



# HURRICANE CITY UTAH

**Mayor**  
Nanette Billings

**City Manager**  
Kaden C. DeMille

**Power Board**  
Mac J. Hall, Chair  
Jerry Brisk  
Pam Humphries  
Dave Imlay  
Joseph Prete  
Charles Reeve

## Power Board Meeting Agenda

8/3/2022

3:00 PM

Power Department Meeting Room – 526 W 600 N

Notice is hereby given that the Power Board will hold a Regular Meeting in the Power Department Meeting room located at 526 W 600 N, Hurricane, UT. A silent roll call will be taken, along with the Pledge of Allegiance and prayer by invitation.

### AGENDA

1. Pledge of Allegiance
2. Prayer
3. Approval of Minutes from July 2022

### STAFF REPORTS

Scott Hughes/Power Director  
Brian Anderson/Transmission & Distribution Superintendent  
Michael Ramirez/Service Superintendent  
Jared Ross/Substation & Generation Superintendent

### OLD BUSINESS

1. AMI Update
2. Three Falls Substation Update
3. 1150 West Alignment Study Update
4. Rocky Mountain Power Agreements Update
5. Power Rate Study Update and Possible Recommendation of Approval

### NEW BUSINESS

1. UAMPS Updates
2. Budget





# HURRICANE CITY

## UTAH

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Charles Reeve

1 The Hurricane City Power Board met on July 6, 2022, at 3:00 p.m. at the Clifton Wilson Substation on 526 W  
2 600 N.

3  
4 In attendance were Chairman Mac Hall, Pam Humphries, Jerry Brisk, Joseph Prete, Charles Reeve, Dave Imlay,  
5 Scott Hughes, Brian Anderson, Fred Resch, Dayton Hall, and Crystal Wright.

6  
7 Mac Hall welcomed everyone to the meeting; Pam Humphries led the Pledge of Allegiance and Dayton Hall  
8 offered the prayer. Pam Humphries suggested one correction to add her on the list of attendees from the June  
9 2022 meeting. Dave Imlay motioned to approve minutes from the June 2022 meeting with that correction.  
10 Pam Humphries seconded the motion.

11  
12 **Scott Hughes:** Scott Hughes provided an update on employees. Talked about the UAMPS Annual Member  
13 Conference coming up in August. Dave Imlay wanted to discuss the employee situation discussed earlier. He  
14 talked about attrition and what it costs us to have lost the lineman that left. Scott Hughes discussed some of  
15 the larger items that didn't make the cut during the budgeting process for this new fiscal year.

16  
17 **Brian Anderson:** Brian Anderson provided updates on the Cordero Line Extension. Discussed the capacitor  
18 bank being installed at 600 North 2600 West. Loads have been evaluated on each circuit and adjusted to  
19 prepare for peak summer loads. Had our end of year inventory count and it went better than anticipated. We  
20 completed our inventory audit with Hinton Burdick. Upcoming projects include 600 N Phase 3A that was  
21 approved in the budget, 1150 West 69kv insulator upgrades and the 2800 West line. Dave Imlay asked  
22 questions about the approved budget. Discussion about budgeting questions and explanations as well as a rate  
23 study that is being undertaken for bonding purposes.

24  
25 **AMI Update:** Scott Hughes provided an update that we are continuing to move forward with this project. We  
26 have chosen Honeywell as our vendor.

27  
28 **Three Falls Substation Update:** Scott Hughes provided an update with the site work. The project is moving  
29 along. Mac Hall asked who was doing the excavation work and Scott Hughes reported that Ash Excavating was  
30 the company that won that bid.

31  
32 **Solar Policy Update:** Scott Hughes thanked Dayton Hall, City Attorney, for working with the Power Department  
33 to get our policies, including the solar policy, updated and consistent throughout the department.

34  
35 **1150 W Alignment Study:** Scott Hughes discussed the alignment study. Landowners along that proposed route  
36 have all been sent notifications regarding the project. Surveyors will be completing their work. There is an  
37 open house for this project. Date was unclear and Scott mentioned he would find out for sure and get it out to  
38 everyone. Charles Reeve brought up the airport protection zone overlay and where that information would be



39 found. Group answered that information is listed on the city website. Scott Hughes and Brian Anderson stated  
40 they have had conversations with JVIation regarding pole heights already for our proposed line.  
41

42 **Rocky Mountain Power Agreements Discussion:** Scott Hughes discussed the annexation discussions that have  
43 been occurring regarding the area south of town by the Sky Ranch Subdivision. Dayton Hall confirmed there is  
44 an agenda item being voted on at City Council tomorrow regarding 40 acres out there. Mac Hall discussed  
45 some history regarding some previous annexation discussions in that same area. Scott Hughes stated that he  
46 will be looking into all existing agreements with Dayton Hall. Scott Hughes brought up a map to show where  
47 the 40 acres is located. Rocky Mountain Power has told us they are still on track to be off our line by April  
48 2023. They talked about keeping a metering point for future use. Dave Imlay stated that had been discussed  
49 before and suggested placing the metering point further up the hill to accommodate future growth. This is a  
50 good idea to provide the reliability of a back feed. Discussion about future annexation plans. Brought up the  
51 annexation map on the city website to discuss how that that potential would tie into future power planning.  
52

53 **Power Rate Study Discussion:** Scott Hughes stated we had reviewed this information earlier in the meeting  
54 and unless there were any additional questions that we would move forward.  
55

56 **UAMPS Updates:** Scott Hughes handed out the CFPP presentation from the last UAMPS board meeting. It was  
57 provided late last night after the Power Board Meeting packet was prepared and distributed. Charles Reeve  
58 shared information regarding a big push by the Utah Taxpayer Association targeting Hurricane residents  
59 specifically due to our participation in the CFPP project. Dave Imlay provided some insight regarding some of  
60 the benefits to continuing participation. Scott Hughes and Dayton Hall will be reviewing the CFPP agreement to  
61 get up to speed in anticipation of questions. Discussed the Steel Solar 1A Project information that was included  
62 in the packet. Dave Imlay made a motion to accept the changes to the agreement as listed. Charles Reeve  
63 seconded the motion. The motion passed unanimously.  
64

65 **Budget:** Joseph Prete asked why April's MW cost was so high compared to the other months. Discussion about  
66 the natural gas price being high in April and how that affects our MW cost overall. It's been very volatile this  
67 year. Our natural gas hedge has proven to be very beneficial. Discussion about the volatility of the market and  
68 how it's been very difficult to make accurate predictions.  
69

70 The Power Board adjourned at 4:30 p.m. The next Power Board Meeting is scheduled for August 3, 2022, at  
71 3:00 p.m.

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An aerial photograph of an offshore oil rig in the middle of a vast, deep blue ocean. The rig is a complex of metal structures, including a tall derrick and various platforms. The sky is overcast with grey clouds. The overall tone is industrial and somewhat somber.

# Prepay Gas Update July 2022

Mason Baker

# Status of MGAG Prepay Transaction

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- Entered into in late 2018 with MGAG (Municipal Gas Authority of Georgia)
- 7 year deal to run into 2026 (duration of deal was premised on uncertain long term plans for Nebo)
- Value of prepay= 7 cent discount on fixed price deal with BP
  - Based on predetermined monthly volumes
- Language in contract with MGAG allows UAMPS to terminate should UAMPS no longer need the gas
  - UAMPS can't terminate because it finds a better deal
- Part of a larger prepay transaction that was 30 years
- Savings to date=\$475,831 (2019, 2020, 2021)

# MGAG Indicative Extension Options

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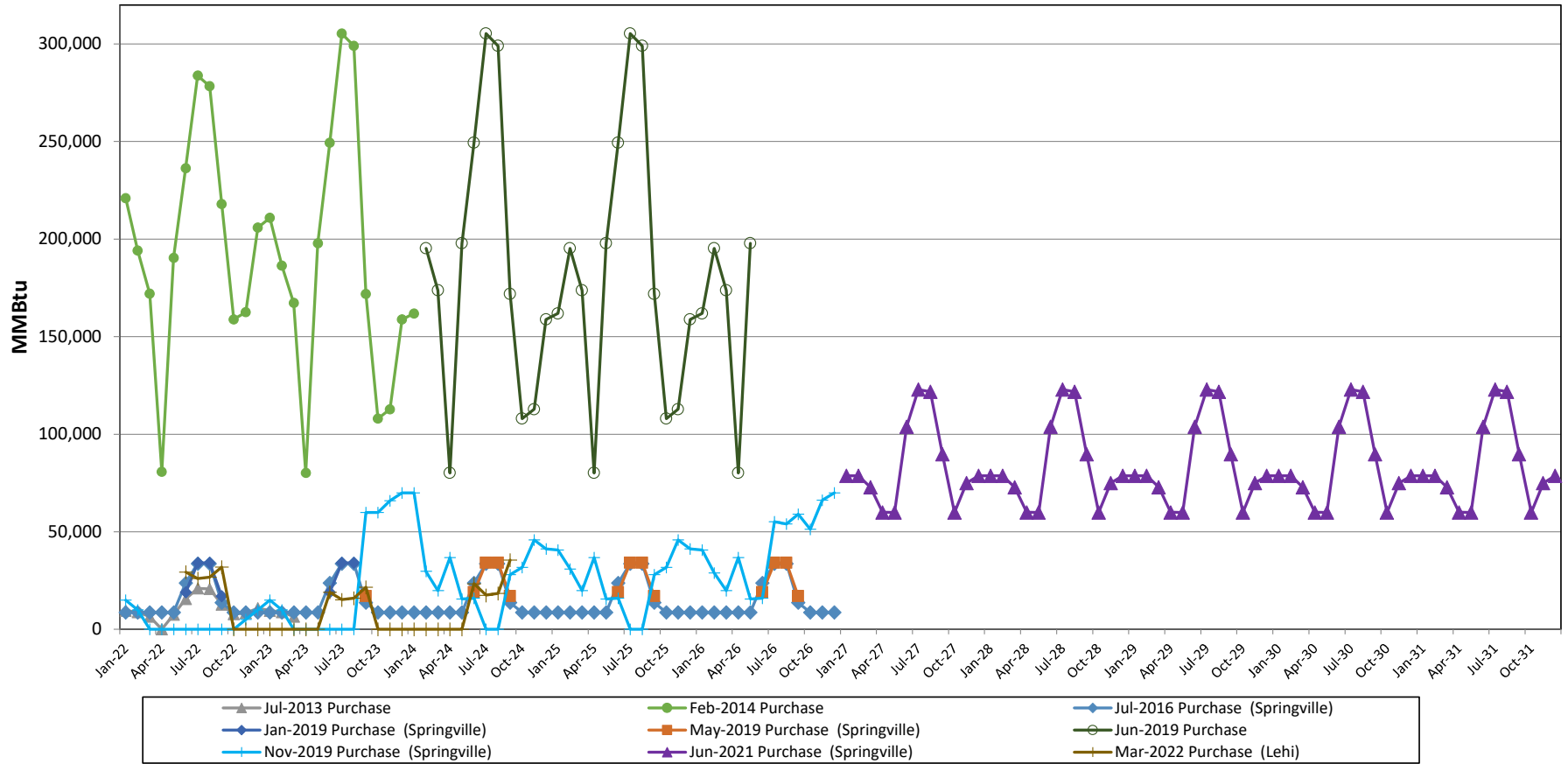
- Extend transaction by 4 years (modest increase on 7 cent savings)
- Extend transaction by longer period 4+ years up to 30 years (maximum savings would be at 30 cents/Mmbtu at 30 years)
  - The longer the extension period, the greater the discount would be
- MGAG's prepay is subject to repricing in October 23'
- If UAMPS does not need the gas then it can terminate w/o consequence OR convert prepay gas to energy delivery (via assigned PPAs)

# Prepay Considerations

- Expected useful life of Nebo (GDS report=2035)
- Nebo Capacity Factor considerations
  - GHG compliance costs?
- Other prepay providers (active market place especially for switch transactions (going from prepay gas to electricity))
- Prepay gas for MIGs

| Year | MWh Generated | Capacity MWh | Capacity Factor |
|------|---------------|--------------|-----------------|
| 2019 | 419,395       | 1,209,456    | 35%             |
| 2020 | 466,709       | 1,212,864    | 38%             |
| 2021 | 543,609       | 1,214,616    | 45%             |

Nebo Locked Gas - Amount

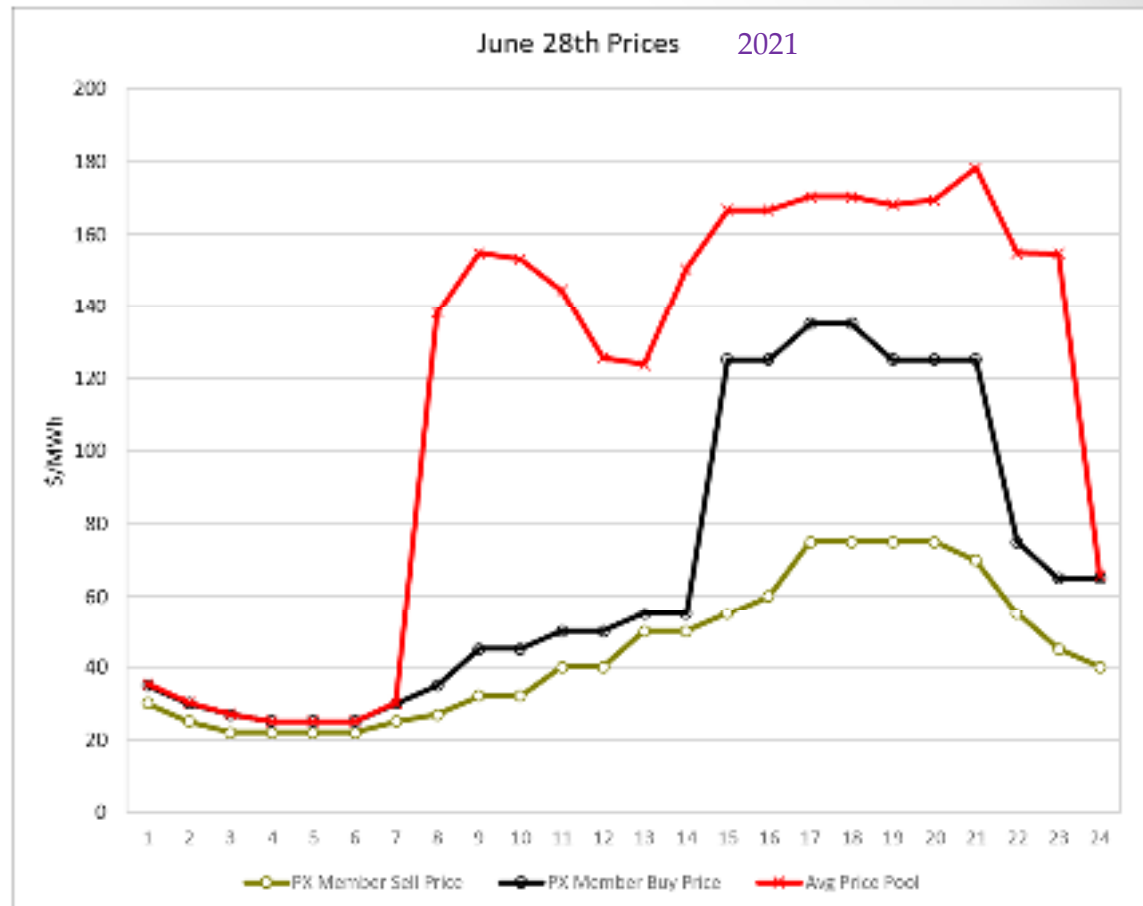


# **PX, Pool, Market Discussion**

**July 19, 2022**

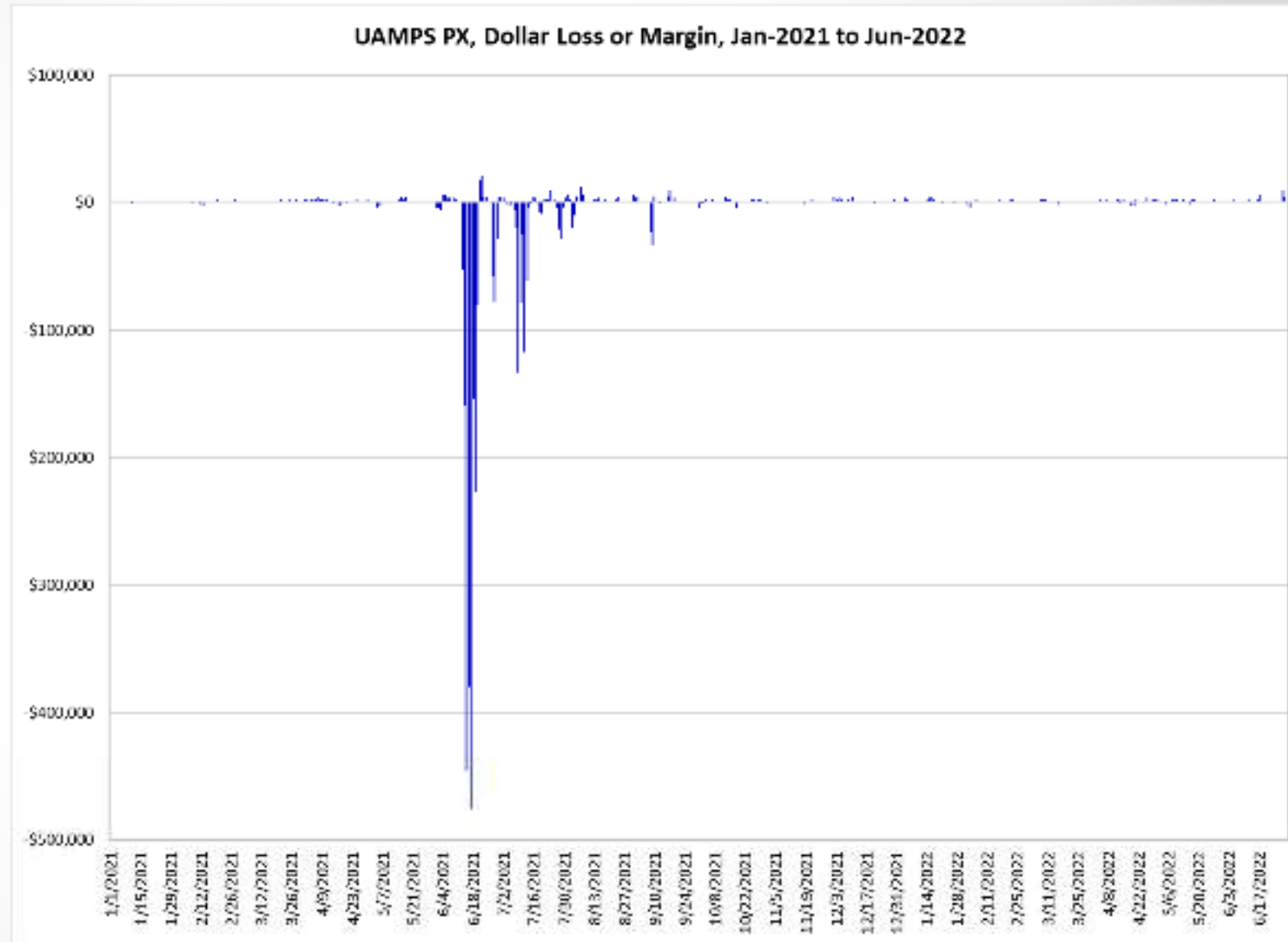
## Market & PX Pricing

- Issue when Day-ahead and Real-time pricing are out of line with each other
- PX prices are offered at the Market Buy and Sell Prices as set by Realtime schedulers
- Market Buy and Sell Prices were set to reflect the Realtime market
- Cost of power with day-ahead was much higher than the Realtime market price sold on the PX, creating a loss



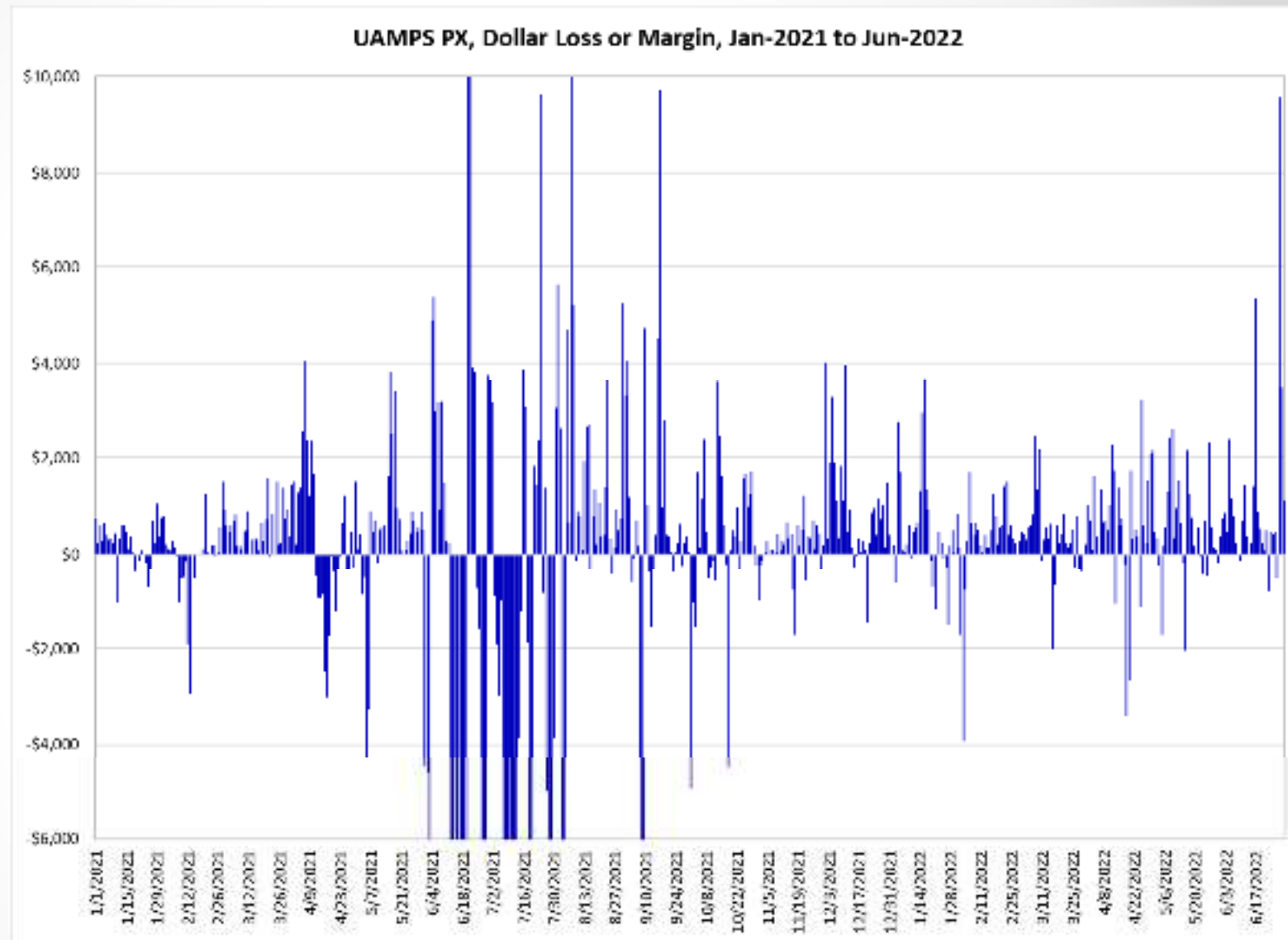
## Notes:

- Showing daily loss or margin from PX
- Large losses in June 2021 dwarf other days



