MEMORANDUM

A D A C O U N T Y D E V E L O P M E N T S E R V I C E S

TO: The Board of Ada County Commissioners

FROM: Leon Letson, Community Planning Manager

DATE: September 6, 2022

RE: Project No. 202102816 A

On July 13, 2022, the Board of Ada County Commissioners tabled 202102816 A, an Appeal of the Planning and Zoning Commission's approval of a Conditional Use for a commercial cell tower (202102816 CU-MSP), for a minimum of sixty (60) days with a request that additional information be provided as follows:

1. The Applicant shall further research and provide information regarding locating the proposed cell tower on Bureau of Land Management property located approximately 1.25 miles to the northwest, as well as properties closer to Highway 16 (**attached as Exhibit #31A**).
2. Development Services Staff shall hire a third-party consultant to review the application materials submitted for the project to verify it will resolve a gap in coverage, as required by Ada County Code Section 8-5-3-114: Tower or Antenna Structure, Commercial (**attached as Exhibit #32A**).
3. Development Services Staff shall provide a map of all cell towers (and carriers), as well as all existing and proposed housing, within a 10-mile radius (the Board approved this to be reduced to a 5-mile radius) (**attached as Exhibit #33A**).
4. Ada County Legal shall Research the Telecommunications Act of 1996 to determine how wireless broadband is regulated, particularly as it relates to requirements associated with determining and resolving gaps in coverage (**this matter was take up during executive session where Ada County Legal advised the Board of Ada County Commissioners**).
5. The Appellant shall Provide proof of diminished land values in the surrounding area resulting from the proposed cell tower (**attached as Exhibit #34A**).
6. Development Services Staff shall research the City of Eagle's reasoning for recommending denial of the proposed cell tower (**attached as Exhibit #35A**).

Joshua J. Leonard
jleonard@clarkwardle.com

September 5, 2022

Sent via email to: lletson@adacounty.id.gov

Board of Ada County Commissioners
c/o: Ada County Development Services Department
Attn: Leon Letson, Community Planning Manager
200 W. Front Street
Boise, Idaho 83702

Re: Project #202102816 CU - Applicant's Supplemental Materials.

Dear Chairman Beck and Commissioners Davidson and Kenyon,

We represent Intermax Towers, LLC, the "Applicant" in Project #202102816 CU ("Application").

During the public hearing held by the Board of Ada County Commissioners ("Board") on July 13, 2022, the Board left the public record open for comments on a very narrow list of issues, including:

1. Whether the Bureau of Land Management ("BLM") will allow the tower on BLM-managed property located 1.3 miles to the northwest of the proposed site;

2. Whether a tower on the BLM-managed property would fill the significant gap in wireless coverage that will result from removal of Verizon's existing antennas from the silo on the parcel addressed as 6397 W. Beacon Light Rd., Eagle, and identified by the Ada County Assessor as Parcel No. S0403110010 ("Silo Parcel");

3. **a.** Whether the County's contractor, Columbia Telecommunications Corporation, concurs with the need for a new wireless communications facility on which Verizon can place its antennas after removal of Verizon's antennas at the Silo Parcel;

b. Whether the County's contractor, Columbia Telecommunications Corporation, believes, from a radio frequency ("RF") perspective, that other available parcels would work better to fill the significant gap in wireless coverage that will result from removal of Verizon's antennas at the Silo Parcel; and

4. An update on the status of Verizon's existing silo site.

Before diving into these items, though, we've noticed that the Board has engaged in a recent pattern of denying Conditional Use Permit ("CUP") applications for wireless communications facilities. We sincerely hope the Board recognizes the distinctive differences between the applications it denied and *this* Application, which is for:

- a **relatively short** (100' tall)…
- …**replacement tower**…
- …that will be **located adjacent to numerous 76' tall power poles** that run along Beacon Light Road…
- …that has space for 4 co-locations…
- …and will have **at least 2 (and *likely* 3[1]) wireless tenants** immediately upon construction.

1. BLM -Managed Property Ruled Out.

There are four (4) BLM -managed parcels within approximately 1.5 miles of the "Proposed Site." Although not required by Ada County Code, the Applicant's representatives again contacted the BLM to ask whether the BLM would consider approving a wireless communications facility on BLM -managed property. The response was that the BLM does approve telecommunications facility rights-of-way on BLM -managed lands.

Although the BLM likely would allow a cell tower on BLM -managed property, there are at least two reasons the BLM -managed parcels located within 1.5 miles of the Proposed Site will not work for the Applicant's proposed cell tower:

- **First**, as discussed in Section 2, below, locating a wireless communications facility on nearby BLM -managed land **would not resolve the significant gap in wireless service** Verizon will experience when the owner of the Silo Parcel demands that Verizon remove its antennas from the silo. In other words, even if a tower was constructed on nearby BLM -managed land, and even if Verizon put its antennas on that tower, a tower on the Proposed Site (or multiple towers on other parcels) still would be needed to close Verizon's significant gap in wireless service. *See* Section 2, below, for more information on how putting a tower on BLM -managed land would not provide the coverage Verizon needs to fill the significant gap in coverage that will occur when Verizon is required to remove its antennas from the silo.

- **Second**, putting a wireless communications facility on the BLM -managed land would ***increase* the visibility of the proposed facility**. Although the planned 100' tower on the Proposed Site would be visible from a dozen or so properties; a tower on BLM -managed

[1] *See* **Conclusion**, pp. 12-13; see also FN 3.

land would be visible from *thousands* of properties, including those that are several miles away.

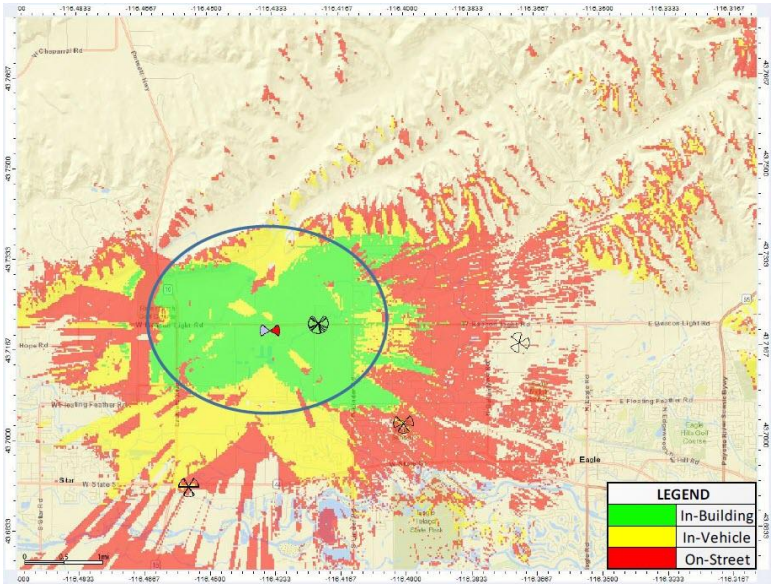
Of these two reasons that a wireless communications facility won't work on the BLM -managed property, the most important is that putting a tower on BLM -managed property is insufficient to enable Verizon to fill the significant gap in coverage that will result when the owner of the Silo Property requires Verizon to remove its antennas from the silo.

2. Tower on BLM Property *Will Not* Fill Significant Gap in Coverage.

As requested by the Board, the Applicant's Radio Frequency ("RF") Engineer, Steven Kennedy of Biwabkos Consultants, LLC, examined whether locating the proposed tower on the BLM -managed property nearby would enable Verizon to fill the significant gap in coverage that will result when the owner of the Silo Property requires Verizon to remove its antennas from the silo, which could happen at any time.

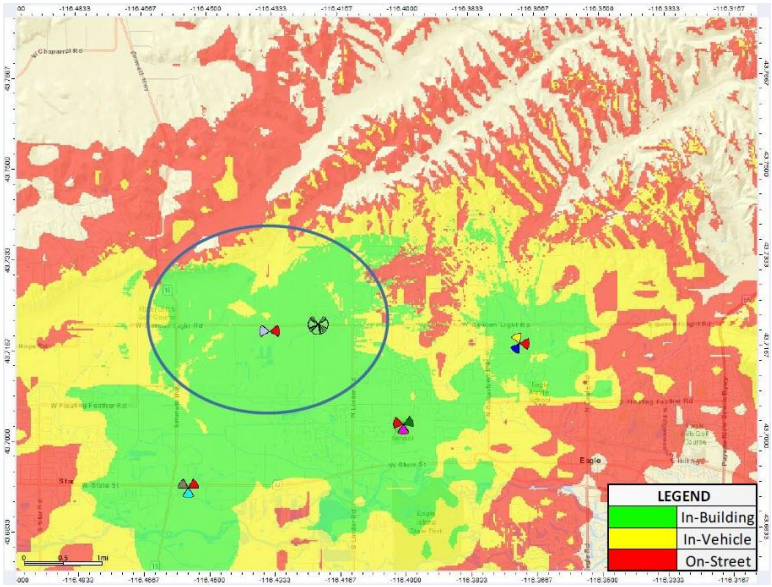
The following are coverage propagation charts that model snapshots of several scenarios. The oval in each of the following propagation chart shows the approximate location of Verizon's search ring, but the oval primarily is included to provide geographical context to the sites and the coverage depicted in each of the propagation charts.

Image A: Verizon's Existing (As-Is) Coverage from Silo Site



The propagation chart shown in **Image A**, above, depicts Verizon's coverage as it exists today, generated only by Verizon's antennas on the silo, with all other existing Verizon antennas (the tower at Skyview Lane that was approved in 2019 after Horizon Tower filed suit against Ada County in federal court, the tower at Eagle High School, and a tower near the intersection of W. State Street and State Highway 16) turned off.

Image B: Verizon's Existing (As-Is) Coverage from *All* Sites



The propagation chart shown in **Image B**, above, depicts the coverage, as it exists today, that is generated by all active Verizon antennas on existing wireless communications facilities (the tower at Skyview Lane that was approved in 2019 after Horizon Tower filed suit against Ada County in federal court, the tower at Eagle High School, and a tower near the intersection of W. State Street and State Highway 16). Because **Image B** shows the coverage from all *existing* Verizon sites, it <u>does not</u> include coverage from Verizon antennas on the Proposed Site (although the Proposed Site's planned location is noted).

Image C: Coverage *After* Antennas Removed from Silo Property

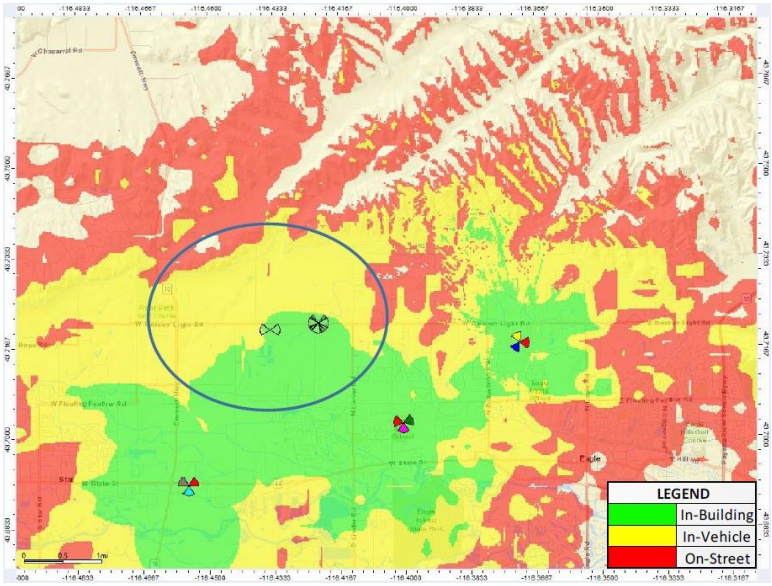


Image C, above, shows the significant loss in coverage (particularly indoor coverage) that will result when Verizon's antennas are removed from the Silo Property without a replacement tower

at the Proposed Site. In other words, **Image C** depicts Verizon's coverage with *no antennas on the Silo Property* and *no antennas on the Proposed Site*. All other existing Verizon sites (the tower at Skyview Lane that was approved in 2019 after Horizon Tower filed suit against Ada County in federal court, the tower at Eagle High School, and a tower near the intersection of W. State Street and State Highway 16) are shown operational, to capture exactly what will happen if Verizon's Silo Property antenna are removed without a replacement tower on the Proposed Site.

