

# **OPS, Water Quality and Water Supply Conditions Update**

July 5, 2012

Seattle  
 Public  
Utilities

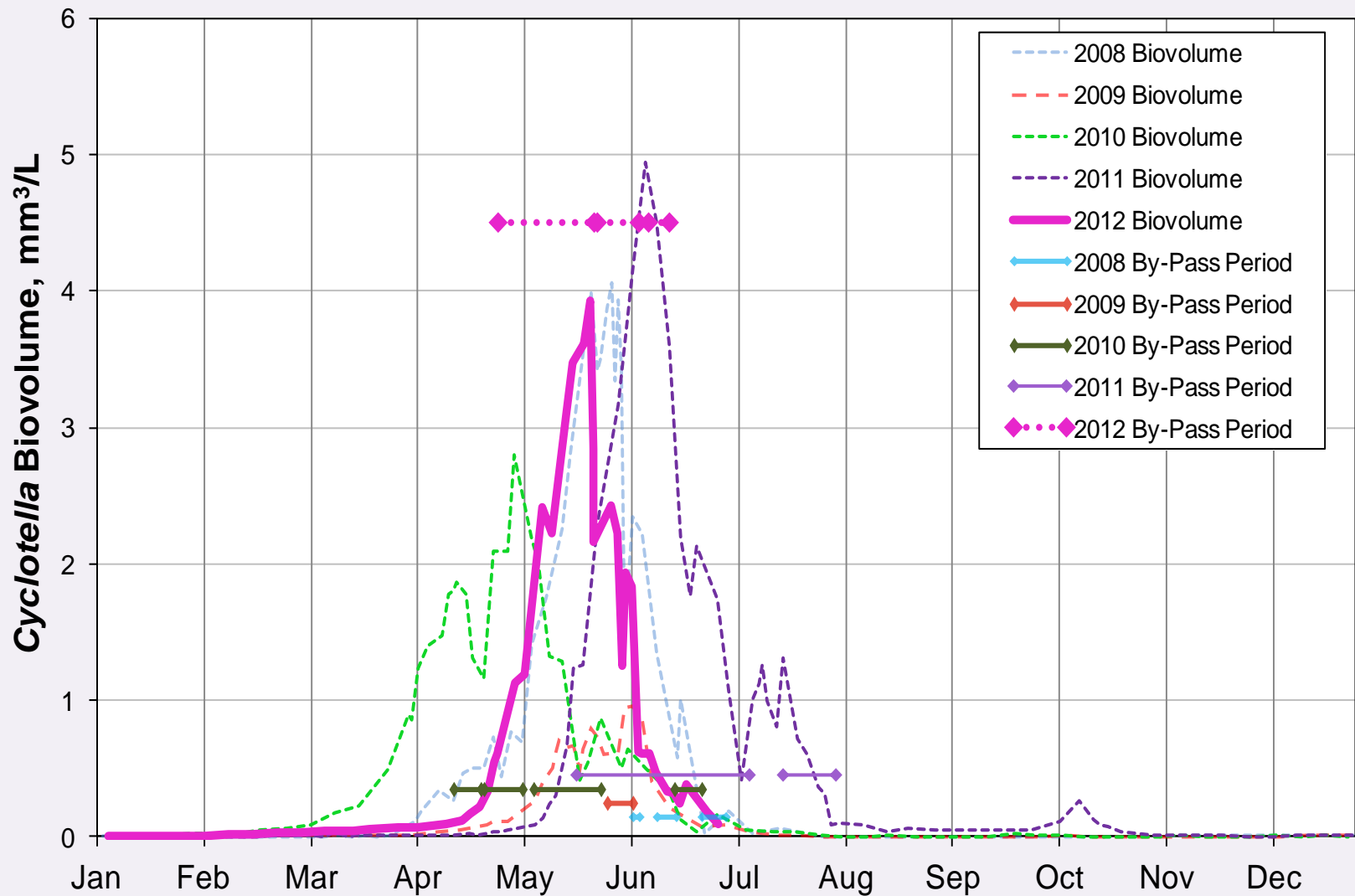
# OPS

- **Spring Refill – *Complete***
- **Lake Youngs Bypass for Algae – *Complete***
- **Landsburg Forebay cleaning – *Complete***
- **Transition Maple Leaf Reservoir back into service**
- **Fall Shut down of Tolt East Side Supply Line (TESSL) for Woodinville Tap**
- **Support Transportation projects (primarily Direct Service Area issue)**

# Water Quality

- Lake Youngs *Cyclotella* algae bloom ended in mid June. Bypassed 91% of time that concentration >0.5
- Sampling for the new Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR) began 2<sup>nd</sup> quarter 2012. SPU has concluded the first round of quarterly sample analysis for wholesale customers. The second round of sampling will begin for some wholesale customers this month.
- Some of the individual HAAs (DBPs) came in above 60 ppb. We think it's related to bypass operations – and more specifically the reconnection of Rock Creek to Cedar River above Landsburg. However since regulatory reporting is based on the average of 4 quarterly samples, we expect that there are no regulatory issues.

# Lake Youngs Outlet *Cyclotella* Biovolume, 2008 to 2012



Includes data through June 29, 2012

# Water Supply

- Spring Refill – *Complete*

# Seattle's Water Supply Message

## July 5, 2012

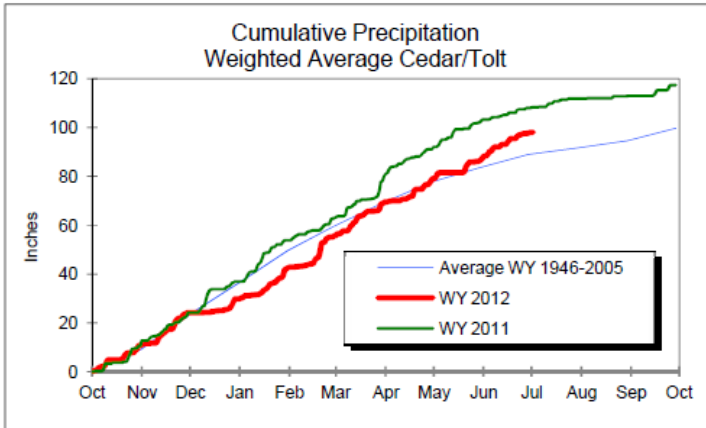
**“Our overall water supply situation and outlook is good.”**

| Seattle<br>Water Supply Indicators  |   |  |
|---|---|--|
| Reservoir Storage   | ● |  |
| Reservoir Inflows   | ● |  |
| Snowpack  | ● |  |
| Customer Use  | ● |  |
| Overall   | ● |  |
| ● Good ● Fair ● Poor<br>For more information, visit<br><a href="http://www.savingwater.org">www.savingwater.org</a> |   |  |

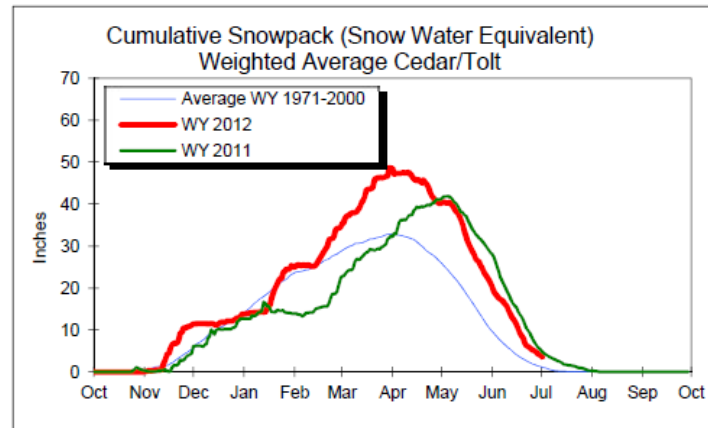


**Chester Morse Lake taken June 17, 2012**  
**Photo Credit: Lloyd Buster**

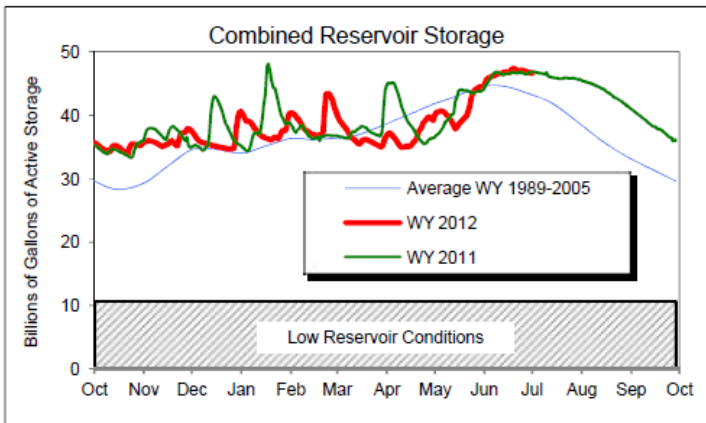
# Seattle Public Utilities Water System Synopsis as of July 2, 2012



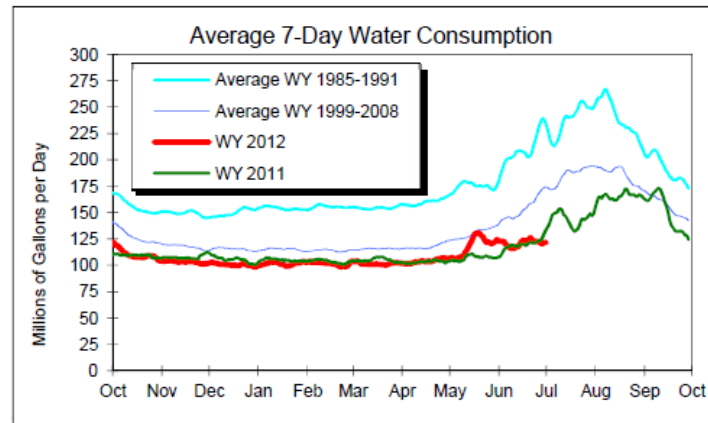
Precipitation was recorded in the Cedar and S.F. Tolt watersheds over the past week.



The average snow accumulation across the sites that we monitor is estimated to be about 3.6 inches snow water equivalent which is above the long term average for this time of the year.



The combined reservoir storage of Chester Morse Lake, Masonry Pool, Lake Youngs and South Fork Tolt Reservoir is above the long term average for this time of year.

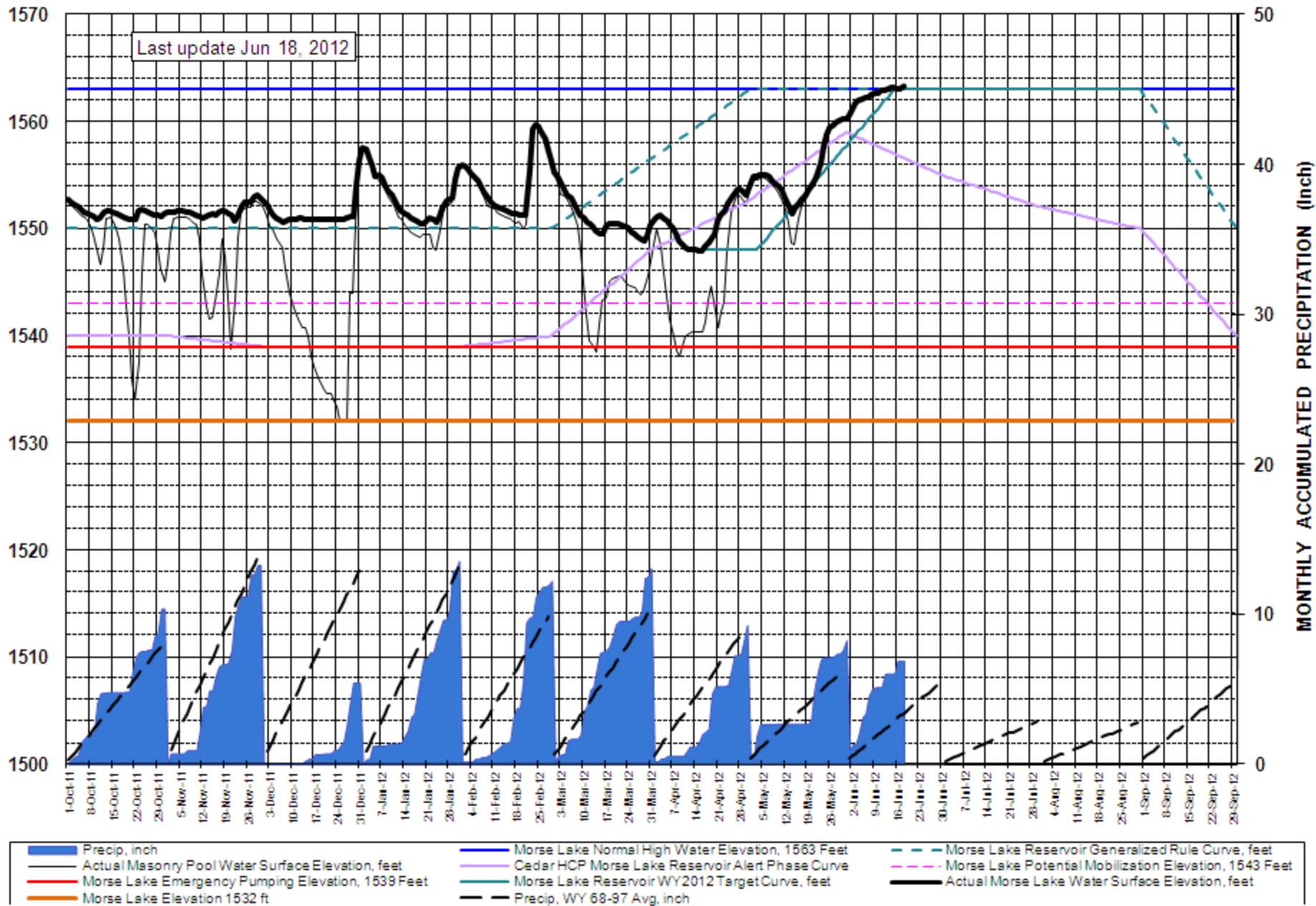


Water use over the past week averaged about 121 million gallons per day (mgd), which is less than the 174 mgd used during the same period over the years 1999-2008.

All data is provisional and subject to revision.

