January 6, 2024

City of Tualatin
Community Development
10699 SW Herman Road
Tualatin, OR 97062

Re: AT&T modification of existing communication facility @ 8930 SW Norwood Rd
AT&T Site Name: PD33 Boones and Ibach
Parcel ID: R2154937

Project Description

New Cingular Wireless PCS, LLC (AT&T) proposes to modify an existing wireless communication facility at the above-mentioned address. To accommodate its antennas and meet its coverage objectives, AT&T proposes to install a 20ft extension on top of the existing monopole. The new overall height will be 130ft. With this extension, AT&T will install (9) panel antennas, (12) remote radio heads, and ancillary equipment on the monopole. Additionally, proposed ground equipment will be within an 10ft X 15ft lease area adjacent to the tower. Given the scope of the proposed modification, this project qualifies as an eligible facilities request covered by Section 6409 of the Spectrum Act (47 U.S.C. Sect. 1455(a)).

Applicable Law

Section 6409 of the Federal Middle Class Tax Relief and Job Creation Act ("Section 6409") was adopted in 2012. Under Section 6409, the City of Tualatin retains discretionary zoning review over the construction of certain new wireless facilities such as new towers, but collocations and/or equipment upgrades at existing telecommunications facilities must be approved. The law, now codified at 47 U.S.C. § 1455, provides that:

> [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.

Since the law's passage, the Federal Communications Commission ("FCC") established regulations that clarify and streamline the municipal approval process for eligible facilities requests under Section 6409. These regulations clarify that municipal review of an eligible facilities request is limited to determining whether the request falls within Section 6409:

> [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 the requirements of this section [47

C.F.R. § 1.6100]. 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 facilities.

AT&T's Application is an Eligible Facilities Request under Section 6409

AT&T's Application qualifies as an eligible facilities request under Section 6409 because the proposed installation involves "a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station."[1]

A WCF is "existing" if it has been "reviewed and approved under the applicable zoning or siting process"[2]. We can establish this Facility as existing given its permitting history:

- The original monopole was approved at 100ft by Washington County.
- In 2008, the City of Tualatin annexed the property. CUP-08-04 was approved by the City to make the "water reservoir" and "wireless communications facility" legally conforming uses. However, the height of 100ft remained legally non-conforming.
- In 2014, Verizon Wireless proposed to increase the height of the monopole to 110ft to accommodate its antennas. VAR-14-01 and AR-14-05 approved the height increase and established the facility and height as legally conforming within the City of Tualatin.

We can also establish that the proposed modification is not a "substantial change" as follows:

1. Height: Height increased by no more than 10 percent or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater. 47 C.F.R. §1.6100(b)(7)(i).

   AT&T proposes to install an extension on top of the existing 110ft monopole to meet its coverage objectives and provide service to the surrounding community. The bottom of AT&T's antennas are 122ft, and the tip height of the existing Verizon antennas are 110ft. This is a separation of 12ft, which is less than the 20 feet that would be considered a substantial change[3].

   The Spectrum Act was passed in 2012, but the FCC did not issue rules and clarifications on implementation until October 2014 – after this variance application was approved. Based on that 2014 FCC Order[4], we assert that the separation between antennas should be measured from the 110ft height approved under VAR-14-01 rather than the height of 100ft approved by Washington County when the site was first built. The variance from 2014 reflects a regulatory determination that the height of 110ft was

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[1] 47 C.F.R. §1.6100(b)(3)

[2] 47 C.F.R. §1.6100(b)(5)

[3] The phrase "separation from the nearest existing antennas" means the distance from the top of the highest existing antenna on the tower to the bottom of the proposed new antennas to be deployed above it. Thus, when determining whether an application satisfies the criteria for an eligible facilities request, localities should not measure this separation from the top of the existing antenna to the top of the new antenna." *Implementation of State and Local Governments' Obligation to Approve Certain Wireless Facility Modification Requests Under Section 6409(A) of the Spectrum Act of 2012, 35 FCC Rcd 5977, ¶ 24 (2020)*

[4] *Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies, Report and Order, 29 FCC Rcd 12865, ¶ 196-197 (2014)*

appropriate under the city's code criteria for conditional uses and variances. Additionally, there is no mention of substantial change criteria in the approval or application materials, so we can conclude that the City did not consider this a mandatory approval but rather a judgement on whether the height was consistent with local land use values.