The following is a side-by-side comparison of Verizon's existing coverage (**Image B**), with antennas still on the silo, and Verizon's coverage as it will be (**Image C**) after the antennas are removed from the Silo Property and without Verizon putting antennas on a replacement tower at the Proposed Site.

Significant Gap in Verizon's Coverage Occurs when Silo Antennas Removed

Image B - As-Is Coverage (*with* Silo)

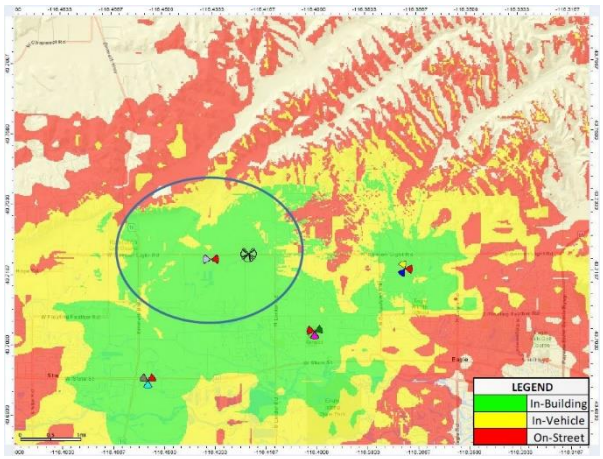
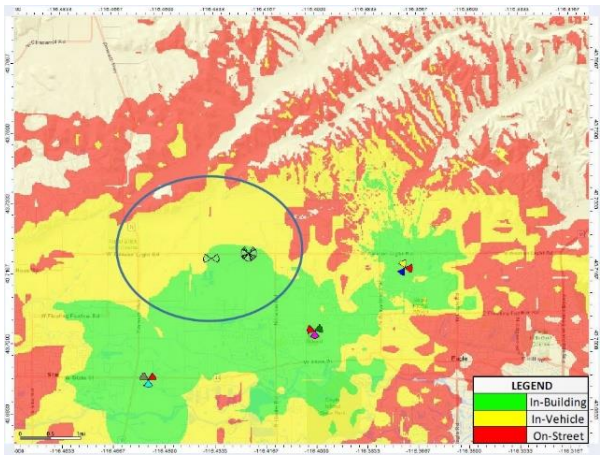


Image C - No Antennas on Silo Property



At the Board's July 13 public hearing, the Board asked the Applicant to examine whether Verizon, instead of moving its antennas to a replacement tower on the Proposed Site, could relocate to a new tower on BLM -managed property. The Applicant examined three (3) potential locations on the BLM -managed property: BLM Site #1 (*see* **Image D-1**, below), BLM Site #2 (*see* **Image D-2**, below), and BLM Site #3 (*see* **Image D-3**, below). The locations were selected based on factors that included (a) accessibility, (b) topographical constraints on constructing a road of sufficient width and limited enough grade to meet code requirements and not pose a risk of drainage/erosion issues; (c) proximity to existing utilities, (d) providing reasonable coverage, and (e) representativeness, among others.

Image D-1: Coverage from Potential BLM Site #1

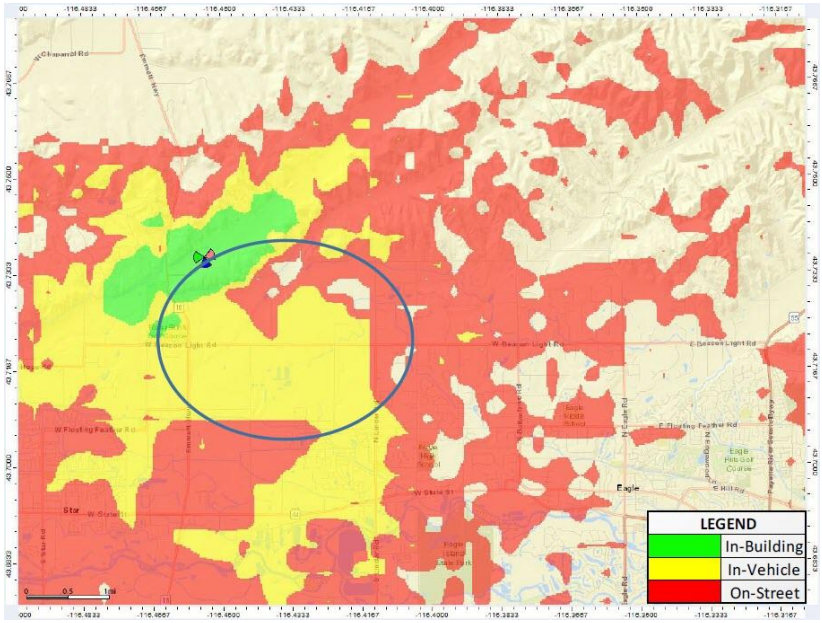


Image D-1, above, shows Verizon's coverage if, instead of constructing the proposed tower at the Proposed Site, a tower was placed at BLM Site #1. It is evident from **Image D-1** that BLM Site #1 ***does not*** offer a reasonable alternative to the Proposed Site, because putting Verizon's antennas on a tower at BLM Site #1 would fail to fill the significant gap in coverage Verizon will experience when its antennas are removed from the Silo Property.

Image D-2: Coverage from Potential BLM Site #2

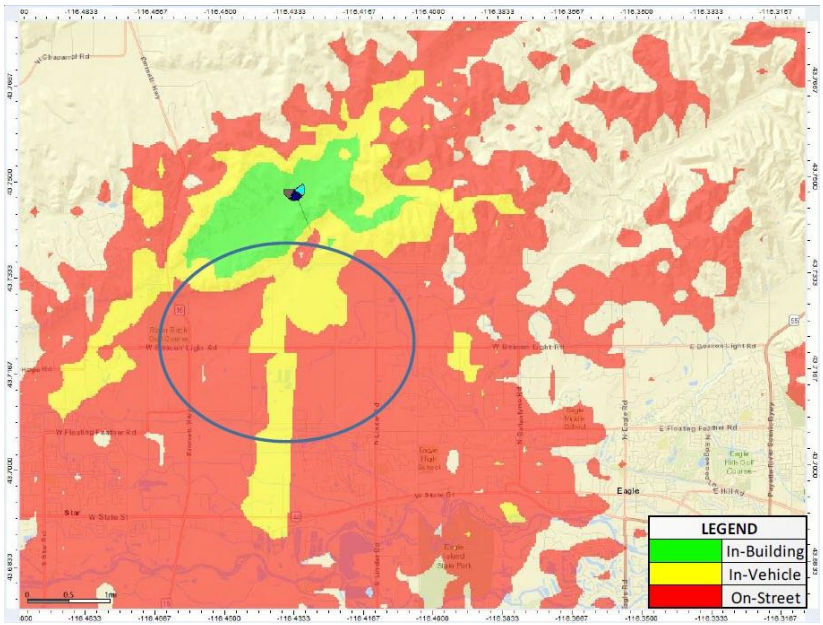


Image D-2, above, shows Verizon's coverage if, instead of constructing the proposed tower at the Proposed Site, a tower was placed at BLM Site #2. It is evident from **Image D-2** that BLM Site

#2 ***does not*** offer a reasonable alternative to the Proposed Site, because putting Verizon's antennas on a tower at BLM Site #2 would fail to fill the significant gap in coverage Verizon will experience when its antennas are removed from the Silo Property.

Image D-3: Coverage from Potential BLM Site #3

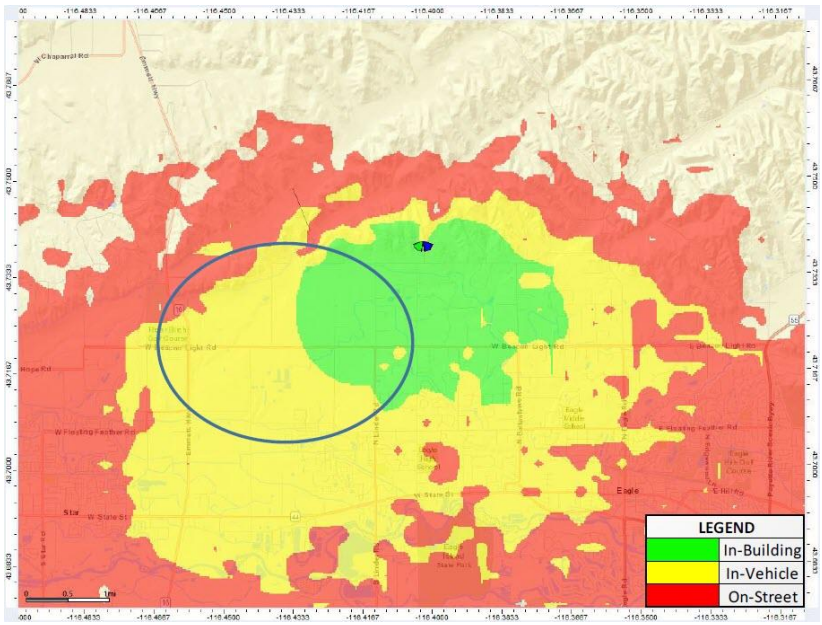


Image D-3, above, shows the coverage offered if, instead of constructing the proposed tower at the Proposed Site, a tower was placed at BLM Site #3. It is evident from **Image D-3** that BLM Site #3 ***does not*** offer a reasonable alternative to the Proposed Site, because putting Verizon's antennas on a tower at BLM Site #3 would fail to fill the significant gap in coverage Verizon will experience when its antennas are removed from the Silo Property.

For convenience, the following is a side-by-side comparison of Verizon's coverage using each of the hypothetical BLM sites, instead of constructing the proposed tower at the Proposed Site:

BLM -MANAGED PROPERTIES RULED OUT

Image D-1: BLM Site #1

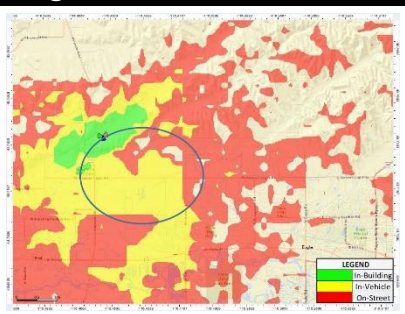


Image D-2: BLM Site #2

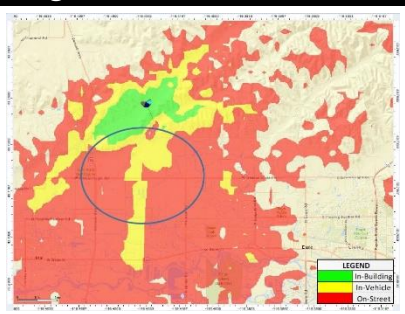
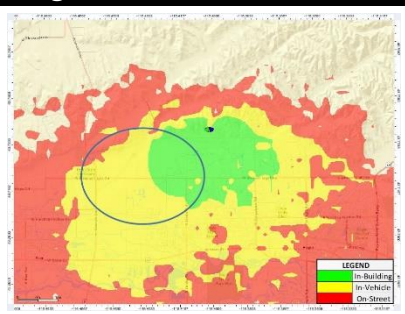


Image D-3: BLM Site #3



Next, we examine the coverage Verizon can achieve by locating Verizon antennas on the proposed 100' tower at the Proposed Site, after Verizon is required to remove its antennas from the Silo

Property. First, however, the following table provides a quick reminder of Verizon's current ("as-is") coverage (*see* **Image B**) and Verizon's coverage after its antennas are removed from the Silo Property (*see* **Image C**):

Verizon Coverage Comparison

Image B - As-Is Coverage (*with* Silo)

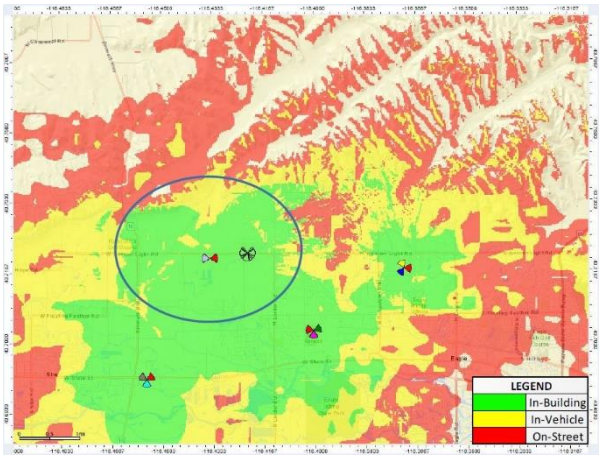
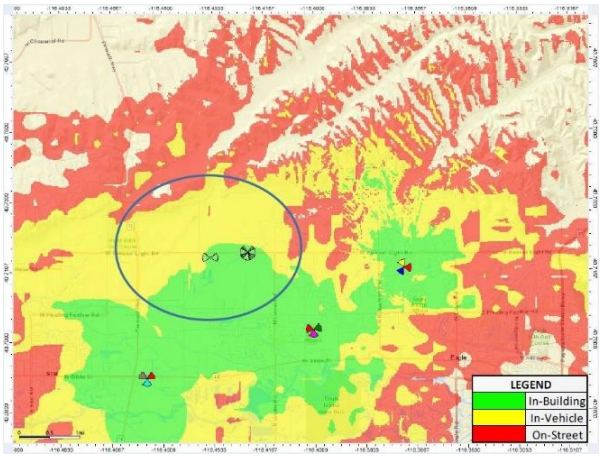


Image C - No Antennas on Silo Property



As shown in **Image B**, above, Verizon currently enjoys good coverage in the area of the existing Silo Site, which makes sense -- **Image B** depicts Verizon's coverage *while its antennas are still on the silo*. **Image C**, above, which depicts Verizon's coverage *after* the owner of the Silo Property requires Verizon to remove its antennas from the silo, shows that Verizon will suffer a <u>substantial</u> loss in coverage when that occurs.

