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Subject: Water usage by Prospect Recreation and Park District at the Serene Conservancy, 5550 Indiana Street, Arvada.

16 September 2021, aerial image updated 1 November 2021

### **Background**

For several years the Prospect Recreation and Park District has been formulating a construction plan for the Serene Conservancy, an 18-acre future open space south of the west end of Jeffco Open Space's Van Bibber Open Space Park. The conservation easement on the property allows a variety of development options on the 5 acres adjacent to Indiana Street. In cooperation with Jeffco Open Space, a new parking lot was recently placed in the northwestern corner of the property. The interior 13 acres are to be returned to natural habitat open to the public. (An option to develop the property with educational agriculture has not been exercised by Prospect nor is it in the construction plan.)

The original water rights for the property were transferred to Prospect, and the conservation easement allows distribution of that water to any part of the property. As I recall, the water rights were subsequently increased by purchase.

The water is delivered to the property by the Alford Selman Lateral Ditch through a 2 inch pipe a short distance after the Ditch enters the property.

Just north of the Ditch is a large intermittent pond, in existence long prior to an aerial photo of 8 November 1979. Subsequent historical images shown in Google Earth reveal a variety of water levels in that pond. It has been our (Prospect's and mine) experience that the filled pond leaks some water beneath its northern banks. When full it releases water to the lowlands through 2 inch pipes at 3 locations around the pond rim. The water never overflows the pond banks. During the 2020 season it took about a month for water from the Ditch to fill the pond initially. Thereafter water was released to the lowlands until the Ditch water flow was reduced to less than capacity later in the season. That gives an indication of the volume of water available with the water rights.

### **Construction Plan Reasonings**

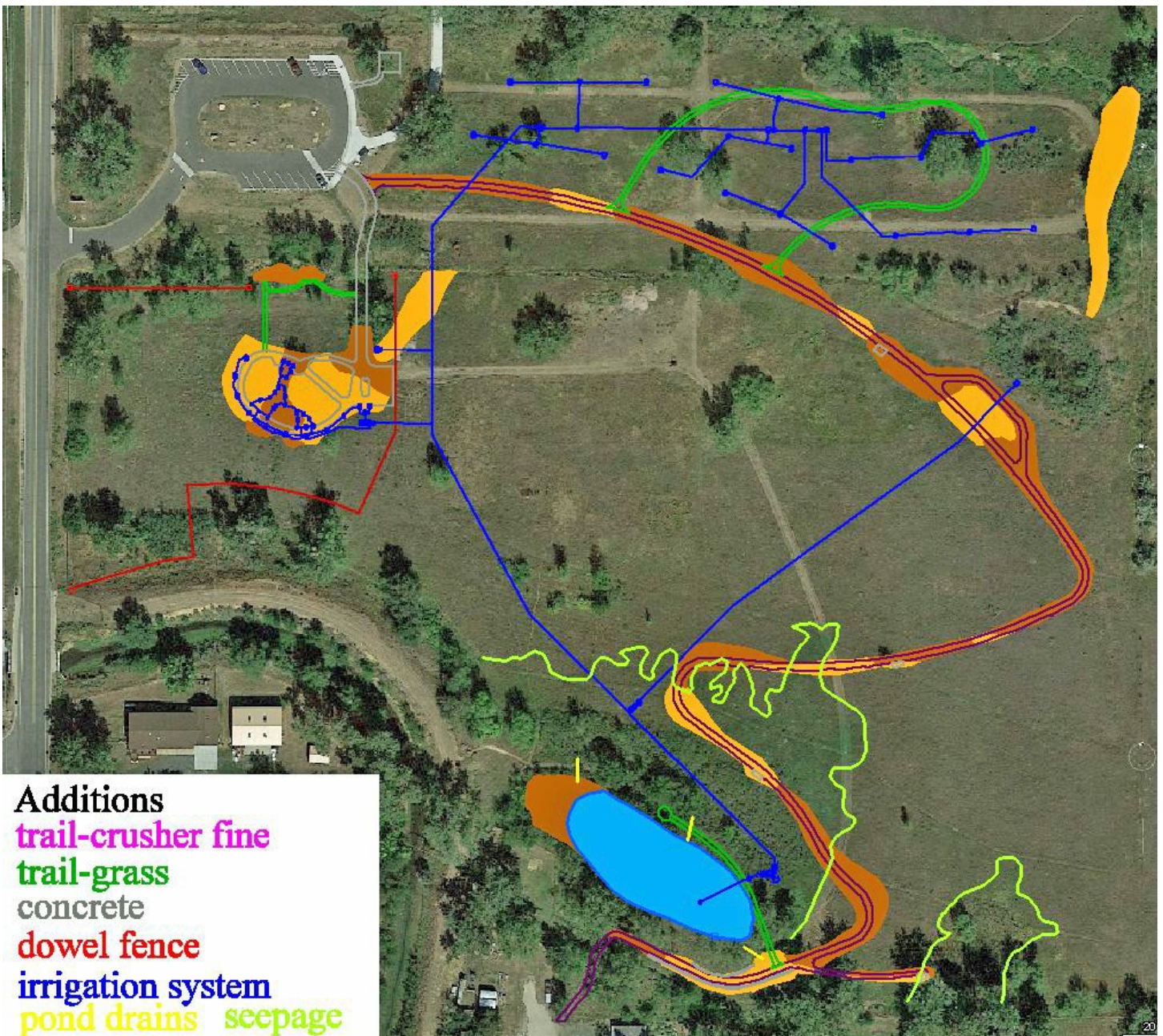
For years Prospect has had in mind to line that pond to slow the leakage. We have thought that we could keep the pond at full capacity throughout the season of water availability. We also thought that we could put standing water into the smaller lowlands pond near the eastern side of the property.