"Existing" means the tower was reviewed and approved under the applicable local zoning process to preserve the local authority to review initial deployments[5]. As this Facility was originally under the jurisdiction of Washington County, the 2014 Variance was the first opportunity for the City of Tualatin to determine if the Facility's height was compatible with their land use criteria making the AT&T proposal the first extension requested under 6409. This does not impact the City's right to limit cumulative impacts to the site made after their original review of the deployment (i.e. any future determinations on substantial changes in height would be based on an 110ft tip height and not on the new tip height). Therefore, this criterion is met.

2. Width: Appurtenance protrudes from the edge of the structure no more than twenty feet. 47 C.F.R. §1.6100(b)(7)(ii).

   The proposed antennas will be attached to the extended monopole with V-Frame antenna mounts that will not protrude more than 20ft from the edge of the pole. As such, this criterion is met.

3. Equipment Cabinets: Project involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets. 47 C.F.R. §1.6100(b)(7)(iii).

   One (1) Walk-up Cabinet (WUC) and one (1) FLX12 cabinet are proposed within the AT&T 10ft X 15ft lease area. Therefore, this criterion is met.

4. Expansion: Project does not entail any excavation or deployment outside the current site, except that for towers outside the right-of-way, it does not entail any excavation or deployment of transmissions equipment outside the current site by more than 30ft in any direction. 47 C.F.R. §1.6100(b)(7)(iv).

   The proposed 10ft x 15ft lease area for AT&T equipment will be within approximately 6ft of the existing equipment pad. As such, it will be within 30ft of the site and this criterion is met.

5. Concealment: Project does not defeat the concealment elements of the eligible (existing) support structure. 47 C.F.R. §1.6100(b)(7)(v).

   The existing monopole does not utilize concealment. Thus, the proposed upgrades will not defeat any existing concealment. This criterion has been met.

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[5] *"…this approach will in all cases limit modifications that are subject to mandatory approval to the same modest increments over what the relevant governing authority has previously deemed compatible with local land use values." Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies, Report and Order, 29 FCC Rcd 12865, ¶ 174 (2014)*

6. Conditions of Approval: Project meets all existing, underlying Conditions of Approval. CFR 47 § 1.6100(b)(7)(vi).

   The proposed modification will meet existing conditions of approval, except for any changes that are non-compliant only in a manner that would not exceed the thresholds identified in CFR 47 § 1.6100(b)(7)(i) through (iv). Any conditions related to height do not apply, as the height increase is not considered a substantial change. See response to Substantial Change Criteria #1, above. Additionally, the antennas will be substantially similar to the existing antennas so as to blend with the existing Facility. The equipment will be located adjacent to existing equipment between water tanks. No trees or vegetation will be removed for the installation.

Conclusion

As the proposed modification qualifies as an eligible facilities request, we respectfully request that the City of Tualatin review and approve the changes subject only to the substantial change criteria of Section 6409 of the Spectrum Act.

Thank you,

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PD33 Boones & Ibach NSB RF Justification

Coverage Justification

OVERVIEW

AT&T is proposing to build a new wireless communication facility ("WCF" or "facility"), PD33 Boones & Ibach (45.351533, -122.769051) in Washington County. This proposed facility meets AT&T's coverage objectives (providing outdoor, in-vehicle, and in-building wireless coverage) within a geographic area not presently served by AT&T's network. Specifically, this proposed new wireless facility Candidate will provide enhanced coverage as well as additional capacity at Tualatin High School, residential and new development along SW Boones Ferry Rd as well as some part of SW Graham Ferry Rd to the west of it. It will also provide coverage enhancement at areas between SW Frobase Rd, SW 82nd Ave and SW Norwood Rd to the east. This coverage objective was determined through a combined analysis of the coverage from current sites in the area, customer complaints, service requests, and radio frequency engineering design. This facility will allow AT&T to provide uninterrupted wireless service with fewer dropped calls, improved call quality, and improved access to additional wireless services that the public now demands. This includes emergency 911 calls throughout the area.

In addition to AT&T 4G LTE commercial facilities, this proposed WCF will include facilities to support FirstNet. As a FirstNet site, this proposed WCF is part of a more significant initiative by AT&T to upgrade existing wireless sites and to build new sites to support FirstNet and deploy the new frequency band for first responders ("Band 14").