Image E: Verizon's Coverage <u>*with*</u> Proposed Site Online

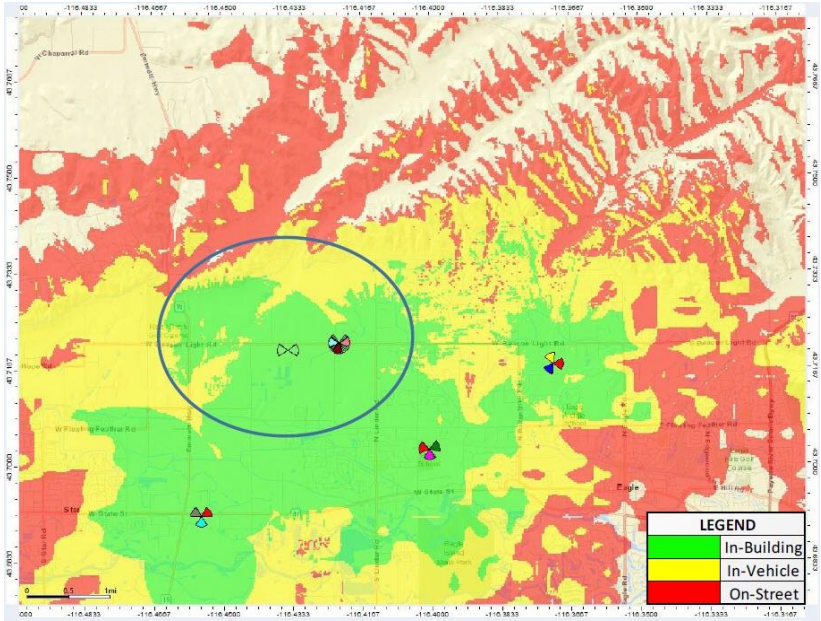


Image E, above, shows Verizon's coverage after the owner of the Silo Property requires removal of Verizon's existing antennas, but with Verizon's antennas relocated to the new tower on the Proposed Site. As demonstrated in **Image E**, above, by relocating its antennas to the wireless communications facility proposed in this Application, Verizon maintains relatively good coverage within its identified coverage area, even after the Silo Property owner requires removal of Verizon's existing antennas from the silo.

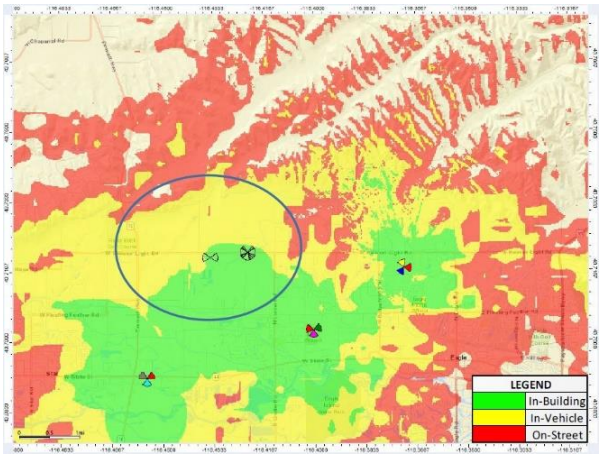
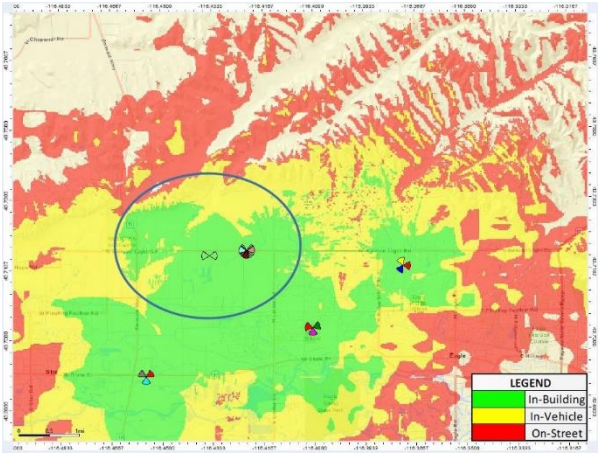
For convenience, the following table contains a side-by-side comparison of what will happen if Verizon's antennas must be removed from the Silo Property and…

- …Ada County overturns the Planning and Zoning Commission's approval of the Application for a CUP for the replacement tower on the Proposed Site, thereby preventing Verizon from relocating its antennas from the silo - *see* **Image C**;

- OR -

- …Ada County upholds the Planning and Zoning Commission's approval of the Application for the proposed wireless communications facility on the Proposed Site, thereby making it possible for Verizon to relocate its antennas and maintain good coverage in this area - *see* **Image E**.

Verizon Coverage Comparison

Image C - No Antennas on Silo Property	**Image E** - Antennas on Proposed Site
	

As evidenced by the above propagation maps, approval of the Application enables Verizon to relocate its antennas to the new wireless communications facility on the Proposed Site, which will prevent a significant gap in Verizon's wireless service from occurring. Conversely, the County's failure to approve the Application will result in a significant gap in Verizon's wireless service, in violation of the "effective prohibition" provision of the Telecommunications Act of 1996.[2]

[2] Ada County continues to rely on the outdated two-prong test formulated by the Ninth Circuit Court of Appeals (and also formerly applied in the Second and Third Circuits), for determining whether the County's denial of a permit application would have "the effect of prohibiting the provision of personal wireless services" (47 USC 332(c)(7)(B)(i)(II)) -- specifically, (1) whether a "significant gap in coverage exists in an area, and (2) whether an applicant's proposed means of

3.a. Review of the Applicant's RF Data by County's Contractor.

The Board asked County staff to work with the County's contractor, Columbia Telecommunications Corporation ("CTC"), to determine whether a new wireless communications facility truly is needed to avoid the significant gap in Verizon's coverage that will result from removal of Verizon's antennas from the Silo Parcel.

The Applicant has not seen the results of CTC's review of the significant gap in Verizon's wireless coverage that will result from Verizon's antennas on the silo being decommissioned; accordingly, **the Applicant reserves all rights to submit supplemental materials in response to CTC's report**.

3.b. Whether a Different Parcel would Fill the Significant Gap in Service.

The Board asked County staff to work with the County's new contractor, CTC, to determine whether CTC believes, from an RF perspective, that other available parcels would work better to fill the significant gap in wireless coverage that will result from removal of Verizon's antennas at the Silo Parcel.

With all due respect to the Board, the scope of its direction to County staff and CTC is impermissible under the Telecommunications Act of 1996 and the Federal Communications Commission's 2018 Declaratory Ruling and Third Report and Order (*see In the Matter of Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment; Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WT 17-29, WC 17-84, FCC 18-133, ¶ 13 (Sept. 26, 2018), aff'd in relevant part and vacated in part by *City of Portland v. United States*, 969 F.3d 1020 (9th Cir., 2020) ("FCC's 2018 Declaratory Ruling and Order"). Specifically, a key footnote in the FCC's 2018 Declaratory Ruling and Order reads (in pertinent part):

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filling the gap in coverage is the "least intrusive" means. (*See American Tower Corp. v. City of San Diego*, 763 P.3d 1035, 1056-57 (9th Cir. 2014); *see also T-Mobile USA v. City of Anacortes*, 572 F.3d 987, 995-99 (9th Cir. 2009).) The outdated two-prong test relied on by Ada County has not been the law since 2018, when the Federal Communications Commission approved and released *FCC's Declaratory Ruling and Order*, aff'd in part and vacated in part by *City of Portland v. United States*, 969 F.3d 1020 (9th Cir., 2020).) The ***correct*** test now to be applied in determining whether a permit denial would have "the effect of prohibiting the provision of personal wireless services" (47 USC 332(c)(7)(B)(i)(II)) is:

> **Whether Ada County's denial of the Application "materially inhibits a provider's ability to engage in any of a variety of activities related to its provision of a covered service."**

Part III.A. of the *FCC's Declaratory Ruling and Order*, ¶¶ 34-40, including (without limitation) FNs 75, 80, 84, 87, and 94. This Application seeks authorization for a replacement tower, because **(a)** the silo on which Verizon's antennas that provide wireless service to this area will be demolished, and more importantly (b) the owner of the Silo Property has refused to negotiate an extension of Verizon's lease on that silo.

Failure by Ada County to approve this Application certainly qualifies as an effective prohibition of service, which is forbidden by the Telecommunications Act of 1996. (*See* 47 USC 332(c)(7)(B)(i)(II).)

> …**local jurisdictions do not have the authority** … **to dictate the design of a provider's network**.

Footnote 84 to Paragraph 36 in Part III.A. of *See* 47 U.S.C. § 332(c)(3)(A); *see also Bastien v. AT&T Wireless Servs., Inc.*, 205 F.3d 983, 989 (7th Cir. 2000), emphasis added.

4. Update on Status of Verizon's Silo Site.

The lease between Verizon and the owner of the Silo Property expired earlier this year, and the owner of the Silo Property has refused to negotiate an extension or renewal of the lease that could allow Verizon to keep its antennas on the silo. Currently, Verizon's antennas only remain on the silo on a month-to-month holdover lease that can be cancelled at any time with only 30 days' notice to Verizon. As a result, Verizon must make other arrangements, which is why it submitted a lease application to the Applicant. Whether it happens now or in a month or two, Verizon's antennas must come off the silo soon.

CONCLUSION

The Application before the Board was approved by the Ada County Planning and Zoning Commission, and it complies with Ada County's Code and Comprehensive Plan. There was no error on the part of the Planning and Zoning Commission. The proposed wireless communications facility on the Proposed Site was designed by telecommunications experts to accommodate antennas on the wireless networks designed by each of the national cellular carriers, as well as the antennas of the Applicant's sister company, Intermax Networks.

Perhaps most relevant to the Board's review of the Application, it seeks approval for a *replacement* facility, which is only necessary because the owner of the Silo Property has refused to renew or renegotiate Verizon' lease for space on the silo. Also, though, T-Mobile, another nationwide cellular carrier and provider of personal wireless services, has contacted the Applicant -- the proposed cell tower, when constructed, likely will immediately have *three* tenants: Verizon, T-Mobile,[3] and Intermax Networks.

The Applicant's attorney and RF Engineer, and others, will be present at the Board's September 14, 2022 public hearing to offer a brief presentation and to answer any questions from the Board. Again, we reserve the right, after reviewing CTC's report and findings, to submit supplemental materials to the Board.

We sincerely and respectfully request approval of the Application.

[3] We will be prepared on September 14th to provide additional information regarding T-Mobile, the status of its colocation on the proposed tower, and its need to improve its wireless coverage in the area of the Proposed Site.

