernize local regulations that control the placement, design and other related impacts that result from wireless deployment. This is incredibly important for the City as it is anticipated that in the future, wireless providers will need to expand the existing network of the one-hundred twenty three (123) existing wireless facilities in order to effectively serve the Fort Collins community. The research and analysis provided by CityScape Consultants, Inc. (CityScape) is compiled into the Plan and will inform and direct City Staff to make future changes to the City's administrative policies and Land Use Code. Ultimately this allows the community to become more strategic in the review of future wireless communications infrastructure.



## PLAN DEVELOPMENT

### Phase I - Research and Assessment of Existing Conditions

To initiate the Wireless Master Plan and explore key issues, the first phase of the planning process took into consideration previous neighborhood concerns and asked participants to confirm feedback received through several contentious neighborhood meetings. All wireless facilities were researched, assessed by visiting each site and cataloged.

### Phase II - Choices and Strategies

The second planning phase documented existing wireless conditions and developed simulated coverage and capacity maps. The resulting analysis identified gaps that are assumed to be filled one day by wireless infrastructure. With this information, City Staff developed a targeted outreach strategy to engage the public from areas that might expect future development. Facilitated conversation, surveys and one-on-one meetings to discuss the trade-offs that are often faced when developing wireless sites, were topics of discussion.

### Phase III - Plan Development

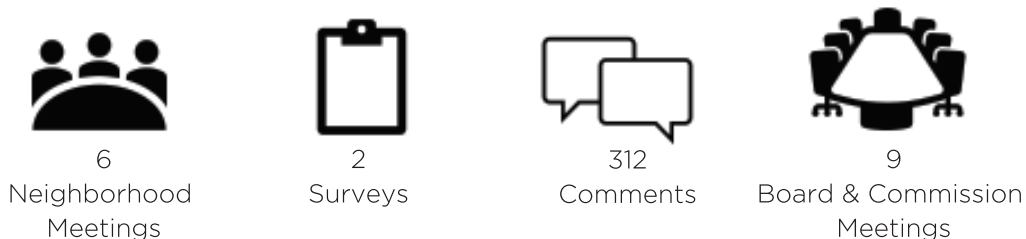
During the development of the Plan, content was developed by CityScape along with staff and curated through review by a technical advisory committee, City Boards and Commissions, community members and other wireless stakeholders reviewed the analysis and materials.

### Phase IV - Implementation

From the guidance of the Plan, future land use code policy changes will be made to unify the City's development standards for wireless telecommunication infrastructure.

### Community Engagement and Technical Advisory Committee

Public outreach collaborated between City Staff and the Consultant team included:



## *PROPOSED POLICIES AND GOALS*

The Plan identifies a number of opportunities and challenges the City will face as the City grows, the wireless technology progresses and wireless subscribers consume more data. Gaps in wireless services are identified and strategies to fill these gaps are outlined.



The community has a strong preference for improved services in residential neighborhoods, therefore the policies and goals of the Wireless Master Plan are identified as follows:

- Existing and concealed facilities should be utilized as a preference where possible.
- Community aesthetics should continue to be protected by planning for well sited, well designed, concealed facilities so that the infrastructure fits seamlessly into the community.
- City owned and other publicly owned properties should be used to allow the City to have greater control over placement of wireless infrastructure, provide opportunities to improve coverage in hard-to-reach residential areas, and potentially create revenue.
- Create an efficient and transparent process between the wireless communication service industries deployment of infrastructure, residents and community.
- Maintain an inventory and monitor existing wireless infrastructure in the community.
- Address safety of telecommunication facilities to minimize possible risk to residents.

## *SUMMARY*

CityScape and City Staff have presented to the public, industry, appointed and elected officials the finding of the analysis of the existing wireless facilities and the previous deployment patterns. Understanding these practices and planning for future deployment allows for improvements to the City's wireless communications network needed by the community for day-to-day business and domestic activities.

To achieve this, City Staff is proposing the attached Draft Wireless Telecommunications Master Plan, providing a better understanding of the desires of the public as it relates to updating the City's standards for wireless communications facilities while minimizing impacts to the community.

# CHAPTER 1

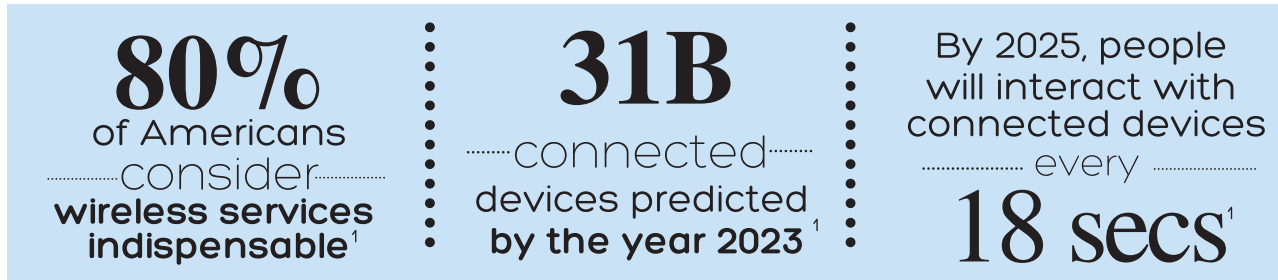
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## INTRODUCTION AND BACKGROUND



# INTRODUCTION

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The City of Fort Collins embarked upon the Wireless Telecommunications Master Plan in the spring of 2020 in response to a series of events. In recent years, the City has seen several controversial wireless tower applications which generated significant community concern around tower siting, design, wireless connectivity to emergency services, radio frequency exposure and cell coverage. These matters prompted City Council to act in 2018 and fund the City's first Wireless Telecommunication Master Plan. The Plan and Ordinance for wireless communications facilities will position the City to benefit from coming changes as well as guard against unwanted impacts.

CityScope Consultants, Inc., an engineering and consulting firm specializing in radio frequency (RF) design, developed this Wireless Telecommunications Master Plan to optimize the wireless telecommunications environment promoting efficient network deployment practices within the City.

According to CTIA, in 2019 the average person checked their wireless phone 58 times daily, while millennials checked their phone 150 times daily. Wireless devices are an integral part of communications for residents, students, businesses, and emergency services throughout the City. Nationally, residents continue to remove their landline and rely solely upon wireless devices for communication.

The City's wireless communications network and the underlying regulations need to be updated to better serve the community. This coincides with a time when the wireless communications industry is expanding their network services. The purpose of the Plan is intended to address these conditions by developing a framework for the efficient deployment of wireless communications facilities, to support the community's day-to-day domestic, commercial, and institutional activities. To achieve this, CityScope worked with the City developing this Plan to facilitate future wireless communications infrastructure to improve services and protect community interests.

The study area of the Plan is defined as the City's jurisdictional boundary plus a one mile perimeter and includes all known infrastructure providing wireless services into the City. All existing wireless facilities have been assessed, studied, cataloged and used as the baseline in CityScape's mapping and analysis.

Propagation maps include all identified antenna locations revealing geographic areas lacking wireless coverage. Latest population data, traffic considerations and network capacity driven variables are considered and shown on heat maps to illustrate gaps caused by network capacity issues. The City can use this information to strategize solutions to add infrastructure in identified areas void of wireless facilities, to plan for a robust wireless network throughout the City over the next ten years.

Overall the Plan empowers the City to be proactive in maintaining a beautifully planned community while managing new wireless infrastructure necessary for ongoing technological advancements.



CityScape Assessment Vehicle



## *PLANNING PROCESS*

An Advisory Committee consisting of City staff and community members met periodically throughout the process to review planning materials and provide feedback on various stages of the Plan. The Advisory Committee also reviewed and commented on the final Plan document. The Advisory Committee included representatives from the community and government representing different points of view and interests as they pertain to wireless telecommunication infrastructure.

The planning process was conducted in three phases.

Phase One included a review of existing infrastructure and an evaluation of community conditions related to the deployment of wireless facilities in Fort Collins. Two public initiation meetings were held on March 10 and 11 to initiate the project, obtain input on priorities, address wireless conditions and review existing infrastructure in the City. The Plan process was paused due to the rapid growth of COVID-19 infections in the community and the subsequent lockdown that went into effect in March 2020. The Plan hiatus lasted until August 2020 when work resumed and public outreach strategy changed to take place virtually for the remainder of the project.

Phase Two included a public outreach meeting in late September 2020 to discuss simulated coverage mapping identifying areas within the City that have gaps in services. These maps were updated again November 2020 with the City's most current data set of existing and proposed facilities.

Phase Three involved analysis to identify potential solutions to address gaps in wireless coverage and capacity. This involved analysis of existing zoning regulations and the identification of City owned properties that could be utilized for wireless deployment.

An online public survey of potential solutions was conducted from mid-March to mid-April 2021. Additionally, work session presentations were made in Spring 2021 to the Planning and Zoning Commission and other City Advisory Boards. The draft Plan progressed through a staff and public review period June-July 2021 and proceeded to the Planning and Zoning Commission for recommendation in August 2021.

The overall steps in the process to develop the Plan are as indicated:

- Inventory of existing wireless infrastructure throughout City;
- Public initiation meetings;
- Public poll to identify priorities;
- Theoretical propagation mapping;
- Virtual update and status report to the public;
- Propagation maps of potential future network deployment patterns;
- Identification of City owned properties that could potentially be part of a network deployment solution for the community and wireless industry;
- Recommendations designed to meet ten-year network deployment objectives;
- Public poll of recommendations;
- Planning Commission work sessions and recommendation;
- City Council work sessions;
- City Council adoption; and
- Council enactment of Wireless Telecommunication Master Plan.

## *VISION FOR THE FUTURE*

This Plan will serve as the basis for the City to implement targeted Land Use Code amendments that address the design, location and new development process for constructing wireless telecommunication facilities. The vision for the future is based on feedback received from various community members, technical experts, boards and commissions and summarized in the following vision statements:

- Provide context-sensitive concealment elements that are compatible with surrounding natural and architectural environments.
- Use limited public lands, such as parks, civic buildings and golf courses in an effort to allow greater community control over placement and design, protect the community from visual impacts and improve coverage in hard to reach residential areas.
- Promote greater transparency from the wireless industry by requiring applicants to demonstrate radio frequency emission compliance with any new or existing wireless development.
- Maintain cohesive small wireless facility design standards which require undergrounding of equipment to protect the community's visual quality.
- Continually monitor, update, and publish the City's database of existing wireless communication facilities to promote collocation.

## STRATEGIES AND POLICIES

The following Table 1 are the short term, long term and ongoing strategies and policies of the City as it relates to the siting of wireless infrastructure.

STRATEGY	DESCRIPTION	CONSIDERATIONS	TIMELINE
Further incentivize roof or wall mounted installations.	Recalibrate or develop process incentives in Land Use Code when wall or roof mounted equipment is proposed on existing structures. Examples may include expedited review times or final approval by the CDNS director without a public hearing.	Prioritizing the use of existing buildings may limit the need for new towers in the same vicinity.	Short Term (1-3 Years)
Create a conditional use process for reviewing wireless proposals in residential zone districts.	Create a process that requires more stringent set of baseline standards that control the location, design, height, and placement of wireless facilities.	Maintains the allowable control protecting residents and their properties.	Short Term (1-3 Years)
Consider the use of certain city-owned properties.	Pre-designed concealed towers to increase coverage and capacity throughout the City would give the City the most control over infrastructure siting.	Allows more control as property owner, sets precedents for design type of infrastructure, creates revenue for the City.	Short Term (1-3 Years)
Update the City's Land Use Code to comply with Federal and State timing requirements.	Decision timelines and required rules concerning local government's review and decision processes for macro cell and small wireless facilities should be included in the City's Code.	Protects the City from unwanted lawsuits.	Short Term (1-3 Years)
Amend zoning standards to match federal definitions.	Rules and application approval timelines would reduce the number of inconsistencies that exist in the current zoning policies and allow for streamlined staff processing.	Concise process for the wireless industry to follow allowing for the types and design the City prefers.	Short Term (1-3 Years)

*STRATEGIES AND POLICIES* continued

STRATEGY	DESCRIPTION	CONSIDERATIONS	TIMELINE
Require wireless providers to demonstrate RF emission compliance for new and existing facilities.	For new and proposed modifications to existing facilities require providers to submit a RF emission report.	Wireless providers must follow FCC regulations as it relates to RF emissions.	Long Term (3+ Years)
Explore a City RF monitoring program.	While radio frequency limits are determined by the FCC, the City could implement periodic monitoring to ensure sites are operating within federal limits.	Radio frequency monitoring requires specialized equipment and skills. Additional funding resources would be required to implement ongoing or periodic monitoring.	Long Term (3+ Years)
Publish and update a wireless inventory map for the City.	The City should build on the inventory included in the Plan by adding facilities to the map as they submit for development review. The inventory should be publicly accessible.	Promotes collocation of existing infrastructure over new facilities.	Ongoing
Develop design standards and expectations for wireless facilities.	Explore the use of a design guidelines document for large wireless facilities, similar to the what currently exists for small cell facilities.	Design guidelines provide a resource that clearly states City preferences for the design and placement of facilities.	Short Term (1-3 Years)
Encourage the use of art as a concealment method for deployment of future wireless communication facilities	Explore ways to incentivize the provision of public and/or private art pieces as a means of effectively disguising wireless infrastructure.	What constitutes art requires extra consideration but can also create a facility that is unique to the community.	Short Term (1-3 Years)

Table 1: Short and Long Term Strategies and Policies

# COMMUNITY AND HISTORY

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Home to 175,000 people, a large student population and growing tourism and business sectors, Fort Collins faces similar global and national trends for increasing demand for wireless connectivity, coverage, and bandwidth.

Community characteristics, state and federal legislation, and numerous other geographic, demographic and natural or built environment factors all contribute to the pattern, location, and distribution of wireless facilities in Fort Collins. These same factors will also influence where and how future wireless deployments in the community may be proposed by the wireless industry.

While the community may be unable to change or influence variables such as terrain, climate and federal legislation, other local factors should be considered for their impacts on how wireless service has developed in the community and how it may shape future deployments. Land use and zoning regulations, the pattern and location of future growth and development, changing demographics and even new mobility options are important considerations as the community identifies a vision and strategies for the future of wireless connectivity and service in Fort Collins.

The following are several key local factors and how they influence wireless service and deployment strategies:

## *Population and Density:*

Growing population, high density locations in the community and growing demand for wireless service all impact wireless service levels in a given area and the need for additional wireless equipment and facilities. Even temporary gatherings such as Colorado State University (CSU) football games and Downtown festivals are considered by the industry when developing their local network and deployment strategies.

## *Terrain:*

Topography is both a challenge and opportunity for wireless services. Hills and areas of higher elevation can block wireless signals or extend their range if placed at a higher elevation. While the City of Fort Collins is generally flat, localized areas of higher elevation are often sought by wireless providers to help extend the range of their wireless facilities and equipment.

## *Vegetation & Building Height:*

Similar to topography, variations in the height of surrounding buildings and vegetation can block or limit wireless signals. Multistory buildings can make excellent locations for roof-mounted equipment to extend wireless signals above smaller structures and tree canopies. However, such structures are unlikely to be available in areas of the community with more open space, parks, and single-family residential developments.

# LEGAL FRAMEWORK

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## *FEDERAL REGULATIONS*

Local government agencies are allowed to regulate personal wireless service facilities (PWSF) as a permitted land use provided local code aligns and does not exceed federal regulations already in place for the industry to follow.

Local codes and land development standards can address concerns related to: location and proximity of infrastructure to other land uses, zones and scenic viewsheds; visual concerns related to location, height and pedestrian views of a structure's height and ground equipment; setbacks outside rights-of-way; fencing; signage; parking, and certain lighting types.

The Telecommunication Act of 1996 preserves local siting authority but contains a handful of specific provisions that require localities to follow federal restrictions. These limitations of local authority must be taken into account when drafting local regulations. Subsequent congressional legislation and federal regulations adopted by the Federal Communications Commission (FCC) provide the definitions and timelines referenced as "shot clocks" that state and local governments must follow when regulating the wireless industry.

### Telecommunication Act 1996 Section 704(a) (47 U.S.C. § 332(c) (7))

The Federal Telecommunications Act of 1996 includes Section 704(a) (47 U.S.C. § 332(c) (7)) and preserves local governments the authority to regulate wireless infrastructure. Section 704 states in relevant part that:

- Land use development standards may not unreasonably discriminate among the wireless providers and may not prohibit or have the effect of prohibiting the deployment of wireless infrastructure.
- Local governments must act on applications for new wireless infrastructure within a "reasonable" amount of time but did not specify what "reasonable" meant.
- Land use policies may be adopted to promote the location and siting of telecommunications facilities in certain designated areas.
- Encourages the use of third-party professional review of site applications.
- Prohibits local government from denying an application for a new wireless facility or the expansion of an existing facility on the grounds that radio frequency emissions are harmful to human health provided the wireless service provider met federal standards.

(47 USC § 1455) Section 6409(a) Middle Class Tax Relief and Job Creation Act of 2012

Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, referenced as the “Spectrum Act” was enacted by Congress to promote wireless deployments of broadband for public safety and commercial purposes. As stated in the Spectrum Act,

“...a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.”

After much debate between the wireless industry and local government the FCC issued a response clarifying definitions and meaning to the Spectrum Act in a Report and Order released October 21, 2014 in W.T. Docket 13-238.

The 2014 Report and Order, clarified the Spectrum Act stating:

“[n]otwithstanding section 704 of the Telecommunications Act of 1996 or any other provision of law, a state or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.”

Several other subsequent Report and Orders have since been vetted and approved by the FCC and the regularity definitions<sup>2</sup> and shot clocks are provided in the Code of Federal Regulations: Title 47, Chapter I, Subchapter A, Part 1, Subpart U Titled State and Local Government Regulation of the Placement, Construction and Modification of Personal Wireless Service Facilities.<sup>3</sup>

Code of Federal Regulations Reasonable Periods of Time to Act on Siting Applications

When an applicant requests a modification, a state or local government may require the applicant to provide documentation or information only to the extent reasonably related to determining whether the request meets and does not exceed the definitions and requirements for collocation or modification. A state or local government may not require an applicant to submit any other documentation, including but not limited to documentation intended to illustrate the need for such wireless facilities or to justify the business decision to modify such wireless facility.

The shot clock date for a siting application is determined by counting forward, beginning on the day after the date when the application was submitted, by the number of calendar days of the shot clock period and including any pre-application period asserted by the siting authority, provided, that if, the date calculated in this

manner is a “holiday” or a legal holiday within the relevant state or local jurisdiction, the shot clock date is the next business day after such date.

The presumptively reasonable periods of time for PWSF applications is as follows in [Table 2](#) unless mutually agreed upon in writing.

INSTALLATION TYPE	TIME PERIOD FOR DECISION	REVIEW AND INITIAL PROCESS	RESUBMISSION PROCESS FOLLOWING NOTICE OF DEFICIENCY
<b>SMALL WIRELESS FACILITIES</b>			
New Structure	90 Days*	10 days after submission to determine incomplete. Must clearly identify, in writing, specific regulation along with missing information and documentation needed to complete the application.	If incomplete, <u>shot clock date restarts at zero</u> . Tolling process repeats until application is complete.
Collocation	60 Days <sup>5</sup> *		
<b>MACRO WIRELESS FACILITIES</b>			
New Structure	150 Days**	30 days after submission to determine incomplete. Must clearly identify, in writing specific regulation along with missing information and documentation needed to complete the application.	If incomplete, <u>shot clock date calculations resume the day after the applicant resubmission (e.g. if originally tolled on day 20, resume day 21)</u> . However, if an <u>applicant's resubmission was not sufficient to render the application complete and siting authority gives notice of incompleteness of resubmission on or before 10th day after resubmission, then tolling continues and shot clock does not resume</u> . Tolling process continues until application is complete.
Collocation	90 Days**		
<b>ELIGIBLE FACILITIES REQUEST (EFRs)</b>			
EFRs can be either macro or small wireless facilities	60 Days*	Within 30 days of receipt of the application the shot clock may be tolled by notifying the applicant of incompleteness and requiring additional information related to the determining whether the application qualifies as an EFR.	Once additional information is provided, the shot clock resumes at the point where it was tolled.

\*In the event the reviewing state or local government fails to approve or deny a request seeking approval, under the shot clock stipulations for a modification to an existing antenna, the request shall be deemed granted. The deemed grant does not become effective until the applicant notifies the applicable reviewing authority, in writing, after the review period has expired (accounting for any tolling) that the application has been deemed granted.

\*\* In the event of expiry of the FCC's shot clock for a new macro facility or macro collocation on an existing PWSF, the applicant is entitled to bring action in court seeking to compel the jurisdiction to grant the permit, which the court is supposed to hear on an expedited basis and the community faces a rebuttable presumption that it violated 47 USC §332 by failing to timely adjudicate the application. The community can then defend and explain why it was unable to do so within allowable timeframes.

\*\*\*Local governments may not continue to toll the shot clock by requesting additional information from providers unrelated to the initial request. If a provider responds to an initial notice of incompleteness but fails to include the information requested, then local government may only toll the shot clock again to alert the provider that it has not provided the information but may not request further information as grounds for a subsequent tolling.

Table 2: PWSF Process and Timelines



## COLORADO STATE LAW



House Bill 17-1193 mandated that the siting, mounting, placement, construction and operation of small cell facilities and small cell networks is a permitted use by right in any zone district. It also gave telecommunication companies the right to locate telecommunication facilities, including small wireless facilities, on municipal light poles, light standards, traffic signals and utility poles within a city right-of way. Further, it mandated a 90-day review period by which municipalities have to process applications for small wireless facilities and 150 days to process new structure or new wireless service facilities other than small wireless facilities.

The State of Colorado has imposed different timelines than the Federal Government through the FCC's regulations for various types of wireless infrastructure. When navigating different federal and state timelines it is always recommended to follow the shorter timeline for each applicable type of application to avoid creating a conflict with compliance amongst the competing timelines. It should be noted that some of the state and federal definitions are different and that unless and until challenged, the City's policy is to follow state law definitions where conflicts exist when the City determines that it benefits the City's regulatory program.

Because of limitations imposed by state and federal legislation, the City has very little flexibility in its ability to regulate the presence of telecommunication facilities. In the existing code the City can and has addressed design aspects to minimize the visual impact that these wireless facilities can have on the community.



Inside concealed silo

# CHAPTER 2

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# WIRELESS INFRASTRUCTURE



# WIRELESS OVERVIEW

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Approximately  
.....  
**280 million**  
smartphone  
users  
**in 2020**<sup>6</sup>

The current evolution of personal wireless technology is benchmarked by the underlying network platforms and referenced as first, second, third, fourth and fifth generations of wireless deployment (1G, 2G, 3G, 4G and 5G respectively). First and second generations provided the initial launch of personal wireless services. Third generation improved data transfer with the addition of multimedia messaging services and provided some simple applications and games. Fourth generation substantially increased download speeds allowing interactive services incorporating broadband technology to enable applications like global positioning services (i.e. Google Maps, Waze Navigation etc.), banking, weather, educational, public safety services and more. This platform continues to evolve as we transition into the fifth generation of technology. The concept of fifth generation and beyond is to use existing bandwidth to get more simultaneous reuse of the same channel by either time share, antenna polarization and other to-be-invented processes.

Wireless telecommunication networks operate using radio bands and frequencies on the wireless spectrum dashboard. Bands and frequencies are the radio signals sent out by service providers that connect with wireless devices to make phone calls and access and share data. Antennas mounted on wireless towers and base stations create these man-made radio waves which provide the signal that interacts with the wireless device within a designated geographic area. This interaction enables the use of all the applications on smart devices.

Radio frequency<sup>6</sup> refers to a subset of electromagnetic energy, generally transmitted through an antenna, creating waves with a desired frequency and length. Frequency represents the number of waves passing by each second, while length is the distance traveled per second.<sup>7</sup> Electromagnetic energy is all about electrical and magnetic energy that moves through the air at the speed of light.

Initially service providers designed wireless networks for intermittent voice services and low data rate transfers focusing on covering large areas of land within the defined service areas. To accomplish this, wireless service providers erected what is referred to as macro facilities. Macro towers are high powered sites intended to cover sizeable geographic areas to service the largest number of network subscribers. These taller facilities require a strong structure and have large antennas

with coaxial cables connecting the antenna to the ground equipment. Each wireless network provider (currently AT&T, T-Mobile, Verizon, Dish) deploys, operates and maintains their own individualized infrastructure network for their subscribing customers.

As wireless data usage continues to escalate, consumers require more speed and high-data-rate transfers that often exceed existing network capability. One way to address the capacity demand is by deploying small wireless facilities.

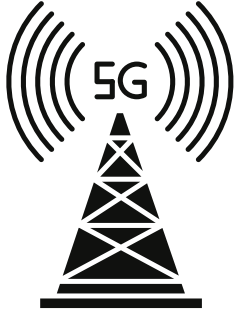
Small wireless facilities, a type of wireless technology for broadband infrastructure, have smaller antennas, are shorter in height and operate at less power than the traditional macro facilities. Small wireless facilities have a smaller coverage footprint and are typically placed between macro facility sites to be used to “fill-in” high capacity areas. Small facilities can be attached to buildings, rooftops, utility poles, traffic signals or free standing structures in public rights-of-way. These sites are routinely deployed in areas with large concentrations of network subscribers.



The wireless industry is currently deploying variations of 5G ready infrastructure and upgrading 4G to evolve into the next generation. The planned 5G standard is intended for true high-speed data meaning download speeds well in excess of today’s standard 25-megabit per second standard. Testing of the originally conceived 5G networks has been inconclusive with coverage and data speeds below anticipated expectations.

The current personal wireless services use radio spectrum that is divided into three distinct bands: 1) Band 71 600 megahertz (MHZ) 2) Cellular 700-999 MHz and 3) PCS/AWS 1,700-2500 MHz. Fifth generation wireless services are currently categorized into three distinct bands: 1) Low-band spectrum including everything below 1 gigahertz (GHz) (1-999 MHz); 2) Mid-band spectrum consisting of all frequencies between 1 GHz and 6 GHz (1000-6000 MHz); and 3) High-band spectrum generally including all frequencies above 6 GHz, with the current focus between 24 GHz and 40 GHz (24000-40000 MHz). High-band spectrum is also referred to as millimeter-wave (mmWave) spectrum which includes all frequencies above 6 GHz.

The FCC continues to reallocate frequencies from other radio services to accommodate the evolving 5G services. Previously thought unusable frequencies are being tested and utilized for consumer wireless.



The growth of fifth generation wireless services is well underway and deployed in many locations. The newer evolving 5G service promises to bring even higher data-rate speeds to greatly improve wireless service functionalities and to compete with most home wi-fi internet services.

The intention is to bring wireless broadband to the general population to open the door for streaming services virtually anywhere and intended to be the backbone for innovative technologies such as autonomous vehicles.



Radio Equipment on Small Wireless Facility

# EXISTING FACILITIES ANALYSIS

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## WIRELESS INFRASTRUCTURE INVENTORY

The wireless infrastructure inventory is an integral part of the analysis and establishes the baseline for determining and understanding the industry deployment patterns within the City. The existing facilities are analyzed and used as the foundation for all mapping.

An assessment of each tower and base station was completed to verify the following information: 1) exact location; 2) ownership; 3) providers; and 4) notable identification. Detailed site information is cataloged in Appendix A.

After the inventory is analyzed it is categorized and mapped in the following ways for analytical purposes:

- Structure Type: Towers and Base Stations
- Antenna Type: Macro, Small, Broadcast, Public Safety
- Location: Private Property, Public Property, Utility Easements, Rights-of-Way
- Design Type: Concealed, Non-Concealed, Semi-Concealed, Dual Purpose

As of May, 2021 there are one hundred twenty-three (123) facilities verified in the designated study area of which eighteen (18) are located outside the City's jurisdiction. All but four (4) are providing personal wireless services to the subscribers in Fort Collins.

The licensed personal wireless service providers verified on infrastructure throughout the study area include: AT&T, CenturyLink, Cricket, Sprint, T-Mobile and Verizon. T-Mobile has purchased Sprint and are combining these networks on the infrastructure. Cricket will turn into AT&T's main prepaid brand on the AT&T network, so most likely the equipment will be or has been upgraded or modified to accommodate both brands. Currently the biggest three service providers across the country are AT&T, T-Mobile and Verizon. Dish Wireless has stated that Colorado will be among the first ten states planned for deployment of its 5G broadband services by 2023. CenturyLink is an internet service provider that is found on existing infrastructure offering broadband services.

The wireless infrastructure owner stakeholders who own and lease vertical real estate throughout the study area, include but are not limited to: American Tower Corporation (ATC), AT&T, Atlas Tower Holding, LLC, CenturyLink, Crown Castle International (CCI), Poudre River Power Authority, SBA Communications, Skyway Towers and Verizon Wireless.

The deployment pattern located inside the City's boundary are not evenly dispersed. Most of the towers and base stations are located in clusters and along the major corridors. The deployment patterns outside the City's zoning jurisdiction are more evenly spaced around the perimeter of the City and are designed to provide service into the City.

The largest concentration of wireless infrastructure is located in and around the largest population density areas of the Downtown District, Colorado State University campus, parallel to East Harmony Road and the intersection of Horsetooth Road and College Avenue.

## ***STRUCTURE TYPE***

There are a total of one hundred and twenty-three (123) facilities comprising of sixty-seven (67) towers and fifty six (56) base stations in the study area and included in the catalog. There are a total of one hundred and four (104) facilities in the City's zoning jurisdiction; fifty-three (53) towers and fifty-one (51) base stations. Of the fifty-three (53) towers inside the City, thirty-five (35) are existing and eighteen (18) are proposed small wireless facility towers. Comparatively, of the fifty-one (51) base stations, forty-one (41) are existing, two (2) are approved but not yet built and eight (8) are proposed and under review.

The City has a large number of base station deployments considering the characteristics of the community. Typically base stations (existing structures) are used in highly urbanized cities where there are large populations and sparse land areas. Towers need adequate ground space to accommodate equipment shelters, cabinets and other ancillary equipment. The antennas need to be located above rooftops, ambient tree heights or other obstructions for effective data transmission. CityScape theorizes the zoning ordinance promotes this type of deployment pattern due to the limitations of the height of towers permitted in each respective zoning district. Antennas placed on rooftops are allowed to be fifteen (15) feet above the roofline. Installing antennas above the building optimizes functionality of the antenna as it allows for more height. For this reason, it appears that the wireless industry is utilizing rooftops as its first choice for deployment.

Platte River Power Authority (PRPA), the electricity provider for Fort Collins previously allowed and negotiated space for the installation of wireless antennas on certain high rise utility structures. The PRPA is only allowing collocations that are below the power lines and not renewing leases for any infrastructure that is currently above the power lines. The existing above power line installations will have to be removed at the end of their subsequent lease agreement. The following table and figure identifies seven (7) PRPA facilities scheduled for removal including an existing tower on PRPA property.

The following **Table 3** summarizes and identifies the inventory by type of structure, either tower or base station.

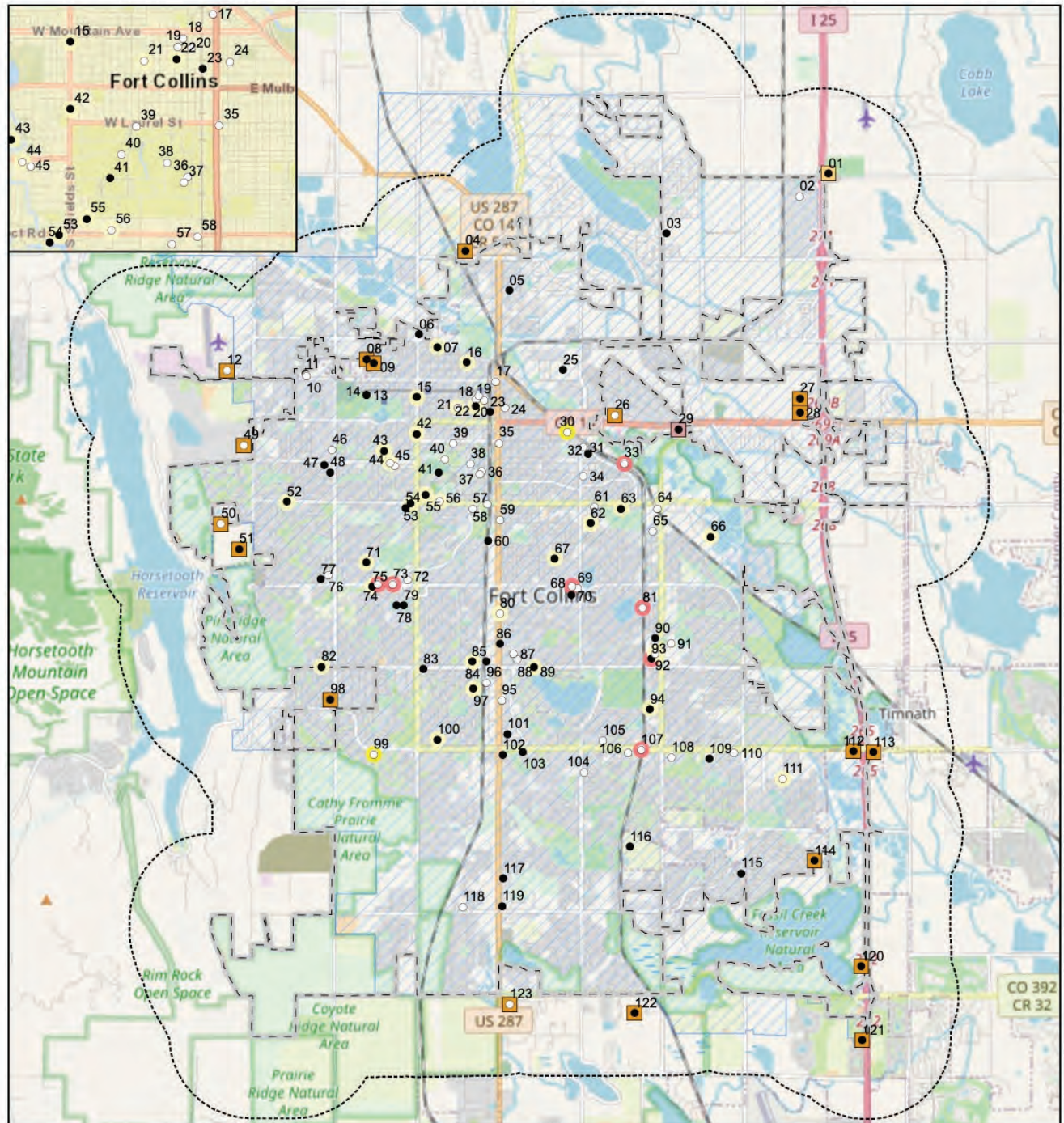
STRUCTURE TYPE	SITE NUMBERS INSIDE CITY	SITE NUMBERS OUTSIDE CITY	TOTAL
Towers	03, 04, 05, 06, 07, 11, 13, 14, 15, 16, 22, 23, 25, 32, 41, 42, 43, 47, 48, 52, 53, 54, 55, 60, 62, 63, 66, 67, 70, 71, 75, 77, 78, 79, 82, 83, 84, 85, 86, 89, 90, 93, 94, 97, 100, 101, 102, 103, 109, 115, 116, 117, 119	01, 08, 09, 27, 28, 29, 51, 98, 112, 113, 114, 120, 121, 122	
	53 Inside City (Site 93 to be removed)	14 Outside City	67
Base Stations	02, 10, 17, 18, 19, 20, 21, 24, 30, 31, 33, 34, 35, 36, 37, 38, 39, 40, 44, 45, 46, 56, 57, 58, 59, 61, 64, 65, 68, 69, 72, 73, 74, 76, 80, 81, 87, 88, 91, 92, 95, 96, 99, 104, 105, 106, 107, 108, 110, 111, 118	12, 26, 49, 50, 123	
	51 Inside City (Sites 68, 73, 74, 81, 107 to be removed)	5 Outside City	56
<b>TOTAL</b>	<b>104</b>	<b>19</b>	<b>123</b>

Table 3: Inventory Summary by Structure Type

The structure types are further depicted in **Figure 1** and represented by the following colored dots:

- Towers
- Base Stations





### Fort Collins Inventory by

#### Cataloged Structure Type

- Tower (67)
- Base Station (56)

- TO BE REMOVED (7)
- Approved But Not Built Inside Zoning Limits (2)
- Proposed Under Review Inside Zoning Limits (27)
- Existing Outside Zoning Limits (18)
- Approved But Not Built Outside Zoning Limits (1)
- Proposed Under Review Outside Zoning Limits (1)

- ▭ City Boundary
- ▭ 1 Mile Buffer
- ▭ Growth Management Area

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc. on

Date: 3/2/2021

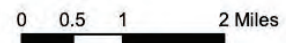


Figure 1: Map of Existing Inventory by Structure Type

## *PERSONAL WIRELESS SERVICE FACILITIES ANTENNA TYPE*

Personal wireless service facilities (PWSF) are facilities including infrastructure for either macro or small cell antennas that provide commercial wireless services. The traditional wireless facility installations that we have become accustomed to seeing are referred to as macro cells, macro antennas or macro wireless facilities. The reference is because these antennas are typically larger in size, higher powered and are mostly the backbone of all wireless networks. There are seventy-eight (78) macro facilities in the City and eighteen (18) located outside the City jurisdiction but are included the study area of the Plan. Small wireless facilities are the newest in wireless technology and have been developed mostly to help network densification. This means adding more cell sites in high density areas to increase the amount of available capacity where there is a higher demand for wireless services. The City has four (4) existing small wireless facilities and nineteen (19) proposed small wireless facilities. These small wireless facilities are proposed in strategic locations in the rights-of-way of capacity strained areas in an effort to offload wireless traffic from existing macro sites. The small wireless facilities are also proposed in areas that would be difficult to site a larger macro facility. The proposed small wireless facilities in the City are mostly located north of Harmony Road and east and west of North College Avenue.