SEARCH RING

AT&T's radio frequency ("RF") engineers performed an RF engineering study, considering multiple objectives, to determine the approximate site location and antenna height required to fulfill the noted network objectives for the targeted service area. From this study, AT&T's RF engineers identified a "search ring" area where a WCF may be located to provide effective service in the target coverage area. Candidates need to have good height and location, overlooking major roads and highways. This was the primary criteria to identify the search ring.

Figure A—Targeted Search Ring indicates the search ring AT&T's RF engineers established for this proposed site. A discussion of the methodology AT&T's RF engineers used to identify the search ring is included at the end of this RF Justification document.

Coverage Justification—Con't

COVERAGE OBJECTIVE

Figure B—Existing AT&T Coverage shows existing AT&T wireless services in the general area of the proposed new site. The red star indicates the location of the proposed new WCF. The blue diamonds indicate the location of existing AT&T WCF sites; coverage from AT&T's existing WCF sites is shaded in green. As can be seen, there is a coverage gap in all areas not shaded in green which may have minimal to no 4G voice service and does not have adequate 4G LTE service.

Figure C—Projected New AT&T Coverage identifies the projected coverage from the proposed new WCF with the requested antenna tip height of 128ft. The proposed antenna tip height is the necessary to help fill the coverage gap relative to nearby complementary wireless facilities and to support the FirstNet Network. This is also the height where an AT&T wireless device can be reliably used to make and receive telephone calls and use data service in the presence of varying signals. The new WCF will provide coverage and capacity enhancement at Tualatin High School, residential and new development along SW Boones Ferry Rd as well as some part of SW Graham Ferry Rd to the west of it. It will also provide coverage enhancement at areas between SW Frobase Rd, SW 82nd Ave and SW Norwood Rd to the east.

Figure D—Projected New AT&T Coverage identifies the projected coverage from the proposed new WCF with the requested antenna tip height of 127.75ft, which is the minimum vertical separation from other carriers' antennas that is required to avoid interference, with structure extension. As seen from the figure, coverage footprint is slightly reduced. Proposed location with antenna tip height of 128ft provides 0.25% more coverage than antenna tip height of 127.75ft.

Figure E—Projected New AT&T Coverage identifies the projected coverage from the proposed new WCF with the requested antenna tip height of 85.5ft which is the minimum vertical separation from other carriers' antennas that is required to avoid interference, without structure extension. As seen from the figure, coverage footprint is reduced. Proposed location with antenna tip height of 128ft provides 37.22% more coverage than antenna tip height of 85.5ft.

ANTENNAS AND EQUIPMENT

To meet the above coverage objectives, this proposed site will contain up to 12 panel antenna and 18 RRH units (together with all associated accessory equipment).

