

"Water is Life"



Frenchman Cambridge Irrigation District

Water Users Meeting

March 21, 2022

Brad Edgerton, Manager

"Water is Life"



Frenchman Cambridge Irrigation District

Dale Cramer, President

Todd Lichty, Vice President

Duane Vorderstrasse, Secretary / Treasurer

FCID Employs 11 Fulltime Employees

1 Part-time Employee

"Water is Life"



Background:

FCID was Established in 1946.

First Irrigation District organized under the Missouri Basin Plan approved by congress in 1944

Background:

"Water is Life"



FCID has three Reclamation Reservoirs with a total irrigation pool capacity of 143,000 acre-feet.

Exclusive Flood Control Pool = 235,747 AF

Surcharge Flood Pool = 290,144 AF

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Background:

Four Reclamation Canal Systems serving
45,669 acres.

Meeker-Driftwood Canal serves 16,691 acres

Red Willow Canal serves 4,642 acres

Bartley Canal serves 6,130

Cambridge Canal serves 18,205

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Background:

Four Reclamation Canal Systems with:

156 miles of main canal

100 miles of buried pipe laterals

157 miles of surface and sub-surface drains

Total Canal Diversion
Capacity = 829 cfs

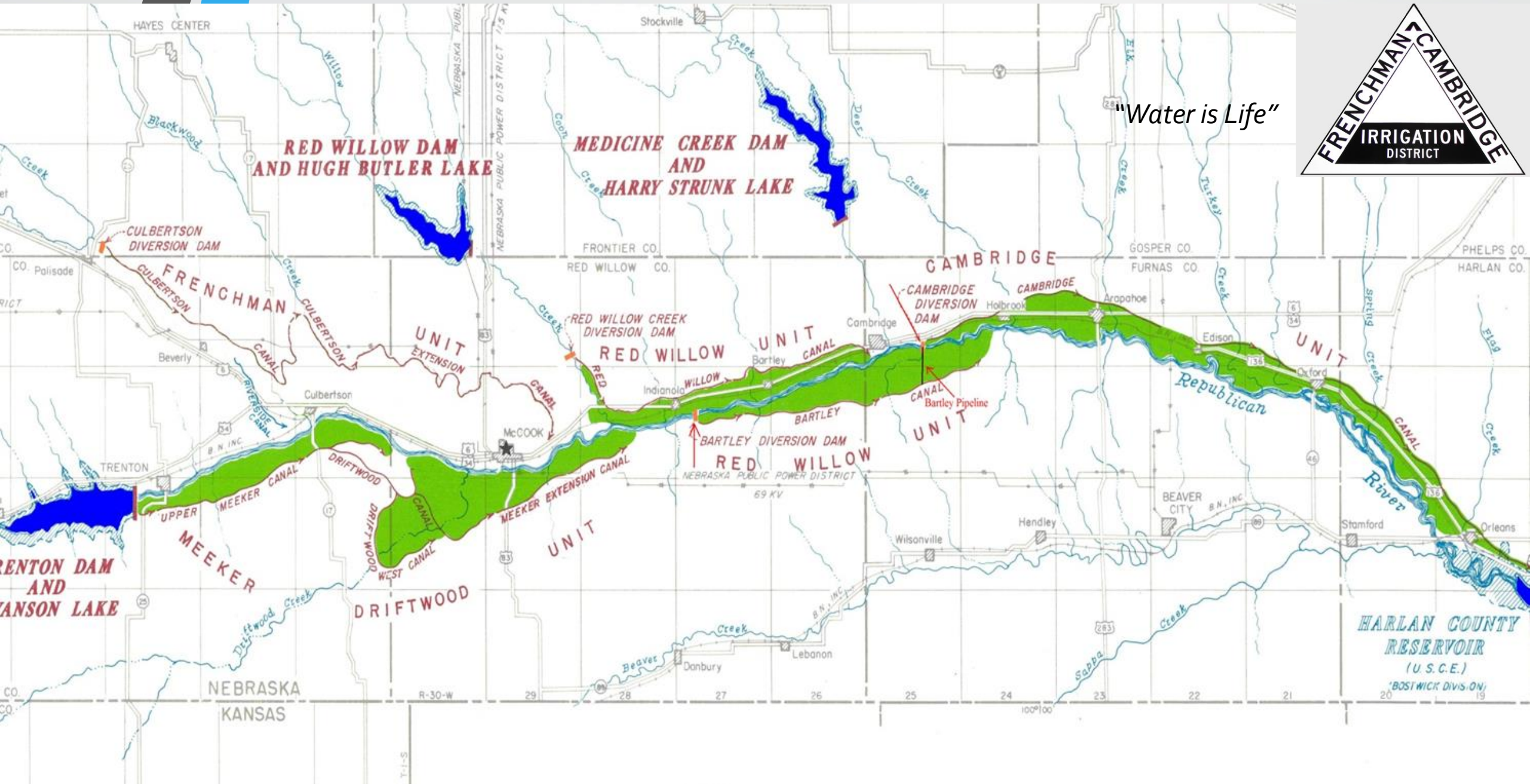
Natural Flow Permits
granted 512 cfs

Priority Dates Range
From 1890 to 1987

Serve over 400
Customers

"Water is Life"





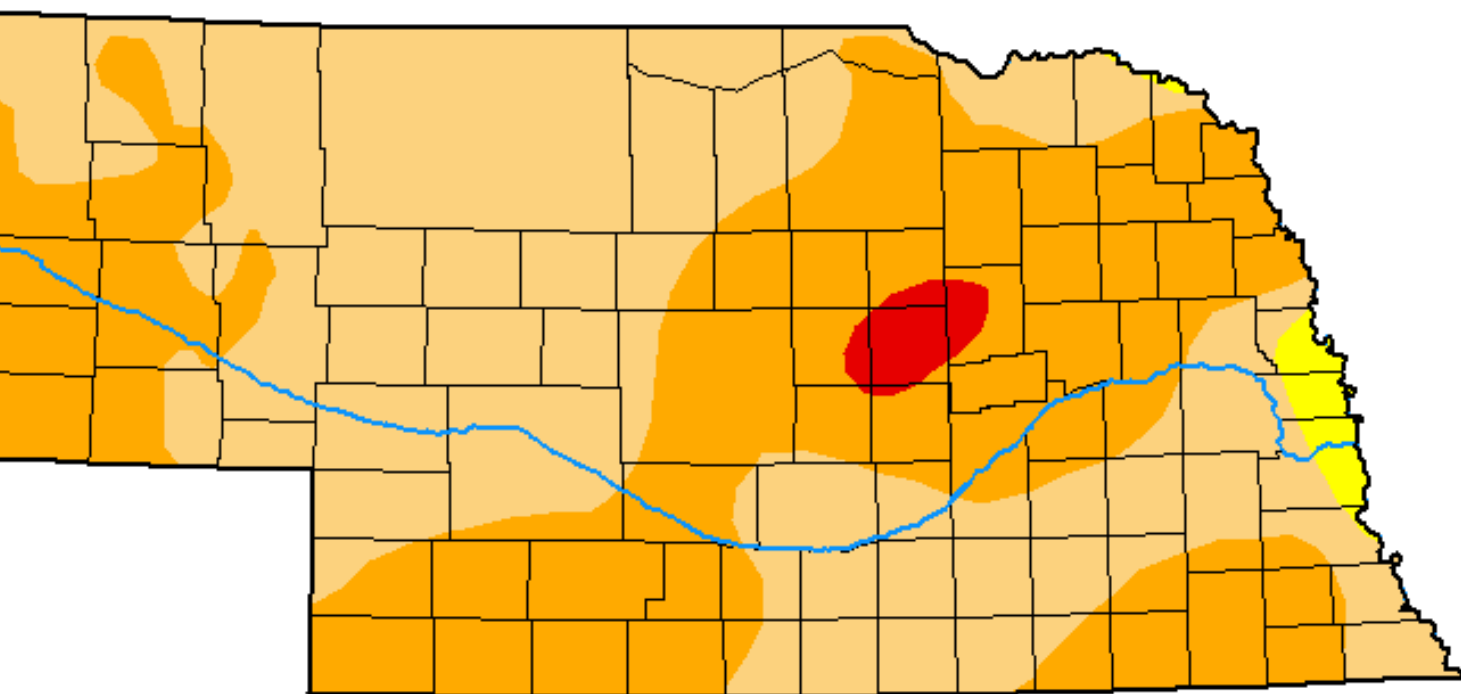
"Water is Life"









HARLAN COUNTY
RESERVOIR
(U.S.C.E.)
BOSTWICK DIVISION

U.S. Drought Monitor
Nebraska

March 15, 2022
(Released Thursday, Mar. 17, 2022)
Valid 8 a.m. EDT



Intensity:

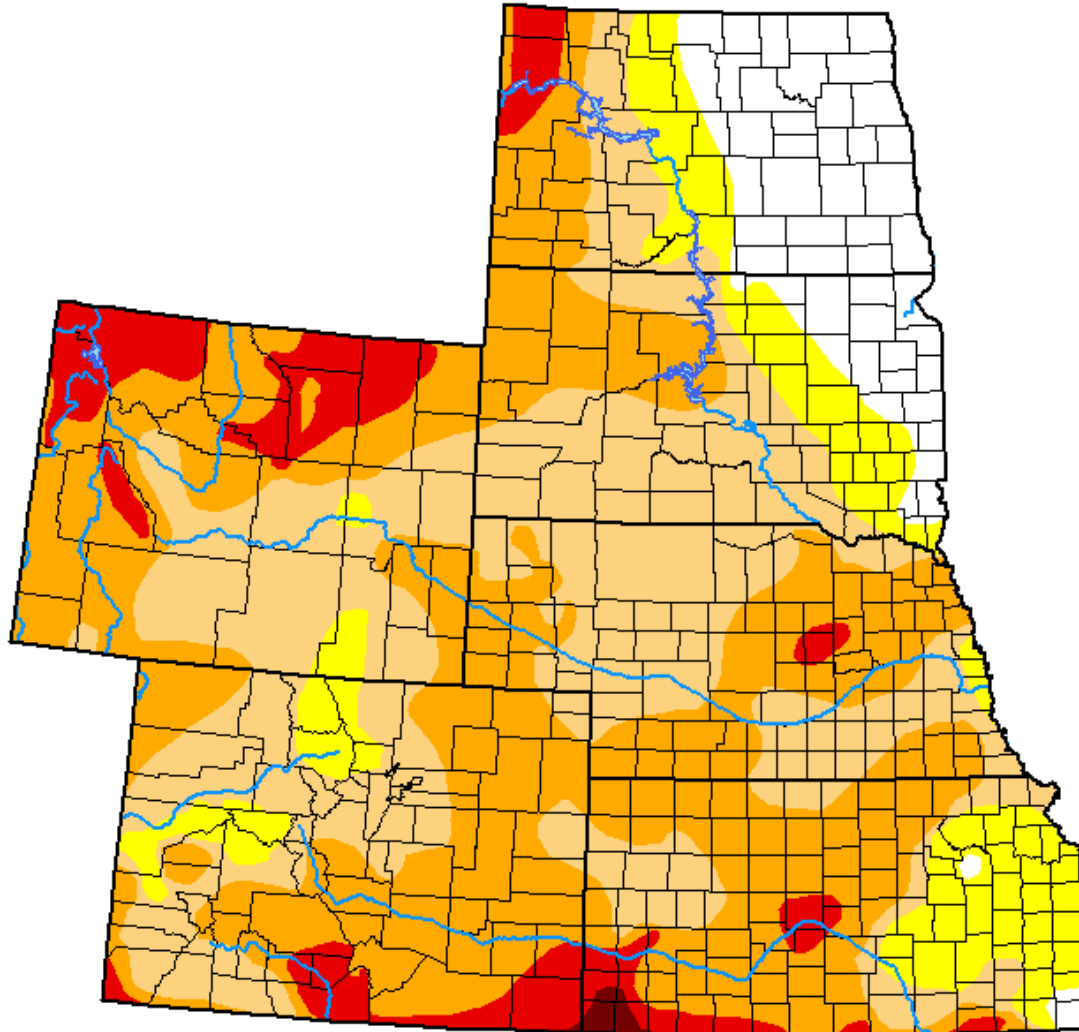
-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>







Author:

