

Lake 4, West Lake and A-Frame Dam Rehabilitation Project

Weekly Construction Update Report

Date: 4/1/2020

3/23/2020 to 3/27/2020

Location: Boulder County Open Space west of Hygiene, CO

Project Owners: Boulder County and St. Vrain & Left Hand Water Conservancy District

Design Engineers:

Lake 4 - Engineering Analytics (EA)

West Lake and A-Frame - Applegate Group (AG);

Lake 4 Outlet Pipeline - Deere & Ault (DA)

Construction Contractors:

Kirkland Construction (Prime Contractor)

Lobato Construction (Sub-contractor)

Weather & Site Conditions: Variable site conditions. Mild temperature

Update by: Obadiah Broughton, Boulder County

Work in Progress/Completed

1. Lake 4 Dam - finish encasement rebar and formworks around 24" DIP (ductile iron pipe) between outlet towers 1 and 2 and poured concrete in the first two sections of the encasement.
2. Lake 4 Dam - work continued on the formworks, rebar and piping at outlet towers 1 and 2.
3. Lake 4 Dam - continued screening embankment fill to 3" minus from the flood deposited sediment in the Lake 4 sediment removal area. This processed fill will be used in the West Lake Dam embankment reconstruction.
4. Lake 4 Dam - hauled sediment from the Lake 4 sediment removal area to the West Lake sediment disposal area.
5. West Lake Dam – installation of the Foothills Outlet Ditch 60" ADS polypropylene inverted siphon pipe within the dam embankment. The pipe was set within the inlet and outlet form works. The inlet structure formwork began around the pipe. Encasement of the outlet pipe with #8 coarse aggregate started.
6. West Lake Dam -prepared grades for installation of the Clough and True Ditch 18" inverted siphon pipe adjacent to the outlet structure wall. Poured concrete in the first coarse of the outlet structure wall.
7. West Lake Dam - continued zoned embankment reconstruction placing clay core, C33 fine aggregate, #8 coarse aggregate and 3" minus native embankment fill. Backfilled around the West Lake outlet pipe encasement structure.
8. West Lake Dam - poured concrete footer and began installing formworks and rebar for the South Branch Ditch crossing culvert wing walls.



3/24: West Lake Dam – installation of Foothills Outlet Ditch 60" inverted siphon pipe within the dam embankment.

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Work in Progress/Completed *(cont.)*

9. A-Frame Pond - continued installing the formworks and rebar for the A-Frame Pond outlet cutoff walls.
10. A-Frame Pond – re-graded N.61st street road prism and ROW over the A-Frame outlet box culvert so road could be re-opened to public use.
11. Began rip rap bedding blending operations with a three bin mixer in the main project staging to get material to meet project specifications.
12. As necessary to facilitate the work dewatering operations occurred to remove nuisance water in work areas, Lake 3, Lake 4, West Lake and A-Frame Pond.

Upcoming Work *(One week look ahead. Week of 3/30/2020 to 4/3/2020)*

1. Lake 4 Dam - finish encasement rebar and formwork around 24' ductile outlet pipe between towers 1 and 2 and pour concrete in the first two sections of encasement.
2. Lake 4 Dam - continue screening embankment fill to 3" minus from the flood deposited sediment in the Lake 4 sediment removal area. This fill will be used in the West Lake Dam embankment reconstruction.
3. West Lake Dam - finalize installation the Foothills Outlet Ditch 60" ADS polypropylene inverted siphon pipe within the dam embankment. Begin installing clean out drain pipe for siphon. Work on the siphon outlet structure formworks and inlet structure wing walls formworks.
4. West Lake Dam - continue zoned embankment reconstruction placing clay core, filter sands and embankment.
5. West Lake - install formworks for the South Branch Ditch crossing culvert wing walls and pour concrete.
6. West Lake Dam - start installation of the Clough and True Ditch 18" inverted siphon pipe
7. A-Frame Dam - continue installing the formworks and rebar for the A-Frame Pond outlet cutoff walls and pour concrete.
8. Lake 4 Dam - continue screening embankment fill to 3" minus from the flood deposited sediment in the Lake 4 sediment removal area. This fill will be used in the West Lake Dam embankment reconstruction.



3/23: West Lake - Foothills Outlet Ditch 60" inverted siphon pipe installation into the inlet formworks



3/25: Backfilling around the Foothills Outlet Ditch 60" inverted siphon pipe installation.