at&t

Figure A—Targeted Search Ring

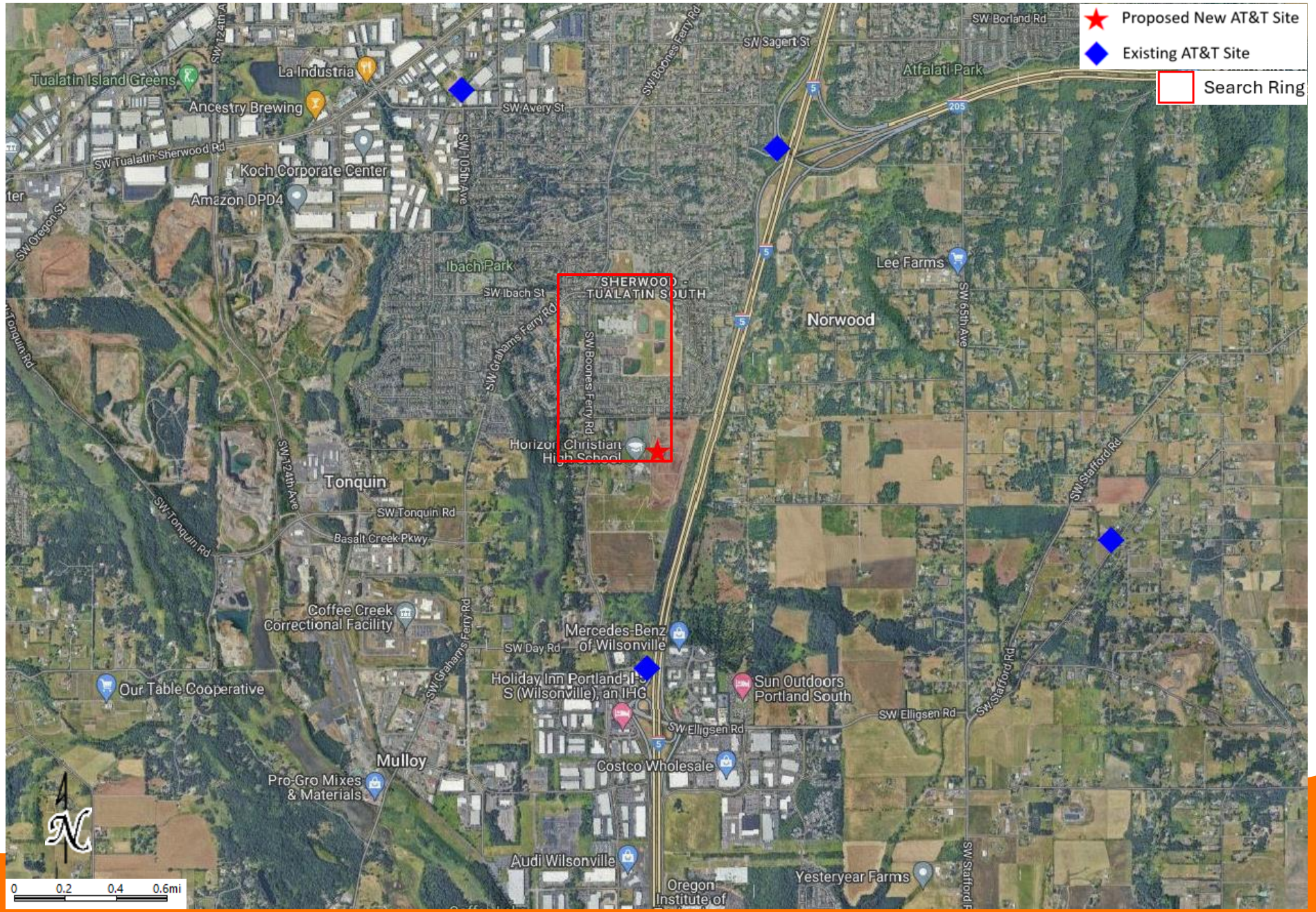


Figure B—Existing AT&T Coverage

Coverage BEFORE Proposed AT&T