

Comments on the Serene Conservancy property and pending construction permit.

by Dr. Ed Holroyd (Edmond W. Holroyd, III, Ph.D.)
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Case Number: 19121832 SA

Address: 5550 Indiana Street

Sub Type: Park & Rec. District

Case Manager: Brittany Gada

Acres: 17.92

Description: Serene Conservancy. Location and Extent to develop a park with passive recreation uses on a roughly 18-acre property owned by Prospect Recreation & Park District

Permit Number: 21126716 00000FPA

Work Type: Plains Development

Sub Type: No Alteration of Watercourse

Permit Number: 21126720 00000GPA

Work Type: Plains Development

Sub Type: Grading Permit

Case Manager: Nathan Seymour



Background: Dr. Ed Holroyd lives close to the south side of the proposed park and has been the volunteer caretaker of the property, on behalf of Prospect Recreation & Park District, since late 2005 through 2020. That includes attending quarterly meetings of the Prospect Foundation to report on activities, such as a continuing census of plants and wildlife, removal of trash from the former agricultural use, suppression of noxious invasive weeds using mowing and herbicides supplied by Prospect, pathway mowing, and minor adjustments for safety concerns. Thereby I know the physical details of property better than anyone else, passing through it at least twice weekly. Weekly bird census observations are sent to Cornell University's eBird web site for scientific studies. Over the fifteen years of maintenance I have transformed the lowlands from a weed patch into a healthy grassland without the use of irrigation water. Aerial imagery has documented those improvements.

Dr. Ed Holroyd previously served as a scientist for the U.S. Bureau of Reclamation for 31 years, retiring in September 2005, doing weather and remote sensing research. He was an adjunct professor at the University of Denver, teaching graduate courses in remote sensing and digital image processing for more than 17 years, retiring in March 2016. He has used the professional version of TNTmips Map and Image Processing software from MicroImages, Inc., for the past three decades, including producing the mapping illustrations in these reports.

Original study documents related to this report are linked here. (some updates 28 November 2021)

1. September2013flooding.pdf, written 1 December 2013
2. CommentsAndConcerns.pdf, written 2 September 2020
3. WaterIssues.pdf, written 9 September 2020
4. Historic.pdf, written 29 May 2021
5. Alternatives.pdf, written 4 June 2021
6. SereneStatus.pdf, written 14 July 2021
7. Loosestrife.pdf, written 19 July 2021
8. SereneSummary.pdf, written 27 July 2021
9. Jeffco-Serene.pdf, written 31 August 2021 (this document)
10. 210916toFarmersHighline.pdf, written 16 September 2021 PDF
11. SereneReview.pdf, written 23 September 2021 PDF
12. SereneCostReview.pdf, written 16 October 2021 PDF
13. Progress.pdf, written 28 November 2021