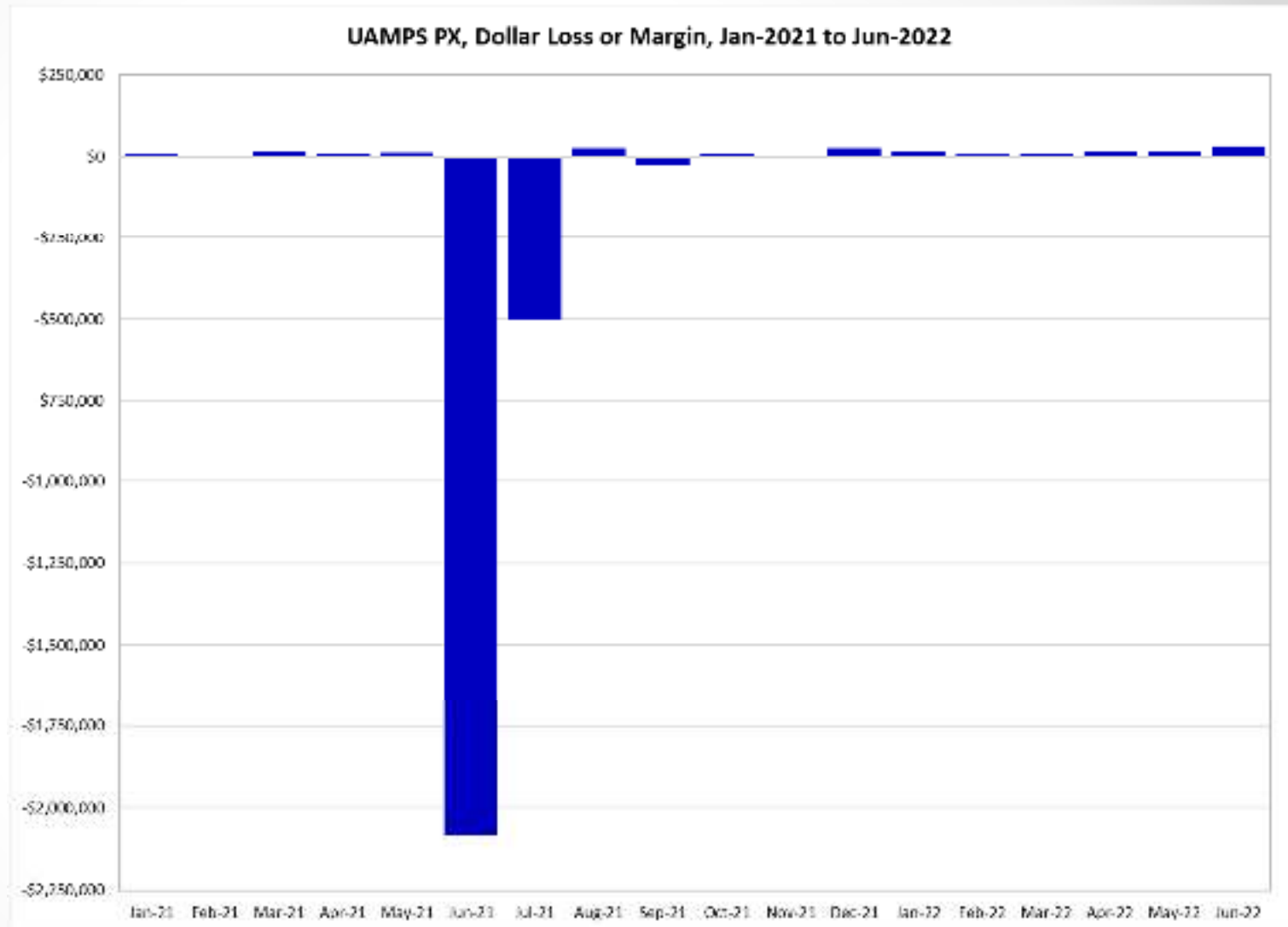
## Notes:

- Showing daily loss or margin from PX
- Zoom in on axis scale shows daily gains and losses with typical margin



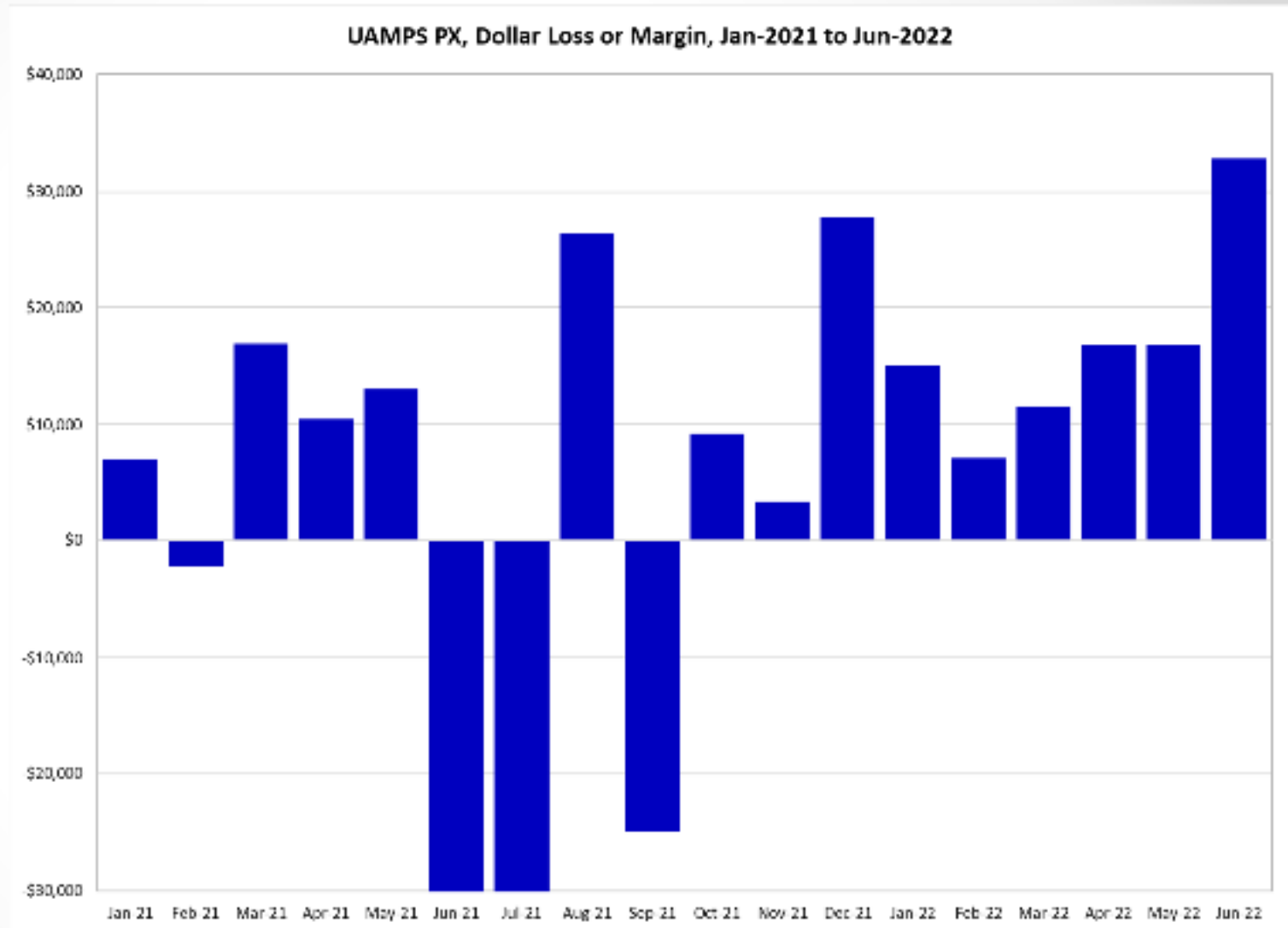
## Notes:

- Showing monthly loss or margin from PX
- Large losses in June 2021 dwarf other months



## Notes:

- Showing monthly loss or margin from PX
- Zoom in on axis scale shows monthly gains and losses with typical margin



## Notes:

- Showing monthly loss or margin by member from PX vs Unplanned Pool

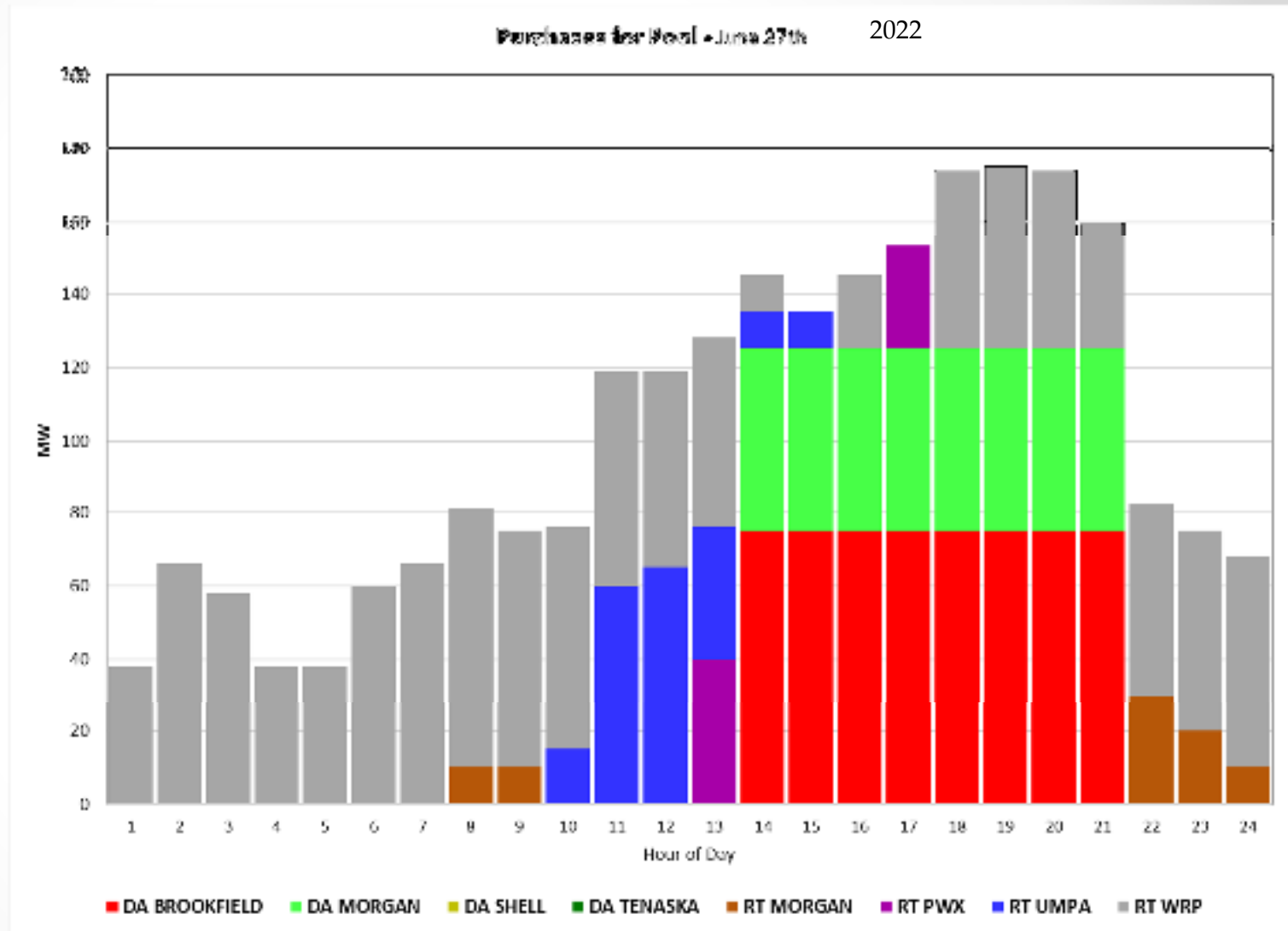
| Member | Jan-21  | Feb-21   | Mar-21  | Apr-21  | May-21  | Jun-21     | Jul-21     | Aug-21    | Sep-21    | Oct-21   | Nov-21  | Dec-21   | Jan-22  | Feb-22  | Mar-22  | Apr-22  | May-22  | Jun-22   |
|--------|---------|----------|---------|---------|---------|------------|------------|-----------|-----------|----------|---------|----------|---------|---------|---------|---------|---------|----------|
| BY     | \$0     | \$0      | \$0     | \$0     | \$0     | -\$810,305 | -\$204,698 | -\$20,734 | -\$36,472 | -\$3,111 | \$136   | \$0      | \$0     | \$0     | \$0     | \$0     | \$0     | -\$917   |
| DX     | -\$44   | \$365    | \$6,149 | \$1,372 | \$4,021 | -\$352,366 | -\$72,257  | \$15,350  | \$6,853   | -\$538   | \$86    | \$2,291  | \$4,662 | \$2,878 | \$6,419 | \$5,715 | \$7,918 | \$8,337  |
| EC     | \$0     | \$0      | \$0     | \$0     | \$0     | -\$12,339  | \$0        | \$0       | \$0       | \$0      | \$0     | \$0      | \$0     | \$0     | \$0     | \$0     | \$0     | \$0      |
| SU     | \$2,660 | -\$2,354 | \$2,835 | \$8,348 | \$9,506 | -\$452,293 | -\$67,127  | \$7,096   | -\$3,317  | \$5,978  | \$1,526 | \$3,548  | \$2,428 | \$4,121 | \$459   | \$9,222 | \$8,412 | \$21,584 |
| US     | \$0     | -\$234   | \$0     | \$0     | \$0     | -\$71,685  | -\$13,940  | -\$172    | \$0       | \$0      | \$0     | \$0      | \$0     | \$0     | \$0     | \$0     | \$0     | \$0      |
| UU     | \$4,575 | \$49     | \$7,826 | \$840   | -\$444  | -\$209,553 | -\$48,654  | \$1,934   | -\$1,382  | \$3,899  | \$2,078 | \$3,855  | \$403   | \$306   | \$2,908 | \$1,070 | \$191   | \$2,669  |
| UV     | \$0     | \$0      | \$0     | \$0     | \$0     | -\$110,915 | -\$58,558  | \$23,643  | \$9,932   | \$0      | \$0     | \$0      | \$0     | \$0     | \$0     | \$0     | \$0     | \$0      |
| WS     | -\$77   | \$0      | \$67    | -\$97   | \$0     | -\$63,529  | -\$34,047  | -\$724    | -\$610    | \$2,992  | -\$502  | \$18,143 | \$7,583 | -\$154  | \$1,828 | \$816   | \$278   | \$1,133  |

## Market & PX Pricing

- Market Buy and Sell Prices were set to reflect the Realtime market
- Method for setting Market Buy Price has changed to include both Day-ahead and Realtime prices
  - Includes any Day-ahead purchases made at the cost of those transactions
  - Includes expected Realtime purchases at the estimated prices for same

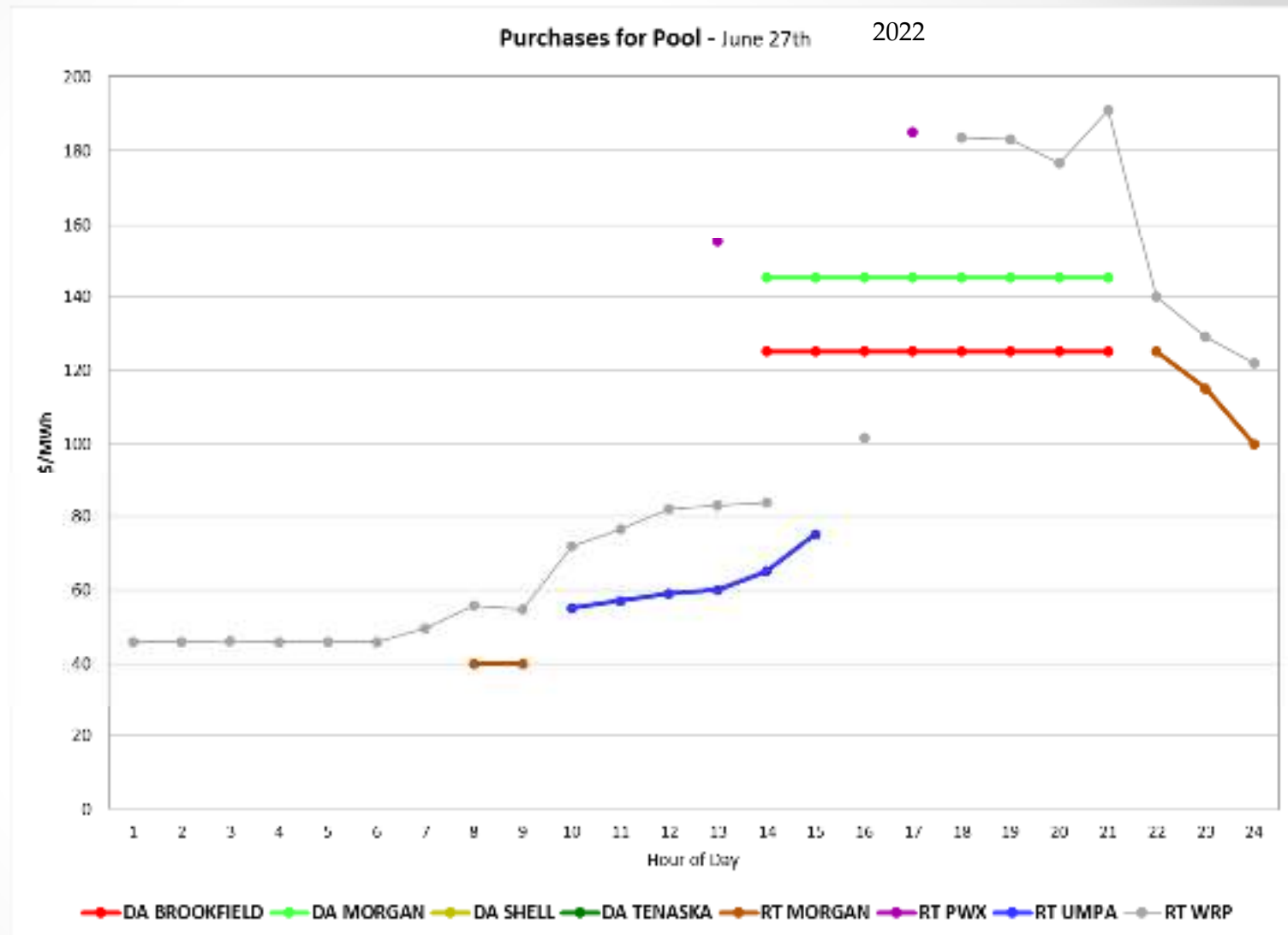
## Notes:

- Example day June 27, 2022
- Both Day-Ahead (DA) and Realtime (RT) purchases
- DA superpeak blocks from Brookfield and Morgan Stanley
- Various RT purchases including WAPA WRP



## Notes:

- DA has average price for the day
- RT prices may vary by hour
- WRP are after the fact prices but were not known at the time



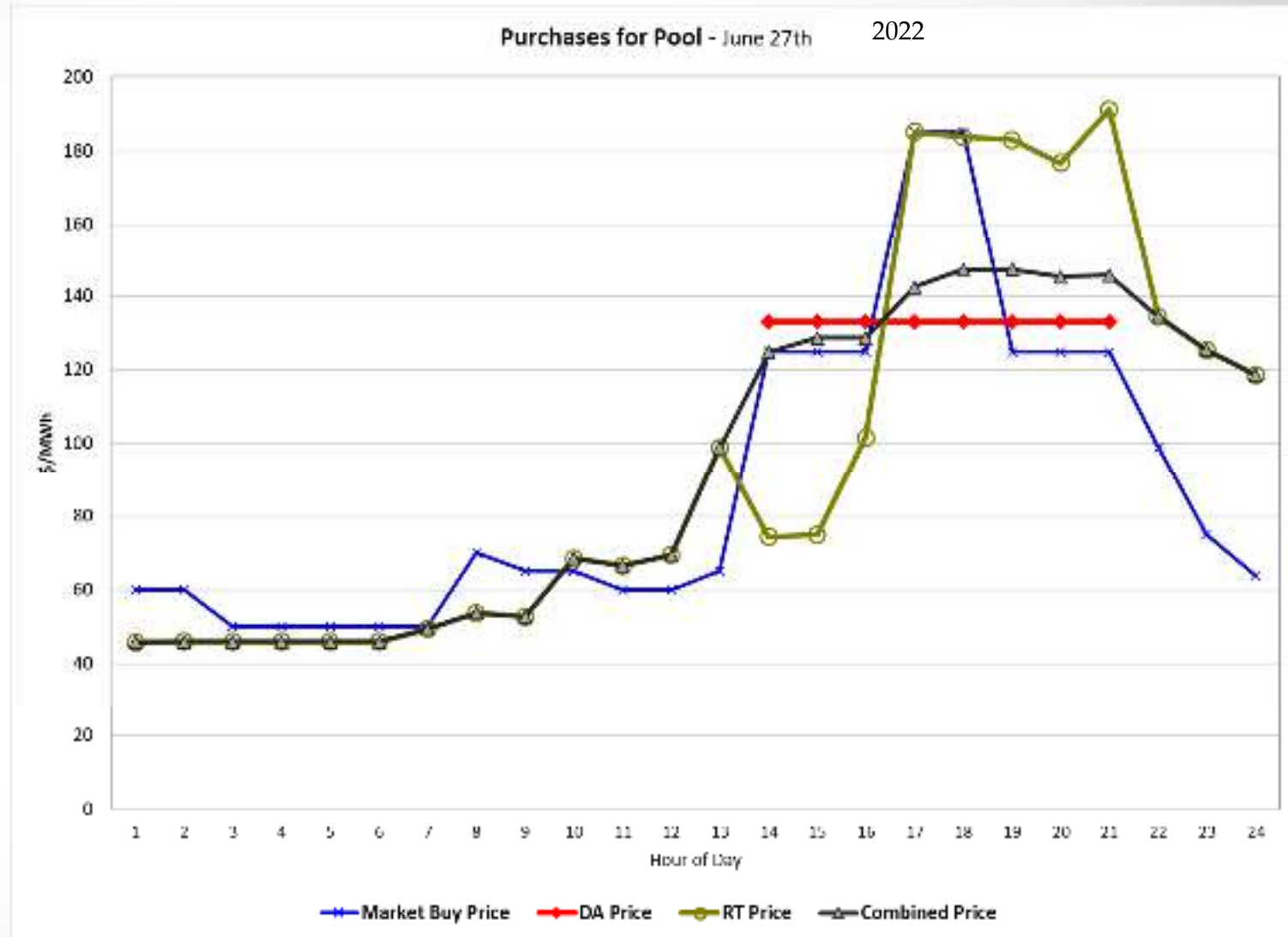
## Notes:

- RT average price by hour
- DA average price by hour
- Combined weighted average price by hour



