

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

## Weekly Construction Update Report

**Date:** 2/4/2020

1/27/2020 to 1/31/2020

**Location:** Boulder County Open Space west of Hygiene, CO

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

**Construction Contractors:**

Kirkland Construction (Prime Contractor)

Lobato Construction (Sub-contractor)

**Design Engineers:**

Lake 4 - Engineering Analytics (EA)

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

Lake 4 Outlet Pipeline - Deere & Ault (DA)

**Weather & Site Conditions:** Dry, cold mornings and mild afternoons

**Update by:** Obadiah Broughton, Boulder County

### Work in Progress/Completed

1. Lake 4 upstream embankment (Lake 3 embankment) – finished the excavation of sub-grade on the northside of embankment. Clay core and filter sand installation continued with in the excavations. Initial tie-in around the original slurry wall occurred on the south and northsides of subgrade excavation.
2. Lake 4 downstream embankment/dam – finalized sub-grade and foundation for outlet pipe between outlet towers 1 and 2 and placed clay core and zone fills under alignment; backfilled around tower foundations; began to install outlet towers formwork and rebar on the tower foundations.
3. Lake 4 flood deposited sediment removal – hauled and placed excavated material unsuitable for embankment fill into the sediment disposal area within West Lake.
4. Lake 4 dam spillway – excavated and finalized the sub-grade.
5. Clough and True Ditch – ditch reconstruction continued with filling of head-cut and embankment with material from the Lake 3 embankment excavation/cut and with material from the Lake 4 flood deposited sediment area.
6. West Lake dam – formwork and rebar prep for outlet tower walls and outlet pipe concrete encasement as concrete in lower 6” outlet pipe encasement cured.
7. A-Frame - finalized the sub-grade and foundation for outlet box culverts. Delivered and installed the complete length (336’) of the A-frame Pond outlet box culverts (42 sections).
8. Continued dewatering operations to remove nuisance water in Lake 4, Lake 4 and West Lake and to drawdown the water levels in A-Frame Pond to facilitate the work.



1/28: Lake 4 upstream dam (Lake 3 embankment) looking west – the excavation of sub-grade to bedrock on northside of embankment

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### Upcoming Work *(One week look ahead. Week of 2/3/2020 to 2/7/2020)*

1. Lake 4 upstream embankment/dam (Lake 3 embankment) - continue placing clay core and zoned embankment fill in completed excavations. Fill upstream embankment with spoils and Lake 4 flood deposited sediment.
2. Lake 4 downstream embankment/dam - continue installing formwork and rebar in the outlet towers and outlet pipe between the towers; begin placing clay core and zoned embankment fills
3. Lake 4 dam spillway – finalize all sub-grade excavations and begin placement riprap and bedding
4. Lake 4 flood deposited sediment removal – haul and place excavated material unsuitable for embankment fill into the sediment disposal area within West Lake.
5. Clough and True Ditch – continue reconstruction ditch embankment.
6. West Lake dam – continue formwork and rebar installation for the outlet tower and pipe.
7. A-Frame - Begin backfill around outlet box culverts
8. Continue dewatering operations to remove nuisance water from project site.

### Additional Notes

1. Weekly construction process meeting was held at the jobsite trailer on Jan. 28<sup>th</sup>
2. N. 61<sup>st</sup> and 63<sup>rd</sup> streets between SH 66 and Hygiene Rd. will be temporarily closed to thru traffic for up to two months starting as of Jan. 20
3. Project website for updates and information:  
<https://www.bouldercounty.org/open-space/management/lake-4-west-lake-a-frame-pond/>



1/28: Lake 3 embankment - initial clay core tie-in to the slurry wall on southside of embankment



1/30: Lake 3 embankment - Remote mini-compactator compacting the filter sand on northside of embankment.

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1/30: Lake 4 downstream dam – looking east at Tower 2 and Tower 1 backfill, sub-grade and formwork/rebar.



1/28: Lake 4 flood sediment removal - loading a haul truck with material from the sediment disposition area.