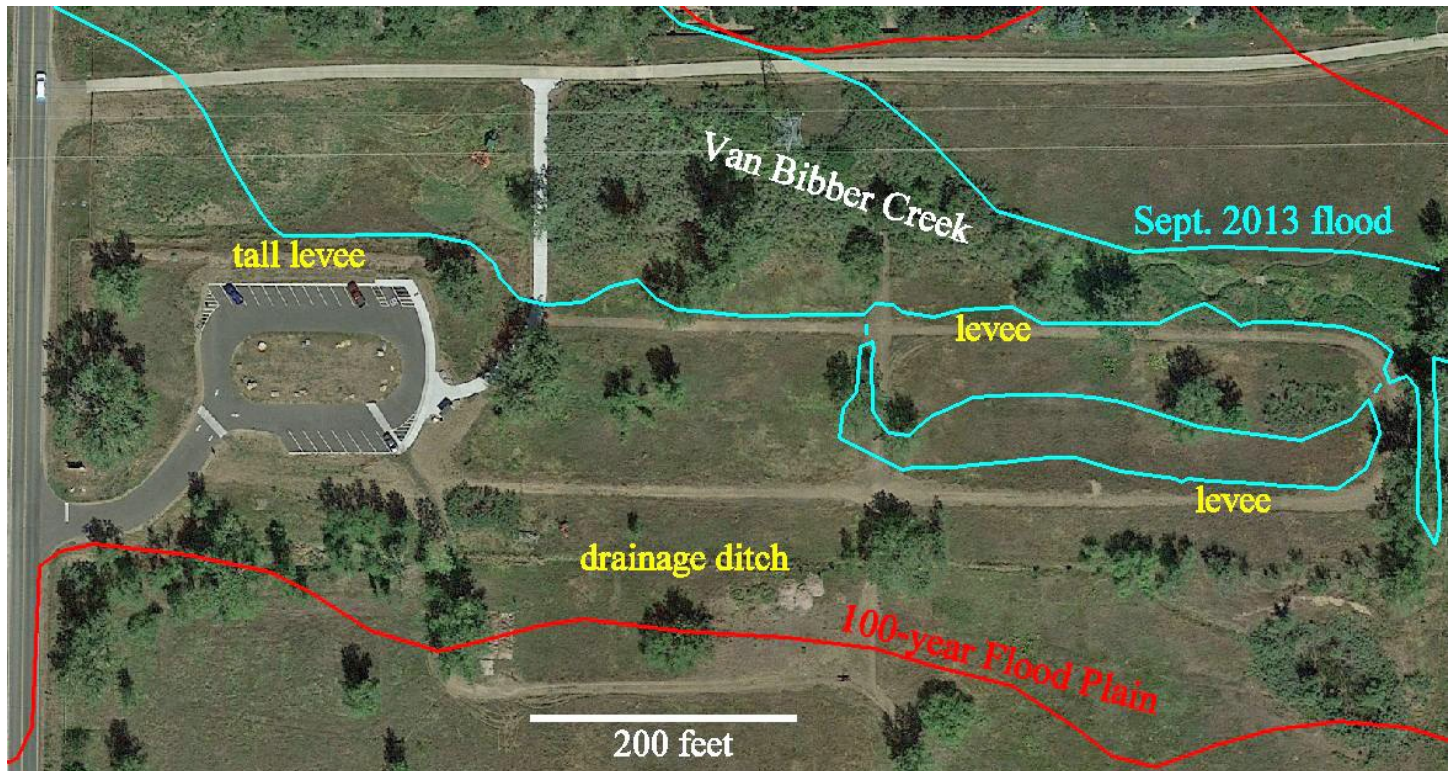
The proposed construction details are based on “Serene Conservancy 100- CD.pdf”, size 39.1 MB, downloaded from Prospect 26 August 2020. The recent revisions have not been made available to me, but are claimed to be minor.

Permit Number: 21126716 00000FPA

Work Type: Plains Development

Sub Type: “No Alteration of Watercourse”

COMMENTS ON THE GRAVEL LOOPS:



It is correctly determined that the construction proposal does not alter the course of Van Bibber Creek. However, the proposed removal of the gravel loops will lower the terrain up to about a foot, destroying their function as levees that did restrict the spread of flood waters during the September 2013 floods.

