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## Re: Community Noise Impact Study for Crow's Feet, Westfir, OR

A noise study was commissioned to explore the compatibility of converting the building attached to the Post Office in Westfir into a market, bike shop, tap room & food café and an outdoor dining area with food carts. It is located on West Oak Rd, directly across from a few houses located on the other side of West Oak Rd. The study reveals there is no potential for detrimental noise impact on nearby houses.

### A) Overview

Vicinity map of proposed development of the old Post office with distance scale showing West Oak Rd and the nearby homes. Elevation of Post office is 1086', the road is at 1092 and the homes across the street are about 1095'.



## B) Compatibility

Below is an overlay of the above vicinity map overlaid with the proposed modification to the old post office site. Here we see the houses across West Oak Rd and others to the west, alongside the NW wall of the post office. This proposed development does not directly encroach on any existing neighbor.



The Crow's Feet facility introduces no new noise generating features into the community except off the back of the building. Here on the NE facing side is a door that enters into the Tap Room & Café area. In front of the wall is a new building. From below it appears as a 20 x 50' patio, above it is an apartment. At the SE end of the patio is an enclosed stairwell.

The patio roof and enclosed stairwell act as noise barriers to any noise emitted from front doors of the Tap & Café room. The parking lot and driveway are similar to existing and previous post office activities.

A noise survey was taken in this area. The background sound level of 40 dBA was measured uniformly in different locations. This background noise comes from the riffing in the river nearby. Trains passing by, around the back side of this area, fill the space with noise levels in the 75 dBA range.

### C) Noise Mitigation

The noise generating location is the activity area, shaded in green. There are two groups of houses within range of the activity area. Refer to the two overhead views of the neighborhood to see houses some 100' due west at the end of 1<sup>st</sup> and 2<sup>nd</sup> Streets and another group some 200' due south across West Oak Rd. The houses to the west will be protected by the sound berm and fencing provided by Trans Cascadia Excursions development and if not, then by a sound wall built along the diagonal NW property line of Crow's Feet. Houses to the south will be protected by increased distance and sound berms.



To the NE of the patio lies a parking lot parallel to the road. Then there is a berm, on the far side of which lies an activity area. Again, these compared to a sound wall and the do not reflect sound on either side of the berm. The berm blocks noise from the activity area. Because a berm has a sloped earth surface and not a vertical sound wall, the parking lot side of the berm does not reflect parking lot noise back towards the houses across the street.

The distance between the outdoors area and the homes to the south is about 200' across West Oak Rd. A loud shout in the open at that distance would register  $90 - 20 \log 200/3 = 90 - 36.5 \text{ dB} = 53.5 \text{ dB}$ . Add the berm barrier effect of about 8 dB and we have the sound arriving at 46 dBA. This would be audible but not disturbing because it arrives with a 40 dBA background noise level.

More specifically, the Lane County noise code, which limits noise crossing residential property lines to not exceed 50 dBA at night (after 10pm) and 60 dBA during the daytime (after 7am), is not expected to be exceeded.

#### D) Conclusion

The noise mitigation of distance, berms and barriers combine to reduce any intruding noise to the existing ambient noise levels by the time they reach neighboring houses, both across the street and around the back side where homes are located around the end of 2<sup>nd</sup> St, northwest of the old post office. Furthermore, its operation should not exceed Lane County noise limits.

The Crow's Feet development is expected to be a compatible addition to the local community with regards to noise.

Sincerely



**Arthur Noxon, PE**  
**Acoustical Engineer**