# CEDAR RIVER AT RESERVOIR

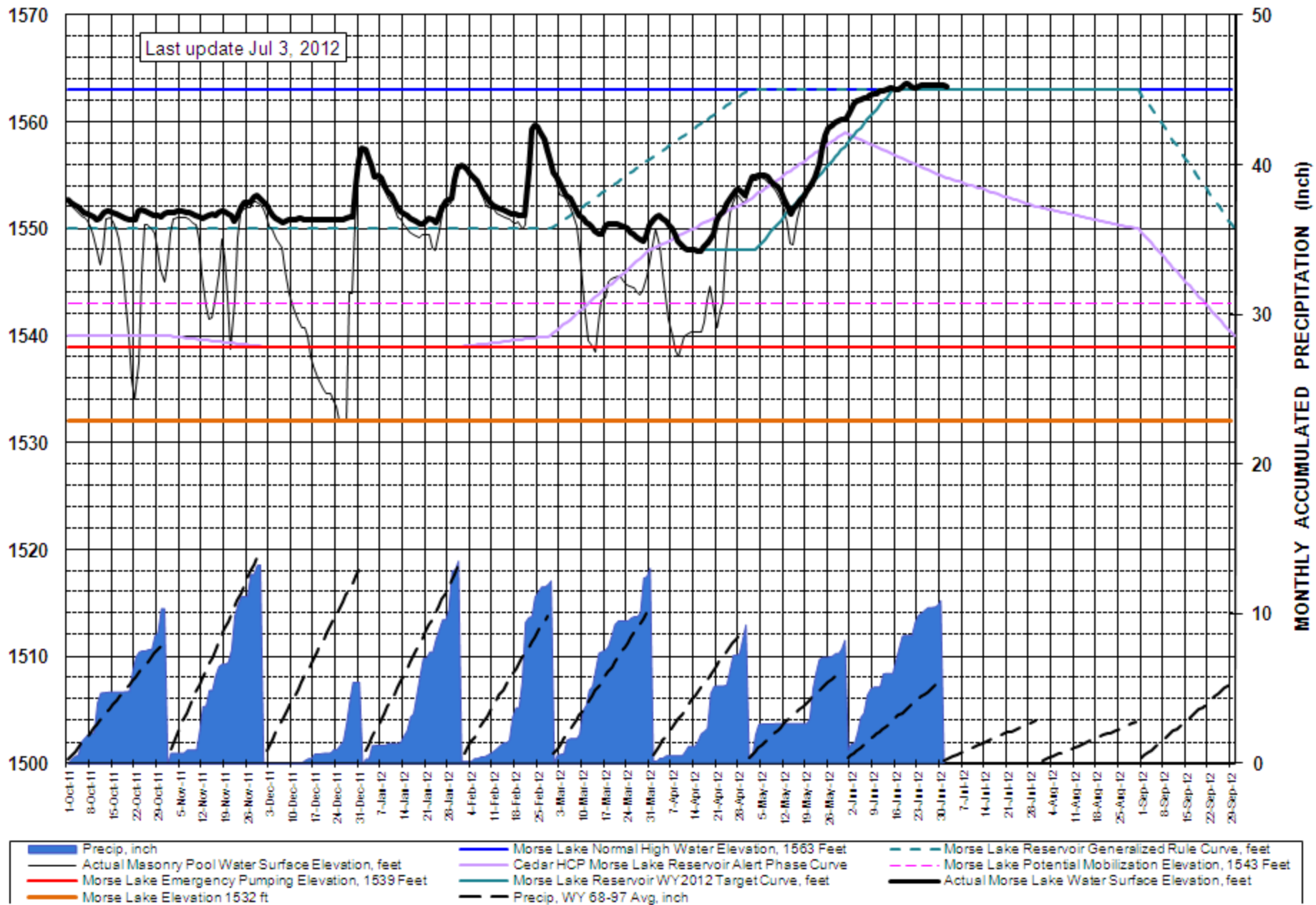
Water Year 2012





# CEDAR RIVER AT RESERVOIR

## Water Year 2012

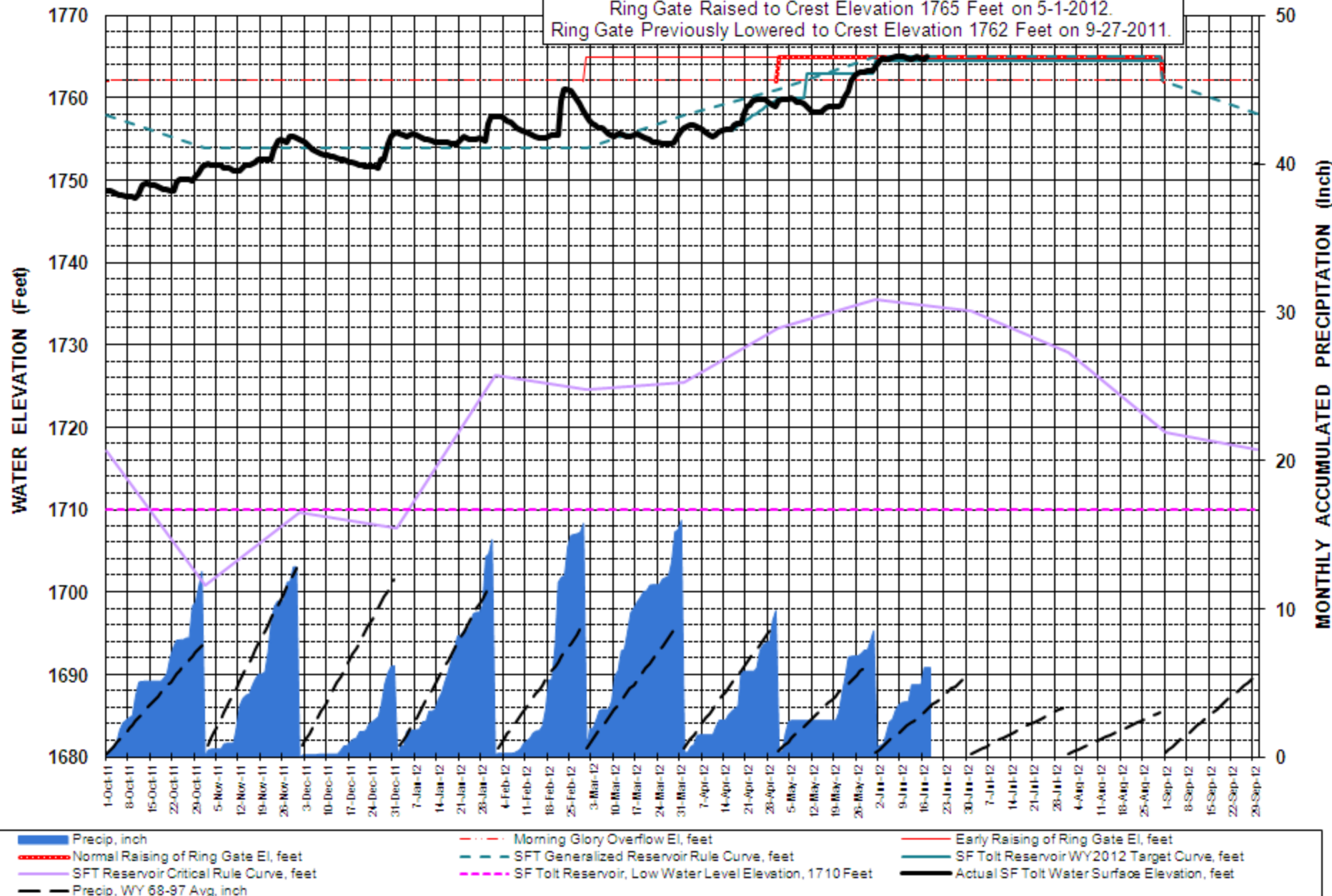


# SOUTH FORK TOLT RIVER AT RESERVOIR

## Water Year 2012

Last update Jun 18, 2012

Ring Gate Raised to Crest Elevation 1765 Feet on 5-1-2012.  
 Ring Gate Previously Lowered to Crest Elevation 1762 Feet on 9-27-2011.



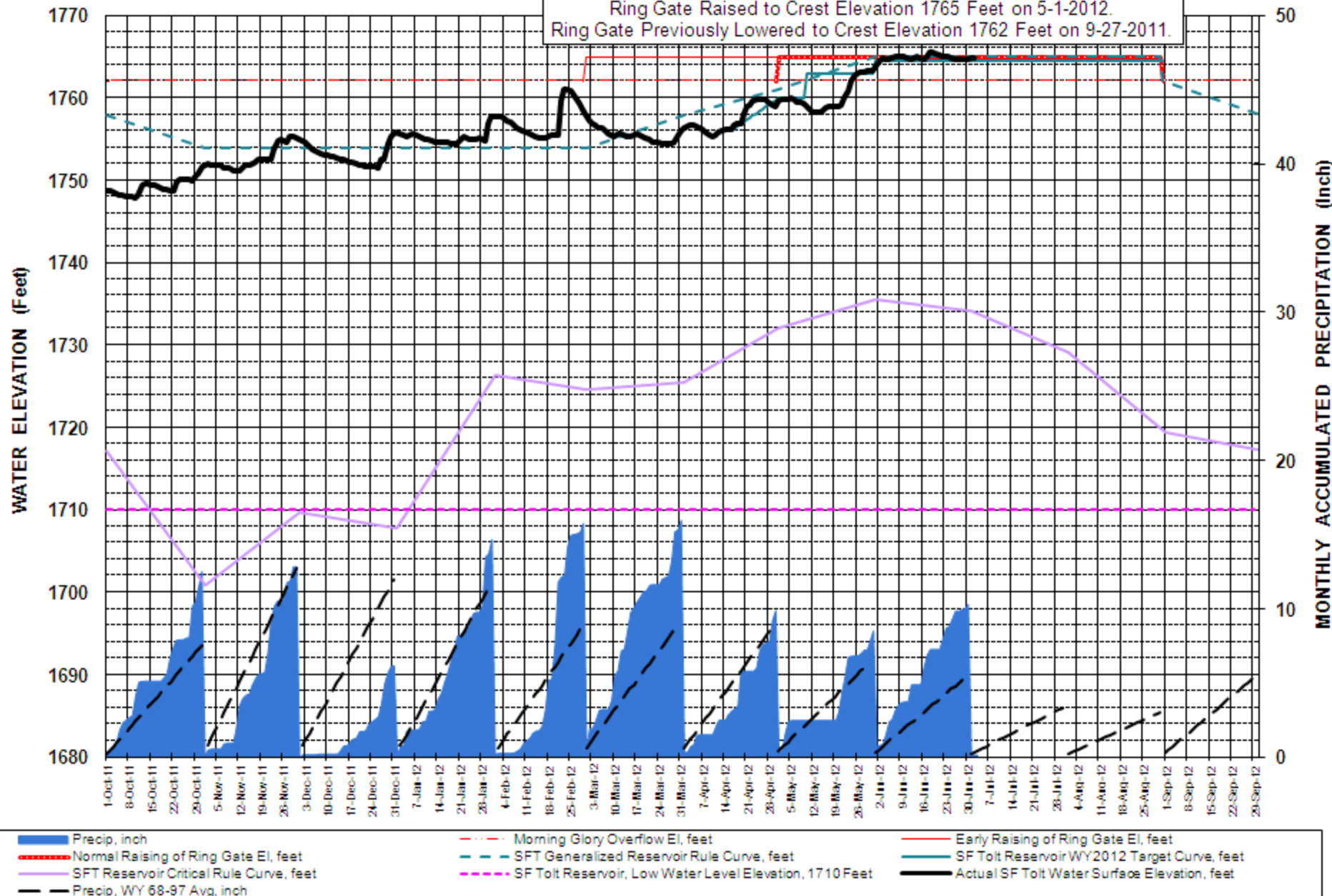
- Precip, inch
- - - Morning Glory Overflow El, feet
- Early Raising of Ring Gate El, feet
- SFT Reservoir Critical Rule Curve, feet
- - - SFT Generalized Reservoir Rule Curve, feet
- SF Tolt Reservoir, Low Water Level Elevation, 1710 Feet
- - - Precip, WY 68-97 Avg, inch
- Actual SF Tolt Water Surface Elevation, feet

# SOUTH FORK TOLT RIVER AT RESERVOIR

## Water Year 2012

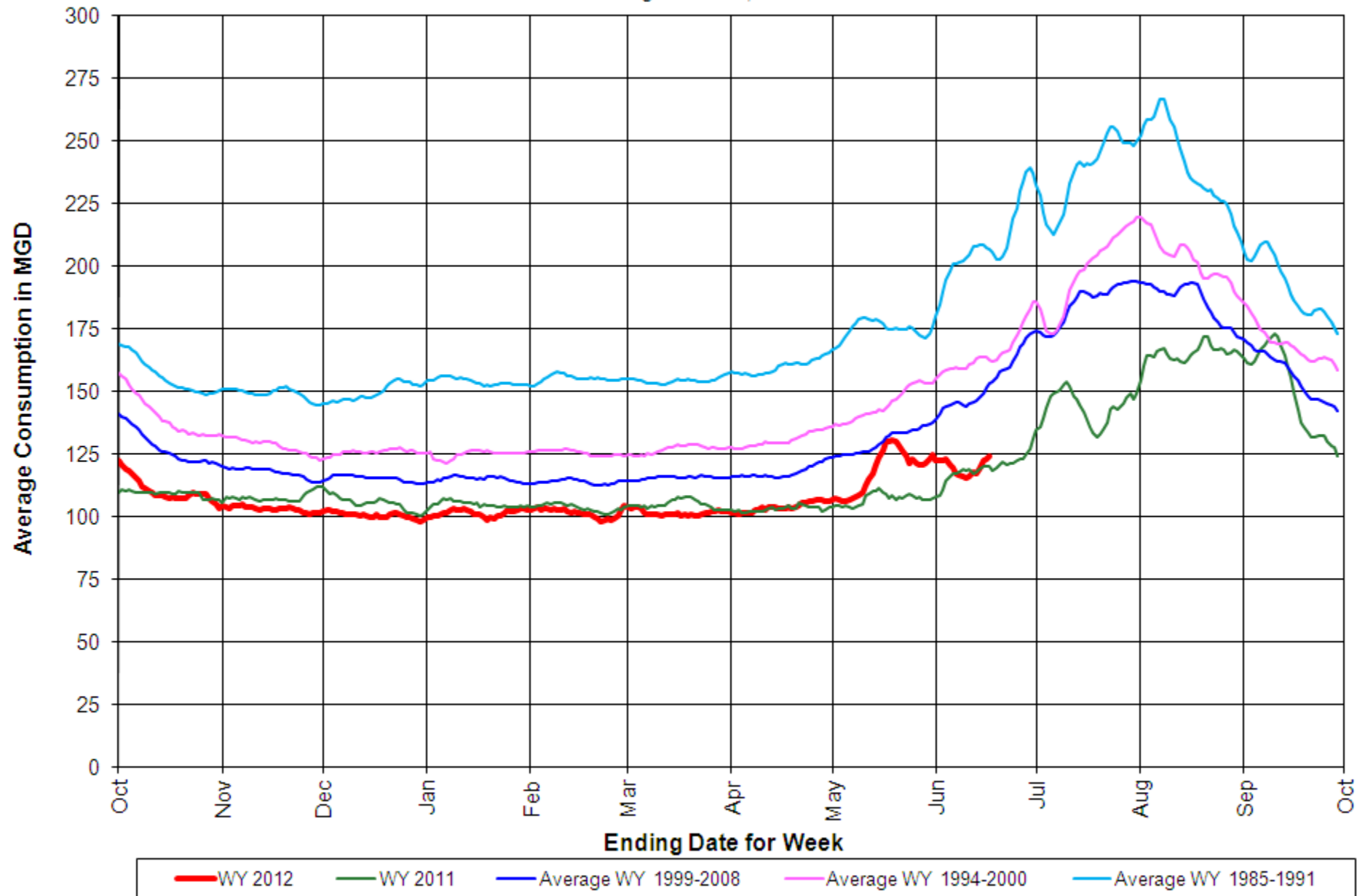
Last update Jul 3, 2012

Ring Gate Raised to Crest Elevation 1765 Feet on 5-1-2012.  
Ring Gate Previously Lowered to Crest Elevation 1762 Feet on 9-27-2011.