There are four (4) sites in the study area that do not have personal wireless service equipment on the infrastructure, therefore they are not integrated in the following table or figure. The facilities that are not included are site numbers 8, 9, 18 and 64. These antenna types do not contribute to commercial wireless services for the City.



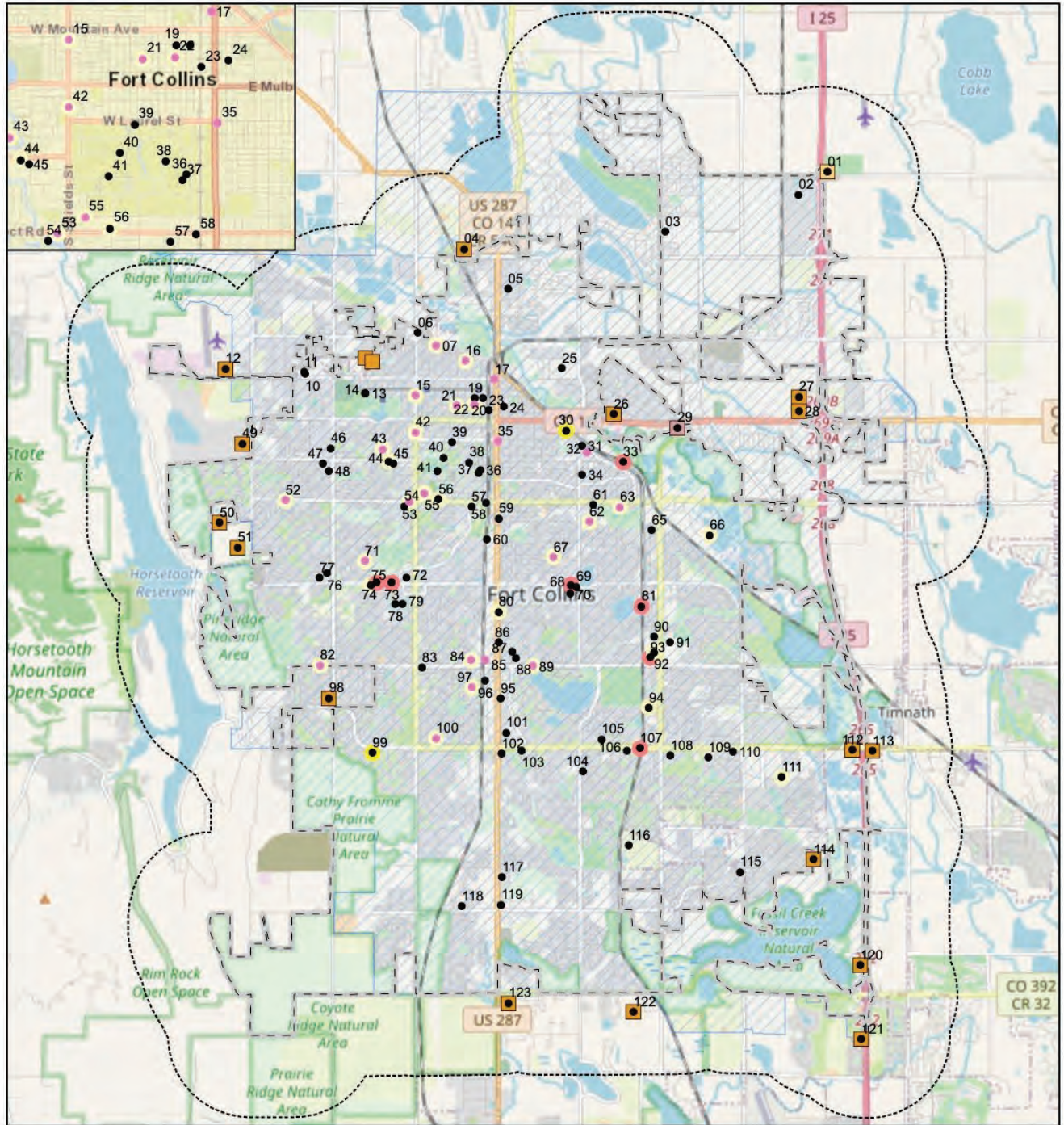
The following **Table 4** is a summary of PWSF sites summarized by antenna type, either macro or small wireless.

ANTENNA TYPE	SITE NUMBERS INSIDE CITY	SITE NUMBERS OUTSIDE CITY	TOTAL
Macro	02, 03, 05, 06, 10, 11, 13, 14,19, 20, 23, 24, 25, 30, 31, 33, 34, 36, 37, 38, 39, 40, 41, 44, 45, 46, 47, 48, 54, 56, 57, 58, 59, 60, 61, 65, 66, 68, 69, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 83, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96, 99, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 115, 116, 117, 118, 119	01, 04, 12, 26, 27, 28, 29, 49, 50, 51, 98, 112, 113, 114, 120, 121, 122, 123	
	78 Inside City (Sites 33, 68, 73, 74, 81, 93, 107 to be removed)	18 Outside City	96
Small Wireless Facilities	07, 15, 16, 17, 21, 22, 32, 35, 42, 43, 52, 53, 55, 62, 63, 67, 71, 82, 84, 85, 89, 97, 100		
	23 Inside City	0 Outside City	23
<b>TOTAL</b>	<b>101</b>	<b>18</b>	<b>119</b>

Table 4: Inventory Summary by PWSF Antenna Type

The PWSF antenna types are further depicted in **Figure 2** and represented by the following colored dots:

- Macro
- Small Wireless Facilities



**Fort Collins Inventory by**

**Cataloged PWSF Antenna Type**

- Macro Cell (96)
- Small Wireless Facility (23)

- TO BE REMOVED (7)
- Approved But Not Built Inside Zoning Limits (2)
- Proposed Under Review Inside Zoning Limits (27)
- Existing Outside Zoning Limits (18)
- Approved But Not Built Outside Zoning Limits (1)
- Proposed Under Review Outside Zoning Limits (1)
- ▭ City Boundary
- ▭ 1 Mile Buffer
- ▭ Growth Management Area

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc. on

Date: 3/2/2021

0 0.5 1 2 Miles



Figure 2: Map of Existing Inventory by PWSF Antenna Type

## Location

Wireless antennas on towers and base stations are located on either private or public property, inside street rights-of-way or in public utility easements. The siting of wireless infrastructure can be complex and the wireless industry will look for the path of least resistance when determining a location for infrastructure. History has demonstrated that the wireless industry typically seeks to install macro cell sites on private property first since land lease negotiations are usually easier. Infrastructure builders want to own the towers and pay a minimal land lease rate and there is usually more private property available for these types of negotiations. In the study area there are eighty three (83) sites on private property.

Recent federal and state legislative changes encourage and promote the use of public rights-of-way for small wireless facility deployment. The City can expect a plethora of right-of-way use applications by each service provider over the next several years for this type of deployment. This trend is already underway as demonstrated by the nineteen (19) proposed small wireless applications presently under review by the City.

The use of tall power distribution poles and towers on public utility easements offer great solutions for macro cells and small wireless facilities. Adding antennas to existing utility poles and structures is less visually intrusive to the mountain and vista viewsheds than adding a new tower in the same vicinity. As noted previously, PRPA is declining to renew existing lease options for the existing sites in their utility easements for any antennas above the power lines, see picture of site #81 as an example.

There are fifteen (15) facilities on publicly owned properties within the study area. Colorado State University has nine (9) facilities between the local and remote campuses. There are two (2) sites on light poles at City Park Ball Field, three (3) sites on Poudre School District (PSD) property, and one (1) site is located on Poudre Fire Authority property. The sites on public property are as follows:

- Colorado State University: Sites 12, 13, 14, 49, 51
- City of Fort Collins: Sites 36, 37, 38, 39, 40, 41,
- Poudre School District: Sites 78, 79, 91
- Poudre Fire Authority: Site 103



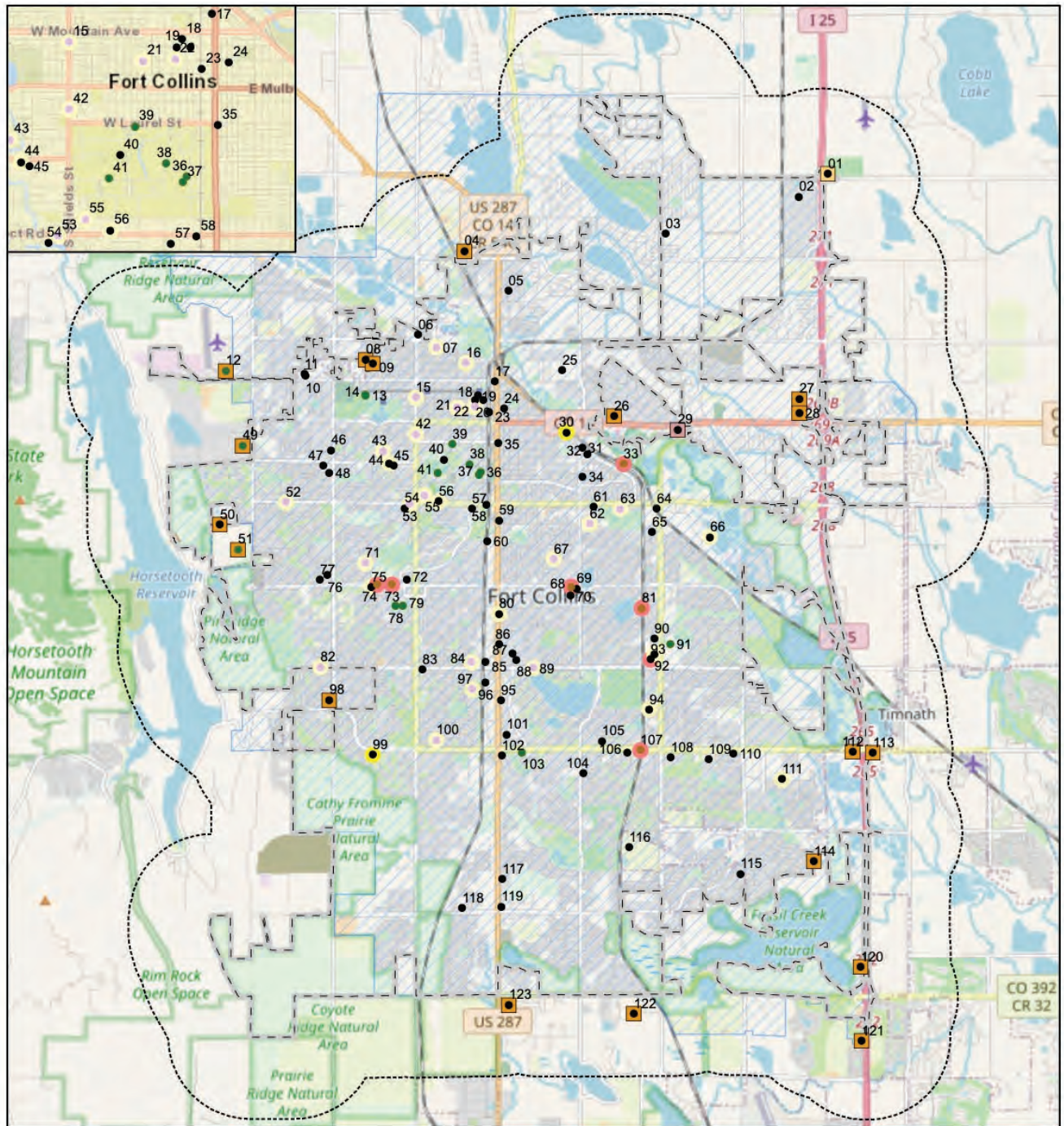
The following **Table 5** summarizes and identifies the location of all facilities by location in the study area.

LOCATION	SITE NUMBERS INSIDE CITY	SITE NUMBERS OUTSIDE CITY	TOTAL
Private Property	02, 03, 05, 06, 10, 11, 17, 18, 19, 20, 23, 24, 25, 29, 30, 31, 32, 34, 35, 44, 45, 46, 47, 48, 54, 56, 57, 58, 59, 60, 61, 64, 65, 66, 69, 70, 72, 75, 76, 77, 80, 83, 85, 86, 87, 88, 90, 92, 93, 94, 95, 96, 98, 101, 102, 104, 105, 106, 108, 109, 110, 111, 115, 116, 117, 118, 119	01, 04, 08, 09, 26, 27, 28, 50, 98, 112, 113, 114, 120, 121, 122, 123	
	67 Inside City (Site 93 to be removed)	16 Outside City	83
Public Property	13, 14, 36, 37, 38, 39, 40, 41, 78, 79, 91, 103	12, 51, 49	
	12 Inside City	3 Outside City	15
Utility Easement	33, 68, 73, 74, 81, 107		
	6 Inside City (All to be removed)	0 Outside City	6
ROW	07, 15, 16, 21, 22, 42, 43, 52, 53, 55, 62, 63, 67, 71, 82, 84, 89, 97, 100		
	19 (Proposed) Inside City	0 Outside City	19
<b>TOTAL</b>	<b>104</b>	<b>19</b>	<b>123</b>

Table 5: Inventory Summary by Location

The locations are further depicted in **Figure 3** and represented by the following colored dots:

- Private Property
- Rights-of-way
- Public Property
- Utility Easement



**Fort Collins Inventory by**

**Cataloged Location**

- Private Property (84)
- Inside Right-of-Way (19)
- Publicly Owned (14)
- Utility Easement (6)

- TO BE REMOVED (7)
- Approved But Not Built Inside Zoning Limits (2)
- Proposed Under Review Inside Zoning Limits (27)
- Existing Outside Zoning Limits (18)
- Approved But Not Built Outside Zoning Limits (1)
- Proposed Under Review Outside Zoning Limits (1)

- ▭ City Boundary
- ▭ 1 Mile Buffer
- ▭ Growth Management Area

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc. on

Date: 3/2/2021

0 0.5 1 2 Miles



Figure 3: Map of Existing Inventory by Location

## Design Type

The City's zoning standards require concealed towers and base stations over non-concealed designs. Concealed towers and base stations are designed to look like something other than a communication facility and/or disguised to fit in with its surroundings. All antenna and ancillary equipment are hidden from sight. A semi-concealed design is defined as painted to blend with the surrounding environment but antenna and cables are still visible. Antennas, cables and ancillary equipment are clearly visible on non-concealed towers and base stations. There are many different design types throughout the study area. Each non-concealed tower type represented are monopole, guy and lattice. The concealed towers represented are faux trees or monopines, faux silos, unipoles and three-legged poles, see [Figure 4](#). There are many non-concealed or semi-concealed base stations in the way of rooftops, utility poles and chimney stacks. The non-concealed base stations are disguised very well on rooftops with faux dormers, faux chimneys or designed as if there is another story on the building, see [Figure 5](#).



Figure 4: Concealed Tower Examples



Figure 5: Concealed and Semi-Concealed Base Stations



In the City’s zoning jurisdiction there are a total of sixty-four (64) concealed facilities of which forty (40) are towers and twenty-four (24) base stations. All eleven (11) semi-concealed facilities are base stations. There are twenty-nine (29) non-concealed facilities which consist of twelve (12) towers (one scheduled to be removed) and seventeen (17) base stations (six scheduled to be removed).

The following **Table 6** identifies and summarizes the design types of the cataloged sites in the study area.

DESIGN TYPE	SITE NUMBERS INSIDE CITY	SITE NUMBERS OUTSIDE CITY	TOTAL
Concealed	03, 06, 07, 10, 11, 15, 16, 17,19, 21, 22, 25, 30, 32, 35, 39, 42, 43, 44, 45, 46, 47, 48, 52, 53, 54, 55, 56, 58, 60, 62, 63, 65, 66, 67, 70, 71, 72, 75, 76, 77, 80, 82, 83, 84, 85, 86, 89, 90, 92, 94, 95, 97, 99, 100, 104, 105, 106, 109, 110, 111, 115, 116, 117	01,12, 98, 114, 122	
	64 Inside City	5 Outside City	69
Semi-Concealed	24, 31, 36, 37, 38, 40, 61, 69, 88, 96, 108	49, 121	
	11 Inside City	2 Outside City	13
Non-Concealed	02, 05, 13, 14, 18, 20, 23, 33, 34, 41, 50, 57, 59, 64, 68, 73, 74, 78, 79, 81, 87, 91, 93, 101, 102, 103, 107, 118, 119	04, 08, 09, 26, 27, 28, 29, 51, 112, 113, 120, 123	
	29 Inside City (Sites 33, 68, 73, 74, 81, 107 to be removed)	12 Outside City	41
<b>TOTAL</b>	<b>104</b>	<b>19</b>	<b>123</b>

Table 6: Inventory Summary by Design Type

The types of concealment are further depicted in **Figure 6** and represented by the following colored dots:

- Concealed
- Semi-Concealed
- Non-Concealed
- Dual Purpose

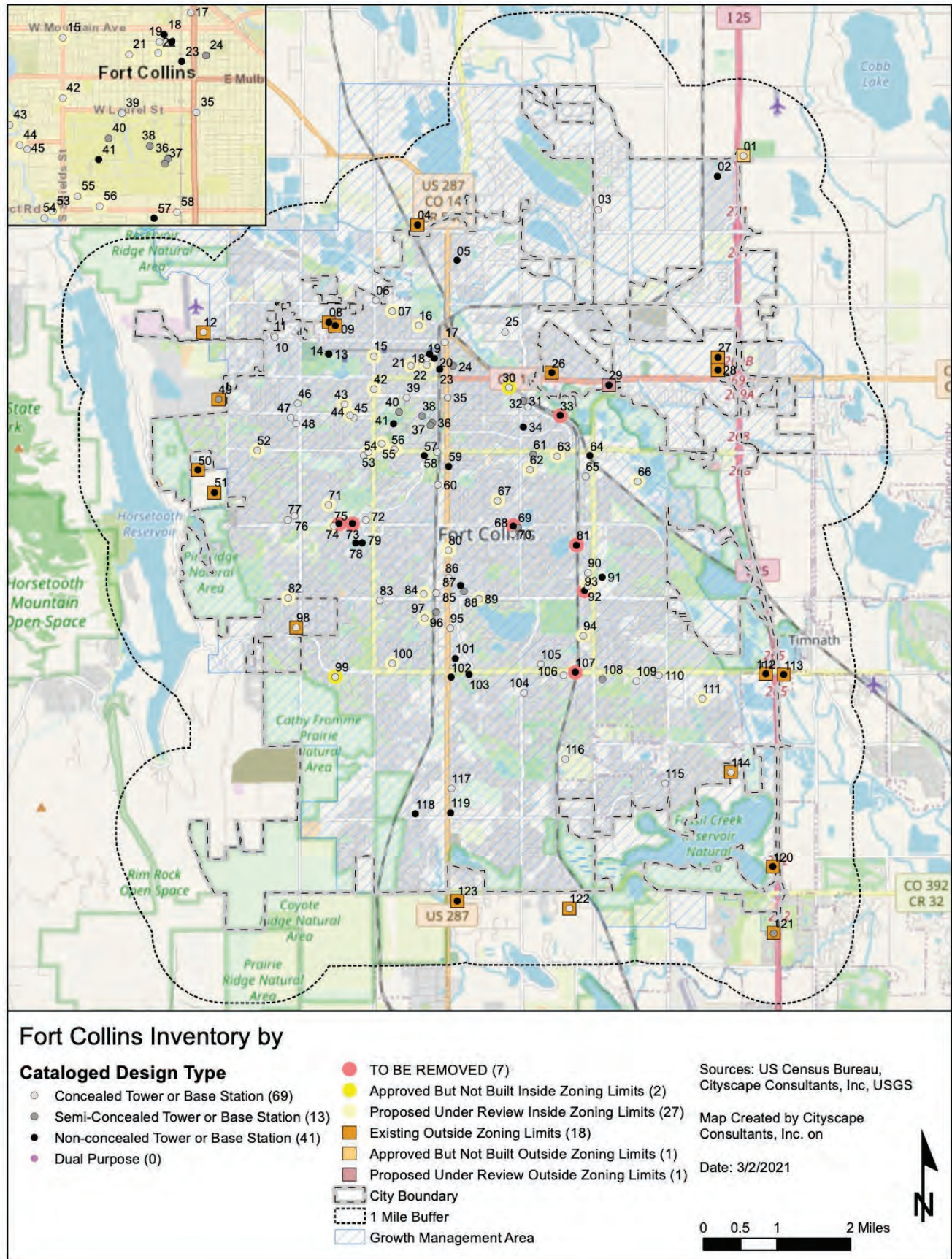
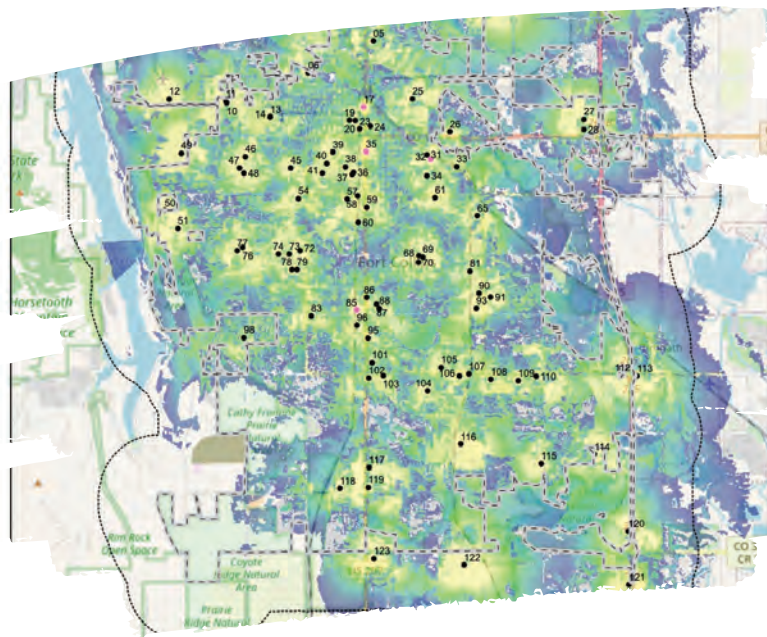


Figure 6: Map of Existing Inventory by Design Type

# CHAPTER 3

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# MAPPING ANALYSIS



# PROPAGATION MAPPING

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Modern and advancing technologies continue to transform how the wireless industry is electronically providing their services. Presently in the evolution of wireless communications, smartphones still use technologies known as fourth generation (4G). This platform incorporates broadband technology to enable applications like games, global positioning services (i.e. Google Maps, Waze Navigation) banking, weather, educational, public safety services and much more to function on the network. These applications require more information to be sent and received within the same radio signal envelope that was used in the previous deployment stages of personal wireless services. The abundance of data contained and being transmitted within the radio frequency envelope makes it more important than ever to have as much signal densification as possible. Increasing signal density requires more wireless facilities.

While cities are being tested with fifth generation (5G) technologies, the wireless industry is still deploying variations of 5G ready infrastructure and upgrading 4G to evolve into this next generation. The planned 5G will implement true high-speed data with download speeds well in excess of today's standard 25-megabit per second speeds. Testing of the originally conceived 5G networks has been inconclusive with coverage and data speeds below anticipated expectations. Fifth generation was planned to utilize extremely high frequencies (EHF), which in the past has only been used experimentally and has no proven operational record. The current 5G deployment is using frequencies substantially lower than what was initially planned and generally close to the current spectrum being used for this service. These current 5G deployment frequencies are being reallocated from other radio services and do not necessarily have the amount of frequencies and bandwidth requisite for the anticipated "true" 5G services.



Propagation mapping is a process that illustrates theoretical predicted coverage from an individual antenna site. Illustrating the service area coverage based on propagation signal strength modeling is of value when trying to determine gaps in network coverage. Signal strength, in this exercise, is a term used to describe the level and

operability of a wireless device. The stronger the signal between the elevated antenna and the wireless handset device the more likely the device and all the built-in features will work as expected.

A reduced signal causes unsatisfactory service and results in slow download or upload speeds and can cause dropped calls. The distance between the elevated antennas and the physical location of the person using the wireless device is one factor determining the signal strength. Other factors affecting signal strength are any natural or man-made obstructions such as location of buildings, type of building materials, vegetation, humidity or weather that comes between antenna and devices. The use of devices indoors or outdoors is also a factor.

The level of propagation signal strength is shown through the gradation of colors from yellow to blue. The geographic areas in yellow identify areas where signal strength can penetrate indoors. The areas in green equates to areas with average signal strength typically for outdoor and in vehicle service. Areas shaded in blue symbolize signal strength that is considered for mostly outdoor use only and gray shaded areas indicate where there is marginal, spotty or no signal. To further explain; the closer the proximity to the antenna the brighter shades of yellow appear indicating better quality of wireless services. As the subscriber approaches the outer edge of the yellow or into the blue area, the signal strength becomes more prone to degradation, particularly as usage in the area increases or environmental conditions worsen. A quick reference of the shades and descriptions are as follows in [Table 7](#).

SIGNAL STRENGTH COLOR	SIGNAL STRENGTH DESCRIPTION
Yellow	In Building
Green	In Vehicle
Blue	Outdoor
Gray	Marginal or No Service

Table 7: Signal Strength Description

The following maps simulate predicted coverage for providers operating in the high frequency band from each of the towers or base stations that currently contain personal wireless services. This simulated RF modeling considers a generic antenna model similar to those used by the wireless service providers and assumes the same provider is located at the highest mounting height on each tower and base station represented. This assumption is for modeling purposes to give an estimation of the predicted wireless coverage in the City if each facility was used by each service provider. It is noted that not all service providers are on every tower or base station but the idea typically is that the infrastructure is already in place to possibly accommodate future collocations. This may not be the case in Fort Collins as discussed further in the Plan.

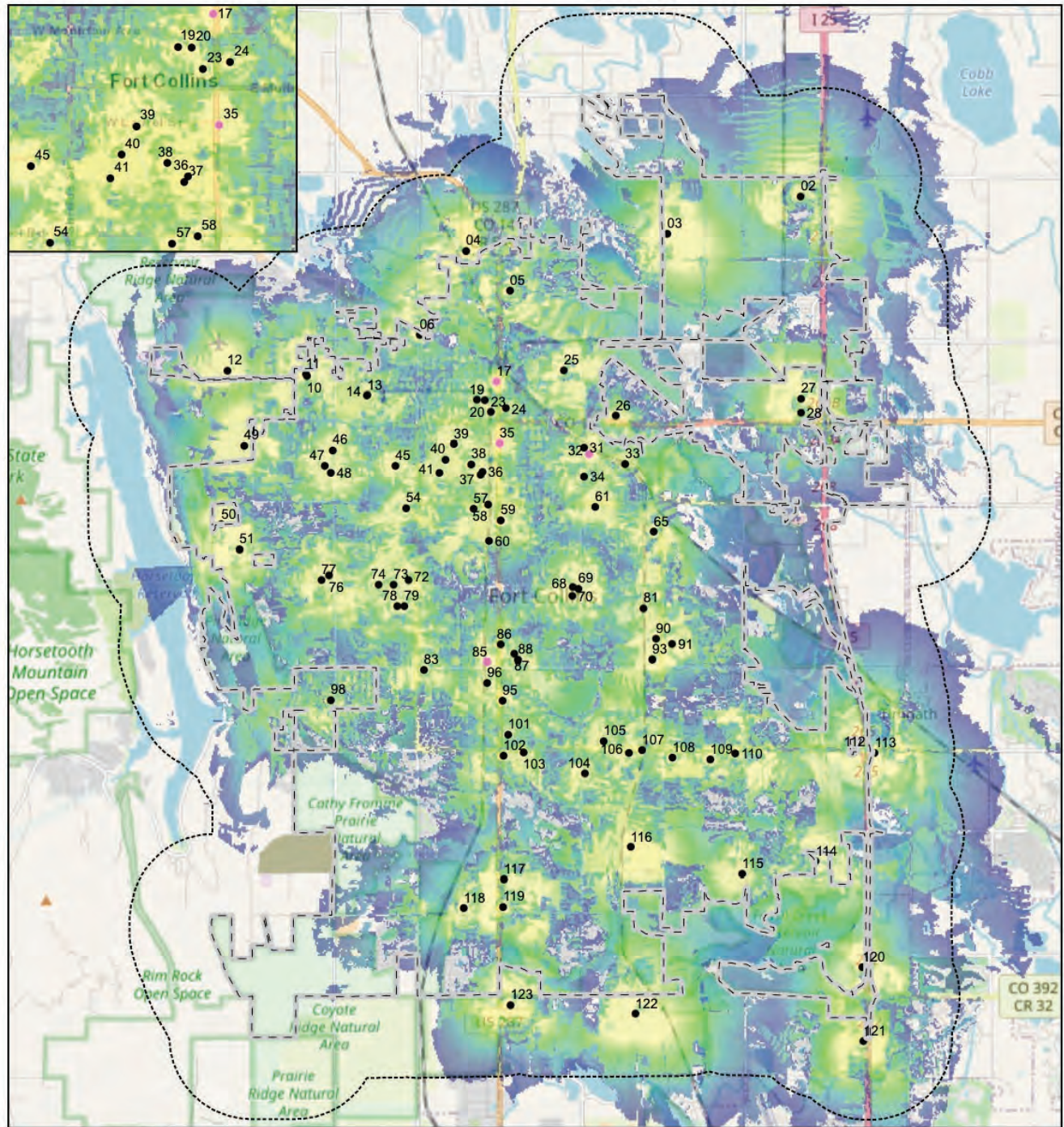
## Network Coverage

Figure 7 illustrates high frequency spectrum (1700-2400 MHz) and includes propagation from the existing macro and small personal wireless facilities. Existing antenna height, ambient tree height, building density and subscriber density variables are considered across the City. The lack of continuous shades of yellow means that network coverage is spotty in areas and there is marginal handoff from one site to another. In order to have seamless wireless coverage throughout the City the map would ideally show more yellow and far less blue with gray holes between each tower and base station.

Due to the nature of the deployment pattern in the City and being only one provider on the majority of sites it is important to illustrate a more realistic representation of the actual coverages. Figures 8 and 9 are simulated propagation maps for two different wireless service providers from their known locations on towers and base stations. These two maps look very different from the map in Figure 7 because the sites turned on for propagation purposes are only the sites for the individual service providers representing their simulated coverages. Both service providers have significant gaps in their individual coverage areas. The only remedy would be to add more wireless infrastructure in these areas.

Overall observations of Figures 7 through 9 indicates the following:

- Fort Collins has a unique deployment pattern, as theorized previously, to the height limitations within the ordinance creating a great number of the facilities that have only one provider.
- Eighteen (18) facilities located just outside the City limits are generally evenly spaced around the city's perimeter but provide wireless services into the City. This deployment pattern typically indicates an attempt to circumvent the jurisdiction's wireless regulations or siting policies. This was most likely the intent of the wireless industry in an effort to provide service to the residential zoning communities that lack tall structures to place antennas.
- The City is underserved especially in neighborhoods and along every major corridor in the City.
- Towers and base stations are widely spread out throughout the City but are spaced too far apart, which prevents adequate handoff between sites resulting in poor coverage throughout the City.
- The City is more likely to need new facilities in areas that already have infrastructure since collocation may not be an option due to the height limitations.



