



September 30, 2024

City of Scappoose  
Community Development Director  
33568 E. City of Scappoose  
Scappoose, OR 97056

**Subject: Buxton Ranch Planned Development and Subdivision Remand (LUBA Case No. 2023-01) (Local File #SB1-22, ZC1-22, CU1-22, SLDP (1-22, 2-22, 3-22, 4-22))**

Dear City of Scappoose Development Director:

My name is Roger C. Sutherland, P.E., and I'm a consulting water resources engineer with 52 years of experience in watershed/stormwater management planning, water quality planning and BMP design, urban hydrology, stormwater pollutant load estimation and BMP modeling, riverine hydraulics, and floodplain mapping. I'm a registered professional engineer (P.E.) in Oregon and have lived and practiced here since 1978. I live in Seaside, Oregon, where I consult part-time through Cascade Water Resources, LLC. I was a principal owner of Pacific Water Resources, Inc. out of Beaverton, Oregon, from 1998 to 2011, when we sold the company to AMEC, a national firm.

I'm a recognized expert in hydraulics and urban hydrology. My knowledge of FEMA criteria and processes contributes greatly to my ability to solve serious flooding problems that plague communities. I have conducted flood insurance studies (FISs) and re-studies throughout Oregon. In addition, I have reviewed, conducted, or directed the hydrologic and hydraulic analyses associated with over thirty FEMA-approved floodplain and floodway modifications referred to as No-Rise Certifications, CLOMR, and LOMRs that dealt primarily with both public or private improvements, usually involving roadway or pathway crossings or encroachments along FEMA regulated waterways. I have made numerous presentations to City Councils, County Commissioners, Planning Committees, and the public, often discussing controversial flood-related topics. In some cases, the audiences could have been characterized as hostile, yet I've always managed to communicate the results of various flood study studies effectively and understandably. In February 1996, during the historic Oregon floods, I was contacted by CBS News out of New York and spent two days with a film crew and was featured throughout a 6-minute documentary that aired nationwide on the CBS' Sunday Morning show.

I've known Joel Haugen, a resident of Scappoose, for over a decade, and I have followed the proceedings associated with the above-referenced development proposal. I share similar concerns with Mr. Haugen that the development as it is currently proposed is a bad idea that could end up doing so much reversible harm. I testified at previous hearings several years ago. I wanted you to know that I have received no monetary compensation for my previous or current efforts. I do this as



my way to give back to Oregon communities in hopes that they can learn from the mistakes we have made in the past and decide to do the right thing as it relates to the complicated business of development and its hydraulic, hydraulic, and water quality impacts to the fragile waterways that drain them.

*focus*  
I'm going to focus my remarks on the foolishness of allowing massive filling in the floodplain adjacent to a flood-prone waterway based on peak flows and water surface that don't even reflect the significant increases due to the development that has been allowed and will continue to be allowed in the future. The Scappoose Stormwater Master Plan (SSMP), published in May 2023 and developed by Brown and Caldwell, didn't even develop a model of the entire Scappoose watershed, so the SSMP has no idea of the current and future flood risk associated with continued development in that watershed. The most significant flood risk to Scappoose, including the downtown area, is this waterway and how it will respond to the increase in impervious surfaces associated with urbanization and the potential impacts of climate change, which suggest Oregon rainfall intensities and depths will increase. A comprehensive model is needed before a decision should be reached on this proposal for a development that could potentially do so much reversible harm!

*\** ( This proposed development would not be allowed anywhere in the Portland Metropolitan area since they have had a regulation in place since 1990 that any fill allowed within the designated 100-year floodplain must be offset by the same amount of floodplain storage lost in the allowed fill. One can't simply dig a hole since the floodplain storage needs to be connected to the waterway, and it needs to be hydraulically effective across the range of flood elevations which is usually associated with the 2-year to the 100-year floods. We now know that filling in floodplains immediately adjacent to waterways is not a good idea since it leads to increased flooding when the peak flows of that waterway increase due to urbanization.

