

**BOARD OF COMMISSIONERS SPECIAL BOARD MEETING
VIRTUAL MEETING VIA ZOOM ~ Wednesday, April 3, 2024, 4:00 p.m.**

BOARD MEMBERS PRESENT: Michael Arion, Dan Graff, Sara Grigsby, Angie Kimpo, Kelly Piper

BOARD MEMBERS ABSENT: None

STAFF MEMBERS PRESENT: District Manager Ana Linden, District Clerk Heather McGivney, Utility Worker I Alivia Pence, Utility Worker I Steve Young

CONSULTANTS PRESENT: Geotechnical Engineer Andre Mare

AGENDA

1. Call to Order – Board President Kelly Piper was having technical difficulties, so Secretary Angie Kimpo called the meeting to order at 4:03pm.

2. Roll Call – All Board Members are present

3. Approval of the Agenda – Sara Grigsby moved to approve the agenda, Michael Arion seconded. *(motion passed 5 yes votes: M. Arion, D. Graff, S. Grigsby, A. Kimpo, K. Piper; 0 no votes)*

NEW BUSINESS

1. Presentation of Larch Mountain Reservoir Plan to Stabilize Slope – Engineer Andre Mare wrote a Primary Geotechnical Study analyzing the slope at Larch Mountain reservoir that has been eroded by runoff. The report is supposed to present an idea of the general risk at the reservoir and to gauge the level of mitigation that the Board wants to pursue. He believes that some form of mitigation is required to stabilize the slope.

- Andre summarized the problem: during the January storm, there was a high volume of overflow through the pipe that drains down into a ravine. This triggered a landslide. It is not just a matter of erosion, there was a significant mass movement of soil down the ravine. About 10 – 12 feet of vertical soil was lost. The top of the slope is now steeper and closer to the tank than it used to be. The overflow goes into the service manhole and then flows out a pipe set underground into the slope. He explained the shape of the slope before the slide and after, and the shape of the landslide. The outfall pipes are dumping out onto the slope. The CWD staff is trying to assure that no more movement occurs before we can put mitigation efforts in place. They installed a sump pump in the manhole, so that if there is another major overflow, they could drain it quickly. Unless CWD intends to remove the reservoir and build one on a different site within the next three years, Andre believes that effort needs to be made to stabilize the slope. The risk could be to the manhole area, or to the stability of the reservoir itself. There needs to be a subsurface soil investigation to provide further data to enable further recommendations. We need to take core soil samples and investigate the groundwater situation and surface seepage. Kelly Piper asked if we performed slope stabilization, the reservoir wouldn't have to be moved? Andre answered that yes, the landslide repairs would essentially stop the further erosion of the slope. Sara Grigsby asked Andre to go over the permanent stabilization options. Andre said that any of these options would involve improving the outfall/overflow from the reservoir. The pipe outlet should go much further down the slope.

THIS WAS A PUBLIC MEETING

Revised 05/06/24, 12:30pm, pg 1

- There are three options as a result of a design level study.
 - Create a buried shear pile wall with vertical steel piles above the top of the landslide on the flat ground in the manhole area. They would go down 30 or 40 feet and would stop further movement of the slope.
 - Another option is to drive exposed piles further down the slope to create a wall. Work would be done from above to grade and smooth the soil. A mesh would be installed so that the wall could drain freely.
 - We could also buttress from below by moving earth. Terraces would be built up the slope and bring in material from other parts of the site to build up to the slope we had before. This is probably not the most cost-effective method.
- Ana Linden asked if any of these three options would occur on the parcel of land that CWD owns. Generally no, the first option would occur closest to the property line, at the crown of the slide. The second option would occur further down the slope, and the third option would involve moving earth in a wide area up and down the slope. Andre believes that this is purely a slide of soils that are uniform, and not a rock slide.
- Angie Kimpo asked if Andre had any idea if there was sub-surface flow from soil saturation that wasn't coming from the tank? Would finding that information be part of the soil boring investigation that should be forthcoming? Andre answered yes, and added that groundwater is almost always a factor in landslides. We need to establish how much of a factor it is in this situation. Maintaining a slope depends on the amount of water, and the level of the water table. Upon his initial examination, there didn't seem to be a lot of seepage near the crown of the slope. Angie asked if Andre could talk about his impressions of the data we have about previous slides, particularly a big one that occurred in the 1970s. Is this a repeat of that previous slide, or is it something different? Andre answered that yes, this seemed to be a repeat of a previous slide that occurred towards the west, and also another slide in this location that happened around 2014. There are some gaps in the data. However, there appear to be additional PVC drains in the scarp that appear to be related to draining ground water.
- There is a fourth option, that is more temporary. At approximately the same location as permanent option two, we would use gabions (rock filled cages) to buttress the slope. They can be terraced, but would more likely be battered back into the slope. This wouldn't involve putting anchors into the slope. It wouldn't stop erosion, but it would maintain the slope above the wall, barring another major landslide.
- Kelly asked which option holds the longest term resolution? Andre said that any of the permanent solutions would be the best bet for the long term. However, which option is best would be determined by the soil and water conditions at the site. The cheapest option, number one, would probably be as effective as numbers two and three.
- Angie asked if we could do option one further back from the slide on District property? Andre answered that it wouldn't be ideal, we'd have to cut back the slope further, and the weight loads on the pile would be increased, the closer we are to the reservoir. It would also mean writing off the slope underneath the wall and allowing it to fail. Then at some point in the future, you'd have the slope right up against the wall.
- Community member Jeff Hargens commented that the reservoir was built in the early 1970s and then later there was a large slide in 1977. Jeff doesn't know what they did with the excavation materials when they built the reservoir, but he believes that most of it was used to fill in the slope. He knows that ODOT also had some materials that they dumped in that location. He wonders if the slides over time have washed away the non-structural construction cuttings, or if the slides are now happening in the native soil? He also remembers the slide in 2014, and he believes that the ground water drainage pipes were already there, but they did repair and extend the outfall pipes. Andre said that in regards to the ODOT fill, he doesn't see any of the fill in the

THIS WAS A PUBLIC MEETING

Revised 05/06/24, 12:30pm, pg 2

current slide. He also doesn't believe that any of the original soil from the installation is in this slide. He believes that this slide was almost entirely within native soil.