### Fort Collins Coverage

- Macro Cell (84)
  - Small Wireless Facility (4)
  - ▭ City Boundary
  - ▭ 1 Mile Buffer
- All Existing PWSF Sites**
- Estimated Coverage for High Frequency**
- Indoor (-75)
  - In Vehicle (-95)
  - Outdoor (-105)

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc. on

Date: 3/11/2021



Figure 7: PWSF Wireless Coverage Map

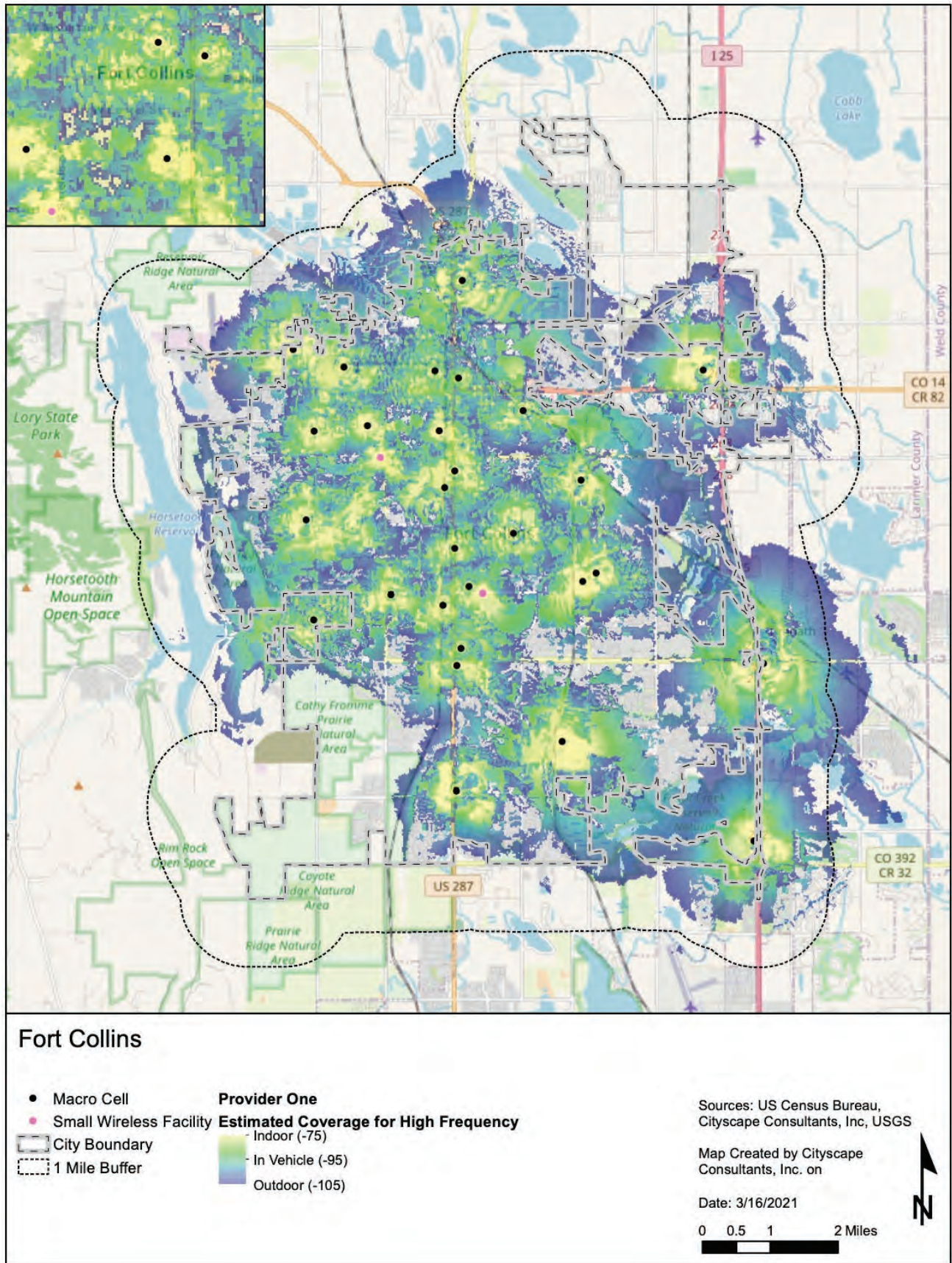


Figure 8: Wireless Coverage Map: Provider One Example



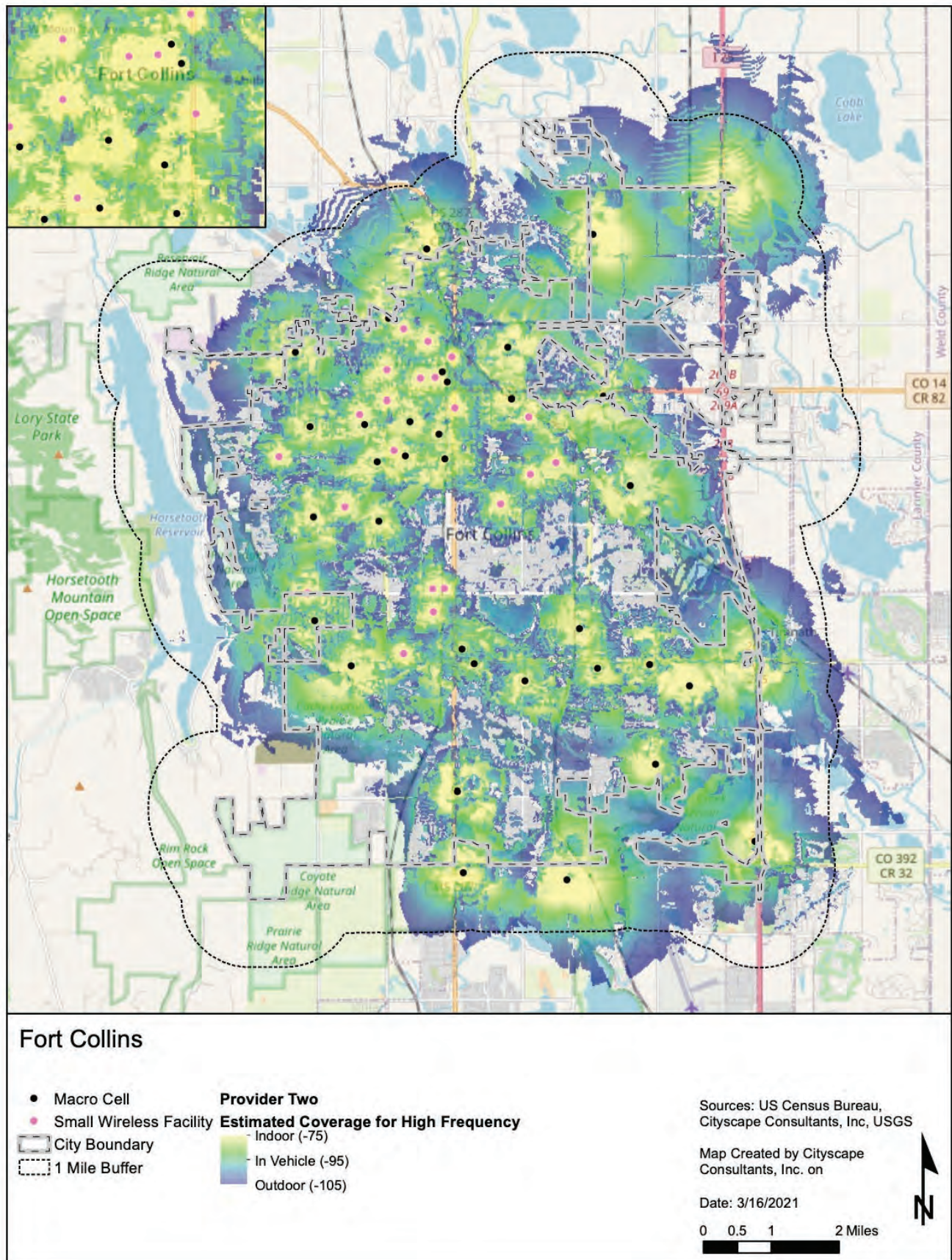


Figure 9: Wireless Coverage Map: Provider Two Example

## Network Capacity

Network capacity is the amount of wireless traffic that a service provider's network can handle at any given time within a specific location. Capacity takes into account the amount of bandwidth being used simultaneously by way of voice calls, and data usage. In order to estimate network capacity, consideration and analysis of the distinct characteristics of the community is studied and portrayed.

Population density is one of the characteristics considered in determining network capacity. Wireless service providers want to deploy as close to their subscriber base as possible which is why residential areas, employment centers, recreational facilities and along major highways and thoroughfares are important considerations.

The map in **Figure 10** illustrates the existing PWSF facilities as an overlay on top of the City's population density by US Census Block Group.

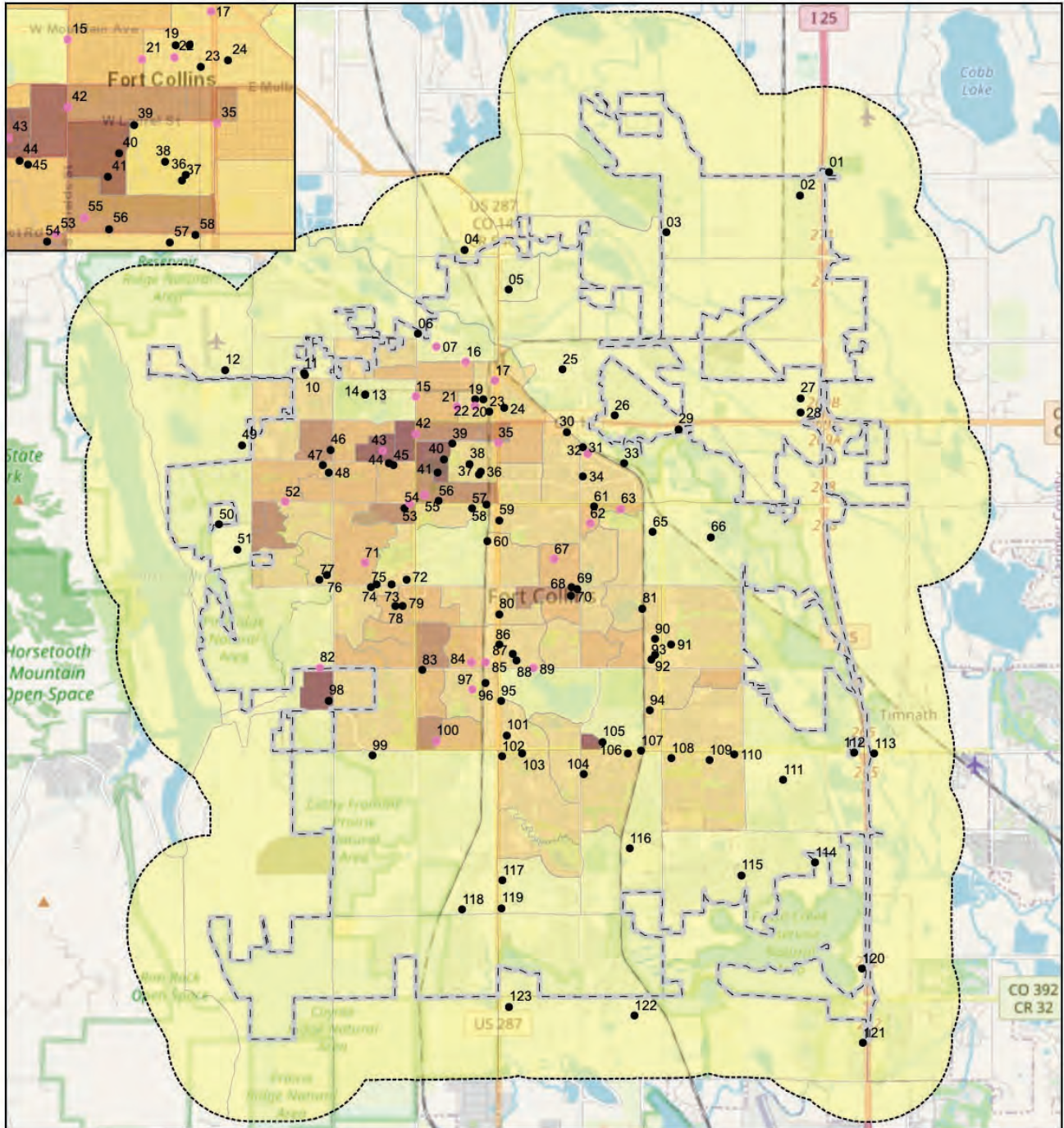


The darkest shades of brown represent US Census Block Groups with over 10,000 people per square mile and are the highest population densities in the City.

All but one census block containing between 10,000 and 16,833 people per square mile are located west of North College Avenue and north of West Harmony Road. Comparing the inventory locational maps to the census block data illustrates the Downtown District, CSU College District and the Urban Mixed-Use Districts west and south of CSU each have clusters of wireless facilities to serve these areas.

Although there is infrastructure in the area to cover this high density population block there is only one provider on each facility. This would indicate that there is coverage in the area but from field experience we know there are significant gaps in service for the other providers not in the area. Additionally, as the usage of wireless data grows the systems will become overloaded and capacity concerns arise.

Because so many of these sites are single provider facilities, the number of sites in this same area will need to double or perhaps triple since there are so few existing wireless facilities that could even accommodate collocations for the other two or three service providers.



### Fort Collins Coverage

#### Cataloged PWSF Antenna Type Population per sq mi

- Macrocell (96)
- Small Wireless Facility (23)
- ▭ City Boundary
- ▭ 1 Mile Buffer

- 52 - 2500
- 2501 - 5000
- 5001 - 7500
- 7501 - 10000
- 10001 - 16833

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc. on

Date: 3/11/2021

0 0.5 1 2 Miles



Figure 10: Map of Population Density with Existing PWSF Inventory Overlay

Vehicular traffic volumes are another important unit of measurement to consider for network capacity since service providers want to provide seamless coverage for their subscribers as they move throughout the City. Eliminating gaps along major transportation corridors and thoroughfares are goals of the wireless service providers and are necessary as we move into 5G and advancing technological uses of wireless services.

Figure 11 shows the traffic counts for the major north south and east west corridors that were provided by the City and used as an overlay on the PWSF coverage map used in Figure 7. This map shows that East Harmony Road and North College Avenue have the greatest traffic volumes (between 40,000 and 58,000 trips per day) and the ROW along both these thoroughfares are dotted with wireless infrastructure.

The approximate 4.48 mile stretch of East Harmony Road west of I-25 to North College Avenue has ten (10) macro cell facilities of which six (6) are single provider facilities. The summary of sites along this stretch are as follows:

- Site 102: tower with one provider at height of 75'
- Site 104: tower with one wireless provider on public safety tower at height of 120'
- Site 105: base station with one provider at height of 42'
- Site 106: base station with one provider at height of 38'
- Site 107: base station with one provider at height of 110' (site to be removed)
- Site 108: base station with two providers at height of 49'
- Site 109: tower with no providers at time of assessment with height of 63'
- Site 110: base station with one provider at height of 65'
- Site 111: tower with one provider at height of 117'
- Site 112: tower with two providers at height of 84'

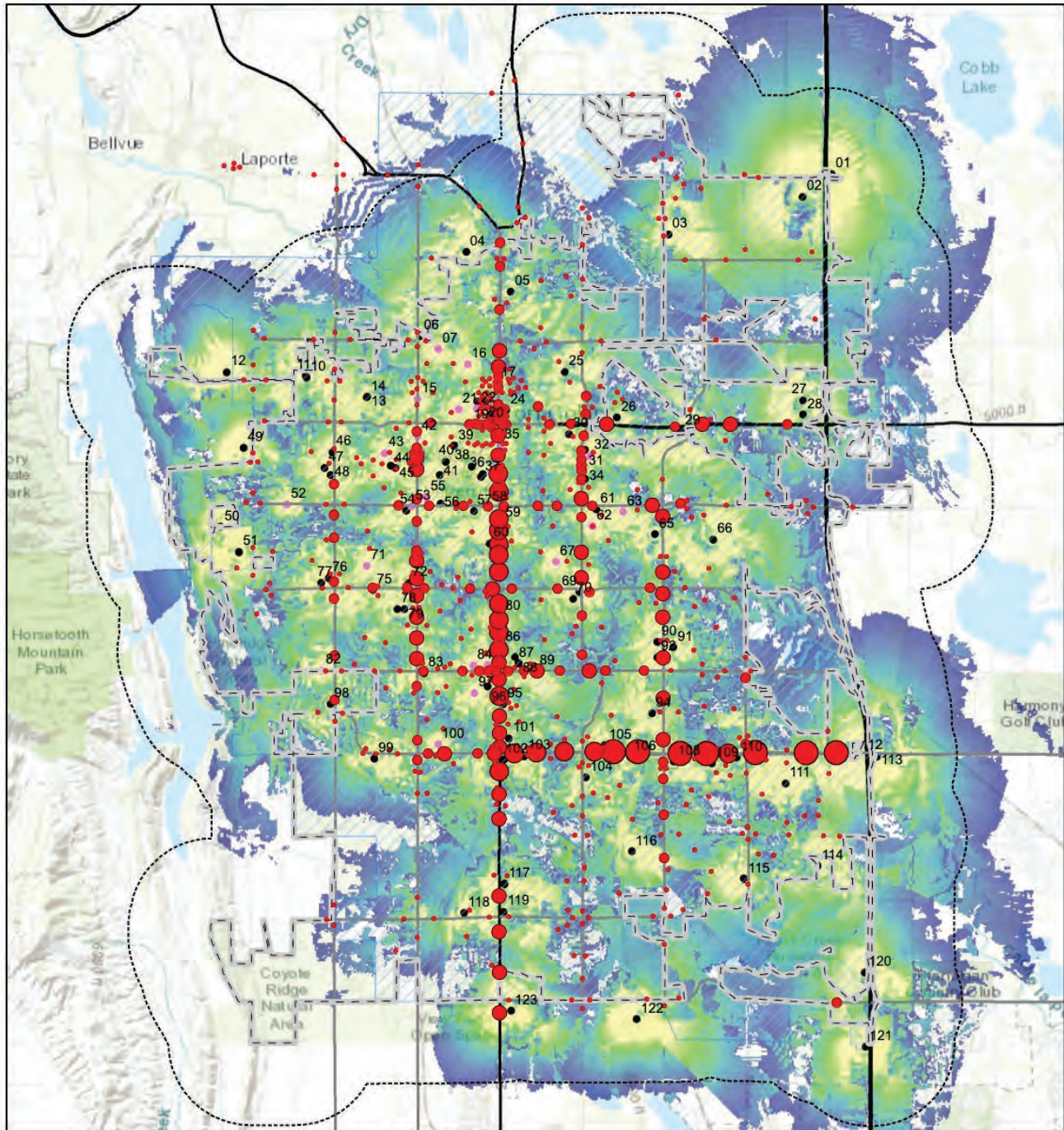


Similarly, North College Avenue has seven (7) wireless facilities parallel the four and a half mile North College Avenue ROW north of Harmony Road and south of Maple Street. Three (3) of these sites are small wireless facilities, four (4) are macro cells and all are single provider facilities. The summary of sites along this corridor are as follows:

- Site 17: base station with one provider at height of 45'
- Site 35: base station with one provider at height of 48'
- Site 59: base station with one provider at height of 48'
- Site 80: base station with one provider at height of 50' (proposed and under review)
- Site 96: tower with one provider at height of 60'
- Site 95: base station with one provider at height of 45'
- Site 102: tower with one provider at height of 75'

Should the City desire to see fewer sites along the roadway segments with less than in-vehicle coverage, then considerations should be given to allow taller towers along these corridors. Taller towers offer more collocation opportunities to the industry. The City should continue the existing strategy of requiring collocation on existing structures as a priority before seeking an application for a new tower or new base station. Sections of roadways shown in blue will need additional infrastructure to increase in-vehicle coverage.





### Fort Collins, CO

#### Current Theoretical Network Service Areas

##### Traffic Counts

- 0 - 20000
- 20001 - 30000
- 30001 - 40000
- 40001 - 50000
- 50001 - 58018

##### PWSF Sites

- Macro Cell
- Small Wireless Facility
- ▭ City Boundary
- ▭ 1 Mile Buffer
- ▭ Growth Management Area

##### High Frequency PWSF Proposed Sites

- ▭ Approximate Coverage
- ▭ Indoor (-75)
- ▭ In Vehicle (-95)
- ▭ Outdoor (-105)

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc. on

Date: 1/27/2021

0 0.5 1 2 Miles



Figure 11: Current Traffic Count Over Wireless Coverage Map

With nearly all Americans owning a mobile phone, wireless communication plays a key role in keeping Americans safe during emergencies and natural disasters like hurricanes, wildfires, snow and ice storms, flooding and tornadoes.

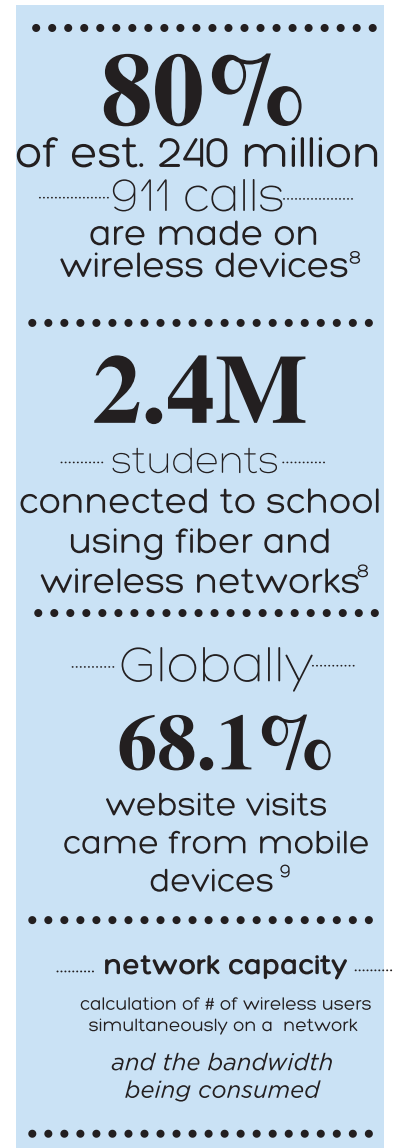
Due to increasing wireless communication usage, network capacity is a crucial element for consideration in the overall wireless Plan.

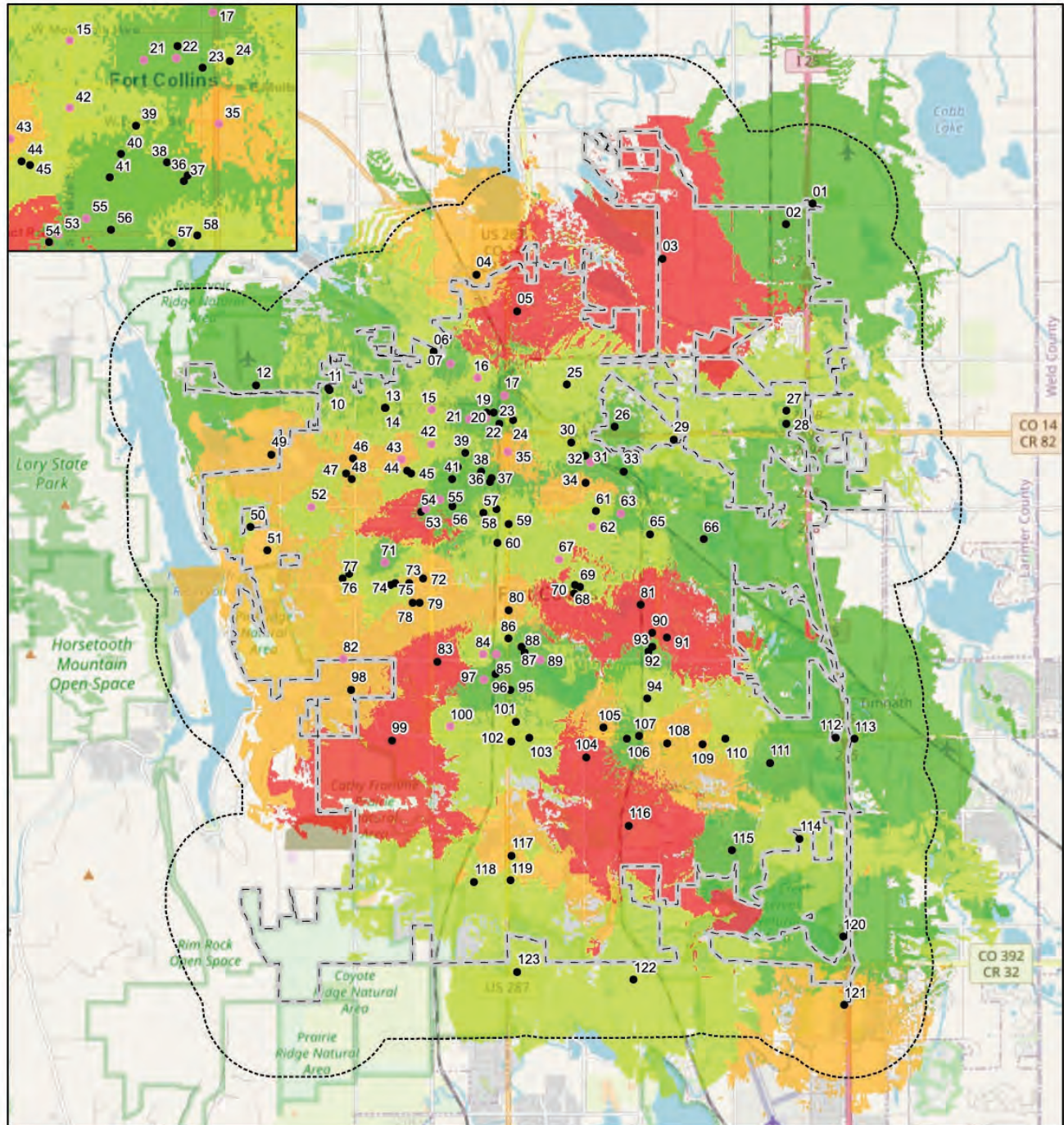
It is difficult to accurately illustrate network capacity since each provider has their own usages and numbers as well as this is considering all providers. In order to best calculate network capacity we analyze the people per household data from the US Census and the City’s traffic counts, compare those totals to the number of wireless facilities in the same geographic area and create a heat map demonstrating approximate network capacity anticipated for 5G bandwidth. It is noted that each wireless service provider’s needs are different but the following map is provided for illustration purposes to showcase the capacity issues in different areas of the City.

As indicated in **Figure 12**, dark green shades are geographic areas with acceptable capacity and red shades symbolize poor capacity.

Over the next ten years it is predicted that the wireless service providers will need to add macro facilities along with small wireless facilities in the pale green, orange and red shaded areas to further develop their network for their subscriber base.

As 5G technology continues to evolve and the wireless usage continues to increase the City can expect a minimum of a tripling of the current number of sites over the next ten years and should strategize ways to accommodate the anticipated number of facilities throughout the City.





## Fort Collins

### Cataloged PWSF Antenna Type Households and Traffic

- Macrocell (96)
- Small Wireless Facility (23)
- ▭ City Boundary
- ▭ 1 Mile Buffer
- < 500 (Acceptable Capacity) (46)
- 501 - 1000 (40)
- 1001 - 1500 (20)
- > 1501 (Poor Capacity) (10)

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc. on

Date: 3/15/2021

0 0.5 1 2 Miles



Figure 12: Map of Predicted Network Capacity



# CHAPTER 4

# ZONING AND FUTURE WIRELESS INFRASTRUCTURE



# ZONING ANALYSIS

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The City's current wireless telecommunication regulations permit wireless telecommunications equipment to be attached or mounted on any existing building or structure including residential buildings containing five (5) or more dwellings units. If the equipment is mounted to the wall of the building, the antenna must be flush mounted and cannot project above the wall on which it is mounted. If the equipment is located on the roof, equipment shall: 1) be screened by a wall or parapet; 2) not exceed more than fifteen (15) feet over the height of the building; and 3) be located as far from the edge of the roof as possible. All equipment is required to be the same color as the building or structure and concealed as much as possible. New ground-mounted wireless telecommunication facilities are required to be concealed and camouflaged as much as possible and heights are limited to the maximum height allowed for structures in the underlying zone district.

These development standards have been effective in preserving the aesthetics of the City because the City has very few non-concealed towers and base stations. The sites are so nicely concealed they are difficult to find in the field. The maximum heights permitted for new towers and antennas on structures is very low in elevation so they are less noticeable amongst existing buildings and trees.

The existing height limitations do not allow for collocations on the majority of structures for various reasons, see [Table 8](#). Antennas working in unison in a service provider's network must have clear line-of-site between all antenna locations for optimal performance. Transmitting radio signals from antennas installed at the top of towers, constructed at the same height of all other buildings in the underlying zoning district, do not have the line-of-site necessary because rooftops of existing buildings block the signals between the elevated antennas. Similarly, antennas mounted on the wall of a building are unable to transmit 360° thereby reducing the coverage area by fifty percent which eliminates line-of-site to other antennas in the network outside the 180° angle. By the same token, requiring the industry to locate as far from the edge of the roof as possible presents a comparable network problem. The further the antenna signals have to transmit horizontally across the roof line, the greater the vertical elevation needed for the signals to reach subscribers at ground level. Limiting antenna mounting heights to fifteen (15) feet above the rooftop while requiring the arrays to be placed as far from the roof's edge as possible, diminishes the coverage area for that facility.

Additionally, this standard limits the number of service providers that can occupy the same rooftop because each provider will need the same general location on the rooftop, making it difficult if not impossible for more than one or two providers to occupy a single rooftop.

<b>ZONE</b>	<b>ZONE NAME</b>	<b>BUILDING HEIGHTS</b>
CG	General Commercial District	4 stories 56'
D	Downtown District	3-12 stories 35-150' *
HMN	High Density Mixed-Use Neighborhood District	5 stories 75'
LMN	Low Density Mixed-Use Neighborhood District	3 stories 35'
MMN	Medium Density Mixed-Use Neighborhood District	3 stories 35'
NCB	Neighborhood Conservation - Buffer District	2.5 stories 28'
NCL	Neighborhood Conservation - Low Density District	2.5 stories 28'
NCM	Neighborhood Conservation - Medium Density District	2.5 stories 28'
RF	Residential Foothills District	3 stories 35'
RUL	Rural Lands District	3 stories 35'
UE	Urban Estates District	3 stories 35'

\*dependent on map in Div. 4.16

Table 8: Building Heights by Zoning District Permitting Wireless Facilities

While these development standards are intended to control the aesthetic aspects of wireless infrastructure deployment they consequently have a negative effect on wireless network design resulting in a larger number of sites necessary to provide full service to the City. This is demonstrated by the large percentage of single provider sites throughout the City. Of the seventy six (76) existing towers and base stations inside the City's limits, only thirteen (13) have more than one provider on the structure. Eleven (11) of these facilities have two providers and only two (2) have three total providers. Sites with collocation on existing facilities inside the City are listed below:

- Sites 20, 24, 31, 57, 87, 91 and 108 are base stations with two providers
- Sites 47, 70, 77 and 119: are towers with two providers
- Sites 5 and 101 are towers with three providers

Consequently, these regulations create a clustering of multiple sites in the same geographic area when potentially one tower could have been constructed for all providers. Notable examples include:

- Site 76 is a Verizon base station on a building at Drake Crossing Shopping Center and Site 77 is an AT&T and T-Mobile tower on the back of the property. If future providers such as DISH or Google decide to need services in this area they may need to construct a new site at this same vicinity because the existing facilities cannot accommodate additional collocations.
- Site 10 is a concealed steeple and Site 11 is a concealed three-legged tower, both located on Calvary Baptist Temple property. It is unlikely that the three-legged tower can be used for collocation since it is only fifty (50) feet tall, see picture below.
- Site 68 is a base station, Site 69 and Site 70 are towers on East Drake Road and South Lemay Avenue. All are likely to have been within the same search area for the different providers.

This type of deployment pattern will continue unless the City decides to increase the heights of free standing towers and lessen the distance of the rooftop antenna setback requirements.

Providing wireless coverage and capacity to subscribers in neighborhood districts will grow in importance as more residents continue to rely on their mobile devices for communication, employment, education and commerce. While the City's zoning code permits attached or mounted on any existing building or structure, including residential buildings containing five (5) or more dwellings units, not all residential neighborhood districts have structures meeting that criteria. Consequently low density residential areas are without coverage because the signal from antennas on existing towers and base stations around the periphery of those districts cannot reach the dwelling units.



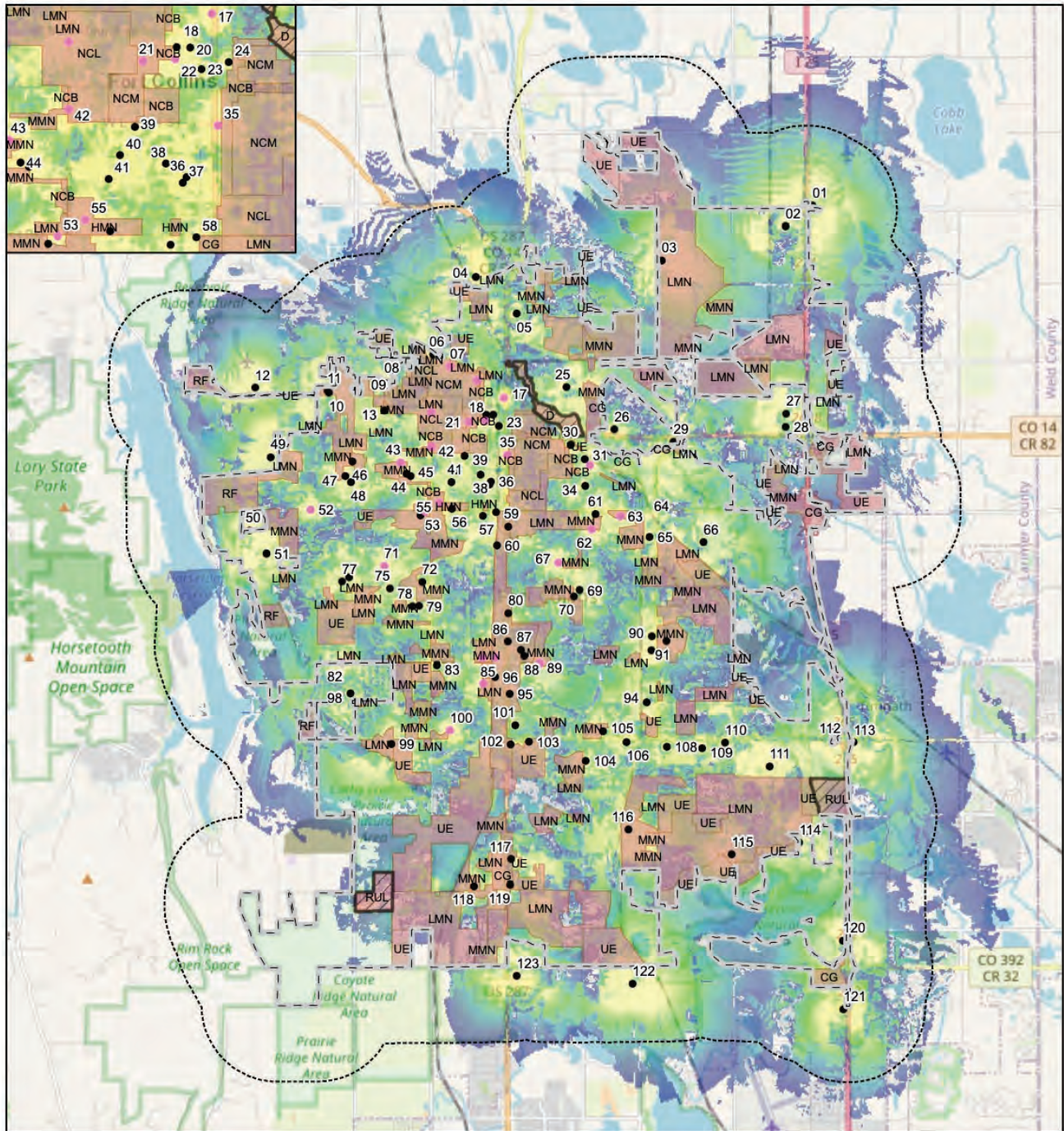
Table 9 below lists all the zoning districts that allow wireless communications equipment attached to existing structures and the cumulative land area in square miles for each zone.

ZONE	ZONE NAME	AREA SQ MILE
CG	General Commercial District	1.866
D	Downtown District	0.188
HMN	High Density Mixed-Use Neighborhood District	0.087
LMN	Low Density Mixed-Use Neighborhood District	10.229
MMN	Medium Density Mixed-Use Neighborhood District	2.930
NCB	Neighborhood Conservation - Buffer District	0.247
NCL	Neighborhood Conservation - Low Density District	0.842
NCM	Neighborhood Conservation - Medium Density District	0.853
RF	Residential Foothills District	0.695
RUL	Rural Lands District	0.450
UE	Urban Estates District	4.299

Table 9: Area Square Mile by Zoning Districts Permitting Wireless Facilities

These represented zoning districts are shown on the coverage and capacity maps in Figures 13 and 14 respectively. The shaded brown areas symbolize the zoning districts found throughout the City where new towers are not currently permitted and where new wireless antenna installations are only permitted on most structures if used for residential purposes and contain at least five (5) dwelling units.





