

COLORADO HEALTHY RIVERS FUND FINAL REPORT

Poudre River Whitewater Park



Prepared for:
Colorado Wildlife Conservation Board
Attn: Chris Sturm

April 14, 2020

City of Fort Collins
Grant Amount: \$300,000
Prepared by: Matthew Day



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INTRODUCTION AND BACKGROUND

Construction of Reach 3 of the Downtown Poudre River Master Plan is the second in a series of ambitious Poudre River projects in Fort Collins and is consistent with the South Platte Basin Roundtable's BIP priorities. The Poudre River Downtown Project Reach 3 is located from approximately College Avenue downstream to the BNSF Railroad Bridge. CWCBC funds are dedicated to a portion of the costs of site demolition, excavation of the river channel and stream bank stabilization. CWCBC Funds were put towards key aspects of the project, such as the creation of the low-flow channel throughout the reach with improvements to the flow depth for fish, flood flow conveyance, and recreational use. Structures, including the Coy Diversion, that block flood flows were removed. The Coy Diversion was a barrier to upstream fish migration. Removal of the Coy Diversion improves aquatic habitat and connectivity for all species, including threatened species and species of concern in this important transitional habitat zone.

The project includes agreements between water providers (ELCO and Fort Collins) that optimizes water supply infrastructure. This project helps protect public infrastructure at College Avenue Bridge and private property. Recreation infrastructure (funded by private dollars) is improved with the installation of whitewater wave features, access to the river, and creation of the overlook plaza. This multi-purpose project will also provide benefits to public safety, water quality, in-river and bank-side recreation and natural systems.



OBJECTIVES

This multi-purpose project has three main tenants: flood mitigation, natural resource enhancements, and providing access to the river.

Goals for the project include:

- Reshape the river to a more natural, sustainable profile.
- Eliminate the overtopping of College Avenue at Vine Drive during 100-year flood events.
- Remove obstructions in the river to reconnect aquatic systems and provide safer river recreation.
- Create river access points, ADA access, family gathering places and river recreation features.
- Enhance habitat to promote connectivity for the terrestrial animals and birds.
- Provide pedestrian connectivity across the river from Downtown to Vine Drive.

Task 1: Site Demolition



Coy Diversion

Description of task:

This task is the demolition work within the Poudre River channel including removal of the Coy diversion structure, boat chute, and concrete retaining wall on the south bank.

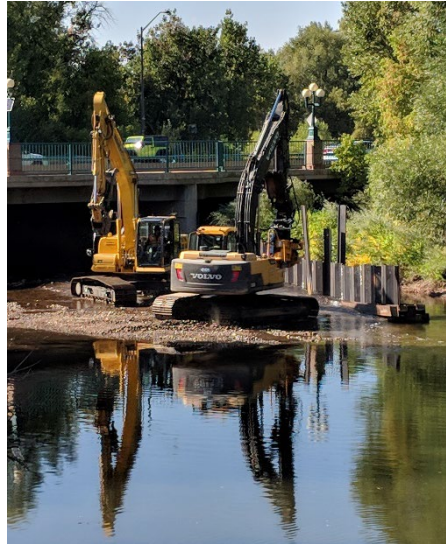
Method/Procedure

Contractors utilized excavators and construction equipment to remove and haul off the old concrete structures from the river channel.

Deliverable/Results

The Whitewater Park project accomplished the desired results of removing the old concrete infrastructure and associated materials from the river corridor. Please refer to the appendix for full size photography of the before and after conditions.

TASK 2 - EARTHWORK IN THE RIVER AND DEWATERING OF COY PONDS



Installation of sheet pile water diversion

Description of Task

This task includes the excavation / reshaping of the river channel, fill, topsoil and fine grading. This item includes work on the old Coy ponds and dewatering.

Method/Procedure

Contractors will remove and stockpile topsoil for re-use. Contractors will utilize excavators and construction equipment in the river with appropriate care of water BMP's. This task includes the cut and fill items includes the excavation / re-shaping of the river channel and reuse of the fill on site.