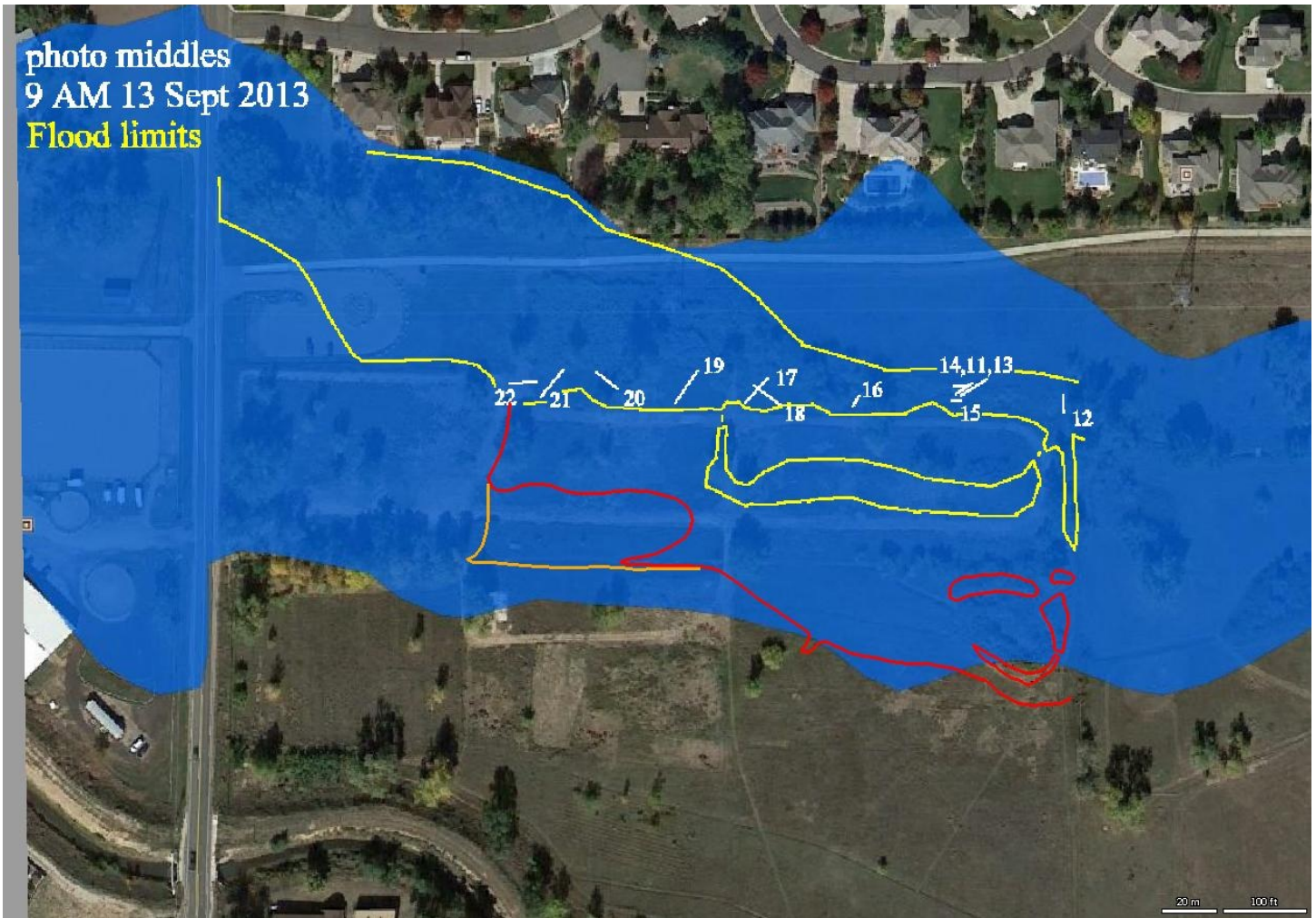
The edges of the flood were mapped at 9 AM on 13 September 2013, as the waters started to recede, visually noting affected vegetation patterns, and taking photos. The cyan lines in the above illustration show the maximum flood edges on a recent aerial image that shows the new parking lot. The scars of the old parking lot are visible with a flood edge crossing it. Water backed through a drainage pipe under the northern loops, allowing flood water into the eastern loop. That water then went through another drainage pipe in the far east and returned to Van Bibber Creek. These photos are from different views of the culvert below the “2013” above.