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Additional Notes

1. March 24th Weekly construction process meeting canceled.
2. N. 61st and N. 63rd streets between SH 66 and Hygiene Rd. was re-opened to through traffic on Friday March 27th.
3. Continue dewatering operations to remove nuisance water from project site and work areas as needed.
4. Project website for updates and information:
<https://www.bouldercounty.org/open-space/management/lake-4-west-lake-a-frame-pond/>



3/24: Screening embankment fill to 3" minus from the flood deposited sediment in the Lake 4 sediment removal area.



3/25: West Lake Dam – zoned embankment fill and #8 coarse aggregate encasement around siphon pipe.



3/25: West Lake Dam - QC inspection on filter diaphragm lift around West Lake Outlet Pipe.



3/26: West Lake Dam – looking south - installation of Foothills Outlet Ditch 60" inverted siphon pipe within the dam embankment.



3/26: West Lake Dam – pouring concrete in the first course of the Clough and True Ditch inverted siphon outlet structure wall.



3/27: West Lake Dam - Looking southwest – installing a section of the Foothills Outlet Ditch 60" inverted siphon pipe.



3/27: West Lake Dam – looking north - installing the Foothills Outlet Ditch 60" inverted siphon pipe at the outlet structure.



3/27: Lake 4 Dam – pouring concrete in the 24" DIP outlet pipe encasement between Lake 4 outlet towers 1 and 2.



3/27: Lake 4 Dam – pouring concrete in the 24" DIP outlet pipe encasement between Lake 4 outlet towers 1 and 2.



3/26: Screening embankment fill from the flood deposited sediment in the Lake 4 sediment removal area.



3/26: Screening embankment fill from the flood deposited sediment in the Lake 4 sediment removal area.



Longmont, CO
25 °F Cloudy

Recent Cities

Revelstoke, British Columbia, Canada (weather/ca/revelstoke/50.99,-118.19) Crested Butte, CO (weather/us/co/crested-butte/38.91,-106.97)

40.17 °N, 105.16 °W

Longmont, CO Weather History

26° VANCE BRAND STATION (/WEATHER/US/CO/LONGMONT/KLMO?CM_VEN=LOCALWX_PWSDASH) | [CHANGE](#)

[HISTORY](/HISTORY/DAILY/US/CO/LONGMONT/KLMO) (</HISTORY/DAILY/US/CO/LONGMONT/KLMO>)

- [TODAY](/WEATHER/US/CO/LONGMONT/KLMO) (</WEATHER/US/CO/LONGMONT/KLMO>)
- [HOURLY](/HOURLY/US/CO/LONGMONT/KLMO) (</HOURLY/US/CO/LONGMONT/KLMO>)
- [10-DAY](/FORECAST/US/CO/LONGMONT/KLMO) (</FORECAST/US/CO/LONGMONT/KLMO>)
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- [WUNDERMAP](/WUNDERMAP?LAT=40.17&LON=-105.16) (</WUNDERMAP?LAT=40.17&LON=-105.16>)

[Daily](#) **[Weekly](#)** [Monthly](#)