## Notes:

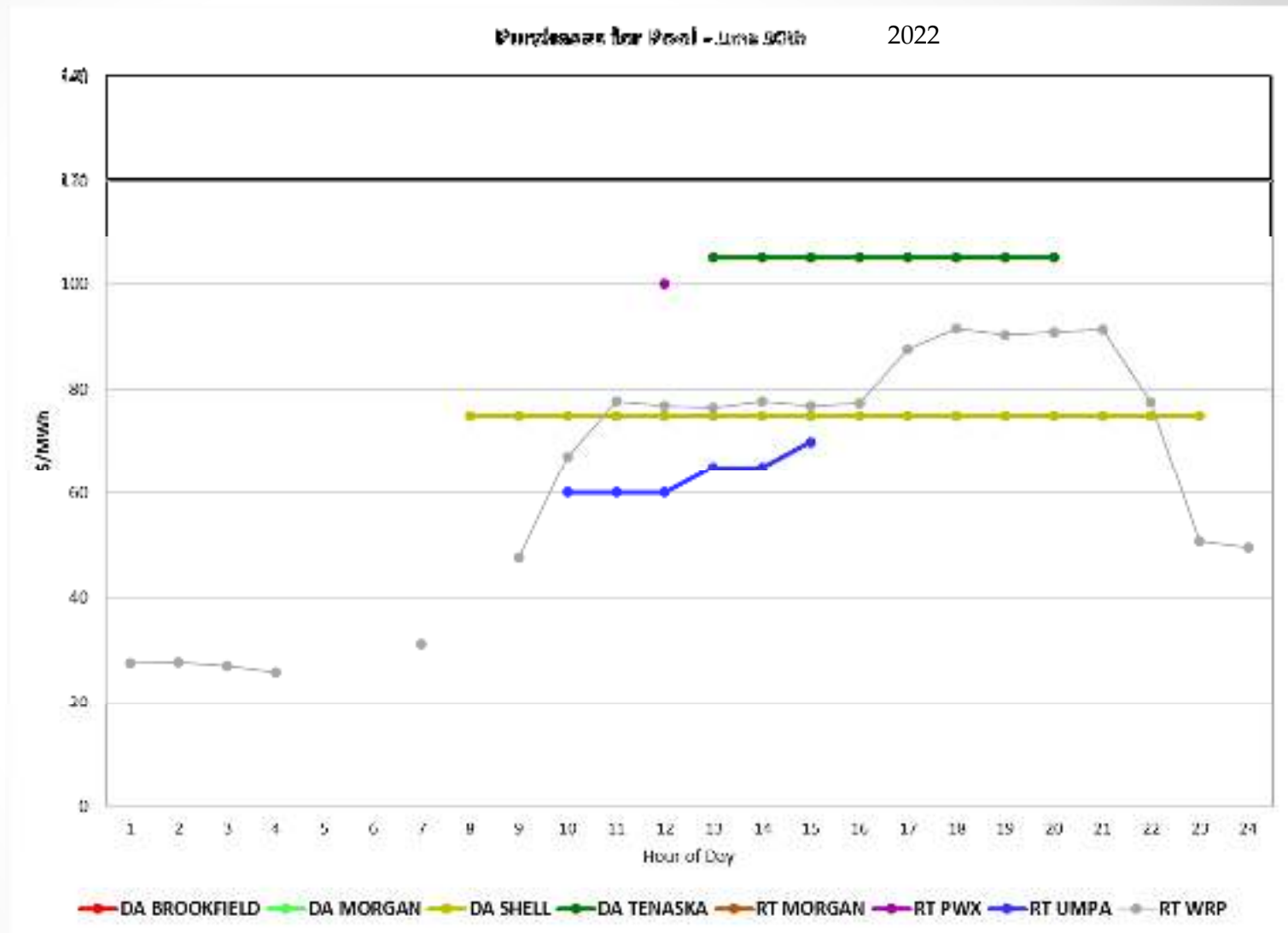
- Adds Market Buy Price  
Price set by  
Schedulers
- Market prices below  
the cost of power will  
result in a loss if PX  
purchases are made
- Market prices above  
the cost of power will  
result in a margin if  
PX purchase are made
- Unknown WRP price  
and unknown future  
Realtime price  
contribute to  
mismatch of pricing





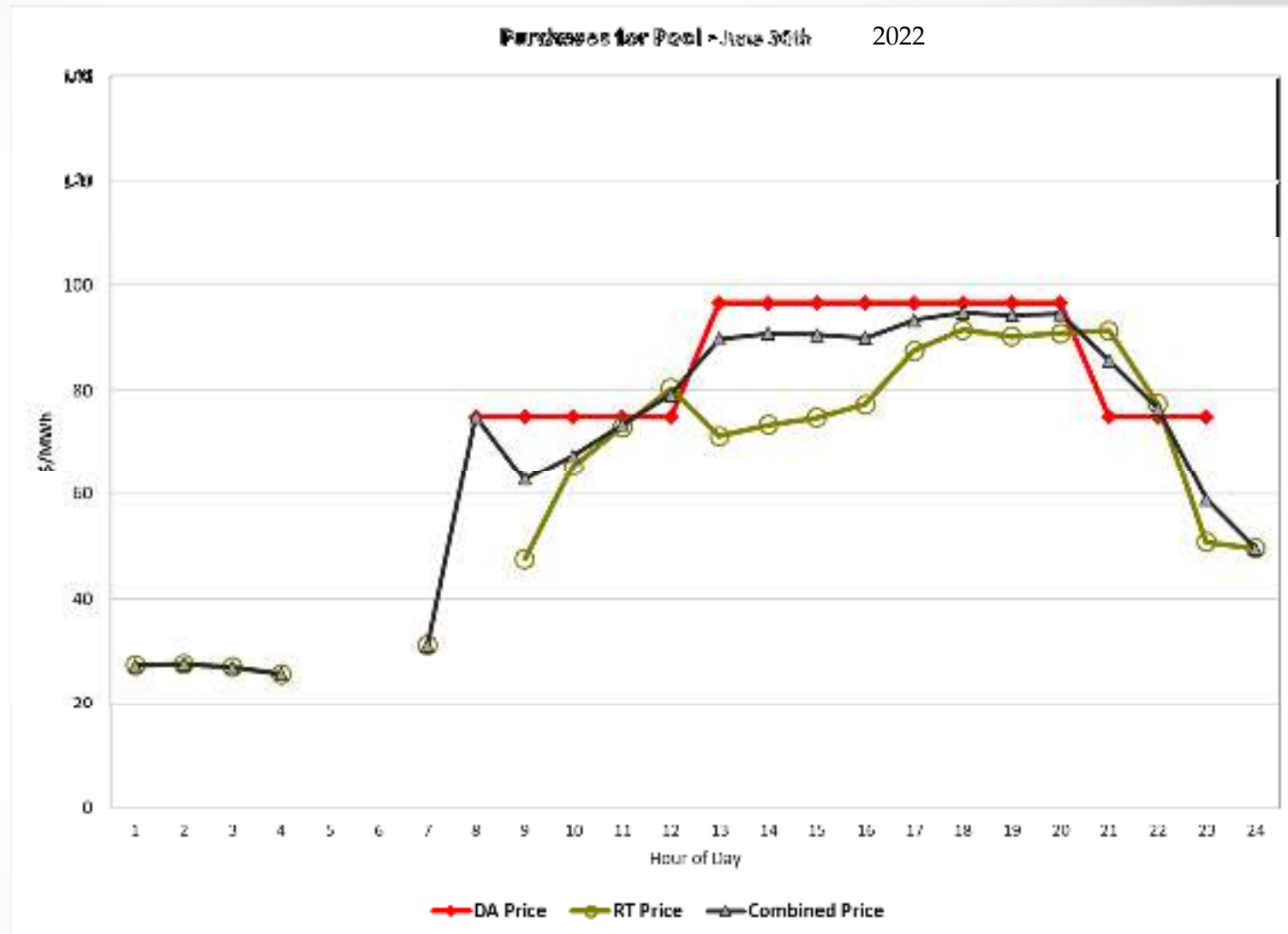
## Notes:

- DA has average price for the day
- RT prices may vary by hour
- WRP are after the fact prices but were not known at the time



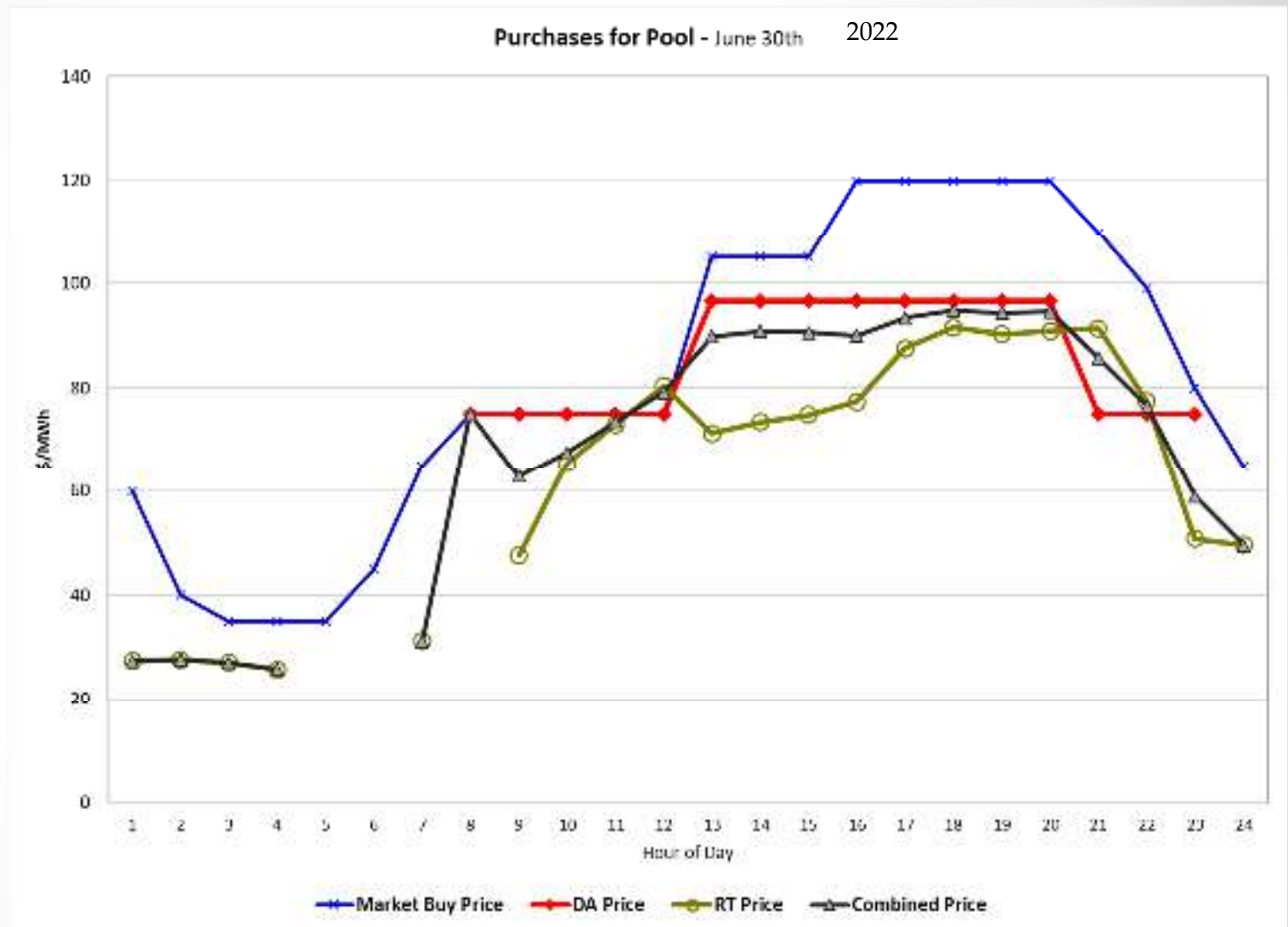
## Notes:

- RT average price by hour
- DA average price by hour
- Combined weighted average price by hour



## Notes:

- Adds Market Buy Price  
Price set by  
Schedulers
- Mismatch between  
Market price and cost  
of power creates a  
margin or loss
- Conservatively high  
prices could avoid  
losses but may give  
poor signal to  
members



## **Market & PX Conclusion**

- UAMPS market pricing method that led to large losses has been corrected
- Difficult to accurately estimate market prices in volatile market
- Allowing unlimited ability for members to buy and sell on the PX at the market prices leaves UAMPS exposed
- UAMPS still vulnerable to losses through the PX with current method

## PX Recommendation

- Recommending only offering Day-ahead purchases on the PX
- PX offers would match price and duration of purchases made by UAMPS
- PX offers would be limited to the MWs purchased by UAMPS
- Hour to hour unlimited amounts at the Market price would Not be offered
- No change to ability of members to make and accept offers
- Market Buy and Sell Prices will still reflect both Day-ahead and Realtime prices and will be shown for member usage for running MIGs, etc.
  - Market Prices will be able to be the best estimate without hedging for future uncertainty

# PX Offer Example

- Example offers
  - Matches amounts as shown earlier on June 30

| UAMPS POWER EXCHANGE |                    | HOURLY PENDING TRANSACTIONS |              |          |                      | FOR AUG 01-31 2022 HOURS 1-24 |            |           |  |
|----------------------|--------------------|-----------------------------|--------------|----------|----------------------|-------------------------------|------------|-----------|--|
| ACCEPT               | ID OFFERED BY      | BUY/SELL HOURS              | PRICE        | KW FLEX. | KW DAY-DAY           | TOTAL ENERGY                  | TOTAL COST |           |  |
|                      | 44 UAMPS PX PLANNE | SELLS                       | 8-23 75.00   | 25,000   | <input type="text"/> | 15-15                         | 400,000    | 30,000.00 |  |
|                      | 45 UAMPS PX PLANNE | SELLS                       | 13-20 105.00 | 65,000   | <input type="text"/> | 15-15                         | 520,000    | 54,600.00 |  |



# Geothermal Opportunities

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RESOURCE COMMITTEE UPDATE

JUNE 20, 2022

## Geothermal RFP Status

- Have reached out to Power Engineers to assemble the RFP
- Calpine and Ormat largest players in the field
  - Some players with less experience
- Power Engineers has provided quote for RFP service at \$75,691
  - Includes data gathering, RFP documents, proposal evaluation criteria, and bid evaluations
  - Short turnaround time and high-level quote
  - Before proceeding, would like to formulate detailed plan with Power Engineers

## GEOTHERMAL INTEREST

As of July 19, 2022

|                     |               |        |
|---------------------|---------------|--------|
| Beaver              | 1,000         | 1.3%   |
| Blanding            | 350           | 0.4%   |
| Bountiful           | 10,000        | 12.8%  |
| Brigham City        | 3,000         | 3.9%   |
| Enterprise          | 500           | 0.6%   |
| Ephraim             | 300           | 0.4%   |
| Fairview            | 100           | 0.1%   |
| Fallon              | 2,000         | 2.6%   |
| Heber Light & Power | 5,000         | 6.4%   |
| Hurricane           | 3,000         | 3.9%   |
| Idaho Falls         | 5,000         | 6.4%   |
| Kaysville           | 4,000         | 5.1%   |
| Lehi                | 10,000        | 12.8%  |
| Logan               | 8,000         | 10.3%  |
| Los Alamos          | 5,000         | 6.4%   |
| Monroe              | 0             | 0.0%   |
| Morgan              | 100           | 0.1%   |
| Plumas-Sierra       | 5,000         | 6.4%   |
| Price               | 5,000         | 6.4%   |
| SUVESD              | 500           | 0.6%   |
| Springville         | 3,000         | 3.9%   |
| St. George          | 0             | 0.0%   |
| Truckee-Donner      | 3,000         | 3.9%   |
| Washington          | 4,000         | 5.1%   |
| <b>TOTAL</b>        | <b>77,850</b> | 100.0% |

Notes: Lehi additional w/o Enchant, Plumas up to 10 MW





# SAN JUAN FUEL UPDATE



JULY 19, 2022

[gdsassociates.com](http://gdsassociates.com)

## SAN JUAN MINE SITUATION

- ❑ Anticipating the retirement of Units 1 and 4 at the end of June 2022, PNM began an orderly inventory reduction process at the end of 2021 (see inventory graph below).
- ❑ Mine production problems began on February 22, 2022 (see inventory graph) and continued through mid-May, with inventory levels dropping below 15 days (for both units), which required PNM to advise the DOE of the situation. Notice was rescinded when inventories recovered in early June.
- ❑ High reject rates (rock), mechanical issues, and weekend repairs limited average output to approximately 7,300 tons/day for the rest of June and the first week of July.
- ❑ Mining operations are in a geological wash-out zone that has thinner coal seams. Longwall equipment can not mine the thinner seam without also mining rock (45-50%), which must be separated and disposed of. Situation is expected to continue through the end of mining operations.

# | COAL INVENTORY

- ❑ Inventories declined continuously from late April through mid-May. In the last week of May, deliveries averaged ~12,000 tons/day, and deliveries averaged over 21,000 tons/day for the first week of June.
- ❑ Additional discussions are anticipated with Westmoreland to determine a mine shutdown date that will result in inventory as close to zero as possible remaining at Unit shutdown on September 30, 2022.



## COAL INVENTORY IMPACTS ON UNIT OPERATIONS

- ❑ San Juan Unit 4 was in a planned outage from early May until May 16.
- ❑ PNM operated both units at the minimum load required to maintain Automatic Generation Control (AGC; load following) capabilities (Unit 1 = 250 MW; Unit 4 = 350 MW), and the combined burn rate for both units was approximately 7,000 tons/day through the end of May.
- ❑ June burns averaged 10,146 tons/day.
- ❑ With the cessation of Unit 1 operations on June 30, inventories stood at ~106,000 tons (approximately 18 days for Unit 4 alone).
- ❑ Inventories had dropped to 88,000 tons (15 days) when Unit 4 was taken off-line for repairs on Monday, July 11. Unit 4 was scheduled to return to service on Thursday, July 14, but a sealing steam safety valve failure delayed Unit 4's return to service until Monday, July 19. Inventory was recorded as 137,331 tons (23 days) Tuesday morning, July 19.

# CARBON FREE POWER PROJECT - NET POSITION

FISCAL YEAR 2022

# CFPP - FY2022 Year-End Financial Report

- ▣ All related project costs are billed to CFPP LLC thru UAMPS billing
- ▣ Project Net Surplus as originally reported for the year-ending 3/31/2022 - \$1,716,224.38 surplus
- ▣ Audit Adjustment
  - Remodel Costs - \$2,167.25 **decrease**
- ▣ Adjusted Project Net Surplus as reported for the year-ending 3/31/2022 – \$1,714,057.13 surplus
  - \$1,716,224.38 surplus retained to offset accumulated loss in retained earning – project cost to date thru FY2020
  - **\$2,167.25 deficit** to be billed to CFPP LLC (audit adj.)

# Surplus Allocation YTD Summary - CFPP

## CARBON FREE POWER PROJECT - FY2022

| MEMBER                    | <u>TOTAL</u>                  |
|---------------------------|-------------------------------|
|                           | <i>Offset to R/E, Chg LLC</i> |
| Beaver                    | \$ 31,881.80                  |
| Blanding                  | 36,985.84                     |
| Bountiful                 | -                             |
| Brigham City              | 225,613.64                    |
| Enterprise                | 5,799.38                      |
| Ephraim                   | 118,354.70                    |
| Fairview                  | 13,314.90                     |
| Fallon                    | 29,588.67                     |
| Fillmore                  | 44,664.10                     |
| Heber                     | -                             |
| Holden                    | 7,397.17                      |
| Hurricane                 | 295,886.77                    |
| Hyrum                     | 147,943.37                    |
| Idaho Falls               | 73,971.69                     |
| Kanosh                    | 4,438.30                      |
| Kaysville                 | -                             |
| Lassen                    | -                             |
| Lehi                      | -                             |
| Logan                     | -                             |
| Los Alamos County         | 31,881.80                     |
| Lost River                | -                             |
| Monroe                    | 17,753.20                     |
| Morgan                    | 20,682.48                     |
| Mt. Pleasant              | 44,383.01                     |
| Murray                    | -                             |
| Oak City                  | 7,397.17                      |
| Paragonah                 | 2,958.87                      |
| Parowan                   | 44,383.01                     |
| Payson                    | 73,971.69                     |
| Price                     | -                             |
| Salmon River              | -                             |
| Santa Clara               | 73,971.69                     |
| SESD                      | 44,383.01                     |
| Spring City               | 5,917.73                      |
| Truckee Donner            | -                             |
| Washington                | 266,150.13                    |
| Weber Basin               | 29,588.67                     |
| Wells Rural Electric Coop | 14,794.34                     |
| <b>TOTAL</b>              | <b>\$ 1,714,057.13</b>        |

## **RESOLUTION OF THE CARBON FREE POWER PROJECT MANAGEMENT COMMITTEE APPROVING THE 2021-22 FISCAL OPERATING MARGIN**

The Carbon Free Power Project Management Committee ("Committee") has reviewed the Project's 2021-22 Fiscal Operating Margin

**BE IT RESOLVED**, the Committee hereby acknowledges the CFPP Project's 2021-22 Fiscal Operating Margin to the Board of Directors as presented.

**BE IT FURTHER RESOLVED**, the 2021-22 Fiscal Operating Margin will be retained to offset the CFPP Project's net accumulative loss in Retained Earnings.

**APPROVED AND ADOPTED**, this 19<sup>th</sup> day of July 2022.



PRESENTED BY GDS ASSOCIATES, INC.

# NEBO PLANT HYDROGEN FEASIBILITY STUDY UPDATE

*Utah Associated Municipal Power Systems*

July 2022



# AGENDA



NEBO HYDROGEN COMPATIBILITY

HYDROGEN USE FUELING SYSTEM

HYDROGEN EMISSIONS IMPACT

HYDROGEN COST

HYDROGEN FUEL SYSTEM UPDATE

# NEBO HYDROGEN COMPATIBILITY

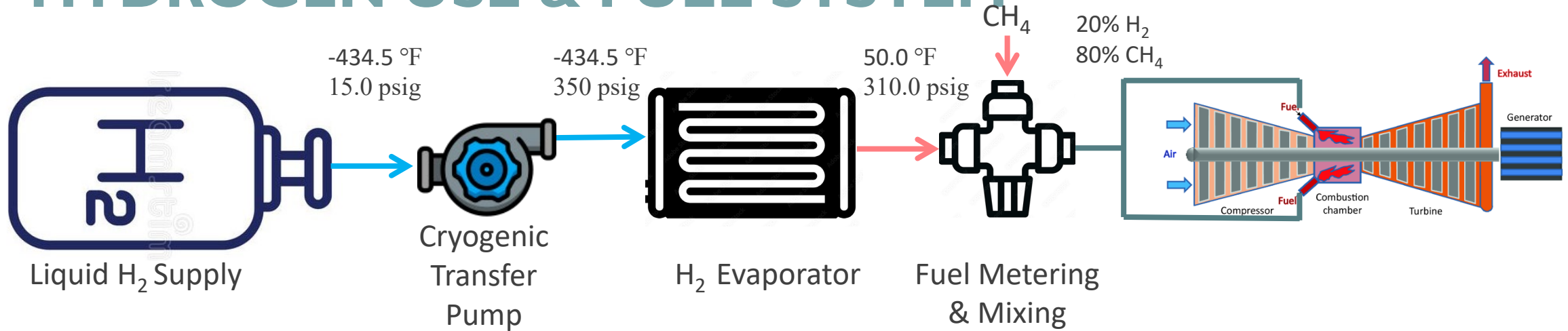
## □ Hydrogen Compatibility

- GE 7EA units with DLN1 combustors *are capable of operating* using a 70/30 (by volume) natural gas/hydrogen mix *without any changes* (GE).
- Existing fuel supply system is also compatible and will not degrade with hydrogen use.
- GDS assessed Nebo operation with fuel mix of 30% H<sub>2</sub>.

## □ Operations Impact

- Hydrogen combustion will minimally increase heat rate (about 2.5%) due to higher percentage of water vapor. LHV – HHV spread is wider.
- Will require installation of mixing station and revised controls.
- May cause increase in reagent use to control NO<sub>x</sub>.

# HYDROGEN USE & FUEL SYSTEM



□ **Nebo combustion turbine (“CT”) can use up to 30% hydrogen without any modification.**

- 30% hydrogen use only equate to about 10% of the Btus used by the CT.
- Minimal impact on operations, including heat rate and emissions.
- Recommend only supplying hydrogen to CT for efficient use.
- Recommend liquid hydrogen due to consumption and storage requirements.
- No change in emissions permits.