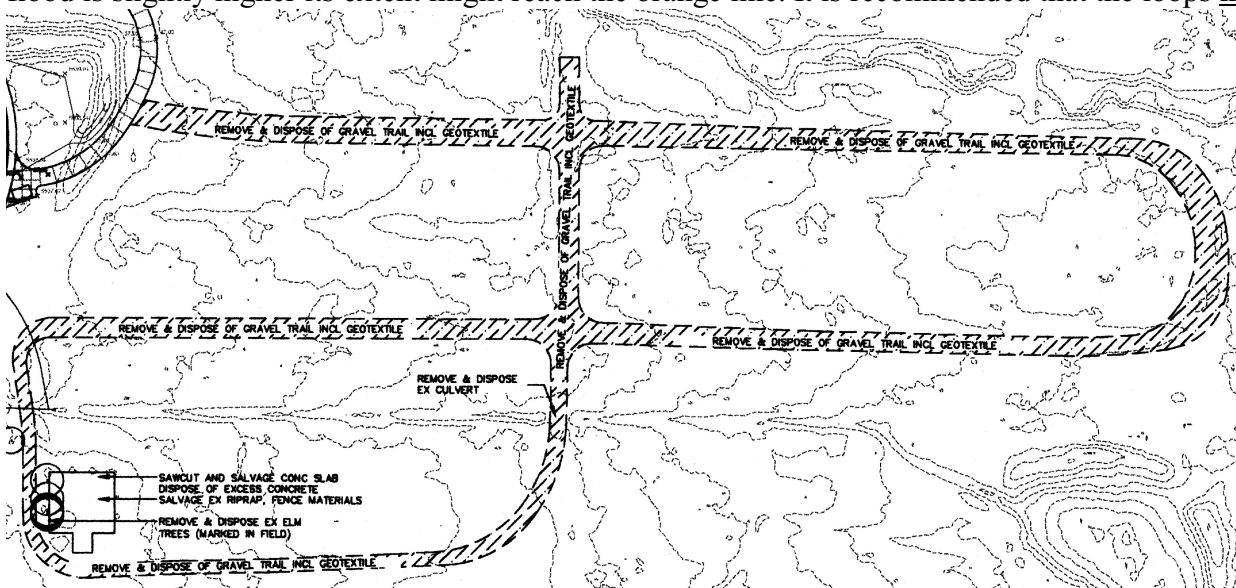
photo 3614, 9 AM 13 Sept 2013



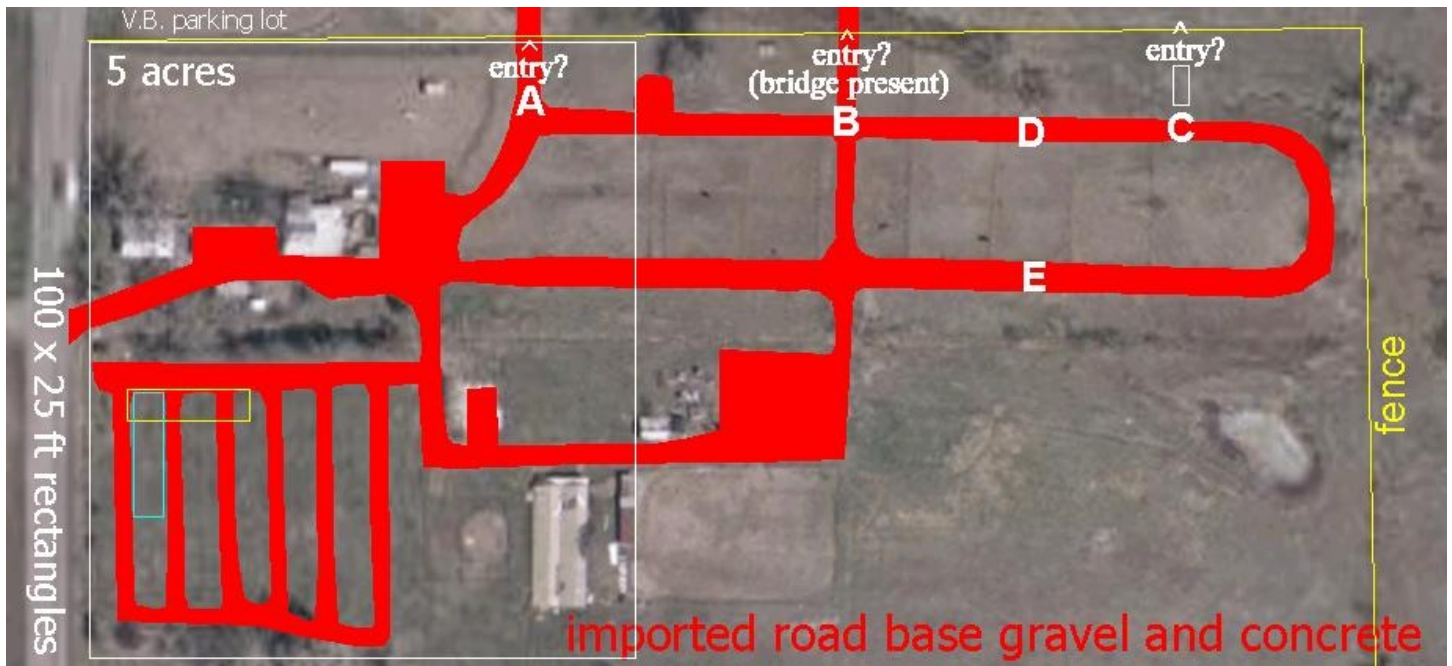
photo 3684, 7:50 AM 29 Sept 2013



This image repeats the 2013 flood edges on an older aerial image, with semi-transparent blue showing the official flood plain. The white numbered lines show the lateral extents and frame number endings of photos taken at the indicated time and date. (All photos are included in document 1.) The slopes along the flood edges were measured to be about 16 feet per 1000 feet, which is 1 foot per 62.5 feet. Using the lidar 1-foot contours of the construction proposal and a similar slope for most of the water edge, it was estimated how a similar flood might extend southward if the gravel levees are removed. That is represented approximately by the red line. The loops in the eastern part would be islands around the pond from the mounds of dirt already there. If the next flood is slightly higher its extent might reach the orange line. It is recommended that the loops **not** be removed.



The gravel width is actually greater than drawn in the proposal. Note that the gravel and any geotextile is to be removed totally.



This illustration, on an aerial image showing former farm buildings, was prepared in 1 December 2007 for additional purposes. The red more accurately shows the extents of imported gravel and the existing concrete pad. I have not mowed the grass and weeds in the southwest for many years, but the gravel presence shows up in the lidar contours. The present construction proposal shows only the path widths that I mowed, not the full widths. (My error on the far east end: the width around the curve is much wider than I drew.) So the volume of imported gravel is likely more than twice what is indicated in the construction proposal.

Ecologically, the gravel loops and deposits elsewhere are similar to natural sandbars and levees along rivers and streams. The vegetation regrowth is treating them accordingly. Though artificial in design, their continued presence is not in violation of the conservation easement directive to restore the property to a natural habitat.



There are deeper hidden features in the southwest, indicated by the yellow dots on this image prepared in mid-December 2018. The concrete pad is at the right and Indiana Street is at the left. (I think that I later found another pair extending the dot array eastward by one spacing interval.) At these locations is a pit lined with large rocks surrounding black plastic plant nursery buckets and likely black cloth. They appear to be part of an underground drainage system in the depressions between the raised gravel strips. The magenta lines show known drainage pipes.

