

From: Marjorie Wolfe <mwolfe@wolfwaterresources.com>
Sent: Wednesday, April 28, 2021 12:19 PM
To: D C <drew-09@live.com>
Subject: RE: Riverbank Stabilization

Hi Timothy,

We do conduct wetland delineations, design, and permitting. I see that you have done preliminary research into this. Do you have an experienced excavator contractor on board already? It will be a tight timeline to turn that around by October largely due to uncertainties in both DSL wetland concurrence and the Joint permit Application JPA review. Incorporating large wood will go a long way toward permit approvals and rock/wood can add stability in the short term. We have worked on design and permitting for bank erosion on both sides of the Willamette in that reach. **On that stretch of the Willamette we have found the boat wakes contribute to bank erosion on top of river hydraulics.** Long term stability may require riparian vegetation and potentially laying back the bank. It is hard to say without looking at your property. We would also need to survey the site to create plans.

The ball park cost is \$100,000 for survey, wetland delineation, stream/wetland functional assessments, permitting and design drawings. Our preferred approach is to permit the 60% and bid that set with an experienced contractor. I recommend not going with low bid unless that contractor is also experienced in working in rivers. We can recommend some if you like. We could go to 100% stamped drawings and not be involved in construction oversight but that is riskier for all of us and will not cost less.

Let me know if you would like discuss this further and I can get you a detailed quote and check in with my staff on workloads and capacity for us to deliver this ASAP to meet your timeline.

Marjorie Wolfe, PE, CFM
Wolf Water Resources
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From: D C <drew-09@live.com>
Sent: Wednesday, April 28, 2021 10:54 AM
To: Marjorie Wolfe <mwolfe@wolfwaterresources.com>
Subject: Riverbank Stabilization

Hello,

I live on the Willamette River near Wilsonville in Clackamas County. The riverbank on our property is suffering from serious erosion and we must get it stabilized as soon as possible with riprap/woody debris. We need help from a wetland consultant and an engineer in order to meet the DSL / Corps permit requirements. We want to meet criteria for the Corps NWP 13 and not exceed 1 cu yd of material per linear foot of bank. Bank frontage is approx. 70 ft. All work is below the OHWM. We plan to use an excavator from the bank to accomplish the work. We also really hope to be able to start the project within this year's window for instream work. Can Wolfe Water Resources assist us with this project? Can you give me an approximate price on what it would cost (engineering, wetland delineation, survey and other permit work)? Is it

feasible to think that we can get the permits approved/project engineered by October of this year?

Thanks,
Timothy Crisell
25777 NE Butteville Rd
Aurora, OR 97002