□ **Fuel System Changes**

- Cryogenic Pump
- H<sub>2</sub> Evaporator
- Natural Gas/H<sub>2</sub> metering & mixing system
- Distributed Control System (DCS) interface

# HYDROGEN EMISSIONS IMPACT

| CO <sub>2</sub> EMISSIONS IMPACT WITH HYDROGEN BY VOLUME % |          |          |          |          |
|------------------------------------------------------------|----------|----------|----------|----------|
| Percent Hydrogen Volume                                    | 0%       | 10%      | 20%      | 30%      |
| Hydrogen Use Mcf/hr                                        | -        | 82.3     | 164.7    | 247.0    |
| Hydrogen Use (mmBtu/hr HHV)                                | -        | 28.1     | 56.2     | 84.2     |
| H2 mmBtu LHV                                               | -        | 23.9     | 47.8     | 71.6     |
| Natural Gas Use (mmbtu/hr HHV)                             | 897.6    | 869.5    | 841.4    | 813.4    |
| Natural Gas Use (mmBtu/hr LHV)                             | 809.5    | 784.2    | 758.8    | 733.5    |
| Natural Gas Use (Mcf/hr)                                   | 823.5    | 797.7    | 772.0    | 746.2    |
| CO <sub>2</sub> Emissions (lbm/hr)                         | 99,641.8 | 96,524.6 | 93,407.4 | 90,290.1 |
| Nat Gas Use Reduction (Mcf/hr)                             | -        | 25.8     | 51.5     | 77.3     |
| Annual CO <sub>2</sub> Emissions (42% CF)<br>(tons/yr)     | 183,301  | 177,567  | 171,832  | 166,098  |
| Annual CO <sub>2</sub> Reduction (42% CF) (Tons/yr)        | -        | 5,734    | 11,469   | 17,203   |
| % Reduction                                                | 0.0%     | 3.2%     | 6.7%     | 10.4%    |

# HYDROGEN COST

- AirLiquide provided liquid hydrogen price of around \$7.88/kg, delivered to Nebo Plant.
- This price equates to about \$58.00/mmBtu, almost 10 times the cost of natural gas.
- Break-even carbon pricing is approximately \$670/ton.

|                                      | Hydrogen Percent Use |         |
|--------------------------------------|----------------------|---------|
|                                      | 0%                   | 30%     |
| Natural Use (mmBtu)                  | 897.6                | 813.36  |
| Natural Gas Hourly Cost @ \$6.00/Mcf | \$4,975              | \$3,223 |
| Hydrogen Use (mmBtu)                 | -                    | 84.2    |
| Hydrogen Hourly Cost @ \$7.80/kg     | \$0                  | \$4,885 |
| Total Fuel Cost                      | \$4,975              | \$8,108 |
| % Increase                           |                      | 63.0%   |

# — HYDROGEN FUEL SYSTEM UPDATE

- ❑ Liquid hydrogen fueling systems for power generation is a young industry with little standardization.
- ❑ Working with AirLiquide and Chart Industries on equipment quotes.
- ❑ Chart Industries is proposing:
  - *Storage 10 ft diameter, 100 ft long storage tank.*
  - *Three to four ambient air evaporators.*
  - *Cryogenic pump to boost pressure to 350 psig.*
- ❑ AirLiquide is proposing:
  - *Storage tank, size to be determined.*
  - *May use liquid hydrogen boil-off from tank instead of evaporators.*
  - *Gas compressors.*
  - *Will provide option of leasing equipment.*
- ❑ Will need to install fire barrier along the road as minimum.
- ❑ Liquid hydrogen cryogenic tanker-trailer cost is around \$1.1 million

# CRSP Project / CREDA Report

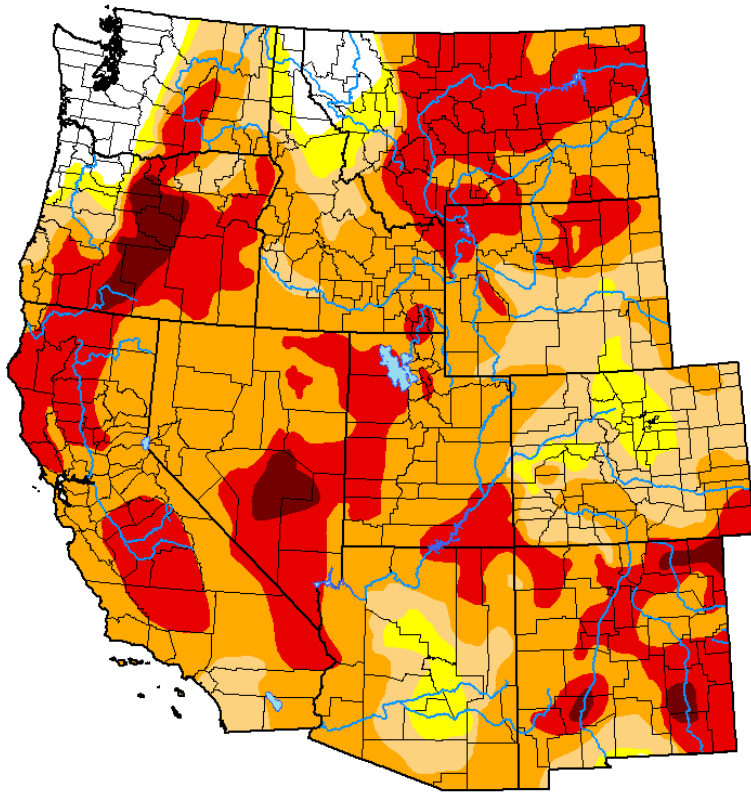
July 19, 2022

- CRSP Hydrology
- CREDA Update



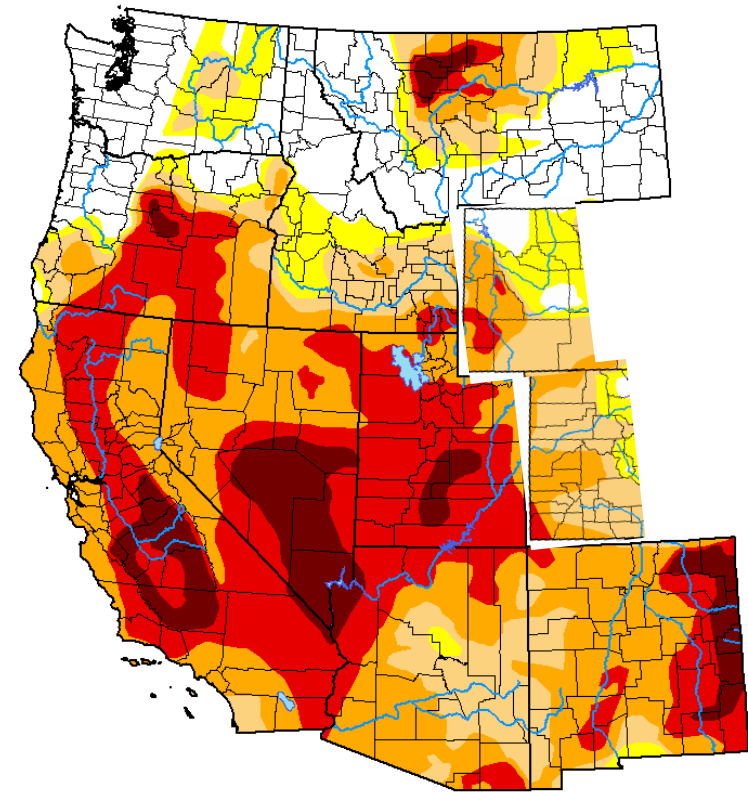
# Drought Monitor

April 2022



4/13/2022

July 2022



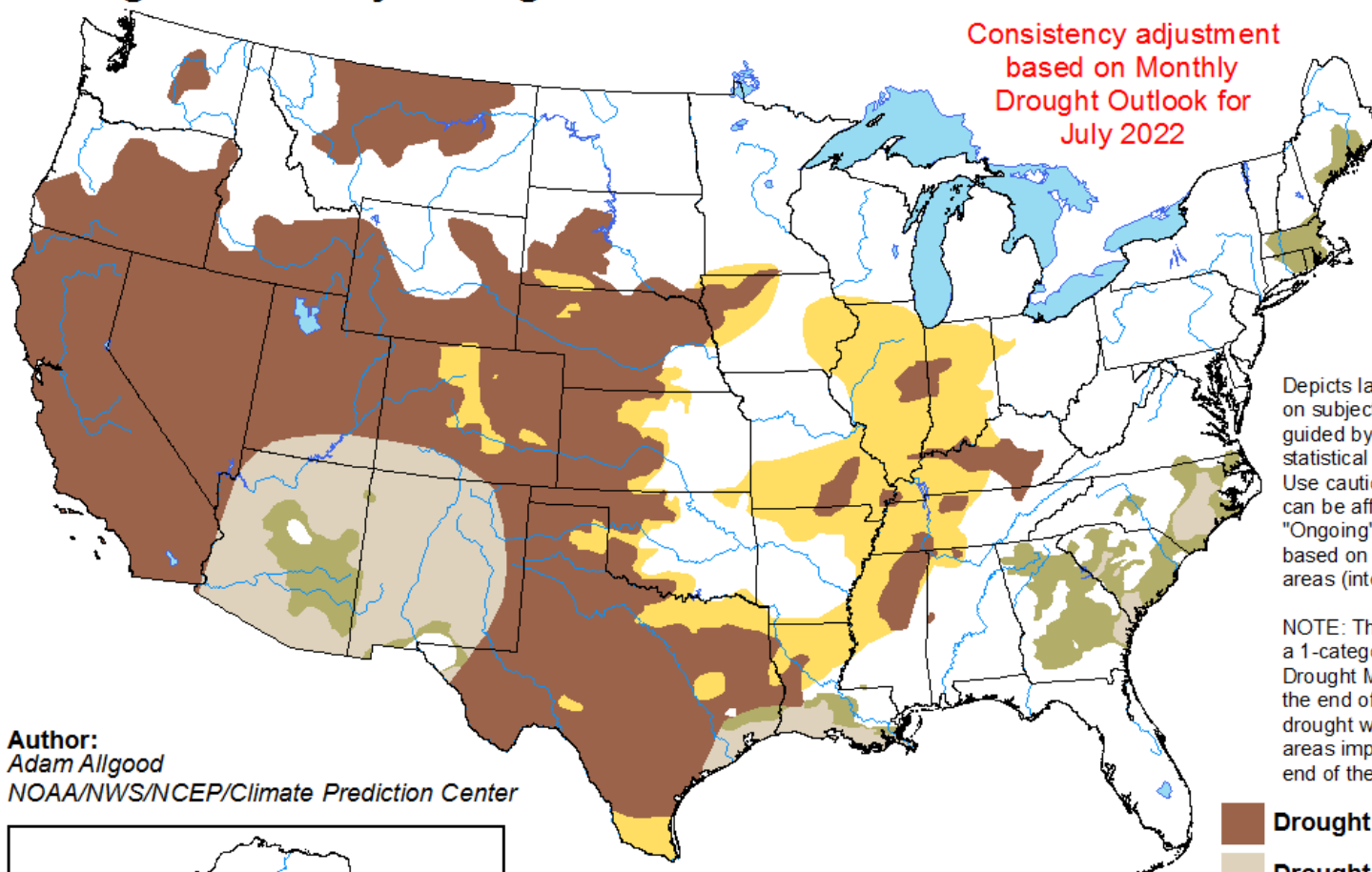
7/14/2022

# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

Valid for July 1 - September 30, 2022  
Released June 30, 2022

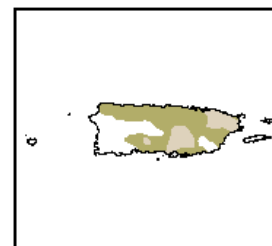
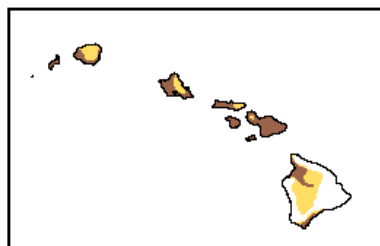
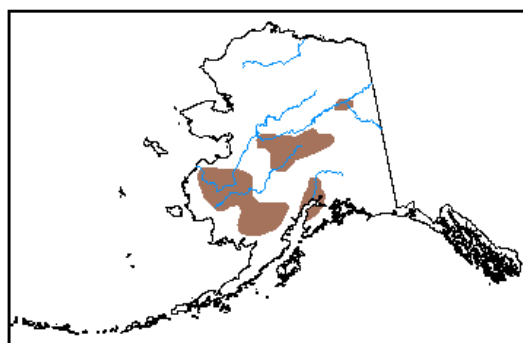
Consistency adjustment  
based on Monthly  
Drought Outlook for  
July 2022



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

**Author:**  
Adam Allgood  
NOAA/NWS/NCEP/Climate Prediction Center



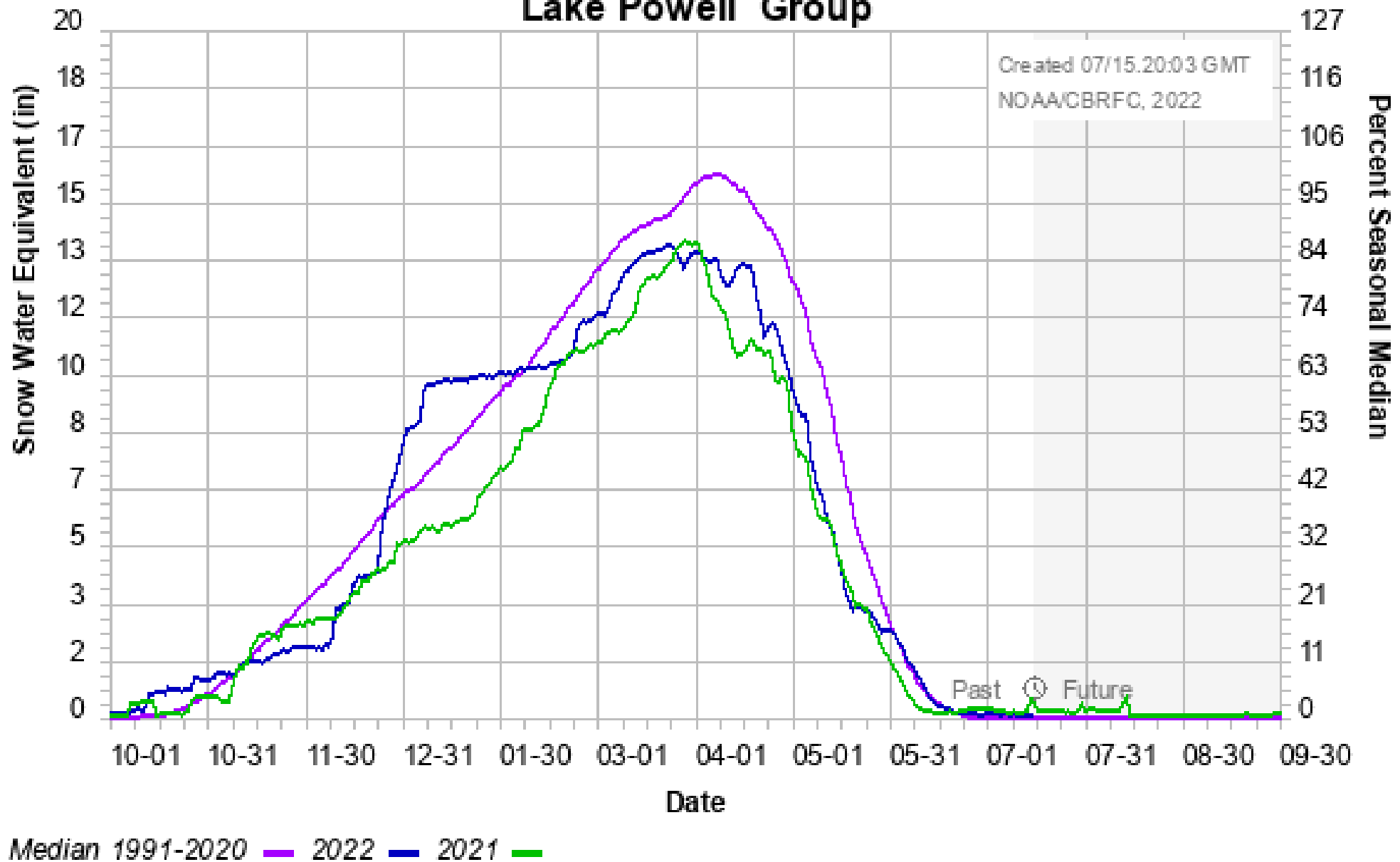
- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<http://go.usa.gov/3eZ73>



## Colorado Basin River Forecast Center Lake Powell Group



# Lake Powell Conditions

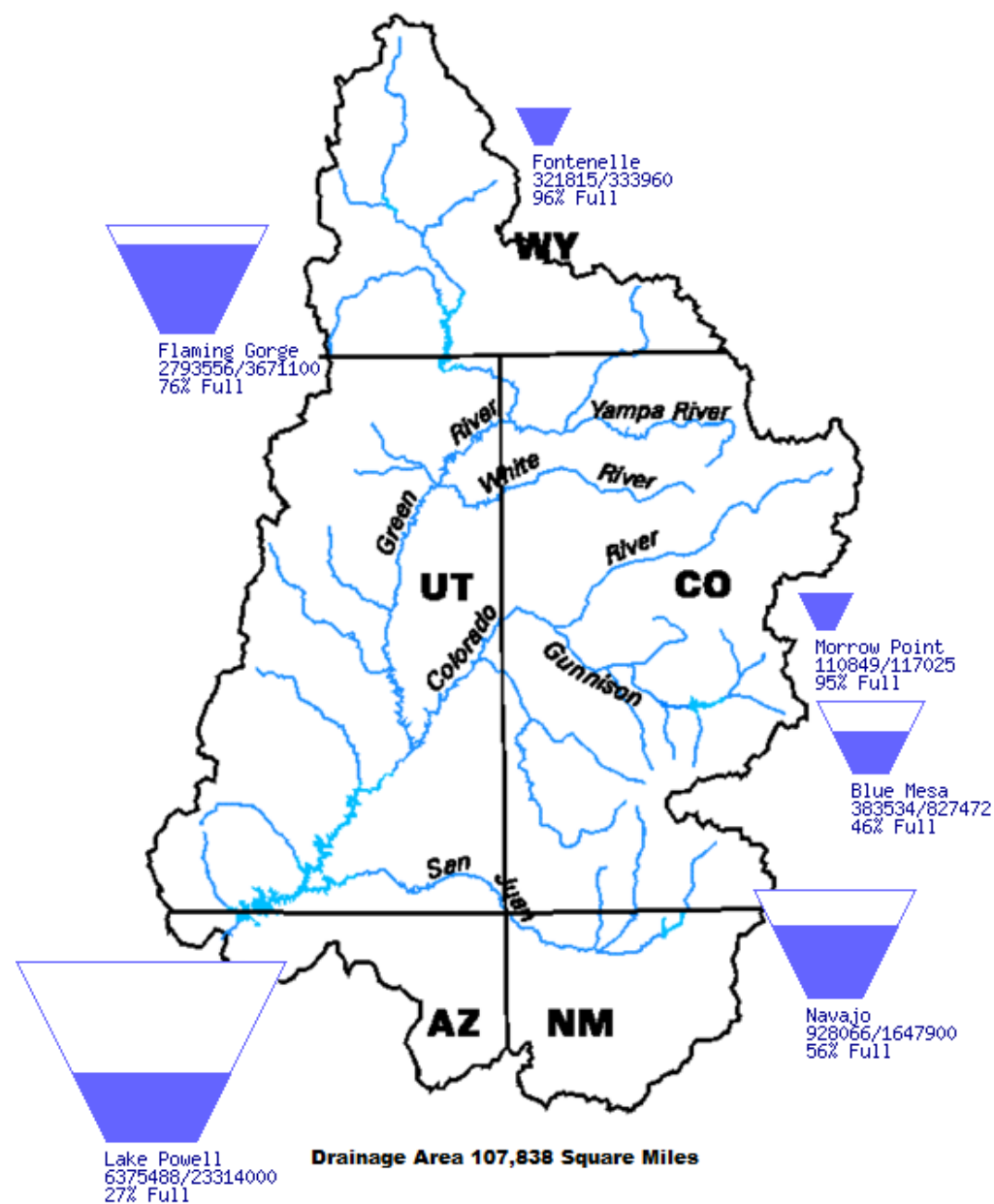
- Status of Lake Powell
  - Current lake elevation = 3,538 feet
    - = 162 feet below the spillway
    - = 48 feet above penstock intake level
  - Current storage is 6.3 million acre feet
    - = 27% of reservoir capacity



## Reservoir Capacity

- New value for total reservoir capacity
  - was 24.3 maf, now 23.3 maf
- Updated with sediment that has filled in bottom of lake since lake was created and
- also new measuring technique

## Upper Colorado River Drainage Basin





# Lake Powell Inflow

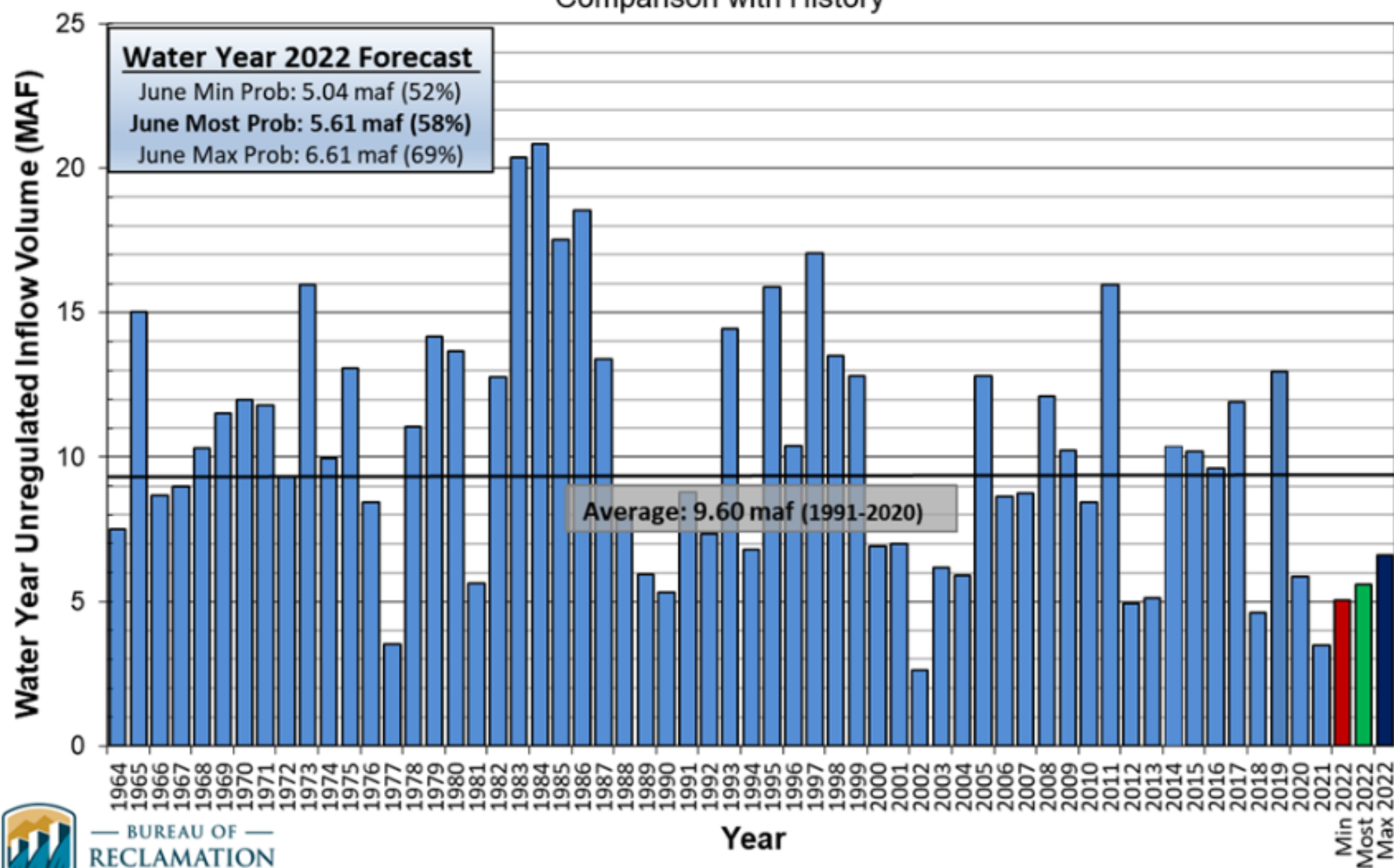
- Status of Lake Powell:
  - Historical unregulated inflow to Lake Powell by water-year
    - 2009 = 88% of average
    - 2010 = 73%
    - 2011 = 147%
    - 2012 = 45%
    - 2013 = 47%
    - 2014 = 96%
    - 2015 = 94%
    - 2016 = 89%
    - 2017 = 110%
    - 2018 = 43%
    - 2019 = 120%
    - 2020 = 54%
    - 2021 = 32% of avg.
    - 2022 = 58% of avg. forecasted (probable range of 52% to 69%)