After the COVID-19 restrictions the public began unrestricted use of the gravel loops for **walking** themselves and sometimes their pets. The loops have a very durable surface and their use has minimized the need for mowing of the weeds and grasses. The public likes the option to walk any or all of the 3 loops in any direction and in any order, repeating if desired. The artistic design of the single gravel (crusher fines) path in the proposal is not a functional replacement for the public walking activities. Most are **not** interested in walking up the hill and back. And those that do want to walk between the north and south extents prefer the present direct route.

The curving path of the artistic pathway in the proposal is necessitated by confining the slope of the path to less than 5 percent. Apparently that will allow easier wheelchair access. However, Jeffco Open Space Parks do not provide such restricted paths in their rugged terrains. It is not required. Even at Two Ponds National Wildlife

Refuge in Arvada, the switch-backed slope-restricted path on the eastern hillside is infrequently used by the public, which favors the direct route though it is somewhat steeper.

Therefore there are two major reasons to **leave the gravel loops intact**. They function as flood control levees. They are the preferred design for public exercise walking of themselves and their pets. The gravel loops are already durable for both purposes and the present walking traffic has greatly reduced the need for mowing the loops.

QUOTES FROM THE CONSERVATION EASEMENT:

The G. paragraph (page 2) of the Conservation Easement states “that the conservation values of the Property be preserved and maintained by permitting only those land uses on the Property that do not significantly impair or interfere with them (“Permitted Uses”). Such Permitted Uses include, without limitation, (1) farming and other agricultural uses, (2) park and open space usage and wildlife habitat, (3) recreational facilities, including trails, parking areas, picnic facilities, a visitor center and appropriate rest rooms, (4) educational facilities, and combinations of the foregoing Permitted Uses, such as a demonstration farm operated for educational purposes.”

The 1. paragraph (page 3) of the “THEREFORE” section states “Purpose. It is the purpose of this Easement to assure that the Property will be retained forever predominantly in its **natural condition** as may be augmented by permitted agricultural, park and recreational, and educational uses, and to prevent any use of the Property that will significantly impair or interfere with the conservation values of the Property. Grantor intends that this Easement will confine the use of the Property to such activities, including, without limitation, those involving farming, public recreation and education, as are not inconsistent with the purpose of this Easement.” (emphasis added)

Section 2. (d) allows a variety of things to be established within Parcel A, which is the 5 acres close to Indiana Street. (Parcel B is the interior 13 acres.)