Facility On-Air—128ft Antenna Tip Height

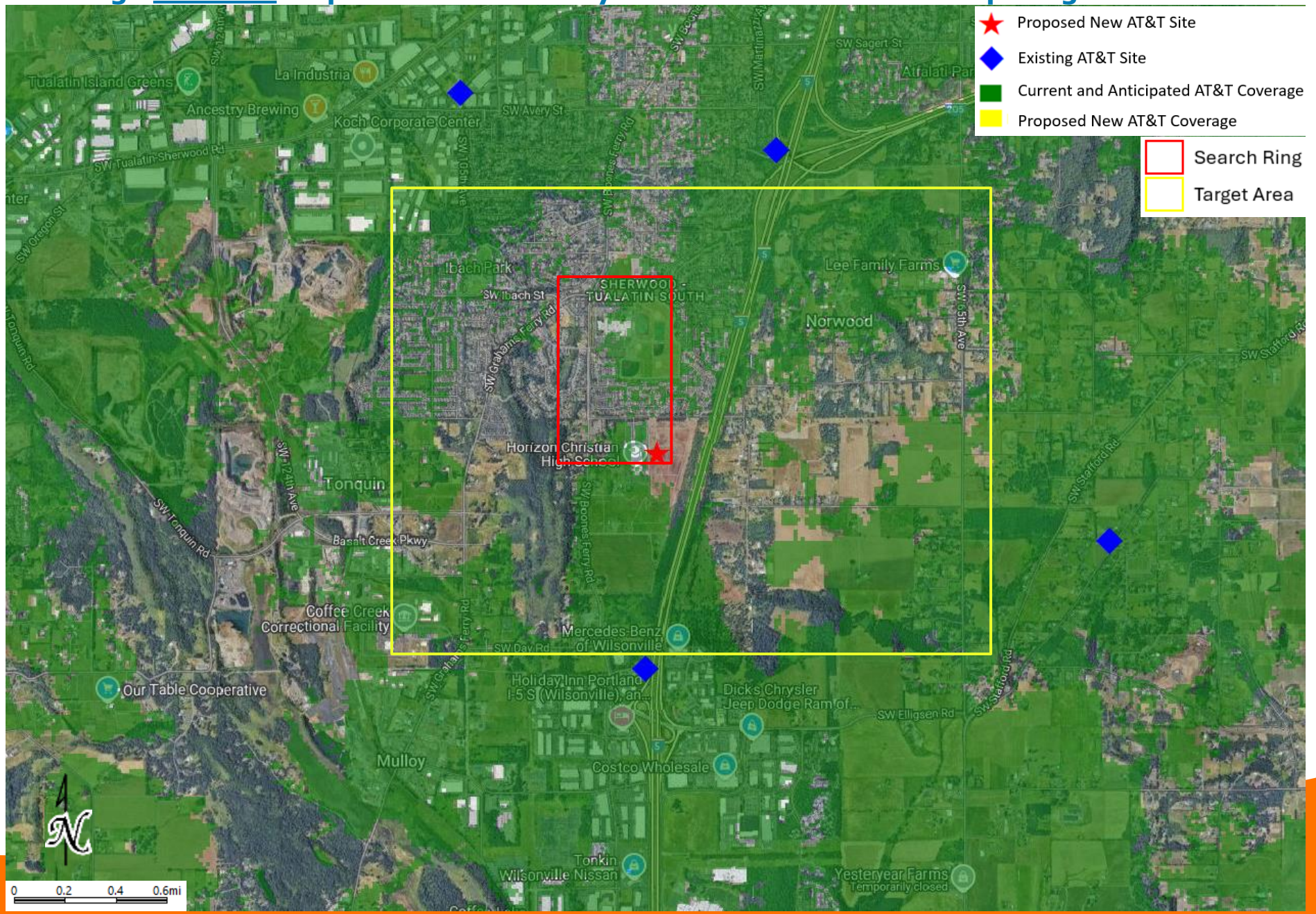


Figure C—Projected New AT&T Coverage

Coverage AFTER Proposed