



at&t

PD68 – South End Road RF Justification

Coverage Justification

AT&T is proposing a new site, PD68, located at 19230 South End Road, Oregon City, Oregon. Currently, AT&T's customers experience a significant gap in 700 MHz LTE wireless coverage on the southwest end of Oregon City. This gap extends for approximately 2 miles along South End Road and South Central Point Road. This is a major coverage gap (weak or no service) scattered with extremely unreliable service along South End Road and the nearby residential areas. The coverage area is characterized by rough terrain and rolling hills in a suburban setting which affect AT&T's ability to provide a consistent, reliable signal. The gap was defined through RF engineering analysis after considering a combination of customer complaints, service requests, and other factors.

AT&T's objective is to provide reliable outdoor, in-vehicle, and in-building coverage within the above-defined areas. The significant gap in wireless coverage is shown in **Exhibit A** which identifies the proposed site (red star) and surrounding adjacent sites (blue triangles). As can be seen, there is a large coverage gap in all areas not shaded in green.

Exhibit B shows the locations of recorded service issues reported by AT&T customers during the period of January 2013 to June 2014. The Legend notes the specific type of issues that were reported and shows precisely where AT&T customers have reported problems. This data further illustrates the LTE 700 MHz coverage gap and shows the need for enhanced service in the area.

Exhibit C shows the projected coverage from the proposed candidate with an antenna tip height of 75 feet. This is 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 exhibit illustrated the planned service coverage improvement along South End Rd and all the small streets. In addition, coverage is also improved at South Central Point Road and the nearby residential area. This site will improve the customer reported service issues addressed in **Exhibit B**.

Exhibit D shows the coverage from proposed alternate site candidate. As detailed below, the alternate site candidate is not adequate to fill the LTE 700 MHz coverage gap due to rough terrain shielding the signals making this site unfeasible to use.

Exhibits E show actual "real world" signal measurements collected showing the coverage gap around South End Road. This data was collected in Q3 of 2013.