U.S. Drought Monitor High Plains

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Author:

Adam Hartman
NOAA/NWS/NCEP/CPC

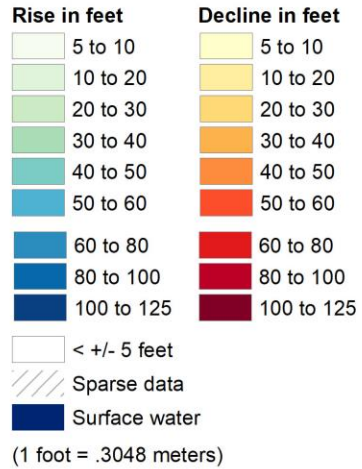
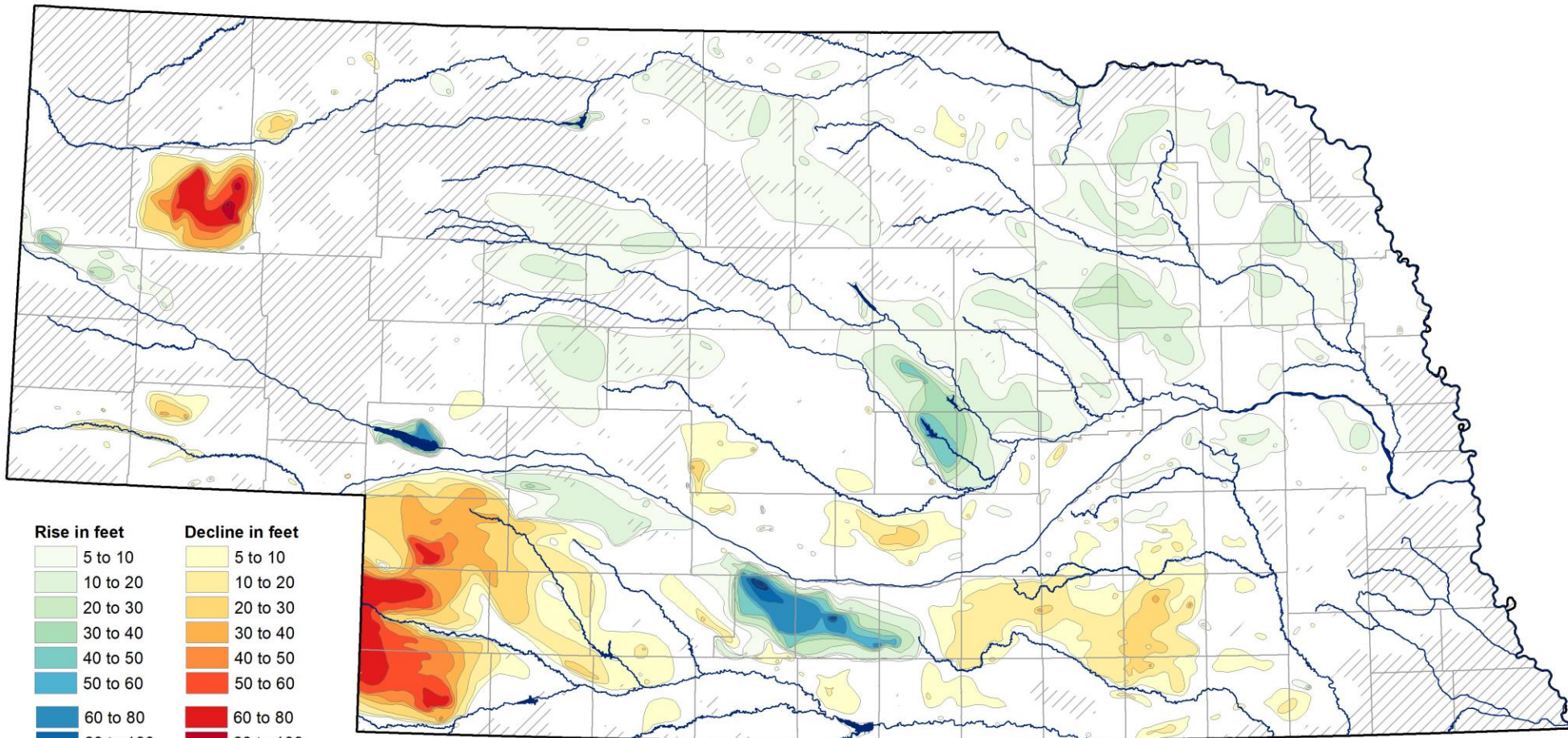


droughtmonitor.unl.edu

Groundwater-Level Changes in Nebraska - Predevelopment to Spring 2020



"Water is Life"



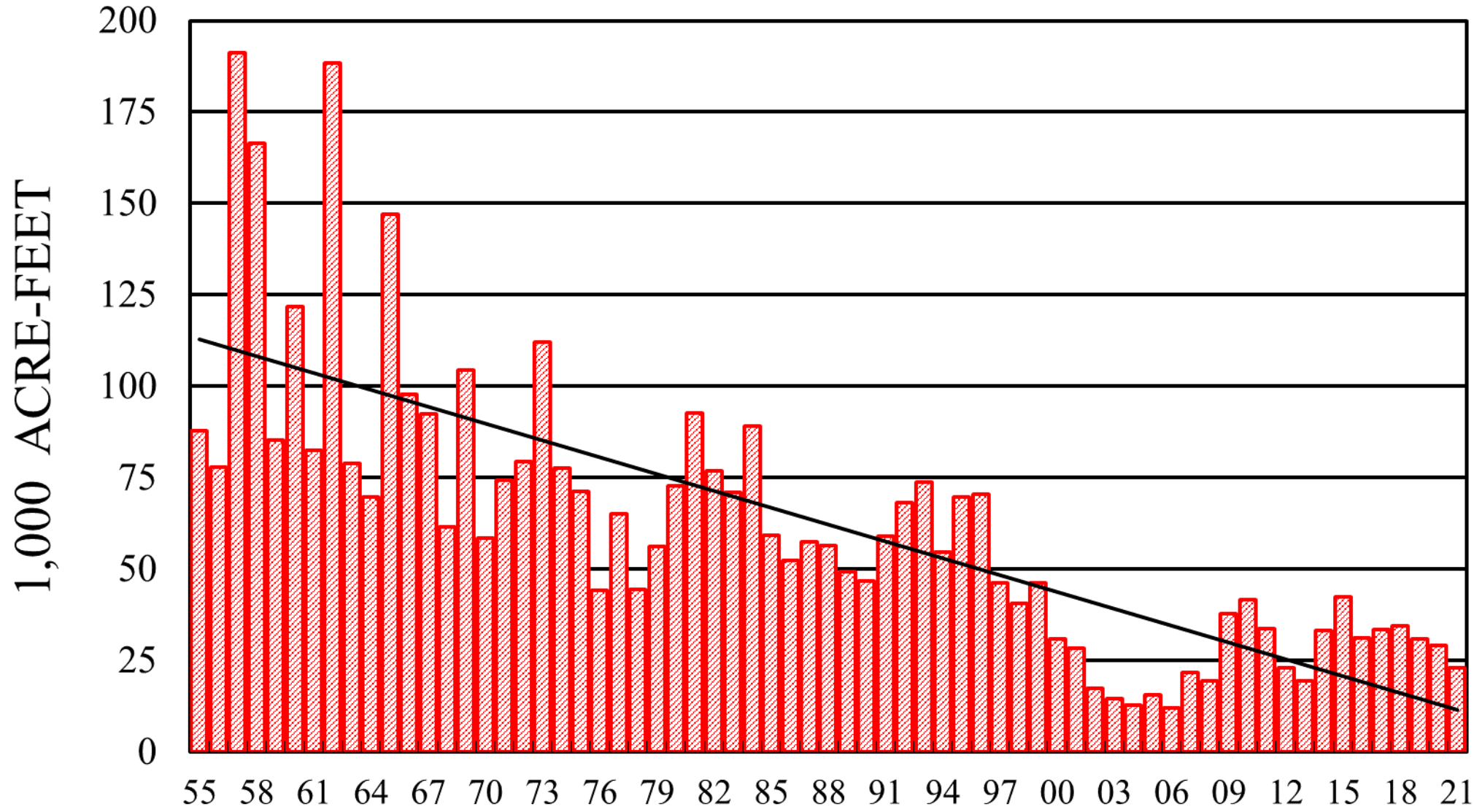
For an explanation of information presented on this map, see the 2020 Nebraska Statewide Groundwater-Level Monitoring Report, available for download at go.unl.edu/groundwater

CONSERVATION AND SURVEY DIVISION (<http://snr.unl.edu/csd>)
 School of Natural Resources (<http://snr.unl.edu>)
 Institute of Agriculture and Natural Resources
 University of Nebraska-Lincoln

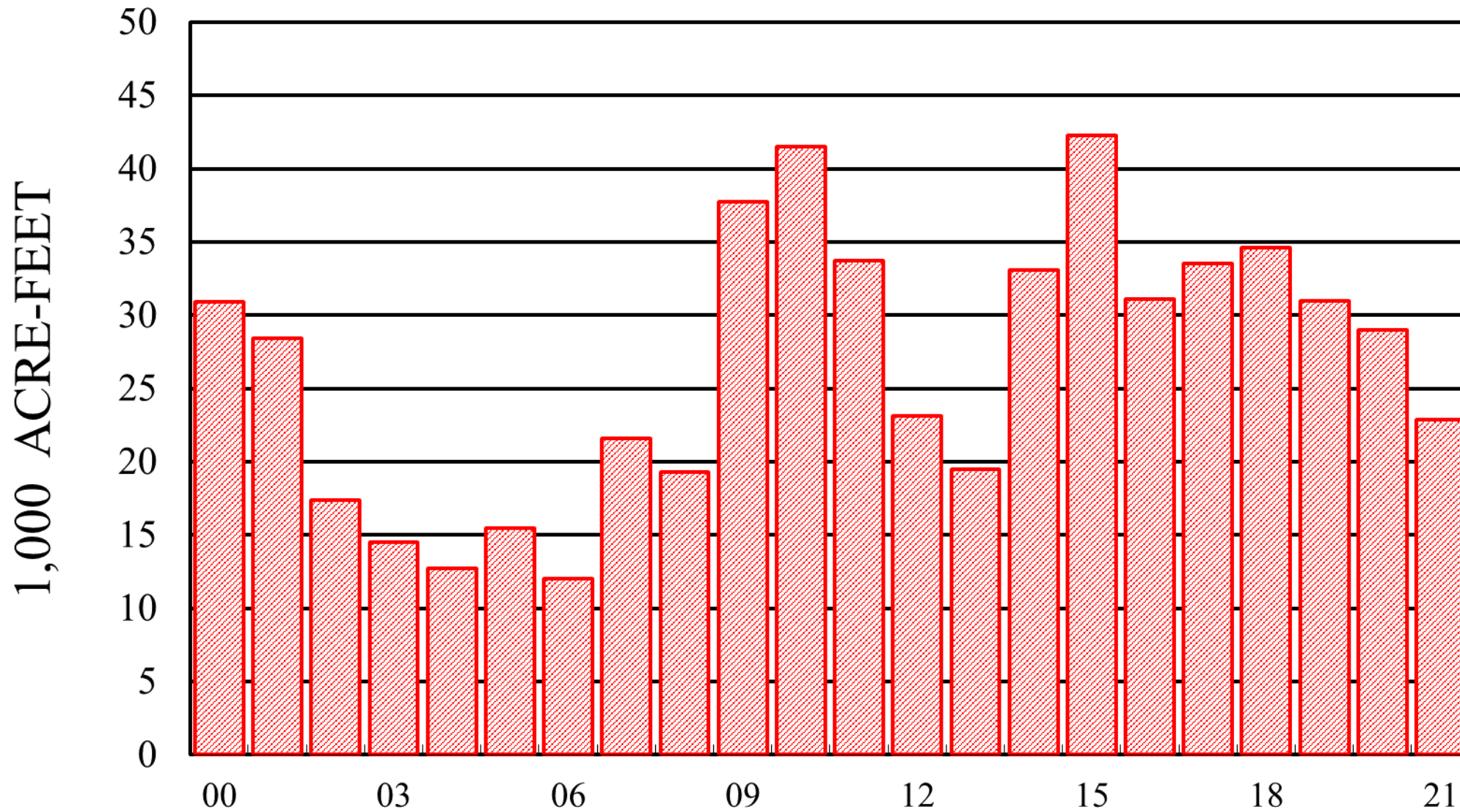
Aaron Young, Survey Geologist, CSD
 Mark Burbach, Water Levels Program Supervisor, CSD
 Les Howard, GIS Manager, CSD

