EXHIBIT P
RF JUSTIFICATION AND ALTERNATIVE SITE ANALYSIS
RF Justification

SNAG31, 75TH ST SW & 46TH AVE W

Exhibit 9: RF Justification Coverage Statement & Propagation Maps
Coverage Justification

AT&T is proposing a new site, SN4931, located at 2605 Mukilteo Speedway, Mukilteo, Washington. This is an AT&T service area that has weak signal coverage as illustrated in Exhibit A. Exhibit A identifies the proposed site (red star) and surrounding adjacent sites (blue triangles). As can be seen, there is a large 4G LTE 1900 MHz coverage gap in all areas not shaded in green. While the target coverage area has voice grade service today, it does not have adequate 4G LTE service within the 1900 MHz frequency band. As AT&T’s technology improves and expands from 2G and 3G to 4G LTE, the company is committed to meeting all wireless communication needs of its customers by delivering faster data speeds and more reliable and expansive voice and data connections, whether its customers are in buildings, in vehicles, or outdoors. AT&T’s addition of new technology will also reduce the number of dropped calls and otherwise address its customers’ reported service issues in the area.

The gap was determined as a result of analyzing a combination of customer complaints, service requests, and from RF engineering design analysis. The planned service coverage improvement is mostly for the residential communities near the Mukilteo chamber of commerce and Olympic View Middle School. This site will also improve road coverage along portions of US Highway 525 (Mukilteo Speedway), 46th West, 48th Avenue West and 16th Street Southwest.

Exhibit B shows the projected coverage from the proposed candidate with an antenna tip height of 120 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 proposed antenna tip height is the minimum necessary to fill the LTE 1900 MHz coverage gap relative to nearby complementary wireless facilities. As shown in Exhibits C1 and C2 locating the antennas below 120 feet will reduce the effectiveness of the new site and will make the proposed facility inadequate, potentially requiring additional sites.

Exhibits D1, D2, D3, D4, and D5 show the coverage from proposed alternate site candidates. As detailed below, these alternates are not adequate to fill the LTE 1900 MHz coverage gap or are otherwise not feasible.
Exhibit A - Existing LTE 1900 MHz Coverage

Service Area BEFORE site addition

Generated April 2014
Coverage Predictions are Computer Model Estimates

Current/Planned Coverage
Proposed New Site Location
Existing AT&T Site Location
Planned Future AT&T Site

135
Exhibit B – New LTE 1900 MHz Coverage
Service Area AFTER new site addition - Antenna Tip @ 120 feet

Generated April 2014
Coverage Predictions are Computer Model Estimates
Exhibit C1 – New LTE 1900 MHz Coverage
Service Area AFTER new site addition - Antenna Tip @ 60 feet

Coverage loss due to lower antenna height

Generated April 2014
Coverage Predictions are Computer Model Estimates
Exhibit C2 – New LTE 1900 MHz Coverage
Service Area AFTER new site addition - Antenna Tip @ 100 feet

Coverage loss due to lower antenna height

Generated April 2014
Coverage Predictions are Computer Model Estimates
Analysis of Alternate Site Locations

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Candidate Description</th>
<th>Antenna Tip/s (feet)</th>
<th>Decimal Latitude</th>
<th>Decimal Longitude</th>
<th>Is this tower Height Extendable?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rawland Tower in an nearby Industrial zone</td>
<td>120'</td>
<td>47.929025</td>
<td>-122.289058</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Rawland Tower in an nearby Industrial zone</td>
<td>120</td>
<td>47.925869</td>
<td>-122.290247</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Existing T-Mobile Tower</td>
<td>135'</td>
<td>47.9227</td>
<td>-122.2942</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>SnoPUD Utility Pole</td>
<td>70'</td>
<td>47.929668</td>
<td>-122.302210°*</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>Existing Water Tank</td>
<td>65'</td>
<td>47.923192°*</td>
<td>-122.293918°*</td>
<td>No</td>
</tr>
</tbody>
</table>

#1 Alternate site is a rawland tower in an nearby industrial zone but far away from Intended target area. Coverage is shown in Exhibit D1. Terrain significantly impacts this site. It is ineffective as shown.

#2 is a similar situation being located away from the intended target area and terrain significantly impacts this site. Coverage is shown in Exhibit D2.

#3 Located far away from the intended target area and terrain significantly impacts this site. Coverage is shown in Exhibit D3.

#4 Intended coverage area is significantly reduced due to lower antenna tip height even though this site is close to proposed site. Coverage is shown in Exhibit D4.

#5 Located far away from the intended target area, due to lower antenna tip height and terrain significantly impacts this site. Coverage is shown in Exhibit D5.
Exhibit D1 – New LTE 1900 MHz Coverage Alternate 1
Antenna Tip @ 120 feet (Raw land Tower in an nearby Industrial zone)

Coverage loss due to Alternate site Location

Alternate# 1

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Coverage Predictions are Computer Model Estimates
Exhibit D2 - New LTE 1900 MHz Coverage Alternate 2

Antenna Tip @ 120 feet (raw land tower in an nearby Industrial zone)

Coverage loss due to Alternate site Location

Alternate # 2
Exhibit D3 – New LTE 1900 MHz Coverage Alternate 3
Antenna Tip @ 135 feet (Existing T-Mobile Tower)

Coverage loss due to Alternate site Location

Alternate# 3

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Coverage Predictions are Computer Model Estimates
Exhibit D4 – New LTE 1900 MHz Coverage Alternate 4
Antenna Tip @ 70 feet (SnoPUD Utility Pole)

Coverage loss due to lower antenna tip height

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Coverage Predictions are Computer Model Estimates
Exhibit D5 – New LTE 1900 MHz Coverage Alternate 5
Antenna Tip @ 65 feet (Existing Water Tank)

Coverage loss due to Alternate site Location

Alternate# 5

Generated April 2014
Coverage Predictions are Computer Model Estimates