Project 202102816

Third Party Review for Ada County

Prepared By: Ron Valdez
August 2022

Disclaimer

Content in this document is based on information provided by Ada County. No information has been provided directly from Applicant or Appellant. A representative from the Appellant has contacted me (Paul McGavin from Wired America) attempting to influence my perspective of the Appellant's position.

1. Executive Summary

This case needs a more comprehensive technical analysis to determine a lack of coverage by removing the existing Verizon Silo site. While the new site location could have many benefits to the community for vital voice and data services for years to come, there is not enough supporting information to show the risk of not building the tower. Assumptions have been made by both the Applicant and Appellant about technical aspects of wireless and how it is best used to serve the community as a whole. As outlined in this document, carrier wireless provides the means for critical in-building communications for emergencies such as medical, law enforcement, and active shooter scenarios. It is important to be very thorough when discounting the need for building telecommunications infrastructure that serves the citizens that live, work, and educate in your communities. A carrier wireless network is much more than general internet access. They are used to save lives when needed.

Tolerance and compromise for a greater purpose should be the primary objective for all parties involved.

A multi-carrier tower can benefit communities because it ensures that less towers are built within a given geographical area. Consolidation of wireless carriers on a single tower saves time and resources for all parties involved.

Wired technologies like coax and fiber provide highly reliable internet connectivity for homes and businesses. Wireless technology, whether it's Wi-Fi, 4G, or 5G, is the primary means of which a majority of users connect at the edge of a network. This technology rapidly expands every 4 to 5 years and it is a vital part of our future. Network augmentation to support wireless connectivity will be needed for years to come.

After reviewing the position of the Applicant and Appellant, I believe it comes down to a lack of strong evidence on ***why*** the new tower location is required. Collecting signal levels at various points in the area does not provide enough information about the overall wireless environment. A comprehensive drive test along major roadways in the area needs to be conducted.

The Applicant has not provided a thorough justification and the Appellants are making assumptions about the technology. Both of which could be solved with clear, concise data.

I believe carriers other than Verizon could have an even bigger need for coverage west of Eagle. It is highly probable that other carriers will also submit applications to build in this area at some point in the future. As the population grows, the infrastructure needed to serve this area will be in demand.

2. Technical Assessment

This section will provide a technical assessment from information provided by the Applicant and Appellate. It is important to have a clear understanding of wireless technology and its purpose. The Mobile Network Operators (MNO's) primarily use both 4G and 5G technologies to provide wireless service with legacy services like 3G being slowly phased out. The area in question primarily focuses on 4G, but future considerations should also be analyzed for 5G. The Applicant's data only focused on 4G, so all information in this report will be aligned with 4G only.

2.1 Signal Strength Overview

RSSI - Received Signal Strength Indicator. This metric measures both usable and non-usable power for a given channel. It's a summed measurement for a channel and is not used to benchmark 4G or 5G technologies.

RSRP - Reference Signal Received Power. This metric measures the usable LTE (4G) reference signal strength by device. An LTE device depends on RSRP to determine connectivity.

RSRQ - Reference Signal Receive Quality. This metric measures the quality of the LTE (4G) signal by looking at usable reference signal power over total measured power. It's the equivalent of a carrier to interference metric for other technologies. The higher the value, the better the quality. RSRQ values will vary based on loading conditions and co-channel interference.

Comprehensive drive testing or crowdsourced user data can be used to quantify 4G coverage and signal quality for a given geographical area. RSRP can be measured for each sector of a cell tower and mapped per "sector" based on a PCI (Physical layer Cell Identifier).

There is no need to disable (turn-off) a cell site to understand coverage areas for certain cell sites. An engineer can collect continuous drive test data on major roads in a given area and then filter out undesired cell/sector information.

The RSRP ranges shown by the Applicant are industry standard and represent Good, Average, and Poor signal strength for both voice and data.

Since voice calls are combined with data sessions over LTE, weak signal or poor quality will affect both voice and data. Because voice traffic is at a lower data rate, it can be more forgiving, but these ranges serve as a good overall indicator for both voice and data.

Poor signal quality will affect critical 911 calls. Since most calls are made from a mobile phone and busy hour (high usage) traffic is often in-building, it is imperative that all citizens have adequate in-building signal strength to ensure connectivity when needed.

Voice over Wi-Fi is very unpredictable and identifying where a call is made over Wi-Fi has a high level of uncertainty. 911 compliance is best served by a carrier wireless network. Wi-Fi is a viable solution for home internet, but falls short for voice related services.

2.2 Carrier Comparison of Signal Strength

Wireless carriers operate in different frequency bands and are often located on different towers and rooftops. The data used by the Applicant to compare Verizon to T-Mobile is not viable. Carriers often have different coverage quality at any given geographical area due to differences in frequency, tower locations, and technology.

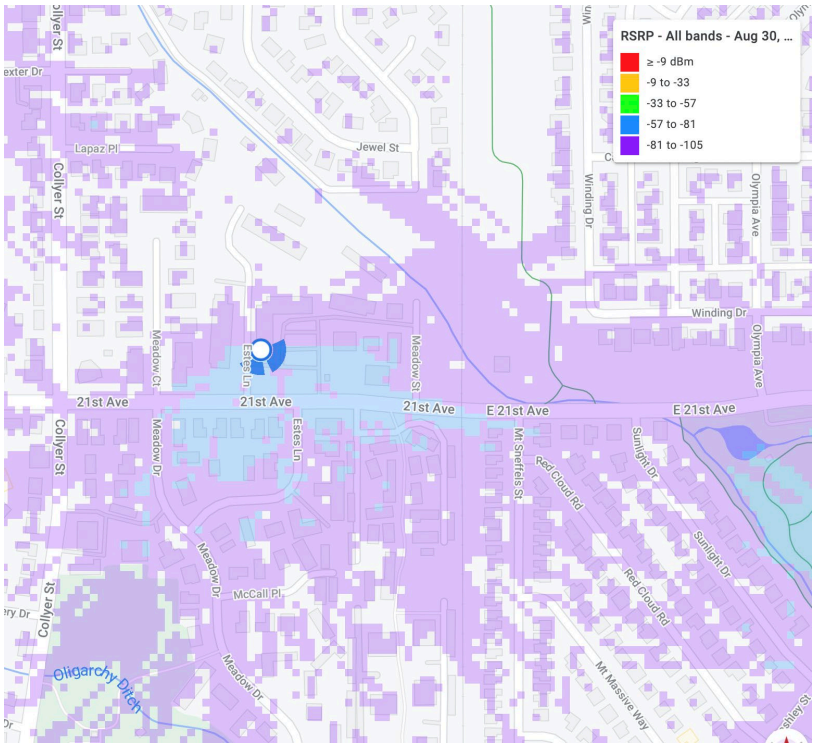
It was noted in the Applicant's report that T-Mobile had very poor coverage in this area, which means as population increases in this area, the need for T-Mobile to provide acceptable coverage will be a priority. There is a high probability that other carriers will also seek to co-locate or build more towers west of Eagle. This will be an on-going factor as development increases. A single multi-carrier tower helps address this issue.

2.3 Coverage Modeling

Coverage maps or "heat maps" provide an estimated coverage boundary and can vary greatly based on clutter and terrain data an engineer uses to run these predictions. A prediction tool must also use a "tuned propagation model" in order to provide an accurate representation of coverage. It's common to find overly optimistic coverage maps as there is a lot of work and monetary investment involved to have the right input data used to create accurate predictions.

An accurate coverage model should show a variance in coverage as the signal is intercepted by buildings, terrain, and trees, and should show a consistent decay over distance.

A finely tuned coverage map will show granular details of a given coverage area such as the map shown below:



Drive test data can be overlaid on a coverage map to show the variance of predicted vs. empirical coverage. A thorough analysis should be provided for justification on **all** site builds, as this will provide a certain level of confidence in the information provided to the citizens and Commission.

2.4 Understanding Coverage

The Appellant is suggesting other locations for the cell tower, which may not be viable for all carriers. Coverage has many components to it. It's important to understand:

- Frequency bands used for voice and data (all carriers)
- Technology being served
- Maximum allowable power
- Where the subscribers are located
- Height of the antenna
- Clutter and terrain in the surrounding area
- Coverage difference between uplink and downlink
- Utility availability
- Reliability of service

The wireless industry typically designs for 4 different morphology types that are based on population density and clutter types.

- Dense Urban
- Urban
- Suburban
- Rural

With expanding communities, it's common to see morphologies change over time. A rural morphology, like the area west of Eagle, can quickly become a suburban morphology based on new home and commercial developments. As these morphologies change, signal absorption increases exponentially and signal quickly degrades. Increased wireless usage (traffic loading) makes it more complicated to access the network for voice and data calls, which makes service unreliable.

Prior to creating "heat maps", Engineers use a link budget to quantify reliable coverage distances for both the uplink and downlink. Link budgets are evaluated by morphology.

The sample link budget below shows estimated reliable downlink coverage distances for LTE at 700 MHz (low band) and 2100 MHz (mid-band).

	Downlink			
AWS 4x4 MIMO	Dense Urban	Urban	Suburban	Rural
Frequency (MHz)	2135	2135	2135	2135
Mobile Height (m)	1.5	1.5	1.5	1.5
h_b	40	40	35	60
PL (dB)	123.8	128.8	131.8	140.7
a_{hm}	0.00	0.05	0.05	0.05
A	137.03	136.98	137.78	134.54
B	34.41	34.41	34.79	33.25
C	0	0	-12.49	-32.94
Radius (km)	0.41	0.58	1.54	14.99
Radius (mi)	0.26	0.36	0.96	9.29
Area (sq km)	0.54	1.06	7.48	705.56
Area (sq mi)	0.21	0.41	2.87	271.22
$A_{modified}$	137.03	136.98	137.38	134.15
Radius (km)	0.41	0.58	1.58	15.40
Radius (mi)	0.26	0.36	0.98	9.55
Area (sq km)	0.54	1.06	7.88	745.16
Area (sq mi)	0.21	0.41	3.03	286.44

	Downlink			
700 MHz 4x4 MIMO	Dense Urban	Urban	Suburban	Rural
Frequency (MHz)	746	746	746	746
Mobile Height (m)	1.5	1.5	1.5	1.5
h_b	40	40	35	60
PL (dB)	125.8	130.8	133.8	142.7
a_{hm}	0.00	0.01	0.01	0.01
A	121.55	121.54	122.34	119.10
B	34.41	34.41	34.79	33.25
C	0	0	-9.46	-27.77
Radius (km)	1.33	1.86	4.01	35.06
Radius (mi)	0.83	1.16	2.48	21.74
Area (sq km)	5.58	10.92	50.44	3860.39
Area (sq mi)	2.15	4.20	19.39	1483.93
$A_{modified}$	121.55	121.54	122.34	119.10
Radius (km)	1.33	1.86	4.01	35.06
Radius (mi)	0.83	1.16	2.48	21.74
Area (sq km)	5.58	10.92	50.44	3860.39
Area (sq mi)	2.15	4.20	19.39	1483.93

This sample ***downlink*** model provides a summarized view of cell radius based on the different morphology types for a given frequency.

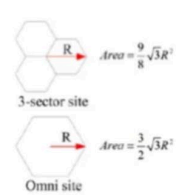
An often-overlooked component is how ***uplink*** coverage is affected. Carrier wireless networks often transmit at 1000 watts or higher. Mobile devices transmit at ¼ watts or less. Because of the disparity in downlink and uplink power, mobile networks are often characterized as "uplink limited". In order to make a successful phone call or data session, both the downlink and uplink are required.

A sample model below shows how much the uplink and downlink can differ for LTE based on pathloss and other factors.

Cell Radius Calculation

		UL	DL
Path Loss (dB)		125.52	130.82
Cell Radius			
UE Antenna Height (m)	v	1.50	
NodeB Antenna Height (m)	w	25.00	
Frequency (MHz)	x	900	945
Propagation Model		Cost231-Hata	
Cell Radius (km)	y=Cell Radius	0.74	1.00
TCH Cell Radius (km)	$z=\min(y_{UL}, y_{DL})$	0.74	
Propagation Model			
Propagation model used		Cost Hata 231	Cost Hata 231
a	$a(H_{UE}) = (1.1 \times \lg(f) - 0.7) \times H_{UE} - (1.56 \times \lg(f) - 0.8)$	0.02	0.02
Cm	Cm	3.00	3.00
Cell radius (km)	Cell Radius=10^((PL-(46.3+33.9*LOG(x)-13.82*LOG(w)+a+Cm))/(44.9-6.55*LOG(w)))	0.74	1.00

Cell Radius	0.74
SiteArea	1.45
Total Site Requiremen	7



Note that the uplink is ***less than 75%*** of the downlink distance required for reliable service. This can vary considerably depending on technology and location.