Data provided by:
 Nebraska Natural Resources Districts
 Central Nebraska Public Power and Irrigation District
 U.S. Geological Survey
 Nebraska Water Science Center
 U.S. Bureau of Reclamation
 Kansas-Nebraska Area Office
 Conservation and Survey Division,
 University of Nebraska - Lincoln

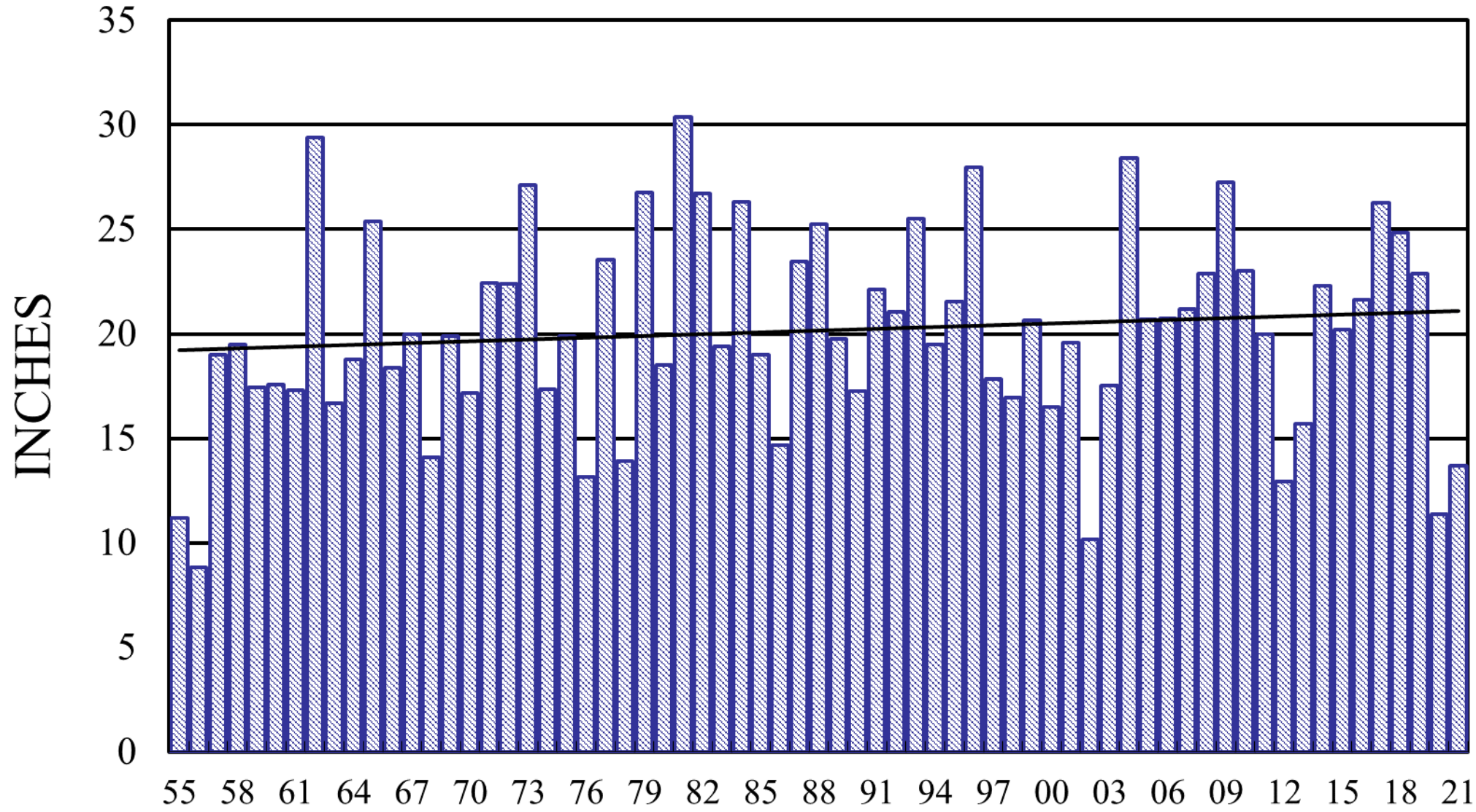
TRENTON DAM YEARLY HISTORICAL INFLOW