# 24-hr Consumption, 7-Day Moving Average

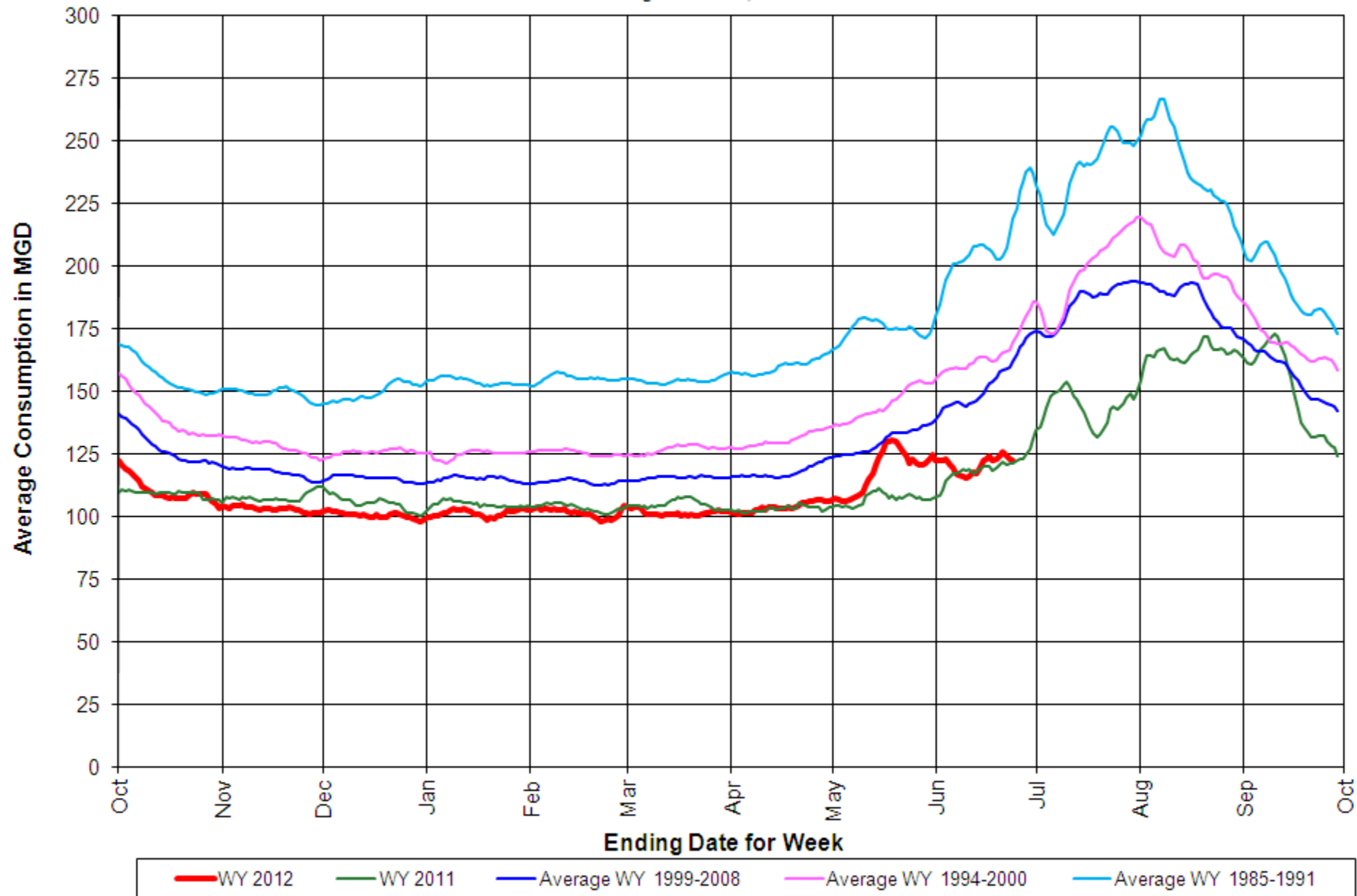
Through June 18, 2012



Notes: A. 7-day moving average is calculated using data from the day of and the previous 6 days.  
All Data is Provisional and Subject to Change

# 24-hr Consumption, 7-Day Moving Average

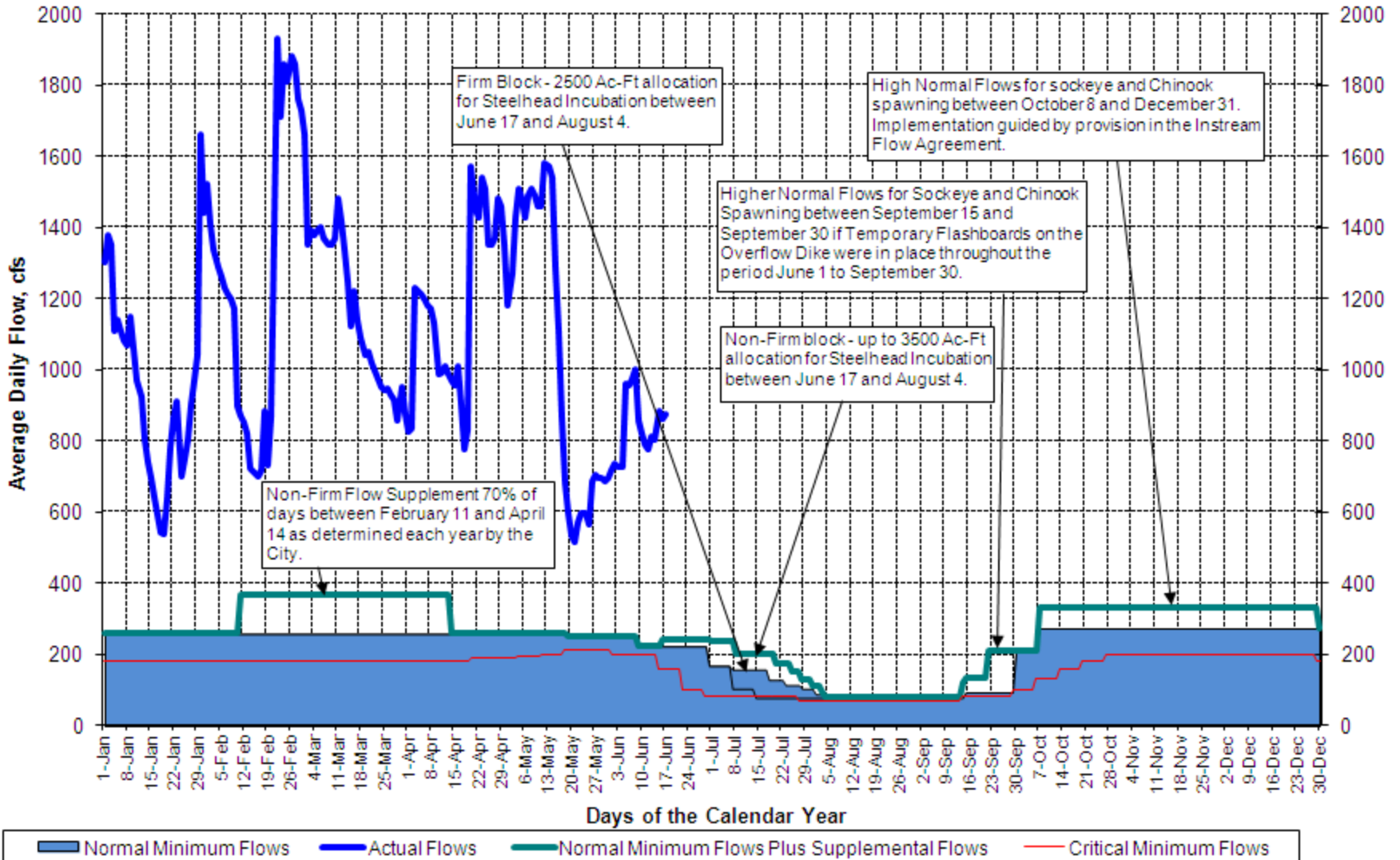
Through June 25, 2012



Notes: A. 7-day moving average is calculated using data from the day of and the previous 6 days.  
All Data is Provisional and Subject to Change

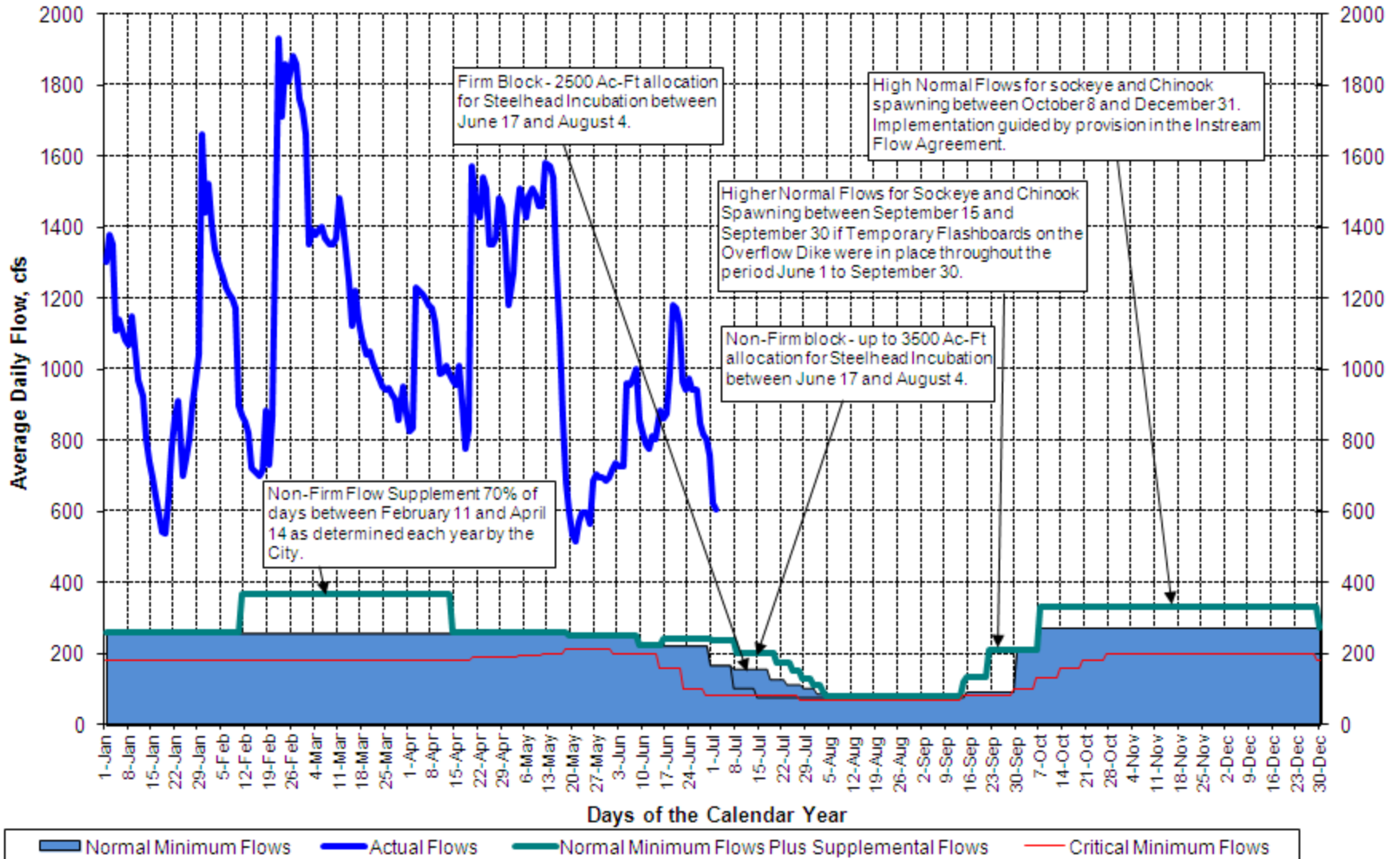
Last Update: 06-17-2012

### Calendar Year 2012 Cedar River Instream Flows Measured at USGS Stream Gage No. 12117600 All Data is Provisional and Subject to Revision