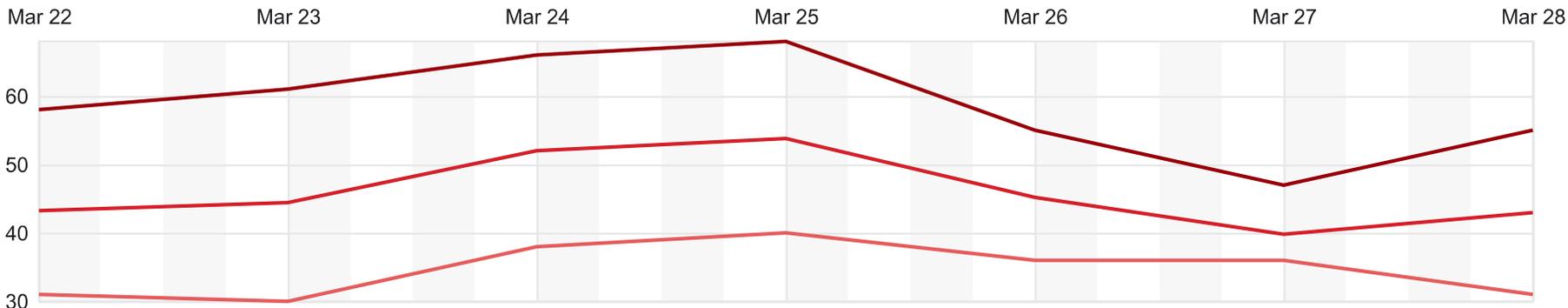
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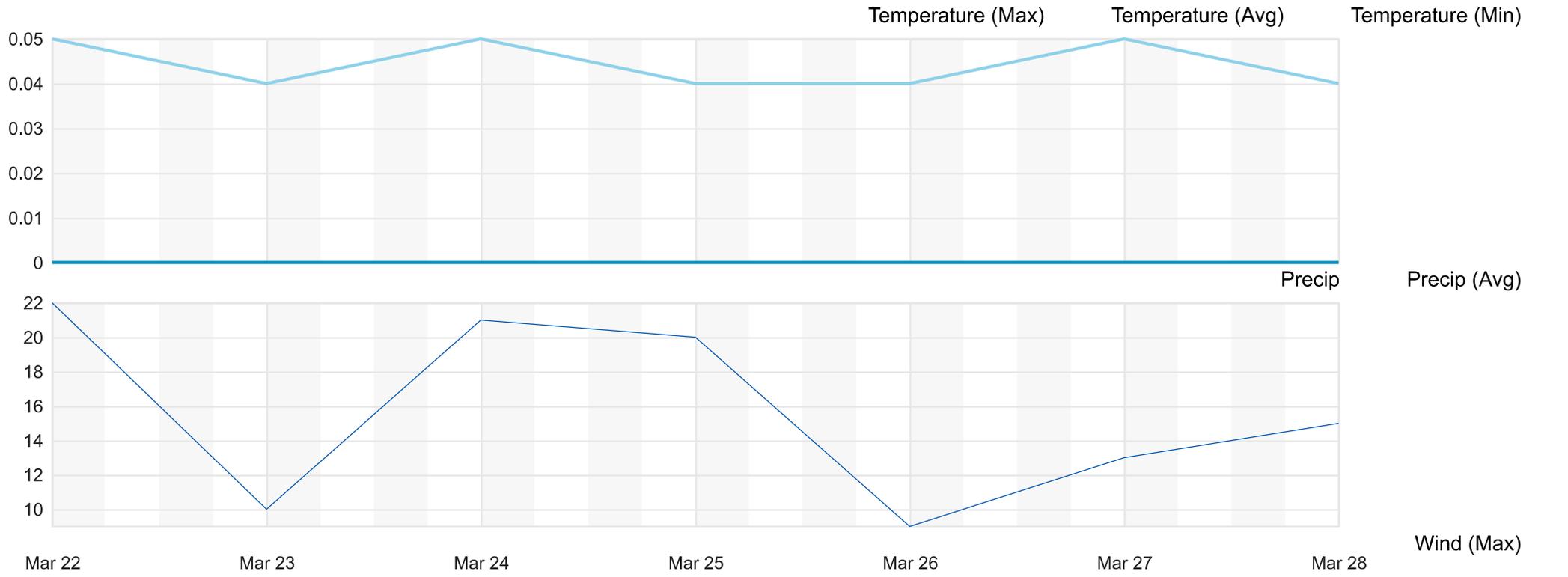
March

23

2020

[View](#)





Summary

Temperature (° F)	Max	Average	Min	▲
Max Temperature	68	58.57	47	
Avg Temperature	53.78	45.92	39.81	
Min Temperature	40	34.57	30	
Dew Point (° F)	Max	Average	Min	▲
Dew Point	36	25.96	7	
Precipitation (Inches)	Max	Average	Min	Sum ▲

Temperature (° F)	Max	Average	Min	▲
Precipitation	0.00	0.00	0.00	0.00
Snowdepth	0.00	0.00	0.00	0.00
Wind	Max	Average	Min	▲
Wind	22	5.59	0	
Gust Wind	28	3.33	0	
Sea Level Pressure	Max	Average	Min	▲
Sea Level Pressure	24.98	24.69	0	

Daily Observations

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)			Pressure (Hg)			Precipitation (in)
	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
Mar 22	58	43.2	31	35	27.3	16	90	58.9	20	22	6.4	0	25.0	24.9	24.9	0.00
23	61	44.5	30	32	26.6	18	76	53.6	20	10	3.3	0	25.0	24.9	24.8	0.00
24	66	52.0	38	31	23.7	16	69	37.3	15	21	6.9	0	24.9	24.8	24.8	0.00
25	68	53.8	40	32	21.7	13	65	33.4	13	20	7.6	0	24.8	24.7	24.6	0.00
26	55	45.2	36	36	32.4	27	83	62.0	46	9	3.9	0	24.7	24.3	0.0	0.00
27	47	39.8	36	35	33.4	31	91	78.9	57	13	4.4	0	24.7	24.4	0.0	0.00
28	55	43.0	31	34	16.7	7	92	41.9	15	15	6.7	0	24.9	24.8	24.7	0.00