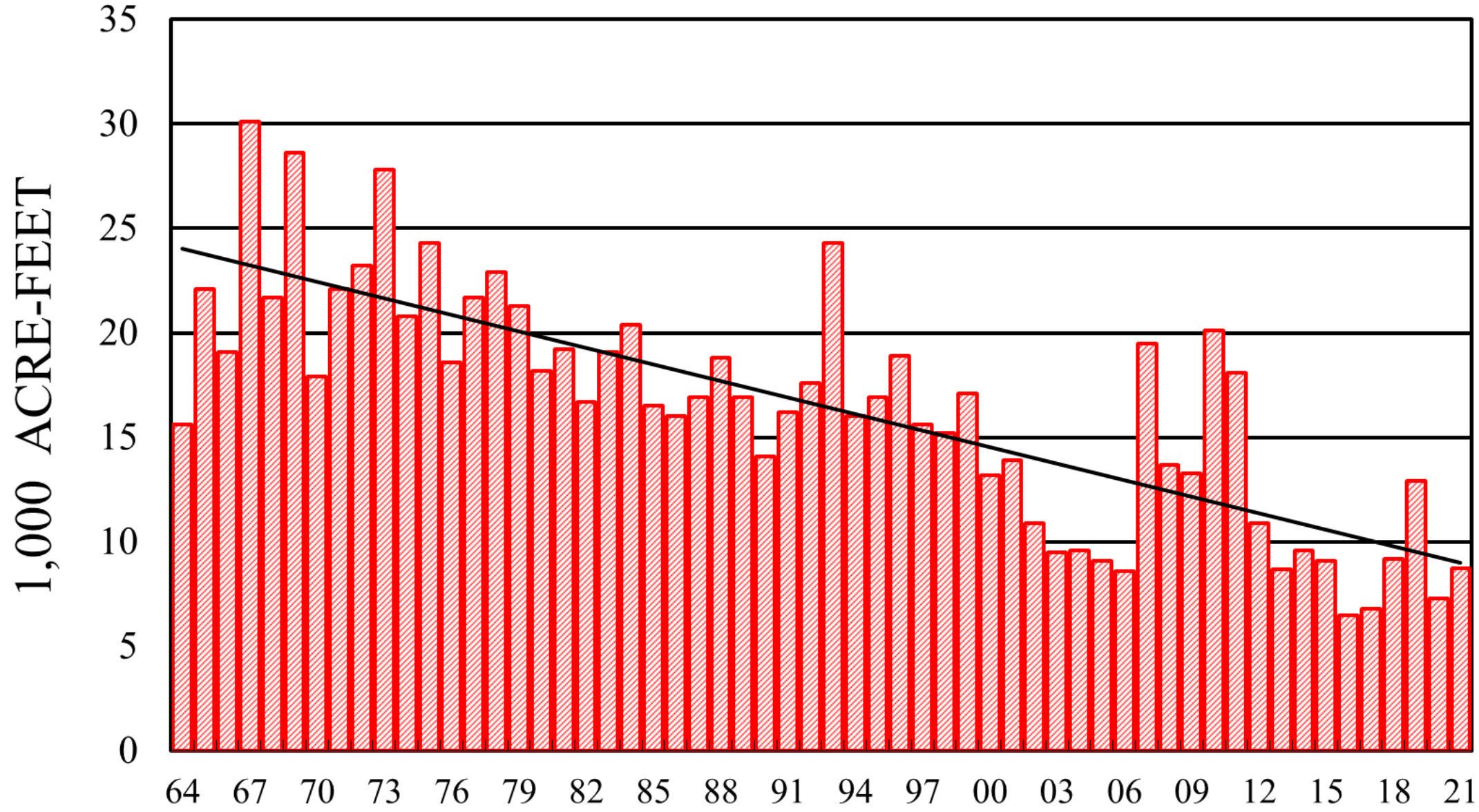
TRENTON DAM YEARLY HISTORICAL INFLOW



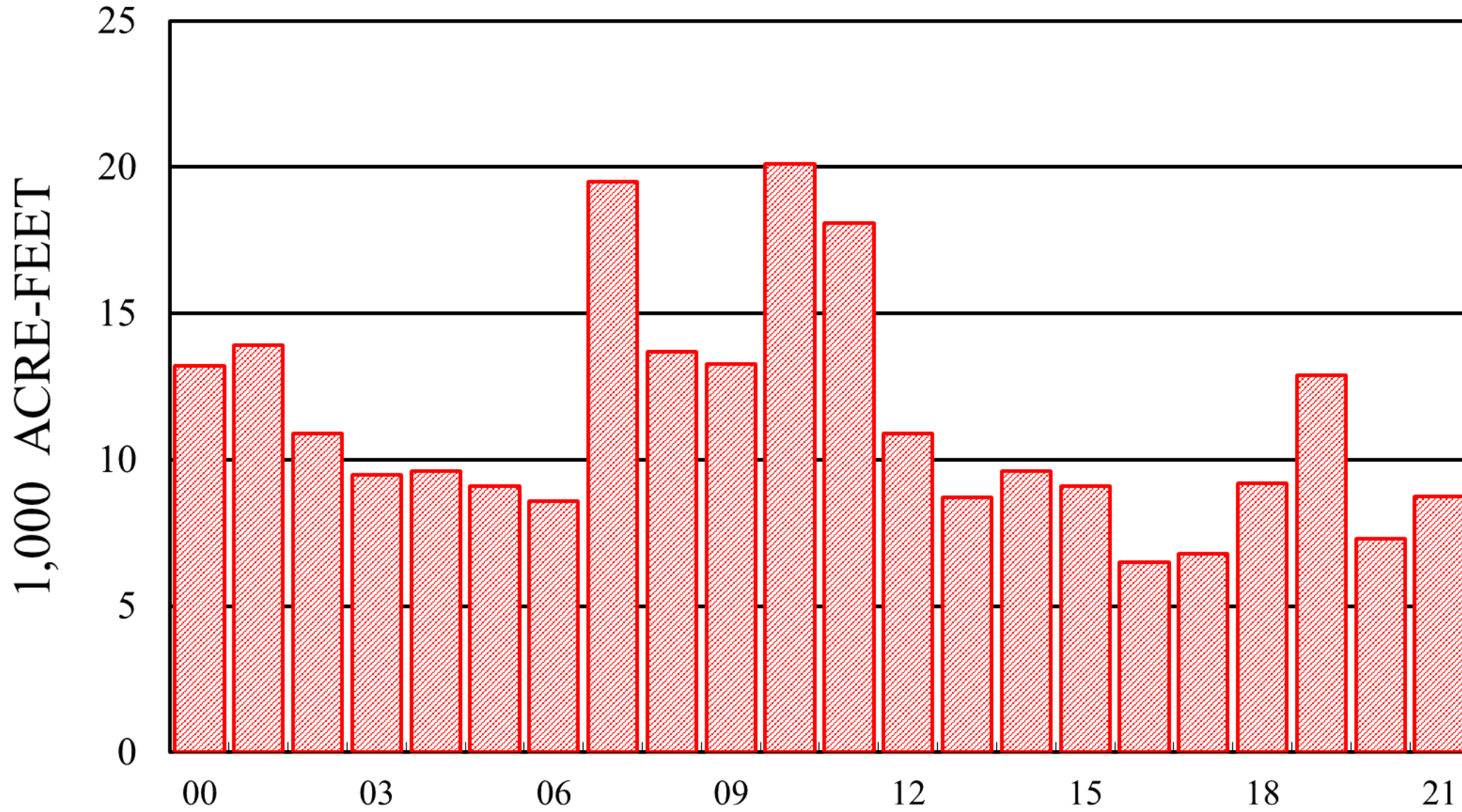
TRENTON DAM YEARLY PRECIPITATION



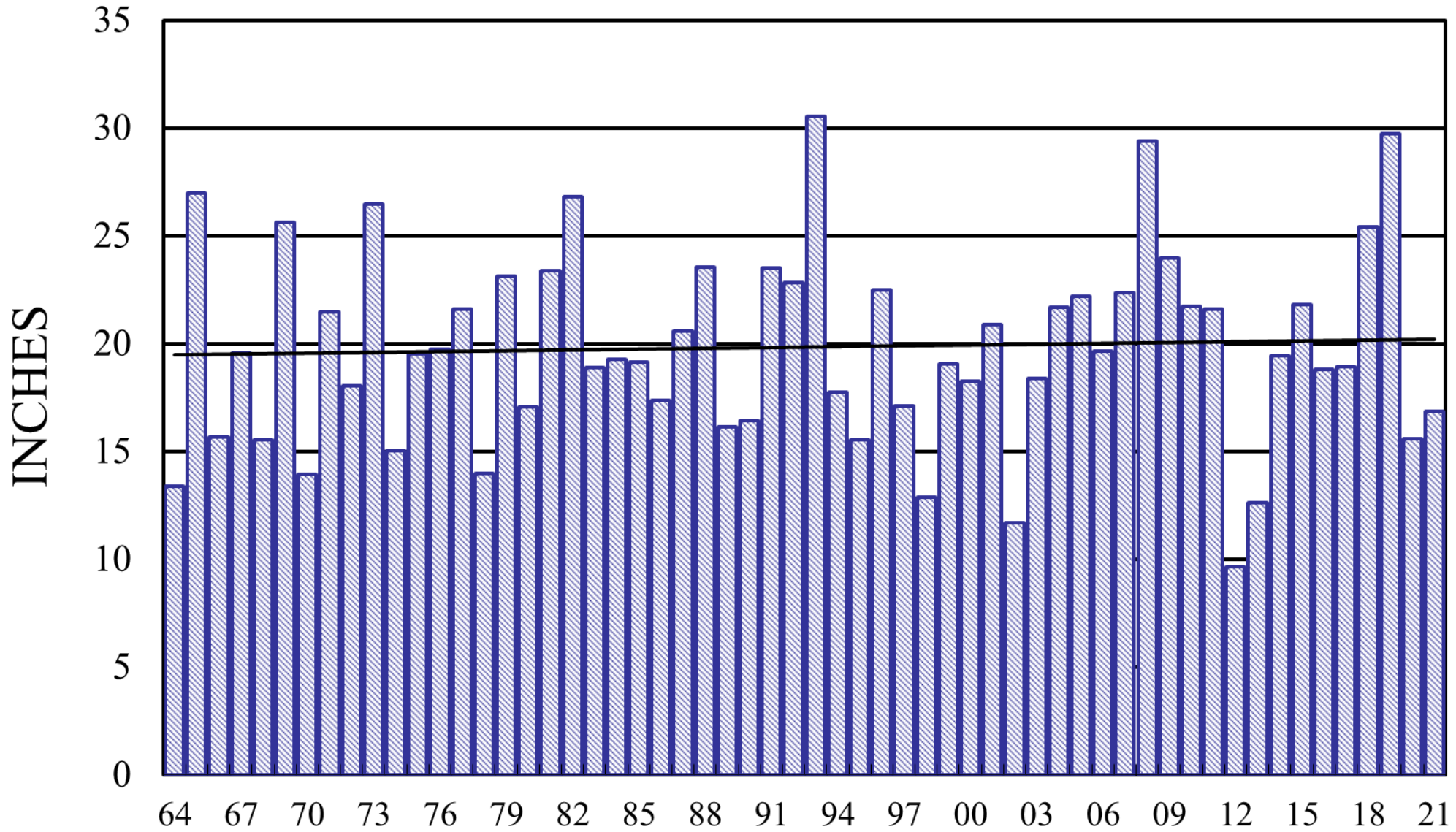
RED WILLOW DAM and HUGH BUTLER LAKE YEARLY HISTORICAL INFLOW



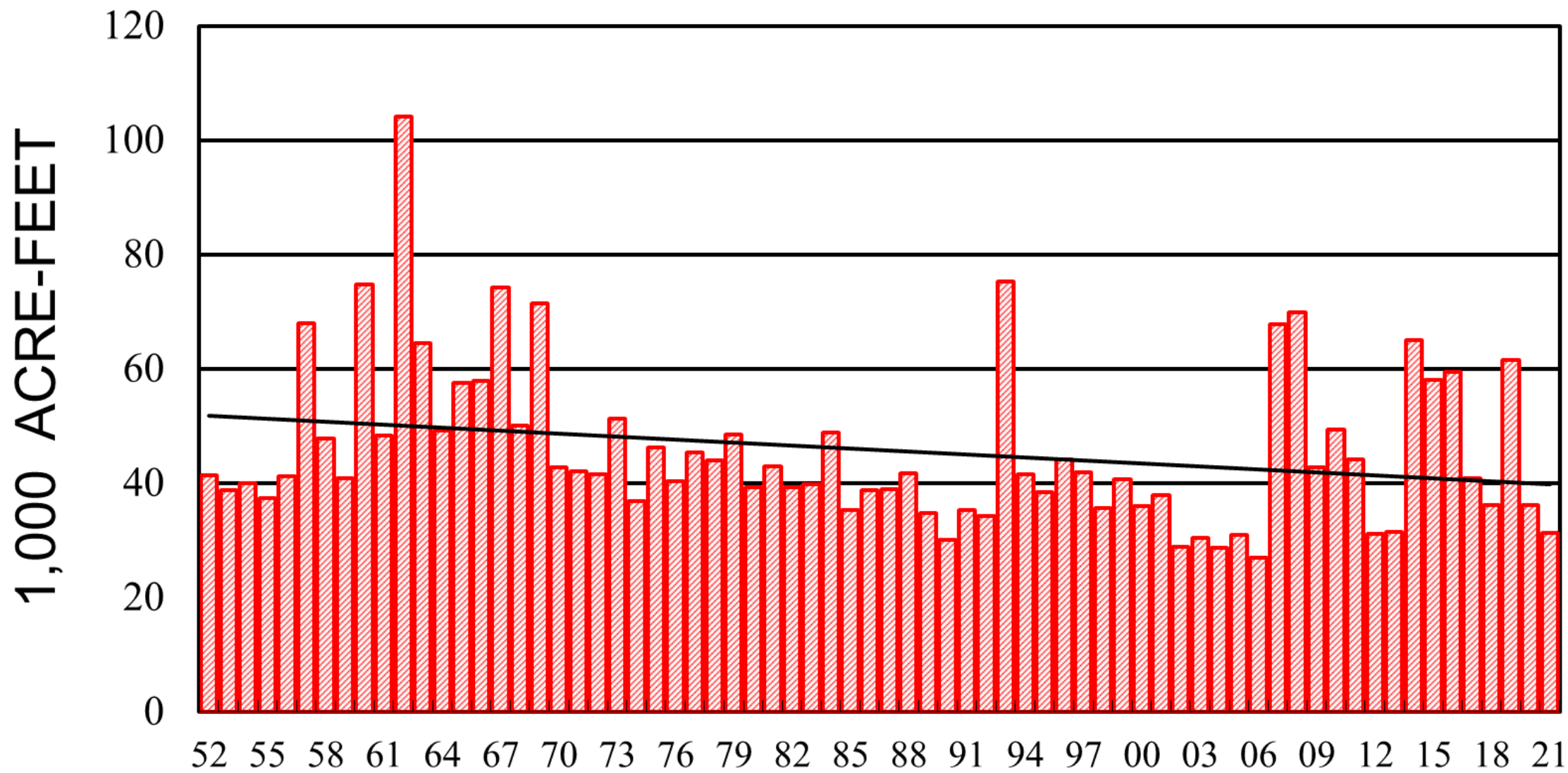
RED WILLOW DAM and HUGH BUTLER LAKE YEARLY HISTORICAL INFLOW