Exhibit A – Existing LTE 700 MHz Coverage

Service Area BEFORE site addition



Exhibit B – Customer Reported Service Issues

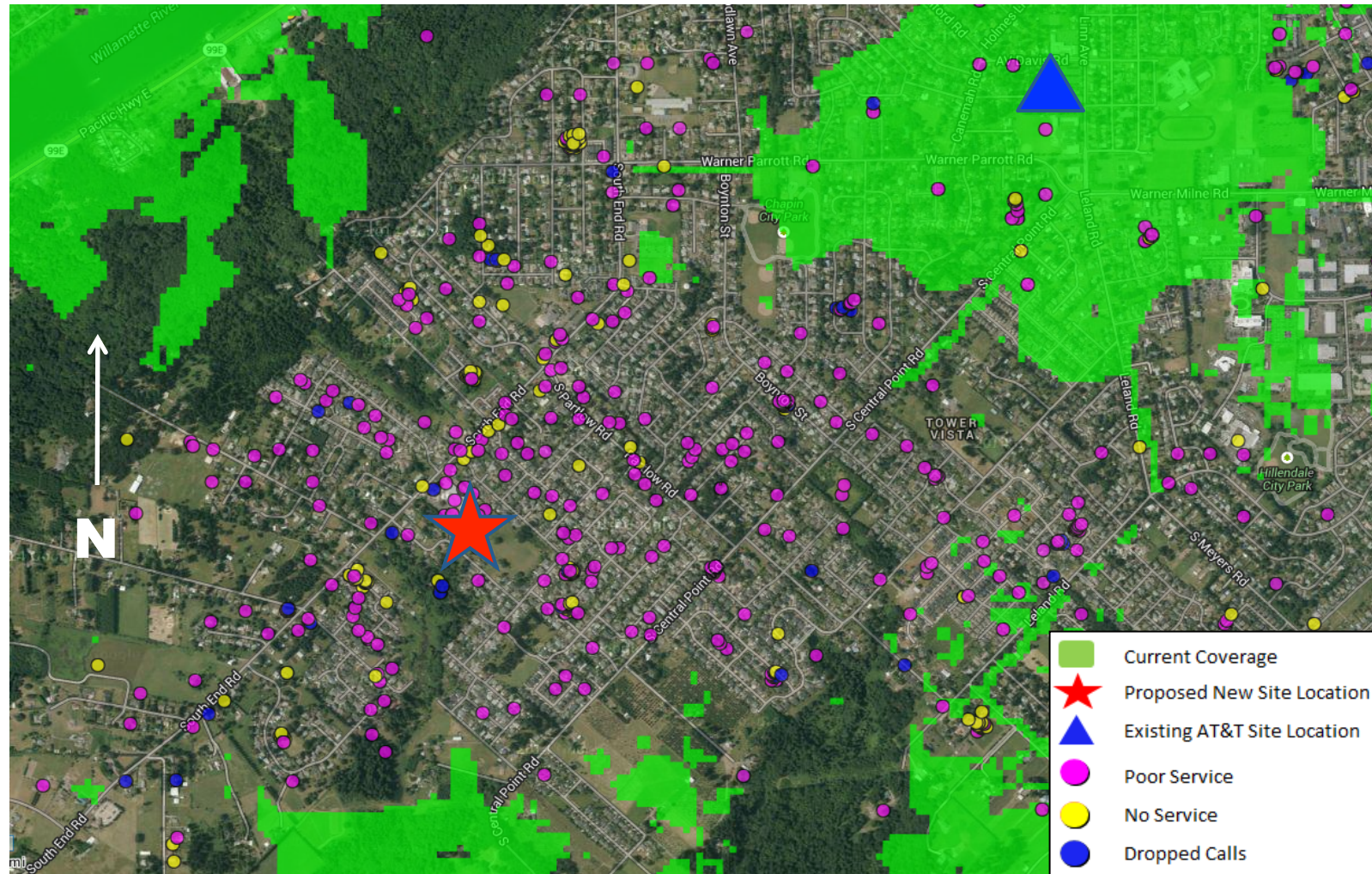