**Fort Collins**

- Zone 01 WTE
- Zone 02 WTF
- City Boundary
- 1 Mile Buffer
- Macro Cell (89)
- Small Wireless Facility (23)

**WTE: Zones That Do Not Allow Wireless Telecommunication Equipment**  
**WTF: Zones That Do Not Allow Wireless Telecommunication Facilities**

**All Existing and All Proposed Sites**  
**Estimated Coverage for High Frequency**  
 - Indoor (-75)  
 - In Vehicle (-95)  
 - Outdoor (-105)

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

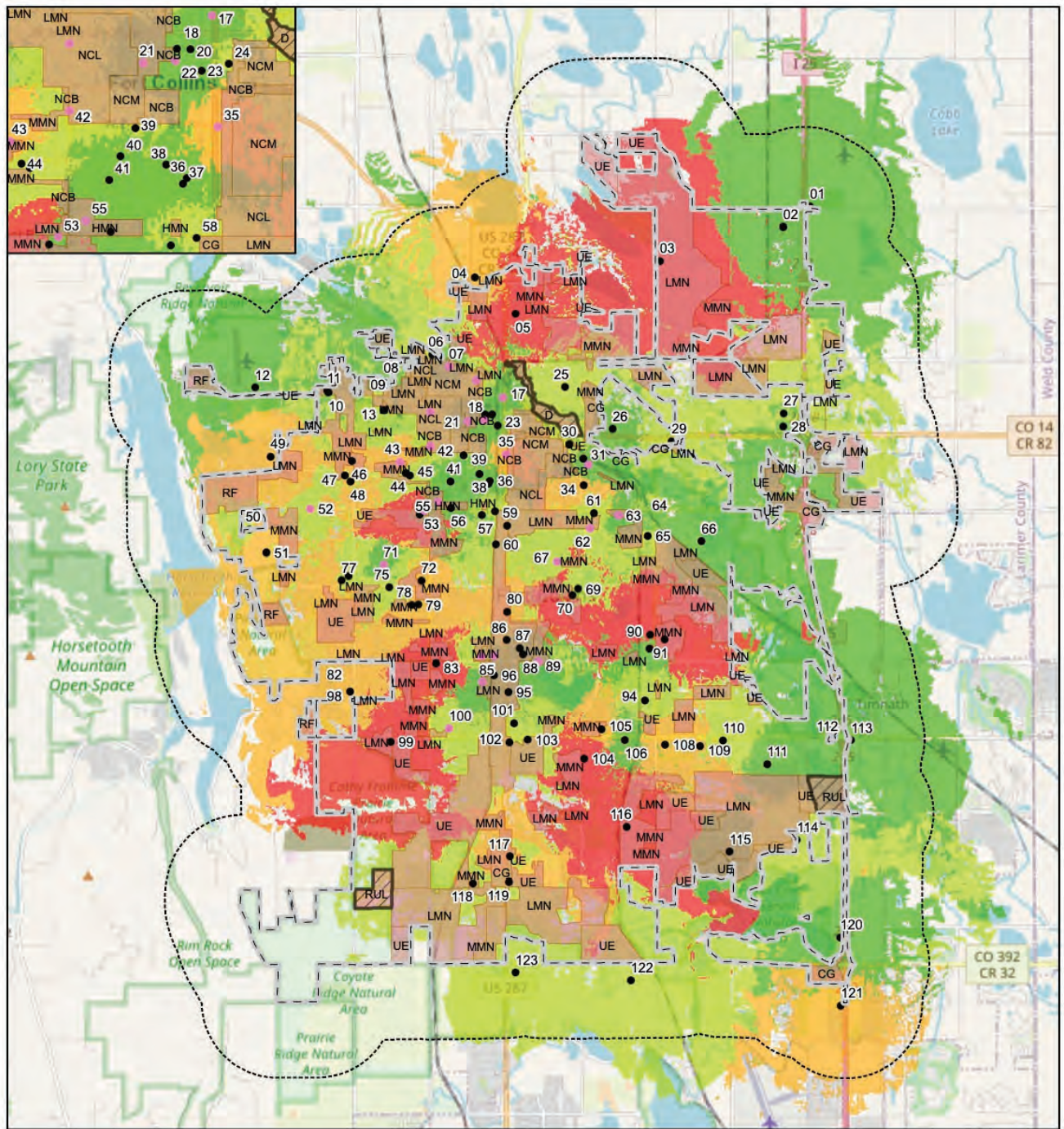
Map Created by Cityscape Consultants, Inc. on

Date: 3/16/2021

0 0.5 1 2 Miles



Figure 13: Wireless Communication Coverage Simulation by Zoning District



### Fort Collins

**WTE: Zones That Do Not Allow Wireless Telecommunication Equipment**  
**WTF: Zones That Do Not Allow Wireless Telecommunication Facilities**

- Zone 01 WTE
- Zone 02 WTF
- City Boundary
- 1 Mile Buffer
- Macro Cell (89)
- Small Wireless Facility (23)

- Households and Traffic**
- < 500 (Acceptable Capacity) (46)
  - 501 - 1000 (40)
  - 1001 - 1500 (20)
  - > 1501 (Poor Capacity) (10)

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc. on

Date: 3/16/2021

0 0.5 1 2 Miles



Figure 14: Wireless Communication Capacity Simulation by Zoning District

## *SUMMARY*

Expanding transportation and mobility options are discussed in the current Fort Collins City Plan. The “Then, Now and Future” tables on page 31 of the City Plan identify how current mobile phone apps help residents and visitors make mode of transportation choices and how future mobile devices will be a tool to provide a seamless service of booking and paying for public and private sector transportation options. A complete wireless network will be required to accomplish these goals and the effects of current zoning standards on the wireless deployment are counterintuitive to building a seamless network. The City has a long way to go to achieve this goal because the current network of installed sites is significantly inadequate for existing and future network coverage and capacity needs of the community.

The City posted an on-line Wireless Master Plan Survey for interested stakeholders to offer experiences and opinions about the current state of wireless connectivity and aesthetics of the infrastructure in the City. The survey was open from April 6 through April 26, 2021 and nearly 250 people participated in the poll. The entire survey results and comments received is provided in Appendix B. Poll results and commentary from participants affirm the gap and capacity analysis. An abbreviated summary of the survey results are listed below:

- 198 (81.5%) of respondents live and work in Fort Collins year-round.
- 209 (85.3%) recorded the quality of wireless service is important to them.
- 238 rely on their mobile device for personal use/entertainment; 177 also rely on it for work and 41 of those polled rely on it for school.
- 105 (42.9%) indicated their network coverage at home is poor; 26 (10.6%) indicated it was excellent.
- Aesthetics in terms of height, color and appearance remains of great importance.
- 160 (67.8%) indicated they would prefer taller facilities with multiple collocation possibilities opposed to shorter and potential more towers.
- 229 (93.9%) indicated they support locating concealed cell towers on City owned property.

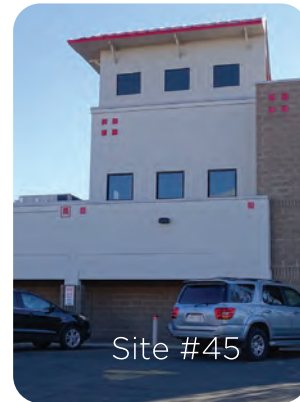


**Preferred type of concealed tower structures are as follows:**

- 159 preferred flagpoles
- 158 preferred monopines
- 96 preferred faux water towers
- 93 preferred unipoles
- 88 preferred bell towers
- 73 preferred faux silos
- 9 preferred other options

**Preferred type of concealed base stations are as follows:**

- 203 preferred concealed
- 203 preferred semi-concealed
- 180 preferred non-concealed
- 178 preferred utility attachments
- 115 preferred water tank attachments



# CHAPTER 5

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## CONCLUSIONS AND RECOMMENDATIONS



# CONCLUSIONS

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Densifying the network with small wireless facilities is a trend across the nation as it prepares for true 5G function. Antenna sites added in capacity-strained areas increase wireless services where it is most needed and helps offload data traffic from surrounding facilities. The need for network capacity will continue to increase as more wireless devices are added by the subscriber base to the network and wireless phones, tablets and laptops utilize data demanding applications. Urban areas like much of Fort Collins and large public venues like the university, parks and museums are strong candidates for network densification because of the highly concentrated areas of mobile subscribers.

Macro cell facilities still provide the greatest flexibility for coverage with the service provider network. To address the public safety concerns and demand for faster download speeds, uninterrupted streaming, and further network reliability the wireless industry will continue to deploy more and more small wireless facilities. These sites work with the macro cell sites to increase network capacity and take the pressure off already overloaded systems.

Based on the study of all the mapping and the characteristics of the community, the following can be concluded:

- Each service provider has gaps in their network.
- Each service provider is required through their license agreement with the FCC to provide comprehensive wireless services to the areas they are licensed to build their network.
- Every local government must allow the wireless industry to build out their networks and local codes and decisions cannot have the effect of prohibiting services.
- Local governments public policies cannot supersede the FCC's rules and regulations.
- Existing towers and base stations in the City do not provide complete coverage and network capacity throughout the City needs improvement to meet Fort Collins' City Plan goals of a robust network for the public.
- Only thirteen (13) of the existing seventy-three (73) towers and base stations are multi provider facilities with sixty (60) facilities that are single provider sites.
- There are more base stations than towers.

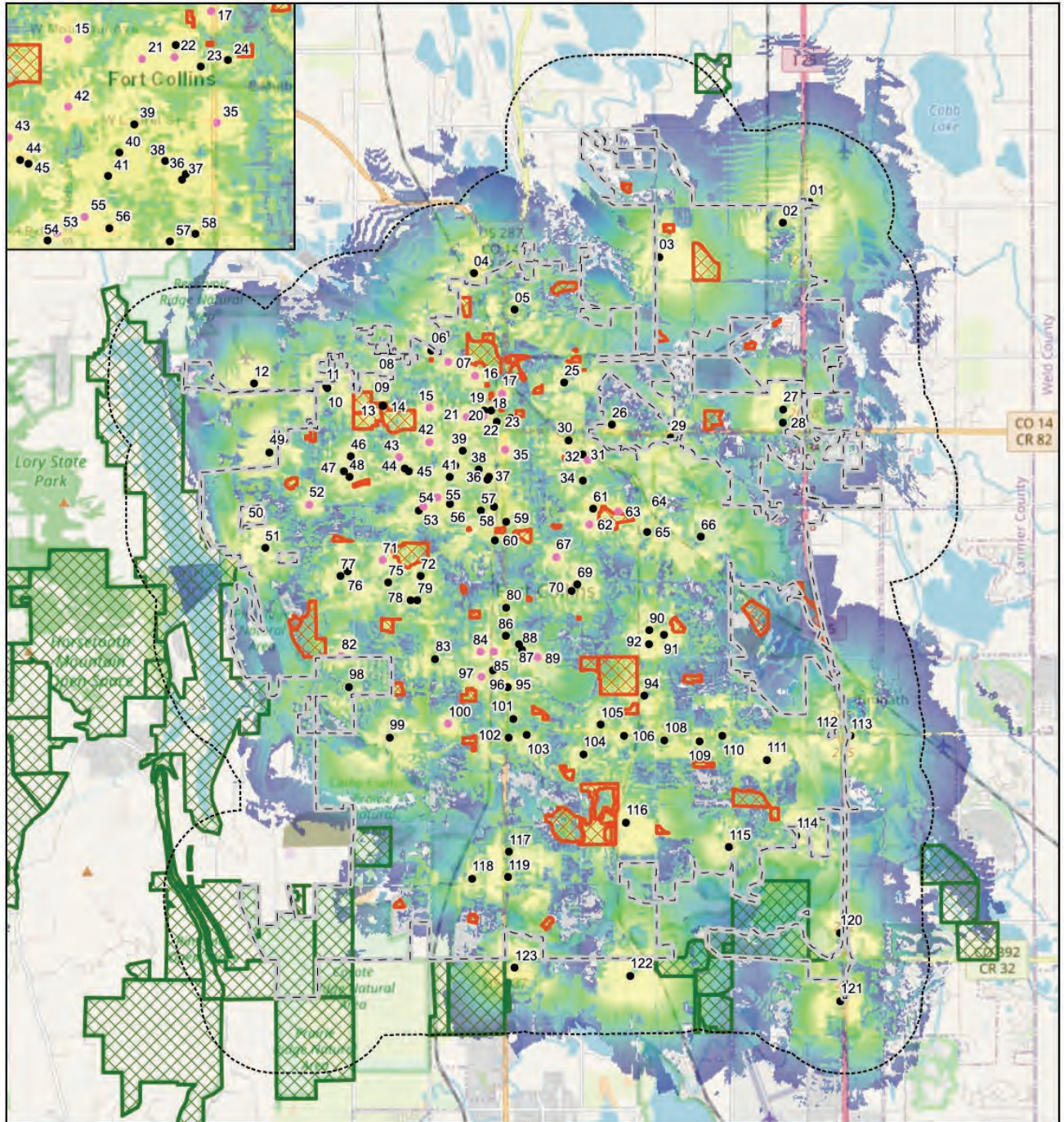
- Tower heights are limited to permitted heights in underlying zoning districts which prohibits line-of-site between antennas at other site locations. This standard makes it impractical for the industry to build multiple provider towers with additional collocation opportunities.
- Rooftop antennas can be 15 feet above the roofline which allows line-of-site between other antennas in the network.
- Zoning requires maximum distance possible from the wireless antennas to the edge of the roof. This spatial requirement limits the distance the antenna signal can transmit and it makes it difficult for more than one service provider to use the same roof unless the footprint of the building is large enough to support more providers.
- Zoning requires concealment of rooftop wireless facilities. It is difficult for some buildings to support more than one architectural change to the rooftop.
- Some building owners may limit the number of rooftop providers they desire on their rooftops since service providers require 24/7 access to their equipment.
- The City can expect to have requests for dozens of macro cell sites and hundreds of small wireless facilities over the next ten years. Most of the new macro facilities will be in areas needing initial wireless coverage.
- The Code of Federal Regulations (CFR) indicates that a state or local government may not deny and shall approve any eligible facilities request for a modification of an eligible support structure that does not substantially change the physical dimensions of such structure. Because of this, the City can expect the wireless industry to seek height increases on existing wireless facilities to gain more height for additional collocations.
- It would be in the best interest of the City to amend existing codes to include the definition of substantial change and other policies in the CFR.
- Seven (7) existing macro facilities currently inside the PRPA easements will be removed as their leases expire and substitute locations will be necessary in the same search ring of each existing location to maintain existing levels of network coverage and capacity. The City should consider planning how best to relocate these seven sites and design the new facilities with enough height and structural integrity for additional collocations.
- Over half the City is deficient in network capacity and some geographic areas that already have infrastructure will need three or four new macro facilities (one for each service provider) and a multitude of small wireless facilities to increase network capacity unless the City decides to make changes to the zoning ordinance to favor and promote collocation.
- Should the public support taller and fewer wireless facilities which would decrease the number of new sites needed in the future.

# RECOMMENDATIONS

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- Considerations to further incentivize the use of roof or wall mounted collation for wireless telecommunication equipment.
- Considerations to allow wireless equipment facilities (towers) in more zoning districts would give the City more choices for deployment.
- Considerations for maximizing the use of city owned properties with pre-designed concealed towers to increase coverage and capacity throughout the City would give the City the most control over infrastructure siting.
- Federal definitions, approval timelines and required rules concerning local government's review and approval processes for macro cell and small wireless facilities should be included in the City's Code.
- Considerations to amend and harmonize zoning standards to match federal definitions, rules and application approval timelines would reduce the number of inconsistencies that exist in the current zoning policies and allow for streamlined staff processing.
- The City may consider options that will allow facilities into single-family residential areas. One solution is to promote the use of city owned property. The City currently has two wireless facilities at the City Ball Park and as learned through the wireless survey, community members support the use of public properties for wireless infrastructure.

The following [Figure 15](#) identifies public properties on the coverage map that could be considered to fill in network gaps. As landlord, the City can be assured each site on city owned property will be well maintained and the City can collect a monthly or annual revenue stream through negotiated lease agreements.



**Fort Collins**

- City Parks and Golf
- Parks Open Space
- City Boundary
- 1 Mile Buffer
- Macro Cell (89)
- Small Wireless Facility (23)

**All Existing and All Proposed Sites**  
**Estimated Coverage for High Frequency**  
 - Indoor (-75)  
 - In Vehicle (-95)  
 - Outdoor (-105)

Sources: US Census Bureau, Cityscape Consultants, Inc, USGS

Map Created by Cityscape Consultants, Inc. on

Date: 4/8/2021

0 0.5 1 2 Miles



Figure 15: Service Gap Map With Potential Fill-in Sites

# GLOSSARY

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# DEFINITIONS

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For purposes of the Plan the following terms are used throughout and provided as reference as follows:

Bandwidth - A range of frequencies used to transmit a signal. The channel width (bandwidth) affects how much data can transmit per unit time. Each service provider has their own designated finite amount allocated to them by the Federal Communications Commission (FCC).

Base Station - Equipment and non-tower supporting structure at a fixed location that enables wireless telecommunications between user equipment and a communications network. Examples include transmission equipment mounted on a rooftop, water tank, silo or other above ground structure other than a tower. The term does not encompass a tower as defined herein or any equipment associated with a tower. "Base Station" includes, but is not limited to:

- Any structure other than a tower that supports or houses radio transceivers, antennas, coaxial or fiber optic cable, regular and back-up power supplies and comparable equipment, regardless of technological configuration; and
- Equipment associated with wireless telecommunications services such as private, broadcast, and public safety services, as well as license-free wireless services and fixed wireless services such as microwave backhaul and broadband.

Concealment - A tower, base station or utility pole that is not readily identifiable as a wireless communication facility and that is designed to be aesthetically compatible with existing and proposed building(s) and uses on a site or in the neighborhood or area. Some of the types of concealment found in the City are faux dormers, faux facades, parapets, steeples, faux chimneys and unipoles.

Macro Wireless Facilities - Traditional support structures for personal wireless service facilities (PWSF) identified as macro cell facilities consist of multiple provider use towers and base stations. Macro facilities are taller infrastructure usually between 50 and 100 feet in height and have been the most commonly utilized infrastructure over the last thirty years. Macro facilities are considered the backbone of the network and allow service providers the most flexible options when deploying their usable spectrum and providing signal over the greatest area. It also allows the flexibility to target the desired signal to a specific location.



Personal Wireless Service Facilities (PWSE) - Facilities for the provision of personal wireless services. Personal wireless service facilities include transmitters, antennas, structures supporting antennas and electronic equipment that is typically installed in close proximity to a transmitter that provides commercial wireless services.

Radio Frequency (RF) - A range of frequencies that are allocated to be transmitted/received through the air without wires, with the use of transmitters/receivers and associated antennas. Radio waves are generated for fixed and/or mobile communication. A frequency or band of frequencies suitable for use in telecommunications.

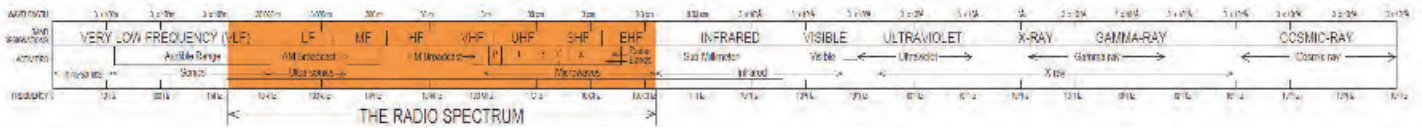
Small Wireless Facilities - Small wireless facilities have antennas mounted at lower heights, generally the height of a utility pole. The equipment is mounted on or inside these smaller poles and are interconnected with fiber optic cables which allows for greater bandwidth and faster transmission speeds. For a single service provider, the small wireless facilities are typically spaced every 650 feet, although there are many variations, creating a densification of the transmitting signals for the network. The ideal service area for a small cell is a specified corridor or neighborhood. According to Colorado Revised Statutes a small wireless facility must meet the following criteria:

- Each antenna associated with the facility must be located inside an enclosure of no more than three (3) cubic feet in volume, or in the case of antenna that have exposed elements, each antenna and all of its exposed elements must be able to fit within an enclosure of not more than three (3) cubic feet in volume; and
- All other wireless equipment associated with the facility is cumulatively no more than seventeen (17) cubic feet in volume. The following ancillary equipment is not included in this calculation: electric meters, concealment elements, telecommunications demarcation boxes, ground-based enclosures, grounding equipment, power transfer switches, cutoff switches, vertical cable runs for the connection of power and other services, and utility poles or other support structures.

Tower - Any support structure built for the primary purpose of supporting antennas and associated facilities for commercial, private, broadcast, microwave, broadband, public, public safety, licensed or unlicensed, and/or fixed or wireless services. A tower may be concealed or non-concealed.

Utility Pole - Any pole or structure designed to maintain, or used for the purpose of lines, cables, or wires for communications, cable, electricity, street lighting, other lighting standards, or comparable standards.

Wireless Spectrum - Consists of electromagnetic radiation and frequency bands. The wireless spectrum frequencies used in communication are regulated by national organizations, which specify which frequency ranges can be used by whom and for which purpose. Spectrum refers to the invisible radio frequencies that wireless signals travel over. These signals enable the use of wireless devices. The frequencies used by the wireless service providers are only a portion of what is considered electromagnetic spectrum. An invisible electro-magnetic transmitting and receiving resource determined and defined by wavelengths and found between the audible hearing range and light. The frequencies referenced for this purpose are located in spectrum used for personal wireless services and are only a small portion of what is called the electromagnetic spectrum.



# APPENDIX A

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## INVENTORY CATALOG

**SERVICE PROVIDERS:** Verizon

**LATITUDE/LONGITUDE:** 40.6148239; -105.0375598

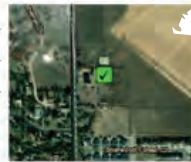
**FACILITY OWNER/ID:** Atlas Tower Holdings, LLC

**FACILITY SITE NAME:** FTC Long Pond

**FCC ASR:** 1308850

**HEIGHT:** 44'

**NOTES:**



**Site ID: 4**      **1800 N Whitcomb Street**

**LOCATION:** Private Property

**CATEGORY:** Tower

**FACILITY TYPE:** Monopole

**ANTENNA TYPE:** Macro Cell

**ZONING:** County

**SERVICE PROVIDERS:** Verizon

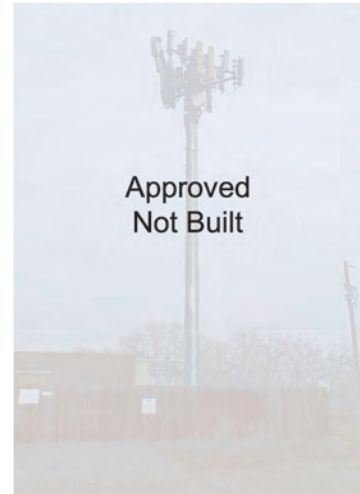
**LATITUDE/LONGITUDE:** 40.6119052; -105.0843311

**OWNER/ID:** American Tower



**Site #1 2808 NE Frontage Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.6252050; -104.9997494
<b>FACILITY OWNER/ID:</b>	Atlas Tower Holdings, LLC
<b>FACILITY SITE NAME:</b>	Odell Golf Course
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	80'
<b>NOTES:</b>	Approved but not built - outside City



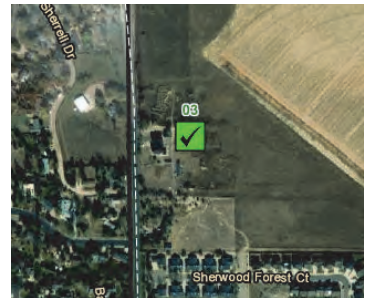
**Site ID: 2 2351 Busch Drive**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Other
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	I
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.6212288; -105.0064799
<b>FACILITY OWNER/ID:</b>	35-02
<b>FACILITY SITE NAME:</b>	City of Fort Collins Project/Bar/Barley Research
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	112'
<b>NOTES:</b>	



## Site ID: 3 2008 Turnberry Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Silo
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	LMN
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.6148239; -105.0375598
<b>FACILITY OWNER/ID:</b>	Atlas Tower Holdings, LLC
<b>FACILITY SITE NAME:</b>	FTC Long Pond
<b>FCC ASR:</b>	1306850
<b>HEIGHT:</b>	44'
<b>NOTES:</b>	



## Site ID: 4 1800 N Whitcomb Street

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.6119052; -105.0843311
<b>FACILITY OWNER/ID:</b>	American Tower Corporation, 414553
<b>FACILITY SITE NAME:</b>	Terry Lake 4 Co
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	60'
<b>NOTES:</b>	



## Site #5 1314 Red Cedar Circle

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	I
<b>SERVICE PROVIDERS:</b>	AT&T (Cricket), Sprint, T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.6048564; -105.0741160
<b>FACILITY OWNER/ID:</b>	American Tower Corporation, 302435
<b>FACILITY SITE NAME:</b>	Josh Ames/Wilcox & College
<b>FCC ASR:</b>	1225956
<b>HEIGHT:</b>	90'
<b>NOTES:</b>	



## Site #6 1052 W Vine Drive

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopine
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CL
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5971174; -105.0950998
<b>FACILITY OWNER/ID:</b>	American Tower Corporation, CO-420055
<b>FACILITY SITE NAME:</b>	Fat Tire CO
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	75'
<b>NOTES:</b>	



**Site #7 833 Elm Street**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.593, -105.115
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 001
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review



**Site #8 1612 Laporte Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Guy
<b>ANTENNA TYPE:</b>	Broadcast
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	
<b>LATITUDE/LONGITUDE:</b>	40.5927839; -105.1073966
<b>FACILITY OWNER/ID:</b>	JACOR Broadcasting of Colorado
<b>FACILITY SITE NAME:</b>	KCOL
<b>FCC ASR:</b>	1036223
<b>HEIGHT:</b>	203'
<b>NOTES:</b>	



**Site #9 1612 Laporte Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Guy
<b>ANTENNA TYPE:</b>	Broadcast
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	
<b>LATITUDE/LONGITUDE:</b>	40.5921275; -105.1057214
<b>FACILITY OWNER/ID:</b>	JACOR Broadcasting of Colorado
<b>FACILITY SITE NAME:</b>	KCOL
<b>FCC ASR:</b>	1036224
<b>HEIGHT:</b>	203'
<b>NOTES:</b>	



**Site #10 2420 Laporte Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	LMN
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5901908; -105.1216263
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC Impala
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	60'
<b>NOTES:</b>	





## Site #11 2420 Laporte Avenue

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Other
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	LMN
<b>SERVICE PROVIDERS:</b>	AT&T, Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5901908; -105.1216263
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 856480
<b>FACILITY SITE NAME:</b>	Taft and Vine/ Calvary Baptist Temple
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	50'
<b>NOTES:</b>	



## Site #12 3915 Laporte Avenue

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5901874; -105.1402496
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	CSU/Atmospheric Simulation Lab
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	50'
<b>NOTES:</b>	



## Site #13 137 S Bryan Avenue

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	POL
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5864537; -105.1073504
<b>FACILITY OWNER/ID:</b>	Sprint - DN13XC324
<b>FACILITY SITE NAME:</b>	City Park Ball Field
<b>FCC ASR:</b>	1231305
<b>HEIGHT:</b>	90'
<b>NOTES:</b>	



## Site #14 139 S Bryan Avenue

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	POL
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5864251; -105.1074684
<b>FACILITY OWNER/ID:</b>	AT&T, DN3060
<b>FACILITY SITE NAME:</b>	City Park Ball Field
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	90'
<b>NOTES:</b>	



**Site #15 1058 S Shields Street**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.586, -105.097
<b>FACILITY OWNER/ID:</b>	Verizon/ES1416
<b>FACILITY SITE NAME:</b>	F ROW E City Park SC 1
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review



**Site #16 31 Cherry Street**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.591, -105.127
<b>FACILITY OWNER/ID:</b>	Verizon/ES983
<b>FACILITY SITE NAME:</b>	FTC Civic Center SC6
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review



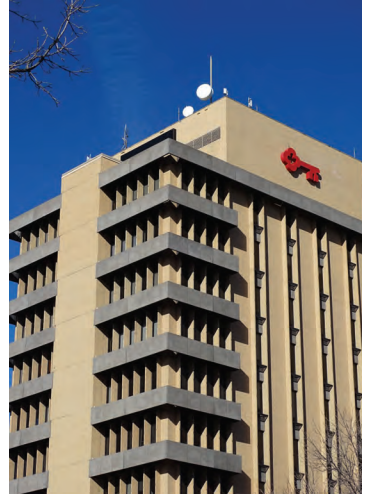
**Site #17 185 N College Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	D
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5887677; -105.0773825
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC Unify SC 01
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	45'
<b>NOTES:</b>	



**Site #18 125 S Howes Street**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Other
<b>ZONING:</b>	D
<b>SERVICE PROVIDERS:</b>	Open Range
<b>LATITUDE/LONGITUDE:</b>	40.5863219; -105.0812680
<b>FACILITY OWNER/ID:</b>	CO0048
<b>FACILITY SITE NAME:</b>	Key Bank
<b>FCC ASR:</b>	1209072
<b>HEIGHT:</b>	159'
<b>NOTES:</b>	



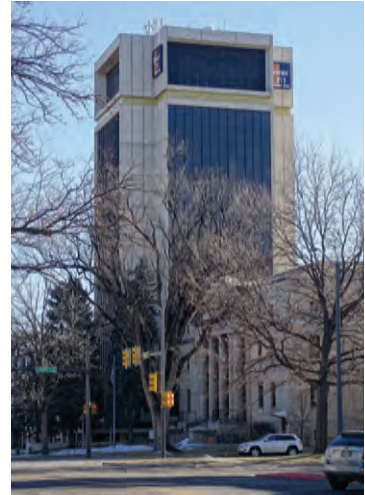
**Site #19 315 W Oak Street**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	D
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5855153; -105.0819281
<b>FACILITY OWNER/ID:</b>	COU 3022
<b>FACILITY SITE NAME:</b>	Fort Collins 850/GSM/Rocky Mountain Bank
<b>FCC ASR:</b>	1252806 - Terminated
<b>HEIGHT:</b>	87'
<b>NOTES:</b>	



**Site #20 215 W Oak Street**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	D
<b>SERVICE PROVIDERS:</b>	T-Mobile, Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5854827; -105.0801632
<b>FACILITY OWNER/ID:</b>	DNO1085A
<b>FACILITY SITE NAME:</b>	First National Bank
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	197'
<b>NOTES:</b>	



**Site #21****301 S Whitcomb Street**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.584, -105.088
<b>FACILITY OWNER/ID:</b>	Verizon/ES1398
<b>FACILITY SITE NAME:</b>	FTC Keybank SC3
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review

**Site #22****320 W Olive Street**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.584, -105.084
<b>FACILITY OWNER/ID:</b>	Verizon/ES1156
<b>FACILITY SITE NAME:</b>	Otter Box SC
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review



## Site #23 124 W Magnolia Street

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Lattice
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	D
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5833615; -105.0787424
<b>FACILITY OWNER/ID:</b>	Century Link
<b>FACILITY SITE NAME:</b>	FTC-Ft Collins Main
<b>FCC ASR:</b>	1028388
<b>HEIGHT:</b>	140'
<b>NOTES:</b>	



## Site #24 300 Remington Street

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	D
<b>SERVICE PROVIDERS:</b>	AT&T (Cricket), Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5840067; -105.0752530
<b>FACILITY OWNER/ID:</b>	Sprint - DN13XC320
<b>FACILITY SITE NAME:</b>	DMA Plaza
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	115'
<b>NOTES:</b>	



**Site #25 903 Buckingham Street**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Silo
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	I
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5907261; -105.0616884
<b>FACILITY OWNER/ID:</b>	Atlas Tower Holdings, LLC
<b>FACILITY SITE NAME:</b>	Alta Vista
<b>FCC ASR:</b>	1301604
<b>HEIGHT:</b>	67'
<b>NOTES:</b>	



**Site #26 428 S Link Lane**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5825937; -105.0497089
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	30'
<b>NOTES:</b>	





**Site #27 3730 Harvester Drive**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	ATT, T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5854465; -105.0066074
<b>FACILITY OWNER/ID:</b>	American Tower Corporation, CO-83356
<b>FACILITY SITE NAME:</b>	HWY-14 & I-25 1B CO/Crossroad - Northwest CMRS
<b>FCC ASR:</b>	1231217
<b>HEIGHT:</b>	80'
<b>NOTES:</b>	



**Site #28 3801 Weiker Drive**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	
<b>LATITUDE/LONGITUDE:</b>	40.5829322; -105.0066862
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 877020
<b>FACILITY SITE NAME:</b>	USWW Cleary Building
<b>FCC ASR:</b>	1032039
<b>HEIGHT:</b>	80'
<b>NOTES:</b>	

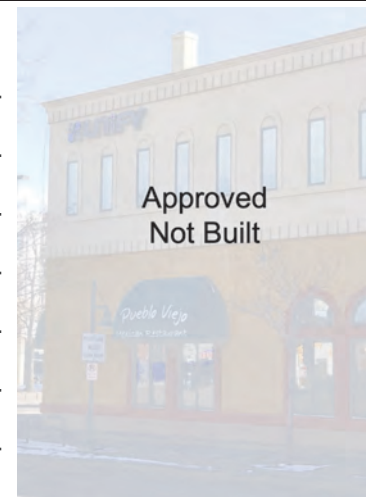


**Site #29****2317 E Mulberry Street**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.580, -105.038
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC Charco
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	60'
<b>NOTES:</b>	Proposed Under Review

**Site #30****901 Riverside Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CL
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5796779; -105.06076236
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC East Dale
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	Approved but not built in City



**Site #31 1133 Riverside Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Smokestack
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	E
<b>SERVICE PROVIDERS:</b>	AT&T, T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5770315; -105.0571753
<b>FACILITY OWNER/ID:</b>	American Tower Corporation, 276549
<b>FACILITY SITE NAME:</b>	Fries Enterprises Co
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	80'
<b>NOTES:</b>	



**Site #32 1201 Riverside Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	E
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5758502; -105.0559587
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC Eastside Park SC
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	35'
<b>NOTES:</b>	



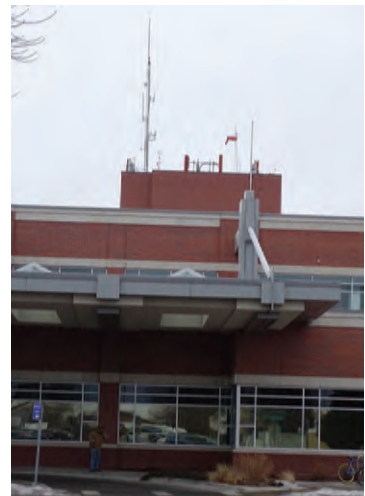
## Site #33 1101 Academy Court

<b>LOCATION:</b>	Utility Easement
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Utility Pole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	I
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5741079; -105.0476228
<b>FACILITY OWNER/ID:</b>	PRPA, 8
<b>FACILITY SITE NAME:</b>	Linden-Timberline 115kV
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	92'
<b>NOTES:</b>	To Be Removed



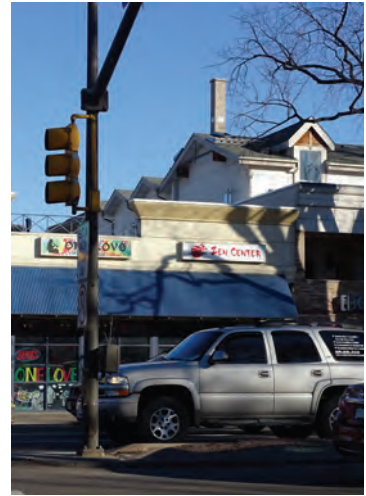
## Site #34 1024 S Lemay Avenue

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	E
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5718672; -105.0571737
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Poudre Valley Hospital
<b>FCC ASR:</b>	1224850
<b>HEIGHT:</b>	66'
<b>NOTES:</b>	



**Site #35****714 S College Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	CC
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5778573; -105.0766692
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC Mugs Coffee SC
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	48'
<b>NOTES:</b>	

**Site #36****1231 Libbie Coy Way**

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CSU
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5728078; -105.0807667
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Natural & Environmental Sciences Building
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	30'
<b>NOTES:</b>	



## Site #37 1231 Libbie Coy Way

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CSU
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5722618; -105.0811959
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Natural & Environmental Sciences Building
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	



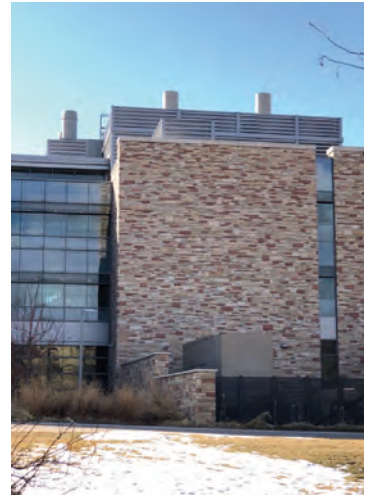
## Site #38 1100 Center Avenue Mall

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CSU
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5741525; -105.0833739
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Computer Science Building
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	