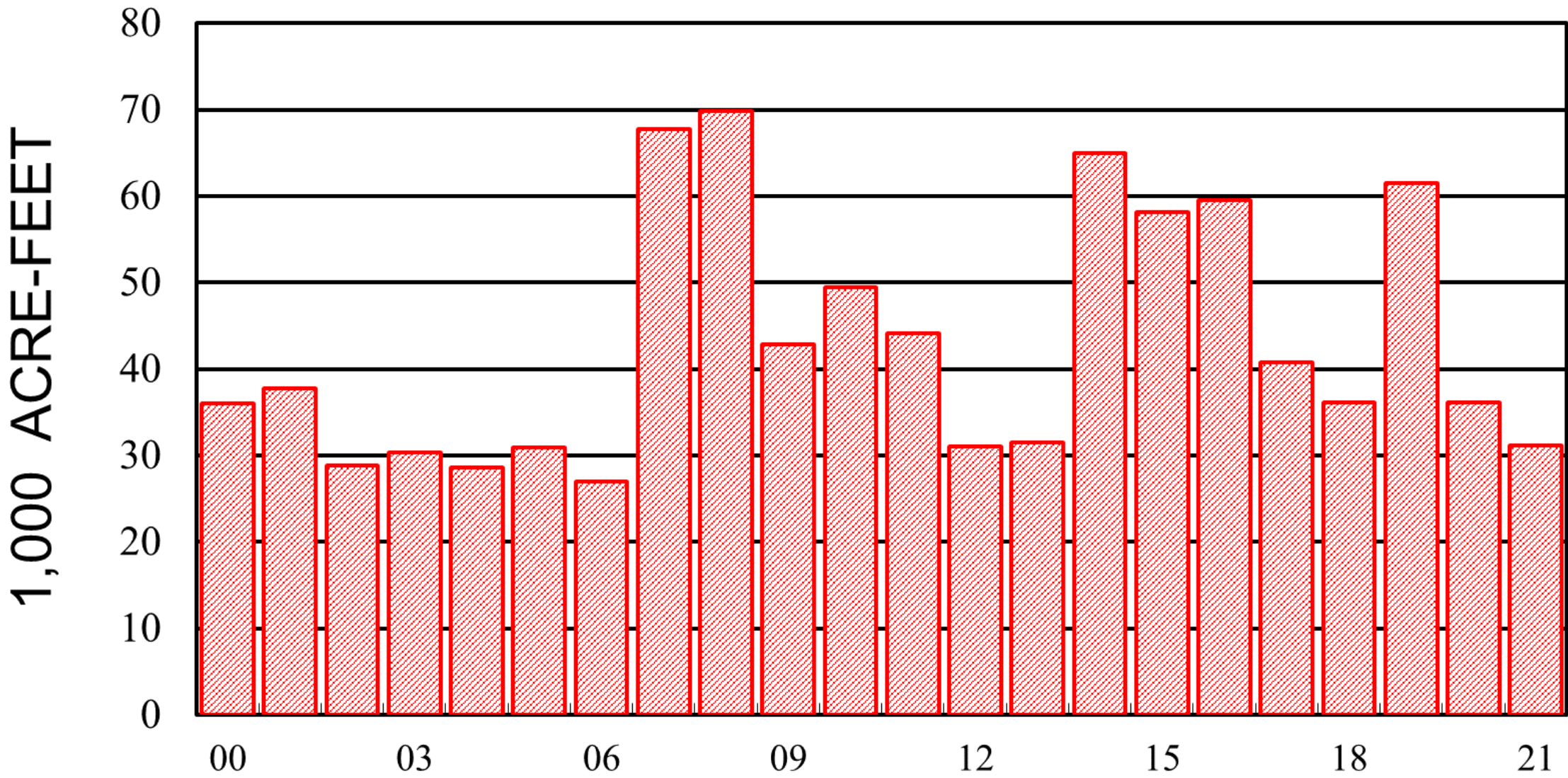
RED WILLOW DAM YEARLY PRECIPITATION



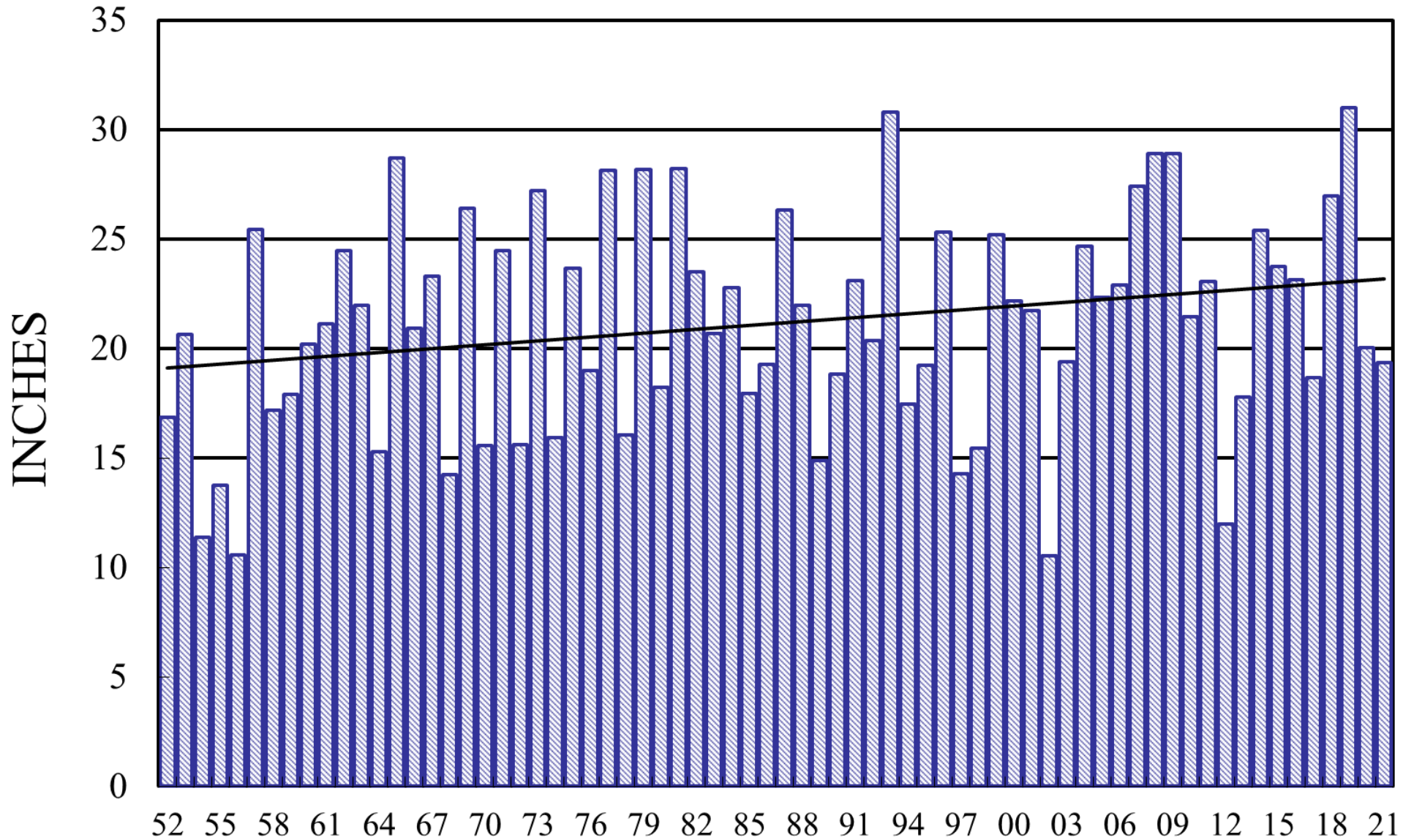
MEDICINE CREEK DAM and HARRY STRUNK LAKE YEARLY HISTORICAL INFLOW



MEDICINE CREEK DAM and HARRY STRUNK LAKE YEARLY HISTORICAL INFLOW



MEDICINE CREEK DAM YEARLY PRECIPITATION



Frenchman Cambridge 2022 Storage Water Supply



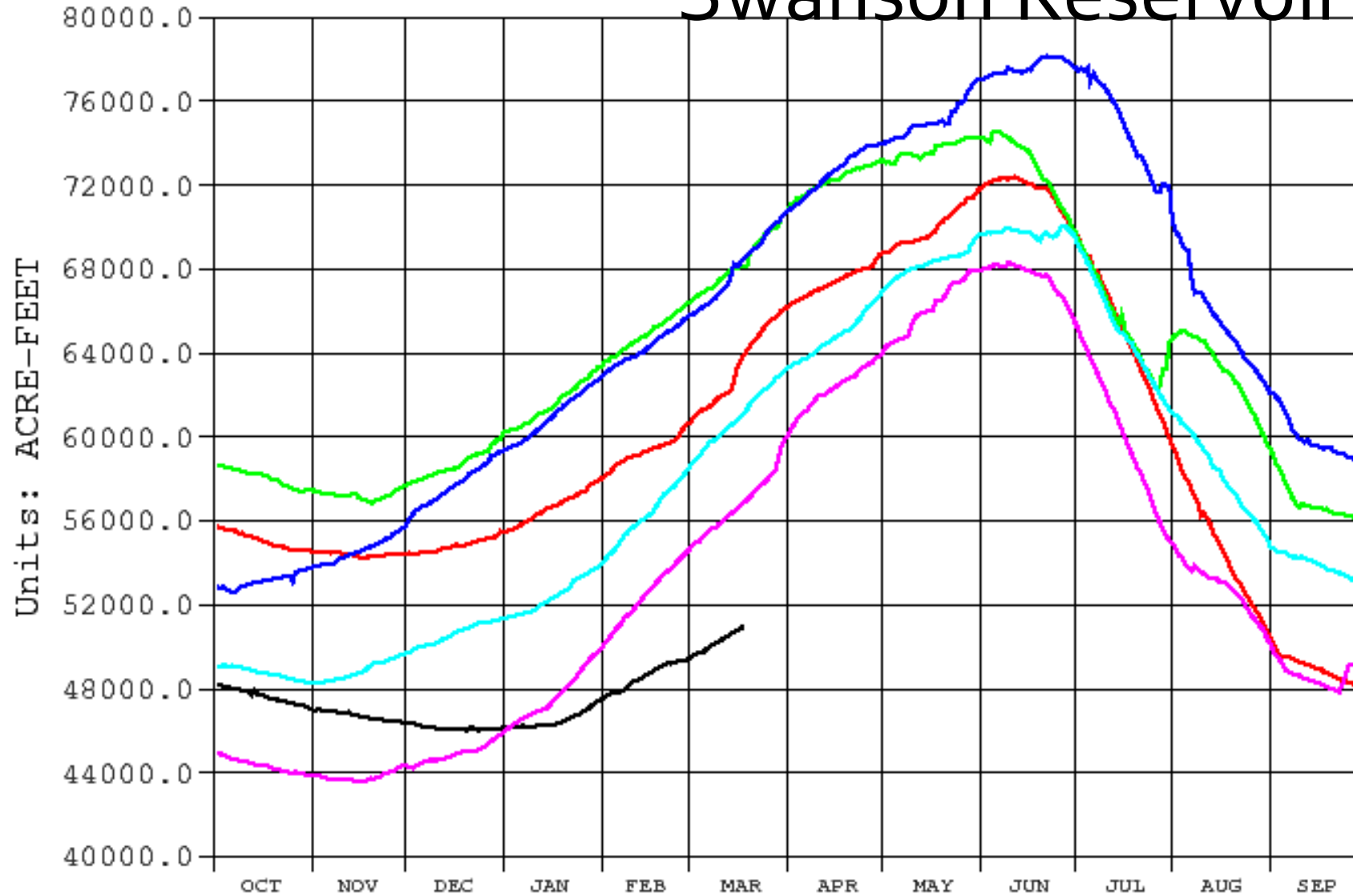
Reservoir Content / Irrigation Supply

Reservoirs 2022	Swanson		Hugh Butler		Harry Strunk		Total AF
	Elevation	Acre-Feet	Elevation	Acre-Feet	Elevation	Acre-Feet	AF
Top of Irrigation Pool	2752.00	110,175	2581.80	36,224	2366.10	34,647	181,046
FCID Contracted Shut Off Elevation/Content AF	2725.00	18,958	2561.00	11,212	2343.00	7,897	38,067
<i>FCID Contracted Irrigation Pool Capacity at 100% Full</i>	27.00	91,217	20.80	25,012	23.10	26,750	142,979
Current Elevation / Content (Acre- Feet)	2737.36	51406.00	2567.31	16995	2365.66	33,846	102,247
% of Full Capacity	46.7%		46.9%		97.7%		56.5%
<i>Current 2022 Irrigation Supply</i>	<i>Feet</i>	<i>A.F.</i>	<i>Feet</i>	<i>A.F.</i>	<i>Feet</i>	<i>A.F.</i>	<i>A.F.</i>
	12.36	32,448	6.31	5,783	22.66	25,949	64,180
Monday, March 21, 2022	% Irr. Pool	35.6%	% Irr. Pool	23.1%	% Irr. Pool	97.0%	44.9%
One Year Change							
Sunday, March 21, 2021	2,741.24	64,691	2,570.31	20,200	2,364.96	32,609	117,500
One Year Change in Storage (AF / Elevation)	-3.88	(13,285)	-3.00	(3,205)	0.70	1,237	(15,253)

Archive Data From 1 OCT Through 30 SEP

Plotted 03/17/2022 16:39

Swanson Reservoir



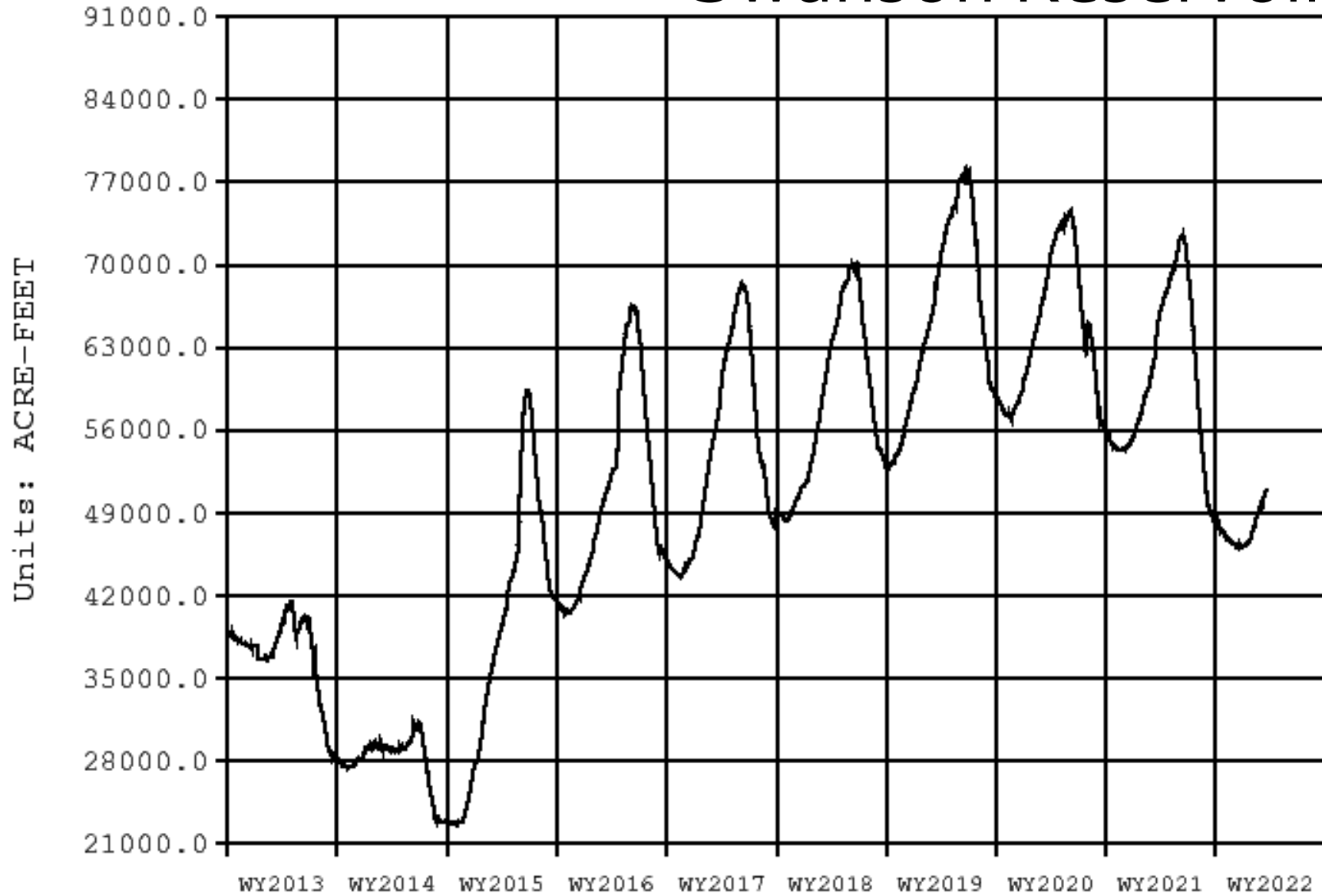
TRNE Swanson Lake (Trenton Dam), NE
AF Reservoir Storage Content (acre-feet)