- Landowner Victor Schmidt corrected Jeff in that the more recent big slide event was in 2005 rather than 2014. He also said that he didn't see any ODOT material in this slide. The excess excavation from building the reservoir was pushed down this slope and also to the west. But he believes that with this slide, the slope surface has gotten down to the original soil.
- Angie asked if we should talk about a potential budget for doing the bore hole testing on soil and ground water? Ana added that she would like landowner Victor's opinion on what he would like to happen. Ana also noted that a potential FEMA disaster declaration might provide funding that would affect this conversation. FEMA money might pay for 75% of a new tank, which would be a great deal on replacing a 50-year-old tank. Andre mentioned that he hasn't prepared estimates for the boring tests. He believes that he could fit the tests into his schedule this summer, but it might behoove CWD to seek another bid to see how timing and costs compare with Andre's. He believes that for the whole repair project, the budget might be in the \$200,000 to \$450,000 range, as an extremely rough estimate. The cheapest option, the buried shear pile wall would be the cheapest at around \$200,000 to \$250,000 depending on the length of piles and the amount of ground water control that is needed. Angie requested that Andre prepare an estimate in writing for the boring tests, and a rough estimate for the repair job. Andre agreed, with the caveat that the estimate for the repair would be extremely ballpark until we know the true situation on the ground.
- Victor said that he's looking for restoration, which may or may not dovetail with the stabilization of the slope. Restoration might involve a significant expense with filling and compacting and creating a stable slope. Another factor to consider is that he has been in contact with the District's insurance company, because they now have a claim for damage to property and debris removal. One of the problems is that we have two separate properties, CWD's and Victor's, and there would be a mix of actions that would need to happen on both properties. One way to deal with this might be to shift the lot lines around so that the slope would be part of CWD property. A buried wall might be the best option for CWD, but it wouldn't be his preference. A lot will depend on the amount of funding available. If increased funding is available to decommission the current reservoir and build a new one, the resulting excavation could provide enough material to rebuild the slope. He thinks that any solution should include slope restoration, and a redesign of the overflow system to take away some of the energy of the released water that is so damaging. He would like CWD to perform an assessment of the condition of the reservoir and do the ground boring tests. Ana added that our insurance won't cover repairs to anything on CWD land, as this event was considered flooding. They are more likely to cover a liability repair to Victor's land. This is something to think about before we do any lot line adjustments.
- Ana said that she would like Andre to write a scope of work that he or another engineering firm could use. Andre replied that he would suggest a two phase proposal. First to perform the investigation, and report the findings and conclusions of what should be done, and how it should be designed. Phase two would be to design the repair for the contractor to work with.
- Andre asked about the possibility of decommissioning the current reservoir and building new, because it is a 50 year old system and the probability of failures increase with age. Angie responded that her understanding of the FEMA regulations would be for repairs to existing infrastructure. Ana responded that there were two options, one for repair and the other being "mitigation" which is funding a change to the system because the infrastructure was ruined by the storm. Both FEMA options are dependent on a declaration of a state of emergency.
- Michael Arion asked Victor to clarify his idea about a lot line adjustment. If there is a line adjustment, then CWD could move forward with the slope mitigation because then the slope would belong to CWD? Victor responded yes. He would advocate for shifting the line so that the decommissioned "scrapped in place" reservoir one would belong to Victor, and the slope and

THIS WAS A PUBLIC MEETING

Revised 05/06/24, 12:30pm, pg 3

ravine would belong to CWD. We would have to look more closely at the boundaries to contemplate where a shift could take place.

- Michael clarified that the next step for this issue is to get an estimate from Andre for the boring tests? Andre answered yes, he could put together an estimate fairly quickly. Angie said that she believes we should also begin to look at the process for lot line adjustments. She knows someone who could possibly help. Victor said that he had investigated a lot line shift with the planning office many years ago, and, at the time, they thought it would be a fairly simple matter. An online comment from Sara said that she had to leave the meeting at 5:00pm, but she wanted to thank Andre for his time and a good meeting, and she thinks that CWD should move forward with the boring proposal. Kelly also thanked Andre and Victor for their time today.

PUBLIC COMMENTS

- Community member Cloudy Sears commented that overflow going directly into a stream could pose a threat to fish and wildlife, as there is a chlorination consideration. She also mentioned that the lot line proposal was a good idea, and very generous for Victor to consider. She has done two lot line adjustments, one for herself and one for the City of Portland, and she found them to be very doable.
- Community member Victoria Purvine commented that what she was hearing was that Victor needs to sue the District to get his property repaired? Victor responded that he's trying not to go in that direction.

ITEMS NOT ON THE AGENDA – None

SUGGESTIONS FOR FUTURE AGENDA ITEMS – None

ADJOURNMENT OF MEETING – Michael Arion made a motion to adjourn the meeting at 5:07pm. Dan Graff seconded. (*motion passed 4 yes votes: M. Arion, D. Graff, S. Grigsby, K. Piper; 0 no votes*) The meeting was adjourned at 5:07pm.

THIS WAS A PUBLIC MEETING

Revised 05/06/24, 12:30pm, pg 4