**Site #39****700 Meridian Avenue**

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CSU
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5777625; -105.0873435
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Scott Bioengineering
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	50'
<b>NOTES:</b>	

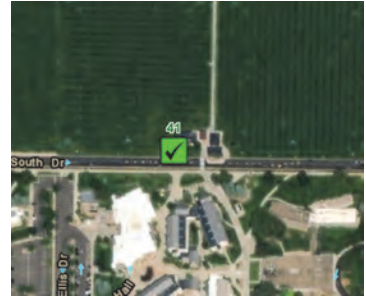
**Site #40****951 Meridian Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CSU
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5749949; -105.0892734
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Student Recreation Center
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	



## Site #41 CSU IM Field, South Drive

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CSU
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5726899; -105.0907051
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 823526
<b>FACILITY SITE NAME:</b>	CSU Intramural Field
<b>FCC ASR:</b>	1250189
<b>HEIGHT:</b>	64'
<b>NOTES:</b>	



## Site #42 620 S Shields Street

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.576, -105.157
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 032
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review





**Site #43****1613 W Plum Street**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.576, -105.107
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 049
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review

**Site #44****1409 W Elizabeth Street**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CC
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5743432; -105.1020012
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC Mo Jeux SC
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	47'
<b>NOTES:</b>	Proposed under City review



## Site #45 1107 City Park Avenue

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CC
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5739286; -105.1008914
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Campus West Liquor
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	32'
<b>NOTES:</b>	



## Site #46 833 South Taft Hill Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	MMN
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.57674641; -105.1155320
<b>FACILITY OWNER/ID:</b>	Bethel Baptist Church
<b>FACILITY SITE NAME:</b>	
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	



## Site #47 1015 S Taft Hill Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	NC
<b>SERVICE PROVIDERS:</b>	T-Mobile, Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5739751; -105.1173368
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 828344
<b>FACILITY SITE NAME:</b>	Taft Hill & Elizabeth
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	50'
<b>NOTES:</b>	



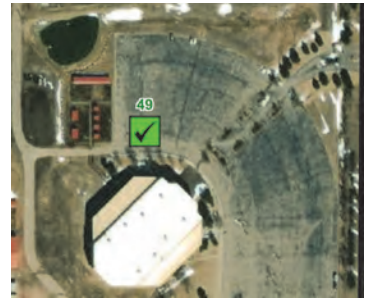
## Site #48 1015 S Taft Hill Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	NC
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5727658; -105.1159266
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 856479
<b>FACILITY SITE NAME:</b>	Taft & Elizabeth
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	47'
<b>NOTES:</b>	

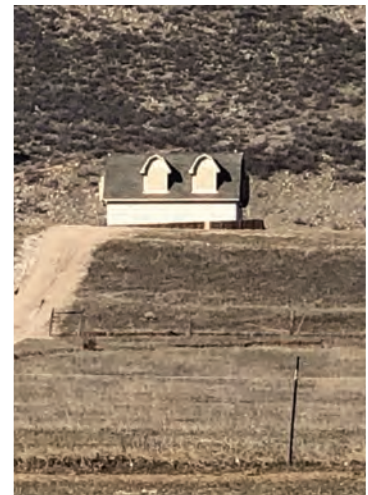


**Site #49****735 S Overland Trail**

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5776025; -105.1359825
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	BW Pickett Equine Center
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	35'
<b>NOTES:</b>	

**Site #50**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CO
<b>SERVICE PROVIDERS:</b>	Unknown
<b>LATITUDE/LONGITUDE:</b>	40.5636701; -105.1414095
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Rex Miller Barn
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	30'
<b>NOTES:</b>	



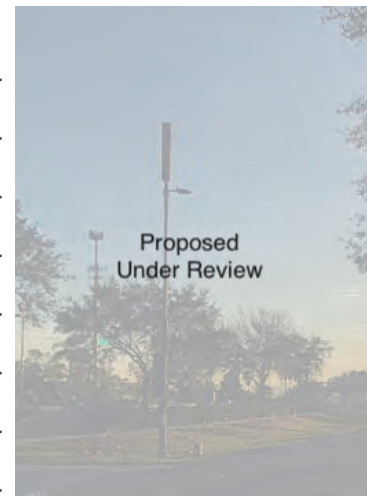
## Site #51 Overland Trail, North of Drake

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	T
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5592483; -105.1372082
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 877100
<b>FACILITY SITE NAME:</b>	Fill-In/Fort Collins/FTC235
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	61'
<b>NOTES:</b>	



## Site #52 2621 W Prospect Road

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.568, -105.127
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 084
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review



**Site #53****1115 W Prospect Road**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.567, -105.099
<b>FACILITY OWNER/ID:</b>	AT&T/CRAN_RUTH_FTCOL_004
<b>FACILITY SITE NAME:</b>	COL06898F_R03_FTCOL_004
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	35'
<b>NOTES:</b>	Proposed Under Review

**Site #54****1127 W Prospect Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopine
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	NC
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5664058; -105.0985081
<b>FACILITY OWNER/ID:</b>	Atlas Tower Holdings, LLC
<b>FACILITY SITE NAME:</b>	Loose Leaf
<b>FCC ASR:</b>	1300635
<b>HEIGHT:</b>	69'
<b>NOTES:</b>	



**Site #55****928 W Lake Street**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.569, -105.094
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 079
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review

**Site #56****808 W Prospect Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HMN
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5676099; -105.0905787
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC Rams Crossing
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	45'
<b>NOTES:</b>	Proposed under City review



**Site #57****425 W Prospect Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	E
<b>SERVICE PROVIDERS:</b>	Sprint, T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5662367; -105.0828021
<b>FACILITY OWNER/ID:</b>	T-Mobile - DN03052C
<b>FACILITY SITE NAME:</b>	Hilton Fort Collins
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	107'
<b>NOTES:</b>	

**Site #58****221 W Prospect Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CC
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5669664; -105.0795213
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC CSU South
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	51'
<b>NOTES:</b>	





**Site #59 1730 S College Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5641543; -105.0765343
<b>FACILITY OWNER/ID:</b>	CO-3010
<b>FACILITY SITE NAME:</b>	Prospect & College
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	48'
<b>NOTES:</b>	



**Site #60 2121 S College Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	AT&T (Cricket)
<b>LATITUDE/LONGITUDE:</b>	40.5605440; -105.0793007
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 839479
<b>FACILITY SITE NAME:</b>	South College Avenue/Big A Self Storage
<b>FCC ASR:</b>	1232618
<b>HEIGHT:</b>	85'
<b>NOTES:</b>	



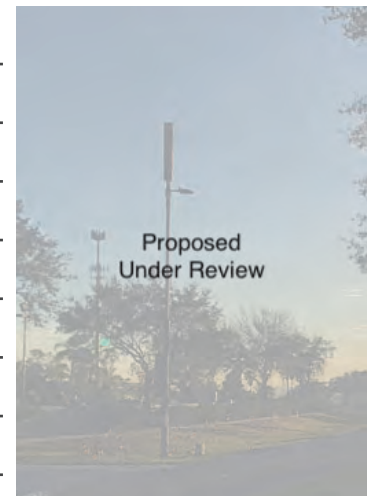
## Site #61 1307 E Prospect Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	NC
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5664960; -105.0545429
<b>FACILITY OWNER/ID:</b>	Fort Collins Club/Genesis Health Club
<b>FACILITY SITE NAME:</b>	Sprint - DN40XC961D
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	48'
<b>NOTES:</b>	



## Site #62 E Stuart Street

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.564, -105.062
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 102
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review



**Site #63****1500 Edora Road**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.566, -105.050
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 091
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review

**Site #64****1609 S Timberline Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Other
<b>ANTENNA TYPE:</b>	Other
<b>ZONING:</b>	E
<b>SERVICE PROVIDERS:</b>	Century Link
<b>LATITUDE/LONGITUDE:</b>	40.5661252; -105.0398813
<b>FACILITY OWNER/ID:</b>	Century Link, DN 1238-B
<b>FACILITY SITE NAME:</b>	Calvin Johnson
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	125'
<b>NOTES:</b>	

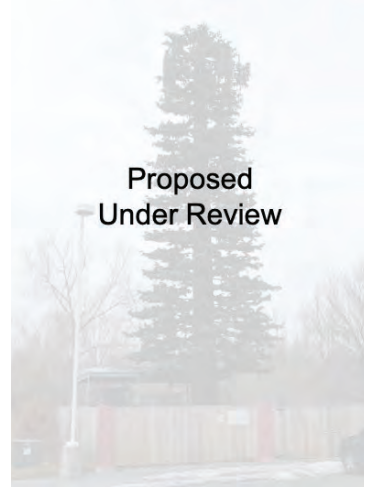


**Site #65****1925 S Timberline Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	I
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5620093; -105.0410508
<b>FACILITY OWNER/ID:</b>	COU3154 Edora Park
<b>FACILITY SITE NAME:</b>	
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	50'
<b>NOTES:</b>	

**Site #66****2025 Sharp Point Drive**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopine
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	I
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.56100246; -105.027540
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	65'
<b>NOTES:</b>	



**Site #67****Columbia Road and Shawnee Court**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.558, -105.065
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 123
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	FTC SC 123

**Site #68****E Drake Road**

<b>LOCATION:</b>	Utility Easement
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Utility Pole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	NC
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5523383; -105.0599473
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Drake-Timberline 115kV Line
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	90'
<b>NOTES:</b>	To Be Removed by PRPA



**Site #69**      **2601 S Lemay Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	NC
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5519896; -105.0586480
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Scotch Pines Village
<b>FCC ASR:</b>	1222568
<b>HEIGHT:</b>	36'
<b>NOTES:</b>	



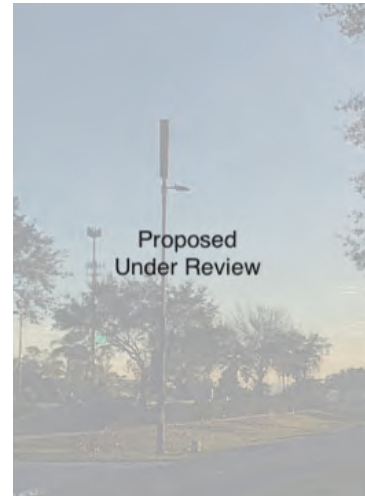
**Site #70**      **2601 S Lemay Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	NC
<b>SERVICE PROVIDERS:</b>	AT&T, T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5507504; -105.0600488
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 839481
<b>FACILITY SITE NAME:</b>	South Lemay
<b>FCC ASR:</b>	1250576
<b>HEIGHT:</b>	80'
<b>NOTES:</b>	



## Site #71 Scarborough Drive and Constitution Ave

LOCATION:	ROW
CATEGORY:	Tower
FACILITY TYPE:	Utility Light
ANTENNA TYPE:	Small Cell
ZONING:	
SERVICE PROVIDERS:	Verizon
LATITUDE/LONGITUDE:	40.555, 105.109
FACILITY OWNER/ID:	Verizon
FACILITY SITE NAME:	FTC SC 119
FCC ASR:	
HEIGHT:	37'
NOTES:	Proposed Under Review



## Site #72 2555 S Shields Street

LOCATION:	Private Property
CATEGORY:	Base Station
FACILITY TYPE:	Roof
ANTENNA TYPE:	Macro Cell
ZONING:	NC
SERVICE PROVIDERS:	Verizon
LATITUDE/LONGITUDE:	40.5537153; -105.0980590
FACILITY OWNER/ID:	
FACILITY SITE NAME:	FTC Wolf Pup
FCC ASR:	
HEIGHT:	38'
NOTES:	



**Site #73****1212 Raintree Drive**

<b>LOCATION:</b>	Utility Easement
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Utility Pole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	MMN
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5529058; -105.1015044
<b>FACILITY OWNER/ID:</b>	PRPA
<b>FACILITY SITE NAME:</b>	Drake- Dixon Creek 115kV Line
<b>FCC ASR:</b>	1222569
<b>HEIGHT:</b>	89'
<b>NOTES:</b>	To Be Removed by PRPA

**Site #74****1600 W Drake Road**

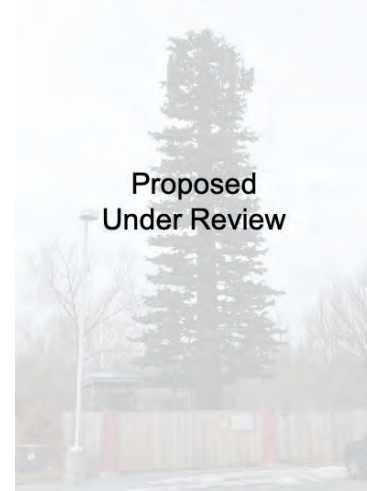
<b>LOCATION:</b>	Utility Easement
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Utility Pole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	POL
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5529342; -105.1050515
<b>FACILITY OWNER/ID:</b>	PRPA DN3018 USID43096
<b>FACILITY SITE NAME:</b>	PRPA Drake-Dixon Creek 115kV Line
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	86'
<b>NOTES:</b>	To Be Removed by PRPA



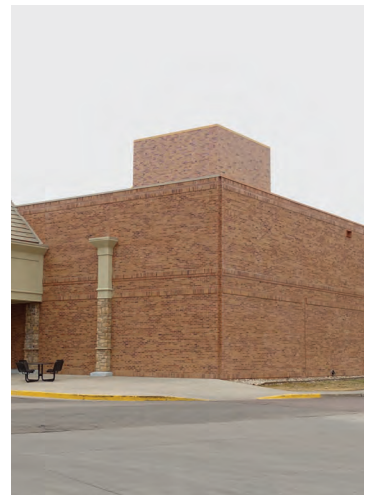


**Site #75****1601 W Drake Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopine
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	RL
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5524692; -105.1062652
<b>FACILITY OWNER/ID:</b>	Mobilitie, DN04198D
<b>FACILITY SITE NAME:</b>	Summitview Church
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	75'
<b>NOTES:</b>	Proposed under City review

**Site #76****2160 W Drake Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	NC
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5546338; -105.1165207
<b>FACILITY OWNER/ID:</b>	FTC Drake Crossing
<b>FACILITY SITE NAME:</b>	Verizon Wireless
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	35'
<b>NOTES:</b>	



**Site #77 2170 W Drake Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	NC
<b>SERVICE PROVIDERS:</b>	AT&T, T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5538176; -105.1182682
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 822100
<b>FACILITY SITE NAME:</b>	Drake Crossing Shopping Center
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	50'
<b>NOTES:</b>	



**Site #78 1300 W Swallow Road**

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Lattice
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	RL
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5490421; -105.1006591
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	70'
<b>NOTES:</b>	



## Site #79 1300 W Swallow Road

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Lattice
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	RL
<b>SERVICE PROVIDERS:</b>	None
<b>LATITUDE/LONGITUDE:</b>	40.5490687; -105.0989817
<b>FACILITY OWNER/ID:</b>	Sprint, DN54XC125
<b>FACILITY SITE NAME:</b>	Stadium Light Tower
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	110'
<b>NOTES:</b>	



## Site #80 2900 S College Avenue

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5476003; -105.0766042
<b>FACILITY OWNER/ID:</b>	COL03242
<b>FACILITY SITE NAME:</b>	College & Drake
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	50'
<b>NOTES:</b>	Proposed under City review



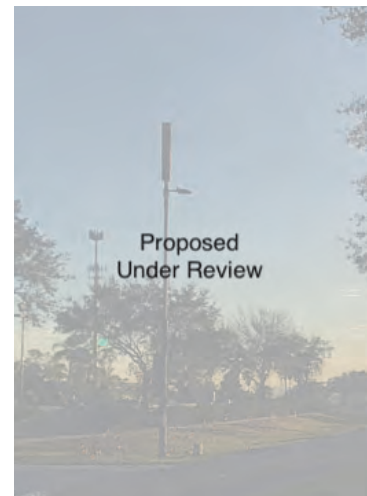
**Site #81 2842 Parklake Drive**

<b>LOCATION:</b>	Utility Easement
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Utility Pole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	RL
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5484776; -105.0435512
<b>FACILITY OWNER/ID:</b>	PRPA Sprint - DN54XC126F
<b>FACILITY SITE NAME:</b>	Utility Pole #312/Timberline-Harmon 230kV Line
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	90'
<b>NOTES:</b>	To Be Removed by PRPA



**Site #82 2300 Horsetooth Road**

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.539, -105.120
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 195
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	Proposed Under Review



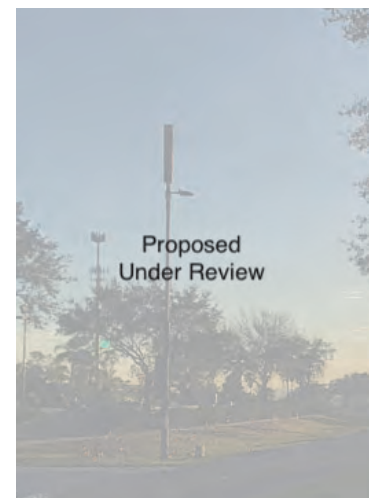
## Site #83 1005 W Horsetooth Road

LOCATION:	Private Property
CATEGORY:	Tower
FACILITY TYPE:	Unipole
ANTENNA TYPE:	Macro Cell
ZONING:	NC
SERVICE PROVIDERS:	AT&T
LATITUDE/LONGITUDE:	40.5377587; -105.0944934
FACILITY OWNER/ID:	Crown Castle International, 857499
FACILITY SITE NAME:	Horsetooth & Taft/Poudre Valley Plaza
FCC ASR:	
HEIGHT:	50'
NOTES:	



## Site #84 345 Riva Ridge Drive

LOCATION:	ROW
CATEGORY:	Tower
FACILITY TYPE:	Utility Light
ANTENNA TYPE:	Small Cell
ZONING:	
SERVICE PROVIDERS:	Verizon
LATITUDE/LONGITUDE:	40.537, -105.123
FACILITY OWNER/ID:	Verizon
FACILITY SITE NAME:	FTC SC 187
FCC ASR:	
HEIGHT:	37'
NOTES:	Proposed Under Review

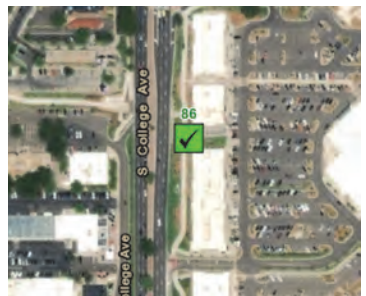


**Site #85****3517 S Mason Street**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5392315; -105.0793567
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC Chippers SC
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	35'
<b>NOTES:</b>	

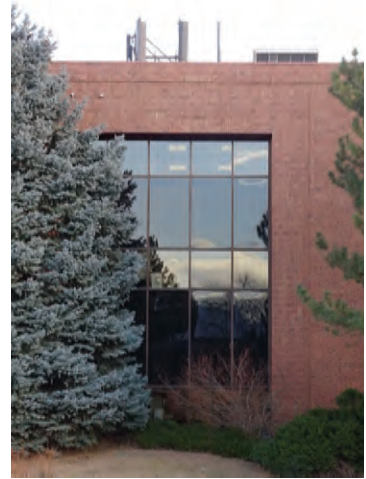
**Site #86****3300 S College Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5421633; -105.0767086
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 826600
<b>FACILITY SITE NAME:</b>	Perkins
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	60'
<b>NOTES:</b>	



**Site #87****3500 JFK Parkway**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	Sprint, Century Link
<b>LATITUDE/LONGITUDE:</b>	40.5405673; -105.0734980
<b>FACILITY OWNER/ID:</b>	FTC-196A
<b>FACILITY SITE NAME:</b>	Norwest Bank
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	45'
<b>NOTES:</b>	

**Site #88****350 E Horsetooth Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	AT&T (Cricket)
<b>LATITUDE/LONGITUDE:</b>	40.5394503; -105.0726826
<b>FACILITY OWNER/ID:</b>	FNL-011A
<b>FACILITY SITE NAME:</b>	Marriott Hotel
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	61'
<b>NOTES:</b>	



## Site #89 500 E Horsetooth Road

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5358, -105.072
<b>FACILITY OWNER/ID:</b>	AT&T/COL06896F_R01(FTCOL_009)
<b>FACILITY SITE NAME:</b>	CRAN_RUTH_FTCOL/257167 (Node)
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	35'
<b>NOTES:</b>	Proposed Under Review



## Site #90 2057 Vermont Drive

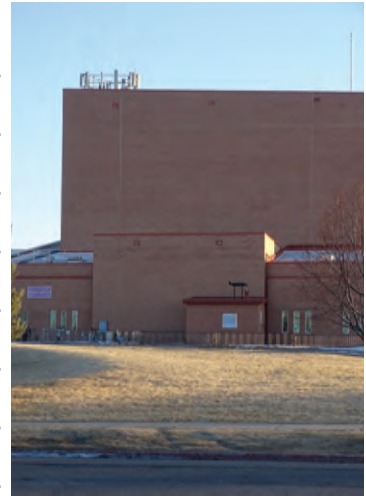
<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	E
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5430560; -105.0405908
<b>FACILITY OWNER/ID:</b>	SBA Communications, CO40865
<b>FACILITY SITE NAME:</b>	Mister Money
<b>FCC ASR:</b>	1273951
<b>HEIGHT:</b>	60'
<b>NOTES:</b>	





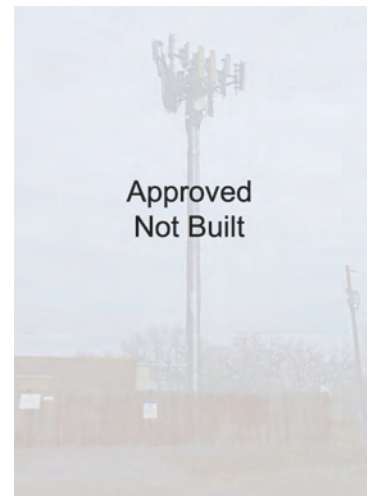
## Site #91 3400 Timberline Road

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	MMN
<b>SERVICE PROVIDERS:</b>	AT&T (Cricket), Century Link
<b>LATITUDE/LONGITUDE:</b>	40.5421103; -105.0369207
<b>FACILITY OWNER/ID:</b>	FNL-010A
<b>FACILITY SITE NAME:</b>	Fort Collins High School
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	70'
<b>NOTES:</b>	



## Site #92 3405 S Timberline Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Rooftop
<b>ANTENNA TYPE:</b>	Macro
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.540, -105.046
<b>FACILITY OWNER/ID:</b>	AT&T
<b>FACILITY SITE NAME:</b>	
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	35'
<b>NOTES:</b>	This will replace Site #93



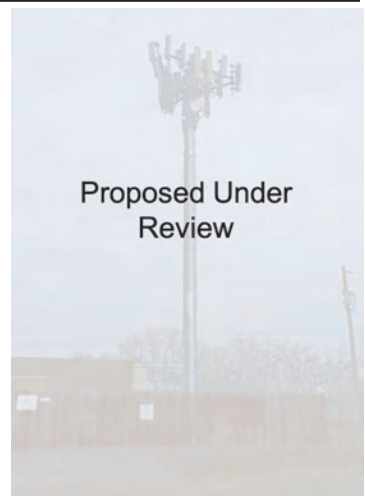
## Site #93 2000 E Horsetooth Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	E
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5394376; -105.0415171
<b>FACILITY OWNER/ID:</b>	CO-0179
<b>FACILITY SITE NAME:</b>	Platt River Headquarters
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	135'
<b>NOTES:</b>	Unipole to be removed and new site across the street will become Site #67 as a rooftop



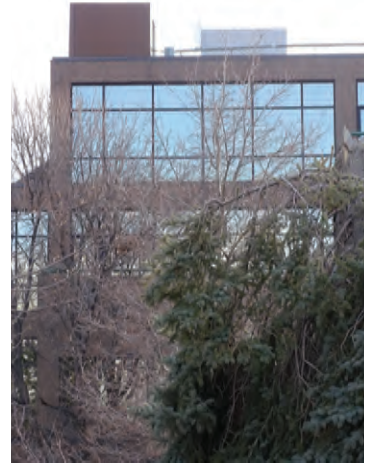
## Site #94 1961 Caribou Drive

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Other
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	E
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5305273; -105.0419365
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC Foxstone
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	Proposed under City review



**Site #95****155 Boardwalk Drive**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5322219; -105.0762982
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	First National Bank
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	45'
<b>NOTES:</b>	

**Site #96****3761 South Mason Street**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5354427; -105.0799192
<b>FACILITY OWNER/ID:</b>	COL03016-LTE 3C
<b>FACILITY SITE NAME:</b>	Horsetooth & College/Creager Park
<b>FCC ASR:</b>	10093602
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	



## Site #97 Manhattan Ave and Fir Court

LOCATION:	ROW
CATEGORY:	Tower
FACILITY TYPE:	Utility Light
ANTENNA TYPE:	Small Cell
ZONING:	
SERVICE PROVIDERS:	Verizon
LATITUDE/LONGITUDE:	40.534, -105.089
FACILITY OWNER/ID:	Verizon
FACILITY SITE NAME:	FTC SC 200
FCC ASR:	
HEIGHT:	37'
NOTES:	Proposed Under Review



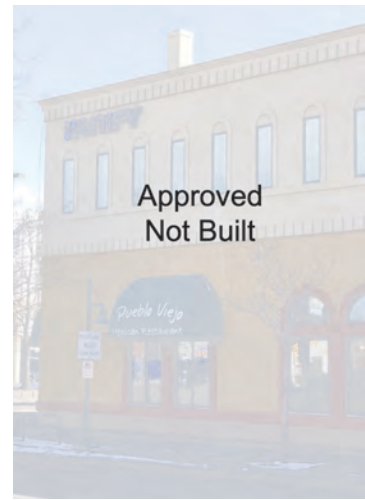
## Site #98 4001B S Taft Rd

LOCATION:	Private Property
CATEGORY:	Tower
FACILITY TYPE:	Unipole
ANTENNA TYPE:	Macro Cell
ZONING:	County
SERVICE PROVIDERS:	AT&T (Cricket), Verizon
LATITUDE/LONGITUDE:	40.5324665; -105.1162149
FACILITY OWNER/ID:	Crown Castle International, 877015
FACILITY SITE NAME:	Boats Unlimited
FCC ASR:	
HEIGHT:	100'
NOTES:	



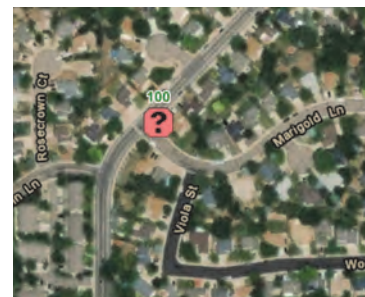
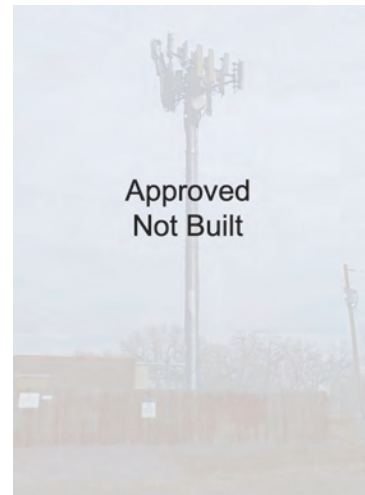
## Site #99 1621 W Harmony Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Other
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	LMN
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5227607; -105.1060815
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC Westbury
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	Approved not built in City



## Site #100 Starflower Drive and Marigold Lane

<b>LOCATION:</b>	ROW
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Utility Light
<b>ANTENNA TYPE:</b>	Small Cell
<b>ZONING:</b>	
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.526, -105.093
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC SC 209
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	37'
<b>NOTES:</b>	



## Site #101 4356 S College Avenue

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HC
<b>SERVICE PROVIDERS:</b>	AT&T (Cricket), Sprint, Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5262322; -105.0750092
<b>FACILITY OWNER/ID:</b>	American Tower Corporation, 302437
<b>FACILITY SITE NAME:</b>	Warren Lake
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	85'
<b>NOTES:</b>	



## Site #102 4620 S College Avenue

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5224932; -105.0761229
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 856958
<b>FACILITY SITE NAME:</b>	Harmony & College
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	75'
<b>NOTES:</b>	



**Site #103****4615 Hogan Drive**

<b>LOCATION:</b>	Public Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Lattice
<b>ANTENNA TYPE:</b>	Macro and Public Safety
<b>ZONING:</b>	UE
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5230484; -105.0715425
<b>FACILITY OWNER/ID:</b>	Poudare Fire, Ft. Collins 7
<b>FACILITY SITE NAME:</b>	CO0052
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	120'
<b>NOTES:</b>	

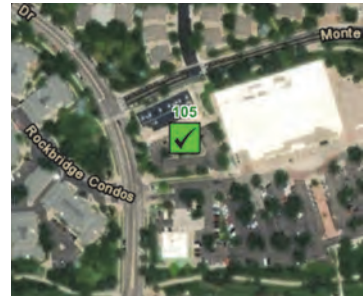
**Site #104****4824 S Lemay Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HC
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5193067; -105.0573035
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	FTC Collindale
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	50'
<b>NOTES:</b>	



## Site #105 1414-B E Harmony Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HC
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5249478; -105.0529308
<b>FACILITY OWNER/ID:</b>	DN60XC083-A
<b>FACILITY SITE NAME:</b>	Harmony Market Place
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	42'
<b>NOTES:</b>	



## Site #106 1620 Oakridge Drive

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HC
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.5228959; -105.0471029
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	Hampton Inn
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	38'
<b>NOTES:</b>	





**Site #107 1805 E Harmony Road**

<b>LOCATION:</b>	Utility Easement
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Utility Pole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HC
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5233179; -105.0440015
<b>FACILITY OWNER/ID:</b>	DN03292D
<b>FACILITY SITE NAME:</b>	PRPA Timberline
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	110'
<b>NOTES:</b>	To Be Removed by PRPA



**Site #108 2121 E Harmony Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HC
<b>SERVICE PROVIDERS:</b>	Centry Link, Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5219588; -105.0369717
<b>FACILITY OWNER/ID:</b>	FTC-233B
<b>FACILITY SITE NAME:</b>	Poudre Valley Health System
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	49'
<b>NOTES:</b>	



## Site #109 4601 Corbett Drive

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HC
<b>SERVICE PROVIDERS:</b>	Empty
<b>LATITUDE/LONGITUDE:</b>	40.5216349; -105.0281368
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 839226
<b>FACILITY SITE NAME:</b>	Corbett Drive
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	63'
<b>NOTES:</b>	



## Site #110 3003 E Harmony Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HC
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5226643; -105.0223751
<b>FACILITY OWNER/ID:</b>	230
<b>FACILITY SITE NAME:</b>	FTC Peloton
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	65'
<b>NOTES:</b>	



## Site #111 35287 Precision Drive

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	HC
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.518096189 -105.0112003
<b>FACILITY OWNER/ID:</b>	
<b>FACILITY SITE NAME:</b>	
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	39'
<b>NOTES:</b>	



## Site #112 4305 E Harmony Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	T-Mobile, Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5228437; -104.9947376
<b>FACILITY OWNER/ID:</b>	American Tower Corporation, CO-82108
<b>FACILITY SITE NAME:</b>	Harmony
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	84'
<b>NOTES:</b>	



**Site #113****4651 Weitzel Street**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5225959; -104.9900651
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 877017
<b>FACILITY SITE NAME:</b>	USWW Graham Land
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	117'
<b>NOTES:</b>	

**Site #114****6101 S CO Road 7**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopine
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	T-Mobile
<b>LATITUDE/LONGITUDE:</b>	40.5034636; -105.0038983
<b>FACILITY OWNER/ID:</b>	Skyway Towers, CO-04029
<b>FACILITY SITE NAME:</b>	Harmony Rd
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	100'
<b>NOTES:</b>	



**Site #115****6131 Ziegler Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Silo
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	LMN
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.5012902; -105.0208970
<b>FACILITY OWNER/ID:</b>	Atlas Tower Holdings, LLC
<b>FACILITY SITE NAME:</b>	Epic Park
<b>FCC ASR:</b>	1299189
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	

**Site #116****6015 S Timberline Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Silo
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	LMN
<b>SERVICE PROVIDERS:</b>	AT&T
<b>LATITUDE/LONGITUDE:</b>	40.5061923; -105.0467733
<b>FACILITY OWNER/ID:</b>	American Tower Corporation, CO-283557
<b>FACILITY SITE NAME:</b>	Timberline/Kechter
<b>FCC ASR:</b>	1282360
<b>HEIGHT:</b>	55'
<b>NOTES:</b>	



**Site #117****6132 S College Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	Empty
<b>LATITUDE/LONGITUDE:</b>	40.5005621; -105.0761475
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 839274
<b>FACILITY SITE NAME:</b>	Fort Collins
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	86'
<b>NOTES:</b>	

**Site #118****508 W Trilby Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	MMN
<b>SERVICE PROVIDERS:</b>	Sprint
<b>LATITUDE/LONGITUDE:</b>	40.4955417; -105.0855572
<b>FACILITY OWNER/ID:</b>	CO-0701A
<b>FACILITY SITE NAME:</b>	Good Samaritan Center
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	50'
<b>NOTES:</b>	

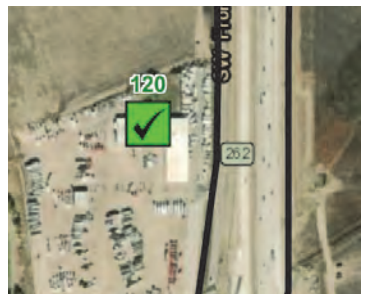


**Site #119****6520 S College Avenue**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	CG
<b>SERVICE PROVIDERS:</b>	AT&T, Verizon
<b>LATITUDE/LONGITUDE:</b>	40.4957451; -105.0764375
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 855731
<b>FACILITY SITE NAME:</b>	N Loveland and 287
<b>FCC ASR:</b>	10093693
<b>HEIGHT:</b>	60'
<b>NOTES:</b>	

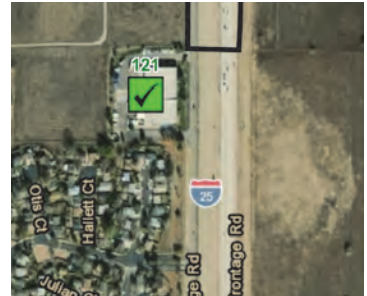
**Site #120****7301 SW Frontage Road**

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Monopole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	AT&T, Verizon
<b>LATITUDE/LONGITUDE:</b>	40.4847229; -104.9931361
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 855728
<b>FACILITY SITE NAME:</b>	I25 & 392
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	75'
<b>NOTES:</b>	



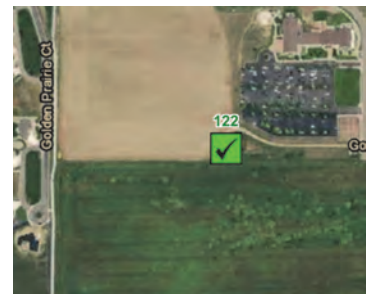
## Site #121 8101 SW Frontage Road

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Unipole
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	Unknown
<b>LATITUDE/LONGITUDE:</b>	40.4715817; -104.9930380
<b>FACILITY OWNER/ID:</b>	Crown Castle International, 877016
<b>FACILITY SITE NAME:</b>	Gardner Signs
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	59'
<b>NOTES:</b>	



## Site #122 1898 Good Shepherd Drive

<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Tower
<b>FACILITY TYPE:</b>	Silo
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.4766757; -105.0457979
<b>FACILITY OWNER/ID:</b>	American Tower Corporation, 414271
<b>FACILITY SITE NAME:</b>	Trilby CO
<b>FCC ASR:</b>	1285063
<b>HEIGHT:</b>	40'
<b>NOTES:</b>	