AT&T Facility On-Air—128ft Antenna Tip Height

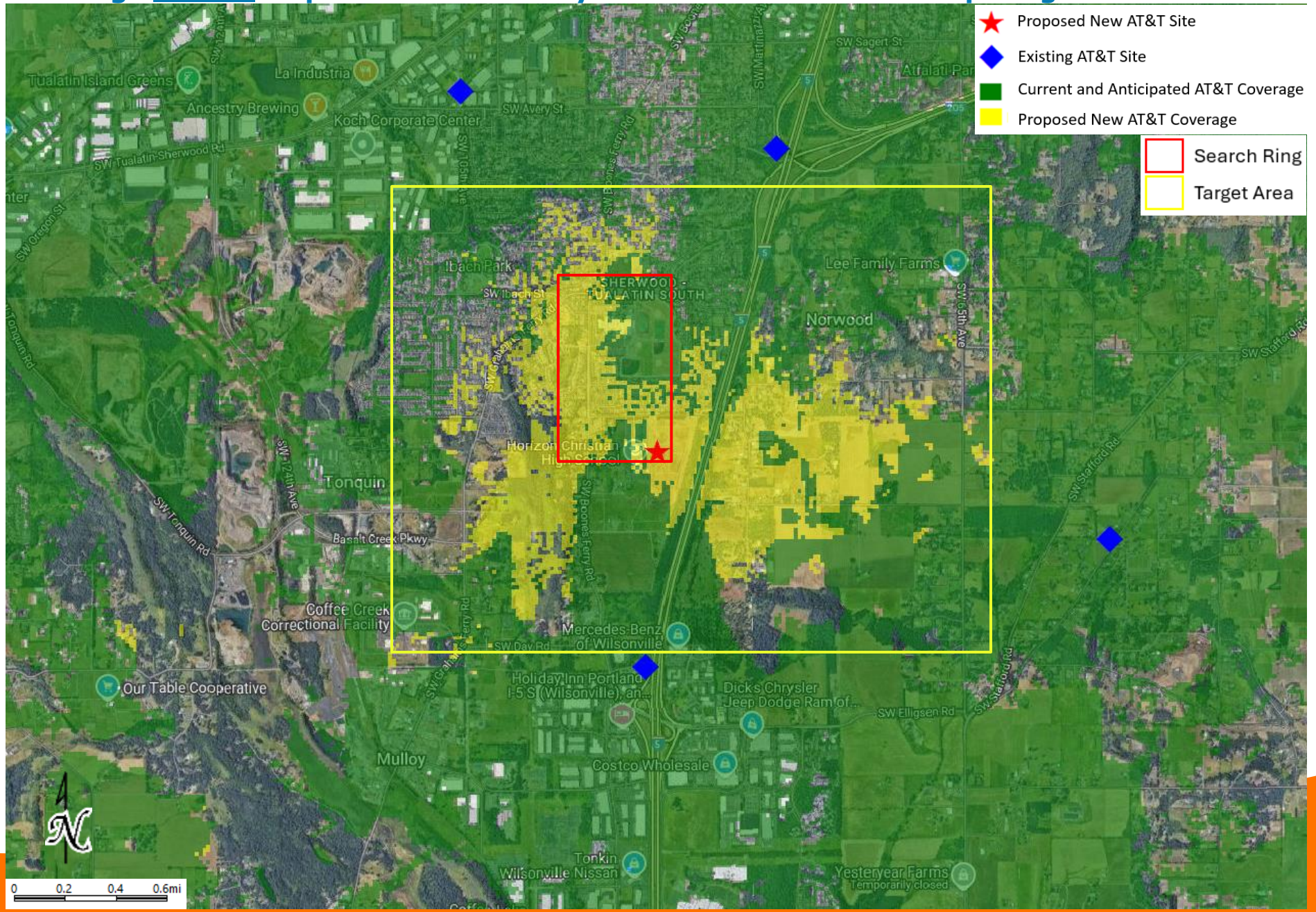


Figure D—Projected New AT&T Coverage