Cell sites that are further away provide a much higher risk for ***unreliable*** coverage. While areas like ***BLM*** are easier to build, they may not provide the reliable coverage needed to serve voice services that are provided over LTE. Legacy (2G & 3G) "voice-only" networks were commonly built to serve larger areas with less users and lower data rates. While data services can utilize buffering and retransmissions to maintain a session, voice requires real time, low latency wireless connectivity. Since voice traffic with 4G and 5G are served via broadband, the coverage areas are smaller when compared with legacy wireless technologies, even at lower frequencies.

2.5 Technical Summary

- Cell sites that are further away from the subscriber, provide lower reliability for voice and data services.
- Morphology, technology type, and frequency band are key drivers in determining the coverage distance.
    - Coverage by each carrier differs due to frequency and tower locations. Assumptions cannot be made between carriers for a given area.
- RSRP and RSRQ are the correct indicators of wireless service availability.
- Community development directly affects network performance and design.
- Coverage maps need to be carefully analyzed for accuracy. Empirical data and proper modeling data is needed to generate an accurate map.
    - Good coverage maps can provide valuable insights for current and forecasted subscriber coverage.

3. Non-Technical Assessment

This section covers the general business case and non-technical aspects to consider when determining short term and long-term infrastructure initiatives.

3.1 Covered Pops (Population)

The density of wireless network infrastructure is determined by the forecasted subscriber counts in a given area. Looking at Beacon Light road, it's important to evaluate how many residential and mobile (in-vehicle) subscribers will be served.

Mobility usage can be determined by average traffic volume per day on the major roads within the cell coverage boundary.

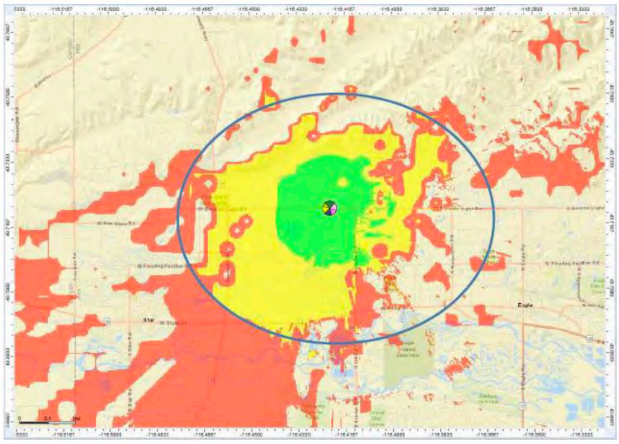
Residential coverage is determined by current and forecasted population information. Both of these items should be presented for the new site on Beacon Light Road. Since the proposed site is a multi-carrier site, information for all carriers within this area should be considered.

The number of subscribers served determines the ROI for the CAPEX and OPEX invested to build a new site.

The single site coverage map provided by the Applicant does not outline the current or forecasted covered population. Covered population should be one of the primary exhibits shown when justifying a new tower build.

Chart 4

Showing RSRP (Reference Signal Received Power) of the proposed Wireless Communications Facility.



Propagation Chart created by **Steven Kennedy of Biwabkos Consultants, LLC.**

Legend

- in-building signal strength
- in-vehicle signal strength
- on-street signal strength

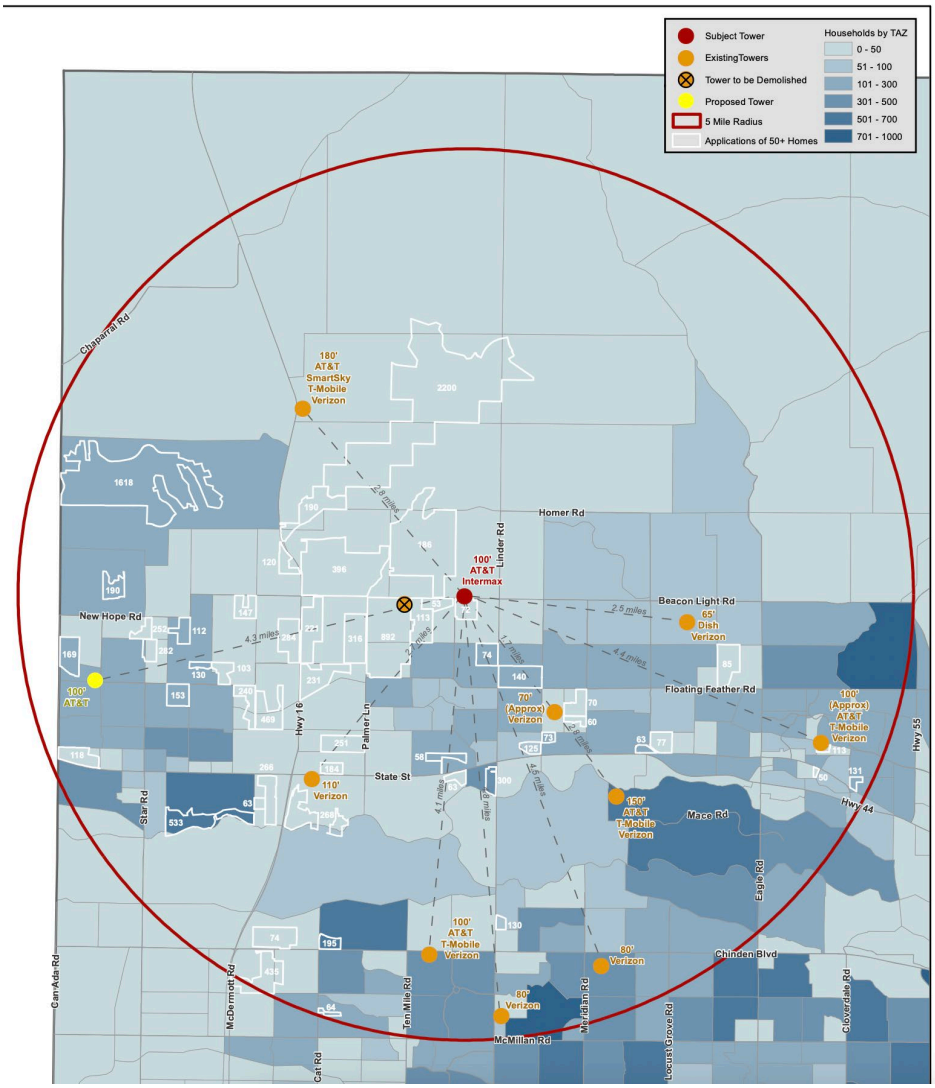
3.2 Eagle Area Deep Dive

The symmetry of a wireless design provides a good "common sense" benchmark of a well designed network. The average distance (determined in the link budget) between sites should be consistent in areas where people live and travel. Looking at the map below, you can see if the silo site is removed and the new site on Beacon Light Rd is **not** built, then there is a big "void" in the northern area of the map. Other Verizon sites have an overall consistency in spacing across low to medium population and higher cell site density in more populated areas.

While the existing area has low population density, the forecasted population is expected to grow. A new site will be needed in this area to provide adequate wireless coverage.

A wireless carrier will typically have "A", "B" and "C" candidates for a new site build. I recommend that the Applicant evaluate all locations and determine the current and forecasted covered population for each candidate.

Cell Towers Within Five Miles of 5410 W Beacon Light Rd



4. Recommendations

As the population grows, more tower locations will be required to serve these areas. The process doesn't end here if the Beacon Light tower is not built. A tower will need to be built in this general area and other home owners will face the same dilemma. While long distance sites were a viable option in the past with legacy wireless technologies, today's wireless networks require a higher density to meet the service requirements for voice and data services.

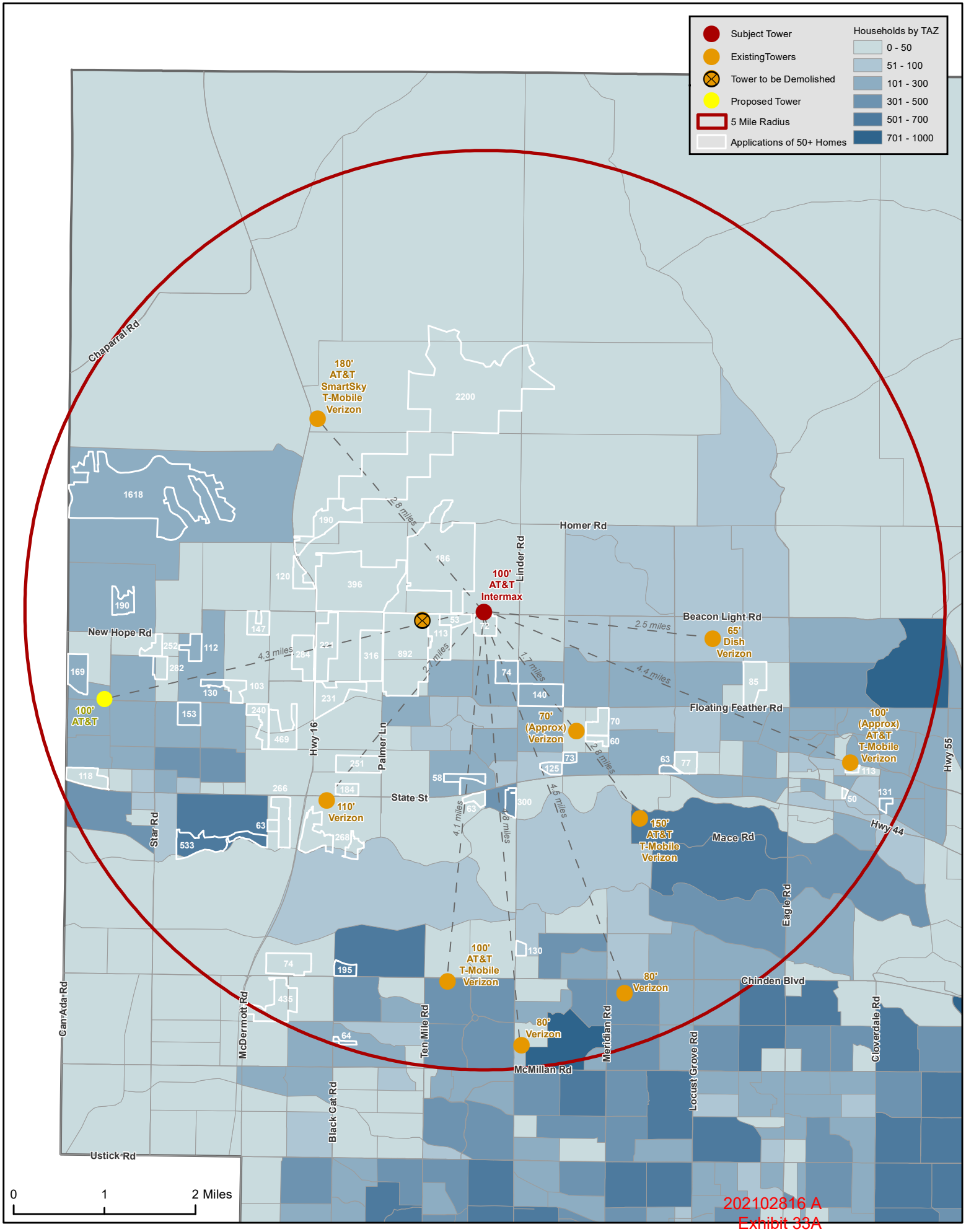
Multi-carrier sites reduce the number of towers built in a certain geographical area. Strategic approval of these sites will safeguard a community for years to come.

It is up to the wireless carriers to provide a complete technical justification that will eliminate all ambiguity.

Here are my recommendations:

- Have the Applicant provide comprehensive drive test data showing all VZW sites excluding the Silo site. This empirical data will show the impact of removing the Silo site for mobile (in-vehicle) and in-building coverage.
- Have the Applicant provide an analysis of current and forecasted covered subscribers for the proposed site.
- Evaluate technical data for all wireless carriers at the Beacon Light tower location.
- Have the Applicant provide an analysis for alternate locations/candidates.
- Have the Applicant provide validation for coverage maps.
- Have the Applicant provide a high-level view of usage and performance for adjacent cell sites.
- Instead of building towers, the Commission could explore other options like multi-carrier outdoor DAS or small cells for expansion which can be an alternative to unsightly towers.