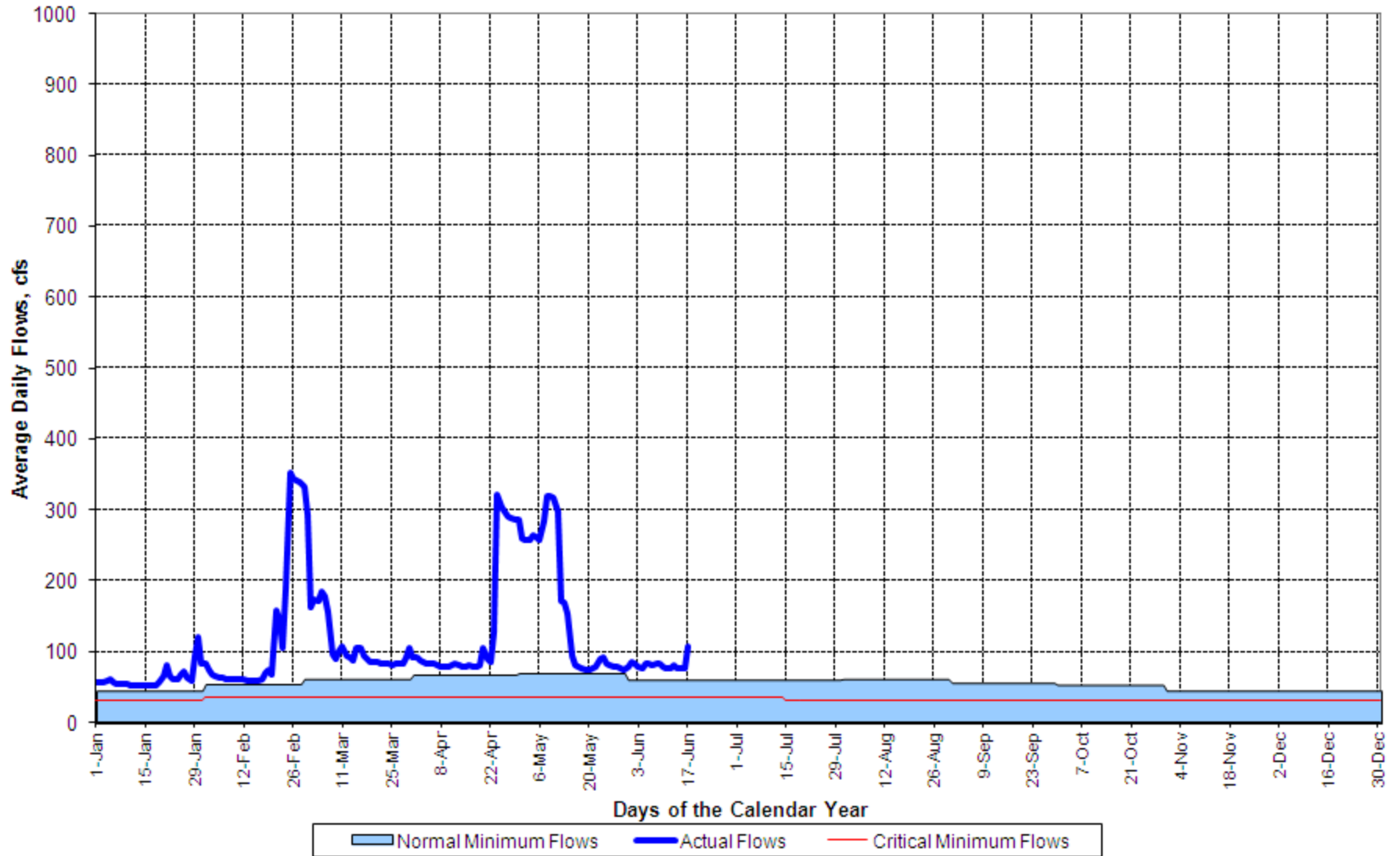
Last Update: 07-02-2012

### Calendar Year 2012 Cedar River Instream Flows Measured at USGS Stream Gage No. 12117600 All Data is Provisional and Subject to Revision



Last Updated: 6/17/2012

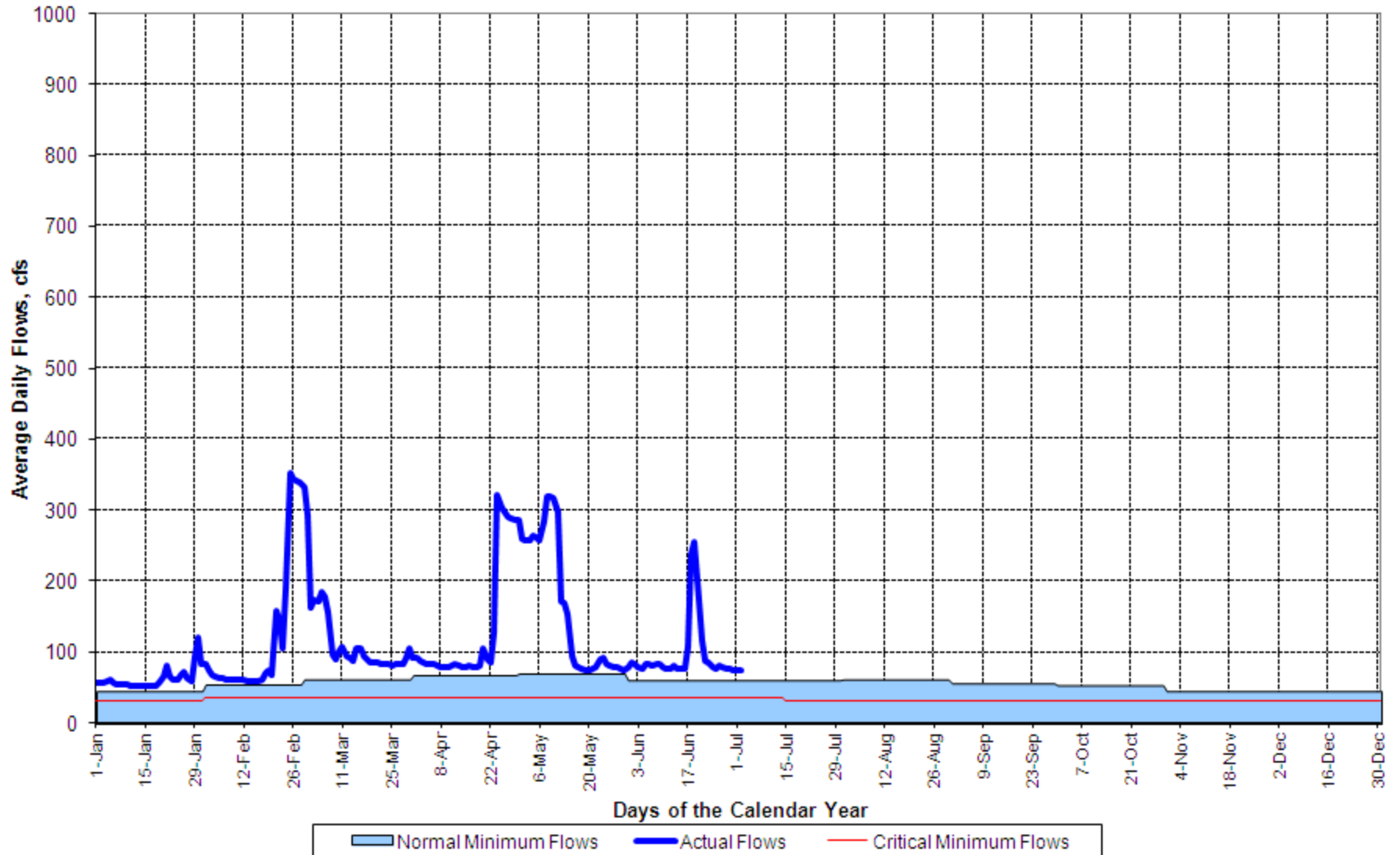
**Calendar Year 2012**  
**South Fork Tolt River Instream Flows Measured at USGS Stream Gage No. 12148000**  
All Data is Provisional and Subject to Revision





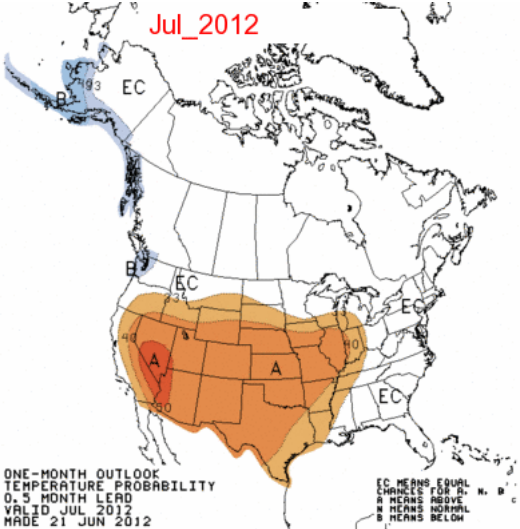
Last Updated: 7/2/2012

**Calendar Year 2012**  
**South Fork Tolt River Instream Flows Measured at USGS Stream Gage No. 12148000**  
All Data is Provisional and Subject to Revision

