

9300 Mill Station Rd. – Vertical Bridge Wireless Tower Proposal (CA-7225)

Co-location Viability and Structure Height

Currently there are not any co-locatable buildings or structures within the designated search ring. There are many components that determine whether a building or structure is a co-locatable option. One of the aspects which determines a structure's co-location viability is height. When search rings are created by the project's Radio Frequency Engineers, they also communicate the ideal height that would adequately meet the coverage objective goals in this area. In this case, the height requirement for the project is 80'. When a screened structure is 80' in overall height, the RAD center of the antennas (the point in which emission is released for coverage) would be at 71'. This is called out on sheet A-4 of the plans. Prior to creating plans for our project, we take the time to research the jurisdiction's height restrictions. We make sure to move forward with a parcel that will enable us to meet the project's height needs. This is, in part, one aspect of what has led us to our current location.

Attached are coverage maps which show the type of coverage that would be emitted with an 80' structure. As evidenced through the updated maps, coverage would be negatively impacted if the overall height were lowered to 70' or 60'. The higher that the antennas are, the larger the coverage footprint is expected to be. The propagation maps show that an 80' tower would provide the most adequate footprint in coverage as this would essentially completely address the deficits in coverage in this location. If the overall height of the tower is lowered, the coverage footprint shrinks in size. If the tower were lower than 80' in height, it would also promote the need to potentially install additional future towers within the vicinity to make up for the lack of coverage provided by a shorter tower. It is for these reasons that an 80' tower is considered the most ideal height for this project.

The Z-axis below shows that the search ring is made up of a combination of single-family residential homes and agricultural land. Single-family residential homes are not suitable structures for installing a wireless facility as the parcels typically don't have enough space to install both a tower and equipment on residentially used land. For this project, the tower and its equipment require 2,500 Sq Ft of space for proper installation. Single-family residential homes are also not suitable for co-location because the existing homes likely range from 15'-20' in overall height, which is not sufficiently tall to meet the coverage goals for this project. Additionally, single-family homes would likely not be able to structurally support the weight of our antennas through a house's rooftop. Ultimately co-locating on a single-family home would not be a viable opportunity for implementing our proposal.

The tallest existing objects within the ring are natural trees. The natural trees within the search ring area appear to range from 30'-90' in height. While antennas and equipment cannot be mounted onto natural trees, the existing trees promote screening for our proposed tower. Our revised sims show how the tower would blend in with existing surrounding trees.

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Z-axes From South to North:



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Z-axis From North to South:



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The closest co-location opportunities are as follows:

Coordinates: 38.423266° , -122.847506°

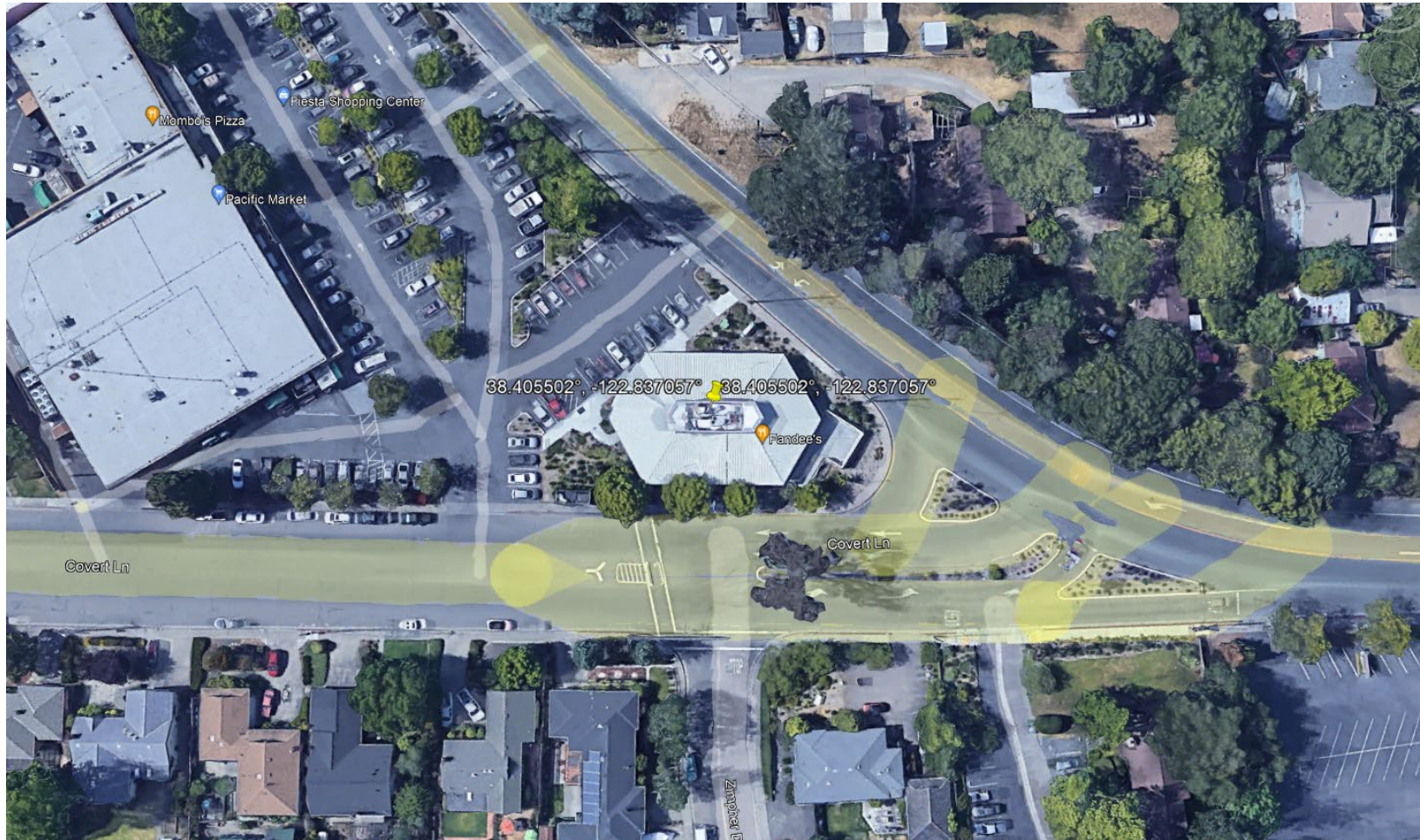
Nearest Existing Wireless Tower – Approximately 4,000' away from the designated ring. We cannot locate on this facility because it is well outside of the range of coverage for the ring and the coverage objectives would not be met.



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Coordinates: 38.405502°, -122.837057°

Second Nearest Existing Wireless Facility – Approximately 5,000' away from the designated ring. We cannot locate on this facility because it is well outside of the range of coverage for the ring and the coverage objectives would not be met.



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Coordinates: 38.402127°, -122.825307°

Third Nearest Existing Wireless Tower – Approximately 9,000' away from the designated ring. We cannot locate on this tower because it is well outside of the range of coverage for the ring and the coverage objectives would not be met.