Cell Towers Within Five Miles of 5410 W Beacon Light Rd



202102816 A
Exhibit 33A

Cell Towers within a 5-Mile Radius of 5410 W Beacon Light Rd

Address	Parcel #	File #	Height	Carriers	Notes
Proposed Towers					
5410 W Beacon Light Rd	S0335433650	202102816-CU	100'	AT&T, Intermax	West of the Beacon Light Rd / Linder Rd Intersection
12016 W Floating Feather Rd	S0406347000	202103048-CU	100'	AT&T	Just East of the Ada / Canyon County Line
Existing Towers					
6880 N Hwy 16	S0321449700	00034-CU	180'	AT&T, SmartSky, T-Mobile, Verizon	South of Firebird Raceway
8090 W Moon Valley Rd	R3720003507	201501114-CU	110'	Verizon	East of the State St / Hwy 16 Intersection
2686 W Everest St	S0426212610	201101237-CU	100'	AT&T, T-Mobile, Verizon	East of the Ten Mile Rd / Chinden Blvd Intersection
5220 N Linder Rd	S0425325750	201500547-CU	80'	Verizon	Next to Rocky Mountain High School
6180 N Meridian Rd	S0530223300	200900057-CU	80'	Verizon	South of the Chinden Blvd / Meridian Rd Intersection - Stealth Church Sign
W Hatchery Rd	S0518212402	98020-CU	150'	AT&T, T-Mobile, Verizon	Eagle Island State Park
574 N Park Ln	S0412131300	City of Eagle	70' (Approx)	Verizon	Eagle High School
611 N Eagle Hills Wy	R2024150300	City of Eagle	100' (Approx)	AT&T, T-Mobile, Verizon	Monopine on Eagle Hills Golf Course
2557 N Sky View Ln	R7132900300	201801311-CU	65'	Dish, Verizon	Monopine South of Beacon Light Rd
Tower to be Demolished					
6397 W Beacon Light Rd	S0403110010		50' (Approx)	Verizon	Located on Top of a Silo

Carrier information derived from planning applications and CellMapper

According to COMPASS estimates, there are approximately 22,977 existing households, and applications submitted for 14,154 additional households, within the radius area. Existing household data is for 2020, and includes all TAZs within or intersected by the 5-mile radius.

202102816 A
Exhibit 33A

Evidence supporting an Ada County Board of Commissioner decision to deny WTF application 202102816-CU

Project: 202102816-CU Wireless Telecommunications Facility (WTF)

Address: Beacon Light Road

Applicant: Clark Wardle, LLP on behalf of Intermax, which a site developer, **not** a Wireless Telecommunications Carrier.

Date: September 6, 2022

Note: WTF = Wireless Telecommunications Facility, which is **not** a Wireless Information Service Facility; there is an important distinction between **regulated** Telecommunications Service (wireless phone calls) and **unregulated** Information Service (wireless broadband, internet, data streaming). Preemption for "significant gap in coverage" only applies to wireless phone calls.

Evidence That Justifies a Decision for Denial of WTF Application 202102816-CU

- **The applicant brought insufficient verifiable hard data** to accurately establish the signal strengths of Verizon telecommunications frequencies **without** the current Verizon Water Tower antennas operating **because Verizon chose to NOT power off** these antennas for the analysis.

- **That Verizon decision was fatal to the application and is a solid finding that the Board can make to deny the application.** Verizon's error means that signal strength measurements from any party are only "best guesses" and not substantial written evidence that can prove the existence of a significant gap in Verizon wireless telecommunications coverage in the target search ring.

- The evidence of signal strengths that **could be measured is** clear: **there is no significant gap** in Verizon wireless telecommunications coverage in the target search ring. The detailed measurements from Aug 28, 2022 prove that here: (Link)

Evidence That Justifies a Decision for Denial of WTF Application 202102816-CU

- **There is insufficient substantial written evidence in the record to get past step one** (existence of significant gap in telecommunications service) to even consider step two (is WTF 202102816-CU the **least intrusive means** to close the alleged gap?)**.**

- For completeness, in the slides that follow the appellant presents the following **substantial written evidence in the record that proves 202102816-CU** is **not the least intrusive means** to provide telecommunications service to the target area.

- The established harms from 202102816-CU have **not been adequately mitigated** and, therefore represent a "taking" of property from residents within 1500 feet of this proposed WTF; the harms are the greatest for those closest to the WTF.

- Appellant presents substantial written evidence of diminished property values, loss of farm customer interest and less public safety.

- Such harms can be mitigated by locating 202102816-CU on Bureau of Land Management Land that is 1-2 miles from the proposed Beacon Light Rd. location.

Evidence Against 202102816-CU Impact to Property Values:

- **March 1, 2022:** (4 pages) Link to referencing Exhibit #21A of Ada County Project #201801311-A: that **Valbridge Property Advisors appraisal** shows an approximate 9% negative property value impact on adjacent properties. ($1,160,000 before WTF, $1,045,000 after WTF= **$115,000 difference** / $1,160,000 = 9%)

- **March 2, 2022:** (43 pages) – including IDAHO TITLE 67: State Government and State Affairs, CHAPTER 65 Local Land Use Planning **67-6502. Purpose**."The purpose of this act shall be to of the state of Idaho as follows:' **promote the health, safety and general welfare of the people."**

- **March 3, 2022:** (154 pages) – including Memorandum in Opposition prepared by the top telecom attorney in the USA (over 7000 cases litigated, 80+% wins)

- **NEW: Sept 2, 2022:** (link) **Licensed Real Estate Broker (Atova, Inc.)** "In my professional opinion, the presence of a cell tower near a residential property will **diminish the value of the property by 5% - 15%.** Properties with a view of a nearby cell tower suffer a visual blight which negatively affects the value of all properties subject to the blight.

From Memorandum in Opposition here

It is important to note that *Intermax* is a site developer, and does not provide personal wireless services. *Intermax* builds cell towers and leases space upon its cell towers to wireless carriers. A copy of the home page on *Intermax's* website is attached as Exhibit "A."

This Memorandum is submitted in opposition to *Intermax*'s application.

As set forth below, *Intermax's* application should be denied because:

(a) *Intermax* has failed to establish that granting the application would be consistent with the requirements of the Ada County Code ("ACC"), specifically, Title 8, Chapter 5;

(b) granting the application violates both ACC, the Comprehensive Plan ("Comp. Plan") and the legislative intent of both;

(c) the irresponsible placement of a ten-story tower at the proposed location would inflict upon the nearby homes and community the precise types of adverse impacts which the ACC and the Comp. Plan were intended to prevent;

(d) there are far less intrusive alternative locations where the desired facility could be built, in greater conformity with the requirements of the ACC and the Comp. Plan; and

As such, we respectfully submit that *Intermax*'s application be denied in a manner that does not violate the Telecommunications Act of 1996.

From Memorandum in Opposition here

- **Exhibit A:** Intermax Towers Marketing Communications
- **Exhibit B:** Opposition Letters from Eagle Idaho residents: Brian & Leslie Decker, Michael & Suzie Dustin, Jordan Miller, Thomas Smith, Chris & Cyndi Fagan, Brad & Allie Bentley
- **Exhibit C:** WTFs Lower Property Values: Letter form John Poole. Atova & Property Appraisal from Valbridge Property Advisors
- **Exhibit D:** WTF Harms to Land Development
- **Exhibit E:** Wireless Coverage Maps: Garbage In . . . Garbage Out: Wireless Coverage Maps published by Wireless Carriers & FCC GN Docket No. 19-367 re: Mobility Fund Phase II Coverage Maps Investigation **concluding that wireless carrier-projected/calculated coverage maps are not reliable**

Photo simulations are to scale, but focal length matters . . .

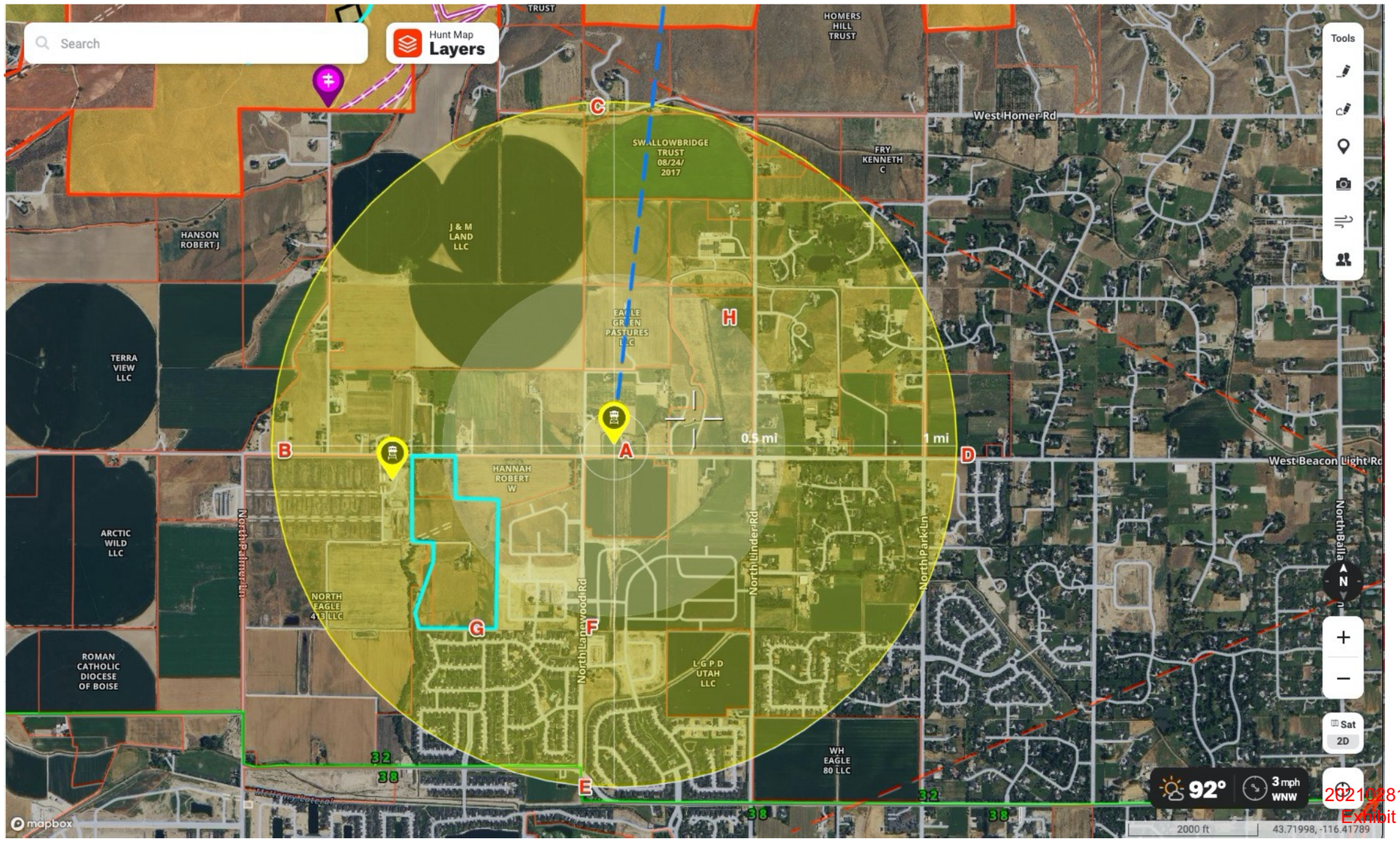
Appellant photo sim: taken from front porch of 5600 W Beacon Light Road, with ~50mm "normal" lens, which makes objects appear life-size

Don't get bamboozled by this common wireless industry trick to **not** provide accurate **photo sims** **from nearby homes.**
Taken from front porch of "Good Life Farms"

Applicant photo sim: used wide-angle ~25mm?) lens, which makes distant items appear smaller

Evidence of No Significant Gap for Verizon

Substantial Written Evidence of **No Significant Gap** in Verizon Wireless Telecommunications Service**:** Signal Strength Readings (dBm)on Verizon's network at **all eight (8) locations** surrounding the proposed WTF **202102816-CU**