2022 2021 2020
2019 2018 2017

Archive data From 1-OCT-2012 Through 30-SEP-2022

Plotted 03/17/2022 16:54

Swanson Reservoir



TRNE

Swanson Lake (Trenton Dam), NE

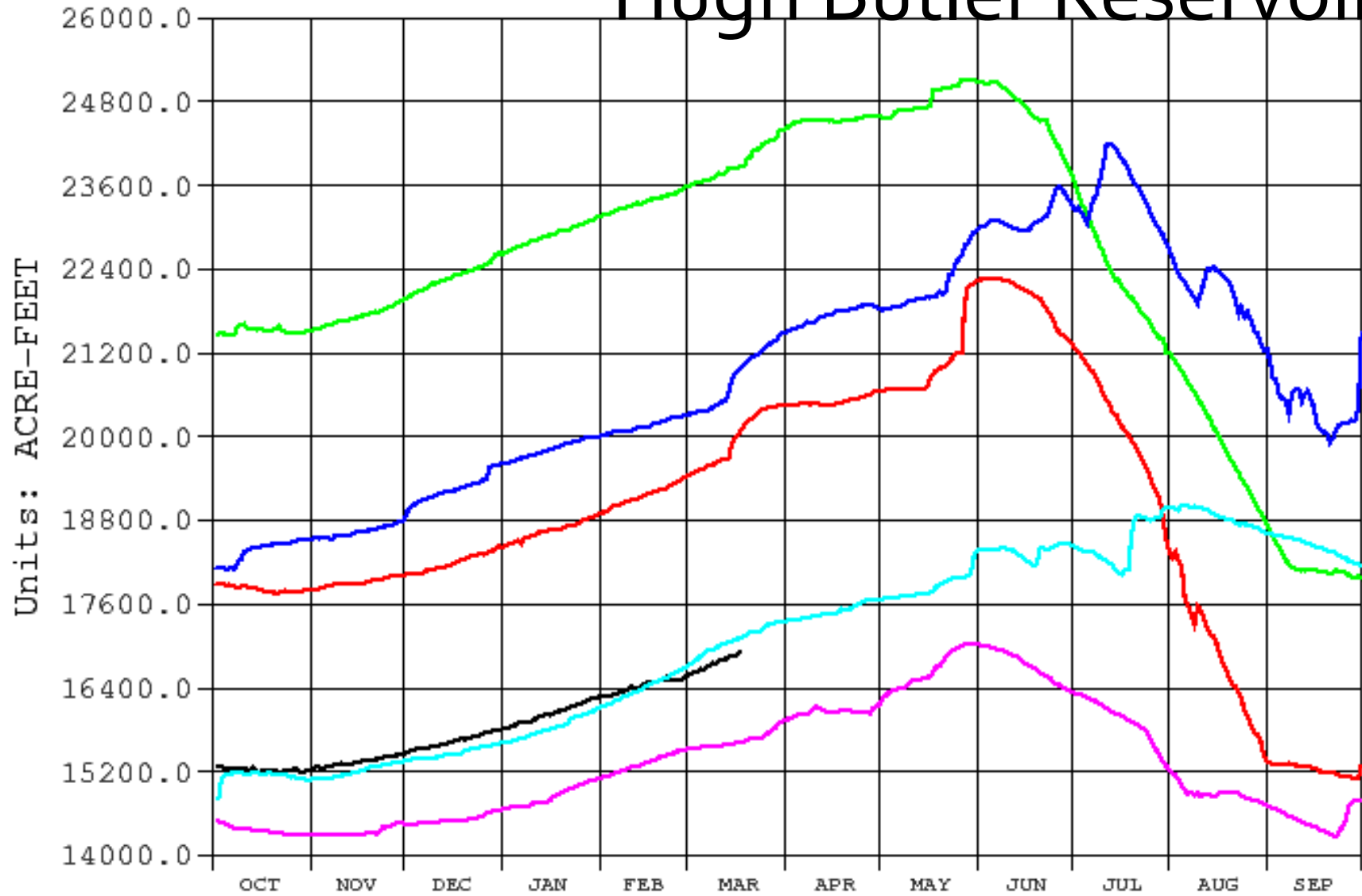
AF

Reservoir Storage Content (acre-feet)

Archive Data From 1 OCT Through 30 SEP

Plotted 03/17/2022 16:43

Hugh Butler Reservoir



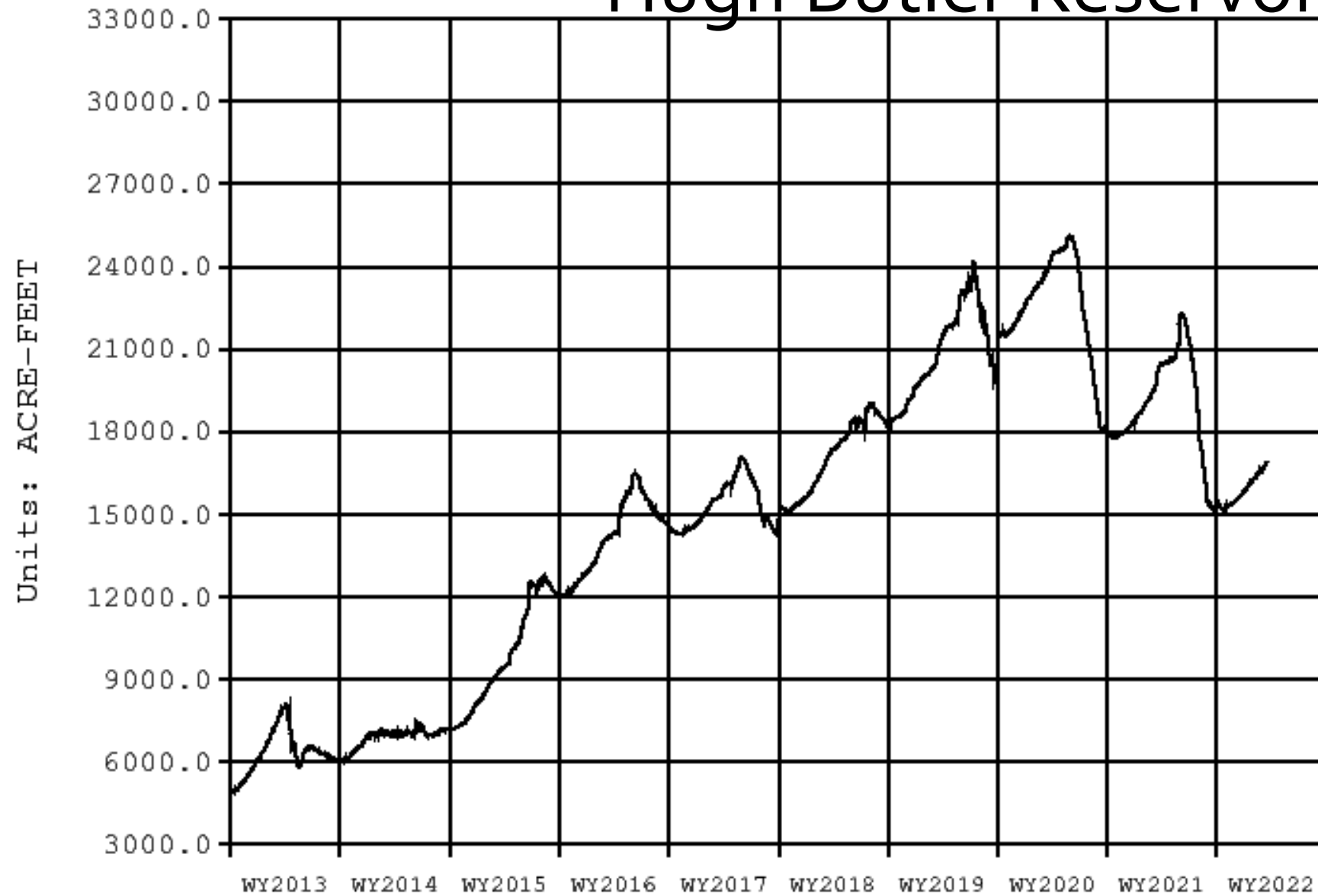
HBNE Hugh Butler Lake (Red Willow Dam), NE
AF Reservoir Storage Content (acre-feet)

2022 2021 2020
2019 2018 2017

Archive data From 1-OCT-2012 Through 30-SEP-2022

Plotted 03/17/2022 16:55

Hugh Butler Reservoir



HBNE

Hugh Butler Lake (Red Willow Dam), NE

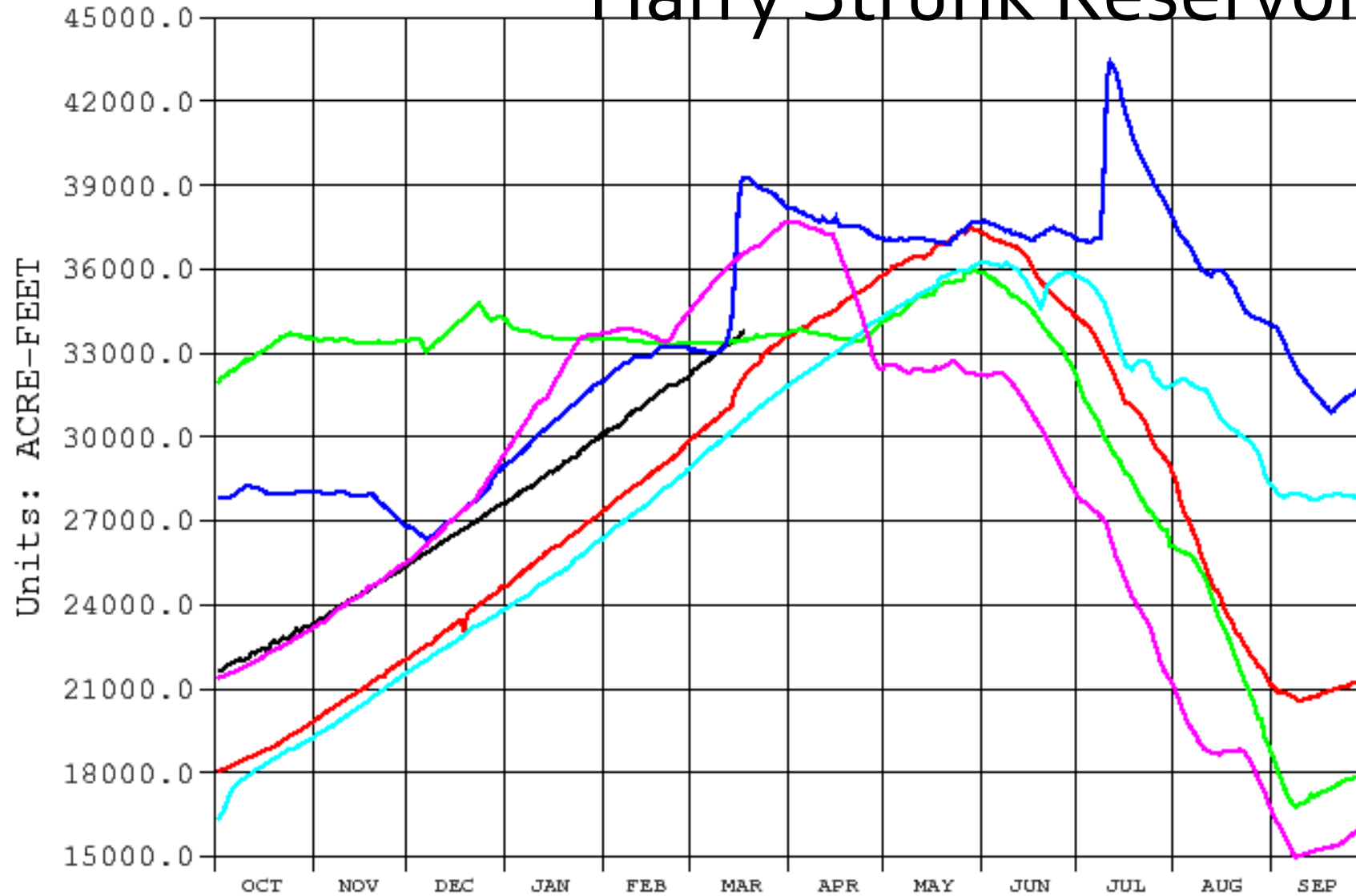
AF

Reservoir Storage Content (acre-feet)