As the construction plan was being developed the contractor's research indicated that the type of water rights for that property did not allow water storage in ponds. The water had to be released quickly for its desired usefulness, with the remainder after use returned to the watershed for downstream use.

It was also indicated that the water rights had a “use it or lose it” stipulation. The board members of the Prospect Foundation therefore reasoned, like businessmen preserving a valuable asset, that the water be sent into the lowlands for irrigation. They were used to irrigating grass lawns in other parks of the Prospect system. However, their construction plans have no proposed lawn areas.

There was never any consideration nor study about whether the prairie grasses of the Serene Conservancy actually need any irrigation water. They do not! That can easily be verified by observing the present health of the prairie grasses throughout the Van Bibber valley (Serene Conservancy, Van Bibber Open Space, private properties) without any irrigation water.

With the abandonment of the option in the conservation easement for educational agriculture, the irrigation need with such development also goes away. For the interior 13 acres the remaining specification is to restore the land to natural habitat. By the definition of “natural”, that means that the water supply must be ordinary precipitation only. Irrigation water is artificial. Therefore the present construction plans for the Serene Conservancy are in violation of the “natural” specification of the conservation easement.





The blue in this illustration shows the layout of the proposed irrigation system on a Google Earth view of September 2019. Around the southern pond the 3 yellow lines mark the locations of the 3 drainage pipes. The bright yellow-green irregular lines show the extent of enhanced vegetation green-up from the season's irrigation water. The larger green-up area is from water discharged from the pond after the normal input from the Ditch through the watering season. The smaller green-up area to the east is from the leak in the Alford Selman Lateral Ditch that has been increasing over at least the past two decades.

From the illustration it is obvious that the water rights do not deliver enough water to irrigate the entire Serene Conservancy property, even with the prior purchase of additional water rights. That is consistent with the failure of the agricultural attempts of the previous ownerships. It is also a warning that the amount of water available for irrigating the lowlands is limited. The proposed construction plans indicate a waste of water delivered to an area that does not need it, and a waste of construction costs to create a violation of the "natural" mandate of the conservation easement.

The illustration also shows a blue diagonal line running downhill to the eastern intermittent pond in the lowlands. The yellow-orange area extending northward from that eastern pond towards the Van Bibber Creek is a proposed excavation to drain that eastern pond, negating any benefit of water delivering to that pond. The water rights do not allow water storage in any ponds anyway. So that part of the construction plans is worthless and wasteful of water and construction costs.

Therefore the Prospect Recreation and Park District should abandon all parts of their proposal involving irrigation use of water from the Alford Selman Lateral Ditch, thereby greatly decreasing the construction costs. Prospect should be encouraged to sell or otherwise transfer their water rights to properties that can responsibly use the valuable irrigation water rather than wasting it on this natural prairie grass area.

Additional details and prior analyses are available at [www.EdHolroyd.info/Serene](http://www.EdHolroyd.info/Serene).

### **Follow-up**

During maximum flow in the Alford Selman Lateral Ditch the first two private properties south of the Ditch after it crosses the Croke Canal experience flooding of parts of their land. Mr. Allan's meeting and relaxation area is thereby restricted by the resulting water pool. Ms. Ward's beautiful garden area suffers plant death from the excess water. The Ditch leak farther to the east, shown in the illustration, promotes the continuing expansion of the extent of the cattail swamp and the healthy presence of the invasive noxious weed Purple Loosestrife. That weed is on the State's A list for mandatory weed eradication.

My personal recommendation is that the Alford Selman Lateral Ditch be lined along its extent from the Croke Canal to at least south of the southeastern corner of the Serene Conservancy property. Initially I had thought of cutting 16-inch PVC sewer pipe into half-pipe sections, screwed together at the joints and opening upwards for easy cleaning. However, Mr. Allan, a contractor, suggests that thinner flexible and durable sheets would cost much less and be easier to install. Lining the Ditch would also make it much easier to clean in the Spring before water flow begins. It would also stop or reduce the seepage of water to the areas adjacent to the Ditch.

Please consider these things to reduce the waste of valuable water in your system. Encourage the Prospect Recreation and Park District to revise their construction plans accordingly, and before contracting and construction begin. Neighboring property owners will also be appreciative of a wiser use of their property tax money. They already prefer that the Serene Conservancy area be left alone, as the natural area that it is, and not developed according to most of the Prospect construction plan.