Section 2. (e) states “Within Parcel B, to construct, install, and maintain nature trails.” plus wording made obsolete by a subsequent amendment.

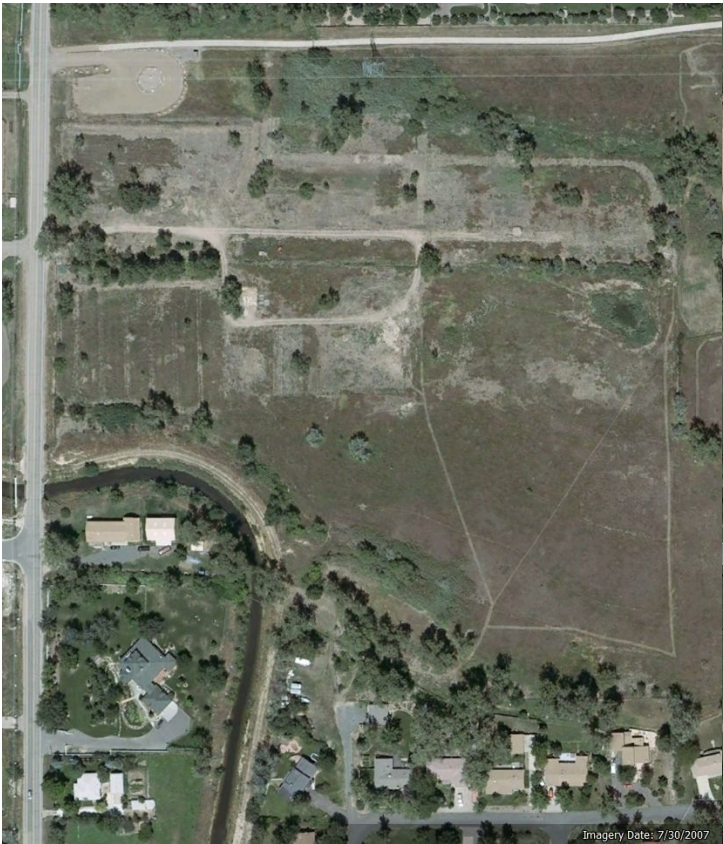
Section 2. (f) states “To utilize all of the water rights in the Farmers’ Highline Canal and Reservoir Company attributable to the Property (and conveyed by Warranty Deed from Monroe D. Jacobs and Mabel L. Jacobs to Walter E. Strippgen and Serene B. Strippgen, June 6, 1984, Grantor’s predecessors in interest, reciting “four inches of water”) for the irrigation of the entire Property”

Section 2. (g) states “To prevent any activity on or use of the Property that is inconsistent with the purpose of this Easement and to require the restoration of such areas or features of the Property that may be damaged by any inconsistent activity or use, pursuant to the remedies set forth in Section 6.”

COMMENTS ON THE PROPOSED IRRIGATION SYSTEM:

It appears that the original water rights were inadequate for economically viable agricultural purposes. Several unauthorized wells were dug on the property for supplemental water. A few years after Prospect acquired the property they obtained additional water rights, perhaps doubling the allotment.

Aerial imagery, from Google Earth, from document 4 (Historic.pdf), second page, is repeated on the next page to show vegetation changes over several years. The 2007 image shows the extent of weeds and barren patches. The 2013 image shows results of weed suppression and grass restoration. The 2017 image shows green grass north of the upper pond in response to excessive watering. The 2019 shows the benefit of normal water release.



Imagery Date: 7/30/2007



Imagery Date: 10/6/2013

30 July 2007. The gray areas in lowlands are barren or weed covered. Some needed black cloth removal. Before soil and prairie grass seed supplements. 6 Oct. 2013. Most of the light green patches in the lowlands show successful prairie grass plantings, else weed removal.



Imagery Date: 6/9/2017



Imagery Date: 9/12/2019

9 June 2017. The two rich green rectangles in the lowlands are prairie grasses. The green north of the upper pond is from irrigation water in excess of our allowance. Trail moved. 12 Sep. 2019. New parking lot and walkway. The green north of the upper pond shows benefit of normal water release.