Archive Data From 1 OCT Through 30 SEP

Plotted 03/17/2022 16:47

Harry Strunk Reservoir



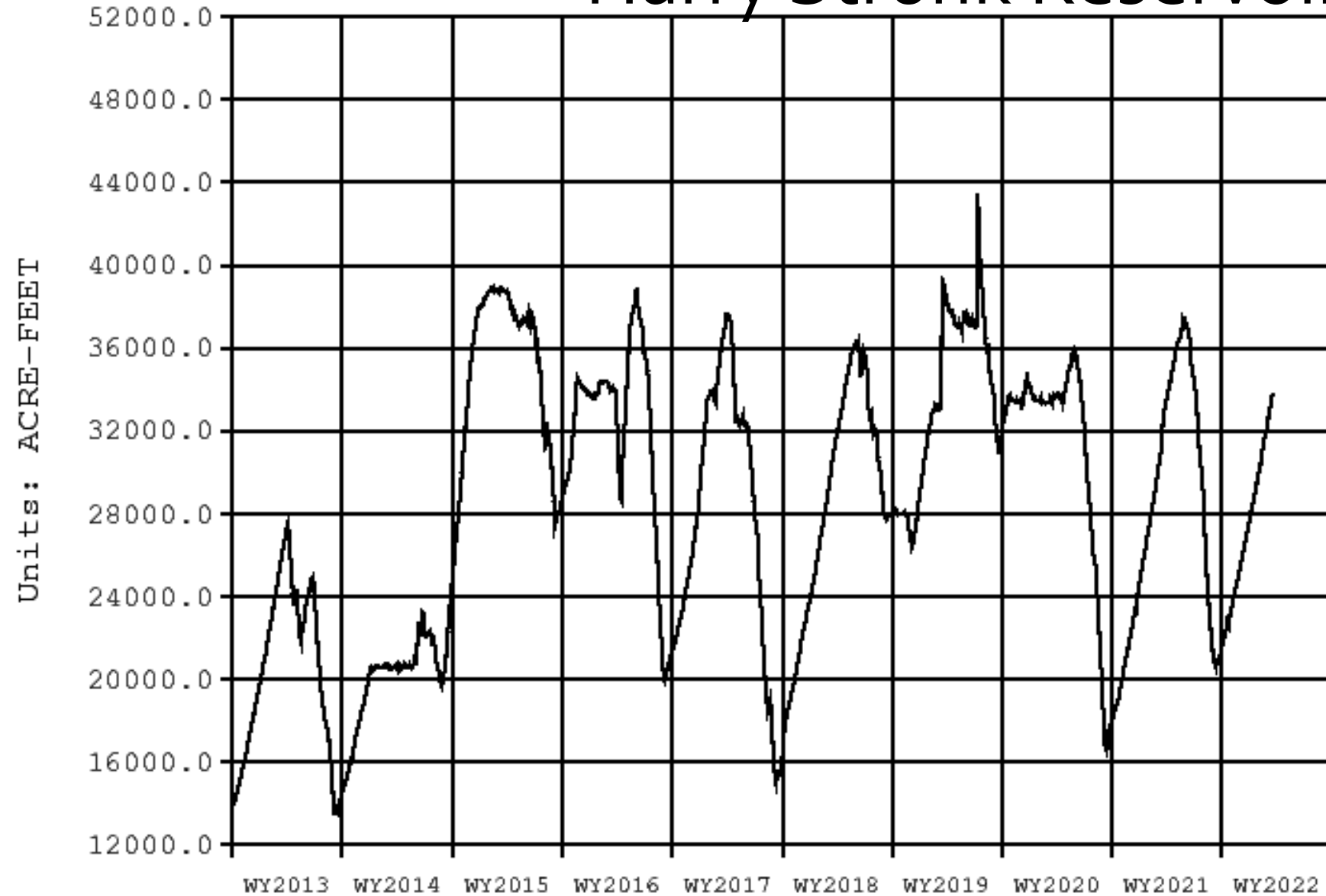
HSNE Harry Strunk Lake (Medicine Creek), NE
AF Reservoir Storage Content (acre-feet)

2022 2021 2020
2019 2018 2017

Archive data From 1-OCT-2012 Through 30-SEP-2022

Plotted 03/17/2022 16:57

Harry Strunk Reservoir



HSNE

Harry Strunk Lake (Medicine Creek), NE

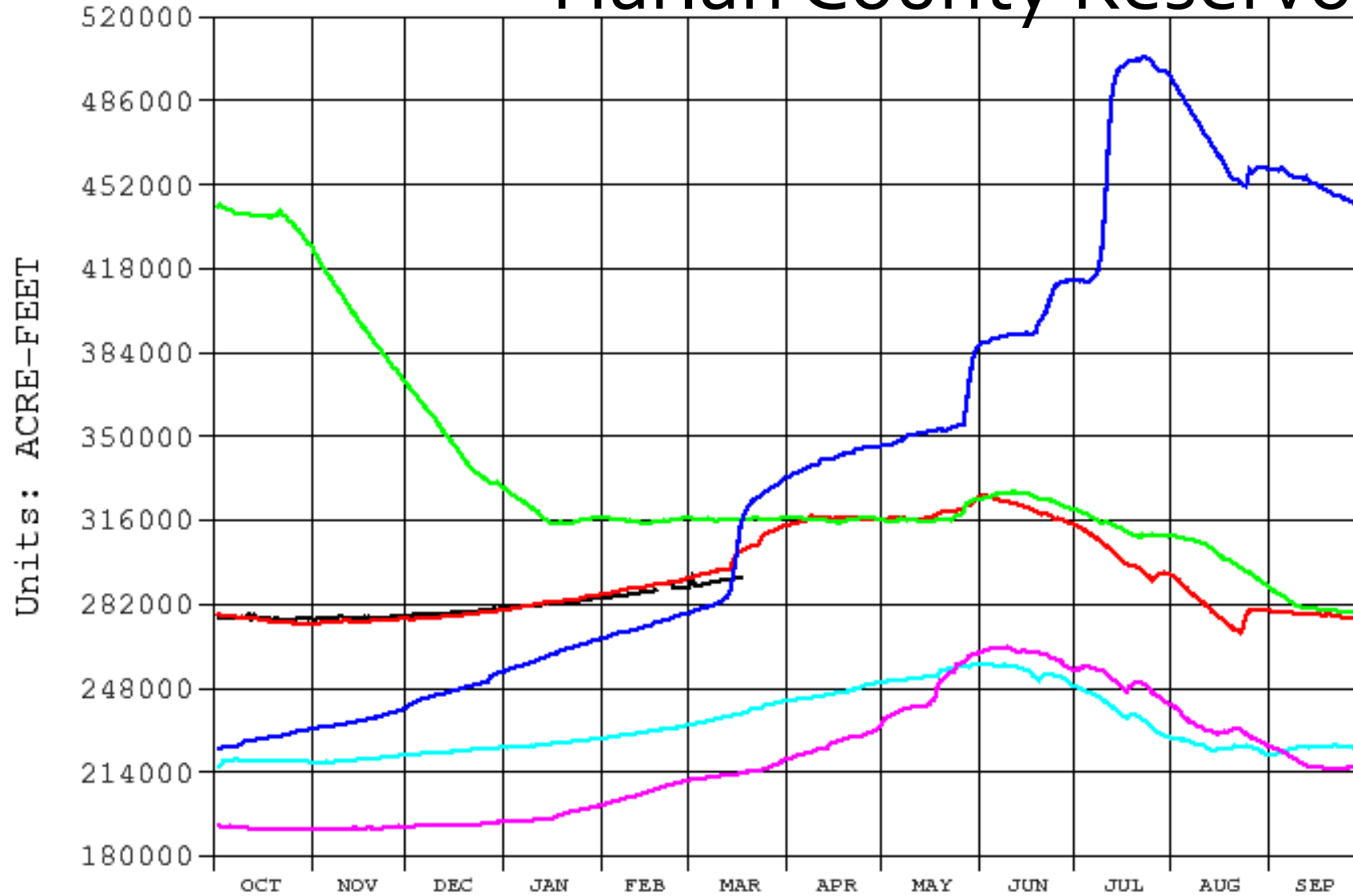
_____ AF

Reservoir Storage Content (acre-feet)

Archive Data From 1 OCT Through 30 SEP

Plotted 03/17/2022 17:03

Harlan County Reservoir



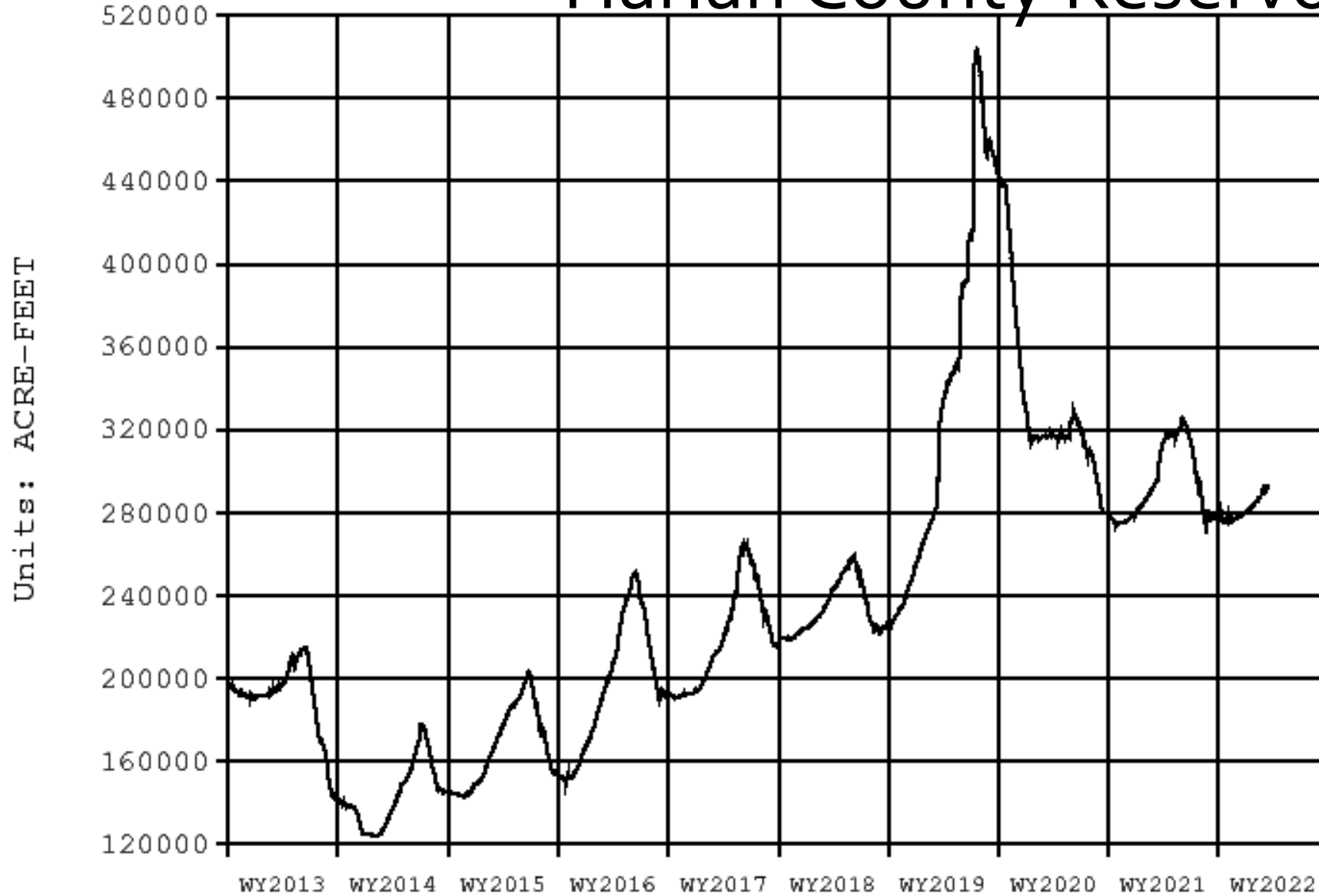
HCNE Harlan County Dam, NE
AF Reservoir Storage Content (acre-feet)