- 2022 inflow:
  - Actual
    - Apr = 66%
    - May = 67%
    - Jun = 52%
  - Forecast
    - Jul = 45%
    - Aug = 49%
    - Sep = 67%

# Lake Powell Unregulated Inflow

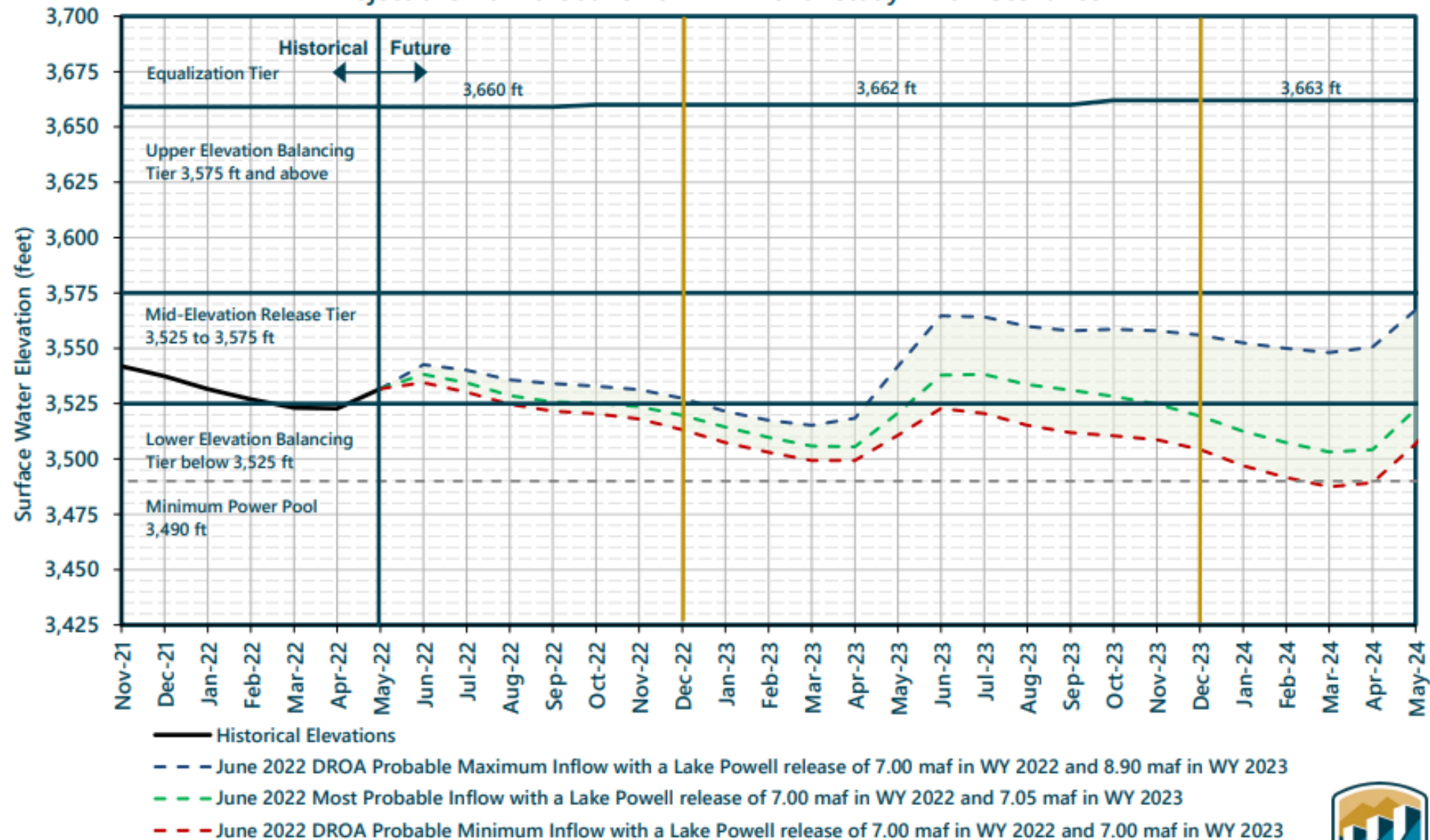
## Water Year 2022 Forecast (issued June 3)

### Comparison with History



# Lake Powell End of Month Elevations<sup>1</sup>

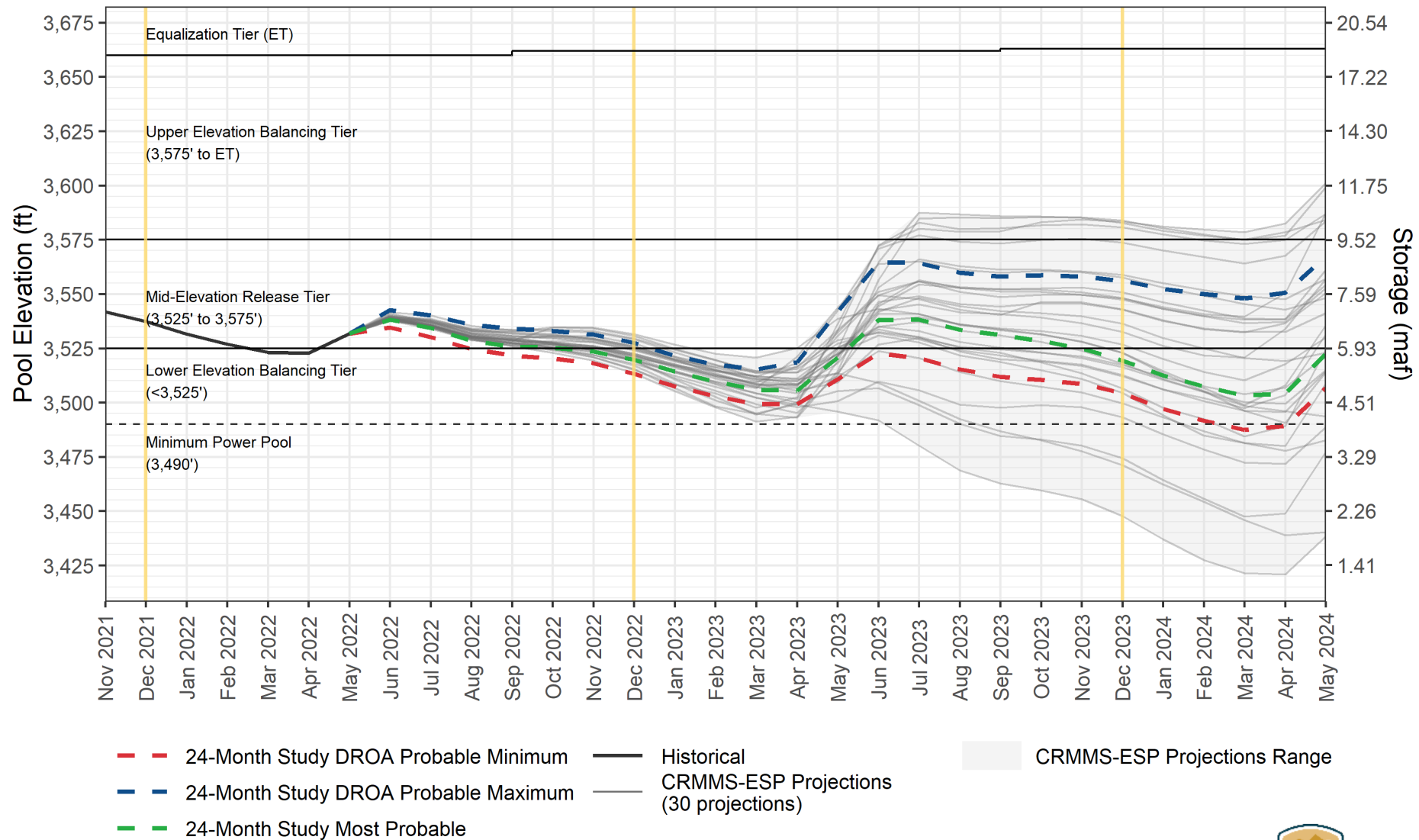
Projections from the June 2022 24-Month Study Inflow Scenarios



<sup>1</sup> Projected Lake Powell end of month physical elevations from the latest 24-Month Study inflow scenarios.  
 The Drought Response Operations Agreement (DROA) is available online at: <https://www.usbr.gov/dcp/finaldocs.html>.



## Lake Powell End-of-Month Elevations<sup>1</sup> CRMMS Projections from June 2022



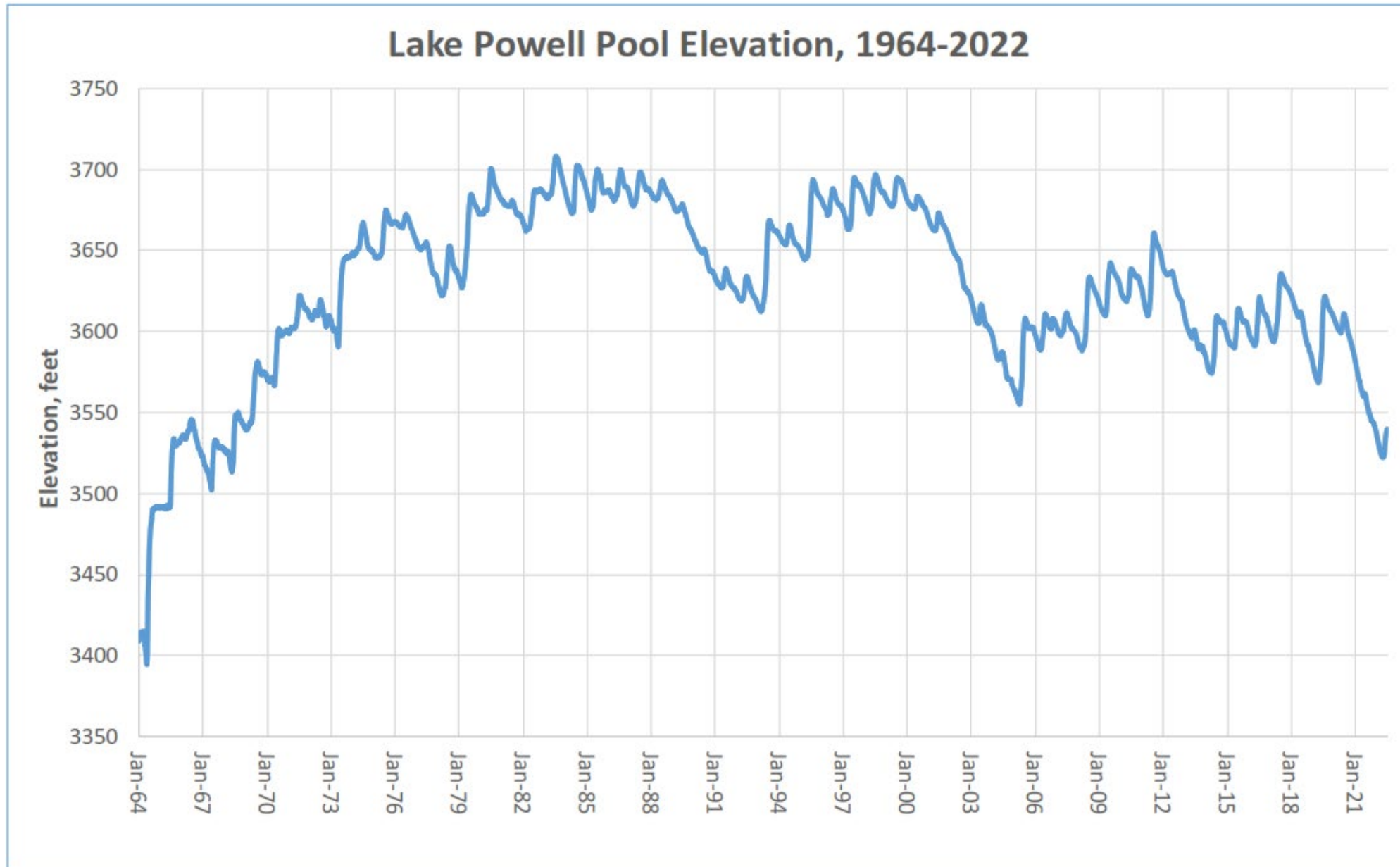
<sup>1</sup> Projected Lake Powell end-of-month physical elevations from the latest CRMMS-ESP and 24-Month Study inflow scenarios.



# Lake Water Level

- Minimum probable (10<sup>th</sup> percentile) has getting to minimum power pool in Feb-2024
- Worst case has getting to minimum power pool in Jun-2023

# Lake Water Level





# Drought Response Operations Agreement

## Actions to Protect Glen Canyon Dam

### 2021

- 2021 DROA release from UB Reservoirs (161 kaf)  
(\*UB=Upper Basin)

### 2022

- Powell monthly release adjustments
- 2022 DROA release from UB Reservoirs (500 kaf)
- Powell WY 2022 Annual Release Reduction (480 kaf)

### Future Actions

- Potential 2023 DROA release from UB Reservoirs
- Potential other evaluations and actions





# Drought Response Operations Agreement

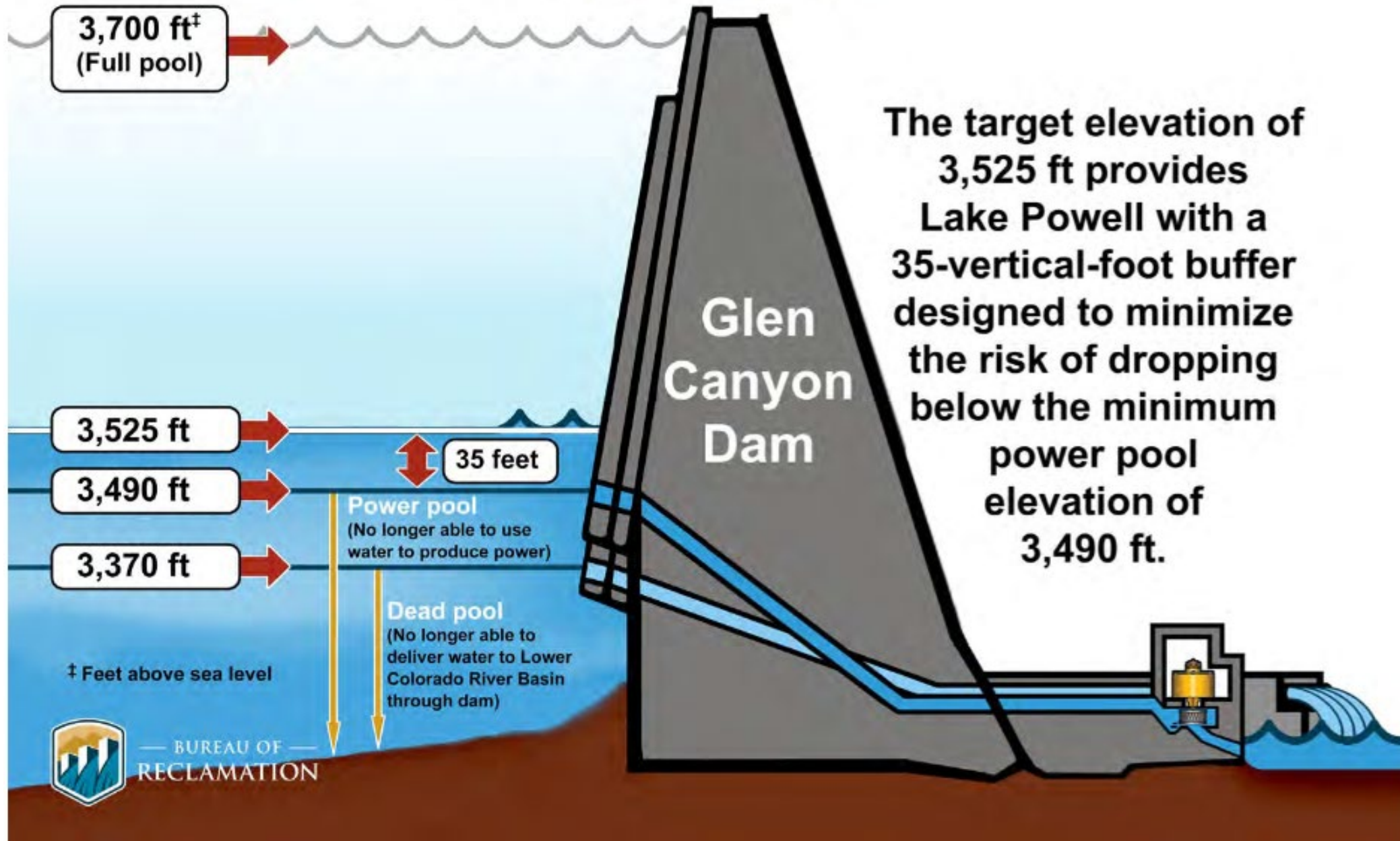
## How Effective Were Drought Responses

### Chance of Reaching Critically Low Reservoir Elevations

Comparison of Current (May 2022) and Last Published (February 2022) CRMMS-ESP 5-Year Projections

|                                                                     | Run           | WY 2022 | WY 2023 | WY 2024 | WY 2025 | WY 2026 |
|---------------------------------------------------------------------|---------------|---------|---------|---------|---------|---------|
| <b>Lake Powell less than 3,525 feet</b>                             | February 2022 | 90%     | 77%     | 50%     | 50%     | 37%     |
|                                                                     | May 2022      | 100%    | 90%     | 50%     | 37%     | 30%     |
|                                                                     | Difference    | 10%     | 13%     | 0%      | -13%    | -7%     |
| <b>Lake Powell less than 3,490 feet</b><br>(minimum power pool)     | February 2022 | N       | 23%     | 27%     | 27%     | 23%     |
|                                                                     | May 2022      | N       | 3%      | 23%     | 17%     | 23%     |
|                                                                     | Difference    | -       | -20%    | -4%     | -10%    | 0%      |
| <b>Lake Powell less than 3,375 feet</b><br>(dead pool = 3,370 feet) | February 2022 | 0%      | 0%      | 0%      | 0%      | 0%      |
|                                                                     | May 2022      | 0%      | 0%      | 0%      | 0%      | 0%      |
|                                                                     | Difference    | 0%      | 0%      | 0%      | 0%      | 0%      |

# Lake Powell



# Fish

- Smallmouth Bass were caught below Glen Cayon dam
  - Detriment to native fish



# CRSP - WAPA



- WAPA-199 Rate
  - Rate expires Dec-2023

# Provo River & Olmsted Remarketing



- Remarketing both contracts starting within next couple of weeks
- Standard is to create resource pool and want to set aside 5% for this
  - Reason is to have widespread use of resource
- Take additional 5% from Olmsted for June Sucker fish aeration
  - Questioned why the above couldn't be the same 5%
    - They considered and think they are in agreement but will evaluate further
- I commented that growth within current customers is significant and can cover the need for the 5% to go to new customers
- My suggestion is that allocations should remain the same
  - CUWCD would like to have additional allocation
  - Any other input?



# GPA UPDATE

Mike Squires  
Government Affairs Director



An aerial photograph of the United States Capitol building in Washington, D.C. The image is taken from a high angle, showing the large, white, domed structure with its iconic statue on top. To the left, the Washington Monument is visible in the distance. In the foreground, there's a large, green lawn and a curved walkway. An American flag is partially visible on the left side. The sky is overcast and grey. The text "FEDERAL UPDATE" is superimposed in the center of the image in a large, white, sans-serif font.

# FEDERAL UPDATE

### Voters on the Direction of the Country

Do you think the United States is on the right track, or is it headed in the wrong direction?

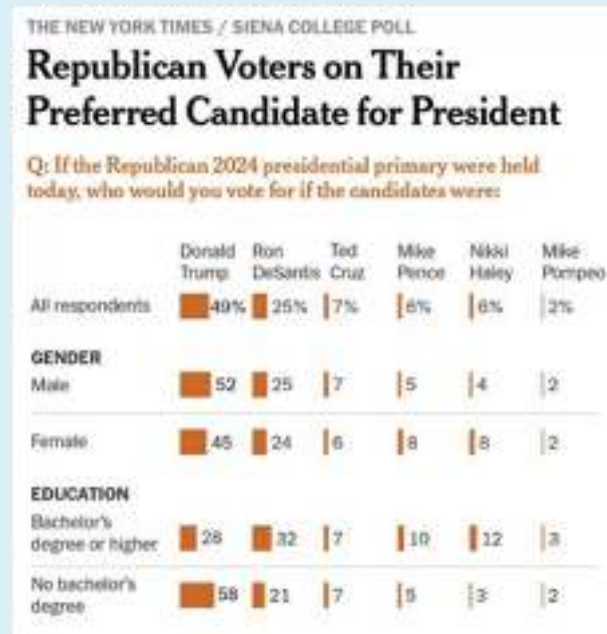


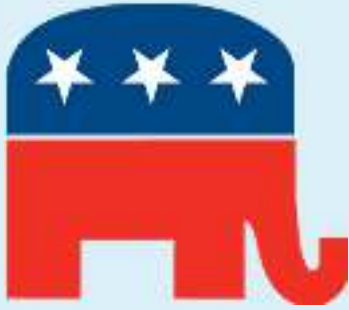
## EXECUTIVE BRANCH

- Biden's numbers dipped further and are now below where Trump was at this same point in his administration.
- Talks of 2024 continue to heat up – will the President even run?
- Trump had a good primary night with many of his endorsed candidates winning.