The restoration of the lowlands to a natural grass prairie was accomplished without any irrigation water. In 2017 irrigation water in excess of the normal allowance was released into the upper pond. It then flowed out 3 drainage pipes into the upper hillside. That improved the green shades about halfway down the hillside, to about the elevation of the cluster of 5 trees and shrubs. The benefit then disappeared farther north until the reappearance of water at the bottom near the two cottonwood and willow trees and the green around them. The 2019 image shows the benefit of a normal allowance of irrigation water. There is a much smaller green patch to the northeast of the upper pond. That shows that the allowance of irrigation water is insufficient to be distributed across the entire property as allowed by the conservation easement. It is certainly insufficient to be distributed by spray irrigation in the lowlands as proposed in the construction document.

The conservation easement indicated “the Property will be retained forever predominantly in its **natural condition** as may be augmented by permitted agricultural, park and recreational, and educational uses”. Irrigation is used for agriculture and lawn. Prospect usage over the past sixteen years and in the proposed construction plan do not address any agriculture or lawn, so there is no need for supplemental water. Furthermore, “natural condition”, by definition, means only precipitation is to provide the water for the property, especially its interior 13 acres. So the construction proposal for the irrigation of the lowlands is in direct violation of the “natural condition” requirement of the conservation easement. (For Prospect to proceed with irrigation could attract a lawsuit.)

I (Ed Holroyd) was at the board meeting of the Prospect Foundation when the water rights were discussed. It was revealed that the type of water rights issued for the property did not allow water storage, as in the upper (southern) pond. Previously the discussion had been to enhance that pond by lining it to greatly reduce or prevent the known leakage. But if storage is denied, then what is allowed? The water rights allow the immediate use of the water to irrigate something. It was also known that the water rights were a “use or lose” situation. So the board decided to irrigate the lowlands and the eastern pond by pumping water down to them. The contractor for the construction plans specified an irrigation system accordingly.

The board members never considered if the prairie grass throughout the property actually needs irrigation. Jeffco Open Space does not irrigate any of the Van Bibber Open Space Park because the valley does not need irrigation for its natural habitat. The present grassland on the property was restored to health without any irrigation water. A visit to the site will confirm by simple observation that its grassland shows no need of irrigation water.



Loosestrife in the Serene lowland in July 2021

There is another important consideration regarding supplemental water. For the past couple decades, at least, the property has suffered from the infestation of the noxious invasive weed **purple loosestrife** (*Lythrum salicaria*), an Asian import with no natural enemies in North America. When it takes over a wetland (cattail swamp) it causes a 90 percent reduction in wildlife use. Only honeybees benefit from its flowers. One mature plant can produce a million small seeds each year. New plants can sprout from seeds and root fragments. The past fifteen years of weed control at the Serene Conservancy have prevented all new seed production, yet the plants keep sprouting from old seed and roots. Treatment has been by spraying with 2,4D herbicide and sometimes by root removal. Soil disturbances, good sunlight and supplemental water all enhance germination opportunities.

There were dozens of scattered plants found in 2021. The proposed irrigation of the lowlands will certainly enhance growths of purple loosestrife. It is State law that the plant must be eradicated wherever it is found, not enhanced by the proposed irrigation system.

The leakage of irrigation water into the southeastern highland cattail swamp continually promotes purple loosestrife there. That is why the leakage needs to be stopped, possibly by lining the ditch with an open half-pipe system, suggested below.



The construction plan specifies the excavation of a drainage ditch for the eastern lowlands pond, connecting it to Van Bibber Creek (orange swath in the illustration). The water rights do not allow storage of irrigation water in that pond, so the piping of water to that pond is in violation of the water rights. The volume of water that can be delivered is small anyway and so a drainage channel is not needed and **should not be built**. (For comparison, it takes a month to fill the upper pond with irrigation water before it overflows onto the hillside.)

The Prospect's construction plan for the Serene Conservancy calls for a very expensive lining of the upper pond and the establishment of a widespread irrigation system. If built, it will just be wasting precious irrigation water in a valley that does not need it. Prospect should therefore **abandon its pond lining and irrigation plans**. It has no appropriate and beneficial use for the water. The water rights should be sold to others who actually need to properly use the water. Doing so will save a great amount of taxpayers money by avoiding the construction costs and ecological damage and actually providing an income from the water rights sale.