**Site #123                      205 Collard Avenue**

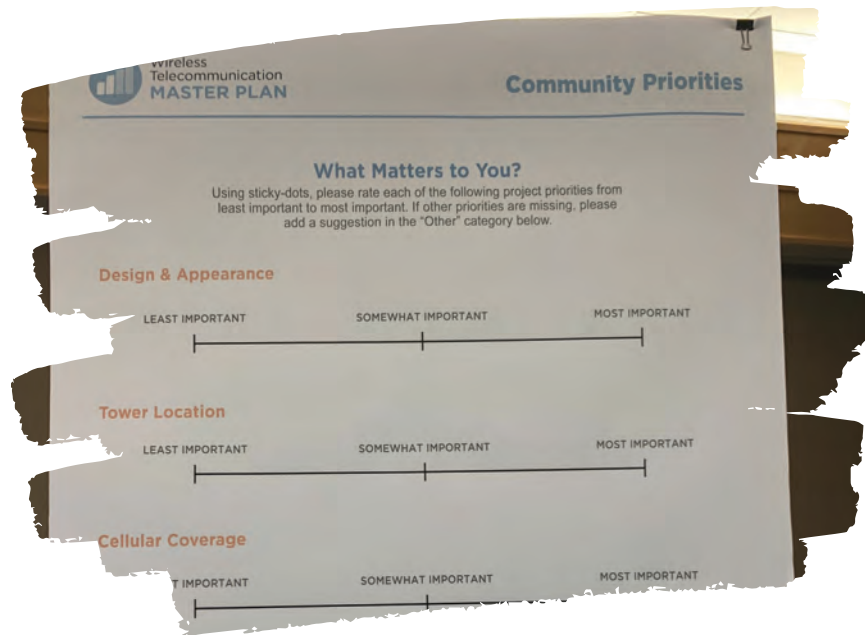
<b>LOCATION:</b>	Private Property
<b>CATEGORY:</b>	Base Station
<b>FACILITY TYPE:</b>	Roof
<b>ANTENNA TYPE:</b>	Macro Cell
<b>ZONING:</b>	County
<b>SERVICE PROVIDERS:</b>	Verizon
<b>LATITUDE/LONGITUDE:</b>	40.4783058; -105.0748570
<b>FACILITY OWNER/ID:</b>	Verizon
<b>FACILITY SITE NAME:</b>	FTC Carpenter
<b>FCC ASR:</b>	
<b>HEIGHT:</b>	35'
<b>NOTES:</b>	



# APPENDIX B

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# WIRELESS SURVEY



# Fort Collins Wireless Master Plan Survey

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## SURVEY RESPONSE REPORT

26 April 2017 - 20 April 2021

**PROJECT NAME:**

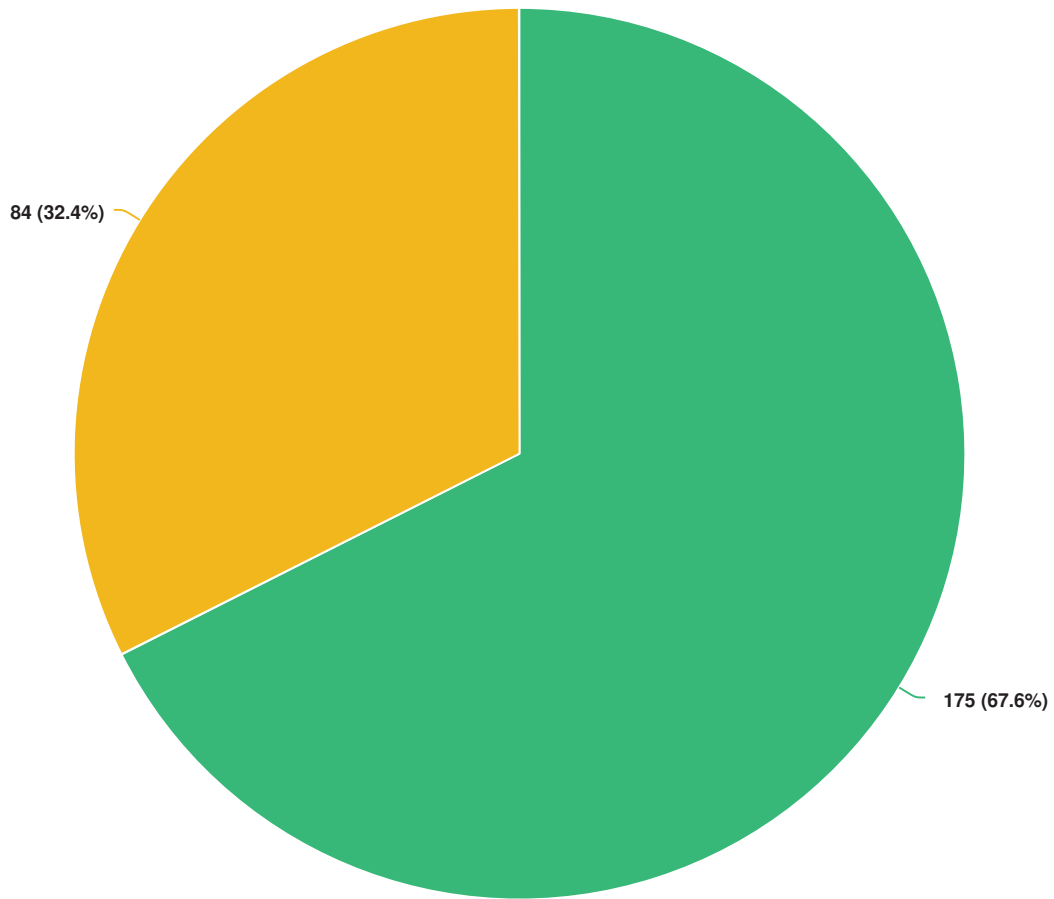
Wireless Master Plan



SURVEY QUESTIONS

**Q1 In the future, would you prefer fewer but taller towers or additional short facilities?**

Analysis has shown that the City's existing regulations for wireless infrastructure has resulted in a higher number of facilities that are shorter. While this ha...



**Question options**

- Taller facilities with multiple collocation possibilities
- Shorter facilities but potentially more of them

Optional question (259 response(s), 12 skipped)

Question type: Radio Button Question

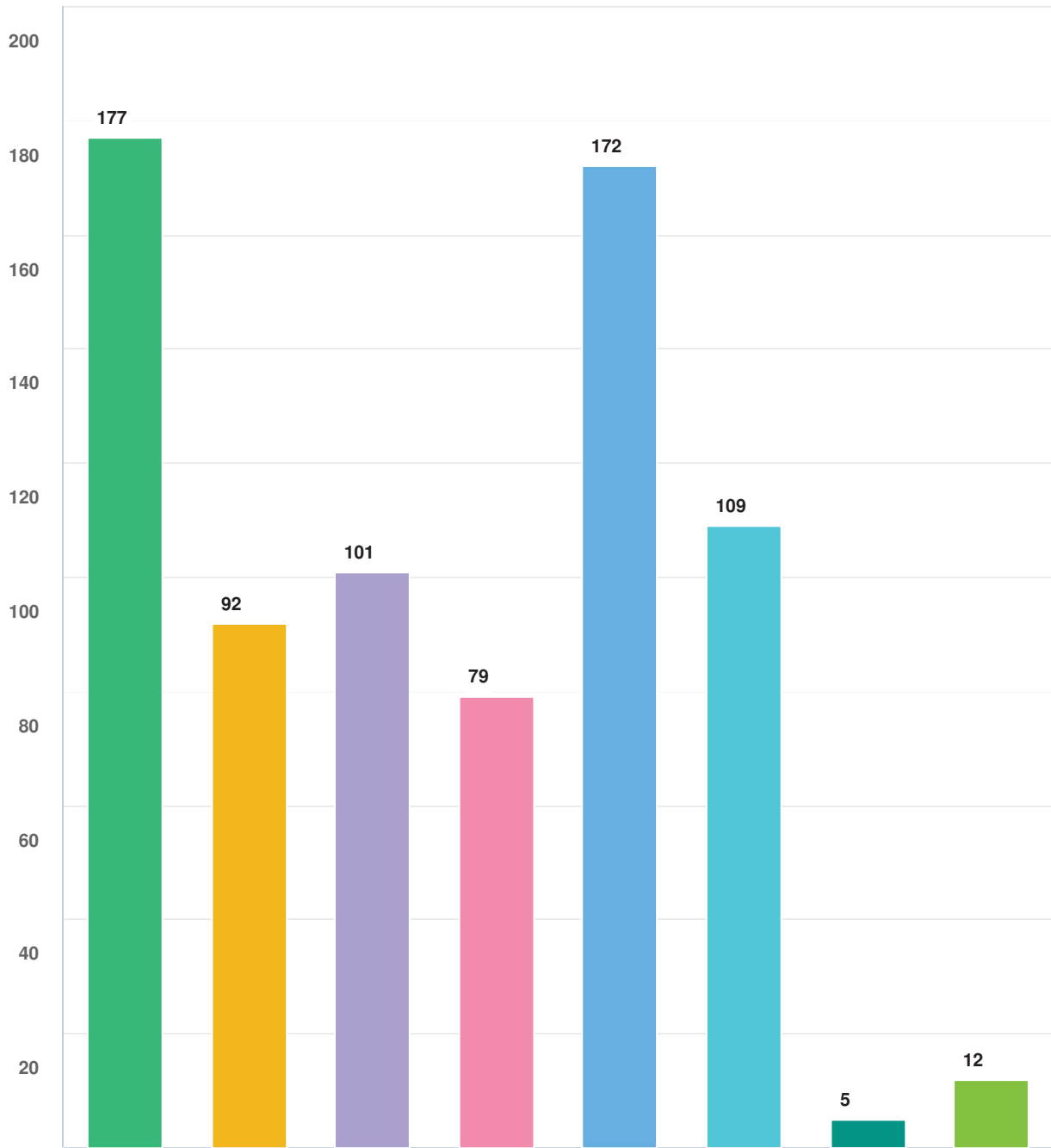
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**Q2** Please rank the following in order of importance to you concerning cell towers on private property.

OPTIONS	AVG. RANK
Coverage/Capacity (ability to provide service and for other providers to collocate on the tower)	1.34
Location (for example, properties where height is less impactful due to the surrounding context)	2.10
Aesthetics (height, color, appearance of cell tower)	2.54

*Optional question (266 response(s), 5 skipped)  
Question type: Ranking Question*

**Q3** Which type of concealed cell tower do you think is appropriate in Fort Collins? Check all that apply.

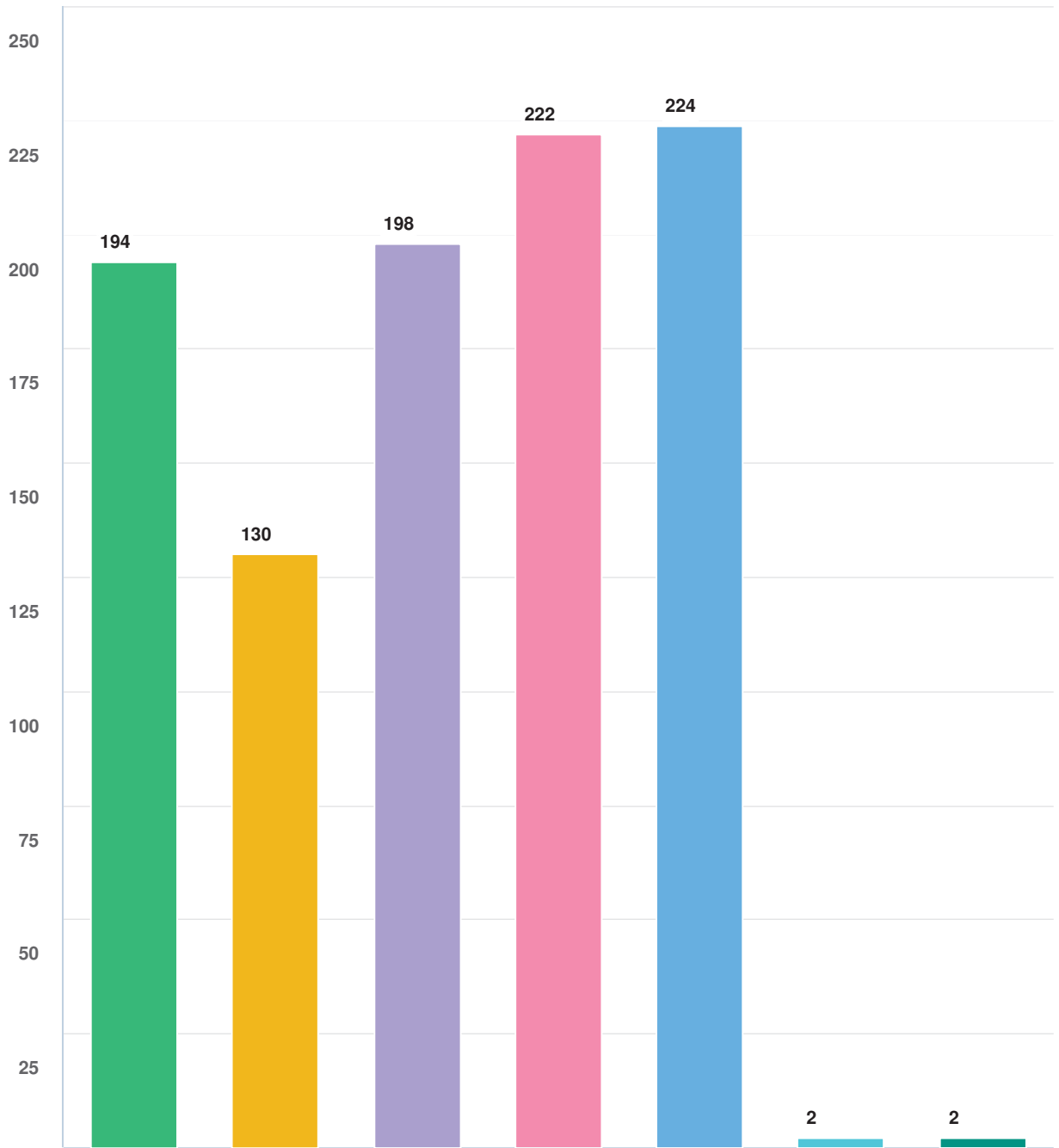


**Question options**

- Monopine
- Bell Tower
- Unipole
- Faux Silo
- Flag Pole
- Faux Water Tower
- None of these
- Other (please specify)

Optional question (267 response(s), 4 skipped)  
Question type: Checkbox Question

**Q4 Which type of cell equipment colocation do you think is appropriate in Fort Collins?**  
 Check all that apply.



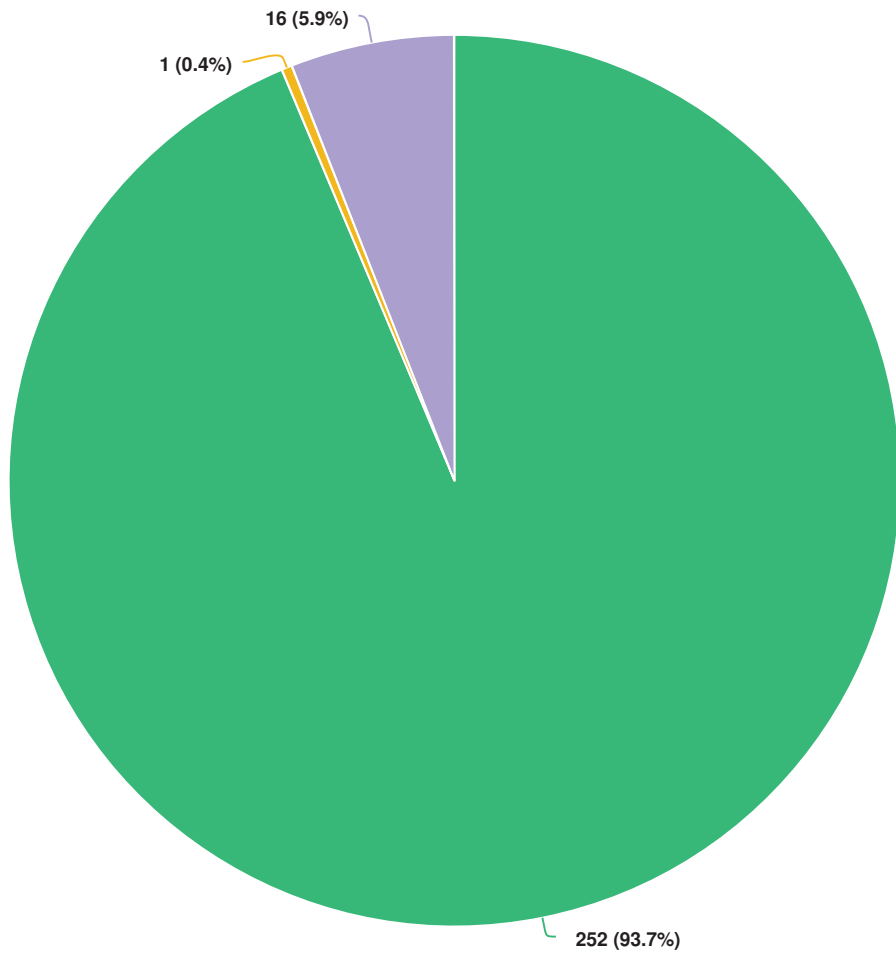
**Question options**

- Utility Attachments
- Water Tanks
- Rooftop Non-Concealed
- Rooftop Semi-Concealed
- Rooftop Concealed
- None of these
- Other (please specify)

*Optional question (268 response(s), 3 skipped)*  
 Question type: *Checkbox Question*



**Q5** Would you support locating concealed cell towers on City-owned property? Analysis has shown that locating facilities on publicly-owned property, such as City parks and golf-courses, could address coverage and capacity shortages in residential areas....



**Question options**

- Yes
- No
- Maybe/Depends

Optional question (269 response(s), 2 skipped)  
Question type: Radio Button Question

**Q6** | If you answered "No" or "Maybe/Depends" to the previous question, please explain why:

Anonymous

3/18/2021 12:20 PM

I feel strongly that you should guide location away from residential areas so if you can put it in city owned properties to reduce the need for residential location that is great. These should all me placed in more commercial related areas. Additionally, these should never be in play grounds or anywhere close to children's activities.

Anonymous

3/22/2021 09:59 AM

I am not especially keen on mixing public and private interests. It has been my experience (govt. Contracting) that the private business comes away with the better deal in these situations.

# WIRELESS TELECOMMUNICATIONS MASTER PLAN - ATTACHMENT 1

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Anonymous

3/26/2021 01:11 PM

If the location was aesthetically appropriate I would support

Anonymous

4/01/2021 10:56 AM

<https://childrenshealthdefense.org/defender/5g-wireless-antennas-private-property/>

Anonymous

4/01/2021 10:59 AM

Not on golf courses or parks

Anonymous

4/01/2021 11:21 AM

Would it cost citizens to do this? Would the city collect any fees from cell service providers? Would city maintenance employees be needed to maintain these towers? Does this cause more tax money to be needed?

Anonymous

4/01/2021 12:37 PM

As long as two conditions were met. First, granting of use of City property is offered equally to all providers without bias. Second, the City receives some reasonable compensation for the use of the property, so City assets are not indirectly subsidizing infrastructure for some carriers, nor is there an incentive to locate on public property vs. leasing from private property owners.

Anonymous

4/01/2021 12:50 PM

Wouldn't want them to look obnoxious.

Anonymous

4/01/2021 08:35 PM

Depends upon where on the property the cell tower is located as well as its ability to blend in with the ascetics of the property

Anonymous

4/02/2021 08:01 AM

How they look

Anonymous

4/02/2021 08:55 PM

As long as it doesn't take away from the function of the city owned property for the public's use

Anonymous

4/06/2021 01:28 PM

due to aesthetics

# WIRELESS TELECOMMUNICATIONS MASTER PLAN - ATTACHMENT 1

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Anonymous

4/06/2021 04:10 PM

It depends on if the limitations are equal to those imposed on private companies.

Anonymous

4/08/2021 07:27 PM

Less emf exposure to humans is top priority

Anonymous

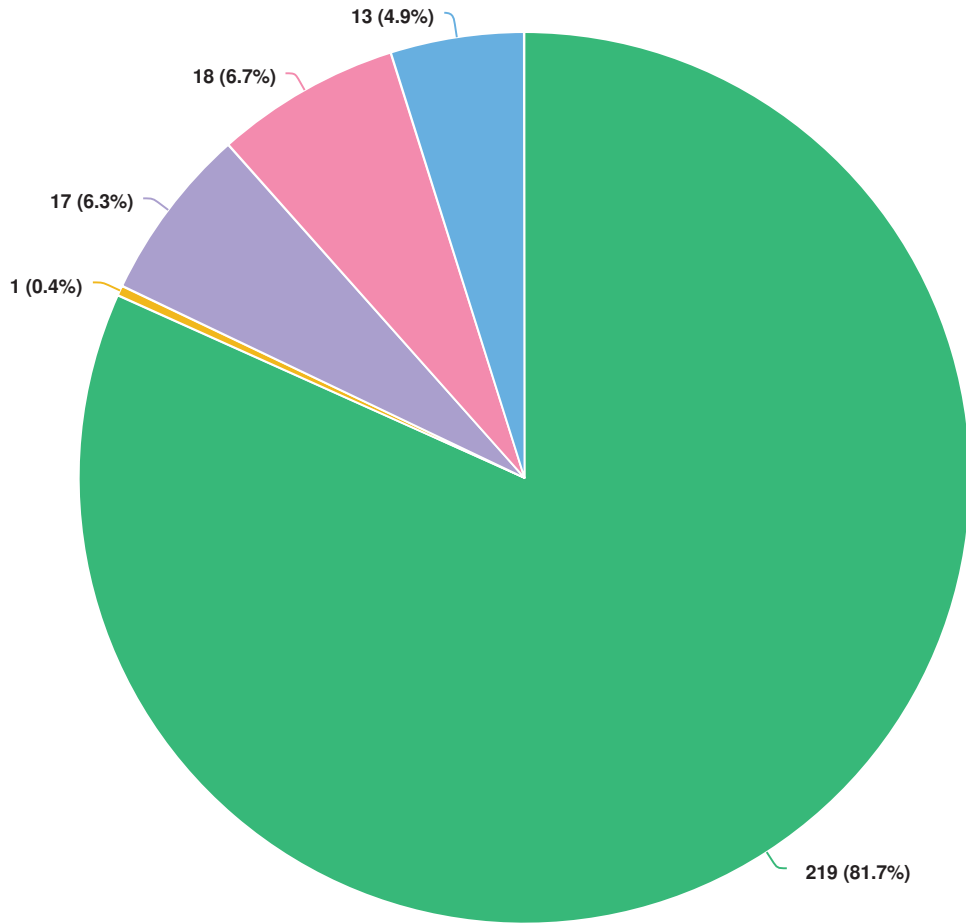
4/09/2021 02:54 PM

It needs to be practical in cost for businesses too. Fort Collins has a history of having unrealistic expectations that impact businesses and drives them away. Good job losing In N Out! They would have brought in some much needed revenues.

**Optional question** (15 response(s), 256 skipped)

**Question type:** Essay Question

**Q7 Choose which best describes you:**

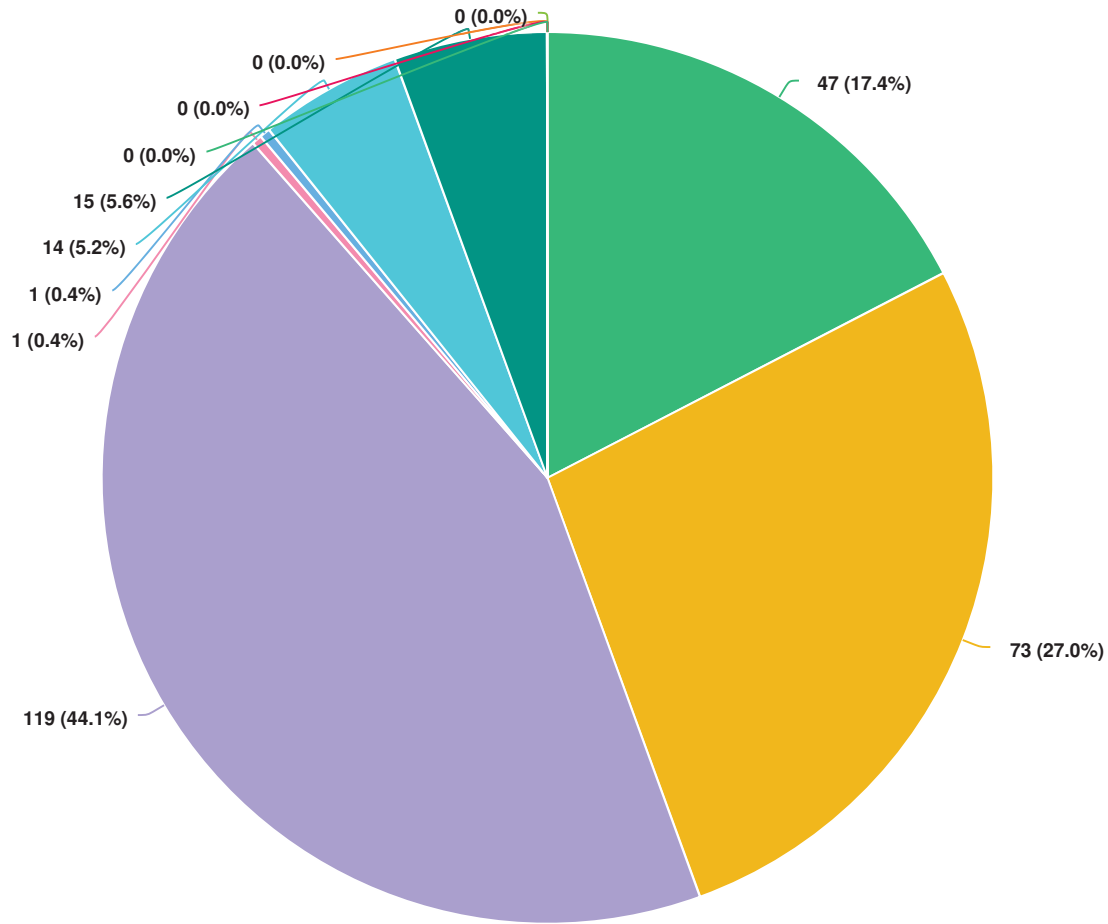


**Question options**

- I live and work in Fort Collins year-round
- I live and work in Fort Collins seasonally
- I live outside of Fort Collins but work in the City
- I live in Fort Collins but work outside of the City
- Other (please specify)

Optional question (268 response(s), 3 skipped)  
Question type: Radio Button Question

**Q8 My Wireless Service Provider is:**

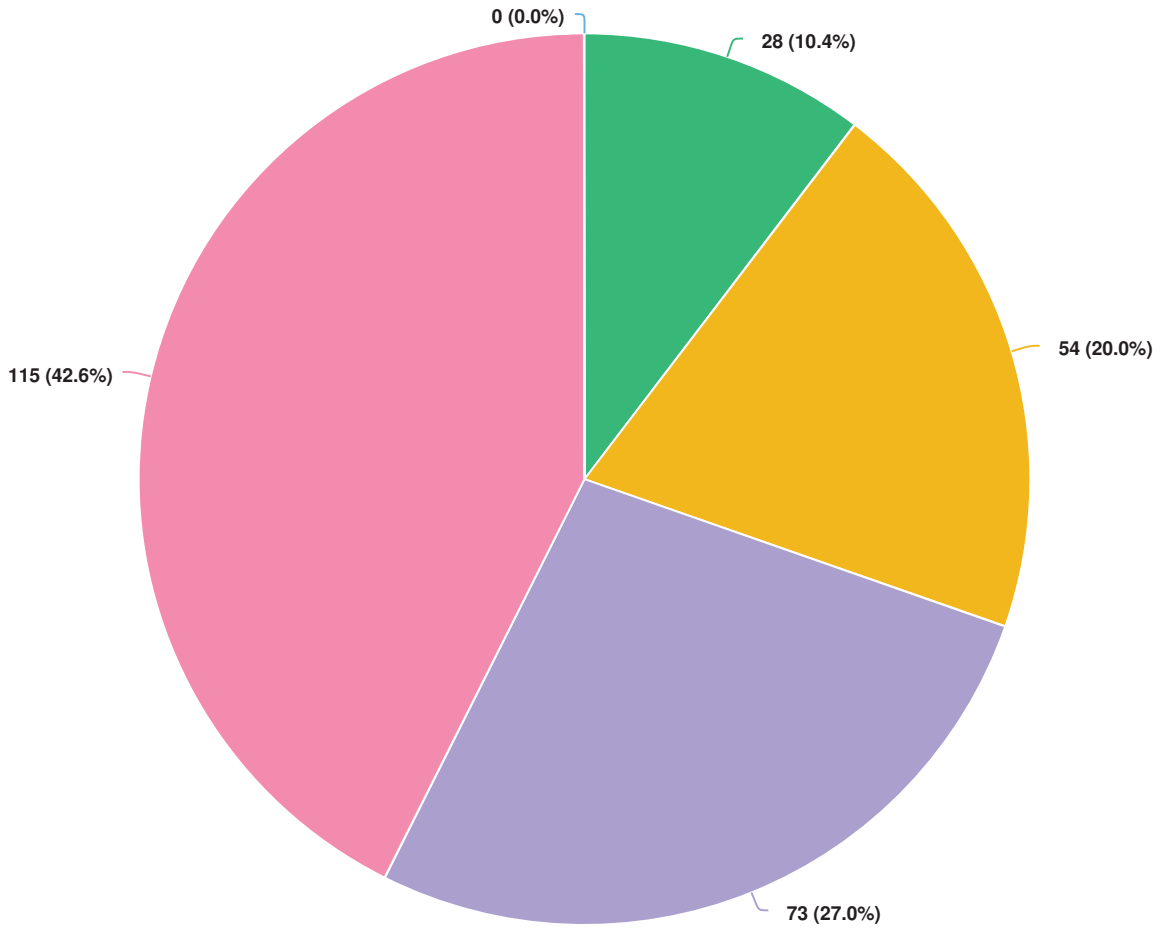


**Question options**

- AT&T
- T-Mobile/Sprint
- Verizon
- Cricket
- Metro by T-Mobile
- Xfinity Mobile
- Other (please specify)
- Boost
- Straight Talk
- Mint Mobile
- Not Applicable/I don't own a wireless device

Optional question (270 response(s), 1 skipped)  
 Question type: Radio Button Question

**Q9** At home my network coverage is:

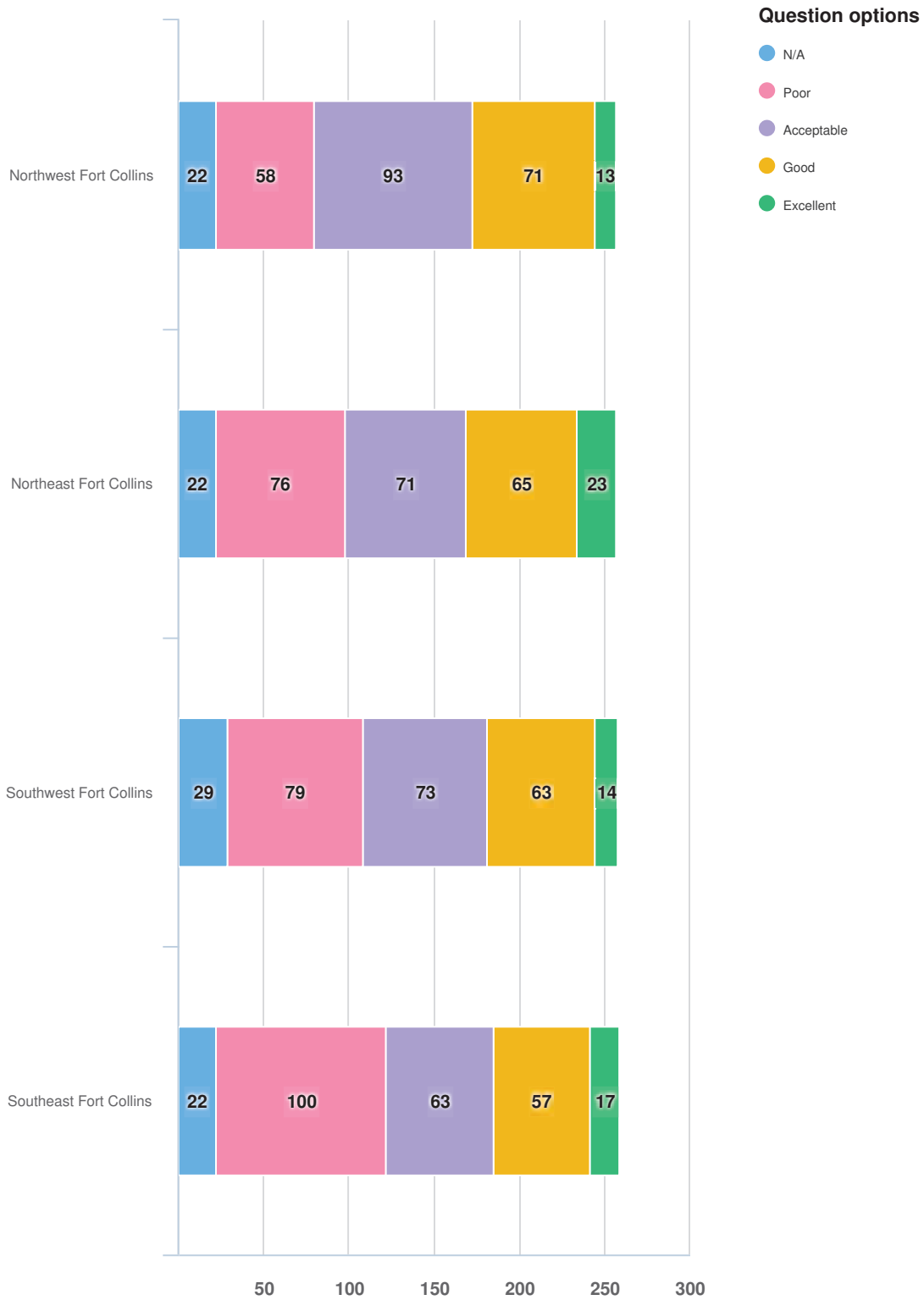


**Question options**

- Excellent
- Good
- Acceptable
- Poor
- N/A

Optional question (270 response(s), 1 skipped)  
Question type: Radio Button Question