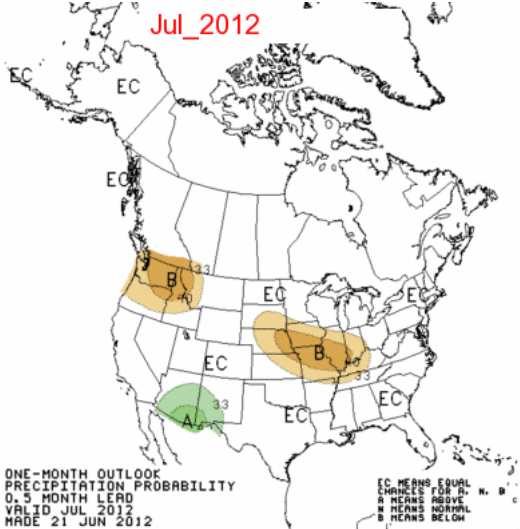


# NOAA Climate Prediction Center Outlook

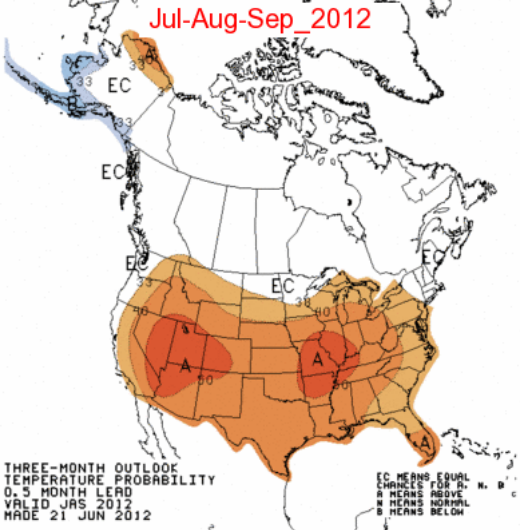
30-Day  
Temperature



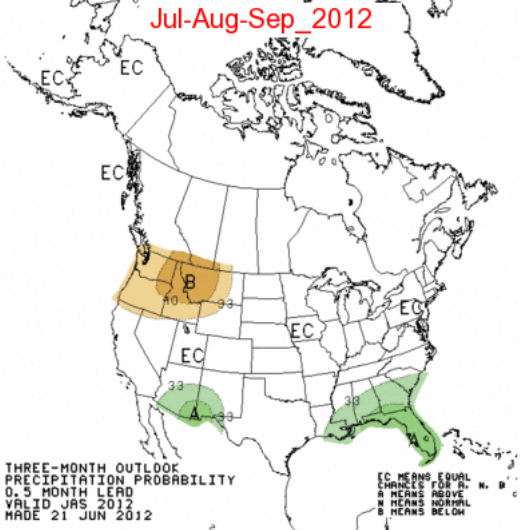
30-Day  
Precipitation



90-Day  
Temperature

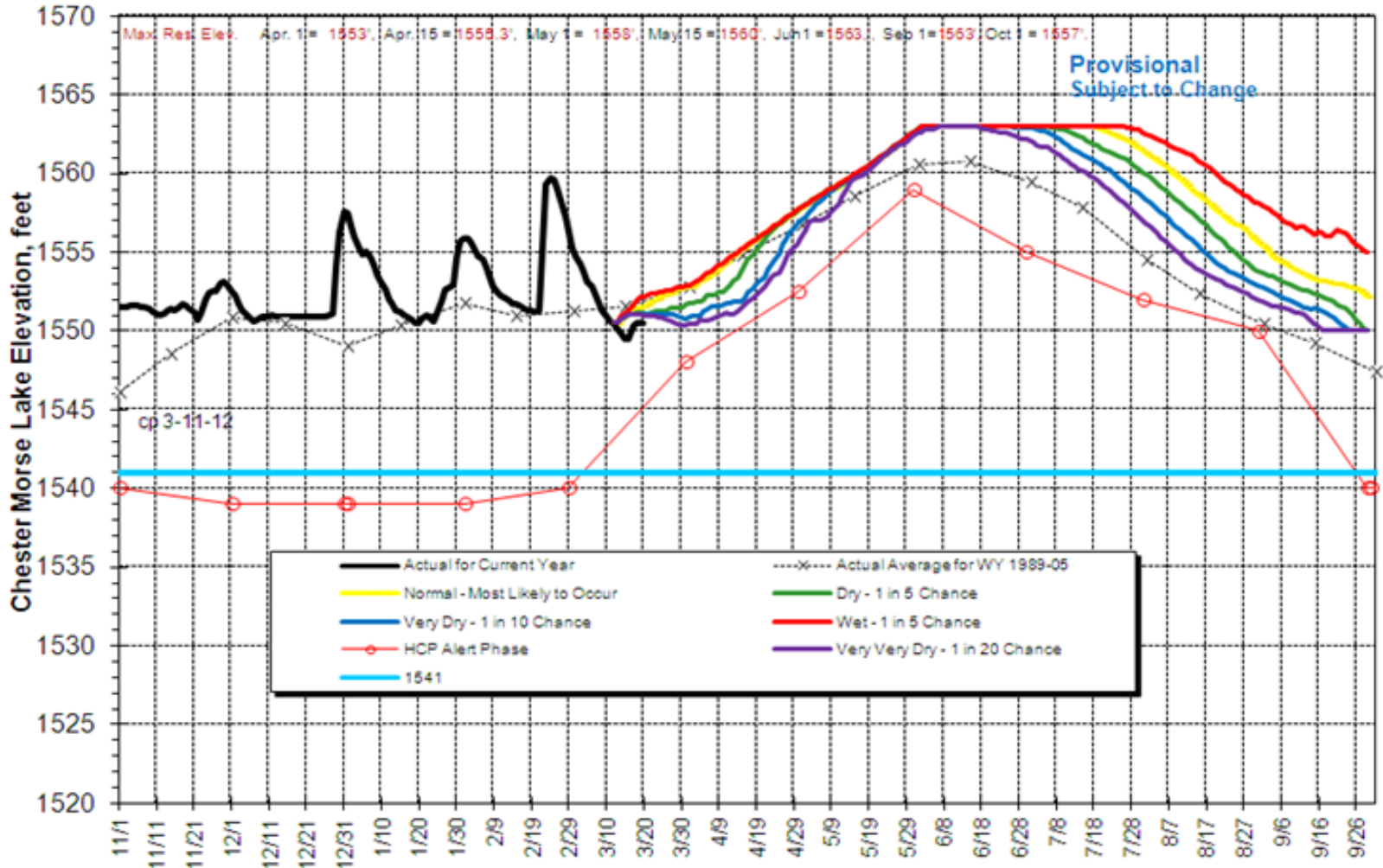


90-Day  
Precipitation



# Questions?

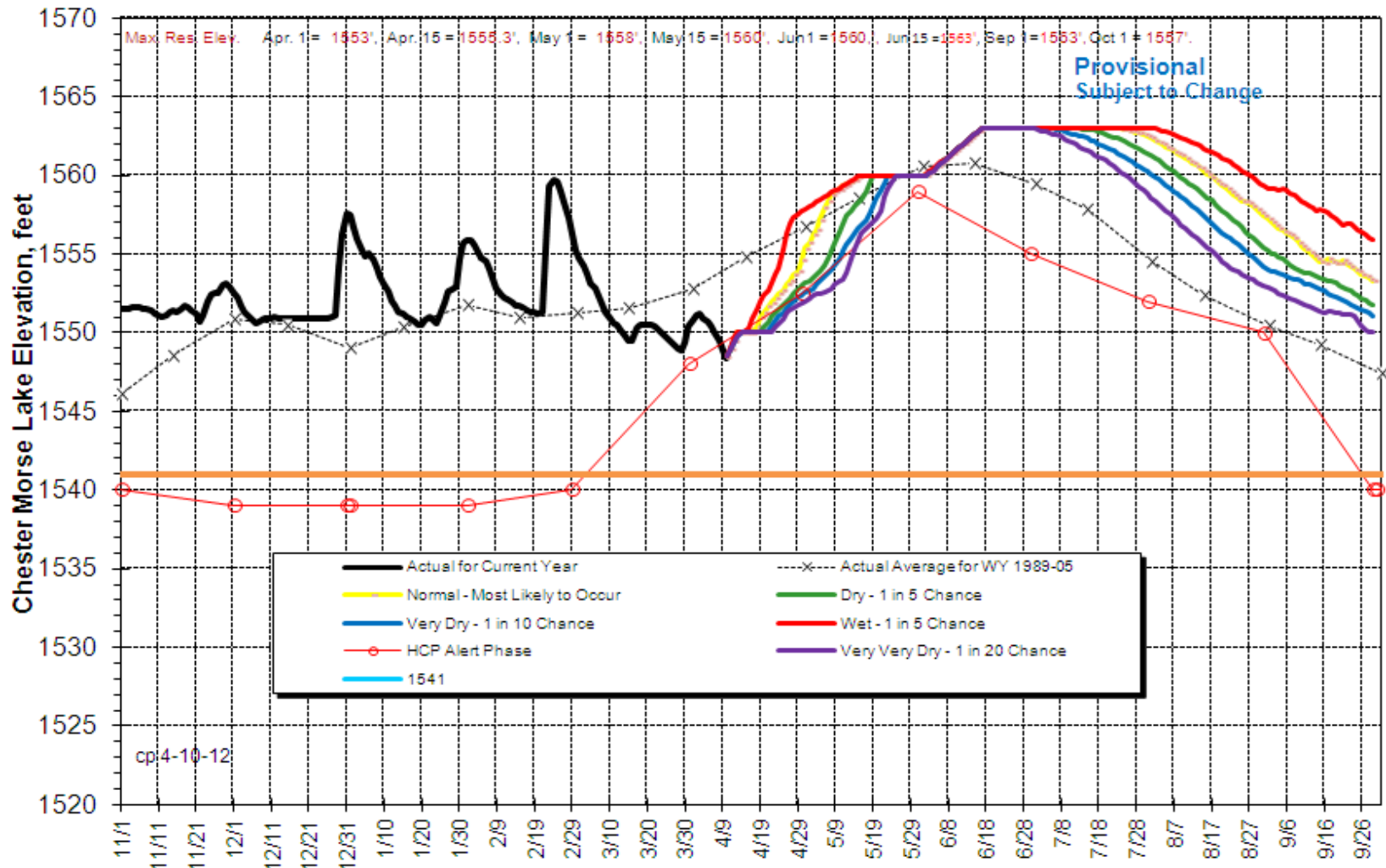
**SCENARIO: Forecast of Chester Morse Lk Elev**  
**Actual Reservoir Elevation on 3/20/2012, Forecast thru , Hist. Data 3-12 thru 9-30-12**  
**Flashboards 1550', Min. Pool 1515' & High-Normal** (SPU - tcj)



Almost 13 billion gallons are stored between elevations 1539.2 and 1562 feet and more than 3.4 billion gallons between elevations 1532 and 1539.2 feet.

**SCENARIO : Forecast of Chester Morse Lk Elev**  
**Actual Reservoir Elevation on 4/9/2012, Historic Data 4-10 thru 9-30-12**  
**Flashboards 1550' , Min. Pool 1515' & High-Normal**

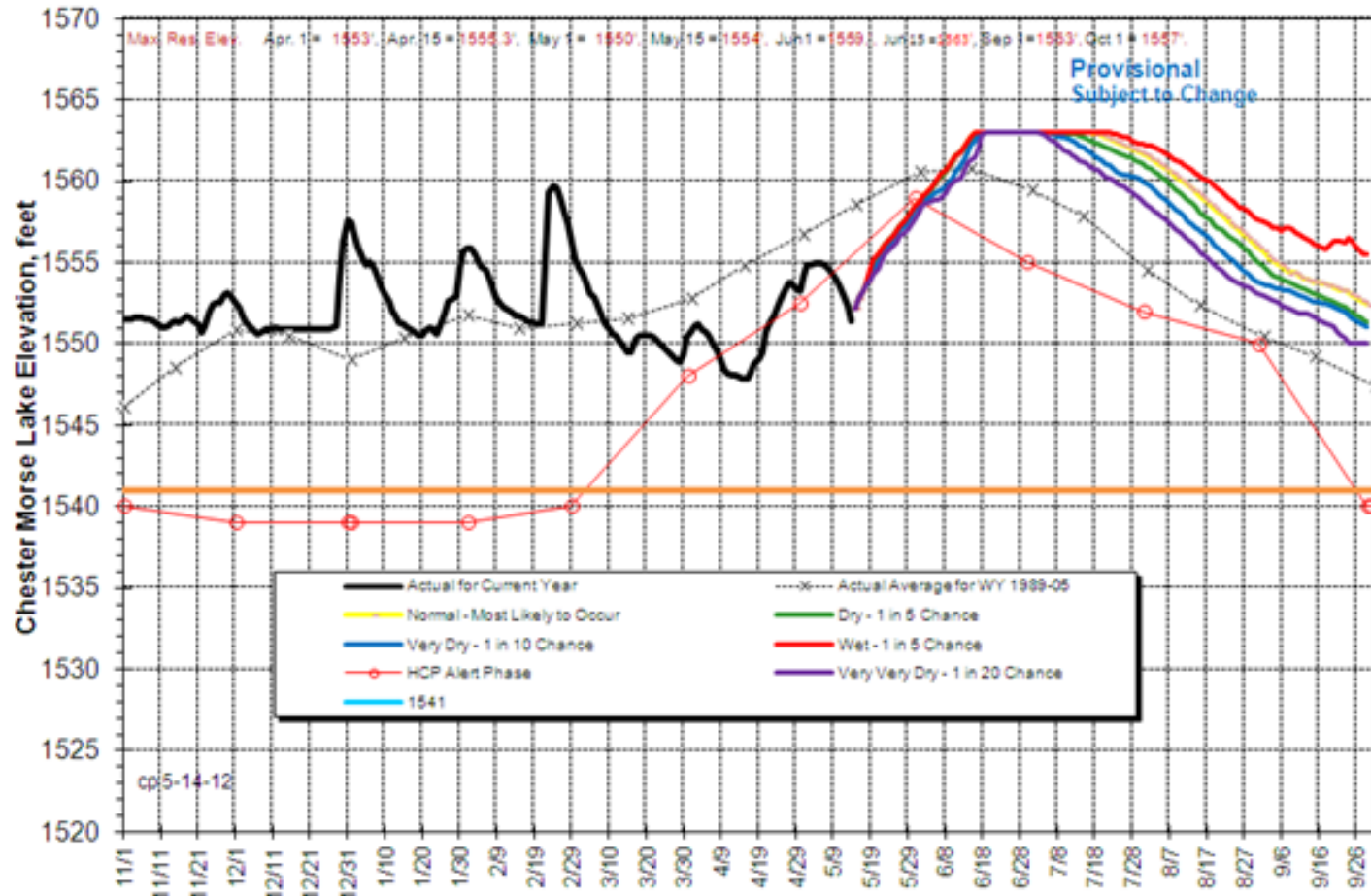
(SPU - tcj)



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**SCENARIO : Forecast of Chester Morse Lk Elev**  
**Actual Reservoir Elevation on 5/14/2012, Historic Data 5-14 thru 9-30-12**  
**Flashboards 1550' , Min. Pool 1515' & High-Normal**

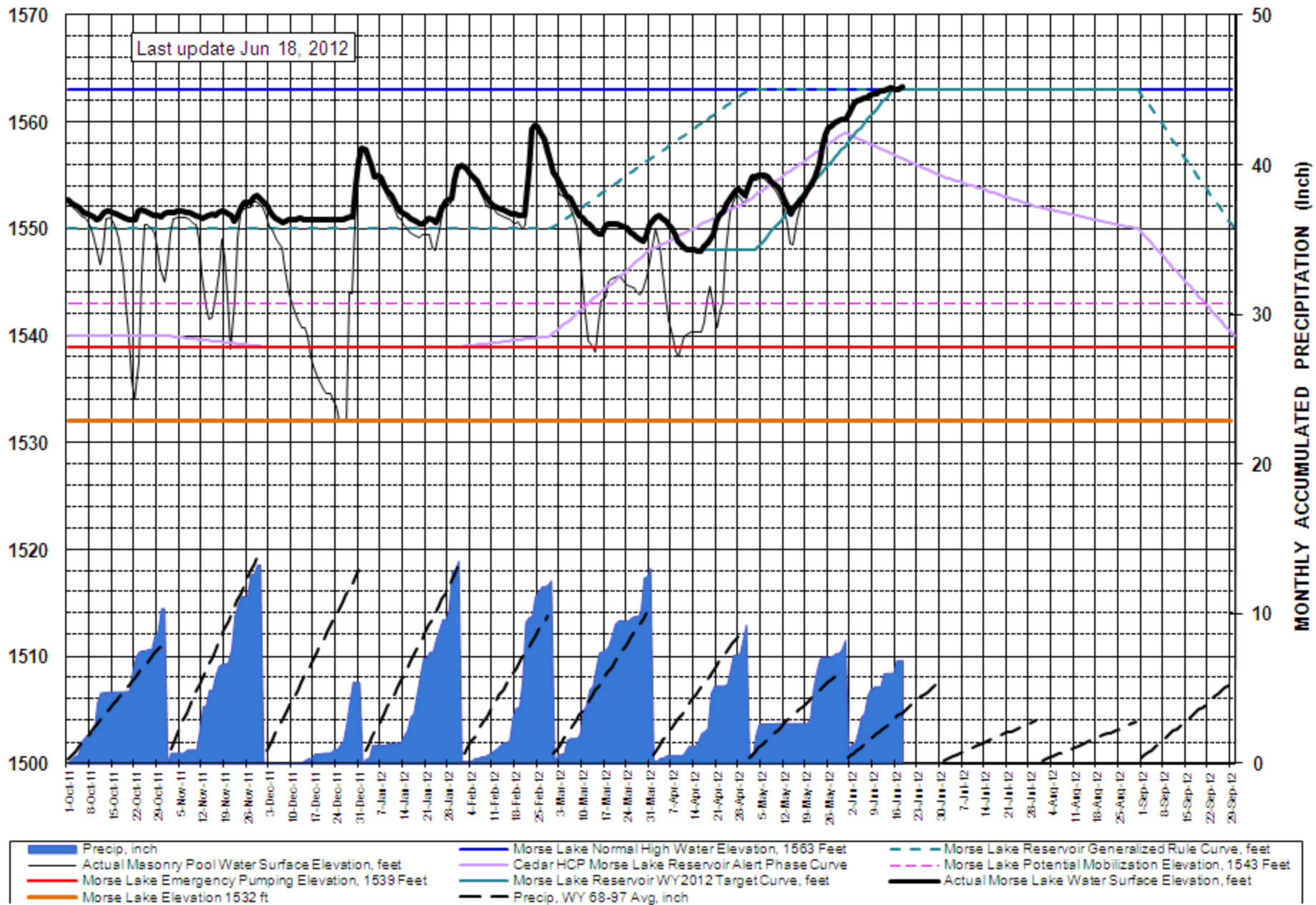
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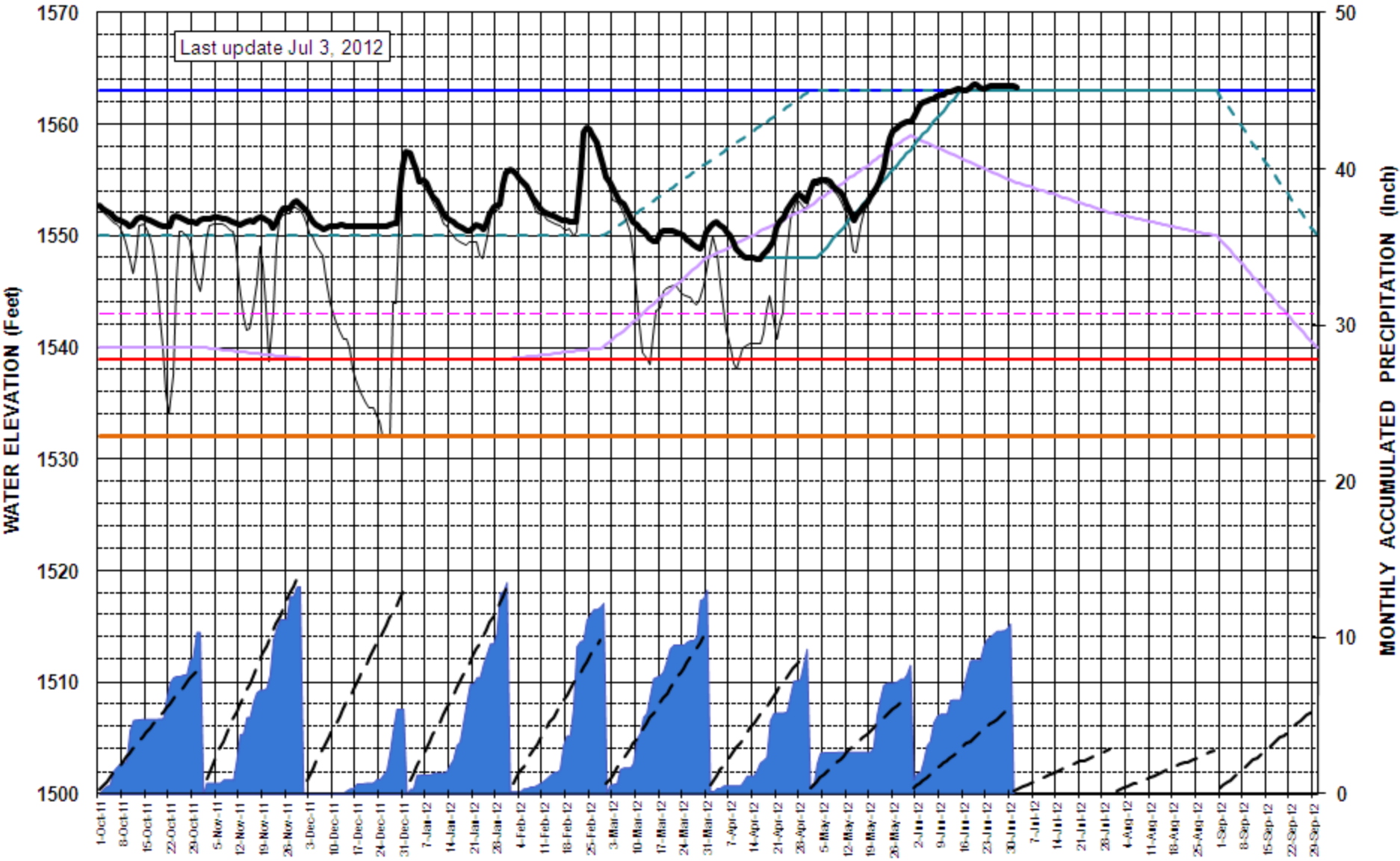
## Water Year 2012