Coverage AFTER Proposed AT&T Facility On-Air—127.75ft Antenna Tip Height

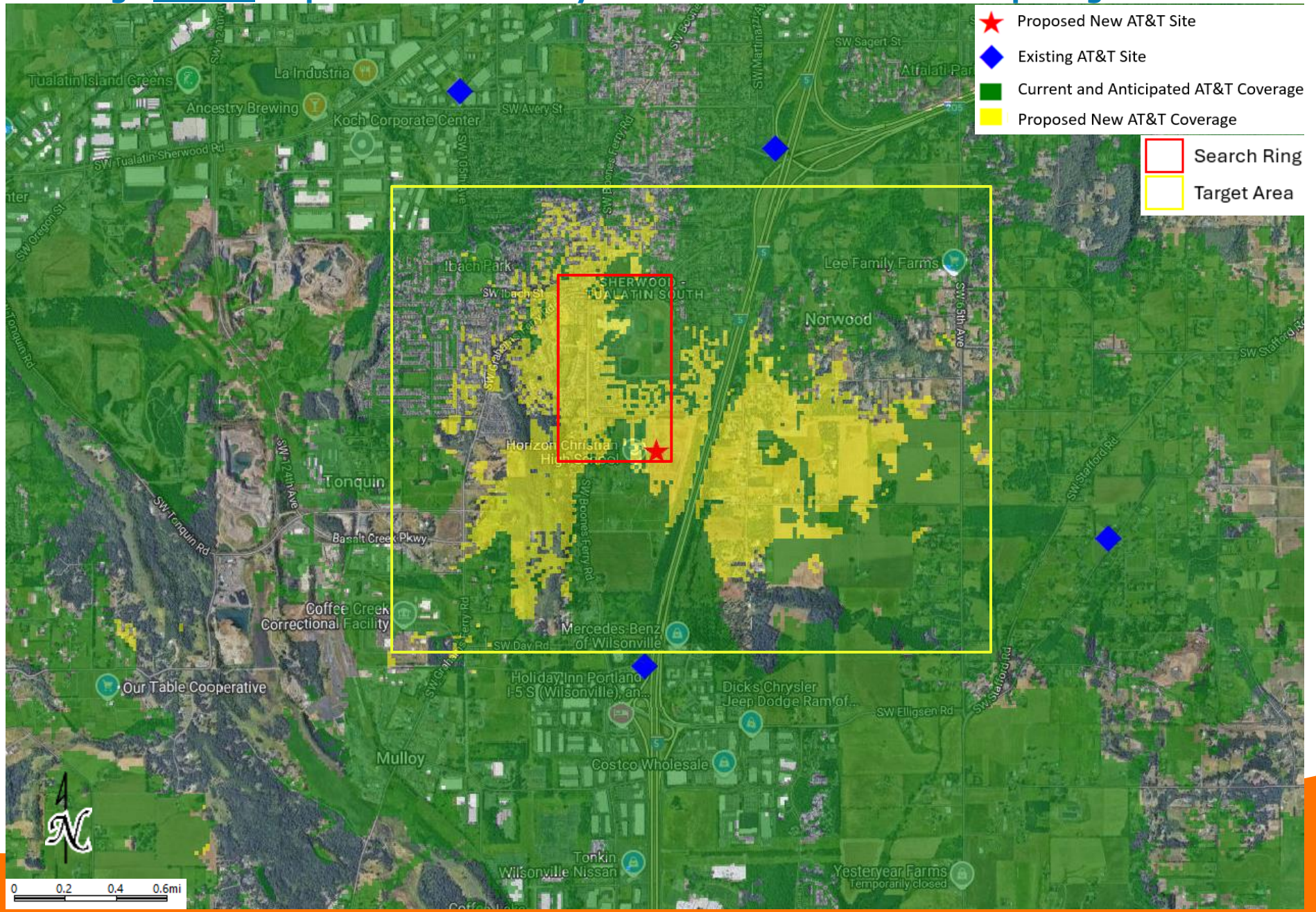
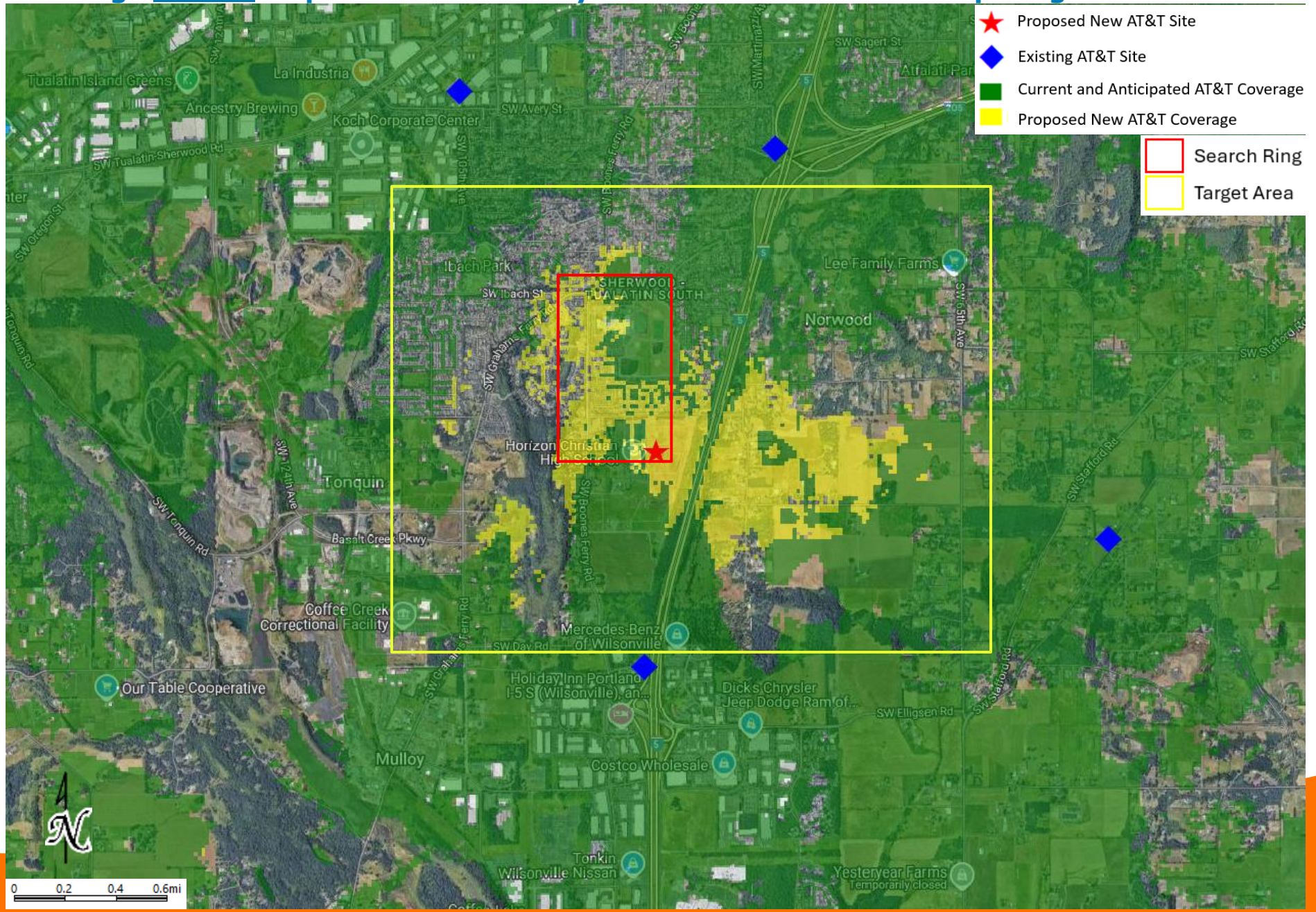