**Q10** Please rate your network coverage as you travel around or work in Fort Collins (see map below for reference):



Optional question (263 response(s), 8 skipped)  
Question type: Likert Question

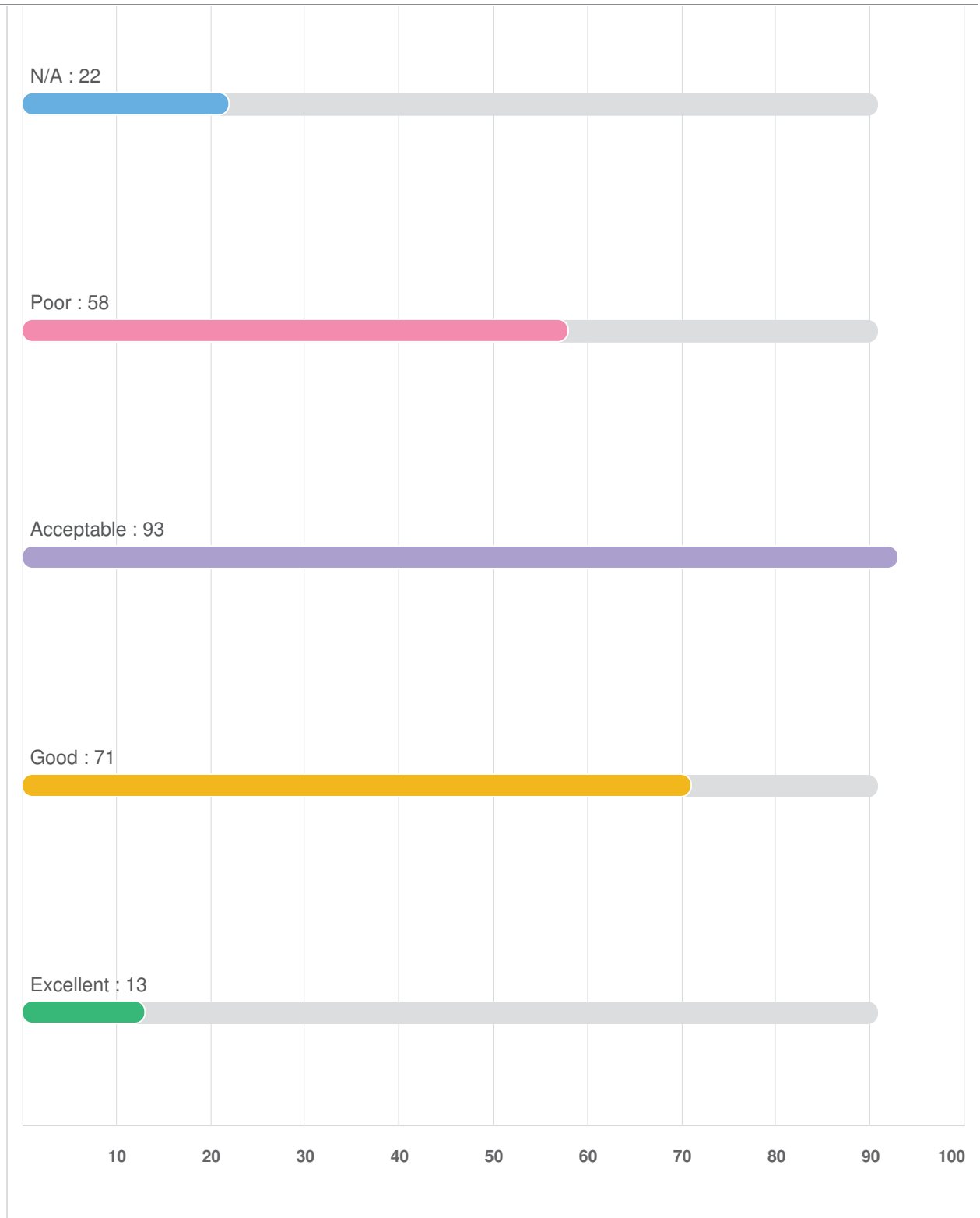


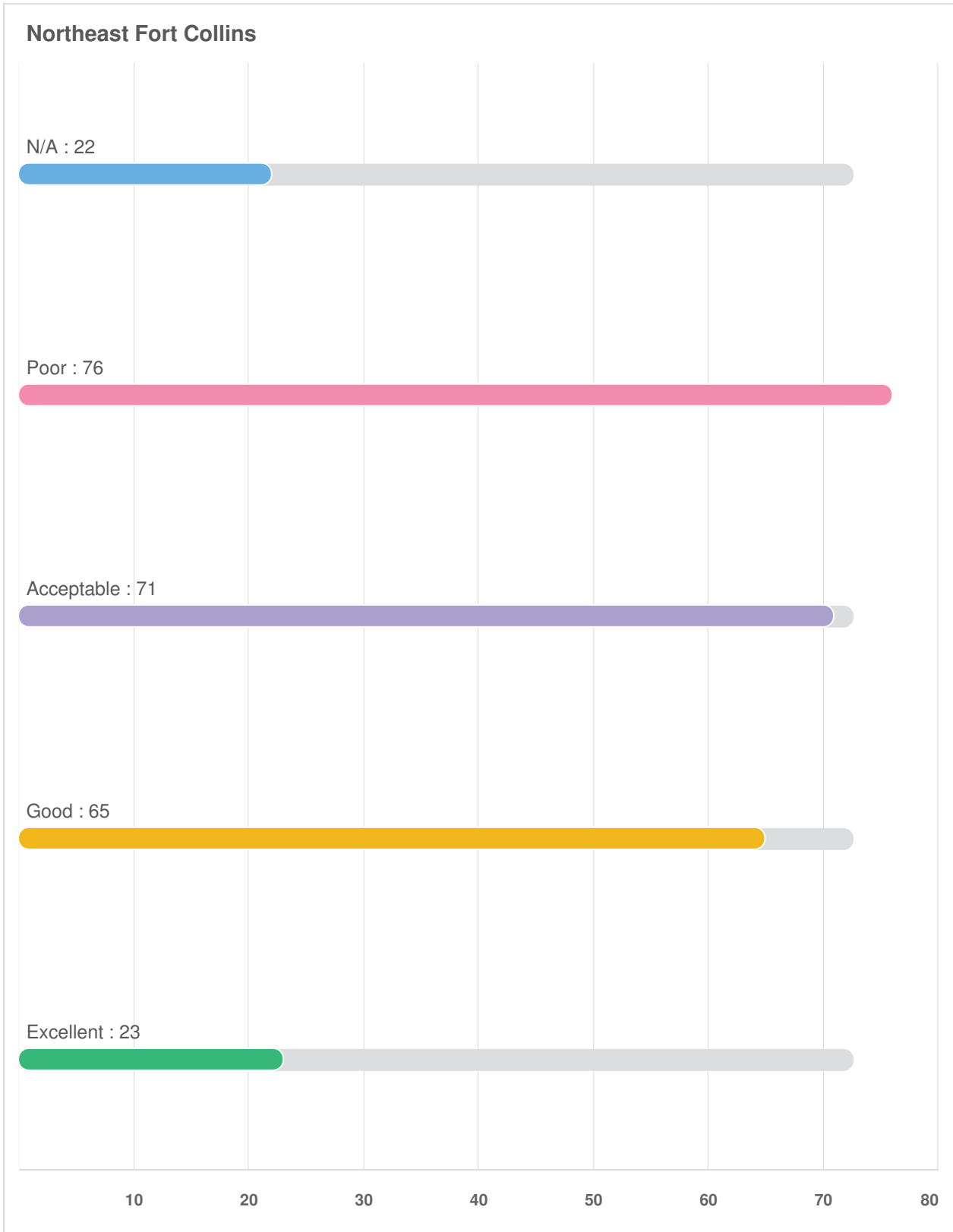
**Q10** | Please rate your network coverage as you travel around or work in Fort Collins (see map below for reference):

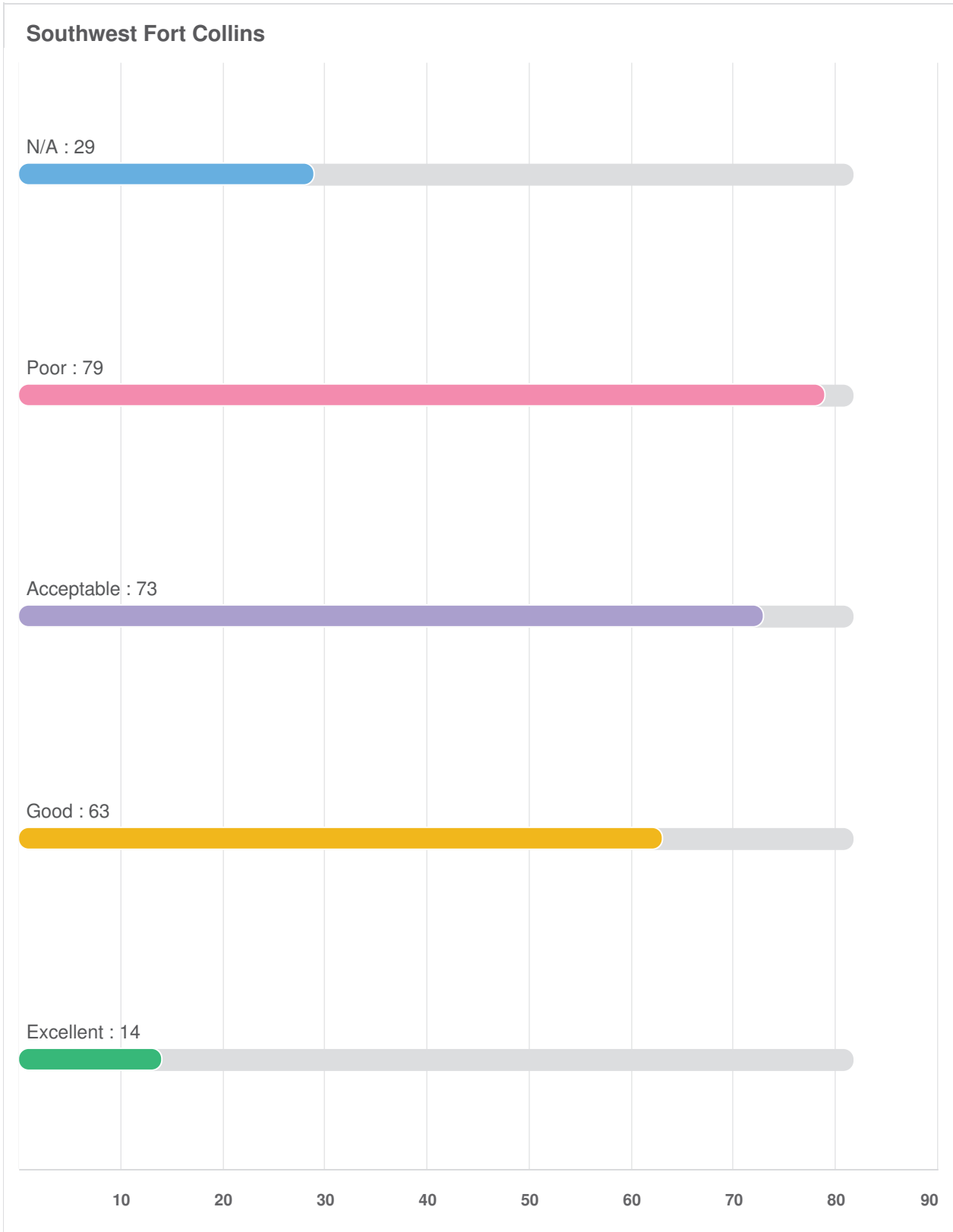
**Northwest Fort Collins**

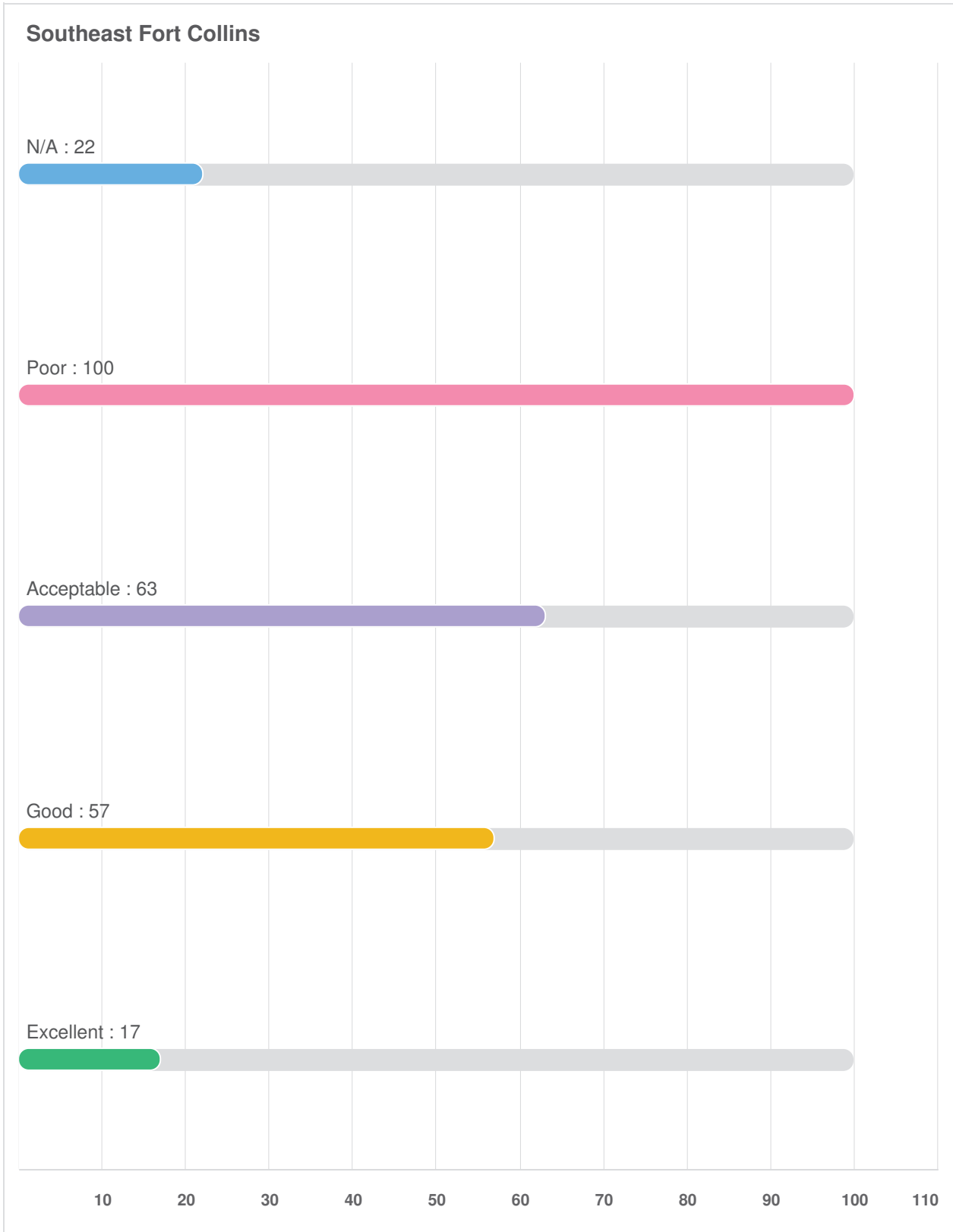
WIRELESS TELECOMMUNICATIONS MASTER PLAN - ATTACHMENT 1

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**Q11** Are there specific areas of town where your service is poor? Please explain below. Example: "I work close to the intersection of Horsetooth and College, and the cell

**service inside my office building is bad."**

Anonymous

3/18/2021 11:47 AM

As you go north from my house on Turnberry and especially in the Maple Hill neighborhood, coverage is bad.

Anonymous

3/18/2021 12:20 PM

I am more concerned about areas that people can rely will not have wireless. Who is monitoring the EMF's. Nobody. With all these additions of cells what about the cumulative effect. We are all just "trusting" that it is below the federal requirements but really no one is watching that. We should require the cellular companies to pay for regular monitoring that the City administers. Other cities are doing this and we should be on the front end of that kind of accountability as well.

Anonymous

3/18/2021 03:00 PM

The intersection of Horsetooth and Shields heading west is terrible. It's a dead zone. My mom lived off of Casa Blanca and my phone would not work in her home nor would internet very well

Anonymous

3/19/2021 01:14 PM

My house in Westchase

Anonymous

3/19/2021 02:02 PM

I live on Homer Drive, southwest of City Park. Coverage for Sprint is highly variable on our property.

wu1836

3/19/2021 03:15 PM

Cell service is terrible near the intersection of Harmony and Shields (by Front Range), on Seneca near Webber Middle School, on Shields in front of Rocky Mountain High School, at the intersection of Taft and Horsetooth and near Super Target/The Group offices, etc on Harmony. We live near the intersection of Taft and Harmony and had such poor coverage on ATT we had to switch carriers. That improved coverage somewhat, but I feel like

WIRELESS TELECOMMUNICATIONS MASTER PLAN - ATTACHMENT 1

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- this area of town is really lacking for coverage in general.
- Anonymous**  
3/19/2021 03:28 PM
- Turnberry, Country Club Road, Richards Lake, Maple Hill, the complete Northeast section of Fort Collins that is continually neglected by all services.
- Anonymous**  
3/19/2021 03:58 PM
- Anywhere around miramont is 1 bar at best
- Anonymous**  
3/19/2021 04:21 PM
- Near the Hearthfire neighborhood on Douglas Road it is poor. South of Harmony on the east side of town it is spotty. Some days are good and some really bad. Inside my office building in Old Town, service is bad.
- Anonymous**  
3/19/2021 06:39 PM
- Maple Hill subdivision has very bad service!
- Anonymous**  
3/20/2021 09:32 AM
- Cell coverage is bad in the Maple Hill subdivision and in the office at 700 Wood St.
- Anonymous**  
3/22/2021 11:16 AM
- I've not had any losses or significant drops of service anywhere within the city limits.
- Anonymous**  
3/22/2021 02:22 PM
- Verizon coverage near Maple/Howes is terrible, as are areas to the west.
- Anonymous**  
3/22/2021 06:33 PM
- Zigler and Harmony is the worst for T-Mobile. Lemay and Harmony doesn't have good coverage in buildings.
- Anonymous**  
3/23/2021 11:38 AM
- Stoney Hill & Niagra (my house) is poor unless I'm upstairs.
- Anonymous**  
3/23/2021 01:18 PM
- My house on Sioux Blvd. I actually had to purchase a personal network extender
- Anonymous**  
3/24/2021 12:41 PM
- My house is located in the Maple Hill subdivision. If I want to talk on my cell phone, I have to go to a specific corner of the house, otherwise the call will drop. Even then, sometimes I

	simply can't use the phone
Anonymous 3/25/2021 08:55 PM	Harmony and County Rd 7, Front Range Village
Anonymous 3/29/2021 01:48 PM	Old Town coverage is abysmal. I live right by PVH and it is even worse.
Anonymous 3/29/2021 02:26 PM	Kechter and lady moon service is very poor. (Oberservatory Village area near Fossil High)
Anonymous 4/01/2021 08:07 AM	Harmony and Ziegler, the area around HP, Target, etc is a major dead spot. I've had three different carriers in town and all have had that same area as a problem. Verizon was the worst, sprint/t-mobile second. AT&T is a little better, and who I am using now.
Anonymous 4/01/2021 08:08 AM	I live on Vanderbilt Ct by Drake and Lemay and coverage is pretty poor in that area. The shopping area by King Soopers on Drake and College has poor T-Mobile reception.
Anonymous 4/01/2021 08:11 AM	No. I have coverage everywhere. Don't think we need anymore towers.
Anonymous 4/01/2021 08:12 AM	I live in Parkwood East and service with all providers we've tried is very spotty here. The area just north of Trilby and College always drops calls when I'm picking my son up from school (Coyote Ridge Elementary).
Anonymous 4/01/2021 08:12 AM	No, fine everywhere
Anonymous 4/01/2021 08:14 AM	Front Range Village (Harmony/Ziegler) is terrible. I have tried AT&T, Verizon, and T-Mobile. Have not noticed issues elsewhere in town.
Anonymous 4/01/2021 08:14 AM	Horse tooth and shields



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Anonymous

4/01/2021 08:16 AM

Our neighborhood (Parkwood East) and the Riffenburgh/ Edora Park areas has very poor Verizon coverage. We used to have AT&T but that had bad coverage at my workplace in the center of town. Please considering enhancing Verizon coverage in Parkwood East/Riffenburgh school areas.

Anonymous

4/01/2021 08:19 AM

I live SW of Harmony and Shields intersection, and my coverage is usually 1 bar -- 2 at most on occasion. Also the area of Harmony between College and Timberline is surprisingly bad. In some spots, 0-1 bar is the best you will get with AT&T.

Anonymous

4/01/2021 08:22 AM

Just west of Nancy Gray and Timberline

Anonymous

4/01/2021 08:25 AM

I live at Drake and Timberline. Any cell coverage within several miles is close to poor at best. I use wifi calling to use my cell at home.

Anonymous

4/01/2021 08:32 AM

Cell service in my house, and especially my basement can be sketchy at times. I live near the intersection of Lemay and Trilby.

Anonymous

4/01/2021 08:38 AM

I live near Timberline and Carpenter and my cell service is poor. It's none existent at Corbett and Harmony (Front Range Village Mall).

Anonymous

4/01/2021 08:41 AM

Only one or two bars at me home near Warren Lake.

Anonymous

4/01/2021 08:51 AM

At harmony and Zeigler coverage is non existent. At my home near Trilby and sheilds I need a micro tower for any reception.

Anonymous

4/01/2021 08:52 AM

Lady Moon and Muskrat Creek Drive

Anonymous

4/01/2021 09:02 AM

I get really frustrated by the cell service in my home. Sometimes it's

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	great. Other times its so bad it's ridiculous.
Anonymous 4/01/2021 09:03 AM	2bars in POET *seems poor
Anonymous 4/01/2021 09:08 AM	I live near Timberline & Vine and my service at home is adequate. I work near Mason & LaPorte and my service is good. When I visit southern Fort Collins - anything on Harmony Rd. is horrible service.
Anonymous 4/01/2021 09:10 AM	I work in the field and there are areas where there is zero cell service. The worst is NE, near the Budweiser plant.
Anonymous 4/01/2021 09:20 AM	North Wood in Pateros Creek subdivision.
Anonymous 4/01/2021 09:26 AM	Just off north wood street north side Pateros Creek housing development on Poudre trail close to rural and so poor coverage
Anonymous 4/01/2021 09:53 AM	Trilby and shields (registry ridge neighborhood) Harmony and Ziegler (woodland park estates)
Anonymous 4/01/2021 09:53 AM	Council Tree complex
Anonymous 4/01/2021 10:29 AM	Service in my neighborhood is poor for most carriers. Registry ridge
Anonymous 4/01/2021 10:42 AM	I live and work in Registry Ridge (Trilby and Shields) and our coverage has always been awful.
Anonymous 4/01/2021 10:56 AM	Super target/Sprouts on Harmony no service.
Anonymous 4/01/2021 11:02 AM	around trilby and timberline needs additional coverage. Also around the target on Harmony.
Anonymous 4/01/2021 11:05 AM	The area around Harmony and Ziegler has little or no reception for T-Mobile customers. And there is

even a T-Mobile store near there.

**Anonymous**  
4/01/2021 11:06 AM  
College near drake and Lemay down to around prospect. My family calls it the Lemay curse because our calls always drop there and we lose data

**Anonymous**  
4/01/2021 11:18 AM  
I have to look at the huge ugly pine tree tower from my home in McClellands Creek (Ziegler/Kechter), but my cell coverage is poor!

**Anonymous**  
4/01/2021 11:39 AM  
I often experience dropped calls at the intersection of Horsetooth and Shields.

**Anonymous**  
4/01/2021 11:51 AM  
There is an AT&T dead zone at Mountain and Shields. I live a block away, and the service isn't good in my home.

**Anonymous**  
4/01/2021 12:17 PM  
Old Town and points north east

**Anonymous**  
4/01/2021 12:37 PM  
I can't think of any inside City limits.

**Anonymous**  
4/01/2021 01:05 PM  
Trailby and shields (near my home)  
UCHealth Harmony campus. (Work)

**Anonymous**  
4/01/2021 01:29 PM  
My son has no coverage in Parkwood just west of intersection of drake and Timberline. We have poor coverage on our house near intersection of Shields and Rolland Moore.

**Anonymous**  
4/01/2021 02:06 PM  
I live in McLellans creek off Kechter, east of Twin Silo Park. Our cell service at home is really bad

**Anonymous**  
4/01/2021 02:12 PM  
There are spots where coverage drops all over town.

**Anonymous**  
4/01/2021 02:57 PM  
At our house it is terrible. We live in Registry Ridge.

**Anonymous**  
4/01/2021 03:29 PM  
On shields st between Horsetooth rd and Swallow always drops calls.

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Anonymous

4/01/2021 03:31 PM

Live 1 block south of martinez park  
with 2-3 bars consistently

Anonymous

4/01/2021 03:48 PM

Neighborhoods off the main streets  
between Drake, Lemay, Horsetooth,  
and Timberline. Anywhere you get off  
the main streets it can be bad.

Anonymous

4/01/2021 03:50 PM

I live near Horsetooth and Shields,  
and have very poor cell service.

Anonymous

4/01/2021 04:40 PM

Fiona's Deli on Harmony - the  
general area around there (including  
inside the store) is a Cricket dead  
spot.

Anonymous

4/01/2021 06:10 PM

Along harmony road from college to  
Ziegler. Also at my home and in the  
registry ridge subdivision. It's not bad  
in shields but once you turn into  
subdivision on bon homme Richard it  
goes to very poor service

Anonymous

4/01/2021 06:44 PM

I live in Registry Ridge near Shields  
and Trilby and the cell service  
throughout the neighborhood is  
awful.

Anonymous

4/01/2021 07:07 PM

Intersection of Lemay and Prospect,  
especially south east corner in  
shopping area.

Anonymous

4/01/2021 07:35 PM

I live in Parkwood East (Creekwood  
Drive), and cell coverage is  
HORRIBLE due to our slightly lower  
elevation.

Anonymous

4/01/2021 07:53 PM

It's bad everywhere

Anonymous

4/01/2021 07:56 PM

I live near Trilby and Shields and the  
coverage is poor for AT&T. Verizon  
is better

Anonymous

4/01/2021 08:18 PM

I wish the coverage was better in the  
foothills west of Fort Collins. I realize  
this is out of city limits, but just want  
to make the issue known.

Anonymous

4/01/2021 08:35 PM

I live just east of Shields at 1207  
Wooded Creek Court. Some days I

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have fair reception in my house,  
other times I must go outside to be  
able to use the cell phone.

Anonymous

4/01/2021 09:01 PM

I live in SW FC and service is poor.

Anonymous

4/01/2021 09:27 PM

Registry ridge neighborhood On  
shields near Kathy framm prairie  
Shields and harmony Huntington hills  
Carpenter and east of Lemay  
Carpenter and east of college

Anonymous

4/01/2021 09:46 PM

Harmony road from I-25 to College  
ave. Trilby & Shields isn't great  
where we live either.

Anonymous

4/01/2021 10:49 PM

I have trouble along Harmony  
between about Timberline and  
Boardwalk. Calls don't go through  
and texts don't get delivered.

Anonymous

4/02/2021 05:06 AM

Shields and Horse tooth / over by  
Sprouts

Anonymous

4/02/2021 07:24 AM

Cell service is generally fine. Internet  
access, however is super spotty and  
particularly dreadful at my house.

Anonymous

4/02/2021 07:48 AM

Anywhere west of Shields is sketchy  
with my iPhone

Anonymous

4/02/2021 08:04 AM

We live just southeast of Timberline  
and Harmony behind the PVH South  
campus. Our service is terrible. PVH  
apparently causes some type of cell  
service dead zone. This needs to be  
rectified to benefit those of us living  
nearby.

Anonymous

4/02/2021 08:15 AM

I live in Brightwater off of Turnberry,  
and my service drops every time I  
pull into my neighborhood, and also  
in my house. I have no service off of  
Corbett near the Target on East  
Harmony.

Anonymous

4/02/2021 12:56 PM

We live in Maple Hill by Budweiser  
and without Wi Fi calling have no  
service in our house.

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Anonymous

4/02/2021 08:55 PM

I live in registry ridge and the cell phone reception is ok. Most of the time we have 2-3 bars.

Anonymous

4/03/2021 07:27 AM

Shields and horsetooth. I almost always cut out or drop calls on my way to work everyday

Anonymous

4/03/2021 07:32 AM

I live near Leshar Middle School and my service at home is poor - generally 1 bar of service.

Anonymous

4/03/2021 08:56 PM

Driving Harmony between Shields and Taft Hill is the worst coverage I get in Fort Collins. I often lose the call.

Anonymous

4/03/2021 10:12 PM

Between Lemay and Timberline around Harmony road (and Horsetooth). Also south of Harmony between Lemay and Timberline - I have horrible reception anywhere in there.

Anonymous

4/04/2021 01:18 AM

Not that I've noticed. But I don't live on my phone.

Anonymous

4/04/2021 10:28 AM

tribly and shields. As soon as I drive in to Registry Ridge, my call is dropped. People park in the side of the road to finish their call. It is a hazard.

Anonymous

4/04/2021 01:58 PM

Front Range Village is very poor for T-Mobile

Anonymous

4/05/2021 08:35 AM

Rigden farm Chase Drive and Exmoor Ln inside my home and outside

Anonymous

4/05/2021 12:56 PM

I work and live close to Tribly and Shields - Registry Ridge. Once I enter my neighborhood my calls are dropped. I have to get to my house and sometimes I can connect but most times I have to switch to wifi in order to make a call. Reception is unbelievably poor at best. It has been a tremendous challenge this past year with working from home. Also, I pray

Anonymous	I don't have an emergency. Im not sure I would be able to get 911. I used to live 5 miles south on Shields in Loveland and Did Not have this problem! This needs to be addressed and adequately resolved so we can get service here in Registry Ridge!
4/05/2021 04:49 PM	Harmony between College and Timberline
Anonymous	Coverage around Lopez Elementary is poor. Cell coverage around Council Tree is poor.
4/05/2021 06:39 PM	
Anonymous	I work near the intersection of Harmony and Corbett and the cell service is bad. Also at the whole Council Tree/ Shopping center.
4/05/2021 06:41 PM	
Anonymous	SW FoCo, Trilby and Shields is terrible. Also no service at Webber Middle School or surrounding neighborhood.
4/05/2021 06:41 PM	
Anonymous	We live off Harmony and Lemay and can't get more than 3 bars inside our apartment.
4/05/2021 06:45 PM	
Anonymous	Harmony and timberline area
4/05/2021 06:50 PM	
Anonymous	Calls are constantly dropped or paused as I walk through the Parkwood neighborhood. Coverage is extremely poor at EPIC.
4/05/2021 06:50 PM	
Anonymous	Ugh...forgot the name of the shopping center off of Harmony where Target, sprouts, the library, world market, etc is.... But I have NO service right there!
4/05/2021 06:52 PM	
Anonymous	Everywhere. Worst cell service I've had in a decade.
4/05/2021 06:53 PM	
Anonymous	Council Tree Village and near my sister's home around Shields and Harmony always give me troubles.
4/05/2021 06:53 PM	
Anonymous	Trilby and college. Service is poor. I

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4/05/2021 07:06 PM

live and work at home for now.

Kristenlocke

4/05/2021 07:15 PM

Along harmony road all the way through town

Anonymous

4/05/2021 07:09 PM

Ziegler and Harmony...Harmony east of College. Lemay and Drake area

Anonymous

4/05/2021 07:11 PM

Near Super Target, Ziegler between harmony and Horsetooth.

Anonymous

4/05/2021 07:16 PM

I live at shields and trilby and have no to very poor service depending on where I am in the neighborhood

Anonymous

4/05/2021 07:16 PM

Old Town

Anonymous

4/05/2021 07:23 PM

Lemay and horse tooth at warren park as well as shields and horse tooth have no Verizon cell service.

Anonymous

4/05/2021 07:25 PM

I used to live near Horsetooth and Shields and cell coverage is non existent. Couldn't use my phone at all without being connected to WiFi

Anonymous

4/05/2021 07:34 PM

Some areas around Rigden Farm neighborhood have dead zones. Edora Park has no coverage most of the time and Lemay and Prospect and the surrounding area is a dead zone. Note: this is time and season dependent. Late afternoon seems to drop data services in these spots even more problematic as the season gets warmer.

Anonymous

4/05/2021 07:35 PM

I live in Bucking Horse and our signal is poor.

Anonymous

4/05/2021 07:41 PM

Corner of Willox and college is a dead zone. Have tried to cal 911 from there and got no connection

Anonymous

4/05/2021 07:43 PM

.1 mile east of I 25 and Mulberry.



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Anonymous

4/05/2021 07:45 PM

Front Range Center, Foothills Mall area & Costco area are awful.

Anonymous

4/05/2021 07:47 PM

Near the court house is bad, near the sheriff's office has no coverage, near liberty common high school has poor service.

Anonymous

4/05/2021 07:58 PM

Outside Rocky Mtn High and the intersection of Horsetooth and Shields. My calls drop everytime. It's especially frustrating if you have a child that attends school in the Seneca area or at Rocky because you can't call ahead to let them know you are on your way of you are in the area.

Anonymous

4/05/2021 08:07 PM

We never have service when at the breweries (New Belgium, ODell's, Horse and Dragon)

Anonymous

4/05/2021 08:17 PM

Live in Richard's Lake and have calls drop in my front yard and neighborhood and around Long Pond. Also have little to no reception at Twin Silo Park and Council Tree shopping center.

Anonymous

4/05/2021 08:20 PM

I always have good signal but performance is very bad on Shields, Home Depot areas on Lemay and most parts of town.

Anonymous

4/05/2021 08:35 PM

Maple hill, Hearthfire

Anonymous

4/05/2021 08:39 PM

Driving down college by the mall makes my call drop

Anonymous

4/05/2021 08:41 PM

SE Fort Collins east of about Kohls it gets a lot worse. But it's worse in general all over town the last few months.

Anonymous

4/05/2021 08:42 PM

We have lived off of Mountain/Laporte and Shields (Bungalow CT) and service is horrible with both Verizon and ATT, multiple dead spots

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Anonymous  
4/05/2021 08:44 PM

I live in Quail Hollow (Overland and Drake). I have had AT&T and Verizon. Neither has good coverage at home. Verizon has gotten worse over the past year or so.

Anonymous  
4/05/2021 08:47 PM

The area by Council Tree is horrible, it's a complete dead zone.

Anonymous  
4/05/2021 08:56 PM

Lemay All the way across

Anonymous  
4/05/2021 08:57 PM

I deliver on harmony a lot and majority of the time, I can't mark my orders as delivered because I have zero cell service.

Anonymous  
4/05/2021 08:58 PM

Service around Beattie elementary is bad. Service all along Horsetooth is awful. I have no service around council tree. Service at and around Harmony Surgery Center is terrible and that's a problem in an emergency.

Anonymous  
4/05/2021 08:58 PM

All along Overland between Drake and Mulberry, CSU Foothills campus, Drake and College, Shields and Mulberry, Harmony and Ziegler, Webber Middle School, Beattie Elementry School, Drake and Shields

Anonymous  
4/05/2021 08:58 PM

Horsetooth and shields is a dead zone and most of west field park has really bad service

Anonymous  
4/05/2021 09:05 PM

I live in the SW part of town. I commonly drive east on Horsetooth from Taft to Shields then head south on Shields. I always lose service near the intersection of Horsetooth and Shields and it doesn't pick back up until I'm near Shields and Harmony.

Anonymous  
4/05/2021 09:14 PM

Harmony & Stover has a Sprint blackout zone. Same at JFK home depot. This is why we switched from Republic to Google Fi

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<p>echinonny 4/05/2021 10:15 PM</p>	<p>I live at the Sunflower Active Adult Community (Mulberry and Sunchase Drive). Cell phone coverage is extremely poor.</p>
<p>Anonymous 4/05/2021 09:14 PM</p>	<p>East of lemay from prospect to horsetooth is bad</p>
<p>Anonymous 4/05/2021 09:17 PM</p>	<p>Lemay</p>
<p>Anonymous 4/05/2021 09:20 PM</p>	<p>I work off of 54G at the elementary school and service at the school is really bad.</p>
<p>Anonymous 4/05/2021 09:23 PM</p>	<p>My neighborhood, brown farm, has very spotty service</p>
<p>Anonymous 4/05/2021 09:34 PM</p>	<p>Shields between laporte and CSU, shields @ harmony are dead zones. Laporte at overland is ok but could be better, my calls cut out sometimes</p>
<p>LEP 4/05/2021 10:15 PM</p>	<p>I live near Co Rd 15 and Co Rd 94 and the cell service is horrible.</p>
<p>Anonymous 4/05/2021 09:37 PM</p>	<p>At sheilds and Horestooth rd and around the spring field area. The speed with T-Mobile is liw for d/l and u/l is non existence.</p>
<p>Anonymous 4/05/2021 09:39 PM</p>	<p>Mulberry and CR 5</p>
<p>Anonymous 4/05/2021 09:41 PM</p>	<p>Lots of places at CSU. Parkwood East neighborhood.</p>
<p>Anonymous 4/05/2021 09:47 PM</p>	<p>Stonehenge/Parkwood neighborhood has terrible coverage. Same with area along Lemay between Riverside and Drake.</p>
<p>Anonymous 4/05/2021 09:50 PM</p>	<p>Near PVH it's a dead zone</p>
<p>Anonymous 4/05/2021 09:56 PM</p>	<p>South of Harmony near I-25 seems particularly spotty. In my neighborhood (Rigden Farm) service</p>

Anonymous

4/05/2021 10:00 PM

with Verizon is sometimes weak on my upstairs floor...with AT&T it was even worse with many dropped calls.