202102816 A
Exhibit 34A

This is substantial written evidence proving there is No Significant Gap in Verizon's Wireless Telecommunications Service in area served by proposed Verizon WTF 202102816-CU

(Link to spreadsheet of dBm readings)

- **Location A**— https://youtu.be/PgTYRiyYzho?t=9 Verizon and T-Mobile calls made at wireless call made at proposed WTF site on Beacon Light Rd. in Eagle, ID
- **Location B** — https://youtu.be/PgTYRiyYzho?t=123 Verizon and T-Mobile calls made wireless call made at No. Palmer and Beacon Light Rd. in Eagle, ID
- **Location C** — https://youtu.be/PgTYRiyYzho?t=195 Verizon and T-Mobile calls made wireless call made at No. Hawkcrest Lane and Homer Rd. in Eagle, ID
- **Location D** — https://youtu.be/PgTYRiyYzho?t=271 Verizon and T-Mobile calls made wireless call made at No. Park Lane and Beacon Light Rd. in Eagle, ID

This is substantial written evidence proving there is No Significant Gap in Verizon's Wireless Telecommunications Service in area served by proposed Verizon WTF 202102816-CU

(Link to spreadsheet of dBm readings)

- **Location E**—https://youtu.be/PgTYRiyYzho?t=345 Verizon and T-Mobile calls made at wireless call made: No. Lanewood and W. Floating Feather Rd. in Eagle, ID

- **Location F** —https://youtu.be/PgTYRiyYzho?t=409 Verizon and T-Mobile calls made wireless call made at No. Lanewood and W. Venetian Dr. in Eagle, ID

- **Location G** —https://youtu.be/PgTYRiyYzho?t=477 Verizon and T-Mobile calls made wireless call made at W. Venetian Dr. and World Cup Way in Eagle, ID

- **Location H** — https://youtu.be/PgTYRiyYzho?t=540 Verizon and T-Mobile calls made wireless call made at Hope Valley Rd. North of proposed WTF location in Eagle, ID

The Late, Great Yogi Berra Sums It Up:

With One of His Famous Yogi-isms:

”This is déjà vu all over again.”

- **AT&T’s denied** 202102048-CU WTF application for W. Floating Feather Rd. shares **many similar shortcomings** with **Verizon’s proposed** 202102816-CU at WTF application for Beacon Light Rd.
- **Same attorney:** Josh Leonard of Clark Wardle, LLP, representing a speculative site developer.
- **Same story:** applicant has the **burden of proof** to bring substantial written evidence to prove a significant gap in carrier-specific, wireless telecommunications service, but has **failed to do so**.

202102816 A
Exhibit 34A

The Achilles Heal of the Verizon 202102816-CU Application

- Applicant brought no verifiable data for accurate signal strength readings showing the **pre-construction conditions** (with no WTF) and post-construction conditions (with WTF powered on)

- **The key missing element** that renders the applicant-provided signal strength data non-substantive is that **Verizon chose to NOT power off** the current Water Tower antennas in order to enable accurate signal strength readings

- **The applicant's RF consultant,** Mr. Kennedy, is asking the Commissioners to trust him, trust him, trust him, even though he has provided no solid, verifiable data that could be accurately corroborated by third-parties.

The Same Shortcoming Applies to Appellant-Supplied Signal Strength Data

- Appellant could not bring data for signal strength readings reflecting the **pre-construction conditions** because **Verizon chose to NOT power off** the current Water Tower antennas to enable accurate pre-construction signal strength readings.

- The Appellant worked with the signal strength conditions dictated by Verizon: the current water tower antennas remained powered on.

- **Verizon failed step one:** the applicant did not provide sufficient substantial written evidence to establish that a significant gap in Verizon wireless telecommunications coverage exists in the target area – either with or without the current water tower antennas powered on. **That is fatal to 202102816-CU** and **there is no need to proceed to step two**: least intrusive means.

- The Appellant data prove with current conditions, **NO significant gap** in Verizon wireless telecommunications coverage exists.

Refuting statements made by Josh Leonard of Clark Wardle, LLP

- **FCC Order 18-133 , Footnote 95:** —"our effective prohibition analysis focuses on the service the provider **wishes** to provide, incorporating the capabilities and performance characteristics it wishes to employ, including facilities deployment to provide existing services more robustly, or at a better level of quality, all to offer a more robust and competitive wireless service for the benefit of the public."

- **Appellant:** No US Court of Appeals Circuit judge has upheld such an FCC "wish-fulfillment scheme" which would violate the cooperative federalism as defined in the 2005 US Supreme Court ruling Palos Verdes v. Abrams. Such a "wish-fulfillment scheme" is merely a presumption that must face case-by-case adjudication.

- From Ninth Circuit Case 18-72689 City of Portland et al. v FCC. Scott Noveck, FCC Attorney on Feb 10, 2020 said at https://youtu.be/zoZHNSOibmo?t=38m28s

"These Orders [FCC 18-111 and FCC 18-133] are not self-enforcing.
They contemplate the need, in many circumstances, for further case-by-case adjudication
and in those instances either someone would have to come back to the Commission or go into court."

Refuting statements made by Josh Leonard of Clark Wardle, LLP

- 3:24:50 "The appellant provided no substantive or competent evidence of their own . . . I have to tell you concerns are not evidence. The only evidence that you have before you, the only competent evidence. . . the only evidence that is relevant today is the evidence we provided in the applicant's packet." (note: this is quite a conclusory statement, but it must be disregarded because the opponents entered competent, probative evidence into the record, summarized here and listed below.

- Note: Mr. Leonard appears to be dismissing **evidence accepted and ruled upon by the US Court of Appeals DC Circuit** on Aug 13, 2021 in CHD/EHT v FCC: **11,000+ pages of evidence** that conclude multiple harms from RF microwave radiation exposures at levels that are hundreds of thousands of times lower than that allowed by current FCC RF microwave radiation regulations. **This evidence**, linked to below is in Ada County's public record and **does NOT amount to mere concerns**, as alleged by Mr. Leonard. It is competent, probative evidence.

- Note: Wireless radio frequency microwave radiation is bioactive and is currently being insufficiently regulated. Therefore, each state or locality can regulate the maximum power output of microwave radiation from wireless infrastructure antennas that reaches any areas that are accessible to human beings and other living organisms, consistent with the **11,000+ pages of peer-reviewed, scientific evidence** that Environmental Health Trust and Children's Health Defense and others plaintiffs placed in the FCC's public record: Vol-1, Vol-2, Vol-3, Vol-4, Vol-5, Vol-6, Vol-7, Vol-8, Vol-9, Vol-10, Vol-11, Vol-12, Vol-13, Vol-14, Vol-15, Vol-16, Vol-17, Vol-18, Vol-19, Vol-20, Vol-21, Vol-22, Vol-23, Vol-24, Vol-25, Vol-26 and Vol-27.

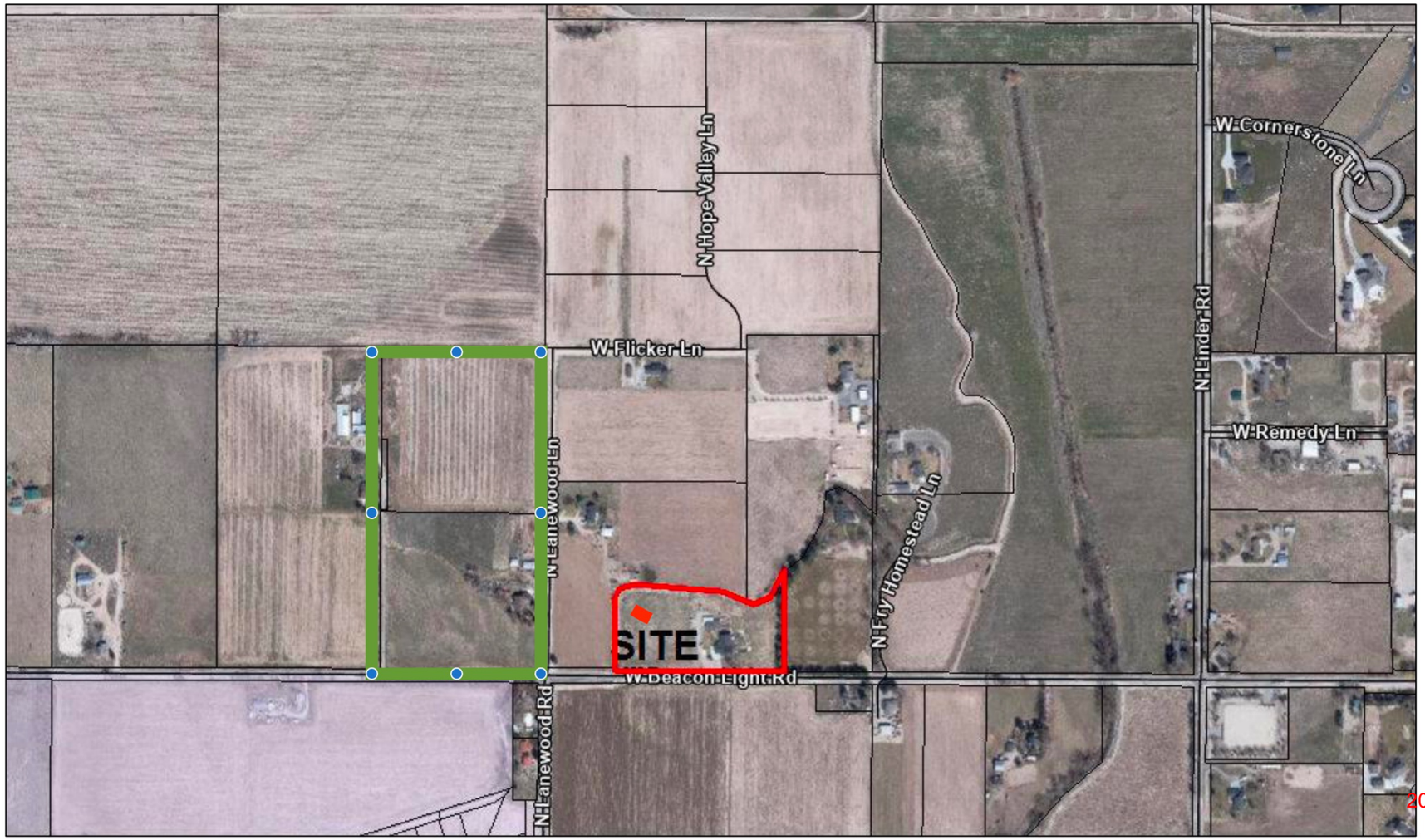
Good Life Farms Marketing Survey

Please click here for full Study from Good Life Farms

Good Life Farms = Green

Proposed Cell Tower = Red

Ada County Development Services



202102816 A
Exhibit 34A

Good Life Farms Marketing Survey

Please click here for full Study from Good Life Farms

- Evidence that shows that constructing a Wireless Telecommunications Facilities (WTF) across from the farm at 5600 West Beacon Rd. in Eagle, ID will deter its customer base from purchasing their products and render its business unprofitable.

- This is substantial written evidence (a professional survey of a sufficiently large sample) that proves that the W Beacon Light Road location proposed in 202102816-CU is NOT the least intrusive means to address an unproven gap in telecommunications service (the inability to place an outdoor wireless phone call in the proposed tower's target search ring).

Good Life Farms Marketing Survey

Please click here for full Study from Good Life Farms

- Evidence that shows that constructing a Wireless Telecommunications Facilities (WTF) across from the farm at 5600 West Beacon Rd. in Eagle, ID will deter its customer base from purchasing their products and render its business unprofitable.

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Substantial written evidence showing 202102816-CU <u>causes unmitigated harms</u>

- Link to 2019-0102-Valbridge-Advisors-Appraisal-Eagle-ID.pdf
- Link to 2022-0902-Atova-Broker-Letter.pdf
- Link to 2022-0301-Letter-from-Bentley-et-al-re-201801311-A 2022.pdf
- Link to 2022-0322-JP-Mejia-Letter-to-Bentley.pdf
- Link to Assessing-the-Economic-Impact-of-Project-202102816-CU-on-a-Third-Generation-Family-Farm.pdf
- Link to 2022-0301-Memorandum-in-Opposition.pdf

Conclusion: Evidence Justifies a Decision for Denial of 202102816-CU

- **Applicant brought no verifiable hard data** that accurately establishes the signal strengths of various frequencies **without** the current Verizon Water Tower antennas operating **because Verizon chose to NOT power off** these antennas for the analysis.