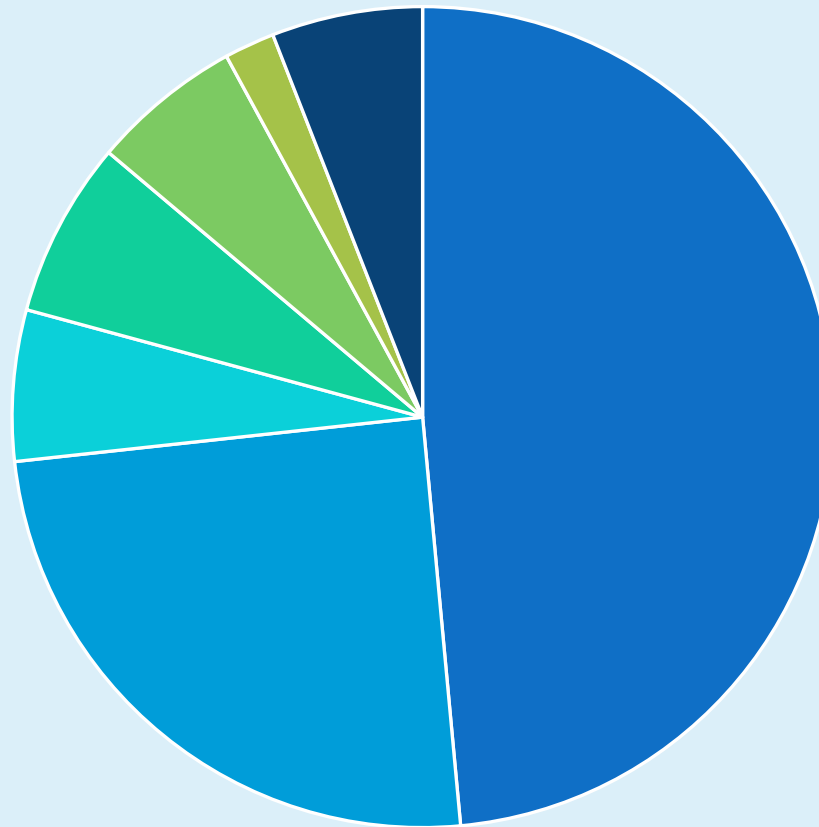
# January 6 Committee Hearings and Trump

- January 6 hearings are having a measurable impact on Trump's support among Republicans especially donors
- Most are waiting for an alternative – helps those who may seek to challenge Trump





## 2024 Election GOP



■ Trump ■ DeSantis ■ Pence ■ Cruz ■ Hayley ■ Pompeo ■ Other

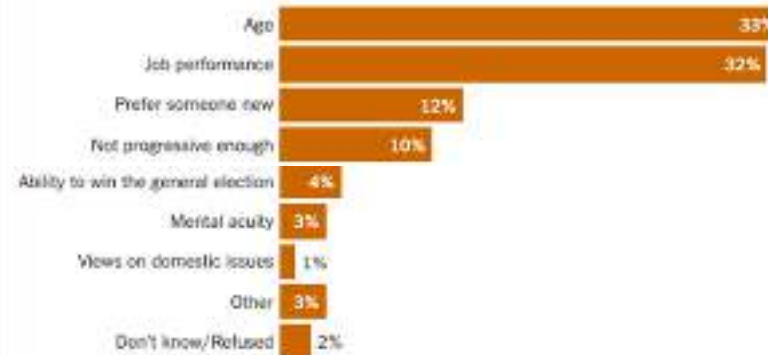
# Democrats

- Recent NYT poll suggests that a clear majority 64% of Democrats do not want Biden to run in 2024
- Progressive groups like RootsAction who championed Biden are now calling him to not run
- Biden was a compromise, and painted himself in a corner
- Harris has worse poll numbers
- Last time incumbent president did NOT get renominated was Pierce in 1856

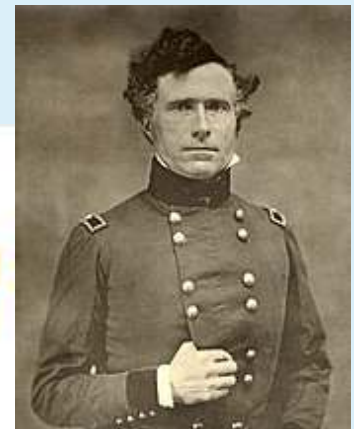
“Our organization fought fiercely in the primaries for Bernie and against Biden,” said [RootsAction.org](https://RootsAction.org) co-founders Jeff Cohen and Norman Solomon in a statement. “But the general election is far less about Biden than it is about Trump — the most dangerous president in modern U.S. history, who opposes virtually every policy and principle that progressives are fighting for.”

## Democrats' Reasons for a Different Candidate

What's the most important reason you would prefer someone other than Joe Biden to be the Democratic Party's 2024 presidential nominee?



Asked of 191 respondents who said they planned to vote in the 2024 Democratic primary and who preferred a candidate other than Joe Biden in a New York Times/Siena College poll from July 3-7, 2022. - By The New York Times



## August

| Sun. | Mon. | Tues. | Wed. | Thurs. | Fri. | Sat. |
|------|------|-------|------|--------|------|------|
|      | 1    | 2     | 3    | 4      | 5    | 6    |
| 7    | 8    | 9     | 10   | 11     | 12   | 13   |
| 14   | 15   | 16    | 17   | 18     | 19   | 20   |
| 21   | 22   | 23    | 24   | 25     | 26   | 27   |
| 28   | 29   | 30    | 31   |        |      |      |

## July

| Sun.                     | Mon.                  | Tues. | Wed. | Thurs. | Fri. | Sat.                     |
|--------------------------|-----------------------|-------|------|--------|------|--------------------------|
|                          |                       |       |      |        | 1    | 2                        |
| 3                        | 4<br>Independence Day | 5     | 6    | 7      | 8    | 9<br>Eid al-Adha (begin) |
| 10<br>Eid al-Adha (cont) | 11                    | 12    | 13   | 14     | 15   | 16                       |
| 17                       | 18                    | 19    | 20   | 21     | 22   | 23                       |
| 24                       | 25                    | 26    | 27   | 28     | 29   | 30                       |
| 31                       |                       |       |      |        |      |                          |

# Congress

## On the docket:

- Gun legislation: H: ☒ S: ☒
- Abortion legislation: H: ☒ S: ☐
- Appropriations (Mark up): H: ☒ S: ☐
- Budget reconciliation H: ☐ S: ☐
- (August insurers need ACA subsidy information.)
- (September 30, 2022 - budget reconciliation deadline.)



# Budget Reconciliation

## Recent development:

- July 11: Schumer announces another go at a budget reconciliation bill
- July 14: Manchin kills chance of another bill

## What's at stake:

- Tax credits - \$300 B
- Clean energy credit direct pay – Manchin opposed
- EV tax credit – Manchin opposed

## Any path to move forward?

- Manchin wanting to see where inflation heads by end of August

# Appropriations

House markup: Advanced SMR RD&D - \$165 M

- Positive remarks and support from Congressman Simpson

■ Senate markup: Less likely to happen

- Senate has limited timeframe to act, probably push it to September
- FY 2023 begins 10/1/22

**Recent Advanced SMR R&D Appropriations. Award History**

| Year           | President Request | House Mark | Senate Mark | Approps/Omnibus Conference |
|----------------|-------------------|------------|-------------|----------------------------|
| <b>FY 2017</b> | \$89.6 M          | \$96.6 M   | \$95 M      | \$95 M                     |
| <b>FY 2018</b> | \$20 M            | \$60 M     | \$0         | \$60 M                     |
| <b>FY 2019</b> | \$54 M            | \$100 M    | \$90 M      | \$100 M                    |
| <b>FY 2020</b> | \$10 M            | \$100 M    | \$100 M     | \$100 M                    |
| <b>FY 2021</b> | \$10 M            | \$105 M    | \$100 M     | \$115 M                    |
| <b>FY 2022</b> | \$115 M           | \$145 M    | \$140 M     | \$150 M                    |
| <b>FY 2023</b> | \$40 M            | \$165 M    |             |                            |

# Other Federal Activity

Good Neighbor/Transport Rule Budget Amendment drafted by UAMPS and offered by Congressman Stewart:



1 DRAFT  
2  
3 U.S. Environmental Protection Agency ("EPA") Federal Implementation Plan  
4 Addressing Regional Ozone Transport for the 2015 Ozone National Ambient Air  
5 Quality Standard; Proposed Rule 87 Fed. Reg. 20,036 (April 6, 2022)  
6  
7 None of these funds made available by this or any other Act may be used by the  
8 Administrator of the U.S. Environmental Protection Agency to write or issue any  
9 administrative rule pursuant to section 110(a)(2)(D)(i)(I) of the Clean Air Act (42  
10 U.S.C. § 7410(a)(2)(D)(i)(I)) referred to as the "good neighbor provision" or the  
11 "interstate transport provision" of the Act.

# *West Virginia v. EPA*



## What it did:

- Using “major questions” doctrine places limitations on EPA’s use of Clean Air Act (CAA) Section 111(d) as used in Clean Power Plan

## What it did *not* do:

- Does not limit EPA’s ability to regulate for CO<sub>2</sub> or GHGs under CAA (already deemed an air pollutant)

## WV v. EPA

“Capping carbon dioxide emissions at a level that will force a nationwide transition away from the use of coal to generate electricity may be a sensible “solution to the crisis of the day.” New York v. United States, 505 U.S. 144, 187, 112 S.Ct. 2408, 120 L.Ed.2d 120 (1992). But it is not plausible that Congress gave EPA the authority to adopt on its own such a regulatory scheme in Section 111(d).”

The background image shows a grand, ornate interior space, likely a government building or museum. It features a series of large, vaulted arches supported by massive stone columns. The ceiling is high and decorated with intricate patterns and paintings. A central staircase leads up to a higher level, and the floor is made of polished stone tiles. The overall atmosphere is one of historical grandeur and architectural beauty.

# STATE UPDATE

# Utah Agency Involvement

## Utah Department of Environmental Quality

- Regional Haze Rule: Second Implementation Period
  - AQB approved proposed SIP

## Utah Office of Energy Development

- Re-establishing OED energy stakeholders working group



UAMPS Comment Letter to DEQ

## Other Utah Items

- “Business Vision for Utah’s Energy Future” a report by the Salt Lake Chamber and Kem Gardner Institute
  - Focusing on natural resources and energy availability in the future for the State of Utah
  - Early engagement can help inform the end report



## State Senate:



Millner



Stevenson



Vickers

## State House:



Petersen



Cutler



Ward



Ballard

## Utah State Primary Election Highlights

- Senate: No major change
- House: New faces: Cutler, Jack, Walter
- Recount in District 72 between Elison and Billings
- Democrats Kitchen and Davis lost

# MEMORANDUM

TO: IPP Project Chairman

FROM: UAMPS Staff

DATE: July 13, 2022

SUBJECT: June 2022 Operations Report

IPP operation plan was to have one unit at minimum through June due to the coal inventory issue. Allowance was made for entities to schedule higher amounts, with a tradeoff for energy in the third quarter months. UAMPS started the month at minimum 8 MW and scheduled up to our 27 MW max on one unit as the month progressed (planning to take less in later September). The IPP project scheduled 11,868 MWh of energy. UAMPS IPP scheduled capacity factor was 29% for the month. Budgeted fuel price is \$27.65 per MWh.



# ITS Ownership Allocation Recalculation

# Amended Ownership Interest by Phase

|         |                                                           |                                 | ACTUAL Ownership Interest in ITS |              |
|---------|-----------------------------------------------------------|---------------------------------|----------------------------------|--------------|
|         |                                                           |                                 | UAMPS                            | PAC          |
| Phase 1 | Install 138kV and CAP 30 MVAR                             | TUTM/2004/C/106/10028564        |                                  | \$560,595    |
| Phase 2 | SGSY Expansion                                            | TUTM/2004/C/106/10029385        | \$13,600,000                     | \$9,064,008  |
|         | SGS: Metering of Mid                                      | TUTM/2004/C/106/10031804        |                                  | \$89,914     |
|         | SGS: Upgrade Emergency Gen                                | TUTM/2004/C/106/10033844        |                                  | \$64,409     |
|         | Red Butte 138 kV Line Termination                         | TUTM/2004/C/306                 |                                  | \$589,516    |
|         | Middleton 138 kV Line Termination                         | TUTM/2004/C/206                 |                                  | \$5,942      |
|         |                                                           | Subtotal Phase 1 & 2            | \$13,600,000                     | \$10,374,385 |
|         |                                                           | Percentage for Phase 1 & 2      | 56.73%                           | 43.27%       |
| Phase 3 | St George Sw Yard 2nd 138kV 30MVAR                        | TZCE/2007/C/001/B               |                                  | \$536,036    |
|         | St George Red Butte 345kV Ln Acquire Easements            | TCED/2012/C/001/B               | \$38,385                         | \$32,599     |
|         | St. George-Red Butte 138 kV Line                          | TCED/2006/C/001/B               | \$19,006,997                     | \$22,909,217 |
|         |                                                           | Subtotal Phase 3                | \$19,045,382                     | \$23,477,852 |
|         |                                                           | Percentage for Phase 1, 2, 3    | 49.09%                           | 50.91%       |
| Phase 4 | Red Butte Central - St George Connect 4th 138 kV District | TZCE/2016/C/002/B               | \$513,670                        | \$512,675    |
|         |                                                           | Subtotal Phase 4                | \$513,670                        | \$512,675    |
|         |                                                           | Percentage for Phase 1, 2, 3, 4 | 49.11%                           | 50.89%       |

# Operations & Maintenance Impact

|                             |        |
|-----------------------------|--------|
| Previous Ownership Interest | 56.74% |
| Amended Ownership Interest  | 49.11% |
| Adjusted                    | -7.63% |

**Overpayment** of O&M activities dating back to 2009

# O&M Overpayment

|        | Orginal   | Revised   | Overpaid   |           |                     |
|--------|-----------|-----------|------------|-----------|---------------------|
| Fiscal | Payment @ | Payment @ | Position - |           |                     |
| Year   | 56.74%    | 49.11%    | 7.63%      |           |                     |
| FY2008 | 25,158    | 21,775    | 3,383.04   |           |                     |
| FY2009 | 70,738    | 61,225    | 9,512.29   |           |                     |
| FY2010 | 30,952    | 26,789    | 4,162.14   |           |                     |
| FY2011 | 40,743    | 35,264    | 5,478.86   |           |                     |
| FY2012 | 147,159   | 127,370   | 19,788.91  |           |                     |
| FY2013 | 178,898   | 154,841   | 24,056.90  |           |                     |
| FY2014 | 79,201    | 68,550    | 10,650.36  |           |                     |
| FY2015 | 31,745    | 27,476    | 4,268.85   |           |                     |
| FY2016 | 32,291    | 27,949    | 4,342.26   |           |                     |
| FY2017 | 61,450    | 53,186    | 8,263.31   |           |                     |
| FY2018 | 109,969   | 95,181    | 14,787.86  |           |                     |
| FY2019 | 56,842    | 49,198    | 7,643.72   |           |                     |
| FY2020 | 88,005    | 76,170    | 11,834.25  |           |                     |
| FY2021 | 159,021   | 137,637   | 21,384.08  |           |                     |
| FY2022 | 126,340   | 109,351   | 16,989.38  | \$ 72,639 | 5-Year Differential |
| Total  | 1,238,510 | 1,071,964 | 166,546    |           |                     |

Seeking approval to accept the amended Ownership Interest percentage and initiate discussions with PacifiCorp for recovery of funds overpaid.

*Next Step: Initiate discussions with PacifiCorp to amend the JOA & ITS to bring it into alignment with current day operations.*

# MOBILE GENERATOR

July 19, 2022

# OPERATING AGREEMENT (aka Host Agreement)

- Mobile Generator Contract (“Contract”) provides UAMPS the ability to enter into an Operating Agreement with one of the Participants selected by the Board
- Pursuant to board action, Lehi was selected in August 2006 to provide the site and be the Designated Operator
- Due to the increased load growth in Lehi, the generator brings little or no value to Lehi and Lehi feels it may be better for one of the other Participants to be the Designated Operator
- Mt. Pleasant has expressed interest in being Designated Operator and providing the site

# RESPONSIBILITIES OF THE OPERATOR

- Responsibilities of the operator
  - Locate at a secure site
  - Notify UAMPS of any changes in the status and schedule with UAMPS any planned maintenance activities
  - Maintain in a condition to be easily transportable upon 12 hours notice
  - Maintain the electrical interconnection to its electrical system for testing and beneficial use of the Participants

# LEHI'S ENTITLEMENT SHARE

- It is not Lehi's intent to withdraw from the Mobile Generator Project to cause a financial burden to the other existing Participants in the Project
- However, Lehi is interested in divesting its entitlement share if there is a willing Participant or non-participant
- Lehi desires to work with interested parties to transfer its entitlement share based on a depreciated value
- Staff recommends sending a letter of solicitation to the existing Participants and then, if no interest is received, to the non-participants

# EMERGENCY USE AGREEMENT (aka rental)

- In May 2020, the Participants assigned the Mobile Generator to the UAMPS Pool that allowed non-Participants to use the Mobile Generator in the case of an emergency
  - Costs - \$500 per month rental rate plus all costs arising out of the use, including but not limited to, transporting and permitting
- Since that time, the Mobile Generator has been used by the City of St. George and Los Alamos County on a stand-by basis with minimal, if any, run hours
- The Emergency Use Agreement has allowed staff to expedite the transport of the Mobile Generator under an emergency
- However, the Agreement does not include a fee schedule if the Mobile Generator is operated under the emergency

# FOR INFORMATION PURPOSES ONLY

|                |                         | Day        | Week        | 4 Week      |
|----------------|-------------------------|------------|-------------|-------------|
| 2000kW/2500kVA | Single Shift or Standby | \$3,957.00 | \$11,870.00 | \$35,610.00 |
|                | Double Shift            | \$5,936.00 | \$17,806.00 | \$53,416.00 |
|                | Triple Shift            | \$7,913.00 | \$23,740.00 | \$71,221.00 |

| Single Shift Rate                                       |    |     | Double Shift Rate           |    |     | Triple Shift Rate           |     |     |
|---------------------------------------------------------|----|-----|-----------------------------|----|-----|-----------------------------|-----|-----|
| Standard Rate                                           |    |     | 1.5 Times Single Shift Rate |    |     | 2.0 Times Single Shift Rate |     |     |
| 8                                                       | 40 | 160 | 16                          | 80 | 320 | 24                          | 160 | 640 |
| Hours shown are maximum hours per shift for the period. |    |     |                             |    |     |                             |     |     |

- Is there a need to establish and include an hourly run fee in the Emergency Use Agreement?



# PacifiCorp Transmission Formula Rate

2022 Update

Rates as of June 1, 2022

|                         |          |          |             | Schedule                                             |                                                                                   |                                                        |                                                   |                                                 |
|-------------------------|----------|----------|-------------|------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------|-------------------------------------------------|
|                         |          |          |             | 1                                                    | 2                                                                                 | 7                                                      | 8                                                 | NITS                                            |
| Service Increment       | Class    | Period   | Unit        | Scheduling, System Control and Dispatch Service (SC) | Reactive Supply and Voltage Control from Generation or Other Sources Service (RV) | LTF and STF Point To Point Transmission Service (Firm) | Non-Firm Point To Point Transmission Service (NF) | Network Integration Transmission Service (NITS) |
| Related FERC docket no. |          |          |             | ER11-3643                                            | ER21-1015                                                                         | ER11-3643                                              | ER11-3643                                         | ER11-3643                                       |
| Effective date          |          |          |             | June 1, 2022                                         | January 1, 2021                                                                   | June 1, 2022                                           | June 1, 2022                                      | June 1, 2022                                    |
| Hourly                  | Firm     | On peak  | \$/MWh      | 0.17                                                 | 0.385                                                                             | 8.93                                                   | n/a                                               | ##                                              |
| Hourly                  | Firm     | Off peak | \$/MWh      | 0.08                                                 | 0.183                                                                             | 4.25                                                   | n/a                                               | ##                                              |
| Hourly                  | Non-firm | On peak  | \$/MWh      | 0.17                                                 | 0.385                                                                             | n/a                                                    | 8.93                                              | ##                                              |
| Hourly                  | Non-firm | Off peak | \$/MWh      | 0.08                                                 | 0.183                                                                             | n/a                                                    | 4.25                                              | ##                                              |
| Daily                   | Firm     | On peak  | \$/MW-day   | 2.75                                                 | 6.165                                                                             | 142.84                                                 | n/a                                               | ##                                              |
| Daily                   | Firm     | Off peak | \$/MW-day   | 1.97                                                 | 4.404                                                                             | 102.03                                                 | n/a                                               | ##                                              |
| Daily                   | Non-firm | On peak  | \$/MW-day   | 2.75                                                 | 6.165                                                                             | n/a                                                    | 142.84                                            | ##                                              |
| Daily                   | Non-firm | Off peak | \$/MW-day   | 1.97                                                 | 4.404                                                                             | n/a                                                    | 102.03                                            | ##                                              |
| Weekly                  | Firm     | Full     | \$/MW-week  | 13.77                                                | 30.827                                                                            | 714.22                                                 | n/a                                               | ##                                              |
| Weekly                  | Non-firm | Full     | \$/MW-week  | 13.77                                                | 30.827                                                                            | n/a                                                    | 714.22                                            | ##                                              |
| Monthly                 | Firm     | Full     | \$/MW-month | 59.66                                                | 133.583                                                                           | 3,094.94                                               | n/a                                               | 3,094.94                                        |
| Monthly                 | Non-firm | Full     | \$/MW-month | 59.66                                                | 133.583                                                                           | n/a                                                    | 3,094.94                                          |                                                 |
| Yearly                  | Firm     | Full     | \$/MW-year  | 715.94                                               | 1,603.000                                                                         | 37,139.32                                              | n/a                                               | 37,139.32                                       |

#### Notes

Charges for Schedules 1, 7, 8, and Network Integration Transmission Service are calculated through PacifiCorp's formula rate and have been rounded to the nearest cent.

Refer to PacifiCorp's OATT for Schedules 4, 9, 10, and 11.

## Charges for these schedules are represented here and/or in PacifiCorp's OATT for only the yearly and monthly service increments but can be calculated for other service increments as needed for billing purposes.

Rates as of June 1, 2022

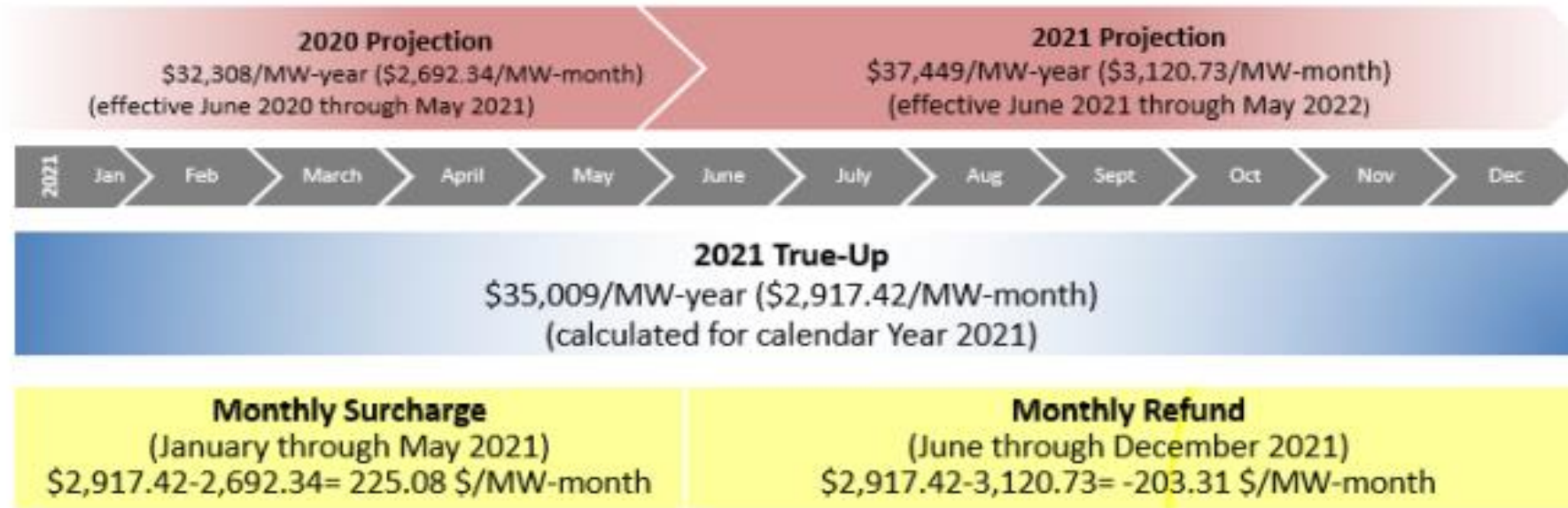
| Rates as of June 1, 2022 |          |          |             | Schedule                                         |                                                                                     |                                                                                   |                                                                                      |                                                                                    |                                                               |                                                 |                                                     |
|--------------------------|----------|----------|-------------|--------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------|
|                          |          |          |             | 3 (Load)                                         | 3/3A (Wind-uncommitted)                                                             | 3/3A (Wind-committed)                                                             | 3/3A (Solar-uncommitted)                                                             | 3/3A (Solar-committed)                                                             | 3/3A (Non-VER committed)                                      | 5                                               | 6                                                   |
| Service Increment        | Class    | Period * | Unit        | Regulation and Frequency Response Service (Load) | Generator Regulation and Frequency Response Service (Wind - uncommitted scheduling) | Generator Regulation and Frequency Response Service (Wind - committed scheduling) | Generator Regulation and Frequency Response Service (Solar - uncommitted scheduling) | Generator Regulation and Frequency Response Service (Solar - committed scheduling) | Generator Regulation and Frequency Response Service (Non-VER) | Operating Reserve-Spinning Reserve Service (SP) | Operating Reserve-Supplemental Reserve Service (SU) |
| Related FERC docket no.  |          |          |             | ER21-1015                                        | ER21-1015                                                                           | ER21-1015                                                                         | ER21-1015                                                                            | ER21-1015                                                                          | ER21-1015                                                     | ER21-1015                                       | ER21-1015                                           |
| Effective date           |          |          |             | January 1, 2021                                  | January 1, 2021                                                                     | January 1, 2021                                                                   | January 1, 2021                                                                      | January 1, 2021                                                                    | January 1, 2021                                               | January 1, 2021                                 | January 1, 2021                                     |
| Hourly                   | Firm     | Full     | \$/MWh      | \$                                               | \$                                                                                  | \$                                                                                | \$                                                                                   | \$                                                                                 | \$                                                            | 0.168                                           | 0.168                                               |
| Monthly                  | Firm     | Full     | \$/MW-month | 115                                              | 558                                                                                 | 518                                                                               | 465                                                                                  | 432                                                                                | 262                                                           | ##                                              | ##                                                  |
| Monthly                  | Non-firm | Full     | \$/MW-month | 115                                              | 558                                                                                 | 518                                                                               | 465                                                                                  | 432                                                                                | 262                                                           | ##                                              | ##                                                  |
| Yearly                   | Firm     | Full     | \$/MW-year  | 1,386                                            | 6,692                                                                               | 6,217                                                                             | 5,584                                                                                | 5,187                                                                              | 3,148                                                         | ##                                              | ##                                                  |