Exhibit C – Proposed LTE 700 MHz Coverage

Service Area After site addition – Antenna Tip @ 75 feet

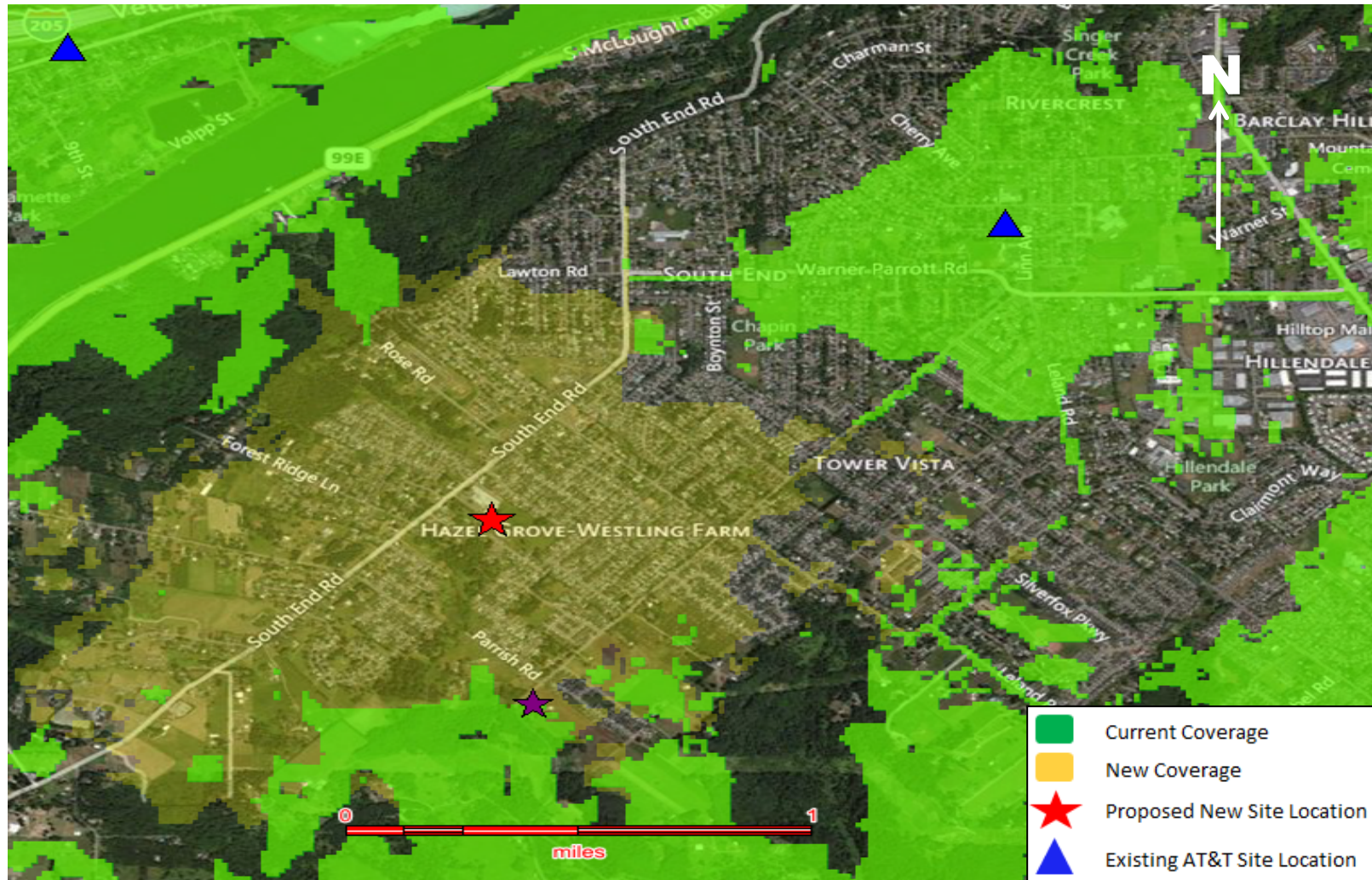
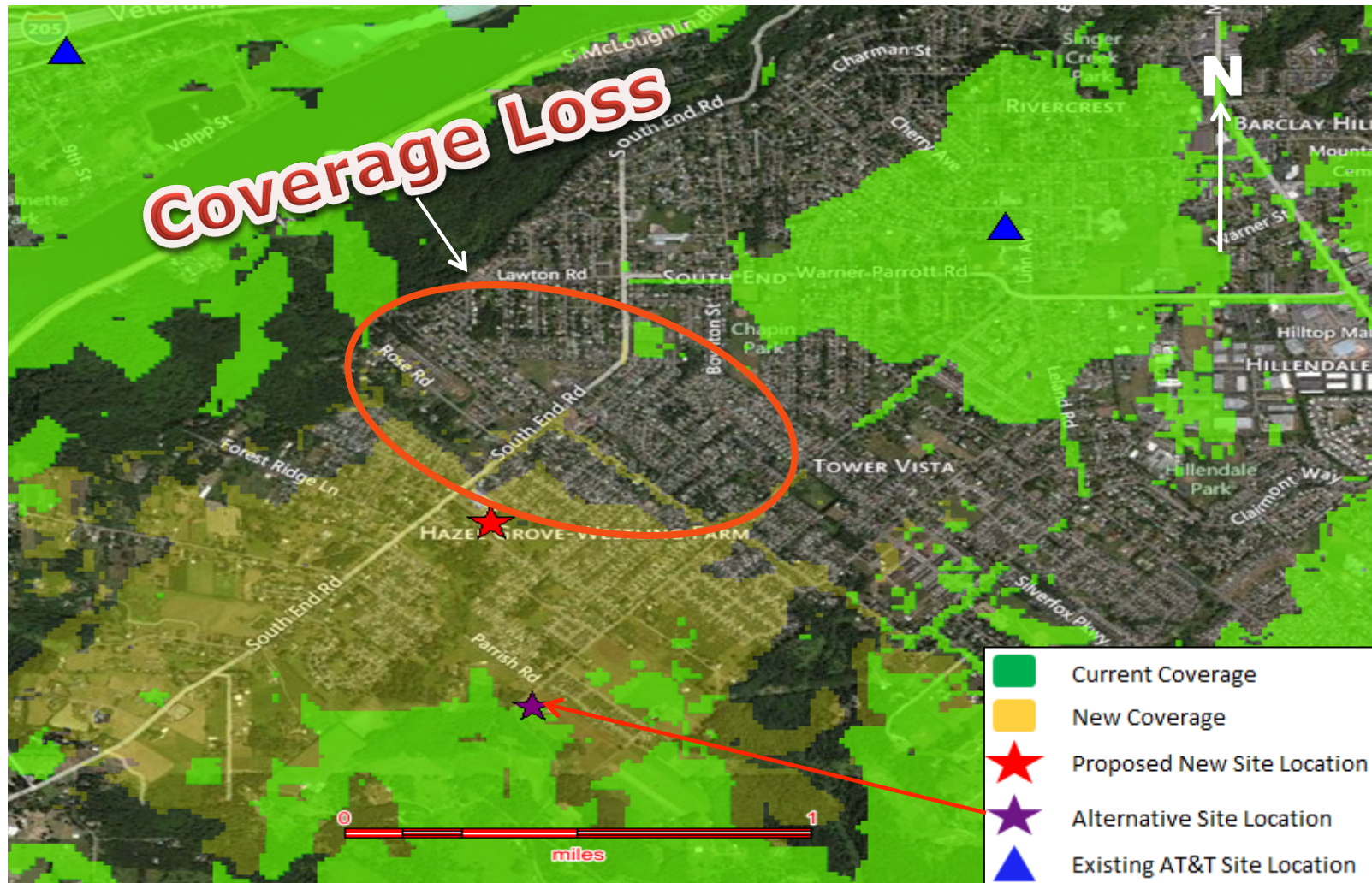