# CEDAR RIVER AT RESERVOIR

## Water Year 2012

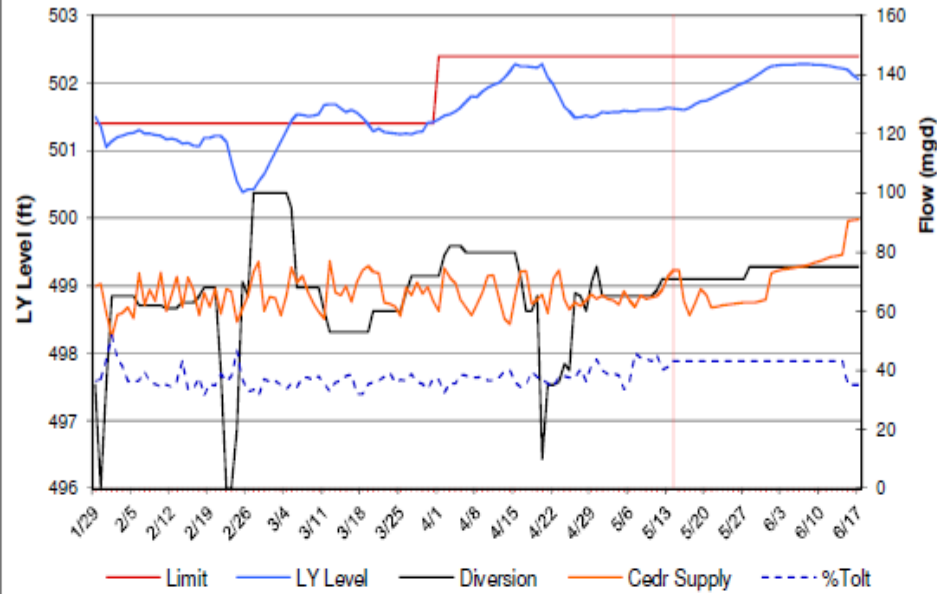
Last update Jul 3, 2012



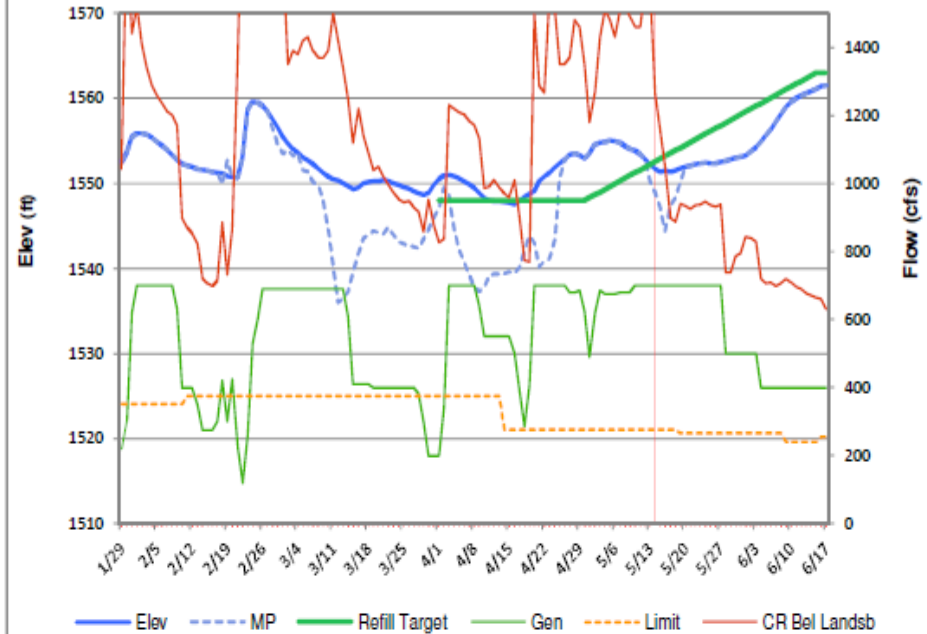
- |   |   |  |
|---|---|--|
| Precip, inch                                      | Morse Lake Normal High Water Elevation, 1563 Feet | Morse Lake Reservoir Generalized Rule Curve, feet      |
| Actual Masonry Pool Water Surface Elevation, feet | Morse Lake Emergency Pumping Elevation, 1539 Feet | Morse Lake Potential Mobilization Elevation, 1543 Feet |
| Morse Lake Elevation 1532 ft                      | Morse Lake Reservoir WY2012 Target Curve, feet    | Actual Morse Lake Water Surface Elevation, feet        |
| Precip, WY 68-97 Avg, inch                        |   |  |