Current 'projected'  
2022 Rates on  
PacifiCorp's OASIS

# Annual Process

## 2021 True-Up

- True-Up covers calendar year during which two projected rates were in effect



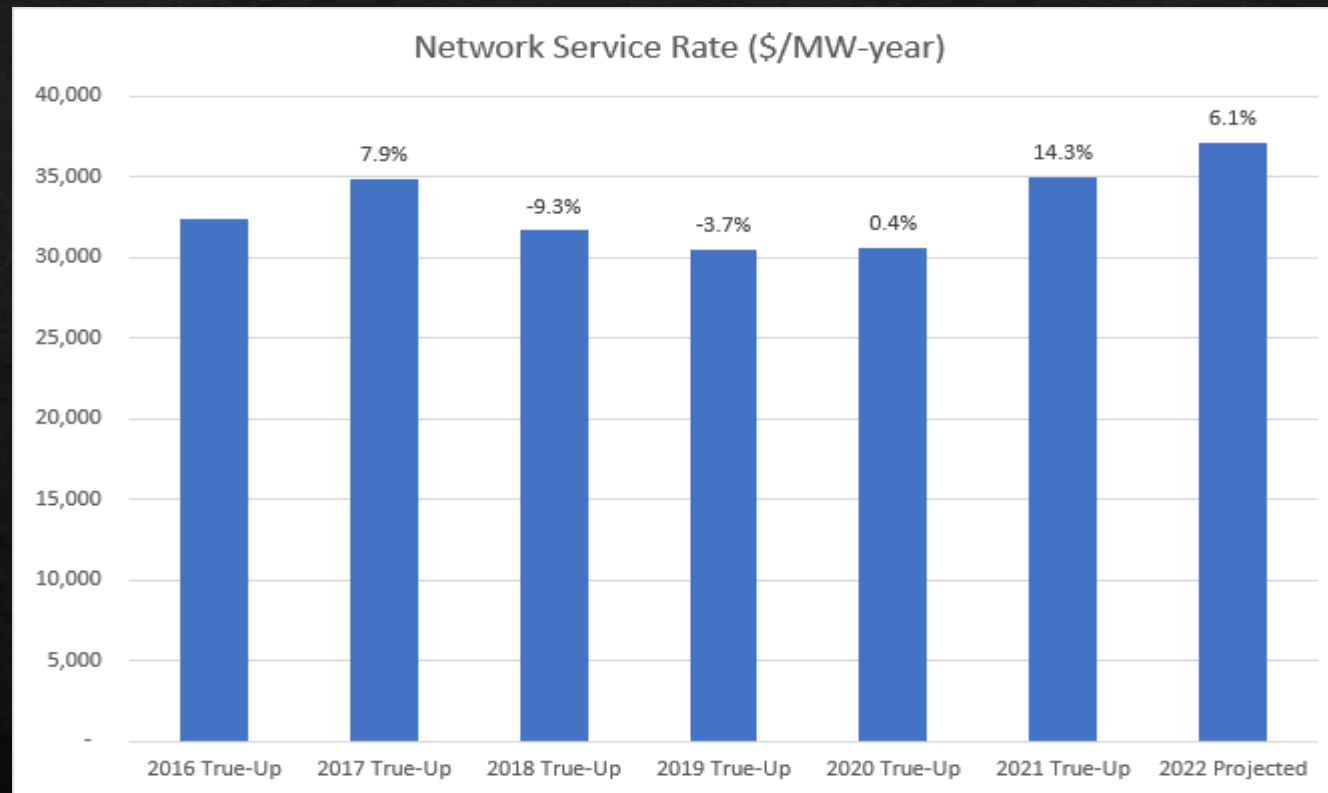
### Stakeholder Process

- Meeting annually in June to review True Up & Projected calculations
- UAMPS, UMPA & Deseret Power share contracted consulting services from GDS
- GDS submits data requests on behalf of the legacy customers

# Primary Drivers Impacting Rates

- Transmission Plant Investments – 16% increase
  - Return on Rate Base – 25% increase
  - Income Taxes – 58% increase
- Transmission O&M Expenses – 8% increase
- A&G Expenses – 39% decrease
- Depreciation Expenses – 16% increase
- Taxes Other Than Income Tax – 10% increase
- Revenue Credits – 36% increase

# 2023 & 2024 Forecasted Rates



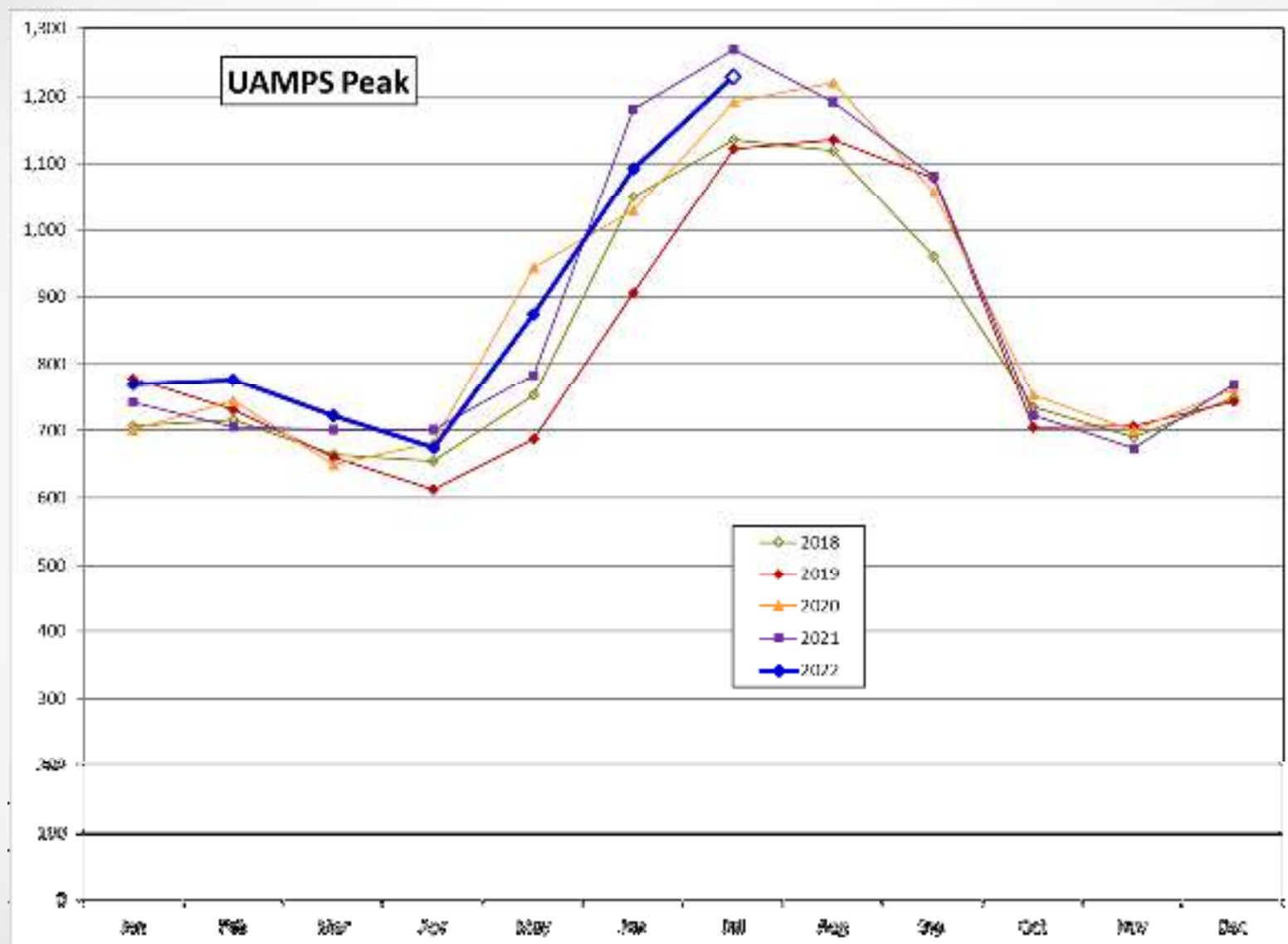
The average rate increase has been approximately 2.6% per year since 2016 (including the projected increase for 2022). Using this value projected rates are:

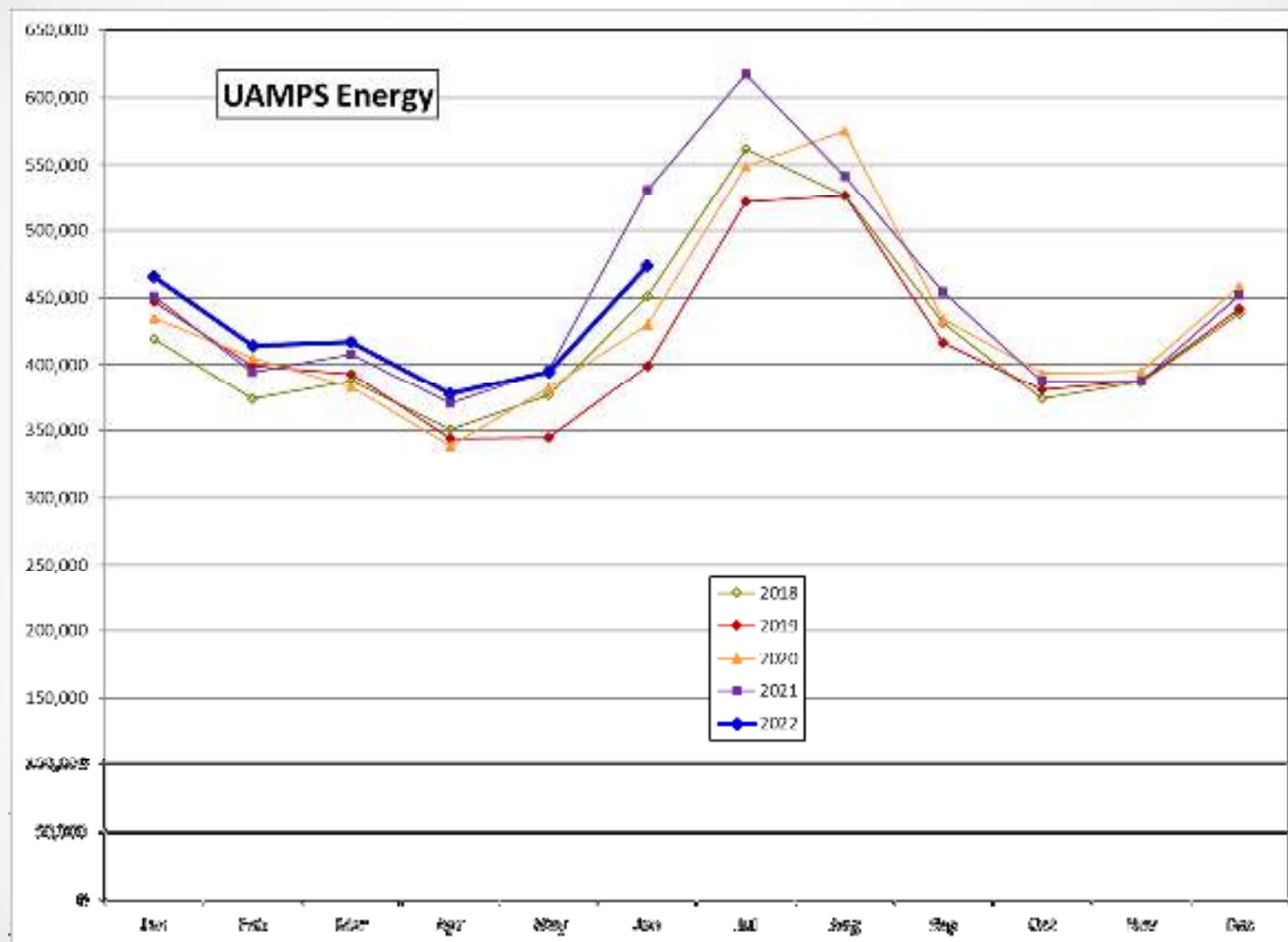
|      |                                                          |
|------|----------------------------------------------------------|
| 2022 | \$37,139/MW-year (\$3,094.94/MW-month) *PAC current rate |
| 2023 | \$38,108/MW-year (\$3,175.94/MW-month) *GDS projection   |
| 2024 | \$39,102/MW-year (\$3,258.50/MW-month) *GDS projection   |



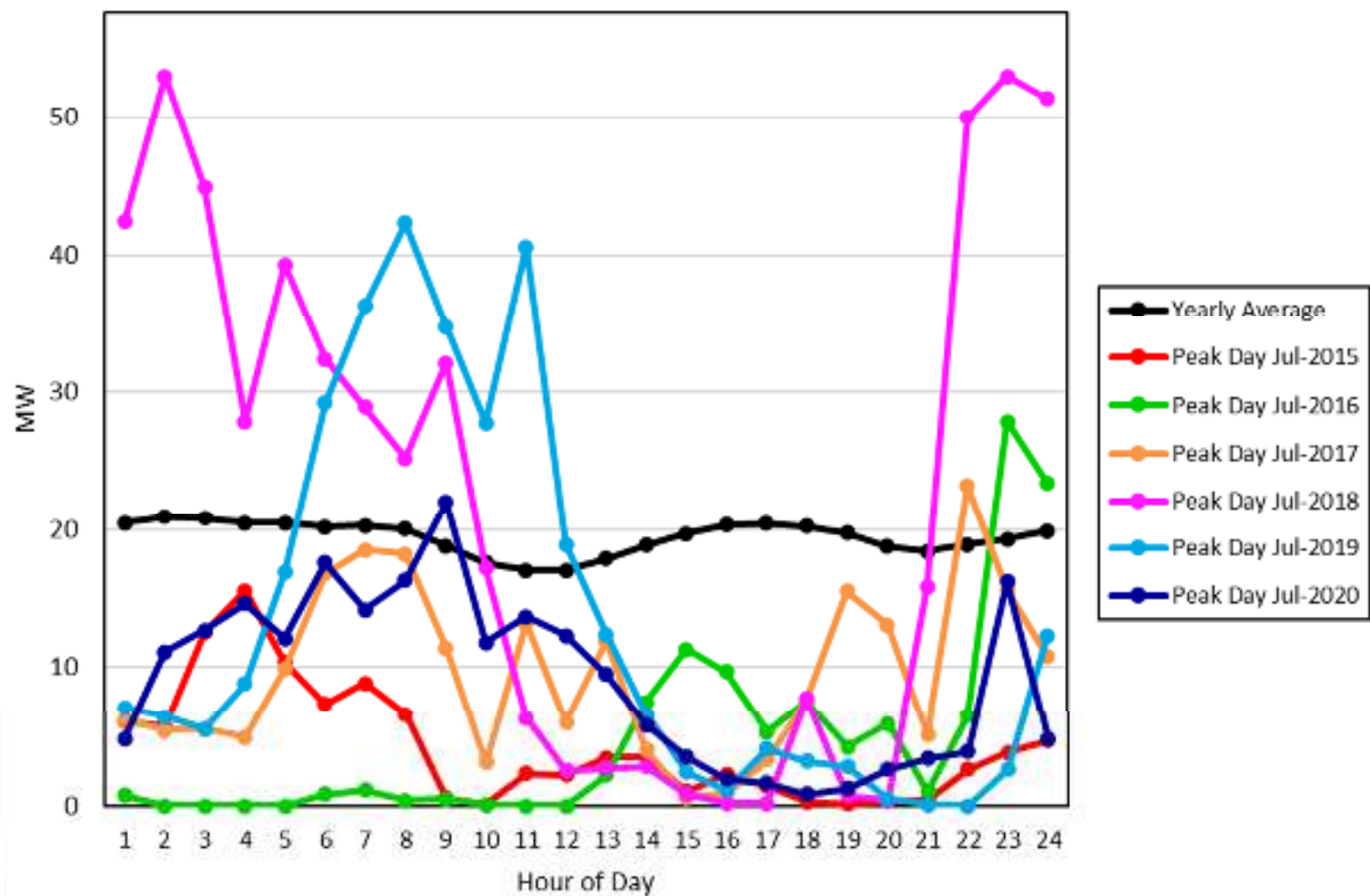
# PX and Scheduling Report

June 2022

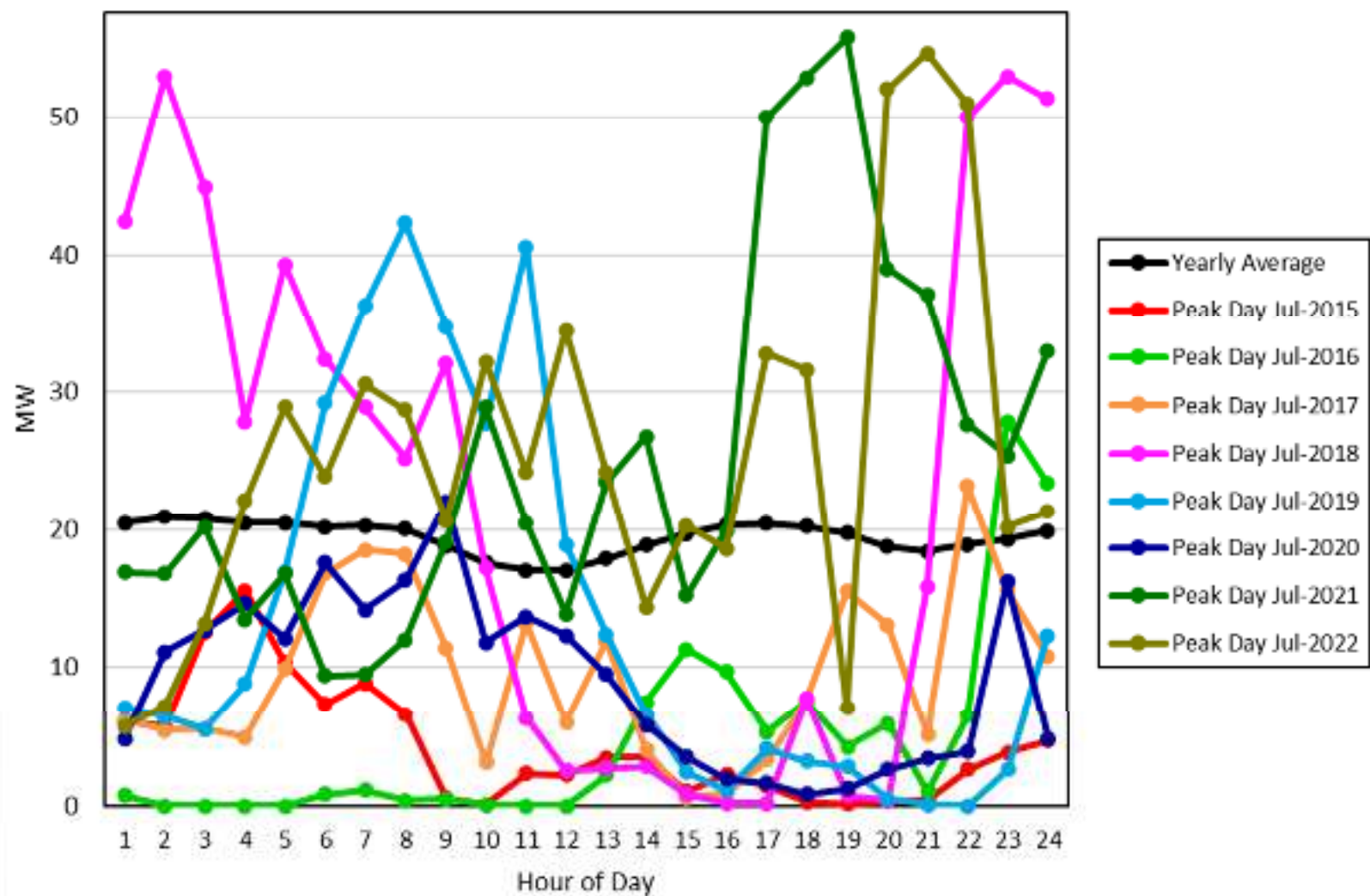




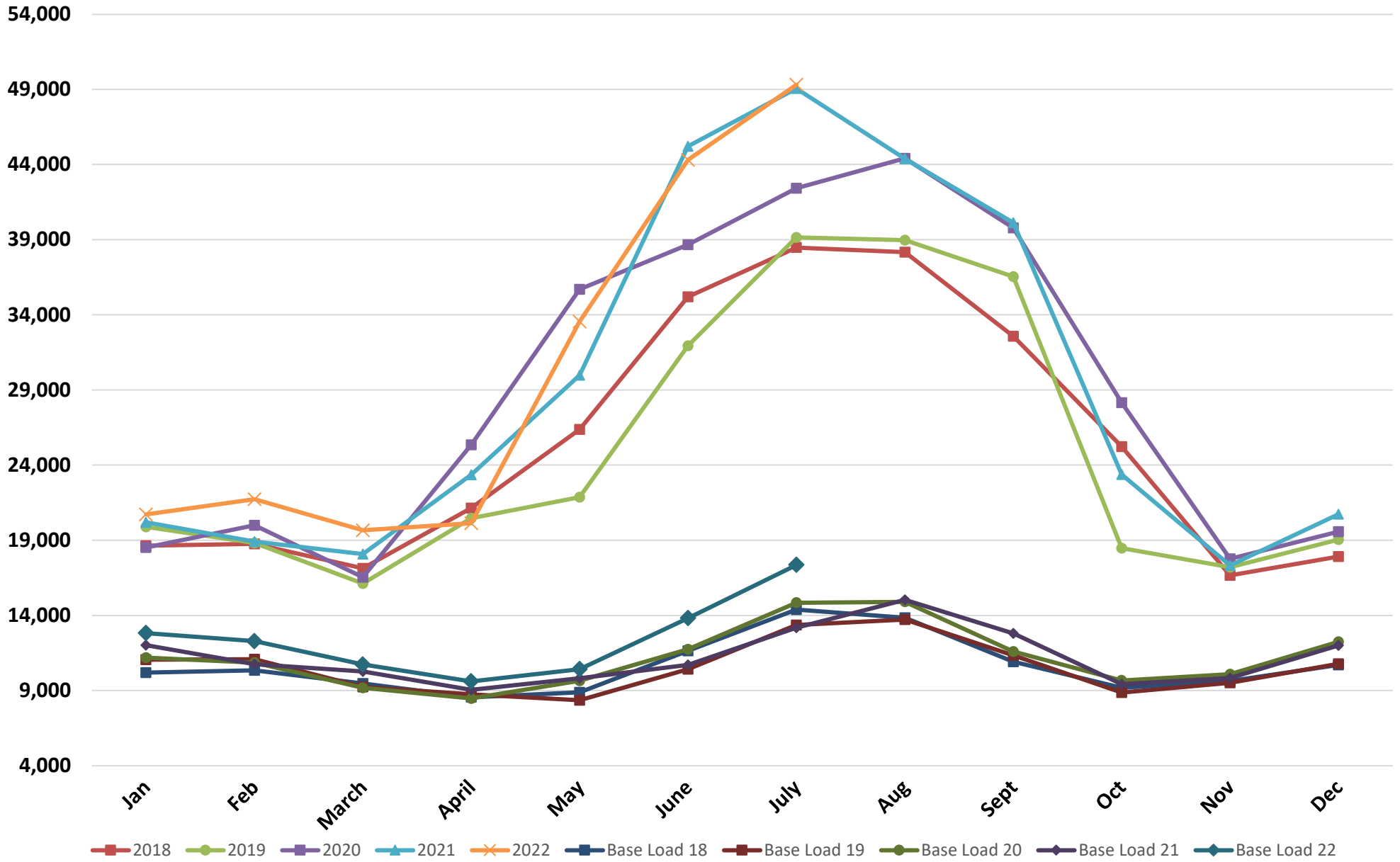
Horse Butte Generation on Peak Load Days - July