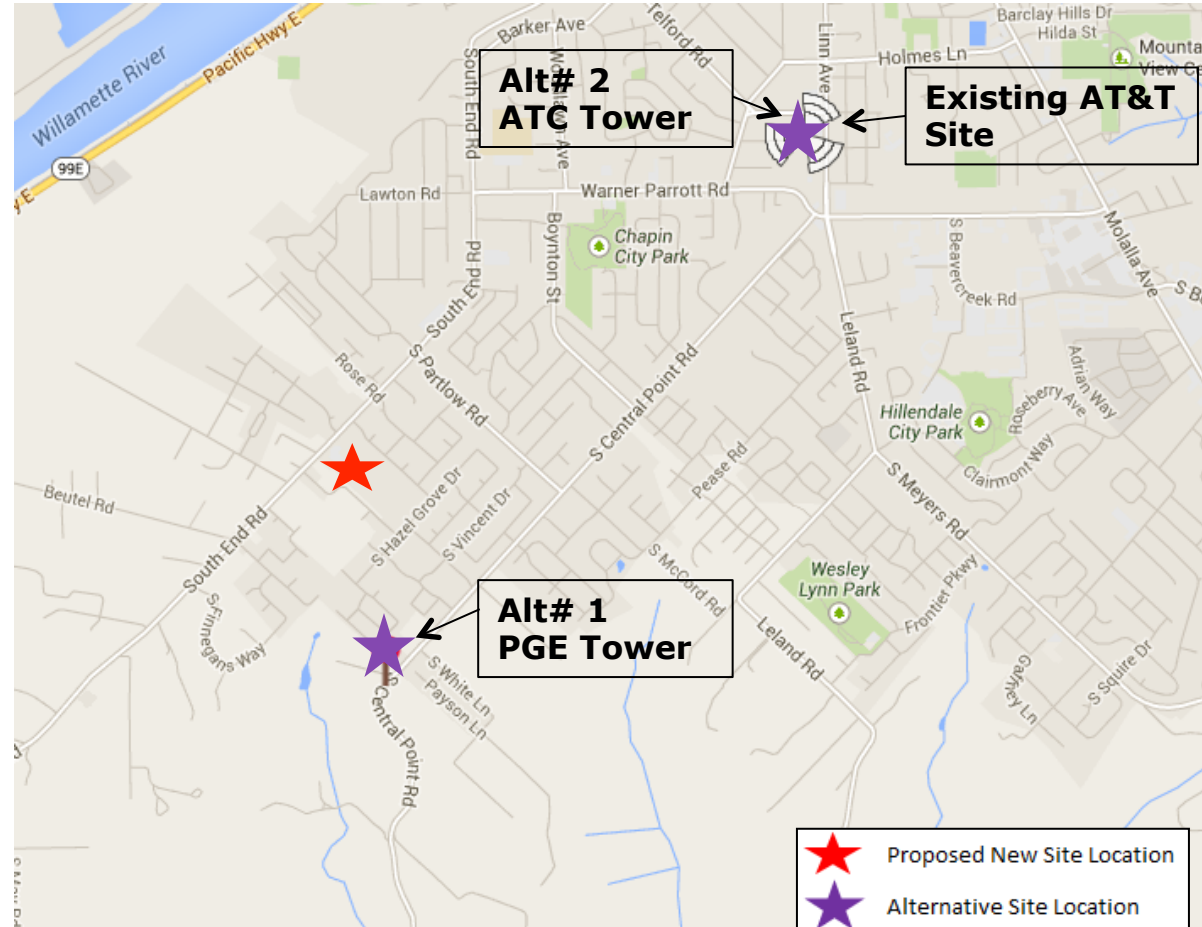
Exhibit D – Alternative Candidate Analysis

PGE Tower – Antenna Tip @ 94 feet



Analysis of Alternate Site Locations

- Alt# 1 is an existing PGE tower approximately 0.54 mile south of the proposed site location. Due to the distance of the PGE tower from the target coverage area, co-location at this tower will not meet the necessary coverage improvement. Also, only one sector of this alternate candidate can primarily cover the South End residential neighborhood and therefore will carry the bulk of traffic which will result in performance issues.
- Alt# 2 was proposed by the local neighbors, which AT&T already has an existing site at the same location.



Map of Gresham, Oregon, showing LTE signal coverage for AT&T. The map displays various streets and landmarks, with colored dots indicating signal strength levels. A legend in the top right corner defines the symbols: Current Coverage (green), New Coverage (yellow), Proposed New (red star), Alternative Site (purple star), Existing Site Location (blue triangle), and Customer Report (pink circle). A legend in the bottom right corner shows signal strength ranges in dBm: all others (black), -140 to -117 (black), -117 to -105 (pink), -105 to -95 (red), -95 to -85 (yellow), -85 to -75 (blue), and -75 to 0 (green). A blue arrow points to a cluster of black dots labeled 'Poor Signal Levels'.