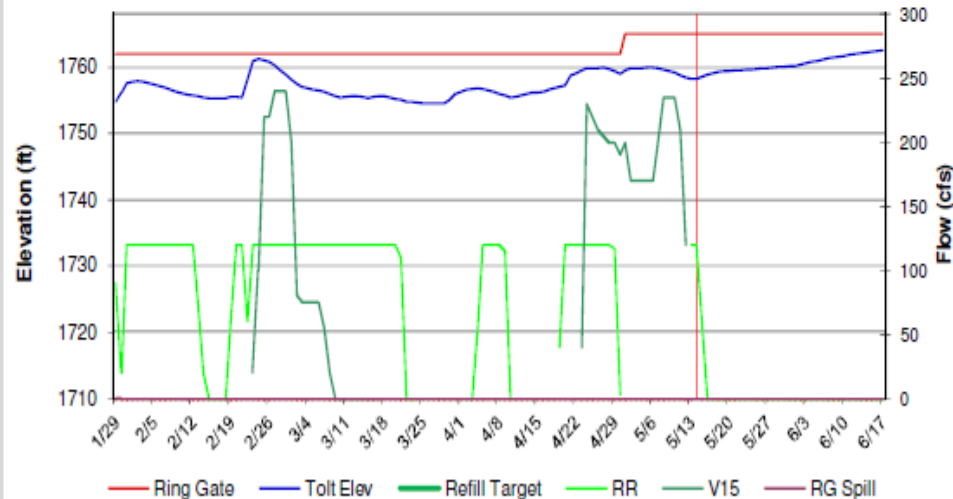
Lake Youngs Plan



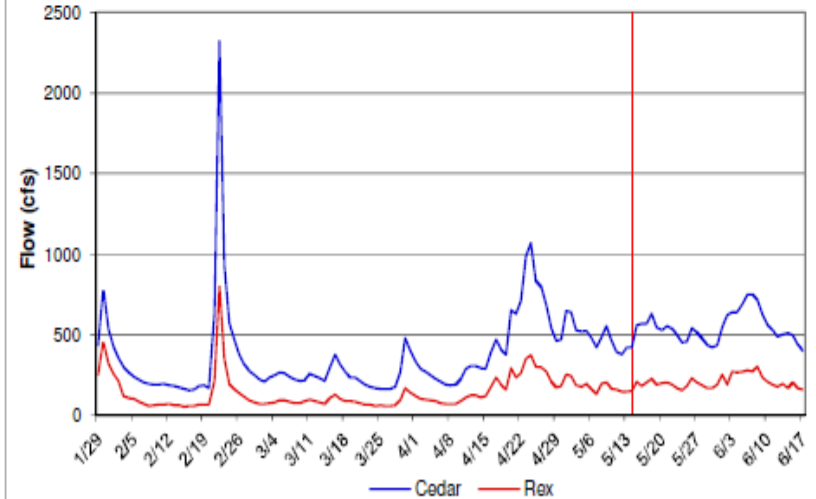
CML Plan



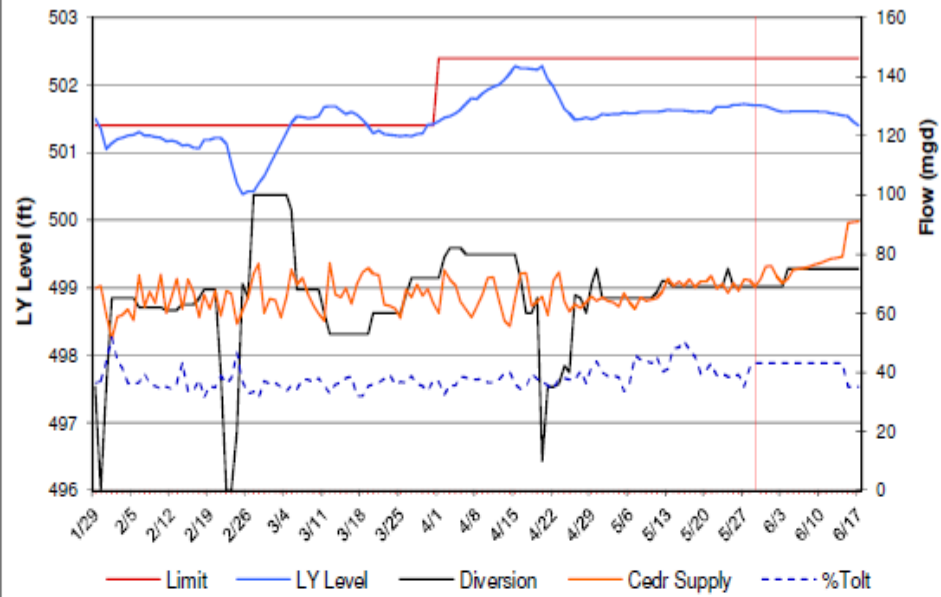
SF Tolt Plan



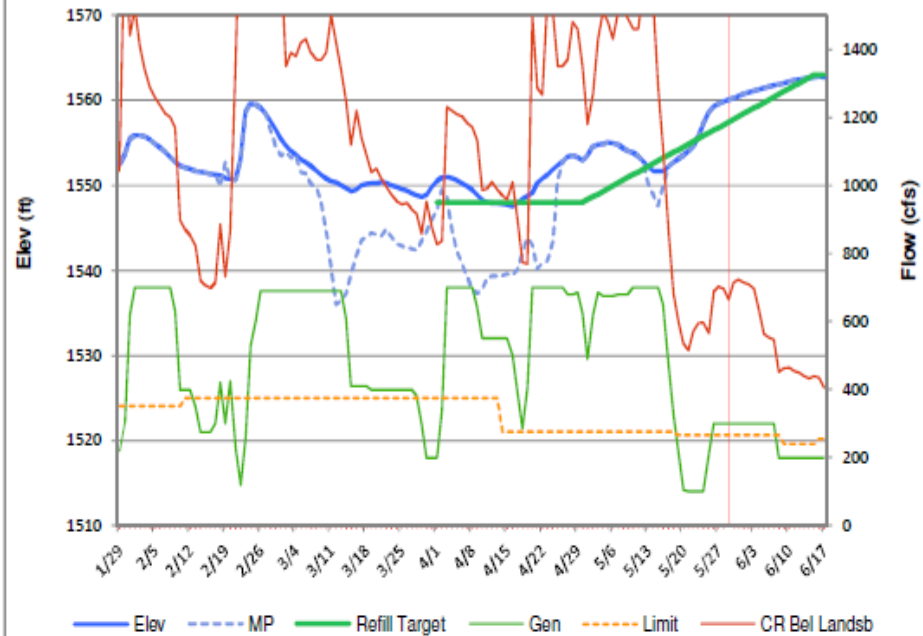
Estimated CML Inflow



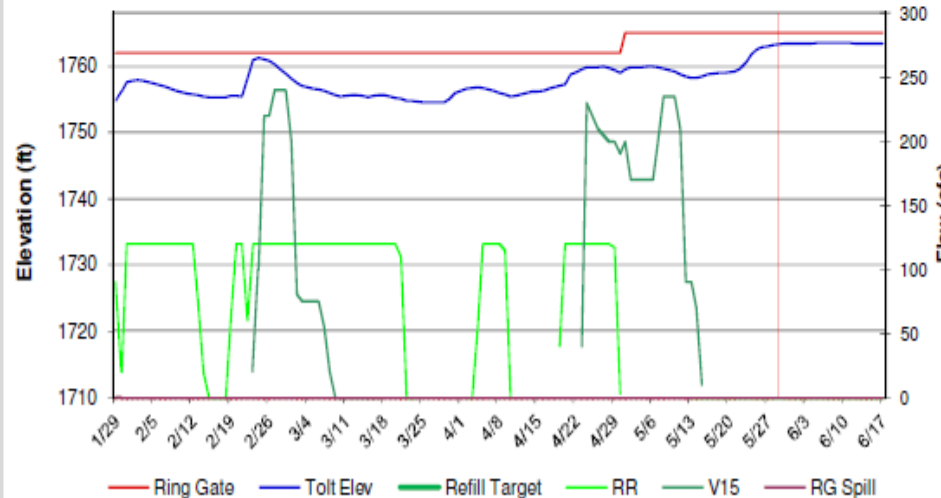
**Lake Youngs Plan**



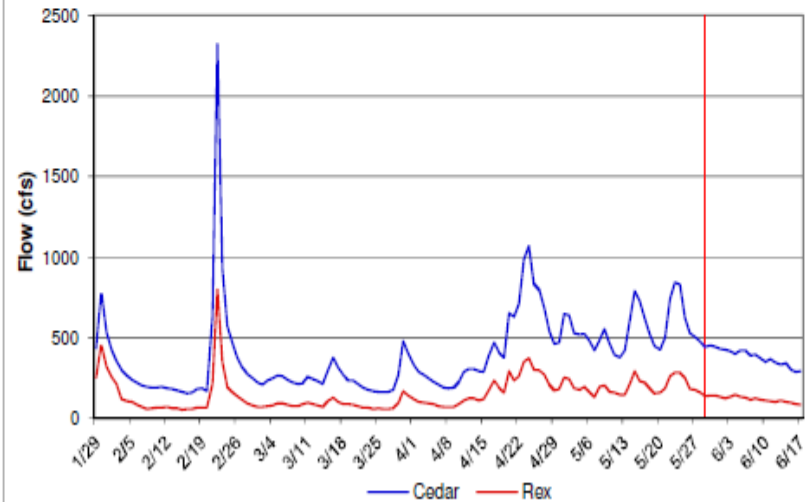
**CML Plan**



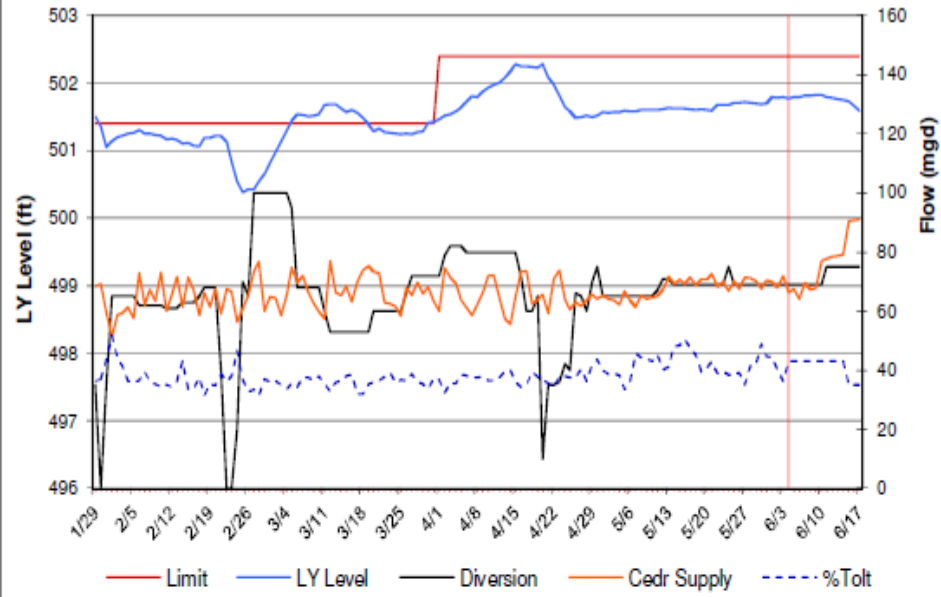
**SF Tolt Plan**



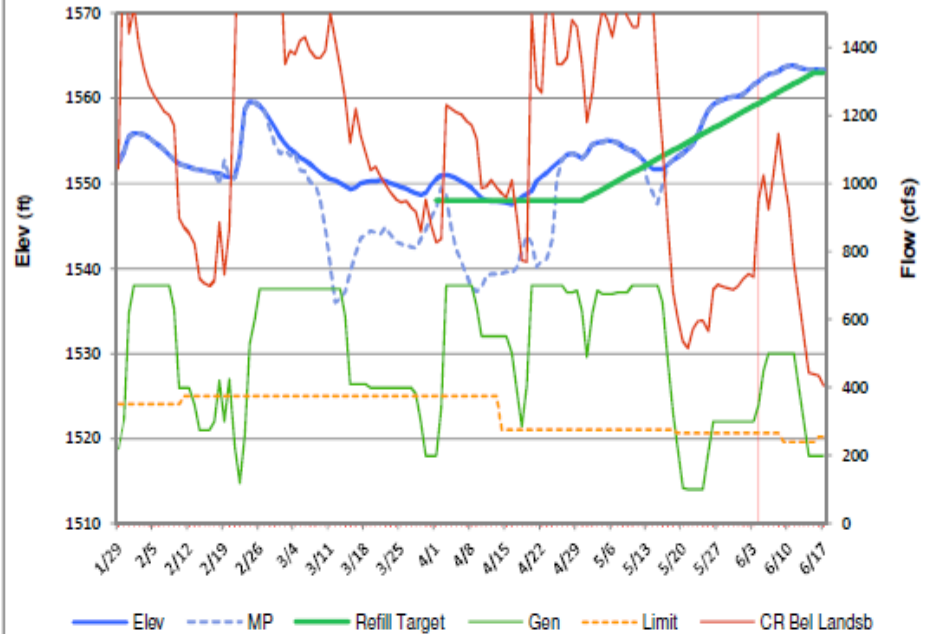
**Estimated CML Inflow**



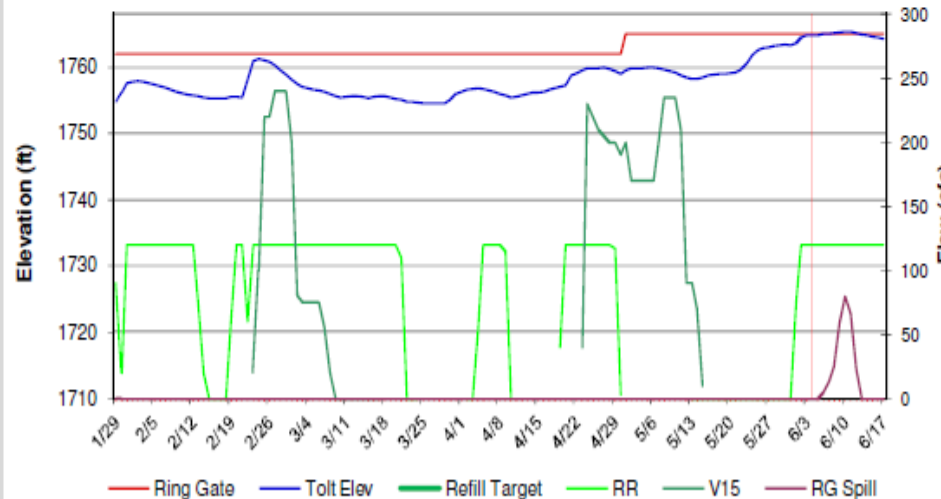
Lake Youngs Plan



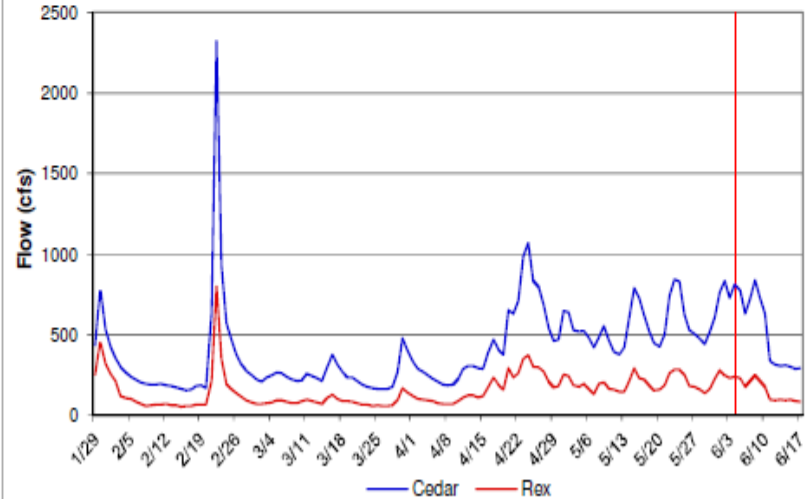
CML Plan



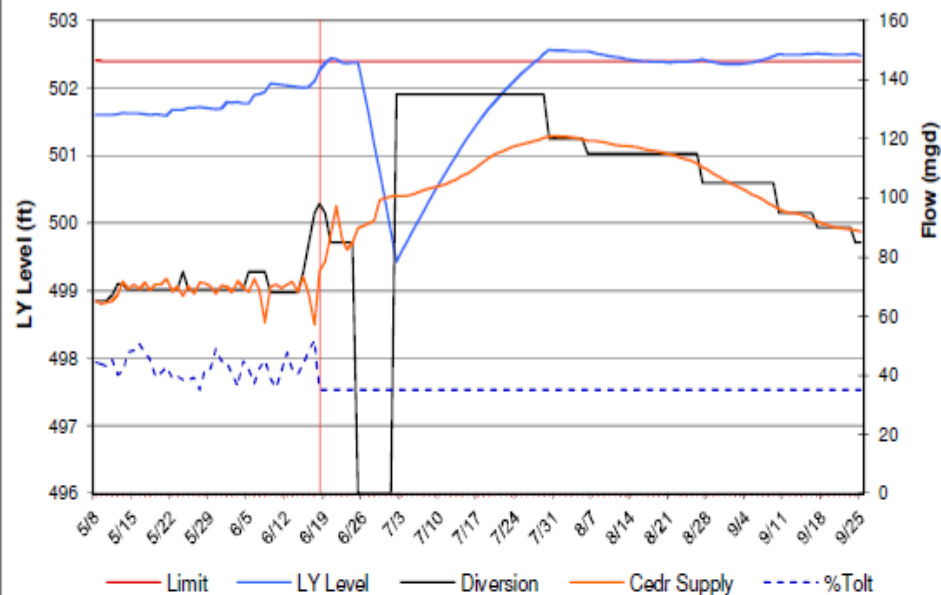
SF Tolt Plan