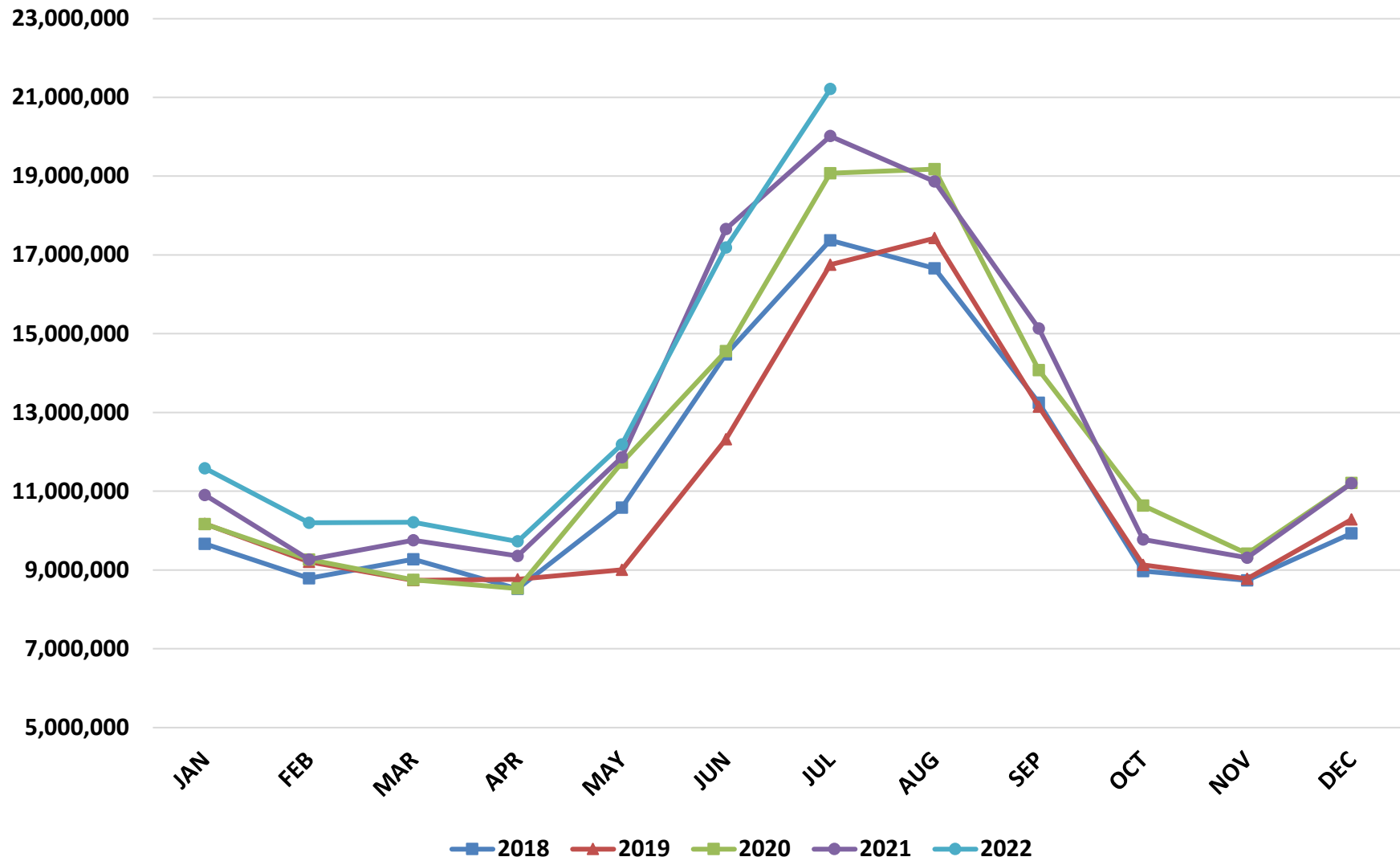
Horse Butte Generation on Peak Load Days - July



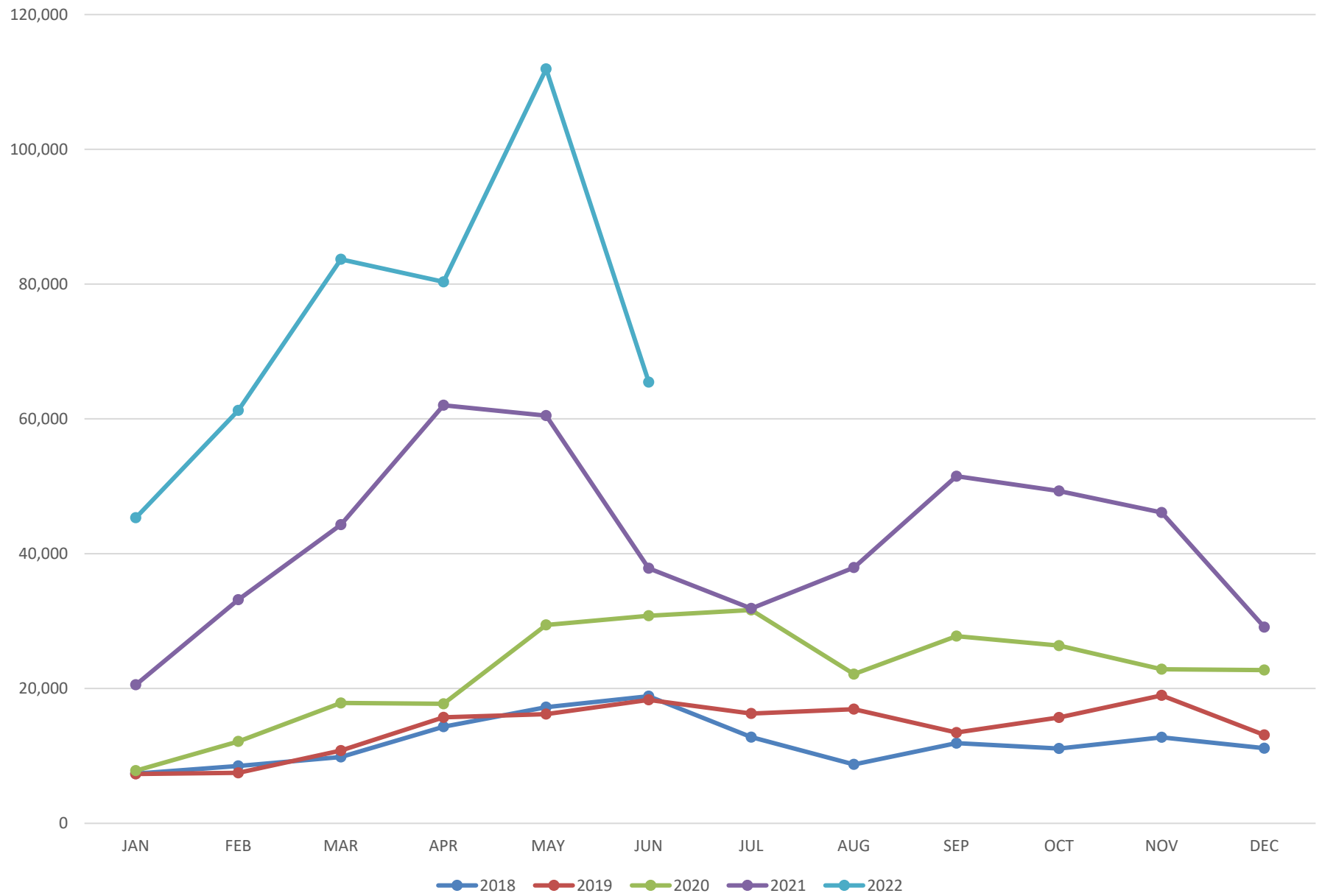
2018 - 2022 KW LOAD



2018 - 2022 KWH LOAD



Solar KWH



## AVERAGE YEARLY POWER PRICES

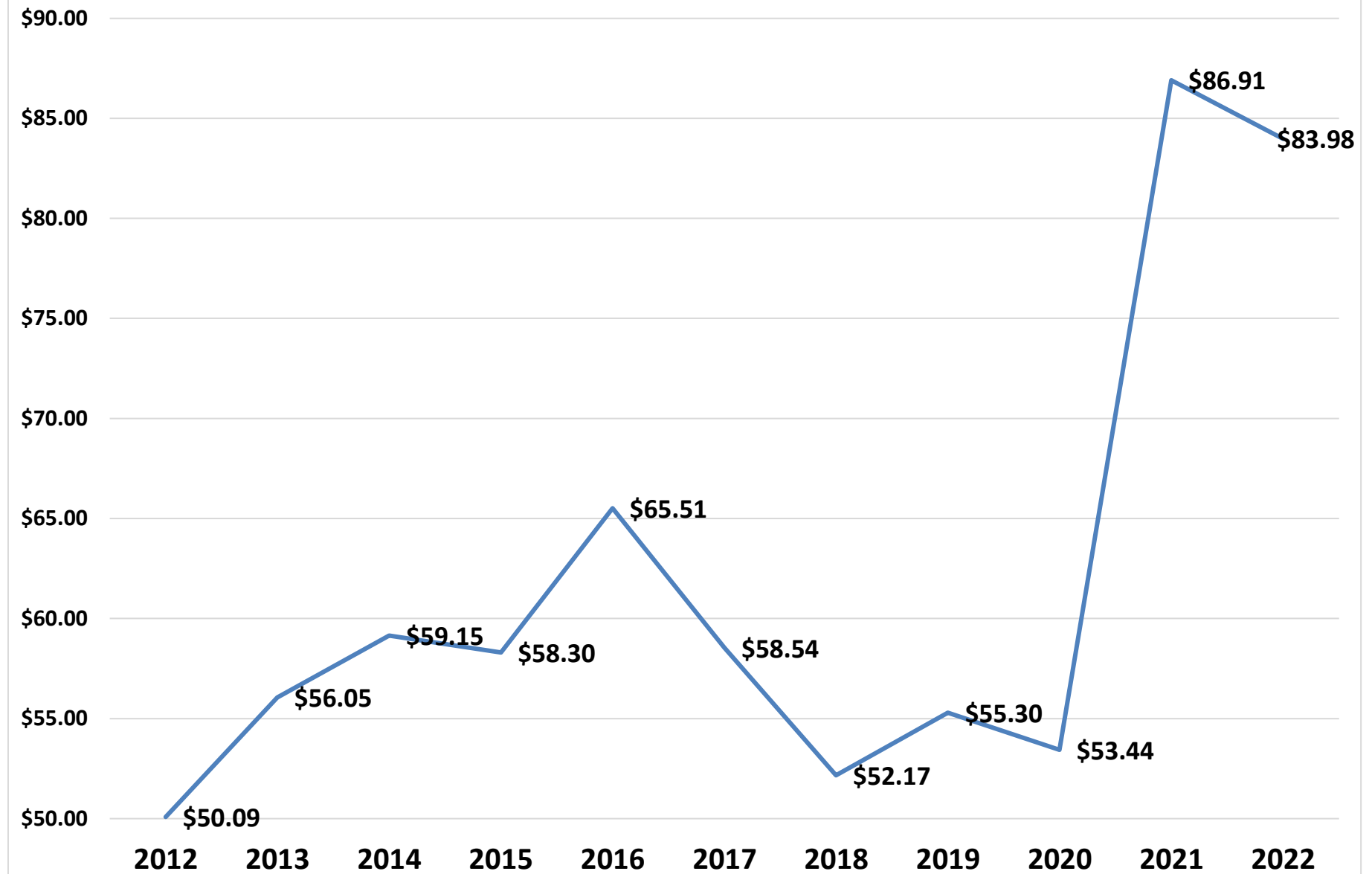
21-22 bdgt amount      **\$0.00**  
 BDGT    Year to Date      **\$75.49**

|                     | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    | 2018    | 2019    | 2020    | 2021    | 2022           |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------------|
| <i>Jan</i>          | \$56.66 | \$60.76 | \$58.36 | \$59.86 | \$57.87 | \$59.07 | \$60.62 | \$59.75 | \$57.76 | \$60.14 | \$68.25        |
| <i>Feb</i>          | \$59.78 | \$58.15 | \$64.45 | \$65.94 | \$62.38 | \$63.04 | \$60.96 | \$67.00 | \$60.67 | \$63.19 | \$70.88        |
| <i>Mar</i>          | \$57.28 | \$63.50 | \$60.83 | \$62.03 | \$61.77 | \$60.99 | \$60.09 | \$65.17 | \$64.67 | \$63.64 | \$67.28        |
| <i>Apr</i>          | \$55.43 | \$63.77 | \$63.75 | \$61.88 | \$59.71 | \$59.49 | \$55.02 | \$55.44 | \$55.92 | \$61.86 | \$82.63        |
| <i>May</i>          | \$53.31 | \$60.28 | \$61.64 | \$64.71 | \$65.51 | \$60.32 | \$58.86 | \$58.55 | \$58.55 | \$59.69 | \$72.69        |
| <i>June</i>         | \$50.09 | \$56.05 | \$59.15 | \$58.30 | \$65.51 | \$58.54 | \$52.17 | \$55.30 | \$53.44 | \$86.91 | \$83.98        |
| <i>Jul</i>          | \$51.16 | \$55.62 | \$56.85 | \$56.91 | \$56.95 | \$58.29 | \$67.87 | \$54.29 | \$55.98 | \$81.04 |                |
| <i>Aug</i>          | \$51.57 | \$55.49 | \$56.84 | \$55.27 | \$57.67 | \$59.00 | \$66.55 | \$54.58 | \$78.40 | \$72.03 |                |
| <i>Sep</i>          | \$54.79 | \$58.80 | \$59.46 | \$56.06 | \$56.97 | \$62.36 | \$55.00 | \$54.34 | \$64.93 | \$82.38 |                |
| <i>Oct</i>          | \$62.68 | \$60.35 | \$61.42 | \$56.97 | \$59.23 | \$59.79 | \$59.36 | \$59.70 | \$62.82 | \$75.92 |                |
| <i>Nov</i>          | \$63.37 | \$61.65 | \$63.03 | \$59.68 | \$64.18 | \$62.14 | \$64.60 | \$63.80 | \$63.60 | \$70.47 |                |
| <i>Dec</i>          | \$56.02 | \$58.37 | \$60.91 | \$57.90 | \$61.51 | \$58.80 | \$61.61 | \$58.55 | \$60.33 | \$70.07 |                |
| <i>Yr Avg</i>       | \$56.01 | \$59.40 | \$60.56 | \$59.63 | \$60.64 | \$60.15 | \$60.23 | \$58.87 | \$61.42 | \$70.61 | \$74.29        |
| <i>Weighted Avg</i> | \$55.22 | \$58.80 | \$60.34 | \$58.99 | \$59.55 | \$59.90 | \$60.56 | \$58.11 | \$61.98 | \$72.46 | <b>\$74.82</b> |

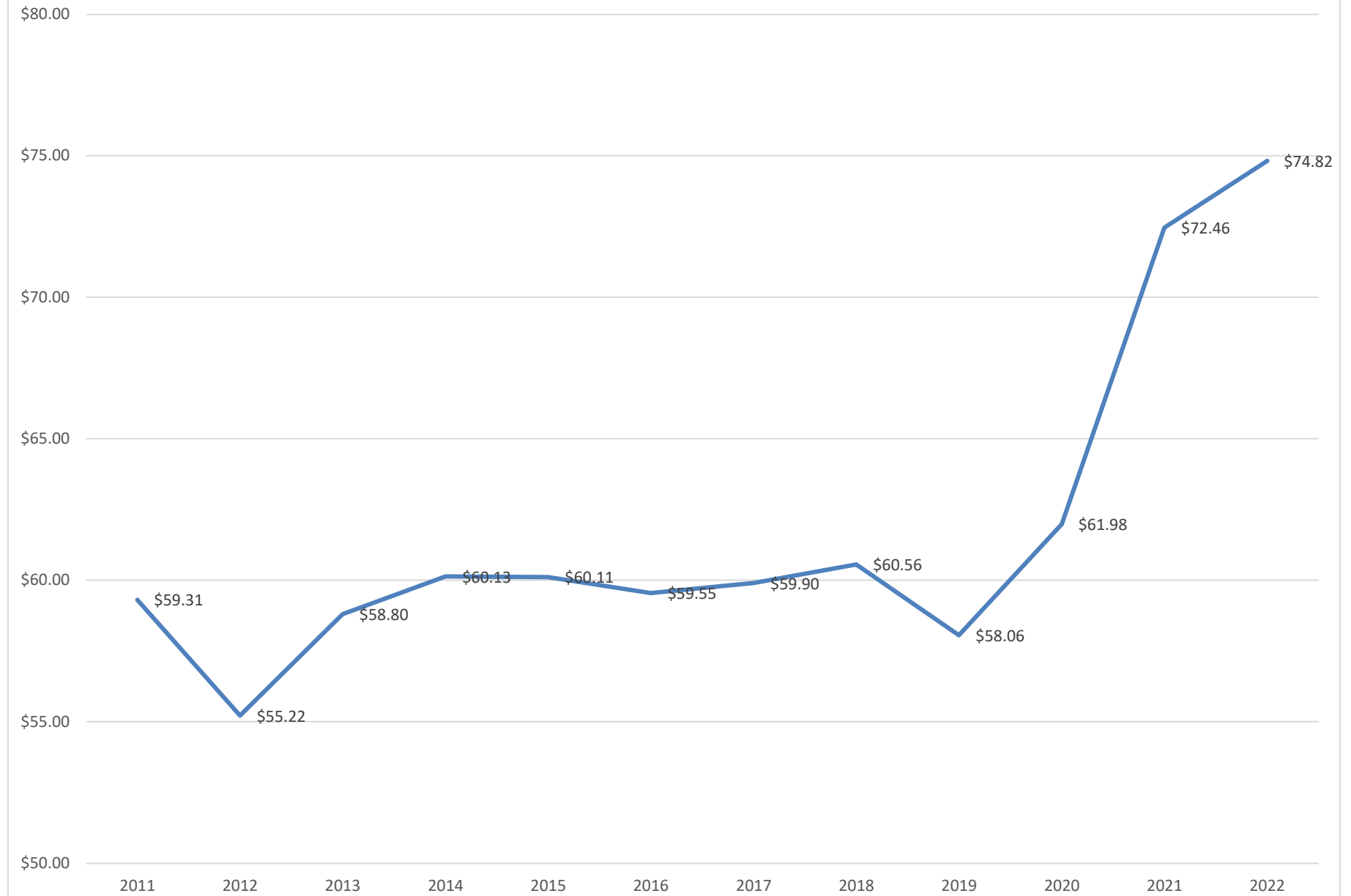
**Cy to  
Date**

*These figures capture the total cost of power to the power department. The power department uses costs only associated with the purchasing and generation of power and includes debt payments and interest associated with power resources.*

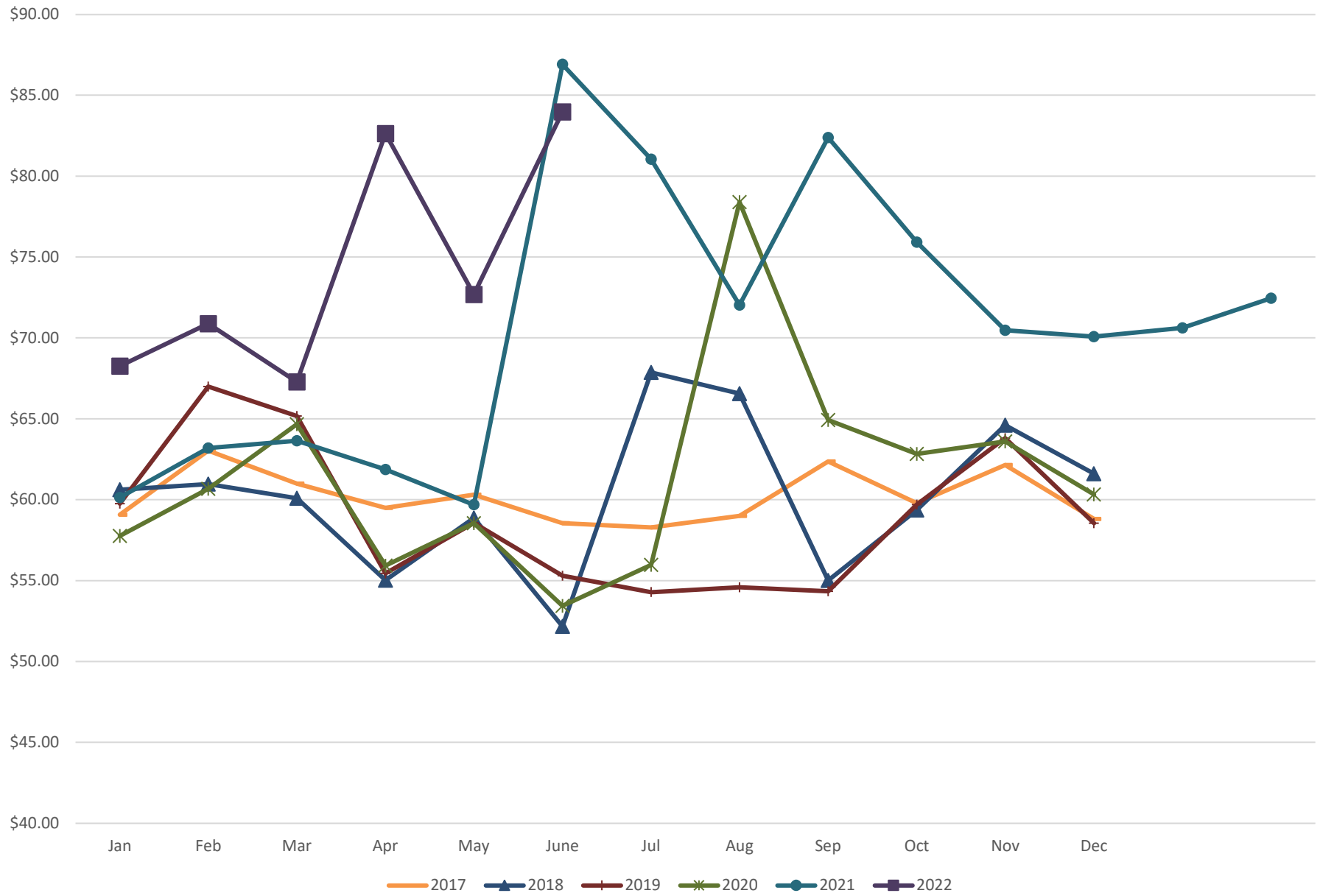
# June



## Weighted Average



Avg Monthly Price (5 Yrs)



Avg Monthly Price