SUMMARY COMMENTS ABOUT THE CONSTRUCTION PLANS:

In general, NONE of the construction plans for the eastern 13 acres (Parcel B) should be accomplished. No removal of the gravel loops. *(The loops should continue to be flood control levees and walking pathways for the public and their pets.)* No excavation of a drainage channel for the eastern pond. *(It is not needed.)* No irrigation system. *(It is not needed.)* No lining of the upper pond. *(There is no allowable need for its water.)* No building of the trails indicated in the construction plan. *(They would seldom be used compared to the existing loops and trail.)*

The picnic shelter and educational playground may be built on Parcel A near Indiana Street, outside of the 100-year flood plain. But it is not to include irrigation water.

The water rights should be sold.

MINOR UPGRADES IN PARCEL B, the 13 interior acres that are supposed to be natural habitat plus trails.

The existing trail from highland to lowland areas may be strengthened with crusher-fine gravel. The debris and dead wood in the eastern pond should be removed but not during nesting season of the Red-winged Blackbirds. The main irrigation ditch at the southern side should be lined with fabric, open upward for easy cleaning. Noxious weed management should continue. These improvements will have only minor costs compared to the present construction proposal. The water rights sale may even provide enough funding for them.

PROSPECT'S RESPONSE TO QUESTIONS: relayed through Nathan Seymour, Jefferson County Planning and Zoning, 30 August 2021

What is the timing for the start of the construction activities?

- Prospect Recreation and Park District anticipates going through the process of selecting a contractor for the project once the permitting process is completed. The exact timing for construction is fluid but I'd anticipate late this year or early 2022. Some of that is dependent upon funding and/or funding sources.

When is there to be a public meeting about the project for the public to submit their comments and other input?

- There will not be a public hearing process with the processing of the Grading Permit. The location and extent for this work was approved under case 19-121832SA and went to hearing on October 23, 2019. Any comments for this grading permit should be send to me the case manager as it pertains to the documents provided.

Is the project to be paid for by our property tax mil levies? If so, what is the estimated cost?

- The majority of the project is anticipated to be paid for using mill levy budget dollars set aside for this specific capital project throughout the last few years. There is also potential for a portion to be paid for through grant funds but the availability and/or qualification for those opportunities is still to be determined. I did not find out the estimated cost but will pass it along if this can be provided.

Has the project been sent out for financial bids?

- No it has not.

Notes: At the June 2021 Prospect Foundation meeting the contractor estimated a cost of about \$700K, likely to increase by 30%. A year ago Prospect was intent on having no public awareness nor hearing about their construction plans. Also relevant to this analysis is the following email (cc addresses removed):

From : Jim Zimmerman <zimzimzim@aol.com>
To : "eholroyd@juno.com" <eholroyd@juno.com>
Cc :
Subject : Termination of Services
Date : Fri, Sep 18, 2020 12:52 PM

Ed:

As you have been told many times, Prospect Recreation & Park District and Prospect Foundation are and have been deeply appreciative of the work that you have put into Serene Conservancy. However, there is a point when certain conduct is no longer tolerable. In making complaints to Jeffco Planning and Zoning about the development plans for Serene Conservancy for your own personal agenda, you have reached that point. You do not have any authority to determine how the development is to occur. That is for the District and Foundation to decide. Both the District and the Foundation went through a very long process, including input from many sources including the public, to make their decisions. These decisions have been reviewed by those government entities with oversight of developments and found to be appropriate. Your conduct may seriously undermine and damage that effort. It is now time to get the park up and running.

Accordingly, your services as a volunteer at Serene Conservancy are terminated; you are not permitted to do any work of any type (including but not limited to maintenance, surveying, and inspecting) on Serene Conservancy; and you are to return all Prospect Recreation & Park District property to the District (by first arranging an appointment with Mike Hanson for the return).

Sincerely,

James D Zimmerman
President of Prospect Recreation & Park District
Chair of the Board of Directors of Prospect Recreation & Park District
Chair of the Board of Directors of Prospect Foundation