Deliverable/Results

The Whitewater Park project accomplished the desired results of reshaping the Poudre River channel profile. The Poudre River at the old Coy dam was approximately 120lf wide, measured in the same location and time of year the new channel is roughly 60' wide. Work on this item also included the restructuring of the Coy ditch and ponds into ways to facilitate water quality and return stormwater flows to the river. Please refer to the appendix for full size photography of the before and after conditions as well as the project as-built survey and associated FEMA CLOMR.

TASK 3-RIVER HABITAT ENHANCEMENT/ BANK STABILIZATION



Drop structures/slope protection and willow plantings/bio-stabilization

Description of Task

This task includes the construction of the boulder toe of slope, rock rip-rap slope protection, terraced grade controls, and bio-stabilization.

Method/Procedure

Contractors will utilize large boulders, rip rap and vegetation to anchor and stabilize the new bank of the river.

Deliverable/Results

The Whitewater Park project accomplished the desired results of stabilizing the riverbanks. Structural layers of boulders, rip rap, soil and cobble create the home for the restoration efforts including 3,000 willows, various trees and shrubs, and native grasses planted along the river's edge. Please refer to the appendix for full size photography of the bank stabilization efforts as well as the as-built survey and FEMA CLOMR.

Conclusions and Discussion

Construction of the Poudre River Whitewater Park was a yearlong process starting October 2018 and wrapped up with an official grand opening celebration October 2019. The project permitting allowed construction to start with river dewatering in late October allowing the contractors to access the river, Coy diversion structure, old south bank wall, and "boat chute" for removal, reconstruction and restoration including plantings for bank stabilization. River enhancements were complete April 2019 prior to the run-off season. Work moved upland and the remainder of the park including ADA access, parking, roadwork, and the south bank overlook plaza and restoration efforts were completed fall 2019.

The Poudre River Whitewater Park met the objectives as outlined in the agreement with one caveat. The overtopping of college avenue greatly reduced but was not eliminated with this project. Although the College Ave bridge outfall was designed/constructed to provide for that 100-year flow, future efforts are needed upstream to facilitate getting the river flows to the bridge. With improvements upstream, the water that is overtopping during a 100-year event at College Avenue will be eliminated.

There are many lessons learned on the Poudre River Whitewater Park river project. Primarily, permitting through multiple agencies including the BNSF and UP Railroads, FEMA, Colorado Parks and Wildlife, and the US Army Corps is a challenge as aligning the permitting schedule and river construction constraints with public expectations is difficult.

The City of Fort Collins is excited to continue future work as outlined in the Poudre River Downtown Master Plan. Efforts are ongoing with a feasibility study of the Reach 4, just downstream of the Whitewater Park. The Feasibility Study is currently under-way and the City of Fort Collins looks forward to continued implementation of the Poudre River Downtown Master Plan.





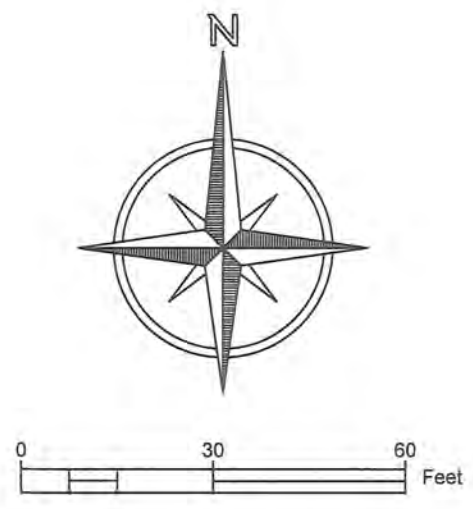
Appendix

- Poudre River Downtown Master Plan
- Reach 3 Site Plan
- As-Built Survey
- Before and After Images: Tasks 1-3
- FEMA CLOMR
- Contractor Final Pay Application