Figure E—Projected New AT&T Coverage

Coverage AFTER Proposed AT&T Facility On-Air—85.5ft Antenna Tip Height



Search Ring Methodology

AT&T's RF engineers used coverage propagation software systems to predict the coverage provided by the proposed new WCF. The software and AT&T's RF engineers considered the general factors outlined below, as well as more project-specific factors such as the type of antenna, antenna tilt, etc.

Coverage. The antenna site must be located in an area where the radio frequency broadcasts will provide adequate coverage within the targeted service area. The RF engineer must take into consideration the coverage objectives for the site as well as the terrain in and around the area to be covered. Because radio frequency broadcasts travel in a straight line and diminish as they travel further away from the antennas, it is generally best to place an antenna site near the center of the desired coverage area. However, in certain cases, the search ring may be located away from the center of the desired coverage area due to the existing coverage, the surrounding terrain, or other features which might affect the radio frequency broadcasts, *e.g.* buildings or sources of electrical interference.

Clutter. AT&T's WCFs must "clear the clutter"—the WCF site must be installed above or close to RF obstructions (the "clutter") to enable the RF to extend beyond and clear the clutter. AT&T's radio frequencies do not penetrate mountains, hills, rocks, or metal, and are diminished by trees, brick and wood walls, and other structures. Accordingly, AT&T's antennas must be installed above or close to the "clutter" to provide high quality communications services in the desired coverage areas. Additionally, if the local code requires us to accommodate additional carriers on the support structure, the structure must be even taller to also allow the other carriers' antennas to clear the clutter.

Call Handoff. The WCF site must be in an area where the radio broadcasts from the site will allow seamless "call handoff" with adjacent WCF sites. Call handoff is a feature of a wireless communications system that allows an ongoing telephone conversation to continue uninterrupted as the user travels from the coverage area of one antenna site into the coverage area of an adjacent antenna site. This requires coverage overlap for a sufficient distance and/or period of time to support the mechanism of the call handoff.

Quality of Service. Users of wireless communications services want to use their services where they live, work, commute and play, including when they are indoors. AT&T's coverage objectives include the ability to provide indoor coverage in areas where there are residences, businesses and indoor recreational facilities.

Search Ring Methodology—Con't

Radio Frequencies used by System. The designs of wireless communications systems vary greatly based upon the radio frequencies that are used by the carrier. If the carrier uses radio frequencies in the 700 MHz to 850 MHz range, the radio signals will travel further and will penetrate buildings better than the radio frequencies in the 1900 MHz band. As a result, wireless communications systems that use lower radio frequencies will need fewer sites than wireless communications systems that use higher radio frequencies.

Land Use Classifications. AT&T's ability to construct a WCF site on any particular property is affected by state and local regulations, including zoning and comprehensive plan classifications, goals, and policies. AT&T's search rings take these laws and regulations into consideration.