*Hydro model needed?* Many people are unaware that early in the National Flood Insurance Program (NFIP), FEMA was sued for trying to include future watershed development conditions in the development of the flood peak flows to use in the mapping of floodplains nationwide. FEMA lost, so the Flood Insurance Rate Maps (FIRMs) are based on the levels of urbanization that existed when the flood insurance study (FIS) was developed, which, in many cases, like that for the City of Scappoose the FIS is decades old. The fact is that FEMA spends very little money on developing the peak flows used in a study. If they exist from some previous creditable modeling efforts, they will be used, but generally, the peak flows are based on a gauge data analysis. When a gage does not exist on the waterway of interest, a peak flow transfer equation is used based on some other watershed and the drainage area comparison between the two. This technique has exhibited considerable error when checked with detailed modeling, especially for urbanized watersheds. That is the case for Scappoose Creek, so no hydrologic model of the entire watershed has been developed. So, we don't know how accurate

the peak flows used in the FIS for Scappoose Creek are in establishing the Base Flood Elevations (BFEs) or the 100-year return interval flood elevations.

Another issue that should be addressed is that FEMA recently suspended reviewing and processing any Conditional Letter of Map Revisions based on fill (CLOMR-F) applications. A CLOMR-F developed for Buxton Ranch Development led to the issuance of a Letter of Map Revision (LOMR) for this development. The reason for the suspension is that FEMA has been sued over the concept of CLOMR-Fs that allow massive filling in the floodplain without considering the potential impacts on endangered species like Salmon in the waterway. FEMA was sued decades ago for the concept of a regular CLOMR without these issues being addressed, and it has been standard practice for well over a decade to essentially obtain a biological opinion as part of the CLOMR submittal that certifies there will not be a "taking of Salmon" before the CLOMR can even be processed.

Somehow, the plaintiffs thought the CLOMR issue was resolved with the previous lawsuit, not realizing that CLOMR-Fs are separate from regular CLOMRs in FEMA's world and must be litigated separately. So, it is almost sure that any CLOMR-Fs in the region moving forward will have the same biological opinion requirement for CLOMRs that has been in place for over a decade. Technically, the LOMR for this development was issued before the lawsuit was litigated and does not apply. So, it will likely be one of the region's last CLOMR-F to LOMR ever issued. Is that what you are planning on telling the residents of Scappoose who are flooded out in the future by Scappoose Creek that you approved this bad idea development based on a technicality?

Don't be complacent in believing that the extreme flooding in the Southeast won't ever happen here. Creditable studies on climate change's impact on storms here in the Northwest suggest that storms are becoming more intense and will deliver much higher rainfall depths. And since our currently estimated 24-hour 100-year return interval rainfall that engineers like me would use in Scappoose to model the one percent annual flooding (i.e., 100-year return interval flood) and resulting base flood elevations (BFEs) is only 4.7 inches. So, even a tiny percentage increase in rainfall depths would have a huge impact on peak flood flows, especially in urbanizing watersheds like Scappoose Creek.

So, for all these reasons I have listed in this pro bono letter, it would not be in the best interest of the residents of the City of Scappoose to approve this development at this time. Let us not make the same old mistakes made by those in the past who came before us. We now know the right thing to do: develop a comprehensive hydrologic model of the entire Scappoose Creek watershed and address these worrisome issues I have raised. Establish future flood return flood elevations based on these model results. Then, with these results in hand, decide whether to allow this development to move forward and, if it does, how many lots it should be limited to.

I understand that a proposal to do exactly that has been recently developed and submitted by arguably the state's best full-time water resources engineering consulting firm. That granting organization is the Columbia River Restoration Fund (CRRF), and a decision on a potential grant award is expected in the next few months.

Finally, for the record, the Buxton Ranch properties proposed for this development are listed in the SSMP as Flood Plains and Wetlands, NOT developable lands.

Thanks for your consideration, and feel free to email me with any questions you may have.

Sincerely,

**Cascade Water Resources, LLC**



Roger Sutherland, PE  
Principal Water Resources Engineer &  
President