- The substantial written evidence of signal strengths that **could be measured is** clear: **there is no significant gap** in Verizon wireless telecommunications coverage in the target search ring.

- 202102816-CU is **not the least intrusive means** to close an alleged, unproven significant gap in telecommunications coverage because it creates unmitigated harms established by substantial written evidence in Ada County's public record: diminished property values, loss of farm customer interest and less public safety. And, failed to perform proper due diligence in exploring adjacent BLM land.

Appendix

Radio Terms Unpacked

- **RSSI** (Received Signal Strength Indicator) is used when measuring the power of 3G/4G LTE/5G frequencies/modulations
- **RSRP** (Reference Signal Received Power) is also used when measuring the power of 4G LTE/5G frequencies/modulations.
- **RSRQ** (Reference Signal Received Quality). This is a measure of the signal quality of a cellular connection (whether significant interference exists).
- **RSSI** applies to 3G, 4G/LTE and 5G networks, but **RSSI** contains the interference in its number, while **RSRQ/RSRP** break out the interference separately from the power received.

Radio Terms Unpacked

- Think of air flowing through a window screen, where air represents the signal.
- **RSRP** is the power that reaches the window screen, while **RSSI** is the power that has passed through (the interfering) window screen (which represents interference from all other signals in the vicinity).
- **Key RF Engineering practice:** for 4G/LTE signals, assess both RSRP (good, fair or poor) and RSRQ (good, fair or poor). If a point has double snake-eyes (RSRP is poor **and** RSRQ is poor) then that should be addressed. **Otherwise, there is no significant gap in telecommunications service**.

Jason Pierce
Mayor

City of Eagle
P.O. Box 1520
Eagle, Idaho 83616
208-939-6813

Council Members:
Charlie Baun
Melissa Gindlesperger
Brad Pike
Helen Russell

February 23, 2022

Ada County Development Services
Attn: Diana Sanders, Associate Planner
Email: dsanders@adacounty.id.gov
200 West Front
Boise, ID 83702

SUBJECT: 202102816 – CU – Conditional Use Permit for 100-foot tall cell tower – Intermax Towers, LLC, represented by Josh Leonard with Clark Wardle, LLP

Dear Ms. Sanders,

On February 22, 2022, the Eagle City Council voted 4 to 0 to recommend denial of the above referenced application.

In the event the Ada County Planning and Zoning Commission (or the BOCC upon appeal) approves the above referenced application, the Council requested the County require the cell tower be camouflaged.

If you have any questions, please call me at 208-489-8771.

Sincerely,

William E. Vaughan, AICP
Zoning Administrator

Attached: City of Eagle Staff Report

202102816 A
Exhibit 35A

CITY OF EAGLE
CONDITIONAL USE PERMIT STAFF REPORT

ADA COUNTY TRANSMITTAL

DESCRIPTION: PERSONAL WIRELESS FACILITY (100-FEET TALL)

FILE NUMBER: 202102816 - CU

APPLICANT: **INTERMAX TOWERS, LLC**
CLARK WARDLE LLP
251 E. FRONT STREET SUITE 310
BOISE, ID 83702

PHONE – 208-388-1000
EMAIL – JLEONARD@CLARKWARDLE.COM

PLANNING AND ZONING COMMISSION MEETING DATE: January 18, 2022

TENTATIVE CITY COUNCIL MEETING DATE: January 25, 2022

PROJECT SUMMARY:

Intermax Towers, LLC, represented by Josh Leonard with Clark Wardle, LLP, is requesting conditional use permit approval from Ada County to construct a 100-foot tall personal wireless facility (monopole cell tower). The 5.35-acre site is located on the north side of Beacon Light Road approximately 270-feet east of North Lanewood Road at 5410 West Beacon Light Road. **This site is located in the Eagle Area of Impact.**

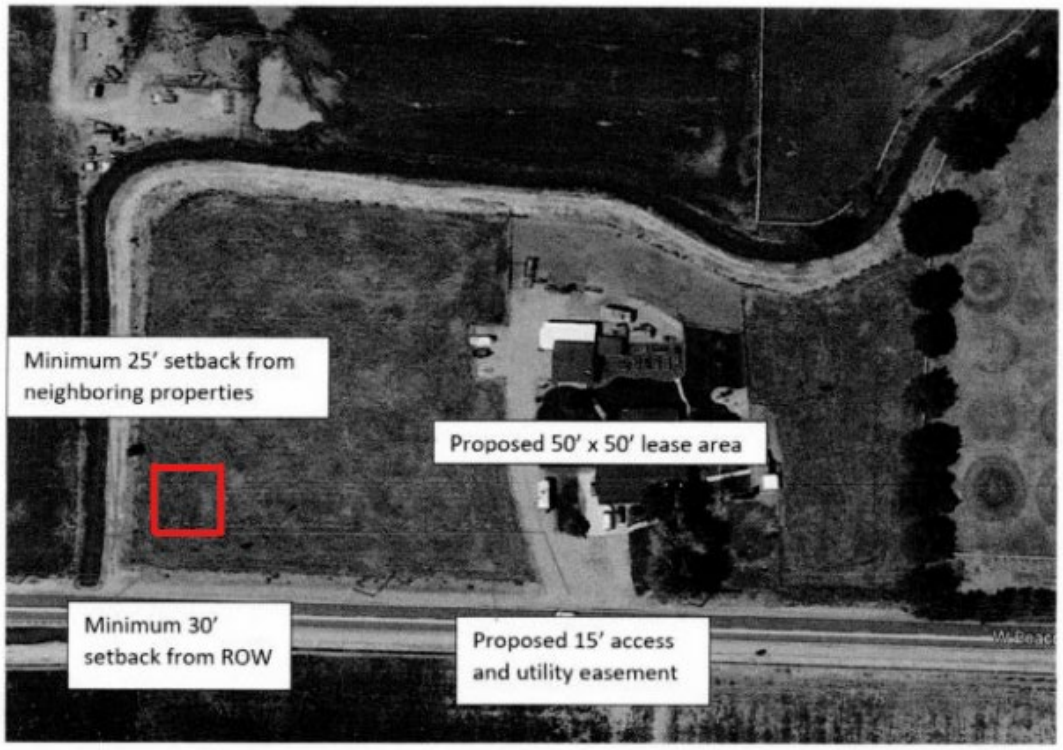
STAFF RECOMMENDATION:

Based upon the information provided to staff to date, staff recommends denial of the requested conditional use permit application.

202102816 A
Exhibit 35A

VICINITY MAP

SITE MAP



202102816 A
Exhibit 35A

STAFF FINDINGS OF FACT:

A. PROJECT SUMMARY:

Intermax Towers, LLC, represented by Josh Leonard with Clark Wardle, LLP, is requesting conditional use permit approval from Ada County to construct a 100-foot tall personal wireless facility (monopole cell tower). The 5.35-acre site is located on the north side of Beacon Light Road approximately 270-feet east of North Lanewood Road at 5410 West Beacon Light Road. **This site is located in the Eagle Area of Impact.**

B. APPLICATION SUBMITTAL:

The application for this Ada County transmittal was received by the City of Eagle on January 10, 2022.

C. NOTICE OF PUBLIC HEARING:

Notice of Public hearing for impact area items are the responsibility of Ada County.

D. COMPREHENSIVE PLAN LAND USE MAP AND ZONING MAP DESIGNATIONS:

	COMP PLAN DESIGNATION	**ZONING DESIGNATION**	**LAND USE**
Existing	Large Lot	RUT A-R (equivalent City zone)	Single family residential
Proposed	Large Lot (no change)	RUT (No change)	Personal Wireless Facility (monopole cell tower)
North of site	Large Lot	RUT	Single family residential and agricultural
South of site	Neighborhood Residential	R2 - residential 2 units /acre	Farmland
East of site	Large Lot	RUT	Single family residential and agricultural
West of site	Large Lot	RUT	Single family residential and agricultural

E. DESIGN REVIEW OVERLAY DISTRICT: Not in the DDA, TDA or CEDA.

F. SITE DATA:

ADDITIONAL SITE DATA	
Lot Size	5.35 acres
Lot Width	680 feet
Minimum Street Frontage	680 feet
Minimum Front Setback (for the A-R zone)	60 feet

G. EAGLE CITY CODE 8-7-3-2 GENERAL STANDARDS FOR CONDITIONAL USES:

The Commission/Council shall review the particular facts and circumstances of each proposed Conditional Use in terms of the following standards and shall find adequate evidence showing that such use at the proposed location:

I. Will, in fact, constitute a conditional use as established in Section 8-2-3 of this title (Eagle City Code Title 8) for the zoning district involved;

B. Will be harmonious with and in accordance with the general objectives or with any specific objective of the Comprehensive Plan and/or this title (Eagle City Code Title 8);

C. Will be designed, constructed, operated and maintained to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such use will not change the essential character of the same area;

D. Will not be hazardous or disturbing to existing or future neighborhood uses;

E. Will be served adequately by essential public facilities such as highways, streets, police and fire protection, drainage structures, refuse disposal, water and sewer and schools; or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide adequately any such services.

F. Will not create excessive additional requirements at public cost for public facilities and services and will not be detrimental to the economic welfare of the community;

I. Will not involve uses, activities, processes, materials, equipment and conditions of operation that will be detrimental to any persons, property or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare or odors;

J. Will have vehicular approaches to the property which are designed as not to create an interference with traffic on surrounding public thoroughfares; and

K. Will not result in the destruction, loss or damage of a natural, scenic or historic feature of major importance.

STAFF ANALYSIS:

A. COMPREHENSIVE PLAN PROVISIONS WHICH ARE OF SPECIAL CONCERN REGARDING THIS PROPOSAL:

The property is designated as Large Lot Residential on the Comprehensive Plan Land Use Map.

B. ZONING ORDINANCE PROVISIONS WHICH ARE OF SPECIAL CONCERN REGARDING THIS PROPOSAL:

- Eagle City Code Section 8-1-2: RULES AND DEFINITIONS:

  PERSONAL WIRELESS FACILITIES: Facilities necessary for the provision of personal wireless services (i.e., towers, support buildings, etc.).

  PERSONAL WIRELESS FACILITIES (WITHIN ENCLOSED BUILDING): Facilities necessary for the provision of personal wireless services (i.e., antennas) that are located within a building or on a building and screened from view.

- Eagle City Code Section 8-2-3: SCHEDULE OF DISTRICT USE REGULATIONS: **states that a personal wireless facility (height over 50-feet) is a prohibited use in the A-R zone.**

  (P - Permitted Use / C - Conditional Use / No P Or C - Prohibited Use)

	DISTRICTS															
LAND USES	A	A-R	R-E	R	L-O	C-A	C-1	C-2	C-3	CBD	M-1	BP	M-2	M-3	PS	MU
COMMERCIAL:																
Personal wireless facilities (height - over 50')	C				C	C	C	C	C	C	C	C	C	C	C	C
Personal wireless facilities (enclosed building, height - over 35')	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

The A-R zone within the City is equivalent to the RUT zone within the County.

DISCUSSION:

- The subject property is located in the Eagle Impact Area and is zoned RUT (Rural Urban Transition - Ada County designation) and is identified on the Eagle Comprehensive Plan Future Land Use Map as Large Lot Residential. Properties identified as Large Lot Residential are compatible with the Agricultural-Residential (A-R), Residential-Estate (R-E), and Residential (R) zoning districts. Pursuant to Eagle City Code Section 8-2-3, personal wireless facilities (monopole cell tower) that are over 50-feet in height and not located within a building are prohibited in the A-R, R-E, and R zoning districts.

- Due to the size of the property (5.35-acres) and its current zoning (RUT), the equivalent City zoning designation is A-R (Agricultural-Residential, one unit per five acres). The property is located within 500 feet of the Eagle City Limits.

STAFF RECOMMENDATION:

Based upon the information provided to staff to date, staff recommends denial of the application since the use is prohibited.

Submitted by:

_____ January 14, 2022

William E. Vaughan, AICP Date

Zoning Administrator