I live at battlecreek & Timberline and my AT&T serves is poor both inside & outside

Anonymous

4/05/2021 10:01 PM

I live near the intersection of Lemay and Harmony and I have very poor cell service.

Anonymous

4/05/2021 10:09 PM

I live southwest of Trilby & Shields and had to ditch Verizon (in favor of TMobile) because Verizon's service/coverage deteriorated significantly last year.

Anonymous

4/05/2021 10:10 PM

I live in Maple Hill and the cell service is horrible - almost no service is some areas with several dead spots. Poor to very poor

Anonymous

4/05/2021 10:11 PM

By edora park!! Absolutely horrible when we lived in the apartments off riverside and prospect.

Anonymous

4/05/2021 10:14 PM

Harmony/Ziegler has been a bandwidth issue for years and years. Coverage is fine but there aren't enough towers to help the bandwidth/through-put for the number of people concentrated in that area.

Anonymous

4/05/2021 10:18 PM

Very spotty on i25, airports, near hospitals, no service around Horsetooth res, poor service NW of town near Laporte, no service near super target

Anonymous

4/05/2021 10:19 PM

The entire square mile of timberline and harmony is extremely poor to no signal at all. And the old town area completely crashes on the weekends and during large events. That's unacceptable and potentially dangerous if there was ever an emergency.

Anonymous

Shields from mulberry to harmony

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4/05/2021 10:28 PM

never gives me a usable connection.

Ah234

4/05/2021 11:15 PM

Along Harmony. Around Fossil Creek Park

Anonymous

4/05/2021 10:35 PM

I work near Prospect & Lemay and the Verizon cell coverage is almost non existent. I used to live at Prospect & Riverside and had the same problem there and in Edora Park. Other carriers seemed to do fine there but Verizon was terrible. That being said I haven't encountered any cell service that is good near the Lemay Prospect intersection area.

Anonymous

4/05/2021 10:40 PM

Bucking Horse bw jail and police station is a dead zone. I have VZw and ATT. Limited coverage with VZ and spotty with ATT. Downtown and Front range village can be super saturated at times as we

Anonymous

4/05/2021 10:49 PM

Lemay, Harmony and college

Anonymous

4/05/2021 11:06 PM

Stuart and Lemay is where I work. Service is awful

Anonymous

4/05/2021 11:08 PM

SW Fort Collins terrible cell service, especially in the Registry Ridge neighborhood, Trilby/Shields. Multiple disconnections, cannot call out. It is so bad, it is almost impossible to make calls and if do get a call I have to go to a corner of house to stay connected.

Anonymous

4/05/2021 11:10 PM

Cell service along Timberline from Prospect to Horsetooth is terrible during business hours

Anonymous

4/05/2021 11:32 PM

Verizon service is terrible in our neighborhood, between Horsetooth and Harmony along and near Shields (both east and west sides).

Anonymous

I lived in Harmony Village near Front

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4/06/2021 12:42 AM

Range mall. The service is slow and spotty especially any where in the front range mall.

Anonymous

4/06/2021 01:32 AM

The intersection of Harmony and Taft Hill, the intersection of Drake and Taft Hill. Taft Hill from Harmony to Trilby. Overland Trail from Horsetooth all the way up to Laporte. ( basically most of Taft Hill throughout the City, and Overland Trail)

Anonymous

4/06/2021 05:59 AM

Harmony and Lemay is very poor service

Anonymous

4/06/2021 06:09 AM

Anywhere north of Harmony up through Old Town between Shields and Timberline has unacceptably poor service. I work near Phemeister and Centre and while the service was never good, it has noticeably declined over the past few months. All of my coworkers with Verizon have noticed, too. An additional location is on Summit View Rd between Mulberry and Prospect. There's a dead zone in SW Fort Collins on both Taft Hill and Shields. Coworkers depend on a Verizon hotspot to work on their computers in the truck while being driven to client locations and service will often drop.

Heather Mayotte

4/06/2021 07:15 AM

I live near the corner of Horsetooth and Seneca. My family's cell service is so bad we have to use the WiFi call feature and even then Calls don't always go through or they are dropped. I am concerned that if we had to dial 911 it may not go through.

Anonymous

4/06/2021 06:20 AM

North side near campus is poor.

Anonymous

4/06/2021 06:21 AM

Baseball fields at Edora and Fossil Creek Park; Intersection of Mulberry & Riverside

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Anonymous

4/06/2021 07:15 AM

Pretty much anywhere I go, my new T-Mobile service is subpar, but I can make calls. Seems 5G service is not as fast as I thought it would be. In FOCO, my Sprint coverage and 4G was better. Once the merger and I think they started shutting the Sprint Towers down, my service started to go down. Was told it was phone, have the latest, but is still not that good. I live and currently work between Drake and Lemay off Centennial Rd.

Anonymous

4/06/2021 07:34 AM

Taft Hill near the landfill

Anonymous

4/06/2021 08:01 AM

Service down in the shopping center by horsetooth and Ziegler is basically non-existent. Additionally, service at my home is awful (near Mulberry/Timberline)

Anonymous

4/06/2021 08:21 AM

I live in the apartments to the South of the police station and my coverage is terrible. It fluctuates during the day which I assume is an impact of police radio signals.

Anonymous

4/06/2021 08:24 AM

Norther FoCo to Wellington is poor.

Anonymous

4/06/2021 09:00 AM

Stonehenge subdivision has terrible coverage on all providers

Anonymous

4/06/2021 09:03 AM

T-Mobile coverage in the Lowe's and Target stores & parking lots by Harmony and Ziegler is non-existent. Once you get to Harmony it picks up again.

Anonymous

4/06/2021 09:12 AM

Kechter and Ziegler in fossil lake the cell service is awful. We have to have a booster in our house for t-mobile. None of our friends with att get service in our house.

Anonymous

4/06/2021 09:59 AM

Prospect/Lemay

Anonymous

4/06/2021 10:19 AM

Prospect and Lemay All of North  
East Fort Collins Bucking Horse

Anonymous

4/06/2021 10:25 AM

Along I-25, I work in Cheyenne and  
my calls drop constantly even on my  
exit to my house (Mountain)

Anonymous

4/06/2021 10:33 AM

Along Horsetooth Road (Taft to  
College), very spotty/low signal in Old  
Town (W of Stover, North of  
Prospect), poor signal around my  
neighborhood (1 to 2 bars in Brown  
Farm)

Anonymous

4/06/2021 10:38 AM

T-Mobile is poor to acceptable in  
most areas. Downtown is usually  
good.

Anonymous

4/06/2021 10:44 AM

Driving west on Drake from College  
toward Shields, then north north on  
Shields, coverage drops off. Inside  
City Hall is often bad. Seems that my  
carrier was bad in the past couple of  
years (i.e. no coverage inside my  
home at Drake/Lemay at all, but it  
got better within the past 2 years).  
Various providers seem to rotate who  
has good coverage and who does  
not.

Anonymous

4/06/2021 10:48 AM

I worked, and will soon work again,  
at the government buildings on  
Centre south of Prospect. The east  
side of the building has significantly  
better coverage than the west side.

Anonymous

4/06/2021 11:14 AM

I work off of Trilby between College  
and Shields, reception is terrible  
there.

Anonymous

4/06/2021 11:25 AM

I lived at the intersection of West  
Stuart and Corriedale Dr. and the cell  
service inside my home was bad. I  
live at the intersection of Mathews St.  
and Laurel and the cell service inside  
my apartment is bad.

Anonymous

4/06/2021 11:29 AM

Prospect/Stuart and Prospect/Pitkin  
by Leshner



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Anonymous

4/06/2021 12:09 PM

South of Ketcher, the coverage is almost non existent. Anything near the harmony corridor is spotty at best.

jared\_smartt\_92

4/06/2021 01:16 PM

Near Harmony and Ziegler! Inside or even outside of buildings in that entire area.

Anonymous

4/06/2021 01:22 PM

The corner of Harmony and Zeigler and harmony and front range village is awful

Anonymous

4/06/2021 01:50 PM

The intersection of Shields and Horsetooth where my kids go to school has almost no service whatsoever

Anonymous

4/06/2021 04:10 PM

I am west of Anhiser Buche. A cell tower Was installed a half mile to my north and never turned on. There are alot of police living in the community north of us. They need cell support.

Anonymous

4/06/2021 04:13 PM

I work at Front Range Community College and we get basically no service at all inside any of the buildings. The service by my home near Timberline and Harmony is also pretty bad with a lot of dead spots.

Anonymous

4/06/2021 05:05 PM

Horsetooth/shields area is almost nonexistent signal. Lemay/harmony area near hotels is very weak signal.

Anonymous

4/06/2021 06:17 PM

Fossil Lake Ranch/Lady Moon Drive. Outside EVERY school. Council Tree area.

Anonymous

4/06/2021 06:26 PM

Shields and casa grande, shields and horsetooth

Anonymous

4/06/2021 06:28 PM

Mosaic community (Vine & Timberline areas) have to rely on home wifi to use cell phone

Anonymous

4/06/2021 06:52 PM

Horsetooth and Shields area is horrible

Anonymous

4/06/2021 09:52 PM

Prospect and overland at&t is non existent. Harmony road is very poor,

	driving in town, I always get dropped calls.
Anonymous 4/06/2021 10:02 PM	My cell signal is bad in my apartment on Yearling Dr. I also have bad coverage at work and the entire Frontrange shopping area. There seem to be many dead spots on Prospect east of College. Finally, cell towers were overloaded during Taste of Fort Collins in 2018 where someone had to drive all the way to Lemay to send a text.
Anonymous 4/06/2021 10:39 PM	Old Town AT&T is poor.
Anonymous 4/06/2021 11:02 PM	The outdoor mall at Harmony and Ziegler, specifically around the target but really in the whole complex has terrible service for multiple providers. I also feel like there is a lot of locations in town that T-Mobile says it has 5G service but it takes forever to load anything
Anonymous 4/06/2021 11:46 PM	Seems to be dead areas around Lemay and Swallow. Inadequate service northeast around Mountain Vista/Turnberry and surrounding neighborhoods. Without WiFi calling we couldn't make calls.
Anonymous 4/07/2021 03:50 AM	I go to Home Depot on Mulberry and can't get service for GPS until I start driving east on Mulberry.
Anonymous 4/07/2021 08:36 AM	The cell coverage in my neighborhood (northeast of Timberline and College) is so bad that I can barely make phone calls unless I use wifi-calling on my internet connection. The coverage in the EPIC/Prospect and Lemay area is similarly terrible.
Anonymous 4/07/2021 08:43 AM	Drake and Eastwood Drive is poor with Comcast service.
Anonymous	Mosaic neighborhood at Sykes and

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4/07/2021 09:22 AM

timberline.

Anonymous

4/07/2021 09:43 AM

The area surrounded by Shields, Drake, College and Prospect is really bad. I have no service at Centre and Shields.

Anonymous

4/07/2021 02:10 PM

Ever since moving here to Northeast Fort Collins over 13 years ago my cell reception has been poor to non-existent! AT&T sent me a microcell to boost my service at home about 10+ years ago which has helped a lot. However, if I want to go out and take a walk, or the microcell is off for some reason there's little to no service. My neighborhood (Maple Hill) has many residents who have reported great to little to no service depending on where they live here with many different providers. There was even a case of a resident dying in his yard because the spouse and a neighbor had no cell reception to call 911! The neighbor had to run to her home to call, and by the time first responders got here it was too late! How'd you like that to happen to you or one of your own relatives?! I've even tried different providers to see if they can give me better service to no avail. I lived on North College (the west side in a trailer court) for several years and had no issues until moving to Maple Hill neighborhood. I feel strongly it's due to lack of towers in this area (or the severely degraded one serving our area) and have had multiple calls with AT&T, been to their stores multiple times to try and remedy the situation to no avail. All I want is good coverage here without the use of wifi! In October 2020 things got even worse (AT&T told me it was because they're reprogramming the towers in preparation for 5G) and I can't even

get pictures and some text messages without having to press "download" which takes time, and some of those never even get through! It's been extremely frustrating for over 13 years living here, I feel like I'm in a 3rd world country. Just fix it!

Anonymous

4/07/2021 02:53 PM

Rampart Road reception is terrible.

Anonymous

4/07/2021 05:01 PM

Maple Hill neighborhood has extremely terrible reception. Our phones need to be on wifi in order to make any calls whatsoever.

Anonymous

4/07/2021 10:32 PM

Everywhere at Horsetooth Lake or near the hospital is terrible! Coverage when parked by RMHS is also very bad (and a bit unsafe IMO). Anywhere east of I-25/south of Harmony can be spotty. It's probably not within the city's purview but the reception in Poudre Canyon is non-existent (also dangerous).

Anonymous

4/08/2021 07:27 PM

Super target area I have no signal

Anonymous

4/08/2021 09:29 PM

Old Town is the worst. The farther you get from Old Town the better the coverage.

Anonymous

4/08/2021 10:12 PM

Norther Fort Collins, my service is horrible. I live in Maple Hill neighborhood and I don't even get reception at my home or in my neighborhood.

Anonymous

4/09/2021 06:48 AM

Taft Hill Road and Horsetooth. I have to walk around outside of Olander to try to find a signal.

Anonymous

4/09/2021 02:54 PM

The entire East half of Fort Collins is awful! I get better coverage in the ski towns than in Fort Collins. Coverage was fine decades ago when I was in college, obviously you have massively failed somewhere along the lines in the last two decades!

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Anonymous

4/10/2021 12:52 PM

My sister lives on Shields and Horsetooth, and the reception at her place is terrible. Driving on Harmony and Shields, going to her place the cell service drops out too.

Anonymous

4/10/2021 12:57 PM

I live on Horsetooth and Shields and have the worst reception. I have to rely on Wifi and use other platforms rather than cell service. To be honest, all of Horsetooth is pretty horrible. I work for TransFort as an operator, Portner is pretty horrible too. There are a lot of places in town that are spotty at best.

Anonymous

4/10/2021 06:23 PM

PSD admin buildings in NW FC is bad, and the council tree area is really bad

Anonymous

4/11/2021 08:43 PM

Fossil ridge high school Area

Anonymous

4/12/2021 01:08 PM

Coverage in Old Town used to be poor (not sure if it's better now) and by the Target in NE Fort Collins is non-existent for T-Mobile.

Anonymous

4/12/2021 01:32 PM

Cell service doesn't work in Poudre High School. My kids are all graduated now, but it was a problem when I needed to alert them of something when they were attending (like that I was outside waiting for them... and they'd never get the message).

Anonymous

4/12/2021 02:25 PM

Work on West Elizabeth corridor, service is very spotty in the area.

Anonymous

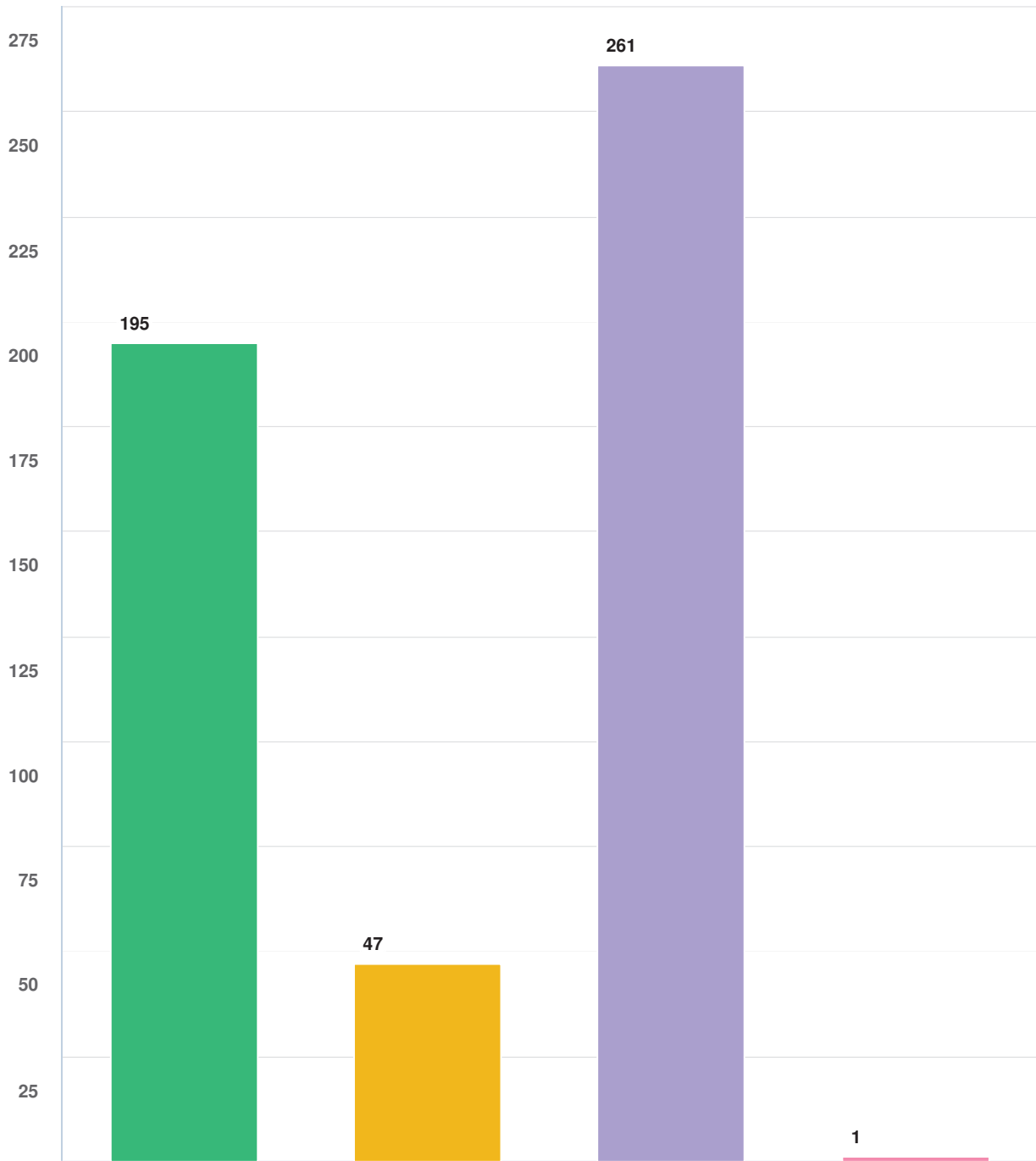
4/13/2021 07:20 AM

The intersection of Horsetooth and Shields is a near dead spot. East of Lady Moon on Ketcher is usually dead. The far south west corner of town (almost in Laporte) is close to dead as well.

**Optional question** (227 response(s), 44 skipped)

**Question type:** Essay Question

**Q12** I rely primarily on my mobile device and corresponding service for the following (check all that apply):

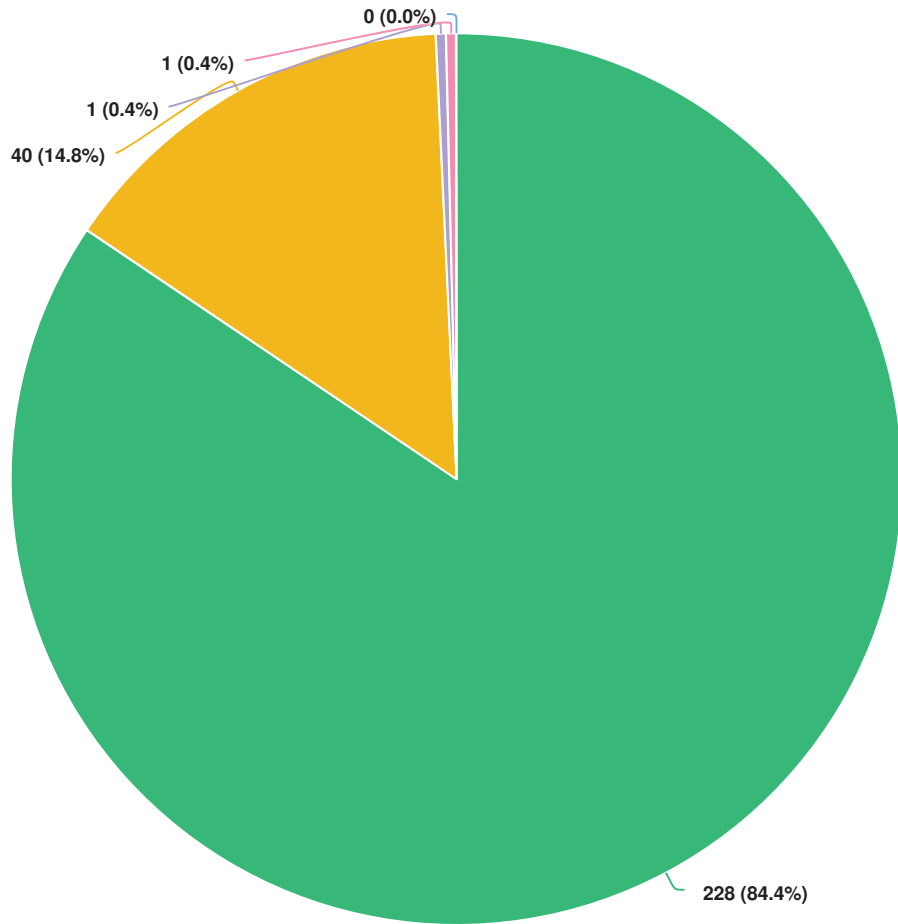


**Question options**

- N/A
- Personal Use/Entertainment
- School
- Work

*Optional question (270 response(s), 1 skipped)  
Question type: Checkbox Question*

**Q13** The quality of wireless service is important to me:



**Question options**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Optional question (270 response(s), 1 skipped)  
Question type: Radio Button Question

**Q14 Please rate the following aspects of Wireless Infrastructure from the most to least important to you:**

OPTIONS	AVG. RANK
Excellent Connectivity	1.36
Balance of Connectivity and Aesthetics	2.01
Aesthetics	2.98
Fewer Towers	3.61

*Optional question (267 response(s), 4 skipped)  
 Question type: Ranking Question*

**Q15 Any other comments or suggestions?**

Anonymous

3/18/2021 11:47 AM

There was no mention here about broadband services through Connexion or others. For those of us with poor wireless service for whatever reason, fiber-delivered internet provides reliable fast service in our homes. Wifi calling works in our homes. There needs to be a balance between connectivity and the way this technology affects people who are electromagnetically sensitive.

Anonymous

3/18/2021 12:20 PM

I would have been interested to see questions not just about connectivity and aesthetics. There are some areas of town that these simple should not be allowed. Residential. Additionally, the allowing of cells regardless if you can see them or not should not be allowed every 150'. That isn't needed and it litters our town up visually and electronically. You have room to increase that



without having an issue at the Federal level. Provide stronger local controls so that you can protect our community. Fiber-you are investing all this money into fiber but then are pushing the wireless. You should rethink you marketing to show the benefits of fiber (many) and this would help that utility and reduce the need fir so much wireless. Educate. Don't just let the wireless companies dictate what our City is going to do.

Anonymous

3/19/2021 01:14 PM

It is so frustrating to see television ads pushing 5G service - at my house, in town, in SE FoCo, I just wish I had 1G service. If I lived up in the mountains somewhere I guess I might expect marginal service, but not in the middle of a modern medium-sized city!

Anonymous

3/19/2021 03:28 PM

The city can not continue to pass development projects in the Northeast area of Fort Collins and continue to neglect the area, i.e. lack of all services in this area.

Anonymous

3/19/2021 03:58 PM

We need a tower in fossil park / miramont coverage is horrible

Anonymous

3/22/2021 09:59 AM

In general I have not experienced issues with connectivity in fort collins. In general when a private business needs/wants govt. support I would like the govt entity to get the best outcome for the citizens. I don't forsee costs going down, so stand strong on asthetics.

Anonymous

3/22/2021 11:16 AM

No suggestions. As mentioned before, though it isn't a problem I've ran into often here, I'm both excited and pleased that the city is taking steps to reinforce this service and make it a priority.

Anonymous

3/23/2021 11:38 AM

I didn't know that there were concealed and semi-concealed

towers. Excellent idea! I'm all for more of those, since they solve esthetics issues and are already nice and tall. They would also seem cheaper to install.

Anonymous  
3/23/2021 01:18 PM

Why not provide wireless access to the CONNEXION network for subscribers so that wifi calling could be used city wide?

Anonymous  
3/29/2021 02:26 PM

We desperately need better cell service. From what I understand the service is poor all around town, although I experienced it primarily in the southeast part of town, near Fossil ridge high.

Anonymous  
4/01/2021 08:07 AM

The tower that was installed in southeast Fort Collins, by McClellands Creek and Fossil Lake is atrocious. Not only is it huge, but the fake tree look is totally out of place. It severely detract from nearby property values. Would much rather see a normal tower, which would blend in way better. Realize that is probably county land and not in the city, but if you're looking for an example of what not to do, look no further.

Anonymous  
4/01/2021 08:11 AM

I don't think we need any more towers. My service is great! I'm sure some are having problems though.

Anonymous  
4/01/2021 08:16 AM

Na

Anonymous  
4/01/2021 08:19 AM

I like the idea of having greater site density on existing structures and minimizing tall standalone towers. I really don't care about aesthetics if it's on an existing structure. But I'd rather not see a lot of tall dedicated towers.

Anonymous  
4/01/2021 08:25 AM

I know this is difficult. Even Police Services suffers from these issues. We no longer live in a land line world.

	Thanks for asking for our feedback!!!
Anonymous 4/01/2021 08:38 AM	I appreciate what you are doing. The future of communication is wireless, so a master plan makes sense.
Anonymous 4/01/2021 09:02 AM	Thank you for looking into this for us.
Anonymous 4/01/2021 09:03 AM	Cel service is my only tether to others and thus truly necessary for my tech life. While I use a MIFI device for most other areas, this should(?) be unnecessary within the city.
Anonymous 4/01/2021 10:56 AM	<a href="http://www.sammilham.com/index.shtm">http://www.sammilham.com/index.shtm</a> <a href="https://childrenshealthdefense.org/defender/landmark-study-highlights-health-threats-5g-people-planet/">https://childrenshealthdefense.org/defender/landmark-study-highlights-health-threats-5g-people-planet/</a>
Anonymous 4/01/2021 11:51 AM	Network testing should be done while driving around town by service provider to determine what areas need most attention based on population density.
fingersfly 4/01/2021 01:15 PM	I do not favor hiding towers because I am concerned about health effects, which this survey does not acknowledge one bit. EMFs are real and will affect children and weaker people. This is why I want fewer towers, and I want them to be obvious so that anyone can avoid them if they are sensitive. Discreet, not hidden. We should not conspire to keep people in the dark about the potential health impacts. You can't even pay \$15 a month (like the wireless metering) to escape this network.
Anonymous 4/01/2021 01:05 PM	Connectivity and wireless speed is what is most important to me.
Anonymous 4/01/2021 02:06 PM	N/A

Anonymous

4/01/2021 02:12 PM

Cell phones are our only communication devices. It is silly to pay for a land line in addition. And while a cell tower shouldn't be an eyesore it is less important than providing communication with no interruption.

Anonymous

4/01/2021 03:48 PM

When we moved here we had ATT. We live near Drake and Lemay. We were surprised how bad cell coverage was in FC since it's not a rural community. We moved from Oregon and never experienced the issues we had here. Needless to say we switched to Verizon and our coverage issues only moved places so it's obviously not specific to carriers.

Anonymous

4/01/2021 04:05 PM

Question 13 doesn't make sense. Amazing to me there can be dead zones in Fort Collins especially in the south west horsetooth and shields area. I can't believe broadband is being installed but we need a survey for better cell service? And you want to be a connected city?

Anonymous

4/01/2021 07:53 PM

Service is embarrassingly bad in Fort Collins. Cell phones are vital today and to have calls dropped or service unavailable in the middle of town is an extreme safety concern

Anonymous

4/01/2021 08:18 PM

I would like to see strong 5G connectivity through out Fort Collins. I realize that for some aesthetics are an issue for some, however wireless connectivity is becoming essential and is a public safety issue. I feel aesthetics should be a minor consideration,

Anonymous

4/02/2021 05:06 AM

none

Anonymous

4/02/2021 07:24 AM

Towers should interfere as little as possible with wildlife needs, so

Anonymous

4/02/2021 07:48 AM

smaller towers attached to pre-existing buildings is by far the safer and less-obtrusive option.

In newer residential areas, developers/builders/contractors should be required to install/guarantee excellent infrastructure that works in any part of a home/apartment. Can this be addressed in a policy that is enforceable?

Anonymous

4/02/2021 08:04 AM

Thanks for the opportunity to provide information.

Anonymous

4/02/2021 09:36 AM

In the end, why do we need 5G? Do we really need faster internet? 5G is the internet for things. And I don't think we have any idea of the health risks associated with radiating our air waives with it. I am completely against the infrastructure, and I hope that the city chooses NOT to place any 5g towers inside the city limit. And I think long term the city is setting itself up for major health lawsuits for adding this infrastructure.

Anonymous

4/02/2021 12:15 PM

Great that you are doing this survey. Wish there was more participation.

Anonymous

4/04/2021 01:18 AM

I'd rather the city get paid rent for cell sites than religious organizations that don't pay taxes.

Anonymous

4/04/2021 10:28 AM

We have lived here for 17 years with horrible coverage. It is way overdue.

Anonymous

4/05/2021 12:56 PM

This needs to be addressed. Registry Ridge is a great community in Fort Collins, however we have been forgotten regarding cell towers and cell service in this community. We need action and resolution so that we can obtain cell service.

Anonymous

4/05/2021 04:49 PM

Excellent coverage adds to the value of living in Ft. Collins - we joke that

<p>Anonymous 4/05/2021 06:53 PM</p>	<p>we can't consider buying a vacation home because of poor cell service! Excellent coverage is VERY important to me.</p>
<p>Anonymous 4/05/2021 06:53 PM</p>	<p>We as a city go nuts with this stuff. Just place them where needed and as unobtrusively as you can. The end.</p>
<p>Anonymous 4/05/2021 07:16 PM</p>	<p>Thanks for asking about this! It's nice you would like our opinions.</p>
<p>Anonymous 4/05/2021 08:56 PM</p>	<p>Add towers as part of the urban sprawl and planning of these developments towards I25</p>
<p>Anonymous 4/05/2021 08:58 PM</p>	<p>Between timberline and Lemay is a dead zone</p>
<p>LEP 4/05/2021 10:15 PM</p>	<p>Better service for all providers.</p>
<p>Anonymous 4/05/2021 09:37 PM</p>	<p>Excellent connectivity is very important to me but I really don't want ugly towers everywhere.</p>
<p>Anonymous 4/05/2021 10:10 PM</p>	<p>5G with T-Mobile needs to be strong all over fort collins with the same speed for upload and d/l.</p>
<p>Anonymous 4/05/2021 10:11 PM</p>	<p>Please improve the coverage in Northeast Fort Collins</p>
<p>Anonymous 4/05/2021 10:14 PM</p>	<p>Please add more towers, especially great if they're attached to an already-standing structure. Cell service is worse here than in the middle of Iowa.</p>
<p>Anonymous</p>	<p>I work with telecom vendors daily for a service for my company, and they've said for years they also know about the bandwidth issues in southeast Fort Collins but say they have limits from the city so they aren't able to improve anything. Finger pointing everywhere.</p>
<p>Anonymous</p>	<p>More towers widely spread is needed</p>

4/05/2021 10:19 PM

over all especially in black spots and heavy trafficked areas. The 5G coverage is supposed to shine considerably over 4G and yet its nearly just as slow is not worse than the 4G coverage.

Anonymous

4/05/2021 10:35 PM

If anything get some more Verizon towers on the East side.

Anonymous

4/05/2021 10:40 PM

With cell phones being our only mode of voice communication (no home phone) it is hugely important to have it work at home.

Anonymous

4/05/2021 11:08 PM

Please consider this Registry Ridge neighborhood area for cell structure nearby, thank you.

Anonymous

4/06/2021 05:59 AM

Verizon service is poor throughout most of town

Anonymous

4/06/2021 06:09 AM

Cell service has been an issue for several years and there has been an even worse decline in service over the past six months. I feel less safe at work late at night, because I'm usually alone and have close to no service where I'm located.

Anonymous

4/06/2021 07:15 AM

I really like the idea of concealed or camouflaged towers. An example is the Scotch Pines Village picture; I had no idea there was a tower there and I shop there all the time. It nicely disappears.

Anonymous

4/06/2021 09:00 AM

Thank you for trying to make this better. Question #9 not fine grained enough to matter to me - some spots in the city are good, some are terrible.

Anonymous

4/06/2021 10:19 AM

This is a dangerous safety issue. Choose your response speed accordingly.

Anonymous

4/06/2021 10:33 AM

I have had pretty bad Verizon coverage in Colorado in general, but it's bad all along the front range -

mostly because it shows I have signal but it does not work, times out, never loads, etc. It's rare that I have exceptionally fast or great signal with one of the biggest providers in the US. Rarely, if ever, have a problem with signal in other parts of the country.

Anonymous

4/06/2021 11:25 AM

The city of Fort Collins should use its taxes to fund a basic cellphone for FC citizens without a cellphone.

Anonymous

4/06/2021 12:09 PM

I have contemplated moving out of south FC strictly because the coverage is soo bad. Even those that say its not a priority or concern, do not deal with bad connection issues.

Anonymous

4/06/2021 04:10 PM

I just wonder if not turning on the Turnberry cell tower had anything to do with this proposal. I can't find any information as to why this tower was not turned on.

Anonymous

4/06/2021 09:37 PM

I don't want all sorts of little towers in neighborhoods and on private property. Our connectivity is fine.and sometimes less is more. We have too many forced "services" affecting our health. We need to think about the long term effects before we jump into more.

Anonymous

4/06/2021 10:02 PM

Frequent updates on the progress of this infrastructure would be good to know.

Anonymous

4/07/2021 08:43 AM

Please keep it reasonably priced, another words below Comcast monthly charges. Offer a minimal service without bells and whistles that provides solid reliable service.

Anonymous

4/07/2021 02:10 PM

I like the idea of disguising cell towers to be more aesthetic.

Anonymous

4/08/2021 07:27 PM

I feel towers should not be close to offices or homes because of EMF exposure



# WIRELESS TELECOMMUNICATIONS MASTER PLAN - ATTACHMENT 1

Fort Collins Wireless Master Plan Survey : Survey Report for 26 April 2017 to 20 April 2021

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Anonymous

4/08/2021 10:12 PM

Please add towers to northern Fort Collins.

Anonymous

4/10/2021 12:57 PM

Adding more towers for our city that is ever-growing is very important. The growth is not just in population but technology as well. I would love to see more enforcement on use of cell phones while operating a vehicle.

Anonymous

4/12/2021 01:32 PM

People know that faux stuff is faux stuff. And it feels yucky or absurd. But art is art. And if it conceals equipment, all the better. I'd love to see the Art in Public Places take this on as part of their program, just like the transformer boxes. They could find local welders/sculptures/etc. who could make unique art pieces that conceal equipment and beautify our neighborhoods rather than faux-ize them.

Anonymous

4/13/2021 07:20 AM

Overall, coverage is pretty good. But it would be nice to have a nice new blanket of good to excellent coverage across the city as a whole.

**Optional question** (70 response(s), 201 skipped)

**Question type:** Essay Question

**Q16** | Please provide your name.(Your name will not be shared with any outside party. Answers to thequestionnaire will only be used to inform the drafting of the WirelessTelecommunications Master Plan).