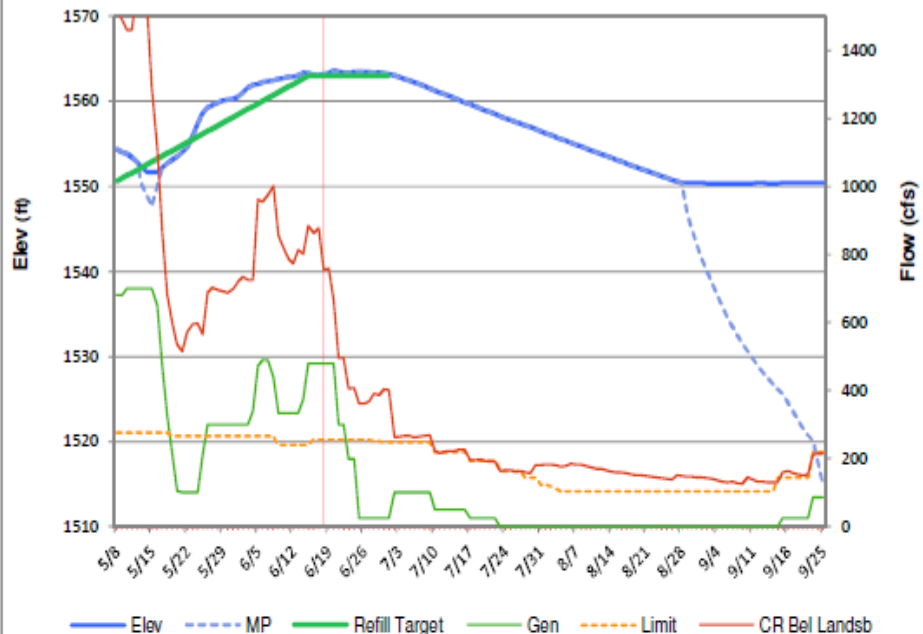
Estimated CML Inflow



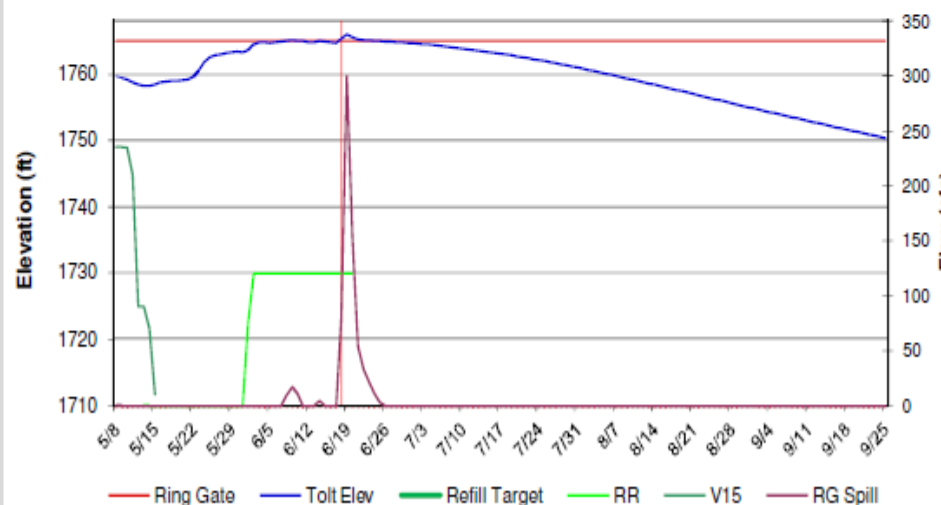
Lake Youngs Plan



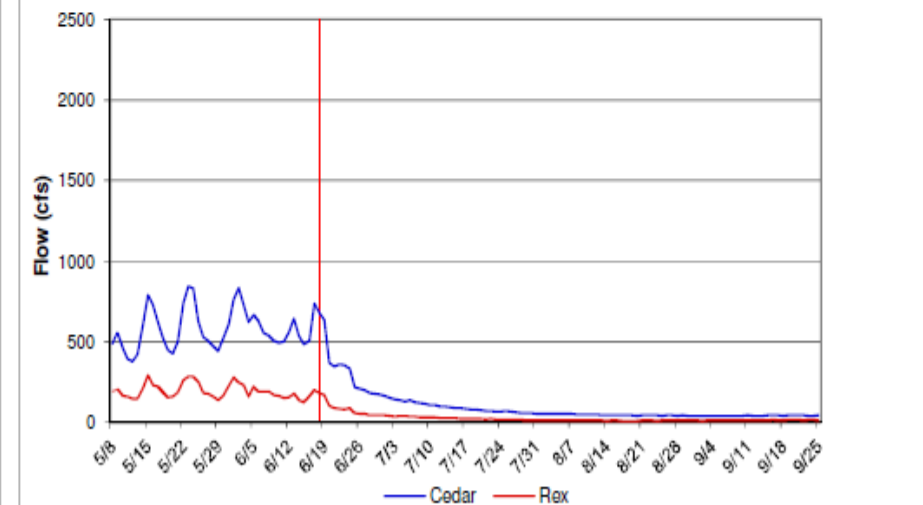
CML Plan



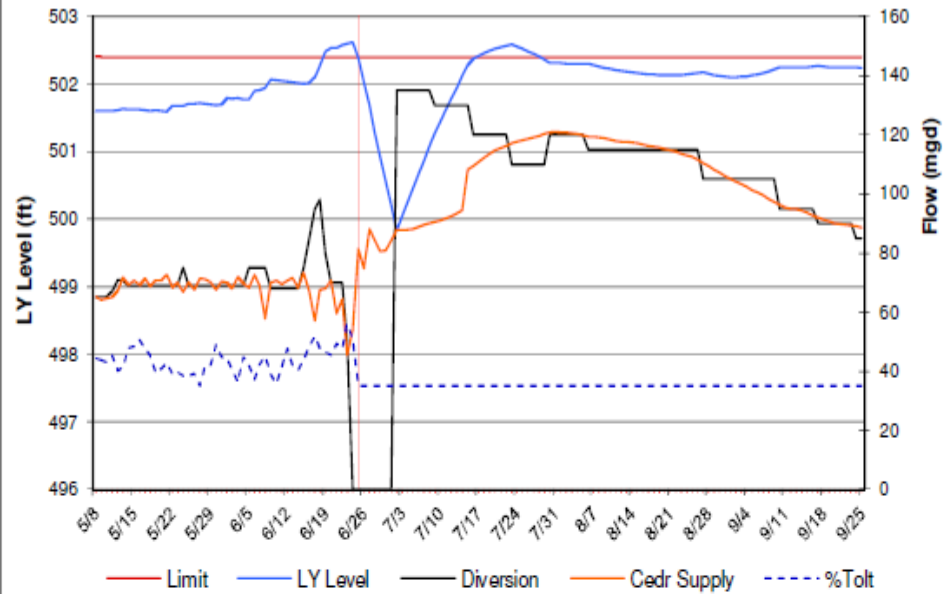
SF Tolt Plan



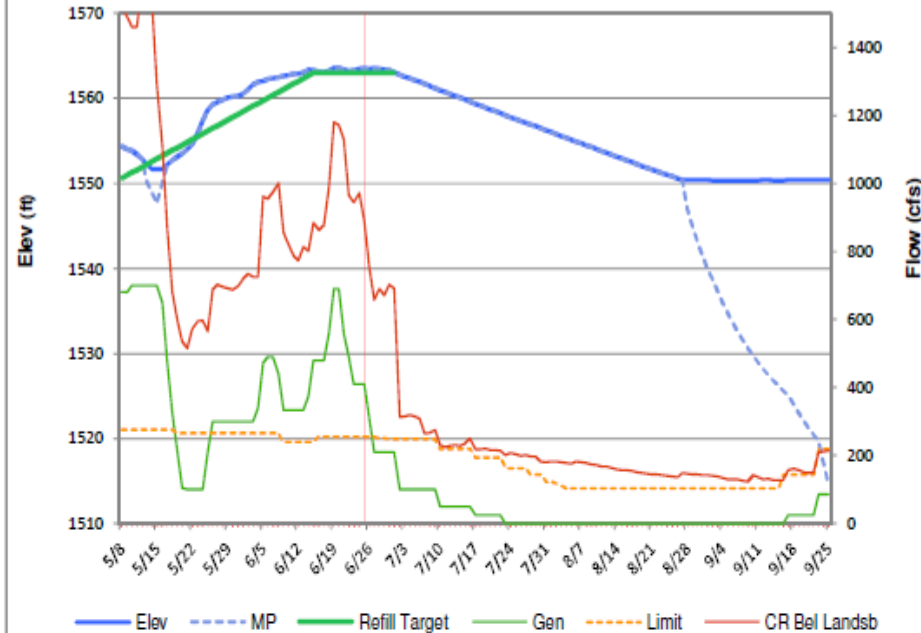
Estimated CML Inflow



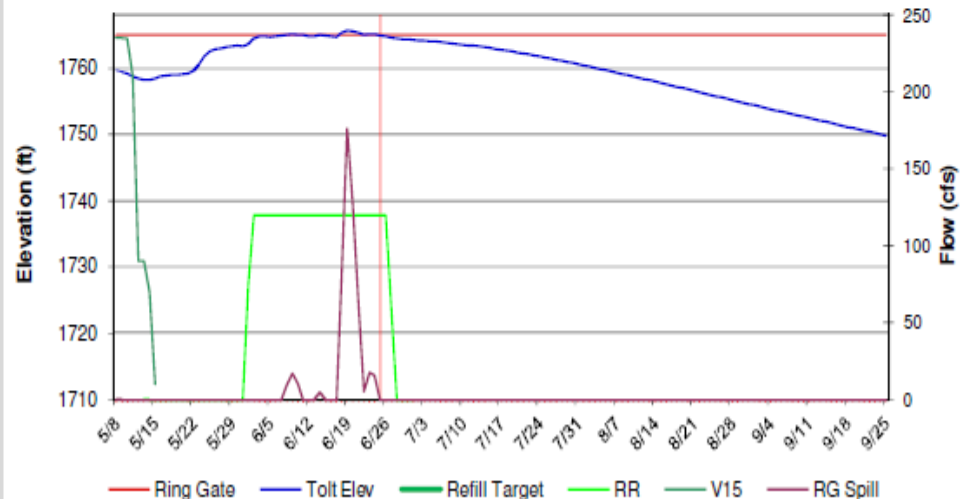
Lake Youngs Plan



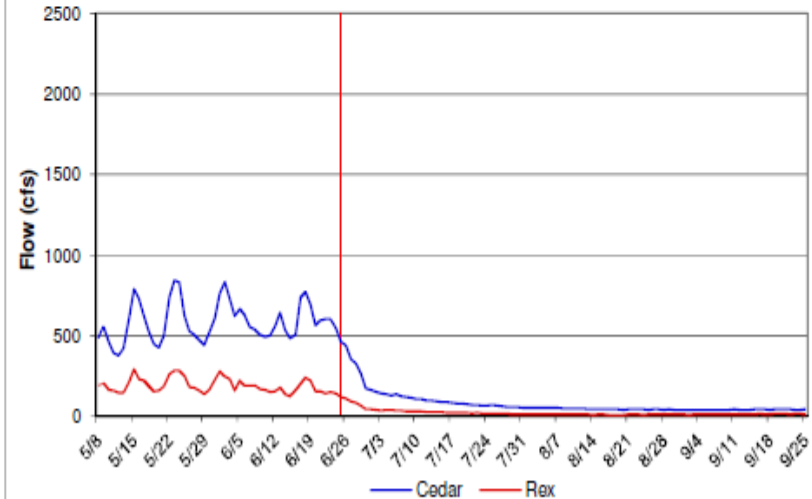
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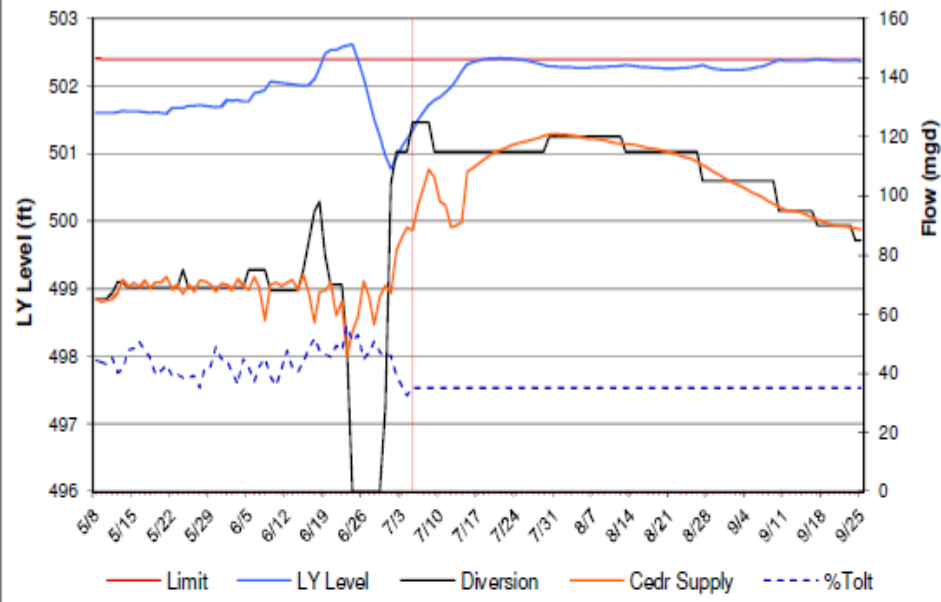
SF Tolt Plan



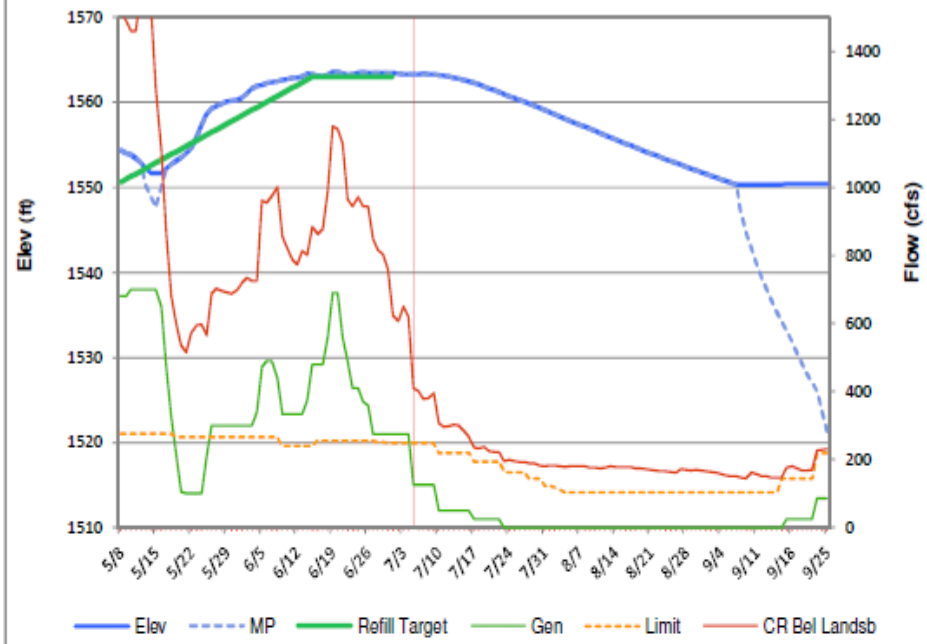
Estimated CML Inflow



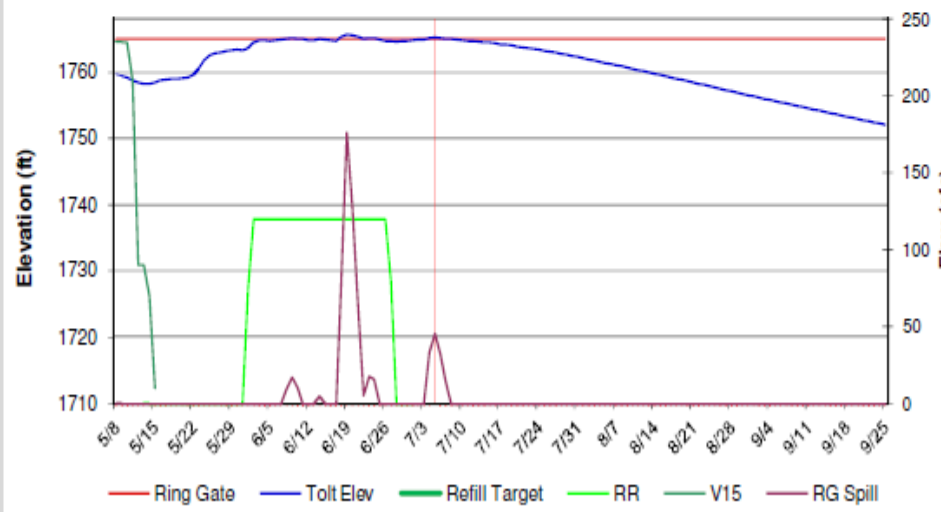
Lake Youngs Plan



CML Plan



SF Tolt Plan



Estimated CML Inflow