References/Contacts

- **Owner**
City of Fort Collins Park Planning and Development
Matthew Day, Sr Landscape Architect / Project Manager
215 North Mason Street
970-224-6096
Fort Collins, Co 80522
- **Designer/Engineer of Record**
Anderson Consulting Engineers, Inc.
Greg Koch, VP
375 Horsetooth Road, Building #5
Fort Collins, CO 80525-3102
970-226-0120
- **Construction**
Environmental Concerns Inc., Site Construction Management
Ted Johnson, Owner
2526 14th St. SE
Loveland, CO 80537
970-669-6291

POUDRE RIVER CHANNEL AS-BUILT
ANDERSON CONSULTING ENGINEERS
POUDRE RIVER WHITEWATER PARK



11
4966.85
CP RIVER
N=1460202.21
E=3117402.55

2
4968.74
BENCHMARK BM COFC 1-00
N=1460240.41
E=3117598.83

US 287
COLLEGE AVENUE

LEGEND

- | | | |
|----------------------|---------------------|----------------------------------|
| ELECTRIC BOX | SANITARY MANHOLE | MAJESTIC SURVEYING CONTROL POINT |
| ELECTRIC TRANSFORMER | WATER SHUTOFF VALVE | EDGE OF ASPHALT |
| LIGHT POLE | WATER VALVE | BIKE RACK |
| ELECTRIC PEDESTAL | FIRE HYDRANT | DRAINAGE LINE |
| ELECTRIC METER | DRAINAGE MANHOLE | FENCE |
| FIBER OPTIC VAULT | DECIDUOUS TREE | CHAIN LINK FENCE |
| TELEPHONE PEDESTAL | CONIFEROUS TREE | MAJOR CONTOUR |
| GAS METER | LANDSCAPE ROCK | MINOR CONTOUR |
| VALVE BOX | TRAFFIC MAST | 4967.00-LC LOW CHORD ELEV. |
| IRRIGATION VALVE | CURB CUT | 4973.50-TR HANDRAIL ELEV. |



Steve A. Syring - On Behalf of Majestic Surveying, LLC
Colorado Licensed Professional Land Surveyor #38469

HORIZONTAL DATUM:
COLORADO STATE PLANE NORTH ZONE

BENCHMARK: PROJECT DATUM: NAVD88
CITY OF FORT COLLINS BENCHMARK #1-00,
LOCATED ON CATCH BASIN AT THE SOUTHEAST
CORNER OF VINE DRIVE AND COLLEGE AVENUE
ELEVATION = 4968.74