2022 2021 2020
2019 2018 2017

Archive data From 1-OCT-2012 Through 30-SEP-2022

Plotted 03/17/2022 17:00

Harlan County Reservoir



HCNE

Harlan County Dam, NE

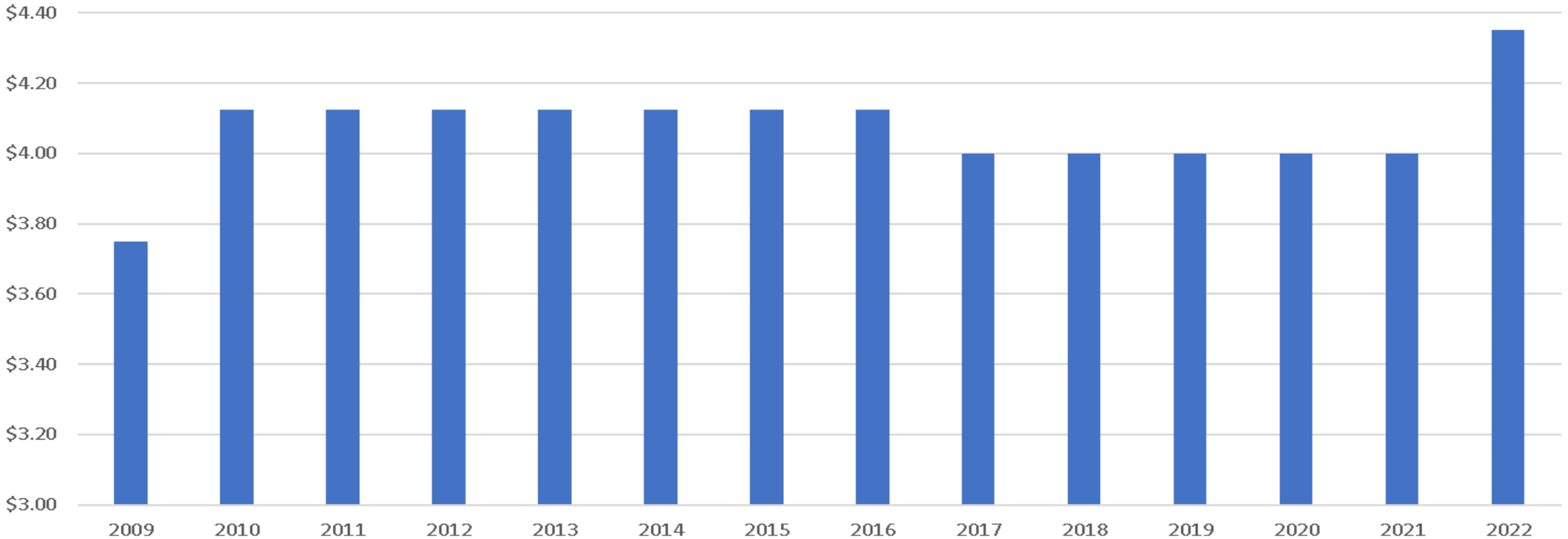
AF

Reservoir Storage Content (acre-feet)

2022 Water Rates

FCID

Per Acre Water Assessment
(Fee per inch of Water Allocated)



"Water is Life"



2022 Water Rates and Allocations

Meeker-Driftwood Canal is allocated 7 inches

\$35.45 per acre for 7 inches

$(7 \text{ inches} \times \$4.35 = 30.45 \text{ plus } \$5 \text{ per acre} = \$35.45)$

"Water is Life"



2022 Water Rates and Allocations

Red Willow Canal is allocated 6 inches

\$31.10 per acre for 6 inches

(6 inches x \$4.35 = \$26.10 plus \$5 per acre = \$31.10)

"Water is Life"



2019 Water Rates and Allocations

Bartley Canal is allocated 6 inches

\$31.10 per acre for 6 inches

(6 inches x \$4.35 = \$26.10 plus \$5 per acre = \$31.10)

River Water should be available early!

"Water is Life"



2022 Water Rates and Allocations

Cambridge Canal is allocated 8 inches

\$39.80 per acre for 8 inches

(8 inches x \$4.35 = \$34.80 plus \$5 per acre = \$39.80)

River Water should be available early

FCID's Finances

"Water is Life"



CD = \$274,164

Federal Obligated Savings = \$384,777

Money Market Account = \$146,069

Checking = \$103,178

2022 Budget

"Water is Life"



2022 Adopted Budget

\$1,668,699

Payroll and Employees Benefits.....53%

District O and M.....33%

Federal Obligations.....14%

Water Conservation

"Water is Life"



2011

FCID was looking for a solution to reduce canal spills and manage the canals more efficiently.

Canal Automation seemed to be a good solution for FCID

Water Conservation

"Water is Life"



Grants:

Year	Project	Nebraska	Reclamation	FCID	Total	Grant Type
2011	Bartley Pump Station		\$754,000	\$824,173	\$1,578,173	WaterSMART
2012	Cambridge Canal Automation		\$299,700	\$332,300	\$632,000	WaterSMART
2012	Pump Station Automation		\$94,900	\$96,400	\$191,300	Area Office
2017	Cambridge Canal TCC (Phase I)	\$915,500		\$610,400	\$1,525,900	WSF
2019	Cambridge Canal TCC (Phase II)	\$528,600		\$352,470	\$881,070	WSF
2020	Meeker-Driftwood Canal TCC	\$2,000,000	\$1,500,000	\$486,446	\$3,986,446	WaterSMART
Totals		\$3,444,100	\$2,648,600	\$2,702,189	\$8,794,889	

Rubicon Water

"Water is Life"



Automated Cambridge Canal Head-gate and operates in upstream level mode.

54 canal structures have been equipped with Flumegates and operate in TCC mode.

Rubicon Water

"Water is Life"



Total Channel Control (TCC) was implemented on the entire length of the Cambridge Canal in 2019.

This solution has eliminated nearly all operational spills on the Cambridge Canal

Rubicon Water

"Water is Life"



SCADA Connect software is used from the office.

A radio network enables inter-communication between the Flumegates.

All components work together, automatically controlling gates according to a canal-wide objective of matching supply with demand.

Rubicon Water

"Water is Life"



We have also been working with Rubicon Water on implementing "water ordering software"

This would allow water orders to be made using your smart phone or computer.

The second part of that would be to have our meters on telemetry with real-time data.





Cambridge Diversion Dam

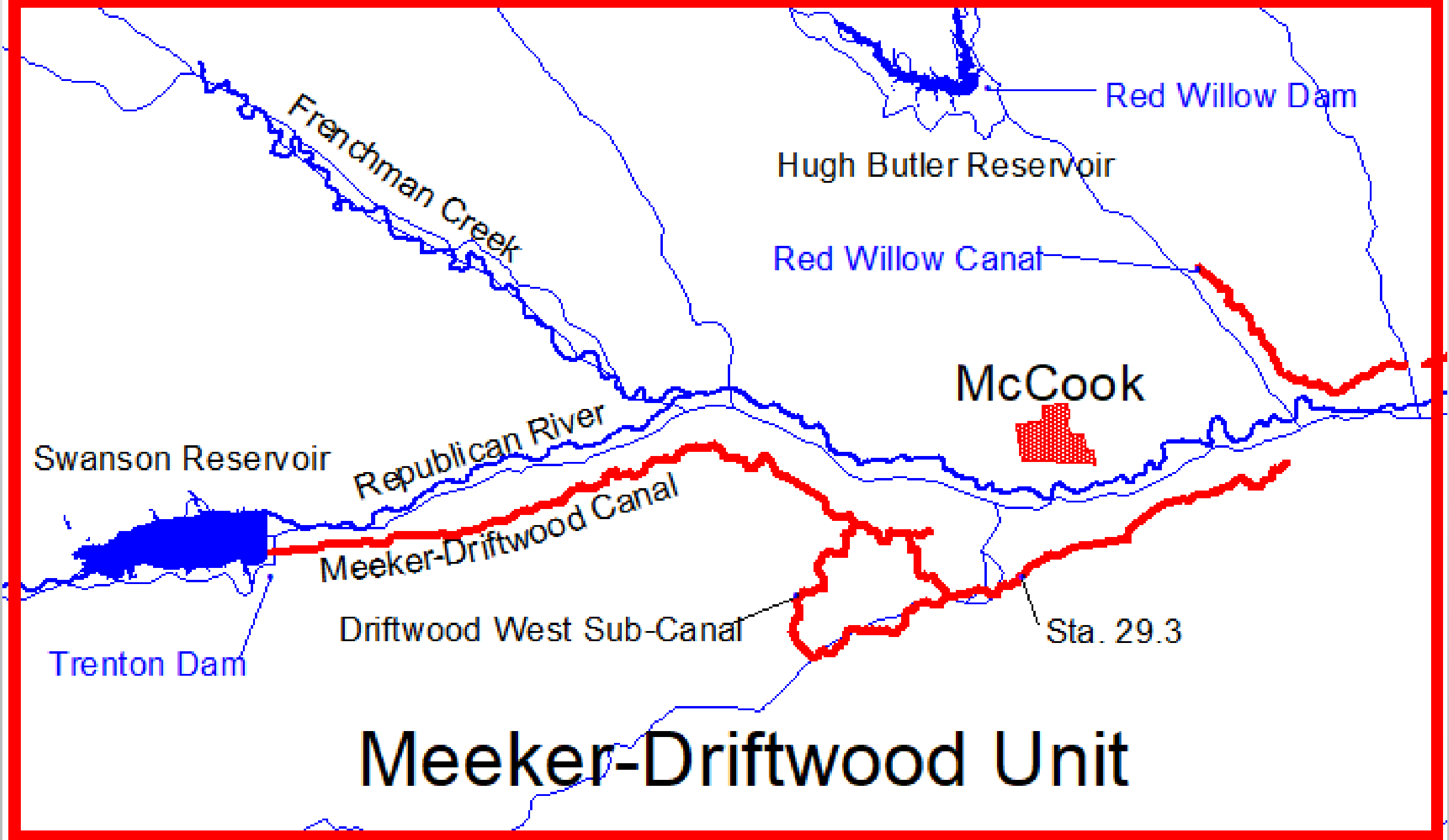






Colorado Compact Settlement Funds

- For over a decade Colorado failed to comply with the Republican River Compact.
- For the past 8 years FCID has been pleading our case with Nebraska that Meeker-Driftwood Canal was harmed.
- In 2018 the three States reached a settlement agreement.
- Nebraska was paid 4 million dollars



Red Willow Dam

Hugh Butler Reservoir

Red Willow Canal

Frenchman Creek

McCook

Swanson Reservoir

Republican River

Meeker-Driftwood Canal

Driftwood West Sub-Canal

Sta. 29.3

Trenton Dam

Meeker-Driftwood Unit











TCC Benefits

- Eliminates Unwanted Canal Spills
- Water orders 7 days a week
- Short notice water order changes
 - REA Peak Power Controls and Rain events
- On-line water orders and water balances

RRA Forms

"Water is Life"



Reclamation Reform Act of 1982

Everyone that farms or own 240 acres under a Federal Project must comply with the RRA laws.

Complete all required forms each year and file with the Irrigation District.

Must notify the District within 60 days after a change in ownership.

No one can irrigate over 960 acres

An aerial photograph of a large reservoir or dam. The water is a deep greenish-blue color. A long, low dam structure runs across the bottom right of the frame. The surrounding landscape is a mix of brown and green fields, with some trees and small structures scattered throughout. The sky is a pale blue with some light clouds.

Thank You!!