1/29: Lake 3 embankment – zone embankment repair from the southside of embankment looking north.



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1/28: Lake 4 flood sediment - disposal of material into the disposal area within West Lake.

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1/27: A-Frame outlet box culvert alignment subgrade. Looking to the east.



1/28: A-Frame outlet box culvert placement. Looking to the east.



1/30: A-Frame outlet box culvert alignment. Culvert box sitting on cut-off wall foundation. Looking to the west.



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1/16 : A-Frame complete outlet box culvert alignment. Looking to the northeast.



Longmont, CO  
19 °F Mostly Cloudy

Recent Cities  
Longmont, CO (weather/us/co/longmont/40.19,-105.18)

40.17 °N, 105.16 °W

# Longmont, CO Weather History

**19° VANCE BRAND STATION** ([/WEATHER/US/CO/LONGMONT/KLMO?CM\\_VEN=LOCALWX\\_PWSDASH](/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>)
- [CALENDAR](/CALENDAR/US/CO/LONGMONT/KLMO) (</CALENDAR/US/CO/LONGMONT/KLMO>)
- [HISTORY](/HISTORY/DAILY/US/CO/LONGMONT/KLMO) (</HISTORY/DAILY/US/CO/LONGMONT/KLMO>)
- [WUNDERMAP](/WUNDERMAP?LAT=40.17&LON=-105.16) (</WUNDERMAP?LAT=40.17&LON=-105.16>)

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

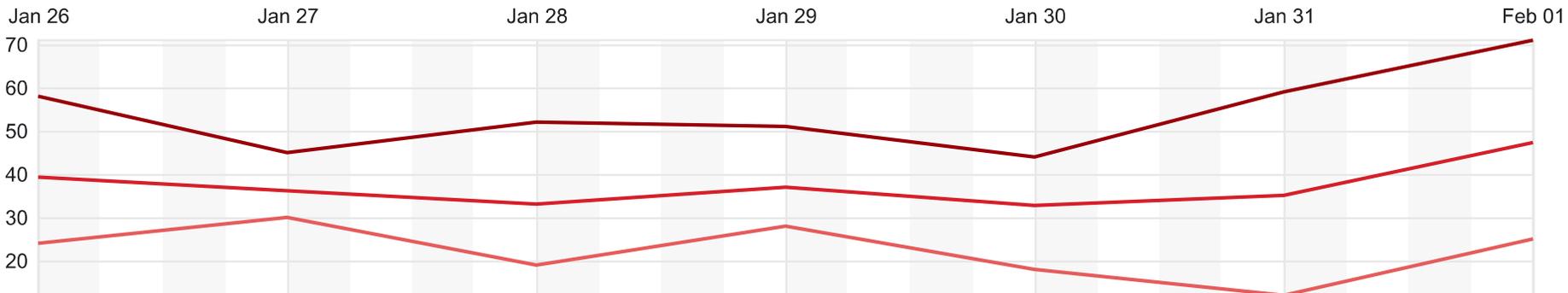
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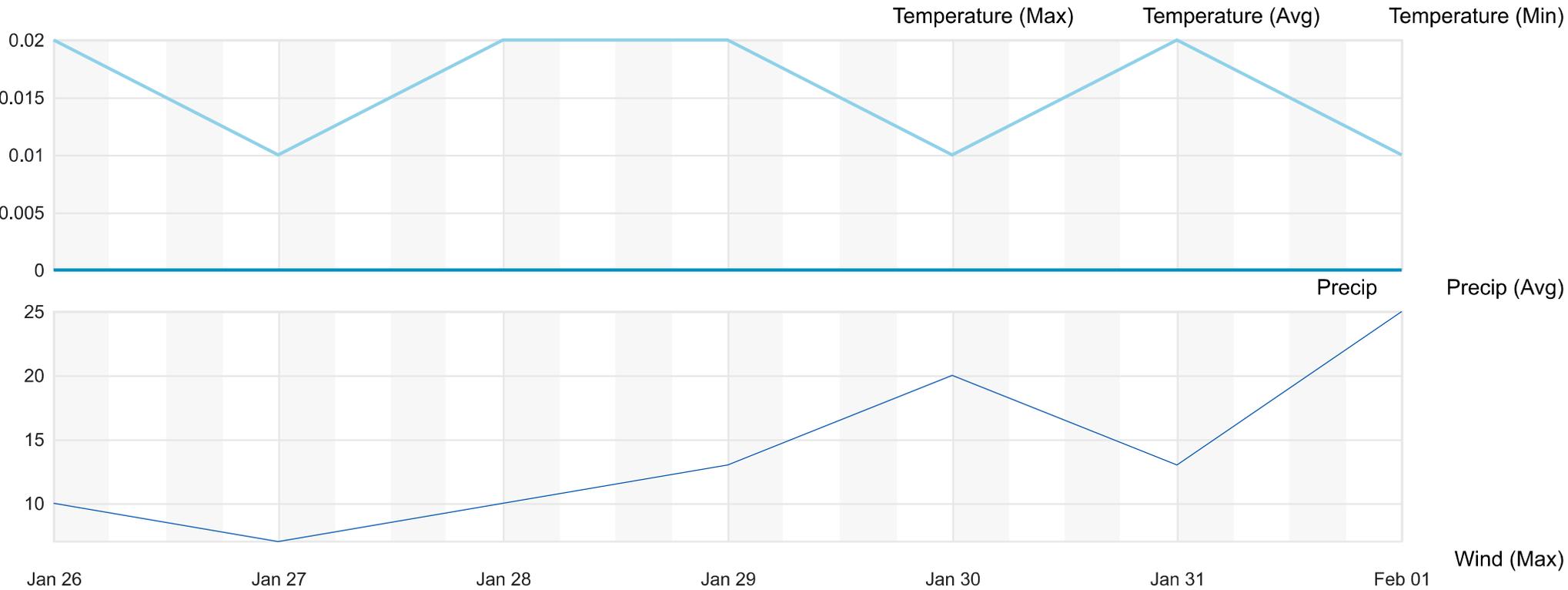
January