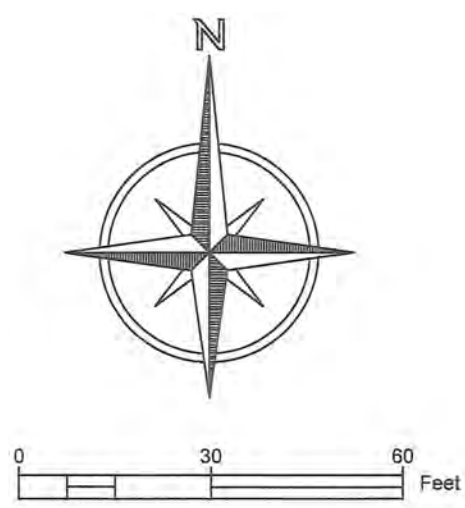
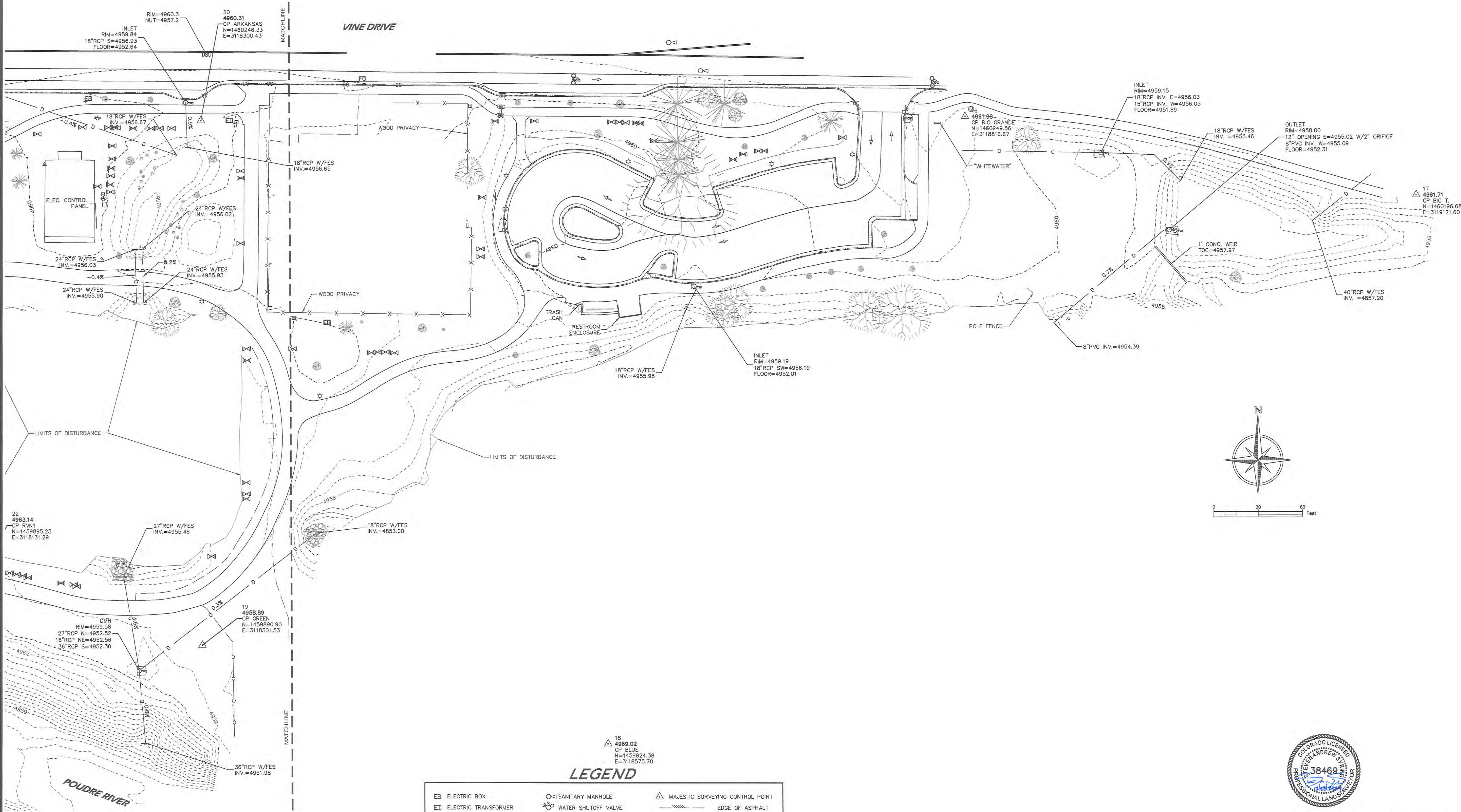


PROJECT NO: 2018076	NAME: POUDRE WHITEWATER PARK	REVISIONS:	DATE:
DATE: 12-10-2019	CLIENT: ANDERSON CONSULTING	ADDED PED. BRIDGE LOW CHORD	12/23/19
DRAWN BY: SAS	FILE NAME: 2018076ASB-SP.DWG		
CHECKED BY: MK, JR	SCALE: 1" = 30'		

1

SHEET 1 OF 2

POUDRE RIVER CHANNEL AS-BUILT
ANDERSON CONSULTING ENGINEERS
POUDRE RIVER WHITEWATER PARK



LEGEND

ELECTRIC BOX	SANITARY MANHOLE	MAJESTIC SURVEYING CONTROL POINT
ELECTRIC TRANSFORMER	WATER SHUTOFF VALVE	EDGE OF ASPHALT
LIGHT POLE	WATER VALVE	BIKE RACK
ELECTRIC PEDESTAL	FIRE HYDRANT	DRAINAGE LINE
ELECTRIC METER	DRAINAGE MANHOLE	FENCE
FIBER OPTIC VAULT	DECIDUOUS TREE	CHAIN LINK FENCE
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