



at&t

#10

CT69 Fort Stevens NSB RF Justification

© 2020 AT&T Intellectual Property. All rights reserved.

AT&T, the Globe logo and other marks are trademarks and service marks of AT&T Intellectual Property and/or AT&T affiliated companies.

Coverage Justification

OVERVIEW

AT&T is proposing to build a new wireless communication facility (“WCF” or “facility”), CT69 Fort Stevens (46.18016, -123.9605) in Clatsop 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 Fort Stevens State Park including main roads, residentials, campground and RV park. 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.



Figure A—Targeted Search Ring

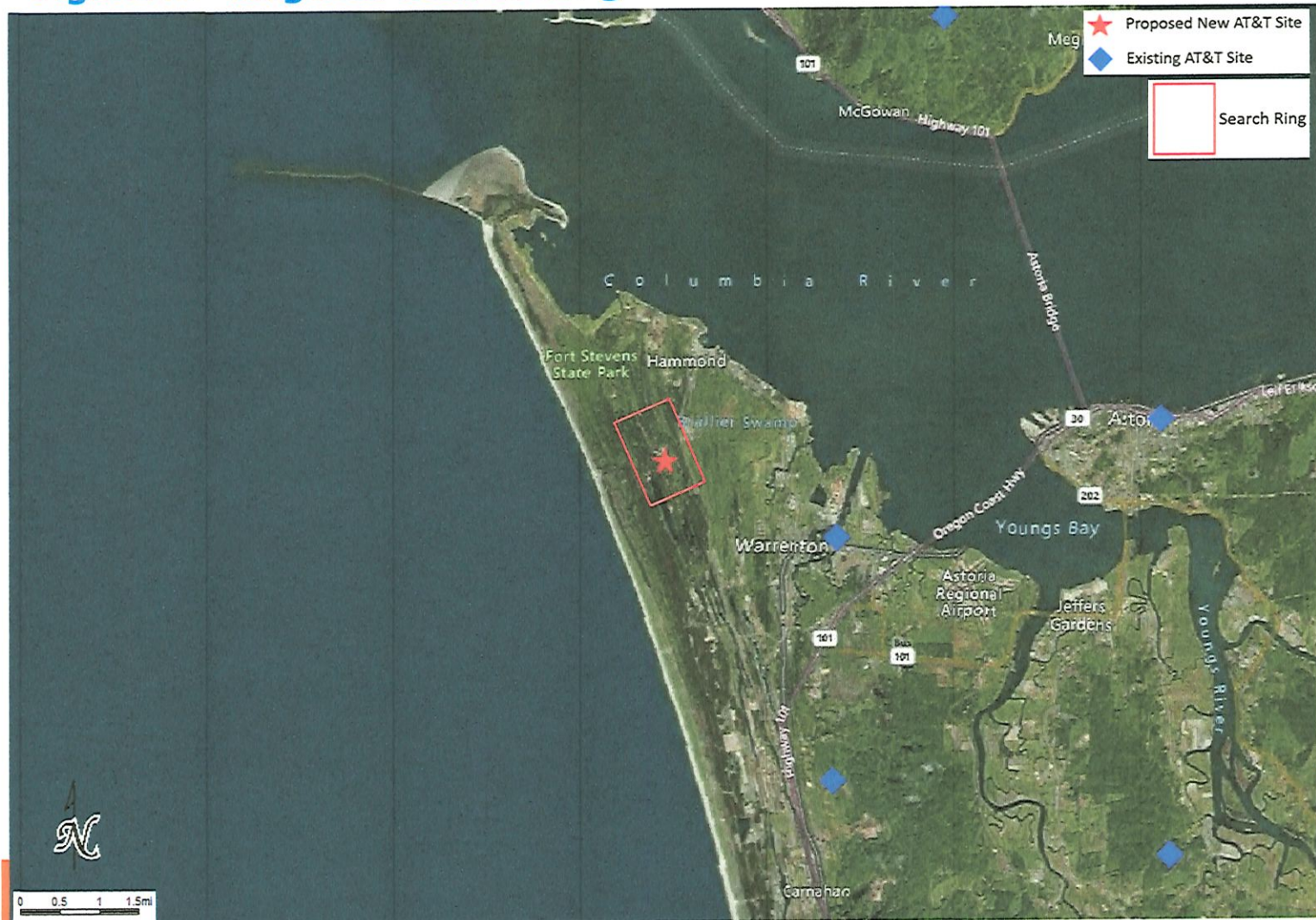
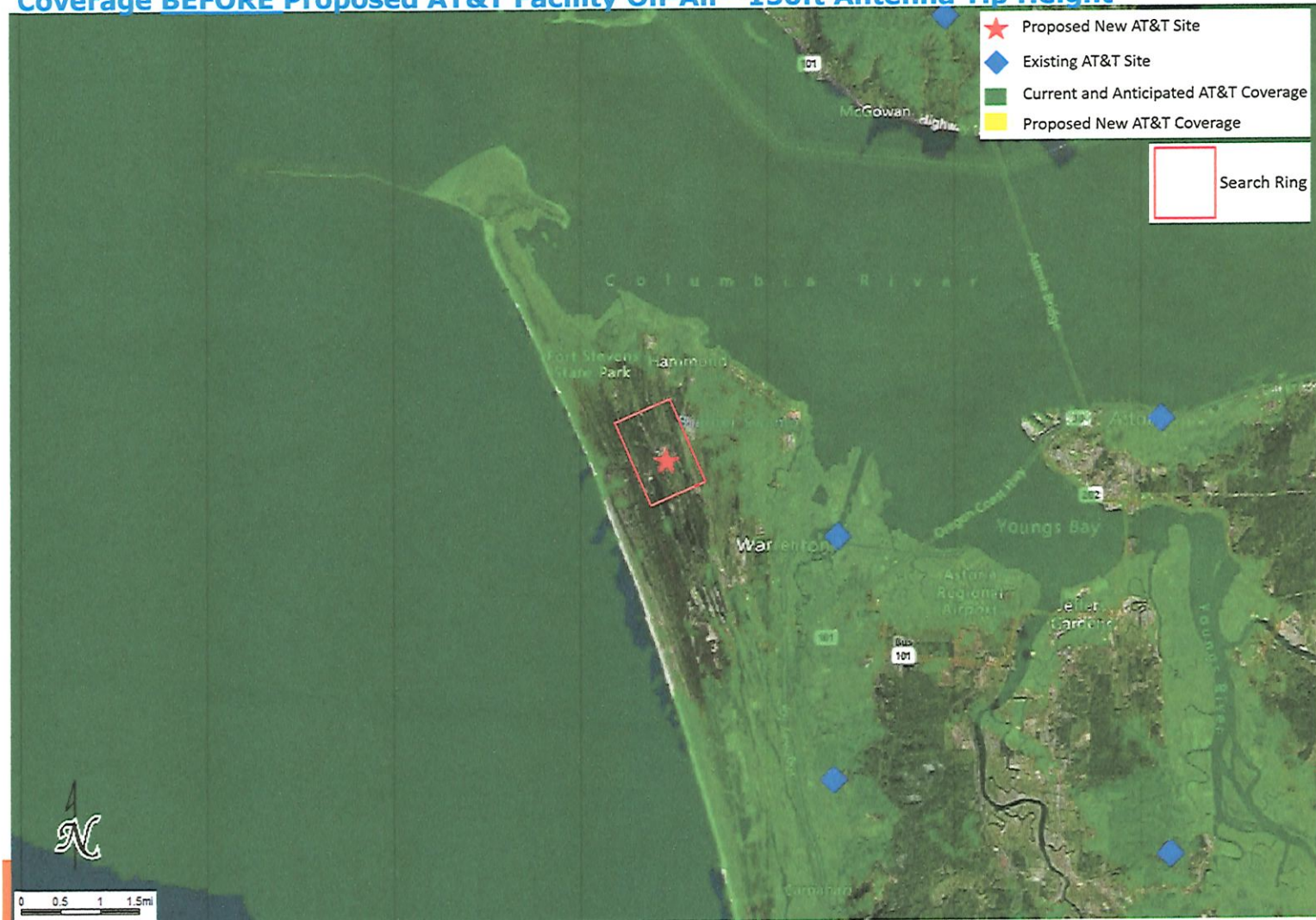


Figure B—Existing AT&T Coverage
Coverage BEFORE Proposed AT&T Facility On-Air—150ft Antenna Tip Height



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.