27

2020

[View](#)





# Summary

Temperature (° F)	Max	Average	Min	▲
Max Temperature	71	54.29	44	
Avg Temperature	47.32	37.24	32.78	
Min Temperature	30	22.29	12	
Dew Point (° F)	Max	Average	Min	▲
Dew Point	30	18.14	1	
Precipitation (Inches)	Max	Average	Min	Sum ▲

<b>Temperature (° F)</b>	Max	Average	Min	▲
Precipitation	0.00	0.00	0.00	0.00
Snowdepth	0.00	0.00	0.00	0.00
<b>Wind</b>	Max	Average	Min	▲
Wind	25	3.87	0	
Gust Wind	31	1.29	0	
<b>Sea Level Pressure</b>	Max	Average	Min	▲
Sea Level Pressure	25.1	24.96	24.84	

# Daily Observations

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)			Pressure (Hg)			Precipitation (in)
Jan	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
26	58	39.3	24	24	19.1	16	73	47.9	21	10	3.2	0	25.0	24.9	24.9	0.00
27	45	36.2	30	30	25.1	19	83	65.2	45	7	1.9	0	25.0	24.9	24.8	0.00
28	52	33.1	19	25	16.2	11	87	55.5	21	10	3.7	0	25.0	25.0	24.9	0.00
29	51	37.0	28	30	22.2	15	86	58.3	28	13	2.7	0	25.0	25.0	24.9	0.00
30	44	32.8	18	30	20.6	10	91	64.7	32	20	4.9	0	25.1	24.9	24.8	0.00
31	59	35.1	12	22	10.9	4	73	44.4	12	13	3.8	0	25.1	25.0	25.0	0.00
1	71	47.3	25	26	12.7	1	75	34.6	9	25	6.9	0	25.1	25.0	25.0	0.00